

DIN 01605

# Downtown Durham Traffic Simulation Report

Durham-Orange Light Rail Transit Project



**July 24, 2015**

The NEPA Preferred Alternative for the D-O LRT Project would generally follow NC 54, I-40, US 15-501, and the North Carolina Railroad (NCRR) Corridor in downtown Durham and east Durham. The alignment would begin at UNC Hospitals, parallel Fordham Boulevard, proceed east on NC 54, travel north on I-40, parallel US 15-501 before it turns east toward the Duke University campus along Erwin Road, and then follow the NCRR Corridor parallel to NC 147 through downtown Durham, before reaching its eastern terminus near Alston Avenue. The alignment would consist of at-grade alignment, fill and cut sections, and elevated structures. In two sections of the alignment, Little Creek and New Hope Creek, multiple Light Rail Alternatives are evaluated in the DEIS.

This technical report contains information for all alternatives analyzed in the DEIS. However, pursuant to MAP 21, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (P.L. 112-141), a NEPA Preferred Alternative has been developed, which recommends C2A in the Little Creek section of the alignment, NHC 2 in the New Hope Creek section of the alignment, the Trent/Flowers Drive station, and the Farrington Road Rail Operations and Maintenance Facility.

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### List of Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AA	Alternatives Analysis
AM	Ante meridian/before noon
DEIS	Draft Environmental Impact Statement
D-O	Durham-Orange
D-O LRT	Durham-Orange Light Rail Transit
DTCC	Durham Technical Community College
EB	Eastbound
FHWA	Federal Highway Administration
I-40	Interstate 40
INRIX	A mobile computer application that pertains to road traffic
LOS	Level of Service
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
MOE	Measures of Effectiveness
NB	Northbound
NC	North Carolina
NCCU	North Carolina Central University
NCDOT	North Carolina Department of Transportation
NCRR	North Carolina Railroad
NHC	New Hope Creek
PM	Post meridian/after noon
ROMF	Rail Operations Maintenance Facility
SB	Southbound
TRM	Triangle Transit Regional Demand Model
TSM	Transportation System Management
UNC	University of North Carolina
US	United States
VA	Veteran Affairs
WB	Westbound

## 1. Executive Summary

The primary study area in this Downtown Durham Traffic Simulation Report is a corridor, approximately 3.2 miles long that runs along Pettigrew Street within Durham city limits from Erwin Road in the northwest through Alston Avenue in the southeast. It also includes intersections on Main Street and Duke Street. A secondary study area analyzed additional intersections to the north and south of Pettigrew Street between E Chapel Hill Street and Dillard Street to determine the traffic impacts associated with closing westbound Pettigrew Street to general traffic.

Traffic analysis was conducted using Synchro and Vissim. The following scenarios were analyzed in this report:

- Existing Conditions
- 2040 No-Build Conditions
- Build LRT Conditions with at-grade alignment at Swift Avenue (Option 1)
- Build LRT Conditions with aerial alignment at Swift Avenue (Option 2)  
[It should be noted that of the Build Conditions scenarios evaluated in this report, only Option 2 was carried forward for study in the DEIS]

Under the Build Conditions, right-of-way constraints would require that Pettigrew Street be converted from two-way operation today to one-way eastbound operation between E Chapel Hill Street and Dillard Street, where the LRT would run along the north side of Pettigrew Street east of Chapel Hill Street. The 2040 Build LRT Option 1 requires the closure of Pettigrew Street between Case Street and east of Swift Avenue due to the limited right-of-way in this section. Build LRT Option 2 elevates the LRT at Swift Avenue and keeps Pettigrew Street open with operations similar to No-Build Conditions.

The overall intersection results of the No-Build versus Build Vissim analysis are shown in Table ES-2 below. During the analysis, roadway modifications to improve traffic operations were incorporated into the LRT Options analysis models in order to mitigate impacts in accordance with the NCDOT and City of Durham criteria. The modifications proposed as part of the LRT Options are presented in Table ES-1. The overall intersection results of the No-Build versus Build Vissim analysis are shown in Table ES-2. The Build analysis results include the modifications presented in Table ES-1.

Under the 2040 LRT At-Grade Swift Avenue Option 1, traffic impacts were observed in the area bounded by Main Street, Pettigrew Street, 9<sup>th</sup> Street and Broad Street. As this subarea is composed of short blocks arranged in a grid network that would already experience significant congestion under No-Build Conditions, several movements would be impacted significantly in Option 1. These traffic impacts are due to the at-grade crossing of the LRT at Broad Street/Swift Avenue which causes additional delays to the north/south running streets. In addition, the closure of Pettigrew Street between Case Street and east of Swift Avenue requires traffic to be rerouted to these already congested roadways to reach their destinations. In Option 2, when the LRT is elevated and Pettigrew Street is open between Case Street and east of Swift Avenue, most of these impacts would be removed. At Main Street and Broad Street under Option 2, the northbound Broad Street left turn would experience a degradation of LOS from D to E due to network signal timing changes aimed at improving the major east/west approaches.

In the downtown area east of Swift Avenue for both Build Options, all intersections would operate in accordance with applicable level of service thresholds with the exception of the following locations:

- Mangum Street and Main Street would experience an overall LOS degradation in the PM peak hour by worsening from LOS D to E.
- Pettigrew Street & Fayetteville Street would meet the overall delay/LOS intersection criteria, however, two movements would experience degradation of LOS in the PM peak hour with the southbound Pettigrew Street left and through movements both worsening from LOS C to E.
- Chapel Hill Street & Willard Street, which is an unsignalized intersection, would meet the overall/delay LOS intersection criteria; however, the stop-controlled Willard Street approach would degrade from LOS E to LOS F in the PM peak hour.

All three intersections would experience LOS impacts due to LRV signal preemption events and the network signal timing changes aimed at providing better east/west progression for the LRT. Mangum Street and Main Street is expected to operate at a high LOS D in the No-Build PM peak hour, and with preemption events the overall delay increases to LOS E. If the loss of on-street parking along Mangum Street is deemed acceptable by the City, a third southbound Mangum Street travel lane could be tested during the Engineering phase of the project to determine if traffic impacts would be mitigated at Mangum Street and Main Street.

The LOS movement impacts at Pettigrew Street and Fayetteville cannot be practically mitigated with roadway modifications due to right-of-way constraints and the location of the NCR corridor that crosses the southbound approach upstream of the stop bar.

Due to preemption events, there are fewer acceptable gaps for vehicles on the stop-controlled Willard Street approach at Chapel Hill Street. The signalization of Willard Street and Chapel Hill Street was discussed with the City of Durham. However, due to the proximity of signals along Chapel Hill Street at Duke Street and Pettigrew Street, the city requested that the intersection remain stop-controlled.

Maximum queues would exceed available storage in several locations; however this is an infrequent occurrence and additional roadway modifications are not recommended at these locations due to the limited operational benefits that would require large capital expenditures via impractical right-of-way acquisitions and the reconstruction of bridges. Many of the turn bay maximum queues would also be contained within their overall approaches' storage space and therefore would not impact upstream intersections.

The expected average queues would be accommodated by the available storage at all locations except the southbound approach of Main Street at Mangum Street. As noted previously, the addition of a third southbound travel lane can be studied during Engineering if the City of Durham were to allow the existing parking lane to be rededicated as a travel lane.





**Table ES-1: LRT Options Geometric Mitigations**

<b>Downtown Durham Segment</b>	
Pettigrew Street at Swift Avenue	Pettigrew is closed between Case St and Swift Ave (Opt 1 only)
Pettigrew Street at Chapel Hill Street	Remove westbound Pettigrew St general traffic lanes
Pettigrew Street at Blackwell Street	Remove westbound Pettigrew St general traffic lanes Remove dedicated eastbound Pettigrew St left turn bay to provide a single left/through/right lane
Pettigrew Street at Mangum Street	Remove westbound Pettigrew St general traffic lanes Restripe southbound Mangum St right turn lane to a through lane Add dedicated eastbound Pettigrew St right turn lane
Pettigrew Street at Dillard Street	Eliminate dedicated northbound Dillard St left turn lane Restripe westbound Pettigrew St lane to prohibit through traffic to provide a left/right only lane Restripe southbound Dillard St left/through lane to a through lane
Pettigrew Street at Roxboro Street	Remove westbound Pettigrew St general traffic lanes Add dedicated eastbound Pettigrew St left turn lane Restripe northbound Roxboro St left/through to a through lane

**Table ES-2: VISSIM Overall Intersection Analysis Summary – 2040 LRT Options vs 2040 No-Build**

Intersection	No-Build		Option 1		Option 2	
	AM	PM	AM	PM	AM	PM
Main Street at 9th Street	C	D	C	E	C	C
Main Street at Iredell Street (Unsignalized)	A	D	A	C	A	C
Main Street at Broad Street	C	D	D	E	C	D
Pettigrew Street at 9th Street (Unsignalized)	B	F	A	F	B	F
Pettigrew Street at Swift Avenue (Unsignalized)	D	F	F	E	B	F
Main Street at Buchanan Boulevard	D	D	D	D	D	D
Maxwell Street at Buchanan Boulevard (Unsignalized)	A	F	A	F	A	F
Duke Street at Main Street	C	C	B	C	B	C
Duke Street at Peabody Street (Unsignalized)	A	A	A	A	A	A
Memorial Street at Duke Street (Unsignalized)	A	A	A	A	A	A
Chapel Hill Street at Duke Street	C	C	C	C	C	C
Chapel Hill Street at Willard Street (Unsignalized)	A	A	C	D	B	D
Pettigrew Street at Chapel Hill Street	A	B	B	C	B	C
Blackwell Street at Pettigrew Street	B	B	B	B	B	B
Blackwell Street at Ramseur Street	B	B	B	B	B	B
Main Street at Corcoran Street	B	B	B	B	B	C
Mangum Street at Main Street	C	D	D	E	D	E
Mangum Street at Ramseur Street	B	C	C	C	C	C
Mangum Street at Pettigrew Street	B	B	A	A	A	A
Roxboro Street at Pettigrew Street	B	B	B	C	B	B
Pettigrew Street at Dillard Street	B	B	B	C	B	C
Fayetteville Street at Pettigrew Street	C	C	C	D	C	D
Fayetteville Street at Jackie Robinson Drive	B	B	B	C	B	C
Morehead Avenue at Fayetteville Street	A	A	A	A	A	A
Pettigrew Street at Grant Street	B	B	B	B	B	B
Gann Street at Pettigrew Street (Unsignalized)	A	A	A	A	A	A
Alston Avenue at Gann Street	C	B	C	B	C	B

 Indicates traffic Impact  
 Indicates traffic Impact Below Mid-D

## 2. Introduction

Through the Alternatives Analysis (AA) process completed in April 2012 prior to preliminary design, which included extensive public outreach, a Locally Preferred Alternative (LPA) was selected to address the purpose and need of the Durham-Orange (D-O) Corridor. The proposed project is a 17.1 mile double-track light rail transit (LRT) line with 17 proposed stations that will greatly expand transit service in Durham and Orange Counties. The Durham-Orange Light Rail Transit (D-O LRT) project extends from its western terminus at the University of North Carolina at Chapel Hill (UNC) at the UNC Hospitals Station to the eastern terminus in Durham at the Alston Avenue Station. The proposed D-O LRT Project improves public transportation access to a range of educational, medical, employment, and other important activity centers, in the D-O Corridor including: UNC; UNC Hospitals; the William and Ida Friday Center for Continuing Education; Duke University; Durham Veterans Affairs (VA) Medical Center and Duke University Medical Center (DUMC); downtown and east Durham.

### 2.1 Description of the Proposed D-O LRT

The proposed D-O LRT alignment generally follows North Carolina (NC) Highway 54 (NC 54), Interstate 40 (I-40), United States (US) 15-501, and parallel to North Carolina Railroad (NCR) Corridor in downtown Durham and east Durham. The proposed alignment begins in Chapel Hill at UNC Hospitals, parallels Fordham Boulevard, proceeds eastward adjacent to NC 54, travels north along I-40, parallels US 15-501 before it turns east towards Duke University and runs within Erwin Road, and then follows the NCR Corridor that parallels NC Highway 147 (NC 147) through downtown Durham, before reaching its eastern terminus in Durham near Alston Avenue. A total of 17 stations are planned, and up to 3,900 parking spaces along the D-O LRT alignment will be provided. In addition, a rail operations maintenance facility (ROMF) will be constructed to accommodate the D-O LRT fleet (12 cars, including spares).

### 2.2 Proposed Project Alternatives

Consistent with the September 2012 Scoping Report, and as described herein, the Draft Environmental Impact Statement (DEIS) will examine the potential environmental impacts of the LRT alternative as well as a small number of alignment, station, and ROMF siting options, including the following:

- Crossing of Little Creek between the Friday Center and the proposed Leigh Village Development (i.e., Alternatives C1, C1A, C2, C2A and associated station location)
- Crossing of New Hope Creek (NHC) and Sandy Creek between Patterson Place and South Square (i.e., NHC Alternatives 1 and 2 and associated station locations)
- Station options at Duke and Durham VA Medical Centers
- Five proposed locations for the ROMF

### 2.3 Purpose of Downtown Durham Traffic Simulation Report

The roadway network is one of the most critical elements of the transportation network, serving as a means to safely move people and goods and to support the economic development of an area. In an effort to balance safety and mobility with economic development and access, many owners of public roads have developed standards for determining the impacts of development on the roadway network and the level to which those impacts must be mitigated. The standards and mitigation levels governing

projects in Durham and Orange Counties of North Carolina have been identified in the *Traffic Methodology Report*.

The purpose of this technical memorandum is to analyze the traffic operations for the Downtown Durham section of the proposed D-O LRT in light of the policies identified in the *Traffic Methodology Report*. The proposed D-O LRT project would integrate the LRT along Pettigrew Street generally.

The goal of the study is to provide decision makers with an evaluation of the ability of the transportation system to accommodate the future travel demand and to help determine which improvements are necessary to accommodate that demand. As noted previously, improvements to the roadway network will be included in this evaluation to determine if reasonable improvements can be made to accommodate the forecasted traffic volumes for 2040 in accordance with the guiding policies. This study will also aim to determine which projects are necessary to accommodate the background growth in traffic and which are necessary to mitigate any additional impacts caused by the proposed D-O LRT project.

## **2.4 Downtown Durham Traffic Simulation Description**

This report describes the approach and summarizes the findings and results of the traffic analysis conducted on the section of the D-O LRT alignment in Downtown Durham.

Preliminary designs were developed for the proposed downtown D-O LRT alignment and are included in the *Basis for Engineering Design* (Appendix D). The design converts Pettigrew Street to one-way eastbound only operation between E Chapel Hill Street and Dillard Street with the LRT running along the north side of the Pettigrew Street east of Chapel Hill Street. Five LRT stations are proposed for implementation along this section of the project. The westernmost of the five is elevated and located west of 9<sup>th</sup> Street and Pettigrew Street. The second of the LRT stations is located east of Buchanan Boulevard between Maxwell Avenue and NC 147. The third is located at the intersection with Pettigrew Street and E Chapel Hill Street. The fourth station is located along Pettigrew Street between Dillard Street and Fayetteville Street, and the easternmost of the five is located on the western side of Pettigrew Street's intersection with Alston Avenue. In the analysis, these five stations are referred to as the Ninth Street Station, Buchanan Boulevard station, Durham Station, Dillard Street Station, and Alston Avenue Station respectively.

The implementation of the proposed D-O LRT along the Pettigrew Street corridor would require the reconstruction of the roadway from Chapel Hill Street to Alston Avenue. Please see Section 3 for a discussion of the Build Options and refer to Appendix D for the preliminary design drawings.

To analyze the potential impacts brought by the LRT, Vissim micro-simulation models were developed to cover the area of the LRT corridor and the nearby intersections. The models aim to capture the direct impact of the LRT operation to the roadway system during both the 2040 weekday AM and PM peak hours. The LRT is assumed to operate with 10 minute peak period frequencies in the eastbound and westbound directions. Every train is assumed to have 20 seconds of dwell time at each station for passenger boarding and alighting.

The following Primary Study Area intersections were analyzed in the Vissim models and are also shown in Figure 1:

- Main Street and 9<sup>th</sup> Street (signalized)

- Main Street at Iredell Street (unsignalized)
- Main Street and Broad Street (signalized)
- Pettigrew Street and 9<sup>th</sup> Street/Erwin Road (unsignalized)
- Pettigrew Street and Swift Avenue/Broad Street (unsignalized)
- Main Street and Buchanan Boulevard (signalized)
- Maxwell Street and Buchanan Boulevard (unsignalized)
- Duke Street and Main Street (signalized)
- Duke Street and Peabody Street (unsignalized)
- Duke Street and Memorial Street (unsignalized)
- Duke Street and Chapel Hill Street (signalized)
- Chapel Hill Street and Willard Street (unsignalized)
- Chapel Hill Street and Pettigrew Street (signalized)
- Main Street and Corcoran Street (signalized)
- Ramseur Street and Blackwell Street (signalized)
- Pettigrew Street and Blackwell Street (signalized)
- Main Street and Mangum Street (signalized)
- Ramseur Street and Mangum Street (signalized)
- Pettigrew Street and Mangum Street (signalized)
- Pettigrew Street and Roxboro Street (signalized)
- Pettigrew Street and Dillard Street (signalized)
- Pettigrew Street and Fayetteville Street (signalized)
- Jackie Robinson Drive and Fayetteville Street (signalized)
- Morehead Avenue and Fayetteville Street (signalized)
- Pettigrew Street and Grant Street (signalized)
- Pettigrew Street and Gann Street (unsignalized)
- Alston Avenue and Gann Street (signalized)

As Pettigrew Street would be converted to one-way eastbound vehicular operation between Chapel Hill Street and Dillard Street to accommodate the LRT, westbound general traffic must find alternate routes to complete their trips. Public transit buses will be permitted to travel in the westbound LRT transit lane from Dillard Street in the east to the Durham Station Transit Center Driveway in the west. The potential impacts caused by the detoured traffic were identified in a regional demand model, and then Synchro models were developed to analyze the potential impacts brought by the detoured traffic outside the primary LRT corridor study area. This secondary study area Synchro network covers the area from Holloway Street/Morgan Street in the north to Jackie Robinson Drive in the south, Duke Street in the west and Dillard Street in the east. The secondary study area intersections are shown in Figure 2.

Figure 1: Primary Study Area Intersections



Figure 2: Secondary Study Area Intersections



### **3. Description of Scenarios**

Four scenarios were analyzed for this study. Those scenarios included an Existing Conditions scenario that was also used for model calibration, a Future Year 2040 No-Build Alternative, and two options for the Future Year 2040 Build condition.

A brief description of the scenarios evaluated in the Vissim microscopic traffic simulation software follows.

#### **3.1 2011 Base Year Scenario**

The 2011 Base Year Scenario simulated traffic conditions as they existed in 2011. The goal of the 2011 Base Year Scenario was to develop a calibrated model that would serve as the basis for the creation of the models for future year No-Build and Build scenarios. As discussed in the *Traffic Methodology Report*, travel time and speed were calibrated.

#### **3.2 2040 No-Build Alternative**

This alternative determined what the traffic operations would be in the vicinity of the proposed D-O LRT project if the proposed project is not constructed. The No-Build Scenario assumed the local transportation system would evolve as currently planned, but without implementation of the proposed project and associated improvements. As part of the No-Build improvements, it was assumed the NCRR tracks would be grade-separated between Blackwell Street and Mangum Street. The Vissim models do not include NCRR rail traffic due to their rare occurrences during the AM and PM peak hours and therefore the status of the NCRR grade-separation project would not affect this analysis.

#### **3.3 2040 Build Alternative— One-Way Eastbound Pettigrew Street**

The 2040 Build Alternative determined what the traffic operations would be in the vicinity of the proposed project if the light rail is constructed and the stations are constructed in downtown Durham.

The Build analysis was based on a preliminary design as well as the currently planned improvements within the study area. Please refer to the Appendix D for the Preliminary Design drawings for Option 1 and Option 2.

Under both options, Pettigrew would be converted to one-way eastbound between Chapel Hill Street and Dillard Street, and the LRT runs along the north side of Pettigrew Street east of Chapel Hill Street.

The 2040 Build Option 1 would close Pettigrew Street between Case Street and east of Swift Avenue to provide exclusive right-of-way for the LRT to cross Swift Avenue at-grade.

The 2040 Build Option 2 elevates LRT at Swift Avenue and keeps Pettigrew Street open from Case Street to east of Swift Avenue.

In terms of the LRT's signal operation, for the purpose of this analysis it was assumed that traffic signals along Pettigrew Street will be programmed to operate with traffic signal pre-emption. Traffic signal pre-emption takes place when traffic signal timing is interrupted to allow trains to remain on schedule. In the case of Downtown Durham, it is assumed the normal traffic signal timing is altered to allow the train to proceed uninhibited. While the train is in the intersection, all conflicting movements must stop



although traffic traveling parallel to the tracks can proceed with the train. Any difference in signal phase length as a result of the passing train is made up within one traffic signal cycle after the train passes.

## 4. Methodology

The use of microscopic traffic simulation was completed using Vissim (version 5.4). Vissim is a microscopic, behavior-based multi-purpose traffic simulation program that evaluates each vehicle individually every model time step and then assigns the appropriate behavior logic according to the traffic operations that the specific vehicle encounters. For many engineering disciplines, simulation has become an indispensable instrument for the optimization of complex technical systems. This is also true for transportation planning and traffic engineering, where simulation is an invaluable and cost-reducing tool. The microscopic simulation model was developed for the studied section of the project and was based on a calibrated base model for the area.

The methodology for microscopic simulation begins with a base model developed from data collected for the transportation network. The base model is then calibrated against data measured in the field to arrive at a calibrated base model. Once the base model is calibrated, future year alternatives can be developed and analyzed for impact study. As in real-life operations, microscopic simulation models are constrained to the capacity of a given roadway, and as such the model can only load traffic up to the capacity of a facility, with excess vehicles being denied entry and queue up outside the model network. This can happen for future scenarios when demand has been forecasted to outgrow the capacity of the existing roadways.

### 4.1 Measures of Effectiveness

Measures of effectiveness (MOE) are system performance statistics that best characterize the degree to which a particular alternative meets the project objectives. The MOEs for microscopic simulation can be abundant due to the nature of the analysis. The primary MOEs for urban arterials are typically average speed and vehicle density for individual segments as well as average travel time and speed for individual origin-destination pairs within the network. On an overall network level, MOEs such as average system speed, average system delay, and number of stops can provide overall indications of the operations of a network.

As discussed in the *Traffic Methodology Report*, corridor-level MOEs including average speed and travel time were used as the method for calibrating the base year model. Control delay, which is utilized to determine intersection LOS, and queuing were the MOEs for the future year models. The concept of Highway Capacity Manual's Level of Service was adopted here for the purpose of simply categorizing the delays. Please note that the calculation methods of HCM delay and VISSIM delay are different, as Vissim delay includes control delay as well as queue delay, whereas, HCM includes control delay only. The LOS grades are based on Vissim delays, which will provide a more conservative result than the HCM-based delays.

The acceptable levels for the future year MOEs were enumerated in the *Traffic Methodology Report*. Additional information regarding the base year MOEs can be found in Section 6.1. Both NCDOT and City of Durham have established guidelines that specify when chosen MOEs meet the required thresholds. The NCDOT's "Policy on Street and Driveway Access to North Carolina Highways" states that when comparing base network conditions to project conditions, mitigation improvements to the roadway network are required if at least one of the following conditions exist:

- The total average delay at an intersection or an individual approach increases by 25% or greater, while maintaining the same Level of Service
- The Level of Service degrades by at least one level
- Or Level of Service is F
- For turning lanes, mitigation improvements shall be identified when the analysis indicates that the 95th percentile queue exceeds the storage capacity of the existing lane.

For the purposes of this analysis, traffic impacts were considered significant if the Build Alternative delay was at or above a middle LOS D or 45.0 seconds or greater for a signalized intersection. Those overall intersections or movements that reported delays greater than 45.0 seconds and experienced an LOS degradation or increase in delay greater than 25% compared to the No-Build were highlighted in the Vissim LOS tables with orange. For those intersections or movements that reported a Build LOS better than middle D or less than 45.0 seconds, the impacts were not considered as significant and were highlighted with yellow.

To be considered a queue impact, the maximum queue length for any Build movement would exceed both the respective No-Build movement’s maximum queue length and the build movement storage length by 10 feet.

**Table 1: City of Durham Traffic Level of Service Standards**

Application	Level of Service Standard
Downtown Tier	LOS E
Compact Neighborhood Tier	LOS E
Urban Tier	LOS D
Suburban Tier	LOS D
Rural Tier	LOS C

For the Downtown Durham segment, those intersections under the jurisdiction of the City of Durham utilized the “Downtown Tier” criteria for MOE evaluation and traffic impact analysis.

## 4.2 Vissim Network Development

### 4.2.1 Geometry

The basis for developing the geometric data was a combination of aerial photographs and contour maps. Aerial photography was used as a background to digitize the network into the simulation model. The three-dimensional attributes and grades were determined based on a contour map of the study area.

The geometry in the 2011 Base Year network and the 2040 No-Build network are based on the current geometry of Downtown Durham. The network was created using aerials from NC OneMap, Google Maps, field verification, and contour maps from the North Carolina Department of Transportation (NCDOT).

#### 4.2.2 Traffic Control

Signal timing and coordination plans were obtained from City of Durham for the nineteen signals included in the study area. These plans were used to input timing, phasing, and detectors for the following intersections in the base year:

- Main Street at 9<sup>th</sup> Street
- Main Street at Broad Street
- Main Street at Buchanan Boulevard
- Duke Street at Main Street
- Duke Street at E Chapel Hill Street
- E Chapel Hill Street at Pettigrew Street
- Blackwell Street/Corcoran Street at Pettigrew Street
- Mangum Street at Pettigrew Street
- Roxboro Street at Pettigrew Street
- Dillard Street at Pettigrew Street
- Grant Street at Pettigrew Street
- Alston Street at Gann Street
- Blackwell Street/Corcoran Street at Downtown Loop/Ramseur Street
- Mangum Street at Downtown Loop/Ramseur Street
- Corcoran Street at Main Street
- Mangum Street at Main Street
- Fayetteville Street at Pettigrew Street
- Fayetteville Street at Jackie Robinson Drive
- Fayetteville Street at Morehead Avenue

The signalized intersections for the future year networks were input into Synchro for signal optimization prior to being input into Vissim. The future year signalized intersections included the previously listed intersections. The future year signal timings were composed from the base year timing, and then re-optimized based on the 2040 traffic volumes.

### 4.2.3 Speed Data

The average speed data in the area were collected using the floating car technique during off-peak periods with low volumes. This data was used to develop desired speed distributions for the network. Weekday peak periods speed data was collected from INRIX (a mobile application pertaining to road traffic). This data was used to determine the average speed during the peak periods from the approximate time the initial count data was collected. This data was used in calibration of the model. The desired speed distribution for turning vehicles at intersections was assumed to be 12.6 mph with a standard deviation of 1.2 mph for right turns and 21 mph with a standard deviation of 2 mph for left turns. There were two main speed distributions used for roadways: 1) 25 mph posted, with a range of 19 to 31 mph in Vissim, and 2) 35 mph posted with a range of 32 to 48 mph.

### 4.2.4 Driving Behavior Parameters

The driving behavior parameters were used to guide vehicles through the network during the simulation models. Both the car-following and lane-change models in Vissim use an extensive range of parameters. Some of these may be adapted by the user to change basic driving behavior. Vissim uses five driving behavior models, of which only one was used in the base model: Urban (motorized). The Urban (motorized) parameters were used to model the surface streets within the network and were based on the Wiedemann 74 model. The Wiedemann 74 model includes three parameters which can be calibrated based on the data collected. Default values were used in developing the base model and any modifications made to the parameters were documented in the calibration section of this report.

### 4.2.5 Estimated Traffic Volumes

Simulation models are capable of using unbalanced input volumes and their own internal algorithms to balance the network; however using this method of traffic volume input can produce inaccuracies in actual processed volumes at particular locations. To accurately model the network, the volumes were developed into a balanced network. The traffic volumes for the proposed project were based on peak hour count data that was balanced along Pettigrew Street by adjusting through volumes and adding sink and source nodes to correspond to mid-block locations that could serve as origins and destinations of traffic. These locations included parking lots for commercial establishments as well as parking areas for residential development along the corridor.

Volumes for the 2011 Existing Condition were developed based on the 2011 count data. The projection of the future volumes for no-build and build conditions were based on Triangle Regional Travel Demand Model (TRM) v5 as outlined in the *Traffic Methodology Report*.

Due to the introduction of the LRT, including park & ride lots and a modal demand shift from personal vehicles to public transit, the 2040 No-Build and Build volumes were based on separate TRM roadway growth rates. Separate future 2040 Build balanced volumes were developed for Build Option 1 and Build Option 2 in the vicinity of Pettigrew Street and Main Street between Erwin Road/9<sup>th</sup> Street and Broad Street/Swift Avenue due to the closure of Pettigrew Street between Case Street and east of Swift Avenue under LRT Option 1. Due to the localized closure of Pettigrew Street, the east/west volumes were rerouted to Main Street via Erwin Street/9<sup>th</sup> Street and Broad Street/Swift Avenue.

Both LRT Option 1 and Option 2 assumed that westbound Pettigrew Street would be closed to general traffic between Chapel Hill Street and Dillard Street, which would require vehicles to find alternative

paths to complete their westbound trips. As a result, Build volumes would increase on Main Street, Holloway Street/Morgan Street, and to a lesser extent Jackie Robinson Drive. Similarly, the north/south running roadways including Roxboro Street and Dillard Street that connect to the alternate westbound roadways are expected to accommodate additional Build volumes compared to No-Build Conditions.

The balanced AM and PM peak hour volumes for the 2011 Existing, 2040 No-Build, 2040 LRT Option 1, and 2040 LRT Option 2 scenarios are shown in Appendix A.

#### **4.2.6 Simulation Settings and Repetitions**

Each simulation was run for one hour with 15 minutes of seeding time for the network to load. The number of simulation runs was based on the process described in Appendix B of the Federal Highway Administration (FHWA) Traffic Analysis Toolbox. The average speed of each simulation run was used as a basis for determining the number of required repetitions, with a confidence level of 95% and a confidence interval of 5 mph. It was calculated that each alternative/option would need to be run with 16 repetitions each for both the AM and PM peak periods.

#### **4.2.7 Output**

The output data was extracted from the model using the Travel Time evaluation, Data Collection, and the Analyzer Reports modules. The Travel Time evaluation provided average travel times for user defined start and end points within the network. The Analyzer Report module provided delay data which was utilized to determine the LOS. The Analyzer Report module provides queuing information as well.

#### **4.2.8 Base Year Calibration**

The base year model was calibrated by comparing modeled travel times versus historic INRIX speed data as described in the *Traffic Analysis Methodology Report*. Historic data was extracted for Pettigrew Street within the study area for AM and PM peak one hour periods during all weekdays for the month of May in 2011. The average speed and corresponding travel time for each direction along Pettigrew Street was determined from the data. It should be noted that INRIX speed data is composed of link-based speeds (as opposed to spot speeds taken at a fixed point); therefore, the model network was developed to match the same extents as the INRIX speed data. For this study this included the Pettigrew Street segments between Chapel Hill Street and Alston Avenue for both directions during the AM and PM peak hours.

For the calibration effort, the average travel time was determined by averaging a statistically adequate number of model runs (see Section 6.1). Speed calibration targets of  $\pm 2.5$  mph (desirable) and  $\pm 5$  mph (acceptable) were set as described in the *Traffic Analysis Methodology Report*.

## 5. Synchro Network Development

In addition to the Vissim analysis addressing the direct impact along the LRT corridor, as Pettigrew Street is converted to one-way eastbound operation for general traffic between Chapel Hill Street and Dillard Street, the potential impacts brought by the detoured traffic outside the LRT corridor were analyzed in Synchro models by comparing the Build scenario to No-Build scenario. The Synchro model was developed for three future scenarios – 2040 No-Build and the two 2040 Build Options. This secondary Synchro network covers an area from Holloway Street/Morgan Street in the north to Jackie Robinson Drive in the south, Duke Street in the west and Dillard Street in the east. As a result, the following intersections were analyzed in Synchro:

- Downtown Loop at Chapel Hill Street
- Great Jones Street at W Main Street
- Great Jones Street at Morris Street
- E Chapel Hill Street/Main Street at Morris Street
- Morgan Street at Foster Street
- Blackwell Street at Jackie Robinson Drive
- Morgan Street at Rigsbee Avenue
- Morgan Street at Mangum Street
- Mangum Street at Jackie Robinson Drive
- Holloway Street at Roxboro Street
- Liberty Loop at Roxboro Street
- Main Street at Roxboro Street
- Dillard Street at Roxboro Street
- Jackie Robinson Drive at Roxboro Street
- Dillard Street at Holloway Street
- Dillard Street at Liberty Street
- Dillard Street at Main Street

### 5.1 Estimated Traffic Volumes

The field peak hour traffic counts for the intersections above were obtained from City of Durham. The counts year ranges from 2007 to 2010. First these counts were aligned to the year of 2011 by applying aggregated growth factors derived from the regional demand model. The traffic volumes were then balanced by adjusting through volumes and adding sink and source nodes to correspond to mid-block locations that could serve as origins and destinations of traffic.

The projection of the future volumes for no-build and build conditions was based on the Triangle Regional Travel Demand Model (TRM) v5. Link growth rates derived from the TRM were applied to the existing

balanced volumes to provide realistic traffic patterns in the future conditions. The resulting future scenarios' balanced volumes were adjusted to provide feasible Volume-to-Capacity ratios in an effort to avoid supersaturated roadways.

## **5.2 Traffic Control**

The existing signal and coordination plans were obtained by Synchro models provided by City of Durham. The future year signal timings were composed from the base year timing, and then re-optimized based on the projected 2040 traffic volumes for the No-Build and Build alternatives. To accommodate the multi-modal users of the Downtown Durham area and minimize pedestrian waiting times, future signal cycle lengths were limited to a maximum of 120 seconds at locations not directly impacted by the LRT. Maximum cycle lengths of 140 seconds were proposed at intersections directly impacted by LRT crossings to accommodate the green time lost to preemption events.



## 6. Simulation Results

Based on the above model network elements and the methodologies defined under MOEs, the results from Vissim and Synchro can be determined.

### 6.1 2011 Existing Conditions

The 2011 Existing Conditions Vissim model was developed and calibrated, as described in Section 4.2.89 above. The INRIX speed data, taken from a 1.3 mile corridor along Pettigrew Street showed the following average speeds and corresponding travel times. The results of the calibrated base model are shown in Table 2 below.

Based on the data included in Table 2 and the calibration criteria of  $\pm 5$  mph with a desired target range of  $\pm 2.5$  mph, the base model is considered to be calibrated and can be utilized as the basis for developing the future year alternatives/options. All four travel time values fell within the acceptable range. In general, the speeds in the model were lower than those from the INRIX data.

**Table 2: 2011 Existing Conditions - Calibrated Base Model Summary**

Direction	Length	Peak Period	Calibrated Model		INRIX		Travel Time Difference (min)	Speed Difference (MPH)	Calibration Range
			Average Travel Time (min)	Average Speed (MPH)	Average Travel Time (min)	Average Speed (MPH)			
<b>Eastbound Travel Time Summary</b>									
EB Corridor Wide	1.31	AM	3.99	19.69	3.73	21.78	0.26	-2.09	Within Desirable
		PM	3.99	19.69	3.67	22.18	0.32	-2.49	Within Desirable
<b>Westbound Travel Time Summary</b>									
WB Corridor Wide	1.16	AM	3.60	19.36	3.22	22.45	0.38	-3.08	Within Acceptable
		PM	3.82	18.22	3.27	22.10	0.55	-3.89	Within Acceptable

## 6.2 2040 No-Build Alternative

The 2040 No-Build Alternative model was developed based on the calibrated Existing Conditions model. The signals optimized in the Synchro model for the 2040 No-Build volumes were incorporated and the 2040 No-Build volumes were then input into the Vissim model.

The Highway Capacity Manual defines LOS for signalized and unsignalized intersections as a function of the average vehicle control delay. LOS may be calculated per movement or per approach for any intersection configuration, but LOS for the intersection as a whole is only defined for signalized and all-way stop configurations. Table 3 and Table 4 demonstrate the different levels of service for signalized and unsignalized intersections based on delay and volume to capacity ratio.

**Table 3: Level of Service – Signalized Intersections**

Level of Service	Delay (seconds)	Description
A	≤10	This level is typically assigned when the volume-to capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	>10-20	This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	>20-35	This level is typically assigned when progression is favorable or the cycle length is moderate. Individual <i>cycle failures</i> (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. This number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	>35-55	This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	>55-80	This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	>80	This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

**Table 4: Level of Service – Unignalized Intersections**

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

The Downtown Durham Primary Study Area 2040 No-Build Vissim MOEs are presented in Table 5 for the AM and PM peak hours.

**Table 5: 2040 No-Build Alternative Vissim Summary**

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Main Street at 9th Street	EBL	84	28.7	C	63	41.1	D
	EBR	62	26.8	C	58	50.5	D
	EBT	348	30.8	C	599	53.8	D
	NBL	78	29.3	C	47	32.4	C
	NBR	111	18.6	B	302	48.9	D
	NBT	176	27.4	C	300	50.8	D
	SBL	127	27.8	C	240	65.2	E
	SBR	96	33.8	C	76	32.7	C
	SBT	384	37.2	D	198	39.5	D
	WBL	128	18.8	B	216	70.0	E
	WBR	114	13.2	B	245	14.2	B
	WBT	274	16.7	B	452	17.7	B
	<b>All</b>		<b>27.0</b>	<b>C</b>		<b>43.4</b>	<b>D</b>
Main Street at Iredell Street (Unsignalized)	EBL	119	3.3	A	176	17.9	C
	EBT	467	3.2	A	965	16.9	C
	SBL	37	17.0	C	33	225.0	F
	SBR	20	11.5	B	77	175.0	F
	WBR	145	2.6	A	25	11.6	B
	WBT	496	3.7	A	836	15.7	C
		<b>All</b>		<b>3.9</b>	<b>A</b>		<b>26.8</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Main Street at Broad Street	EBL	14	57.2	E	113	37.9	D
	EBR	143	6.9	A	255	7.9	A
	EBT	347	37.3	D	630	34.4	C
	NBL	252	30.1	C	283	51.0	D
	NBR	243	2.7	A	185	1.5	A
	NBT	299	17.3	B	448	16.1	B
	SBL	66	60.5	E	116	107.6	F
	SBR	52	28.8	C	65	78.8	E
	SBT	412	43.7	D	625	93.0	F
	WBL	175	68.3	E	167	49.3	D
	WBR	32	21.7	C	87	48.9	D
	WBT	337	26.9	C	513	53.7	D
	<b>All</b>		<b>30.9</b>	<b>C</b>		<b>47.3</b>	<b>D</b>
Pettigrew Street at 9th Street (Unsignalized)	NBR	29	9.0	A	82	128.0	F
	NBT	220	14.5	B	596	141.6	F
	SBL	25	1.6	A	42	12.4	B
	SBT	549	0.4	A	430	1.9	A
	WBL	79	39.4	E	26	19.7	C
	WBR	145	38.7	E	53	46.6	E
	<b>All</b>		<b>11.9</b>	<b>B</b>		<b>59.4</b>	<b>F</b>
Pettigrew Street at Swift Avenue (Unsignalized to Signalized)	EBL	6	104.7	F	53	373.3	F
	EBR	31	32.2	D	166	316.2	F
	EBT	2	42.6	E	3	345.7	F
	NBL	191	25.1	D	48	118.5	F
	NBR	19	27.9	D	9	67.0	F
	NBT	777	47.1	E	820	122.4	F
	SBL	22	48.7	E	16	133.0	F
	SBR	42	1.9	A	45	1.3	A
	SBT	666	0.7	A	986	1.0	A
	WBL	1	38.6	E	17	854.1	F
	WBR	11	100.9	F	43	941.6	F
	WBT	2	106.4	F	6	928.8	F
	<b>All</b>		<b>26.2</b>	<b>D</b>		<b>92.5</b>	<b>F</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Main Street at Buchanan Boulevard	EBL	128	52.8	D	187	118.9	F
	EBR	86	7.5	A	69	12.4	B
	EBT	475	24.4	C	554	24.5	C
	NBL	79	67.5	E	97	117.9	F
	NBR	63	13.1	B	67	18.6	B
	NBT	177	48.2	D	350	60.1	E
	SBL	170	80.7	F	107	154.1	F
	SBR	170	24.4	C	179	43.1	D
	SBT	327	56.1	E	312	95.5	F
	WBL	51	62.5	E	36	93.5	F
	WBR	44	26.8	C	181	26.1	C
	WBT	293	27.6	C	689	27.2	C
	<b>All</b>		<b>39.8</b>	<b>D</b>		<b>52.0</b>	<b>D</b>
Maxwell Street at Buchanan Boulevard (Unsignalized)	EBL	52	24.8	C	40	1273.0	F
	EBR	74	15.1	C	49	984.3	F
	EBT	0	0.0	A	0	0.0	A
	NBL	13	7.9	A	57	96.3	F
	NBR	0	0.0	A	0	0.0	A
	NBT	267	7.5	A	474	107.1	F
	SBL	0	0.0	A	0	0.0	A
	SBR	17	0.6	A	50	2.3	A
	SBT	447	0.6	A	367	1.3	A
	WBL	0	0.0	A	0	0.0	A
	WBR	0	0.0	A	0	0.0	A
	WBT	0	0.0	A	0	0.0	A
	<b>All</b>		<b>5.6</b>	<b>A</b>		<b>85.8</b>	<b>F</b>
Duke Street at Main Street	EBL	170	40.1	D	172	49.1	D
	EBT	374	36.7	D	446	37.8	D
	NBL	251	11.4	B	274	13.9	B
	NBR	40	11.1	B	28	12.8	B
	NBT	956	12.1	B	1133	14.1	B
	WBR	22	21.0	C	24	28.9	C
	WBT	93	33.6	C	270	35.2	D
	<b>All</b>		<b>20.4</b>	<b>C</b>		<b>23.6</b>	<b>C</b>
Duke Street at	EBL	16	10.5	B	28	16.0	C

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Peabody Street (Unsignalized)	EBT	3	10.4	B	15	20.6	C
	NBL	59	0.6	A	104	0.8	A
	NBR	1	0.5	A	4	3.1	A
	NBT	1218	3.1	A	1399	6.2	A
	WBR	13	10.5	B	8	13.2	B
	WBT	31	14.7	B	30	17.1	C
	<b>All</b>			<b>3.5</b>	<b>A</b>		<b>6.4</b>
Memorial Street at Duke Street (Unsignalized)	EBL1	0	0.7	A	0	3.5	A
	EBL2	5	8.9	A	15	15.5	C
	NBL	20	3.6	A	10	6.8	A
	NBT1	1273	4.8	A	1492	8.4	A
	NBT2	0	2.8	A	0	6.9	A
	<b>All</b>			<b>2.9</b>	<b>A</b>		<b>7.1</b>
Chapel Hill Street at Duke Street	EBL	193	20.3	C	161	61.5	E
	EBT	690	15.1	B	388	17.0	B
	NBL	117	26.4	C	189	38.0	D
	NBR	132	12.4	B	111	7.7	A
	NBT	1039	27.8	C	1318	40.8	D
	WBR	61	13.6	B	23	15.7	B
	WBT	383	16.5	B	749	17.2	B
	<b>All</b>			<b>21.1</b>	<b>C</b>		<b>31.3</b>
Chapel Hill Street at Willard Street (Unsignalized)	EBR	137	1.6	A	52	1.3	A
	EBT	685	1.7	A	447	1.6	A
	NBL	15	15.5	C	42	47.4	E
	NBR	29	11.4	B	93	26.3	D
	WBL	47	7.9	A	57	4.0	A
	WBT	429	1.0	A	730	9.5	A
	<b>All</b>			<b>2.0</b>	<b>A</b>		<b>8.7</b>
Pettigrew Street at Chapel Hill Street	EBR	260	3.6	A	167	3.3	A
	EBT	454	3.8	A	373	4.1	A
	NBL	86	17.1	B	246	47.3	D
	NBR	69	8.9	A	41	36.5	D
	WBL	42	13.7	B	37	15.1	B
	WBT	390	8.5	A	541	13.9	B
	<b>All</b>			<b>6.7</b>	<b>A</b>		<b>16.6</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Blackwell Street at Pettigrew Street	EBL	13	32.4	C	26	26.4	C
	EBR	36	11.1	B	53	11.9	B
	EBT	121	20.8	C	143	18.1	B
	NBL	21	16.8	B	43	20.1	C
	NBR	7	9.2	A	47	12.1	B
	NBT	139	15.3	B	200	16.2	B
	SBL	51	3.0	A	74	12.8	B
	SBR	33	1.0	A	44	2.4	A
	SBT	164	1.4	A	187	7.1	A
	WBL	9	16.6	B	35	5.8	A
	WBR	51	15.7	B	49	10.9	B
	WBT	205	14.3	B	126	6.3	A
	<b>All</b>			<b>11.9</b>	<b>B</b>		<b>12.2</b>
Blackwell Street at Ramseur Street	EBL	16	14.6	B	111	18.6	B
	EBR	7	5.0	A	190	14.3	B
	EBT	385	16.2	B	371	17.0	B
	NBR	7	4.0	A	57	2.7	A
	NBT	196	8.7	A	218	6.8	A
	SBL	27	16.5	B	81	14.7	B
	SBT	241	15.0	B	115	13.3	B
	<b>All</b>			<b>14.0</b>	<b>B</b>		<b>13.5</b>
Main Street at Corcoran Street	EBL	52	28.2	C	41	33.3	C
	EBR	50	21.7	C	24	24.7	C
	EBT	176	26.7	C	223	31.6	C
	NBL	20	7.2	A	38	9.8	A
	NBR	9	3.9	A	16	7.4	A
	NBT	183	5.7	A	275	8.8	A
	SBL	24	12.6	B	57	14.9	B
	SBR	22	7.1	A	35	8.0	A
	SBT	187	12.5	B	154	11.0	B
	WBL	31	11.2	B	18	32.8	C
	WBR	42	6.2	A	66	21.2	C
	WBT	174	8.7	A	165	30.8	C
<b>All</b>			<b>13.9</b>	<b>B</b>		<b>19.1</b>	<b>B</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Mangum Street at Main Street	EBR	7	36.9	D	24	36.9	D
	EBT	202	42.8	D	272	31.8	C
	SBL	173	16.6	B	92	34.5	C
	SBR	7	5.3	A	14	8.7	A
	SBT	1099	17.7	B	985	33.4	C
	WBL	84	53.4	D	281	179.1	F
	WBT	240	23.3	C	235	79.9	E
	<b>All</b>		<b>23.0</b>	<b>C</b>		<b>53.6</b>	<b>D</b>
Mangum Street at Ramseur Street	EBR	117	45.6	D	176	46.6	D
	EBT	302	20.8	C	333	9.4	A
	SBL	91	17.8	B	61	29.3	C
	SBT	1099	16.8	B	1229	28.2	C
	<b>All</b>		<b>19.7</b>	<b>B</b>		<b>26.5</b>	<b>C</b>
Mangum Street at Pettigrew Street	EBR	52	26.1	C	122	15.8	B
	EBT	127	40.8	D	142	23.5	C
	SBL	54	0.7	A	58	0.6	A
	SBR	67	0.5	A	29	0.3	A
	SBT	1095	0.2	A	1318	0.3	A
	WBL	77	58.6	E	123	68.3	E
	WBT	198	37.5	D	181	33.7	C
	<b>All</b>		<b>11.4</b>	<b>B</b>		<b>10.7</b>	<b>B</b>
Pettigrew Street at Dillard Street	EBL	15	12.4	B	26	11.6	B
	EBR	25	5.9	A	27	9.7	A
	EBT	75	9.3	A	197	12.2	B
	NBL	0	0.0	A	51	25.0	C
	NBR	34	8.2	A	69	14.1	B
	NBT	100	17.6	B	251	16.6	B
	SBL	45	21.3	C	96	24.6	C
	SBR	98	9.9	A	16	13.4	B
	SBT	110	18.5	B	238	16.9	B
	WBL	25	6.1	A	69	17.8	B
	WBR	18	3.6	A	32	11.7	B
	WBT	87	6.0	A	78	16.3	B
	<b>All</b>		<b>12.3</b>	<b>B</b>		<b>16.5</b>	<b>B</b>



Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Fayetteville Street at Pettigrew Street	EBL	7	61.4	E	10	38.7	D
	EBR	26	5.6	A	124	29.3	C
	EBT	57	53.9	D	180	45.2	D
	NBL	35	5.9	A	19	5.2	A
	NBR	61	0.3	A	133	0.5	A
	NBT	388	1.3	A	436	1.1	A
	SBL	41	21.1	C	42	25.8	C
	SBR	7	13.4	B	4	24.9	C
	SBT	445	22.4	C	667	27.0	C
	WBL	90	59.8	E	131	143.1	F
	WBR	50	31.3	C	40	65.4	E
	WBT	127	47.2	D	83	64.0	E
	<b>All</b>			<b>21.3</b>	<b>C</b>		<b>31.1</b>
Fayetteville Street at Jackie Robinson Drive	NBL	185	14.2	B	308	17.8	B
	NBT	367	11.7	B	567	10.8	B
	SBR	40	2.1	A	31	6.9	A
	SBT	521	6.8	A	891	7.2	A
	WBL	144	40.5	D	151	43.9	D
	WBR	117	6.7	A	21	41.5	D
	WBT	13	36.8	D	8	42.9	D
	<b>All</b>			<b>12.9</b>	<b>B</b>		<b>13.2</b>
Morehead Avenue at Fayetteville Street	EBL	33	45.3	D	130	54.5	D
	EBR	130	6.6	A	17	6.7	A
	EBT	0	0.0	A	0	0.0	A
	NBR	18	1.8	A	3	2.6	A
	NBT	519	2.6	A	745	3.2	A
	SBL	71	3.2	A	146	6.2	A
	SBT	594	1.5	A	896	2.4	A
	<b>All</b>			<b>3.5</b>	<b>A</b>		<b>6.5</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Pettigrew Street at Grant Street	EBL	0	0.0	A	27	17.5	B
	EBR	13	3.2	A	0	0.0	A
	EBT	146	6.2	A	328	15.9	B
	NBL	0	0.0	A	54	25.5	C
	NBR	73	9.8	A	185	21.4	C
	NBT	51	19.6	B	119	25.0	C
	SBL	86	25.2	C	134	25.9	C
	SBR	0	0.0	A	0	0.0	A
	SBT	68	23.0	C	59	21.4	C
	WBL	127	7.8	A	140	16.2	B
	WBR	121	5.4	A	92	8.3	A
	WBT	267	7.0	A	200	11.0	B
	<b>All</b>			<b>10.5</b>	<b>B</b>		<b>18.0</b>
Gann Street at Pettigrew Street (Unsignalized)	EBR	72	2.7	A	121	2.9	A
	EBT	287	2.9	A	496	2.8	A
	NBL	102	9.4	A	172	15.7	C
	NBR	12	7.1	A	43	13.1	B
	WBL	23	8.4	A	63	10.1	B
	WBT	437	0.4	A	357	0.5	A
	<b>All</b>			<b>2.6</b>	<b>A</b>		<b>4.7</b>
Alston Avenue at Gann Street	EBL	69	57.6	E	31	56.0	E
	EBR	182	13.1	B	186	7.2	A
	NBL	14	18.4	B	137	18.6	B
	NBT	875	12.0	B	1500	9.7	A
	SBR	46	12.2	B	22	10.2	B
	SBT	1440	14.0	B	1355	13.4	B
	WBL	457	59.5	E	150	55.3	E
	WBR	315	41.9	D	147	11.9	B
	WBT	52	58.9	E	1	24.4	C
<b>All</b>			<b>23.1</b>	<b>C</b>		<b>13.8</b>	<b>B</b>

Intersection	Movement	AM Peak			PM Peak		
		Volume (vph)	Delay (s)	LOS	Volume (vph)	Delay (s)	LOS
Roxboro Street at Pettigrew Street	EBL	90	57.0	E	77	26.4	C
	EBT	91	43.3	D	123	14.7	B
	NBL	188	9.1	A	205	20.9	C
	NBR	24	2.6	A	127	7.9	A
	NBT	1524	9.0	A	1244	20.5	C
	WBR	98	67.6	E	46	19.5	B
	WBT	87	81.0	F	99	28.5	C
	<b>All</b>		<b>18.4</b>	<b>B</b>		<b>20.0</b>	<b>B</b>

Overall, as indicated in Table 5 for the No-Build Vissim outputs, the downtown Durham corridor is relatively less congested compared to other corridors studied as part of the D-O LRT project. All of the overall intersections report an LOS D or better during the AM peak hour. Several individual movements in the area bounded by Main Street, Pettigrew Street, Broad Street, and 9<sup>th</sup> Street operate at LOS E or F in the future. This is not unexpected as the only planned improvement for these intersections would grade separate the NCRR track between Blackwell Street and Mangum Street and the demand is expected to increase by approximately from 30% to 60% in this dense grid area. The overall LOS at Pettigrew Street and Swift Ave and at Pettigrew Street and 9<sup>th</sup> Street are F during the PM peak hour. This is partially due to the traffic demand growth at the intersections themselves and partially due to the demand growth at the downstream intersections. The demand at the intersection of Main Street and 9<sup>th</sup> Street is expected to increase from 1,798 vehicles per hour in 2012 to 2,796 vehicles per hour in 2040. The demand at Main Street and Broad Street is expected to increase from 2,652 vehicles per hour in the year of 2011 to 3,487 vehicles per hour in 2040. Because it is a dense grid network, the queues are expected to spill back from the downstream intersections and cause further delay. In addition, the Smith Warehouse driveway at Buchanan Boulevard also operates at LOS F under 2040 No-Build conditions due to the queue spillback from the intersection of Main Street and Buchanan Boulevard.

A 2040 No-Build Synchro-based model was developed to further investigate the potential signal optimization in the micro-simulation area to improve traffic operation. In addition to covering the same network area as in the Vissim model along the LRT corridor, a secondary study area Synchro network, as described in Section 5, was developed to analyze the effects of traffic detoured due to Pettigrew Street's one-way eastbound conversion. Refer to Appendix C for Synchro model outputs for the No-Build scenario.

It is important to note that there are No-Build background issues that would exist regardless of the potential D-O LRT project. These areas of congestion will also have an impact on meeting the thresholds laid out in NCDOT's "Policy on Street and Driveway Access to North Carolina Highways".

Based on the results of the Vissim analyses, the following intersections in the primary study area are anticipated to operate at LOS E or LOS F in at least one No-Build peak hour:

- Pettigrew Street and 9<sup>th</sup> Street
- Pettigrew Street and Swift Avenue
- Maxwell Street and Buchanan Boulevard

In the secondary study network, all intersections are expected to operate at LOS C or better for both AM and PM peak hours.

### **6.3 2040 Build Conditions Option 1 - LRT at-grade at Swift Avenue**

As it has been described in Section 3.3, the 2040 LRT Option 1 would close Pettigrew Street between Case Street and east of Swift Avenue to provide for an exclusive right-of-way for the LRT to cross Swift Avenue at-grade. In addition, Pettigrew Street would be converted to one-way eastbound general traffic operation between E Chapel Hill Street and Dillard Street, and the LRT would run along the north side of the Pettigrew Street east of Chapel Hill Street.

Based on the above model network elements and the methodologies defined under MOEs, the results from Vissim for the 2040 Build Conditions were determined. Detailed traffic delay at individual movement level and overall intersection level was compared to No-Build scenarios in Table 10 (AM peak hour) and Table 11 (PM peak hour) in Section 7. Queuing information for 2040 LRT Option 1 is also included in the comparison tables.

### **6.4 2040 Build Conditions Option 2 – Elevated LRT at Swift Avenue**

Option 2 would elevate the LRT at Swift Avenue and keep Pettigrew Street open from Case Street to east of Swift Avenue. Similar to Option 1, Pettigrew Street would be converted to one-way eastbound general traffic operation between E Chapel Hill Street and Dillard Street, and the LRT would run along the north side of the Pettigrew Street east of Chapel Hill Street.

Based on the above model network elements and the methodologies defined under MOEs, the results from Vissim for the 2040 Build Conditions were determined. Detailed traffic delay at the individual movement level and overall intersection level were compared to No-Build scenarios in Table 12 (AM peak hour) and Table 13 (PM peak hour) in Section 7. Queuing information for 2040 LRT Option 2 is also included in Table 12 (AM peak hour) and Table 13 (PM peak hour).

Proposed geometric mitigations that have been applied to both the 2040 LRT Option 1 and 2040 LRT Option 2 are listed in Table 6.

Intersection signal timing changes from 1) Existing to No-Build and from 2) No-Build to Build including traffic signal cycle length and phasing modifications are shown in Table 7 for LRT Option 1, and LRT Option 2 from Buchanan Boulevard to Alston Avenue. Table 8 shows the scenario changes for the single intersection under LRT Option 2 that would have a different geometry than LRT Option 1. Tables 7 and 8 also indicate the lane configuration modifications that are proposed between Existing to No-Build, and No-Build to Build conditions.

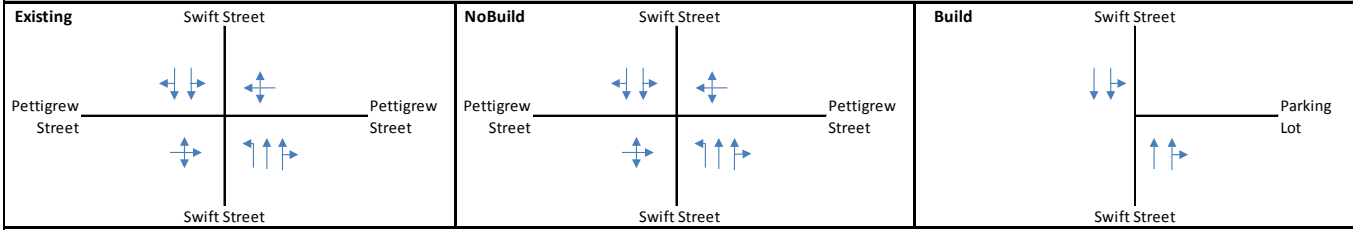
**Table 6: LRT Options Geometric Mitigation Measures**

Downtown Durham Segment	
Pettigrew Street at Swift Avenue	Pettigrew is closed between Case St and Swift Ave (Opt 1 only)
Pettigrew Street at Chapel Hill Street	Remove westbound Pettigrew St general traffic lanes
Pettigrew Street at Blackwell Street	Remove westbound Pettigrew St general traffic lanes Remove dedicated eastbound Pettigrew St left turn bay to provide single left/through/right lane
Pettigrew Street at Mangum Street	Remove westbound Pettigrew St general traffic lanes Restripe southbound Mangum St right turn lane to a through lane Add dedicated eastbound Pettigrew St right turn lane
Pettigrew Street at Dillard Street	Eliminate dedicated northbound Dillard St left turn lane Restripe westbound Pettigrew St lane to prohibit through traffic to provide a left/right only lane Restripe southbound Dillard St left/through lane to a through lane
Pettigrew Street at Roxboro Street	Remove westbound Pettigrew St general traffic lanes Add dedicated eastbound Pettigrew St left turn lane Restripe northbound left/through to a through lane

**Table 7. 2040 LRT Option 1 Signal & Lane Configuration Modifications**

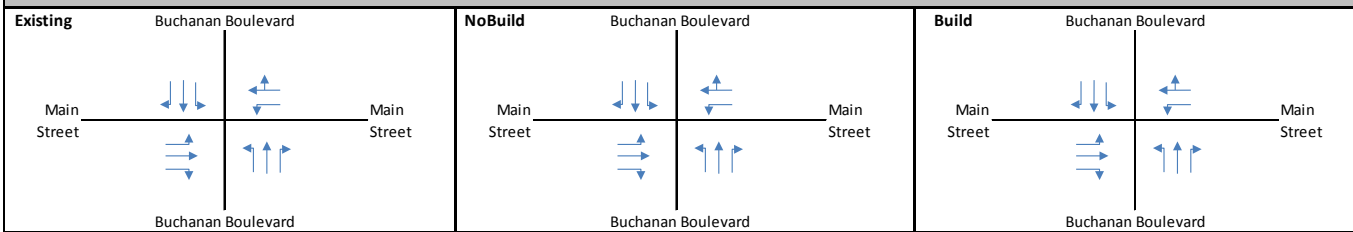
<b>Main Street and 9th Street</b>					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	90s to 120s	WBL, NBL and SBL Protected Only changed to Permitted/Protected	Existing to NoBuild	90s to 140s	WBL, NBL and SBL Protected Only changed to Permitted/Protected
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change
<b>Main Street and Iredell Street</b>					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized
<b>Main Street at Broad Street/Swift Avenue</b>					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	90s to 120s	No Change	Existing to NoBuild	90s to 140s	EBL and WBL Protected Only to Permitted/Protected
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change
<b>Pettigrew Street and 9th Street/Erwin Road</b>					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

**Pettigrew Street and Swift Avenue**



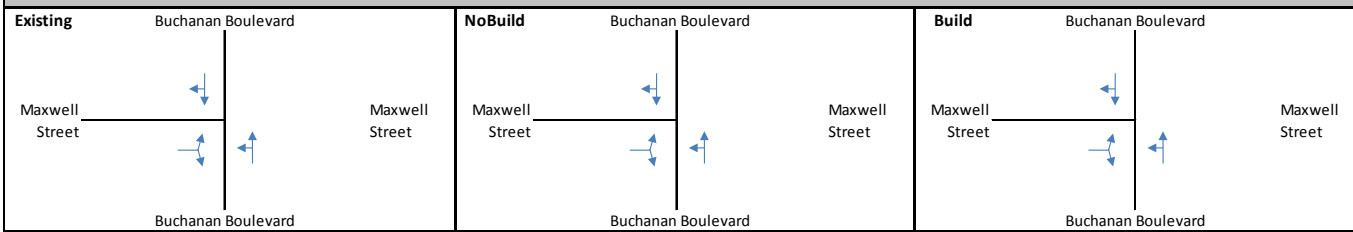
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Road Closed	NoBuild to Build	-	Road Closed

**Buchanan Boulevard and Main Street**



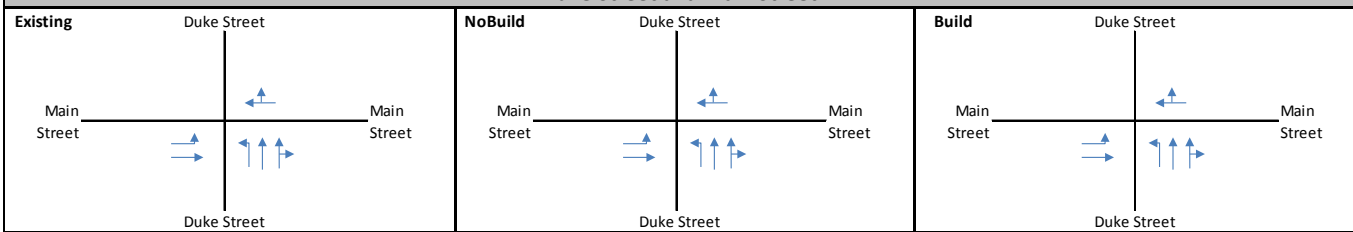
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	90s to 120s	NBL and SBL Permitted changed to Protected only	Existing to NoBuild	90s to 140s	NBL and SBL Permitted changed to Protected only
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

**Buchanan Boulevard and Maxwell Street**



AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

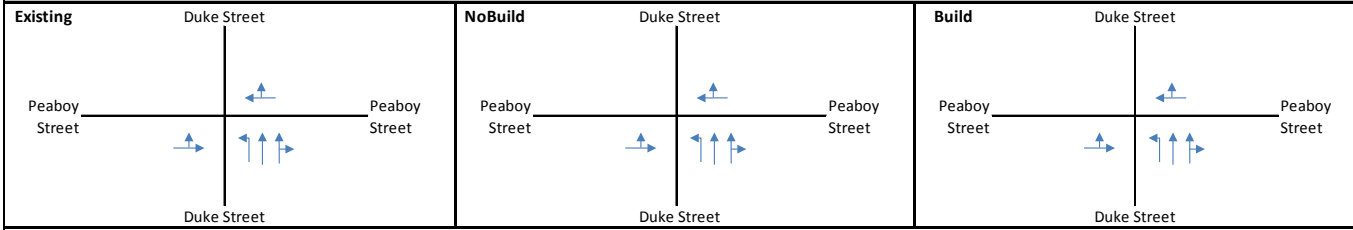
**Duke Street and Main Street**



AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	80s to 120s	No Change	Existing to NoBuild	90s to 140s	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

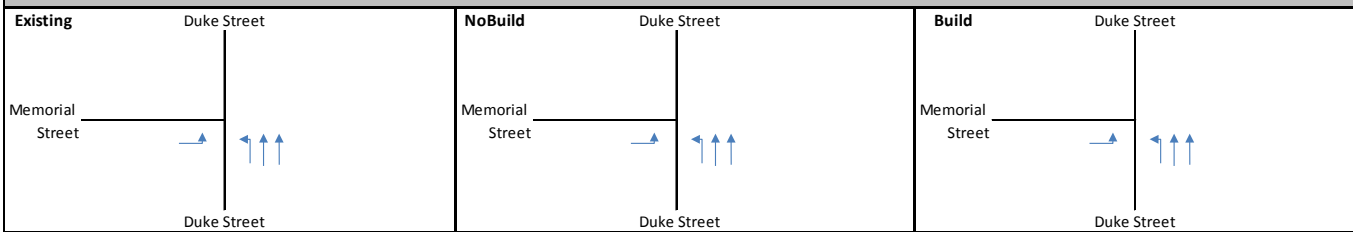


**Duke Street and Peaboy Street**



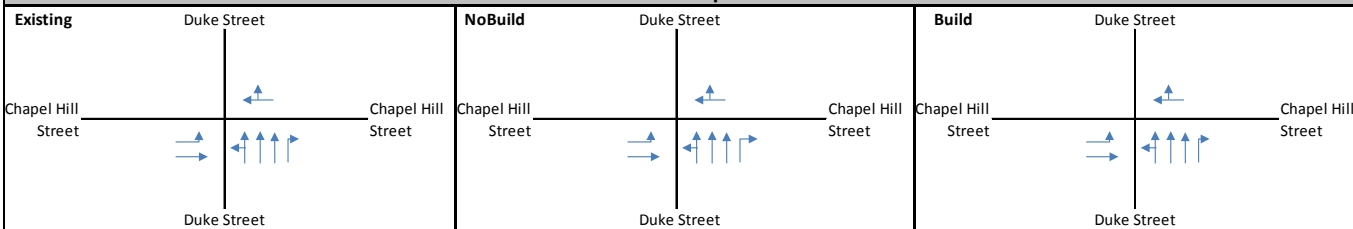
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

**Duke Street and Memorial Street**



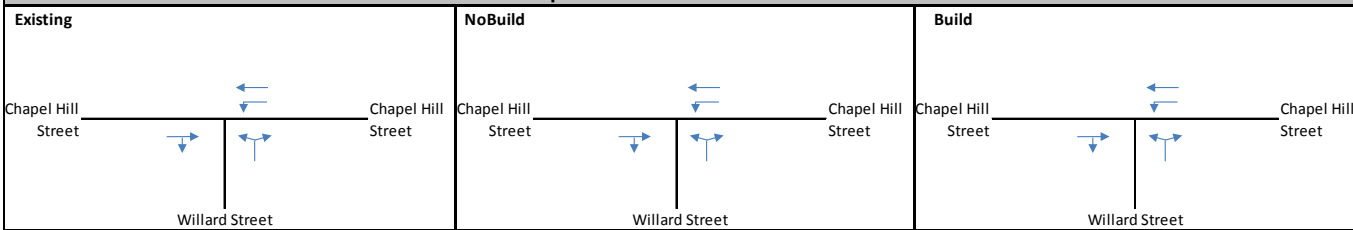
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

**Duke Street and Chapel Hill Street**



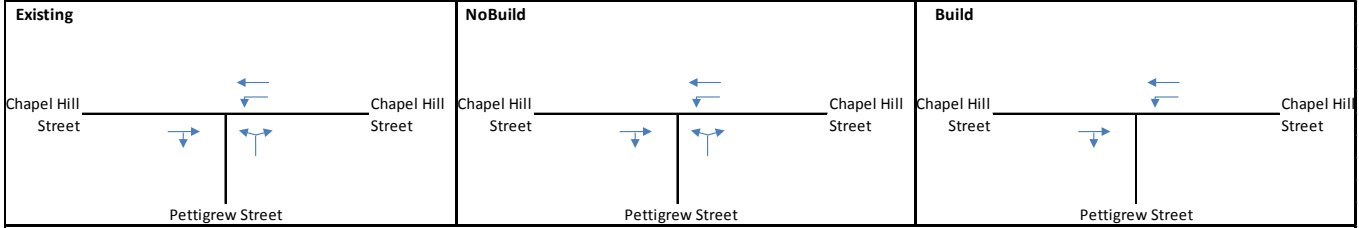
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	80s to 90s	EBL Protected Only changed to Permitted/Protected	Existing to NoBuild	90s to 120s	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

**Chapel Hill Street at Willard Street**



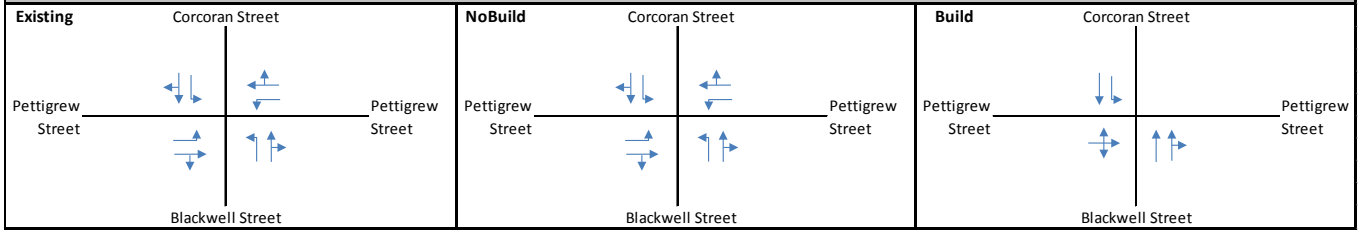
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

**Chapel Hill Street at Pettigrew Street**



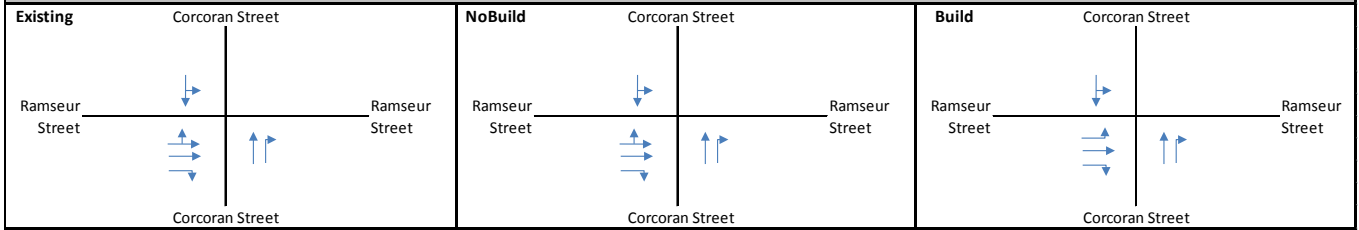
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	80s to 90s	No Change	Existing to NoBuild	90s to 120s	No Change
NoBuild to Build	No Change	NBL Protected is removed	NoBuild to Build	No Change	NBL Protected is removed

**Pettigrew Street at Corcoran Street/Blackwell Street**



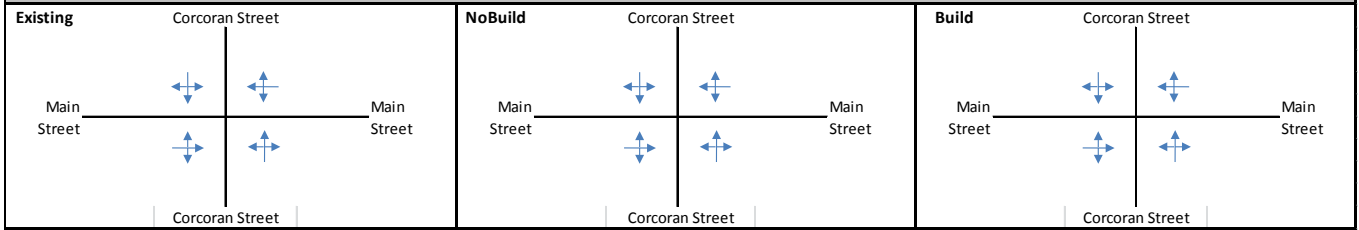
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	85s to 90s	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	WBL and NBL Permitted are removed Transit Signal Preemption	NoBuild to Build	No Change	WBL and NBL Permitted are removed Transit Signal Preemption

**Ramseur Street at Corcoran Street**



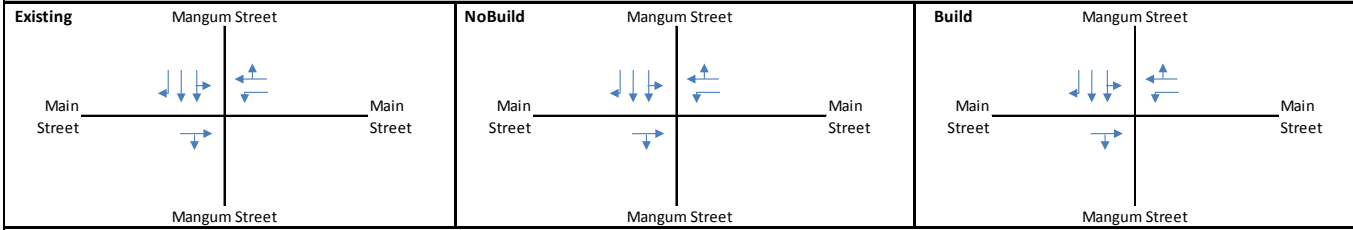
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	85s to 90s	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

**Main Street at Corcoran Street**



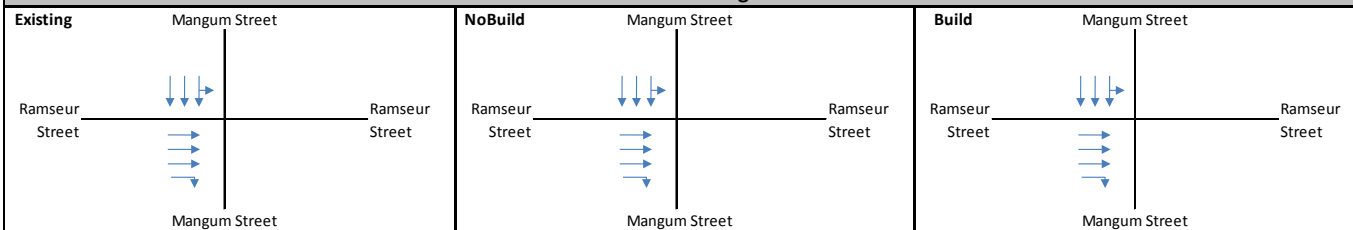
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	54s to 90s	No Change	Existing to NoBuild	54s to 90s	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

### Main Street at Mangum Street



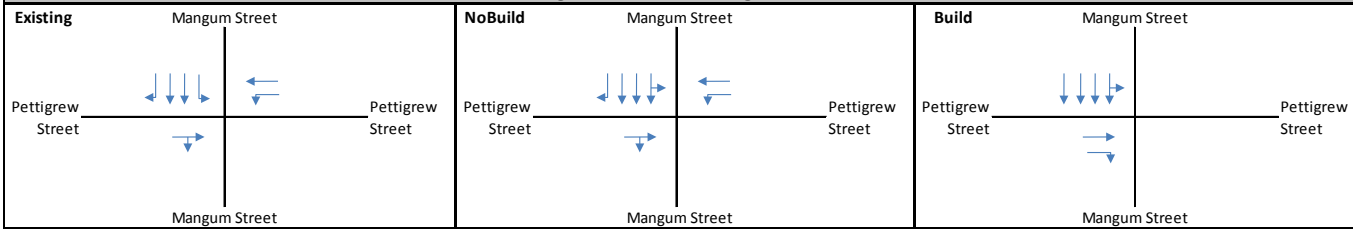
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	75s to 90s	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

### Ramseur Street at Mangum Street



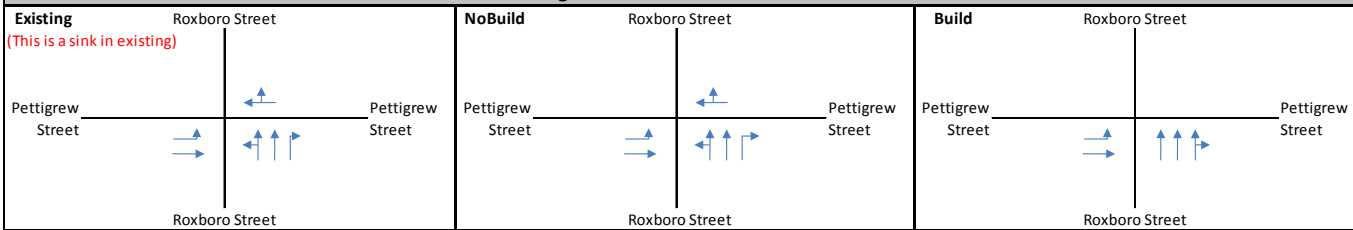
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	75s to 90s	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

### Pettigrew Street at Mangum Street



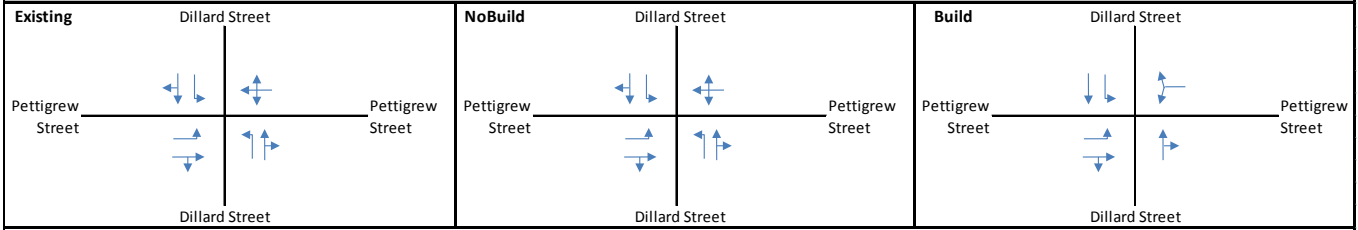
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	75s to 90s	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	WBL and SBR Permitted are removed	NoBuild to Build	No Change	WBL and SBR Permitted are removed
		EBR changed to Permitted			EBR changed to Permitted
		Transit Signal Preemption			Transit Signal Preemption

### Pettigrew Street at Roxboro Street



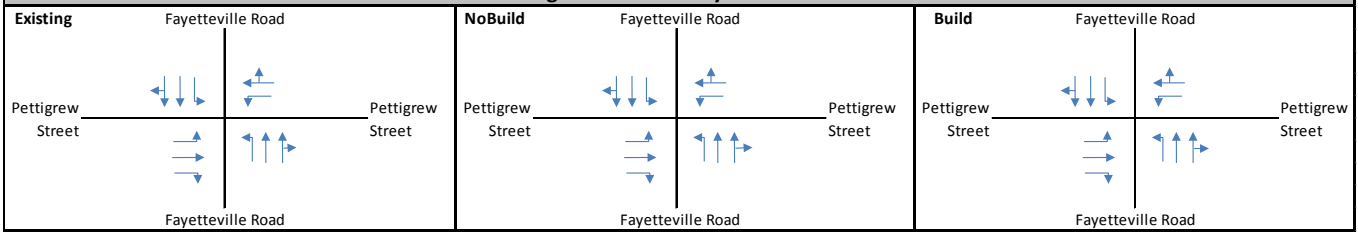
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	75s to 90s	-	Existing to NoBuild	90s to 75s	-
NoBuild to Build	No Change	NBL and NBR Permitted are removed	NoBuild to Build	No Change	NBL and NBR Permitted are removed
		Transit Signal Preemption			Transit Signal Preemption

**Pettigrew Street at Dillard Street**



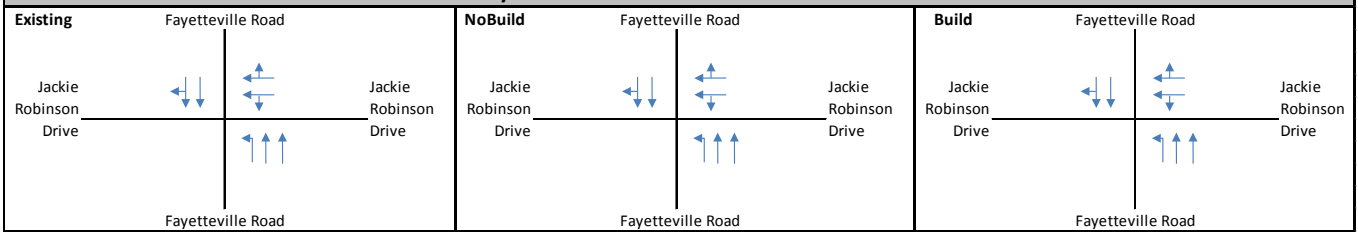
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	75s to 60s	No Change	Existing to NoBuild	60s to 65s	No Change
NoBuild to Build	No Change	NBL Permitted is removed Transit Signal Preemption	NoBuild to Build	No Change	NBL Permitted is removed Transit Signal Preemption

**Pettigrew Street at Fayetteville Road**



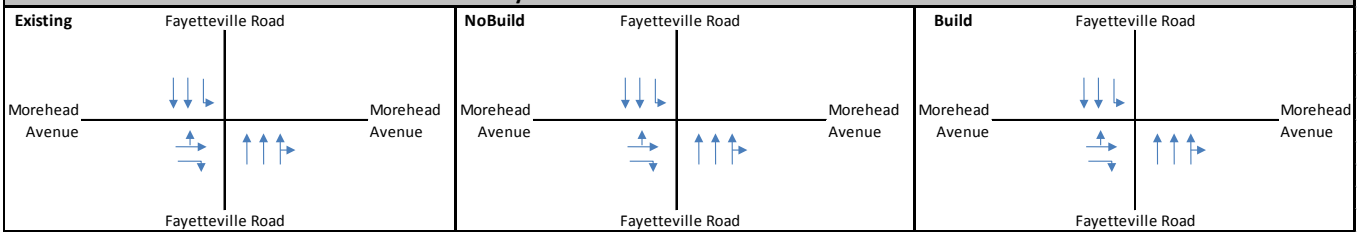
AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	100s to 120s	No Change	Existing to NoBuild	110s to 120s	No Change
NoBuild to Build	No Change	SBL Permitted changed to Protected Only Transit Signal Preemption	NoBuild to Build	No Change	SBL Permitted changed to Protected Only Transit Signal Preemption

**Fayetteville Road at Jackie Robinson Drive**



AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	100s to 120s	NBL Protected Only changed to Permitted/Protected	Existing to NoBuild	110s to 120s	NBL Protected Only changed to Permitted/Protected
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

**Fayetteville Road at Morehead Avenue**



AM	Cycle Length	Phasing	PM	Cycle Length	Phasing
Existing to NoBuild	100s to 120s	No Change	Existing to NoBuild	110s to 120s	No Change
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

Pettigrew Street at Grant Street					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
<b>AM</b>	<b>Cycle Length</b>	<b>Phasing</b>	<b>PM</b>	<b>Cycle Length</b>	<b>Phasing</b>
Existing to NoBuild	No Change	No Change	Existing to NoBuild	No Change	No Change
NoBuild to Build	No Change	EBR Permitted is removed Transit Signal Preemption	NoBuild to Build	No Change	EBR Permitted is removed Transit Signal Preemption
Pettigrew Street at Gann Street					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
<b>AM</b>	<b>Cycle Length</b>	<b>Phasing</b>	<b>PM</b>	<b>Cycle Length</b>	<b>Phasing</b>
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized
Alston Avenue at Gann Street/NC 147 NB Ramp					
<b>Existing</b>		<b>NoBuild</b>		<b>Build</b>	
<b>AM</b>	<b>Cycle Length</b>	<b>Phasing</b>	<b>PM</b>	<b>Cycle Length</b>	<b>Phasing</b>
Existing to NoBuild	75s to 120s	WBL and NBL Permitted changed to Permitted/Protected	Existing to NoBuild	80s to 120s	WBL and NBL Permitted changed to Permitted/Protected
NoBuild to Build	No Change	No Change	NoBuild to Build	No Change	No Change

**Table 8. 2040 LRT Option 2 Signal & Lane Configuration Modifications**

Pettigrew Street and Swift Avenue					
<b>Existing</b>		<b>NoBuild</b>		<b>NoBuild</b>	
<b>AM</b>	<b>Cycle Length</b>	<b>Phasing</b>	<b>PM</b>	<b>Cycle Length</b>	<b>Phasing</b>
Existing to NoBuild	-	Unsignalized	Existing to NoBuild	-	Unsignalized
NoBuild to Build	-	Unsignalized	NoBuild to Build	-	Unsignalized

## **7. Summary of Results**

The following section summarizes the Vissim simulation results for the 2040 No-Build versus the two 2040 Build LRT Alternatives in a side by side manner. Table 9 through Table 12 include individual movement and overall intersection delays, LOS and queuing information as reported by Vissim for all future scenarios.

Table 13 and Table 14 compare the 2040 No-Build versus 2040 Build LRT Options Scenarios' Synchro results for the secondary study area outside of the Pettigrew Street LRT corridor.

Table 9: D-O LRT: Downtown Durham Segment – VISSIM Intersection Analysis Output Summary - 2040 Build Option 1 vs. 2040 No-Build AM Peak Hour 8:00 - 9:00 AM

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
1	Main Street at 9th Street <sup>1</sup>	EBL	84	84	81	84	24.8	28.7	-3.9	-13.6%	C	C	10	12	-2	-15.90%	625	115	111	4	3.5%
		EBR	63	64	61	62	26.2	26.8	-0.6	-2.2%	C	C	68	77	-9	-12.22%	900	439	428	11	2.6%
		EBT	366	364	343	348	29.0	30.8	-1.9	-6.0%	C	C	78	88	-10	-11.28%	900	456	445	11	2.4%
		NBL	73	76	72	78	31.6	29.3	2.3	8.0%	C	C	33	83	-51	-60.76%	106	237	223	14	6.1%
		NBR	119	119	111	111	18.0	18.6	-0.7	-3.7%	B	B	19	66	-47	-70.89%	106	213	199	13	6.7%
		NBT	60	59	173	176	35.2	27.4	7.7	28.2%	D	C	33	83	-51	-60.76%	106	237	223	14	6.1%
		SBL	145	143	127	127	27.0	27.8	-0.8	-3.0%	C	C	114	125	-12	-9.46%	330	514	485	28	5.8%
		SBR	84	83	95	96	33.9	33.8	0.1	0.3%	C	C	91	104	-12	-11.87%	330	484	456	28	6.2%
		SBT	349	354	375	384	38.5	37.2	1.4	3.7%	D	D	114	125	-12	-9.46%	330	514	485	28	5.8%
		WBL	200	233	125	128	18.9	18.8	0.2	0.8%	B	B	17	10	7	63.29%	190	226	139	87	62.8%
		WBR	210	244	111	114	10.5	13.2	-2.7	-20.3%	B	B	25	27	-2	-8.88%	300	365	328	37	11.1%
		WBT	226	257	265	274	14.7	16.7	-1.9	-11.6%	B	B	32	35	-3	-7.57%	300	387	350	37	10.4%
		<b>All</b>	<b>1979</b>	<b>2080</b>	<b>1940</b>	<b>1982</b>	<b>25.5</b>	<b>27.0</b>	<b>-1.5</b>	<b>-5.7%</b>	<b>C</b>	<b>C</b>	<b>53</b>	<b>70</b>	<b>-17</b>	<b>-24.35%</b>		<b>515</b>	<b>487</b>	<b>28</b>	<b>5.8%</b>
2	Main Street at Iredell Street <sup>1</sup> (Unsignalized)	EBL	119	117	118	119	5.0	3.3	1.7	52.4%	A	A	2	8	-5	-70.18%	60	168	91	77	85.2%
		EBT	512	509	462	467	3.6	3.2	0.5	15.5%	A	A	2	8	-5	-70.18%	290	168	91	77	85.2%
		SBL	44	42	38	37	22.3	17.0	5.3	31.4%	C	C	0	3	-3	-87.07%	370	44	40	4	11.1%
		SBR	22	21	21	20	14.6	11.5	3.1	27.2%	B	B	0	3	-3	-87.07%	370	44	40	4	11.1%
		WBR	119	141	138	145	3.5	2.6	0.9	33.9%	A	A	5	1	4	776.67%	290	316	97	218	224.5%
		WBT	615	713	481	496	5.1	3.7	1.4	38.9%	A	A	5	1	4	776.67%	290	316	97	218	224.5%
				<b>All</b>	<b>1432</b>	<b>1543</b>	<b>1258</b>	<b>1284</b>	<b>5.1</b>	<b>3.9</b>	<b>1.2</b>	<b>31.9%</b>	<b>A</b>	<b>A</b>	<b>3</b>	<b>4</b>	<b>-1</b>	<b>-33.28%</b>		<b>322</b>	<b>140</b>
3	Main Street at Broad Street <sup>1</sup>	EBL	13	14	13	14	101.2	57.2	44.0	76.9%	F	E	30	43	-12	-29.09%	198	393	390	3	0.7%
		EBR	169	166	144	143	5.6	6.9	-1.4	-19.8%	A	A	0	3	-3	-98.39%	317	23	54	-31	-58.0%
		EBT	374	371	342	347	33.5	37.3	-3.8	-10.2%	C	D	88	101	-13	-12.60%	317	452	444	8	1.9%
		NBL	381	461	241	252	21.6	30.1	-8.5	-28.2%	C	C	100	202	-102	-50.68%	121	184	275	-91	-33.1%
		NBR	223	270	237	243	1.2	2.7	-1.4	-53.2%	A	A	0	0	0	-62.82%	116	33	48	-15	-31.3%
		NBT	238	285	290	299	23.9	17.3	6.6	37.8%	C	B	100	202	-102	-50.68%	121	184	275	-91	-33.1%
		SBL	87	83	69	66	50.7	60.5	-9.8	-16.1%	D	E	26	24	2	8.35%	130	183	180	3	1.7%
		SBR	90	89	50	52	31.8	28.8	3.0	10.3%	C	C	40	66	-26	-39.59%	450	410	466	-56	-12.1%
		SBT	335	329	411	412	45.1	43.7	1.4	3.2%	D	D	69	96	-27	-27.70%	450	453	508	-55	-10.8%
		WBL	139	161	171	175	266.1	68.3	197.8	289.6%	F	E	449	92	357	387.86%	412	677	463	214	46.1%
		WBR	37	40	33	32	48.6	21.7	26.9	123.7%	D	C	53	23	30	126.54%	560	576	390	186	47.8%
		WBT	265	304	328	337	57.0	26.9	30.1	112.1%	E	C	81	57	24	41.34%	560	657	473	185	39.1%
		<b>All</b>	<b>2352</b>	<b>2573</b>	<b>2328</b>	<b>2372</b>	<b>44.6</b>	<b>30.9</b>	<b>13.7</b>	<b>44.2%</b>	<b>D</b>	<b>C</b>	<b>86</b>	<b>76</b>	<b>10</b>	<b>13.84%</b>		<b>677</b>	<b>578</b>	<b>99</b>	<b>17.1%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
4	Pettigrew Street at 9th Street <sup>1</sup> (Unsignalized)	EBT LRT	6	6	N/A	N/A	5.6	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBR	23	24	28	29	2.9	9.0	-6.1	-68.2%	A	A	1	11	-10	-90.03%	720	116	174	-58	-33.3%
		NBT	238	241	213	220	3.0	14.5	-11.5	-79.5%	A	B	1	11	-10	-90.03%	720	116	174	-58	-33.3%
		SBL	30	32	24	25	1.0	1.6	-0.6	-36.0%	A	A	0	0	0	-71.43%	105	55	53	3	5.3%
		SBT	582	619	537	549	0.3	0.4	0.0	-11.5%	A	A	0	0	0	-71.43%	105	55	53	3	5.3%
		WBL	14	13	75	79	18.6	39.4	-20.8	-52.8%	C	E	0	33	-33	-99.96%	185	23	298	-275	-92.3%
		WBR	14	13	143	145	12.8	38.7	-25.9	-66.9%	B	E	0	33	-33	-99.96%	185	23	298	-275	-92.3%
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
	<b>All</b>	<b>912</b>	<b>942</b>	<b>1019</b>	<b>1047</b>	<b>1.6</b>	<b>11.9</b>	<b>-10.3</b>	<b>-86.6%</b>	<b>A</b>	<b>B</b>	<b>0</b>	<b>15</b>	<b>-14</b>	<b>-97.97%</b>		<b>125</b>	<b>310</b>	<b>-185</b>	<b>-59.7%</b>	
5	Pettigrew Street at Swift Avenue <sup>1</sup> (Unsignalized)	EBL			6	6		104.7				F		5			506		73		
		EBR			32	31		32.2				D		5			506		73		
		EBT			1	2		42.6				E		5			506		73		
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			186	191		25.1				D		49			443		440		
		NBR			19	19		27.9				D		204			443		684		
		NBT	843	1016	752	777	101.1	47.1	53.9	114.5%	F	E	716	204	512	250.87%	443	851	684	167	24.4%
		SBL			21	22		48.7				E		12			137		188		
		SBR			40	42		1.9				A		12			137		188		
		SBT	643	656	662	666	0.8	0.7	0.1	20.9%	A	A	3	12	-9	-76.26%	137	201	188	13	6.9%
		WBL			1	1		38.6				E		2			515		9		
		WBR			10	11		100.9				F		2			515		9		
		WBT			2	2		106.4				F		2			515		9		
		WBT LRT	6	6	N/A	N/A	1.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		137	N/A	N/A	N/A
	<b>All</b>	<b>1498</b>	<b>1672</b>	<b>1733</b>	<b>1770</b>	<b>57.1</b>	<b>26.2</b>	<b>30.9</b>	<b>118.0%</b>	<b>F</b>	<b>D</b>	<b>180</b>	<b>43</b>	<b>137</b>	<b>318.76%</b>		<b>851</b>	<b>684</b>	<b>166</b>	<b>24.3%</b>	
6	Main Street at Buchanan Boulevard <sup>1</sup>	EBL	134	127	134	128	51.8	52.8	-1.0	-1.8%	D	D	40	42	-3	-6.19%	215	329	421	-92	-21.8%
		EBR	86	86	87	86	7.2	7.5	-0.3	-3.8%	A	A	0	0	0	50.00%	267	9	5	5	97.6%
		EBT	464	464	476	475	23.8	24.4	-0.6	-2.6%	C	C	77	83	-6	-7.76%	607	562	579	-18	-3.1%
		NBL	74	79	73	79	66.4	67.5	-1.1	-1.6%	E	E	35	36	-1	-3.05%	70	178	185	-7	-3.9%
		NBR	63	61	65	63	12.0	13.1	-1.2	-8.8%	B	B	0	0	0	-21.74%	120	17	18	-1	-5.0%
		NBT	177	171	183	177	43.8	48.2	-4.5	-9.3%	D	D	48	56	-8	-13.60%	433	191	206	-15	-7.3%
		SBL	160	164	165	170	81.5	80.7	0.8	1.0%	F	F	128	134	-6	-4.52%	130	472	471	1	0.2%
		SBR	171	169	171	170	23.4	24.4	-1.0	-4.2%	C	C	4	5	-1	-25.50%	130	190	176	14	8.0%
		SBT	325	325	326	327	56.2	56.1	0.1	0.2%	E	E	158	154	4	2.49%	400	471	470	2	0.4%
WBL	50	50	52	51	60.5	62.5	-1.9	-3.1%	E	E	17	18	-1	-3.56%	382	168	163	5	2.9%		



Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
		WBR	43	43	45	44	27.9	26.8	1.1	3.9%	C	C	59	58	1	2.31%	530	397	371	26	7.0%	
		WBT	292	293	293	293	27.7	27.6	0.2	0.5%	C	C	59	58	1	2.31%	530	397	371	26	7.0%	
		<b>All</b>	<b>2040</b>	<b>2032</b>	<b>2070</b>	<b>2063</b>	<b>39.0</b>	<b>39.8</b>	<b>-0.7</b>	<b>-1.8%</b>	<b>D</b>	<b>D</b>	<b>52</b>	<b>54</b>	<b>-2</b>	<b>-2.97%</b>		<b>568</b>	<b>579</b>	<b>-11</b>	<b>-1.9%</b>	
7	Maxwell Street at Buchanan Boulevard <sup>2</sup> (Unsignalized)	EBL	50	48	54	52	19.3	24.8	-5.5	-22.1%	C	C	15	25	-10	-38.97%	465	234	263	-29	-10.9%	
		EBR	71	70	75	74	11.9	15.1	-3.2	-21.2%	B	C	2	6	-4	-72.99%	465	83	134	-51	-38.3%	
		EBT			0	0		0.0				A		6				465		134		
		NBL	13	13	13	13	3.5	7.9	-4.3	-55.1%	A	A	1	7	-6	-83.01%	558	103	143	-40	-27.9%	
		NBR			0	0		0.0				A		7				558		143		
		NBT	263	263	267	267	6.8	7.5	-0.7	-9.1%	A	A	15	7	9	124.38%	558	234	143	91	64.1%	
		SBL			0	0		0.0				A		0				432		11		
		SBR	16	16	17	17	0.6	0.6	0.0	8.7%	A	A	0	0	0	475.00%	432	39	11	28	242.6%	
		SBT	446	445	448	447	1.2	0.6	0.6	117.0%	A	A	0	0	0	475.00%	432	39	11	28	242.6%	
		WBL			0	0		0.0				A		0				295		0		
		WBR			0	0		0.0				A		25				295		263		
		WBT			0	0		0.0				A		0				295		0		
		<b>All</b>	<b>859</b>	<b>855</b>	<b>873</b>	<b>870</b>	<b>4.9</b>	<b>5.6</b>	<b>-0.6</b>	<b>-11.4%</b>	<b>A</b>	<b>A</b>	<b>6</b>	<b>7</b>	<b>-1</b>	<b>-18.55%</b>		<b>234</b>	<b>263</b>	<b>-29</b>	<b>-10.9%</b>	
8	Duke Street at Main Street <sup>1</sup>	EBL	154	154	175	170	38.8	40.1	-1.3	-3.3%	D	D	33	43	-9	-22.07%	198	301	307	-6	-2.1%	
		EBT	403	405	369	374	37.7	36.7	1.0	2.6%	D	D	105	92	13	13.97%	323	329	329	0	0.1%	
		NBL	258	260	250	251	9.6	11.4	-1.8	-15.7%	A	B	13	16	-3	-17.74%	204	308	386	-78	-20.2%	
		NBR	49	47	41	40	10.0	11.1	-1.0	-9.4%	B	B	30	39	-9	-22.58%	300	388	389	-1	-0.4%	
		NBT	929	923	966	956	10.2	12.1	-1.9	-15.6%	B	B	37	47	-10	-21.87%	300	411	413	-1	-0.3%	
		WBR	21	21	22	22	17.6	21.0	-3.5	-16.5%	B	C	11	11	-1	-6.15%	221	151	156	-6	-3.7%	
		WBT	98	96	95	93	31.7	33.6	-1.9	-5.6%	C	C	19	20	-1	-5.43%	221	169	175	-6	-3.3%	
				<b>All</b>	<b>1912</b>	<b>1906</b>	<b>1917</b>	<b>1906</b>	<b>19.4</b>	<b>20.4</b>	<b>-1.0</b>	<b>-5.1%</b>	<b>B</b>	<b>C</b>	<b>35</b>	<b>38</b>	<b>-3</b>	<b>-7.57%</b>		<b>413</b>	<b>415</b>	<b>-1</b>
9	Duke Street at Peabody Street <sup>1</sup> (Unsignalized)	EBL	11	11	17	16	13.6	10.5	3.1	29.4%	B	B	0	0	0	-50.00%	390	15	22	-7	-33.0%	
		EBT	3	3	3	3	11.6	10.4	1.2	11.0%	B	B	0	0	0	-50.00%	390	15	22	-7	-33.0%	
		NBL	63	62	60	59	0.7	0.6	0.1	8.8%	A	A	0	0	0	0.00%	140	0	0	0	0.0%	
		NBR	1	1	1	1	0.2	0.5	-0.4	-69.9%	A	A	1	2	-1	-62.40%	140	94	141	-47	-33.6%	
		NBT	1212	1207	1226	1218	2.3	3.1	-0.9	-27.2%	A	A	1	2	-1	-62.40%	140	94	141	-47	-33.6%	
		WBR	12	12	13	13	10.9	10.5	0.3	3.3%	B	B	0	0	0	-30.43%	543	30	41	-11	-26.4%	
		WBT	33	32	32	31	13.1	14.7	-1.6	-10.7%	B	B	0	0	0	-30.43%	543	30	41	-11	-26.4%	
				<b>All</b>	<b>1336</b>	<b>1328</b>	<b>1352</b>	<b>1341</b>	<b>2.7</b>	<b>3.5</b>	<b>-0.8</b>	<b>-23.0%</b>	<b>A</b>	<b>A</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>-60.49%</b>		<b>94</b>	<b>141</b>	<b>-47</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
10	Memorial Street at Duke Street <sup>1</sup> (Unsignalized)	EBL1	0	0	0	0	0.7	0.7	-0.1	-7.9%	A	A	5	0	5	0.00%	370	309	0	309	0.0%
		EBL2	4	5	4	5	11.4	8.9	2.5	27.5%	B	A	11	0	11	0.00%	370	360	0	360	0.0%
		NBL	14	15	20	20	5.3	3.6	1.7	47.2%	A	A	8	4	4	109.72%	213	247	209	38	18.0%
		NBT1	64	1265	60	1273	6.9	4.8	2.1	44.5%	A	A	5	4	1	23.15%	213	309	209	99	47.4%
		NBT2	1209		1223		4.7	2.8	1.9	66.2%	A	A	11	4	7	180.25%	213	360	209	150	71.7%
		<b>All</b>	<b>1291</b>	<b>1285</b>	<b>1307</b>	<b>1298</b>	<b>4.8</b>	<b>2.9</b>	<b>1.9</b>	<b>64.1%</b>	<b>A</b>	<b>A</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>239.79%</b>		<b>360</b>	<b>209</b>	<b>151</b>	<b>71.8%</b>
11	Chapel Hill Street at Duke Street <sup>1</sup>	EBL	201	196	199	193	24.5	20.3	4.2	20.6%	C	C	18	19	-1	-3.55%	220	325	307	19	6.1%
		EBT	670	669	688	690	30.5	15.1	15.4	102.0%	C	B	125	71	54	76.60%	336	383	381	2	0.5%
		NBL	120	115	122	117	26.3	26.4	-0.1	-0.5%	C	C	78	74	4	5.91%	455	296	293	3	1.2%
		NBR	126	126	130	132	35.6	12.4	23.2	188.1%	D	B	64	61	3	4.65%	455	277	275	2	0.8%
		NBT	1031	1026	1045	1039	28.2	27.8	0.3	1.2%	C	C	78	74	4	5.91%	455	296	293	3	1.2%
		WBR	55	58	58	61	25.5	13.6	12.0	88.3%	C	B	71	30	40	133.29%	275	378	291	87	30.0%
		WBT	359	361	384	383	27.2	16.5	10.6	64.4%	C	B	87	45	41	91.17%	275	408	321	87	27.2%
<b>All</b>	<b>2562</b>	<b>2551</b>	<b>2626</b>	<b>2615</b>	<b>28.6</b>	<b>21.1</b>	<b>7.5</b>	<b>35.4%</b>	<b>C</b>	<b>C</b>	<b>74</b>	<b>53</b>	<b>21</b>	<b>39.16%</b>		<b>410</b>	<b>386</b>	<b>24</b>	<b>6.2%</b>		
12	Chapel Hill Street at Willard Street <sup>1</sup> (Unsignalized)	EBR	138	137	136	137	13.4	1.6	11.9	763.5%	B	A	89	0	89	52725.93%	275	340	41	299	734.5%
		EBT	658	658	683	685	19.0	1.7	17.4	1048.7%	C	A	89	0	89	52725.93%	275	340	41	299	734.5%
		NBL	14	13	15	15	30.5	15.5	15.0	96.8%	D	C	4	0	4	2157.14%	460	99	31	68	218.7%
		NBR	85	84	28	29	33.3	11.4	21.9	192.7%	D	B	4	0	4	2157.14%	460	99	31	68	218.7%
		WBL	99	95	51	47	14.6	7.9	6.8	86.2%	B	A	1	0	1	7866.67%	142	125	17	108	643.2%
		WBT	400	406	427	429	5.3	1.0	4.3	414.6%	A	A	1	0	1	5750.00%	205	89	7	81	1100.8%
		<b>All</b>	<b>1394</b>	<b>1393</b>	<b>1339</b>	<b>1342</b>	<b>15.2</b>	<b>2.0</b>	<b>13.2</b>	<b>650.2%</b>	<b>C</b>	<b>A</b>	<b>31</b>	<b>0</b>	<b>31</b>	<b>29464.71%</b>		<b>340</b>	<b>66</b>	<b>274</b>	<b>416.6%</b>
13	Pettigrew Street at Chapel Hill Street <sup>1</sup>	EBR	269	270	256	260	7.0	3.6	3.4	95.8%	A	A	88	2	86	3542.78%	206	284	153	131	85.5%
		EBT	474	472	454	454	8.6	3.8	4.9	128.3%	A	A	97	9	88	929.12%	206	301	200	101	50.6%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			87	86		17.1				B		9			377		168		
		NBR			69	69		8.9				A		3			377		139		
		WBL	39	37	42	42	31.0	13.7	17.3	126.8%	C	B	60	17	43	257.02%	222	291	206	85	41.3%
		WBT	499	501	391	390	22.3	8.5	13.8	162.9%	C	A	60	17	43	257.02%	275	291	206	85	41.3%
		WBT LRT	6	6	N/A	N/A	6.7	N/A	N/A	N/A	A	N/A	10	N/A	N/A	N/A		247	N/A	N/A	N/A
<b>All</b>	<b>1293</b>	<b>1280</b>	<b>1299</b>	<b>1301</b>	<b>14.2</b>	<b>6.7</b>	<b>7.6</b>	<b>114.2%</b>	<b>B</b>	<b>A</b>	<b>53</b>	<b>10</b>	<b>43</b>	<b>445.23%</b>		<b>301</b>	<b>255</b>	<b>46</b>	<b>18.3%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
14	Blackwell Street at Pettigrew Street <sup>2</sup>	EBL	0	0	14	13	0.0	32.4	-32.4	-100.0%	A	C	35	1	34	2519.16%	150	246	39	207	529.9%
		EBR	117	116	35	36	21.5	11.1	10.4	94.2%	C	B	23	10	12	122.36%	785	218	137	80	58.3%
		EBT	83	83	123	121	36.4	20.8	15.6	74.8%	D	C	35	20	16	79.65%	785	246	159	86	54.2%
		EBT LRT	6	6	N/A	N/A	3.0	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		125	N/A	N/A	N/A
		NBL			21	21		16.8				B		2				100		65	
		NBR	90	89	7	7	4.2	9.2	-5.0	-54.4%	A	A	2	7	-5	-71.69%	148	68	153	-84	-55.3%
		NBT	82	83	140	139	15.7	15.3	0.4	2.4%	B	B	7	12	-5	-41.72%	148	92	167	-75	-44.8%
		SBL	6	6	50	51	3.0	3.0	0.0	-0.8%	A	A	1	1	1	102.02%	98	67	50	18	35.2%
		SBR			34	33		1.0				A		1				98		50	
		SBT	94	91	171	164	2.5	1.4	1.1	74.9%	A	A	1	1	1	102.02%	98	67	50	18	35.2%
		WBL			7	9		16.6				B		0				143		25	
		WBR			49	51		15.7				B		13				375		278	
		WBT			211	205		14.3				B		18				375		291	
		WBT LRT	6	6	N/A	N/A	0.1	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		64	N/A	N/A	N/A
		<b>All</b>	<b>500</b>	<b>468</b>	<b>861</b>	<b>850</b>	<b>15.2</b>	<b>11.9</b>	<b>3.3</b>	<b>27.6%</b>	<b>B</b>	<b>B</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>66.81%</b>		<b>246</b>	<b>291</b>	<b>-45</b>	<b>-15.5%</b>
15	Blackwell Street at Ramseur Street <sup>1</sup>	EBL	19	20	15	16	13.2	14.6	-1.5	-10.2%	B	B	22	24	-2	-7.57%	1081	148	155	-8	-5.0%
		EBR	3	2	6	7	4.8	5.0	-0.2	-3.0%	A	A	30	32	-2	-4.94%	263	193	202	-8	-4.1%
		EBT	348	351	384	385	14.9	16.2	-1.3	-7.9%	B	B	22	24	-2	-7.57%	1081	148	155	-8	-5.0%
		NBR	2	2	7	7	0.3	4.0	-3.7	-93.6%	A	A	0	13	-13	-99.26%	98	9	135	-126	-93.4%
		NBT	80	81	196	196	2.8	8.7	-5.9	-67.8%	A	A	1	29	-28	-96.13%	98	31	202	-171	-84.5%
		SBL	34	34	26	27	13.0	16.5	-3.5	-21.1%	B	B	9	28	-20	-69.61%	200	155	284	-129	-45.4%
		SBT	98	95	248	241	12.2	15.0	-2.8	-18.4%	B	B	9	28	-20	-69.61%	200	155	284	-129	-45.4%
		<b>All</b>	<b>583</b>	<b>585</b>	<b>883</b>	<b>879</b>	<b>12.5</b>	<b>14.0</b>	<b>-1.4</b>	<b>-10.3%</b>	<b>B</b>	<b>B</b>	<b>13</b>	<b>25</b>	<b>-12</b>	<b>-48.06%</b>		<b>204</b>	<b>284</b>	<b>-80</b>	<b>-28.2%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
16	Main Street at Corcoran Street <sup>2</sup>	EBL	44	42	55	52	30.7	28.2	2.5	8.7%	C	C	49	44	5	10.71%	158	322	301	21	6.8%
		EBR	15	16	50	50	19.7	21.7	-2.0	-9.3%	B	C	39	34	5	13.92%	158	306	285	21	7.2%
		EBT	244	236	180	176	26.7	26.7	0.1	0.3%	C	C	49	44	5	10.71%	158	322	301	21	6.8%
		NBL	6	6	20	20	9.5	7.2	2.3	32.0%	A	A	4	6	-2	-28.73%	202	93	92	1	1.0%
		NBR	5	7	8	9	6.1	3.9	2.2	57.2%	A	A	2	3	-1	-37.39%	202	84	83	1	1.1%
		NBT	87	88	183	183	8.7	5.7	3.0	52.2%	A	A	4	6	-2	-28.73%	202	93	92	1	1.0%
		SBL	46	46	24	24	16.5	12.6	3.9	31.2%	B	B	10	15	-4	-28.98%	172	151	196	-45	-23.0%
		SBR	19	18	23	22	8.0	7.1	1.0	14.0%	A	A	5	9	-4	-40.39%	172	131	176	-45	-25.7%
		SBT	94	91	193	187	12.8	12.5	0.3	2.1%	B	B	10	15	-4	-28.98%	172	151	196	-45	-23.0%
		WBL	22	22	31	31	9.9	11.2	-1.3	-11.7%	A	B	11	10	1	6.59%	310	188	106	82	77.9%
		WBR	76	76	40	42	6.1	6.2	-0.1	-1.8%	A	A	6	4	1	30.40%	310	166	84	82	97.6%
		WBT	246	240	179	174	7.5	8.7	-1.2	-13.6%	A	A	11	10	1	6.59%	310	188	106	82	77.9%
		All	904	888	986	970	15.2	13.9	1.3	9.0%	B	B	17	17	0	0.07%		328	301	27	9.0%
17	Mangum Street at Main Street <sup>1</sup>	EBR	9	9	7	7	50.2	36.9	13.3	35.9%	D	D	93	43	50	117.34%	311	365	231	134	58.3%
		EBT	286	280	204	202	55.1	42.8	12.2	28.5%	E	D	108	56	52	92.80%	311	383	249	134	54.0%
		SBL	170	172	171	173	35.7	16.6	19.2	115.6%	D	B	199	76	123	160.72%	166	532	465	67	14.5%
		SBR	18	17	7	7	13.0	5.3	7.7	144.0%	B	A	185	65	120	186.22%	166	514	444	70	15.7%
		SBT	1081	1082	1096	1099	35.5	17.7	17.8	100.1%	D	B	199	76	123	160.72%	166	532	465	67	14.5%
		WBL	48	45	88	84	47.5	53.4	-5.9	-11.1%	D	D	12	28	-16	-57.81%	185	91	192	-101	-52.5%
		WBT	326	321	243	240	23.0	23.3	-0.3	-1.3%	C	C	46	33	13	38.08%	342	335	266	68	25.6%
		All	1938	1926	1817	1812	36.5	23.0	13.5	58.6%	D	C	120	54	66	122.77%		532	465	67	14.5%
18	Mangum Street at Ramseur Street <sup>1</sup>	EBR	107	108	116	117	52.6	45.6	7.0	15.3%	D	D	41	40	0	0.81%	318	179	143	36	24.8%
		EBT	276	279	298	302	16.0	20.8	-4.8	-23.1%	B	C	41	40	0	0.81%	318	179	143	36	24.8%
		SBL	87	89	89	91	29.1	17.8	11.3	63.4%	C	B	139	78	61	77.73%	225	325	317	8	2.7%
		SBT	1051	1047	1101	1099	27.3	16.8	10.6	63.1%	C	B	139	78	61	77.73%	225	325	317	8	2.7%
				All	1521	1523	1605	1609	27.2	19.7	7.5	38.2%	C	B	90	59	31	51.55%		325	317

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
19	Mangum Street at Pettigrew Street <sup>1</sup>	EBR	52	52	53	52	7.3	26.1	-18.8	-71.9%	A	C	20	23	-3	-14.08%	375	189	188	2	0.8%
		EBT	126	126	127	127	36.6	40.8	-4.2	-10.2%	D	D	31	43	-12	-28.11%	375	210	224	-14	-6.3%
		EBT LRT	6	6	N/A	N/A	8.6	N/A	N/A	N/A	A	N/A	2	N/A	N/A	N/A		200	N/A	N/A	N/A
		SBL	49	49	55	54	1.6	0.7	0.9	132.7%	A	A	1	0	1	752.17%	82	102	52	51	98.4%
		SBR			67	67		0.5				A		0			82		42		
		SBT	1105	1106	1095	1095	0.7	0.2	0.4	176.9%	A	A	1	0	1	752.17%	82	102	52	51	98.4%
		WBL	52	52	78	77	7.3	58.6	-51.2	-87.5%	A	E	20	27	-7	-27.23%	353	189	168	21	12.4%
		WBT			200	198		37.5				D		44			400		252		
		WBT LRT	6	6	N/A	N/A	0.4	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		86	N/A	N/A	N/A
		<b>All</b>	<b>1361</b>	<b>1333</b>	<b>1675</b>	<b>1670</b>	<b>4.4</b>	<b>11.4</b>	<b>-6.9</b>	<b>-61.0%</b>	<b>A</b>	<b>B</b>	<b>8</b>	<b>20</b>	<b>-11</b>	<b>-57.60%</b>		<b>219</b>	<b>275</b>	<b>-56</b>	<b>-20.4%</b>
20	Pettigrew Street at Dillard Street <sup>2</sup>	EBL	30	27	16	15	13.5	12.4	1.1	8.9%	B	B	3	2	1	86.18%	153	74	67	7	9.9%
		EBR	18	20	24	25	5.4	5.9	-0.5	-8.8%	A	A	0	1	-1	-83.13%	917	32	76	-44	-58.1%
		EBT	49	50	76	75	7.7	9.3	-1.6	-17.1%	A	A	2	3	-2	-49.02%	917	73	105	-32	-30.1%
		EBT LRT	6	6	N/A	N/A	0.7	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		87	N/A	N/A	N/A
		NBL			0	0		0.0				A		0			155		0		
		NBR	8	8	34	34	11.5	8.2	3.3	40.5%	B	A	4	5	-1	-19.42%	822	86	114	-28	-24.6%
		NBT	66	68	100	100	26.5	17.6	8.9	50.9%	C	B	10	11	-1	-7.36%	822	100	128	-28	-21.7%
		SBL	38	37	46	45	28.5	21.3	7.2	34.0%	C	C	31	27	4	14.39%	264	216	214	1	0.7%
		SBR			101	98		9.9				A		18			264		187		
		SBT	110	109	110	110	26.9	18.5	8.4	45.2%	C	B	31	27	4	14.39%	264	216	214	1	0.7%
		WBL	36	37	25	25	8.3	6.1	2.3	37.6%	A	A	2	2	0	19.59%	695	93	111	-17	-15.8%
		WBR	45	43	17	18	8.4	3.6	4.8	133.4%	A	A	2	1	1	192.56%	695	93	96	-3	-3.2%
		WBT			88	87		6.0				A		2			695		111		
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>419</b>	<b>399</b>	<b>638</b>	<b>632</b>	<b>18.1</b>	<b>12.3</b>	<b>5.8</b>	<b>47.5%</b>	<b>B</b>	<b>B</b>	<b>10</b>	<b>8</b>	<b>2</b>	<b>18.71%</b>		<b>220</b>	<b>214</b>	<b>5</b>	<b>2.4%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
21	Fayetteville Street at Pettigrew Street <sup>1</sup>	EBL	10	9	8	7	57.4	61.4	-4.1	-6.6%	E	E	3	2	0	6.77%	210	43	44	-1	-2.0%	
		EBR	6	6	26	26	4.6	5.6	-1.0	-17.4%	A	A	0	0	0	0.00%	273	0	0	0	0.0%	
		EBT	53	53	59	57	36.9	53.9	-17.1	-31.6%	D	D	11	18	-7	-41.23%	696	105	133	-29	-21.4%	
		EBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	3	3	35	35	8.5	5.9	2.6	44.0%	A	A	11	4	6	139.49%	70	143	145	-2	-1.6%	
		NBR	46	45	58	61	0.4	0.3	0.1	43.9%	A	A	46	46	0	0.20%	70	140	140	1	0.6%	
		NBT	365	371	382	388	2.7	1.3	1.4	112.7%	A	A	11	4	6	139.49%	70	143	145	-2	-1.6%	
		SBL	58	58	42	41	40.3	21.1	19.2	90.8%	D	C	15	5	9	178.62%	250	226	124	102	82.9%	
		SBR	1	1	7	7	22.3	13.4	9.0	67.1%	C	B	86	32	54	165.75%	400	358	207	152	73.5%	
		SBT	434	432	449	445	42.5	22.4	20.1	90.0%	D	C	86	52	35	67.07%	400	358	250	108	43.3%	
		WBL	93	96	87	90	49.0	59.8	-10.8	-18.0%	D	E	21	28	-7	-24.97%	100	193	200	-7	-3.3%	
		WBR	103	108	45	50	33.2	31.3	1.9	6.2%	C	C	49	31	18	60.02%	1570	345	254	91	35.7%	
		WBT	94	90	127	127	52.2	47.2	5.0	10.5%	D	D	49	44	5	10.52%	1570	345	277	68	24.5%	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		<b>All</b>	<b>1277</b>	<b>1272</b>	<b>1323</b>	<b>1334</b>	<b>29.2</b>	<b>21.3</b>	<b>7.9</b>	<b>36.9%</b>	<b>C</b>	<b>C</b>	<b>28</b>	<b>22</b>	<b>5</b>	<b>23.66%</b>		<b>388</b>	<b>292</b>	<b>96</b>	<b>32.7%</b>	
22	Fayetteville Street at Jackie Robinson Drive <sup>1</sup>	NBL	228	227	186	185	26.4	14.2	12.2	86.2%	C	B	35	13	22	166.84%	277	266	150	116	77.0%	
		NBT	322	328	359	367	20.7	11.7	9.0	76.4%	C	B	24	14	10	66.88%	286	213	137	76	55.0%	
		SBR	43	44	39	40	1.0	2.1	-1.0	-50.9%	A	A	6	9	-3	-35.83%	70	137	156	-18	-11.8%	
		SBT	490	490	524	521	4.6	6.8	-2.2	-31.7%	A	A	11	16	-5	-30.05%	70	156	172	-16	-9.4%	
		WBL	172	169	149	144	40.1	40.5	-0.4	-0.9%	D	D	45	39	5	14.01%	345	264	222	42	19.0%	
		WBR	91	91	115	117	9.3	6.7	2.6	38.2%	A	A	35	33	2	5.60%	345	251	217	34	15.6%	
		WBT	13	13	13	13	38.8	36.8	2.0	5.5%	D	D	45	39	5	14.01%	603	264	222	42	19.0%	
		<b>All</b>	<b>1361</b>	<b>1362</b>	<b>1385</b>	<b>1387</b>	<b>17.1</b>	<b>12.9</b>	<b>4.2</b>	<b>33.0%</b>	<b>B</b>	<b>B</b>	<b>29</b>	<b>24</b>	<b>5</b>	<b>21.78%</b>		<b>285</b>	<b>224</b>	<b>61</b>	<b>27.3%</b>	
23	Morehead Avenue at Fayetteville Street <sup>1</sup>	EBL	43	44	31	33	49.5	45.3	4.2	9.3%	D	D	13	8	5	54.25%	1260	102	87	15	17.1%	
		EBR	143	139	133	130	6.9	6.6	0.3	4.2%	A	A	2	1	1	122.63%	1195	69	53	15	28.6%	
		EBT	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	13	8	5	54.25%	1260	102	87	15	17.1%	
		NBR	20	20	18	18	2.1	1.8	0.3	16.7%	A	A	1	1	0	22.22%	389	64	63	1	2.4%	
		NBT	507	511	514	519	2.9	2.6	0.3	11.2%	A	A	3	3	0	5.50%	389	82	81	1	1.8%	
		SBL	99	93	74	71	4.8	3.2	1.6	50.7%	A	A	1	0	1	240.98%	255	90	53	37	68.6%	
		SBT	564	566	598	594	2.3	1.5	0.8	52.9%	A	A	3	2	1	89.92%	275	159	141	17	12.2%	
		<b>All</b>	<b>1376</b>	<b>1373</b>	<b>1368</b>	<b>1365</b>	<b>4.7</b>	<b>3.5</b>	<b>1.2</b>	<b>32.7%</b>	<b>A</b>	<b>A</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>55.30%</b>		<b>168</b>	<b>141</b>	<b>27</b>	<b>19.0%</b>	

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
24	Pettigrew Street at Grant Street <sup>2</sup>	EBL	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	0	5	-5	-100.00%	155	0	107	-107	-100.0%
		EBR	7	7	13	13	7.4	3.2	4.2	134.0%	A	A	5	0	5	86100.00%	1570	122	4	118	2959.5%
		EBT	151	149	145	146	7.4	6.2	1.3	20.3%	A	A	5	5	1	17.92%	1570	122	107	15	13.9%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	21	7	13	178.37%	625	213	112	101	90.0%
		NBR	104	102	73	73	14.9	9.8	5.1	52.3%	B	A	14	4	11	300.69%	625	198	96	102	106.0%
		NBT	96	93	51	51	27.1	19.6	7.5	38.0%	C	B	21	7	13	178.37%	625	213	112	101	90.0%
		SBL	93	90	89	86	34.0	25.2	8.8	35.0%	C	C	25	16	9	52.81%	266	221	199	22	11.0%
		SBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	25	7	18	272.70%	266	221	181	39	21.8%
		SBT	51	50	69	68	31.7	23.0	8.7	37.7%	C	C	25	16	9	52.81%	266	221	199	22	11.0%
		WBL	67	69	127	127	8.9	7.8	1.1	14.0%	A	A	2	4	-2	-47.59%	70	67	86	-19	-22.2%
		WBR	122	123	121	121	10.9	5.4	5.6	103.3%	B	A	20	6	14	252.87%	193	298	163	135	82.8%
		WBT	287	294	259	267	10.3	7.0	3.2	46.2%	B	A	20	8	12	141.08%	193	300	174	126	72.6%
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>989</b>	<b>977</b>	<b>948</b>	<b>952</b>	<b>15.2</b>	<b>10.5</b>	<b>4.7</b>	<b>44.3%</b>	<b>B</b>	<b>B</b>	<b>13</b>	<b>7</b>	<b>6</b>	<b>85.69%</b>		<b>308</b>	<b>215</b>	<b>93</b>	<b>43.2%</b>		
25	Gann Street at Pettigrew Street <sup>2</sup> (Unsignalized)	EBR	74	73	72	72	2.1	2.7	-0.6	-21.4%	A	A	0	0	0	0.00%	206	0	0	0	0.0%
		EBT	290	282	290	287	2.4	2.9	-0.5	-17.3%	A	A	0	0	0	0.00%	206	0	0	0	0.0%
		NBL	101	105	99	102	9.8	9.4	0.4	3.7%	A	A	0	0	0	71.43%	248	54	45	9	18.9%
		NBR	11	11	12	12	8.0	7.1	0.9	12.4%	A	A	0	0	0	71.43%	248	54	45	9	18.9%
		WBL	21	21	23	23	8.1	8.4	-0.3	-3.5%	A	A	0	0	0	0.00%	367	9	8	1	7.3%
		WBT	421	426	432	437	0.4	0.4	0.0	7.6%	A	A	0	0	0	0.00%	367	0	0	0	0.0%
		<b>All</b>	<b>918</b>	<b>918</b>	<b>929</b>	<b>933</b>	<b>2.5</b>	<b>2.6</b>	<b>-0.1</b>	<b>-4.6%</b>	<b>A</b>	<b>A</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25.00%</b>		<b>54</b>	<b>45</b>	<b>9</b>	<b>18.9%</b>
26	Alston Avenue at Gann Street <sup>1</sup>	EBL	61	63	69	69	59.4	57.6	1.8	3.2%	E	E	25	26	-1	-5.30%	196	212	217	-5	-2.4%
		EBR	183	182	182	182	12.9	13.1	-0.2	-1.2%	B	B	16	18	-1	-6.92%	196	201	206	-5	-2.6%
		NBL	13	13	14	14	18.6	18.4	0.2	1.2%	B	B	31	33	-2	-7.04%	300	254	261	-7	-2.8%
		NBT	873	870	878	875	11.2	12.0	-0.7	-5.9%	B	B	31	33	-2	-7.04%	528	254	261	-7	-2.8%
		SBR	48	46	48	46	12.2	12.2	0.0	-0.3%	B	B	70	74	-4	-5.83%	190	554	579	-25	-4.3%
		SBT	1441	1438	1443	1440	13.4	14.0	-0.6	-4.1%	B	B	72	76	-4	-5.74%	1037	557	582	-25	-4.3%
		WBL	425	457	431	457	61.0	59.5	1.4	2.4%	E	E	372	370	2	0.50%	188	686	685	1	0.1%
		WBR	296	321	294	315	43.3	41.9	1.4	3.4%	D	D	147	128	20	15.48%	1000	653	652	1	0.1%
		WBT	47	52	48	52	62.2	58.9	3.3	5.6%	E	E	163	142	21	14.67%	1000	677	676	1	0.1%
<b>All</b>	<b>3386</b>	<b>3442</b>	<b>3407</b>	<b>3450</b>	<b>22.9</b>	<b>23.1</b>	<b>-0.2</b>	<b>-0.8%</b>	<b>C</b>	<b>C</b>	<b>103</b>	<b>100</b>	<b>3</b>	<b>2.95%</b>		<b>690</b>	<b>698</b>	<b>-8</b>	<b>-1.1%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
27	Roxboro Street at Pettigrew Street <sup>1</sup>	EBL	86	86	90	90	49.7	57.0	-7.2	-12.7%	D	E	31	38	-7	-19.53%	220	197	172	25	14.3%
		EBT	89	89	91	91	37.8	43.3	-5.5	-12.6%	D	D	31	38	-7	-19.53%	288	197	172	25	14.3%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			189	188		9.1				A		50				541		439	
		NBR	8	8	25	24	5.3	2.6	2.7	102.9%	A	A	83	38	46	121.37%	541	547	408	139	34.0%
		NBT	1950	1973	1501	1524	12.2	9.0	3.2	35.4%	B	A	94	50	44	88.63%	541	569	439	130	29.7%
		WBR			100	98		67.6				E		80				916		349	
		WBT			88	87		81.0				F		94				916		368	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		44	N/A	N/A	N/A
		All	2157	2156	2085	2102	14.6	18.4	-3.8	-20.5%	B	B	48	55	-8	-13.97%		569	484	84	17.4%
28	LRT at Buchanan Boulevard <sup>2</sup>	EBT LRT	6	6			0.0				A		0					0			
		NBT	277	263			3.3				A		4					155			
		SBT	516	445			7.0				A		23					437			
		WBT LRT	6	6			5.1				A		9					234			
		All	805	708			5.7				A		9					437			
	Downtown Durham Corridor	EB LRT	6	6			23.1														
	Downtown Durham Corridor	WB LRT	6	6			23.4														
		All	40355	40770	40971	41136	21.0	17.2			C	B	37	30	7	22.37%		851	747	104	13.9%

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied

- Indicates LRT Movement
- Indicates Traffic Impact
- Indicates Traffic Impact below Mid-D
- Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet



Table 10: D-O LRT: Downtown Durham Segment – VISSIM Intersection Analysis Output Summary - 2040 Build Option 1 vs. 2040 No-Build PM Peak Hour 5:00 - 6:00 PM

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
1	Main Street at 9th Street <sup>1</sup>	EBL	53	61	52	63	44.7	41.1	3.6	8.7%	D	D	8	8	0	-0.25%	625	74	77	-3	-3.9%
		EBR	45	52	48	58	60.2	50.5	9.6	19.1%	E	D	304	284	20	7.16%	900	457	453	4	0.9%
		EBT	518	592	498	599	66.2	53.8	12.4	23.0%	E	D	318	298	21	6.91%	900	474	470	4	0.9%
		NBL	25	47	18	47	32.6	32.4	0.2	0.5%	C	C	192	116	76	65.51%	106	255	185	71	38.2%
		NBR	206	327	140	302	37.6	48.9	-11.4	-23.2%	D	D	170	100	70	69.59%	106	231	165	66	40.0%
		NBT	158	250	127	300	41.3	50.8	-9.5	-18.7%	D	D	192	116	76	65.51%	106	255	185	71	38.2%
		SBL	244	270	219	240	184.3	65.2	119.2	182.8%	F	E	378	181	197	108.63%	330	609	503	107	21.2%
		SBR	71	74	65	76	60.3	32.7	27.5	84.1%	E	C	350	157	193	123.37%	330	580	472	108	22.9%
		SBT	141	147	180	198	66.9	39.5	27.4	69.3%	E	D	378	181	197	108.63%	330	609	503	107	21.2%
		WBL	214	263	168	216	46.2	70.0	-23.8	-34.0%	D	E	106	158	-52	-33.03%	190	388	392	-4	-1.0%
		WBR	230	286	187	245	18.9	14.2	4.6	32.6%	B	B	171	149	22	14.73%	300	374	373	1	0.3%
		WBT	357	441	347	452	22.5	17.7	4.9	27.5%	C	B	186	163	23	14.16%	300	396	395	1	0.3%
		<b>All</b>	<b>2263</b>	<b>2810</b>	<b>2048</b>	<b>2796</b>	<b>59.4</b>	<b>43.4</b>	<b>16.0</b>	<b>36.7%</b>	<b>E</b>	<b>D</b>	<b>229</b>	<b>159</b>	<b>70</b>	<b>44.11%</b>		<b>609</b>	<b>529</b>	<b>80</b>	<b>15.2%</b>
2	Main Street at Iredell Street <sup>1</sup> (Unsignalized)	EBL	145	174	135	176	15.9	17.9	-2.0	-11.4%	C	C	105	103	2	2.10%	60	327	321	6	1.9%
		EBT	825	1015	726	965	18.5	16.9	1.6	9.2%	C	C	105	103	2	2.10%	290	327	321	6	1.9%
		SBL	30	32	27	33	180.9	225.0	-44.2	-19.6%	F	F	81	117	-36	-31.16%	370	204	203	1	0.6%
		SBR	79	80	67	77	141.2	175.0	-33.8	-19.3%	F	F	81	117	-36	-31.16%	370	204	203	1	0.6%
		WBR	17	22	20	25	7.6	11.6	-4.0	-34.2%	A	B	65	101	-36	-35.53%	290	416	418	-2	-0.6%
		WBT	724	910	635	836	13.8	15.7	-1.9	-12.1%	B	C	65	101	-36	-35.53%	290	416	418	-2	-0.6%
				<b>All</b>	<b>1821</b>	<b>2233</b>	<b>1610</b>	<b>2112</b>	<b>24.4</b>	<b>26.8</b>	<b>-2.3</b>	<b>-8.7%</b>	<b>C</b>	<b>D</b>	<b>84</b>	<b>107</b>	<b>-23</b>	<b>-21.85%</b>		<b>416</b>	<b>418</b>
3	Main Street at Broad Street <sup>1</sup>	EBL	96	118	87	113	127.1	37.9	89.2	235.4%	F	D	300	271	29	10.86%	198	459	454	5	1.1%
		EBR	269	323	196	255	8.8	7.9	0.9	11.9%	A	A	1	3	-2	-65.96%	317	95	114	-19	-16.5%
		EBT	496	606	477	630	39.8	34.4	5.5	16.0%	D	C	311	318	-7	-2.19%	317	474	469	5	1.0%
		NBL	280	312	175	283	30.3	51.0	-20.7	-40.6%	C	D	120	209	-89	-42.74%	121	221	267	-46	-17.2%
		NBR	164	182	131	185	1.7	1.5	0.2	12.0%	A	A	2	101	-99	-98.26%	116	113	251	-138	-55.0%
		NBT	331	352	318	448	15.7	16.1	-0.5	-2.8%	B	B	120	209	-89	-42.74%	121	221	267	-46	-17.2%
		SBL	108	126	80	116	106.9	107.6	-0.7	-0.7%	F	F	104	86	18	20.65%	130	562	561	1	0.2%
		SBR	90	105	42	65	69.5	78.8	-9.3	-11.8%	E	E	310	339	-29	-8.63%	450	531	528	3	0.6%
		SBT	483	573	437	625	80.7	93.0	-12.2	-13.2%	F	F	349	375	-25	-6.78%	450	573	569	3	0.6%
		WBL	137	187	146	167	251.7	49.3	202.4	410.7%	F	D	433	49	384	784.76%	412	676	348	329	94.5%
		WBR	95	129	77	87	52.8	48.9	3.9	7.9%	D	D	178	263	-85	-32.45%	560	588	591	-2	-0.4%
		WBT	372	515	443	513	58.9	53.7	5.1	9.6%	E	D	222	326	-104	-31.89%	560	671	673	-2	-0.3%
		<b>All</b>	<b>2919</b>	<b>3528</b>	<b>2609</b>	<b>3487</b>	<b>57.0</b>	<b>47.3</b>	<b>9.7</b>	<b>20.5%</b>	<b>E</b>	<b>D</b>	<b>204</b>	<b>212</b>	<b>-8</b>	<b>-3.87%</b>		<b>677</b>	<b>674</b>	<b>3</b>	<b>0.5%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
4	Pettigrew Street at 9th Street <sup>1</sup> (Unsignalized)	EBT LRT	6	6	N/A	N/A	5.6	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBR	7	10	35	82	74.3	128.0	-53.7	-41.9%	F	F	212	278	-66	-23.62%	720	305	362	-57	-15.7%
		NBT	376	609	257	596	107.5	141.6	-34.1	-24.1%	F	F	212	278	-66	-23.62%	720	305	362	-57	-15.7%
		SBL	18	22	33	42	5.8	12.4	-6.6	-53.5%	A	B	3	22	-20	-88.44%	105	138	180	-42	-23.5%
		SBT	382	440	362	430	0.6	1.9	-1.3	-69.8%	A	A	3	22	-20	-88.44%	105	138	180	-42	-23.5%
		WBL	76	87	18	26	387.5	19.7	367.8	1871.9%	F	C	182	1	180	12335.04%	185	323	63	260	413.0%
		WBR	12	15	38	53	339.7	46.6	293.1	628.3%	F	E	182	1	180	12335.04%	185	323	63	260	413.0%
		WBTLRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>883</b>	<b>1183</b>	<b>743</b>	<b>1229</b>	<b>79.0</b>	<b>59.4</b>	<b>19.6</b>	<b>33.1%</b>	<b>F</b>	<b>F</b>	<b>99</b>	<b>100</b>	<b>-1</b>	<b>-1.31%</b>		<b>328</b>	<b>362</b>	<b>-34</b>	<b>-9.3%</b>		
5	Pettigrew Street at Swift Avenue <sup>1</sup> (Unsignalized)	EBL			29	53		373.3				F		638			506		840		
		EBR			89	166		316.2				F		638			506		840		
		EBT			2	3		345.7				F		638			506		840		
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			33	48		118.5				F		187			443		395		
		NBR			7	9		67.0				F		658			443		784		
		NBT	775	846	574	820	94.7	122.4	-27.7	-22.6%	F	F	527	715	-188	-26.25%	443	827	841	-14	-1.7%
		SBL			11	16		133.0				F		30			137		222		
		SBR			32	45		1.3				A		30			137		222		
		SBT	888	1083	734	986	0.9	1.0	-0.1	-12.6%	A	A	3	30	-27	-90.11%	137	164	222	-58	-26.3%
		WBL			9	17		854.1				F		369			515		502		
		WBR			22	43		941.6				F		369			515		502		
		WBT			3	6		928.8				F		369			515		502		
WBTLRT	6	6	N/A	N/A	0.7	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		87	N/A	N/A	N/A		
<b>All</b>	<b>1676</b>	<b>1929</b>	<b>1544</b>	<b>2212</b>	<b>44.1</b>	<b>92.5</b>	<b>-48.4</b>	<b>-52.3%</b>	<b>E</b>	<b>F</b>	<b>133</b>	<b>389</b>	<b>-257</b>	<b>-65.94%</b>		<b>827</b>	<b>847</b>	<b>-20</b>	<b>-2.4%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
6	Main Street at Buchanan Boulevard <sup>1</sup>	EBL	182	184	183	187	119.2	118.9	0.3	0.3%	F	F	339	343	-4	-1.22%	215	611	610	1	0.2%	
		EBR	64	65	68	69	11.5	12.4	-0.9	-7.1%	B	B	0	0	0	0.00%	267	0	0	0	0.0%	
		EBT	540	549	541	554	24.1	24.5	-0.4	-1.7%	C	C	15	16	-1	-4.79%	607	474	462	13	2.7%	
		NBL	76	94	72	97	119.7	117.9	1.8	1.5%	F	F	90	83	7	8.51%	70	191	211	-20	-9.5%	
		NBR	55	66	52	67	18.9	18.6	0.3	1.8%	B	B	0	0	0	3.57%	120	10	8	2	25.2%	
		NBT	274	339	256	350	55.6	60.1	-4.5	-7.5%	E	E	106	109	-3	-2.61%	433	199	222	-23	-10.6%	
		SBL	101	109	98	107	151.0	154.1	-3.1	-2.0%	F	F	167	165	2	1.12%	130	471	475	-4	-0.8%	
		SBR	175	180	170	179	41.5	43.1	-1.5	-3.6%	D	D	8	10	-2	-20.79%	130	290	255	34	13.5%	
		SBT	283	310	280	312	92.9	95.5	-2.5	-2.7%	F	F	269	277	-8	-2.87%	400	471	474	-3	-0.5%	
		WBL	32	34	35	36	94.8	93.5	1.3	1.4%	F	F	38	44	-6	-13.02%	382	484	516	-32	-6.2%	
		WBR	182	183	181	181	26.1	26.1	0.0	-0.1%	C	C	233	229	4	1.81%	530	620	621	-1	-0.1%	
		WBT	698	685	701	689	27.7	27.2	0.5	1.7%	C	C	233	229	4	1.81%	530	620	621	-1	-0.1%	
		<b>All</b>	<b>2664</b>	<b>2798</b>	<b>2636</b>	<b>2828</b>	<b>51.4</b>	<b>52.0</b>	<b>-0.5</b>	<b>-1.0%</b>	<b>D</b>	<b>D</b>	<b>125</b>	<b>125</b>	<b>-1</b>	<b>-0.42%</b>		<b>622</b>	<b>622</b>	<b>0</b>	<b>0.0%</b>	
7	Maxwell Street at Buchanan Boulevard <sup>2</sup> (Unsignalized)	EBL	7	37	12	40	1374.8	1273.0	101.8	8.0%	F	F	441	510	-69	-13.57%	465	554	615	-61	-9.8%	
		EBR	8	48	13	49	1181.6	984.3	197.3	20.0%	F	F	163	192	-29	-15.09%	465	190	218	-28	-12.9%	
		EBT			0	0		0.0				A		192				465		218		
		NBL	47	55	44	57	83.8	96.3	-12.5	-13.0%	F	F	301	383	-82	-21.35%	558	451	516	-65	-12.6%	
		NBR			0	0		0.0				A		383				558		516		
		NBT	397	462	367	474	110.7	107.1	3.6	3.3%	F	F	441	383	58	15.10%	558	554	516	38	7.5%	
		SBL			0	0		0.0				A		1				432		153		
		SBR	45	48	46	50	3.9	2.3	1.7	74.8%	A	A	1	1	0	12.61%	432	127	153	-26	-17.2%	
		SBT	334	361	336	367	1.9	1.3	0.6	44.8%	A	A	1	1	0	12.61%	432	127	153	-26	-17.2%	
		WBL			0	0		0.0				A		0				295		0		
		WBR			0	0		0.0				A		510				295		615		
		WBT			0	0		0.0				A		0				295		0		
		<b>All</b>	<b>840</b>	<b>1011</b>	<b>818</b>	<b>1037</b>	<b>79.6</b>	<b>85.8</b>	<b>-6.2</b>	<b>-7.2%</b>	<b>F</b>	<b>F</b>	<b>225</b>	<b>213</b>	<b>12</b>	<b>5.48%</b>		<b>554</b>	<b>615</b>	<b>-61</b>	<b>-9.8%</b>	
8	Duke Street at Main Street <sup>1</sup>	EBL	174	178	168	172	48.9	49.1	-0.3	-0.5%	D	D	57	53	4	7.98%	198	310	311	0	-0.1%	
		EBT	443	449	440	446	37.3	37.8	-0.4	-1.2%	D	D	117	118	-1	-0.74%	323	331	334	-3	-0.8%	
		NBL	246	246	274	274	13.9	13.9	0.0	0.4%	B	B	21	25	-4	-14.80%	204	412	408	4	1.0%	
		NBR	27	27	29	28	13.2	12.8	0.5	3.6%	B	B	73	64	9	14.65%	300	404	400	5	1.2%	
		NBT	1175	1167	1143	1133	14.7	14.1	0.6	4.3%	B	B	83	73	10	13.30%	300	428	423	5	1.1%	
		WBR	26	27	23	24	28.0	28.9	-1.0	-3.3%	C	C	54	53	1	1.78%	221	253	255	-2	-0.9%	
		WBT	285	276	278	270	34.8	35.2	-0.4	-1.2%	C	D	65	64	1	1.34%	221	271	273	-2	-0.8%	
				<b>All</b>	<b>2376</b>	<b>2370</b>	<b>2355</b>	<b>2347</b>	<b>23.9</b>	<b>23.6</b>	<b>0.3</b>	<b>1.2%</b>	<b>C</b>	<b>C</b>	<b>67</b>	<b>64</b>	<b>3</b>	<b>4.60%</b>		<b>432</b>	<b>425</b>	<b>7</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
9	Duke Street at Peabody Street <sup>1</sup> (Unsignalized)	EBL	30	28	31	28	14.9	16.0	-1.1	-6.9%	B	C	1	1	0	-32.84%	390	53	56	-4	-6.2%
		EBT	12	11	16	15	19.0	20.6	-1.6	-7.9%	C	C	1	1	0	-32.84%	390	53	56	-4	-6.2%
		NBL	102	102	105	104	0.8	0.8	0.1	8.9%	A	A	0	0	0	0.00%	140	0	0	0	0.0%
		NBR	3	3	4	4	0.6	3.1	-2.4	-79.4%	A	A	12	17	-5	-31.24%	140	156	272	-116	-42.7%
		NBT	1409	1405	1407	1399	5.9	6.2	-0.4	-5.6%	A	A	12	17	-5	-31.24%	140	156	272	-116	-42.7%
		WBR	7	7	8	8	16.3	13.2	3.1	23.1%	C	B	0	0	0	-65.22%	543	27	38	-11	-29.8%
		WBT	29	27	31	30	16.5	17.1	-0.6	-3.3%	C	C	0	0	0	-65.22%	543	27	38	-11	-29.8%
	<b>All</b>	<b>1591</b>	<b>1583</b>	<b>1601</b>	<b>1588</b>	<b>6.0</b>	<b>6.4</b>	<b>-0.4</b>	<b>-5.9%</b>	<b>A</b>	<b>A</b>	<b>4</b>	<b>5</b>	<b>-2</b>	<b>-31.27%</b>		<b>156</b>	<b>272</b>	<b>-116</b>	<b>-42.7%</b>	
10	Memorial Street at Duke Street <sup>1</sup> (Unsignalized)	EBL1	1	0	1	0	5.5	3.5	2.0	56.8%	A	A	9	0	9	144500.00%	370	343	3	340	10924.9%
		EBL2	9	10	13	15	14.0	15.5	-1.5	-9.8%	B	C	29	0	29	468400.00%	370	401	3	398	12797.6%
		NBL	9	10	10	10	8.8	6.8	2.0	28.9%	A	A	35	22	14	63.61%	213	297	287	9	3.2%
		NBT1	102	1500	104	1492	10.3	8.4	1.9	22.2%	B	A	9	22	-13	-58.07%	213	343	287	56	19.4%
		NBT2	1399		1394		8.9	6.9	1.9	27.7%	A	A	29	22	8	35.84%	213	401	287	114	39.6%
			<b>All</b>	<b>1519</b>	<b>1520</b>	<b>1522</b>	<b>1517</b>	<b>9.0</b>	<b>7.1</b>	<b>1.9</b>	<b>26.6%</b>	<b>A</b>	<b>A</b>	<b>22</b>	<b>13</b>	<b>9</b>	<b>72.96%</b>		<b>402</b>	<b>287</b>	<b>114</b>
11	Chapel Hill Street at Duke Street <sup>1</sup>	EBL	152	149	163	161	48.5	61.5	-13.1	-21.3%	D	E	43	67	-24	-35.37%	220	338	350	-12	-3.4%
		EBT	366	365	389	388	16.5	17.0	-0.6	-3.3%	B	B	33	35	-2	-6.42%	336	345	365	-20	-5.6%
		NBL	221	221	189	189	40.2	38.0	2.3	6.0%	D	D	167	147	20	13.85%	455	582	520	63	12.1%
		NBR	113	113	111	111	9.5	7.7	1.7	22.6%	A	A	151	131	20	15.38%	455	563	500	63	12.6%
		NBT	1339	1343	1320	1318	43.2	40.8	2.4	5.8%	D	D	167	147	20	13.85%	455	582	520	63	12.1%
		WBR	18	18	23	23	21.9	15.7	6.2	39.7%	C	B	183	121	62	51.32%	275	399	397	2	0.6%
		WBT	712	717	747	749	23.3	17.2	6.0	35.0%	C	B	203	140	63	45.06%	275	429	427	2	0.5%
	<b>All</b>	<b>2922</b>	<b>2926</b>	<b>2943</b>	<b>2939</b>	<b>33.6</b>	<b>31.3</b>	<b>2.3</b>	<b>7.5%</b>	<b>C</b>	<b>C</b>	<b>135</b>	<b>112</b>	<b>23</b>	<b>20.35%</b>		<b>582</b>	<b>520</b>	<b>63</b>	<b>12.1%</b>	
12	Chapel Hill Street at Willard Street <sup>1</sup> (Unsignalized)	EBR	59	57	55	52	5.8	1.3	4.5	345.4%	A	A	13	0	13	2931.88%	275	303	72	231	321.5%
		EBT	420	421	446	447	11.3	1.6	9.7	617.5%	B	A	13	0	13	2931.88%	275	303	72	231	321.5%
		NBL	41	43	40	42	142.2	47.4	94.9	200.3%	F	E	108	18	90	508.26%	460	299	203	96	47.6%
		NBR	119	118	97	93	105.7	26.3	79.4	301.7%	F	D	108	18	90	508.26%	460	299	203	96	47.6%
		WBL	81	79	59	57	4.6	4.0	0.5	13.6%	A	A	21	6	15	271.82%	142	240	271	-31	-11.4%
		WBT	689	692	729	730	18.3	9.5	8.8	92.7%	C	A	48	20	28	139.05%	205	238	278	-40	-14.4%
	<b>All</b>	<b>1409</b>	<b>1410</b>	<b>1426</b>	<b>1421</b>	<b>25.7</b>	<b>8.7</b>	<b>17.0</b>	<b>195.7%</b>	<b>D</b>	<b>A</b>	<b>52</b>	<b>10</b>	<b>41</b>	<b>401.58%</b>		<b>310</b>	<b>284</b>	<b>26</b>	<b>9.3%</b>	

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
13	Pettigrew Street at Chapel Hill Street <sup>1</sup>	EBR	137	141	164	167	6.3	3.3	3.1	93.7%	A	A	50	3	47	1693.97%	206	278	193	85	44.1%
		EBT	402	398	379	373	7.7	4.1	3.6	87.5%	A	A	56	9	47	517.08%	206	295	240	55	22.9%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			248	246		47.3				D		78				377		384	
		NBR			40	41		36.5				D		58				377		355	
		WBL	24	25	38	37	35.2	15.1	20.2	134.1%	D	B	118	33	85	254.52%	222	299	244	55	22.4%
		WBT	770	771	542	541	38.3	13.9	24.4	175.0%	D	B	118	33	85	254.52%	275	299	244	55	22.4%
		WBT LRT	6	6	N/A	N/A	5.3	N/A	N/A	N/A	A	N/A	9	N/A	N/A	N/A		247	N/A	N/A	N/A
<b>All</b>	<b>1345</b>	<b>1335</b>	<b>1410</b>	<b>1405</b>	<b>25.6</b>	<b>16.6</b>	<b>9.0</b>	<b>54.1%</b>	<b>C</b>	<b>B</b>	<b>59</b>	<b>36</b>	<b>23</b>	<b>64.35%</b>		<b>300</b>	<b>387</b>	<b>-87</b>	<b>-22.5%</b>		
14	Blackwell Street at Pettigrew Street <sup>2</sup>	EBL	16	15	25	26	26.8	26.4	0.4	1.4%	C	C	27	3	24	863.27%	150	263	59	204	343.1%
		EBR	104	107	53	53	16.0	11.9	4.1	34.8%	B	B	16	10	7	66.69%	785	235	198	36	18.4%
		EBT	106	108	142	143	25.9	18.1	7.8	42.8%	C	B	27	17	10	58.62%	785	263	223	40	18.0%
		EBT LRT	6	6	N/A	N/A	1.4	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		62	N/A	N/A	N/A
		NBL			42	43		20.1				C		4				100		142	
		NBR	68	67	49	47	8.5	12.1	-3.6	-29.6%	A	B	7	16	-8	-53.86%	148	124	176	-52	-29.7%
		NBT	209	204	206	200	16.3	16.2	0.0	0.3%	B	B	16	22	-6	-25.76%	148	147	190	-43	-22.4%
		SBL	29	29	72	74	13.7	12.8	0.9	6.8%	B	B	29	10	19	181.65%	98	164	96	68	70.2%
		SBR			43	44		2.4				A		10				98		96	
		SBT	217	219	185	187	7.2	7.1	0.1	2.0%	A	A	29	10	19	181.65%	98	164	96	68	70.2%
		WBL			35	35		5.8				A		1				143		30	
		WBR			48	49		10.9				B		2				375		103	
		WBT			130	126		6.3				A		5				375		117	
WBT LRT	6	6	N/A	N/A	0.2	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		73	N/A	N/A	N/A		
<b>All</b>	<b>777</b>	<b>749</b>	<b>1029</b>	<b>1027</b>	<b>14.0</b>	<b>12.2</b>	<b>1.8</b>	<b>14.9%</b>	<b>B</b>	<b>B</b>	<b>17</b>	<b>9</b>	<b>8</b>	<b>87.29%</b>		<b>263</b>	<b>230</b>	<b>33</b>	<b>14.2%</b>		
15	Blackwell Street at Ramseur Street <sup>1</sup>	EBL	38	40	107	111	15.3	18.6	-3.3	-17.7%	B	B	29	31	-3	-8.76%	1081	173	192	-19	-10.1%
		EBR	185	186	185	190	19.0	14.3	4.8	33.3%	B	B	29	59	-31	-51.66%	263	175	260	-85	-32.8%
		EBT	348	348	376	371	15.2	17.0	-1.7	-10.3%	B	B	29	31	-3	-8.76%	1081	173	192	-19	-10.1%
		NBR	91	88	59	57	1.6	2.7	-1.1	-41.6%	A	A	0	11	-10	-98.94%	98	18	129	-111	-86.1%
		NBT	134	131	220	218	4.2	6.8	-2.6	-37.7%	A	A	3	24	-21	-88.41%	98	49	195	-146	-74.7%
		SBL	41	42	80	81	11.7	14.7	-3.0	-20.2%	B	B	5	13	-8	-60.98%	200	96	171	-75	-43.8%
		SBT	62	62	114	115	10.5	13.3	-2.8	-20.9%	B	B	5	13	-8	-60.98%	200	96	171	-75	-43.8%
		<b>All</b>	<b>897</b>	<b>897</b>	<b>1141</b>	<b>1143</b>	<b>12.5</b>	<b>13.5</b>	<b>-1.0</b>	<b>-7.1%</b>	<b>B</b>	<b>B</b>	<b>14</b>	<b>26</b>	<b>-12</b>	<b>-45.90%</b>		<b>175</b>	<b>263</b>	<b>-89</b>	<b>-33.6%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
16	Main Street at Corcoran Street <sup>2</sup>	EBL	48	46	43	41	31.7	33.3	-1.6	-4.7%	C	C	59	57	2	3.90%	158	321	353	-32	-9.0%
		EBR	10	10	23	24	22.8	24.7	-1.9	-7.5%	C	C	48	46	2	4.68%	158	305	337	-32	-9.4%
		EBT	261	253	231	223	30.3	31.6	-1.3	-4.2%	C	C	59	57	2	3.90%	158	321	353	-32	-9.0%
		NBL	13	14	38	38	9.9	9.8	0.1	1.2%	A	A	7	16	-9	-57.59%	202	121	182	-60	-33.1%
		NBR	6	7	15	16	8.1	7.4	0.7	9.2%	A	A	4	12	-8	-70.02%	202	112	172	-60	-34.8%
		NBT	152	150	274	275	7.3	8.8	-1.5	-17.0%	A	A	7	16	-9	-57.59%	202	121	182	-60	-33.1%
		SBL	75	72	56	57	15.3	14.9	0.5	3.1%	B	B	11	13	-2	-16.06%	172	164	188	-25	-13.0%
		SBR	34	33	37	35	7.7	8.0	-0.4	-4.4%	A	A	6	8	-2	-21.22%	172	143	168	-25	-14.6%
		SBT	86	82	158	154	11.1	11.0	0.2	1.7%	B	B	11	13	-2	-16.06%	172	164	188	-25	-13.0%
		WBL	7	12	13	18	25.0	32.8	-7.8	-23.8%	C	C	24	30	-5	-17.64%	310	269	279	-10	-3.7%
		WBR	73	122	46	66	16.6	21.2	-4.7	-22.0%	B	C	18	21	-4	-16.98%	310	248	258	-10	-4.0%
		WBT	116	190	118	165	24.4	30.8	-6.5	-21.0%	C	C	24	30	-5	-17.64%	310	269	279	-10	-3.7%
	<b>All</b>	<b>881</b>	<b>991</b>	<b>1053</b>	<b>1112</b>	<b>20.0</b>	<b>19.1</b>	<b>0.8</b>	<b>4.4%</b>	<b>B</b>	<b>B</b>	<b>23</b>	<b>27</b>	<b>-3</b>	<b>-12.61%</b>		<b>340</b>	<b>381</b>	<b>-41</b>	<b>-10.7%</b>	
17	Mangum Street at Main Street <sup>1</sup>	EBR	32	29	25	24	35.8	36.9	-1.1	-2.9%	D	D	61	48	13	27.68%	311	379	357	22	6.3%
		EBT	309	303	278	272	32.9	31.8	1.1	3.5%	C	C	74	61	13	22.03%	311	398	375	22	6.0%
		SBL	80	84	92	92	74.0	34.5	39.5	114.7%	E	C	364	135	229	170.19%	166	539	510	29	5.6%
		SBR	15	15	14	14	22.5	8.7	13.8	158.5%	C	A	346	120	226	188.62%	166	520	491	29	5.9%
		SBT	935	974	982	985	68.7	33.4	35.2	105.4%	E	C	364	135	229	170.19%	166	539	510	29	5.6%
		WBL	179	298	200	281	182.5	179.1	3.5	1.9%	F	F	277	282	-5	-1.62%	185	373	375	-2	-0.5%
		WBT	180	309	162	235	88.8	79.9	8.9	11.1%	F	E	112	57	55	96.17%	342	367	361	5	1.5%
			<b>All</b>	<b>1731</b>	<b>2012</b>	<b>1752</b>	<b>1903</b>	<b>75.3</b>	<b>53.6</b>	<b>21.7</b>	<b>40.4%</b>	<b>E</b>	<b>D</b>	<b>228</b>	<b>120</b>	<b>109</b>	<b>90.99%</b>		<b>539</b>	<b>512</b>	<b>27</b>
18	Mangum Street at Ramseur Street <sup>1</sup>	EBR	152	147	176	176	53.5	46.6	6.9	14.9%	D	D	55	54	1	2.77%	318	224	224	1	0.3%
		EBT	326	331	335	333	9.8	9.4	0.4	4.4%	A	A	55	54	1	2.77%	318	224	224	1	0.3%
		SBL	63	73	56	61	39.3	29.3	10.0	34.2%	D	C	219	213	6	2.79%	225	328	335	-7	-2.0%
		SBT	1084	1228	1151	1229	37.6	28.2	9.4	33.4%	D	C	219	213	6	2.79%	225	328	335	-7	-2.0%
			<b>All</b>	<b>1624</b>	<b>1779</b>	<b>1718</b>	<b>1799</b>	<b>33.6</b>	<b>26.5</b>	<b>7.1</b>	<b>27.0%</b>	<b>C</b>	<b>C</b>	<b>137</b>	<b>133</b>	<b>4</b>	<b>2.78%</b>		<b>328</b>	<b>335</b>	<b>-7</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
19	Mangum Street at Pettigrew Street <sup>1</sup>	EBR	100	101	119	122	4.9	15.8	-10.9	-68.8%	A	B	5	15	-10	-66.11%	375	137	254	-116	-45.9%
		EBT	104	103	143	142	19.9	23.5	-3.6	-15.3%	B	C	12	29	-18	-60.46%	375	158	290	-132	-45.5%
		EBT LRT	6	6	N/A	N/A	6.7	N/A	N/A	N/A	A	N/A	2	N/A	N/A	N/A		200	N/A	N/A	N/A
		SBL	42	47	56	58	1.8	0.6	1.2	192.0%	A	A	2	0	2	4037.50%	82	126	44	82	188.7%
		SBR			28	29		0.3				A		0			82		34		
		SBT	1189	1328	1243	1318	0.9	0.3	0.6	202.2%	A	A	2	0	2	4037.50%	82	126	44	82	188.7%
		WBL	100	101	122	123	4.9	68.3	-63.4	-92.8%	A	E	5	55	-50	-91.00%	353	137	302	-164	-54.5%
		WBT			185	181		33.7				C		36			400		241		
		WBT LRT	6	6	N/A	N/A	0.5	N/A	N/A	N/A	A	N/A	4	N/A	N/A	N/A		103	N/A	N/A	N/A
		<b>All</b>	<b>1463</b>	<b>1579</b>	<b>1897</b>	<b>1973</b>	<b>2.7</b>	<b>10.7</b>	<b>-8.0</b>	<b>-74.5%</b>	<b>A</b>	<b>B</b>	<b>4</b>	<b>19</b>	<b>-15</b>	<b>-78.88%</b>		<b>207</b>	<b>382</b>	<b>-174</b>	<b>-45.7%</b>
20	Pettigrew Street at Dillard Street <sup>2</sup>	EBL	154	155	25	26	17.5	11.6	5.9	50.9%	B	B	15	2	13	774.01%	153	215	57	159	279.9%
		EBR	9	9	27	27	7.6	9.7	-2.1	-21.6%	A	A	1	4	-3	-80.52%	917	89	150	-61	-40.5%
		EBT	99	103	195	197	11.5	12.2	-0.7	-5.9%	B	B	5	12	-7	-56.55%	917	126	179	-52	-29.3%
		EBT LRT	6	6	N/A	N/A	1.4	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		125	N/A	N/A	N/A
		NBL			53	51		25.0				C		6			155		89		
		NBR	4	4	72	69	17.7	14.1	3.6	25.8%	B	B	18	21	-3	-12.19%	822	191	231	-40	-17.2%
		NBT	193	188	251	251	22.5	16.6	5.9	35.4%	C	B	25	28	-3	-9.56%	822	203	245	-42	-17.2%
		SBL	137	133	97	96	37.1	24.6	12.5	50.8%	D	C	65	46	19	40.97%	264	288	252	36	14.2%
		SBR			16	16		13.4				B		33			264		225		
		SBT	221	217	244	238	23.1	16.9	6.2	36.8%	C	B	65	46	19	40.97%	264	288	252	36	14.2%
		WBL	9	9	67	69	21.7	17.8	3.9	22.2%	C	B	9	10	-2	-17.56%	695	129	183	-53	-29.1%
		WBR	87	89	32	32	22.6	11.7	11.0	94.1%	C	B	9	6	2	36.09%	695	129	168	-39	-23.0%
		WBT			78	78		16.3				B		10			695		183		
		WBT LRT	6	6	N/A	N/A	5.2	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>933</b>	<b>907</b>	<b>1158</b>	<b>1150</b>	<b>22.4</b>	<b>16.5</b>	<b>5.9</b>	<b>35.9%</b>	<b>C</b>	<b>B</b>	<b>23</b>	<b>19</b>	<b>4</b>	<b>23.11%</b>		<b>305</b>	<b>277</b>	<b>28</b>	<b>10.1%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
21	Fayetteville Street at Pettigrew Street <sup>1</sup>	EBL	5	5	10	10	50.9	38.7	12.2	31.6%	D	D	1	2	0	-24.64%	210	28	38	-9	-24.2%
		EBR	67	66	126	124	10.5	29.3	-18.8	-64.2%	B	C	0	17	-17	-99.28%	273	17	156	-139	-89.1%
		EBT	124	125	180	180	42.0	45.2	-3.2	-7.1%	D	D	30	48	-18	-37.75%	696	230	281	-51	-18.3%
		EBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL	6	6	20	19	8.1	5.2	2.9	56.0%	A	A	7	2	5	253.00%	70	132	64	67	105.1%
		NBR	146	146	128	133	0.4	0.5	-0.2	-31.3%	A	A	9	2	7	346.06%	70	131	64	67	103.8%
		NBT	364	372	429	436	2.4	1.1	1.3	120.9%	A	A	7	2	5	253.00%	70	132	64	67	105.1%
		SBL	76	75	43	42	58.4	25.8	32.7	126.8%	E	C	28	6	23	408.04%	250	409	148	261	177.0%
		SBR	2	2	4	4	58.8	24.9	33.9	136.4%	E	C	193	91	101	110.87%	400	412	405	7	1.8%
		SBT	692	692	670	667	64.4	27.0	37.3	138.2%	E	C	193	91	101	110.87%	400	412	405	7	1.8%
		WBL	119	125	123	131	75.4	143.1	-67.7	-47.3%	E	F	51	133	-82	-61.71%	100	282	474	-192	-40.5%
		WBR	62	60	39	40	24.1	65.4	-41.3	-63.2%	C	E	20	62	-41	-67.07%	1570	203	378	-175	-46.3%
		WBT	47	46	84	83	51.2	64.0	-12.8	-20.0%	D	E	20	62	-41	-67.07%	1570	203	378	-175	-46.3%
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>1721</b>	<b>1720</b>	<b>1855</b>	<b>1869</b>	<b>40.3</b>	<b>31.1</b>	<b>9.2</b>	<b>29.5%</b>	<b>D</b>	<b>C</b>	<b>40</b>	<b>43</b>	<b>-3</b>	<b>-7.29%</b>		<b>413</b>	<b>500</b>	<b>-87</b>	<b>-17.4%</b>		
22	Fayetteville Street at Jackie Robinson Drive <sup>1</sup>	NBL	383	385	309	308	40.0	17.8	22.3	125.4%	D	B	108	29	79	276.49%	277	373	275	98	35.6%
		NBT	511	519	560	567	23.6	10.8	12.8	118.2%	C	B	65	20	45	223.97%	286	378	240	138	57.6%
		SBR	4	5	30	31	1.5	6.9	-5.4	-78.1%	A	A	21	40	-19	-47.16%	70	175	195	-20	-10.4%
		SBT	874	878	889	891	6.1	7.2	-1.1	-15.4%	A	A	28	40	-12	-30.67%	70	194	195	-1	-0.3%
		WBL	158	155	157	151	45.3	43.9	1.4	3.3%	D	D	45	44	1	1.20%	345	244	239	5	2.1%
		WBR	5	5	17	21	7.7	41.5	-33.8	-81.5%	A	D	35	44	-9	-21.22%	345	232	239	-8	-3.3%
		WBT	5	5	8	8	39.0	42.9	-4.0	-9.2%	D	D	45	44	1	1.20%	603	244	239	5	2.1%
		<b>All</b>	<b>1939</b>	<b>1952</b>	<b>1970</b>	<b>1977</b>	<b>20.7</b>	<b>13.2</b>	<b>7.4</b>	<b>56.3%</b>	<b>C</b>	<b>B</b>	<b>49</b>	<b>37</b>	<b>12</b>	<b>32.48%</b>		<b>378</b>	<b>288</b>	<b>90</b>	<b>31.2%</b>
23	Morehead Avenue at Fayetteville Street <sup>1</sup>	EBL	120	123	129	130	53.9	54.5	-0.6	-1.1%	D	D	39	43	-4	-9.58%	1260	205	214	-9	-4.2%
		EBR	0	0	18	17	0.0	6.7	-6.7	-100.0%	A	A	18	21	-3	-14.70%	1195	172	181	-9	-5.0%
		EBT	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	39	43	-4	-9.58%	1260	205	214	-9	-4.2%
		NBR	0	0	3	3	0.0	2.6	-2.6	-100.0%	A	A	5	3	2	56.06%	389	119	101	18	18.0%
		NBT	774	781	739	745	6.4	3.2	3.2	100.0%	A	A	8	6	2	36.31%	389	137	119	18	15.3%
		SBL	130	131	147	146	11.6	6.2	5.4	87.3%	B	A	5	2	3	150.00%	255	144	86	59	68.4%
		SBT	901	902	899	896	5.6	2.4	3.2	132.1%	A	A	17	5	11	224.82%	275	360	109	251	230.1%
		<b>All</b>	<b>1926</b>	<b>1937</b>	<b>1935</b>	<b>1937</b>	<b>9.3</b>	<b>6.5</b>	<b>2.8</b>	<b>43.2%</b>	<b>A</b>	<b>A</b>	<b>19</b>	<b>18</b>	<b>1</b>	<b>5.79%</b>		<b>360</b>	<b>214</b>	<b>146</b>	<b>68.2%</b>



Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
24	Pettigrew Street at Grant Street <sup>2</sup>	EBL	37	39	25	27	17.1	17.5	-0.4	-2.3%	B	B	3	32	-30	-91.38%	155	57	291	-234	-80.5%	
		EBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	17	0	17	0.00%	1570	226	0	226	0.0%	
		EBT	308	307	324	328	10.9	15.9	-5.0	-31.6%	B	B	17	32	-15	-46.75%	1570	226	291	-65	-22.3%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	59	58	53	54	28.8	25.5	3.4	13.3%	C	C	31	44	-13	-29.71%	625	256	306	-49	-16.1%	
		NBR	97	97	188	185	18.9	21.4	-2.5	-11.5%	B	C	23	35	-11	-32.52%	625	242	290	-48	-16.6%	
		NBT	87	83	123	119	27.9	25.0	2.9	11.4%	C	C	31	44	-13	-29.71%	625	256	306	-49	-16.1%	
		SBL	123	118	137	134	35.5	25.9	9.7	37.3%	D	C	47	23	23	99.33%	266	316	255	61	23.8%	
		SBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	47	14	33	237.03%	266	316	241	75	31.2%	
		SBT	109	107	61	59	33.5	21.4	12.2	56.9%	C	C	47	23	23	99.33%	266	316	255	61	23.8%	
		WBL	214	215	137	140	17.0	16.2	0.8	4.6%	B	B	16	9	7	83.94%	70	207	118	89	75.8%	
		WBR	92	92	92	92	10.6	8.3	2.3	28.1%	B	A	12	7	5	73.31%	193	193	140	52	37.4%	
		WBT	169	173	193	200	11.2	11.0	0.2	1.7%	B	B	13	11	2	18.71%	193	195	151	44	28.9%	
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
<b>All</b>	<b>1306</b>	<b>1289</b>	<b>1334</b>	<b>1338</b>	<b>18.8</b>	<b>18.0</b>	<b>0.7</b>	<b>4.0%</b>	<b>B</b>	<b>B</b>	<b>22</b>	<b>23</b>	<b>-1</b>	<b>-5.32%</b>		<b>343</b>	<b>332</b>	<b>10</b>	<b>3.1%</b>			
25	Gann Street at Pettigrew Street <sup>2</sup> (Unsignalized)	EBR	156	157	121	121	3.8	2.9	0.9	29.6%	A	A	0	0	0	0.00%	206	7	0	7	0.0%	
		EBT	414	410	501	496	4.3	2.8	1.5	53.8%	A	A	0	0	0	0.00%	206	7	0	7	0.0%	
		NBL	126	128	169	172	15.5	15.7	-0.1	-0.9%	C	C	3	3	0	1.34%	248	134	122	12	9.9%	
		NBR	88	87	44	43	13.3	13.1	0.2	1.7%	B	B	3	3	0	1.34%	248	134	122	12	9.9%	
		WBL	27	26	64	63	8.7	10.1	-1.4	-14.1%	A	B	0	0	0	-100.00%	367	13	39	-27	-67.4%	
		WBT	414	420	350	357	0.6	0.5	0.1	25.3%	A	A	0	0	0	0.00%	367	0	0	0	0.0%	
		<b>All</b>	<b>1225</b>	<b>1228</b>	<b>1249</b>	<b>1252</b>	<b>4.9</b>	<b>4.7</b>	<b>0.3</b>	<b>5.5%</b>	<b>A</b>	<b>A</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0.57%</b>		<b>134</b>	<b>122</b>	<b>12</b>	<b>9.9%</b>	
26	Alston Avenue at Gann Street <sup>1</sup>	EBL	33	34	30	31	52.2	56.0	-3.9	-6.9%	D	E	10	10	0	-1.08%	196	153	156	-3	-2.2%	
		EBR	177	175	188	186	7.1	7.2	-0.2	-2.1%	A	A	4	6	-1	-22.01%	196	142	151	-10	-6.4%	
		NBL	129	128	136	137	19.1	18.6	0.5	2.7%	B	B	45	47	-2	-4.80%	300	414	395	19	4.9%	
		NBT	1473	1484	1490	1500	9.0	9.7	-0.8	-7.9%	A	A	45	47	-2	-4.80%	528	414	395	19	4.9%	
		SBR	21	20	23	22	14.3	10.2	4.1	40.1%	B	B	72	51	21	40.57%	190	550	208	342	164.6%	
		SBT	1358	1346	1360	1355	15.1	13.4	1.7	12.8%	B	B	74	59	15	26.36%	1037	554	223	330	148.0%	
		WBL	154	153	151	150	39.6	55.3	-15.7	-28.4%	D	E	36	52	-16	-30.88%	188	227	300	-73	-24.2%	
		WBR	153	150	150	147	11.2	11.9	-0.7	-5.6%	B	B	1	1	0	2.76%	1000	83	80	3	4.2%	
		WBT	1	1	1	1	34.1	24.4	9.7	39.6%	C	C	4	4	0	6.54%	1000	108	103	4	4.3%	
<b>All</b>	<b>3499</b>	<b>3491</b>	<b>3529</b>	<b>3529</b>	<b>13.6</b>	<b>13.8</b>	<b>-0.3</b>	<b>-1.9%</b>	<b>B</b>	<b>B</b>	<b>32</b>	<b>31</b>	<b>2</b>	<b>5.26%</b>		<b>554</b>	<b>409</b>	<b>145</b>	<b>35.4%</b>			

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
27	Roxboro Street at Pettigrew Street <sup>1</sup>	EBL	34	36	77	77	23.4	26.4	-2.9	-11.2%	C	C	10	15	-5	-36.48%	220	152	139	13	9.4%	
		EBT	112	114	122	123	15.1	14.7	0.4	2.8%	B	B	10	15	-5	-36.48%	288	152	139	13	9.4%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	
		NBL			206	205		20.9				C		110				541		474		
		NBR	152	153	127	127	24.7	7.9	16.9	214.5%	C	A	258	99	160	161.77%	541	569	458	111	24.3%	
		NBT	1563	1577	1228	1244	35.6	20.5	15.1	73.7%	D	C	273	110	163	148.68%	541	587	474	113	23.8%	
		WBR			46	46		19.5				B		13				916		163		
		WBT			101	99		28.5				C		20				916		178		
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		45	N/A	N/A	N/A	
		All	1887	1880	1907	1921	33.0	20.0	13.0	65.0%	C	B	118	54	63	116.26%		587	474	113	23.8%	
28	LRT at Buchanan Boulevard <sup>2</sup>	EBT LRT	6	6			0.0				A		0					0				
		NBT	453	462			54.8				F		137					213				
		SBT	343	361			3.9				A		30					354				
		WBT LRT	6	6			5.1				A		9					235				
		All	808	823			32.4				D		44					356				
	Downtown Durham Corridor	EB LRT	6	6			20.2															
	Downtown Durham Corridor	WB LRT	6	6			22.0															
		All	46845	49870	46792	50848	31.7	27.7			C	C	79	88	-9	-9.72%		827	851	-24	-2.8%	

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied





-  Indicates LRT Movement
-  Indicates Traffic Impact
-  Indicates Traffic Impact below Mid-D
-  Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet

Table 11: D-O LRT: Downtown Durham Segment – VISSIM Intersection Analysis Output Summary - 2040 Build Option2 vs. 2040 No-Build AM Peak Hour 8:00 - 9:00 AM

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
1	Main Street at 9th Street <sup>1</sup>	EBL	84	84	81	84	25.5	28.7	-3.2	-11.2%	C	C	10	12	-2	-13.8%	625	109	111	-2	-1.8%
		EBR	63	64	61	62	22.1	26.8	-4.6	-17.2%	C	C	63	77	-14	-18.7%	900	437	428	9	2.1%
		EBT	366	364	343	348	27.3	30.8	-3.6	-11.5%	C	C	73	88	-15	-17.4%	900	454	445	9	2.0%
		NBL	72	76	72	78	31.2	29.3	1.9	6.4%	C	C	85	83	2	2.5%	106	227	223	4	1.9%
		NBR	121	119	111	111	17.1	18.6	-1.5	-8.1%	B	B	68	66	2	2.8%	106	204	199	4	2.1%
		NBT	189	187	173	176	25.5	27.4	-2.0	-7.2%	C	C	85	83	2	2.5%	106	227	223	4	1.9%
		SBL	126	124	127	127	28.5	27.8	0.7	2.4%	C	C	116	125	-9	-7.6%	330	464	485	-21	-4.3%
		SBR	84	83	95	96	33.6	33.8	-0.1	-0.4%	C	C	94	104	-10	-9.3%	330	435	456	-21	-4.6%
		SBT	369	373	375	384	38.8	37.2	1.6	4.4%	D	D	116	125	-9	-7.6%	330	464	485	-21	-4.3%
		WBL	135	133	125	128	13.0	18.8	-5.8	-30.7%	B	B	6	10	-4	-40.0%	190	130	139	-9	-6.5%
		WBR	116	116	111	114	7.3	13.2	-5.8	-44.3%	A	B	11	27	-16	-58.6%	300	298	328	-30	-9.3%
		WBT	256	257	265	274	10.4	16.7	-6.3	-37.7%	B	B	17	35	-18	-51.6%	300	320	350	-30	-8.7%
		<b>All</b>	<b>1980</b>	<b>1980</b>	<b>1940</b>	<b>1982</b>	<b>24.6</b>	<b>27.0</b>	<b>-2.4</b>	<b>-9.0%</b>	<b>C</b>	<b>C</b>	<b>62</b>	<b>70</b>	<b>-8</b>	<b>-11.0%</b>		<b>474</b>	<b>487</b>	<b>-12</b>	<b>-2.5%</b>
2	Main Street at Iredell Street <sup>1</sup> (Unsignalized)	EBL	118	117	118	119	3.0	3.3	-0.3	-9.9%	A	A	0	8	-7	-93.9%	60	70	91	-20	-22.6%
		EBT	494	490	462	467	2.2	3.2	-0.9	-29.6%	A	A	0	8	-7	-93.9%	290	70	91	-20	-22.6%
		SBL	44	42	38	37	16.7	17.0	-0.3	-1.7%	C	C	0	3	-3	-96.0%	370	26	40	-13	-33.2%
		SBR	22	21	21	20	10.7	11.5	-0.8	-6.7%	B	B	0	3	-3	-96.0%	370	26	40	-13	-33.2%
		WBR	138	141	138	145	2.8	2.6	0.2	8.6%	A	A	1	1	0	50.0%	290	130	97	32	33.3%
		WBT	485	485	481	496	3.9	3.7	0.3	6.8%	A	A	1	1	0	50.0%	290	130	97	32	33.3%
				<b>All</b>	<b>1302</b>	<b>1296</b>	<b>1258</b>	<b>1284</b>	<b>3.6</b>	<b>3.9</b>	<b>-0.2</b>	<b>-6.1%</b>	<b>A</b>	<b>A</b>	<b>0</b>	<b>4</b>	<b>-3</b>	<b>-87.8%</b>		<b>159</b>	<b>140</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
3	Main Street at Broad Street <sup>1</sup>	EBL	13	14	13	14	77.8	57.2	20.6	36.0%	E	E	23	43	-20	-46.0%	198	338	390	-52	-13.3%	
		EBR	151	147	144	143	2.5	6.9	-4.5	-64.3%	A	A	0	3	-3	-99.2%	317	11	54	-43	-78.8%	
		EBT	375	371	342	347	30.3	37.3	-7.0	-18.9%	C	D	73	101	-28	-27.7%	317	425	444	-19	-4.2%	
		NBL	271	273	241	252	36.1	30.1	6.0	19.9%	D	C	127	202	-75	-37.2%	121	271	275	-4	-1.5%	
		NBR	250	250	237	243	2.5	2.7	-0.1	-4.5%	A	A	2	0	2	409.0%	116	158	48	110	232.2%	
		NBT	302	302	290	299	26.5	17.3	9.2	53.0%	C	B	127	202	-75	-37.2%	121	271	275	-4	-1.5%	
		SBL	65	61	69	66	67.5	60.5	7.0	11.6%	E	E	26	24	2	8.4%	130	156	180	-24	-13.2%	
		SBR	50	51	50	52	28.6	28.8	-0.3	-0.9%	C	C	52	66	-14	-20.9%	450	431	466	-35	-7.4%	
		SBT	399	389	411	412	46.5	43.7	2.8	6.3%	D	D	82	96	-13	-14.0%	450	473	508	-35	-6.8%	
		WBL	162	160	171	175	66.3	68.3	-2.0	-2.9%	E	E	68	92	-24	-26.2%	412	328	463	-136	-29.3%	
		WBR	29	29	33	32	17.2	21.7	-4.5	-20.8%	B	C	15	23	-9	-37.0%	560	292	390	-98	-25.1%	
		WBT	301	302	328	337	24.0	26.9	-2.9	-10.7%	C	C	45	57	-12	-21.8%	560	375	473	-98	-20.7%	
	<b>All</b>	<b>2369</b>	<b>2349</b>	<b>2328</b>	<b>2372</b>	<b>31.3</b>	<b>30.9</b>	<b>0.3</b>	<b>1.0%</b>	<b>C</b>	<b>C</b>	<b>53</b>	<b>76</b>	<b>-22</b>	<b>-29.6%</b>		<b>496</b>	<b>578</b>	<b>-82</b>	<b>-14.2%</b>		
4	Pettigrew Street at 9th Street <sup>1</sup> (Unsignalized)	EBT LRT	6	6	N/A	N/A	1.9	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	
		NBR	28	30	28	29	10.3	9.0	1.3	14.7%	B	A	9	11	-2	-20.1%	720	209	174	36	20.6%	
		NBT	237	241	213	220	15.4	14.5	0.9	6.2%	C	B	9	11	-2	-20.1%	720	209	174	36	20.6%	
		SBL	23	24	24	25	1.9	1.6	0.3	21.6%	A	A	0	0	0	30.4%	105	103	53	50	95.2%	
		SBT	543	546	537	549	0.4	0.4	0.0	-3.3%	A	A	0	0	0	30.4%	105	103	53	50	95.2%	
		WBL	73	74	75	79	35.5	39.4	-3.9	-9.9%	E	E	29	33	-4	-12.1%	185	282	298	-16	-5.4%	
		WBR	146	141	143	145	40.0	38.7	1.2	3.2%	E	E	29	33	-4	-12.1%	185	282	298	-16	-5.4%	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A			0	N/A	N/A	N/A
			<b>All</b>	<b>1062</b>	<b>1056</b>	<b>1019</b>	<b>1047</b>	<b>11.9</b>	<b>11.9</b>	<b>0.0</b>	<b>0.2%</b>	<b>B</b>	<b>B</b>	<b>10</b>	<b>15</b>	<b>-5</b>	<b>-35.4%</b>		<b>306</b>	<b>310</b>	<b>-3</b>	<b>-1.1%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
5	Pettigrew Street at Swift Avenue <sup>1</sup> (Unsignalized)	EBL	6	6	6	6	34.1	104.7	-70.7	-67.5%	D	F	0	5	-5	-92.0%	506	21	73	-52	-71.5%	
		EBR	33	31	32	31	9.0	32.2	-23.1	-71.9%	A	D	0	5	-5	-92.0%	506	21	73	-52	-71.5%	
		EBT	2	2	1	2	12.0	42.6	-30.6	-71.8%	B	E	0	5	-5	-92.0%	506	21	73	-52	-71.5%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	192	188	186	191	7.9	25.1	-17.1	-68.4%	A	D	1	49	-48	-97.2%	443	105	440	-335	-76.1%	
		NBR	20	20	19	19	10.9	27.9	-17.0	-60.9%	B	D	58	204	-146	-71.8%	443	575	684	-109	-15.9%	
		NBT	807	808	752	777	19.3	47.1	-27.8	-59.1%	C	E	58	204	-146	-71.8%	443	575	684	-109	-15.9%	
		SBL	22	22	21	22	13.1	48.7	-35.6	-73.2%	B	E	1	12	-12	-95.8%	137	116	188	-72	-38.4%	
		SBR	38	38	40	42	1.4	1.9	-0.5	-24.6%	A	A	1	12	-12	-95.8%	137	116	188	-72	-38.4%	
		SBT	652	636	662	666	0.4	0.7	-0.3	-49.1%	A	A	1	12	-12	-95.8%	137	116	188	-72	-38.4%	
		WBL	1	1	1	1	6.4	38.6	-32.2	-83.4%	A	E	0	2	-2	-100.0%	515	0	9	-9	-100.0%	
		WBR	11	11	10	11	38.2	100.9	-62.7	-62.1%	E	F	0	2	-2	-100.0%	515	0	9	-9	-100.0%	
		WBT	2	2	2	2	23.7	106.4	-82.7	-77.7%	C	F	0	2	-2	-100.0%	515	0	9	-9	-100.0%	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		<b>All</b>	<b>1798</b>	<b>1765</b>	<b>1733</b>	<b>1770</b>	<b>10.6</b>	<b>26.2</b>	<b>-15.6</b>	<b>-59.7%</b>	<b>B</b>	<b>D</b>	<b>9</b>	<b>43</b>	<b>-34</b>	<b>-80.1%</b>		<b>575</b>	<b>684</b>	<b>-109</b>	<b>-15.9%</b>	
6	Main Street at Buchanan Boulevard <sup>1</sup>	EBL	134	127	134	128	51.8	52.8	-1.0	-1.8%	D	D	40	42	-3	-6.3%	215	329	421	-92	-21.8%	
		EBR	86	86	87	86	7.3	7.5	-0.2	-2.9%	A	A	0	0	0	50.0%	267	9	5	5	97.6%	
		EBT	464	464	476	475	23.8	24.4	-0.6	-2.5%	C	C	77	83	-6	-7.6%	607	562	579	-17	-3.0%	
		NBL	74	79	73	79	66.3	67.5	-1.2	-1.8%	E	E	35	36	-1	-3.6%	70	180	185	-5	-2.5%	
		NBR	63	61	65	63	11.9	13.1	-1.3	-9.5%	B	B	0	0	0	-93.5%	120	7	18	-10	-58.5%	
		NBT	177	171	183	177	44.1	48.2	-4.2	-8.6%	D	D	49	56	-7	-12.9%	433	191	206	-15	-7.1%	
		SBL	159	164	165	170	81.0	80.7	0.3	0.4%	F	F	125	134	-8	-6.2%	130	472	471	1	0.2%	
		SBR	171	169	171	170	23.2	24.4	-1.2	-4.9%	C	C	4	5	-1	-14.7%	130	190	176	14	7.9%	
		SBT	325	325	326	327	55.8	56.1	-0.3	-0.6%	E	E	156	154	3	1.7%	400	471	470	2	0.4%	
		WBL	50	50	52	51	60.4	62.5	-2.1	-3.3%	E	E	17	18	-1	-3.9%	382	168	163	5	2.9%	
		WBR	44	43	45	44	27.9	26.8	1.1	4.2%	C	C	59	58	1	2.3%	530	397	371	26	7.0%	
		WBT	293	293	293	293	27.7	27.6	0.2	0.6%	C	C	59	58	1	2.3%	530	397	371	26	7.0%	
		<b>All</b>	<b>2040</b>	<b>2032</b>	<b>2070</b>	<b>2063</b>	<b>39.0</b>	<b>39.8</b>	<b>-0.8</b>	<b>-2.0%</b>	<b>D</b>	<b>D</b>	<b>52</b>	<b>54</b>	<b>-2</b>	<b>-3.4%</b>		<b>568</b>	<b>579</b>	<b>-11</b>	<b>-1.9%</b>	

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
7	Maxwell Street at Buchanan Boulevard <sup>2</sup> (Unsignalized)	EBL	50	48	54	52	19.1	24.8	-5.7	-23.1%	C	C	15	25	-10	-41.3%	465	235	263	-28	-10.6%	
		EBR	71	70	75	74	11.6	15.1	-3.6	-23.5%	B	C	2	6	-4	-74.5%	465	82	134	-52	-38.9%	
		EBT			0	0		0.0				A		6				465		134		
		NBL	13	13	13	13	3.5	7.9	-4.4	-55.4%	A	A	1	7	-6	-84.0%	558	101	143	-42	-29.4%	
		NBR			0	0		0.0				A		7				558		143		
		NBT	263	263	267	267	6.7	7.5	-0.9	-11.6%	A	A	15	7	8	115.7%	558	235	143	92	64.7%	
		SBL			0	0		0.0				A		0				432		11		
		SBR	16	16	17	17	0.6	0.6	0.0	5.4%	A	A	0	0	0	1200.0%	432	52	11	41	355.0%	
		SBT	446	445	448	447	1.2	0.6	0.6	114.8%	A	A	0	0	0	1200.0%	432	52	11	41	355.0%	
		WBL			0	0		0.0				A		0				295		0		
		WBR			0	0		0.0				A		25				295		263		
		WBT			0	0		0.0				A		0				295		0		
		<b>All</b>	<b>859</b>	<b>855</b>	<b>873</b>	<b>870</b>	<b>4.8</b>	<b>5.6</b>	<b>-0.7</b>	<b>-13.4%</b>	<b>A</b>	<b>A</b>	<b>5</b>	<b>7</b>	<b>-1</b>	<b>-20.8%</b>		<b>235</b>	<b>263</b>	<b>-28</b>	<b>-10.6%</b>	
8	Duke Street at Main Street <sup>1</sup>	EBL	154	154	175	170	38.8	40.1	-1.3	-3.3%	D	D	34	43	-9	-21.8%	198	300	307	-7	-2.4%	
		EBT	403	405	369	374	37.7	36.7	1.0	2.7%	D	D	105	92	13	14.0%	323	329	329	-1	-0.2%	
		NBL	259	260	250	251	10.1	11.4	-1.3	-11.8%	B	B	15	16	-1	-6.9%	204	348	386	-38	-9.8%	
		NBR	49	47	41	40	10.5	11.1	-0.6	-5.3%	B	B	31	39	-7	-18.6%	300	393	389	3	0.9%	
		NBT	929	923	966	956	10.8	12.1	-1.3	-11.1%	B	B	39	47	-9	-18.0%	300	416	413	3	0.7%	
		WBR	21	21	22	22	17.5	21.0	-3.5	-16.8%	B	C	11	11	-1	-5.9%	221	151	156	-6	-3.6%	
		WBT	98	96	95	93	31.8	33.6	-1.8	-5.4%	C	C	19	20	-1	-5.2%	221	169	175	-6	-3.2%	
				<b>All</b>	<b>1912</b>	<b>1906</b>	<b>1917</b>	<b>1906</b>	<b>19.7</b>	<b>20.4</b>	<b>-0.7</b>	<b>-3.5%</b>	<b>B</b>	<b>C</b>	<b>36</b>	<b>38</b>	<b>-2</b>	<b>-5.6%</b>		<b>417</b>	<b>415</b>	<b>2</b>
9	Duke Street at Peabody Street <sup>1</sup> (Unsignalized)	EBL	11	11	17	16	13.1	10.5	2.6	24.3%	B	B	0	0	0	-50.0%	390	19	22	-3	-12.9%	
		EBT	3	3	3	3	10.7	10.4	0.3	2.9%	B	B	0	0	0	-50.0%	390	19	22	-3	-12.9%	
		NBL	63	62	60	59	0.7	0.6	0.1	7.8%	A	A	0	0	0	0.0%	140	0	0	0	0.0%	
		NBR	1	1	1	1	0.3	0.5	-0.3	-49.4%	A	A	0	2	-1	-75.2%	140	83	141	-58	-41.2%	
		NBT	1213	1207	1226	1218	2.2	3.1	-0.9	-28.6%	A	A	0	2	-1	-75.2%	140	83	141	-58	-41.2%	
		WBR	12	12	13	13	10.6	10.5	0.1	0.5%	B	B	0	0	0	-26.1%	543	31	41	-10	-24.2%	
		WBT	33	32	32	31	13.2	14.7	-1.5	-10.2%	B	B	0	0	0	-26.1%	543	31	41	-10	-24.2%	
				<b>All</b>	<b>1336</b>	<b>1328</b>	<b>1352</b>	<b>1341</b>	<b>2.6</b>	<b>3.5</b>	<b>-0.8</b>	<b>-24.3%</b>	<b>A</b>	<b>A</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>-69.1%</b>		<b>86</b>	<b>141</b>	<b>-55</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
10	Memorial Street at Duke Street <sup>1</sup> (Unsignalized)	EBL1	0	0	0	0	0.7	0.7	-0.1	-7.9%	A	A	5	0	5	0.0%	370	267	0	267	0.0%
		EBL2	4	5	4	5	9.5	8.9	0.6	6.6%	A	A	12	0	12	0.0%	370	361	0	361	0.0%
		NBL	14	15	20	20	4.6	3.6	1.0	26.2%	A	A	9	4	5	116.5%	213	267	209	58	27.6%
		NBT1	63	1265	60	1273	7.3	4.8	2.5	53.0%	A	A	5	4	1	20.5%	213	267	209	57	27.2%
		NBT2	1210		1223		4.6	2.8	1.8	63.6%	A	A	12	4	8	187.3%	213	361	209	151	72.2%
		<b>All</b>	<b>1291</b>	<b>1285</b>	<b>1307</b>	<b>1298</b>	<b>4.8</b>	<b>2.9</b>	<b>1.8</b>	<b>62.4%</b>	<b>A</b>	<b>A</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>245.2%</b>		<b>362</b>	<b>209</b>	<b>152</b>	<b>72.7%</b>
11	Chapel Hill Street at Duke Street <sup>1</sup>	EBL	200	196	199	193	22.9	20.3	2.6	12.7%	C	C	18	19	-1	-3.4%	220	326	307	19	6.3%
		EBT	670	669	688	690	27.0	15.1	11.9	78.8%	C	B	109	71	38	54.3%	336	385	381	5	1.2%
		NBL	120	115	122	117	27.1	26.4	0.7	2.8%	C	C	79	74	5	6.3%	455	301	293	8	2.8%
		NBR	125	126	130	132	32.8	12.4	20.5	165.7%	C	B	64	61	3	5.3%	455	282	275	7	2.5%
		NBT	1032	1026	1045	1039	28.0	27.8	0.2	0.7%	C	C	79	74	5	6.3%	455	301	293	8	2.8%
		WBR	55	58	58	61	25.6	13.6	12.1	89.0%	C	B	71	30	41	135.0%	275	377	291	86	29.4%
		WBT	360	361	384	383	27.8	16.5	11.3	68.2%	C	B	87	45	42	92.5%	275	406	321	85	26.7%
		<b>All</b>	<b>2562</b>	<b>2551</b>	<b>2626</b>	<b>2615</b>	<b>27.5</b>	<b>21.1</b>	<b>6.4</b>	<b>30.0%</b>	<b>C</b>	<b>C</b>	<b>72</b>	<b>53</b>	<b>19</b>	<b>35.5%</b>		<b>410</b>	<b>386</b>	<b>24</b>	<b>6.2%</b>
12	Chapel Hill Street at Willard Street <sup>1</sup> (Unsignalized)	EBR	138	137	136	137	12.4	1.6	10.8	696.4%	B	A	79	0	79	46522.2%	275	334	41	293	719.5%
		EBT	658	658	683	685	17.9	1.7	16.2	980.4%	C	A	79	0	79	46522.2%	275	334	41	293	719.5%
		NBL	14	13	15	15	31.6	15.5	16.1	104.1%	D	C	4	0	4	2050.0%	460	87	31	56	179.2%
		NBR	85	84	28	29	30.3	11.4	18.9	166.5%	D	B	4	0	4	2050.0%	460	87	31	56	179.2%
		WBL	99	95	51	47	14.3	7.9	6.4	81.8%	B	A	1	0	1	6433.3%	142	120	17	104	617.3%
		WBT	400	406	427	429	5.1	1.0	4.0	393.9%	A	A	0	0	0	2300.0%	205	62	7	54	733.5%
		<b>All</b>	<b>1394</b>	<b>1393</b>	<b>1339</b>	<b>1342</b>	<b>14.3</b>	<b>2.0</b>	<b>12.3</b>	<b>604.9%</b>	<b>B</b>	<b>A</b>	<b>28</b>	<b>0</b>	<b>28</b>	<b>25994.1%</b>		<b>334</b>	<b>66</b>	<b>268</b>	<b>407.3%</b>
13	Pettigrew Street at Chapel Hill Street <sup>1</sup>	EBR	268	270	256	260	7.0	3.6	3.4	95.1%	A	A	85	2	83	3402.3%	206	281	153	128	83.3%
		EBT	475	472	454	454	8.4	3.8	4.6	122.3%	A	A	94	9	84	892.4%	206	297	200	98	48.9%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			87	86		17.1				B		9				377		168	
		NBR			69	69		8.9				A		3				377		139	
		WBL	38	37	42	42	30.3	13.7	16.7	122.0%	C	B	56	17	39	233.2%	222	292	206	86	41.7%
		WBT	499	501	391	390	20.5	8.5	12.0	141.7%	C	A	56	17	39	233.2%	275	292	206	86	41.7%
		WBT LRT	6	6	N/A	N/A	5.6	N/A	N/A	N/A	A	N/A	9	N/A	N/A	N/A		247	N/A	N/A	N/A
		<b>All</b>	<b>1292</b>	<b>1280</b>	<b>1299</b>	<b>1301</b>	<b>13.4</b>	<b>6.7</b>	<b>6.8</b>	<b>101.6%</b>	<b>B</b>	<b>A</b>	<b>50</b>	<b>10</b>	<b>40</b>	<b>419.0%</b>		<b>299</b>	<b>255</b>	<b>45</b>	<b>17.5%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
14	Blackwell Street at Pettigrew Street <sup>2</sup>	EBL	0	0	14	13	0.0	32.4	-32.4	-100.0%	A	C	36	1	34	2569.6%	150	253	39	214	548.5%
		EBR	117	116	35	36	22.8	11.1	11.7	105.5%	C	B	23	10	13	127.3%	785	226	137	88	64.3%
		EBT	83	83	123	121	36.0	20.8	15.2	72.8%	D	C	36	20	16	83.1%	785	253	159	94	58.8%
		EBT LRT	6	6	N/A	N/A	1.2	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		125	N/A	N/A	N/A
		NBL			21	21		16.8				B		2			100		65		
		NBR	91	89	7	7	4.3	9.2	-5.0	-53.9%	A	A	2	7	-5	-72.9%	148	72	153	-81	-52.8%
		NBT	82	83	140	139	15.1	15.3	-0.2	-1.1%	B	B	7	12	-5	-43.6%	148	96	167	-71	-42.5%
		SBL	6	6	50	51	3.6	3.0	0.7	22.3%	A	A	1	1	0	72.7%	98	57	50	7	14.4%
		SBR			34	33		1.0				A		1			98		50		
		SBT	95	91	171	164	2.2	1.4	0.8	53.2%	A	A	1	1	0	72.7%	98	57	50	7	14.4%
		WBL			7	9		16.6				B		0			143		25		
		WBR			49	51		15.7				B		13			375		278		
		WBT			211	205		14.3				B		18			375		291		
		WBT LRT	6	6	N/A	N/A	0.1	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		64	N/A	N/A	N/A
<b>All</b>	<b>500</b>	<b>468</b>	<b>861</b>	<b>850</b>	<b>15.3</b>	<b>11.9</b>	<b>3.4</b>	<b>28.3%</b>	<b>B</b>	<b>B</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>67.9%</b>		<b>253</b>	<b>291</b>	<b>-38</b>	<b>-13.1%</b>		
15	Blackwell Street at Ramseur Street <sup>1</sup>	EBL	19	20	15	16	12.6	14.6	-2.0	-13.7%	B	B	22	24	-2	-8.2%	1081	147	155	-9	-5.5%
		EBR	3	2	6	7	4.8	5.0	-0.2	-3.5%	A	A	30	32	-2	-6.1%	263	192	202	-10	-4.9%
		EBT	348	351	384	385	14.8	16.2	-1.4	-8.6%	B	B	22	24	-2	-8.2%	1081	147	155	-9	-5.5%
		NBR	2	2	7	7	0.2	4.0	-3.8	-94.1%	A	A	0	13	-13	-99.0%	98	10	135	-126	-92.7%
		NBT	80	81	196	196	2.8	8.7	-5.9	-68.3%	A	A	1	29	-28	-96.1%	98	34	202	-168	-83.3%
		SBL	34	34	26	27	13.4	16.5	-3.2	-19.1%	B	B	9	28	-20	-69.6%	200	154	284	-130	-45.8%
		SBT	98	95	248	241	11.9	15.0	-3.1	-20.8%	B	B	9	28	-20	-69.6%	200	154	284	-130	-45.8%
		<b>All</b>	<b>583</b>	<b>585</b>	<b>883</b>	<b>879</b>	<b>12.4</b>	<b>14.0</b>	<b>-1.6</b>	<b>-11.2%</b>	<b>B</b>	<b>B</b>	<b>13</b>	<b>25</b>	<b>-12</b>	<b>-48.4%</b>		<b>203</b>	<b>284</b>	<b>-81</b>	<b>-28.6%</b>



Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
16	Main Street at Corcoran Street <sup>2</sup>	EBL	44	42	55	52	30.8	28.2	2.6	9.2%	C	C	50	44	5	12.2%	158	325	301	24	7.9%
		EBR	15	16	50	50	20.2	21.7	-1.5	-7.1%	C	C	40	34	5	15.6%	158	309	285	24	8.3%
		EBT	245	236	180	176	27.2	26.7	0.6	2.1%	C	C	50	44	5	12.2%	158	325	301	24	7.9%
		NBL	6	6	20	20	7.3	7.2	0.1	1.7%	A	A	5	6	-2	-26.2%	202	88	92	-4	-4.5%
		NBR	5	7	8	9	5.0	3.9	1.1	27.8%	A	A	2	3	-1	-38.2%	202	79	83	-4	-4.9%
		NBT	88	88	183	183	9.4	5.7	3.6	63.4%	A	A	5	6	-2	-26.2%	202	88	92	-4	-4.5%
		SBL	46	46	24	24	16.9	12.6	4.3	34.0%	B	B	10	15	-4	-29.7%	172	149	196	-47	-24.1%
		SBR	19	18	23	22	7.9	7.1	0.8	11.3%	A	A	5	9	-4	-41.6%	172	128	176	-47	-26.9%
		SBT	94	91	193	187	12.7	12.5	0.2	1.7%	B	B	10	15	-4	-29.7%	172	149	196	-47	-24.1%
		WBL	22	22	31	31	11.1	11.2	-0.1	-1.3%	B	B	11	10	1	11.5%	310	207	106	102	96.6%
		WBR	76	76	40	42	6.3	6.2	0.1	0.8%	A	A	6	4	2	39.1%	310	186	84	102	121.0%
		WBT	246	240	179	174	7.7	8.7	-1.0	-11.6%	A	A	11	10	1	11.5%	310	207	106	102	96.6%
	<b>All</b>	<b>905</b>	<b>888</b>	<b>986</b>	<b>970</b>	<b>15.4</b>	<b>13.9</b>	<b>1.5</b>	<b>11.1%</b>	<b>B</b>	<b>B</b>	<b>17</b>	<b>17</b>	<b>0</b>	<b>1.6%</b>		<b>341</b>	<b>301</b>	<b>40</b>	<b>13.2%</b>	
17	Mangum Street at Main Street <sup>1</sup>	EBR	9	9	7	7	49.0	36.9	12.1	32.7%	D	D	94	43	51	119.6%	311	376	231	145	62.8%
		EBT	286	280	204	202	55.4	42.8	12.6	29.4%	E	D	109	56	53	94.5%	311	394	249	145	58.2%
		SBL	170	172	171	173	35.0	16.6	18.4	111.0%	C	B	188	76	111	146.0%	166	533	465	69	14.8%
		SBR	18	17	7	7	12.5	5.3	7.1	133.8%	B	A	174	65	109	169.3%	166	515	444	71	16.0%
		SBT	1083	1082	1096	1099	34.1	17.7	16.3	92.1%	C	B	188	76	111	146.0%	166	533	465	69	14.8%
		WBL	48	45	88	84	47.1	53.4	-6.3	-11.8%	D	D	12	28	-17	-58.5%	185	92	192	-100	-52.0%
		WBT	326	321	243	240	23.1	23.3	-0.2	-1.0%	C	C	46	33	13	38.3%	342	334	266	68	25.6%
			<b>All</b>	<b>1939</b>	<b>1926</b>	<b>1817</b>	<b>1812</b>	<b>35.7</b>	<b>23.0</b>	<b>12.7</b>	<b>55.0%</b>	<b>D</b>	<b>C</b>	<b>116</b>	<b>54</b>	<b>62</b>	<b>114.4%</b>		<b>533</b>	<b>465</b>	<b>68</b>
18	Mangum Street at Ramseur Street <sup>1</sup>	EBR	107	108	116	117	49.9	45.6	4.3	9.3%	D	D	39	40	-1	-3.7%	318	170	143	26	18.3%
		EBT	276	279	298	302	15.7	20.8	-5.1	-24.4%	B	C	39	40	-1	-3.7%	318	170	143	26	18.3%
		SBL	86	89	89	91	29.5	17.8	11.7	65.4%	C	B	134	78	56	71.4%	225	322	317	5	1.5%
		SBT	1052	1047	1101	1099	27.1	16.8	10.3	61.6%	C	B	134	78	56	71.4%	225	322	317	5	1.5%
			<b>All</b>	<b>1521</b>	<b>1523</b>	<b>1605</b>	<b>1609</b>	<b>26.8</b>	<b>19.7</b>	<b>7.1</b>	<b>36.2%</b>	<b>C</b>	<b>B</b>	<b>87</b>	<b>59</b>	<b>27</b>	<b>45.8%</b>		<b>322</b>	<b>317</b>	<b>5</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
19	Mangum Street at Pettigrew Street <sup>1</sup>	EBR	53	52	53	52	7.6	26.1	-18.5	-70.9%	A	C	20	23	-2	-10.7%	375	193	188	5	2.9%
		EBT	126	126	127	127	37.6	40.8	-3.2	-7.8%	D	D	32	43	-11	-26.1%	375	214	224	-10	-4.6%
		EBT LRT	6	6	N/A	N/A	12.7	N/A	N/A	N/A	B	N/A	4	N/A	N/A	N/A		200	N/A	N/A	N/A
		SBL	49	49	55	54	1.6	0.7	0.9	121.2%	A	A	1	0	1	734.8%	82	104	52	52	100.6%
		SBR			67	67		0.5				A		0			82		42		
		SBT	1105	1106	1095	1095	0.7	0.2	0.4	182.1%	A	A	1	0	1	734.8%	82	104	52	52	100.6%
		WBL	53	52	78	77	7.6	58.6	-51.0	-87.1%	A	E	20	27	-7	-24.4%	353	193	168	25	14.7%
		WBT			200	198		37.5				D		44			400		252		
		WBT LRT	6	6	N/A	N/A	0.4	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		84	N/A	N/A	N/A
		All	1362	1333	1675	1670	4.6	11.4	-6.8	-59.8%	A	B	9	20	-11	-55.5%		223	275	-52	-18.9%
20	Pettigrew Street at Dillard Street <sup>2</sup>	EBL	30	27	16	15	12.5	12.4	0.1	0.9%	B	B	2	2	1	60.6%	153	77	67	10	14.1%
		EBR	18	20	24	25	5.5	5.9	-0.4	-7.3%	A	A	0	1	-1	-76.9%	917	43	76	-33	-43.6%
		EBT	49	50	76	75	8.1	9.3	-1.2	-13.4%	A	A	2	3	-2	-47.1%	917	82	105	-23	-21.5%
		EBT LRT	6	6	N/A	N/A	0.5	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		75	N/A	N/A	N/A
		NBL			0	0		0.0				A		0			155		0		
		NBR	8	8	34	34	11.5	8.2	3.4	41.1%	B	A	5	5	-1	-10.5%	822	90	114	-24	-21.0%
		NBT	66	68	100	100	28.2	17.6	10.6	60.6%	C	B	10	11	0	-1.2%	822	104	128	-24	-18.4%
		SBL	39	37	46	45	28.2	21.3	6.9	32.6%	C	C	31	27	4	15.7%	264	222	214	8	3.6%
		SBR			101	98		9.9				A		18			264		187		
		SBT	110	109	110	110	27.5	18.5	9.0	48.7%	C	B	31	27	4	15.7%	264	222	214	8	3.6%
		WBL	36	37	25	25	7.5	6.1	1.5	24.6%	A	A	2	2	0	0.3%	695	96	111	-15	-13.4%
		WBR	45	43	17	18	7.8	3.6	4.2	115.1%	A	A	2	1	1	145.5%	695	96	96	0	-0.5%
		WBT			88	87		6.0				A		2			695		111		
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
All	420	399	638	632	18.3	12.3	6.0	49.1%	B	B	10	8	2	20.2%		224	214	10	4.4%		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
21	Fayetteville Street at Pettigrew Street <sup>1</sup>	EBL	10	9	8	7	57.2	61.4	-4.3	-6.9%	E	E	3	2	0	8.9%	210	43	44	-1	-2.3%	
		EBR	6	6	26	26	5.0	5.6	-0.6	-10.7%	A	A	0	0	0	0.0%	273	0	0	0	0.0%	
		EBT	53	53	59	57	37.7	53.9	-16.2	-30.0%	D	D	11	18	-7	-39.9%	696	104	133	-29	-21.6%	
		EBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	3	3	35	35	8.6	5.9	2.7	45.7%	A	A	10	4	6	134.1%	70	143	145	-2	-1.5%	
		NBR	47	45	58	61	0.4	0.3	0.1	43.9%	A	A	45	46	-2	-3.9%	70	141	140	1	0.7%	
		NBT	364	371	382	388	2.7	1.3	1.4	108.8%	A	A	10	4	6	134.1%	70	143	145	-2	-1.5%	
		SBL	59	58	42	41	40.9	21.1	19.8	93.5%	D	C	16	5	11	212.4%	250	225	124	101	81.9%	
		SBR	1	1	7	7	16.1	13.4	2.8	20.9%	B	B	84	32	52	159.8%	400	343	207	136	65.9%	
		SBT	435	432	449	445	41.8	22.4	19.5	87.1%	D	C	84	52	33	63.3%	400	343	250	92	37.0%	
		WBL	93	96	87	90	48.7	59.8	-11.0	-18.4%	D	E	22	28	-6	-22.7%	100	214	200	14	6.8%	
		WBR	102	108	45	50	32.6	31.3	1.3	4.0%	C	C	48	31	18	57.4%	1570	350	254	96	37.6%	
		WBT	94	90	127	127	51.2	47.2	4.0	8.4%	D	D	48	44	4	8.7%	1570	350	277	73	26.2%	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
<b>All</b>	<b>1277</b>	<b>1272</b>	<b>1323</b>	<b>1334</b>	<b>28.9</b>	<b>21.3</b>	<b>7.6</b>	<b>35.7%</b>	<b>C</b>	<b>C</b>	<b>27</b>	<b>22</b>	<b>5</b>	<b>22.1%</b>		<b>380</b>	<b>292</b>	<b>88</b>	<b>30.1%</b>			
22	Fayetteville Street at Jackie Robinson Drive <sup>1</sup>	NBL	228	227	186	185	27.5	14.2	13.3	93.7%	C	B	37	13	24	179.9%	277	261	150	111	73.8%	
		NBT	322	328	359	367	21.4	11.7	9.7	82.5%	C	B	25	14	11	76.9%	286	235	137	97	70.6%	
		SBR	43	44	39	40	0.9	2.1	-1.1	-54.0%	A	A	6	9	-4	-39.4%	70	134	156	-22	-14.1%	
		SBT	491	490	524	521	4.4	6.8	-2.4	-35.9%	A	A	10	16	-6	-36.1%	70	149	172	-23	-13.4%	
		WBL	172	169	149	144	39.7	40.5	-0.8	-1.9%	D	D	44	39	5	12.5%	345	261	222	39	17.7%	
		WBR	91	91	115	117	9.0	6.7	2.3	34.7%	A	A	35	33	1	4.1%	345	249	217	31	14.3%	
		WBT	13	13	13	13	38.3	36.8	1.6	4.2%	D	D	44	39	5	12.5%	603	261	222	39	17.7%	
		<b>All</b>	<b>1362</b>	<b>1362</b>	<b>1385</b>	<b>1387</b>	<b>17.3</b>	<b>12.9</b>	<b>4.4</b>	<b>34.2%</b>	<b>B</b>	<b>B</b>	<b>29</b>	<b>24</b>	<b>5</b>	<b>21.7%</b>		<b>281</b>	<b>224</b>	<b>58</b>	<b>25.7%</b>	
23	Morehead Avenue at Fayetteville Street <sup>1</sup>	EBL	43	44	31	33	48.9	45.3	3.6	8.0%	D	D	13	8	4	53.4%	1260	102	87	15	17.3%	
		EBR	143	139	133	130	6.8	6.6	0.2	2.6%	A	A	2	1	1	134.3%	1195	69	53	16	29.1%	
		EBT	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	13	8	4	53.4%	1260	102	87	15	17.3%	
		NBR	20	20	18	18	2.0	1.8	0.2	13.5%	A	A	1	1	0	19.7%	389	60	63	-3	-4.5%	
		NBT	507	511	514	519	2.9	2.6	0.3	13.4%	A	A	3	3	0	6.4%	389	78	81	-3	-3.5%	
		SBL	99	93	74	71	4.5	3.2	1.3	41.0%	A	A	1	0	1	196.7%	255	77	53	24	45.0%	
		SBT	564	566	598	594	2.3	1.5	0.8	52.9%	A	A	3	2	1	90.3%	275	163	141	22	15.5%	
		<b>All</b>	<b>1376</b>	<b>1373</b>	<b>1368</b>	<b>1365</b>	<b>4.6</b>	<b>3.5</b>	<b>1.1</b>	<b>31.6%</b>	<b>A</b>	<b>A</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>54.4%</b>		<b>171</b>	<b>141</b>	<b>30</b>	<b>20.9%</b>	

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
24	Pettigrew Street at Grant Street <sup>2</sup>	EBL	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	0	5	-5	-100.0%	155	0	107	-107	-100.0%	
		EBR	7	7	13	13	7.0	3.2	3.8	120.4%	A	A	5	0	5	86900.0%	1570	120	4	116	2916.7%	
		EBT	152	149	145	146	7.6	6.2	1.4	23.2%	A	A	5	5	1	19.0%	1570	120	107	13	12.3%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	20	7	13	170.4%	625	205	112	94	83.7%	
		NBR	104	102	73	73	14.5	9.8	4.7	48.5%	B	A	14	4	10	287.0%	625	191	96	95	98.7%	
		NBT	96	93	51	51	26.5	19.6	6.9	35.1%	C	B	20	7	13	170.4%	625	205	112	94	83.7%	
		SBL	93	90	89	86	33.2	25.2	8.0	32.0%	C	C	24	16	8	48.9%	266	218	199	19	9.6%	
		SBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	24	7	18	263.2%	266	218	181	37	20.3%	
		SBT	51	50	69	68	31.0	23.0	8.0	34.9%	C	C	24	16	8	48.9%	266	218	199	19	9.6%	
		WBL	67	69	127	127	8.9	7.8	1.2	15.1%	A	A	2	4	-2	-47.8%	70	70	86	-16	-18.9%	
		WBR	122	123	121	121	11.1	5.4	5.8	107.0%	B	A	21	6	15	271.1%	193	303	163	140	85.8%	
		WBT	287	294	259	267	10.7	7.0	3.7	52.1%	B	A	21	8	13	153.3%	193	305	174	131	75.4%	
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
<b>All</b>	<b>989</b>	<b>977</b>	<b>948</b>	<b>952</b>	<b>15.2</b>	<b>10.5</b>	<b>4.7</b>	<b>44.2%</b>	<b>B</b>	<b>B</b>	<b>13</b>	<b>7</b>	<b>6</b>	<b>84.3%</b>		<b>315</b>	<b>215</b>	<b>99</b>	<b>46.2%</b>			
25	Gann Street at Pettigrew Street <sup>2</sup> (Unsignalized)	EBR	74	73	72	72	2.2	2.7	-0.5	-17.8%	A	A	0	0	0	0.0%	206	0	0	0	0.0%	
		EBT	291	282	290	287	2.4	2.9	-0.5	-17.7%	A	A	0	0	0	0.0%	206	0	0	0	0.0%	
		NBL	101	105	99	102	9.6	9.4	0.2	1.8%	A	A	0	0	0	35.7%	248	47	45	2	4.4%	
		NBR	11	11	12	12	8.3	7.1	1.3	17.8%	A	A	0	0	0	35.7%	248	47	45	2	4.4%	
		WBL	21	21	23	23	8.0	8.4	-0.4	-4.8%	A	A	0	0	0	0.0%	367	7	8	-1	-11.3%	
		WBT	421	426	432	437	0.5	0.4	0.0	9.1%	A	A	0	0	0	0.0%	367	0	0	0	0.0%	
		<b>All</b>	<b>919</b>	<b>918</b>	<b>929</b>	<b>933</b>	<b>2.5</b>	<b>2.6</b>	<b>-0.2</b>	<b>-5.8%</b>	<b>A</b>	<b>A</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-8.3%</b>		<b>47</b>	<b>45</b>	<b>2</b>	<b>4.4%</b>	
26	Alston Avenue at Gann Street <sup>1</sup>	EBL	61	63	69	69	60.5	57.6	2.9	5.1%	E	E	25	26	-1	-4.2%	196	215	217	-2	-1.0%	
		EBR	183	182	182	182	13.1	13.1	0.0	0.2%	B	B	16	18	-1	-6.9%	196	204	206	-2	-1.1%	
		NBL	13	13	14	14	18.6	18.4	0.2	1.1%	B	B	31	33	-2	-7.2%	300	260	261	-1	-0.4%	
		NBT	873	870	878	875	11.2	12.0	-0.7	-6.1%	B	B	31	33	-2	-7.2%	528	260	261	-1	-0.4%	
		SBR	48	46	48	46	12.3	12.2	0.1	0.7%	B	B	69	74	-5	-6.8%	190	530	579	-49	-8.4%	
		SBT	1442	1438	1443	1440	13.4	14.0	-0.6	-4.4%	B	B	71	76	-5	-6.7%	1037	533	582	-49	-8.4%	
		WBL	423	457	431	457	61.8	59.5	2.3	3.9%	E	E	372	370	2	0.5%	188	685	685	0	0.0%	
		WBR	294	321	294	315	42.8	41.9	0.9	2.2%	D	D	141	128	14	10.7%	1000	652	652	0	0.1%	
		WBT	47	52	48	52	61.3	58.9	2.4	4.1%	E	E	156	142	14	10.2%	1000	677	676	0	0.1%	
<b>All</b>	<b>3384</b>	<b>3442</b>	<b>3407</b>	<b>3450</b>	<b>22.9</b>	<b>23.1</b>	<b>-0.2</b>	<b>-0.7%</b>	<b>C</b>	<b>C</b>	<b>101</b>	<b>100</b>	<b>1</b>	<b>1.5%</b>		<b>690</b>	<b>698</b>	<b>-8</b>	<b>-1.2%</b>			

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
27	Roxboro Street at Pettigrew Street <sup>1</sup>	EBL	86	86	90	90	48.4	57.0	-8.6	-15.0%	D	E	30	38	-8	-22.1%	220	211	172	39	22.7%	
		EBT	89	89	91	91	37.4	43.3	-5.9	-13.6%	D	D	30	38	-8	-22.1%	288	211	172	39	22.7%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	
		NBL			189	188		9.1				A		50				541		439		
		NBR	8	8	25	24	12.9	2.6	10.3	392.6%	B	A	69	38	31	83.0%	541	269	408	-139	-34.1%	
		NBT	1950	1973	1501	1524	14.0	9.0	5.1	56.3%	B	A	81	50	31	63.1%	541	291	439	-147	-33.6%	
		WBR			100	98		67.6				E		80				916		349		
		WBT			88	87		81.0				F		94				916		368		
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		0	N/A	N/A	N/A	
		All	2157	2156	2085	2102	16.3	18.4	-2.1	-11.6%	B	B	42	55	-14	-24.8%		293	484	-192	-39.6%	
28	LRT at Buchanan Boulevard <sup>2</sup>	EBT LRT	6	6			0.0				A		0					0				
		NBT	277	263			3.0				A		4					152				
		SBT	516	445			6.4				A		20					410				
		WBT LRT	6	6			5.1				A		9					234				
		All	805	708			5.2				A		8					410				
Downtown Durham Corridor		EB LRT	6	6			21.5															
Downtown Durham Corridor		WB LRT	6	6			21.4															
		All	40696	40406	40971	41136	18.5	17.2			B	B	31	30	1	3.3%		701	747	-46	-6.2%	

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied

 Indicates LRT Movement

 Indicates Traffic Impact

 Indicates Traffic Impact below Mid-D

 Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet

Table 12: D-O LRT: Downtown Durham Segment – VISSIM Intersection Analysis Output Summary - 2040 Build Option 2 vs. 2040 No-Build PM Peak Hour 5:00 - 6:00 PM

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
1	Main Street at 9th Street <sup>1</sup>	EBL	56	61	52	63	41.6	41.1	0.5	1.2%	D	D	9	8	2	21.6%	625	87	77	10	13.3%
		EBR	48	52	48	58	43.3	50.5	-7.2	-14.3%	D	D	231	284	-53	-18.6%	900	456	453	3	0.6%
		EBT	547	592	498	599	45.8	53.8	-8.1	-15.0%	D	D	244	298	-53	-18.0%	900	473	470	3	0.6%
		NBL	24	47	18	47	26.6	32.4	-5.8	-17.9%	C	C	116	116	0	0.1%	106	185	185	0	0.2%
		NBR	179	305	140	302	23.0	48.9	-25.9	-52.9%	C	D	101	100	1	0.6%	106	166	165	0	0.2%
		NBT	169	288	127	300	33.5	50.8	-17.3	-34.0%	C	D	116	116	0	0.1%	106	185	185	0	0.2%
		SBL	226	237	219	240	43.4	65.2	-21.8	-33.4%	D	E	96	181	-86	-47.3%	330	376	503	-127	-25.2%
		SBR	69	74	65	76	20.1	32.7	-12.7	-38.7%	C	C	74	157	-83	-52.7%	330	345	472	-127	-26.9%
		SBT	178	180	180	198	28.7	39.5	-10.9	-27.5%	C	D	96	181	-86	-47.3%	330	376	503	-127	-25.2%
		WBL	179	204	168	216	50.0	70.0	-20.0	-28.5%	D	E	85	158	-73	-46.4%	190	390	392	-3	-0.7%
		WBR	211	248	187	245	12.9	14.2	-1.3	-9.2%	B	B	116	149	-32	-21.9%	300	374	373	1	0.3%
		WBT	377	441	347	452	16.4	17.7	-1.3	-7.1%	B	B	128	163	-35	-21.4%	300	396	395	1	0.3%
				<b>All</b>	<b>2262</b>	<b>2729</b>	<b>2048</b>	<b>2796</b>	<b>32.7</b>	<b>43.4</b>	<b>-10.7</b>	<b>-24.6%</b>	<b>C</b>	<b>D</b>	<b>118</b>	<b>159</b>	<b>-42</b>	<b>-26.1%</b>		<b>497</b>	<b>529</b>
2	Main Street at Iredell Street <sup>1</sup> (Unsignalized)	EBL	149	174	135	176	12.5	17.9	-5.5	-30.5%	B	C	54	103	-49	-47.2%	60	318	321	-3	-0.9%
		EBT	806	960	726	965	11.8	16.9	-5.2	-30.5%	B	C	54	103	-49	-47.2%	290	318	321	-3	-0.9%
		SBL	30	32	27	33	109.8	225.0	-115.3	-51.2%	F	F	45	117	-72	-61.5%	370	191	203	-12	-6.1%
		SBR	79	80	67	77	81.0	175.0	-94.0	-53.7%	F	F	45	117	-72	-61.5%	370	191	203	-12	-6.1%
		WBR	20	22	20	25	8.0	11.6	-3.6	-30.9%	A	B	38	101	-63	-62.6%	290	417	418	-1	-0.3%
		WBT	686	813	635	836	12.9	15.7	-2.7	-17.4%	B	C	38	101	-63	-62.6%	290	417	418	-1	-0.3%
				<b>All</b>	<b>1769</b>	<b>2081</b>	<b>1610</b>	<b>2112</b>	<b>17.1</b>	<b>26.8</b>	<b>-9.6</b>	<b>-36.0%</b>	<b>C</b>	<b>D</b>	<b>46</b>	<b>107</b>	<b>-61</b>	<b>-57.3%</b>		<b>417</b>	<b>418</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
3	Main Street at Broad Street <sup>1</sup>	EBL	101	118	87	113	39.8	37.9	1.9	4.9%	D	D	171	271	-100	-36.9%	198	455	454	1	0.2%
		EBR	228	268	196	255	4.2	7.9	-3.7	-46.7%	A	A	26	3	23	877.1%	317	126	114	12	10.5%
		EBT	513	606	477	630	28.6	34.4	-5.7	-16.7%	C	C	231	318	-87	-27.4%	317	471	469	2	0.4%
		NBL	185	263	175	283	75.6	51.0	24.6	48.1%	E	D	196	209	-13	-6.1%	121	268	267	1	0.3%
		NBR	134	174	131	185	9.8	1.5	8.3	547.7%	A	A	178	101	78	77.1%	116	253	251	2	0.8%
		NBT	332	439	318	448	24.4	16.1	8.3	51.6%	C	B	196	209	-13	-6.1%	121	268	267	1	0.3%
		SBL	84	112	80	116	116.2	107.6	8.6	8.0%	F	F	71	86	-16	-18.1%	130	482	561	-79	-14.1%
		SBR	42	62	42	65	70.8	78.8	-7.9	-10.1%	E	E	334	339	-5	-1.5%	450	529	528	1	0.2%
		SBT	442	630	437	625	92.0	93.0	-1.0	-1.1%	F	F	373	375	-2	-0.5%	450	570	569	1	0.2%
		WBL	162	171	146	167	47.1	49.3	-2.2	-4.5%	D	D	75	49	26	52.7%	412	314	348	-34	-9.8%
		WBR	85	89	77	87	35.4	48.9	-13.6	-27.7%	D	D	152	263	-111	-42.2%	560	589	591	-2	-0.3%
		WBT	483	510	443	513	40.9	53.7	-12.9	-24.0%	D	D	204	326	-121	-37.2%	560	672	673	-2	-0.3%
		<b>All</b>	<b>2792</b>	<b>3442</b>	<b>2609</b>	<b>3487</b>	<b>45.4</b>	<b>47.3</b>	<b>-1.9</b>	<b>-4.0%</b>	<b>D</b>	<b>D</b>	<b>184</b>	<b>212</b>	<b>-28</b>	<b>-13.4%</b>		<b>672</b>	<b>674</b>	<b>-2</b>	<b>-0.3%</b>
4	Pettigrew Street at 9th Street <sup>1</sup> (Unsignalized)	EBT LRT	6	6	N/A	N/A	2.8	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBR	47	79	35	82	99.9	128.0	-28.0	-21.9%	F	F	260	278	-17	-6.2%	720	365	362	2	0.6%
		NBT	331	587	257	596	109.0	141.6	-32.6	-23.0%	F	F	260	278	-17	-6.2%	720	365	362	2	0.6%
		SBL	34	38	33	42	2.8	12.4	-9.6	-77.2%	A	B	2	22	-20	-90.9%	105	81	180	-99	-54.9%
		SBT	370	398	362	430	0.4	1.9	-1.6	-81.6%	A	A	2	22	-20	-90.9%	105	81	180	-99	-54.9%
		WBL	21	27	18	26	22.3	19.7	2.7	13.5%	C	C	2	1	1	52.1%	185	80	63	17	26.3%
		WBR	40	53	38	53	49.1	46.6	2.4	5.2%	E	E	2	1	1	52.1%	185	80	63	17	26.3%
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		<b>All</b>	<b>856</b>	<b>1182</b>	<b>743</b>	<b>1229</b>	<b>50.5</b>	<b>59.4</b>	<b>-8.8</b>	<b>-14.9%</b>	<b>F</b>	<b>F</b>	<b>66</b>	<b>100</b>	<b>-34</b>	<b>-34.2%</b>		<b>365</b>	<b>362</b>	<b>2</b>	<b>0.6%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
5	Pettigrew Street at Swift Avenue <sup>1</sup>	EBL	33	47	29	53	296.4	373.3	-76.9	-20.6%	F	F	452	638	-186	-29.1%	506	783	840	-57	-6.8%	
		EBR	112	157	89	166	227.3	316.2	-88.9	-28.1%	F	F	452	638	-186	-29.1%	506	783	840	-57	-6.8%	
		EBT	2	2	2	3	175.8	345.7	-169.8	-49.1%	F	F	452	638	-186	-29.1%	506	783	840	-57	-6.8%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
		NBL	36	49	33	48	134.6	118.5	16.2	13.6%	F	F	66	187	-121	-64.6%	443	392	395	-3	-0.7%	
		NBR	7	8	7	9	56.8	67.0	-10.2	-15.3%	F	F	629	658	-29	-4.3%	443	785	784	1	0.1%	
		NBT	595	789	574	820	114.4	122.4	-8.0	-6.5%	F	F	686	715	-29	-4.0%	443	842	841	1	0.1%	
		SBL	11	14	11	16	40.8	133.0	-92.2	-69.3%	E	F	19	30	-11	-36.8%	137	163	222	-60	-26.8%	
		SBR	32	43	32	45	1.0	1.3	-0.3	-23.7%	A	A	19	30	-11	-36.8%	137	163	222	-60	-26.8%	
		SBT	792	1012	734	986	0.6	1.0	-0.4	-42.1%	A	A	19	30	-11	-36.8%	137	163	222	-60	-26.8%	
		WBL	9	16	9	17	532.1	854.1	-322.0	-37.7%	F	F	238	369	-132	-35.7%	515	470	502	-31	-6.2%	
		WBR	25	40	22	43	563.1	941.6	-378.5	-40.2%	F	F	238	369	-132	-35.7%	515	470	502	-31	-6.2%	
		WBT	4	5	3	6	642.6	928.8	-286.2	-30.8%	F	F	238	369	-132	-35.7%	515	470	502	-31	-6.2%	
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	N/A
<b>All</b>	<b>1669</b>	<b>2182</b>	<b>1544</b>	<b>2212</b>	<b>77.8</b>	<b>92.5</b>	<b>-14.7</b>	<b>-15.9%</b>	<b>F</b>	<b>F</b>	<b>250</b>	<b>389</b>	<b>-139</b>	<b>-35.6%</b>		<b>845</b>	<b>847</b>	<b>-3</b>	<b>-0.3%</b>			
6	Main Street at Buchanan Boulevard <sup>1</sup>	EBL	182	184	183	187	118.6	118.9	-0.3	-0.2%	F	F	339	343	-4	-1.1%	215	610	610	0	0.0%	
		EBR	64	65	68	69	11.5	12.4	-0.9	-6.9%	B	B	0	0	0	0.0%	267	0	0	0	0.0%	
		EBT	541	549	541	554	24.2	24.5	-0.3	-1.2%	C	C	16	16	0	-2.6%	607	457	462	-5	-1.0%	
		NBL	77	94	72	97	120.8	117.9	2.9	2.5%	F	F	93	83	9	11.1%	70	195	211	-16	-7.5%	
		NBR	55	66	52	67	16.8	18.6	-1.7	-9.3%	B	B	0	0	0	-100.0%	120	1	8	-7	-87.6%	
		NBT	274	339	256	350	56.8	60.1	-3.4	-5.6%	E	E	110	109	1	1.2%	433	206	222	-17	-7.5%	
		SBL	101	109	98	107	153.5	154.1	-0.6	-0.4%	F	F	169	165	3	1.9%	130	471	475	-4	-0.8%	
		SBR	174	180	170	179	41.9	43.1	-1.2	-2.8%	D	D	9	10	-1	-10.9%	130	291	255	36	14.1%	
		SBT	280	310	280	312	92.5	95.5	-3.0	-3.1%	F	F	267	277	-10	-3.6%	400	472	474	-2	-0.5%	
		WBL	32	34	35	36	93.9	93.5	0.4	0.4%	F	F	34	44	-10	-22.9%	382	481	516	-35	-6.7%	
		WBR	182	183	181	181	26.0	26.1	-0.1	-0.5%	C	C	231	229	2	1.0%	530	621	621	0	0.0%	
		WBT	699	685	701	689	27.4	27.2	0.2	0.6%	C	C	231	229	2	1.0%	530	621	621	0	0.0%	
<b>All</b>	<b>2662</b>	<b>2798</b>	<b>2636</b>	<b>2828</b>	<b>51.5</b>	<b>52.0</b>	<b>-0.5</b>	<b>-1.0%</b>	<b>D</b>	<b>D</b>	<b>125</b>	<b>125</b>	<b>-1</b>	<b>-0.5%</b>		<b>623</b>	<b>622</b>	<b>1</b>	<b>0.1%</b>			



Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
7	Maxwell Street at Buchanan Boulevard <sup>2</sup> (Unsignalized)	EBL	8	37	12	40	1341.8	1273.0	68.8	5.4%	F	F	434	510	-76	-14.8%	465	553	615	-61	-10.0%	
		EBR	12	48	13	49	1083.3	984.3	99.0	10.1%	F	F	161	192	-31	-16.1%	465	188	218	-30	-13.6%	
		EBT			0	0		0.0				A		192				465		218		
		NBL	48	55	44	57	84.0	96.3	-12.3	-12.8%	F	F	294	383	-89	-23.3%	558	450	516	-66	-12.7%	
		NBR			0	0		0.0				A		383				558		516		
		NBT	396	462	367	474	108.9	107.1	1.7	1.6%	F	F	434	383	51	13.4%	558	553	516	38	7.3%	
		SBL			0	0		0.0				A		1				432		153		
		SBR	45	48	46	50	3.6	2.3	1.4	60.9%	A	A	1	1	0	27.7%	432	134	153	-20	-12.8%	
		SBT	333	361	336	367	2.0	1.3	0.7	53.8%	A	A	1	1	0	27.7%	432	134	153	-20	-12.8%	
		WBL			0	0		0.0				A		0				295		0		
		WBR			0	0		0.0				A		510				295		615		
		WBT			0	0		0.0				A		0				295		0		
				<b>All</b>	<b>841</b>	<b>1011</b>	<b>818</b>	<b>1037</b>	<b>82.3</b>	<b>85.8</b>	<b>-3.5</b>	<b>-4.0%</b>	<b>F</b>	<b>F</b>	<b>221</b>	<b>213</b>	<b>8</b>	<b>3.8%</b>		<b>553</b>	<b>615</b>	<b>-61</b>
8	Duke Street at Main Street <sup>1</sup>	EBL	175	178	168	172	48.8	49.1	-0.4	-0.8%	D	D	57	53	4	7.5%	198	310	311	0	-0.1%	
		EBT	443	449	440	446	37.3	37.8	-0.5	-1.2%	D	D	117	118	-1	-0.8%	323	331	334	-3	-0.8%	
		NBL	247	246	274	274	13.4	13.9	-0.5	-3.4%	B	B	20	25	-5	-19.5%	204	401	408	-7	-1.6%	
		NBR	27	27	29	28	14.6	12.8	1.8	14.2%	B	B	74	64	10	15.0%	300	403	400	3	0.7%	
		NBT	1181	1167	1143	1133	14.7	14.1	0.6	4.1%	B	B	83	73	10	13.3%	300	426	423	3	0.7%	
		WBR	26	27	23	24	27.9	28.9	-1.0	-3.5%	C	C	54	53	1	1.8%	221	253	255	-2	-0.9%	
		WBT	285	276	278	270	34.8	35.2	-0.4	-1.2%	C	D	65	64	1	1.3%	221	271	273	-2	-0.8%	
				<b>All</b>	<b>2383</b>	<b>2370</b>	<b>2355</b>	<b>2347</b>	<b>23.8</b>	<b>23.6</b>	<b>0.2</b>	<b>0.8%</b>	<b>C</b>	<b>C</b>	<b>67</b>	<b>64</b>	<b>3</b>	<b>4.3%</b>		<b>429</b>	<b>425</b>	<b>4</b>
9	Duke Street at Peabody Street <sup>1</sup> (Unsignalized)	EBL	30	28	31	28	14.4	16.0	-1.6	-10.1%	B	C	0	1	0	-43.3%	390	53	56	-4	-6.5%	
		EBT	12	11	16	15	18.3	20.6	-2.3	-11.3%	C	C	0	1	0	-43.3%	390	53	56	-4	-6.5%	
		NBL	103	102	105	104	0.8	0.8	0.0	4.1%	A	A	0	0	0	0.0%	140	0	0	0	0.0%	
		NBR	3	3	4	4	0.8	3.1	-2.2	-73.3%	A	A	12	17	-5	-29.0%	140	157	272	-115	-42.2%	
		NBT	1415	1405	1407	1399	6.0	6.2	-0.2	-3.9%	A	A	12	17	-5	-29.0%	140	157	272	-115	-42.2%	
		WBR	7	7	8	8	16.0	13.2	2.8	21.0%	C	B	0	0	0	-60.9%	543	26	38	-13	-33.2%	
		WBT	29	27	31	30	16.0	17.1	-1.0	-6.1%	C	C	0	0	0	-60.9%	543	26	38	-13	-33.2%	
				<b>All</b>	<b>1599</b>	<b>1583</b>	<b>1601</b>	<b>1588</b>	<b>6.1</b>	<b>6.4</b>	<b>-0.3</b>	<b>-5.0%</b>	<b>A</b>	<b>A</b>	<b>4</b>	<b>5</b>	<b>-2</b>	<b>-29.8%</b>		<b>157</b>	<b>272</b>	<b>-115</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
10	Memorial Street at Duke Street <sup>1</sup> (Unsignalized)	EBL1	1	0	1	0	5.2	3.5	1.7	48.0%	A	A	7	0	7	115900.0%	370	343	3	340	10907.6%
		EBL2	9	10	13	15	14.8	15.5	-0.7	-4.2%	B	C	22	0	22	346000.0%	370	372	3	368	11839.0%
		NBL	9	10	10	10	8.3	6.8	1.5	22.6%	A	A	29	22	8	35.2%	213	292	287	4	1.5%
		NBT1	103	1500	104	1492	9.6	8.4	1.2	14.2%	A	A	7	22	-14	-66.4%	213	343	287	55	19.2%
		NBT2	1404		1394		8.2	6.9	1.3	18.3%	A	A	22	22	0	0.3%	213	372	287	84	29.3%
		<b>All</b>	<b>1526</b>	<b>1520</b>	<b>1522</b>	<b>1517</b>	<b>8.3</b>	<b>7.1</b>	<b>1.2</b>	<b>17.2%</b>	<b>A</b>	<b>A</b>	<b>17</b>	<b>13</b>	<b>4</b>	<b>34.3%</b>		<b>381</b>	<b>287</b>	<b>93</b>	<b>32.4%</b>
11	Chapel Hill Street at Duke Street <sup>1</sup>	EBL	152	149	163	161	48.1	61.5	-13.5	-21.9%	D	E	43	67	-23	-35.0%	220	343	350	-7	-2.0%
		EBT	366	365	389	388	16.7	17.0	-0.3	-2.0%	B	B	33	35	-2	-4.7%	336	345	365	-20	-5.5%
		NBL	222	221	189	189	38.5	38.0	0.5	1.3%	D	D	158	147	11	7.5%	455	569	520	50	9.6%
		NBR	113	113	111	111	9.0	7.7	1.2	15.8%	A	A	142	131	11	8.5%	455	550	500	50	10.0%
		NBT	1341	1343	1320	1318	41.2	40.8	0.3	0.7%	D	D	158	147	11	7.5%	455	569	520	50	9.6%
		WBR	18	18	23	23	20.4	15.7	4.7	30.2%	C	B	177	121	56	46.6%	275	398	397	1	0.4%
		WBT	712	717	747	749	22.7	17.2	5.5	31.9%	C	B	197	140	57	40.9%	275	428	427	1	0.3%
		<b>All</b>	<b>2925</b>	<b>2926</b>	<b>2943</b>	<b>2939</b>	<b>32.4</b>	<b>31.3</b>	<b>1.1</b>	<b>3.6%</b>	<b>C</b>	<b>C</b>	<b>130</b>	<b>112</b>	<b>17</b>	<b>15.5%</b>		<b>569</b>	<b>520</b>	<b>50</b>	<b>9.6%</b>
12	Chapel Hill Street at Willard Street <sup>1</sup> (Unsignalized)	EBR	59	57	55	52	5.9	1.3	4.6	358.5%	A	A	12	0	12	2782.6%	275	304	72	232	322.8%
		EBT	420	421	446	447	11.4	1.6	9.9	629.1%	B	A	12	0	12	2782.6%	275	304	72	232	322.8%
		NBL	42	43	40	42	130.7	47.4	83.3	175.9%	F	E	102	18	84	477.0%	460	301	203	99	48.7%
		NBR	120	118	97	93	100.1	26.3	73.8	280.3%	F	D	102	18	84	477.0%	460	301	203	99	48.7%
		WBL	81	79	59	57	4.5	4.0	0.5	11.2%	A	A	24	6	18	330.6%	142	240	271	-31	-11.4%
		WBT	688	692	729	730	18.1	9.5	8.6	90.5%	C	A	47	20	27	133.8%	205	237	278	-41	-14.8%
		<b>All</b>	<b>1410</b>	<b>1410</b>	<b>1426</b>	<b>1421</b>	<b>25.1</b>	<b>8.7</b>	<b>16.4</b>	<b>188.8%</b>	<b>D</b>	<b>A</b>	<b>50</b>	<b>10</b>	<b>40</b>	<b>385.1%</b>		<b>310</b>	<b>284</b>	<b>26</b>	<b>9.2%</b>
13	Pettigrew Street at Chapel Hill Street <sup>1</sup>	EBR	137	141	164	167	6.3	3.3	3.0	93.5%	A	A	51	3	48	1728.3%	206	277	193	84	43.4%
		EBT	402	398	379	373	7.8	4.1	3.7	91.4%	A	A	57	9	48	528.1%	206	293	240	54	22.3%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL			248	246		47.3				D		78				377		384	
		NBR			40	41		36.5				D		58				377		355	
		WBL	24	25	38	37	36.7	15.1	21.6	143.6%	D	B	119	33	86	257.1%	222	300	244	56	23.1%
		WBT	770	771	542	541	38.7	13.9	24.7	177.4%	D	B	119	33	86	257.1%	275	300	244	56	23.1%
		WBT LRT	6	6	N/A	N/A	5.7	N/A	N/A	N/A	A	N/A	10	N/A	N/A	N/A		247	N/A	N/A	N/A
		<b>All</b>	<b>1345</b>	<b>1335</b>	<b>1410</b>	<b>1405</b>	<b>25.8</b>	<b>16.6</b>	<b>9.2</b>	<b>55.6%</b>	<b>C</b>	<b>B</b>	<b>59</b>	<b>36</b>	<b>24</b>	<b>66.1%</b>		<b>301</b>	<b>387</b>	<b>-87</b>	<b>-22.4%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
14	Blackwell Street at Pettigrew Street <sup>2</sup>	EBL	16	15	25	26	27.3	26.4	0.9	3.5%	C	C	28	3	25	902.4%	150	260	59	201	338.6%	
		EBR	104	107	53	53	17.1	11.9	5.2	43.8%	B	B	17	10	7	76.1%	785	232	198	34	17.0%	
		EBT	106	108	142	143	26.6	18.1	8.5	46.7%	C	B	28	17	11	65.1%	785	260	223	37	16.8%	
		EBT LRT	6	6	N/A	N/A	2.3	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		175	N/A	N/A	N/A	N/A
		NBL			42	43		20.1				C		4				100		142		
		NBR	68	67	49	47	8.1	12.1	-4.0	-32.8%	A	B	7	16	-8	-52.5%	148	135	176	-41	-23.3%	
		NBT	210	204	206	200	16.7	16.2	0.5	3.1%	B	B	16	22	-5	-24.2%	148	159	190	-31	-16.5%	
		SBL	29	29	72	74	13.3	12.8	0.5	4.0%	B	B	30	10	20	188.0%	98	159	96	63	65.0%	
		SBR			43	44		2.4				A		10				98		96		
		SBT	216	219	185	187	7.4	7.1	0.3	4.3%	A	A	30	10	20	188.0%	98	159	96	63	65.0%	
		WBL			35	35		5.8				A		1				143		30		
		WBR			48	49		10.9				B		2				375		103		
		WBT			130	126		6.3				A		5				375		117		
		WBT LRT	6	6	N/A	N/A	0.2	N/A	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		71	N/A	N/A	N/A
<b>All</b>	<b>778</b>	<b>749</b>	<b>1029</b>	<b>1027</b>	<b>14.3</b>	<b>12.2</b>	<b>2.2</b>	<b>17.9%</b>	<b>B</b>	<b>B</b>	<b>18</b>	<b>9</b>	<b>9</b>	<b>93.5%</b>		<b>260</b>	<b>230</b>	<b>30</b>	<b>13.0%</b>			
15	Blackwell Street at Ramseur Street <sup>1</sup>	EBL	38	40	107	111	16.2	18.6	-2.4	-12.9%	B	B	28	31	-3	-9.9%	1081	168	192	-24	-12.5%	
		EBR	185	186	185	190	19.0	14.3	4.8	33.5%	B	B	28	59	-31	-52.9%	263	170	260	-90	-34.6%	
		EBT	348	348	376	371	14.9	17.0	-2.1	-12.2%	B	B	28	31	-3	-9.9%	1081	168	192	-24	-12.5%	
		NBR	91	88	59	57	1.6	2.7	-1.1	-41.3%	A	A	0	11	-11	-99.4%	98	18	129	-111	-86.2%	
		NBT	134	131	220	218	4.2	6.8	-2.6	-38.9%	A	A	3	24	-21	-88.8%	98	47	195	-148	-75.7%	
		SBL	41	42	80	81	12.9	14.7	-1.8	-12.5%	B	B	5	13	-8	-59.4%	200	103	171	-68	-39.7%	
		SBT	61	62	114	115	10.7	13.3	-2.6	-19.9%	B	B	5	13	-8	-59.4%	200	103	171	-68	-39.7%	
		<b>All</b>	<b>897</b>	<b>897</b>	<b>1141</b>	<b>1143</b>	<b>12.5</b>	<b>13.5</b>	<b>-1.0</b>	<b>-7.3%</b>	<b>B</b>	<b>B</b>	<b>14</b>	<b>26</b>	<b>-12</b>	<b>-46.5%</b>		<b>170</b>	<b>263</b>	<b>-93</b>	<b>-35.4%</b>	

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
16	Main Street at Corcoran Street <sup>2</sup>	EBL	48	46	43	41	34.4	33.3	1.1	3.4%	C	C	66	57	9	16.4%	158	348	353	-5	-1.4%
		EBR	10	10	23	24	22.6	24.7	-2.1	-8.5%	C	C	55	46	9	19.6%	158	332	337	-5	-1.5%
		EBT	262	253	231	223	32.9	31.6	1.3	4.1%	C	C	66	57	9	16.4%	158	348	353	-5	-1.4%
		NBL	13	14	38	38	10.5	9.8	0.7	6.9%	B	A	7	16	-9	-57.0%	202	114	182	-67	-37.0%
		NBR	6	7	15	16	10.4	7.4	3.1	41.3%	B	A	4	12	-8	-70.1%	202	105	172	-67	-39.0%
		NBT	152	150	274	275	7.4	8.8	-1.3	-15.3%	A	A	7	16	-9	-57.0%	202	114	182	-67	-37.0%
		SBL	75	72	56	57	16.3	14.9	1.4	9.2%	B	B	11	13	-2	-16.4%	172	169	188	-19	-10.1%
		SBR	34	33	37	35	7.7	8.0	-0.4	-4.4%	A	A	6	8	-2	-22.5%	172	149	168	-19	-11.4%
		SBT	86	82	158	154	11.1	11.0	0.2	1.5%	B	B	11	13	-2	-16.4%	172	169	188	-19	-10.1%
		WBL	7	12	13	18	33.8	32.8	1.0	3.1%	C	C	38	30	8	26.3%	310	312	279	32	11.6%
		WBR	78	122	46	66	25.6	21.2	4.4	20.7%	C	C	29	21	7	34.4%	310	290	258	32	12.6%
		WBT	123	190	118	165	31.6	30.8	0.7	2.4%	C	C	38	30	8	26.3%	310	312	279	32	11.6%
		<b>All</b>	<b>893</b>	<b>991</b>	<b>1053</b>	<b>1112</b>	<b>22.9</b>	<b>19.1</b>	<b>3.7</b>	<b>19.6%</b>	<b>C</b>	<b>B</b>	<b>28</b>	<b>27</b>	<b>2</b>	<b>5.7%</b>		<b>383</b>	<b>381</b>	<b>1</b>	<b>0.4%</b>
17	Mangum Street at Main Street <sup>1</sup>	EBR	32	29	25	24	38.8	36.9	1.9	5.2%	D	D	68	48	20	41.8%	311	390	357	33	9.2%
		EBT	309	303	278	272	36.0	31.8	4.2	13.2%	D	C	81	61	21	33.9%	311	408	375	33	8.7%
		SBL	78	84	92	92	78.8	34.5	44.3	128.7%	E	C	380	135	245	182.2%	166	540	510	30	5.8%
		SBR	15	15	14	14	23.4	8.7	14.7	168.4%	C	A	362	120	242	202.0%	166	521	491	30	6.1%
		SBT	919	974	982	985	71.9	33.4	38.5	115.1%	E	C	380	135	245	182.2%	166	540	510	30	5.8%
		WBL	189	298	200	281	178.8	179.1	-0.3	-0.2%	F	F	279	282	-3	-1.1%	185	374	375	-1	-0.2%
		WBT	193	309	162	235	72.0	79.9	-8.0	-9.9%	E	E	63	57	6	10.4%	342	366	361	5	1.3%
				<b>All</b>	<b>1734</b>	<b>2012</b>	<b>1752</b>	<b>1903</b>	<b>76.3</b>	<b>53.6</b>	<b>22.7</b>	<b>42.3%</b>	<b>E</b>	<b>D</b>	<b>230</b>	<b>120</b>	<b>111</b>	<b>92.8%</b>		<b>540</b>	<b>512</b>
18	Mangum Street at Ramseur Street <sup>1</sup>	EBR	151	147	176	176	54.3	46.6	7.7	16.6%	D	D	56	54	2	3.5%	318	240	224	16	7.2%
		EBT	327	331	335	333	9.7	9.4	0.3	3.1%	A	A	56	54	2	3.5%	318	240	224	16	7.2%
		SBL	62	73	56	61	41.5	29.3	12.2	41.7%	D	C	245	213	32	15.1%	225	331	335	-4	-1.2%
		SBT	1076	1228	1151	1229	39.3	28.2	11.1	39.5%	D	C	245	213	32	15.1%	225	331	335	-4	-1.2%
				<b>All</b>	<b>1617</b>	<b>1779</b>	<b>1718</b>	<b>1799</b>	<b>34.9</b>	<b>26.5</b>	<b>8.4</b>	<b>31.7%</b>	<b>C</b>	<b>C</b>	<b>150</b>	<b>133</b>	<b>17</b>	<b>12.8%</b>		<b>333</b>	<b>335</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
19	Mangum Street at Pettigrew Street <sup>1</sup>	EBR	100	101	119	122	5.0	15.8	-10.7	-68.1%	A	B	5	15	-9	-63.4%	375	157	254	-97	-38.1%
		EBT	104	103	143	142	19.9	23.5	-3.6	-15.4%	B	C	12	29	-17	-59.0%	375	178	290	-112	-38.8%
		EBT LRT	6	6	N/A	N/A	7.9	N/A	N/A	N/A	A	N/A	2	N/A	N/A	N/A		187	N/A	N/A	N/A
		SBL	42	47	56	58	2.0	0.6	1.4	216.0%	A	A	2	0	2	3712.5%	82	118	44	75	171.1%
		SBR			28	29		0.3				A		0			82		34		
		SBT	1182	1328	1243	1318	0.8	0.3	0.6	195.6%	A	A	2	0	2	3712.5%	82	118	44	75	171.1%
		WBL	100	101	122	123	5.0	68.3	-63.2	-92.6%	A	E	5	55	-50	-90.3%	353	157	302	-145	-47.9%
		WBT			185	181		33.7				C		36			400		241		
		WBT LRT	6	6	N/A	N/A	0.7	N/A	N/A	N/A	A	N/A	3	N/A	N/A	N/A		112	N/A	N/A	N/A
		<b>All</b>	<b>1456</b>	<b>1579</b>	<b>1897</b>	<b>1973</b>	<b>2.7</b>	<b>10.7</b>	<b>-8.0</b>	<b>-74.7%</b>	<b>A</b>	<b>B</b>	<b>4</b>	<b>19</b>	<b>-15</b>	<b>-78.8%</b>		<b>218</b>	<b>382</b>	<b>-163</b>	<b>-42.8%</b>
20	Pettigrew Street at Dillard Street <sup>2</sup>	EBL	154	155	25	26	16.8	11.6	5.2	44.7%	B	B	15	2	13	744.4%	153	186	57	130	229.1%
		EBR	9	9	27	27	6.9	9.7	-2.7	-28.2%	A	A	1	4	-3	-83.3%	917	67	150	-82	-55.1%
		EBT	99	103	195	197	11.0	12.2	-1.2	-9.8%	B	B	5	12	-7	-58.7%	917	105	179	-74	-41.5%
		EBT LRT	6	6	N/A	N/A	0.9	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		125	N/A	N/A	N/A
		NBL			53	51		25.0				C		6			155		89		
		NBR	4	4	72	69	19.4	14.1	5.3	37.5%	B	B	19	21	-2	-8.6%	822	212	231	-19	-8.1%
		NBT	193	188	251	251	23.0	16.6	6.4	38.6%	C	B	26	28	-2	-6.8%	822	224	245	-21	-8.5%
		SBL	137	133	97	96	35.5	24.6	10.9	44.6%	D	C	64	46	18	39.8%	264	292	252	40	15.8%
		SBR			16	16		13.4				B		33			264		225		
		SBT	221	217	244	238	23.5	16.9	6.7	39.4%	C	B	64	46	18	39.8%	264	292	252	40	15.8%
		WBL	9	9	67	69	21.8	17.8	4.0	22.6%	C	B	9	10	-2	-15.7%	695	133	183	-49	-27.0%
		WBR	87	89	32	32	23.3	11.7	11.6	99.5%	C	B	9	6	2	39.3%	695	133	168	-35	-20.7%
		WBT			78	78		16.3				B		10			695		183		
		WBT LRT	6	6	N/A	N/A	5.2	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>932</b>	<b>907</b>	<b>1158</b>	<b>1150</b>	<b>22.3</b>	<b>16.5</b>	<b>5.8</b>	<b>35.4%</b>	<b>C</b>	<b>B</b>	<b>23</b>	<b>19</b>	<b>4</b>	<b>22.7%</b>		<b>296</b>	<b>277</b>	<b>19</b>	<b>6.9%</b>		

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
21	Fayetteville Street at Pettigrew Street <sup>1</sup>	EBL	5	5	10	10	42.9	38.7	4.3	11.0%	D	D	1	2	-1	-41.7%	210	25	38	-13	-33.3%
		EBR	67	66	126	124	10.4	29.3	-18.9	-64.6%	B	C	0	17	-17	-99.7%	273	12	156	-144	-92.3%
		EBT	124	125	180	180	42.0	45.2	-3.2	-7.1%	D	D	30	48	-18	-38.0%	696	233	281	-47	-16.9%
		EBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL	6	6	20	19	8.8	5.2	3.7	70.9%	A	A	7	2	5	232.2%	70	138	64	74	115.6%
		NBR	146	146	128	133	0.4	0.5	-0.1	-27.7%	A	A	8	2	6	322.4%	70	133	64	69	107.2%
		NBT	364	372	429	436	2.4	1.1	1.3	118.6%	A	A	7	2	5	232.2%	70	138	64	74	115.6%
		SBL	76	75	43	42	61.1	25.8	35.4	137.4%	E	C	36	6	30	538.7%	250	384	148	236	160.0%
		SBR	2	2	4	4	47.4	24.9	22.5	90.4%	D	C	190	91	99	107.9%	400	414	405	10	2.4%
		SBT	693	692	670	667	63.7	27.0	36.6	135.5%	E	C	190	91	99	107.9%	400	414	405	10	2.4%
		WBL	119	125	123	131	72.4	143.1	-70.7	-49.4%	E	F	49	133	-84	-63.5%	100	299	474	-176	-37.0%
		WBR	62	60	39	40	23.4	65.4	-41.9	-64.2%	C	E	19	62	-42	-69.0%	1570	210	378	-168	-44.4%
		WBT	47	46	84	83	48.0	64.0	-16.0	-25.1%	D	E	19	62	-42	-69.0%	1570	210	378	-168	-44.4%
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>1723</b>	<b>1720</b>	<b>1855</b>	<b>1869</b>	<b>39.7</b>	<b>31.1</b>	<b>8.6</b>	<b>27.7%</b>	<b>D</b>	<b>C</b>	<b>40</b>	<b>43</b>	<b>-3</b>	<b>-8.1%</b>		<b>415</b>	<b>500</b>	<b>-85</b>	<b>-17.0%</b>		
22	Fayetteville Street at Jackie Robinson Drive <sup>1</sup>	NBL	381	385	309	308	43.3	17.8	25.6	144.2%	D	B	120	29	92	321.1%	277	375	275	100	36.5%
		NBT	511	519	560	567	26.4	10.8	15.6	144.4%	C	B	78	20	58	287.6%	286	381	240	141	58.8%
		SBR	4	5	30	31	3.6	6.9	-3.2	-46.9%	A	A	21	40	-19	-47.1%	70	178	195	-17	-8.7%
		SBT	875	878	889	891	6.1	7.2	-1.0	-14.4%	A	A	27	40	-13	-31.8%	70	198	195	3	1.7%
		WBL	158	155	157	151	45.2	43.9	1.3	3.1%	D	D	45	44	0	0.9%	345	241	239	2	0.7%
		WBR	5	5	17	21	8.1	41.5	-33.4	-80.4%	A	D	35	44	-9	-21.4%	345	228	239	-11	-4.7%
		WBT	5	5	8	8	38.7	42.9	-4.3	-9.9%	D	D	45	44	0	0.9%	603	241	239	2	0.7%
		<b>All</b>	<b>1940</b>	<b>1952</b>	<b>1970</b>	<b>1977</b>	<b>22.1</b>	<b>13.2</b>	<b>8.8</b>	<b>66.8%</b>	<b>C</b>	<b>B</b>	<b>53</b>	<b>37</b>	<b>16</b>	<b>41.9%</b>		<b>381</b>	<b>288</b>	<b>93</b>	<b>32.4%</b>
23	Morehead Avenue at Fayetteville Street <sup>1</sup>	EBL	120	123	129	130	54.6	54.5	0.0	0.1%	D	D	39	43	-4	-9.4%	1260	205	214	-9	-4.2%
		EBR	0	0	18	17	0.0	6.7	-6.7	-100.0%	A	A	18	21	-3	-14.6%	1195	172	181	-9	-5.0%
		EBT	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	39	43	-4	-9.4%	1260	205	214	-9	-4.2%
		NBR	0	0	3	3	0.0	2.6	-2.6	-100.0%	A	A	5	3	2	84.6%	389	120	101	19	18.8%
		NBT	774	781	739	745	7.4	3.2	4.2	133.0%	A	A	9	6	3	55.9%	389	138	119	19	16.0%
		SBL	131	131	147	146	11.6	6.2	5.4	86.9%	B	A	6	2	3	160.4%	255	171	86	86	100.1%
		SBT	903	902	899	896	5.7	2.4	3.3	136.0%	A	A	17	5	12	233.7%	275	355	109	246	225.9%
		<b>All</b>	<b>1927</b>	<b>1937</b>	<b>1935</b>	<b>1937</b>	<b>9.9</b>	<b>6.5</b>	<b>3.3</b>	<b>51.2%</b>	<b>A</b>	<b>A</b>	<b>19</b>	<b>18</b>	<b>1</b>	<b>8.0%</b>		<b>355</b>	<b>214</b>	<b>141</b>	<b>66.1%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)				
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %
			Model	Demand	Model	Demand															
24	Pettigrew Street at Grant Street <sup>2</sup>	EBL	37	39	25	27	16.6	17.5	-0.9	-5.0%	B	B	3	32	-30	-91.9%	155	59	291	-232	-79.9%
		EBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	17	0	17	0.0%	1570	210	0	210	0.0%
		EBT	308	307	324	328	11.0	15.9	-4.9	-31.0%	B	B	17	32	-15	-47.0%	1570	210	291	-80	-27.6%
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
		NBL	59	58	53	54	28.6	25.5	3.2	12.4%	C	C	31	44	-13	-30.0%	625	255	306	-51	-16.5%
		NBR	97	97	188	185	18.6	21.4	-2.8	-13.1%	B	C	23	35	-11	-33.0%	625	241	290	-49	-17.0%
		NBT	87	83	123	119	27.8	25.0	2.8	11.3%	C	C	31	44	-13	-30.0%	625	255	306	-51	-16.5%
		SBL	123	118	137	134	35.4	25.9	9.6	37.0%	D	C	47	23	23	99.1%	266	315	255	60	23.6%
		SBR	0	0	0	0	0.0	0.0	0.0	0.0%	A	A	47	14	33	236.6%	266	315	241	75	31.0%
		SBT	109	107	61	59	32.5	21.4	11.1	52.1%	C	C	47	23	23	99.1%	266	315	255	60	23.6%
		WBL	214	215	137	140	17.0	16.2	0.8	4.9%	B	B	16	9	7	82.8%	70	184	118	66	56.1%
		WBR	92	92	92	92	10.7	8.3	2.4	29.2%	B	A	12	7	5	76.1%	193	197	140	57	40.7%
		WBT	168	173	193	200	11.1	11.0	0.2	1.6%	B	B	13	11	2	20.7%	193	199	151	48	32.0%
		WBT LRT	6	6	N/A	N/A	5.1	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A
<b>All</b>	<b>1306</b>	<b>1289</b>	<b>1334</b>	<b>1338</b>	<b>18.7</b>	<b>18.0</b>	<b>0.6</b>	<b>3.5%</b>	<b>B</b>	<b>B</b>	<b>22</b>	<b>23</b>	<b>-1</b>	<b>-5.5%</b>		<b>330</b>	<b>332</b>	<b>-2</b>	<b>-0.7%</b>		
25	Gann Street at Pettigrew Street <sup>2</sup> (Unsignalized)	EBR	157	157	121	121	4.0	2.9	1.1	37.1%	A	A	0	0	0	0.0%	206	4	0	4	0.0%
		EBT	413	410	501	496	4.3	2.8	1.5	52.2%	A	A	0	0	0	0.0%	206	4	0	4	0.0%
		NBL	125	128	169	172	15.6	15.7	-0.1	-0.4%	C	C	3	3	0	-0.2%	248	125	122	3	2.5%
		NBR	88	87	44	43	13.4	13.1	0.3	1.9%	B	B	3	3	0	-0.2%	248	125	122	3	2.5%
		WBL	27	26	64	63	8.8	10.1	-1.3	-13.2%	A	B	0	0	0	-100.0%	367	13	39	-26	-66.7%
		WBT	414	420	350	357	0.6	0.5	0.1	21.5%	A	A	0	0	0	0.0%	367	0	0	0	0.0%
		<b>All</b>	<b>1225</b>	<b>1228</b>	<b>1249</b>	<b>1252</b>	<b>4.9</b>	<b>4.7</b>	<b>0.3</b>	<b>5.4%</b>	<b>A</b>	<b>A</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>-0.6%</b>		<b>125</b>	<b>122</b>	<b>3</b>	<b>2.5%</b>
26	Alston Avenue at Gann Street <sup>1</sup>	EBL	33	34	30	31	52.8	56.0	-3.2	-5.8%	D	E	10	10	0	-3.9%	196	130	156	-26	-16.8%
		EBR	176	175	188	186	6.9	7.2	-0.3	-4.4%	A	A	4	6	-2	-28.6%	196	119	151	-33	-21.5%
		NBL	128	128	136	137	19.0	18.6	0.4	2.1%	B	B	45	47	-2	-4.9%	300	426	395	31	7.8%
		NBT	1474	1484	1490	1500	8.9	9.7	-0.8	-8.2%	A	A	45	47	-2	-4.9%	528	426	395	31	7.8%
		SBR	21	20	23	22	13.1	10.2	2.9	28.5%	B	B	70	51	19	36.1%	190	521	208	313	150.3%
		SBT	1359	1346	1360	1355	14.9	13.4	1.5	10.8%	B	B	72	59	13	22.4%	1037	524	223	301	134.7%
		WBL	154	153	151	150	39.4	55.3	-16.0	-28.8%	D	E	36	52	-16	-31.2%	188	234	300	-67	-22.2%
		WBR	153	150	150	147	11.6	11.9	-0.3	-2.8%	B	B	1	1	0	9.2%	1000	78	80	-2	-2.1%
		WBT	1	1	1	1	34.2	24.4	9.7	39.8%	C	C	4	4	0	12.7%	1000	102	103	-1	-0.6%
		<b>All</b>	<b>3500</b>	<b>3491</b>	<b>3529</b>	<b>3529</b>	<b>13.4</b>	<b>13.8</b>	<b>-0.4</b>	<b>-2.9%</b>	<b>B</b>	<b>B</b>	<b>32</b>	<b>31</b>	<b>1</b>	<b>3.4%</b>		<b>534</b>	<b>409</b>	<b>125</b>	<b>30.6%</b>

Node	Intersection	Movement	Volume (VPH)		Volume (VPH)		Delay (Seconds)				LOS		Avg Queue Length (ft)				Max Queue Length (ft)					
			Build		No-Build		Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Difference	Difference %	Storage Space Available	Build	No-Build	Difference	Difference %	
			Model	Demand	Model	Demand																
27	Roxboro Street at Pettigrew Street <sup>1</sup>	EBL	35	36	77	77	29.9	26.4	3.5	13.3%	C	C	15	15	0	0.7%	220	165	139	26	18.6%	
		EBT	111	114	122	123	24.3	14.7	9.6	65.2%	C	B	15	15	0	0.7%	288	165	139	26	18.6%	
		EBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	0	N/A	N/A	N/A		0	N/A	N/A	N/A	
		NBL			206	205		20.9				C		110				541		474		
		NBR	151	153	127	127	17.7	7.9	9.8	124.8%	B	A	83	99	-16	-15.8%	541	273	458	-185	-40.5%	
		NBT	1561	1577	1228	1244	18.3	20.5	-2.2	-10.8%	B	C	94	110	-16	-14.6%	541	290	474	-184	-38.9%	
		WBR			46	46		19.5				B		13				916		163		
		WBT			101	99		28.5				C		20				916		178		
		WBT LRT	6	6	N/A	N/A	0.0	N/A	N/A	N/A	A	N/A	1	N/A	N/A	N/A		0	N/A	N/A	N/A	
		<b>All</b>	<b>1883</b>	<b>1880</b>	<b>1907</b>	<b>1921</b>	<b>18.7</b>	<b>20.0</b>	<b>-1.3</b>	<b>-6.5%</b>	<b>B</b>	<b>B</b>	<b>43</b>	<b>54</b>	<b>-11</b>	<b>-20.7%</b>		<b>290</b>	<b>474</b>	<b>-184</b>	<b>-38.9%</b>	
28	LRT at Buchanan Boulevard <sup>2</sup>	EBT LRT	6	6			0.0				A		0					0				
		NBT	452	462			51.6				F		128					215				
		SBT	345	361			3.4				A		7					299				
		WBT LRT	6	6			5.1				A		9					235				
		All	809	823			30.3				D		36					301				
Downtown Durham Corridor		EB LRT	6	6			19.0															
Downtown Durham Corridor		WB LRT	6	6			22.0															
		All	46659	49803	46792	50848	29.5	27.7			C	C	77	88	-10	-11.6%		845	851	-6	-0.7%	

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied

 Indicates LRT Movement

 Indicates Traffic Impact

 Indicates Traffic Impact below Mid-D

 Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet



Table 13: D-O LRT: Downtown Durham – Synchro Intersection Analysis - 2040 Build One-Way Pettigrew VS 2040 No-Build AM Peak Hour 8:00 AM – 9:00 AM

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference	Difference %
1	Downtown Loop at Chapel Hill Street <sup>1</sup>	EBT	4.2	9.3	-5.1	-54.8%	A	A	0.16	0.38	239	28	188	-160	-85.1%
		EBR	0.1	0.1	0	0.0%	A	A	0.09	0.06	239	0	0	0	-
		WBLT	3.8	5.9	-2.1	-35.6%	A	A	0.04	0.11	232	11	43	-32	-74.4%
		SBT	16.4	16.5	-0.1	-0.6%	B	B	0.13	0.25	185	26	43	-17	-39.5%
		SBR	0.9	1.8	-0.9	-50.0%	A	A	0.22	0.25	185	23	76	-53	-69.7%
		Overall	4.8	8.2	-3.4	-41.5%	A	A							
2	Great Jones Street at W Main Street <sup>1</sup>	SBLTR	17.2	16.6	0.6	3.6%	B	B	0.33	0.29	441	111	97	14	14.4%
		EBT	10.6	10.6	0	0.0%	B	B	0.24	0.24	306	108	108	0	0.0%
		EBR	4.6	2	2.6	130.0%	A	A	0.22	0.18	148	51	26	25	96.2%
		WLT	14.8	18.9	-4.1	-21.7%	B	B	0.13	0.12	298	108	125	-17	-13.6%
		Overall	14	13.7	0.3	2.2%	B	B							
3	Great Jones Street at Morris Street <sup>1</sup>	WBTR	7.3	5.2	2.1	40.4%	A	A	0.31	0.25	557	28	50	-22	-44.0%
		NBL	28.2	29.8	-1.6	-5.4%	C	C	0.45	0.27	360	110	72	38	52.8%
		NBT	26.3	29.6	-3.3	-11.1%	C	C	0.30	0.26	360	81	73	8	11.0%
		SBR	7.8	2.4	5.4	225.0%	A	A	0.41	0.36	227	94	31	63	203.2%
		Overall	11.7	8.8	2.9	33.0%	B	A							
4	E Chapel Hill Street/ Main Street at Morris Street <sup>2</sup>	EBLTR	25.7	20.3	5.4	26.6%	C	C	0.54	0.64	232	242	320	-78	-24.4%
		WBLTR	10.9	10.7	0.2	1.9%	B	B	0.16	0.13	461	66	54	12	22.2%
		SBLT	46.4	35.1	11.3	32.2%	D	D	0.77	0.54	298	321	231	90	39.0%
		NBLTR	14.2	9.3	4.9	52.7%	B	A	0.61	0.40	460	241	48	193	402.1%
		Overall	27	20.6	6.4	31.1%	C	C							
5	Morgan Street at Foster Street <sup>1</sup>	WBLTR	4.3	4.9	-0.6	-12.2%	A	A	0.39	0.34	454	24	25	-1	-4.0%
		NBL	8.1	7.9	0.2	2.5%	A	A	0.04	0.08	360	14	25	-11	-44.0%
		NBT	10.5	9.2	1.3	14.1%	B	A	0.22	0.31	360	117	132	-15	-11.4%
		SBTR	9.5	10.6	-1.1	-10.4%	A	B	0.31	0.33	365	120	137	-17	-12.4%
		Overall	6.3	7	-0.7	-10.0%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference	Difference %
6	Blackwell Street at Jackie Robinson Drive <sup>1</sup>	EBLTR	13.2	16.1	-2.9	-18.0%	B	B	0.06	0.04	341	28	26	2	7.7%
		EBR	13.3	16.1	-2.8	-17.4%	B	B	0.06	0.04	341	33	28	5	17.9%
		WBL	1.3	1.4	-0.1	-7.1%	A	A	0.13	0.16	750	6	5	1	20.0%
		WBT	1.9	1.8	0.1	5.6%	A	A	0.38	0.31	750	18	10	8	80.0%
		WBR	1.2	1.1	0.1	9.1%	A	A	0.11	0.08	750	6	3	3	100.0%
		NBL	25.7	26.2	-0.5	-1.9%	C	C	0.32	0.34	201	104	112	-8	-7.1%
		NBT	24.6	24.5	0.1	0.4%	C	C	0.29	0.29	201	126	125	1	0.8%
		SBTR	25.6	31.6	-6	-19.0%	C	C	0.16	0.15	768	85	89	-4	-4.5%
		Overall	11.4	12.8	-1.4	-10.9%	B	B							
7	Morgan Street at Rigsbee Avenue <sup>1</sup>	WBLTR	1.7	1.9	-0.2	-10.5%	A	A	0.34	0.30	418	16	15	1	6.7%
		NBLT	16.1	17	-0.9	-5.3%	B	B	0.09	0.17	352	47	78	-31	-39.7%
		SBTR	9.5	14.4	-4.9	-34.0%	A	B	0.18	0.19	314	60	80	-20	-25.0%
		Overall	3.2	4.7	-1.5	-31.9%	A	A							
8	Morgan Street at Mangum Street <sup>1</sup>	NBLT	24.1	23.4	0.7	3.0%	C	C	0.64	0.59	206	243	213	30	14.1%
		WBT	9.7	9.5	0.2	2.1%	A	A	0.54	0.54	215	235	240	-5	-2.1%
		WBR	6.7	6.2	0.5	8.1%	A	A	0.21	0.20	215	74	67	7	10.4%
		Overall	16.7	15.8	0.9	5.7%	B	B							
9	Mangum Street at Jackie Robinson Drive <sup>1</sup>	WBLT	29.3	29	0.3	1.0%	C	C	0.60	0.60	506	239	223	16	7.2%
		SBT	13.7	11.1	2.6	23.4%	B	B	0.24	0.24	458	198	182	16	8.8%
		SBR	11.1	7.7	3.4	44.2%	B	A	0.21	0.18	228	161	111	50	45.0%
		Overall	20.7	18.8	1.9	10.1%	C	B							
10	Holloway Street at Roxboro Street <sup>1</sup>	WBT	29.9	30.9	-1	-3.2%	C	C	0.65	0.64	913	274	269	5	1.9%
		WBR	0.1	0.1	0	0.0%	A	A	0.08	0.08	913	0	0	0	-
		NBLTR	10.9	10.3	0.6	5.8%	B	B	0.22	0.22	225	100	99	1	1.0%
		Overall	16.3	16	0.3	1.9%	B	B							
11	Liberty Loop at Roxboro Street <sup>1</sup>	EBL	33.9	33.8	0.1	0.3%	C	C	0.46	0.46	276	118	116	2	1.7%
		EBT	32.6	32.7	-0.1	-0.3%	C	C	0.33	0.34	326	81	81	0	0.0%
		NBL	0.8	0.7	0.1	14.3%	A	A	0.21	0.15	460	15	11	4	36.4%
		NBTR	0.8	0.7	0.1	14.3%	A	A	0.15	0.16	460	11	12	-1	-8.3%
		Overall	8.5	9.3	-0.8	-8.6%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference	Difference %
12	Main Street at Roxboro Street <sup>1</sup>	EBL	15.9	22.2	-6.3	-28.4%	B	C	0.32	0.25	148	55	52	3	5.8%
		EBT	15.7	22.2	-6.5	-29.3%	B	C	0.43	0.40	293	192	184	8	4.3%
		WBT	18.9	19	-0.1	-0.5%	B	B	0.45	0.42	497	221	208	13	6.3%
		WBR	6.5	6.1	0.4	6.6%	A	A	0.20	0.22	108	55	53	2	3.8%
		NBLTR	21.1	12.3	8.8	71.5%	C	B	0.90	0.78	386	142	298	-156	-52.3%
		Overall	19.1	14.5	4.6	31.7%	B	B							
13	Dillard Street at Roxboro Street <sup>1</sup>	EBL	41.4	46.8	-5.4	-11.5%	D	D	0.40	0.46	345	59	74	-15	-
		EBT	30.4	36.2	-5.8	-16.0%	C	D	0.10	0.16	564	38	44	-6	-13.6%
		WBTR	48.1	44.1	4	9.1%	D	D	0.75	0.57	826	181	111	70	63.1%
		NBLT	5.5	3.8	1.7	44.7%	A	A	0.60	0.55	465	161	124	37	29.8%
		NBR	0.4	0.3	0.1	33.3%	A	A	0.11	0.10	307	0	0	0	-
		Overall	10	7.2	2.8	38.9%	A	A							
14	Jackie Robinson Drive at Roxboro Street <sup>1</sup>	WBT	8.3	8	0.3	3.8%	A	A	0.36	0.32	1342	133	116	17	14.7%
		WBR	79.3	80.5	-1.2	-1.5%	E	F	1.10	1.10	1342	940	944	-4	-0.4%
		NBL	4.5	4.6	-0.1	-2.2%	A	A	0.29	0.27	265	47	45	2	4.4%
		NBT	30.5	30.1	0.4	1.3%	C	C	0.74	0.73	265	275	268	7	2.6%
		Overall	39.5	40.8	-1.3	-3.2%	D	D							
15	Dillard Street at Holloway Street <sup>1</sup>	EBLTR	6.9	7.4	-0.5	-6.8%	A	A	0.22	0.22	916	50	54	-4	-7.4%
		WBLTR	13.5	13.7	-0.2	-1.5%	B	B	0.47	0.48	715	226	228	-2	-0.9%
		NBL	19.4	22.7	-3.3	-14.5%	B	C	0.38	0.39	485	145	156	-11	-7.1%
		NBTR	6.4	9	-2.6	-28.9%	A	A	0.04	0.05	485	25	25	0	0.0%
		SBLTR	13.9	14.2	-0.3	-2.1%	B	B	0.12	0.11	310	50	47	3	6.4%
		Overall	13	13.9	-0.9	-6.5%	B	B							
16	Dillard Street at Liberty Street <sup>1</sup>	NBTR	17.8	18.2	-0.4	-2.2%	B	B	0.07	0.10	384	41	51	-10	-19.6%
		SBLT	13.8	13.4	0.4	3.0%	B	B	0.13	0.13	486	47	50	-3	-6.0%
		EBL	1.7	2.1	-0.4	-19.0%	A	A	0.03	0.10	378	4	11	-7	-63.6%
		EBT	1.7	2	-0.3	-15.0%	A	A	0.06	0.06	378	7	8	-1	-12.5%
		EBR	0.2	0.1	0.1	100.0%	A	A	0.09	0.02	378	1	0	1	-
		WBL	9.5	9.9	-0.4	-4.0%	A	A	0.10	0.15	397	40	55	-15	-27.3%
		WBR	2.3	2.3	0	0.0%	A	A	0.10	0.10	397	20	19	1	5.3%
		Overall	8.5	9.2	-0.7	-7.6%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference	Difference %
17	Dillard Street at Main Street <sup>2</sup>	EBL	6.7	6.8	-0.1	-1.5%	A	A	0.04	0.05	100	8	12	-4	-33.3%
		EBT	7.3	7.1	0.2	2.8%	A	A	0.09	0.08	365	51	50	1	2.0%
		EBR	3.6	3.6	0	0.0%	A	A	0.10	0.10	100	28	30	-2	-6.7%
		WBL	6.6	6.6	0	0.0%	A	A	0.06	0.06	555	23	23	0	0.0%
		WBTR	10.1	9.9	0.2	2.0%	B	A	0.48	0.47	555	218	212	6	2.8%
		NBL	23.3	23.8	-0.5	-2.1%	C	C	0.14	0.16	147	41	42	-1	-2.4%
		NBTR	16.7	17.7	-1	-5.6%	B	B	0.07	0.09	396	35	42	-7	-16.7%
		SBL	21	17.8	3.2	18.0%	C	B	0.15	0.17	385	62	60	2	3.3%
		SBTR	15.7	14.1	1.6	11.3%	B	B	0.35	0.42	385	123	135	-12	-8.9%
Overall	11.3	11.1	0.2	1.8%	B	B									

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied

 Indicates Traffic Impact

 Indicates Traffic Impact below Mid-D

 Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet

Table 14: D-O LRT: Downtown Durham – Synchro Intersection Analysis - 2040 Build One-Way Pettigrew VS 2040 No-Build PM Peak Hour 5:00 PM – 6:00 PM

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference Absolute	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference Absolute	Difference %
1	Downtown Loop at Chapel Hill Street <sup>1</sup>	EBT	5.8	7.3	-1.5	-20.5%	A	A	0.27	0.37	239	89	126	-37	-29.4%
		EBR	0.1	0.0	0.1	-	A	A	0.07	0.00	239	0	0	0	-
		WBLT	14.0	6.3	7.7	122.2%	B	A	0.19	0.15	232	122	47	75	159.6%
		SBT	11.9	12.8	-0.9	-7.0%	B	B	0.29	0.30	185	38	43	-5	-11.6%
		SBR	4.2	1.9	2.3	121.1%	A	A	0.45	0.33	185	185	76	109	143.4%
		Overall	7.3	7.0	0.3	4.3%	A	A							
2	Great Jones Street at W Main Street <sup>1</sup>	SBLTR	15.9	14.6	1.3	8.9%	B	B	0.47	0.40	441	134	108	26	24.1%
		EBT	9.8	9.8	0.0	0.0%	A	A	0.35	0.35	306	137	136	1	0.7%
		EBR	7.0	5.5	1.5	27.3%	A	A	0.25	0.25	148	71	62	9	14.5%
		WLT	9.2	9.0	0.2	2.2%	A	A	0.28	0.27	298	88	100	-12	-12.0%
		Overall	12.9	11.7	1.2	10.3%	B	B							
3	Great Jones Street at Morris Street <sup>1</sup>	WBTR	9.7	9.4	0.3	3.2%	A	A	0.33	0.31	557	56	51	5	9.8%
		NBL	36.6	32.2	4.4	13.7%	D	C	0.49	0.36	360	111	86	25	29.1%
		NBT	33.1	31.8	1.3	4.1%	C	C	0.34	0.35	360	80	87	-7	-8.0%
		SBR	12.4	11.2	1.2	10.7%	B	B	0.48	0.51	227	134	134	0	0.0%
		Overall	14.4	13.1	1.3	9.9%	B	B							
4	E Chapel Hill Street/ Main Street at Morris Street <sup>2</sup>	EBLTR	20.8	87.4	-66.6	-76.2%	C	F	0.61	1.07	232	234	324	-90	-27.8%
		WBLTR	17.7	15.7	2.0	12.7%	B	B	0.58	0.33	461	216	81	135	166.7%
		SBLT	18.4	17.3	1.1	6.4%	B	B	0.57	0.67	298	112	182	-70	-38.5%
		NBLTR	16.8	8.6	8.2	95.3%	B	A	0.34	0.35	460	128	89	39	43.8%
		Overall	18.5	39.7	-21.2	-53.4%	B	D							
5	Morgan Street at Foster Street <sup>1</sup>	WBLTR	3.8	5.7	-1.9	-33.3%	A	A	0.34	0.28	454	13	28	-15	-53.6%
		NBL	10.5	11.8	-1.3	-11.0%	B	B	0.12	0.20	360	24	39	-15	-38.5%
		NBT	12.4	13.4	-1.0	-7.5%	B	B	0.39	0.46	360	160	194	-34	-17.5%
		SBTR	12.2	12.7	-0.5	-3.9%	B	B	0.51	0.51	365	194	196	-2	-1.0%
		Overall	7.9	9.7	-1.8	-18.6%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference Absolute	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference Absolute	Difference %
6	Blackwell Street at Jackie Robinson Drive <sup>1</sup>	EBLTR	20.2	19.4	0.8	4.1%	C	B	0.60	0.57	341	234	220	14	6.4%
		EBR	20.2	19.1	1.1	5.8%	C	B	0.60	0.56	341	237	215	22	10.2%
		WBL	20.5	19.5	1.0	5.1%	C	B	0.49	0.46	750	108	104	4	3.8%
		WBT	13.2	12.8	0.4	3.1%	B	B	0.21	0.16	750	84	67	17	25.4%
		WBR	12.5	12.2	0.3	2.5%	B	B	0.12	0.09	750	46	37	9	24.3%
		NBL	15.6	15.7	-0.1	-0.6%	B	B	0.19	0.19	201	50	52	-2	-3.8%
		NBT	14.6	14.7	-0.1	-0.7%	B	B	0.16	0.17	201	68	69	-1	-1.4%
		SBTR	17.0	16.7	0.3	1.8%	B	B	0.37	0.34	768	142	134	8	6.0%
		Overall	18.0	17.5	0.5	2.9%	B	B							
7	Morgan Street at Rigsbee Avenue <sup>1</sup>	WBLTR	11.5	11.0	0.5	4.5%	B	B	0.37	0.30	418	108	86	22	25.6%
		NBLT	12.5	13.6	-1.1	-8.1%	B	B	0.23	0.32	352	81	111	-30	-27.0%
		SBTR	9.0	9.4	-0.4	-4.3%	A	A	0.15	0.16	314	54	57	-3	-5.3%
		Overall	11.4	11.3	0.1	0.9%	B	B							
8	Morgan Street at Mangum Street <sup>1</sup>	NBLT	21.4	21.0	0.4	1.9%	C	C	0.58	0.52	206	173	138	35	25.4%
		WBT	7.5	6.8	0.7	10.3%	A	A	0.45	0.44	215	160	163	-3	-1.8%
		WBR	5.1	3.8	1.3	34.2%	A	A	0.15	0.13	215	45	35	10	28.6%
		Overall	14.5	13.2	1.3	9.8%	B	B							
9	Mangum Street at Jackie Robinson Drive <sup>1</sup>	WBLT	23.8	22.8	1.0	4.4%	C	C	0.55	0.57	506	138	154	-16	-10.4%
		SBT	4.7	5.9	-1.2	-20.3%	A	A	0.30	0.33	458	92	110	-18	-16.4%
		SBR	4.1	7.3	-3.2	-43.8%	A	A	0.28	0.41	228	67	143	-76	-53.1%
		Overall	10.8	11.7	-0.9	-7.7%	B	B							
10	Holloway Street at Roxboro Street <sup>1</sup>	WBT	34.2	32.8	1.4	4.3%	C	C	0.76	0.74	913	274	249	25	10.0%
		WBR	0.2	0.1	0.1	100.0%	A	A	0.15	0.11	913	0	0	0	-
		NBLTR	3.0	3.7	-0.7	-18.9%	A	A	0.42	0.45	225	82	105	-23	-21.9%
		Overall	8.6	8.6	0.0	0.0%	A	A							
11	Liberty Loop at Roxboro Street <sup>1</sup>	EBL	22.8	22.8	0.0	0.0%	C	C	0.56	0.54	276	147	142	5	3.5%
		EBT	19.7	20.3	-0.6	-3.0%	B	C	0.40	0.42	326	95	98	-3	-3.1%
		NBL	1.5	1.4	0.1	7.1%	A	A	0.24	0.15	460	16	10	6	60.0%
		NBTR	1.6	1.5	0.1	6.7%	A	A	0.38	0.43	460	24	26	-2	-7.7%
		Overall	7.2	7.2	0.0	0.0%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference Absolute	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference Absolute	Difference %
12	Main Street at Roxboro Street <sup>1</sup>	EBL	21.8	17.9	3.9	21.8%	C	B	0.53	0.42	148	104	84	20	23.8%
		EBT	15.3	14.7	0.6	4.1%	B	B	0.46	0.42	293	179	161	18	11.2%
		WBT	15.0	14.2	0.8	5.6%	B	B	0.52	0.47	497	212	187	25	13.4%
		WBR	2.5	2.5	0.0	0.0%	A	A	0.19	0.21	108	27	28	-1	-3.6%
		NBLTR	45.6	35.7	9.9	27.7%	D	D	1.01	0.97	386	538	504	34	6.7%
		Overall	32.6	26.5	6.1	23.0%	C	C							
13	Dillard Street at Roxboro Street <sup>1</sup>	EBL	70.3	66.2	4.1	6.2%	E	E	0.92	0.87	345	169	143	26	18.2%
		EBT	21.9	24.0	-2.1	-8.8%	C	C	0.37	0.44	564	105	115	-10	-8.7%
		WBTR	28.9	30.5	-1.6	-5.2%	C	C	0.67	0.70	826	182	177	5	2.8%
		NBLT	7.5	6.6	0.9	13.6%	A	A	0.64	0.56	465	131	114	17	14.9%
		NBR	0.7	0.6	0.1	16.7%	A	A	0.10	0.13	307	0	2	-2	-100.0%
		Overall	15.3	14.7	0.6	4.1%	B	B							
14	Jackie Robinson Drive at Roxboro Street <sup>1</sup>	WBT	7.9	8.7	-0.8	-9.2%	A	A	0.31	0.32	1342	82	82	0	0.0%
		WBR	21.7	19.7	2.0	10.2%	C	B	0.83	0.79	1342	351	288	63	21.9%
		NBL	3.8	3.6	0.2	5.6%	A	A	0.32	0.33	265	45	47	-2	-4.3%
		NBT	20.3	18.9	1.4	7.4%	C	B	0.61	0.56	265	200	195	5	2.6%
		Overall	16.3	15.1	1.2	7.9%	B	B							
15	Dillard Street at Holloway Street <sup>1</sup>	EBLTR	6.4	5.9	0.5	8.5%	A	A	0.43	0.36	916	114	94	20	21.3%
		WBLTR	6.3	6.2	0.1	1.6%	A	A	0.36	0.35	715	96	93	3	3.2%
		NBL	22.8	18.3	4.5	24.6%	C	B	0.62	0.47	485	142	101	41	40.6%
		NBTR	6.8	7.1	-0.3	-4.2%	A	A	0.13	0.19	485	34	41	-7	-17.1%
		SBLTR	12.5	13.2	-0.7	-5.3%	B	B	0.10	0.11	310	32	33	-1	-3.0%
		Overall	10.2	8.7	1.5	17.2%	B	A							
16	Dillard Street at Liberty Street <sup>1</sup>	NBTR	13.7	11.9	1.8	15.1%	B	B	0.17	0.15	384	40	35	5	14.3%
		SBLT	8.8	9.1	-0.3	-3.3%	A	A	0.15	0.11	486	24	22	2	9.1%
		EBL	7.2	7.7	-0.5	-6.5%	A	A	0.08	0.15	378	30	49	-19	-38.8%
		EBT	8.7	9.1	-0.4	-4.4%	A	A	0.29	0.33	378	92	106	-14	-13.2%
		EBR	2.0	2.3	-0.3	-13.0%	A	A	0.18	0.10	378	22	16	6	37.5%
		WBL	7.6	7.8	-0.2	-2.6%	A	A	0.10	0.12	397	23	25	-2	-8.0%
		WBR	2.4	2.5	-0.1	-4.0%	A	A	0.08	0.06	397	14	12	2	16.7%
		Overall	8.2	8.5	-0.3	-3.5%	A	A							

Node	Intersection	Movement	Delay (Seconds)				LOS		V/C		95% Queue Length				
			Build	No-Build	Difference Absolute	Difference %	Build	No-Build	Build	No-Build	Storage Space	Build	No-Build	Difference Absolute	Difference %
17	Dillard Street at Main Street <sup>2</sup>	EBL	11.7	11.3	0.4	3.5%	B	B	0.14	0.10	100	28	21	7	33.3%
		EBT	14.1	14.2	-0.1	-0.7%	B	B	0.44	0.45	365	147	150	-3	-2.0%
		EBR	3.7	2.6	1.1	42.3%	A	A	0.08	0.05	100	16	11	5	45.5%
		WBL	10.7	10.8	-0.1	-0.9%	B	B	0.06	0.07	555	15	17	-2	-11.8%
		WBTR	13.4	13.9	-0.5	-3.6%	B	B	0.46	0.49	555	144	156	-12	-7.7%
		NBL	10.8	9.6	1.2	12.5%	B	A	0.29	0.21	147	61	48	13	27.1%
		NBTR	7.6	6.6	1.0	15.2%	A	A	0.26	0.22	396	69	56	13	23.2%
		SBL	8.0	8.5	-0.5	-5.9%	A	A	0.32	0.33	385	66	74	-8	-10.8%
		SBTR	2.8	2.8	0.0	0.0%	A	A	0.28	0.21	385	18	21	-3	-14.3%
		Overall	9.9	10.3	-0.4	-3.9%	A	B							

1 - NCDOT Traffic Impact Criteria is applied

2 - City of Durham Traffic Impact Criteria is applied

 Indicates Traffic Impact

 Indicates Traffic Impact below Mid-D

 Build Max Queue length exceeds No-Build and Storage Space by more than 10 feet



## 7.1 Analysis of LOS Thresholds in Primary Study Area

Each of the two 2040 Build LRT Options were compared to the respective No-Build scenario at each intersection by overall and individual movement levels. While the LRT is at-grade between Case Street and east of Swift Avenue for Build Option 1 and the LRT is elevated in this section for Build LRT Option 2, both options have a consistent LRT alignment and roadway configuration east of Buchanan Boulevard. Therefore, any MOE differences between the two build options at locations east of Buchanan Boulevard would be due to the change in the LRV travel times. Under LRT Option 2, the LRV would operate at a higher speed along the elevated track section near Swift Avenue, which would cause the train to arrive at the various at-grade intersections at different phases compared to Option 1. As the train generally maintains a consistent travel time, the signal preemption events would occur during the same signal phase at intersections using fixed time signal operations. For the purposes of the traffic impact analysis, the worst LOS, highest delay, and longest maximum queue length among both build options has been selected for discussion below.

The following section discusses the intersections where LRT impacts have been identified. The identified impacts are discussed below in regards to the NCDOT thresholds.

### 7.1.1 Main Street at 9<sup>th</sup> Street

The NCDOT traffic impact criteria are applied to the intersection of Main Street and 9<sup>th</sup> Street as Main Street is under NCDOT jurisdiction. The two Build LRT Options report different delays, LOS, and queue lengths at this intersection. For the 2040 LRT At-Grade Swift Avenue Option 1, the overall intersection delay at Main Street and 9<sup>th</sup> Street exceeds the NCDOT thresholds in the PM peak hour by experiencing LOS degradation. The 2040 LRT Elevated Swift Avenue Option 2 reports that the overall intersection delays meet NCDOT criteria in both AM and PM peak hours. Similarly, all of the individual intersection movements are expected to meet the NCDOT thresholds in the AM peak hour for both LRT options; however, in the PM peak hour LRT Option 1 reports multiple movements that exceed NCDOT LOS thresholds while Option 2 does not report any movements that would exceed LOS or delay impact criteria.

In the PM peak hour, LRT Option 1 reports that five individual movements are expected to operate with degraded LOS of middle D or worse including the eastbound Main Street right turn, the eastbound Main Street through movement, the southbound 9<sup>th</sup> Street left turn, the southbound 9<sup>th</sup> Street right turn, and the southbound 9<sup>th</sup> Street through movement.

For the 2040 LRT At-Grade Swift Avenue Option 1, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Northbound 9<sup>th</sup> Street left turn exceeds storage space by 131 feet in AM and 149 feet in PM
- Northbound 9<sup>th</sup> Street right turn exceeds the shared through/right lane storage space by 107 feet in AM and 125 feet in PM
- Northbound 9<sup>th</sup> Street through movement exceeds the shared through/right lane storage space by 131 AM and 149 feet in PM
- Southbound 9<sup>th</sup> Street left turn exceeds storage space by 184 feet in AM and 279 feet in PM

- Southbound 9<sup>th</sup> Street right turn exceeds the shared through/right lane storage space by 154 in AM and 250 feet in PM
- Southbound 9<sup>th</sup> Street through movement exceeds the shared through/right lane storage space by 184 feet in AM and 279 feet in PM
- Westbound Main Street left turn exceeds storage space by 36 feet in AM
- Westbound Main Street right turn exceeds the shared through/right lane storage space by 65 feet in AM only
- Westbound Main Street through movement exceeds the shared through/right lane storage space by 87 feet in AM only

Under the LRT At-Grade Swift Avenue Option 1, the southbound 9<sup>th</sup> Street approach would be impacted due to the traffic detoured from the closed section of Pettigrew Street. Due to significant right-of-way constraints including the NCRR corridor to the south, there are no practical geometric mitigations that could resolve the movement delay and maximum queue impacts for Option 1.

For the 2040 LRT Elevated Swift Avenue Option 2, there are no queue impacts at the intersection of Main Street and 9<sup>th</sup> Street in the AM and PM peak hours.

### 7.1.2 Main Street at Iredell Street

The NCDOT traffic impact criteria are applied to the intersection of Main Street and Iredell Street, as Main Street is under NCDOT jurisdiction. For both 2040 Build LRT Options, the overall intersection delays at Main Street and Iredell Street meet the NCDOT thresholds in both AM and PM peak hours. All movements are expected to meet the NCDOT thresholds as well in both LRT options and peak hours.

The two Build LRT Options report different delays, LOS, and queue lengths at this intersection.

For the 2040 LRT At-Grade Swift Avenue Option 1, the maximum queue length for the following movements will exceed both their available storage space and their AM peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Main Street left turn exceeds storage space by 108 feet in AM
- Westbound Main Street right turn exceeds the shared through/right lane storage space by 26 feet in AM
- Westbound Main Street through movement exceeds the shared through/right lane storage space by 26 feet in AM

In AM peak hour under Option 1, the maximum queues along the eastbound and westbound movements would increase due to the diverted traffic from the Pettigrew Street closure between Case Street and Swift Avenue. The average queues are within the available storage space, except for the westbound Main Street left turn. Due to significant right-of-way constraints including the NCRR corridor to the south, there are no practical geometric mitigations that could resolve the movement delay and maximum queue impacts for Option 1.

For the LRT Option 2, Pettigrew Street is open between Case Street and east of Swift Avenue, and therefore all movements' maximum queues are expected to meet the NCDOT thresholds in both AM and PM peak hours.

### 7.1.3 Main Street at Broad Street

The NCDOT traffic impact criteria are applied to the intersection of Main Street and Broad Street, as Main Street is under NCDOT jurisdiction. For both 2040 LRT Options, the overall intersection delays at Main Street and Broad Street meet the NCDOT thresholds in both AM and PM peak hours.

The two Build LRT Options report different delays, LOS, and queue lengths at this intersection. Under the LRT At-Grade Swift Avenue Option 1, several individual movements are expected to operate with degraded LOS of middle D or worse including the eastbound Main Street left turn in the AM and PM peak hours, the westbound Main Street left turn in the AM and PM peak hours, the westbound Main Street right turn in the AM peak hour only, and the westbound Main Street through movement in the AM and PM peak hours. For Option 2, the following movements reported a degraded LOS: the eastbound Main Street left turn during the AM peak hour only and the northbound Broad Street left turn in the PM peak hour only.

In the AM peak hour under Option 1, the delays for the eastbound left and westbound left and through movements would increase due to the detoured traffic from a closed Pettigrew Street between Case Street and east of Swift Avenue. In the PM peak hour under Option 1, the delay has increased for eastbound and westbound Main Street left turns due to the same traffic diversions expected in the AM.

In the AM peak hour under Option 2, although the eastbound Main Street left turn LOS degrades, this movement's volume is forecasted to be less than 15 vehicles per hour. During the PM peak hour under Option 2, the northbound Broad Street left turn movement would experience an LOS degradation as a result of signal timing changes that were made to favor the east/west coordination of streets along the LRT project, which has an east/west alignment in Downtown Durham. The signal offset or phase times could potentially be modified to alleviate the northbound left movement degradation, however, these changes would potentially cause more significant impacts to the adjacent intersections. Overall, this intersection operates slightly better under Option 2 when compared to the No-Build PM due to signal timing modifications.

For the 2040 LRT At-Grade Swift Avenue Option 1, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Westbound Main Street left turn exceeds storage space by 265 feet in AM and by 264 feet in PM
- Westbound Main Street right turn exceeds the shared through/right lane storage space by 16 feet in AM
- Westbound Main Street through movement exceeds the shared through/right lane storage space by 97 feet in AM

Under the 2040 LRT Elevated Swift Avenue Option 2, only the northbound Broad Street right turn would experience a maximum queue length that would exceed the storage space and No-Build maximum queue space, with a maximum queue in excess of the available storage space by 42 feet in the AM peak hour only. However, this maximum queue is considered a very rare occurrence as the average queue for this movement is only 2 feet. For the LRT Option 2, Pettigrew Street is open between Case Street and east of Swift Avenue, and therefore the majority of vehicular movements are expected to meet the NCDOT thresholds in both AM and PM peak hours.

#### 7.1.4 Pettigrew Street at 9<sup>th</sup> Street

The NCDOT traffic impact criteria are applied to the unsignalized intersection of Pettigrew Street and 9<sup>th</sup> Street, as this section of 9<sup>th</sup> Street is under NCDOT jurisdiction. For both 2040 LRT Build Options, the overall intersection delays at Pettigrew Street and 9<sup>th</sup> Street meet the NCDOT thresholds in the AM peak hour. However, under the PM peak hour in Option 1, the overall intersection experiences an increase in delay greater than 25% thereby exceeding NCDOT criteria. During the PM peak hour, Option 2 meets the NCDOT criteria for overall intersection delay.

The two Build LRT Options report different delays, LOS, and queue lengths at this intersection. Under the LRT At-Grade Swift Avenue Option 1, two individual movements are expected to operate with degraded LOS of middle D or worse including the westbound Pettigrew Street left turn in the PM peak hour and the westbound Pettigrew Street right turn in the PM peak hour. For Option 2, all movements meet the NCDOT delay and LOS criteria for both AM and PM peak hours.

For the 2040 LRT At-Grade Swift Avenue Option 1, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Westbound Pettigrew Street left turn exceeds the shared left/right turn lane storage space by 138 feet in PM
- Westbound Main Street right turn exceeds the shared left/right lane storage space by 138 feet in PM

In PM peak hour under Option 1, both delays and the maximum queues are expected to increase beyond NCDOT thresholds for the westbound approach due to the detoured traffic. These westbound movements have relatively low forecast volumes with 87 vehicles per hour expected for the westbound Pettigrew Street left turn and only 15 vehicles per hour expected for the westbound right turn. Due to significant right-of-way constraints including the NCRR corridor to the north, there are no practical geometric mitigations that could resolve the movement delay and maximum queue impacts for Option 1. This location is also physically constrained by the NCRR bridge over Erwin Road/9<sup>th</sup> Street.

For the 2040 LRT Elevated Swift Avenue Option 2, there are no maximum queue length impacts expected at any movement.

#### 7.1.5 Pettigrew Street at Swift Avenue

The NCDOT traffic impact criteria are applied to the unsignalized intersection of Pettigrew Street and Swift Avenue, as this section of Swift Avenue is under NCDOT jurisdiction. In 2040 LRT Option 1, due to the closure of Pettigrew Street between Case Street and east of Swift Avenue, only the northbound and southbound Swift Avenue through movements are allowed. The LRT crossing at Swift Avenue would be controlled by gates. For LRT Option 2, the LRT is elevated and the intersection would remain the same as the No-Build Conditions.

For 2040 LRT At-Grade Swift Avenue Option 1, the overall intersection delay at Pettigrew Street and Swift Avenue exceeds the NCDOT thresholds in the AM peak hour. The additional delay experienced is partially caused by the LRT crossing, and added congestion at the intersection of Main Street and Broad Street to the north caused by the detoured traffic from the Pettigrew Street closure.

The 2040 LRT Option 2 meets the NCDOT criteria for overall intersection and all individual movement delays in both AM and PM peak hours.

In 2040 LRT Option 1 during the AM peak hour, the Vissim model indicates the northbound through movement will degrade LOS.

For the 2040 LRT At-Grade Swift Avenue Option 1, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Northbound Swift Avenue through movement exceeds storage space by 408 feet in AM
- Southbound Swift Avenue through movement exceeds storage space by 64 feet in AM

The queuing and delays experienced in Option 1 are primarily due to the increased congestion at the intersection of Main Street and Broad Street to the north. Due to the right-of-way constraints and adjacent NCRS corridor, there are no practical mitigations to reduce delays and queues for the northbound and southbound Swift Avenue approaches.

In Build Option 2 due to elevated LRT tracks, there are no traffic impacts in either peak hour.

#### **7.1.6 Main Street at Buchanan Boulevard**

The NCDOT traffic impact criteria are applied to the intersection of Main Street and Buchanan Boulevard, as Main Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT Options, the overall intersection delays at Main Street and Buchanan Boulevard meet the NCDOT thresholds in both AM and PM peak. None of the movements experience delay or LOS impacts in either LRT Option.

For both 2040 LRT Options during the AM and PM peak hours, the southbound Buchanan Boulevard right turn maximum queue exceeds the available storage space. For both Build Options, the maximum queue length exceeds the right turn bay storage space by 60 feet in the AM and 161 feet in the PM peak hour, but the maximum queue is contained within the southbound approach and would not reach the upstream intersection. Additionally, average queue lengths are well below the available storage length for both peak hours under both options with an average length of 5 feet in the AM and 9 feet in the PM peak hour. The Build Options' maximum queue exceeds the respective No-Build movement by only 14 feet in the AM and 36 feet in the PM peak hour

#### **7.1.7 Memorial Street at Duke Street**

The NCDOT traffic impact criteria are applied to the intersection of Memorial Street and Duke Street, as Duke Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT options, there are no overall intersection or movement delay impacts at Memorial Street and Duke Street.

For both 2040 LRT options, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Memorial Street left turn exceeds the storage space by 31 feet in PM only
- Northbound Duke Street left turn exceeds storage space by 54 feet in AM only
- Northbound Duke Street through movement to the northbound left turn bay at Peabody Street exceeds storage space by 96 feet in AM peak and 130 feet in PM
- Northbound Duke Street through movement exceeds storage space by 148 feet in AM peak and 188 feet in PM

The average queue lengths for the movements above are all expected to be 30 feet or less, which are well below the available storage length for both peak hours in both Build options. There are no practical mitigations due to right-of-way constraints and proximity of the adjacent signalized intersections.

#### 7.1.8 Chapel Hill Street at Duke Street

The NCDOT traffic impact criteria are applied to the intersection of Chapel Hill Street and Duke Street, as both roadways are under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT options, there are no overall intersection or movement delay impacts at Chapel Hill Street and Duke Street.

For both 2040 LRT options, the maximum queue lengths are generally consistent between alternatives. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Chapel Hill Street left turn exceeds the left turn bay storage space by 106 feet for in AM only, however, the movement maximum queue length will be contained by the eastbound approach
- Northbound Duke Street left turn exceeds the shared left/through lane storage space by 127 feet in PM only
- Northbound Duke Street right turn exceeds storage space by 108 feet in PM only
- Northbound Duke Street through movement exceeds the shared left/through lane storage space by 127 feet in PM only
- Westbound Chapel Hill Street right turn exceeds the shared through/right turn lane storage space by 103 feet in AM only
- Westbound Chapel Hill Street through movement exceeds the shared through/right turn lane storage space by 133 feet in AM only

The maximum queue length events are considered to occur infrequently and the average queue lengths are well below the available storage length for both peak hours in both scenarios, and there are no practical mitigations due to right-of-way constraints and proximity of the adjacent signalized intersections.

#### 7.1.9 Chapel Hill Street at Willard Street

The NCDOT traffic impact criteria are applied to the intersection of Chapel Hill Street and Willard Street, as Chapel Hill Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT Options, the overall intersection delays at Chapel Hill Street and Willard Street meet the NCDOT thresholds in both the AM and PM peak hours.

Under both LRT Options, several movements are expected to operate with degraded LOS of middle D or worse including the northbound Willard Street left turn in the PM peak hour and the northbound Willard Street right turn in the PM peak hour.

For both 2040 LRT Options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Chapel Hill Street right turn exceeds the shared through/right lane storage space by 65 feet in AM and by 29 feet in PM
- Eastbound Chapel Hill Street through movement exceeds the shared through/right lane storage space by 65 feet in AM and 29 feet in PM

For both 2040 Build Options during the AM peak hour, the eastbound maximum queue length would extend longer than the available storage space. However the average queue lengths are well below the storage length.

#### **7.1.10 Pettigrew Street at Chapel Hill Street**

The NCDOT traffic impact criteria are applied to the intersection of Pettigrew Street and Chapel Hill Street, as Chapel Hill Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT Options, the overall intersection delays at Pettigrew Street and Chapel Hill Street meet the NCDOT thresholds in both the AM and PM peak hours. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. Although the removal of the westbound Pettigrew Street approach would eliminate vehicular conflicts with the north and southbound Chapel Hill Street movements, the traffic signal will be maintained to provide for the safe crossing of pedestrians across Chapel Hill Street.

For both LRT options in both peak hours, the overall intersection and all movement delays and LOS at Pettigrew Street and Chapel Hill Street meet the NCDOT thresholds.

For both 2040 LRT scenarios, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Chapel Hill Street right turn exceeds the shared through/right lane storage space by 78 feet in AM and 72 feet in PM
- Eastbound Chapel Hill Street through movement exceeds the shared through/right lane storage space by 95 feet in AM and 89 feet in PM
- Westbound Chapel Hill Street left turn exceeds storage space by 70 feet in AM and 78 feet in PM
- Westbound Chapel Hill Street through movement exceeds storage space by 17 feet in AM and 25 feet in PM

The maximum queue lengths along eastbound and westbound Chapel Hill Street approaches have increased due to detoured westbound traffic from Pettigrew Street. However, the average queues are well below the available storage lengths for these affected movements.

### 7.1.11 Pettigrew Street at Blackwell Street

The City of Durham traffic impact criteria are applied to the intersection of Pettigrew Street and Blackwell Street, as both roadways are under city jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. For both 2040 LRT options, the LRT crosses Blackwell Street at the north side of the intersection of Pettigrew Street and Blackwell Street.

For both 2040 LRT Options, the overall intersection and individual movement delays at Pettigrew Street and Blackwell Street meet the City of Durham thresholds in both the AM and PM peak hours.

For both 2040 LRT Options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Pettigrew Street left turn exceeds the shared left/through/right lane storage space by 103 feet in AM and 113 feet in PM for both Options
- Southbound Blackwell Street left turn exceeds storage space by 66 feet in PM only
- Southbound Blackwell Street through movement exceeds storage space by 66 feet in PM only

The maximum queue lengths at this intersection are primarily due to the LRT signal preemption events. However, the average queue lengths are well below the storage length. The LRT crossing of Blackwell Street does not cause significant impacts to this intersection.

### 7.1.12 Main Street at Corcoran Street

The City of Durham traffic impact criteria are applied to the intersection of Main Street and Corcoran Street, as both roadways are under city jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. For both 2040 LRT options, the LRT crosses Blackwell Street at the north side of the intersection of Pettigrew Street and Blackwell Street, which is located to the south of Main Street and Corcoran Street.

For both 2040 LRT options, the overall intersection and individual movement delays at Main Street and Corcoran Street meet the City of Durham thresholds in both the AM and PM peak hours.

For both 2040 LRT options, the maximum queue lengths are generally consistent between options. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Main Street left turn exceeds the shared left/through/right lane storage space by 167 feet in AM only
- Eastbound Main Street right turn exceeds the shared left/through/right lane storage space by 151 feet in AM only
- Eastbound Main Street through movement exceeds the shared left/through/right lane storage space by 167 feet in AM only



The increased maximum queue lengths at this intersection are primarily due to the LRT signal preemption events occurring two intersections to the south at Pettigrew Street. However, the average queue lengths are well below the available storage length. Additionally, the Build maximum queues are expected to be slightly longer than the No-Build maximum queue length by 24 feet for all three of the impacted eastbound Main Street movements.

#### 7.1.13 Main Street at Mangum Street

The NCDOT traffic impact criteria are applied to the intersection of Main Street and Mangum Street, as Mangum Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT Options, the overall intersection delay at Main Street and Mangum Street exceeds the NCDOT thresholds in the PM peak hour by experiencing degradation of LOS. The LRV travel times have an impact at this intersection due to the poor operations expected in the No-Build PM peak hour. Therefore, due to alignment differences at Swift Avenue there are MOE variations between Build Option 1 and Build Option 2.

Under the LRT At-Grade Swift Avenue Option 1, several individual movements are expected to operate with degraded LOS of middle D or worse including the eastbound Main Street through movement in the AM peak hour, the southbound Mangum Street left turn in the PM peak hour, the southbound Mangum Street through movement in the PM peak hour, and the westbound Main Street through movement in the PM peak hour. For Option 1, the eastbound Main Street right turn movement will maintain its LOS but experiences an increase in delay greater than 25% thereby exceeding NCDOT criteria.

For Build Option 2, the following movements are expected to operate with a degraded LOS of middle D or worse: the eastbound Main Street right turn in the AM peak hour only, the southbound Mangum Street left turn in the PM peak hour only, and the southbound Mangum Street through movement in the PM peak hour only.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Main Street right turn exceeds the shared through/right lane storage space by 65 feet in AM and by 79 feet in PM
- Eastbound Main Street through movement exceeds the shared through/right lane storage space by 83 feet in AM and by 97 feet in PM
- Southbound Mangum Street left turn exceeds the shared left/through lane storage space by 367 feet in AM and 374 feet in PM
- Southbound Mangum Street right turn exceeds the storage space by 348 feet in AM and 355 feet in PM
- Southbound Mangum Street right turn exceeds the shared left/through storage space by 367 feet in AM and by 374 feet in PM

The maximum queue lengths along eastbound Main Street and Southbound Chapel Hill Street approaches would increase due to detoured westbound traffic from Pettigrew Street and LRT signal preemption activities occurring to the south. The average queue lengths for the eastbound Main Street are contained within the available storage space; however, the southbound average queues will also exceed the storage

space and extend beyond the upstream signalized intersection of Parrish Street and Mangum Street. Compared to the No-Build PM, the Build PM maximum queue lengths are only 30 feet longer. Due to right-of-way constraints and the close proximity of adjacent signalized intersections, the only practical mitigation would require the removal of parking along the western curbface of Mangum Street between Parrish Street and Ramseur Street to provide a third southbound through lane. With approval from the City of Durham, this mitigation can be analyzed during the Engineering phase of the project.

#### **7.1.14 Pettigrew Street at Mangum Street**

The NCDOT traffic impact criteria are applied to the intersection of Pettigrew Street and Mangum Street, as Mangum Street is under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. For both 2040 Build Conditions, the LRT crosses Mangum Street at the north side of the intersection with Pettigrew Street.

For both 2040 LRT options during both peak hours, the overall intersection delays and all vehicular movements meet the NCDOT thresholds in both AM and PM peak hours.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Southbound Mangum Street left turn exceeds the shared left/through lane storage space by 22 feet in AM and by 44 feet in PM
- Southbound Mangum Street through movement exceeds the shared left/through lane storage space by 22 feet in AM and by 44 feet in PM

For both 2040 LRT options during both peak hours, the maximum queue length along southbound approach would be increased due to the extra delay caused by the LRT signal preemption events. However, the average queue length is well below the storage length. The overall intersection operates at LOS A in both peak hours under both LRT Alternatives due to the reduced conflicts from the westbound Pettigrew Street closure.

#### **7.1.15 Pettigrew Street at Dillard Street**

The City of Durham traffic impact criteria are applied to the intersection of Pettigrew Street and Dillard Street, as both roadways are under city jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. For both 2040 LRT options, the LRT crosses Dillard Street at the north side of the intersection with Pettigrew Street.

For both 2040 LRT options, the overall intersection and all vehicular movements meet the City of Durham LOS thresholds in both AM and PM peak hours.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Eastbound Pettigrew Street left turn exceeds storage space by 62 feet in PM only
- Southbound Dillard Street left turn exceeds storage space by 28 feet in PM only
- Southbound Dillard Street through movement exceeds storage space 28 feet in PM only

In the PM peak hour, the maximum queue length along the southbound Dillard Street approach would be increased due to the extra delay caused by the LRT crossing. However the average queue lengths are well below the storage length. The eastbound Pettigrew Street left turn maximum queue would be contained within the eastbound approach storage space and would not spill back to the upstream intersection.

#### 7.1.16 Pettigrew Street at Fayetteville Street

The NCDOT traffic impact criteria are applied to the intersection of Pettigrew Street and Fayetteville Street, as Fayetteville Street is under NCDOT jurisdiction. Under both LRT options, Pettigrew Street would be converted to one-way eastbound operation for vehicular traffic between Chapel Hill Street and Dillard Street. For both 2040 Build Options, the LRT crosses Fayetteville Street at the north side of the intersection with Pettigrew Street. For both 2040 LRT options during both peak hours, the overall intersection delays meet the NCDOT thresholds in both AM and PM peak hours.

Under the LRT Option 1, the southbound Fayetteville left turn, through movement and right turn all experience degradation of LOS in the PM peak hour. For Option 1, the eastbound Pettigrew Street left turn would also experience an increase in delay greater than 25%; however, this movement's demand is only 5 vehicles per hour.

For LRT Option 2, the southbound Fayetteville left turn and right turn would experience degradation of LOS in the PM peak hour.

For both 2040 LRT Options, the maximum queue length for the following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Northbound Fayetteville Street left turn exceeds storage space by 68 feet in PM only
- Northbound Fayetteville Street right turn exceeds the shared through/right storage space by 63 feet in PM only
- Northbound Fayetteville Street through movement exceeds the shared through/right storage space by 68 feet in PM only
- Southbound Fayetteville Street left turn exceeds storage space by 159 feet in the PM only; however the maximum queue would be contained by the southbound approach
- Westbound Pettigrew Street left turn exceeds storage space by 114 feet in AM; however, the maximum queue length would be contained by the eastbound approach

The eastbound Pettigrew Street left turn and southbound Fayetteville Street right turn are impacted in the PM peak hour under Option 1 only, however, the volume for both of these movements are 5 and 2 vehicles per hour, respectively. During the PM peak hour for both LRT options, the maximum queue lengths would be increased on the northbound and southbound approaches. However the average queue lengths are well below the storage length.

#### **7.1.17 Jackie Robinson Drive at Fayetteville Street**

The NCDOT traffic impact criteria are applied to the intersection of Jackie Robinson Drive and Fayetteville Street, as both roadways are under NCDOT jurisdiction.

For both 2040 LRT options during both peak hours, the overall intersection delays and all vehicular movements meet the NCDOT thresholds in both AM and PM peak hours.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Northbound Fayetteville Street left turn exceeds storage space by 98 feet in PM only
- Northbound Fayetteville Street through movement exceeds storage space by 95 feet in PM only

In the PM peak hour, the maximum queue length along the northbound Fayetteville Street approach would be increased due to the extra delay caused by the LRT crossing to the north and the close proximity of signalized intersections. However the average queue lengths for these impacted movements are well below the storage length.

#### **7.1.18 Morehead Avenue at Fayetteville Street**

The NCDOT traffic impact criteria are applied to the intersection of Morehead Avenue and Fayetteville Street, as both roadways are under NCDOT jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT options, the overall intersection delays and individual movements at Morehead Avenue and Fayetteville Street meet the NCDOT thresholds in both the AM and PM peak hours.

The maximum queue length for the southbound Fayetteville Street through movement is expected to exceed the available storage space by 85 feet in the PM peak hour only under both LRT options. However, the maximum queue events are infrequent, and the average queue length is well below the available storage space.

#### **7.1.19 Pettigrew Street at Grant Street**

The City of Durham traffic impact criteria are applied to the intersection of Pettigrew Street and Grant Street, as both roadways are under city jurisdiction. The alignment and roadway configurations for LRT At-Grade Swift Avenue Option 1 and LRT Elevated Swift Avenue Option 2 are consistent at this intersection. For both 2040 LRT options, the LRT crosses Grant Street at the north side of the intersection with Pettigrew Street.

For both 2040 LRT options, the overall intersection and individual movement delays meet the City of Durham thresholds in both AM and PM peak. The LRT crossing does not bring significant impacts to the intersection, as the overall intersection maintains LOS B in both future LRT options.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Southbound Grant Street left turn exceeds the shared left/through/right storage space by 50 feet in PM only

- Southbound Grant Street right turn exceeds the shared left/through/right storage space by 50 feet in PM only
- Southbound Grant Street through movement exceeds the shared left/through/right storage space by 50 feet in PM only
- Westbound Pettigrew Street left turn exceeds the storage space by 137 feet in PM only
- Westbound Pettigrew Street right turn exceeds the shared through/right lane storage space by 110 feet in the AM only
- Westbound Pettigrew Street through movement exceeds the shared through/ right lane storage space by 112 feet in the AM only

During the AM peak, the westbound maximum queue lengths would be increased due to volume increase along that approach. During the PM peak, the southbound maximum queue lengths would be extended due to the delays caused by the LRT crossing. However, for both approaches the average queues are well below the storage length.

#### 7.1.20 Alston Avenue at Gann Street

The NCDOT traffic impact criteria are applied to the intersection of Alston Avenue and Gann Street, as Alston Avenue is under NCDOT jurisdiction.

For both 2040 LRT options during both peak hours, the overall intersection and all vehicular movement delays meet the NCDOT thresholds in both AM and PM peak hours.

For both 2040 LRT options, the maximum queue lengths are generally consistent. The following movements will exceed both their available storage space and their respective peak hour No-Build maximum queue length by more than 10 feet:

- Northbound Alston Avenue left turn exceeds the storage space by 114 feet in PM only
- Southbound Alston Avenue right turn exceeds storage space by 360 feet in PM only

During the PM peak hour for both LRT options, the maximum queue lengths would be increased on the northbound and southbound approaches. However, the average queue lengths are well below the storage lengths. Additionally, the northbound and southbound Alston Avenue left turns' maximum queue lengths would be contained by the northbound and southbound approaches storage space, respectively, which would avoid blocking of the upstream intersections.

## 7.2 Analysis of LOS Thresholds in Secondary Study Area

Based on the secondary study 2040 Synchro models, all intersections that lie outside of the primary LRT corridor that may be affected by the detoured westbound Pettigrew Street traffic are expected to operate at LOS E or better which meets the threshold set forth by the City of Durham. In addition, after optimizing the signal timing, the delays would be reduced at many intersections. Most overall intersections operate at delays of LOS C or better under the LRT options.

There are three lane groups that would experience minor traffic impacts. The only movement expected to experience an impact in delay would be the northbound Roxboro Street shared left/through/right lane at the intersection of Main Street and Roxboro Street during the PM peak hour. This lane group reports a Build condition increase in delay greater than 25% when compared to the No-Build, however, the resulting delay is barely over 45 seconds with an exact value of 45.6 seconds of delay in the PM peak hour.

The following lane groups 95% queue length will exceed both their available storage space and their respective peak hour No-Build 95% queue length by more than 10 feet:

- At the intersection of Chapel Hill Street/Main Street and Morris Street, the southbound Main Street shared left/through lane exceeds the storage space by 23 feet in the AM only
- At the intersection of Morgan Street and Rigsbee Avenue, the northbound Rigsbee Avenue shared left/through lane exceeds the storage space by 30 feet in the AM only
- At the intersection of Main Street and Roxboro Street, the northbound Roxboro Street shared left/through/right lane group by 34 feet in the PM only

The future build traffic impacts expected in the secondary study area do not represent a significant difference in operations from the No-Build conditions. The single lane group that would report a delay increase of 25% would still have a delay just barely over 45 seconds and would maintain the same LOS D in the No-Build scenario. For the three lane groups that would experience 95% queue lengths in excess of their storage space the corresponding No-Build 95% queue lengths, the excess queue length would be less than 35 feet.

## 8. Conclusions/Recommendations

When comparing the Build options to the No-Build Alternative, it was observed that although the LRT at-grade crossings may cause extra delay to the north/south aligned streets, generally the future roadway capacities are sufficient to accommodate the additional delays under the future LRT Build conditions. The additional LRT delays were also mitigated by the reduced number of conflicts at the intersections where Pettigrew Street would be converted to a one-way eastbound operation.

Under the 2040 LRT At-Grade Swift Avenue Option 1, traffic impacts were observed in the area bounded by Main Street, Pettigrew Street, 9<sup>th</sup> Street and Broad Street. As this subarea is composed of short blocks arranged in a grid network that would already experience significant congestion under No-Build Conditions, several movements would be impacted significantly in Option 1. These traffic impacts are due to the at-grade crossing of the LRT at Broad Street/Swift Avenue which causes additional delays to the north/south running streets. The closure of Pettigrew Street between Case Street and east of Swift Avenue requires traffic to be rerouted to these already congested roadways to reach their destinations. In Option 2, when the LRT is elevated and Pettigrew Street is open between Case Street and east of Swift Avenue, most of these impacts would be removed. At Main Street and Broad Street under Option 2, the northbound Broad Street left turn would experience a degradation of LOS from D to E due to network signal timing changes.

In the downtown area east of Swift Avenue for both Build Options, all intersections would operate in accordance with applicable level of service thresholds with the exception of the following locations:

- Mangum Street and Main Street would experience an overall LOS degradation in the PM peak hour by worsening from LOS D to E.
- Pettigrew Street & Fayetteville Street would meet the overall delay/LOS intersection criteria, however, two movements would experience degradation of LOS in the PM peak hour with the southbound Pettigrew Street left and through movements both worsening from LOS C to E.
- Chapel Hill Street & Willard Street, which is an unsignalized intersection, would meet the overall/delay LOS intersection criteria; however, the stop-controlled Willard Street approach would degrade from LOS E to LOS F in the PM peak hour.

All three intersections would experience LOS impacts due to LRV signal preemption events and the network signal timing changes aimed at providing better east/west progression for the LRT. Mangum Street and Main Street is expected to operate at a high LOS D in the No-Build PM peak hour, and with preemption events the overall delay increases to LOS E. If the loss of parking along Mangum Street is deemed acceptable, a third southbound Mangum Street travel lane could be tested during the Engineering phase of the project to determine if traffic impacts would be mitigated at Mangum Street and Main Street.

The LOS movement impacts at Pettigrew Street and Fayetteville cannot be practically mitigated with roadway modifications due to right-of-way constraints and the location of the NCRRC corridor that crosses the southbound approach upstream of the stop bar.

Due to preemption events, there are fewer acceptable gaps for vehicles on the stop-controlled Willard Street approach at Chapel Hill Street. The signalization of Willard Street and Chapel Hill Street was

discussed with the City of Durham. However, due to the proximity of signals along Chapel Hill Street at Duke Street and Pettigrew Street, the city requested that the intersection remain stop-controlled.

Maximum queues would exceed available storage in several locations; however this is an infrequent occurrence and additional roadway modifications are not recommended at these locations due to the limited operational benefits that would require large capital expenditures via impractical right-of-way acquisitions and the reconstruction of bridges. Many of the turn bay maximum queues would also be contained within their overall approaches' storage space and therefore would not impact upstream intersections.

The expected average queues would be accommodated by the available storage at all locations except the southbound approach of Main Street at Mangum Street. The addition of a third southbound travel lane can be studied during the Engineering phase of the project if the City of Durham were to allow the existing parking lane to be rededicated as a travel lane.

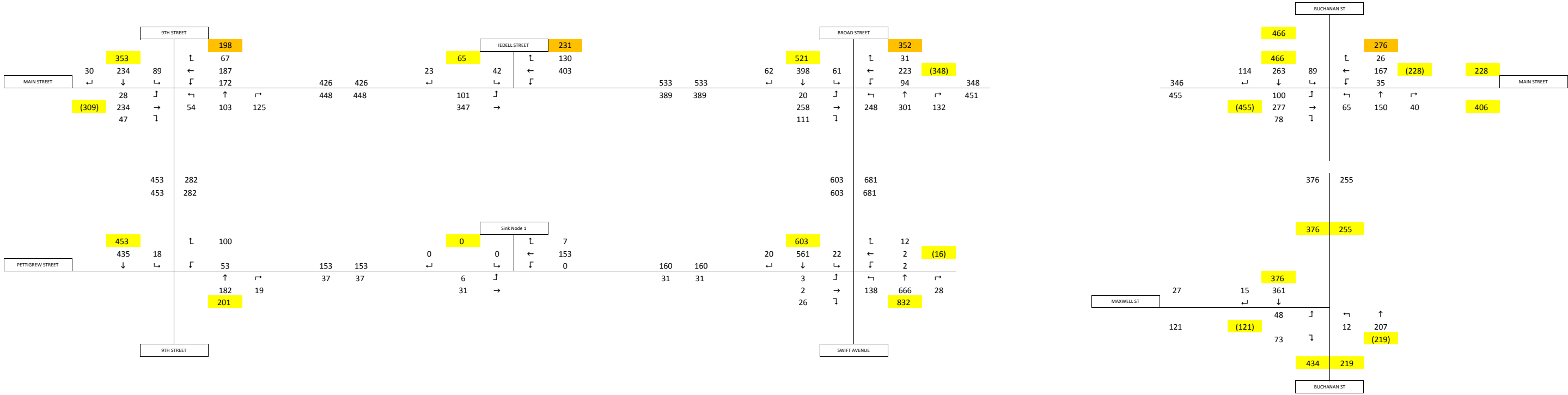


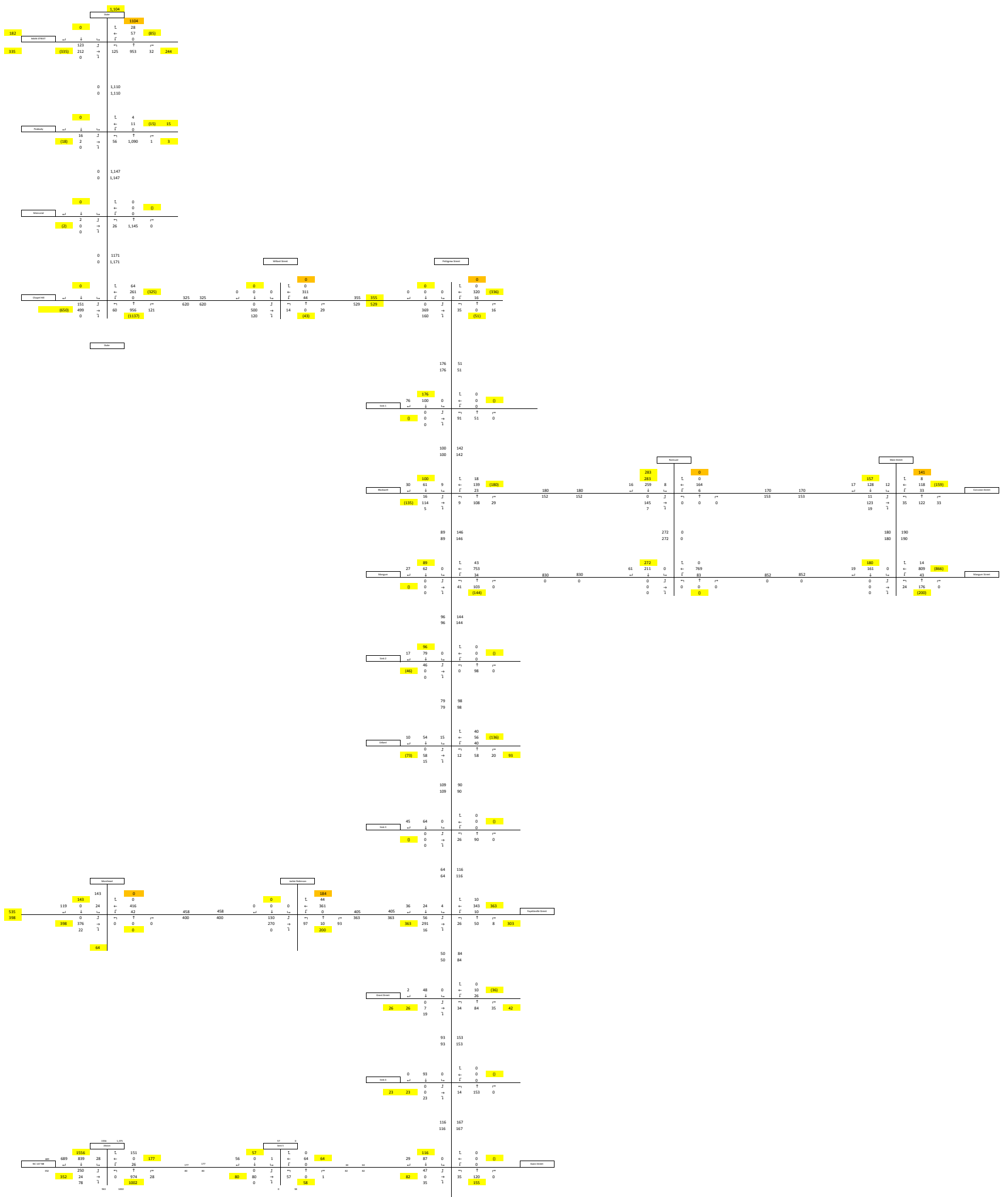
**D-O LRT: Downtown Durham Traffic Simulation Report**  
**Appendices**

# **Appendix A**

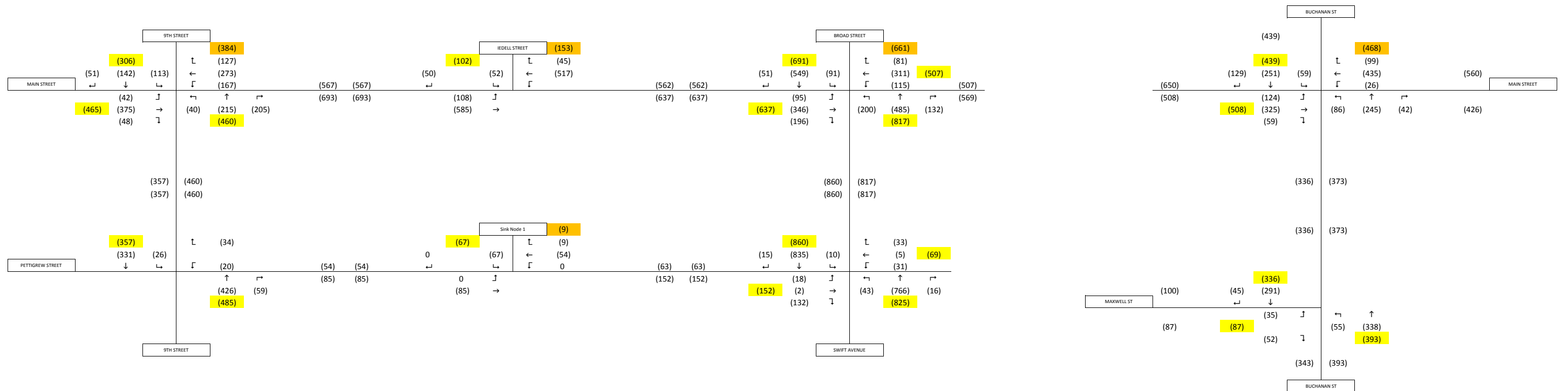
## **Balanced Peak Hour Volumes**

# Volume Diagram-Existing AM



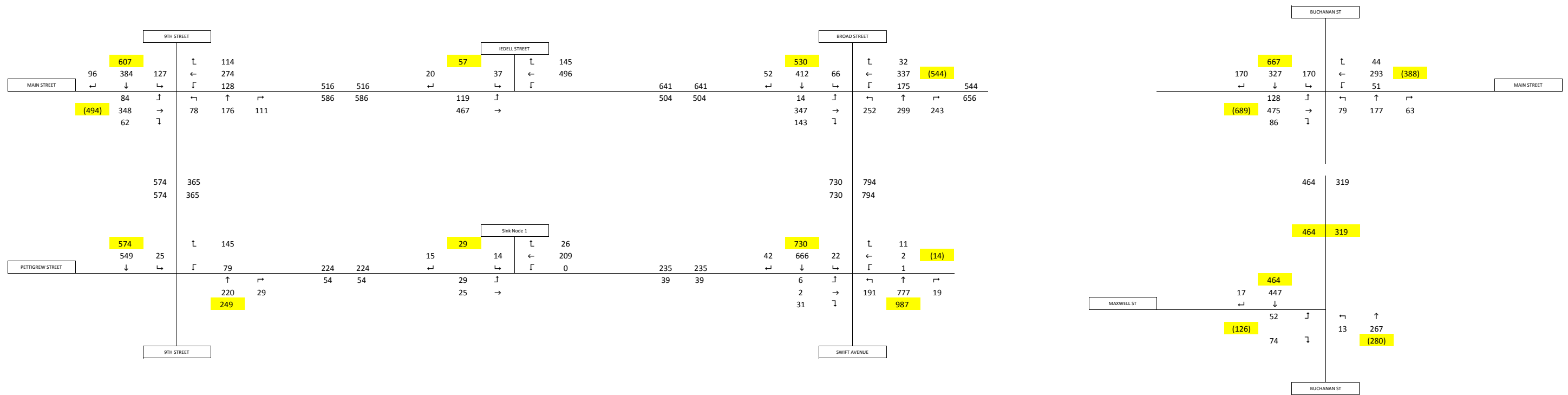


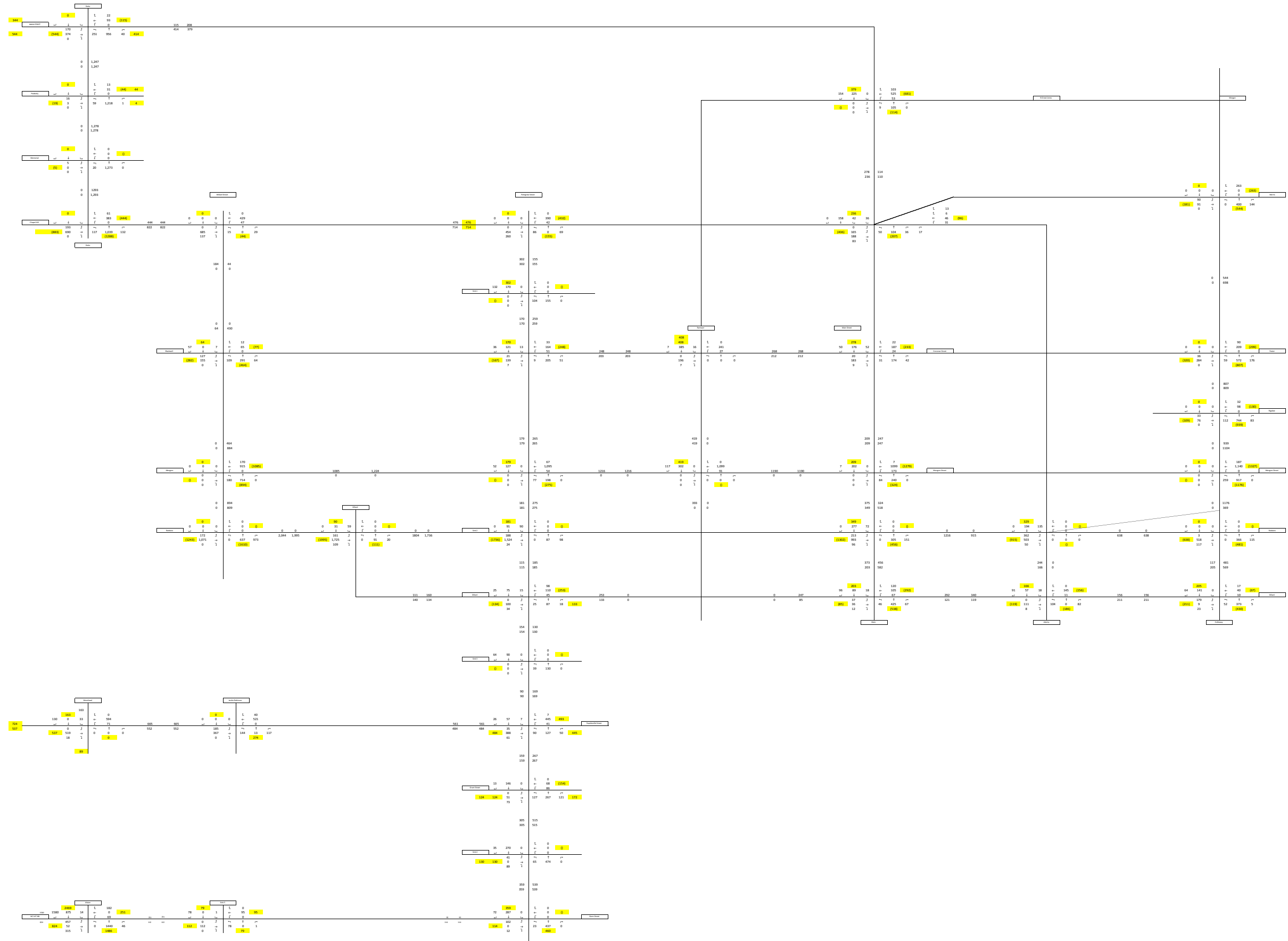
# Volume Diagram-Existing PM





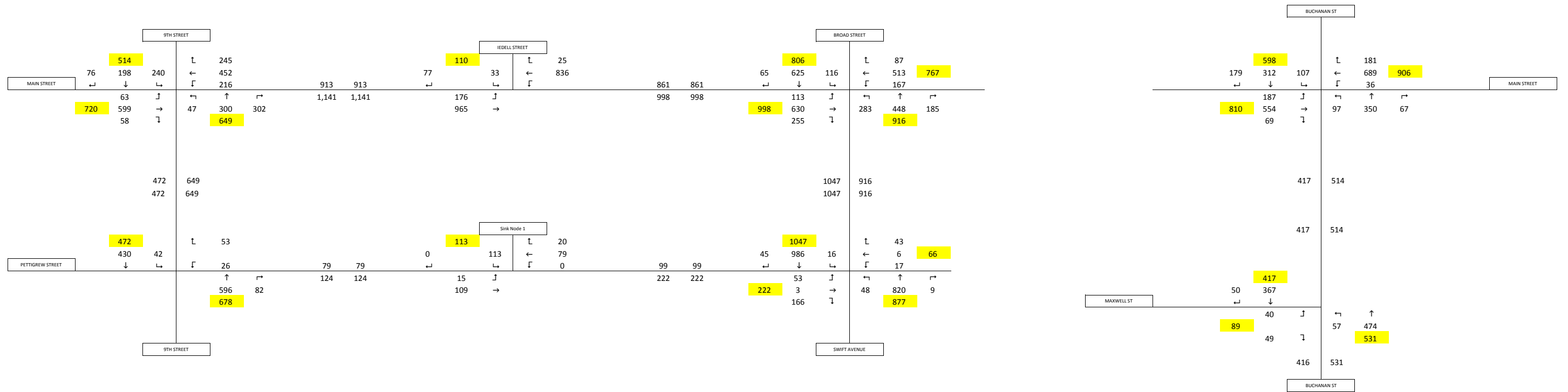
# Volume Diagram-NoBuild AM

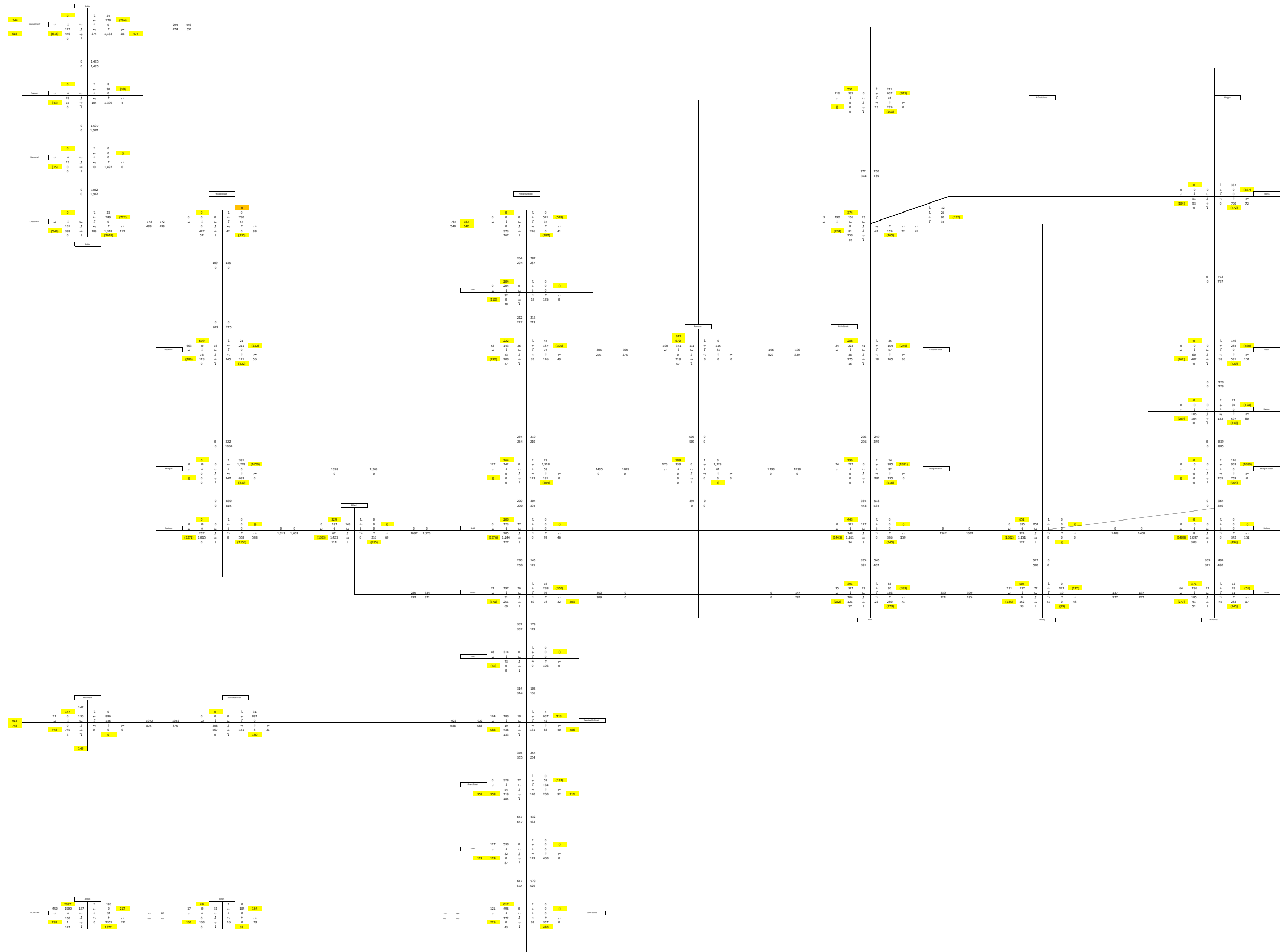




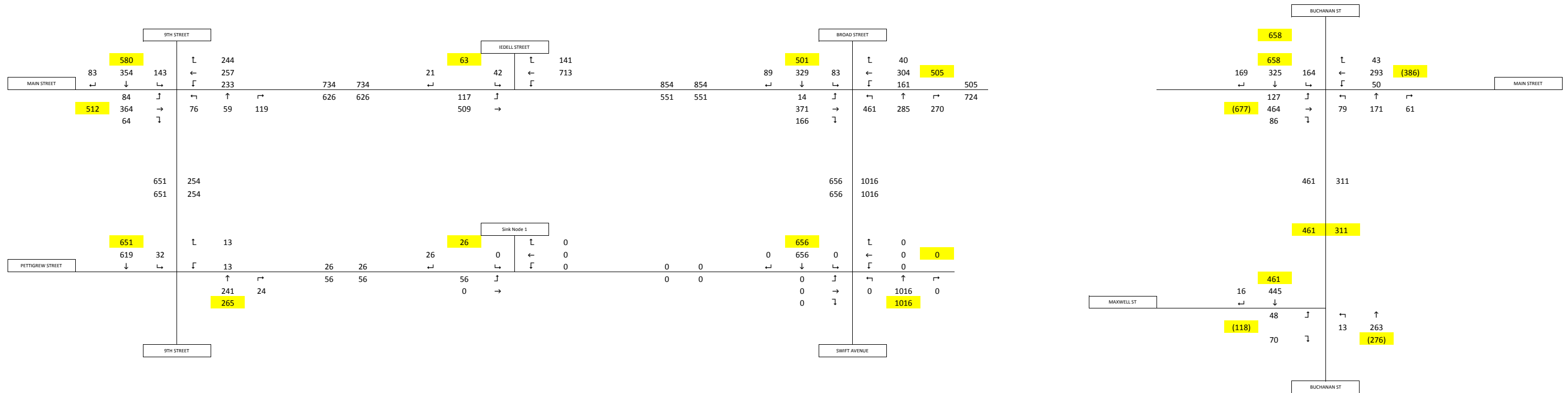


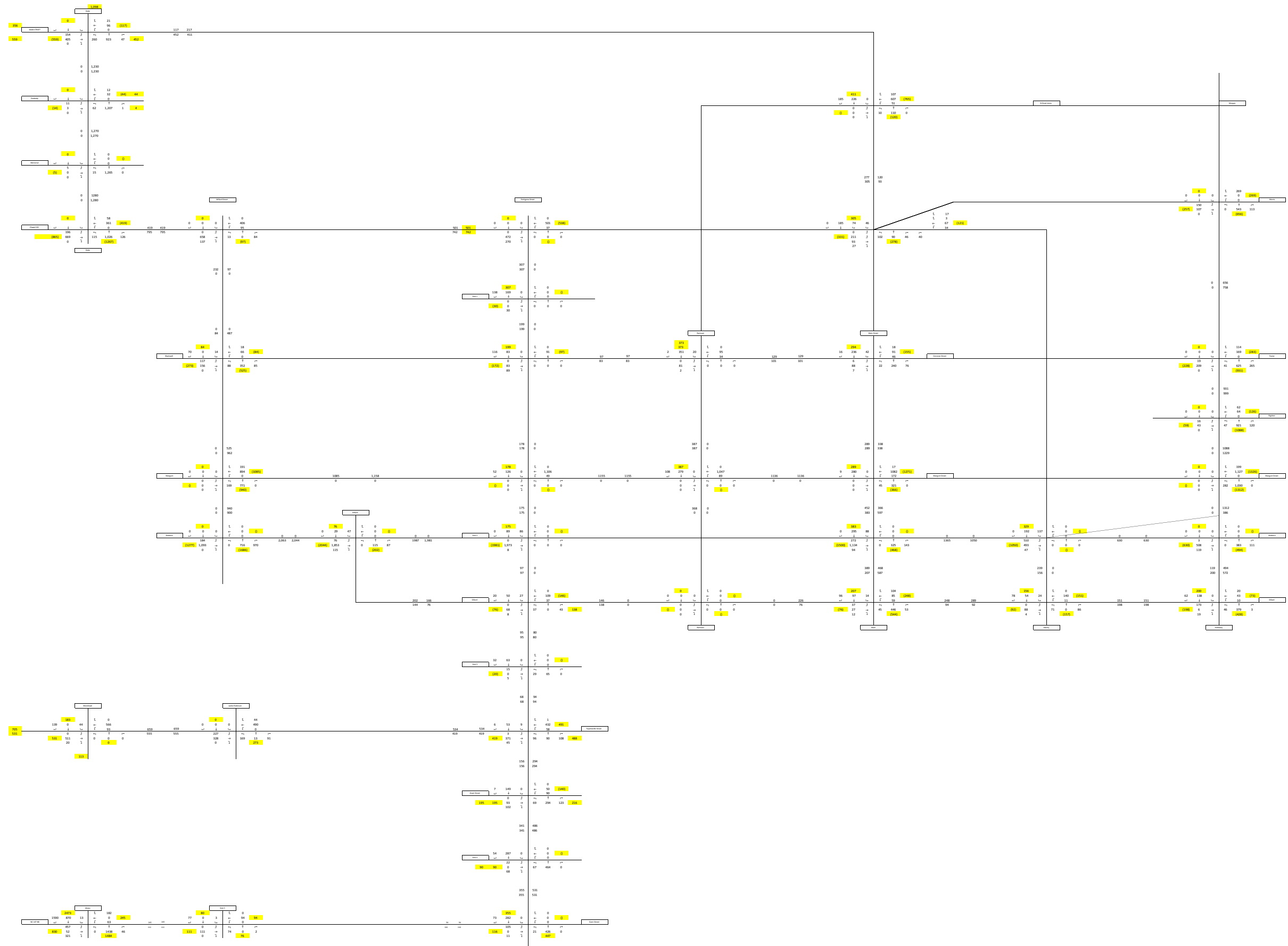
# Volume Diagram-NoBuild PM



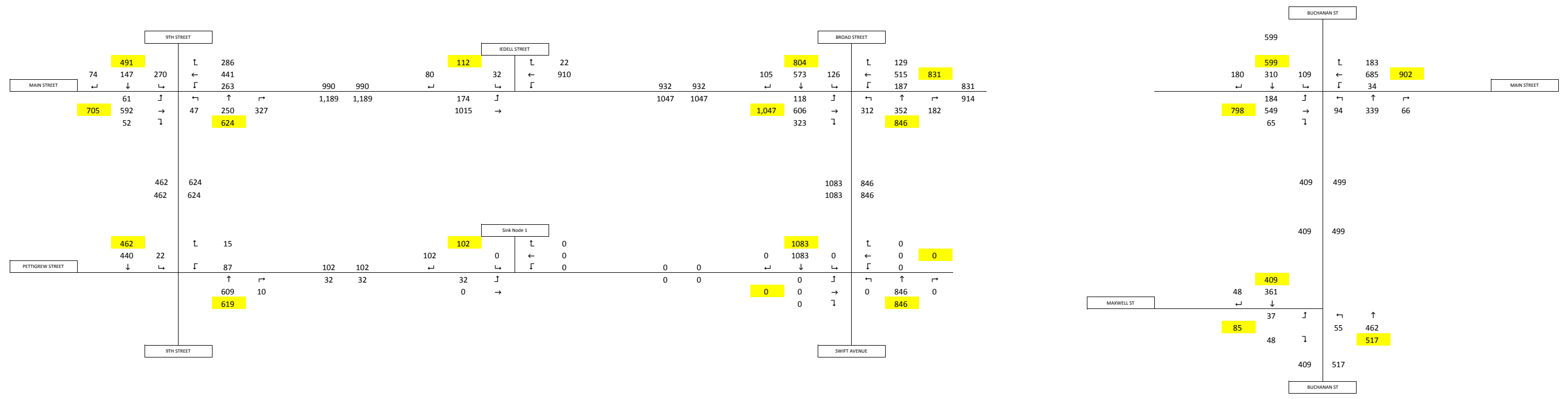


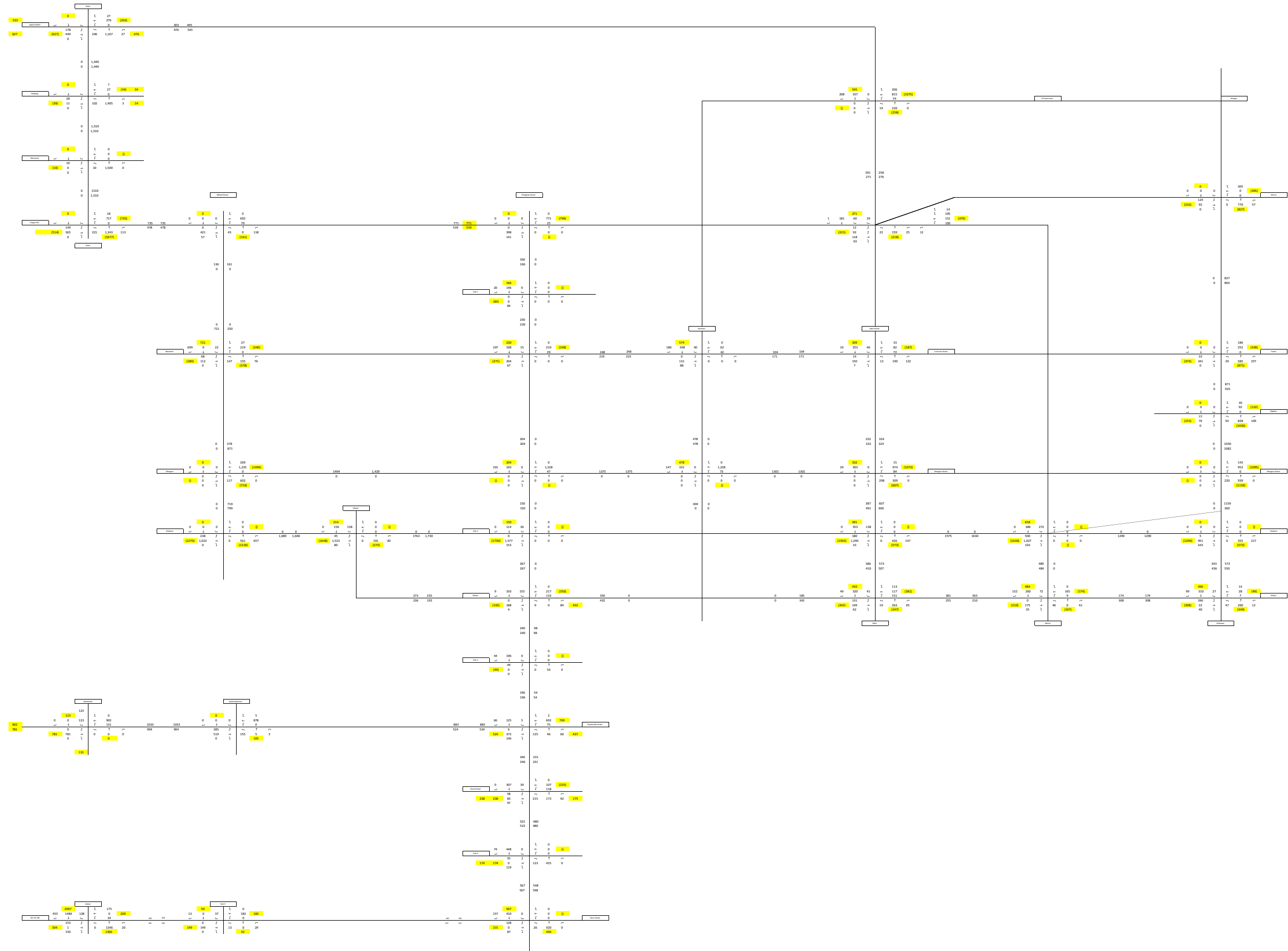
# Volume Diagram-Build Alternative 1 AM



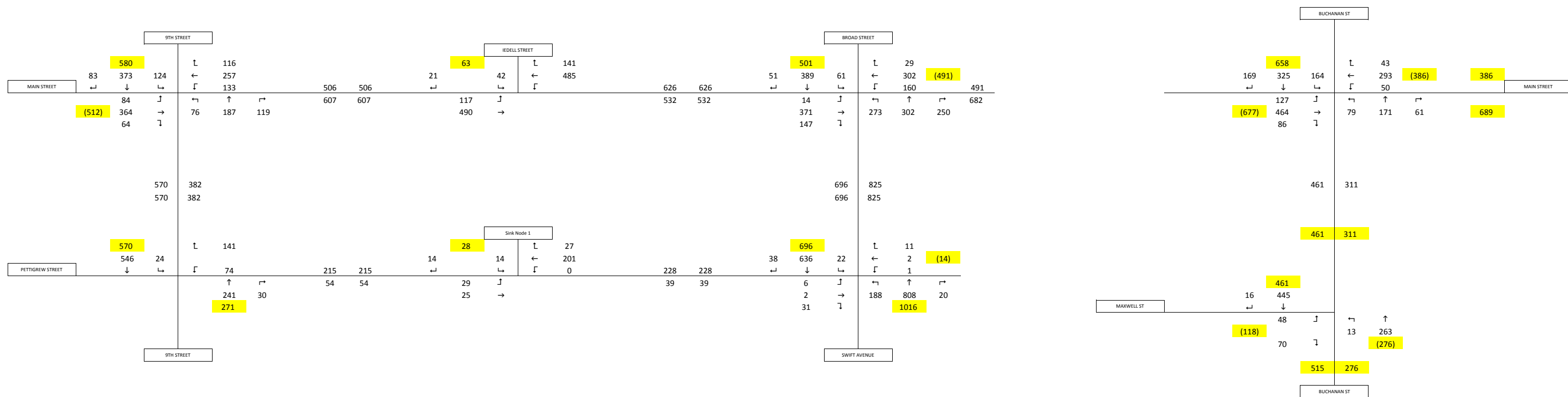


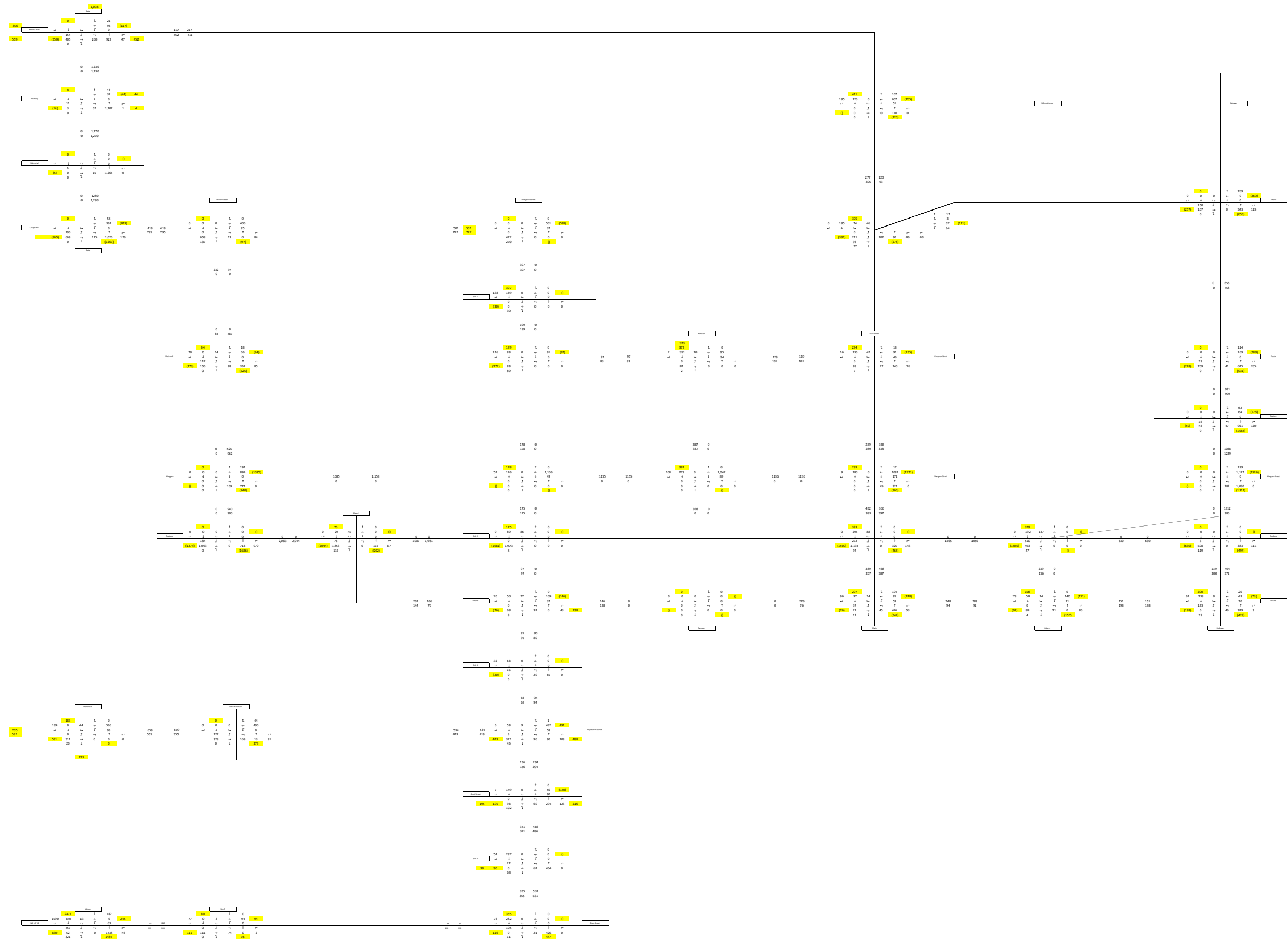
# Volume Diagram-Build Alternative 1 PM





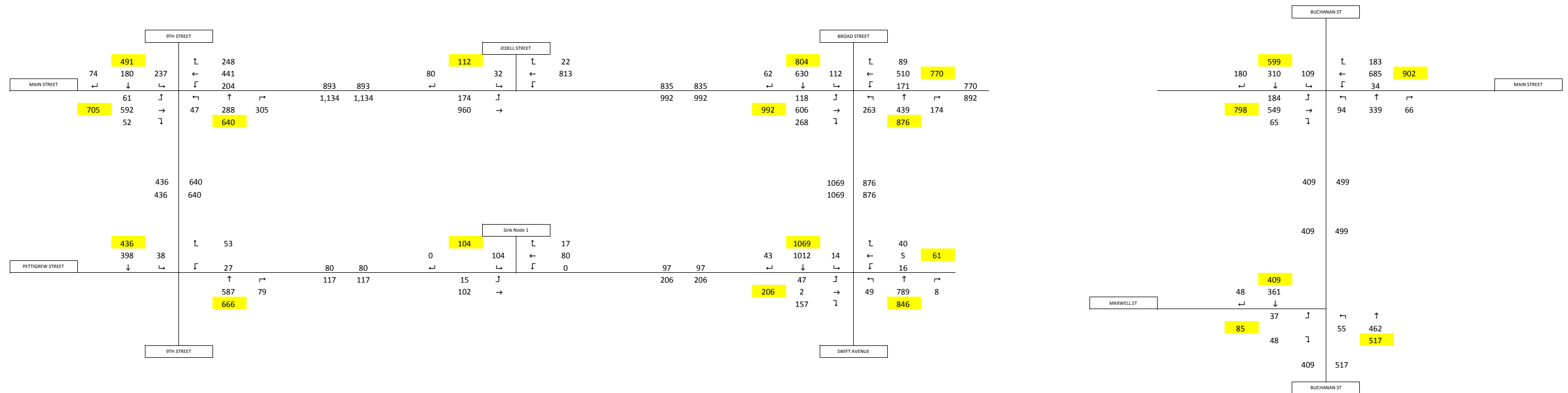
## Volume Diagram-Build Alternative 2 AM

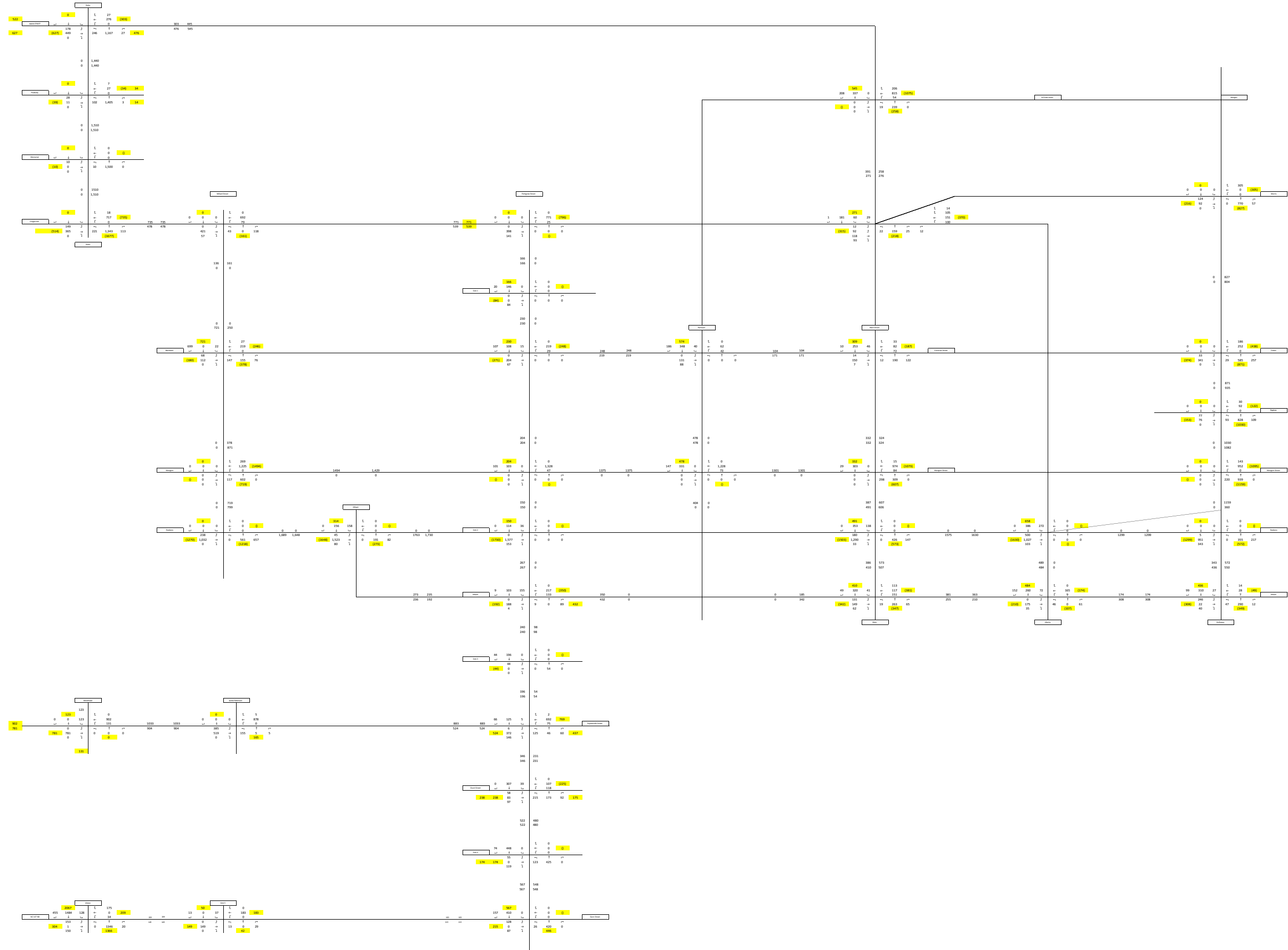






## Volume Diagram-Build Alternative 2 PM





# **Appendix B**

## **2040 Synchro Results**

## **Synchro Output-2040 No Build AM**

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	348	62	128	274	114	78	176	111	127	384	96
Satd. Flow (prot)	1718	1767	0	1718	1729	0	1718	1704	0	1718	1754	0
Flt Permitted	0.503			0.209			0.152			0.323		
Satd. Flow (perm)	910	1767	0	378	1729	0	275	1704	0	584	1754	0
Satd. Flow (RTOR)		8			22			26			12	
Lane Group Flow (vph)	93	456	0	142	431	0	87	319	0	141	534	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	44.0	44.0		14.0	58.0		14.0	39.0		23.0	48.0	
Total Split (%)	36.7%	36.7%		11.7%	48.3%		11.7%	32.5%		19.2%	40.0%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	41.0	41.0		55.6	55.6		45.1	36.1		53.0	40.4	
Actuated g/C Ratio	0.34	0.34		0.46	0.46		0.38	0.30		0.44	0.34	
v/c Ratio	0.30	0.75		0.50	0.53		0.41	0.60		0.37	0.89	
Control Delay	33.5	44.1		18.9	18.7		25.0	38.1		21.8	55.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.5	44.1		18.9	18.7		25.0	38.1		21.8	55.2	
LOS	C	D		B	B		C	D		C	E	
Approach Delay		42.3			18.7			35.3			48.2	
Approach LOS		D			B			D			D	
Queue Length 50th (ft)	54	314		60	185		36	187		61	369	
Queue Length 95th (ft)	103	#451		m77	m270		67	297		101	#558	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	310	608		282	812		211	535		434	636	
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	0.30	0.75		0.50	0.53		0.41	0.60		0.32	0.84	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.89

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

2/27/2015

Intersection Signal Delay: 36.7

Intersection LOS: D

Intersection Capacity Utilization 78.2%

ICU Level of Service D

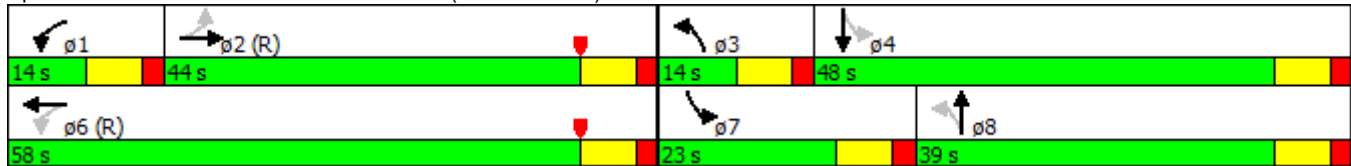
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

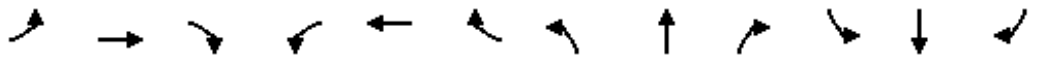
Splits and Phases: 1: Ninth Street & US 70 (W Main Street)



Lanes, Volumes, Timings

2: Swift Avenue/Broad Street & US 70 (W Main Street)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	347	143	175	337	32	252	299	243	66	412	52
Satd. Flow (prot)	1718	1809	1537	1718	1785	0	1718	1809	1537	1718	3378	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1785	0	1718	1809	1537	1718	3378	0
Satd. Flow (RTOR)			118		4				270		11	
Lane Group Flow (vph)	16	386	159	194	410	0	280	332	270	73	516	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2						8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	24.0	14.0	14.0	32.0		14.0	24.0	24.0	14.0	37.0	
Total Split (s)	14.0	36.0	27.0	20.0	42.0		27.0	49.0	49.0	15.0	37.0	
Total Split (%)	11.7%	30.0%	22.5%	16.7%	35.0%		22.5%	40.8%	40.8%	12.5%	30.8%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	9.0	34.1	60.8	17.7	51.1		21.8	41.3	41.3	9.8	26.5	
Actuated g/C Ratio	0.08	0.28	0.51	0.15	0.43		0.18	0.34	0.34	0.08	0.22	
v/c Ratio	0.12	0.75	0.19	0.77	0.54		0.90	0.53	0.38	0.52	0.68	
Control Delay	43.5	44.2	14.1	70.2	31.9		79.8	35.4	4.7	66.6	46.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	43.5	44.2	14.1	70.2	31.9		79.8	35.4	4.7	66.6	46.4	
LOS	D	D	B	E	C		E	D	A	E	D	
Approach Delay		35.6			44.2			40.1			48.9	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	10	276	45	141	209		214	215	0	55	191	
Queue Length 95th (ft)	m18	#443	m94	#290	403		#372	288	55	106	236	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	128	513	840	252	762		314	667	737	143	908	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.13	0.75	0.19	0.77	0.54		0.89	0.50	0.37	0.51	0.57	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90

# Lanes, Volumes, Timings

## 2: Swift Avenue/Broad Street & US 70 (W Main Street)

2/27/2015

Intersection Signal Delay: 42.0

Intersection LOS: D

Intersection Capacity Utilization 71.6%

ICU Level of Service C

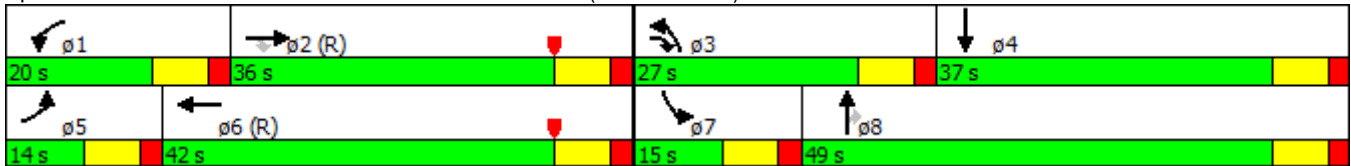
Analysis Period (min) 15

# 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: 2: Swift Avenue/Broad Street & US 70 (W Main Street)





Lanes, Volumes, Timings

3: Erwin Road/Ninth Street & Pettigrew Street

2/27/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	79	145	220	29	25	549
Satd. Flow (prot)	1640	0	1798	0	0	1823
Flt Permitted	0.983					0.998
Satd. Flow (perm)	1640	0	1798	0	0	1823
Lane Group Flow (vph)	249	0	276	0	0	638
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 66.9% ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

4: Swift Avenue/Broad Street & Pettigrew Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕			↕	
Volume (vph)	6	2	31	1	2	11	191	777	19	22	666	42
Satd. Flow (prot)	0	1602	0	0	1608	0	1718	3423	0	0	3402	0
Flt Permitted		0.992			0.997		0.950				0.999	
Satd. Flow (perm)	0	1602	0	0	1608	0	1718	3423	0	0	3402	0
Lane Group Flow (vph)	0	43	0	0	15	0	212	884	0	0	811	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Control Type: Unsignalized

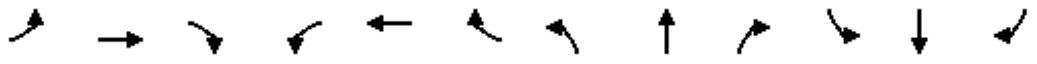
Intersection Capacity Utilization 56.5%      ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	475	86	51	293	44	79	177	63	170	327	170
Satd. Flow (prot)	1718	1809	1537	1718	1772	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1772	0	1718	1809	1537	1718	1809	1537
Satd. Flow (RTOR)			227						164			189
Lane Group Flow (vph)	142	528	96	57	375	0	88	197	70	189	363	189
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	32.0	14.0	14.0	32.0	14.0
Total Split (s)	20.0	50.0	50.0	14.0	44.0		15.0	32.0	14.0	24.0	41.0	20.0
Total Split (%)	16.7%	41.7%	41.7%	11.7%	36.7%		12.5%	26.7%	11.7%	20.0%	34.2%	16.7%
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
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
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	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.3	53.3	53.3	9.0	45.2		9.8	22.7	31.7	17.8	30.7	45.0
Actuated g/C Ratio	0.12	0.44	0.44	0.08	0.38		0.08	0.19	0.26	0.15	0.26	0.38
v/c Ratio	0.70	0.66	0.12	0.45	0.56		0.63	0.58	0.13	0.74	0.79	0.27
Control Delay	68.9	33.7	0.3	64.7	35.3		73.2	50.6	0.5	66.9	53.7	2.8
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	68.9	33.7	0.3	64.7	35.3		73.2	50.6	0.5	66.9	53.7	2.8
LOS	E	C	A	E	D		E	D	A	E	D	A
Approach Delay		36.0			39.2			46.3			44.1	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	106	332	0	43	232		67	141	0	140	261	0
Queue Length 95th (ft)	#188	500	0	88	357		#136	210	0	#235	356	30
Internal Link Dist (ft)		298			220			276			273	
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	214	803	808	128	666		143	407	526	272	542	702
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	0.66	0.66	0.12	0.45	0.56		0.62	0.48	0.13	0.69	0.67	0.27

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79

# Lanes, Volumes, Timings

## 5: Buchanan Boulevard & W Main Street (No Train)

2/27/2015

Intersection Signal Delay: 40.8

Intersection LOS: D

Intersection Capacity Utilization 70.5%

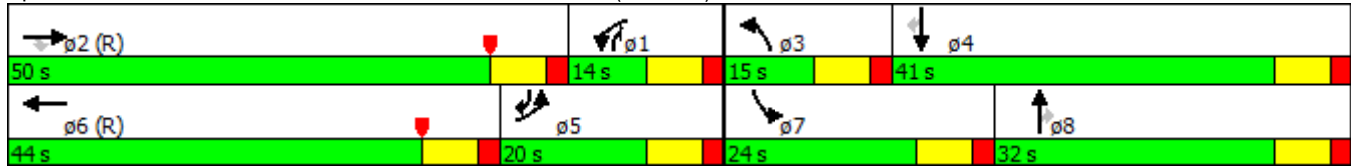
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	374	0	0	93	22	251	956	40	0	0	0
Satd. Flow (prot)	1546	1628	0	0	1585	0	1546	3074	0	0	0	0
Flt Permitted	0.655						0.950					
Satd. Flow (perm)	1066	1628	0	0	1585	0	1546	3074	0	0	0	0
Satd. Flow (RTOR)					12			5				
Lane Group Flow (vph)	189	416	0	0	127	0	279	1106	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	32.0	32.0			32.0		28.0	28.0				
Total Split (s)	53.0	53.0			53.0		67.0	67.0				
Total Split (%)	44.2%	44.2%			44.2%		55.8%	55.8%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	38.8	38.8			38.8		71.2	71.2				
Actuated g/C Ratio	0.32	0.32			0.32		0.59	0.59				
v/c Ratio	0.55	0.79			0.24		0.30	0.61				
Control Delay	38.4	47.6			26.3		14.7	18.5				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	38.4	47.6			26.3		14.7	18.5				
LOS	D	D			C		B	B				
Approach Delay		44.8			26.3			17.7				
Approach LOS		D			C			B				
Queue Length 50th (ft)	119	290			64		102	272				
Queue Length 95th (ft)	176	371			102		186	406				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	426	651			641		917	1826				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.44	0.64			0.20		0.30	0.61				

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79



Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	16	3	0	0	31	13	59	1218	1	0	0	0
Satd. Flow (prot)	0	1561	0	0	1564	0	1546	3093	0	0	0	0
Flt Permitted		0.959					0.950					
Satd. Flow (perm)	0	1561	0	0	1564	0	1546	3093	0	0	0	0
Lane Group Flow (vph)	0	21	0	0	48	0	66	1354	0	0	0	0
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 51.9%      ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

2/27/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	5	0	20	1273	0	0
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Lane Group Flow (vph)	6	0	22	1414	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

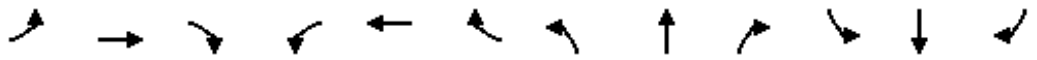
Intersection Capacity Utilization 45.2%      ICU Level of Service A

Analysis Period (min) 15



Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	690	0	0	383	61	117	1039	132	0	0	0
Satd. Flow (prot)	1718	1809	0	0	1774	0	0	4913	1537	0	0	0
Flt Permitted	0.243							0.995				
Satd. Flow (perm)	440	1809	0	0	1774	0	0	4913	1537	0	0	0
Satd. Flow (RTOR)					11				147			
Lane Group Flow (vph)	214	767	0	0	494	0	0	1284	147	0	0	0
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			30.0		30.0	30.0	30.0			
Total Split (s)	15.0	56.0			41.0		34.0	34.0	34.0			
Total Split (%)	16.7%	62.2%			45.6%		37.8%	37.8%	37.8%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	51.0	51.0			36.1			29.0	29.0			
Actuated g/C Ratio	0.57	0.57			0.40			0.32	0.32			
v/c Ratio	0.55	0.75			0.69			0.81	0.25			
Control Delay	15.3	20.4			15.8			32.9	5.1			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	15.3	20.4			15.8			32.9	5.1			
LOS	B	C			B			C	A			
Approach Delay		19.3			15.8			30.1				
Approach LOS		B			B			C				
Queue Length 50th (ft)	56	306			103			243	0			
Queue Length 95th (ft)	93	460			187			299	40			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	391	1025			717			1583	594			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.55	0.75			0.69			0.81	0.25			

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 68 (76%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81



Lanes, Volumes, Timings  
 10: Willard Street & Chapel Hill Street

2/27/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	685	137	47	429	15	29
Satd. Flow (prot)	1769	0	1718	1809	1621	0
Flt Permitted			0.950		0.983	
Satd. Flow (perm)	1769	0	1718	1809	1621	0
Lane Group Flow (vph)	913	0	52	477	49	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 54.4%      ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 11: Pettigrew Street & Chapel Hill Street

2/27/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	454	260	42	390	86	69
Satd. Flow (prot)	1720	0	1718	1809	1654	0
Flt Permitted			0.283		0.973	
Satd. Flow (perm)	1720	0	512	1809	1654	0
Satd. Flow (RTOR)	63				43	
Lane Group Flow (vph)	793	0	47	433	173	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	4	
Permitted Phases			6			
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	45.0		17.0	17.0	28.0	
Total Split (s)	62.0		62.0	62.0	28.0	
Total Split (%)	68.9%		68.9%	68.9%	31.1%	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	64.9		64.9	64.9	15.1	
Actuated g/C Ratio	0.72		0.72	0.72	0.17	
v/c Ratio	0.63		0.13	0.33	0.55	
Control Delay	2.9		15.0	16.1	12.1	
Queue Delay	0.2		0.0	0.4	0.0	
Total Delay	3.1		15.0	16.5	12.1	
LOS	A		B	B	B	
Approach Delay	3.1			16.4	12.1	
Approach LOS	A			B	B	
Queue Length 50th (ft)	12		17	184	9	
Queue Length 95th (ft)	52		51	302	22	
Internal Link Dist (ft)	168			210	1409	
Turn Bay Length (ft)						
Base Capacity (vph)	1257		369	1304	454	
Starvation Cap Reductn	64		0	418	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.66		0.13	0.49	0.38	

**Intersection Summary**

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 88 (98%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63

# Lanes, Volumes, Timings

## 11: Pettigrew Street & Chapel Hill Street

2/27/2015

Intersection Signal Delay: 8.6

Intersection LOS: A

Intersection Capacity Utilization 57.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: Pettigrew Street & Chapel Hill Street



# Lanes, Volumes, Timings

## 12: Downtown loop/Great Jones Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↑↑↑	↗
Volume (vph)	0	436	87	22	76	0	0	0	0	0	332	356
Satd. Flow (prot)	0	1863	1583	0	1658	0	0	0	0	0	5085	1583
Flt Permitted					0.878							
Satd. Flow (perm)	0	1863	1583	0	1472	0	0	0	0	0	5085	1583
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	484	97	0	108	0	0	0	0	0	369	396
Turn Type		NA	Free	Perm	NA						NA	Free
Protected Phases		4				8				6	6	
Permitted Phases			Free	8								Free
Minimum Split (s)		29.0		29.0	29.0					20.0	20.0	
Total Split (s)		64.0		64.0	64.0					26.0	26.0	
Total Split (%)		71.1%		71.1%	71.1%					28.9%	28.9%	
Yellow Time (s)		4.0		4.0	4.0					3.5	3.5	
All-Red Time (s)		2.0		2.0	2.0					0.5	0.5	
Lost Time Adjust (s)		-4.0			-1.0						-4.0	
Total Lost Time (s)		2.0			5.0						0.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		62.0	90.0		59.0						26.0	90.0
Actuated g/C Ratio		0.69	1.00		0.66						0.29	1.00
v/c Ratio		0.38	0.06		0.11						0.25	0.25
Control Delay		8.6	0.1		5.9						16.5	1.7
Queue Delay		0.7	0.0		0.0						0.0	0.0
Total Delay		9.3	0.1		5.9						16.5	1.8
LOS		A	A		A						B	A
Approach Delay		7.8			5.9						8.9	
Approach LOS		A			A						A	
Queue Length 50th (ft)		119	0		30						30	14
Queue Length 95th (ft)		188	m0		43						43	76
Internal Link Dist (ft)		10			376			795			213	
Turn Bay Length (ft)												
Base Capacity (vph)		1283	1583		964						1469	1583
Starvation Cap Reductn		468	0		0						0	0
Spillback Cap Reductn		0	0		32						0	34
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.59	0.06		0.12						0.25	0.26

### Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 6:SBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 8.2  
 Intersection Capacity Utilization 37.0%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

2/27/2015

Splits and Phases: 12: Downtown loop/Great Jones Street



Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					↑↑↑↑			↑	↑			↑
Volume (vph)	0	0	0	53	525	103	0	225	154	9	105	0
Satd. Flow (prot)	0	0	0	0	6235	0	0	1863	1583	0	1855	0
Flt Permitted					0.996						0.977	
Satd. Flow (perm)	0	0	0	0	6235	0	0	1863	1583	0	1820	0
Satd. Flow (RTOR)					60				170			
Lane Group Flow (vph)	0	0	0	0	756	0	0	250	171	0	127	0
Turn Type				Perm	NA			NA	custom	Perm	NA	
Protected Phases					2							8
Permitted Phases				2				4	4	8		
Minimum Split (s)				20.0	20.0			30.0	30.0	30.0	30.0	
Total Split (s)				37.0	37.0			53.0	53.0	53.0	53.0	
Total Split (%)				41.1%	41.1%			58.9%	58.9%	58.9%	58.9%	
Yellow Time (s)				3.5	3.5			3.8	3.8	3.8	3.8	
All-Red Time (s)				0.5	0.5			2.4	2.4	2.4	2.4	
Lost Time Adjust (s)					-4.0			-4.0	-4.0		-4.0	
Total Lost Time (s)					0.0			2.2	2.2		2.2	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					37.0			50.8	50.8		50.8	
Actuated g/C Ratio					0.41			0.56	0.56		0.56	
v/c Ratio					0.29			0.24	0.18		0.12	
Control Delay					16.6			10.6	2.0		18.9	
Queue Delay					0.0			0.0	0.0		0.0	
Total Delay					16.6			10.6	2.0		18.9	
LOS					B			B	A		B	
Approach Delay					16.6			7.1			18.9	
Approach LOS					B			A			B	
Queue Length 50th (ft)					74			67	0		71	
Queue Length 95th (ft)					97			108	26		125	
Internal Link Dist (ft)			213		294			720			413	
Turn Bay Length (ft)												
Base Capacity (vph)					2598			1051	967		1027	
Starvation Cap Reductn					0			0	0		0	
Spillback Cap Reductn					0			0	0		0	
Storage Cap Reductn					0			0	0		0	
Reduced v/c Ratio					0.29			0.24	0.18		0.12	

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 14 (16%), Referenced to phase 2:SBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.29	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 35.7%	ICU Level of Service A
Analysis Period (min) 15	

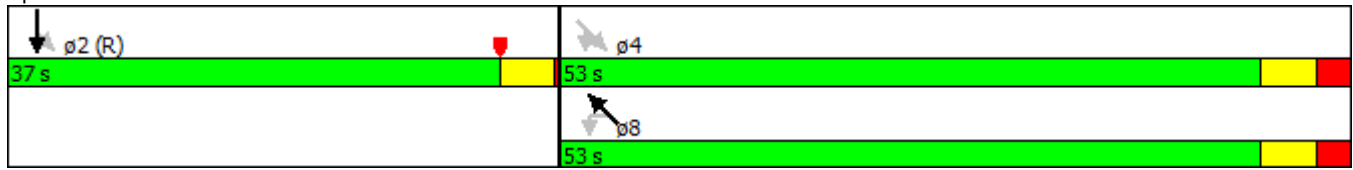


Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

2/27/2015

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	400	144	90	91	0	0	0	263
Satd. Flow (prot)	0	0	0	0	6152	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6152	0	1770	1863	0	0	0	1611
Satd. Flow (RTOR)					116							353
Lane Group Flow (vph)	0	0	0	0	604	0	100	101	0	0	0	307
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					35.0		19.0	19.0				36.0
Total Split (%)					38.9%		21.1%	21.1%				40.0%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					33.7		19.0	19.0				36.0
Actuated g/C Ratio					0.37		0.21	0.21				0.40
v/c Ratio					0.25		0.27	0.26				0.36
Control Delay					5.2		29.8	29.6				2.4
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					5.2		29.8	29.6				2.4
LOS					A		C	C				A
Approach Delay					5.2			29.7				
Approach LOS					A			C				
Queue Length 50th (ft)					9		37	37				0
Queue Length 95th (ft)					50		m72	m73				31
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2376		373	393				856
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.25		0.27	0.26				0.36

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 22 (24%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.36  
 Intersection Signal Delay: 8.8  
 Intersection Capacity Utilization 40.3%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings  
14: Morris Street & Great Jones

2/27/2015

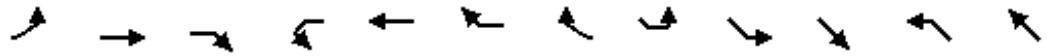
Splits and Phases: 14: Morris Street & Great Jones



Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	SEL2	SEL	SET	NWL	NWT
Lane Configurations		↕			↕					↕		↕
Volume (vph)	165	188	83	31	46	6	13	36	42	158	50	104
Satd. Flow (prot)	0	1746	0	0	1749	0	0	0	0	1798	0	1744
Flt Permitted		0.836			0.821					0.778		0.876
Satd. Flow (perm)	0	1488	0	0	1459	0	0	0	0	1421	0	1546
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	484	0	0	106	0	0	0	0	263	0	231
Turn Type	Perm	NA		Perm	NA			Perm	Perm	NA	Perm	NA
Protected Phases		4			8					6		2
Permitted Phases	4			8				6	6		2	
Minimum Split (s)	22.0	22.0		20.0	20.0			22.0	22.0	22.0	20.0	20.0
Total Split (s)	53.0	53.0		53.0	53.0			37.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%		58.9%	58.9%			41.1%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.5	4.5		3.5	3.5			4.5	4.5	4.5	3.5	3.5
All-Red Time (s)	2.5	2.5		0.5	0.5			2.5	2.5	2.5	0.5	0.5
Lost Time Adjust (s)		0.0			0.0					-1.0		-1.0
Total Lost Time (s)		7.0			4.0					6.0		3.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		46.0			49.0					31.0		34.0
Actuated g/C Ratio		0.51			0.54					0.34		0.38
v/c Ratio		0.64			0.13					0.54		0.40
Control Delay		20.3			10.7					35.1		9.3
Queue Delay		0.1			0.0					0.0		0.0
Total Delay		20.3			10.7					35.1		9.3
LOS		C			B					D		A
Approach Delay		20.3			10.7					35.1		9.3
Approach LOS		C			B					D		A
Queue Length 50th (ft)		230			28					141		34
Queue Length 95th (ft)		320			54					231		48
Internal Link Dist (ft)		376			463					413		487
Turn Bay Length (ft)												
Base Capacity (vph)		760			794					489		584
Starvation Cap Reductn		9			0					0		0
Spillback Cap Reductn		0			0					0		0
Storage Cap Reductn		0			0					0		0
Reduced v/c Ratio		0.64			0.13					0.54		0.40

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 12 (13%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 20.6  
 Intersection Capacity Utilization 60.7%  
 Analysis Period (min) 15

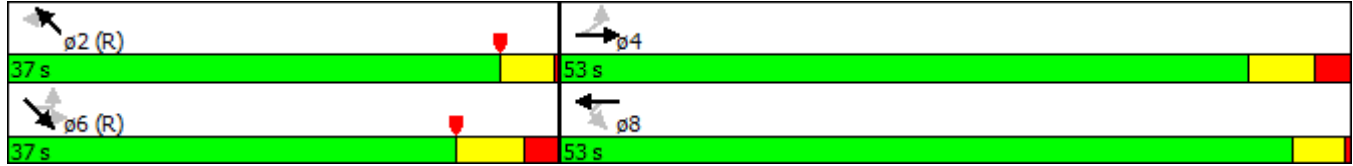
Intersection LOS: C  
 ICU Level of Service B

Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

2/27/2015

Splits and Phases: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street



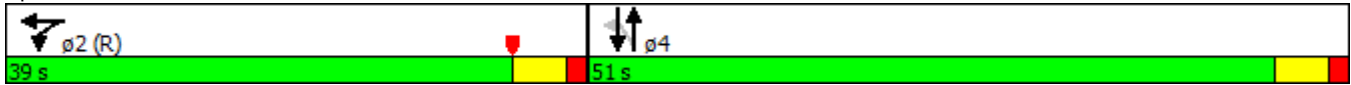
Lane Group	NWR	NWR2
<b>Phase Configurations</b>		
Volume (vph)	36	17
Satd. Flow (prot)	0	0
Flt Permitted		
Satd. Flow (perm)	0	0
Satd. Flow (RTOR)		
Lane Group Flow (vph)	0	0
<b>Turn Type</b>		
Protected Phases		
Permitted Phases		
Minimum Split (s)		
Total Split (s)		
Total Split (%)		
Yellow Time (s)		
All-Red Time (s)		
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
<b>Intersection Summary</b>		



Lanes, Volumes, Timings  
16: Foster Street & Great Jones

2/27/2015

Splits and Phases: 16: Foster Street & Great Jones



Lanes, Volumes, Timings  
 17: Corcoran Street & E. Main Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	52	176	50	31	174	42	20	183	9	24	187	22
Satd. Flow (prot)	0	1767	0	0	1774	0	0	1789	0	0	1776	0
Flt Permitted		0.831			0.905			0.961			0.956	
Satd. Flow (perm)	0	1482	0	0	1615	0	0	1728	0	0	1707	0
Satd. Flow (RTOR)		17			16			3			7	
Lane Group Flow (vph)	0	310	0	0	274	0	0	235	0	0	259	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	48.0	48.0		48.0	48.0		42.0	42.0		42.0	42.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		24.6			24.6			55.4			55.4	
Actuated g/C Ratio		0.27			0.27			0.62			0.62	
v/c Ratio		0.74			0.60			0.22			0.25	
Control Delay		41.0			11.0			2.9			7.5	
Queue Delay		0.0			0.0			0.4			0.0	
Total Delay		41.0			11.0			3.2			7.5	
LOS		D			B			A			A	
Approach Delay		41.0			11.0			3.3			7.5	
Approach LOS		D			B			A			A	
Queue Length 50th (ft)		122			12			13			46	
Queue Length 95th (ft)		198			17			29			89	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		716			779			1063			1052	
Starvation Cap Reductn		0			0			436			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.35			0.37			0.25	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 39 (43%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74





Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕	↗		↕	
Volume (vph)	16	385	7	0	0	0	0	196	7	27	241	0
Satd. Flow (prot)	0	3087	1384	0	0	0	0	1628	1384	0	1620	0
Flt Permitted		0.998									0.955	
Satd. Flow (perm)	0	3087	1384	0	0	0	0	1628	1384	0	1555	0
Satd. Flow (RTOR)			48						48			
Lane Group Flow (vph)	0	446	8	0	0	0	0	218	8	0	298	0
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		2						8				4
Permitted Phases	2		2						8	4		
Minimum Split (s)	25.0	25.0	25.0					25.0	25.0	25.0	25.0	
Total Split (s)	44.0	44.0	44.0					46.0	46.0	46.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					51.1%	51.1%	51.1%	51.1%	
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)		3.0	-2.0					-2.0	-2.0		-2.0	
Total Lost Time (s)		10.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		34.0	39.0					41.0	41.0		41.0	
Actuated g/C Ratio		0.38	0.43					0.46	0.46		0.46	
v/c Ratio		0.38	0.01					0.29	0.01		0.42	
Control Delay		40.9	8.3					23.2	0.4		19.4	
Queue Delay		0.0	0.0					1.5	0.0		1.3	
Total Delay		40.9	8.3					24.6	0.4		20.7	
LOS		D	A					C	A		C	
Approach Delay		40.3						23.8			20.7	
Approach LOS		D						C			C	
Queue Length 50th (ft)		135	1					83	0		120	
Queue Length 95th (ft)		184	m4					105	m0		178	
Internal Link Dist (ft)		268			293			118			200	
Turn Bay Length (ft)			250						50			
Base Capacity (vph)		1166	626					741	656		708	
Starvation Cap Reductn		0	0					353	0		228	
Spillback Cap Reductn		0	0					0	0		0	
Storage Cap Reductn		0	0					0	0		0	
Reduced v/c Ratio		0.38	0.01					0.56	0.01		0.62	

Intersection Summary

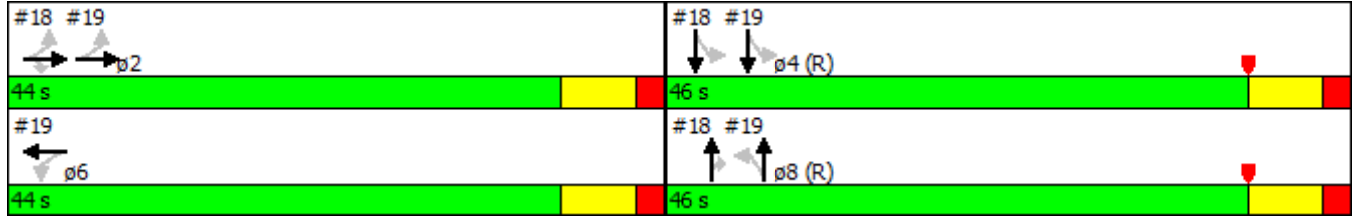
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 49 (54%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.42  
 Intersection Signal Delay: 30.5  
 Intersection Capacity Utilization 56.2%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

2/27/2015

Splits and Phases: 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)



Lane Group	ø6
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	30.0
Total Split (s)	44.0
Total Split (%)	49%
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	121	36	9	205	51	21	139	7	51	164	33
Satd. Flow (prot)	1546	1572	0	1546	1579	0	1546	1616	0	1546	1587	0
Flt Permitted	0.516			0.640			0.594			0.654		
Satd. Flow (perm)	840	1572	0	1042	1579	0	967	1616	0	1065	1587	0
Satd. Flow (RTOR)		21			18			4			15	
Lane Group Flow (vph)	14	174	0	10	285	0	23	162	0	57	219	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	25.0	25.0		30.0	30.0		25.0	25.0		25.0	25.0	
Total Split (s)	44.0	44.0		44.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%		48.9%	48.9%		51.1%	51.1%		51.1%	51.1%	
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?												
Act Effct Green (s)	39.0	39.0		39.0	39.0		41.0	41.0		41.0	41.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.46	0.46		0.46	0.46	
v/c Ratio	0.04	0.25		0.02	0.41		0.05	0.22		0.12	0.30	
Control Delay	15.9	13.8		6.7	8.2		15.9	15.4		2.1	1.7	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.5	
Total Delay	15.9	13.8		6.7	8.5		15.9	15.5		2.1	2.2	
LOS	B	B		A	A		B	B		A	A	
Approach Delay		13.9			8.4			15.5			2.2	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	3	30		1	36		6	44		1	0	
Queue Length 95th (ft)	m7	m68		m3	54		23	100		4	10	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)	100			90			60					
Base Capacity (vph)	364	693		451	694		440	738		485	731	
Starvation Cap Reductn	0	0		0	0		0	0		0	226	
Spillback Cap Reductn	50	0		0	95		0	46		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.25		0.02	0.48		0.05	0.23		0.12	0.43	

Intersection Summary

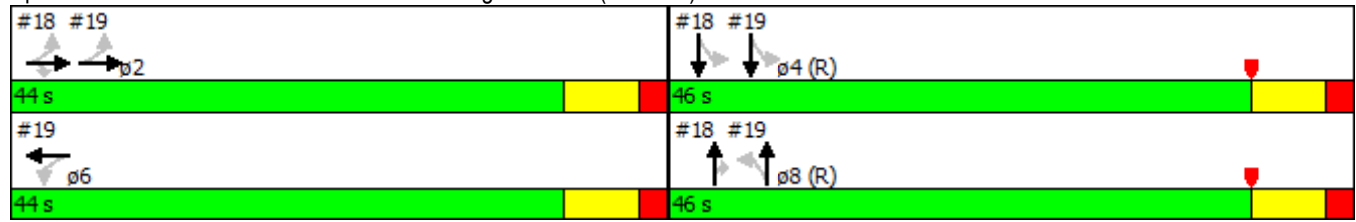
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 49 (54%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.42  
 Intersection Signal Delay: 9.1  
 Intersection Capacity Utilization 45.6%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (No Train)

2/27/2015

Splits and Phases: 19: Blackwell Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↖	↗	↖	↗			↕	
Volume (vph)	7	0	57	109	291	64	127	155	0	0	65	12
Satd. Flow (prot)	0	1518	1475	1736	1827	1553	1736	1827	0	0	1789	0
Flt Permitted		0.929		0.734			0.702					
Satd. Flow (perm)	0	1427	1475	1341	1827	1553	1282	1827	0	0	1789	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	34	37	121	323	71	141	172	0	0	85	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2				6
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	56.0	56.0	56.0	56.0	56.0	56.0	34.0	34.0			34.0	
Total Split (%)	62.2%	62.2%	62.2%	62.2%	62.2%	62.2%	37.8%	37.8%			37.8%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		51.0	51.0	51.0	51.0	51.0	29.0	29.0			29.0	
Actuated g/C Ratio		0.57	0.57	0.57	0.57	0.57	0.32	0.32			0.32	
v/c Ratio		0.04	0.04	0.16	0.31	0.08	0.34	0.29			0.15	
Control Delay		16.1	16.0	1.4	1.8	1.1	26.2	24.5			31.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		16.1	16.0	1.4	1.8	1.1	26.2	24.5			31.6	
LOS		B	B	A	A	A	C	C			C	
Approach Delay		16.0			1.6			25.3			31.6	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)		12	13	3	8	2	61	73			46	
Queue Length 95th (ft)		m26	m28	5	10	3	112	125			89	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		808	835	759	1035	880	413	588			576	
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		0.04	0.04	0.16	0.31	0.08	0.34	0.29			0.15	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 9 (10%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.34  
 Intersection Signal Delay: 12.8  
 Intersection Capacity Utilization 39.5%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

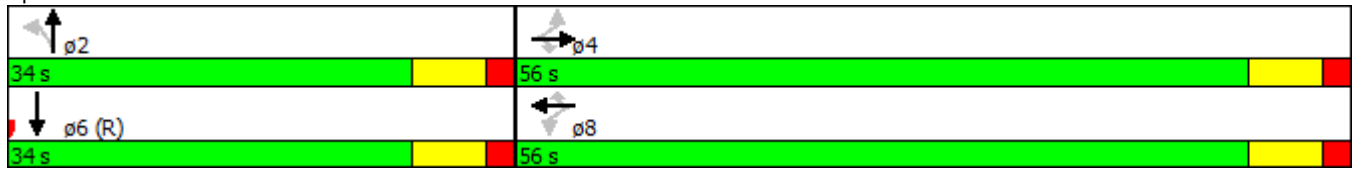
Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

2/27/2015

Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive



Lanes, Volumes, Timings  
 21: Rigsbee Avenue & Morgan Loop

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					← ↑ →			↑			↑	
Volume (vph)	0	0	0	112	744	83	33	76	0	0	98	32
Satd. Flow (prot)	0	0	0	0	6287	0	0	1835	0	0	1799	0
Flt Permitted					0.994			0.902				
Satd. Flow (perm)	0	0	0	0	6287	0	0	1680	0	0	1799	0
Satd. Flow (RTOR)					39						23	
Lane Group Flow (vph)	0	0	0	0	1043	0	0	121	0	0	145	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				25.0	25.0		25.0	25.0			25.0	
Total Split (s)				51.0	51.0		39.0	39.0			39.0	
Total Split (%)				56.7%	56.7%		43.3%	43.3%			43.3%	
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0			-4.0			-4.0	
Total Lost Time (s)					1.0			1.0			1.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					50.0			38.0			38.0	
Actuated g/C Ratio					0.56			0.42			0.42	
v/c Ratio					0.30			0.17			0.19	
Control Delay					1.9			17.0			14.4	
Queue Delay					0.0			0.0			0.0	
Total Delay					1.9			17.0			14.4	
LOS					A			B			B	
Approach Delay					1.9			17.0			14.4	
Approach LOS					A			B			B	
Queue Length 50th (ft)					13			42			42	
Queue Length 95th (ft)					15			78			80	
Internal Link Dist (ft)		433			66			129			206	
Turn Bay Length (ft)												
Base Capacity (vph)					3510			709			772	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.30			0.17			0.19	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 3 (3%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.30  
 Intersection Signal Delay: 4.7  
 Intersection Capacity Utilization 40.5%  
 Analysis Period (min) 15

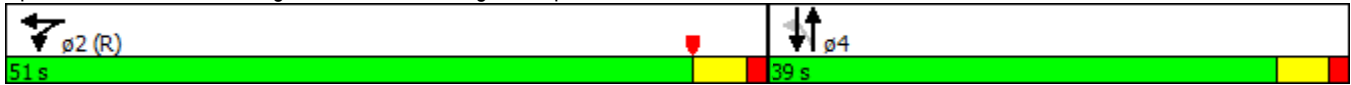
Intersection LOS: A  
 ICU Level of Service A



Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

2/27/2015

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop



Lanes, Volumes, Timings  
 22: Magnum Street/Morgan Loop

2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑↑									↑↑	↑
Volume (vph)	259	917	0	0	0	0	0	0	0	0	1140	187
Satd. Flow (prot)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.989										
Satd. Flow (perm)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Satd. Flow (RTOR)		80										22
Lane Group Flow (vph)	0	1307	0	0	0	0	0	0	0	0	1267	208
Turn Type	Perm	NA									NA	custom
Protected Phases		4										
Permitted Phases	4										2	2
Detector Phase	4	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	32.0	32.0									58.0	58.0
Total Split (%)	35.6%	35.6%									64.4%	64.4%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None									C-Max	C-Max
Act Effct Green (s)		30.7									59.3	59.3
Actuated g/C Ratio		0.34									0.66	0.66
v/c Ratio		0.59									0.54	0.20
Control Delay		23.4									9.5	6.2
Queue Delay		0.0									0.0	0.0
Total Delay		23.4									9.5	6.2
LOS		C									A	A
Approach Delay		23.4									9.0	
Approach LOS		C									A	
Queue Length 50th (ft)		185									187	38
Queue Length 95th (ft)		213									240	67
Internal Link Dist (ft)		566			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2304									2330	1049
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.57									0.54	0.20

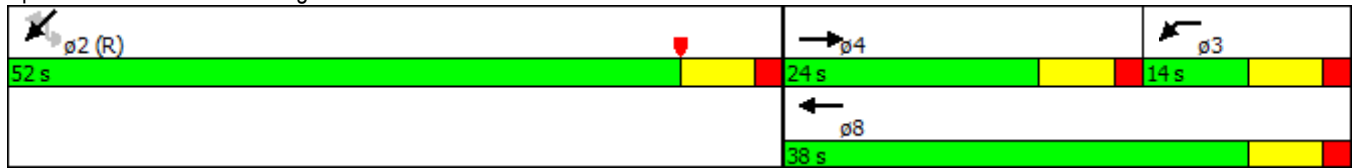
Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:SWT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.59





Splits and Phases: 23: Mangum Street





Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

2/27/2015

Lane Group	ø3	ø4
Lane Configurations		
Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Minimum Split (s)	10.0	23.0
Total Split (s)	10.0	23.0
Total Split (%)	11%	26%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

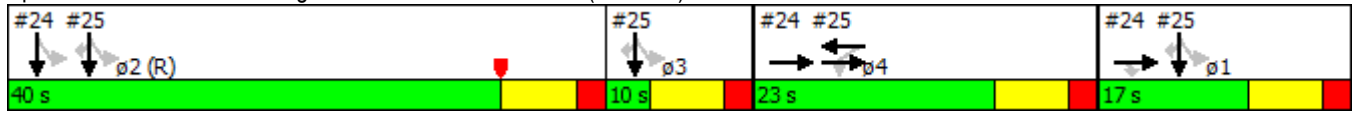
Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

2/27/2015

Queue shown is maximum after two cycles.

Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)





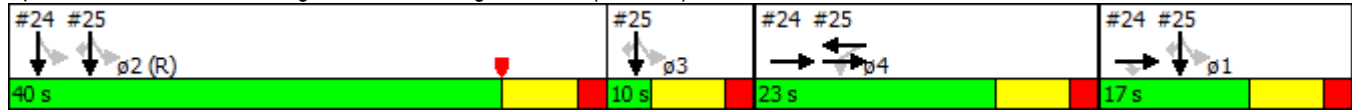


# Lanes, Volumes, Timings

## 25: Mangum Street & Pettigrew Street (No Train)

2/27/2015

Splits and Phases: 25: Mangum Street & Pettigrew Street (No Train)



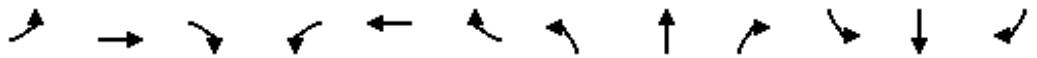
Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Minimum Split (s)	14.0	29.0	10.0
Total Split (s)	17.0	40.0	10.0
Total Split (%)	19%	44%	11%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

### Intersection Summary

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	180	714	0	0	0	0	0	915	170
Satd. Flow (prot)	0	0	0	0	5034	0	0	0	0	0	6408	1583
Flt Permitted					0.990							
Satd. Flow (perm)	0	0	0	0	5034	0	0	0	0	0	6408	1583
Satd. Flow (RTOR)					64							138
Lane Group Flow (vph)	0	0	0	0	1004	0	0	0	0	0	1040	193
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				46.0	46.0						44.0	44.0
Total Split (%)				51.1%	51.1%						48.9%	48.9%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None					C-Max	C-Max	
Act Effct Green (s)					29.2					60.8	57.8	
Actuated g/C Ratio					0.32					0.68	0.64	
v/c Ratio					0.60					0.24	0.18	
Control Delay					29.0					11.1	7.7	
Queue Delay					0.0					0.0	0.0	
Total Delay					29.0					11.1	7.7	
LOS					C					B	A	
Approach Delay					29.0					10.5		
Approach LOS					C					B		
Queue Length 50th (ft)					195					120	47	
Queue Length 95th (ft)					223					181	111	
Internal Link Dist (ft)		297			516			238		1078		
Turn Bay Length (ft)												
Base Capacity (vph)					2604					4326	1065	
Starvation Cap Reductn					0					0	0	
Spillback Cap Reductn					0					0	0	
Storage Cap Reductn					0					0	0	
Reduced v/c Ratio					0.39					0.24	0.18	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:SBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.60

# Lanes, Volumes, Timings

## 26: Jackie Robinson Drive & Mangum Street

2/27/2015

Intersection Signal Delay: 18.8

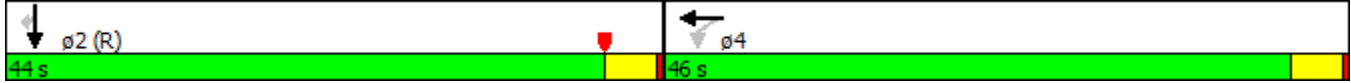
Intersection LOS: B

Intersection Capacity Utilization 37.4%

ICU Level of Service A

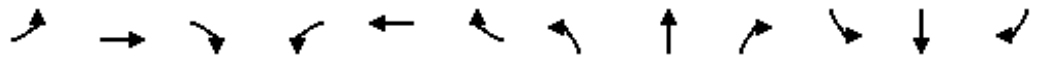
Analysis Period (min) 15

Splits and Phases: 26: Jackie Robinson Drive & Mangum Street



Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	366	115	3	518	117	0	0	0
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Satd. Flow (RTOR)						128		66				
Lane Group Flow (vph)	0	0	0	0	407	128	0	709	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					53.0		37.0	37.0				
Total Split (%)					58.9%		41.1%	41.1%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					30.7	90.0		57.3				
Actuated g/C Ratio					0.34	1.00		0.64				
v/c Ratio					0.64	0.08		0.22				
Control Delay					30.9	0.1		10.4				
Queue Delay					0.0	0.0		0.0				
Total Delay					30.9	0.1		10.4				
LOS					C	A		B				
Approach Delay					23.5			10.4				
Approach LOS					C			B				
Queue Length 50th (ft)					218	0		64				
Queue Length 95th (ft)					269	0		99				
Internal Link Dist (ft)		211			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					1097	1583		3173				
Starvation Cap Reductn					0	0		0				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.37	0.08		0.22				

Intersection Summary

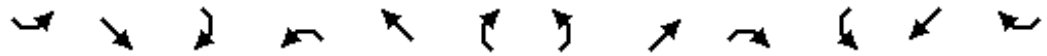
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 44 (49%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

2/27/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖	↗					↖	↗				
Volume (vph)	135	194	0	0	0	0	362	503	50	0	0	0
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Satd. Flow (RTOR)	*12							26				
Lane Group Flow (vph)	150	216	0	0	0	0	402	615	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	45.0	45.0					45.0	45.0				
Total Split (%)	50.0%	50.0%					50.0%	50.0%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	16.1	16.1					71.9	70.9				
Actuated g/C Ratio	0.18	0.18					0.80	0.79				
v/c Ratio	0.46	0.34					0.15	0.16				
Control Delay	33.8	32.7					0.7	0.7				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	33.8	32.7					0.7	0.7				
LOS	C	C					A	A				
Approach Delay		33.2						0.7				
Approach LOS		C						A				
Queue Length 50th (ft)	71	57					3	4				
Queue Length 95th (ft)	116	81					m11	12				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	851	1690					2741	3953				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.18	0.13					0.15	0.16				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 2:NETL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46

# Lanes, Volumes, Timings

## 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

2/27/2015

Intersection Signal Delay: 9.3

Intersection LOS: A

Intersection Capacity Utilization 25.0%

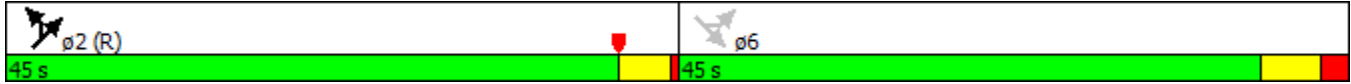
ICU Level of Service A

Analysis Period (min) 15

\* User Entered Value

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

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty





Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

2/27/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	72	277	305	151	213	993	96	0
Satd. Flow (prot)	1770	1863	1863	1583	0	3472	0	3614
Flt Permitted	0.424					0.992		
Satd. Flow (perm)	790	1863	1863	1583	0	3472	0	3614
Satd. Flow (RTOR)				168		14		
Lane Group Flow (vph)	80	308	339	168	0	1447	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	31.0	31.0	31.0	31.0	48.0	48.0		11.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	53.3%	53.3%		12.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	37.0	37.0	39.0	39.0		48.0		
Actuated g/C Ratio	0.41	0.41	0.43	0.43		0.53		
v/c Ratio	0.25	0.40	0.42	0.22		0.78		
Control Delay	22.2	22.2	19.0	6.1		11.6		
Queue Delay	0.0	0.0	0.0	0.0		0.9		
Total Delay	22.2	22.2	19.0	6.1		12.4		
LOS	C	C	B	A		B		
Approach Delay		22.2	14.7			12.4		
Approach LOS		C	B			B		
Queue Length 50th (ft)	31	121	138	16		252		
Queue Length 95th (ft)	m52	m184	208	53		297		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	324	765	807	781		1858		
Starvation Cap Reductn	0	0	0	0		172		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.25	0.40	0.42	0.22		0.86		

**Intersection Summary**

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78

# Lanes, Volumes, Timings

## 29: N. Roxboro Street & Main Street

2/27/2015

Intersection Signal Delay: 14.5

Intersection LOS: B

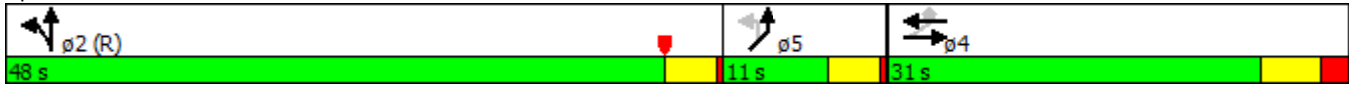
Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

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

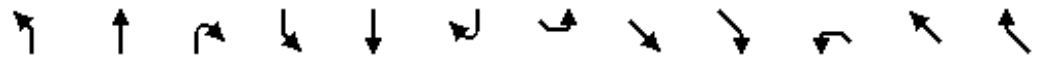
Splits and Phases: 29: N. Roxboro Street & Main Street



Lanes, Volumes, Timings

30: Roxboro & Pettigrew Street (No Train)

2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↗				↖	↑			↘	
Volume (vph)	188	1524	24	0	0	0	90	91	0	0	87	98
Satd. Flow (prot)	0	3522	1583	0	0	0	1752	1844	0	0	1713	0
Flt Permitted		0.995					0.290					
Satd. Flow (perm)	0	3522	1583	0	0	0	535	1844	0	0	1713	0
Satd. Flow (RTOR)			109								52	
Lane Group Flow (vph)	0	1902	27	0	0	0	100	101	0	0	206	0
Turn Type	Perm	NA	Perm				pm+pt	NA			NA	
Protected Phases		2					7	4			8	
Permitted Phases	2		2				4					
Detector Phase	2	2	2				7	4			8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0				4.0	7.0			7.0	
Minimum Split (s)	17.0	17.0	17.0				8.0	14.0			14.0	
Total Split (s)	68.0	68.0	68.0				8.0	22.0			14.0	
Total Split (%)	75.6%	75.6%	75.6%				8.9%	24.4%			15.6%	
Yellow Time (s)	4.0	4.0	4.0				3.5	4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0				0.5	2.0			2.0	
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0	2.0				0.0	2.0			2.0	
Lead/Lag							Lag				Lead	
Lead-Lag Optimize?							Yes				Yes	
Recall Mode	C-Max	C-Max	C-Max				None	None			None	
Act Effct Green (s)		67.8	67.8				22.0	18.2			11.8	
Actuated g/C Ratio		0.75	0.75				0.24	0.20			0.13	
v/c Ratio		0.72	0.02				0.41	0.27			0.76	
Control Delay		4.4	0.0				39.7	32.5			47.8	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		4.5	0.0				39.7	32.5			47.8	
LOS		A	A				D	C			D	
Approach Delay		4.4						36.1			47.8	
Approach LOS		A						D			D	
Queue Length 50th (ft)		205	0				57	59			85	
Queue Length 95th (ft)		30	m0				m100	m102			#192	
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)							100					
Base Capacity (vph)		2652	1218				241	409			273	
Starvation Cap Reductn		39	0				0	0			0	
Spillback Cap Reductn		30	0				0	0			0	
Storage Cap Reductn		0	0				0	0			0	
Reduced v/c Ratio		0.73	0.02				0.41	0.25			0.75	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

# Lanes, Volumes, Timings

## 30: Roxboro & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 73.1%

ICU Level of Service D

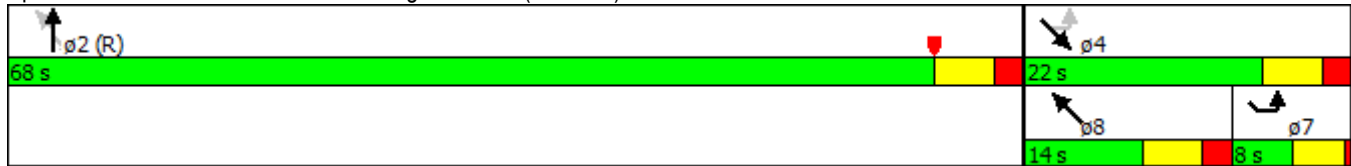
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 30: Roxboro & Pettigrew Street (No Train)



Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	31	0	0	91	20	161	1725	109	0	0	0
Satd. Flow (prot)	1770	1863	0	0	1818	0	0	5065	1583	0	0	0
Flt Permitted	0.678							0.996				
Satd. Flow (perm)	1263	1863	0	0	1818	0	0	5065	1583	0	0	0
Satd. Flow (RTOR)					11				121			
Lane Group Flow (vph)	66	34	0	0	123	0	0	2096	121	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	26.0	26.0			26.0		64.0	64.0	64.0			
Total Split (%)	28.9%	28.9%			28.9%		71.1%	71.1%	71.1%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	10.3	10.3			10.3			67.7	67.7			
Actuated g/C Ratio	0.11	0.11			0.11			0.75	0.75			
v/c Ratio	0.46	0.16			0.57			0.55	0.10			
Control Delay	46.8	36.2			44.1			3.7	0.3			
Queue Delay	0.0	0.0			0.0			0.1	0.0			
Total Delay	46.8	36.2			44.1			3.8	0.3			
LOS	D	D			D			A	A			
Approach Delay		43.2			44.1			3.6				
Approach LOS		D			D			A				
Queue Length 50th (ft)	36	18			61			96	0			
Queue Length 95th (ft)	74	44			111			m124	m0			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	280	414			412			3812	1221			
Starvation Cap Reductn	0	0			0			504	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.24	0.08			0.30			0.63	0.10			

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.57



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↓	↑↑↑				
Volume (vph)	0	0	0	0	637	973	172	1071	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Satd. Flow (RTOR)						36	191					
Lane Group Flow (vph)	0	0	0	0	708	1081	191	1190	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					59.0	59.0	31.0	31.0				
Total Split (%)					65.6%	65.6%	34.4%	34.4%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					57.0	55.0	29.0	29.0				
Actuated g/C Ratio					0.63	0.61	0.32	0.32				
v/c Ratio					0.32	1.10	0.27	0.73				
Control Delay					8.0	80.5	4.6	30.1				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					8.0	80.5	4.6	30.1				
LOS					A	F	A	C				
Approach Delay					51.8			26.6				
Approach LOS					D			C				
Queue Length 50th (ft)					87	~700	0	217				
Queue Length 95th (ft)					116	#944	45	268				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2241	981	699	1638				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.32	1.10	0.27	0.73				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 53 (59%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.10

# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

2/27/2015

Intersection Signal Delay: 40.8

Intersection LOS: D

Intersection Capacity Utilization 87.6%

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.

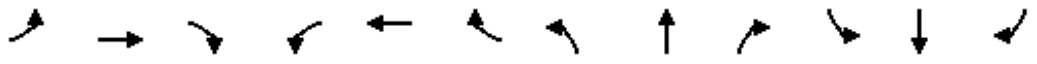
Splits and Phases: 32: Jackie Robinson Drive & Roxboro





Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (vph)	0	141	64	52	373	5	179	9	23	10	40	17
Satd. Flow (prot)	0	1785	0	0	1848	0	1770	1662	0	0	1785	0
Flt Permitted					0.939		0.713				0.973	
Satd. Flow (perm)	0	1785	0	0	1746	0	1328	1662	0	0	1749	0
Satd. Flow (RTOR)		42			1			26			19	
Lane Group Flow (vph)	0	228	0	0	478	0	199	36	0	0	74	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	53.0	53.0		53.0	53.0		37.0	37.0		37.0	37.0	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		51.0			51.0		35.0	35.0			35.0	
Actuated g/C Ratio		0.57			0.57		0.39	0.39			0.39	
v/c Ratio		0.22			0.48		0.39	0.05			0.11	
Control Delay		7.4			13.7		22.7	9.0			14.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		7.4			13.7		22.7	9.0			14.2	
LOS		A			B		C	A			B	
Approach Delay		7.4			13.7			20.6			14.2	
Approach LOS		A			B			C			B	
Queue Length 50th (ft)		35			151		98	0			19	
Queue Length 95th (ft)		54			228		156	25			47	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1029			989		516	662			691	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.22			0.48		0.39	0.05			0.11	

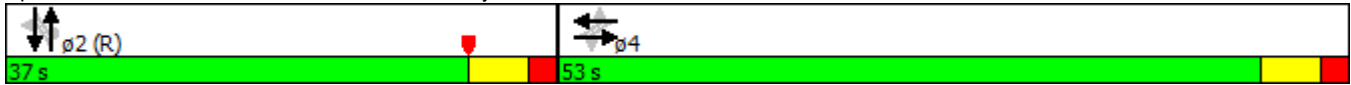
Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 13.9  
 Intersection Capacity Utilization 60.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street




















2/27/2015

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

2/27/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	111	8	11	145	0	91	57	18	104	0	82
Satd. Flow (prot)	0	3504	0	0	3529	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.938		0.950			0.716		
Satd. Flow (perm)	0	3504	0	0	3320	0	1770	1863	1583	1334	0	1583
Satd. Flow (RTOR)		9							36			91
Lane Group Flow (vph)	0	132	0	0	173	0	101	63	20	116	0	91
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		37.0		37.0	37.0		53.0	53.0	53.0	53.0		53.0
Total Split (%)		41.1%		41.1%	41.1%		58.9%	58.9%	58.9%	58.9%		58.9%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0			2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		35.0			35.0		51.0	51.0	51.0	51.0		51.0
Actuated g/C Ratio		0.39			0.39		0.57	0.57	0.57	0.57		0.57
v/c Ratio		0.10			0.13		0.10	0.06	0.02	0.15		0.10
Control Delay		18.2			13.4		2.1	2.0	0.1	9.9		2.3
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		18.2			13.4		2.1	2.0	0.1	9.9		2.3
LOS		B			B		A	A	A	A		A
Approach Delay		18.2			13.4			1.8				
Approach LOS		B			B			A				
Queue Length 50th (ft)		28			35		7	4	0	29		0
Queue Length 95th (ft)		51			50		11	8	0	55		19
Internal Link Dist (ft)		428			477			952			87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1368			1291		1003	1055	912	755		936
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		0.10			0.13		0.10	0.06	0.02	0.15		0.10

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 13 (14%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.15  
 Intersection Signal Delay: 9.2  
 Intersection Capacity Utilization 32.5%  
 Analysis Period (min) 15

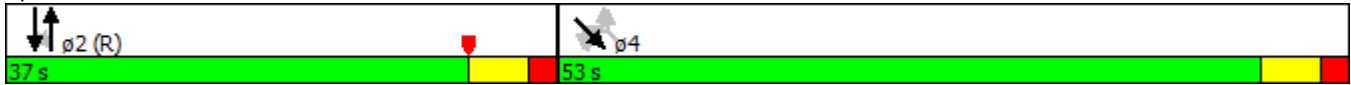
Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings

34: Dillard Street

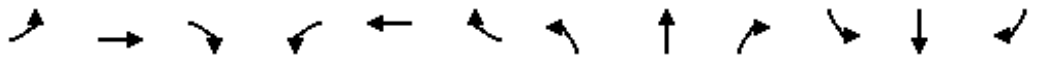
2/27/2015

Splits and Phases: 34: Dillard Street



Lanes, Volumes, Timings  
35: Dillard Street & Main Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	89	96	46	425	67	37	36	12	67	105	120
Satd. Flow (prot)	1770	1863	1583	1770	1825	0	1770	1794	0	1770	1714	0
Flt Permitted	0.360			0.693			0.441			0.722		
Satd. Flow (perm)	671	1863	1583	1291	1825	0	821	1794	0	1345	1714	0
Satd. Flow (RTOR)			107		17			13			67	
Lane Group Flow (vph)	20	99	107	51	546	0	41	53	0	74	250	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%	65.6%	65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	57.0	57.0	57.0	57.0	57.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63		0.32	0.32		0.32	0.32	
v/c Ratio	0.05	0.08	0.10	0.06	0.47		0.16	0.09		0.17	0.42	
Control Delay	6.8	7.1	3.6	6.6	9.9		23.8	17.7		17.8	14.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.8	7.1	3.6	6.6	9.9		23.8	17.7		17.8	14.1	
LOS	A	A	A	A	A		C	B		B	B	
Approach Delay		5.4			9.7			20.4			14.9	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	6	35	13	10	141		17	16		30	75	
Queue Length 95th (ft)	m12	m50	m30	23	212		42	42		60	135	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	424	1179	1041	817	1162		264	586		433	597	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.08	0.10	0.06	0.47		0.16	0.09		0.17	0.42	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 3 (3%), Referenced to phase 4:EBWB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 11.1  
 Intersection Capacity Utilization 55.1%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: B  
 ICU Level of Service B

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

2/27/2015

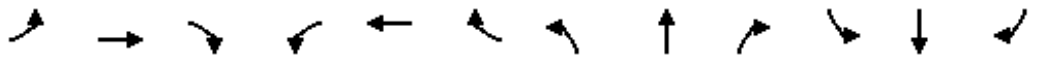
Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	75	25	25	87	18	0	100	34	45	110	98
Satd. Flow (prot)	1718	1740	0	0	1757	0	1809	1740	0	1718	1680	0
Flt Permitted	0.665				0.945					0.662		
Satd. Flow (perm)	1203	1740	0	0	1677	0	1809	1740	0	1197	1680	0
Satd. Flow (RTOR)		28			16			36			95	
Lane Group Flow (vph)	17	111	0	0	145	0	0	149	0	50	231	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
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	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	36.9	36.9			36.9			13.1		13.1	13.1	
Actuated g/C Ratio	0.62	0.62			0.62			0.22		0.22	0.22	
v/c Ratio	0.02	0.10			0.14			0.37		0.19	0.53	
Control Delay	6.3	5.0			1.2			16.6		19.1	15.8	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	6.3	5.0			1.2			16.6		19.1	15.8	
LOS	A	A			A			B		B	B	
Approach Delay		5.2			1.2			16.6			16.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	2	10			6			35		15	43	
Queue Length 95th (ft)	11	35			m6			67		34	86	
Internal Link Dist (ft)		989			699			307			151	
Turn Bay Length (ft)	75											
Base Capacity (vph)	739	1080			1037			774		518	781	
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	0.02	0.10			0.14			0.19		0.10	0.30	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.53

# Lanes, Volumes, Timings

## 36: Dillard Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 11.3

Intersection LOS: B

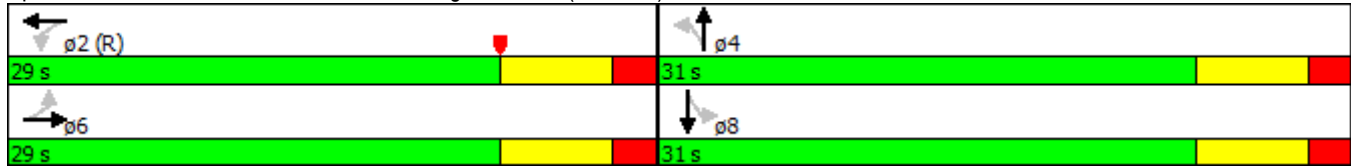
Intersection Capacity Utilization 43.8%

ICU Level of Service A

Analysis Period (min) 15

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

### Splits and Phases: 36: Dillard Street & Pettigrew Street (No Train)





Lanes, Volumes, Timings

37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	57	26	90	127	50	35	388	61	41	445	7
Satd. Flow (prot)	1718	1809	1537	1718	1731	0	1718	3368	0	1718	3430	0
Flt Permitted	0.348			0.716			0.399			0.070		
Satd. Flow (perm)	629	1809	1537	1295	1731	0	722	3368	0	127	3430	0
Satd. Flow (RTOR)			164		14			45			2	
Lane Group Flow (vph)	8	63	29	100	197	0	39	499	0	46	502	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		3			3		5	2 4			6	
Permitted Phases	3		3	3			2 4			6		
Detector Phase	3	3	3	3	3		5	2 4		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			10.0	10.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		14.0			27.0	27.0	
Total Split (s)	23.0	23.0	23.0	23.0	23.0		22.0			52.0	52.0	
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%		18.3%			43.3%	43.3%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		None			C-Max	C-Max	
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0		88.0	93.0		57.0	57.0	
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14		0.73	0.78		0.48	0.48	
v/c Ratio	0.09	0.25	0.08	0.55	0.77		0.06	0.19		0.77	0.31	
Control Delay	43.4	43.3	0.9	65.6	70.0		1.4	1.2		99.4	21.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	43.4	43.3	0.9	65.6	70.0		1.4	1.5		99.4	21.0	
LOS	D	D	A	E	E		A	A		F	C	
Approach Delay		31.0			68.5			1.5			27.6	
Approach LOS		C			E			A			C	
Queue Length 50th (ft)	5	39	0	65	120		1	6		29	123	
Queue Length 95th (ft)	20	81	0	140	#244		3	7		#113	183	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	94	271	369	194	271		671	2605		60	1629	
Starvation Cap Reductn	0	0	0	0	0		0	1488		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.23	0.08	0.52	0.73		0.06	0.45		0.77	0.31	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77

Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	74.0	23.0	14.0	32.0
Total Split (%)	62%	19%	12%	27%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lag	Lead	Lag
Lead-Lag Optimize?			Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
<b>Intersection Summary</b>				

# Lanes, Volumes, Timings

## 37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 26.6

Intersection LOS: C

Intersection Capacity Utilization 45.2%

ICU Level of Service A

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 37: Fayetteville Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	185	367	0	0	521	40	0	0	0	144	13	117
Satd. Flow (prot)	1718	3436	0	0	3399	0	0	0	0	0	3133	0
Flt Permitted	0.342										0.974	
Satd. Flow (perm)	619	3436	0	0	3399	0	0	0	0	0	3133	0
Satd. Flow (RTOR)					9						130	
Lane Group Flow (vph)	206	408	0	0	623	0	0	0	0	0	304	0
Turn Type	pm+pt	NA			NA					Perm	NA	
Protected Phases	5	2			6 7							8
Permitted Phases	2									8		
Detector Phase	5	2			6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	22.0	74.0								32.0	32.0	
Total Split (%)	18.3%	61.7%								26.7%	26.7%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0										-2.0
Total Lost Time (s)	5.0	5.0										5.0
Lead/Lag	Lead									Lag	Lag	
Lead-Lag Optimize?										Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	75.7	75.7			71.0							20.3
Actuated g/C Ratio	0.63	0.63			0.59							0.17
v/c Ratio	0.40	0.19			0.31							0.48
Control Delay	12.4	9.3			4.7							27.3
Queue Delay	0.4	0.3			0.2							0.0
Total Delay	12.8	9.7			4.9							27.3
LOS	B	A			A							C
Approach Delay		10.7			4.9							27.3
Approach LOS		B			A							C
Queue Length 50th (ft)	59	61			26							62
Queue Length 95th (ft)	99	89			43							104
Internal Link Dist (ft)		254			141			340				242
Turn Bay Length (ft)												
Base Capacity (vph)	548	2168			2013							805
Starvation Cap Reductn	90	1170			699							0
Spillback Cap Reductn	0	0			0							0
Storage Cap Reductn	0	0			0							0
Reduced v/c Ratio	0.45	0.41			0.47							0.38

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 12/27/2015

Lane Group	ø3	ø4	ø6	ø7
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	3	4	6	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	10.0	7.0
Minimum Split (s)	23.0	23.0	27.0	14.0
Total Split (s)	23.0	23.0	52.0	14.0
Total Split (%)	19%	19%	43%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?				Yes
Recall Mode	None	None	C-Max	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
<b>Intersection Summary</b>				

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 12/27/2015

Intersection Signal Delay: 11.6

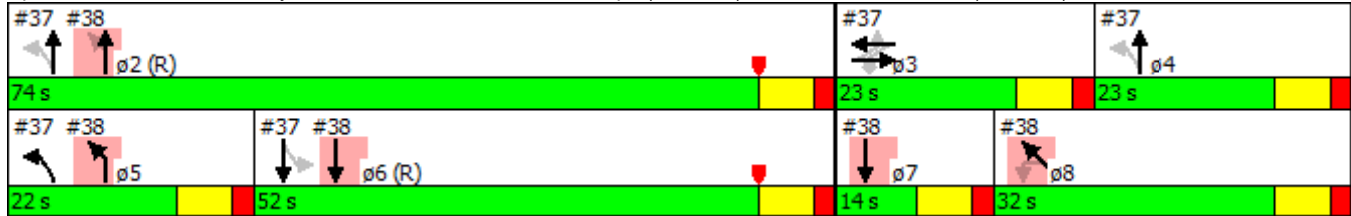
Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)



Lanes, Volumes, Timings

39: Fayetteville Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	33	0	130	0	0	0	0	519	18	71	594	0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	4913	0	1718	3436	0
Flt Permitted		0.950								0.416		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	4913	0	752	3436	0
Satd. Flow (RTOR)			144					7				
Lane Group Flow (vph)	0	37	144	0	0	0	0	597	0	79	660	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	48.0	48.0	48.0					72.0		72.0	72.0	
Total Split (%)	40.0%	40.0%	40.0%					60.0%		60.0%	60.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		10.7	10.7					99.3		99.3	99.3	
Actuated g/C Ratio		0.09	0.09					0.83		0.83	0.83	
v/c Ratio		0.24	0.54					0.15		0.13	0.23	
Control Delay		53.8	15.6					2.2		0.7	0.7	
Queue Delay		0.0	0.0					0.0		0.0	0.2	
Total Delay		53.8	15.6					2.2		0.7	0.9	
LOS		D	B					A		A	A	
Approach Delay		23.4						2.2			0.9	
Approach LOS		C						A			A	
Queue Length 50th (ft)		27	0					23		1	3	
Queue Length 95th (ft)		60	61					40		1	4	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		622	648					4066		621	2842	
Starvation Cap Reductn		0	0					0		0	1248	
Spillback Cap Reductn		0	0					0		0	0	
Storage Cap Reductn		0	0					0		0	0	
Reduced v/c Ratio		0.06	0.22					0.15		0.13	0.41	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 53 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54

# Lanes, Volumes, Timings

## 39: Fayetteville Street

2/27/2015

Intersection Signal Delay: 4.1

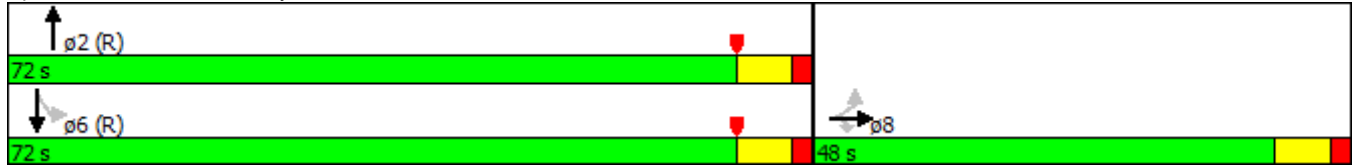
Intersection LOS: A

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 39: Fayetteville Street





Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↘			↕			↕	
Volume (vph)	0	146	13	127	267	121	0	51	73	86	68	0
Satd. Flow (prot)	0	1809	1537	1718	1724	0	0	1666	0	0	1760	0
Flt Permitted				0.654							0.752	
Satd. Flow (perm)	0	1809	1537	1183	1724	0	0	1666	0	0	1360	0
Satd. Flow (RTOR)			73		51			81				
Lane Group Flow (vph)	0	162	14	141	431	0	0	138	0	0	172	0
Turn Type		NA	Perm	Perm	NA			NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%	55.0%	55.0%	55.0%		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	5.0	
All-Red Time (s)	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	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		39.2	39.2	39.2	39.2			14.6			14.7	
Actuated g/c Ratio		0.65	0.65	0.65	0.65			0.24			0.24	
v/c Ratio		0.14	0.01	0.18	0.38			0.30			0.52	
Control Delay		8.3	1.5	7.7	7.8			9.6			24.4	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		8.3	1.5	7.7	7.8			9.6			24.4	
LOS		A	A	A	A			A			C	
Approach Delay		7.8			7.8			9.6			24.4	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)		42	0	21	63			16			54	
Queue Length 95th (ft)		m79	m0	57	148			47			93	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)			75	75								
Base Capacity (vph)		1181	1029	772	1143			662			498	
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		0.14	0.01	0.18	0.38			0.21			0.35	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.52

# Lanes, Volumes, Timings

## 40: Grant Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 10.7

Intersection LOS: B

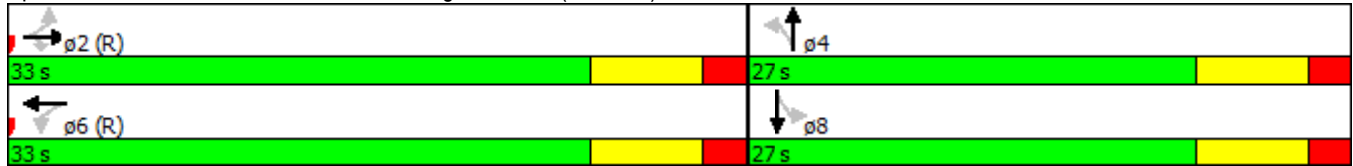
Intersection Capacity Utilization 61.9%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 40: Grant Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

2/27/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	287	72	23	437	102	12
Satd. Flow (prot)	1760	0	1718	1809	1707	0
Flt Permitted			0.950		0.957	
Satd. Flow (perm)	1760	0	1718	1809	1707	0
Lane Group Flow (vph)	399	0	26	486	126	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 36.0%      ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	0	182	457	52	315	14	875	0	0	1440	46
Satd. Flow (prot)	1718	0	1537	1718	1575	0	1718	3436	0	0	3419	0
Flt Permitted	0.523			0.950			0.058					
Satd. Flow (perm)	946	0	1537	1718	1575	0	105	3436	0	0	3419	0
Satd. Flow (RTOR)			164		121							4
Lane Group Flow (vph)	77	0	202	508	408	0	16	972	0	0	1651	0
Turn Type	Perm		Perm	pm+pt	NA		pm+pt	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8			2					
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0			10.0	
Minimum Split (s)	24.0		24.0	14.0	24.0		14.0	20.0			24.0	
Total Split (s)	24.0		24.0	21.0	45.0		14.0	75.0			61.0	
Total Split (%)	20.0%		20.0%	17.5%	37.5%		11.7%	62.5%			50.8%	
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	Lag		Lag	Lead			Lead				Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes				Yes	
Recall Mode	None		None	None	None		None	C-Max			C-Max	
Act Effct Green (s)	15.6		15.6	36.6	36.6		73.4	73.4			67.8	
Actuated g/C Ratio	0.13		0.13	0.30	0.30		0.61	0.61			0.56	
v/c Ratio	0.63		0.59	0.97	0.72		0.09	0.46			0.85	
Control Delay	71.3		19.5	73.5	33.3		11.3	14.0			29.5	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	71.3		19.5	73.5	33.3		11.3	14.0			29.5	
LOS	E		B	E	C		B	B			C	
Approach Delay					55.6			14.0			29.5	
Approach LOS					E			B			C	
Queue Length 50th (ft)	58		29	381	198		5	208			488	
Queue Length 95th (ft)	110		103	#570	311		15	270			#864	
Internal Link Dist (ft)		434			115			139			473	
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	149		381	524	605		185	2100			1932	
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	0.52		0.53	0.97	0.67		0.09	0.46			0.85	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

2/27/2015

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 90.4%

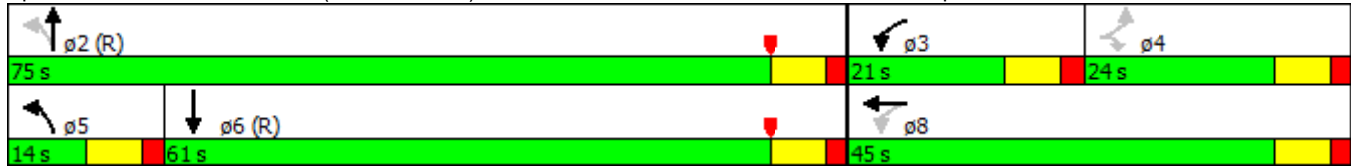
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps



## **Synchro Output-2040 No Build PM**

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	599	58	216	452	245	47	300	302	240	198	76
Satd. Flow (prot)	1718	1785	0	1718	1713	0	1718	1673	0	1718	1734	0
Flt Permitted	0.111			0.075			0.492			0.079		
Satd. Flow (perm)	201	1785	0	136	1713	0	890	1673	0	143	1734	0
Satd. Flow (RTOR)		4			27			38			15	
Lane Group Flow (vph)	70	730	0	240	774	0	52	669	0	267	304	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	55.0	55.0		17.0	72.0		14.0	49.0		19.0	54.0	
Total Split (%)	39.3%	39.3%		12.1%	51.4%		10.0%	35.0%		13.6%	38.6%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	50.0	50.0		67.0	67.0		53.0	44.0		63.0	51.8	
Actuated g/C Ratio	0.36	0.36		0.48	0.48		0.38	0.31		0.45	0.37	
v/c Ratio	0.99	1.14		1.20	0.93		0.13	1.21		1.21	0.47	
Control Delay	149.3	121.8		141.6	21.9		23.2	151.2		162.8	35.7	
Queue Delay	0.0	0.0		0.0	3.6		0.0	0.0		0.0	0.0	
Total Delay	149.3	121.8		141.6	25.5		23.2	151.2		162.8	35.7	
LOS	F	F		F	C		C	F		F	D	
Approach Delay		124.2			53.0			141.9			95.1	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)	63	~775		~209	478		27	~721		~248	206	
Queue Length 95th (ft)	#170	#1024		m#219	m453		53	#966		#432	299	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	71	640		200	833		390	551		221	650	
Starvation Cap Reductn	0	0		0	29		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	0.99	1.14		1.20	0.96		0.13	1.21		1.21	0.47	

### Intersection Summary

Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 73 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 125  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.21

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

2/27/2015

Intersection Signal Delay: 99.7

Intersection LOS: F

Intersection Capacity Utilization 111.3%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

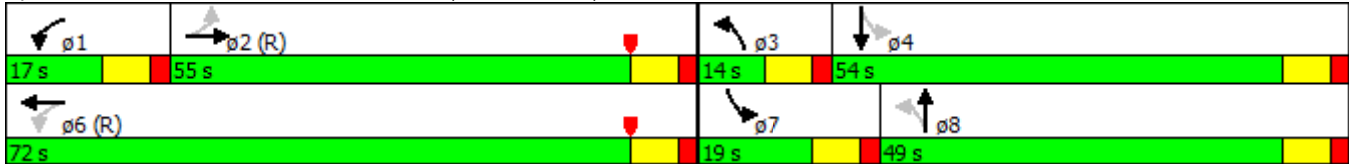
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Ninth Street & US 70 (W Main Street)

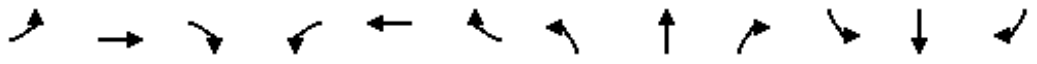




# Lanes, Volumes, Timings

## 2: Swift Avenue/Broad Street & US 70 (W Main Street)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	630	255	167	513	87	283	448	185	116	625	65
Satd. Flow (prot)	1718	1809	1537	1718	1769	0	1718	1809	1537	1718	3388	0
Flt Permitted	0.078			0.074			0.950			0.950		
Satd. Flow (perm)	141	1809	1537	134	1769	0	1718	1809	1537	1718	3388	0
Satd. Flow (RTOR)			86		7				171		7	
Lane Group Flow (vph)	126	700	283	186	667	0	314	498	206	129	766	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	37.0		14.0	14.0	14.0	14.0	32.0	
Total Split (s)	16.0	56.0	29.0	19.0	59.0		29.0	49.0	49.0	16.0	36.0	
Total Split (%)	11.4%	40.0%	20.7%	13.6%	42.1%		20.7%	35.0%	35.0%	11.4%	25.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	62.0	51.2	80.2	68.0	54.2		24.0	44.0	44.0	11.0	31.0	
Actuated g/C Ratio	0.44	0.37	0.57	0.49	0.39		0.17	0.31	0.31	0.08	0.22	
v/c Ratio	0.68	1.06	0.31	0.84	0.97		1.07	0.88	0.34	0.96	1.01	
Control Delay	25.8	79.3	16.7	64.9	69.2		125.6	63.1	9.7	131.6	89.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		13.1	0.0	0.0	0.0	0.0	
Total Delay	25.8	79.3	16.7	64.9	69.2		138.7	63.1	9.7	131.6	89.3	
LOS	C	E	B	E	E		F	E	A	F	F	
Approach Delay		57.2			68.3			75.6			95.4	
Approach LOS		E			E			E			F	
Queue Length 50th (ft)	71	~722	109	118	589		~315	429	22	119	~376	
Queue Length 95th (ft)	m60	m581	m95	#250	#850		#508	#627	86	#254	#515	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	186	660	917	223	689		294	568	600	134	755	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		37	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.68	1.06	0.31	0.83	0.97		1.22	0.88	0.34	0.96	1.01	

### Intersection Summary

Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 27 (19%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.07

# Lanes, Volumes, Timings

## 2: Swift Avenue/Broad Street & US 70 (W Main Street)

2/27/2015

Intersection Signal Delay: 73.3

Intersection LOS: E

Intersection Capacity Utilization 94.1%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

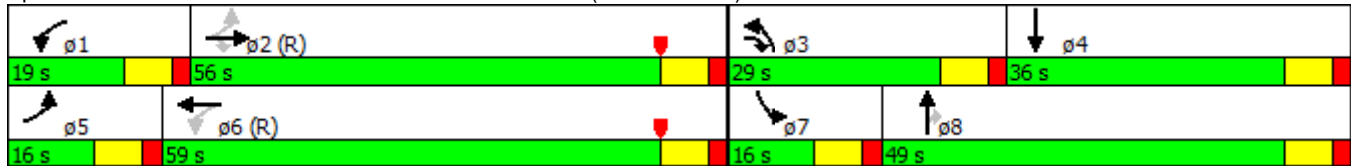
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Swift Avenue/Broad Street & US 70 (W Main Street)



Lanes, Volumes, Timings

3: Erwin Road/Ninth Street & Pettigrew Street

2/27/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	53	596	82	42	430
Satd. Flow (prot)	1634	0	1798	0	0	1820
Flt Permitted	0.984					0.996
Satd. Flow (perm)	1634	0	1798	0	0	1820
Lane Group Flow (vph)	88	0	753	0	0	525
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

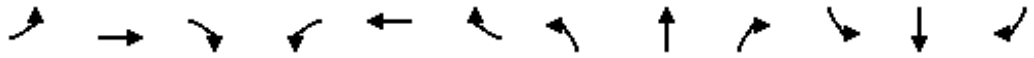
Intersection Capacity Utilization 68.9% ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

4: Swift Avenue/Broad Street & Pettigrew Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕			↕	
Volume (vph)	53	3	166	17	6	43	48	820	9	16	986	45
Satd. Flow (prot)	0	1606	0	0	1628	0	1718	3430	0	0	3412	0
Flt Permitted		0.988			0.987		0.950				0.999	
Satd. Flow (perm)	0	1606	0	0	1628	0	1718	3430	0	0	3412	0
Lane Group Flow (vph)	0	246	0	0	74	0	53	921	0	0	1164	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 64.1%

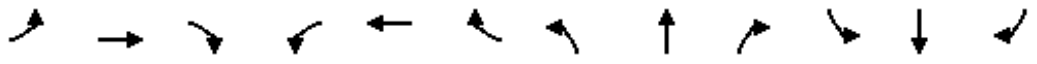
ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	187	554	69	36	689	181	97	350	67	107	312	179
Satd. Flow (prot)	1718	1809	1537	1718	1753	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1753	0	1718	1809	1537	1718	1809	1537
Satd. Flow (RTOR)			140						86			138
Lane Group Flow (vph)	208	616	77	40	967	0	108	389	74	119	347	199
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	31.0	14.0	14.0	32.0	14.0
Total Split (s)	19.0	79.0	79.0	14.0	74.0		14.0	33.0	14.0	14.0	33.0	19.0
Total Split (%)	13.6%	56.4%	56.4%	10.0%	52.9%		10.0%	23.6%	10.0%	10.0%	23.6%	13.6%
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
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
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	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.0	76.8	76.8	9.0	69.0		9.0	28.0	42.0	9.0	28.0	47.0
Actuated g/C Ratio	0.10	0.55	0.55	0.06	0.49		0.06	0.20	0.30	0.06	0.20	0.34
v/c Ratio	1.22	0.62	0.08	0.36	1.12		0.98	1.08	0.14	1.08	0.96	0.33
Control Delay	189.8	25.9	0.2	72.5	103.3		145.2	121.5	5.8	168.7	93.7	12.8
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	189.8	25.9	0.2	72.5	103.3		145.2	121.5	5.8	168.7	93.7	12.8
LOS	F	C	A	E	F		F	F	A	F	F	B
Approach Delay		61.6			102.1			111.0			82.9	
Approach LOS		E			F			F			F	
Queue Length 50th (ft)	~231	389	0	36	~1011		100	~393	0	~121	316	38
Queue Length 95th (ft)	#395	523	0	77	#1268		#228	#601	30	#253	#512	102
Internal Link Dist (ft)		298			220			276			273	
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	171	992	906	110	863		110	361	521	110	361	607
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	1.22	0.62	0.08	0.36	1.12		0.98	1.08	0.14	1.08	0.96	0.33

Intersection Summary

Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 145  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.22

# Lanes, Volumes, Timings

## 5: Buchanan Boulevard & W Main Street (No Train)

2/27/2015

Intersection Signal Delay: 88.0

Intersection LOS: F

Intersection Capacity Utilization 98.6%

ICU Level of Service F

Analysis Period (min) 15

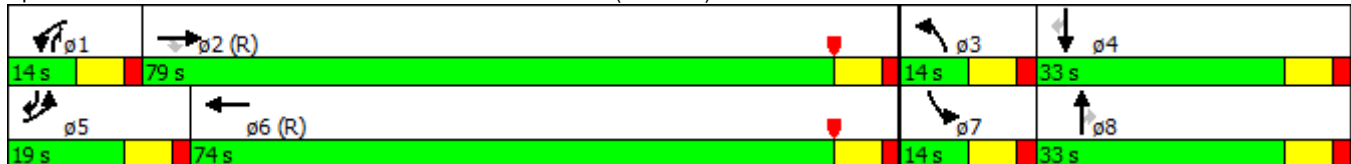
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

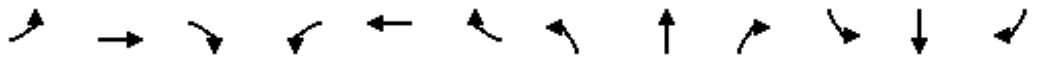
Queue shown is maximum after two cycles.

Splits and Phases: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	446	0	0	270	24	274	1133	28	0	0	0
Satd. Flow (prot)	1546	1628	0	0	1610	0	1546	3080	0	0	0	0
Flt Permitted	0.401						0.950					
Satd. Flow (perm)	653	1628	0	0	1610	0	1546	3080	0	0	0	0
Satd. Flow (RTOR)					4			2				
Lane Group Flow (vph)	191	496	0	0	327	0	304	1290	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	31.0	31.0			32.0		28.0	28.0				
Total Split (s)	65.0	65.0			65.0		75.0	75.0				
Total Split (%)	46.4%	46.4%			46.4%		53.6%	53.6%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	51.1	51.1			51.1		78.9	78.9				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
v/c Ratio	0.80	0.84			0.56		0.35	0.74				
Control Delay	63.9	53.1			37.8		19.5	27.7				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	63.9	53.1			37.8		19.5	27.7				
LOS	E	D			D		B	C				
Approach Delay		56.1			37.8			26.2				
Approach LOS		E			D			C				
Queue Length 50th (ft)	153	404			230		148	457				
Queue Length 95th (ft)	244	507			298		243	624				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	279	697			692		871	1737				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.68	0.71			0.47		0.35	0.74				

Intersection Summary

Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84





Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	28	15	0	0	30	8	104	1399	4	0	0	0
Satd. Flow (prot)	0	1577	0	0	1581	0	1546	3093	0	0	0	0
Flt Permitted		0.969					0.950					
Satd. Flow (perm)	0	1577	0	0	1581	0	1546	3093	0	0	0	0
Lane Group Flow (vph)	0	48	0	0	42	0	116	1558	0	0	0	0
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 59.0%      ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

2/27/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	15	0	10	1492	0	0
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Lane Group Flow (vph)	17	0	11	1658	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 51.2% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	388	0	0	749	23	189	1318	111	0	0	0
Satd. Flow (prot)	1718	1809	0	0	1801	0	0	4908	1537	0	0	0
Flt Permitted	0.066							0.994				
Satd. Flow (perm)	119	1809	0	0	1801	0	0	4908	1537	0	0	0
Satd. Flow (RTOR)					2				100			
Lane Group Flow (vph)	179	431	0	0	858	0	0	1674	123	0	0	0
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases	4											
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			29.0		30.0	30.0	30.0			
Total Split (s)	14.0	75.0			61.0		45.0	45.0	45.0			
Total Split (%)	11.7%	62.5%			50.8%		37.5%	37.5%	37.5%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	70.0	70.0			56.0			40.0	40.0			
Actuated g/C Ratio	0.58	0.58			0.47			0.33	0.33			
v/c Ratio	0.95	0.41			1.02			1.02	0.21			
Control Delay	81.5	15.1			61.8			68.0	9.0			
Queue Delay	0.0	0.0			3.9			0.0	0.0			
Total Delay	81.5	15.1			65.7			68.0	9.0			
LOS	F	B			E			E	A			
Approach Delay		34.6			65.7			64.0				
Approach LOS		C			E			E				
Queue Length 50th (ft)	89	173			~714			~505	12			
Queue Length 95th (ft)	#234	245			#938			#602	56			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	189	1055			841			1636	579			
Starvation Cap Reductn	0	0			10			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.95	0.41			1.03			1.02	0.21			

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 8 (7%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.02

# Lanes, Volumes, Timings

## 9: Duke Street & Chapel Hill Street

2/27/2015

Intersection Signal Delay: 58.9

Intersection LOS: E

Intersection Capacity Utilization 91.5%

ICU Level of Service F

Analysis Period (min) 15

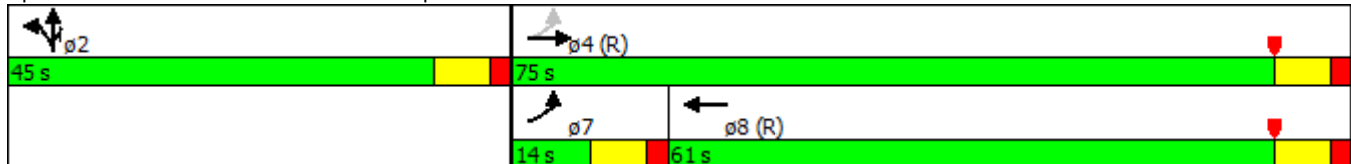
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

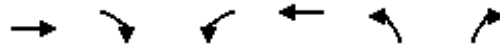
Queue shown is maximum after two cycles.

Splits and Phases: 9: Duke Street & Chapel Hill Street



Lanes, Volumes, Timings  
 10: Willard Street & Chapel Hill Street

2/27/2015



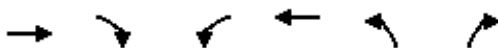
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	447	52	57	730	42	93
Satd. Flow (prot)	1783	0	1718	1809	1616	0
Flt Permitted			0.950		0.985	
Satd. Flow (perm)	1783	0	1718	1809	1616	0
Lane Group Flow (vph)	555	0	63	811	150	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

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

Lanes, Volumes, Timings  
 11: Pettigrew Street & Chapel Hill Street

2/27/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Volume (vph)	373	167	37	541	246	41
Satd. Flow (prot)	1733	0	1718	1809	1702	0
Flt Permitted			0.358		0.959	
Satd. Flow (perm)	1733	0	647	1809	1702	0
Satd. Flow (RTOR)	33				7	
Lane Group Flow (vph)	600	0	41	601	319	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	4	
Permitted Phases			6			
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	45.0		24.0	24.0	28.0	
Total Split (s)	76.0		76.0	76.0	44.0	
Total Split (%)	63.3%		63.3%	63.3%	36.7%	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max		C-Max	C-Max	None	
Act Effct Green (s)	80.6		80.6	80.6	29.4	
Actuated g/C Ratio	0.67		0.67	0.67	0.24	
v/c Ratio	0.51		0.09	0.49	0.76	
Control Delay	7.2		9.3	12.5	52.3	
Queue Delay	0.2		0.0	4.1	0.0	
Total Delay	7.4		9.3	16.6	52.3	
LOS	A		A	B	D	
Approach Delay	7.4			16.1	52.3	
Approach LOS	A			B	D	
Queue Length 50th (ft)	47		10	209	225	
Queue Length 95th (ft)	412		30	364	301	
Internal Link Dist (ft)	168			210	1409	
Turn Bay Length (ft)						
Base Capacity (vph)	1175		435	1215	557	
Starvation Cap Reductn	138		0	519	0	
Spillback Cap Reductn	0		0	227	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.58		0.09	0.86	0.57	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 32 (27%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76

# Lanes, Volumes, Timings

## 11: Pettigrew Street & Chapel Hill Street

2/27/2015

Intersection Signal Delay: 20.2

Intersection LOS: C

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 11: Pettigrew Street & Chapel Hill Street







Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

2/27/2015

Splits and Phases: 12: Downtown loop/Great Jones Street



Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					↑↑↑↑			↑	↑			↑
Volume (vph)	0	0	0	42	662	211	0	335	216	15	235	0
Satd. Flow (prot)	0	0	0	0	6171	0	0	1863	1583	0	1857	0
Flt Permitted					0.998						0.972	
Satd. Flow (perm)	0	0	0	0	6171	0	0	1863	1583	0	1811	0
Satd. Flow (RTOR)					120				95			
Lane Group Flow (vph)	0	0	0	0	1017	0	0	372	240	0	278	0
Turn Type				Perm	NA			NA	custom	Perm	NA	
Protected Phases					2							8
Permitted Phases				2				4	4	8		
Minimum Split (s)				20.0	20.0			30.0	30.0	30.0	30.0	
Total Split (s)				30.0	30.0			45.0	45.0	45.0	45.0	
Total Split (%)				40.0%	40.0%			60.0%	60.0%	60.0%	60.0%	
Yellow Time (s)				3.5	3.5			3.8	3.8	3.8	3.8	
All-Red Time (s)				0.5	0.5			2.4	2.4	2.4	2.4	
Lost Time Adjust (s)					-4.0			-4.0	-4.0		-4.0	
Total Lost Time (s)					0.0			2.2	2.2		2.2	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					30.0			42.8	42.8		42.8	
Actuated g/C Ratio					0.40			0.57	0.57		0.57	
v/c Ratio					0.40			0.35	0.25		0.27	
Control Delay					14.6			9.8	5.5		9.0	
Queue Delay					0.0			0.0	0.0		0.0	
Total Delay					14.6			9.8	5.5		9.0	
LOS					B			A	A		A	
Approach Delay					14.6			8.1			9.0	
Approach LOS					B			A			A	
Queue Length 50th (ft)					82			85	29		60	
Queue Length 95th (ft)					108			136	62		100	
Internal Link Dist (ft)		213			294			720			413	
Turn Bay Length (ft)												
Base Capacity (vph)					2540			1063	944		1033	
Starvation Cap Reductn					0			0	0		0	
Spillback Cap Reductn					0			0	0		0	
Storage Cap Reductn					0			0	0		0	
Reduced v/c Ratio					0.40			0.35	0.25		0.27	

Intersection Summary

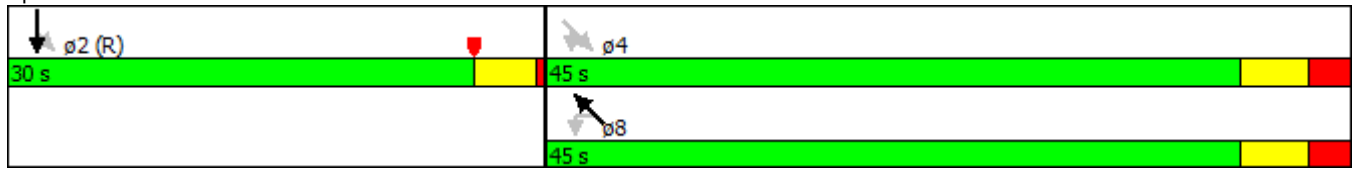
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:SBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

2/27/2015

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	700	72	91	93	0	0	0	337
Satd. Flow (prot)	0	0	0	0	6318	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6318	0	1770	1863	0	0	0	1611
Satd. Flow (RTOR)					40							186
Lane Group Flow (vph)	0	0	0	0	858	0	101	103	0	0	0	374
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					34.0		12.0	12.0				29.0
Total Split (%)					45.3%		16.0%	16.0%				38.7%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					32.7		12.0	12.0				29.0
Actuated g/C Ratio					0.44		0.16	0.16				0.39
v/c Ratio					0.31		0.36	0.35				0.51
Control Delay					9.4		32.2	31.8				11.2
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					9.4		32.2	31.8				11.2
LOS					A		C	C				B
Approach Delay					9.4			32.0				
Approach LOS					A			C				
Queue Length 50th (ft)					41		42	43				59
Queue Length 95th (ft)					51		86	87				134
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2777		283	298				737
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.31		0.36	0.35				0.51

Intersection Summary

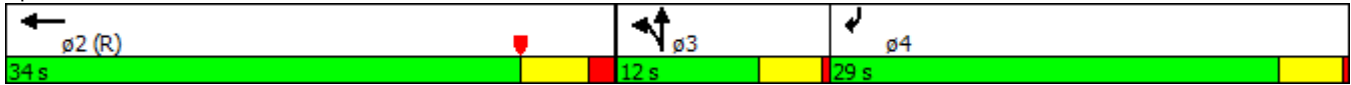
Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 58 (77%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay: 13.1  
 Intersection Capacity Utilization 47.3%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings  
14: Morris Street & Great Jones

2/27/2015

Splits and Phases: 14: Morris Street & Great Jones





Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

2/27/2015



Lane Group	NWL	NWT	NWR	NWR2
Lane Configurations		↕		
Volume (vph)	47	155	22	41
Satd. Flow (prot)	0	1753	0	0
Flt Permitted		0.895		
Satd. Flow (perm)	0	1583	0	0
Satd. Flow (RTOR)				
Lane Group Flow (vph)	0	294	0	0
Turn Type	Perm	NA		
Protected Phases		2		
Permitted Phases	2			
Minimum Split (s)	20.0	20.0		
Total Split (s)	32.0	32.0		
Total Split (%)	59.3%	59.3%		
Yellow Time (s)	3.5	3.5		
All-Red Time (s)	0.5	0.5		
Lost Time Adjust (s)		-1.0		
Total Lost Time (s)		3.0		
Lead/Lag				
Lead-Lag Optimize?				
Act Effct Green (s)		29.0		
Actuated g/C Ratio		0.54		
v/c Ratio		0.35		
Control Delay		8.6		
Queue Delay		0.0		
Total Delay		8.6		
LOS		A		
Approach Delay		8.6		
Approach LOS		A		
Queue Length 50th (ft)		48		
Queue Length 95th (ft)		89		
Internal Link Dist (ft)		487		
Turn Bay Length (ft)				
Base Capacity (vph)		850		
Starvation Cap Reductn		0		
Spillback Cap Reductn		0		
Storage Cap Reductn		0		
Reduced v/c Ratio		0.35		

Intersection Summary

# Lanes, Volumes, Timings

## 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

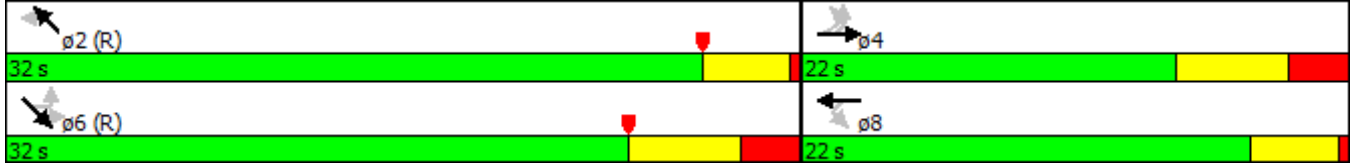
2/27/2015

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: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street





Lanes, Volumes, Timings  
 16: Foster Street & Great Jones

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑		↖	↑			↗	
Volume (vph)	0	0	0	38	531	151	60	402	0	0	284	146
Satd. Flow (prot)	0	0	0	0	6184	0	1770	1863	0	0	1777	0
Flt Permitted					0.997		0.339					
Satd. Flow (perm)	0	0	0	0	6184	0	631	1863	0	0	1777	0
Satd. Flow (RTOR)					117						51	
Lane Group Flow (vph)	0	0	0	0	800	0	67	447	0	0	478	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				24.0	24.0		24.0	24.0			24.0	
Total Split (s)				35.0	35.0		40.0	40.0			40.0	
Total Split (%)				46.7%	46.7%		53.3%	53.3%			53.3%	
Yellow Time (s)				3.6	3.6		3.6	3.6			3.6	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)					1.1		1.1	1.1			1.1	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					33.9		38.9	38.9			38.9	
Actuated g/C Ratio					0.45		0.52	0.52			0.52	
v/c Ratio					0.28		0.20	0.46			0.51	
Control Delay					5.7		11.8	13.4			12.7	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					5.7		11.8	13.4			12.7	
LOS					A		B	B			B	
Approach Delay					5.7			13.2			12.7	
Approach LOS					A			B			B	
Queue Length 50th (ft)					20		16	123			119	
Queue Length 95th (ft)					28		39	194			196	
Internal Link Dist (ft)		603			433			858			215	
Turn Bay Length (ft)												
Base Capacity (vph)					2859		327	966			946	
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.28		0.20	0.46			0.51	

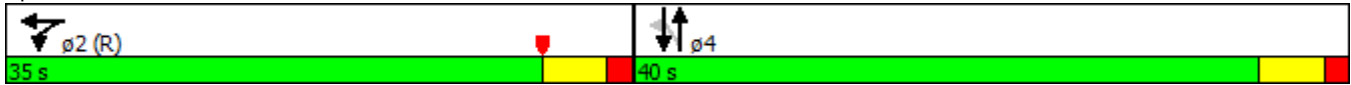
Intersection Summary

Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 46 (61%), Referenced to phase 2:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 9.7	Intersection LOS: A
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Lanes, Volumes, Timings  
16: Foster Street & Great Jones

2/27/2015

Splits and Phases: 16: Foster Street & Great Jones



Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	41	223	24	18	165	66	38	275	16	57	154	35
Satd. Flow (prot)	0	1794	0	0	1754	0	0	1785	0	0	1755	0
Flt Permitted		0.881			0.958			0.940			0.852	
Satd. Flow (perm)	0	1592	0	0	1687	0	0	1688	0	0	1512	0
Satd. Flow (RTOR)		6			25			4			12	
Lane Group Flow (vph)	0	321	0	0	276	0	0	366	0	0	273	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		24.0	24.0	
Total Split (s)	44.0	44.0		44.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%		48.9%	48.9%		51.1%	51.1%		51.1%	51.1%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		24.8			24.8			55.2			55.2	
Actuated g/C Ratio		0.28			0.28			0.61			0.61	
v/c Ratio		0.72			0.57			0.35			0.29	
Control Delay		38.0			19.6			8.9			10.1	
Queue Delay		0.0			0.0			0.4			0.0	
Total Delay		38.0			19.6			9.3			10.1	
LOS		D			B			A			B	
Approach Delay		38.0			19.6			9.3			10.1	
Approach LOS		D			B			A			B	
Queue Length 50th (ft)		162			41			70			63	
Queue Length 95th (ft)		224			42			111			135	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		693			745			1036			932	
Starvation Cap Reductn		0			0			271			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.46			0.37			0.48			0.29	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 23 (26%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72

# Lanes, Volumes, Timings

## 17: Corcoran Street & E. Mian Street'

2/27/2015

Intersection Signal Delay: 19.2

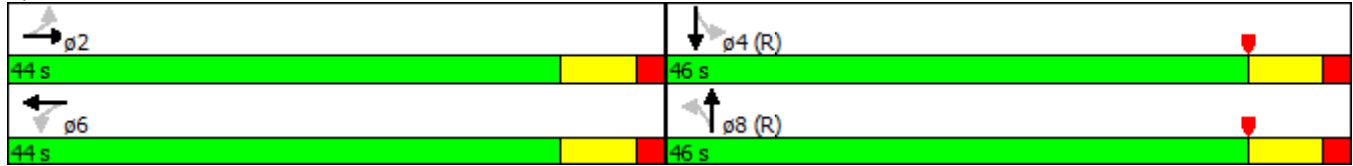
Intersection LOS: B

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15

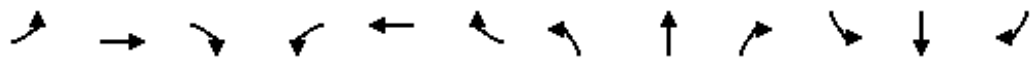
### Splits and Phases: 17: Corcoran Street & E. Mian Street'



# Lanes, Volumes, Timings

## 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕	↗		↕	
Volume (vph)	111	371	190	0	0	0	0	218	57	81	115	0
Satd. Flow (prot)	0	3059	1384	0	0	0	0	1628	1384	0	1595	0
Flt Permitted		0.989									0.794	
Satd. Flow (perm)	0	3059	1384	0	0	0	0	1628	1384	0	1292	0
Satd. Flow (RTOR)			211						60			
Lane Group Flow (vph)	0	535	211	0	0	0	0	242	63	0	218	0
Turn Type	Split	NA	Perm					NA	Perm	Perm	NA	
Protected Phases	2	2						8				4
Permitted Phases			2						8	4		
Minimum Split (s)	33.0	33.0	33.0					28.0	28.0	14.0	14.0	
Total Split (s)	44.0	44.0	44.0					46.0	46.0	46.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					51.1%	51.1%	51.1%	51.1%	
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)		-4.0	-4.0					-4.0	-4.0		-4.0	
Total Lost Time (s)		3.0	3.0					3.0	3.0		3.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		41.0	41.0					43.0	43.0		43.0	
Actuated g/C Ratio		0.46	0.46					0.48	0.48		0.48	
v/c Ratio		0.38	0.28					0.31	0.09		0.35	
Control Delay		17.2	3.2					8.4	1.5		11.9	
Queue Delay		0.0	0.0					1.1	0.5		0.6	
Total Delay		17.2	3.3					9.4	2.0		12.5	
LOS		B	A					A	A		B	
Approach Delay		13.3						7.9			12.5	
Approach LOS		B						A			B	
Queue Length 50th (ft)		102	0					45	1		45	
Queue Length 95th (ft)		142	38					70	4		68	
Internal Link Dist (ft)		268			293			118			200	
Turn Bay Length (ft)			250						50			
Base Capacity (vph)		1393	745					777	692		617	
Starvation Cap Reductn		0	0					325	423		160	
Spillback Cap Reductn		0	14					7	0		11	
Storage Cap Reductn		0	0					0	0		0	
Reduced v/c Ratio		0.38	0.29					0.54	0.23		0.48	

### Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 11.8  
 Intersection Capacity Utilization 49.4%  
 Analysis Period (min) 15

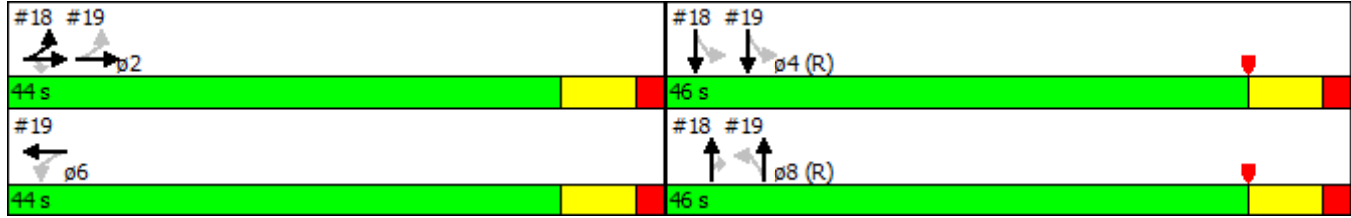
Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

2/27/2015

Splits and Phases: 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)



Lane Group	$\phi 6$
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Minimum Split (s)	33.0
Total Split (s)	44.0
Total Split (%)	49%
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

# Lanes, Volumes, Timings

## 19: Blackwell Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	143	53	35	126	49	43	200	47	74	187	44
Satd. Flow (prot)	1546	1561	0	1546	1559	0	1546	1582	0	1546	1581	0
Flt Permitted	0.617			0.590			0.554			0.536		
Satd. Flow (perm)	1004	1561	0	960	1559	0	902	1582	0	872	1581	0
Satd. Flow (RTOR)		26			27			17			17	
Lane Group Flow (vph)	29	218	0	39	194	0	48	274	0	82	257	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	33.0	33.0		33.0	33.0		28.0	28.0		14.0	14.0	
Total Split (s)	44.0	44.0		44.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%		48.9%	48.9%		51.1%	51.1%		51.1%	51.1%	
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?												
Act Effct Green (s)	39.0	39.0		39.0	39.0		41.0	41.0		41.0	41.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.46	0.46		0.46	0.46	
v/c Ratio	0.07	0.32		0.09	0.28		0.12	0.38		0.21	0.35	
Control Delay	15.5	16.2		11.5	8.8		15.1	16.9		13.4	12.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		1.4	4.1	
Total Delay	15.5	16.2		11.5	8.8		15.1	16.9		14.8	16.8	
LOS	B	B		B	A		B	B		B	B	
Approach Delay		16.1			9.3			16.6			16.3	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	9	68		4	7		15	92		17	51	
Queue Length 95th (ft)	26	122		m18	60		37	153		46	109	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)	100			90			60					
Base Capacity (vph)	435	691		416	690		410	729		397	729	
Starvation Cap Reductn	0	0		0	0		0	0		191	385	
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	0.07	0.32		0.09	0.28		0.12	0.38		0.40	0.75	

### Intersection Summary

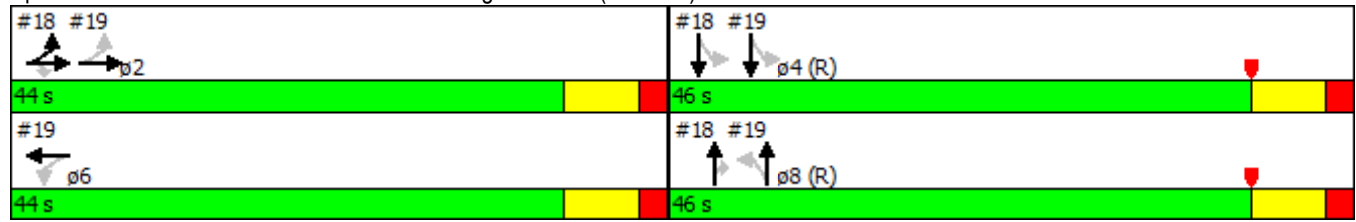
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 14.9  
 Intersection LOS: B  
 Intersection Capacity Utilization 57.6%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (No Train)

2/27/2015

Splits and Phases: 19: Blackwell Street & Pettigrew Street (No Train)

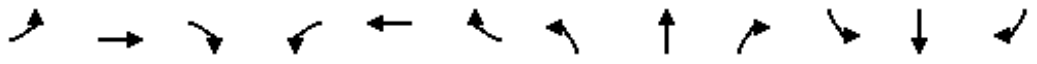




Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↖	↗	↖	↗			↕	
Volume (vph)	16	0	663	145	121	56	73	113	0	0	211	21
Satd. Flow (prot)	0	1484	1475	1736	1827	1553	1736	1827	0	0	1805	0
Flt Permitted		0.985		0.424			0.555					
Satd. Flow (perm)	0	1465	1475	775	1827	1553	1014	1827	0	0	1805	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	379	376	161	134	62	81	126	0	0	257	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	24.0	24.0			36.0	
Total Split (%)	52.0%	52.0%	52.0%	52.0%	52.0%	52.0%	32.0%	32.0%			48.0%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		34.0	34.0	34.0	34.0	34.0	31.0	31.0			31.0	
Actuated g/C Ratio		0.45	0.45	0.45	0.45	0.45	0.41	0.41			0.41	
v/c Ratio		0.57	0.56	0.46	0.16	0.09	0.19	0.17			0.34	
Control Delay		19.4	19.1	19.5	12.8	12.2	15.7	14.7			16.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		19.4	19.1	19.5	12.8	12.2	15.7	14.7			16.7	
LOS		B	B	B	B	B	B	B			B	
Approach Delay		19.2			15.7			15.0			16.7	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		130	129	50	35	16	23	36			79	
Queue Length 95th (ft)		220	215	104	67	37	52	69			134	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		664	668	351	828	704	419	755			746	
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		0.57	0.56	0.46	0.16	0.09	0.19	0.17			0.34	

Intersection Summary

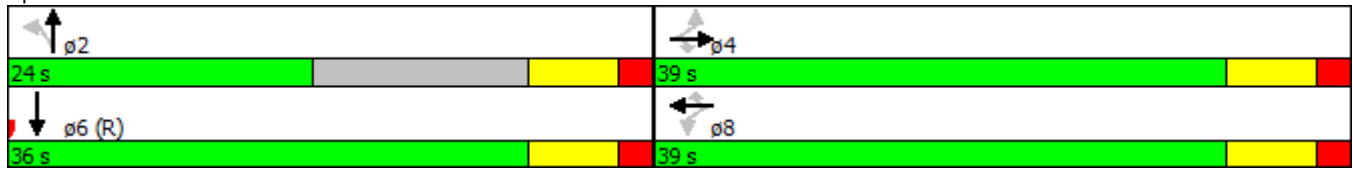
Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 71 (95%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 17.5  
 Intersection Capacity Utilization 60.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

2/27/2015

Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive

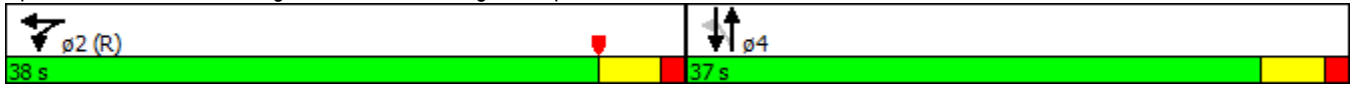




Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

2/27/2015

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop



Lanes, Volumes, Timings  
22: Magnum Street/Morgan Loop

2/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑↑									↑↑	↑
Volume (vph)	205	759	0	0	0	0	0	0	0	0	963	126
Satd. Flow (prot)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.989										
Satd. Flow (perm)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Satd. Flow (RTOR)		94										43
Lane Group Flow (vph)	0	1071	0	0	0	0	0	0	0	0	1070	140
Turn Type	custom	NA									NA	custom
Protected Phases		4										
Permitted Phases	2										2	2
Detector Phase	2	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	52.0	28.0									52.0	52.0
Total Split (%)	65.0%	35.0%									65.0%	65.0%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	None									C-Max	C-Max
Act Effct Green (s)		25.3									54.7	54.7
Actuated g/C Ratio		0.32									0.68	0.68
v/c Ratio		0.52									0.44	0.13
Control Delay		21.0									6.8	3.8
Queue Delay		0.0									0.0	0.0
Total Delay		21.0									6.8	3.8
LOS		C									A	A
Approach Delay		21.0									6.4	
Approach LOS		C									A	
Queue Length 50th (ft)		113									111	14
Queue Length 95th (ft)		138									163	35
Internal Link Dist (ft)		562			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2279									2421	1096
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.47									0.44	0.13

Intersection Summary

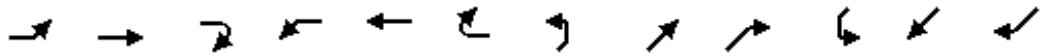
Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 74 (93%), Referenced to phase 2:NBSW, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.52



Lanes, Volumes, Timings

23: Mangum Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↗		↖	↗						↕	↗
Volume (vph)	0	272	24	281	235	0	0	0	0	92	985	14
Satd. Flow (prot)	0	1807	0	1736	1827	0	0	0	0	0	3423	1537
Flt Permitted				0.322							0.996	
Satd. Flow (perm)	0	1807	0	588	1827	0	0	0	0	0	3423	1537
Satd. Flow (RTOR)		5										133
Lane Group Flow (vph)	0	329	0	312	261	0	0	0	0	0	1196	16
Turn Type		NA		pm+pt	NA					Split	NA	Perm
Protected Phases		4		3	8					2	2	
Permitted Phases				8								2
Detector Phase		4		3	8					2	2	2
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					10.0	10.0	10.0
Minimum Split (s)		22.0		14.0	21.0					23.0	23.0	23.0
Total Split (s)		25.0		17.0	42.0					48.0	48.0	48.0
Total Split (%)		27.8%		18.9%	46.7%					53.3%	53.3%	53.3%
Yellow Time (s)		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
Lost Time Adjust (s)		-2.0		-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0						5.0	5.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Max		Max	Max					C-Max	C-Max	C-Max
Act Effct Green (s)		20.0		37.0	37.0						43.0	43.0
Actuated g/C Ratio		0.22		0.41	0.41						0.48	0.48
v/c Ratio		0.81		0.79	0.35						0.73	0.02
Control Delay		37.1		44.8	19.9						22.2	0.1
Queue Delay		0.0		0.0	0.0						1.1	0.0
Total Delay		37.1		44.8	19.9						23.3	0.1
LOS		D		D	B						C	A
Approach Delay		37.1			33.4						23.0	
Approach LOS		D			C						C	
Queue Length 50th (ft)		66		124	99						275	0
Queue Length 95th (ft)		#293		#234	160						355	0
Internal Link Dist (ft)		318			194			229			321	
Turn Bay Length (ft)				120								250
Base Capacity (vph)		405		394	751						1635	803
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		0		0	0						217	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.81		0.79	0.35						0.84	0.02

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 28 (31%), Referenced to phase 2:SWTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81

# Lanes, Volumes, Timings

## 23: Mangum Street

2/27/2015

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 73.7%

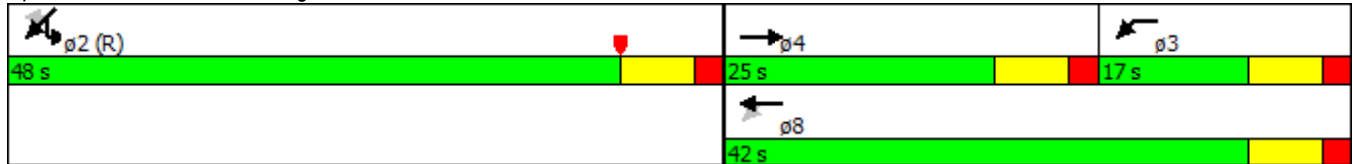
ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 23: Mangum Street

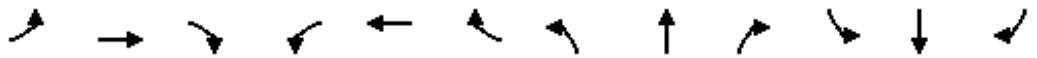




Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑								↑↑↑	
Volume (vph)	0	333	176	0	0	0	0	0	0	61	1229	0
Satd. Flow (prot)	0	4938	1537	0	0	0	0	0	0	0	4928	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	4938	1537	0	0	0	0	0	0	0	4928	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	370	196	0	0	0	0	0	0	0	1434	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		1 4										2
Permitted Phases			1 4							2		
Detector Phase		1 4	1 4							2	2	
Switch Phase												
Minimum Initial (s)										19.0	19.0	
Minimum Split (s)										27.0	27.0	
Total Split (s)										36.0	36.0	
Total Split (%)										40.0%	40.0%	
Yellow Time (s)										5.0	5.0	
All-Red Time (s)										2.0	2.0	
Lost Time Adjust (s)												-2.0
Total Lost Time (s)												5.0
Lead/Lag										Lead	Lead	
Lead-Lag Optimize?										Yes	Yes	
Recall Mode										C-Max	C-Max	
Act Effct Green (s)		40.0	40.0									31.0
Actuated g/C Ratio		0.44	0.44									0.34
v/c Ratio		0.17	0.29									0.85
Control Delay		10.4	13.0									19.8
Queue Delay		0.0	0.0									6.6
Total Delay		10.4	13.0									26.4
LOS		B	B									C
Approach Delay		11.3										26.4
Approach LOS		B										C
Queue Length 50th (ft)		43	83									218
Queue Length 95th (ft)		57	143									251
Internal Link Dist (ft)		293			106			117				229
Turn Bay Length (ft)												
Base Capacity (vph)		2194	683									1697
Starvation Cap Reductn		0	0									227
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.17	0.29									0.98

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 25 (28%), Referenced to phase 2:SBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96

Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

2/27/2015

Lane Group	ø1	ø3	ø4
Lane Configurations			
Volume (vph)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	2.0	7.0
Minimum Split (s)	14.0	9.0	23.0
Total Split (s)	18.0	9.0	27.0
Total Split (%)	20%	10%	30%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	
Lead-Lag Optimize?		Yes	
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
<b>Intersection Summary</b>			

# Lanes, Volumes, Timings

## 24: Mangum Street & Ramseur Street (No Train)

2/27/2015

Intersection Signal Delay: 22.2

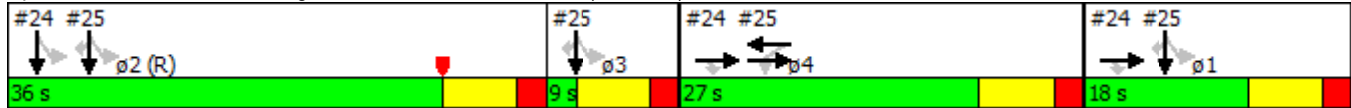
Intersection LOS: C

Intersection Capacity Utilization 44.2%

ICU Level of Service A

Analysis Period (min) 15

### Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔						↕↕↕	↗
Volume (vph)	0	142	122	123	181	0	0	0	0	58	1318	29
Satd. Flow (prot)	0	1527	0	1546	1628	0	0	0	0	0	4435	1384
Flt Permitted				0.362							0.998	
Satd. Flow (perm)	0	1527	0	589	1628	0	0	0	0	0	4435	1384
Satd. Flow (RTOR)		46										48
Lane Group Flow (vph)	0	294	0	137	201	0	0	0	0	0	1528	32
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		4			4						1 2 3	
Permitted Phases				4						1 2 3		1 2 3
Detector Phase		4		4	4					1 2 3	1 2 3	1 2 3
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0							
Minimum Split (s)		23.0		23.0	23.0							
Total Split (s)		27.0		27.0	27.0							
Total Split (%)		30.0%		30.0%	30.0%							
Yellow Time (s)		5.0		5.0	5.0							
All-Red Time (s)		2.0		2.0	2.0							
Lost Time Adjust (s)		-2.0		-2.0	-2.0							
Total Lost Time (s)		5.0		5.0	5.0							
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		None		None	None							
Act Effct Green (s)		22.0		22.0	22.0					58.0	58.0	
Actuated g/C Ratio		0.24		0.24	0.24					0.64	0.64	
v/c Ratio		0.72		0.96	0.51					0.53	0.04	
Control Delay		37.1		102.5	34.6					2.9	0.0	
Queue Delay		0.0		0.0	0.0					0.5	0.0	
Total Delay		37.1		102.5	34.6					3.4	0.0	
LOS		D		F	C					A	A	
Approach Delay		37.1			62.1					3.4		
Approach LOS		D			E					A		
Queue Length 50th (ft)		84		77	99					36	0	
Queue Length 95th (ft)		#188		#192	168					43	m0	
Internal Link Dist (ft)		398			755			154		117		
Turn Bay Length (ft)				120								
Base Capacity (vph)		408		143	397					2858	908	
Starvation Cap Reductn		0		0	0					790	0	
Spillback Cap Reductn		0		0	0					0	0	
Storage Cap Reductn		0		0	0					0	0	
Reduced v/c Ratio		0.72		0.96	0.51					0.74	0.04	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 25 (28%), Referenced to phase 2:SBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96

Lanes, Volumes, Timings  
 25: Mangum Street & Pettigrew Street (No Train)

2/27/2015

Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	19.0	2.0
Minimum Split (s)	14.0	27.0	9.0
Total Split (s)	18.0	36.0	9.0
Total Split (%)	20%	40%	10%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	C-Max	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
<b>Intersection Summary</b>			

# Lanes, Volumes, Timings

## 25: Mangum Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 66.3%

ICU Level of Service C

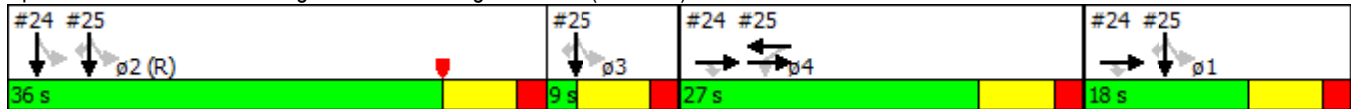
Analysis Period (min) 15

# 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: 25: Mangum Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	147	683	0	0	0	0	0	1278	381
Satd. Flow (prot)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Flt Permitted					0.991							
Satd. Flow (perm)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Satd. Flow (RTOR)					39							92
Lane Group Flow (vph)	0	0	0	0	932	0	0	0	0	0	1452	433
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				33.0	33.0						47.0	47.0
Total Split (%)				41.3%	41.3%						58.8%	58.8%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None					C-Max	C-Max	
Act Effct Green (s)					25.5						54.5	51.5
Actuated g/C Ratio					0.32						0.68	0.64
v/c Ratio					0.57						0.33	0.41
Control Delay					22.8						5.9	7.3
Queue Delay					0.0						0.0	0.0
Total Delay					22.8						5.9	7.3
LOS					C						A	A
Approach Delay					22.8						6.2	
Approach LOS					C						A	
Queue Length 50th (ft)					135						72	67
Queue Length 95th (ft)					154						110	143
Internal Link Dist (ft)		297			516			238			1078	
Turn Bay Length (ft)												
Base Capacity (vph)					2101						4368	1052
Starvation Cap Reductn					0						0	0
Spillback Cap Reductn					0						0	0
Storage Cap Reductn					0						0	0
Reduced v/c Ratio					0.44						0.33	0.41

Intersection Summary

Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 27 (34%), Referenced to phase 2:SBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.57

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

2/27/2015

Intersection Signal Delay: 11.7

Intersection LOS: B

Intersection Capacity Utilization 46.4%

ICU Level of Service A

Analysis Period (min) 15

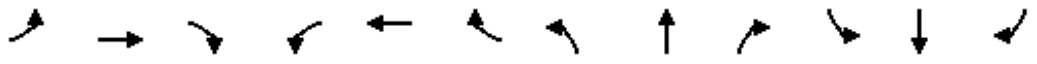
Splits and Phases: 26: Jackie Robinson Drive & Mangum Street





Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	342	152	8	1097	303	0	0	0
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4923	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4923	0	0	0	0
Satd. Flow (RTOR)						169		228				
Lane Group Flow (vph)	0	0	0	0	380	169	0	1565	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					20.0		50.0	50.0				
Total Split (%)					28.6%		71.4%	71.4%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					19.4	70.0		48.6				
Actuated g/C Ratio					0.28	1.00		0.69				
v/c Ratio					0.74	0.11		0.45				
Control Delay					32.8	0.1		3.4				
Queue Delay					0.0	0.0		0.2				
Total Delay					32.8	0.1		3.7				
LOS					C	A		A				
Approach Delay					22.8			3.7				
Approach LOS					C			A				
Queue Length 50th (ft)					146	0		58				
Queue Length 95th (ft)					#249	0		105				
Internal Link Dist (ft)		236			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					532	1583		3487				
Starvation Cap Reductn					0	0		1012				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.71	0.11		0.63				

Intersection Summary

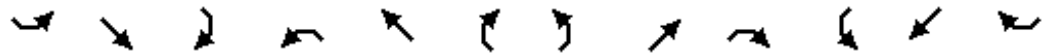
Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

2/27/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖	↗					↖	↗				
Volume (vph)	257	395	0	0	0	0	324	1151	127	0	0	0
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5009	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5009	0	0	0	0
Satd. Flow (RTOR)	*12							39				
Lane Group Flow (vph)	286	439	0	0	0	0	360	1420	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	33.0	33.0					37.0	37.0				
Total Split (%)	47.1%	47.1%					52.9%	52.9%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	20.5	20.5					47.5	46.5				
Actuated g/C Ratio	0.29	0.29					0.68	0.66				
v/c Ratio	0.54	0.42					0.15	0.43				
Control Delay	22.8	20.3					1.4	1.5				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	22.8	20.3					1.4	1.5				
LOS	C	C					A	A				
Approach Delay		21.3						1.5				
Approach LOS		C						A				
Queue Length 50th (ft)	99	80					5	15				
Queue Length 95th (ft)	142	98					m10	m26				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	790	1567					2328	3339				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.36	0.28					0.15	0.43				

Intersection Summary

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 20 (29%), Referenced to phase 2:NETL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54

# Lanes, Volumes, Timings

## 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

2/27/2015

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 46.0%

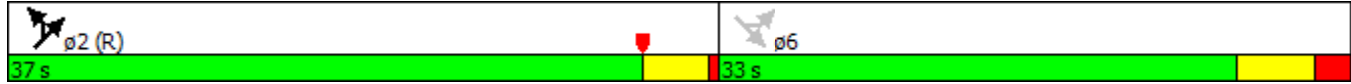
ICU Level of Service A

Analysis Period (min) 15

\* User Entered Value

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

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty



Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

2/27/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	122	321	386	159	148	1261	34	0
Satd. Flow (prot)	1770	1863	1863	1583	0	3507	0	3614
Flt Permitted	0.380					0.995		
Satd. Flow (perm)	708	1863	1863	1583	0	3507	0	3614
Satd. Flow (RTOR)				177		5		
Lane Group Flow (vph)	136	357	429	177	0	1603	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	26.0	26.0	26.0	26.0	33.0	33.0		11.0
Total Split (%)	37.1%	37.1%	37.1%	37.1%	47.1%	47.1%		15.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	32.0	32.0	34.0	34.0		33.0		
Actuated g/C Ratio	0.46	0.46	0.49	0.49		0.47		
v/c Ratio	0.42	0.42	0.47	0.21		0.97		
Control Delay	17.9	14.7	14.2	2.5		35.4		
Queue Delay	0.0	0.0	0.0	0.0		0.3		
Total Delay	17.9	14.7	14.2	2.5		35.7		
LOS	B	B	B	A		D		
Approach Delay		15.6	10.8			35.7		
Approach LOS		B	B			D		
Queue Length 50th (ft)	38	98	116	0		333		
Queue Length 95th (ft)	84	161	187	28		#504		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	323	851	904	859		1655		
Starvation Cap Reductn	0	0	0	0		4		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.42	0.42	0.47	0.21		0.97		

Intersection Summary

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97

# Lanes, Volumes, Timings

## 29: N. Roxboro Street & Main Street

2/27/2015

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 78.1%

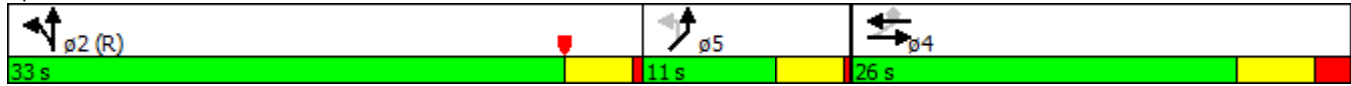
ICU Level of Service D

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 29: N. Roxboro Street & Main Street



Lanes, Volumes, Timings

30: Roxboro & Pettigrew Street (No Train)

2/27/2015

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	205	1244	127	0	0	0	77	123	0	0	99	46
Satd. Flow (prot)	0	3514	1583	0	0	0	1752	1844	0	0	1765	0
Flt Permitted		0.993					0.517					
Satd. Flow (perm)	0	3514	1583	0	0	0	953	1844	0	0	1765	0
Satd. Flow (RTOR)			141								28	
Lane Group Flow (vph)	0	1610	141	0	0	0	86	137	0	0	161	0
Turn Type	Perm	NA	Perm				pm+pt	NA			NA	
Protected Phases		2					7	4			8	
Permitted Phases	2		2				4					
Minimum Split (s)	17.0	17.0	17.0				8.0	14.0			14.0	
Total Split (s)	39.0	39.0	39.0				18.0	36.0			18.0	
Total Split (%)	52.0%	52.0%	52.0%				24.0%	48.0%			24.0%	
Yellow Time (s)	4.0	4.0	4.0				3.5	4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0				0.5	2.0			2.0	
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0	2.0				0.0	2.0			2.0	
Lead/Lag							Lag				Lead	
Lead-Lag Optimize?							Yes				Yes	
Act Effct Green (s)		37.0	37.0				36.0	34.0			16.0	
Actuated g/C Ratio		0.49	0.49				0.48	0.45			0.21	
v/c Ratio		0.93	0.17				0.13	0.16			0.40	
Control Delay		29.2	2.6				12.1	12.8			24.4	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		29.2	2.6				12.1	12.8			24.4	
LOS		C	A				B	B			C	
Approach Delay		27.1						12.5			24.4	
Approach LOS		C						B			C	
Queue Length 50th (ft)		347	0				21	36			53	
Queue Length 95th (ft)		#515	26				44	68			106	
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)							100					
Base Capacity (vph)		1733	852				649	835			398	
Starvation Cap Reductn		0	0				0	0			0	
Spillback Cap Reductn		0	0				0	0			0	
Storage Cap Reductn		0	0				0	0			0	
Reduced v/c Ratio		0.93	0.17				0.13	0.16			0.40	

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 61 (81%), Referenced to phase 2:NBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 25.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 66.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

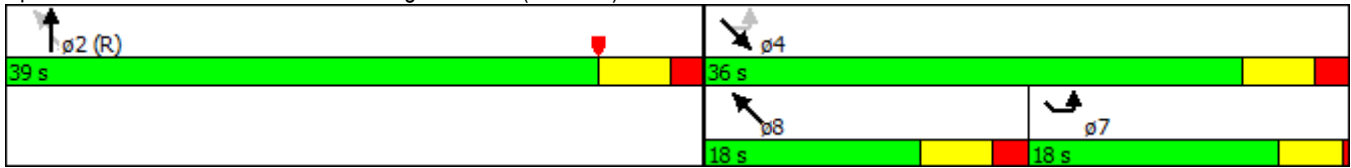
Lanes, Volumes, Timings

30: Roxboro & Pettigrew Street (No Train)

2/27/2015

Queue shown is maximum after two cycles.

Splits and Phases: 30: Roxboro & Pettigrew Street (No Train)





Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	181	0	0	216	69	67	1425	111	0	0	0
Satd. Flow (prot)	1770	1863	0	0	1801	0	0	5075	1583	0	0	0
Flt Permitted	0.395							0.998				
Satd. Flow (perm)	736	1863	0	0	1801	0	0	5075	1583	0	0	0
Satd. Flow (RTOR)					14				123			
Lane Group Flow (vph)	159	201	0	0	317	0	0	1657	123	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	29.0	29.0			29.0		41.0	41.0	41.0			
Total Split (%)	41.4%	41.4%			41.4%		58.6%	58.6%	58.6%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	17.3	17.3			17.3			40.7	40.7			
Actuated g/C Ratio	0.25	0.25			0.25			0.58	0.58			
v/c Ratio	0.87	0.44			0.70			0.56	0.13			
Control Delay	66.2	24.0			30.5			6.6	0.6			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	66.2	24.0			30.5			6.6	0.6			
LOS	E	C			C			A	A			
Approach Delay		42.6			30.5			6.2				
Approach LOS		D			C			A				
Queue Length 50th (ft)	65	72			117			91	0			
Queue Length 95th (ft)	#143	115			177			114	m2			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	241	612			601			2950	971			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.66	0.33			0.53			0.56	0.13			

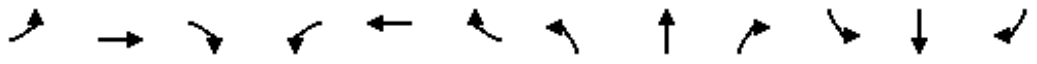
Intersection Summary

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 20 (29%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↓	↑↑↑				
Volume (vph)	0	0	0	0	558	598	257	1015	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Satd. Flow (RTOR)						47	286					
Lane Group Flow (vph)	0	0	0	0	620	664	286	1128	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					45.0	45.0	25.0	25.0				
Total Split (%)					64.3%	64.3%	35.7%	35.7%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					38.2	36.2	27.8	27.8				
Actuated g/C Ratio					0.55	0.52	0.40	0.40				
v/c Ratio					0.32	0.79	0.33	0.56				
Control Delay					8.7	19.7	3.6	18.9				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					8.7	19.7	3.6	18.9				
LOS					A	B	A	B				
Approach Delay					14.4			15.8				
Approach LOS					B			B				
Queue Length 50th (ft)					64	184	0	142				
Queue Length 95th (ft)					82	288	47	195				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2173	946	874	2016				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.29	0.70	0.33	0.56				

Intersection Summary

Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 39 (56%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79

# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

2/27/2015

Intersection Signal Delay: 15.1

Intersection LOS: B

Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 32: Jackie Robinson Drive & Roxboro



Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (vph)	21	286	64	45	283	17	185	41	51	11	28	12
Satd. Flow (prot)	0	1814	0	0	1839	0	1770	1708	0	0	1785	0
Flt Permitted		0.973			0.920		0.778				0.944	
Satd. Flow (perm)	0	1771	0	0	1702	0	1449	1708	0	0	1704	0
Satd. Flow (RTOR)		34			9			57			13	
Lane Group Flow (vph)	0	412	0	0	383	0	206	103	0	0	56	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0		18.0	18.0			18.0	
Actuated g/C Ratio		0.63			0.63		0.30	0.30			0.30	
v/c Ratio		0.36			0.35		0.47	0.19			0.11	
Control Delay		5.9			6.2		18.3	7.1			13.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		5.9			6.2		18.3	7.1			13.2	
LOS		A			A		B	A			B	
Approach Delay		5.9			6.2			14.6			13.2	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		54			53		59	1			11	
Queue Length 95th (ft)		94			93		101	41			33	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1134			1081		434	552			520	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.36			0.35		0.47	0.19			0.11	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 22 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 8.7  
 Intersection Capacity Utilization 54.9%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street




















2/27/2015

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

2/27/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	152	33	10	127	0	131	297	77	51	0	48
Satd. Flow (prot)	0	3444	0	0	3525	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.934		0.950			0.486		
Satd. Flow (perm)	0	3444	0	0	3306	0	1770	1863	1583	905	0	1583
Satd. Flow (RTOR)		37							86			55
Lane Group Flow (vph)	0	206	0	0	152	0	146	330	86	57	0	53
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		26.0		26.0	26.0		34.0	34.0	34.0	34.0		34.0
Total Split (%)		43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%		56.7%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0			2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		24.0			24.0		32.0	32.0	32.0	32.0		32.0
Actuated g/C Ratio		0.40			0.40		0.53	0.53	0.53	0.53		0.53
v/c Ratio		0.15			0.11		0.15	0.33	0.10	0.12		0.06
Control Delay		11.9			9.1		7.7	9.1	2.3	7.8		2.5
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		11.9			9.1		7.7	9.1	2.3	7.8		2.5
LOS		B			A		A	A	A	A		A
Approach Delay		11.9			9.1			7.7				
Approach LOS		B			A			A				
Queue Length 50th (ft)		0			12		24	61	0	9		0
Queue Length 95th (ft)		35			22		49	106	16	25		12
Internal Link Dist (ft)		428			477			952			87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1399			1322		944	993	884	482		869
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		0.15			0.11		0.15	0.33	0.10	0.12		0.06

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.33  
 Intersection Signal Delay: 8.5  
 Intersection Capacity Utilization 40.1%  
 Analysis Period (min) 15

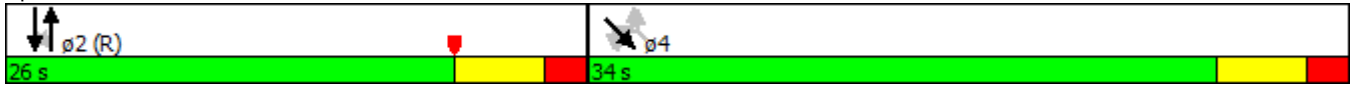
Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings

34: Dillard Street

2/27/2015

Splits and Phases: 34: Dillard Street





Lanes, Volumes, Timings  
35: Dillard Street & Main Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	327	35	22	280	71	104	121	57	166	90	83
Satd. Flow (prot)	1770	1863	1583	1770	1807	0	1770	1773	0	1770	1729	0
Flt Permitted	0.380			0.407			0.603			0.598		
Satd. Flow (perm)	708	1863	1583	758	1807	0	1123	1773	0	1114	1729	0
Satd. Flow (RTOR)			55		27			56			92	
Lane Group Flow (vph)	32	363	39	24	390	0	116	197	0	184	192	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	26.0	26.0	26.0	26.0	26.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.50	0.50		0.50	0.50	
v/c Ratio	0.10	0.45	0.05	0.07	0.49		0.21	0.22		0.33	0.21	
Control Delay	11.3	14.2	2.6	10.8	13.9		9.6	6.6		8.5	2.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.3	14.2	2.6	10.8	13.9		9.6	6.6		8.5	2.8	
LOS	B	B	A	B	B		A	A		A	A	
Approach Delay		13.0			13.7			7.7			5.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	7	88	0	5	89		22	26		22	4	
Queue Length 95th (ft)	21	150	11	17	156		48	56		74	21	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	306	807	717	328	798		561	914		557	910	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.45	0.05	0.07	0.49		0.21	0.22		0.33	0.21	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 49 (82%), Referenced to phase 4:EBWB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 10.3  
 Intersection Capacity Utilization 53.1%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

2/27/2015

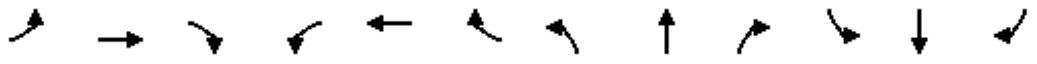
Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	197	27	69	78	32	51	251	69	96	238	16
Satd. Flow (prot)	1718	1776	0	0	1732	0	1718	1751	0	1718	1791	0
Flt Permitted	0.668				0.810		0.489			0.383		
Satd. Flow (perm)	1208	1776	0	0	1430	0	884	1751	0	693	1791	0
Satd. Flow (RTOR)		13			20			28			7	
Lane Group Flow (vph)	29	249	0	0	200	0	57	356	0	107	282	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	31.0	31.0		31.0	31.0		34.0	34.0		34.0	34.0	
Total Split (%)	47.7%	47.7%		47.7%	47.7%		52.3%	52.3%		52.3%	52.3%	
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	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	34.9	34.9		34.9	34.9		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.31	0.31		0.31	0.31	
v/c Ratio	0.04	0.26		0.26	0.26		0.21	0.64		0.50	0.51	
Control Delay	9.8	10.1		9.9	9.9		16.3	22.2		25.2	20.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	10.1		9.9	9.9		16.3	22.2		25.2	20.1	
LOS	A	B		A	A		B	C		C	C	
Approach Delay		10.0		9.9	9.9		21.4	21.4		21.5	21.5	
Approach LOS		B		A	A		C	C		C	C	
Queue Length 50th (ft)	5	45		34	34		17	111		34	89	
Queue Length 95th (ft)	20	108		89	89		35	155		66	125	
Internal Link Dist (ft)		989		699	699		307	307		151	151	
Turn Bay Length (ft)	75						150	150				
Base Capacity (vph)	648	959		777	777		394	796		309	802	
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	0.04	0.26		0.26	0.26		0.14	0.45		0.35	0.35	

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64

# Lanes, Volumes, Timings

## 36: Dillard Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 17.1

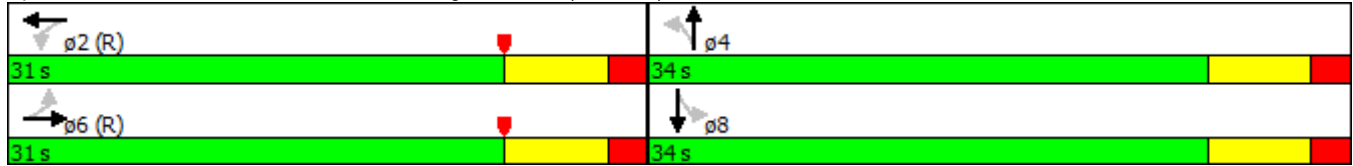
Intersection LOS: B

Intersection Capacity Utilization 61.8%

ICU Level of Service B

Analysis Period (min) 15

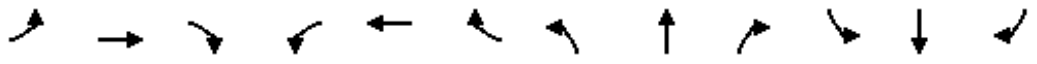
### Splits and Phases: 36: Dillard Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	180	124	131	83	40	19	436	133	42	667	4
Satd. Flow (prot)	1718	1809	1537	1718	1720	0	1718	3316	0	1718	3433	0
Flt Permitted	0.588			0.442			0.228			0.103		
Satd. Flow (perm)	1063	1809	1537	799	1720	0	412	3316	0	186	3433	0
Satd. Flow (RTOR)			138		18			85				
Lane Group Flow (vph)	11	200	138	146	136	0	21	632	0	47	745	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		3	5		3		5	2 4			6	
Permitted Phases	3		3	3			2 4			6		
Detector Phase	3	3	5	3	3		5	2 4		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			10.0	10.0	
Minimum Split (s)	23.0	23.0	14.0	23.0	23.0		14.0			27.0	27.0	
Total Split (s)	29.0	29.0	25.0	29.0	29.0		25.0			43.0	43.0	
Total Split (%)	24.2%	24.2%	20.8%	24.2%	24.2%		20.8%			35.8%	35.8%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None			C-Max	C-Max	
Act Effct Green (s)	23.5	23.5	45.8	23.5	23.5		81.5	86.5		38.8	38.8	
Actuated g/C Ratio	0.20	0.20	0.38	0.20	0.20		0.68	0.72		0.32	0.32	
v/c Ratio	0.05	0.56	0.21	0.94	0.39		0.04	0.26		0.80	0.67	
Control Delay	39.8	50.5	3.0	103.0	38.9		1.9	1.8		110.0	38.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.2		0.0	0.4	
Total Delay	39.8	50.5	3.0	103.0	38.9		1.9	2.1		110.0	39.3	
LOS	D	D	A	F	D		A	A		F	D	
Approach Delay		31.3			72.1			2.0			43.5	
Approach LOS		C			E			A			D	
Queue Length 50th (ft)	7	141	0	118	87		2	1		33	264	
Queue Length 95th (ft)	24	219	25	#250	153		3	4		#110	334	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	212	361	672	159	358		522	2369		59	1110	
Starvation Cap Reductn	0	0	0	0	0		0	937		0	0	
Spillback Cap Reductn	0	0	3	0	0		0	0		0	90	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.55	0.21	0.92	0.38		0.04	0.44		0.80	0.73	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94

# Lanes, Volumes, Timings

## 37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	68.0	23.0	14.0	38.0
Total Split (%)	57%	19%	12%	32%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag		Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
<b>Intersection Summary</b>				

# Lanes, Volumes, Timings

## 37: Fayetteville Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 58.0%

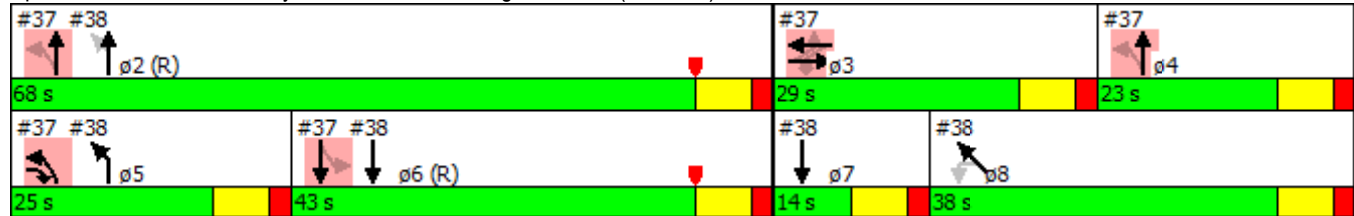
ICU Level of Service B

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

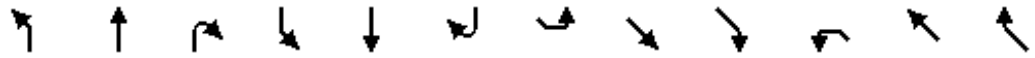
Queue shown is maximum after two cycles.

### Splits and Phases: 37: Fayetteville Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 12/27/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖	↕			↕						↕	
Volume (vph)	308	567	0	0	891	31	0	0	0	151	8	21
Satd. Flow (prot)	1718	3436	0	0	3419	0	0	0	0	0	3243	0
Flt Permitted	0.096										0.960	
Satd. Flow (perm)	174	3436	0	0	3419	0	0	0	0	0	3243	0
Satd. Flow (RTOR)					4						12	
Lane Group Flow (vph)	342	630	0	0	1024	0	0	0	0	0	200	0
Turn Type	pm+pt	NA			NA					Perm	NA	
Protected Phases	5	2			6 7						8	
Permitted Phases	2									8		
Detector Phase	5	2			6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	25.0	68.0								38.0	38.0	
Total Split (%)	20.8%	56.7%								31.7%	31.7%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0									-2.0	
Total Lost Time (s)	5.0	5.0									5.0	
Lead/Lag	Lead									Lag	Lag	
Lead-Lag Optimize?	Yes									Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	66.1	66.1			52.8						29.9	
Actuated g/C Ratio	0.55	0.55			0.44						0.25	
v/c Ratio	0.90	0.33			0.68						0.25	
Control Delay	57.5	19.3			13.2						34.0	
Queue Delay	3.9	0.5			0.9						0.0	
Total Delay	61.4	19.8			14.1						34.0	
LOS	E	B			B						C	
Approach Delay		34.4			14.1						34.0	
Approach LOS		C			B						C	
Queue Length 50th (ft)	212	158			84						61	
Queue Length 95th (ft)	#411	222			m97						91	
Internal Link Dist (ft)		254			141			340			242	
Turn Bay Length (ft)												
Base Capacity (vph)	382	1893			1506						900	
Starvation Cap Reductn	15	810			228						0	
Spillback Cap Reductn	0	0			116						59	
Storage Cap Reductn	0	0			0						0	
Reduced v/c Ratio	0.93	0.58			0.80						0.24	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 64 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94



# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 7/27/2015

Lane Group	ø3	ø4	ø6	ø7
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	3	4	6	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	7.0	7.0	10.0	7.0
Minimum Split (s)	23.0	23.0	27.0	14.0
Total Split (s)	29.0	23.0	43.0	14.0
Total Split (%)	24%	19%	36%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				

### Intersection Summary

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 7/27/2015

Intersection Signal Delay: 24.9

Intersection LOS: C

Intersection Capacity Utilization 63.5%

ICU Level of Service B

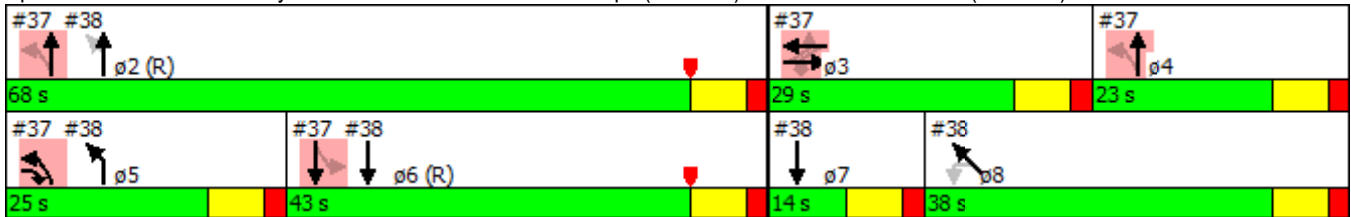
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

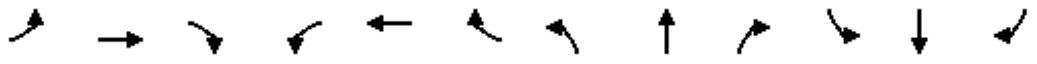
Splits and Phases: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)



Lanes, Volumes, Timings

39: Fayetteville Street

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	130	0	17	0	0	0	0	745	3	146	896	0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	4933	0	1718	3436	0
Flt Permitted		0.950								0.325		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	4933	0	588	3436	0
Satd. Flow (RTOR)			36					1				
Lane Group Flow (vph)	0	144	19	0	0	0	0	831	0	162	996	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	31.0	31.0	31.0					89.0		89.0	89.0	
Total Split (%)	25.8%	25.8%	25.8%					74.2%		74.2%	74.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		17.2	17.2					92.8		92.8	92.8	
Actuated g/C Ratio		0.14	0.14					0.77		0.77	0.77	
v/c Ratio		0.58	0.08					0.22		0.36	0.38	
Control Delay		56.7	5.8					4.2		16.1	12.9	
Queue Delay		0.0	0.0					0.0		0.0	1.9	
Total Delay		56.7	5.8					4.2		16.1	14.8	
LOS		E	A					A		B	B	
Approach Delay		50.8						4.2			15.0	
Approach LOS		D						A			B	
Queue Length 50th (ft)		106	0					53		69	223	
Queue Length 95th (ft)		165	10					83		m139	348	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		376	364					3814		454	2656	
Starvation Cap Reductn		0	0					0		0	1448	
Spillback Cap Reductn		0	0					158		0	0	
Storage Cap Reductn		0	0					0		0	0	
Reduced v/c Ratio		0.38	0.05					0.23		0.36	0.82	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.58

# Lanes, Volumes, Timings

## 39: Fayetteville Street

2/27/2015

Intersection Signal Delay: 13.5

Intersection LOS: B

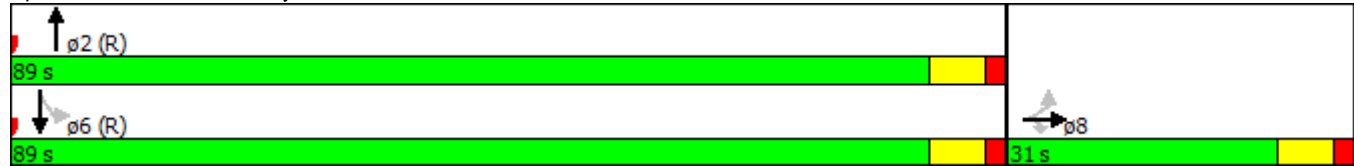
Intersection Capacity Utilization 59.8%

ICU Level of Service B

Analysis Period (min) 15

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

### Splits and Phases: 39: Fayetteville Street



Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗			↕			↕	
Volume (vph)	27	328	0	140	200	92	54	119	185	134	59	0
Satd. Flow (prot)	0	1801	1809	1718	1724	0	0	1670	0	0	1749	0
Flt Permitted		0.959		0.475				0.923			0.479	
Satd. Flow (perm)	0	1734	1809	859	1724	0	0	1553	0	0	866	0
Satd. Flow (RTOR)					50			104				
Lane Group Flow (vph)	0	394	0	156	324	0	0	398	0	0	215	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	32.0	32.0	32.0	32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-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	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		30.9		30.9	30.9			19.1			19.1	
Actuated g/C Ratio		0.52		0.52	0.52			0.32			0.32	
v/c Ratio		0.44		0.35	0.36			0.70			0.78	
Control Delay		5.7		13.2	9.7			19.7			38.7	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		5.7		13.2	9.7			19.7			38.7	
LOS		A		B	A			B			D	
Approach Delay		5.7			10.8			19.7			38.7	
Approach LOS		A			B			B			D	
Queue Length 50th (ft)		53		33	56			86			66	
Queue Length 95th (ft)		m74		80	115			161			#153	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)				75								
Base Capacity (vph)		892		442	912			659			331	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.44		0.35	0.36			0.60			0.65	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78

# Lanes, Volumes, Timings

## 40: Grant Street & Pettigrew Street (No Train)

2/27/2015

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 82.7%

ICU Level of Service E

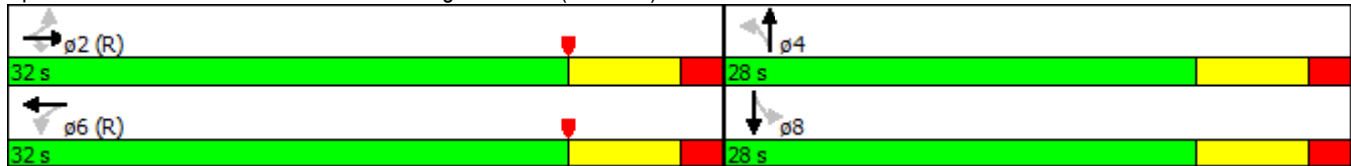
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 40: Grant Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

2/27/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	496	121	63	357	172	43
Satd. Flow (prot)	1762	0	1718	1809	1693	0
Flt Permitted			0.950		0.962	
Satd. Flow (perm)	1762	0	1718	1809	1693	0
Lane Group Flow (vph)	685	0	70	397	239	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 59.1% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

2/27/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	0	186	150	1	147	137	1500	0	0	1355	22
Satd. Flow (prot)	1718	0	1537	1718	1539	0	1718	3436	0	0	3430	0
Flt Permitted	0.653			0.950			0.061					
Satd. Flow (perm)	1181	0	1537	1718	1539	0	110	3436	0	0	3430	0
Satd. Flow (RTOR)			207		20							1
Lane Group Flow (vph)	34	0	207	167	164	0	152	1667	0	0	1530	0
Turn Type	Perm		Perm	pm+pt	NA		pm+pt	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8			2					
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0			10.0	
Minimum Split (s)	24.0		24.0	14.0	24.0		24.0	24.0			24.0	
Total Split (s)	26.0		26.0	21.0	47.0		24.0	73.0			49.0	
Total Split (%)	21.7%		21.7%	17.5%	39.2%		20.0%	60.8%			40.8%	
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	Lag		Lag	Lead			Lead				Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes				Yes	
Recall Mode	None		None	None	None		None	C-Max			C-Max	
Act Effct Green (s)	11.6		11.6	31.5	31.5		78.5	78.5			60.6	
Actuated g/C Ratio	0.10		0.10	0.26	0.26		0.65	0.65			0.50	
v/c Ratio	0.30		0.62	0.37	0.39		0.62	0.74			0.88	
Control Delay	55.3		14.7	37.8	33.8		33.8	17.3			35.1	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	55.3		14.7	37.8	33.8		33.8	17.3			35.1	
LOS	E		B	D	C		C	B			D	
Approach Delay					35.8			18.7			35.1	
Approach LOS					D			B			D	
Queue Length 50th (ft)	26		11	106	91		63	423			529	
Queue Length 95th (ft)	m52		72	159	146		134	594			#847	
Internal Link Dist (ft)		434			115			139			473	
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	206		439	451	551		326	2247			1733	
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		0.47	0.37	0.30		0.47	0.74			0.88	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88



Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

2/27/2015

Intersection Signal Delay: 26.6

Intersection LOS: C

Intersection Capacity Utilization 74.1%

ICU Level of Service D

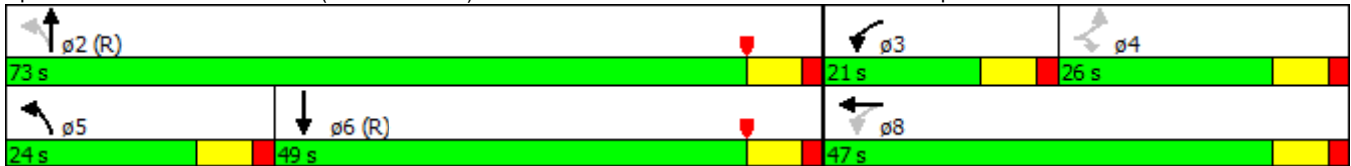
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps



# **Synchro Output-2040 Build Alt 1 AM**

Lanes, Volumes, Timings  
1: Ninth Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	364	64	233	257	244	76	59	119	143	354	83
Satd. Flow (prot)	1718	1769	0	1718	1677	0	1718	1628	0	1718	1758	0
Flt Permitted	0.421			0.175			0.205			0.444		
Satd. Flow (perm)	761	1769	0	317	1677	0	371	1628	0	803	1758	0
Satd. Flow (RTOR)		8			51			84			11	
Lane Group Flow (vph)	93	475	0	259	557	0	84	198	0	159	485	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	44.0	44.0		14.0	58.0		14.0	39.0		23.0	48.0	
Total Split (%)	36.7%	36.7%		11.7%	48.3%		11.7%	32.5%		19.2%	40.0%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	41.1	41.1		60.4	60.4		39.2	30.2		49.3	38.4	
Actuated g/C Ratio	0.34	0.34		0.50	0.50		0.33	0.25		0.41	0.32	
v/c Ratio	0.36	0.78		0.79	0.64		0.38	0.42		0.36	0.85	
Control Delay	35.8	45.8		32.5	11.8		25.1	22.4		23.4	51.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.8	45.8		32.5	11.8		25.1	22.4		23.4	51.9	
LOS	D	D		C	B		C	C		C	D	
Approach Delay		44.1			18.4			23.2			44.9	
Approach LOS		D			B			C			D	
Queue Length 50th (ft)	55	332		95	230		37	67		72	334	
Queue Length 95th (ft)	107	#502		m#166	m79		65	137		114	457	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	260	611		327	870		221	531		468	637	
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	0.36	0.78		0.79	0.64		0.38	0.37		0.34	0.76	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.85

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

3/12/2015

Intersection Signal Delay: 32.7

Intersection LOS: C

Intersection Capacity Utilization 83.0%

ICU Level of Service E

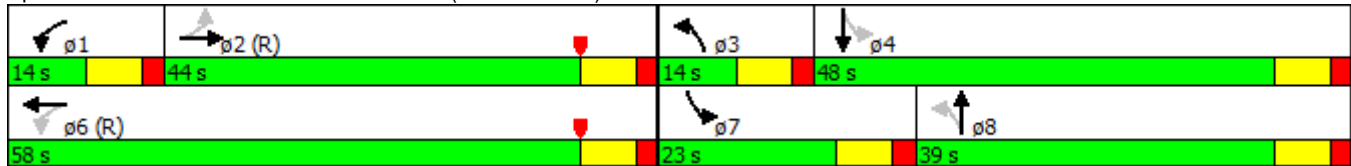
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

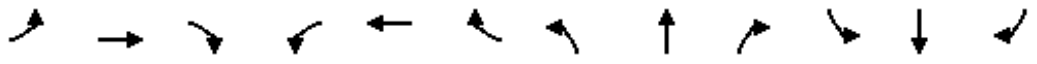
Splits and Phases: 1: Ninth Street & US 70 (W Main Street)



Lanes, Volumes, Timings

2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	371	166	161	304	40	461	285	270	83	329	89
Satd. Flow (prot)	1718	1809	1537	1718	1778	0	1718	1809	1537	1718	3326	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1778	0	1718	1809	1537	1718	3326	0
Satd. Flow (RTOR)			164		5				300		28	
Lane Group Flow (vph)	16	412	184	179	382	0	512	317	300	92	465	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2						8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	24.0	14.0	14.0	32.0		14.0	24.0	24.0	14.0	37.0	
Total Split (s)	14.0	30.0	37.0	16.0	32.0		37.0	56.0	56.0	18.0	37.0	
Total Split (%)	11.7%	25.0%	30.8%	13.3%	26.7%		30.8%	46.7%	46.7%	15.0%	30.8%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	9.0	25.0	63.8	11.0	35.4		38.8	52.0	52.0	12.0	25.2	
Actuated g/C Ratio	0.08	0.21	0.53	0.09	0.30		0.32	0.43	0.43	0.10	0.21	
v/c Ratio	0.12	1.10	0.21	1.14	0.72		0.92	0.40	0.36	0.54	0.65	
Control Delay	51.1	109.7	3.7	163.0	48.1		63.7	25.6	3.7	63.0	44.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	51.1	109.7	3.7	163.0	48.1		63.7	25.6	3.7	63.0	44.3	
LOS	D	F	A	F	D		E	C	A	E	D	
Approach Delay		76.3			84.8			37.0			47.4	
Approach LOS		E			F			D			D	
Queue Length 50th (ft)	10	~348	2	~162	243		371	168	0	68	167	
Queue Length 95th (ft)	m21	m#549	m25	#308	#483		#669	246	52	124	205	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	128	376	894	157	527		556	783	835	186	907	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.13	1.10	0.21	1.14	0.72		0.92	0.40	0.36	0.49	0.51	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 52 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14

# Lanes, Volumes, Timings

## 2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015

Intersection Signal Delay: 56.8

Intersection LOS: E

Intersection Capacity Utilization 82.6%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

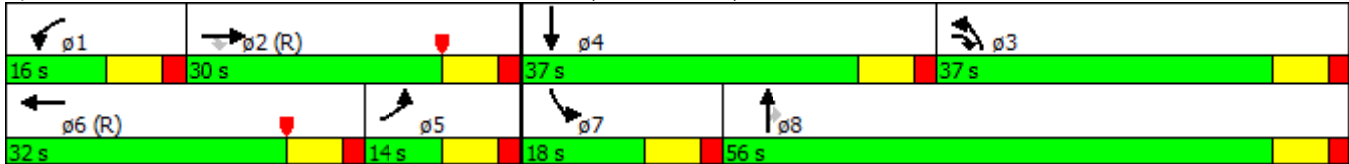
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

### Splits and Phases: 2: Swift Avenue/Broad Street & US 70 (W Main Street)



Lanes, Volumes, Timings

3: Erwin Road/Ninth Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	13	13	241	24	32	619
Satd. Flow (prot)	1662	0	1805	0	0	1823
Flt Permitted	0.976					0.998
Satd. Flow (perm)	1662	0	1805	0	0	1823
Lane Group Flow (vph)	28	0	295	0	0	724
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 61.8% ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

4: Swift Avenue/Broad Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			↔↑
Volume (vph)	0	0	1016	0	0	656
Satd. Flow (prot)	0	0	4938	0	0	3436
Flt Permitted						
Satd. Flow (perm)	0	0	4938	0	0	3436
Lane Group Flow (vph)	0	0	1129	0	0	729
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.0%      ICU Level of Service A

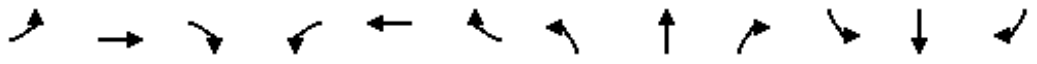
Analysis Period (min) 15



Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	464	86	50	293	43	79	171	61	164	325	169
Satd. Flow (prot)	1718	1809	1537	1718	1774	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1774	0	1718	1809	1537	1718	1809	1537
Satd. Flow (RTOR)			227						164			188
Lane Group Flow (vph)	141	516	96	56	374	0	88	190	68	182	361	188
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	32.0	14.0	14.0	32.0	14.0
Total Split (s)	20.0	50.0	50.0	14.0	44.0		15.0	32.0	14.0	24.0	41.0	20.0
Total Split (%)	16.7%	41.7%	41.7%	11.7%	36.7%		12.5%	26.7%	11.7%	20.0%	34.2%	16.7%
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
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
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	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.3	53.3	53.3	9.0	45.2		9.8	22.9	31.9	17.6	30.6	45.0
Actuated g/C Ratio	0.12	0.44	0.44	0.08	0.38		0.08	0.19	0.27	0.15	0.26	0.38
v/c Ratio	0.69	0.64	0.12	0.44	0.56		0.63	0.55	0.13	0.73	0.78	0.27
Control Delay	68.5	33.1	0.3	64.3	35.2		73.2	49.6	0.5	65.7	53.5	2.7
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	68.5	33.1	0.3	64.3	35.2		73.2	49.6	0.5	65.7	53.5	2.7
LOS	E	C	A	E	D		E	D	A	E	D	A
Approach Delay		35.5			39.0			46.0			43.5	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	106	321	0	42	231		67	135	0	134	260	0
Queue Length 95th (ft)	#186	485	0	87	356		#136	203	0	#217	353	30
Internal Link Dist (ft)		298			220			276			273	
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	214	804	809	128	668		143	407	528	272	542	701
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	0.66	0.64	0.12	0.44	0.56		0.62	0.47	0.13	0.67	0.67	0.27

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78

# Lanes, Volumes, Timings

## 5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 69.9%

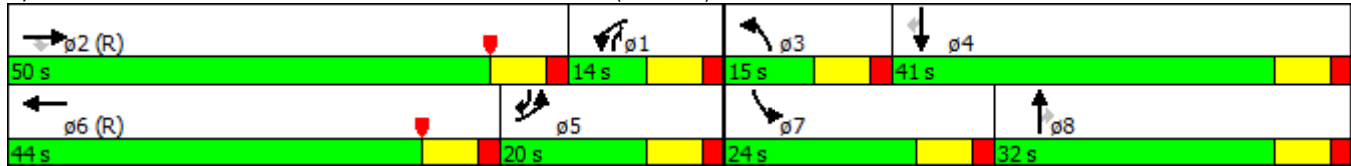
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	405	0	0	96	21	260	923	47	0	0	0
Satd. Flow (prot)	1546	1628	0	0	1589	0	1546	3071	0	0	0	0
Flt Permitted	0.654						0.950					
Satd. Flow (perm)	1065	1628	0	0	1589	0	1546	3071	0	0	0	0
Satd. Flow (RTOR)					11			6				
Lane Group Flow (vph)	171	450	0	0	130	0	289	1078	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	32.0	32.0			32.0		28.0	28.0				
Total Split (s)	53.0	53.0			53.0		67.0	67.0				
Total Split (%)	44.2%	44.2%			44.2%		55.8%	55.8%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	40.6	40.6			40.6		69.4	69.4				
Actuated g/C Ratio	0.34	0.34			0.34		0.58	0.58				
v/c Ratio	0.47	0.82			0.24		0.32	0.61				
Control Delay	34.7	48.3			25.6		15.7	19.3				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	34.7	48.3			25.6		15.7	19.3				
LOS	C	D			C		B	B				
Approach Delay		44.6			25.6			18.6				
Approach LOS		D			C			B				
Queue Length 50th (ft)	102	313			65		113	275				
Queue Length 95th (ft)	158	410			105		194	392				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	426	651			642		893	1778				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.40	0.69			0.20		0.32	0.61				

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82



Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	11	3	0	0	32	12	62	1207	1	0	0	0
Satd. Flow (prot)	0	1566	0	0	1569	0	1546	3093	0	0	0	0
Flt Permitted		0.962					0.950					
Satd. Flow (perm)	0	1566	0	0	1569	0	1546	3093	0	0	0	0
Lane Group Flow (vph)	0	15	0	0	49	0	69	1342	0	0	0	0
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 51.3%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

3/12/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	5	0	15	1265	0	0
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Lane Group Flow (vph)	6	0	17	1406	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

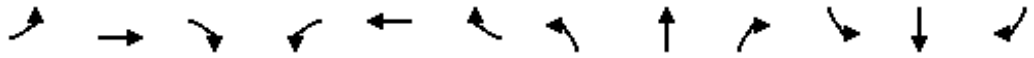
Control Type: Unsignalized

Intersection Capacity Utilization 45.0% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	669	0	0	361	58	115	1026	126	0	0	0
Satd. Flow (prot)	1718	1809	0	0	1774	0	0	4913	1537	0	0	0
Flt Permitted	0.268							0.995				
Satd. Flow (perm)	485	1809	0	0	1774	0	0	4913	1537	0	0	0
Satd. Flow (RTOR)					11				140			
Lane Group Flow (vph)	218	743	0	0	465	0	0	1268	140	0	0	0
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			30.0		30.0	30.0	30.0			
Total Split (s)	15.0	56.0			41.0		34.0	34.0	34.0			
Total Split (%)	16.7%	62.2%			45.6%		37.8%	37.8%	37.8%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	51.0	51.0			36.0			29.0	29.0			
Actuated g/C Ratio	0.57	0.57			0.40			0.32	0.32			
v/c Ratio	0.53	0.72			0.65			0.80	0.24			
Control Delay	14.7	19.5			12.5			32.5	5.2			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	14.7	19.5			12.5			32.5	5.2			
LOS	B	B			B			C	A			
Approach Delay		18.4			12.5			29.8				
Approach LOS		B			B			C				
Queue Length 50th (ft)	57	289			112			239	0			
Queue Length 95th (ft)	96	433			172			294	40			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	411	1025			717			1583	590			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.53	0.72			0.65			0.80	0.24			

Intersection Summary

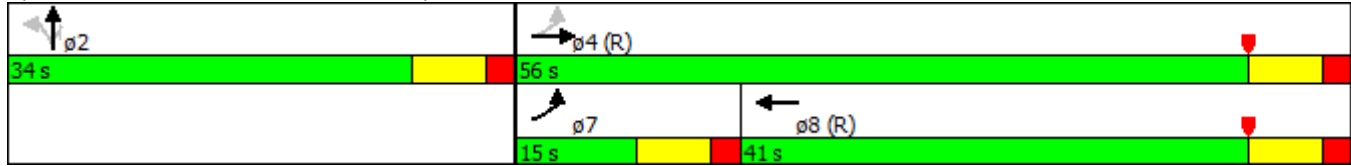
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 68 (76%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80

Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

3/12/2015

Intersection Signal Delay: 23.1      Intersection LOS: C  
 Intersection Capacity Utilization 68.0%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 9: Duke Street & Chapel Hill Street



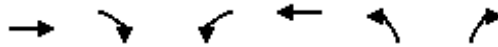




# Lanes, Volumes, Timings

## 11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø4
Lane Configurations	↔		↔	↔			
Volume (vph)	472	270	37	501	0	0	
Satd. Flow (prot)	1720	0	1718	1809	0	0	
Flt Permitted			0.184				
Satd. Flow (perm)	1720	0	333	1809	0	0	
Satd. Flow (RTOR)	59						
Lane Group Flow (vph)	824	0	41	557	0	0	
Turn Type	NA		Perm	NA			
Protected Phases	2			6			4
Permitted Phases			6				
Minimum Split (s)	45.0		45.0	45.0			32.0
Total Split (s)	58.0		58.0	58.0			32.0
Total Split (%)	64.4%		64.4%	64.4%			36%
Yellow Time (s)	3.0		3.0	3.0			3.0
All-Red Time (s)	2.0		2.0	2.0			2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0		3.0	3.0			
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	55.0		55.0	55.0			
Actuated g/C Ratio	0.61		0.61	0.61			
v/c Ratio	0.77		0.20	0.50			
Control Delay	13.4		10.9	13.3			
Queue Delay	0.1		0.0	1.0			
Total Delay	13.5		10.9	14.3			
LOS	B		B	B			
Approach Delay	13.5			14.1			
Approach LOS	B			B			
Queue Length 50th (ft)	136		13	228			
Queue Length 95th (ft)	274		38	326			
Internal Link Dist (ft)	168			210	1409		
Turn Bay Length (ft)							
Base Capacity (vph)	1074		203	1105			
Starvation Cap Reductn	7		0	300			
Spillback Cap Reductn	0		0	0			
Storage Cap Reductn	0		0	0			
Reduced v/c Ratio	0.77		0.20	0.69			

### Intersection Summary

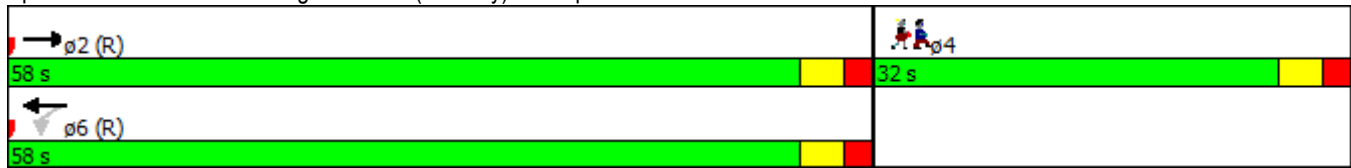
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 11 (12%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 13.7  
 Intersection Capacity Utilization 44.6%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015

Splits and Phases: 11: Pettigrew Street (Oneway) & Chapel Hill Street



Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↑↑↑	↗
Volume (vph)	0	183	129	6	33	0	0	0	0	169	0	307
Satd. Flow (prot)	0	1863	1583	0	1663	0	0	0	0	0	4831	1583
Flt Permitted					0.965						0.950	
Satd. Flow (perm)	0	1863	1583	0	1618	0	0	0	0	0	4831	1583
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	203	143	0	44	0	0	0	0	0	188	341
Turn Type		NA	Free	Perm	NA					Split	NA	Free
Protected Phases		4				8				6	6	
Permitted Phases			Free	8								Free
Minimum Split (s)		29.0		29.0	29.0					20.0	20.0	
Total Split (s)		64.0		64.0	64.0					26.0	26.0	
Total Split (%)		71.1%		71.1%	71.1%					28.9%	28.9%	
Yellow Time (s)		4.0		4.0	4.0					3.5	3.5	
All-Red Time (s)		2.0		2.0	2.0					0.5	0.5	
Lost Time Adjust (s)		-4.0			-1.0						-4.0	
Total Lost Time (s)		2.0			5.0						0.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		62.0	90.0		59.0						26.0	90.0
Actuated g/C Ratio		0.69	1.00		0.66						0.29	1.00
v/c Ratio		0.16	0.09		0.04						0.13	0.22
Control Delay		4.2	0.1		3.8						16.4	0.9
Queue Delay		0.0	0.0		0.0						0.0	0.0
Total Delay		4.2	0.1		3.8						16.4	0.9
LOS		A	A		A						B	A
Approach Delay		2.5			3.8						6.4	
Approach LOS		A			A						A	
Queue Length 50th (ft)		24	0		8						16	6
Queue Length 95th (ft)		m28	m0		m11						26	23
Internal Link Dist (ft)		10			376			795			213	
Turn Bay Length (ft)												
Base Capacity (vph)		1283	1583		1060						1395	1583
Starvation Cap Reductn		0	0		0						0	0
Spillback Cap Reductn		0	0		36						0	36
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.16	0.09		0.04						0.13	0.22

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 6:SBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.22  
 Intersection Signal Delay: 4.8  
 Intersection Capacity Utilization 25.7%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

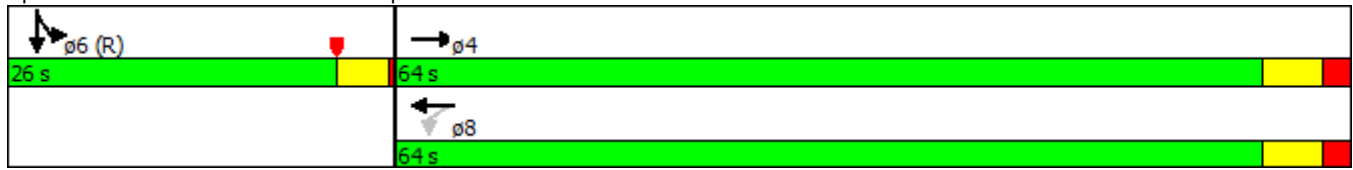
Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015

Splits and Phases: 12: Downtown loop/Great Jones Street



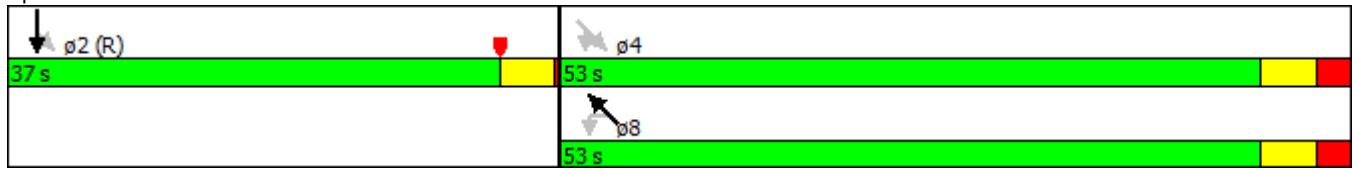


Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

3/12/2015

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	543	113	150	107	0	0	0	269
Satd. Flow (prot)	0	0	0	0	6241	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6241	0	1770	1863	0	0	0	1611
Satd. Flow (RTOR)					67							218
Lane Group Flow (vph)	0	0	0	0	729	0	167	119	0	0	0	314
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					35.0		19.0	19.0				36.0
Total Split (%)					38.9%		21.1%	21.1%				40.0%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					33.7		19.0	19.0				36.0
Actuated g/C Ratio					0.37		0.21	0.21				0.40
v/c Ratio					0.31		0.45	0.30				0.41
Control Delay					7.3		28.2	26.2				7.8
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					7.3		28.2	26.2				7.8
LOS					A		C	C				A
Approach Delay					7.3			27.4				
Approach LOS					A			C				
Queue Length 50th (ft)					46		54	38				34
Queue Length 95th (ft)					28		m110	m81				94
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2378		373	393				775
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.31		0.45	0.30				0.41

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 22 (24%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.45  
 Intersection Signal Delay: 11.7  
 Intersection Capacity Utilization 45.6%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: B  
 ICU Level of Service A



Lanes, Volumes, Timings  
14: Morris Street & Great Jones

3/12/2015

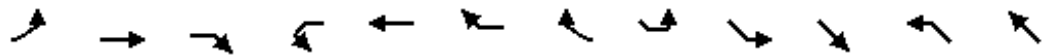
Splits and Phases: 14: Morris Street & Great Jones



Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	SEL2	SEL	SET	NWL	NWT
Lane Configurations		↕			↕					↕		↕
Volume (vph)	211	93	27	34	67	3	17	46	74	185	102	90
Satd. Flow (prot)	0	1751	0	0	1762	0	0	0	0	1792	0	1719
Flt Permitted		0.743			0.856					0.699		0.761
Satd. Flow (perm)	0	1342	0	0	1529	0	0	0	0	1277	0	1332
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	367	0	0	134	0	0	0	0	339	0	308
Turn Type	Perm	NA		Perm	NA			Perm	Perm	NA	Perm	NA
Protected Phases		4			8					6		2
Permitted Phases	4			8				6	6		2	
Minimum Split (s)	22.0	22.0		20.0	20.0			22.0	22.0	22.0	20.0	20.0
Total Split (s)	53.0	53.0		53.0	53.0			37.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%		58.9%	58.9%			41.1%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.5	4.5		3.5	3.5			4.5	4.5	4.5	3.5	3.5
All-Red Time (s)	2.5	2.5		0.5	0.5			2.5	2.5	2.5	0.5	0.5
Lost Time Adjust (s)		0.0			0.0					-1.0		-1.0
Total Lost Time (s)		7.0			4.0					6.0		3.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		46.0			49.0					31.0		34.0
Actuated g/C Ratio		0.51			0.54					0.34		0.38
v/c Ratio		0.54			0.16					0.77		0.61
Control Delay		25.7			10.9					46.4		14.2
Queue Delay		0.0			0.0					0.0		0.0
Total Delay		25.7			10.9					46.4		14.2
LOS		C			B					D		B
Approach Delay		25.7			10.9					46.4		14.2
Approach LOS		C			B					D		B
Queue Length 50th (ft)		168			36					201		95
Queue Length 95th (ft)		242			66					#321		241
Internal Link Dist (ft)		376			463					413		487
Turn Bay Length (ft)												
Base Capacity (vph)		685			832					439		503
Starvation Cap Reductn		0			0					0		0
Spillback Cap Reductn		0			0					0		0
Storage Cap Reductn		0			0					0		0
Reduced v/c Ratio		0.54			0.16					0.77		0.61

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 12 (13%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 27.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 57.6%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	NWR	NWR2
<b>Lane Configurations</b>		
Volume (vph)	46	40
Satd. Flow (prot)	0	0
Flt Permitted		
Satd. Flow (perm)	0	0
Satd. Flow (RTOR)		
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Minimum Split (s)		
Total Split (s)		
Total Split (%)		
Yellow Time (s)		
All-Red Time (s)		
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
<b>Intersection Summary</b>		

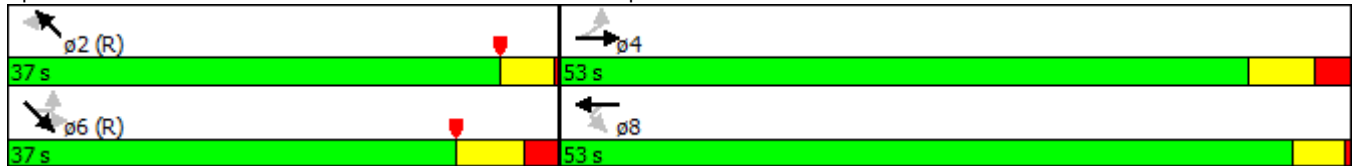
Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015

Queue shown is maximum after two cycles.

Splits and Phases: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

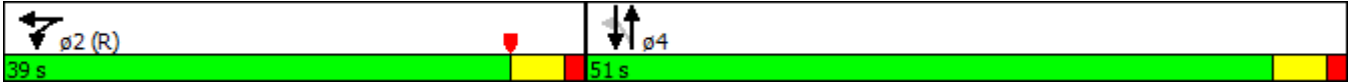




Lanes, Volumes, Timings  
16: Foster Street & Great Jones

3/12/2015

Splits and Phases: 16: Foster Street & Great Jones



Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	42	236	16	22	240	76	6	88	7	46	91	18
Satd. Flow (prot)	0	1801	0	0	1767	0	0	1785	0	0	1753	0
Flt Permitted		0.834			0.963			0.986			0.896	
Satd. Flow (perm)	0	1513	0	0	1707	0	0	1765	0	0	1595	0
Satd. Flow (RTOR)		4			22			5			9	
Lane Group Flow (vph)	0	327	0	0	375	0	0	113	0	0	172	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	48.0	48.0		48.0	48.0		42.0	42.0		42.0	42.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		26.9			26.9			53.1			53.1	
Actuated g/C Ratio		0.30			0.30			0.59			0.59	
v/c Ratio		0.72			0.71			0.11			0.18	
Control Delay		41.9			10.9			4.6			8.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		41.9			10.9			4.6			8.0	
LOS		D			B			A			A	
Approach Delay		41.9			10.9			4.6			8.0	
Approach LOS		D			B			A			A	
Queue Length 50th (ft)		192			14			16			32	
Queue Length 95th (ft)		m252			9			30			65	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		724			827			1043			944	
Starvation Cap Reductn		0			1			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.45			0.11			0.18	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 39 (43%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72

# Lanes, Volumes, Timings

## 17: Corcoran Street & E. Mian Street'

3/12/2015

Intersection Signal Delay: 20.0

Intersection LOS: B

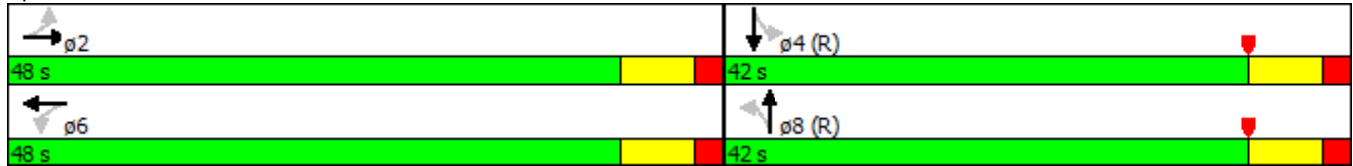
Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

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

### Splits and Phases: 17: Corcoran Street & E. Mian Street'





Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕	↗		↕	
Volume (vph)	20	351	2	0	0	0	0	81	2	34	95	0
Satd. Flow (prot)	0	3084	1384	0	0	0	0	1628	1384	0	1607	0
Flt Permitted		0.997									0.915	
Satd. Flow (perm)	0	3084	1384	0	0	0	0	1628	1384	0	1489	0
Satd. Flow (RTOR)			48						48			
Lane Group Flow (vph)	0	412	2	0	0	0	0	90	2	0	144	0
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2		2						8	4		
Minimum Split (s)	25.0	25.0	25.0					25.0	25.0	25.0	25.0	
Total Split (s)	44.0	44.0	44.0					46.0	46.0	46.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					51.1%	51.1%	51.1%	51.1%	
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)		3.0	-2.0					-2.0	-2.0		-2.0	
Total Lost Time (s)		10.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		34.0	39.0					41.0	41.0		41.0	
Actuated g/C Ratio		0.38	0.43					0.46	0.46		0.46	
v/c Ratio		0.35	0.00					0.12	0.00		0.21	
Control Delay		19.9	0.0					19.7	0.0		15.4	
Queue Delay		0.0	0.0					0.7	0.0		0.0	
Total Delay		19.9	0.0					20.3	0.0		15.4	
LOS		B	A					C	A		B	
Approach Delay		19.8						19.9			15.4	
Approach LOS		B						B			B	
Queue Length 50th (ft)		80	0					34	0		54	
Queue Length 95th (ft)		110	0					42	m0		92	
Internal Link Dist (ft)		268			293			118			200	
Turn Bay Length (ft)			250									
Base Capacity (vph)		1165	626					741	656		678	
Starvation Cap Reductn		0	0					439	0		0	
Spillback Cap Reductn		0	0					0	0		0	
Storage Cap Reductn		0	0					0	0		0	
Reduced v/c Ratio		0.35	0.00					0.30	0.00		0.21	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 49 (54%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 18.8  
 Intersection Capacity Utilization 41.6%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

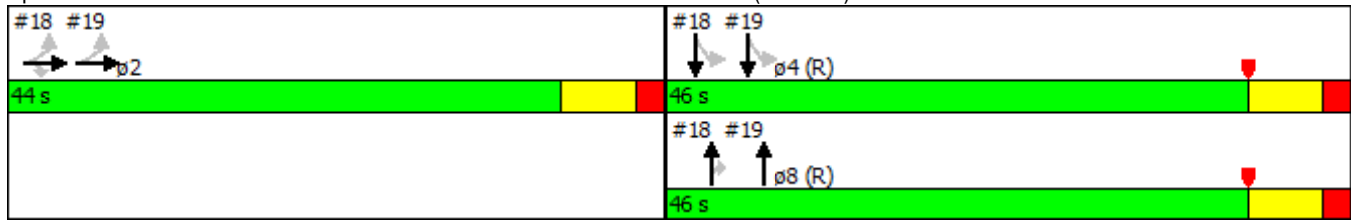
Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015

Splits and Phases: 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕		↕	↕	
Volume (vph)	0	83	116	0	0	0	0	83	89	6	91	0
Satd. Flow (prot)	0	1499	0	0	0	0	0	2852	0	1546	1628	0
Flt Permitted										0.632		
Satd. Flow (perm)	0	1499	0	0	0	0	0	2852	0	1029	1628	0
Satd. Flow (RTOR)		99						99				
Lane Group Flow (vph)	0	221	0	0	0	0	0	191	0	7	101	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	25.0	25.0						25.0		25.0	25.0	
Total Split (s)	44.0	44.0						46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%						51.1%		51.1%	51.1%	
Yellow Time (s)	5.0	5.0						5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0						-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		39.0						41.0		41.0	41.0	
Actuated g/C Ratio		0.43						0.46		0.46	0.46	
v/c Ratio		0.31						0.14		0.01	0.14	
Control Delay		3.3						7.2		1.5	1.7	
Queue Delay		0.0						0.0		0.0	0.7	
Total Delay		3.3						7.2		1.5	2.4	
LOS		A						A		A	A	
Approach Delay		3.3						7.2			2.3	
Approach LOS		A						A			A	
Queue Length 50th (ft)		27						7		0	2	
Queue Length 95th (ft)		m24						39		1	5	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)												
Base Capacity (vph)		705						1353		468	741	
Starvation Cap Reductn		0						0		0	423	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.31						0.14		0.01	0.32	

Intersection Summary

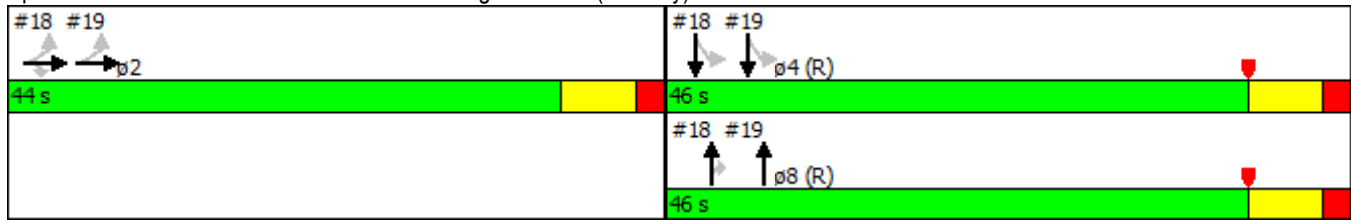
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 49 (54%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 4.5  
 Intersection Capacity Utilization 26.9%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)

3/12/2015

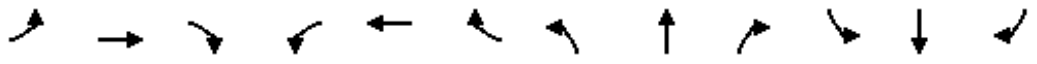
Splits and Phases: 19: Blackwell Street & Pettigrew Street (Oneway)



# Lanes, Volumes, Timings

## 20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕			↕	
Volume (vph)	14	0	70	88	352	85	117	156	0	0	66	18
Satd. Flow (prot)	0	1544	1475	1736	1827	1553	1736	1827	0	0	1774	0
Flt Permitted		0.857		0.728			0.697					
Satd. Flow (perm)	0	1348	1475	1330	1827	1553	1273	1827	0	0	1774	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	43	51	98	391	94	130	173	0	0	93	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	56.0	56.0	56.0	56.0	56.0	56.0	34.0	34.0			34.0	
Total Split (%)	62.2%	62.2%	62.2%	62.2%	62.2%	62.2%	37.8%	37.8%			37.8%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		51.0	51.0	51.0	51.0	51.0	29.0	29.0			29.0	
Actuated g/C Ratio		0.57	0.57	0.57	0.57	0.57	0.32	0.32			0.32	
v/c Ratio		0.06	0.06	0.13	0.38	0.11	0.32	0.29			0.16	
Control Delay		13.7	13.6	1.3	1.9	1.2	25.7	24.6			24.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		13.7	13.6	1.3	1.9	1.2	25.7	24.6			24.3	
LOS		B	B	A	A	A	C	C			C	
Approach Delay		13.6			1.7			25.1			24.3	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)		13	15	1	6	1	55	73			42	
Queue Length 95th (ft)		m27	m32	6	18	6	104	126			80	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		763	835	753	1035	880	410	588			571	
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		0.06	0.06	0.13	0.38	0.11	0.32	0.29			0.16	

### Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 9 (10%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 11.3  
 Intersection Capacity Utilization 42.7%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

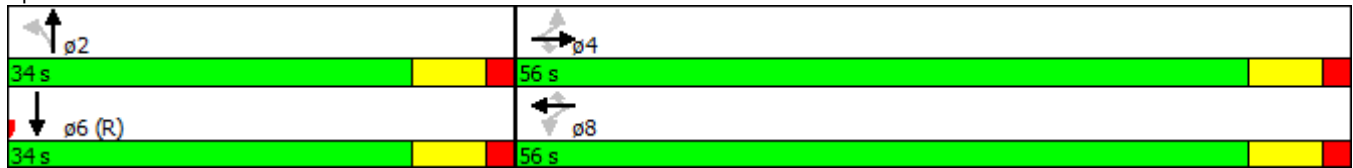
Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

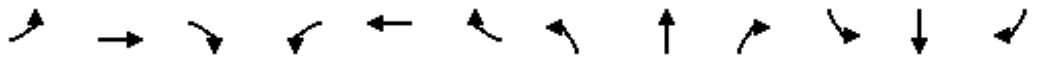
3/12/2015

Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive



Lanes, Volumes, Timings  
 21: Rigsbee Avenue & Morgan Loop

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→			↑			↑	
Volume (vph)	0	0	0	47	921	120	16	43	0	0	64	62
Satd. Flow (prot)	0	0	0	0	6286	0	0	1839	0	0	1738	0
Flt Permitted					0.998			0.931				
Satd. Flow (perm)	0	0	0	0	6286	0	0	1734	0	0	1738	0
Satd. Flow (RTOR)					55						67	
Lane Group Flow (vph)	0	0	0	0	1208	0	0	66	0	0	140	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				25.0	25.0		25.0	25.0			25.0	
Total Split (s)				51.0	51.0		39.0	39.0			39.0	
Total Split (%)				56.7%	56.7%		43.3%	43.3%			43.3%	
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0			-4.0			-4.0	
Total Lost Time (s)					1.0			1.0			1.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					50.0			38.0			38.0	
Actuated g/C Ratio					0.56			0.42			0.42	
v/c Ratio					0.34			0.09			0.18	
Control Delay					1.7			16.1			9.5	
Queue Delay					0.0			0.0			0.0	
Total Delay					1.7			16.1			9.5	
LOS					A			B			A	
Approach Delay					1.7			16.1			9.5	
Approach LOS					A			B			A	
Queue Length 50th (ft)					14			22			24	
Queue Length 95th (ft)					16			47			60	
Internal Link Dist (ft)		433			66			129			206	
Turn Bay Length (ft)												
Base Capacity (vph)					3516			732			772	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.34			0.09			0.18	

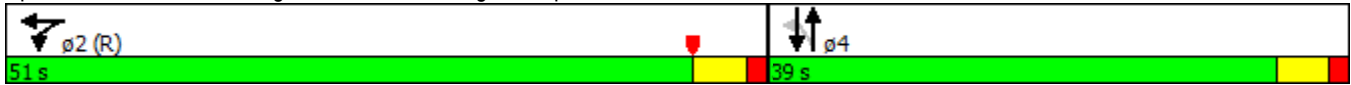
Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 2:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 3.2	Intersection LOS: A
Intersection Capacity Utilization 39.0%	ICU Level of Service A
Analysis Period (min) 15	

Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

3/12/2015

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop





Lanes, Volumes, Timings  
22: Magnum Street/Morgan Loop

3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑↑									↑↑	↑
Volume (vph)	282	1030	0	0	0	0	0	0	0	0	1127	199
Satd. Flow (prot)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.989										
Satd. Flow (perm)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Satd. Flow (RTOR)		82										13
Lane Group Flow (vph)	0	1457	0	0	0	0	0	0	0	0	1252	221
Turn Type	custom	NA									NA	custom
Protected Phases		4										
Permitted Phases	2										2	2
Detector Phase	2	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	58.0	32.0									58.0	58.0
Total Split (%)	64.4%	35.6%									64.4%	64.4%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	None									C-Max	C-Max
Act Effct Green (s)		31.5									58.5	58.5
Actuated g/C Ratio		0.35									0.65	0.65
v/c Ratio		0.64									0.54	0.21
Control Delay		24.1									9.7	6.7
Queue Delay		0.0									0.0	0.0
Total Delay		24.1									9.7	6.7
LOS		C									A	A
Approach Delay		24.1									9.3	
Approach LOS		C									A	
Queue Length 50th (ft)		210									184	43
Queue Length 95th (ft)		243									235	74
Internal Link Dist (ft)		566			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2306									2300	1033
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.63									0.54	0.21

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:NBSW, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64





Queue shown is maximum after two cycles.

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

Splits and Phases: 23: Mangum Street





Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

3/12/2015

Lane Group	ø3	ø4
Lane Configurations		
Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Minimum Split (s)	10.0	23.0
Total Split (s)	10.0	23.0
Total Split (%)	11%	26%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
<b>Intersection Summary</b>		

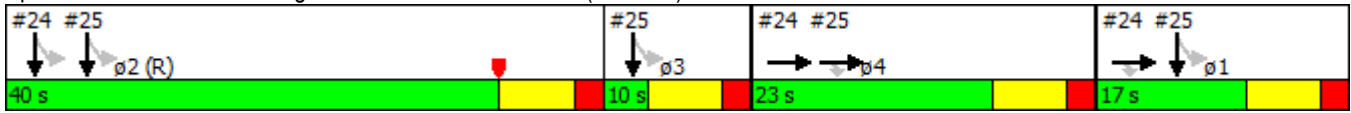
Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

3/12/2015

Queue shown is maximum after two cycles.

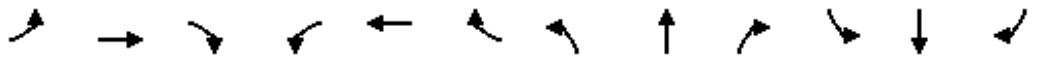
Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (Oneway)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗								↑↑↑↑	
Volume (vph)	0	126	52	0	0	0	0	0	0	49	1106	0
Satd. Flow (prot)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Satd. Flow (RTOR)			218									
Lane Group Flow (vph)	0	140	58	0	0	0	0	0	0	0	1283	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		4									1 2 3	
Permitted Phases			4							1 2 3		
Minimum Split (s)		23.0	23.0									
Total Split (s)		23.0	23.0									
Total Split (%)		25.6%	25.6%									
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?												
Act Effct Green (s)		18.0	18.0								62.0	
Actuated g/C Ratio		0.20	0.20								0.69	
v/c Ratio		0.43	0.13								0.33	
Control Delay		40.1	1.2								0.2	
Queue Delay		0.0	0.0								0.2	
Total Delay		40.1	1.2								0.3	
LOS		D	A								A	
Approach Delay		28.7									0.3	
Approach LOS		C									A	
Queue Length 50th (ft)		62	0								0	
Queue Length 95th (ft)		121	0								0	
Internal Link Dist (ft)		398			755			154			117	
Turn Bay Length (ft)												
Base Capacity (vph)		325	451								3849	
Starvation Cap Reductn		0	0								1363	
Spillback Cap Reductn		0	0								0	
Storage Cap Reductn		0	0								0	
Reduced v/c Ratio		0.43	0.13								0.52	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 32 (36%), Referenced to phase 2:SBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 4.1  
 Intersection Capacity Utilization 34.3%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

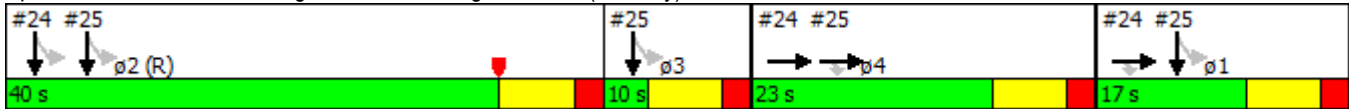


# Lanes, Volumes, Timings

## 25: Mangum Street & Pettigrew Street (Oneway)

3/12/2015

Splits and Phases: 25: Mangum Street & Pettigrew Street (Oneway)



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Minimum Split (s)	14.0	29.0	10.0
Total Split (s)	17.0	40.0	10.0
Total Split (%)	19%	44%	11%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

### Intersection Summary

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	169	771	0	0	0	0	0	894	191
Satd. Flow (prot)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Flt Permitted					0.991							
Satd. Flow (perm)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Satd. Flow (RTOR)					68							116
Lane Group Flow (vph)	0	0	0	0	1056	0	0	0	0	0	1016	217
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				46.0	46.0						44.0	44.0
Total Split (%)				51.1%	51.1%						48.9%	48.9%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None						C-Max	C-Max
Act Effct Green (s)					30.4						59.6	56.6
Actuated g/C Ratio					0.34						0.66	0.63
v/c Ratio					0.60						0.24	0.21
Control Delay					29.3						13.7	11.1
Queue Delay					0.0						0.0	0.0
Total Delay					29.3						13.7	11.1
LOS					C						B	B
Approach Delay					29.3						13.3	
Approach LOS					C						B	
Queue Length 50th (ft)					210						142	75
Queue Length 95th (ft)					239						198	161
Internal Link Dist (ft)		297			516			238			1078	
Turn Bay Length (ft)												
Base Capacity (vph)					2609						4242	1038
Starvation Cap Reductn					0						0	0
Spillback Cap Reductn					0						0	0
Storage Cap Reductn					0						0	0
Reduced v/c Ratio					0.40						0.24	0.21

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:SBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.60

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015

Intersection Signal Delay: 20.7

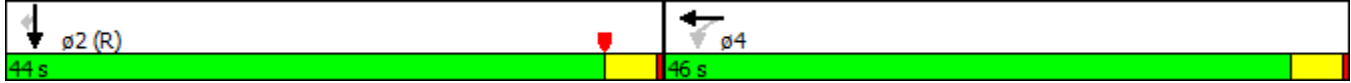
Intersection LOS: C

Intersection Capacity Utilization 37.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Jackie Robinson Drive & Mangum Street



Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	383	111	3	508	119	0	0	0
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Satd. Flow (RTOR)						123		71				
Lane Group Flow (vph)	0	0	0	0	426	123	0	699	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					53.0		37.0	37.0				
Total Split (%)					58.9%		41.1%	41.1%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					31.7	90.0		56.3				
Actuated g/C Ratio					0.35	1.00		0.63				
v/c Ratio					0.65	0.08		0.22				
Control Delay					29.9	0.1		10.8				
Queue Delay					0.0	0.0		0.0				
Total Delay					29.9	0.1		10.8				
LOS					C	A		B				
Approach Delay					23.2			10.8				
Approach LOS					C			B				
Queue Length 50th (ft)					227	0		68				
Queue Length 95th (ft)					274	0		100				
Internal Link Dist (ft)		211			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					1097	1583		3119				
Starvation Cap Reductn					0	0		0				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.39	0.08		0.22				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 44 (49%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.65



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	137	192	0	0	0	0	510	493	47	0	0	0
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5019	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5019	0	0	0	0
Satd. Flow (RTOR)	*12							24				
Lane Group Flow (vph)	152	213	0	0	0	0	567	600	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	45.0	45.0					45.0	45.0				
Total Split (%)	50.0%	50.0%					50.0%	50.0%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	16.2	16.2					71.8	70.8				
Actuated g/C Ratio	0.18	0.18					0.80	0.79				
v/c Ratio	0.46	0.33					0.21	0.15				
Control Delay	33.9	32.6					0.8	0.8				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	33.9	32.6					0.8	0.8				
LOS	C	C					A	A				
Approach Delay		33.1						0.8				
Approach LOS		C						A				
Queue Length 50th (ft)	72	56					7	5				
Queue Length 95th (ft)	118	81					m15	m11				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	851	1690					2737	3952				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.18	0.13					0.21	0.15				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 2:NETL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46

# Lanes, Volumes, Timings

## 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015

Intersection Signal Delay: 8.5

Intersection LOS: A

Intersection Capacity Utilization 28.8%

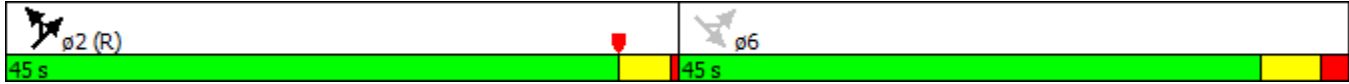
ICU Level of Service A

Analysis Period (min) 15

\* User Entered Value

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

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty



Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

3/12/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	88	295	325	143	272	1134	94	0
Satd. Flow (prot)	1770	1863	1863	1583	0	3476	0	3614
Flt Permitted	0.401					0.991		
Satd. Flow (perm)	747	1863	1863	1583	0	3476	0	3614
Satd. Flow (RTOR)				159		12		
Lane Group Flow (vph)	98	328	361	159	0	1666	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	31.0	31.0	31.0	31.0	48.0	48.0		11.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	53.3%	53.3%		12.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	37.0	37.0	39.0	39.0		48.0		
Actuated g/C Ratio	0.41	0.41	0.43	0.43		0.53		
v/c Ratio	0.32	0.43	0.45	0.20		0.90		
Control Delay	15.9	15.7	18.9	6.5		16.4		
Queue Delay	0.0	0.0	0.0	0.0		4.7		
Total Delay	15.9	15.7	18.9	6.5		21.1		
LOS	B	B	B	A		C		
Approach Delay		15.7	15.1			21.1		
Approach LOS		B	B			C		
Queue Length 50th (ft)	41	139	150	16		94		
Queue Length 95th (ft)	m55	m192	221	55		#142		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	307	765	807	776		1859		
Starvation Cap Reductn	0	0	0	0		146		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.32	0.43	0.45	0.20		0.97		

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90



# Lanes, Volumes, Timings

## 29: N. Roxboro Street & Main Street

3/12/2015

Intersection Signal Delay: 19.1

Intersection LOS: B

Intersection Capacity Utilization 76.0%

ICU Level of Service D

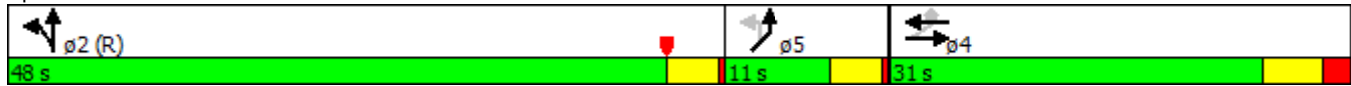
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













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

Splits and Phases: 29: N. Roxboro Street & Main Street



Lanes, Volumes, Timings  
 30: Roxboro & Pettigrew Street (Oneway)

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↗				↖	↑				
Volume (vph)	0	1973	8	0	0	0	86	89	0	0	0	0
Satd. Flow (prot)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Satd. Flow (RTOR)			36									
Lane Group Flow (vph)	0	2192	9	0	0	0	96	99	0	0	0	0
Turn Type		NA	Perm				pm+pt	NA				
Protected Phases		2					7	4				
Permitted Phases			2				4					
Detector Phase		2	2				7	4				
Switch Phase												
Minimum Initial (s)		10.0	10.0				4.0	7.0				
Minimum Split (s)		17.0	17.0				8.0	14.0				
Total Split (s)		68.0	68.0				22.0	22.0				
Total Split (%)		75.6%	75.6%				24.4%	24.4%				
Yellow Time (s)		4.0	4.0				3.5	4.0				
All-Red Time (s)		2.0	2.0				0.5	2.0				
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0				
Total Lost Time (s)		2.0	2.0				0.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max				None	None				
Act Effct Green (s)		75.5	75.5				15.0	13.5				
Actuated g/C Ratio		0.84	0.84				0.17	0.15				
v/c Ratio		0.74	0.01				0.33	0.36				
Control Delay		5.1	0.0				34.6	35.2				
Queue Delay		0.0	0.0				0.0	0.0				
Total Delay		5.2	0.0				34.6	35.2				
LOS		A	A				C	D				
Approach Delay		5.1						34.9				
Approach LOS		A						C				
Queue Length 50th (ft)		71	0				58	61				
Queue Length 95th (ft)		456	m0				108	112				
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)												
Base Capacity (vph)		2967	1333				428	409				
Starvation Cap Reductn		39	0				0	0				
Spillback Cap Reductn		0	0				0	0				
Storage Cap Reductn		0	0				0	0				
Reduced v/c Ratio		0.75	0.01				0.22	0.24				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 2:NBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74

# Lanes, Volumes, Timings

## 30: Roxboro & Pettigrew Street (Oneway)

3/12/2015

Intersection Signal Delay: 7.6

Intersection LOS: A

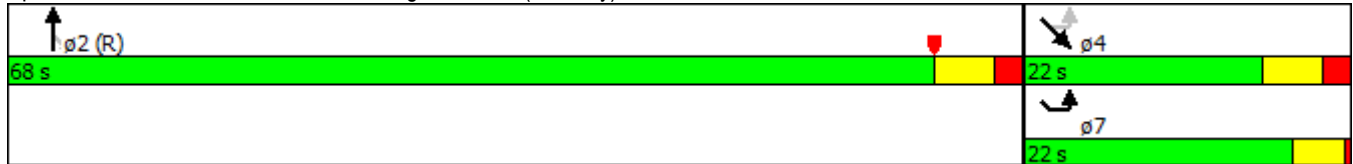
Intersection Capacity Utilization 92.2%

ICU Level of Service F

Analysis Period (min) 15

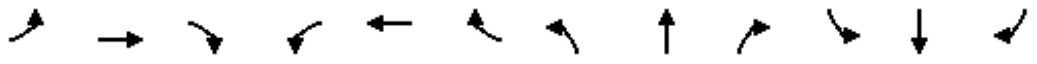
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Roxboro & Pettigrew Street (Oneway)



Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	29	0	0	115	87	76	1853	115	0	0	0
Satd. Flow (prot)	1770	1863	0	0	1755	0	0	5075	1583	0	0	0
Flt Permitted	0.422							0.998				
Satd. Flow (perm)	786	1863	0	0	1755	0	0	5075	1583	0	0	0
Satd. Flow (RTOR)					14				128			
Lane Group Flow (vph)	52	32	0	0	225	0	0	2143	128	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	26.0	26.0			26.0		64.0	64.0	64.0			
Total Split (%)	28.9%	28.9%			28.9%		71.1%	71.1%	71.1%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	14.9	14.9			14.9			63.1	63.1			
Actuated g/C Ratio	0.17	0.17			0.17			0.70	0.70			
v/c Ratio	0.40	0.10			0.75			0.60	0.11			
Control Delay	41.4	30.4			48.1			5.3	0.4			
Queue Delay	0.0	0.0			0.0			0.2	0.0			
Total Delay	41.4	30.4			48.1			5.5	0.4			
LOS	D	C			D			A	A			
Approach Delay		37.2			48.1			5.2				
Approach LOS		D			D			A				
Queue Length 50th (ft)	27	16			115			129	0			
Queue Length 95th (ft)	59	38			181			m161	m0			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	174	414			400			3557	1147			
Starvation Cap Reductn	0	0			0			472	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.30	0.08			0.56			0.69	0.11			

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↘	↑↑↑				
Volume (vph)	0	0	0	0	716	970	184	1093	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Satd. Flow (RTOR)						36	204					
Lane Group Flow (vph)	0	0	0	0	796	1078	204	1214	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					59.0	59.0	31.0	31.0				
Total Split (%)					65.6%	65.6%	34.4%	34.4%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					57.0	55.0	29.0	29.0				
Actuated g/C Ratio					0.63	0.61	0.32	0.32				
v/c Ratio					0.36	1.10	0.29	0.74				
Control Delay					8.3	79.3	4.5	30.5				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					8.3	79.3	4.5	30.5				
LOS					A	E	A	C				
Approach Delay					49.2			26.8				
Approach LOS					D			C				
Queue Length 50th (ft)					101	~696	0	223				
Queue Length 95th (ft)					133	#940	47	275				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2241	981	708	1638				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.36	1.10	0.29	0.74				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 53 (59%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.10

# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

3/12/2015

Intersection Signal Delay: 39.5

Intersection LOS: D

Intersection Capacity Utilization 87.8%

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: 32: Jackie Robinson Drive & Roxboro



Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (vph)	0	138	62	46	379	3	173	6	19	10	43	20
Satd. Flow (prot)	0	1785	0	0	1852	0	1770	1652	0	0	1781	0
Flt Permitted					0.949		0.703				0.976	
Satd. Flow (perm)	0	1785	0	0	1766	0	1310	1652	0	0	1751	0
Satd. Flow (RTOR)		42			1			21			22	
Lane Group Flow (vph)	0	222	0	0	475	0	192	28	0	0	81	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	53.0	53.0		53.0	53.0		37.0	37.0		37.0	37.0	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		51.0			51.0		35.0	35.0			35.0	
Actuated g/C Ratio		0.57			0.57		0.39	0.39			0.39	
v/c Ratio		0.22			0.47		0.38	0.04			0.12	
Control Delay		6.8			13.5		19.4	6.4			13.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		6.8			13.5		19.4	6.4			13.9	
LOS		A			B		B	A			B	
Approach Delay		6.8			13.5			17.8			13.9	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		31			149		90	0			21	
Queue Length 95th (ft)		50			226		145	25			50	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1029			1001		509	655			694	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.22			0.47		0.38	0.04			0.12	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 13.0  
 Intersection Capacity Utilization 60.0%  
 Analysis Period (min) 15

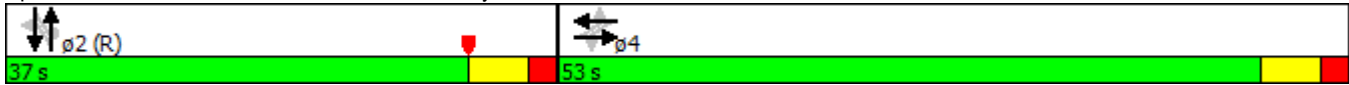
Intersection LOS: B  
 ICU Level of Service B



Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street




















3/12/2015

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	88	4	11	140	0	24	54	78	71	0	86
Satd. Flow (prot)	0	3518	0	0	3525	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.939		0.950			0.718		
Satd. Flow (perm)	0	3518	0	0	3323	0	1770	1863	1583	1337	0	1583
Satd. Flow (RTOR)		4							87			96
Lane Group Flow (vph)	0	102	0	0	168	0	27	60	87	79	0	96
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		37.0		37.0	37.0		53.0	53.0	53.0	53.0		53.0
Total Split (%)		41.1%		41.1%	41.1%		58.9%	58.9%	58.9%	58.9%		58.9%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0			2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		35.0			35.0		51.0	51.0	51.0	51.0		51.0
Actuated g/C Ratio		0.39			0.39		0.57	0.57	0.57	0.57		0.57
v/c Ratio		0.07			0.13		0.03	0.06	0.09	0.10		0.10
Control Delay		17.8			13.8		1.7	1.7	0.2	9.5		2.3
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		17.8			13.8		1.7	1.7	0.2	9.5		2.3
LOS		B			B		A	A	A	A		A
Approach Delay		17.8			13.8			1.0				
Approach LOS		B			B			A				
Queue Length 50th (ft)		22			34		2	3	0	19		0
Queue Length 95th (ft)		41			47		4	7	1	40		20
Internal Link Dist (ft)		428			477			952			87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1370			1292		1003	1055	934	757		938
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		0.07			0.13		0.03	0.06	0.09	0.10		0.10

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 13 (14%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.13  
 Intersection Signal Delay: 8.5  
 Intersection Capacity Utilization 32.5%  
 Analysis Period (min) 15

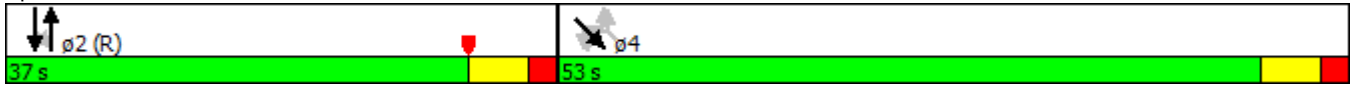
Intersection LOS: A  
 ICU Level of Service A

Lanes, Volumes, Timings

34: Dillard Street

3/12/2015

Splits and Phases: 34: Dillard Street



Lanes, Volumes, Timings  
 35: Dillard Street & Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	97	96	45	446	53	37	27	12	59	85	104
Satd. Flow (prot)	1770	1863	1583	1770	1833	0	1770	1779	0	1770	1708	0
Flt Permitted	0.355			0.686			0.496			0.729		
Satd. Flow (perm)	661	1863	1583	1278	1833	0	924	1779	0	1358	1708	0
Satd. Flow (RTOR)			107		13			13			73	
Lane Group Flow (vph)	16	108	107	50	555	0	41	43	0	66	210	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%	65.6%	65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	57.0	57.0	57.0	57.0	57.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63		0.32	0.32		0.32	0.32	
v/c Ratio	0.04	0.09	0.10	0.06	0.48		0.14	0.07		0.15	0.35	
Control Delay	6.7	7.3	3.6	6.6	10.1		23.3	16.7		21.0	15.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	7.3	3.6	6.6	10.1		23.3	16.7		21.0	15.7	
LOS	A	A	A	A	B		C	B		C	B	
Approach Delay		5.5			9.8			19.9			17.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	5	38	19	10	145		16	12		29	64	
Queue Length 95th (ft)	m8	m51	m28	23	218		41	35		62	124	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	418	1179	1041	809	1165		297	582		437	599	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.09	0.10	0.06	0.48		0.14	0.07		0.15	0.35	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 3 (3%), Referenced to phase 4:EBWB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 11.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.4%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

3/12/2015

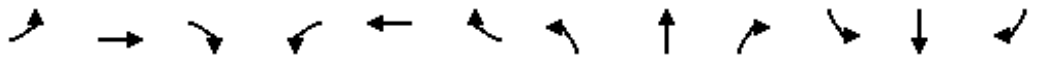
Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	50	20	37	0	43	0	68	8	37	109	0
Satd. Flow (prot)	1718	1733	0	0	1638	0	0	1783	0	1718	1809	0
Flt Permitted	0.699				0.881					0.702		
Satd. Flow (perm)	1264	1733	0	0	1477	0	0	1783	0	1270	1809	0
Satd. Flow (RTOR)		22			73			9				
Lane Group Flow (vph)	30	78	0	0	89	0	0	85	0	41	121	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2						8		
Detector Phase	6	6		2	2			4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0			7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			23.0		23.0	23.0	
Total Split (s)	29.0	29.0		29.0	29.0			31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%			51.7%		51.7%	51.7%	
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	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		C-Max	C-Max			None		None	None	
Act Effct Green (s)	42.2	42.2			42.2			11.6		11.6	11.6	
Actuated g/C Ratio	0.70	0.70			0.70			0.19		0.19	0.19	
v/c Ratio	0.03	0.06			0.08			0.24		0.17	0.35	
Control Delay	4.9	3.9			0.6			19.7		20.8	23.1	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	4.9	3.9			0.6			19.7		20.8	23.1	
LOS	A	A			A			B		C	C	
Approach Delay		4.2			0.6			19.7			22.5	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)	3	6			0			24		13	38	
Queue Length 95th (ft)	13	22			m1			52		33	73	
Internal Link Dist (ft)		989			699			307			151	
Turn Bay Length (ft)	100											
Base Capacity (vph)	889	1225			1061			777		550	783	
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	0.03	0.06			0.08			0.11		0.07	0.15	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.35

Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street

3/12/2015

Intersection Signal Delay: 13.1

Intersection LOS: B

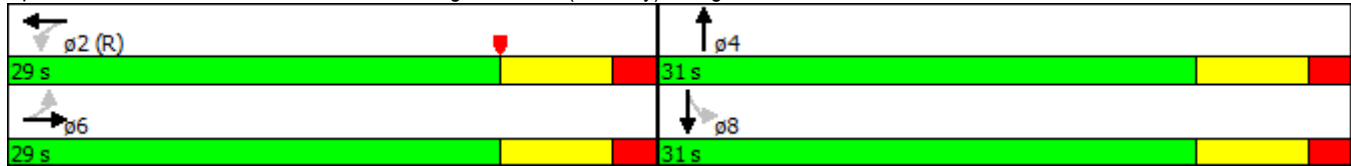
Intersection Capacity Utilization 28.4%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street



Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	53	6	96	90	108	3	371	45	58	432	1
Satd. Flow (prot)	1718	1809	1537	1718	1660	0	1718	3381	0	1718	3436	0
Flt Permitted	0.340			0.719			0.369			0.950		
Satd. Flow (perm)	615	1809	1537	1300	1660	0	667	3381	0	1718	3436	0
Satd. Flow (RTOR)			227		45			19				
Lane Group Flow (vph)	10	59	7	107	220	0	3	462	0	64	481	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		3			3		5	2 4		1	6	
Permitted Phases	3		3	3			2 4					
Detector Phase	3	3	3	3	3		5	2 4		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			5.0	10.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		14.0			12.0	27.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		32.0			15.0	35.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		26.7%			12.5%	29.2%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?										Yes		
Recall Mode	None	None	None	None	None		None			None	C-Max	
Act Effct Green (s)	19.8	19.8	19.8	19.8	19.8		73.2	78.2		9.6	47.0	
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.61	0.65		0.08	0.39	
v/c Ratio	0.10	0.20	0.02	0.50	0.71		0.01	0.21		0.47	0.36	
Control Delay	37.1	37.1	0.0	44.4	41.0		2.7	2.2		64.1	29.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	37.1	37.1	0.0	44.4	41.0		2.7	2.4		64.1	29.9	
LOS	D	D	A	D	D		A	A		E	C	
Approach Delay		33.7			42.1			2.4			34.0	
Approach LOS		C			D			A			C	
Queue Length 50th (ft)	5	33	0	63	114		0	13		48	136	
Queue Length 95th (ft)	18	61	0	89	133		m1	36		95	227	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	128	376	499	270	381		643	2179		143	1345	
Starvation Cap Reductn	0	0	0	0	0		0	1039		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.16	0.01	0.40	0.58		0.00	0.41		0.45	0.36	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71



Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street

3/12/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	52.0	23.0	14.0	39.0
Total Split (%)	43%	19%	12%	33%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
<b>Intersection Summary</b>				

# Lanes, Volumes, Timings

## 37: Fayetteville Street & Pettigrew Street

3/12/2015

Intersection Signal Delay: 25.5

Intersection LOS: C

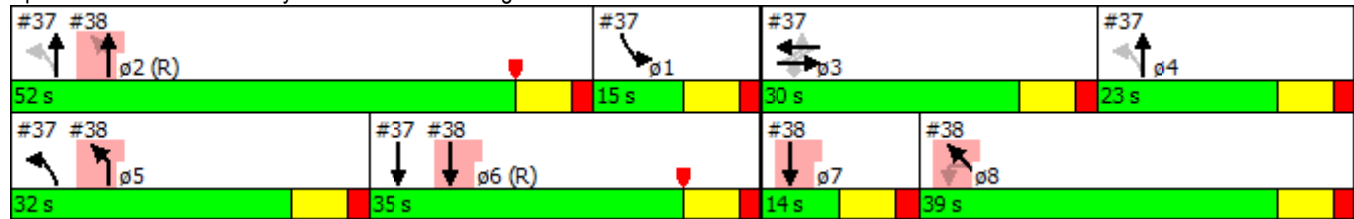
Intersection Capacity Utilization 42.3%

ICU Level of Service A

Analysis Period (min) 15

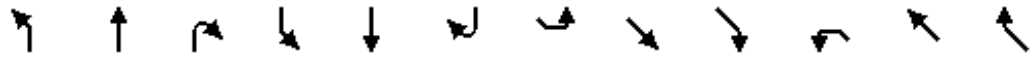
m Volume for 95th percentile queue is metered by upstream signal.

### Splits and Phases: 37: Fayetteville Street & Pettigrew Street



Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations	↖	↕			↕						↕	
Volume (vph)	227	328	0	0	490	44	0	0	0	169	13	91
Satd. Flow (prot)	1718	3436	0	0	3395	0	0	0	0	0	3167	0
Flt Permitted	0.290										0.970	
Satd. Flow (perm)	525	3436	0	0	3395	0	0	0	0	0	3167	0
Satd. Flow (RTOR)					9						73	
Lane Group Flow (vph)	252	364	0	0	593	0	0	0	0	0	303	0
Turn Type	pm+pt	NA			NA					Perm	NA	
Protected Phases	5	2			6 7							8
Permitted Phases	2									8		
Detector Phase	5	2			6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	32.0	52.0								39.0	39.0	
Total Split (%)	26.7%	43.3%								32.5%	32.5%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0										-2.0
Total Lost Time (s)	5.0	5.0										5.0
Lead/Lag	Lead	Lead								Lag	Lag	
Lead-Lag Optimize?		Yes								Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	58.8	58.8			61.0							25.2
Actuated g/C Ratio	0.49	0.49			0.51							0.21
v/c Ratio	0.57	0.22			0.34							0.42
Control Delay	24.6	18.3			6.2							31.2
Queue Delay	0.1	0.0			0.2							0.0
Total Delay	24.7	18.3			6.4							31.2
LOS	C	B			A							C
Approach Delay		20.9			6.4							31.2
Approach LOS		C			A							C
Queue Length 50th (ft)	112	73			24							80
Queue Length 95th (ft)	160	113			40							112
Internal Link Dist (ft)		254			141			340				242
Turn Bay Length (ft)												
Base Capacity (vph)	525	1684			1729							949
Starvation Cap Reductn	17	0			446							0
Spillback Cap Reductn	0	0			0							0
Storage Cap Reductn	0	0			0							0
Reduced v/c Ratio	0.50	0.22			0.46							0.32

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

Lane Group	ø1	ø3	ø4	ø6	ø7
Lane Configurations					
Volume (vph)					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Satd. Flow (RTOR)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	4	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	10.0	7.0
Minimum Split (s)	12.0	23.0	23.0	27.0	14.0
Total Split (s)	15.0	30.0	23.0	35.0	14.0
Total Split (%)	13%	25%	19%	29%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None	None	C-Max	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					
Queue Length 50th (ft)					
Queue Length 95th (ft)					
Internal Link Dist (ft)					
Turn Bay Length (ft)					
Base Capacity (vph)					
Starvation Cap Reductn					
Spillback Cap Reductn					
Storage Cap Reductn					
Reduced v/c Ratio					

### Intersection Summary

Lanes, Volumes, Timings

**38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015**

Intersection Signal Delay: 17.3

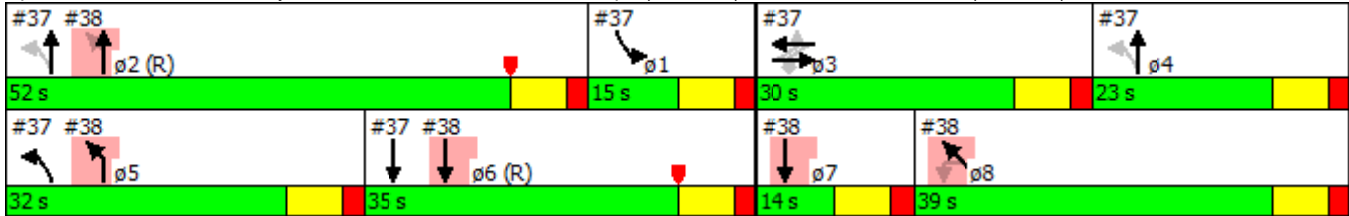
Intersection LOS: B

Intersection Capacity Utilization 49.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)



Lanes, Volumes, Timings

39: Fayetteville Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	44	0	139	0	0	0	0	511	20	93	566	0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	4908	0	1718	3436	0
Flt Permitted		0.950								0.419		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	4908	0	758	3436	0
Satd. Flow (RTOR)			154					8				
Lane Group Flow (vph)	0	49	154	0	0	0	0	590	0	103	629	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	48.0	48.0	48.0					72.0		72.0	72.0	
Total Split (%)	40.0%	40.0%	40.0%					60.0%		60.0%	60.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		11.3	11.3					98.7		98.7	98.7	
Actuated g/C Ratio		0.09	0.09					0.82		0.82	0.82	
v/c Ratio		0.30	0.54					0.15		0.17	0.22	
Control Delay		54.8	15.1					2.3		1.1	0.7	
Queue Delay		0.0	0.0					0.0		0.0	0.1	
Total Delay		54.8	15.1					2.3		1.1	0.8	
LOS		D	B					A		A	A	
Approach Delay		24.6						2.3			0.8	
Approach LOS		C						A			A	
Queue Length 50th (ft)		36	0					24		3	8	
Queue Length 95th (ft)		74	62					40		7	15	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		622	655					4039		623	2827	
Starvation Cap Reductn		0	0					0		0	1125	
Spillback Cap Reductn		0	0					0		0	0	
Storage Cap Reductn		0	0					0		0	0	
Reduced v/c Ratio		0.08	0.24					0.15		0.17	0.37	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 53 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54

# Lanes, Volumes, Timings

## 39: Fayetteville Street

3/12/2015

Intersection Signal Delay: 4.6

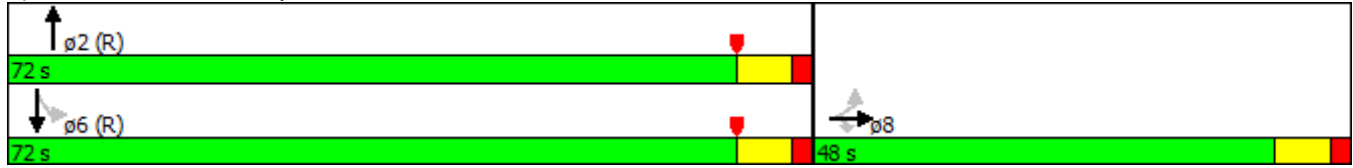
Intersection LOS: A

Intersection Capacity Utilization 47.9%

ICU Level of Service A

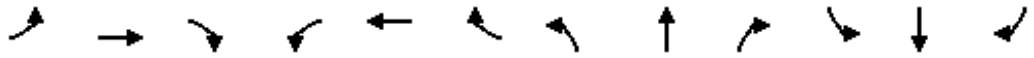
Analysis Period (min) 15

Splits and Phases: 39: Fayetteville Street



Lanes, Volumes, Timings  
 40: Grant Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	149	7	69	294	123	0	93	102	90	50	0
Satd. Flow (prot)	1809	1796	0	1718	1729	0	0	1680	0	0	1753	0
Flt Permitted				0.647							0.628	
Satd. Flow (perm)	1809	1796	0	1170	1729	0	0	1680	0	0	1136	0
Satd. Flow (RTOR)		5			47			104				
Lane Group Flow (vph)	0	174	0	77	464	0	0	216	0	0	156	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		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	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		35.3		35.3	35.3			14.7			14.7	
Actuated g/C Ratio		0.59		0.59	0.59			0.24			0.24	
v/c Ratio		0.16		0.11	0.45			0.44			0.56	
Control Delay		10.9		7.4	8.8			12.2			27.0	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		10.9		7.4	8.8			12.2			27.0	
LOS		B		A	A			B			C	
Approach Delay		10.9			8.7			12.2			27.0	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)		97		11	71			33			50	
Queue Length 95th (ft)		147		34	166			72			89	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)				75								
Base Capacity (vph)		1059		689	1037			681			416	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.16		0.11	0.45			0.32			0.38	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.56

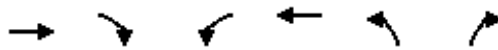




Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	282	73	21	426	105	11
Satd. Flow (prot)	1758	0	1718	1809	1708	0
Flt Permitted			0.950		0.957	
Satd. Flow (perm)	1758	0	1718	1809	1708	0
Lane Group Flow (vph)	394	0	23	473	129	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 35.6% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	182	457	52	321	13	870	0	0	1438	46
Satd. Flow (prot)	1718	0	1537	1718	1575	0	1718	3436	0	0	3419	0
Flt Permitted	0.519			0.950			0.058					
Satd. Flow (perm)	939	0	1537	1718	1575	0	105	3436	0	0	3419	0
Satd. Flow (RTOR)			164		122							4
Lane Group Flow (vph)	70	0	202	508	415	0	14	967	0	0	1649	0
Turn Type	Perm		Perm	pm+pt	NA		pm+pt	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8			2					
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0			10.0	
Minimum Split (s)	24.0		24.0	14.0	24.0		14.0	20.0			24.0	
Total Split (s)	24.0		24.0	21.0	45.0		14.0	75.0			61.0	
Total Split (%)	20.0%		20.0%	17.5%	37.5%		11.7%	62.5%			50.8%	
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	Lag		Lag	Lead			Lead				Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes				Yes	
Recall Mode	None		None	None	None		None	C-Max			C-Max	
Act Effct Green (s)	15.3		15.3	36.3	36.3		73.7	73.7			68.1	
Actuated g/C Ratio	0.13		0.13	0.30	0.30		0.61	0.61			0.57	
v/c Ratio	0.59		0.60	0.98	0.74		0.08	0.46			0.85	
Control Delay	69.9		21.1	76.1	34.4		11.1	13.8			29.0	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	69.9		21.1	76.1	34.4		11.1	13.8			29.0	
LOS	E		C	E	C		B	B			C	
Approach Delay					57.3			13.7			29.0	
Approach LOS					E			B			C	
Queue Length 50th (ft)	53		30	385	206		4	202			478	
Queue Length 95th (ft)	102		108	#570	318		13	267			#863	
Internal Link Dist (ft)		434			115			139			473	
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	148		381	519	606		185	2110			1942	
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	0.47		0.53	0.98	0.68		0.08	0.46			0.85	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 90.3%

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: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

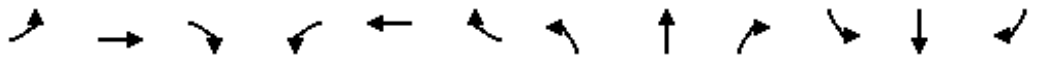


# **Synchro Output-2040 Build Alt 1 PM**

Lanes, Volumes, Timings

1: Ninth Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	592	52	263	441	286	47	250	327	270	147	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	200		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1718	1787	0	1718	1702	0	1718	1655	0	1718	1718	0
Flt Permitted	0.093			0.079			0.597			0.084		
Satd. Flow (perm)	168	1787	0	143	1702	0	1080	1655	0	152	1718	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			32			47			20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		299			755			166			290	
Travel Time (s)		6.8			17.2			3.8			6.6	
Lane Group Flow (vph)	68	716	0	292	808	0	52	641	0	300	245	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	52.0	52.0		21.0	73.0		14.0	46.0		21.0	53.0	
Total Split (%)	37.1%	37.1%		15.0%	52.1%		10.0%	32.9%		15.0%	37.9%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	47.0	47.0		68.0	68.0		50.0	41.0		62.0	50.8	
Actuated g/C Ratio	0.34	0.34		0.49	0.49		0.36	0.29		0.44	0.36	
v/c Ratio	1.21	1.19		1.17	0.96		0.12	1.24		1.22	0.39	
Control Delay	230.3	142.4		126.4	36.6		23.8	162.2		165.1	33.4	
Queue Delay	0.0	0.0		0.0	6.7		0.0	1.2		1.8	0.0	
Total Delay	230.3	142.4		126.4	43.4		23.8	163.4		166.9	33.4	
LOS	F	F		F	D		C	F		F	C	
Approach Delay		150.0			65.4			152.9			106.9	
Approach LOS		F			E			F			F	
Queue Length 50th (ft)	~75	~786		~270	513		27	~693		~287	156	
Queue Length 95th (ft)	#179	#1033		m#263	m501		54	#935		#479	235	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	56	601		249	843		426	517		246	636	
Starvation Cap Reductn	0	0		0	32		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	69		29	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	



Lanes, Volumes, Timings

2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015



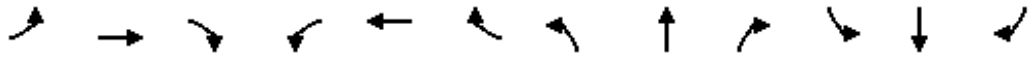
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	606	323	187	515	129	312	352	182	126	573	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	100		300	200		0	0		0	100		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			0			25		
Satd. Flow (prot)	1718	1809	1537	1718	1754	0	1718	1809	1537	1718	3357	0
Flt Permitted	0.077			0.074			0.950			0.950		
Satd. Flow (perm)	139	1809	1537	134	1754	0	1718	1809	1537	1718	3357	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140		10				202		14	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		755			391			214			263	
Travel Time (s)		14.7			7.6			4.2			5.1	
Lane Group Flow (vph)	131	673	359	208	715	0	347	391	202	140	754	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	37.0		14.0	14.0	14.0	14.0	32.0	
Total Split (s)	14.0	57.0	33.0	16.0	59.0		33.0	47.0	47.0	20.0	34.0	
Total Split (%)	10.0%	40.7%	23.6%	11.4%	42.1%		23.6%	33.6%	33.6%	14.3%	24.3%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	61.0	52.0	80.0	65.0	54.0		28.0	42.4	42.4	14.6	29.0	
Actuated g/C Ratio	0.44	0.37	0.57	0.46	0.39		0.20	0.30	0.30	0.10	0.21	
v/c Ratio	0.81	1.00	0.38	1.12	1.05		1.01	0.71	0.33	0.78	1.07	
Control Delay	35.3	48.9	5.7	135.2	88.8		106.4	52.1	6.2	89.1	104.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		30.8	0.0	0.0	0.0	0.0	
Total Delay	35.3	48.9	5.7	135.2	88.8		137.2	52.1	6.2	89.1	104.5	
LOS	D	D	A	F	F		F	D	A	F	F	
Approach Delay		34.0			99.3			73.7			102.1	
Approach LOS		C			F			E			F	
Queue Length 50th (ft)	64	~615	57	~167	~701		~324	319	0	126	~393	
Queue Length 95th (ft)	m42	m477	m40	#334	#948		#529	442	59	#232	#525	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	162	671	938	186	682		343	547	606	184	706	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		54	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	



Lanes, Volumes, Timings

2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015

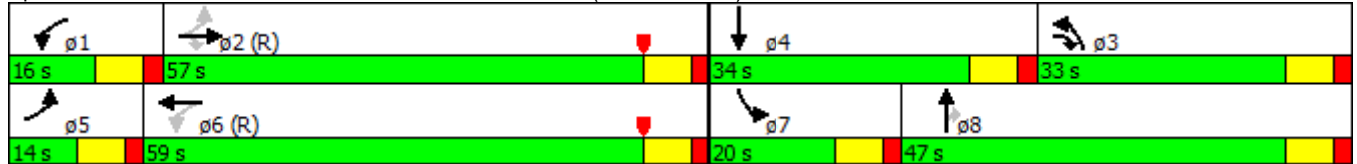


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.81	1.00	0.38	1.12	1.05		1.20	0.71	0.33	0.76	1.07	

Intersection Summary

Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	130											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.12											
Intersection Signal Delay:	74.4						Intersection LOS: E					
Intersection Capacity Utilization	95.4%						ICU Level of Service F					
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.											
m	Volume for 95th percentile queue is metered by upstream signal.											

Splits and Phases: 2: Swift Avenue/Broad Street & US 70 (W Main Street)



Lanes, Volumes, Timings  
 3: Erwin Road/Ninth Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	87	15	609	10	22	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1717	0	1823	0	0	1823
Flt Permitted	0.959					0.998
Satd. Flow (perm)	1717	0	1823	0	0	1823
Link Speed (mph)	30		30			30
Link Distance (ft)	262		232			166
Travel Time (s)	6.0		5.3			3.8
Lane Group Flow (vph)	114	0	688	0	0	513
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.5%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings

4: Swift Avenue/Broad Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			↑↑
Volume (vph)	0	0	846	0	0	1083
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		2%			2%
Storage Length (ft)	0	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	0				0	
Satd. Flow (prot)	0	0	4938	0	0	3436
Flt Permitted						
Satd. Flow (perm)	0	0	4938	0	0	3436
Link Speed (mph)	35		35			35
Link Distance (ft)	333		243			214
Travel Time (s)	6.5		4.7			4.2
Lane Group Flow (vph)	0	0	940	0	0	1203
Sign Control	Stop		Free			Free

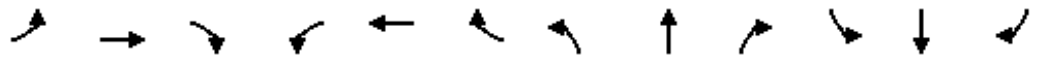
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.3%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	549	65	34	685	183	94	339	66	109	310	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	130		250	100		0	80		80	150		150
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			25			25			25		
Satd. Flow (prot)	1718	1809	1537	1718	1751	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1751	0	1718	1809	1537	1718	1809	1537
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			140						86			141
Link Speed (mph)		35			25			35				35
Link Distance (ft)		378			300			356				353
Travel Time (s)		7.4			8.2			6.9				6.9
Lane Group Flow (vph)	204	610	72	38	964	0	104	377	73	121	344	200
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	31.0	14.0	14.0	32.0	14.0
Total Split (s)	19.0	79.0	79.0	14.0	74.0		14.0	33.0	14.0	14.0	33.0	19.0
Total Split (%)	13.6%	56.4%	56.4%	10.0%	52.9%		10.0%	23.6%	10.0%	10.0%	23.6%	13.6%
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
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
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	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.0	76.8	76.8	9.0	69.0		9.0	28.0	42.0	9.0	28.0	47.0
Actuated g/C Ratio	0.10	0.55	0.55	0.06	0.49		0.06	0.20	0.30	0.06	0.20	0.34
v/c Ratio	1.19	0.61	0.08	0.35	1.12		0.95	1.04	0.14	1.10	0.95	0.33
Control Delay	182.2	25.7	0.2	71.8	102.5		136.2	112.7	5.7	173.4	91.9	12.4
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	182.2	25.7	0.2	71.8	102.5		136.2	112.7	5.7	173.4	91.9	12.4
LOS	F	C	A	E	F		F	F	A	F	F	B
Approach Delay		59.7			101.4			103.0				82.9
Approach LOS		E			F			F				F
Queue Length 50th (ft)	~223	384	0	34	~1006		96	~371	0	~124	313	37
Queue Length 95th (ft)	#388	515	0	73	#1265		#217	#575	29	#258	#507	100
Internal Link Dist (ft)		298			220			276				273
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	171	992	906	110	862		110	361	521	110	361	609
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

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	1.19	0.61	0.08	0.35	1.12		0.95	1.04	0.14	1.10	0.95	0.33

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 Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 85.8 Intersection LOS: F

Intersection Capacity Utilization 97.9% ICU Level of Service F

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.

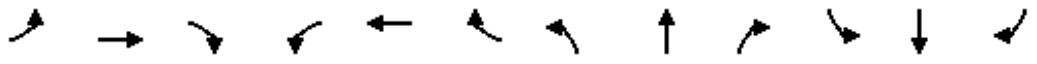
Queue shown is maximum after two cycles.

Splits and Phases: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

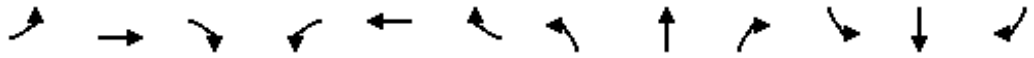
3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	449	0	0	276	27	246	1167	27	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1546	1628	0	0	1608	0	1546	3084	0	0	0	0
Flt Permitted	0.390						0.950					
Satd. Flow (perm)	635	1628	0	0	1608	0	1546	3084	0	0	0	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					4			2				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		287			246			371			269	
Travel Time (s)		6.5			5.6			7.2			5.2	
Lane Group Flow (vph)	198	499	0	0	337	0	273	1327	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	31.0	31.0			32.0		28.0	28.0				
Total Split (s)	65.0	65.0			65.0		75.0	75.0				
Total Split (%)	46.4%	46.4%			46.4%		53.6%	53.6%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	51.3	51.3			51.3		78.7	78.7				
Actuated g/C Ratio	0.37	0.37			0.37		0.56	0.56				
v/c Ratio	0.85	0.84			0.57		0.31	0.76				
Control Delay	71.3	53.1			38.2		19.0	28.7				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	71.3	53.1			38.2		19.0	28.7				
LOS	E	D			D		B	C				
Approach Delay		58.3			38.2			27.1				
Approach LOS		E			D			C				
Queue Length 50th (ft)	163	407			238		130	481				
Queue Length 95th (ft)	#280	511			309		216	654				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	272	697			691		869	1735				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				

Lanes, Volumes, Timings  
 6: Duke Street & W. Main Street

3/12/2015

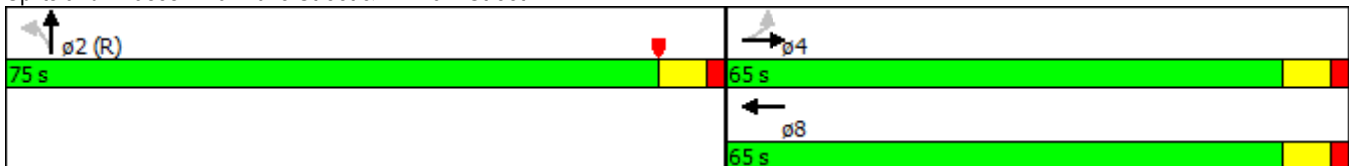


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.73	0.72			0.49		0.31	0.76				

Intersection Summary

Area Type: CBD  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 36.8 Intersection LOS: D  
 Intersection Capacity Utilization 78.2% 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: 6: Duke Street & W. Main Street



Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	28	11	0	0	27	7	102	1405	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Satd. Flow (prot)	0	1571	0	0	1582	0	1546	3093	0	0	0	0
Flt Permitted		0.965					0.950					
Satd. Flow (perm)	0	1571	0	0	1582	0	1546	3093	0	0	0	0
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		246			237			253			371	
Travel Time (s)		5.6			5.4			4.9			7.2	
Lane Group Flow (vph)	0	43	0	0	38	0	113	1564	0	0	0	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	59.0%
ICU Level of Service	B
Analysis Period (min)	15



Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

3/12/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	0	10	1500	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	296			304	253	
Travel Time (s)	6.7			5.9	4.9	
Lane Group Flow (vph)	11	0	11	1667	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.5% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	365	0	0	717	18	221	1343	113	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	115		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1718	1809	0	0	1803	0	0	4903	1537	0	0	0
Flt Permitted	0.067							0.993				
Satd. Flow (perm)	121	1809	0	0	1803	0	0	4903	1537	0	0	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					1				100			
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		340			394			330			304	
Travel Time (s)		9.3			10.7			6.4			5.9	
Lane Group Flow (vph)	166	406	0	0	817	0	0	1738	126	0	0	0
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases	4											
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			29.0		30.0	30.0	30.0			
Total Split (s)	14.0	74.0			60.0		46.0	46.0	46.0			
Total Split (%)	11.7%	61.7%			50.0%		38.3%	38.3%	38.3%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-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			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	69.0	69.0			55.0			41.0	41.0			
Actuated g/C Ratio	0.58	0.58			0.46			0.34	0.34			
v/c Ratio	0.88	0.39			0.99			1.04	0.21			
Control Delay	66.5	15.4			49.1			71.3	9.1			
Queue Delay	0.0	0.0			3.1			0.0	0.0			
Total Delay	66.5	15.4			52.2			71.3	9.1			
LOS	E	B			D			E	A			
Approach Delay		30.2			52.2			67.1				
Approach LOS		C			D			E				
Queue Length 50th (ft)	78	164			613			~531	13			
Queue Length 95th (ft)	#208	233			#881			#628	57			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	189	1040			826			1675	590			
Starvation Cap Reductn	0	0			11			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			

Lanes, Volumes, Timings

9: Duke Street & Chapel Hill Street

3/12/2015

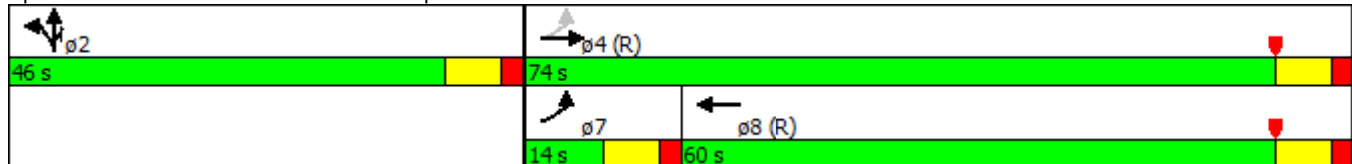


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.88	0.39			1.00			1.04	0.21			

Intersection Summary

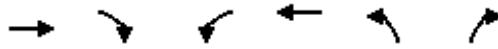
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	56.9
Intersection LOS:	E
Intersection Capacity Utilization:	90.0%
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: 9: Duke Street & Chapel Hill Street



Lanes, Volumes, Timings  
 10: Willard Street & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	421	57	79	692	43	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Storage Length (ft)		0	65		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			65		0	
Satd. Flow (prot)	1780	0	1718	1809	1608	0
Flt Permitted			0.950		0.987	
Satd. Flow (perm)	1780	0	1718	1809	1608	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	394			248	276	
Travel Time (s)	10.7			6.8	6.3	
Lane Group Flow (vph)	531	0	88	769	179	0
Sign Control	Free			Free	Stop	

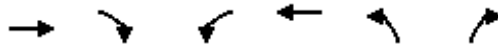
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.7%
	ICU Level of Service A
Analysis Period (min)	15

# Lanes, Volumes, Timings

## 11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø4
Lane Configurations	↔		↔	↔			
Volume (vph)	398	141	25	771	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Grade (%)	2%			2%	2%		
Satd. Flow (prot)	1745	0	1718	1809	0	0	
Flt Permitted			0.364				
Satd. Flow (perm)	1745	0	658	1809	0	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	37						
Link Speed (mph)	25			25	30		
Link Distance (ft)	248			290	1489		
Travel Time (s)	6.8			7.9	33.8		
Lane Group Flow (vph)	599	0	28	857	0	0	
Turn Type	NA		Perm	NA			
Protected Phases	2			6			4
Permitted Phases			6				
Minimum Split (s)	24.0		24.0	24.0			32.0
Total Split (s)	88.0		88.0	88.0			32.0
Total Split (%)	73.3%		73.3%	73.3%			27%
Yellow Time (s)	3.0		3.0	3.0			3.0
All-Red Time (s)	2.0		2.0	2.0			2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0		3.0	3.0			
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	85.0		85.0	85.0			
Actuated g/C Ratio	0.71		0.71	0.71			
v/c Ratio	0.48		0.06	0.67			
Control Delay	4.4		5.8	12.9			
Queue Delay	0.1		0.0	24.9			
Total Delay	4.6		5.8	37.9			
LOS	A		A	D			
Approach Delay	4.6			36.9			
Approach LOS	A			D			
Queue Length 50th (ft)	60		6	329			
Queue Length 95th (ft)	105		15	460			
Internal Link Dist (ft)	168			210	1409		
Turn Bay Length (ft)							
Base Capacity (vph)	1246		466	1281			
Starvation Cap Reductn	117		0	450			
Spillback Cap Reductn	0		0	165			
Storage Cap Reductn	0		0	0			
Reduced v/c Ratio	0.53		0.06	1.03			

### Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

# Lanes, Volumes, Timings

## 11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 43.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: Pettigrew Street (Oneway) & Chapel Hill Street



Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↑↑↑	↗
Volume (vph)	0	304	94	14	160	0	0	0	0	11	395	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1863	1583	0	1670	0	0	0	0	0	5080	1583
Flt Permitted					0.966						0.999	
Satd. Flow (perm)	0	1863	1583	0	1619	0	0	0	0	0	5080	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		90			456			875			293	
Travel Time (s)		2.0			10.4			19.9			6.7	
Lane Group Flow (vph)	0	338	104	0	194	0	0	0	0	0	451	707
Turn Type		NA	Free	Perm	NA					Split	NA	Free
Protected Phases		4			8					6	6	
Permitted Phases			Free	8								Free
Minimum Split (s)		29.0		29.0	29.0					20.0	20.0	
Total Split (s)		52.0		52.0	52.0					23.0	23.0	
Total Split (%)		69.3%		69.3%	69.3%					30.7%	30.7%	
Yellow Time (s)		4.0		4.0	4.0					3.5	3.5	
All-Red Time (s)		2.0		2.0	2.0					0.5	0.5	
Lost Time Adjust (s)		-4.0			-1.0						-4.0	
Total Lost Time (s)		2.0			5.0						0.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		50.0	75.0		47.0						23.0	75.0
Actuated g/C Ratio		0.67	1.00		0.63						0.31	1.00
v/c Ratio		0.27	0.07		0.19						0.29	0.45
Control Delay		5.8	0.1		14.0						11.9	4.2
Queue Delay		0.0	0.0		0.0						0.0	0.0
Total Delay		5.8	0.1		14.0						11.9	4.2
LOS		A	A		B						B	A
Approach Delay		4.4			14.0						7.2	
Approach LOS		A			B						A	
Queue Length 50th (ft)		55	0		64						27	106
Queue Length 95th (ft)		89	0		122						38	185
Internal Link Dist (ft)		10			376			795			213	
Turn Bay Length (ft)												
Base Capacity (vph)		1242	1583		1014						1557	1583
Starvation Cap Reductn		0	0		0						0	0
Spillback Cap Reductn		0	0		0						0	0
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.27	0.07		0.19						0.29	0.45

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 46 (61%), Referenced to phase 6:SBTL, Start of Yellow  
 Natural Cycle: 50

# Lanes, Volumes, Timings

## 12: Downtown loop/Great Jones Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.3

Intersection LOS: A

Intersection Capacity Utilization 35.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 12: Downtown loop/Great Jones Street























Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					  							
Volume (vph)	0	0	0	54	815	206	0	337	208	19	239	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6203	0	0	1863	1583	0	1855	0
Flt Permitted					0.997						0.964	
Satd. Flow (perm)	0	0	0	0	6203	0	0	1863	1583	0	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					95				52			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		293			374			800			493	
Travel Time (s)		6.7			8.5			18.2			11.2	
Lane Group Flow (vph)	0	0	0	0	1195	0	0	374	231	0	287	0
Turn Type				Perm	NA			NA	custom	Perm	NA	
Protected Phases					2						8	
Permitted Phases				2				4	4	8		
Minimum Split (s)				20.0	20.0			30.0	30.0	30.0	30.0	
Total Split (s)				30.0	30.0			45.0	45.0	45.0	45.0	
Total Split (%)				40.0%	40.0%			60.0%	60.0%	60.0%	60.0%	
Yellow Time (s)				3.5	3.5			3.8	3.8	3.8	3.8	
All-Red Time (s)				0.5	0.5			2.4	2.4	2.4	2.4	
Lost Time Adjust (s)					-4.0			-4.0	-4.0		-4.0	
Total Lost Time (s)					0.0			2.2	2.2		2.2	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					30.0			42.8	42.8		42.8	
Actuated g/C Ratio					0.40			0.57	0.57		0.57	
v/c Ratio					0.47			0.35	0.25		0.28	
Control Delay					15.9			9.8	7.0		9.2	
Queue Delay					0.0			0.0	0.0		0.0	
Total Delay					15.9			9.8	7.0		9.2	
LOS					B			A	A		A	
Approach Delay					15.9			8.7			9.2	
Approach LOS					B			A			A	
Queue Length 50th (ft)					105			85	37		55	
Queue Length 95th (ft)					134			137	71		88	
Internal Link Dist (ft)		213			294			720			413	
Turn Bay Length (ft)												
Base Capacity (vph)					2538			1063	925		1024	
Starvation Cap Reductn					0			0	0		0	
Spillback Cap Reductn					0			0	0		0	
Storage Cap Reductn					0			0	0		0	
Reduced v/c Ratio					0.47			0.35	0.25		0.28	
<b>Intersection Summary</b>												
Area Type:	Other											
Cycle Length:	75											
Actuated Cycle Length:	75											
Offset:	48 (64%), Referenced to phase 2:SBTL, Start of Yellow											
Natural Cycle:	50											

Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 12.9

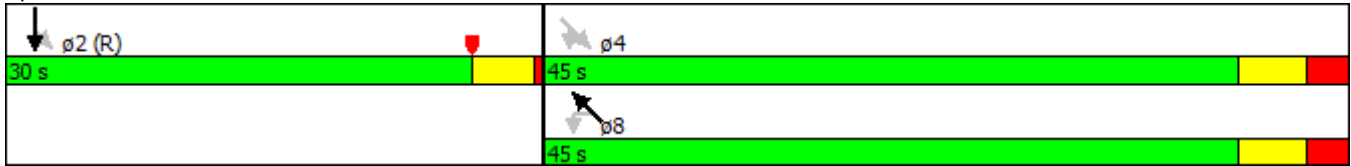
Intersection LOS: B

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	770	57	124	92	0	0	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6344	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6344	0	1770	1863	0	0	0	1611
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					26							140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			683			465			317	
Travel Time (s)		2.9			15.5			10.6			7.2	
Lane Group Flow (vph)	0	0	0	0	919	0	138	102	0	0	0	339
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					34.0		12.0	12.0				29.0
Total Split (%)					45.3%		16.0%	16.0%				38.7%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					32.7		12.0	12.0				29.0
Actuated g/C Ratio					0.44		0.16	0.16				0.39
v/c Ratio					0.33		0.49	0.34				0.48
Control Delay					9.7		36.6	33.1				12.4
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					9.7		36.6	33.1				12.4
LOS					A		D	C				B
Approach Delay					9.7			35.1				
Approach LOS					A			D				
Queue Length 50th (ft)					46		62	43				63
Queue Length 95th (ft)					56		m111	m80				134
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2780		283	298				708
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.33		0.49	0.34				0.48

Intersection Summary

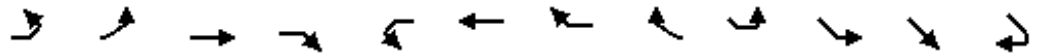
Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 58 (77%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55



Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	SEL2	SEL	SET	SER
Lane Configurations			↕			↕					↕	
Volume (vph)	12	92	118	93	100	151	105	14	29	60	181	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	1726	0	0	1724	0	0	0	0	1798	0
Flt Permitted			0.720			0.820					0.776	
Satd. Flow (perm)	0	0	1263	0	0	1432	0	0	0	0	1418	0
Right Turn on Red				No				No				No
Satd. Flow (RTOR)												
Link Speed (mph)			30			30					30	
Link Distance (ft)			456			451					493	
Travel Time (s)			10.4			10.3					11.2	
Lane Group Flow (vph)	0	0	349	0	0	412	0	0	0	0	301	0
Turn Type	Perm	Perm	NA		Perm	NA			Perm	Perm	NA	
Protected Phases			4			8					6	
Permitted Phases	4	4			8				6	6		
Minimum Split (s)	22.0	22.0	22.0		20.0	20.0			22.0	22.0	22.0	
Total Split (s)	41.0	41.0	41.0		41.0	41.0			34.0	34.0	34.0	
Total Split (%)	54.7%	54.7%	54.7%		54.7%	54.7%			45.3%	45.3%	45.3%	
Yellow Time (s)	4.5	4.5	4.5		3.5	3.5			4.5	4.5	4.5	
All-Red Time (s)	2.5	2.5	2.5		0.5	0.5			2.5	2.5	2.5	
Lost Time Adjust (s)			0.0			0.0					-1.0	
Total Lost Time (s)			7.0			4.0					6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)			34.0			37.0					28.0	
Actuated g/C Ratio			0.45			0.49					0.37	
v/c Ratio			0.61			0.58					0.57	
Control Delay			20.8			17.7					18.4	
Queue Delay			0.0			0.0					0.0	
Total Delay			20.8			17.7					18.4	
LOS			C			B					B	
Approach Delay			20.8			17.7					18.4	
Approach LOS			C			B					B	
Queue Length 50th (ft)			134			129					72	
Queue Length 95th (ft)			234			216					112	
Internal Link Dist (ft)			376			371					413	
Turn Bay Length (ft)												
Base Capacity (vph)			572			706					529	
Starvation Cap Reductn			0			0					0	
Spillback Cap Reductn			0			0					0	
Storage Cap Reductn			0			0					0	
Reduced v/c Ratio			0.61			0.58					0.57	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow  
 Natural Cycle: 55

Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	NWL	NWT	NWR	NWR2
Lane Configurations		↕		
Volume (vph)	22	159	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900
Satd. Flow (prot)	0	1776	0	0
Flt Permitted		0.956		
Satd. Flow (perm)	0	1706	0	0
Right Turn on Red				No
Satd. Flow (RTOR)				
Link Speed (mph)		30		
Link Distance (ft)		567		
Travel Time (s)		12.9		
Lane Group Flow (vph)	0	242	0	0
Turn Type	Perm	NA		
Protected Phases		2		
Permitted Phases	2			
Minimum Split (s)	20.0	20.0		
Total Split (s)	34.0	34.0		
Total Split (%)	45.3%	45.3%		
Yellow Time (s)	3.5	3.5		
All-Red Time (s)	0.5	0.5		
Lost Time Adjust (s)		-1.0		
Total Lost Time (s)		3.0		
Lead/Lag				
Lead-Lag Optimize?				
Act Effct Green (s)		31.0		
Actuated g/C Ratio		0.41		
v/c Ratio		0.34		
Control Delay		16.8		
Queue Delay		0.0		
Total Delay		16.8		
LOS		B		
Approach Delay		16.8		
Approach LOS		B		
Queue Length 50th (ft)		74		
Queue Length 95th (ft)		128		
Internal Link Dist (ft)		487		
Turn Bay Length (ft)				
Base Capacity (vph)		705		
Starvation Cap Reductn		0		
Spillback Cap Reductn		0		
Storage Cap Reductn		0		
Reduced v/c Ratio		0.34		
<b>Intersection Summary</b>				

Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 18.5

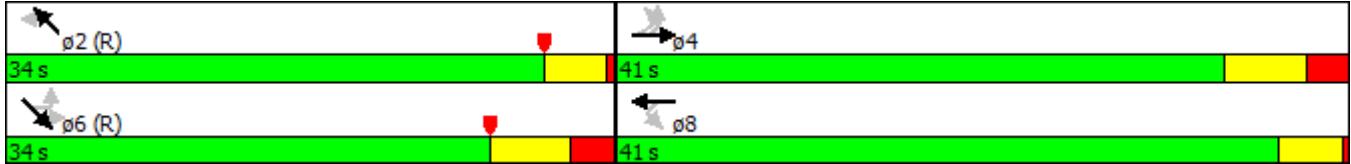
Intersection LOS: B

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street



Lanes, Volumes, Timings  
 16: Foster Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→		↖	↑			↗	
Volume (vph)	0	0	0	29	585	257	33	341	0	0	252	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6114	0	1770	1863	0	0	1757	0
Flt Permitted					0.998		0.332					
Satd. Flow (perm)	0	0	0	0	6114	0	618	1863	0	0	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					184						74	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			513			938			295	
Travel Time (s)		15.5			11.7			21.3			6.7	
Lane Group Flow (vph)	0	0	0	0	968	0	37	379	0	0	487	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				24.0	24.0		24.0	24.0			24.0	
Total Split (s)				35.0	35.0		40.0	40.0			40.0	
Total Split (%)				46.7%	46.7%		53.3%	53.3%			53.3%	
Yellow Time (s)				3.6	3.6		3.6	3.6			3.6	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)					1.1		1.1	1.1			1.1	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					33.9		38.9	38.9			38.9	
Actuated g/C Ratio					0.45		0.52	0.52			0.52	
v/c Ratio					0.34		0.12	0.39			0.51	
Control Delay					3.8		10.5	12.4			12.2	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					3.8		10.5	12.4			12.2	
LOS					A		B	B			B	
Approach Delay					3.8			12.3			12.2	
Approach LOS					A			B			B	
Queue Length 50th (ft)					0		8	100			115	
Queue Length 95th (ft)					13		24	160			194	
Internal Link Dist (ft)		603			433			858			215	
Turn Bay Length (ft)												
Base Capacity (vph)					2864		320	966			946	
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.34		0.12	0.39			0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 46 (61%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50



Lanes, Volumes, Timings  
16: Foster Street & Great Jones

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 7.9

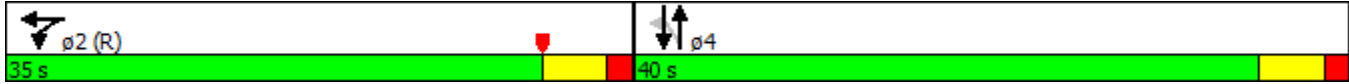
Intersection LOS: A

Intersection Capacity Utilization 47.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 16: Foster Street & Great Jones



Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	46	253	10	12	190	122	14	150	7	72	82	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Satd. Flow (prot)	0	1807	0	0	1730	0	0	1791	0	0	1732	0
Flt Permitted		0.819			0.983			0.972			0.826	
Satd. Flow (perm)	0	1490	0	0	1704	0	0	1747	0	0	1458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			43			3			16	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		276			398			280			938	
Travel Time (s)		6.3			9.0			7.6			25.6	
Lane Group Flow (vph)	0	343	0	0	360	0	0	191	0	0	208	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		24.0	24.0	
Total Split (s)	44.0	44.0		44.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%		48.9%	48.9%		51.1%	51.1%		51.1%	51.1%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		26.4			26.4			53.6			53.6	
Actuated g/C Ratio		0.29			0.29			0.60			0.60	
v/c Ratio		0.78			0.68			0.18			0.24	
Control Delay		41.2			22.4			6.6			10.1	
Queue Delay		0.1			0.0			0.3			0.0	
Total Delay		41.3			22.4			6.8			10.1	
LOS		D			C			A			B	
Approach Delay		41.3			22.4			6.8			10.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		177			67			26			47	
Queue Length 95th (ft)		241			70			47			106	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		646			762			1041			874	
Starvation Cap Reductn		0			14			434			0	
Spillback Cap Reductn		28			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.48			0.31			0.24	

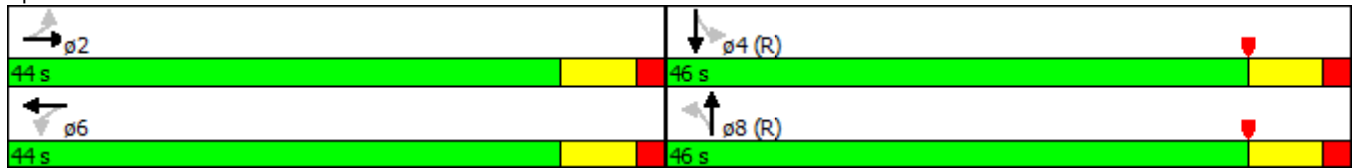
Intersection Summary

Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

3/12/2015

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	23 (26%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	23.3
Intersection LOS:	C
Intersection Capacity Utilization:	65.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: Corcoran Street & E. Mian Street'



Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕	↗		↕	
Volume (vph)	40	348	186	0	0	0	0	131	88	42	62	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		250	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3077	1384	0	0	0	0	1628	1384	0	1595	0
Flt Permitted		0.995									0.858	
Satd. Flow (perm)	0	3077	1384	0	0	0	0	1628	1384	0	1397	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)			207						98			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			198			280	
Travel Time (s)		9.5			10.2			5.4			7.6	
Lane Group Flow (vph)	0	431	207	0	0	0	0	146	98	0	116	0
Turn Type	Split	NA	Perm					NA	Perm	Perm	NA	
Protected Phases	2	2						8				4
Permitted Phases			2						8	4		
Minimum Split (s)	33.0	33.0	33.0					28.0	28.0	14.0	14.0	
Total Split (s)	44.0	44.0	44.0					46.0	46.0	46.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					51.1%	51.1%	51.1%	51.1%	
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)		-4.0	-4.0					-4.0	-4.0		-4.0	
Total Lost Time (s)		3.0	3.0					3.0	3.0		3.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		41.0	41.0					43.0	43.0		43.0	
Actuated g/C Ratio		0.46	0.46					0.48	0.48		0.48	
v/c Ratio		0.31	0.28					0.19	0.14		0.17	
Control Delay		16.3	3.3					6.0	0.4		9.3	
Queue Delay		0.0	0.0					0.7	0.5		0.0	
Total Delay		16.3	3.3					6.6	1.0		9.3	
LOS		B	A					A	A		A	
Approach Delay		12.1						4.4			9.3	
Approach LOS		B						A			A	
Queue Length 50th (ft)		78	0					16	0		24	
Queue Length 95th (ft)		112	37					24	0		38	
Internal Link Dist (ft)		268			293			118			200	
Turn Bay Length (ft)			250									
Base Capacity (vph)		1401	743					777	712		667	
Starvation Cap Reductn		0	0					387	377		0	
Spillback Cap Reductn		0	40					0	0		11	
Storage Cap Reductn		0	0					0	0		0	
Reduced v/c Ratio		0.31	0.29					0.37	0.29		0.18	

Intersection Summary

Area Type: CBD



Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕		↕	↕	
Volume (vph)	15	108	107	0	0	0	0	204	67	29	219	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	90		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			0		
Satd. Flow (prot)	0	1521	0	0	0	0	0	2978	0	1546	1628	0
Flt Permitted		0.997								0.568		
Satd. Flow (perm)	0	1521	0	0	0	0	0	2978	0	925	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61						65				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1489			478			183			198	
Travel Time (s)		33.8			10.9			4.2			4.5	
Lane Group Flow (vph)	0	256	0	0	0	0	0	301	0	32	243	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	33.0	33.0						28.0		14.0	14.0	
Total Split (s)	44.0	44.0						46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%						51.1%		51.1%	51.1%	
Yellow Time (s)	5.0	5.0						5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0						-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		39.0						41.0		41.0	41.0	
Actuated g/C Ratio		0.43						0.46		0.46	0.46	
v/c Ratio		0.37						0.22		0.08	0.33	
Control Delay		14.7						11.9		14.4	16.0	
Queue Delay		0.0						0.0		0.0	9.9	
Total Delay		14.7						11.9		14.4	25.9	
LOS		B						B		B	C	
Approach Delay		14.7						11.9			24.6	
Approach LOS		B						B			C	
Queue Length 50th (ft)		70						40		8	64	
Queue Length 95th (ft)		129						66		27	142	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)												
Base Capacity (vph)		693						1392		421	741	
Starvation Cap Reductn		0						0		0	459	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.37						0.22		0.08	0.86	

Intersection Summary

Area Type: CBD

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)

3/12/2015

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17 (19%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 16.9

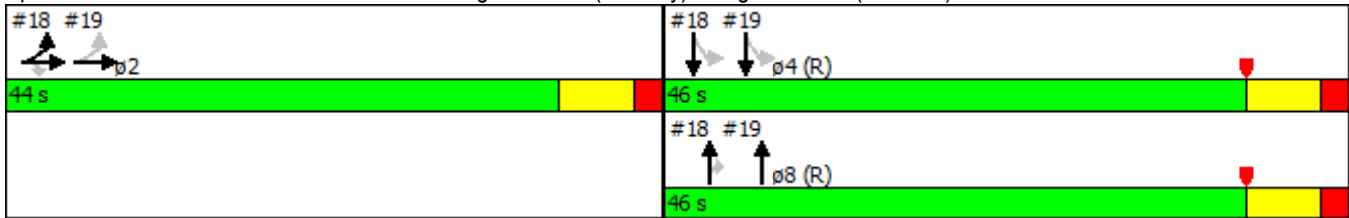
Intersection LOS: B

Intersection Capacity Utilization 41.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)



Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↖	↖	↖	↖	↖		↗	
Volume (vph)	22	0	699	147	155	76	68	112	0	0	219	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1486	1475	1736	1827	1553	1736	1827	0	0	1800	0
Flt Permitted		0.977		0.405			0.537					
Satd. Flow (perm)	0	1457	1475	740	1827	1553	981	1827	0	0	1800	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30				30
Link Distance (ft)		398			532			459				1374
Travel Time (s)		9.0			12.1			10.4				31.2
Lane Group Flow (vph)	0	397	404	163	172	84	76	124	0	0	273	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	24.0	24.0			36.0	
Total Split (%)	52.0%	52.0%	52.0%	52.0%	52.0%	52.0%	32.0%	32.0%			48.0%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		34.0	34.0	34.0	34.0	34.0	31.0	31.0			31.0	
Actuated g/C Ratio		0.45	0.45	0.45	0.45	0.45	0.41	0.41			0.41	
v/c Ratio		0.60	0.60	0.49	0.21	0.12	0.19	0.16			0.37	
Control Delay		20.2	20.2	20.5	13.2	12.5	15.6	14.6			17.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		20.2	20.2	20.5	13.2	12.5	15.6	14.6			17.0	
LOS		C	C	C	B	B	B	B			B	
Approach Delay		20.2			15.9			15.0			17.0	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		140	142	51	46	22	22	35			85	
Queue Length 95th (ft)		234	237	108	84	46	50	68			142	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		660	668	335	828	704	405	755			744	
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		0.60	0.60	0.49	0.21	0.12	0.19	0.16			0.37	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 71 (95%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50



# Lanes, Volumes, Timings

## 20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 18.0

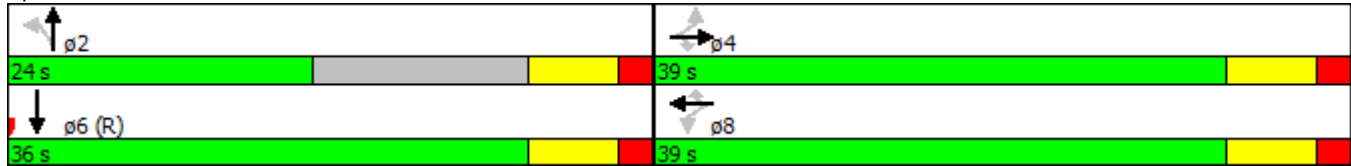
Intersection LOS: B

Intersection Capacity Utilization 62.7%

ICU Level of Service B

Analysis Period (min) 15

### Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive



Lanes, Volumes, Timings  
 21: Rigsbee Avenue & Morgan Loop

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→			↑			↑	
Volume (vph)	0	0	0	93	828	109	77	76	0	0	92	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6280	0	0	1816	0	0	1801	0
Flt Permitted					0.996			0.823				
Satd. Flow (perm)	0	0	0	0	6280	0	0	1533	0	0	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					54							30
Link Speed (mph)		30			30			30				30
Link Distance (ft)		513			146			209				286
Travel Time (s)		11.7			3.3			4.8				6.5
Lane Group Flow (vph)	0	0	0	0	1144	0	0	170	0	0	135	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				25.0	25.0		25.0	25.0			25.0	
Total Split (s)				38.0	38.0		37.0	37.0			37.0	
Total Split (%)				50.7%	50.7%		49.3%	49.3%			49.3%	
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0			-4.0			-4.0	
Total Lost Time (s)					1.0			1.0			1.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					37.0			36.0			36.0	
Actuated g/C Ratio					0.49			0.48			0.48	
v/c Ratio					0.37			0.23			0.15	
Control Delay					11.5			12.5			9.0	
Queue Delay					0.0			0.0			0.0	
Total Delay					11.5			12.5			9.0	
LOS					B			B			A	
Approach Delay					11.5			12.5			9.0	
Approach LOS					B			B			A	
Queue Length 50th (ft)					85			44			26	
Queue Length 95th (ft)					108			81			54	
Internal Link Dist (ft)		433			66			129			206	
Turn Bay Length (ft)												
Base Capacity (vph)					3125			735			880	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.37			0.23			0.15	
<b>Intersection Summary</b>												
Area Type:	Other											
Cycle Length:	75											
Actuated Cycle Length:	75											
Offset:	40 (53%), Referenced to phase 2:WBTL, Start of Yellow											
Natural Cycle:	50											

Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 11.4

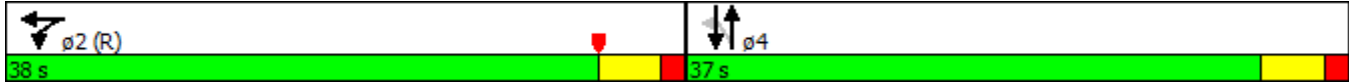
Intersection LOS: B

Intersection Capacity Utilization 41.9%

ICU Level of Service A

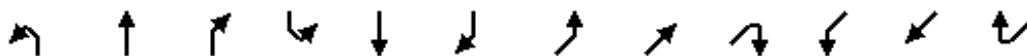
Analysis Period (min) 15

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop



Lanes, Volumes, Timings  
 22: Magnum Street/Morgan Loop

3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑↑									↑↑	↑
Volume (vph)	220	939	0	0	0	0	0	0	0	0	952	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	6350	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.991										
Satd. Flow (perm)	0	6350	0	0	0	0	0	0	0	0	3539	1583
Right Turn on Red	Yes		No			Yes			Yes			Yes
Satd. Flow (RTOR)		81										19
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			360			794			631	
Travel Time (s)		14.6			8.2			18.0			14.3	
Lane Group Flow (vph)	0	1287	0	0	0	0	0	0	0	0	1058	159
Turn Type	custom	NA									NA	custom
Protected Phases		4										
Permitted Phases	2										2	2
Detector Phase	2	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	52.0	28.0									52.0	52.0
Total Split (%)	65.0%	35.0%									65.0%	65.0%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	None									C-Max	C-Max
Act Effct Green (s)		27.1									52.9	52.9
Actuated g/C Ratio		0.34									0.66	0.66
v/c Ratio		0.58									0.45	0.15
Control Delay		21.4									7.5	5.1
Queue Delay		0.0									0.0	0.0
Total Delay		21.4									7.5	5.1
LOS		C									A	A
Approach Delay		21.4									7.2	
Approach LOS		C									A	
Queue Length 50th (ft)		139									121	24
Queue Length 95th (ft)		173									160	45
Internal Link Dist (ft)		562			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2275									2338	1052
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.57									0.45	0.15

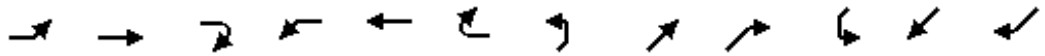
Intersection Summary

Area Type: Other



Lanes, Volumes, Timings  
23: Mangum Street

3/12/2015

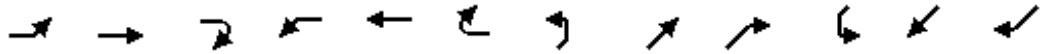


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↗		↖	↗						↕	↗
Volume (vph)	0	303	29	298	309	0	0	0	0	84	974	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Storage Length (ft)	0		0	120		0	0		0	0		250
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	1805	0	1736	1827	0	0	0	0	0	3423	1537
Flt Permitted				0.290							0.996	
Satd. Flow (perm)	0	1805	0	530	1827	0	0	0	0	0	3423	1537
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)		5										133
Link Speed (mph)		30			30			25			35	
Link Distance (ft)		398			274			309			401	
Travel Time (s)		9.0			6.2			8.4			7.8	
Lane Group Flow (vph)	0	369	0	331	343	0	0	0	0	0	1175	17
Turn Type		NA		pm+pt	NA					Split	NA	Perm
Protected Phases		4		3	8					2	2	
Permitted Phases				8								2
Detector Phase		4		3	8					2	2	2
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					10.0	10.0	10.0
Minimum Split (s)		22.0		14.0	21.0					23.0	23.0	23.0
Total Split (s)		27.0		21.0	48.0					42.0	42.0	42.0
Total Split (%)		30.0%		23.3%	53.3%					46.7%	46.7%	46.7%
Yellow Time (s)		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
Lost Time Adjust (s)		-2.0		-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0						5.0	5.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Max		Max	Max					C-Max	C-Max	C-Max
Act Effct Green (s)		22.0		43.0	43.0						37.0	37.0
Actuated g/C Ratio		0.24		0.48	0.48						0.41	0.41
v/c Ratio		0.83		0.71	0.39						0.84	0.02
Control Delay		36.6		34.9	16.8						30.4	0.1
Queue Delay		0.0		0.0	0.0						1.5	0.0
Total Delay		36.6		34.9	16.8						31.8	0.1
LOS		D		C	B						C	A
Approach Delay		36.6			25.7						31.4	
Approach LOS		D			C						C	
Queue Length 50th (ft)		75		116	120						307	0
Queue Length 95th (ft)		#327		#183	187						396	0
Internal Link Dist (ft)		318			194			229			321	
Turn Bay Length (ft)				120								250
Base Capacity (vph)		445		467	872						1407	710
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		0		0	0						97	0
Storage Cap Reductn		0		0	0						0	0

Lanes, Volumes, Timings

23: Mangum Street

3/12/2015

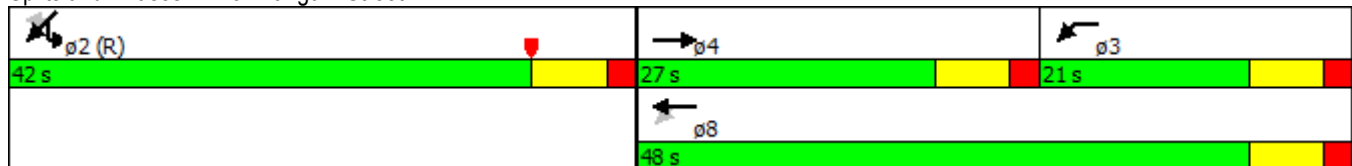


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Reduced v/c Ratio		0.83		0.71	0.39						0.90	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 28 (31%), Referenced to phase 2:SWTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 30.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 76.1%  
 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.

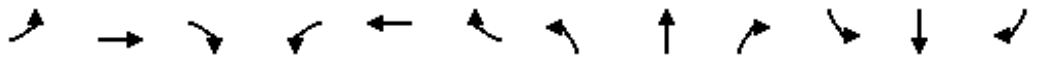
Splits and Phases: 23: Mangum Street



Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑								↑↑↑	
Volume (vph)	0	331	147	0	0	0	0	0	0	73	1228	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	4938	1537	0	0	0	0	0	0	0	4923	0
Flt Permitted											0.997	
Satd. Flow (perm)	0	4938	1537	0	0	0	0	0	0	0	4923	0
Right Turn on Red			No			No			No	No		No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		373			186			197			309	
Travel Time (s)		7.3			3.6			3.8			6.0	
Lane Group Flow (vph)	0	368	163	0	0	0	0	0	0	0	1445	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		1 4									2	
Permitted Phases			1 4							2		
Detector Phase		1 4	1 4							2	2	
Switch Phase												
Minimum Initial (s)										19.0	19.0	
Minimum Split (s)										27.0	27.0	
Total Split (s)										36.0	36.0	
Total Split (%)										40.0%	40.0%	
Yellow Time (s)										5.0	5.0	
All-Red Time (s)										2.0	2.0	
Lost Time Adjust (s)												-2.0
Total Lost Time (s)												5.0
Lead/Lag										Lead	Lead	
Lead-Lag Optimize?										Yes	Yes	
Recall Mode										C-Max	C-Max	
Act Effct Green (s)		39.3	39.3									31.7
Actuated g/C Ratio		0.44	0.44									0.35
v/c Ratio		0.17	0.24									0.83
Control Delay		11.7	13.6									18.3
Queue Delay		0.0	0.0									4.8
Total Delay		11.7	13.6									23.1
LOS		B	B									C
Approach Delay		12.3										23.1
Approach LOS		B										C
Queue Length 50th (ft)		54	68									108
Queue Length 95th (ft)		71	123									245
Internal Link Dist (ft)		293			106			117				229
Turn Bay Length (ft)												
Base Capacity (vph)		2135	664									1731
Starvation Cap Reductn		0	0									225
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0



Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

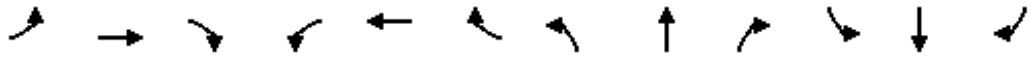
3/12/2015

Lane Group	ø1	ø3	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	2.0	7.0
Minimum Split (s)	14.0	9.0	23.0
Total Split (s)	18.0	9.0	27.0
Total Split (%)	20%	10%	30%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	
Lead-Lag Optimize?		Yes	
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			

Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

3/12/2015

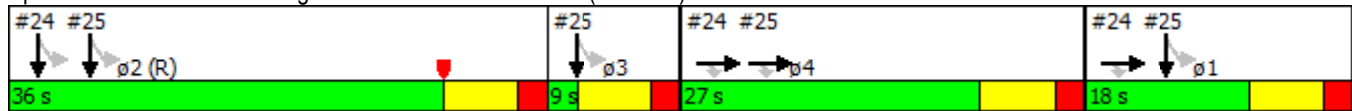


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio		0.17	0.25								0.96	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	25 (28%), Referenced to phase 2:SBTL, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	20.2
Intersection LOS:	C
Intersection Capacity Utilization	42.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)



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Lane Group	ø1	ø3	ø4
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗								↑↑↑↑	
Volume (vph)	0	103	101	0	0	0	0	0	0	47	1328	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	120		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Right Turn on Red			Yes			No			No	No		Yes
Satd. Flow (RTOR)			218									
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		478			835			234			197	
Travel Time (s)		10.9			19.0			4.6			3.8	
Lane Group Flow (vph)	0	114	112	0	0	0	0	0	0	0	1528	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		4									1 2 3	
Permitted Phases			4							1 2 3		
Detector Phase		4	4							1 2 3	1 2 3	
Switch Phase												
Minimum Initial (s)		7.0	7.0									
Minimum Split (s)		23.0	23.0									
Total Split (s)		27.0	27.0									
Total Split (%)		30.0%	30.0%									
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?												
Recall Mode		None	None									
Act Effct Green (s)		15.8	15.8								64.2	
Actuated g/C Ratio		0.18	0.18								0.71	
v/c Ratio		0.40	0.27								0.38	
Control Delay		34.3	3.9								1.4	
Queue Delay		0.0	0.0								0.3	
Total Delay		34.3	3.9								1.7	
LOS		C	A								A	
Approach Delay		19.2									1.7	
Approach LOS		B									A	
Queue Length 50th (ft)		58	0								22	
Queue Length 95th (ft)		99	9								29	
Internal Link Dist (ft)		398			755			154			117	
Turn Bay Length (ft)												
Base Capacity (vph)		397	503								3986	
Starvation Cap Reductn		0	0								1551	
Spillback Cap Reductn		0	0								0	
Storage Cap Reductn		0	0								0	

Lanes, Volumes, Timings  
 25: Mangum Street & Pettigrew Street (No Train)

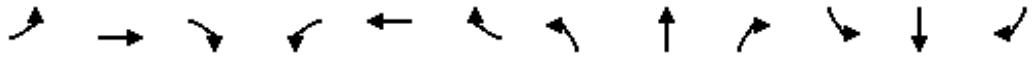
3/12/2015

Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	19.0	2.0
Minimum Split (s)	14.0	27.0	9.0
Total Split (s)	18.0	36.0	9.0
Total Split (%)	20%	40%	10%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	C-Max	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			

Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (No Train)

3/12/2015

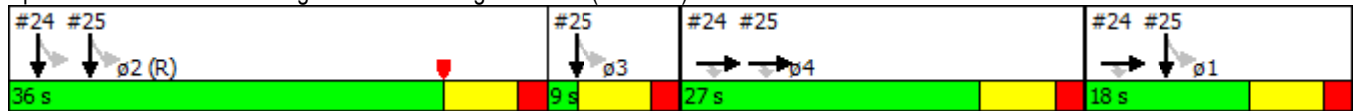


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio		0.29	0.22								0.63	

Intersection Summary

Area Type:	CBD											
Cycle Length:	90											
Actuated Cycle Length:	90											
Offset:	25 (28%), Referenced to phase 2:SBTL, Start of Yellow											
Natural Cycle:	75											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.83											
Intersection Signal Delay:	4.0						Intersection LOS: A					
Intersection Capacity Utilization	37.5%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 25: Mangum Street & Pettigrew Street (No Train)



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Lane Group	ø1	ø2	ø3
Reduced v/c Ratio			
Intersection Summary			

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Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	117	602	0	0	0	0	0	1225	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	5045	0	0	0	0	0	6408	1583
Flt Permitted					0.992							
Satd. Flow (perm)	0	0	0	0	5045	0	0	0	0	0	6408	1583
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)					45							125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		377			596			318			1158	
Travel Time (s)		8.6			13.5			7.2			26.3	
Lane Group Flow (vph)	0	0	0	0	807	0	0	0	0	0	1392	306
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				33.0	33.0						47.0	47.0
Total Split (%)				41.3%	41.3%						58.8%	58.8%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None						C-Max	C-Max
Act Effct Green (s)					22.8						57.2	54.2
Actuated g/C Ratio					0.28						0.72	0.68
v/c Ratio					0.55						0.30	0.28
Control Delay					23.8						4.7	4.1
Queue Delay					0.0						0.0	0.0
Total Delay					23.8						4.7	4.1
LOS					C						A	A
Approach Delay					23.8						4.6	
Approach LOS					C						A	
Queue Length 50th (ft)					116						61	29
Queue Length 95th (ft)					138						92	67
Internal Link Dist (ft)		297			516			238			1078	
Turn Bay Length (ft)												
Base Capacity (vph)					2107						4580	1112
Starvation Cap Reductn					0						0	0
Spillback Cap Reductn					0						0	0
Storage Cap Reductn					0						0	0
Reduced v/c Ratio					0.38						0.30	0.28

Intersection Summary

Area Type: Other



# Lanes, Volumes, Timings

## 26: Jackie Robinson Drive & Mangum Street

3/12/2015

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 2:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.8

Intersection LOS: B

Intersection Capacity Utilization 38.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Jackie Robinson Drive & Mangum Street



Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	355	217	5	951	343	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4882	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4882	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						241		296				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			1048			307			581	
Travel Time (s)		7.2			23.8			7.0			13.2	
Lane Group Flow (vph)	0	0	0	0	394	241	0	1444	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					20.0		50.0	50.0				
Total Split (%)					28.6%		71.4%	71.4%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					19.5	70.0		48.5				
Actuated g/C Ratio					0.28	1.00		0.69				
v/c Ratio					0.76	0.15		0.42				
Control Delay					34.2	0.2		2.8				
Queue Delay					0.0	0.0		0.2				
Total Delay					34.2	0.2		3.0				
LOS					C	A		A				
Approach Delay					21.3			3.0				
Approach LOS					C			A				
Queue Length 50th (ft)					153	0		41				
Queue Length 95th (ft)					#274	0		82				
Internal Link Dist (ft)		236			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					532	1583		3473				
Starvation Cap Reductn					0	0		1047				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.74	0.15		0.60				

Intersection Summary

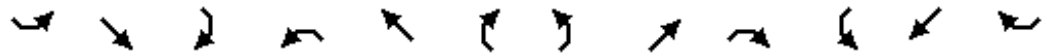
Area Type: Other



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	272	386	0	0	0	0	500	1027	103	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)	*12							35				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			1032			555			307	
Travel Time (s)		9.0			23.5			12.6			7.0	
Lane Group Flow (vph)	302	429	0	0	0	0	556	1255	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	33.0	33.0					37.0	37.0				
Total Split (%)	47.1%	47.1%					52.9%	52.9%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	21.1	21.1					46.9	45.9				
Actuated g/C Ratio	0.30	0.30					0.67	0.66				
v/c Ratio	0.56	0.40					0.24	0.38				
Control Delay	22.8	19.7					1.5	1.6				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	22.8	19.7					1.5	1.6				
LOS	C	B					A	A				
Approach Delay		21.0						1.6				
Approach LOS		C						A				
Queue Length 50th (ft)	104	76					9	16				
Queue Length 95th (ft)	147	95					m16	m24				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	790	1567					2301	3301				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.38	0.27					0.24	0.38				

# Lanes, Volumes, Timings

## 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015

### Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 20 (29%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 43.9%

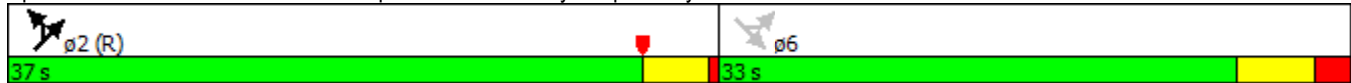
ICU Level of Service A

Analysis Period (min) 15

\* User Entered Value

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

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty



Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

3/12/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	138	353	426	147	180	1290	33	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1770	1863	1863	1583	0	3507	0	3614
Flt Permitted	0.341					0.994		
Satd. Flow (perm)	635	1863	1863	1583	0	3507	0	3614
Right Turn on Red				Yes			Yes	
Satd. Flow (RTOR)				163		4		
Link Speed (mph)		30	30			30		30
Link Distance (ft)		610	1011			314		846
Travel Time (s)		13.9	23.0			7.1		19.2
Lane Group Flow (vph)	153	392	473	163	0	1670	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	26.0	26.0	26.0	26.0	33.0	33.0		11.0
Total Split (%)	37.1%	37.1%	37.1%	37.1%	47.1%	47.1%		15.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	32.0	32.0	34.0	34.0		33.0		
Actuated g/C Ratio	0.46	0.46	0.49	0.49		0.47		
v/c Ratio	0.53	0.46	0.52	0.19		1.01		
Control Delay	21.8	15.3	15.0	2.5		44.8		
Queue Delay	0.0	0.0	0.0	0.0		0.9		
Total Delay	21.8	15.3	15.0	2.5		45.6		
LOS	C	B	B	A		D		
Approach Delay		17.1	11.8			45.6		
Approach LOS		B	B			D		
Queue Length 50th (ft)	45	110	132	0		~367		
Queue Length 95th (ft)	104	179	212	27		#538		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	290	851	904	852		1655		
Starvation Cap Reductn	0	0	0	0		5		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.53	0.46	0.52	0.19		1.01		

Intersection Summary













Area Type: Other



# Lanes, Volumes, Timings

## 30: Roxboro & Pettigrew Street (No Train)

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↗				↖	↑				
Volume (vph)	0	1577	153	0	0	0	36	114	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Satd. Flow (prot)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)			170									
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		371			177			835			1069	
Travel Time (s)		8.4			4.0			22.8			24.3	
Lane Group Flow (vph)	0	1752	170	0	0	0	40	127	0	0	0	0
Turn Type		NA	Perm				pm+pt	NA				
Protected Phases		2					7	4				
Permitted Phases			2				4					
Minimum Split (s)		17.0	17.0				8.0	14.0				
Total Split (s)		44.0	44.0				31.0	31.0				
Total Split (%)		58.7%	58.7%				41.3%	41.3%				
Yellow Time (s)		4.0	4.0				3.5	4.0				
All-Red Time (s)		2.0	2.0				0.5	2.0				
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0				
Total Lost Time (s)		2.0	2.0				0.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		42.0	42.0				31.0	29.0				
Actuated g/C Ratio		0.56	0.56				0.41	0.39				
v/c Ratio		0.88	0.18				0.06	0.18				
Control Delay		21.5	1.9				13.6	16.0				
Queue Delay		0.0	0.0				0.0	0.0				
Total Delay		21.5	1.9				13.6	16.0				
LOS		C	A				B	B				
Approach Delay		19.8						15.4				
Approach LOS		B						B				
Queue Length 50th (ft)		343	0				11	38				
Queue Length 95th (ft)		#471	24				28	73				
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)												
Base Capacity (vph)		1981	961				724	713				
Starvation Cap Reductn		0	0				0	0				
Spillback Cap Reductn		0	0				0	0				
Storage Cap Reductn		0	0				0	0				
Reduced v/c Ratio		0.88	0.18				0.06	0.18				

### Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Yellow



Lanes, Volumes, Timings

30: Roxboro & Pettigrew Street (No Train)

3/12/2015

Natural Cycle: 45

Control Type: Pretimed

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 19.4

Intersection LOS: B

Intersection Capacity Utilization 84.4%

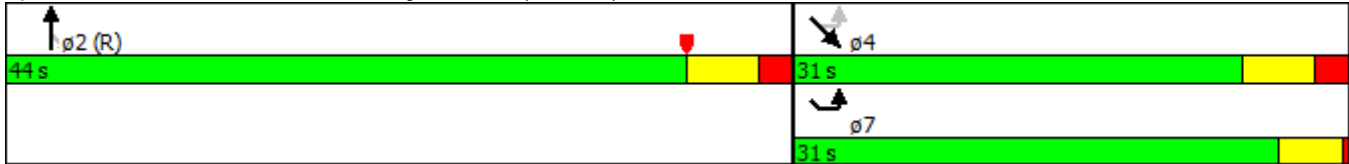
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

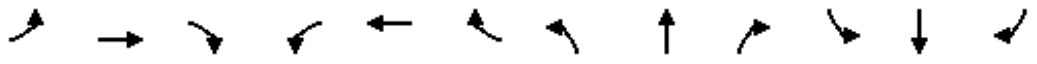
Queue shown is maximum after two cycles.

Splits and Phases: 30: Roxboro & Pettigrew Street (No Train)



Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	156	0	0	191	82	45	1523	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1770	1863	0	0	1786	0	0	5080	1583	0	0	0
Flt Permitted	0.411							0.999				
Satd. Flow (perm)	766	1863	0	0	1786	0	0	5080	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8				93			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			547			542			292	
Travel Time (s)		7.8			12.4			12.3			6.6	
Lane Group Flow (vph)	184	182	0	0	319	0	0	1829	93	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	29.0	29.0			29.0		41.0	41.0	41.0			
Total Split (%)	41.4%	41.4%			41.4%		58.6%	58.6%	58.6%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	18.5	18.5			18.5			39.5	39.5			
Actuated g/C Ratio	0.26	0.26			0.26			0.56	0.56			
v/c Ratio	0.92	0.37			0.67			0.64	0.10			
Control Delay	70.3	21.9			28.9			7.5	0.7			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	70.3	21.9			28.9			7.5	0.7			
LOS	E	C			C			A	A			
Approach Delay		46.2			28.9			7.1				
Approach LOS		D			C			A				
Queue Length 50th (ft)	73	61			114			111	0			
Queue Length 95th (ft)	#169	105			182			131	m0			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	251	612			592			2869	934			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.73	0.30			0.54			0.64	0.10			

Lanes, Volumes, Timings  
 31: Roxboro & Dillard Street

3/12/2015

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 20 (29%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 15.3 Intersection LOS: B  
 Intersection Capacity Utilization 71.8% 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: 31: Roxboro & Dillard Street



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↓	↑↑↑				
Volume (vph)	0	0	0	0	561	657	238	1032	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						47	264					
Link Speed (mph)		30			30			30				30
Link Distance (ft)		596			1010			251				542
Travel Time (s)		13.5			23.0			5.7				12.3
Lane Group Flow (vph)	0	0	0	0	623	730	264	1147	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					45.0	45.0	25.0	25.0				
Total Split (%)					64.3%	64.3%	35.7%	35.7%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					39.9	37.9	26.1	26.1				
Actuated g/C Ratio					0.57	0.54	0.37	0.37				
v/c Ratio					0.31	0.83	0.32	0.61				
Control Delay					7.9	21.7	3.8	20.3				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					7.9	21.7	3.8	20.3				
LOS					A	C	A	C				
Approach Delay					15.4			17.2				
Approach LOS					B			B				
Queue Length 50th (ft)					58	203	0	153				
Queue Length 95th (ft)					82	351	45	200				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2173	946	825	1895				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.29	0.77	0.32	0.61				

Intersection Summary

Area Type: Other

# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

3/12/2015

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 39 (56%), Referenced to phase 2:NBTL, Start of Yellow

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Jackie Robinson Drive & Roxboro



Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖			↕	
Volume (vph)	27	310	99	47	290	12	246	22	40	7	28	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1800	0	0	1840	0	1770	1682	0	0	1778	0
Flt Permitted		0.967			0.906		0.782				0.967	
Satd. Flow (perm)	0	1745	0	0	1679	0	1457	1682	0	0	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			6			44				16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1048			976			557				160
Travel Time (s)		23.8			22.2			12.7				3.6
Lane Group Flow (vph)	0	484	0	0	387	0	273	68	0	0	55	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2				2
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0		18.0	18.0			18.0	
Actuated g/C Ratio		0.63			0.63		0.30	0.30			0.30	
v/c Ratio		0.43			0.36		0.62	0.13			0.10	
Control Delay		6.4			6.3		22.8	6.8			12.5	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		6.4			6.3		22.8	6.8			12.5	
LOS		A			A		C	A			B	
Approach Delay		6.4			6.3			19.6			12.5	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		65			55		88	0			10	
Queue Length 95th (ft)		114			96		142	34			32	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1122			1065		437	535			530	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.43			0.36		0.62	0.13			0.10	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 22 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40

Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 58.2%

ICU Level of Service B




















Analysis Period (min) 15

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	175	35	9	165	0	72	260	152	46	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		50
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3451	0	0	3529	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.939		0.950			0.522		
Satd. Flow (perm)	0	3451	0	0	3323	0	1770	1863	1583	972	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39							169			68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			557			1032			167	
Travel Time (s)		11.5			12.7			23.5			3.8	
Lane Group Flow (vph)	0	233	0	0	193	0	80	289	169	51	0	68
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		26.0		26.0	26.0		34.0	34.0	34.0	34.0		34.0
Total Split (%)		43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%		56.7%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0		-4.0	-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		24.0		24.0	24.0		32.0	32.0	32.0	32.0		32.0
Actuated g/C Ratio		0.40		0.40	0.40		0.53	0.53	0.53	0.53		0.53
v/c Ratio		0.17		0.15	0.15		0.08	0.29	0.18	0.10		0.08
Control Delay		13.7		8.8	8.8		7.2	8.7	2.0	7.6		2.4
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		13.7		8.8	8.8		7.2	8.7	2.0	7.6		2.4
LOS		B		A	A		A	A	A	A		A
Approach Delay		13.7		8.8	8.8		6.4					
Approach LOS		B		A	A		A					
Queue Length 50th (ft)		21		14	14		13	52	0	8		0
Queue Length 95th (ft)		40		24	24		30	92	22	23		14
Internal Link Dist (ft)		428		477	477		952				87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1403		1329	1329		944	993	923	518		876
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		0.17		0.15	0.15		0.08	0.29	0.18	0.10		0.08

Intersection Summary

Area Type: Other  
Cycle Length: 60



# Lanes, Volumes, Timings

## 34: Dillard Street

3/12/2015

Actuated Cycle Length: 60

Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 8.2

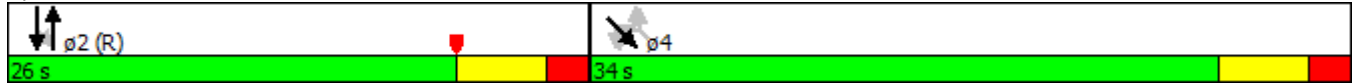
Intersection LOS: A

Intersection Capacity Utilization 38.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 34: Dillard Street



Lanes, Volumes, Timings  
 35: Dillard Street & Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	320	49	19	263	65	131	149	62	151	117	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	150		0	0		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1770	1863	1583	1770	1807	0	1770	1781	0	1770	1725	0
Flt Permitted	0.406			0.414			0.541			0.561		
Satd. Flow (perm)	756	1863	1583	771	1807	0	1008	1781	0	1045	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55		26			50			116	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1011			262			692			508	
Travel Time (s)		23.0			6.0			15.7			11.5	
Lane Group Flow (vph)	46	356	54	21	364	0	146	235	0	168	256	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	26.0	26.0	26.0	26.0	26.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.50	0.50		0.50	0.50	
v/c Ratio	0.14	0.44	0.08	0.06	0.46		0.29	0.26		0.32	0.28	
Control Delay	11.7	14.1	3.7	10.7	13.4		10.8	7.6		8.0	2.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.7	14.1	3.7	10.7	13.4		10.8	7.6		8.0	2.8	
LOS	B	B	A	B	B		B	A		A	A	
Approach Delay		12.6			13.2			8.8			4.8	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	10	86	0	4	81		28	34		18	4	
Queue Length 95th (ft)	28	147	16	15	144		61	69		66	18	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	327	807	717	334	797		504	915		522	920	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.44	0.08	0.06	0.46		0.29	0.26		0.32	0.28	

Intersection Summary

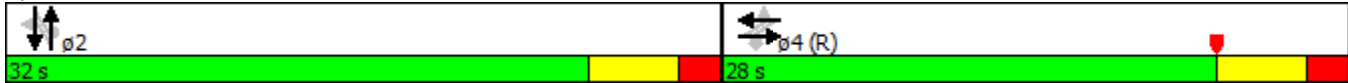
Area Type: Other  
 Cycle Length: 60

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

3/12/2015

Actuated Cycle Length: 60	
Offset: 49 (82%), Referenced to phase 4:EBWB, Start of Yellow	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

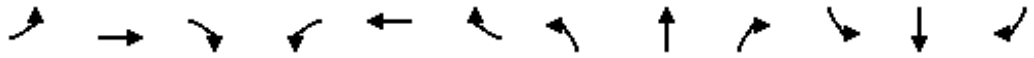
Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

3/12/2015

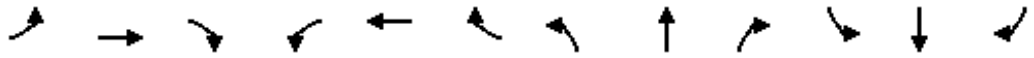


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	103	9	9	0	89	0	188	4	133	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	100		0	0		0	150		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			0			25			0		
Satd. Flow (prot)	1718	1787	0	0	1578	0	0	1803	0	1718	1809	0
Flt Permitted	0.687				0.979					0.570		
Satd. Flow (perm)	1243	1787	0	0	1553	0	0	1803	0	1031	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			99			2				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1069			779			387			231	
Travel Time (s)		29.2			21.2			10.6			6.3	
Lane Group Flow (vph)	172	124	0	0	109	0	0	213	0	148	241	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2						8		
Detector Phase	6	6		2	2			4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0			7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			23.0		23.0	23.0	
Total Split (s)	31.0	31.0		31.0	31.0			34.0		34.0	34.0	
Total Split (%)	47.7%	47.7%		47.7%	47.7%			52.3%		52.3%	52.3%	
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	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max			None		None	None	
Act Effct Green (s)	38.2	38.2			38.2			16.8		16.8	16.8	
Actuated g/C Ratio	0.59	0.59			0.59			0.26		0.26	0.26	
v/c Ratio	0.24	0.12			0.11			0.46		0.56	0.52	
Control Delay	9.0	7.4			2.9			22.1		27.9	23.6	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	9.0	7.4			2.9			22.1		27.9	23.6	
LOS	A	A			A			C		C	C	
Approach Delay		8.3			2.9			22.1			25.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	28	17			1			71		52	83	
Queue Length 95th (ft)	77	50			24			106		88	120	
Internal Link Dist (ft)		989			699			307			151	
Turn Bay Length (ft)	100											
Base Capacity (vph)	730	1053			953			805		459	807	
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	

Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

3/12/2015

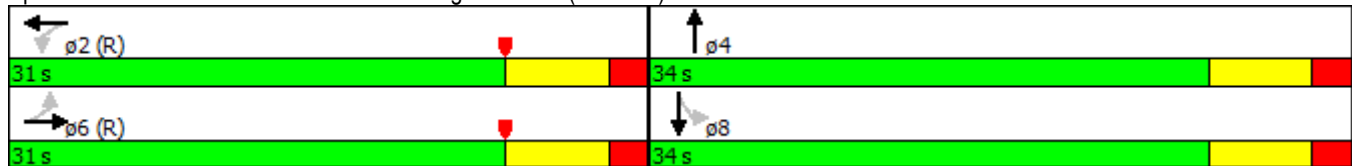


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.24	0.12			0.11			0.26		0.32	0.30	

Intersection Summary

Area Type:	Other	
Cycle Length:	65	
Actuated Cycle Length:	65	
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle:	50	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.56	
Intersection Signal Delay:	17.2	Intersection LOS: B
Intersection Capacity Utilization	45.3%	ICU Level of Service A
Analysis Period (min)	15	

Splits and Phases: 36: Dillard Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

37: Fayetteville Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	125	66	125	46	60	6	372	146	75	692	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		300	125		0	0		0	150		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			0			25		
Satd. Flow (prot)	1718	1809	1537	1718	1655	0	1718	3292	0	1718	3436	0
Flt Permitted	0.612			0.555			0.156			0.950		
Satd. Flow (perm)	1107	1809	1537	1004	1655	0	282	3292	0	1718	3436	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		48			86				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		779			1447			221			262	
Travel Time (s)		15.2			28.2			4.3			5.1	
Lane Group Flow (vph)	6	139	73	139	118	0	7	575	0	83	771	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		3	5		3		5	2.4		1	6	
Permitted Phases	3		3	3			2.4					
Detector Phase	3	3	5	3	3		5	2.4		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			5.0	10.0	
Minimum Split (s)	23.0	23.0	14.0	23.0	23.0		14.0			12.0	27.0	
Total Split (s)	26.0	26.0	35.0	26.0	26.0		35.0			17.0	36.0	
Total Split (%)	21.7%	21.7%	29.2%	21.7%	21.7%		29.2%			14.2%	30.0%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None			None	C-Max	
Act Effct Green (s)	19.9	19.9	47.3	19.9	19.9		71.5	76.5		11.3	37.1	
Actuated g/C Ratio	0.17	0.17	0.39	0.17	0.17		0.60	0.64		0.09	0.31	
v/c Ratio	0.03	0.46	0.10	0.84	0.38		0.01	0.27		0.51	0.73	
Control Delay	41.8	50.4	0.3	85.9	30.9		1.5	0.7		63.1	43.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.2		0.0	0.4	
Total Delay	41.8	50.4	0.3	85.9	30.9		1.5	0.9		63.1	44.1	
LOS	D	D	A	F	C		A	A		E	D	
Approach Delay		33.4			60.7			0.9			45.9	
Approach LOS		C			E			A			D	
Queue Length 50th (ft)	4	97	0	105	51		0	2		62	301	
Queue Length 95th (ft)	17	163	0	#217	113		m1	0		116	#403	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	193	316	736	175	329		529	2099		171	1061	
Starvation Cap Reductn	0	0	0	0	0		0	660		0	0	
Spillback Cap Reductn	0	0	2	0	0		0	0		0	60	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	

Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street (No Train)

3/12/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	54.0	23.0	14.0	35.0
Total Split (%)	45%	19%	12%	29%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				





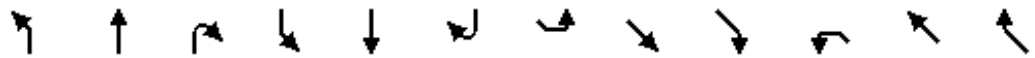
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Lane Group	ø2	ø4	ø7	ø8
Reduced v/c Ratio				
Intersection Summary				

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Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	385	519	0	5	878	0	0	0	0	155	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%				2%			2%
Satd. Flow (prot)	1718	3436	0	0	3436	0	0	0	0	0	3265	0
Flt Permitted	0.148				0.951						0.955	
Satd. Flow (perm)	268	3436	0	0	3268	0	0	0	0	0	3265	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												3
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		334			221			420			322	
Travel Time (s)		6.5			4.3			8.2			6.3	
Lane Group Flow (vph)	428	577	0	0	982	0	0	0	0	0	184	0
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6 7							8
Permitted Phases	2			6 7						8		
Detector Phase	5	2		6 7	6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	35.0	54.0								35.0	35.0	
Total Split (%)	29.2%	45.0%								29.2%	29.2%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0										-2.0
Total Lost Time (s)	5.0	5.0										5.0
Lead/Lag	Lead	Lead								Lag	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	55.9	55.9			51.1							26.5
Actuated g/C Ratio	0.47	0.47			0.43							0.22
v/c Ratio	0.94	0.36			0.71							0.25
Control Delay	56.9	19.2			12.4							37.8
Queue Delay	15.2	0.4			1.3							0.0
Total Delay	72.2	19.6			13.7							37.8
LOS	E	B			B							D
Approach Delay		42.0			13.7							37.8
Approach LOS		D			B							D
Queue Length 50th (ft)	289	132			64							59
Queue Length 95th (ft)	#481	162			78							91
Internal Link Dist (ft)		254			141			340				242
Turn Bay Length (ft)												
Base Capacity (vph)	489	1600			1390							818
Starvation Cap Reductn	58	502			215							0
Spillback Cap Reductn	0	0			0							0
Storage Cap Reductn	0	0			0							0
Reduced v/c Ratio	0.99	0.53			0.84							0.22

Intersection Summary

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

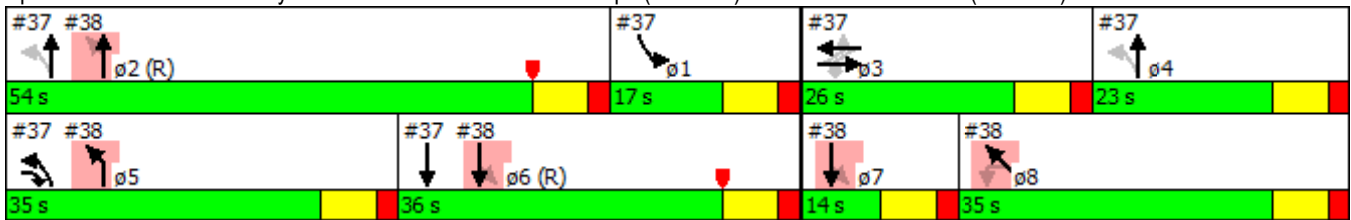
Lane Group	ø1	ø3	ø4	ø6	ø7
Lane Configurations					
Volume (vph)					
Ideal Flow (vphpl)					
Grade (%)					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (mph)					
Link Distance (ft)					
Travel Time (s)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	4	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	10.0	7.0
Minimum Split (s)	12.0	23.0	23.0	27.0	14.0
Total Split (s)	17.0	26.0	23.0	36.0	14.0
Total Split (%)	14%	22%	19%	30%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Max	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					
Queue Length 50th (ft)					
Queue Length 95th (ft)					
Internal Link Dist (ft)					
Turn Bay Length (ft)					
Base Capacity (vph)					
Starvation Cap Reductn					
Spillback Cap Reductn					
Storage Cap Reductn					
Reduced v/c Ratio					
<b>Intersection Summary</b>					

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	28.8
Intersection LOS:	C
Intersection Capacity Utilization:	66.8%
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: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)



Lanes, Volumes, Timings

39: Fayetteville Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	123	0	0	0	0	0	0	781	0	131	902	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	1736	1827	0	0	0	0	4938	0	1718	3436	0
Flt Permitted		0.950								0.312		
Satd. Flow (perm)	0	1736	1827	0	0	0	0	4938	0	564	3436	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		299			347			255			334	
Travel Time (s)		6.8			7.9			5.0			6.5	
Lane Group Flow (vph)	0	137	0	0	0	0	0	868	0	146	1002	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	31.0	31.0	31.0					89.0		89.0	89.0	
Total Split (%)	25.8%	25.8%	25.8%					74.2%		74.2%	74.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		16.8						93.2		93.2	93.2	
Actuated g/C Ratio		0.14						0.78		0.78	0.78	
v/c Ratio		0.57						0.23		0.33	0.38	
Control Delay		56.7						4.1		3.0	1.5	
Queue Delay		0.2						0.0		0.0	0.3	
Total Delay		56.9						4.1		3.0	1.8	
LOS		E						A		A	A	
Approach Delay		56.9						4.1			2.0	
Approach LOS		E						A			A	
Queue Length 50th (ft)		100						55		5	20	
Queue Length 95th (ft)		159						86		m15	42	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		376						3836		438	2669	
Starvation Cap Reductn		0						0		0	909	
Spillback Cap Reductn		30						95		0	0	
Storage Cap Reductn		0						0		0	0	

Lanes, Volumes, Timings

39: Fayetteville Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio		0.40						0.23		0.33	0.57	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	85 (71%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	6.3
Intersection LOS:	A
Intersection Capacity Utilization	42.7%
ICU Level of Service	A
Analysis Period (min)	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 39: Fayetteville Street



Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

3/12/2015

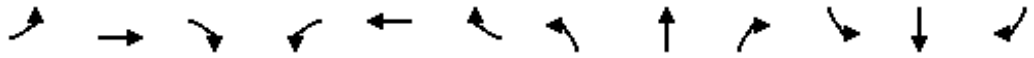


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	307	0	215	173	92	58	83	97	118	107	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		75	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	1718	1809	0	1718	1715	0	0	1689	0	0	1762	0
Flt Permitted	0.571			0.528				0.869			0.676	
Satd. Flow (perm)	1033	1809	0	955	1715	0	0	1485	0	0	1223	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					58			67				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1447			807			159			117	
Travel Time (s)		28.2			15.7			3.1			2.3	
Lane Group Flow (vph)	43	341	0	239	294	0	0	264	0	0	250	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
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	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	31.8	31.8		31.8	31.8			18.2			18.2	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.30			0.30	
v/c Ratio	0.08	0.36		0.47	0.31			0.53			0.67	
Control Delay	5.2	5.3		14.5	8.5			15.9			27.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.2	5.3		14.5	8.5			15.9			27.0	
LOS	A	A		B	A			B			C	
Approach Delay		5.3			11.2			15.9			27.0	
Approach LOS		A			B			B			C	
Queue Length 50th (ft)	3	21		51	44			55			77	
Queue Length 95th (ft)	m12	63		125	100			104			131	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)				75								
Base Capacity (vph)	546	957		505	934			610			468	
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	

Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.08	0.36		0.47	0.31			0.43			0.53	

Intersection Summary

Area Type:	Other	
Cycle Length:	60	
Actuated Cycle Length:	60	
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle:	40	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.67	
Intersection Signal Delay:	13.2	Intersection LOS: B
Intersection Capacity Utilization	64.5%	ICU Level of Service C
Analysis Period (min)	15	
m	Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 40: Grant Street & Pettigrew Street (No Train)

<p>→ ø2 (R)</p>	<p>↑ ø4</p>
32 s	28 s
<p>← ø6 (R)</p>	<p>↓ ø8</p>
32 s	28 s



Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	410	157	26	420	128	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Satd. Flow (prot)	1742	0	1718	1809	1660	0
Flt Permitted			0.950		0.971	
Satd. Flow (perm)	1742	0	1718	1809	1660	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	807			174	514	
Travel Time (s)	18.3			4.0	11.7	
Lane Group Flow (vph)	630	0	29	467	239	0
Sign Control	Free			Free	Stop	

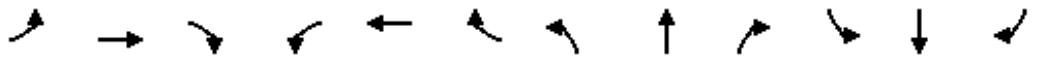
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.2%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

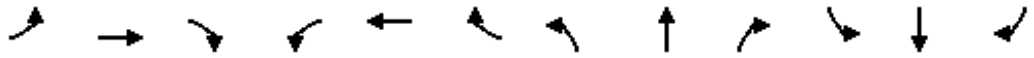


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	175	153	1	150	128	1484	0	0	1346	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	150		0	0		0	100		0	0		200
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			0			25			0		
Satd. Flow (prot)	1718	0	1537	1718	1539	0	1718	3436	0	0	3430	0
Flt Permitted	0.651			0.950			0.950					
Satd. Flow (perm)	1177	0	1537	1718	1539	0	1718	3436	0	0	3430	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			194		21							1
Link Speed (mph)		30			30			35				35
Link Distance (ft)		514			195			219				553
Travel Time (s)		11.7			4.4			4.3				10.8
Lane Group Flow (vph)	38	0	194	170	168	0	142	1649	0	0	1518	0
Turn Type	Perm		Perm	pm+pt	NA		Prot	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8								
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0				10.0
Minimum Split (s)	24.0		24.0	14.0	24.0		24.0	24.0				24.0
Total Split (s)	26.0		26.0	21.0	47.0		24.0	73.0				49.0
Total Split (%)	21.7%		21.7%	17.5%	39.2%		20.0%	60.8%				40.8%
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	Lag		Lag	Lead			Lead					Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes					Yes
Recall Mode	None		None	None	None		None	C-Max				C-Max
Act Effct Green (s)	11.7		11.7	31.8	31.8		17.1	78.2				56.1
Actuated g/C Ratio	0.10		0.10	0.26	0.26		0.14	0.65				0.47
v/c Ratio	0.33		0.60	0.37	0.40		0.58	0.74				0.95
Control Delay	60.6		17.7	37.7	33.7		57.0	17.2				44.7
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	60.6		17.7	37.7	33.7		57.0	17.2				44.7
LOS	E		B	D	C		E	B				D
Approach Delay					35.7			20.4				44.7
Approach LOS					D			C				D
Queue Length 50th (ft)	28		16	107	93		104	420				580
Queue Length 95th (ft)	m62		73	162	150		163	576				#884
Internal Link Dist (ft)		434			115			139				473
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	205		429	454	552		284	2240				1605
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

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

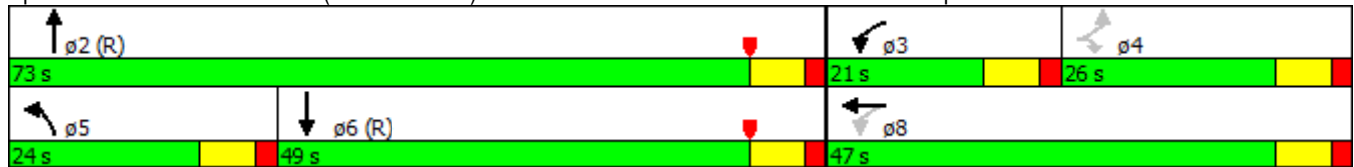


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.19		0.45	0.37	0.30		0.50	0.74			0.95	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	31.5
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.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps



# **Synchro Output-2040 Build Alt 2 AM**

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	364	64	133	257	116	76	187	119	124	373	83
Satd. Flow (prot)	1718	1769	0	1718	1724	0	1718	1704	0	1718	1760	0
Flt Permitted	0.519			0.216			0.157			0.334		
Satd. Flow (perm)	939	1769	0	391	1724	0	284	1704	0	604	1760	0
Satd. Flow (RTOR)		8			25			29			10	
Lane Group Flow (vph)	93	475	0	148	415	0	84	340	0	138	506	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	46.0	46.0		14.0	60.0		14.0	46.0		14.0	46.0	
Total Split (%)	38.3%	38.3%		11.7%	50.0%		11.7%	38.3%		11.7%	38.3%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	45.2	45.2		59.8	59.8		45.2	36.2		46.2	39.0	
Actuated g/C Ratio	0.38	0.38		0.50	0.50		0.38	0.30		0.38	0.32	
v/c Ratio	0.26	0.71		0.49	0.48		0.39	0.64		0.44	0.87	
Control Delay	30.8	39.9		11.2	8.3		25.2	37.8		25.4	54.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.8	39.9		11.2	8.3		25.2	37.8		25.4	54.4	
LOS	C	D		B	A		C	D		C	D	
Approach Delay		38.4			9.1			35.3			48.2	
Approach LOS		D			A			D			D	
Queue Length 50th (ft)	52	323		41	183		36	196		61	352	
Queue Length 95th (ft)	99	459		m24	m49		67	293		104	#534	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	353	671		300	870		214	601		316	607	
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	0.26	0.71		0.49	0.48		0.39	0.57		0.44	0.83	

### Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 65 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87

# Lanes, Volumes, Timings

## 1: Ninth Street & US 70 (W Main Street)

3/12/2015

Intersection Signal Delay: 33.2

Intersection LOS: C

Intersection Capacity Utilization 77.6%

ICU Level of Service D

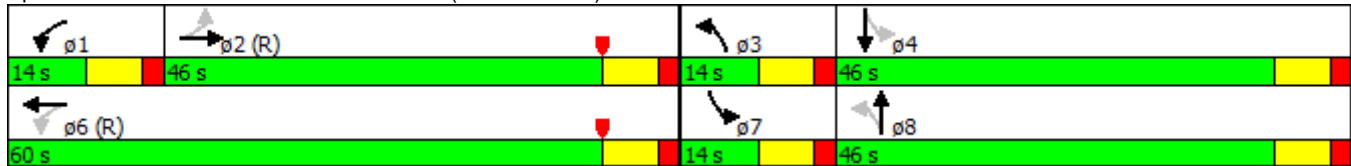
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

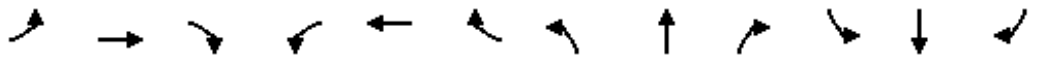
Splits and Phases: 1: Ninth Street & US 70 (W Main Street)



Lanes, Volumes, Timings

2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	371	147	160	302	29	273	302	250	61	389	51
Satd. Flow (prot)	1718	1809	1537	1718	1785	0	1718	1809	1537	1718	3378	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1785	0	1718	1809	1537	1718	3378	0
Satd. Flow (RTOR)			164		4				278		12	
Lane Group Flow (vph)	16	412	163	178	368	0	303	336	278	68	489	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2						8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	24.0	14.0	14.0	32.0		14.0	24.0	24.0	14.0	37.0	
Total Split (s)	14.0	36.0	28.0	19.0	41.0		28.0	50.0	50.0	15.0	37.0	
Total Split (%)	11.7%	30.0%	23.3%	15.8%	34.2%		23.3%	41.7%	41.7%	12.5%	30.8%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	9.0	33.3	58.8	15.4	48.1		25.5	44.3	44.3	9.8	25.8	
Actuated g/C Ratio	0.08	0.28	0.49	0.13	0.40		0.21	0.37	0.37	0.08	0.22	
v/c Ratio	0.12	0.82	0.19	0.81	0.51		0.83	0.50	0.37	0.49	0.66	
Control Delay	49.8	47.4	2.7	78.8	33.0		65.3	32.5	4.5	64.9	46.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	49.8	47.4	2.7	78.8	33.0		65.3	32.5	4.5	64.9	46.1	
LOS	D	D	A	E	C		E	C	A	E	D	
Approach Delay		35.2			47.9			34.9			48.4	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	10	226	0	138	203		213	198	0	51	182	
Queue Length 95th (ft)	m19	#479	m30	#270	360		#402	288	55	100	222	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	128	502	836	219	717		365	684	754	143	909	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.13	0.82	0.19	0.81	0.51		0.83	0.49	0.37	0.48	0.54	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 54 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83

# Lanes, Volumes, Timings

## 2: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015

Intersection Signal Delay: 40.5

Intersection LOS: D

Intersection Capacity Utilization 72.6%

ICU Level of Service C

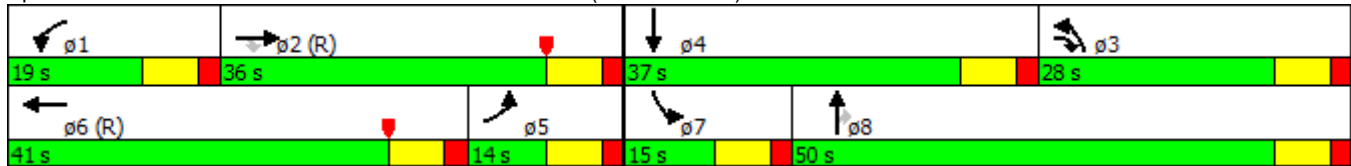
Analysis Period (min) 15

# 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: 2: Swift Avenue/Broad Street & US 70 (W Main Street)





Lanes, Volumes, Timings

3: Erwin Road/Ninth Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	74	141	241	30	24	546
Satd. Flow (prot)	1636	0	1800	0	0	1823
Flt Permitted	0.983					0.998
Satd. Flow (perm)	1636	0	1800	0	0	1823
Lane Group Flow (vph)	239	0	301	0	0	634
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 67.3% ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

4: Swift Avenue/Broad Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↕			↕	
Volume (vph)	6	2	31	1	2	11	188	808	20	22	636	38
Satd. Flow (prot)	0	1602	0	0	1608	0	1718	3423	0	0	3402	0
Flt Permitted		0.992			0.997		0.950				0.998	
Satd. Flow (perm)	0	1602	0	0	1608	0	1718	3423	0	0	3402	0
Lane Group Flow (vph)	0	43	0	0	15	0	209	920	0	0	773	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 56.4%

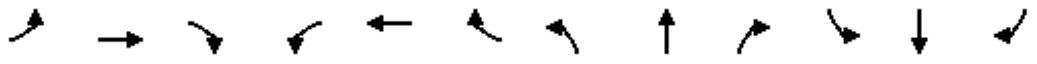
ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	464	86	50	293	43	79	171	61	164	325	169
Satd. Flow (prot)	1718	1809	1537	1718	1774	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1774	0	1718	1809	1537	1718	1809	1537
Satd. Flow (RTOR)			227						164			188
Lane Group Flow (vph)	141	516	96	56	374	0	88	190	68	182	361	188
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	32.0	14.0	14.0	32.0	14.0
Total Split (s)	20.0	50.0	50.0	14.0	44.0		15.0	32.0	14.0	24.0	41.0	20.0
Total Split (%)	16.7%	41.7%	41.7%	11.7%	36.7%		12.5%	26.7%	11.7%	20.0%	34.2%	16.7%
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
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
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	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.3	53.3	53.3	9.0	45.2		9.8	22.9	31.9	17.6	30.6	45.0
Actuated g/C Ratio	0.12	0.44	0.44	0.08	0.38		0.08	0.19	0.27	0.15	0.26	0.38
v/c Ratio	0.69	0.64	0.12	0.44	0.56		0.63	0.55	0.13	0.73	0.78	0.27
Control Delay	68.5	33.1	0.3	64.3	35.2		73.2	49.6	0.5	65.7	53.5	2.7
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	68.5	33.1	0.3	64.3	35.2		73.2	49.6	0.5	65.7	53.5	2.7
LOS	E	C	A	E	D		E	D	A	E	D	A
Approach Delay		35.5			39.0			46.0			43.5	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	106	321	0	42	231		67	135	0	134	260	0
Queue Length 95th (ft)	#186	485	0	87	356		#136	203	0	#217	353	30
Internal Link Dist (ft)		298			220			276			273	
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	214	804	809	128	668		143	407	528	272	542	701
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	0.66	0.64	0.12	0.44	0.56		0.62	0.47	0.13	0.67	0.67	0.27

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78

# Lanes, Volumes, Timings

## 5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 69.9%

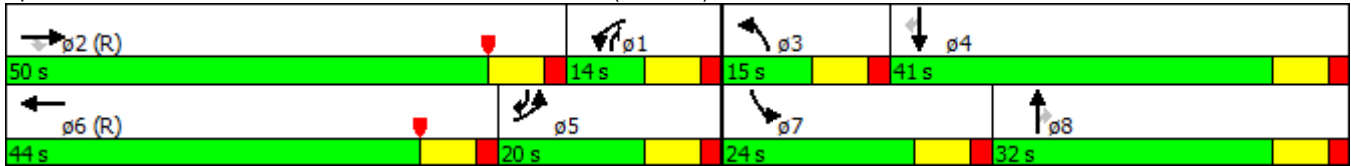
ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	405	0	0	96	21	260	923	47	0	0	0
Satd. Flow (prot)	1546	1628	0	0	1589	0	1546	3071	0	0	0	0
Flt Permitted	0.654						0.950					
Satd. Flow (perm)	1065	1628	0	0	1589	0	1546	3071	0	0	0	0
Satd. Flow (RTOR)					11			6				
Lane Group Flow (vph)	171	450	0	0	130	0	289	1078	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	32.0	32.0			32.0		28.0	28.0				
Total Split (s)	53.0	53.0			53.0		67.0	67.0				
Total Split (%)	44.2%	44.2%			44.2%		55.8%	55.8%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	40.6	40.6			40.6		69.4	69.4				
Actuated g/C Ratio	0.34	0.34			0.34		0.58	0.58				
v/c Ratio	0.47	0.82			0.24		0.32	0.61				
Control Delay	34.7	48.3			25.6		15.7	19.3				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	34.7	48.3			25.6		15.7	19.3				
LOS	C	D			C		B	B				
Approach Delay		44.6			25.6			18.6				
Approach LOS		D			C			B				
Queue Length 50th (ft)	102	313			65		113	275				
Queue Length 95th (ft)	158	410			105		194	392				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	426	651			642		893	1778				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.40	0.69			0.20		0.32	0.61				

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82

Lanes, Volumes, Timings  
 6: Duke Street & W. Main Street

3/12/2015

Intersection Signal Delay: 26.6                      Intersection LOS: C  
 Intersection Capacity Utilization 62.0%            ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 6: Duke Street & W. Main Street



Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	11	3	0	0	32	12	62	1207	1	0	0	0
Satd. Flow (prot)	0	1566	0	0	1569	0	1546	3093	0	0	0	0
Flt Permitted		0.962					0.950					
Satd. Flow (perm)	0	1566	0	0	1569	0	1546	3093	0	0	0	0
Lane Group Flow (vph)	0	15	0	0	49	0	69	1342	0	0	0	0
Sign Control		Stop			Stop			Free				Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 51.3%      ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

3/12/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	5	0	15	1265	0	0
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Lane Group Flow (vph)	6	0	17	1406	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

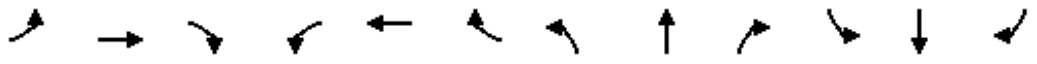
Intersection Capacity Utilization 45.0%      ICU Level of Service A

Analysis Period (min) 15



Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	669	0	0	361	58	115	1026	126	0	0	0
Satd. Flow (prot)	1718	1809	0	0	1774	0	0	4913	1537	0	0	0
Flt Permitted	0.268							0.995				
Satd. Flow (perm)	485	1809	0	0	1774	0	0	4913	1537	0	0	0
Satd. Flow (RTOR)					11				140			
Lane Group Flow (vph)	218	743	0	0	465	0	0	1268	140	0	0	0
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			30.0		30.0	30.0	30.0			
Total Split (s)	15.0	56.0			41.0		34.0	34.0	34.0			
Total Split (%)	16.7%	62.2%			45.6%		37.8%	37.8%	37.8%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	51.0	51.0			36.0			29.0	29.0			
Actuated g/C Ratio	0.57	0.57			0.40			0.32	0.32			
v/c Ratio	0.53	0.72			0.65			0.80	0.24			
Control Delay	14.7	19.5			12.5			32.5	5.2			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	14.7	19.5			12.5			32.5	5.2			
LOS	B	B			B			C	A			
Approach Delay		18.4			12.5			29.8				
Approach LOS		B			B			C				
Queue Length 50th (ft)	57	289			112			239	0			
Queue Length 95th (ft)	96	433			172			294	40			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	411	1025			717			1583	590			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.53	0.72			0.65			0.80	0.24			

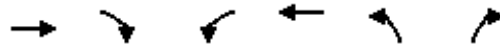
Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 68 (76%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80



Lanes, Volumes, Timings  
 10: Willard Street & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	658	137	95	406	13	84
Satd. Flow (prot)	1767	0	1718	1809	1587	0
Flt Permitted			0.950		0.994	
Satd. Flow (perm)	1767	0	1718	1809	1587	0
Lane Group Flow (vph)	883	0	106	451	107	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

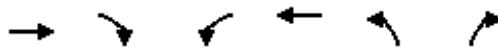
Intersection Capacity Utilization 64.1%      ICU Level of Service C

Analysis Period (min) 15

# Lanes, Volumes, Timings

## 11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø4
Lane Configurations	↔		↔	↔			
Volume (vph)	472	270	37	501	0	0	
Satd. Flow (prot)	1720	0	1718	1809	0	0	
Flt Permitted			0.184				
Satd. Flow (perm)	1720	0	333	1809	0	0	
Satd. Flow (RTOR)	59						
Lane Group Flow (vph)	824	0	41	557	0	0	
Turn Type	NA		Perm	NA			
Protected Phases	2			6			4
Permitted Phases			6				
Minimum Split (s)	45.0		45.0	45.0			32.0
Total Split (s)	58.0		58.0	58.0			32.0
Total Split (%)	64.4%		64.4%	64.4%			36%
Yellow Time (s)	3.0		3.0	3.0			3.0
All-Red Time (s)	2.0		2.0	2.0			2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0		3.0	3.0			
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	55.0		55.0	55.0			
Actuated g/C Ratio	0.61		0.61	0.61			
v/c Ratio	0.77		0.20	0.50			
Control Delay	13.4		10.9	13.3			
Queue Delay	0.1		0.0	1.0			
Total Delay	13.5		10.9	14.3			
LOS	B		B	B			
Approach Delay	13.5			14.1			
Approach LOS	B			B			
Queue Length 50th (ft)	136		13	228			
Queue Length 95th (ft)	274		38	326			
Internal Link Dist (ft)	168			210	1409		
Turn Bay Length (ft)							
Base Capacity (vph)	1074		203	1105			
Starvation Cap Reductn	7		0	300			
Spillback Cap Reductn	0		0	0			
Storage Cap Reductn	0		0	0			
Reduced v/c Ratio	0.77		0.20	0.69			

### Intersection Summary

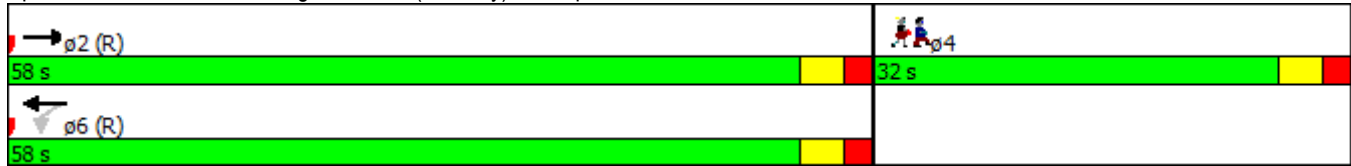
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 11 (12%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 13.7  
 Intersection Capacity Utilization 44.6%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015

Splits and Phases: 11: Pettigrew Street (Oneway) & Chapel Hill Street



Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↑↑↑	↗
Volume (vph)	0	183	129	6	33	0	0	0	0	169	0	307
Satd. Flow (prot)	0	1863	1583	0	1663	0	0	0	0	0	4831	1583
Flt Permitted					0.965						0.950	
Satd. Flow (perm)	0	1863	1583	0	1618	0	0	0	0	0	4831	1583
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	203	143	0	44	0	0	0	0	0	188	341
Turn Type		NA	Free	Perm	NA					Split	NA	Free
Protected Phases		4				8				6	6	
Permitted Phases			Free	8								Free
Minimum Split (s)		29.0		29.0	29.0					20.0	20.0	
Total Split (s)		64.0		64.0	64.0					26.0	26.0	
Total Split (%)		71.1%		71.1%	71.1%					28.9%	28.9%	
Yellow Time (s)		4.0		4.0	4.0					3.5	3.5	
All-Red Time (s)		2.0		2.0	2.0					0.5	0.5	
Lost Time Adjust (s)		-4.0			-1.0						-4.0	
Total Lost Time (s)		2.0			5.0						0.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		62.0	90.0		59.0						26.0	90.0
Actuated g/C Ratio		0.69	1.00		0.66						0.29	1.00
v/c Ratio		0.16	0.09		0.04						0.13	0.22
Control Delay		4.2	0.1		3.8						16.4	0.9
Queue Delay		0.0	0.0		0.0						0.0	0.0
Total Delay		4.2	0.1		3.8						16.4	0.9
LOS		A	A		A						B	A
Approach Delay		2.5			3.8						6.4	
Approach LOS		A			A						A	
Queue Length 50th (ft)		24	0		8						16	6
Queue Length 95th (ft)		m28	m0		m11						26	23
Internal Link Dist (ft)		10			376			795			213	
Turn Bay Length (ft)												
Base Capacity (vph)		1283	1583		1060						1395	1583
Starvation Cap Reductn		0	0		0						0	0
Spillback Cap Reductn		0	0		36						0	36
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.16	0.09		0.04						0.13	0.22

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 6:SBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.22  
 Intersection Signal Delay: 4.8  
 Intersection LOS: A  
 Intersection Capacity Utilization 25.7%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015

Splits and Phases: 12: Downtown loop/Great Jones Street





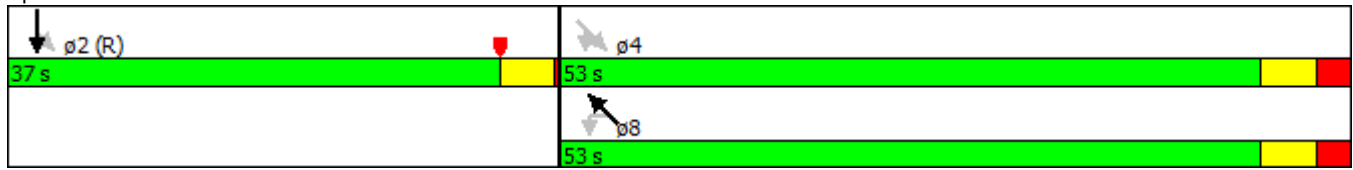


Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

3/12/2015

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	543	113	150	107	0	0	0	269
Satd. Flow (prot)	0	0	0	0	6241	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6241	0	1770	1863	0	0	0	1611
Satd. Flow (RTOR)					67							218
Lane Group Flow (vph)	0	0	0	0	729	0	167	119	0	0	0	314
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					35.0		19.0	19.0				36.0
Total Split (%)					38.9%		21.1%	21.1%				40.0%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					33.7		19.0	19.0				36.0
Actuated g/C Ratio					0.37		0.21	0.21				0.40
v/c Ratio					0.31		0.45	0.30				0.41
Control Delay					7.3		28.2	26.2				7.8
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					7.3		28.2	26.2				7.8
LOS					A		C	C				A
Approach Delay					7.3			27.4				
Approach LOS					A			C				
Queue Length 50th (ft)					46		54	38				34
Queue Length 95th (ft)					28		m110	m81				94
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2378		373	393				775
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.31		0.45	0.30				0.41

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 22 (24%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.45  
 Intersection Signal Delay: 11.7  
 Intersection Capacity Utilization 45.6%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings  
14: Morris Street & Great Jones

3/12/2015

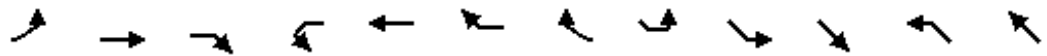
Splits and Phases: 14: Morris Street & Great Jones



# Lanes, Volumes, Timings

## 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	SEL2	SEL	SET	NWL	NWT
Lane Configurations		↕			↕					↕		↕
Volume (vph)	211	93	27	34	67	3	17	46	74	185	102	90
Satd. Flow (prot)	0	1751	0	0	1762	0	0	0	0	1792	0	1719
Flt Permitted		0.743			0.856					0.699		0.761
Satd. Flow (perm)	0	1342	0	0	1529	0	0	0	0	1277	0	1332
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	367	0	0	134	0	0	0	0	339	0	308
Turn Type	Perm	NA		Perm	NA			Perm	Perm	NA	Perm	NA
Protected Phases		4			8					6		2
Permitted Phases	4			8				6	6		2	
Minimum Split (s)	22.0	22.0		20.0	20.0			22.0	22.0	22.0	20.0	20.0
Total Split (s)	53.0	53.0		53.0	53.0			37.0	37.0	37.0	37.0	37.0
Total Split (%)	58.9%	58.9%		58.9%	58.9%			41.1%	41.1%	41.1%	41.1%	41.1%
Yellow Time (s)	4.5	4.5		3.5	3.5			4.5	4.5	4.5	3.5	3.5
All-Red Time (s)	2.5	2.5		0.5	0.5			2.5	2.5	2.5	0.5	0.5
Lost Time Adjust (s)		0.0			0.0					-1.0		-1.0
Total Lost Time (s)		7.0			4.0					6.0		3.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		46.0			49.0					31.0		34.0
Actuated g/C Ratio		0.51			0.54					0.34		0.38
v/c Ratio		0.54			0.16					0.77		0.61
Control Delay		25.7			10.9					46.4		14.2
Queue Delay		0.0			0.0					0.0		0.0
Total Delay		25.7			10.9					46.4		14.2
LOS		C			B					D		B
Approach Delay		25.7			10.9					46.4		14.2
Approach LOS		C			B					D		B
Queue Length 50th (ft)		168			36					201		95
Queue Length 95th (ft)		242			66					#321		241
Internal Link Dist (ft)		376			463					413		487
Turn Bay Length (ft)												
Base Capacity (vph)		685			832					439		503
Starvation Cap Reductn		0			0					0		0
Spillback Cap Reductn		0			0					0		0
Storage Cap Reductn		0			0					0		0
Reduced v/c Ratio		0.54			0.16					0.77		0.61

### Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 12 (13%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 27.0  
 Intersection Capacity Utilization 57.6%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	NWR	NWR2
<b>Lane Configurations</b>		
Volume (vph)	46	40
Satd. Flow (prot)	0	0
Flt Permitted		
Satd. Flow (perm)	0	0
Satd. Flow (RTOR)		
Lane Group Flow (vph)	0	0
Turn Type		
Protected Phases		
Permitted Phases		
Minimum Split (s)		
Total Split (s)		
Total Split (%)		
Yellow Time (s)		
All-Red Time (s)		
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
<b>Intersection Summary</b>		

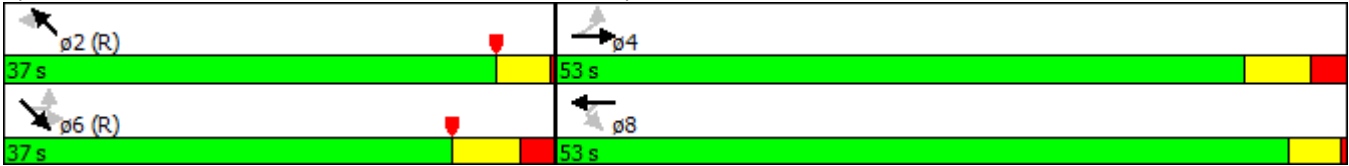
Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015

Queue shown is maximum after two cycles.

Splits and Phases: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street



Lanes, Volumes, Timings  
 16: Foster Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→		↖	↑			↗	
Volume (vph)	0	0	0	41	625	265	19	209	0	0	169	114
Satd. Flow (prot)	0	0	0	0	6120	0	1770	1863	0	0	1762	0
Flt Permitted					0.998		0.485					
Satd. Flow (perm)	0	0	0	0	6120	0	903	1863	0	0	1762	0
Satd. Flow (RTOR)					137						61	
Lane Group Flow (vph)	0	0	0	0	1034	0	21	232	0	0	315	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				24.0	24.0		24.0	24.0			24.0	
Total Split (s)				39.0	39.0		51.0	51.0			51.0	
Total Split (%)				43.3%	43.3%		56.7%	56.7%			56.7%	
Yellow Time (s)				3.6	3.6		3.6	3.6			3.6	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)					1.1		1.1	1.1			1.1	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					37.9		49.9	49.9			49.9	
Actuated g/C Ratio					0.42		0.55	0.55			0.55	
v/c Ratio					0.39		0.04	0.22			0.31	
Control Delay					4.3		8.1	10.5			9.5	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					4.3		8.1	10.5			9.5	
LOS					A		A	B			A	
Approach Delay					4.3			10.3			9.5	
Approach LOS					A			B			A	
Queue Length 50th (ft)					12		7	83			70	
Queue Length 95th (ft)					24		m14	117			120	
Internal Link Dist (ft)		603			433			858			215	
Turn Bay Length (ft)												
Base Capacity (vph)					2656		500	1032			1004	
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.39		0.04	0.22			0.31	

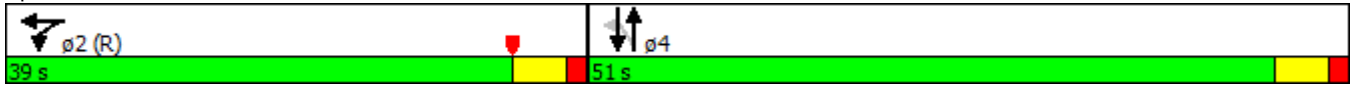
Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 87 (97%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay: 6.3  
 Intersection Capacity Utilization 36.6%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings  
16: Foster Street & Great Jones

3/12/2015

Splits and Phases: 16: Foster Street & Great Jones





Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	42	236	16	22	240	76	6	88	7	46	91	18
Satd. Flow (prot)	0	1801	0	0	1767	0	0	1785	0	0	1753	0
Flt Permitted		0.834			0.963			0.986			0.896	
Satd. Flow (perm)	0	1513	0	0	1707	0	0	1765	0	0	1595	0
Satd. Flow (RTOR)		4			22			5			9	
Lane Group Flow (vph)	0	327	0	0	375	0	0	113	0	0	172	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	48.0	48.0		48.0	48.0		42.0	42.0		42.0	42.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		26.9			26.9			53.1			53.1	
Actuated g/C Ratio		0.30			0.30			0.59			0.59	
v/c Ratio		0.72			0.71			0.11			0.18	
Control Delay		41.9			10.9			4.6			8.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		41.9			10.9			4.6			8.0	
LOS		D			B			A			A	
Approach Delay		41.9			10.9			4.6			8.0	
Approach LOS		D			B			A			A	
Queue Length 50th (ft)		192			14			16			32	
Queue Length 95th (ft)		m252			9			30			65	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		724			827			1043			944	
Starvation Cap Reductn		0			1			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.45			0.11			0.18	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 39 (43%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72

# Lanes, Volumes, Timings

## 17: Corcoran Street & E. Mian Street'

3/12/2015

Intersection Signal Delay: 20.0

Intersection LOS: B

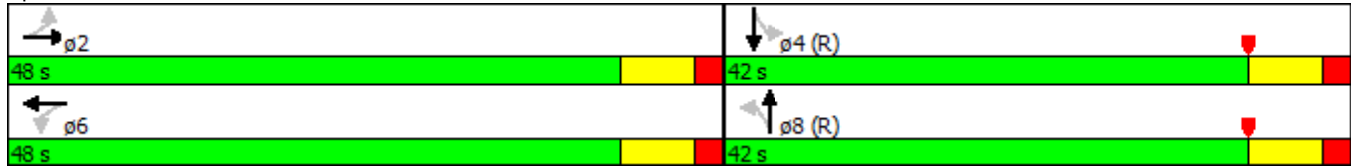
Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

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

### Splits and Phases: 17: Corcoran Street & E. Mian Street'



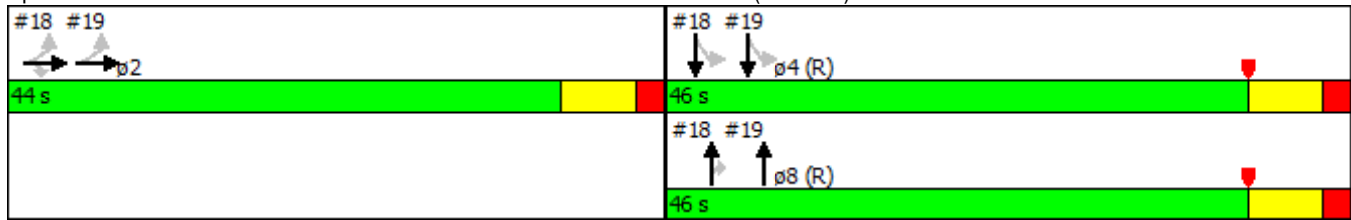


Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015

Splits and Phases: 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕		↕	↕	
Volume (vph)	0	83	116	0	0	0	0	83	89	6	91	0
Satd. Flow (prot)	0	1499	0	0	0	0	0	2852	0	1546	1628	0
Flt Permitted										0.632		
Satd. Flow (perm)	0	1499	0	0	0	0	0	2852	0	1029	1628	0
Satd. Flow (RTOR)		99						99				
Lane Group Flow (vph)	0	221	0	0	0	0	0	191	0	7	101	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	25.0	25.0						25.0		25.0	25.0	
Total Split (s)	44.0	44.0						46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%						51.1%		51.1%	51.1%	
Yellow Time (s)	5.0	5.0						5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0						-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		39.0						41.0		41.0	41.0	
Actuated g/C Ratio		0.43						0.46		0.46	0.46	
v/c Ratio		0.31						0.14		0.01	0.14	
Control Delay		3.3						7.2		1.5	1.7	
Queue Delay		0.0						0.0		0.0	0.7	
Total Delay		3.3						7.2		1.5	2.4	
LOS		A						A		A	A	
Approach Delay		3.3						7.2			2.3	
Approach LOS		A						A			A	
Queue Length 50th (ft)		27						7		0	2	
Queue Length 95th (ft)		m24						39		1	5	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)												
Base Capacity (vph)		705						1353		468	741	
Starvation Cap Reductn		0						0		0	423	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.31						0.14		0.01	0.32	

Intersection Summary

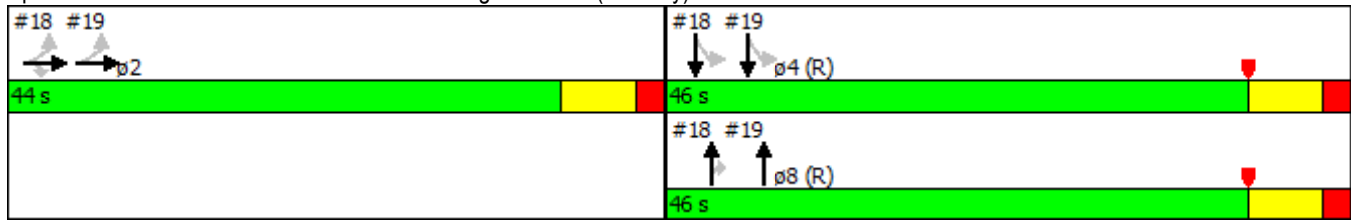
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 49 (54%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 4.5  
 Intersection Capacity Utilization 26.9%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)

3/12/2015

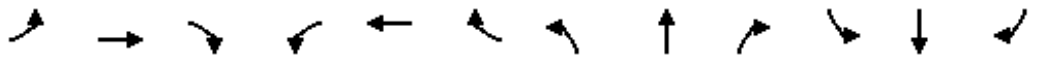
Splits and Phases: 19: Blackwell Street & Pettigrew Street (Oneway)



Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↖	↗	↖	↗			↕	
Volume (vph)	14	0	70	88	352	85	117	156	0	0	66	18
Satd. Flow (prot)	0	1544	1475	1736	1827	1553	1736	1827	0	0	1774	0
Flt Permitted		0.857		0.728			0.697					
Satd. Flow (perm)	0	1348	1475	1330	1827	1553	1273	1827	0	0	1774	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	43	51	98	391	94	130	173	0	0	93	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2				6
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	56.0	56.0	56.0	56.0	56.0	56.0	34.0	34.0			34.0	
Total Split (%)	62.2%	62.2%	62.2%	62.2%	62.2%	62.2%	37.8%	37.8%			37.8%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		51.0	51.0	51.0	51.0	51.0	29.0	29.0			29.0	
Actuated g/C Ratio		0.57	0.57	0.57	0.57	0.57	0.32	0.32			0.32	
v/c Ratio		0.06	0.06	0.13	0.38	0.11	0.32	0.29			0.16	
Control Delay		13.7	13.6	1.3	1.9	1.2	25.7	24.6			24.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		13.7	13.6	1.3	1.9	1.2	25.7	24.6			24.3	
LOS		B	B	A	A	A	C	C			C	
Approach Delay		13.6			1.7			25.1			24.3	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)		13	15	1	6	1	55	73			42	
Queue Length 95th (ft)		m27	m32	6	18	6	104	126			80	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		763	835	753	1035	880	410	588			571	
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		0.06	0.06	0.13	0.38	0.11	0.32	0.29			0.16	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 9 (10%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 11.3  
 Intersection Capacity Utilization 42.7%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

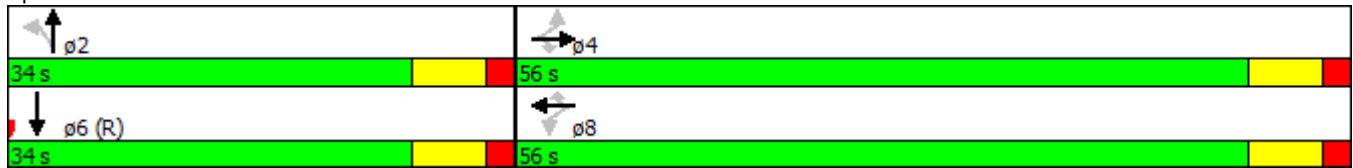
Intersection LOS: B  
 ICU Level of Service A

Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015

Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive





Lanes, Volumes, Timings  
 21: Rigsbee Avenue & Morgan Loop

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→			↑			↑	
Volume (vph)	0	0	0	47	921	120	16	43	0	0	64	62
Satd. Flow (prot)	0	0	0	0	6286	0	0	1839	0	0	1738	0
Flt Permitted					0.998			0.931				
Satd. Flow (perm)	0	0	0	0	6286	0	0	1734	0	0	1738	0
Satd. Flow (RTOR)					55						67	
Lane Group Flow (vph)	0	0	0	0	1208	0	0	66	0	0	140	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				25.0	25.0		25.0	25.0			25.0	
Total Split (s)				51.0	51.0		39.0	39.0			39.0	
Total Split (%)				56.7%	56.7%		43.3%	43.3%			43.3%	
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0			-4.0			-4.0	
Total Lost Time (s)					1.0			1.0			1.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					50.0			38.0			38.0	
Actuated g/C Ratio					0.56			0.42			0.42	
v/c Ratio					0.34			0.09			0.18	
Control Delay					1.7			16.1			9.5	
Queue Delay					0.0			0.0			0.0	
Total Delay					1.7			16.1			9.5	
LOS					A			B			A	
Approach Delay					1.7			16.1			9.5	
Approach LOS					A			B			A	
Queue Length 50th (ft)					14			22			24	
Queue Length 95th (ft)					16			47			60	
Internal Link Dist (ft)		433			66			129			206	
Turn Bay Length (ft)												
Base Capacity (vph)					3516			732			772	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.34			0.09			0.18	

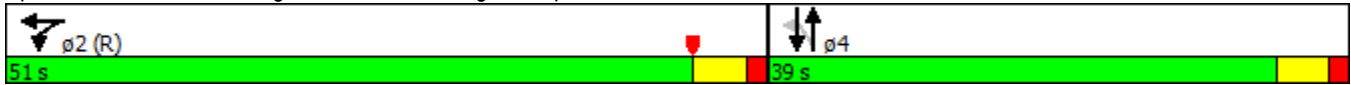
Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 3 (3%), Referenced to phase 2:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 3.2	Intersection LOS: A
Intersection Capacity Utilization 39.0%	ICU Level of Service A
Analysis Period (min) 15	

Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

3/12/2015

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop



Lanes, Volumes, Timings  
22: Magnum Street/Morgan Loop

3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑↑									↑↑	↑
Volume (vph)	282	1030	0	0	0	0	0	0	0	0	1127	199
Satd. Flow (prot)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.989										
Satd. Flow (perm)	0	6337	0	0	0	0	0	0	0	0	3539	1583
Satd. Flow (RTOR)		82										13
Lane Group Flow (vph)	0	1457	0	0	0	0	0	0	0	0	1252	221
Turn Type	custom	NA									NA	custom
Protected Phases		4										
Permitted Phases	2										2	2
Detector Phase	2	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	58.0	32.0									58.0	58.0
Total Split (%)	64.4%	35.6%									64.4%	64.4%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	None									C-Max	C-Max
Act Effct Green (s)		31.5									58.5	58.5
Actuated g/C Ratio		0.35									0.65	0.65
v/c Ratio		0.64									0.54	0.21
Control Delay		24.1									9.7	6.7
Queue Delay		0.0									0.0	0.0
Total Delay		24.1									9.7	6.7
LOS		C									A	A
Approach Delay		24.1									9.3	
Approach LOS		C									A	
Queue Length 50th (ft)		210									184	43
Queue Length 95th (ft)		243									235	74
Internal Link Dist (ft)		566			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2306									2300	1033
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.63									0.54	0.21

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:NBSW, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64





Queue shown is maximum after two cycles.

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

Splits and Phases: 23: Mangum Street





Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

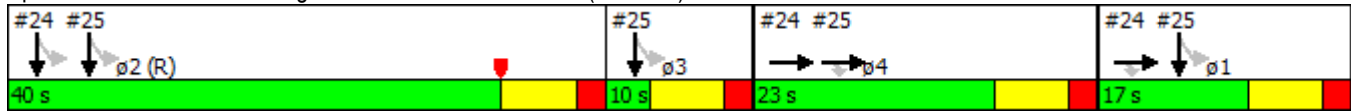
3/12/2015

Lane Group	ø3	ø4
Lane Configurations		
Volume (vph)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Satd. Flow (RTOR)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Minimum Split (s)	10.0	23.0
Total Split (s)	10.0	23.0
Total Split (%)	11%	26%
Yellow Time (s)	5.0	5.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
<b>Intersection Summary</b>		



Queue shown is maximum after two cycles.

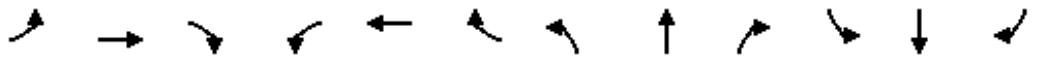
Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (Oneway)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗								↑↑↑↑	
Volume (vph)	0	126	52	0	0	0	0	0	0	49	1106	0
Satd. Flow (prot)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Satd. Flow (RTOR)			218									
Lane Group Flow (vph)	0	140	58	0	0	0	0	0	0	0	1283	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		4									1 2 3	
Permitted Phases			4							1 2 3		
Minimum Split (s)		23.0	23.0									
Total Split (s)		23.0	23.0									
Total Split (%)		25.6%	25.6%									
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?												
Act Effct Green (s)		18.0	18.0								62.0	
Actuated g/C Ratio		0.20	0.20								0.69	
v/c Ratio		0.43	0.13								0.33	
Control Delay		40.1	1.2								0.2	
Queue Delay		0.0	0.0								0.2	
Total Delay		40.1	1.2								0.3	
LOS		D	A								A	
Approach Delay		28.7									0.3	
Approach LOS		C									A	
Queue Length 50th (ft)		62	0								0	
Queue Length 95th (ft)		121	0								0	
Internal Link Dist (ft)		398			755			154			117	
Turn Bay Length (ft)												
Base Capacity (vph)		325	451								3849	
Starvation Cap Reductn		0	0								1363	
Spillback Cap Reductn		0	0								0	
Storage Cap Reductn		0	0								0	
Reduced v/c Ratio		0.43	0.13								0.52	

Intersection Summary

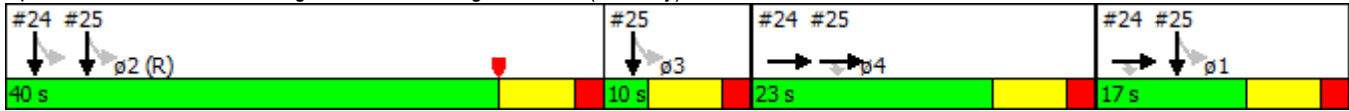
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 32 (36%), Referenced to phase 2:SBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 4.1  
 Intersection Capacity Utilization 34.3%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

# Lanes, Volumes, Timings

## 25: Mangum Street & Pettigrew Street (Oneway)

3/12/2015

Splits and Phases: 25: Mangum Street & Pettigrew Street (Oneway)



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Satd. Flow (RTOR)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Minimum Split (s)	14.0	29.0	10.0
Total Split (s)	17.0	40.0	10.0
Total Split (%)	19%	44%	11%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			

### Intersection Summary

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	169	771	0	0	0	0	0	894	191
Satd. Flow (prot)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Flt Permitted					0.991							
Satd. Flow (perm)	0	0	0	0	5040	0	0	0	0	0	6408	1583
Satd. Flow (RTOR)					68							116
Lane Group Flow (vph)	0	0	0	0	1056	0	0	0	0	0	1016	217
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				46.0	46.0						44.0	44.0
Total Split (%)				51.1%	51.1%						48.9%	48.9%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None					C-Max	C-Max	
Act Effct Green (s)					30.4						59.6	56.6
Actuated g/C Ratio					0.34						0.66	0.63
v/c Ratio					0.60						0.24	0.21
Control Delay					29.3						13.7	11.1
Queue Delay					0.0						0.0	0.0
Total Delay					29.3						13.7	11.1
LOS					C						B	B
Approach Delay					29.3						13.3	
Approach LOS					C						B	
Queue Length 50th (ft)					210						142	75
Queue Length 95th (ft)					239						198	161
Internal Link Dist (ft)		297			516			238			1078	
Turn Bay Length (ft)												
Base Capacity (vph)					2609						4242	1038
Starvation Cap Reductn					0						0	0
Spillback Cap Reductn					0						0	0
Storage Cap Reductn					0						0	0
Reduced v/c Ratio					0.40						0.24	0.21

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:SBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.60

Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015

Intersection Signal Delay: 20.7

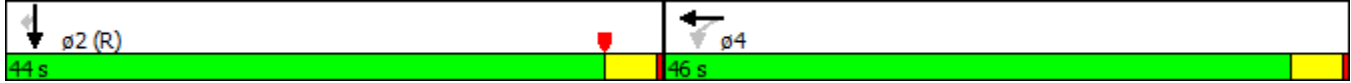
Intersection LOS: C

Intersection Capacity Utilization 37.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Jackie Robinson Drive & Mangum Street



Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	383	111	3	508	119	0	0	0
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4943	0	0	0	0
Satd. Flow (RTOR)						123		71				
Lane Group Flow (vph)	0	0	0	0	426	123	0	699	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					53.0		37.0	37.0				
Total Split (%)					58.9%		41.1%	41.1%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					31.7	90.0		56.3				
Actuated g/C Ratio					0.35	1.00		0.63				
v/c Ratio					0.65	0.08		0.22				
Control Delay					29.9	0.1		10.8				
Queue Delay					0.0	0.0		0.0				
Total Delay					29.9	0.1		10.8				
LOS					C	A		B				
Approach Delay					23.2			10.8				
Approach LOS					C			B				
Queue Length 50th (ft)					227	0		68				
Queue Length 95th (ft)					274	0		100				
Internal Link Dist (ft)		211			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					1097	1583		3119				
Starvation Cap Reductn					0	0		0				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.39	0.08		0.22				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 44 (49%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.65



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	137	192	0	0	0	0	510	493	47	0	0	0
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5019	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5019	0	0	0	0
Satd. Flow (RTOR)	*12							24				
Lane Group Flow (vph)	152	213	0	0	0	0	567	600	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	45.0	45.0					45.0	45.0				
Total Split (%)	50.0%	50.0%					50.0%	50.0%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	16.2	16.2					71.8	70.8				
Actuated g/C Ratio	0.18	0.18					0.80	0.79				
v/c Ratio	0.46	0.33					0.21	0.15				
Control Delay	33.9	32.6					0.8	0.8				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	33.9	32.6					0.8	0.8				
LOS	C	C					A	A				
Approach Delay		33.1						0.8				
Approach LOS		C						A				
Queue Length 50th (ft)	72	56					7	5				
Queue Length 95th (ft)	118	81					m15	m11				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	851	1690					2737	3952				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.18	0.13					0.21	0.15				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 2:NETL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46



# Lanes, Volumes, Timings

## 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015

Intersection Signal Delay: 8.5

Intersection LOS: A

Intersection Capacity Utilization 28.8%

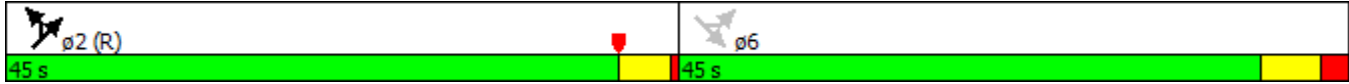
ICU Level of Service A

Analysis Period (min) 15

\* User Entered Value

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

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty



Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

3/12/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	88	295	325	143	272	1134	94	0
Satd. Flow (prot)	1770	1863	1863	1583	0	3476	0	3614
Flt Permitted	0.401					0.991		
Satd. Flow (perm)	747	1863	1863	1583	0	3476	0	3614
Satd. Flow (RTOR)				159		12		
Lane Group Flow (vph)	98	328	361	159	0	1666	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	31.0	31.0	31.0	31.0	48.0	48.0		11.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	53.3%	53.3%		12.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	37.0	37.0	39.0	39.0		48.0		
Actuated g/C Ratio	0.41	0.41	0.43	0.43		0.53		
v/c Ratio	0.32	0.43	0.45	0.20		0.90		
Control Delay	15.9	15.7	18.9	6.5		16.4		
Queue Delay	0.0	0.0	0.0	0.0		4.7		
Total Delay	15.9	15.7	18.9	6.5		21.1		
LOS	B	B	B	A		C		
Approach Delay		15.7	15.1			21.1		
Approach LOS		B	B			C		
Queue Length 50th (ft)	41	139	150	16		94		
Queue Length 95th (ft)	m55	m192	221	55		#142		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	307	765	807	776		1859		
Starvation Cap Reductn	0	0	0	0		146		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.32	0.43	0.45	0.20		0.97		

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90

# Lanes, Volumes, Timings

## 29: N. Roxboro Street & Main Street

3/12/2015

Intersection Signal Delay: 19.1

Intersection LOS: B

Intersection Capacity Utilization 76.0%

ICU Level of Service D

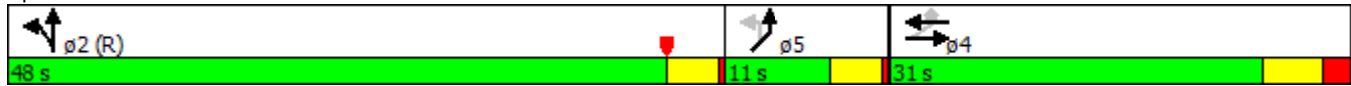
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













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

Splits and Phases: 29: N. Roxboro Street & Main Street



Lanes, Volumes, Timings  
 30: Roxboro & Pettigrew Street (Oneway)

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↗				↖	↑				
Volume (vph)	0	1973	8	0	0	0	86	89	0	0	0	0
Satd. Flow (prot)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Satd. Flow (RTOR)			36									
Lane Group Flow (vph)	0	2192	9	0	0	0	96	99	0	0	0	0
Turn Type		NA	Perm				pm+pt	NA				
Protected Phases		2					7	4				
Permitted Phases			2				4					
Detector Phase		2	2				7	4				
Switch Phase												
Minimum Initial (s)		10.0	10.0				4.0	7.0				
Minimum Split (s)		17.0	17.0				8.0	14.0				
Total Split (s)		68.0	68.0				22.0	22.0				
Total Split (%)		75.6%	75.6%				24.4%	24.4%				
Yellow Time (s)		4.0	4.0				3.5	4.0				
All-Red Time (s)		2.0	2.0				0.5	2.0				
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0				
Total Lost Time (s)		2.0	2.0				0.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max				None	None				
Act Effct Green (s)		75.5	75.5				15.0	13.5				
Actuated g/C Ratio		0.84	0.84				0.17	0.15				
v/c Ratio		0.74	0.01				0.33	0.36				
Control Delay		5.1	0.0				34.6	35.2				
Queue Delay		0.0	0.0				0.0	0.0				
Total Delay		5.2	0.0				34.6	35.2				
LOS		A	A				C	D				
Approach Delay		5.1						34.9				
Approach LOS		A						C				
Queue Length 50th (ft)		71	0				58	61				
Queue Length 95th (ft)		456	m0				108	112				
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)												
Base Capacity (vph)		2967	1333				428	409				
Starvation Cap Reductn		39	0				0	0				
Spillback Cap Reductn		0	0				0	0				
Storage Cap Reductn		0	0				0	0				
Reduced v/c Ratio		0.75	0.01				0.22	0.24				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 1 (1%), Referenced to phase 2:NBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.74

# Lanes, Volumes, Timings

## 30: Roxboro & Pettigrew Street (Oneway)

3/12/2015

Intersection Signal Delay: 7.6

Intersection LOS: A

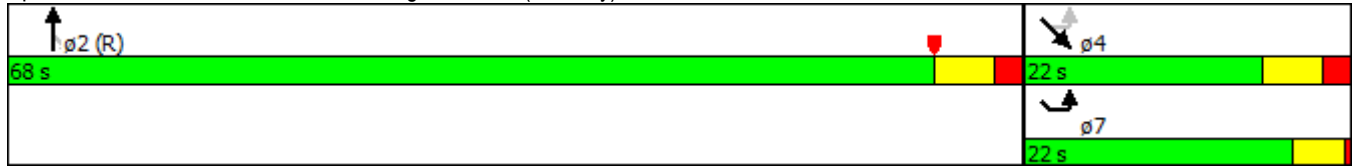
Intersection Capacity Utilization 92.2%

ICU Level of Service F

Analysis Period (min) 15

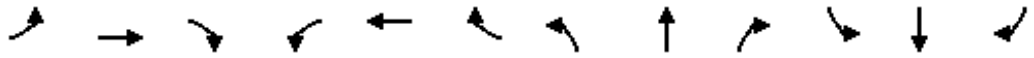
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 30: Roxboro & Pettigrew Street (Oneway)



Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	29	0	0	115	87	76	1853	115	0	0	0
Satd. Flow (prot)	1770	1863	0	0	1755	0	0	5075	1583	0	0	0
Flt Permitted	0.422							0.998				
Satd. Flow (perm)	786	1863	0	0	1755	0	0	5075	1583	0	0	0
Satd. Flow (RTOR)					14				128			
Lane Group Flow (vph)	52	32	0	0	225	0	0	2143	128	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	26.0	26.0			26.0		64.0	64.0	64.0			
Total Split (%)	28.9%	28.9%			28.9%		71.1%	71.1%	71.1%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	14.9	14.9			14.9			63.1	63.1			
Actuated g/C Ratio	0.17	0.17			0.17			0.70	0.70			
v/c Ratio	0.40	0.10			0.75			0.60	0.11			
Control Delay	41.4	30.4			48.1			5.3	0.4			
Queue Delay	0.0	0.0			0.0			0.2	0.0			
Total Delay	41.4	30.4			48.1			5.5	0.4			
LOS	D	C			D			A	A			
Approach Delay		37.2			48.1			5.2				
Approach LOS		D			D			A				
Queue Length 50th (ft)	27	16			115			129	0			
Queue Length 95th (ft)	59	38			181			m161	m0			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	174	414			400			3557	1147			
Starvation Cap Reductn	0	0			0			472	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.30	0.08			0.56			0.69	0.11			

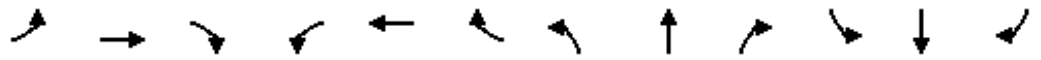
Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 21 (23%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↘	↑↑↑				
Volume (vph)	0	0	0	0	716	970	184	1093	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Satd. Flow (RTOR)						36	204					
Lane Group Flow (vph)	0	0	0	0	796	1078	204	1214	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					59.0	59.0	31.0	31.0				
Total Split (%)					65.6%	65.6%	34.4%	34.4%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					57.0	55.0	29.0	29.0				
Actuated g/C Ratio					0.63	0.61	0.32	0.32				
v/c Ratio					0.36	1.10	0.29	0.74				
Control Delay					8.3	79.3	4.5	30.5				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					8.3	79.3	4.5	30.5				
LOS					A	E	A	C				
Approach Delay					49.2			26.8				
Approach LOS					D			C				
Queue Length 50th (ft)					101	~696	0	223				
Queue Length 95th (ft)					133	#940	47	275				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2241	981	708	1638				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.36	1.10	0.29	0.74				

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 53 (59%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.10



# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

3/12/2015

Intersection Signal Delay: 39.5

Intersection LOS: D

Intersection Capacity Utilization 87.8%

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: 32: Jackie Robinson Drive & Roxboro



Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘			↕	
Volume (vph)	0	138	62	46	379	3	173	6	19	10	43	20
Satd. Flow (prot)	0	1785	0	0	1852	0	1770	1652	0	0	1781	0
Flt Permitted					0.949		0.703				0.976	
Satd. Flow (perm)	0	1785	0	0	1766	0	1310	1652	0	0	1751	0
Satd. Flow (RTOR)		42			1			21			22	
Lane Group Flow (vph)	0	222	0	0	475	0	192	28	0	0	81	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	53.0	53.0		53.0	53.0		37.0	37.0		37.0	37.0	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		51.0			51.0		35.0	35.0			35.0	
Actuated g/C Ratio		0.57			0.57		0.39	0.39			0.39	
v/c Ratio		0.22			0.47		0.38	0.04			0.12	
Control Delay		6.8			13.5		19.4	6.4			13.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		6.8			13.5		19.4	6.4			13.9	
LOS		A			B		B	A			B	
Approach Delay		6.8			13.5			17.8			13.9	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		31			149		90	0			21	
Queue Length 95th (ft)		50			226		145	25			50	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1029			1001		509	655			694	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.22			0.47		0.38	0.04			0.12	

Intersection Summary

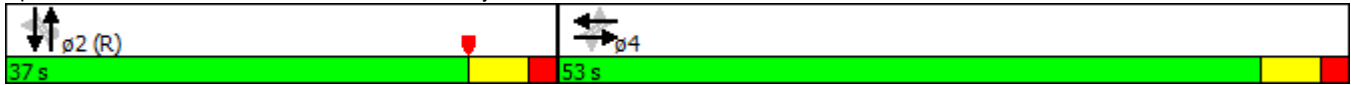
Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 33 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 13.0  
 Intersection Capacity Utilization 60.0%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street




















3/12/2015

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	88	4	11	140	0	24	54	78	71	0	86
Satd. Flow (prot)	0	3518	0	0	3525	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.939		0.950			0.718		
Satd. Flow (perm)	0	3518	0	0	3323	0	1770	1863	1583	1337	0	1583
Satd. Flow (RTOR)		4							87			96
Lane Group Flow (vph)	0	102	0	0	168	0	27	60	87	79	0	96
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		37.0		37.0	37.0		53.0	53.0	53.0	53.0		53.0
Total Split (%)		41.1%		41.1%	41.1%		58.9%	58.9%	58.9%	58.9%		58.9%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0			2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		35.0			35.0		51.0	51.0	51.0	51.0		51.0
Actuated g/C Ratio		0.39			0.39		0.57	0.57	0.57	0.57		0.57
v/c Ratio		0.07			0.13		0.03	0.06	0.09	0.10		0.10
Control Delay		17.8			13.8		1.7	1.7	0.2	9.5		2.3
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		17.8			13.8		1.7	1.7	0.2	9.5		2.3
LOS		B			B		A	A	A	A		A
Approach Delay		17.8			13.8			1.0				
Approach LOS		B			B			A				
Queue Length 50th (ft)		22			34		2	3	0	19		0
Queue Length 95th (ft)		41			47		4	7	1	40		20
Internal Link Dist (ft)		428			477			952			87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1370			1292		1003	1055	934	757		938
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		0.07			0.13		0.03	0.06	0.09	0.10		0.10

Intersection Summary

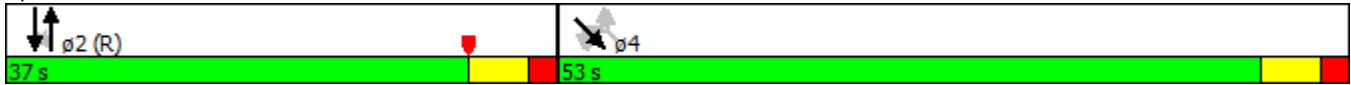
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 13 (14%), Referenced to phase 2:NBSB, Start of Yellow	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.13	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 32.5%	ICU Level of Service A
Analysis Period (min) 15	

Lanes, Volumes, Timings

34: Dillard Street

3/12/2015

Splits and Phases: 34: Dillard Street



Lanes, Volumes, Timings  
 35: Dillard Street & Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	97	96	45	446	53	37	27	12	59	85	104
Satd. Flow (prot)	1770	1863	1583	1770	1833	0	1770	1779	0	1770	1708	0
Flt Permitted	0.355			0.686			0.496			0.729		
Satd. Flow (perm)	661	1863	1583	1278	1833	0	924	1779	0	1358	1708	0
Satd. Flow (RTOR)			107		13			13			73	
Lane Group Flow (vph)	16	108	107	50	555	0	41	43	0	66	210	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2				2
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0		31.0	31.0		31.0	31.0	
Total Split (%)	65.6%	65.6%	65.6%	65.6%	65.6%		34.4%	34.4%		34.4%	34.4%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	57.0	57.0	57.0	57.0	57.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.63		0.32	0.32		0.32	0.32	
v/c Ratio	0.04	0.09	0.10	0.06	0.48		0.14	0.07		0.15	0.35	
Control Delay	6.7	7.3	3.6	6.6	10.1		23.3	16.7		21.0	15.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.7	7.3	3.6	6.6	10.1		23.3	16.7		21.0	15.7	
LOS	A	A	A	A	B		C	B		C	B	
Approach Delay		5.5			9.8			19.9			17.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	5	38	19	10	145		16	12		29	64	
Queue Length 95th (ft)	m8	m51	m28	23	218		41	35		62	124	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	418	1179	1041	809	1165		297	582		437	599	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.09	0.10	0.06	0.48		0.14	0.07		0.15	0.35	

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 3 (3%), Referenced to phase 4:EBWB, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 11.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.4%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

3/12/2015

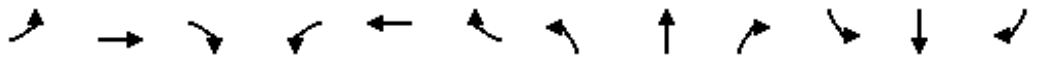
Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	50	20	37	0	43	0	68	8	37	109	0
Satd. Flow (prot)	1718	1733	0	0	1638	0	0	1783	0	1718	1809	0
Flt Permitted	0.699				0.881					0.702		
Satd. Flow (perm)	1264	1733	0	0	1477	0	0	1783	0	1270	1809	0
Satd. Flow (RTOR)		22			73			9				
Lane Group Flow (vph)	30	78	0	0	89	0	0	85	0	41	121	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2						8		
Detector Phase	6	6		2	2			4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0			7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			23.0		23.0	23.0	
Total Split (s)	29.0	29.0		29.0	29.0			31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%			51.7%		51.7%	51.7%	
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	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		C-Max	C-Max			None		None	None	
Act Effct Green (s)	42.2	42.2			42.2			11.6		11.6	11.6	
Actuated g/C Ratio	0.70	0.70			0.70			0.19		0.19	0.19	
v/c Ratio	0.03	0.06			0.08			0.24		0.17	0.35	
Control Delay	4.9	3.9			0.6			19.7		20.8	23.1	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	4.9	3.9			0.6			19.7		20.8	23.1	
LOS	A	A			A			B		C	C	
Approach Delay		4.2			0.6			19.7			22.5	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)	3	6			0			24		13	38	
Queue Length 95th (ft)	13	22			m1			52		33	73	
Internal Link Dist (ft)		989			699			307			151	
Turn Bay Length (ft)	100											
Base Capacity (vph)	889	1225			1061			777		550	783	
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	0.03	0.06			0.08			0.11		0.07	0.15	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.35



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street

3/12/2015

Intersection Signal Delay: 13.1

Intersection LOS: B

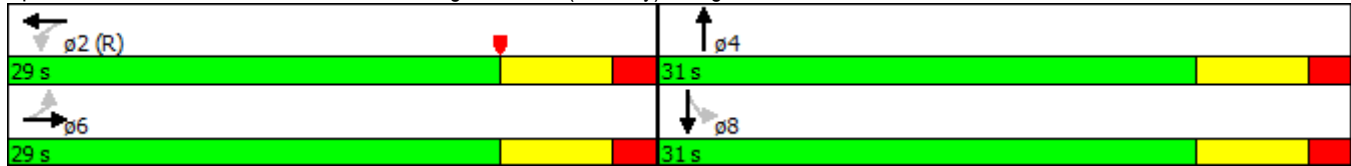
Intersection Capacity Utilization 28.4%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 36: Dillard Street & Pettigrew Street (Oneway)/Pettigrew Street



Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	53	6	96	90	108	3	371	45	58	432	1
Satd. Flow (prot)	1718	1809	1537	1718	1660	0	1718	3381	0	1718	3436	0
Flt Permitted	0.340			0.719			0.369			0.950		
Satd. Flow (perm)	615	1809	1537	1300	1660	0	667	3381	0	1718	3436	0
Satd. Flow (RTOR)			227		45			19				
Lane Group Flow (vph)	10	59	7	107	220	0	3	462	0	64	481	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		3			3		5	2 4		1	6	
Permitted Phases	3		3	3			2 4					
Detector Phase	3	3	3	3	3		5	2 4		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			5.0	10.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		14.0			12.0	27.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		32.0			15.0	35.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		26.7%			12.5%	29.2%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?										Yes		
Recall Mode	None	None	None	None	None		None			None	C-Max	
Act Effct Green (s)	19.8	19.8	19.8	19.8	19.8		73.2	78.2		9.6	47.0	
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.61	0.65		0.08	0.39	
v/c Ratio	0.10	0.20	0.02	0.50	0.71		0.01	0.21		0.47	0.36	
Control Delay	37.1	37.1	0.0	44.4	41.0		2.7	2.2		64.1	29.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	37.1	37.1	0.0	44.4	41.0		2.7	2.4		64.1	29.9	
LOS	D	D	A	D	D		A	A		E	C	
Approach Delay		33.7			42.1			2.4			34.0	
Approach LOS		C			D			A			C	
Queue Length 50th (ft)	5	33	0	63	114		0	13		48	136	
Queue Length 95th (ft)	18	61	0	89	133		m1	36		95	227	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	128	376	499	270	381		643	2179		143	1345	
Starvation Cap Reductn	0	0	0	0	0		0	1039		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.16	0.01	0.40	0.58		0.00	0.41		0.45	0.36	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71

Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street

3/12/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Satd. Flow (RTOR)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	52.0	23.0	14.0	39.0
Total Split (%)	43%	19%	12%	33%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
<b>Intersection Summary</b>				



Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	227	328	0	0	490	44	0	0	0	169	13	91
Satd. Flow (prot)	1718	3436	0	0	3395	0	0	0	0	0	3167	0
Flt Permitted	0.290										0.970	
Satd. Flow (perm)	525	3436	0	0	3395	0	0	0	0	0	3167	0
Satd. Flow (RTOR)					9						73	
Lane Group Flow (vph)	252	364	0	0	593	0	0	0	0	0	303	0
Turn Type	pm+pt	NA			NA					Perm	NA	
Protected Phases	5	2			6 7							8
Permitted Phases	2									8		
Detector Phase	5	2			6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	32.0	52.0								39.0	39.0	
Total Split (%)	26.7%	43.3%								32.5%	32.5%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0										-2.0
Total Lost Time (s)	5.0	5.0										5.0
Lead/Lag	Lead	Lead								Lag	Lag	
Lead-Lag Optimize?		Yes								Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	58.8	58.8			61.0							25.2
Actuated g/C Ratio	0.49	0.49			0.51							0.21
v/c Ratio	0.57	0.22			0.34							0.42
Control Delay	24.6	18.3			6.2							31.2
Queue Delay	0.1	0.0			0.2							0.0
Total Delay	24.7	18.3			6.4							31.2
LOS	C	B			A							C
Approach Delay		20.9			6.4							31.2
Approach LOS		C			A							C
Queue Length 50th (ft)	112	73			24							80
Queue Length 95th (ft)	160	113			40							112
Internal Link Dist (ft)		254			141			340				242
Turn Bay Length (ft)												
Base Capacity (vph)	525	1684			1729							949
Starvation Cap Reductn	17	0			446							0
Spillback Cap Reductn	0	0			0							0
Storage Cap Reductn	0	0			0							0
Reduced v/c Ratio	0.50	0.22			0.46							0.32

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

Lane Group	ø1	ø3	ø4	ø6	ø7
Lane Configurations					
Volume (vph)					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Satd. Flow (RTOR)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	4	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	10.0	7.0
Minimum Split (s)	12.0	23.0	23.0	27.0	14.0
Total Split (s)	15.0	30.0	23.0	35.0	14.0
Total Split (%)	13%	25%	19%	29%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	None	None	None	C-Max	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					
Queue Length 50th (ft)					
Queue Length 95th (ft)					
Internal Link Dist (ft)					
Turn Bay Length (ft)					
Base Capacity (vph)					
Starvation Cap Reductn					
Spillback Cap Reductn					
Storage Cap Reductn					
Reduced v/c Ratio					
<b>Intersection Summary</b>					

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

Intersection Signal Delay: 17.3

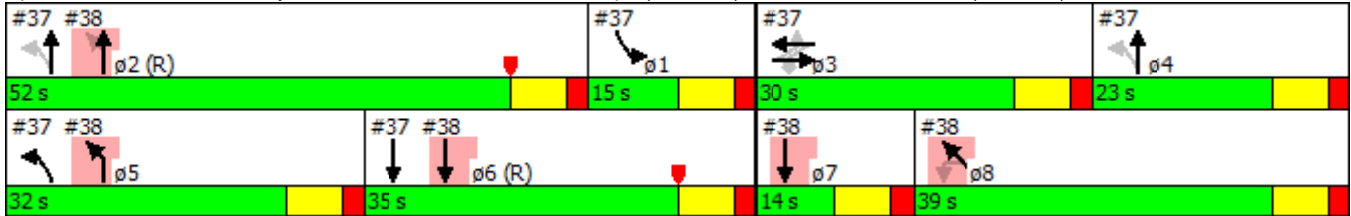
Intersection LOS: B

Intersection Capacity Utilization 49.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)



Lanes, Volumes, Timings

39: Fayetteville Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	44	0	139	0	0	0	0	511	20	93	566	0
Satd. Flow (prot)	0	1736	1553	0	0	0	0	4908	0	1718	3436	0
Flt Permitted		0.950								0.419		
Satd. Flow (perm)	0	1736	1553	0	0	0	0	4908	0	758	3436	0
Satd. Flow (RTOR)			154					8				
Lane Group Flow (vph)	0	49	154	0	0	0	0	590	0	103	629	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	48.0	48.0	48.0					72.0		72.0	72.0	
Total Split (%)	40.0%	40.0%	40.0%					60.0%		60.0%	60.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		11.3	11.3					98.7		98.7	98.7	
Actuated g/C Ratio		0.09	0.09					0.82		0.82	0.82	
v/c Ratio		0.30	0.54					0.15		0.17	0.22	
Control Delay		54.8	15.1					2.3		1.1	0.7	
Queue Delay		0.0	0.0					0.0		0.0	0.1	
Total Delay		54.8	15.1					2.3		1.1	0.8	
LOS		D	B					A		A	A	
Approach Delay		24.6						2.3			0.8	
Approach LOS		C						A			A	
Queue Length 50th (ft)		36	0					24		3	8	
Queue Length 95th (ft)		74	62					40		7	15	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		622	655					4039		623	2827	
Starvation Cap Reductn		0	0					0		0	1125	
Spillback Cap Reductn		0	0					0		0	0	
Storage Cap Reductn		0	0					0		0	0	
Reduced v/c Ratio		0.08	0.24					0.15		0.17	0.37	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 53 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54



# Lanes, Volumes, Timings

## 39: Fayetteville Street

3/12/2015

Intersection Signal Delay: 4.6

Intersection LOS: A

Intersection Capacity Utilization 47.9%

ICU Level of Service A

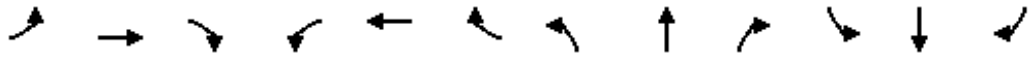
Analysis Period (min) 15

Splits and Phases: 39: Fayetteville Street



Lanes, Volumes, Timings  
 40: Grant Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	149	7	69	294	123	0	93	102	90	50	0
Satd. Flow (prot)	1809	1796	0	1718	1729	0	0	1680	0	0	1753	0
Flt Permitted				0.647							0.628	
Satd. Flow (perm)	1809	1796	0	1170	1729	0	0	1680	0	0	1136	0
Satd. Flow (RTOR)		5			47			104				
Lane Group Flow (vph)	0	174	0	77	464	0	0	216	0	0	156	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		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	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)		35.3		35.3	35.3			14.7			14.7	
Actuated g/C Ratio		0.59		0.59	0.59			0.24			0.24	
v/c Ratio		0.16		0.11	0.45			0.44			0.56	
Control Delay		10.9		7.4	8.8			12.2			27.0	
Queue Delay		0.0		0.0	0.0			0.0			0.0	
Total Delay		10.9		7.4	8.8			12.2			27.0	
LOS		B		A	A			B			C	
Approach Delay		10.9			8.7			12.2			27.0	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)		97		11	71			33			50	
Queue Length 95th (ft)		147		34	166			72			89	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)				75								
Base Capacity (vph)		1059		689	1037			681			416	
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.16		0.11	0.45			0.32			0.38	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.56



Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	282	73	21	426	105	11
Satd. Flow (prot)	1758	0	1718	1809	1708	0
Flt Permitted			0.950		0.957	
Satd. Flow (perm)	1758	0	1718	1809	1708	0
Lane Group Flow (vph)	394	0	23	473	129	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

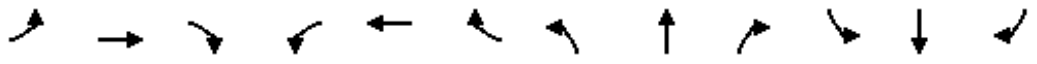
Intersection Capacity Utilization 35.6%      ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	0	182	457	52	321	13	870	0	0	1438	46
Satd. Flow (prot)	1718	0	1537	1718	1575	0	1718	3436	0	0	3419	0
Flt Permitted	0.519			0.950			0.058					
Satd. Flow (perm)	939	0	1537	1718	1575	0	105	3436	0	0	3419	0
Satd. Flow (RTOR)			164		122							4
Lane Group Flow (vph)	70	0	202	508	415	0	14	967	0	0	1649	0
Turn Type	Perm		Perm	pm+pt	NA		pm+pt	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8			2					
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0			10.0	
Minimum Split (s)	24.0		24.0	14.0	24.0		14.0	20.0			24.0	
Total Split (s)	24.0		24.0	21.0	45.0		14.0	75.0			61.0	
Total Split (%)	20.0%		20.0%	17.5%	37.5%		11.7%	62.5%			50.8%	
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	Lag		Lag	Lead			Lead				Lag	
Lead-Lag Optimize?	Yes		Yes	Yes			Yes				Yes	
Recall Mode	None		None	None	None		None	C-Max			C-Max	
Act Effct Green (s)	15.3		15.3	36.3	36.3		73.7	73.7			68.1	
Actuated g/C Ratio	0.13		0.13	0.30	0.30		0.61	0.61			0.57	
v/c Ratio	0.59		0.60	0.98	0.74		0.08	0.46			0.85	
Control Delay	69.9		21.1	76.1	34.4		11.1	13.8			29.0	
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	69.9		21.1	76.1	34.4		11.1	13.8			29.0	
LOS	E		C	E	C		B	B			C	
Approach Delay					57.3			13.7			29.0	
Approach LOS					E			B			C	
Queue Length 50th (ft)	53		30	385	206		4	202			478	
Queue Length 95th (ft)	102		108	#570	318		13	267			#863	
Internal Link Dist (ft)		434			115			139			473	
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	148		381	519	606		185	2110			1942	
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	0.47		0.53	0.98	0.68		0.08	0.46			0.85	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 90.3%

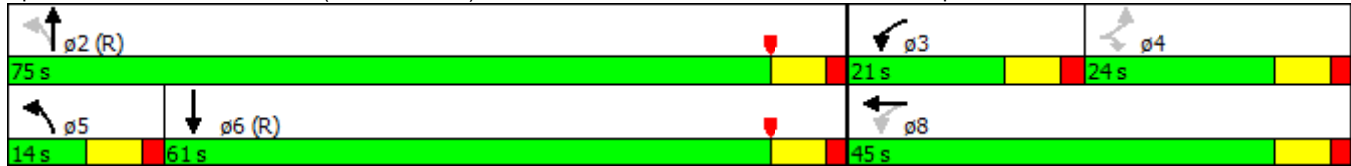
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

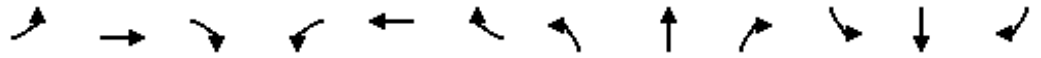


# **Synchro Output-2040 Build Alt 2 PM**

Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



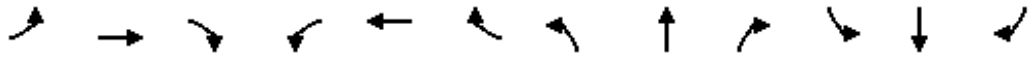
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	549	65	34	685	183	94	339	66	109	310	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	130		250	100		0	80		80	150		150
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	100			25			25			25		
Satd. Flow (prot)	1718	1809	1537	1718	1751	0	1718	1809	1537	1718	1809	1537
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	1809	1537	1718	1751	0	1718	1809	1537	1718	1809	1537
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			140						86			141
Link Speed (mph)		35			25			35				35
Link Distance (ft)		378			300			356				353
Travel Time (s)		7.4			8.2			6.9				6.9
Lane Group Flow (vph)	204	610	72	38	964	0	104	377	73	121	344	200
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases			2						8			4
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	35.0	35.0	14.0	30.0		14.0	31.0	14.0	14.0	32.0	14.0
Total Split (s)	19.0	79.0	79.0	14.0	74.0		14.0	33.0	14.0	14.0	33.0	19.0
Total Split (%)	13.6%	56.4%	56.4%	10.0%	52.9%		10.0%	23.6%	10.0%	10.0%	23.6%	13.6%
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
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
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	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	None
Act Effct Green (s)	14.0	76.8	76.8	9.0	69.0		9.0	28.0	42.0	9.0	28.0	47.0
Actuated g/C Ratio	0.10	0.55	0.55	0.06	0.49		0.06	0.20	0.30	0.06	0.20	0.34
v/c Ratio	1.19	0.61	0.08	0.35	1.12		0.95	1.04	0.14	1.10	0.95	0.33
Control Delay	182.2	25.7	0.2	71.8	102.5		136.2	112.7	5.7	173.4	91.9	12.4
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	182.2	25.7	0.2	71.8	102.5		136.2	112.7	5.7	173.4	91.9	12.4
LOS	F	C	A	E	F		F	F	A	F	F	B
Approach Delay		59.7			101.4			103.0				82.9
Approach LOS		E			F			F				F
Queue Length 50th (ft)	~223	384	0	34	~1006		96	~371	0	~124	313	37
Queue Length 95th (ft)	#388	515	0	73	#1265		#217	#575	29	#258	#507	100
Internal Link Dist (ft)		298			220			276				273
Turn Bay Length (ft)	130		250	100			80		80	150		150
Base Capacity (vph)	171	992	906	110	862		110	361	521	110	361	609
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



Lanes, Volumes, Timings

5: Buchanan Boulevard & W Main Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	1.19	0.61	0.08	0.35	1.12		0.95	1.04	0.14	1.10	0.95	0.33

Intersection Summary

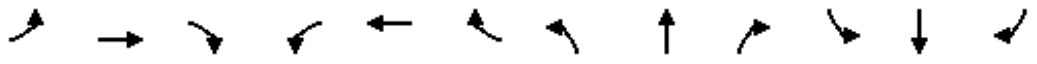
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow											
Natural Cycle:	135											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	1.19											
Intersection Signal Delay:	85.8						Intersection LOS: F					
Intersection Capacity Utilization	97.9%						ICU Level of Service F					
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: 5: Buchanan Boulevard & W Main Street (No Train)



Lanes, Volumes, Timings  
6: Duke Street & W. Main Street

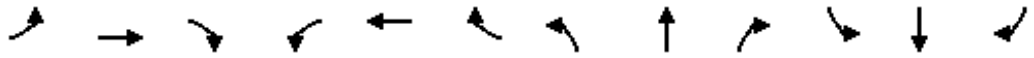
3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	449	0	0	276	27	246	1167	27	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1546	1628	0	0	1608	0	1546	3084	0	0	0	0
Flt Permitted	0.390						0.950					
Satd. Flow (perm)	635	1628	0	0	1608	0	1546	3084	0	0	0	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					4			2				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		287			246			371			269	
Travel Time (s)		6.5			5.6			7.2			5.2	
Lane Group Flow (vph)	198	499	0	0	337	0	273	1327	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0				
Minimum Split (s)	31.0	31.0			32.0		28.0	28.0				
Total Split (s)	65.0	65.0			65.0		75.0	75.0				
Total Split (%)	46.4%	46.4%			46.4%		53.6%	53.6%				
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max				
Act Effct Green (s)	51.3	51.3			51.3		78.7	78.7				
Actuated g/C Ratio	0.37	0.37			0.37		0.56	0.56				
v/c Ratio	0.85	0.84			0.57		0.31	0.76				
Control Delay	71.3	53.1			38.2		19.0	28.7				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	71.3	53.1			38.2		19.0	28.7				
LOS	E	D			D		B	C				
Approach Delay		58.3			38.2			27.1				
Approach LOS		E			D			C				
Queue Length 50th (ft)	163	407			238		130	481				
Queue Length 95th (ft)	#280	511			309		216	654				
Internal Link Dist (ft)		207			166			291			189	
Turn Bay Length (ft)	75											
Base Capacity (vph)	272	697			691		869	1735				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				

Lanes, Volumes, Timings  
 6: Duke Street & W. Main Street

3/12/2015

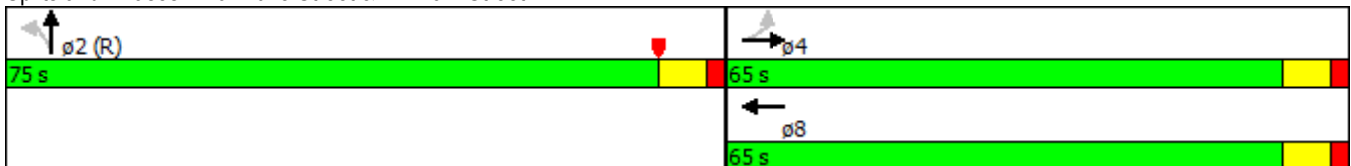


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.73	0.72			0.49		0.31	0.76				

Intersection Summary

Area Type: CBD  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 36.8 Intersection LOS: D  
 Intersection Capacity Utilization 78.2% 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: 6: Duke Street & W. Main Street



Lanes, Volumes, Timings  
 7: Duke Street & Peabody Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↔				
Volume (vph)	28	11	0	0	27	7	102	1405	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Satd. Flow (prot)	0	1571	0	0	1582	0	1546	3093	0	0	0	0
Flt Permitted		0.965					0.950					
Satd. Flow (perm)	0	1571	0	0	1582	0	1546	3093	0	0	0	0
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		246			237			253			371	
Travel Time (s)		5.6			5.4			4.9			7.2	
Lane Group Flow (vph)	0	43	0	0	38	0	113	1564	0	0	0	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	59.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
 8: Duke Street & Memorial Street

3/12/2015



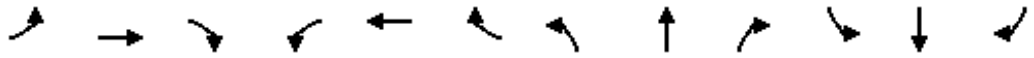
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	10	0	10	1500	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Satd. Flow (prot)	1718	0	1718	3436	0	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1718	0	1718	3436	0	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	296			304	253	
Travel Time (s)	6.7			5.9	4.9	
Lane Group Flow (vph)	11	0	11	1667	0	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 9: Duke Street & Chapel Hill Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	365	0	0	717	18	221	1343	113	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	115		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1718	1809	0	0	1803	0	0	4903	1537	0	0	0
Flt Permitted	0.067							0.993				
Satd. Flow (perm)	121	1809	0	0	1803	0	0	4903	1537	0	0	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					1				100			
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		340			394			330			304	
Travel Time (s)		9.3			10.7			6.4			5.9	
Lane Group Flow (vph)	166	406	0	0	817	0	0	1738	126	0	0	0
Turn Type	pm+pt	NA			NA		Split	NA	Prot			
Protected Phases	7	4			8		2	2	2			
Permitted Phases	4											
Detector Phase	7	4			8		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	35.0			29.0		30.0	30.0	30.0			
Total Split (s)	14.0	74.0			60.0		46.0	46.0	46.0			
Total Split (%)	11.7%	61.7%			50.0%		38.3%	38.3%	38.3%			
Yellow Time (s)	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			
Lost Time Adjust (s)	-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			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Recall Mode	None	C-Max			C-Max		Max	Max	Max			
Act Effct Green (s)	69.0	69.0			55.0			41.0	41.0			
Actuated g/C Ratio	0.58	0.58			0.46			0.34	0.34			
v/c Ratio	0.88	0.39			0.99			1.04	0.21			
Control Delay	66.5	15.4			49.1			71.3	9.1			
Queue Delay	0.0	0.0			3.1			0.0	0.0			
Total Delay	66.5	15.4			52.2			71.3	9.1			
LOS	E	B			D			E	A			
Approach Delay		30.2			52.2			67.1				
Approach LOS		C			D			E				
Queue Length 50th (ft)	78	164			613			~531	13			
Queue Length 95th (ft)	#208	233			#881			#628	57			
Internal Link Dist (ft)		260			314			250			224	
Turn Bay Length (ft)	115											
Base Capacity (vph)	189	1040			826			1675	590			
Starvation Cap Reductn	0	0			11			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			

Lanes, Volumes, Timings

9: Duke Street & Chapel Hill Street

3/12/2015

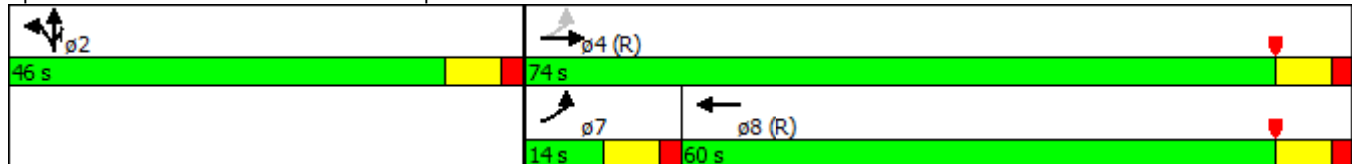


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.88	0.39			1.00			1.04	0.21			

Intersection Summary

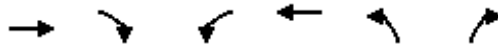
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.04
Intersection Signal Delay:	56.9
Intersection LOS:	E
Intersection Capacity Utilization:	90.0%
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: 9: Duke Street & Chapel Hill Street



Lanes, Volumes, Timings  
 10: Willard Street & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	421	57	79	692	43	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Storage Length (ft)		0	65		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			65		0	
Satd. Flow (prot)	1780	0	1718	1809	1608	0
Flt Permitted			0.950		0.987	
Satd. Flow (perm)	1780	0	1718	1809	1608	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	394			248	276	
Travel Time (s)	10.7			6.8	6.3	
Lane Group Flow (vph)	531	0	88	769	179	0
Sign Control	Free			Free	Stop	

Intersection Summary

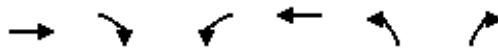
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.7%
	ICU Level of Service A
Analysis Period (min)	15



# Lanes, Volumes, Timings

## 11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø4
Lane Configurations	↔		↔	↔			
Volume (vph)	398	141	25	771	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Grade (%)	2%			2%	2%		
Satd. Flow (prot)	1745	0	1718	1809	0	0	
Flt Permitted			0.364				
Satd. Flow (perm)	1745	0	658	1809	0	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	37						
Link Speed (mph)	25			25	30		
Link Distance (ft)	248			290	1489		
Travel Time (s)	6.8			7.9	33.8		
Lane Group Flow (vph)	599	0	28	857	0	0	
Turn Type	NA		Perm	NA			
Protected Phases	2			6			4
Permitted Phases			6				
Minimum Split (s)	24.0		24.0	24.0			32.0
Total Split (s)	88.0		88.0	88.0			32.0
Total Split (%)	73.3%		73.3%	73.3%			27%
Yellow Time (s)	3.0		3.0	3.0			3.0
All-Red Time (s)	2.0		2.0	2.0			2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0		3.0	3.0			
Lead/Lag							
Lead-Lag Optimize?							
Act Effct Green (s)	85.0		85.0	85.0			
Actuated g/C Ratio	0.71		0.71	0.71			
v/c Ratio	0.48		0.06	0.67			
Control Delay	4.4		5.8	12.9			
Queue Delay	0.1		0.0	24.9			
Total Delay	4.6		5.8	37.9			
LOS	A		A	D			
Approach Delay	4.6			36.9			
Approach LOS	A			D			
Queue Length 50th (ft)	60		6	329			
Queue Length 95th (ft)	105		15	460			
Internal Link Dist (ft)	168			210	1409		
Turn Bay Length (ft)							
Base Capacity (vph)	1246		466	1281			
Starvation Cap Reductn	117		0	450			
Spillback Cap Reductn	0		0	165			
Storage Cap Reductn	0		0	0			
Reduced v/c Ratio	0.53		0.06	1.03			

### Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Lanes, Volumes, Timings

11: Pettigrew Street (Oneway) & Chapel Hill Street

3/12/2015

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 23.8

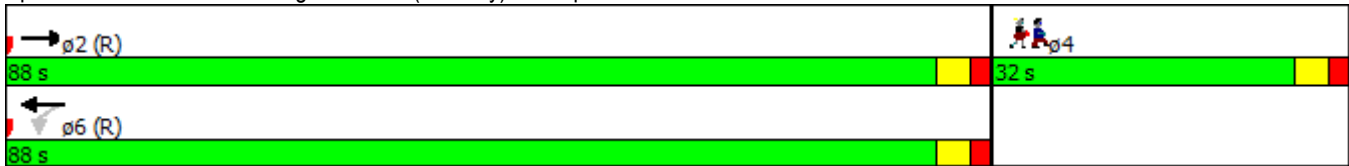
Intersection LOS: C

Intersection Capacity Utilization 43.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: Pettigrew Street (Oneway) & Chapel Hill Street



# Lanes, Volumes, Timings

## 12: Downtown loop/Great Jones Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↑↑↑	↗
Volume (vph)	0	304	94	14	160	0	0	0	0	11	395	636
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1863	1583	0	1670	0	0	0	0	0	5080	1583
Flt Permitted					0.966						0.999	
Satd. Flow (perm)	0	1863	1583	0	1619	0	0	0	0	0	5080	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		90			456			875			293	
Travel Time (s)		2.0			10.4			19.9			6.7	
Lane Group Flow (vph)	0	338	104	0	194	0	0	0	0	0	451	707
Turn Type		NA	Free	Perm	NA					Split	NA	Free
Protected Phases		4			8					6	6	
Permitted Phases			Free	8								Free
Minimum Split (s)		29.0		29.0	29.0					20.0	20.0	
Total Split (s)		52.0		52.0	52.0					23.0	23.0	
Total Split (%)		69.3%		69.3%	69.3%					30.7%	30.7%	
Yellow Time (s)		4.0		4.0	4.0					3.5	3.5	
All-Red Time (s)		2.0		2.0	2.0					0.5	0.5	
Lost Time Adjust (s)		-4.0			-1.0						-4.0	
Total Lost Time (s)		2.0			5.0						0.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		50.0	75.0		47.0						23.0	75.0
Actuated g/C Ratio		0.67	1.00		0.63						0.31	1.00
v/c Ratio		0.27	0.07		0.19						0.29	0.45
Control Delay		5.8	0.1		14.0						11.9	4.2
Queue Delay		0.0	0.0		0.0						0.0	0.0
Total Delay		5.8	0.1		14.0						11.9	4.2
LOS		A	A		B						B	A
Approach Delay		4.4			14.0						7.2	
Approach LOS		A			B						A	
Queue Length 50th (ft)		55	0		64						27	106
Queue Length 95th (ft)		89	0		122						38	185
Internal Link Dist (ft)		10			376			795			213	
Turn Bay Length (ft)												
Base Capacity (vph)		1242	1583		1014						1557	1583
Starvation Cap Reductn		0	0		0						0	0
Spillback Cap Reductn		0	0		0						0	0
Storage Cap Reductn		0	0		0						0	0
Reduced v/c Ratio		0.27	0.07		0.19						0.29	0.45

### Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 46 (61%), Referenced to phase 6:SBTL, Start of Yellow  
 Natural Cycle: 50

Lanes, Volumes, Timings

12: Downtown loop/Great Jones Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 7.3

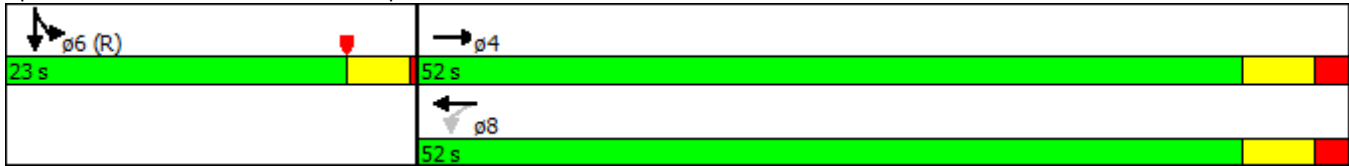
Intersection LOS: A

Intersection Capacity Utilization 35.4%

ICU Level of Service A

Analysis Period (min) 15



















Splits and Phases: 12: Downtown loop/Great Jones Street



Lanes, Volumes, Timings

13: Great Jones Street & W. Main Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					  							
Volume (vph)	0	0	0	54	815	206	0	337	208	19	239	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6203	0	0	1863	1583	0	1855	0
Flt Permitted					0.997						0.964	
Satd. Flow (perm)	0	0	0	0	6203	0	0	1863	1583	0	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					95				52			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		293			374			800			493	
Travel Time (s)		6.7			8.5			18.2			11.2	
Lane Group Flow (vph)	0	0	0	0	1195	0	0	374	231	0	287	0
Turn Type				Perm	NA			NA	custom	Perm	NA	
Protected Phases					2							8
Permitted Phases				2				4	4	8		
Minimum Split (s)				20.0	20.0			30.0	30.0	30.0	30.0	
Total Split (s)				30.0	30.0			45.0	45.0	45.0	45.0	
Total Split (%)				40.0%	40.0%			60.0%	60.0%	60.0%	60.0%	
Yellow Time (s)				3.5	3.5			3.8	3.8	3.8	3.8	
All-Red Time (s)				0.5	0.5			2.4	2.4	2.4	2.4	
Lost Time Adjust (s)					-4.0			-4.0	-4.0		-4.0	
Total Lost Time (s)					0.0			2.2	2.2		2.2	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					30.0			42.8	42.8		42.8	
Actuated g/C Ratio					0.40			0.57	0.57		0.57	
v/c Ratio					0.47			0.35	0.25		0.28	
Control Delay					15.9			9.8	7.0		9.2	
Queue Delay					0.0			0.0	0.0		0.0	
Total Delay					15.9			9.8	7.0		9.2	
LOS					B			A	A		A	
Approach Delay					15.9			8.7			9.2	
Approach LOS					B			A			A	
Queue Length 50th (ft)					105			85	37		55	
Queue Length 95th (ft)					134			137	71		88	
Internal Link Dist (ft)		213			294			720			413	
Turn Bay Length (ft)												
Base Capacity (vph)					2538			1063	925		1024	
Starvation Cap Reductn					0			0	0		0	
Spillback Cap Reductn					0			0	0		0	
Storage Cap Reductn					0			0	0		0	
Reduced v/c Ratio					0.47			0.35	0.25		0.28	
<b>Intersection Summary</b>												
Area Type:	Other											
Cycle Length:	75											
Actuated Cycle Length:	75											
Offset:	48 (64%), Referenced to phase 2:SBTL, Start of Yellow											
Natural Cycle:	50											

# Lanes, Volumes, Timings

## 13: Great Jones Street & W. Main Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 12.9

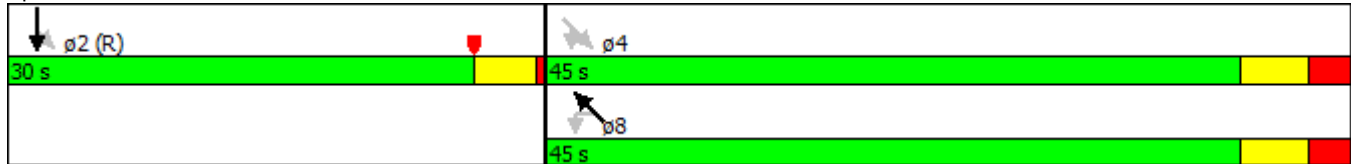
Intersection LOS: B

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 13: Great Jones Street & W. Main Street



Lanes, Volumes, Timings  
 14: Morris Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑		↖	↑				↗
Volume (vph)	0	0	0	0	770	57	124	92	0	0	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6344	0	1770	1863	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6344	0	1770	1863	0	0	0	1611
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)					26							140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			683			465			317	
Travel Time (s)		2.9			15.5			10.6			7.2	
Lane Group Flow (vph)	0	0	0	0	919	0	138	102	0	0	0	339
Turn Type					NA		Split	NA				Prot
Protected Phases					2		3	3				4
Permitted Phases												4
Minimum Split (s)					25.0		8.0	8.0				20.0
Total Split (s)					34.0		12.0	12.0				29.0
Total Split (%)					45.3%		16.0%	16.0%				38.7%
Yellow Time (s)					3.8		3.5	3.5				3.5
All-Red Time (s)					1.5		0.5	0.5				0.5
Lost Time Adjust (s)					-4.0		-4.0	-4.0				-4.0
Total Lost Time (s)					1.3		0.0	0.0				0.0
Lead/Lag							Lead	Lead				Lag
Lead-Lag Optimize?							Yes	Yes				Yes
Act Effct Green (s)					32.7		12.0	12.0				29.0
Actuated g/C Ratio					0.44		0.16	0.16				0.39
v/c Ratio					0.33		0.49	0.34				0.48
Control Delay					9.7		36.6	33.1				12.4
Queue Delay					0.0		0.0	0.0				0.0
Total Delay					9.7		36.6	33.1				12.4
LOS					A		D	C				B
Approach Delay					9.7			35.1				
Approach LOS					A			D				
Queue Length 50th (ft)					46		62	43				63
Queue Length 95th (ft)					56		m111	m80				134
Internal Link Dist (ft)		48			603			385			237	
Turn Bay Length (ft)												
Base Capacity (vph)					2780		283	298				708
Starvation Cap Reductn					0		0	0				0
Spillback Cap Reductn					0		0	0				0
Storage Cap Reductn					0		0	0				0
Reduced v/c Ratio					0.33		0.49	0.34				0.48

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 58 (77%), Referenced to phase 2:WBT, Start of Yellow  
 Natural Cycle: 55

Lanes, Volumes, Timings  
14: Morris Street & Great Jones

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 14.4

Intersection LOS: B

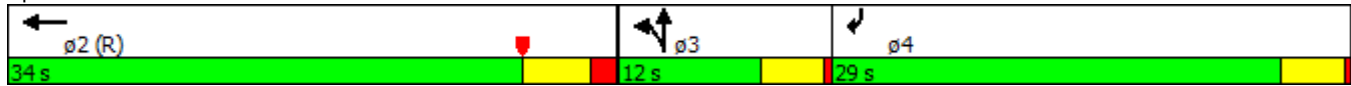
Intersection Capacity Utilization 47.9%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 14: Morris Street & Great Jones

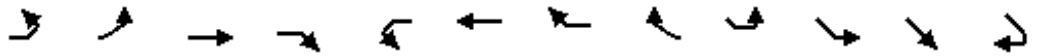




Lanes, Volumes, Timings

15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	SEL2	SEL	SET	SER
Lane Configurations			↕			↕					↕	
Volume (vph)	12	92	118	93	100	151	105	14	29	60	181	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	1726	0	0	1724	0	0	0	0	1798	0
Flt Permitted			0.720			0.820					0.776	
Satd. Flow (perm)	0	0	1263	0	0	1432	0	0	0	0	1418	0
Right Turn on Red				No				No				No
Satd. Flow (RTOR)												
Link Speed (mph)			30			30					30	
Link Distance (ft)			456			451					493	
Travel Time (s)			10.4			10.3					11.2	
Lane Group Flow (vph)	0	0	349	0	0	412	0	0	0	0	301	0
Turn Type	Perm	Perm	NA		Perm	NA			Perm	Perm	NA	
Protected Phases			4			8					6	
Permitted Phases	4	4			8				6	6		
Minimum Split (s)	22.0	22.0	22.0		20.0	20.0			22.0	22.0	22.0	
Total Split (s)	41.0	41.0	41.0		41.0	41.0			34.0	34.0	34.0	
Total Split (%)	54.7%	54.7%	54.7%		54.7%	54.7%			45.3%	45.3%	45.3%	
Yellow Time (s)	4.5	4.5	4.5		3.5	3.5			4.5	4.5	4.5	
All-Red Time (s)	2.5	2.5	2.5		0.5	0.5			2.5	2.5	2.5	
Lost Time Adjust (s)			0.0			0.0					-1.0	
Total Lost Time (s)			7.0			4.0					6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)			34.0			37.0					28.0	
Actuated g/C Ratio			0.45			0.49					0.37	
v/c Ratio			0.61			0.58					0.57	
Control Delay			20.8			17.7					18.4	
Queue Delay			0.0			0.0					0.0	
Total Delay			20.8			17.7					18.4	
LOS			C			B					B	
Approach Delay			20.8			17.7					18.4	
Approach LOS			C			B					B	
Queue Length 50th (ft)			134			129					72	
Queue Length 95th (ft)			234			216					112	
Internal Link Dist (ft)			376			371					413	
Turn Bay Length (ft)												
Base Capacity (vph)			572			706					529	
Starvation Cap Reductn			0			0					0	
Spillback Cap Reductn			0			0					0	
Storage Cap Reductn			0			0					0	
Reduced v/c Ratio			0.61			0.58					0.57	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow  
 Natural Cycle: 55

# Lanes, Volumes, Timings

## 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015



Lane Group	NWL	NWT	NWR	NWR2
Lane Configurations		↕		
Volume (vph)	22	159	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900
Satd. Flow (prot)	0	1776	0	0
Flt Permitted		0.956		
Satd. Flow (perm)	0	1706	0	0
Right Turn on Red				No
Satd. Flow (RTOR)				
Link Speed (mph)		30		
Link Distance (ft)		567		
Travel Time (s)		12.9		
Lane Group Flow (vph)	0	242	0	0
Turn Type	Perm	NA		
Protected Phases		2		
Permitted Phases	2			
Minimum Split (s)	20.0	20.0		
Total Split (s)	34.0	34.0		
Total Split (%)	45.3%	45.3%		
Yellow Time (s)	3.5	3.5		
All-Red Time (s)	0.5	0.5		
Lost Time Adjust (s)		-1.0		
Total Lost Time (s)		3.0		
Lead/Lag				
Lead-Lag Optimize?				
Act Effct Green (s)		31.0		
Actuated g/C Ratio		0.41		
v/c Ratio		0.34		
Control Delay		16.8		
Queue Delay		0.0		
Total Delay		16.8		
LOS		B		
Approach Delay		16.8		
Approach LOS		B		
Queue Length 50th (ft)		74		
Queue Length 95th (ft)		128		
Internal Link Dist (ft)		487		
Turn Bay Length (ft)				
Base Capacity (vph)		705		
Starvation Cap Reductn		0		
Spillback Cap Reductn		0		
Storage Cap Reductn		0		
Reduced v/c Ratio		0.34		
<b>Intersection Summary</b>				

# Lanes, Volumes, Timings

## 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 18.5

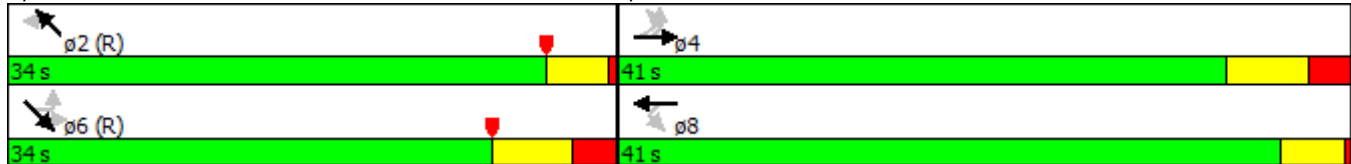
Intersection LOS: B

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 15: E Main Street/W. Main Street & E. Chapel Hill Street & Morris Street



Lanes, Volumes, Timings  
 16: Foster Street & Great Jones

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑		↖	↑			↗	
Volume (vph)	0	0	0	29	585	257	33	341	0	0	252	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6114	0	1770	1863	0	0	1757	0
Flt Permitted					0.998		0.332					
Satd. Flow (perm)	0	0	0	0	6114	0	618	1863	0	0	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					184						74	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			513			938			295	
Travel Time (s)		15.5			11.7			21.3			6.7	
Lane Group Flow (vph)	0	0	0	0	968	0	37	379	0	0	487	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4			4	
Permitted Phases							4					
Minimum Split (s)				24.0	24.0		24.0	24.0			24.0	
Total Split (s)				35.0	35.0		40.0	40.0			40.0	
Total Split (%)				46.7%	46.7%		53.3%	53.3%			53.3%	
Yellow Time (s)				3.6	3.6		3.6	3.6			3.6	
All-Red Time (s)				1.5	1.5		1.5	1.5			1.5	
Lost Time Adjust (s)					-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)					1.1		1.1	1.1			1.1	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					33.9		38.9	38.9			38.9	
Actuated g/C Ratio					0.45		0.52	0.52			0.52	
v/c Ratio					0.34		0.12	0.39			0.51	
Control Delay					3.8		10.5	12.4			12.2	
Queue Delay					0.0		0.0	0.0			0.0	
Total Delay					3.8		10.5	12.4			12.2	
LOS					A		B	B			B	
Approach Delay					3.8			12.3			12.2	
Approach LOS					A			B			B	
Queue Length 50th (ft)					0		8	100			115	
Queue Length 95th (ft)					13		24	160			194	
Internal Link Dist (ft)		603			433			858			215	
Turn Bay Length (ft)												
Base Capacity (vph)					2864		320	966			946	
Starvation Cap Reductn					0		0	0			0	
Spillback Cap Reductn					0		0	0			0	
Storage Cap Reductn					0		0	0			0	
Reduced v/c Ratio					0.34		0.12	0.39			0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 46 (61%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50

Lanes, Volumes, Timings  
16: Foster Street & Great Jones

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 7.9

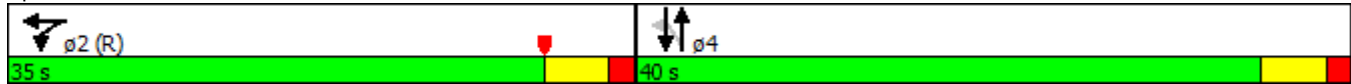
Intersection LOS: A

Intersection Capacity Utilization 47.3%

ICU Level of Service A

Analysis Period (min) 15

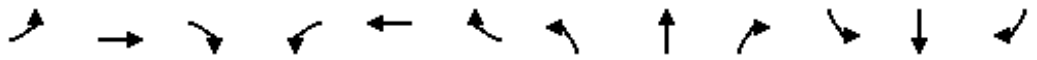
Splits and Phases: 16: Foster Street & Great Jones



Lanes, Volumes, Timings

17: Corcoran Street & E. Mian Street'

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	46	253	10	12	190	122	14	150	7	72	82	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Satd. Flow (prot)	0	1807	0	0	1730	0	0	1791	0	0	1732	0
Flt Permitted		0.819			0.983			0.972			0.826	
Satd. Flow (perm)	0	1490	0	0	1704	0	0	1747	0	0	1458	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			43			3			16	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		276			398			280			938	
Travel Time (s)		6.3			9.0			7.6			25.6	
Lane Group Flow (vph)	0	343	0	0	360	0	0	191	0	0	208	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0		21.0	21.0		21.0	21.0		24.0	24.0	
Total Split (s)	44.0	44.0		44.0	44.0		46.0	46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%		48.9%	48.9%		51.1%	51.1%		51.1%	51.1%	
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	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		26.4			26.4			53.6			53.6	
Actuated g/C Ratio		0.29			0.29			0.60			0.60	
v/c Ratio		0.78			0.68			0.18			0.24	
Control Delay		41.2			22.4			6.6			10.1	
Queue Delay		0.1			0.0			0.3			0.0	
Total Delay		41.3			22.4			6.8			10.1	
LOS		D			C			A			B	
Approach Delay		41.3			22.4			6.8			10.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)		177			67			26			47	
Queue Length 95th (ft)		241			70			47			106	
Internal Link Dist (ft)		196			318			200			858	
Turn Bay Length (ft)												
Base Capacity (vph)		646			762			1041			874	
Starvation Cap Reductn		0			14			434			0	
Spillback Cap Reductn		28			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.48			0.31			0.24	

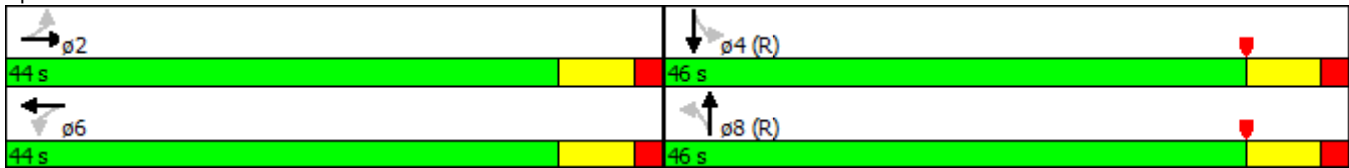
Intersection Summary

Lanes, Volumes, Timings  
 17: Corcoran Street & E. Mian Street'

3/12/2015

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	23 (26%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	23.3
Intersection LOS:	C
Intersection Capacity Utilization:	65.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 17: Corcoran Street & E. Mian Street'



Lanes, Volumes, Timings

18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗					↕	↗		↕	
Volume (vph)	40	348	186	0	0	0	0	131	88	42	62	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		250	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3077	1384	0	0	0	0	1628	1384	0	1595	0
Flt Permitted		0.995									0.858	
Satd. Flow (perm)	0	3077	1384	0	0	0	0	1628	1384	0	1397	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)			207						98			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		348			373			198			280	
Travel Time (s)		9.5			10.2			5.4			7.6	
Lane Group Flow (vph)	0	431	207	0	0	0	0	146	98	0	116	0
Turn Type	Split	NA	Perm					NA	Perm	Perm	NA	
Protected Phases	2	2						8				4
Permitted Phases			2						8	4		
Minimum Split (s)	33.0	33.0	33.0					28.0	28.0	14.0	14.0	
Total Split (s)	44.0	44.0	44.0					46.0	46.0	46.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					51.1%	51.1%	51.1%	51.1%	
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)		-4.0	-4.0					-4.0	-4.0		-4.0	
Total Lost Time (s)		3.0	3.0					3.0	3.0		3.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		41.0	41.0					43.0	43.0		43.0	
Actuated g/C Ratio		0.46	0.46					0.48	0.48		0.48	
v/c Ratio		0.31	0.28					0.19	0.14		0.17	
Control Delay		16.3	3.3					6.0	0.4		9.3	
Queue Delay		0.0	0.0					0.7	0.5		0.0	
Total Delay		16.3	3.3					6.6	1.0		9.3	
LOS		B	A					A	A		A	
Approach Delay		12.1						4.4			9.3	
Approach LOS		B						A			A	
Queue Length 50th (ft)		78	0					16	0		24	
Queue Length 95th (ft)		112	37					24	0		38	
Internal Link Dist (ft)		268			293			118			200	
Turn Bay Length (ft)			250									
Base Capacity (vph)		1401	743					777	712		667	
Starvation Cap Reductn		0	0					387	377		0	
Spillback Cap Reductn		0	40					0	0		11	
Storage Cap Reductn		0	0					0	0		0	
Reduced v/c Ratio		0.31	0.29					0.37	0.29		0.18	

Intersection Summary

Area Type: CBD



# Lanes, Volumes, Timings

## 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)

3/12/2015

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17 (19%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 9.9

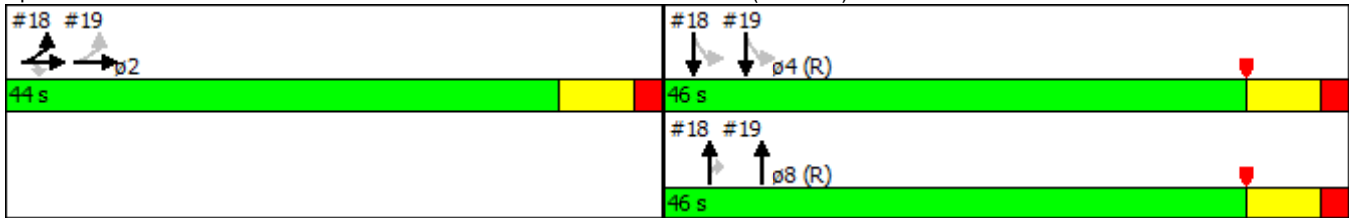
Intersection LOS: A

Intersection Capacity Utilization 35.8%

ICU Level of Service A

Analysis Period (min) 15

### Splits and Phases: 18: Blackwell Street/Corcoran Street & Ramseur Street (No Train)



Lanes, Volumes, Timings

19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕		↕	↕	
Volume (vph)	15	108	107	0	0	0	0	204	67	29	219	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	90		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			0		
Satd. Flow (prot)	0	1521	0	0	0	0	0	2978	0	1546	1628	0
Flt Permitted		0.997								0.568		
Satd. Flow (perm)	0	1521	0	0	0	0	0	2978	0	925	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61						65				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1489			478			183			198	
Travel Time (s)		33.8			10.9			4.2			4.5	
Lane Group Flow (vph)	0	256	0	0	0	0	0	301	0	32	243	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	33.0	33.0						28.0		14.0	14.0	
Total Split (s)	44.0	44.0						46.0		46.0	46.0	
Total Split (%)	48.9%	48.9%						51.1%		51.1%	51.1%	
Yellow Time (s)	5.0	5.0						5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0						-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		39.0						41.0		41.0	41.0	
Actuated g/C Ratio		0.43						0.46		0.46	0.46	
v/c Ratio		0.37						0.22		0.08	0.33	
Control Delay		14.7						11.9		14.4	16.0	
Queue Delay		0.0						0.0		0.0	9.9	
Total Delay		14.7						11.9		14.4	25.9	
LOS		B						B		B	C	
Approach Delay		14.7						11.9			24.6	
Approach LOS		B						B			C	
Queue Length 50th (ft)		70						40		8	64	
Queue Length 95th (ft)		129						66		27	142	
Internal Link Dist (ft)		1409			398			103			118	
Turn Bay Length (ft)												
Base Capacity (vph)		693						1392		421	741	
Starvation Cap Reductn		0						0		0	459	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.37						0.22		0.08	0.86	

Intersection Summary

Area Type: CBD

# Lanes, Volumes, Timings

## 19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)

3/12/2015

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 17 (19%), Referenced to phase 4:SBTL and 8:NBT, Start of Yellow

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 16.9

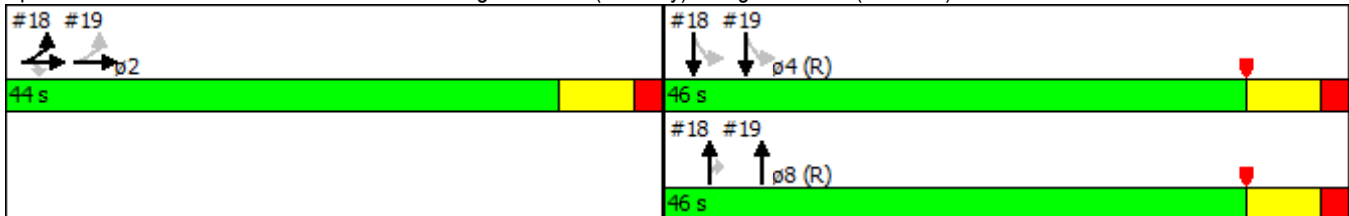
Intersection LOS: B

Intersection Capacity Utilization 41.5%

ICU Level of Service A

Analysis Period (min) 15

### Splits and Phases: 19: Blackwell Street & Pettigrew Street (Oneway)/Pettigrew Street (No Train)



Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↖	↖	↖	↖	↖		↖	
Volume (vph)	22	0	699	147	155	76	68	112	0	0	219	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1486	1475	1736	1827	1553	1736	1827	0	0	1800	0
Flt Permitted		0.977		0.405			0.537					
Satd. Flow (perm)	0	1457	1475	740	1827	1553	981	1827	0	0	1800	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		398			532			459			1374	
Travel Time (s)		9.0			12.1			10.4			31.2	
Lane Group Flow (vph)	0	397	404	163	172	84	76	124	0	0	273	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2					
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0			24.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	24.0	24.0			36.0	
Total Split (%)	52.0%	52.0%	52.0%	52.0%	52.0%	52.0%	32.0%	32.0%			48.0%	
Yellow Time (s)	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	
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?												
Act Effct Green (s)		34.0	34.0	34.0	34.0	34.0	31.0	31.0			31.0	
Actuated g/C Ratio		0.45	0.45	0.45	0.45	0.45	0.41	0.41			0.41	
v/c Ratio		0.60	0.60	0.49	0.21	0.12	0.19	0.16			0.37	
Control Delay		20.2	20.2	20.5	13.2	12.5	15.6	14.6			17.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay		20.2	20.2	20.5	13.2	12.5	15.6	14.6			17.0	
LOS		C	C	C	B	B	B	B			B	
Approach Delay		20.2			15.9			15.0			17.0	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		140	142	51	46	22	22	35			85	
Queue Length 95th (ft)		234	237	108	84	46	50	68			142	
Internal Link Dist (ft)		318			452			379			1294	
Turn Bay Length (ft)												
Base Capacity (vph)		660	668	335	828	704	405	755			744	
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		0.60	0.60	0.49	0.21	0.12	0.19	0.16			0.37	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 71 (95%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 50

Lanes, Volumes, Timings

20: Blackwell Street & Willard Street/Jackie Robinson Drive

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 18.0

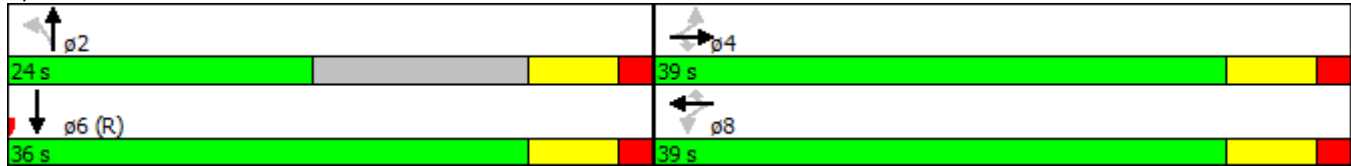
Intersection LOS: B

Intersection Capacity Utilization 62.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 20: Blackwell Street & Willard Street/Jackie Robinson Drive



Lanes, Volumes, Timings  
 21: Rigsbee Avenue & Morgan Loop

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑→			↑			↑	
Volume (vph)	0	0	0	93	828	109	77	76	0	0	92	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	6280	0	0	1816	0	0	1801	0
Flt Permitted					0.996			0.823				
Satd. Flow (perm)	0	0	0	0	6280	0	0	1533	0	0	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					54							30
Link Speed (mph)		30			30			30				30
Link Distance (ft)		513			146			209				286
Travel Time (s)		11.7			3.3			4.8				6.5
Lane Group Flow (vph)	0	0	0	0	1144	0	0	170	0	0	135	0
Turn Type				Split	NA		Perm	NA			NA	
Protected Phases				2	2			4				4
Permitted Phases							4					
Minimum Split (s)				25.0	25.0		25.0	25.0				25.0
Total Split (s)				38.0	38.0		37.0	37.0				37.0
Total Split (%)				50.7%	50.7%		49.3%	49.3%				49.3%
Yellow Time (s)				3.5	3.5		3.5	3.5				3.5
All-Red Time (s)				1.5	1.5		1.5	1.5				1.5
Lost Time Adjust (s)					-4.0			-4.0				-4.0
Total Lost Time (s)					1.0			1.0				1.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)					37.0			36.0				36.0
Actuated g/C Ratio					0.49			0.48				0.48
v/c Ratio					0.37			0.23				0.15
Control Delay					11.5			12.5				9.0
Queue Delay					0.0			0.0				0.0
Total Delay					11.5			12.5				9.0
LOS					B			B				A
Approach Delay					11.5			12.5				9.0
Approach LOS					B			B				A
Queue Length 50th (ft)					85			44				26
Queue Length 95th (ft)					108			81				54
Internal Link Dist (ft)		433			66			129				206
Turn Bay Length (ft)												
Base Capacity (vph)					3125			735				880
Starvation Cap Reductn					0			0				0
Spillback Cap Reductn					0			0				0
Storage Cap Reductn					0			0				0
Reduced v/c Ratio					0.37			0.23				0.15

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 40 (53%), Referenced to phase 2:WBTL, Start of Yellow  
 Natural Cycle: 50

Lanes, Volumes, Timings  
21: Rigsbee Avenue & Morgan Loop

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 11.4

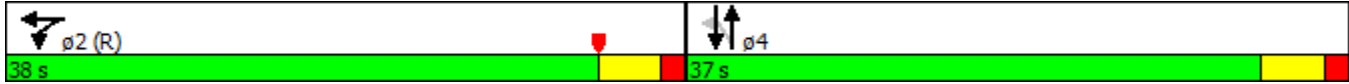
Intersection LOS: B

Intersection Capacity Utilization 41.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 21: Rigsbee Avenue & Morgan Loop



Lanes, Volumes, Timings  
 22: Magnum Street/Morgan Loop

3/12/2015

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	220	939	0	0	0	0	0	0	0	0	952	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	6350	0	0	0	0	0	0	0	0	3539	1583
Flt Permitted		0.991										
Satd. Flow (perm)	0	6350	0	0	0	0	0	0	0	0	3539	1583
Right Turn on Red	Yes		No			Yes			Yes			Yes
Satd. Flow (RTOR)		81										19
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			360			794			631	
Travel Time (s)		14.6			8.2			18.0			14.3	
Lane Group Flow (vph)	0	1287	0	0	0	0	0	0	0	0	1058	159
Turn Type	custom	NA									NA	custom
Protected Phases		4										
Permitted Phases	2										2	2
Detector Phase	2	4									2	2
Switch Phase												
Minimum Initial (s)	4.0	4.0									4.0	4.0
Minimum Split (s)	20.0	20.0									20.0	20.0
Total Split (s)	52.0	28.0									52.0	52.0
Total Split (%)	65.0%	35.0%									65.0%	65.0%
Yellow Time (s)	3.5	3.5									3.5	3.5
All-Red Time (s)	0.5	0.5									0.5	0.5
Lost Time Adjust (s)		-4.0									-4.0	-4.0
Total Lost Time (s)		0.0									0.0	0.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	None									C-Max	C-Max
Act Effct Green (s)		27.1									52.9	52.9
Actuated g/C Ratio		0.34									0.66	0.66
v/c Ratio		0.58									0.45	0.15
Control Delay		21.4									7.5	5.1
Queue Delay		0.0									0.0	0.0
Total Delay		21.4									7.5	5.1
LOS		C									A	A
Approach Delay		21.4									7.2	
Approach LOS		C									A	
Queue Length 50th (ft)		139									121	24
Queue Length 95th (ft)		173									160	45
Internal Link Dist (ft)		562			280			714			551	
Turn Bay Length (ft)												
Base Capacity (vph)		2275									2338	1052
Starvation Cap Reductn		0									0	0
Spillback Cap Reductn		0									0	0
Storage Cap Reductn		0									0	0
Reduced v/c Ratio		0.57									0.45	0.15

Intersection Summary

Area Type:	Other
------------	-------



# Lanes, Volumes, Timings

## 22: Magnum Street/Morgan Loop

3/12/2015

Cycle Length: 80  
Actuated Cycle Length: 80  
Offset: 74 (93%), Referenced to phase 2:NBSW, Start of Yellow  
Natural Cycle: 40  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.58  
Intersection Signal Delay: 14.5  
Intersection Capacity Utilization 49.9%  
Analysis Period (min) 15

Intersection LOS: B  
ICU Level of Service A

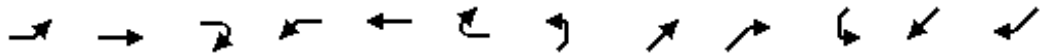
Splits and Phases: 22: Magnum Street/Morgan Loop



Lanes, Volumes, Timings

23: Mangum Street

3/12/2015

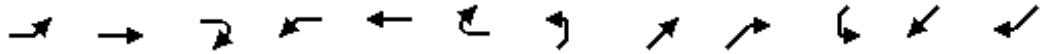


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↗		↖	↗						↕	↗
Volume (vph)	0	303	29	298	309	0	0	0	0	84	974	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Storage Length (ft)	0		0	120		0	0		0	0		250
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	1805	0	1736	1827	0	0	0	0	0	3423	1537
Flt Permitted				0.290							0.996	
Satd. Flow (perm)	0	1805	0	530	1827	0	0	0	0	0	3423	1537
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)		5										133
Link Speed (mph)		30			30			25			35	
Link Distance (ft)		398			274			309			401	
Travel Time (s)		9.0			6.2			8.4			7.8	
Lane Group Flow (vph)	0	369	0	331	343	0	0	0	0	0	1175	17
Turn Type		NA		pm+pt	NA					Split	NA	Perm
Protected Phases		4		3	8					2	2	
Permitted Phases				8								2
Detector Phase		4		3	8					2	2	2
Switch Phase												
Minimum Initial (s)		7.0		7.0	7.0					10.0	10.0	10.0
Minimum Split (s)		22.0		14.0	21.0					23.0	23.0	23.0
Total Split (s)		27.0		21.0	48.0					42.0	42.0	42.0
Total Split (%)		30.0%		23.3%	53.3%					46.7%	46.7%	46.7%
Yellow Time (s)		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
Lost Time Adjust (s)		-2.0		-2.0	-2.0						-2.0	-2.0
Total Lost Time (s)		5.0		5.0	5.0						5.0	5.0
Lead/Lag		Lead		Lag								
Lead-Lag Optimize?		Yes		Yes								
Recall Mode		Max		Max	Max					C-Max	C-Max	C-Max
Act Effct Green (s)		22.0		43.0	43.0						37.0	37.0
Actuated g/C Ratio		0.24		0.48	0.48						0.41	0.41
v/c Ratio		0.83		0.71	0.39						0.84	0.02
Control Delay		36.6		34.9	16.8						30.4	0.1
Queue Delay		0.0		0.0	0.0						1.5	0.0
Total Delay		36.6		34.9	16.8						31.8	0.1
LOS		D		C	B						C	A
Approach Delay		36.6			25.7						31.4	
Approach LOS		D			C						C	
Queue Length 50th (ft)		75		116	120						307	0
Queue Length 95th (ft)		#327		#183	187						396	0
Internal Link Dist (ft)		318			194			229			321	
Turn Bay Length (ft)				120								250
Base Capacity (vph)		445		467	872						1407	710
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		0		0	0						97	0
Storage Cap Reductn		0		0	0						0	0

Lanes, Volumes, Timings

23: Mangum Street

3/12/2015

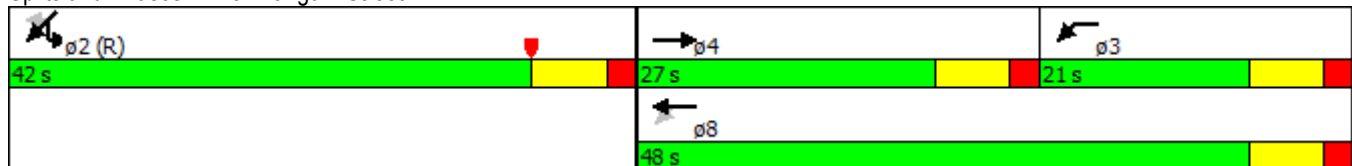


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Reduced v/c Ratio		0.83		0.71	0.39						0.90	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 28 (31%), Referenced to phase 2:SWTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 30.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 76.1%  
 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.

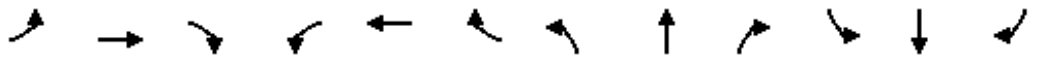
Splits and Phases: 23: Mangum Street



Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑								↑↑↑	
Volume (vph)	0	331	147	0	0	0	0	0	0	73	1228	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	4938	1537	0	0	0	0	0	0	0	4923	0
Flt Permitted											0.997	
Satd. Flow (perm)	0	4938	1537	0	0	0	0	0	0	0	4923	0
Right Turn on Red			No			No			No	No		No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		373			186			197			309	
Travel Time (s)		7.3			3.6			3.8			6.0	
Lane Group Flow (vph)	0	368	163	0	0	0	0	0	0	0	1445	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		1 4									2	
Permitted Phases			1 4							2		
Detector Phase		1 4	1 4							2	2	
Switch Phase												
Minimum Initial (s)										19.0	19.0	
Minimum Split (s)										27.0	27.0	
Total Split (s)										36.0	36.0	
Total Split (%)										40.0%	40.0%	
Yellow Time (s)										5.0	5.0	
All-Red Time (s)										2.0	2.0	
Lost Time Adjust (s)												-2.0
Total Lost Time (s)												5.0
Lead/Lag										Lead	Lead	
Lead-Lag Optimize?										Yes	Yes	
Recall Mode										C-Max	C-Max	
Act Effct Green (s)		39.3	39.3									31.7
Actuated g/C Ratio		0.44	0.44									0.35
v/c Ratio		0.17	0.24									0.83
Control Delay		11.7	13.6									18.3
Queue Delay		0.0	0.0									4.8
Total Delay		11.7	13.6									23.1
LOS		B	B									C
Approach Delay		12.3										23.1
Approach LOS		B										C
Queue Length 50th (ft)		54	68									108
Queue Length 95th (ft)		71	123									245
Internal Link Dist (ft)		293			106			117				229
Turn Bay Length (ft)												
Base Capacity (vph)		2135	664									1731
Starvation Cap Reductn		0	0									225
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0

Lanes, Volumes, Timings  
 24: Mangum Street & Ramseur Street (No Train)

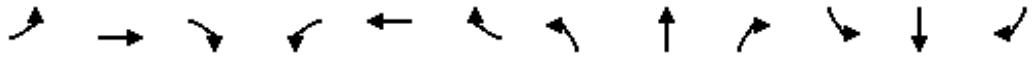
3/12/2015

Lane Group	ø1	ø3	ø4
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	2.0	7.0
Minimum Split (s)	14.0	9.0	23.0
Total Split (s)	18.0	9.0	27.0
Total Split (%)	20%	10%	30%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	
Lead-Lag Optimize?		Yes	
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			

Lanes, Volumes, Timings

24: Mangum Street & Ramseur Street (No Train)

3/12/2015

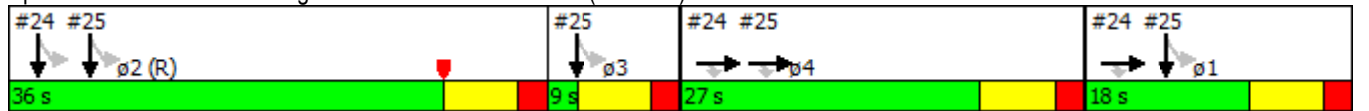


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio		0.17	0.25								0.96	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	25 (28%), Referenced to phase 2:SBTL, Start of Yellow
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	20.2
Intersection LOS:	C
Intersection Capacity Utilization	42.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 24: Mangum Street & Ramseur Street (No Train)



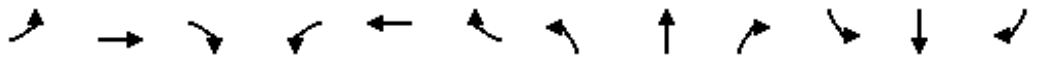
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Lane Group	ø1	ø3	ø4
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗								↑↑↑↑	
Volume (vph)	0	103	101	0	0	0	0	0	0	47	1328	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	120		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1628	1384	0	0	0	0	0	0	0	5588	0
Right Turn on Red			Yes			No			No	No		Yes
Satd. Flow (RTOR)			218									
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		478			835			234			197	
Travel Time (s)		10.9			19.0			4.6			3.8	
Lane Group Flow (vph)	0	114	112	0	0	0	0	0	0	0	1528	0
Turn Type		NA	Perm							Perm	NA	
Protected Phases		4									1 2 3	
Permitted Phases			4							1 2 3		
Detector Phase		4	4							1 2 3	1 2 3	
Switch Phase												
Minimum Initial (s)		7.0	7.0									
Minimum Split (s)		23.0	23.0									
Total Split (s)		27.0	27.0									
Total Split (%)		30.0%	30.0%									
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?												
Recall Mode		None	None									
Act Effct Green (s)		15.8	15.8								64.2	
Actuated g/C Ratio		0.18	0.18								0.71	
v/c Ratio		0.40	0.27								0.38	
Control Delay		34.3	3.9								1.4	
Queue Delay		0.0	0.0								0.3	
Total Delay		34.3	3.9								1.7	
LOS		C	A								A	
Approach Delay		19.2									1.7	
Approach LOS		B									A	
Queue Length 50th (ft)		58	0								22	
Queue Length 95th (ft)		99	9								29	
Internal Link Dist (ft)		398			755			154			117	
Turn Bay Length (ft)												
Base Capacity (vph)		397	503								3986	
Starvation Cap Reductn		0	0								1551	
Spillback Cap Reductn		0	0								0	
Storage Cap Reductn		0	0								0	



Lanes, Volumes, Timings  
 25: Mangum Street & Pettigrew Street (No Train)

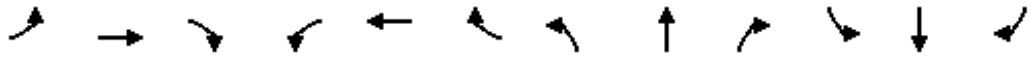
3/12/2015

Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	7.0	19.0	2.0
Minimum Split (s)	14.0	27.0	9.0
Total Split (s)	18.0	36.0	9.0
Total Split (%)	20%	40%	10%
Yellow Time (s)	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	C-Max	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			

Lanes, Volumes, Timings

25: Mangum Street & Pettigrew Street (No Train)

3/12/2015

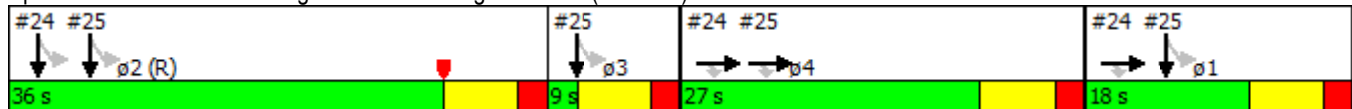


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio		0.29	0.22								0.63	

Intersection Summary

Area Type:	CBD											
Cycle Length:	90											
Actuated Cycle Length:	90											
Offset:	25 (28%), Referenced to phase 2:SBTL, Start of Yellow											
Natural Cycle:	75											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.83											
Intersection Signal Delay:	4.0						Intersection LOS: A					
Intersection Capacity Utilization	37.5%						ICU Level of Service A					
Analysis Period (min)	15											

Splits and Phases: 25: Mangum Street & Pettigrew Street (No Train)



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Lane Group	ø1	ø2	ø3
Reduced v/c Ratio			
Intersection Summary			

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Lanes, Volumes, Timings

26: Jackie Robinson Drive & Mangum Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑						↑↑↑	↑
Volume (vph)	0	0	0	117	602	0	0	0	0	0	1225	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	5045	0	0	0	0	0	6408	1583
Flt Permitted					0.992							
Satd. Flow (perm)	0	0	0	0	5045	0	0	0	0	0	6408	1583
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)					45							125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		377			596			318			1158	
Travel Time (s)		8.6			13.5			7.2			26.3	
Lane Group Flow (vph)	0	0	0	0	807	0	0	0	0	0	1392	306
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Detector Phase				4	4						2	2
Switch Phase												
Minimum Initial (s)				4.0	4.0						4.0	4.0
Minimum Split (s)				20.0	20.0						20.0	20.0
Total Split (s)				33.0	33.0						47.0	47.0
Total Split (%)				41.3%	41.3%						58.8%	58.8%
Yellow Time (s)				3.5	3.5						3.5	3.5
All-Red Time (s)				0.5	0.5						0.5	0.5
Lost Time Adjust (s)					-4.0						-4.0	-1.0
Total Lost Time (s)					0.0						0.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None						C-Max	C-Max
Act Effct Green (s)					22.8						57.2	54.2
Actuated g/C Ratio					0.28						0.72	0.68
v/c Ratio					0.55						0.30	0.28
Control Delay					23.8						4.7	4.1
Queue Delay					0.0						0.0	0.0
Total Delay					23.8						4.7	4.1
LOS					C						A	A
Approach Delay					23.8						4.6	
Approach LOS					C						A	
Queue Length 50th (ft)					116						61	29
Queue Length 95th (ft)					138						92	67
Internal Link Dist (ft)		297			516			238			1078	
Turn Bay Length (ft)												
Base Capacity (vph)					2107						4580	1112
Starvation Cap Reductn					0						0	0
Spillback Cap Reductn					0						0	0
Storage Cap Reductn					0						0	0
Reduced v/c Ratio					0.38						0.30	0.28

Intersection Summary

Area Type: Other

# Lanes, Volumes, Timings

## 26: Jackie Robinson Drive & Mangum Street

3/12/2015

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 27 (34%), Referenced to phase 2:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.8

Intersection LOS: B

Intersection Capacity Utilization 38.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Jackie Robinson Drive & Mangum Street



Lanes, Volumes, Timings  
27: Roxboro & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑↑↑				
Volume (vph)	0	0	0	0	355	217	5	951	343	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	1863	1583	0	4882	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	1863	1583	0	4882	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						241		296				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		316			1048			307			581	
Travel Time (s)		7.2			23.8			7.0			13.2	
Lane Group Flow (vph)	0	0	0	0	394	241	0	1444	0	0	0	0
Turn Type					NA	Free	Perm	NA				
Protected Phases					8			2				
Permitted Phases						Free	2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		10.0	10.0				
Minimum Split (s)					20.0		22.0	22.0				
Total Split (s)					20.0		50.0	50.0				
Total Split (%)					28.6%		71.4%	71.4%				
Yellow Time (s)					3.5		4.0	4.0				
All-Red Time (s)					0.5		2.0	2.0				
Lost Time Adjust (s)					-4.0			-4.0				
Total Lost Time (s)					0.0			2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None		C-Max	C-Max				
Act Effct Green (s)					19.5	70.0		48.5				
Actuated g/C Ratio					0.28	1.00		0.69				
v/c Ratio					0.76	0.15		0.42				
Control Delay					34.2	0.2		2.8				
Queue Delay					0.0	0.0		0.2				
Total Delay					34.2	0.2		3.0				
LOS					C	A		A				
Approach Delay					21.3			3.0				
Approach LOS					C			A				
Queue Length 50th (ft)					153	0		41				
Queue Length 95th (ft)					#274	0		82				
Internal Link Dist (ft)		236			968			227			501	
Turn Bay Length (ft)												
Base Capacity (vph)					532	1583		3473				
Starvation Cap Reductn					0	0		1047				
Spillback Cap Reductn					0	0		0				
Storage Cap Reductn					0	0		0				
Reduced v/c Ratio					0.74	0.15		0.60				

Intersection Summary

Area Type: Other



Lanes, Volumes, Timings

28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	272	386	0	0	0	0	500	1027	103	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	2		0	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1770	3539	0	0	0	0	3433	5014	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)	*12							35				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		394			1032			555			307	
Travel Time (s)		9.0			23.5			12.6			7.0	
Lane Group Flow (vph)	302	429	0	0	0	0	556	1255	0	0	0	0
Turn Type	custom	NA					Split	NA				
Protected Phases							2	2				
Permitted Phases	6	6										
Detector Phase	6	6					2	2				
Switch Phase												
Minimum Initial (s)	7.0	7.0					4.0	4.0				
Minimum Split (s)	26.0	26.0					20.0	20.0				
Total Split (s)	33.0	33.0					37.0	37.0				
Total Split (%)	47.1%	47.1%					52.9%	52.9%				
Yellow Time (s)	4.0	4.0					3.5	3.5				
All-Red Time (s)	2.0	2.0					0.5	0.5				
Lost Time Adjust (s)	-4.0	-4.0					-4.0	-3.0				
Total Lost Time (s)	2.0	2.0					0.0	1.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None					C-Max	C-Max				
Act Effct Green (s)	21.1	21.1					46.9	45.9				
Actuated g/C Ratio	0.30	0.30					0.67	0.66				
v/c Ratio	0.56	0.40					0.24	0.38				
Control Delay	22.8	19.7					1.5	1.6				
Queue Delay	0.0	0.0					0.0	0.0				
Total Delay	22.8	19.7					1.5	1.6				
LOS	C	B					A	A				
Approach Delay		21.0						1.6				
Approach LOS		C						A				
Queue Length 50th (ft)	104	76					9	16				
Queue Length 95th (ft)	147	95					m16	m24				
Internal Link Dist (ft)		314			952			475			227	
Turn Bay Length (ft)	100											
Base Capacity (vph)	790	1567					2301	3301				
Starvation Cap Reductn	0	0					0	0				
Spillback Cap Reductn	0	0					0	0				
Storage Cap Reductn	0	0					0	0				
Reduced v/c Ratio	0.38	0.27					0.24	0.38				



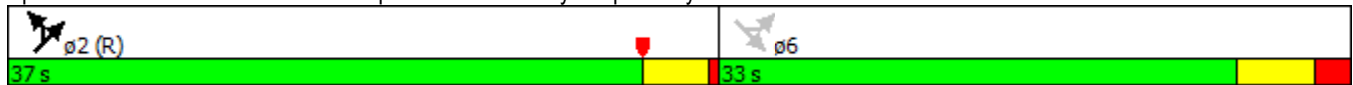
Lanes, Volumes, Timings  
 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty

3/12/2015

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 20 (29%), Referenced to phase 2:NETL, Start of Yellow  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 7.2 Intersection LOS: A  
 Intersection Capacity Utilization 43.9% ICU Level of Service A  
 Analysis Period (min) 15  
 \* User Entered Value  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 28: Roxboro Loop/Roxboro & Liberty Loop/Liberty



Lanes, Volumes, Timings  
 29: N. Roxboro Street & Main Street

3/12/2015



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	NEL
Lane Configurations								
Volume (vph)	138	353	426	147	180	1290	33	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1770	1863	1863	1583	0	3507	0	3614
Flt Permitted	0.341					0.994		
Satd. Flow (perm)	635	1863	1863	1583	0	3507	0	3614
Right Turn on Red				Yes			Yes	
Satd. Flow (RTOR)				163		4		
Link Speed (mph)		30	30			30		30
Link Distance (ft)		610	1011			314		846
Travel Time (s)		13.9	23.0			7.1		19.2
Lane Group Flow (vph)	153	392	473	163	0	1670	0	0
Turn Type	Perm	NA	NA	Perm	Split	NA		Prot
Protected Phases		4	4		2	2		5
Permitted Phases	4			4				
Detector Phase	4	4	4	4	2	2		5
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	4.0	4.0		4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0		11.0
Total Split (s)	26.0	26.0	26.0	26.0	33.0	33.0		11.0
Total Split (%)	37.1%	37.1%	37.1%	37.1%	47.1%	47.1%		15.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.5	3.5		3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	0.5	0.5		0.5
Lost Time Adjust (s)	-1.0	-1.0	-3.0	-3.0		-4.0		0.0
Total Lost Time (s)	5.0	5.0	3.0	3.0		0.0		4.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max		None
Act Effct Green (s)	32.0	32.0	34.0	34.0		33.0		
Actuated g/C Ratio	0.46	0.46	0.49	0.49		0.47		
v/c Ratio	0.53	0.46	0.52	0.19		1.01		
Control Delay	21.8	15.3	15.0	2.5		44.8		
Queue Delay	0.0	0.0	0.0	0.0		0.9		
Total Delay	21.8	15.3	15.0	2.5		45.6		
LOS	C	B	B	A		D		
Approach Delay		17.1	11.8			45.6		
Approach LOS		B	B			D		
Queue Length 50th (ft)	45	110	132	0		~367		
Queue Length 95th (ft)	104	179	212	27		#538		
Internal Link Dist (ft)		530	931			234		766
Turn Bay Length (ft)								
Base Capacity (vph)	290	851	904	852		1655		
Starvation Cap Reductn	0	0	0	0		5		
Spillback Cap Reductn	0	0	0	0		0		
Storage Cap Reductn	0	0	0	0		0		
Reduced v/c Ratio	0.53	0.46	0.52	0.19		1.01		

Intersection Summary













Area Type: Other



Lanes, Volumes, Timings

30: Roxboro & Pettigrew Street (No Train)

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑	↗				↖	↑				
Volume (vph)	0	1577	153	0	0	0	36	114	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Satd. Flow (prot)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3539	1583	0	0	0	1752	1844	0	0	0	0
Right Turn on Red			Yes			Yes	No		Yes			Yes
Satd. Flow (RTOR)			170									
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		371			177			835			1069	
Travel Time (s)		8.4			4.0			22.8			24.3	
Lane Group Flow (vph)	0	1752	170	0	0	0	40	127	0	0	0	0
Turn Type		NA	Perm				pm+pt	NA				
Protected Phases		2					7	4				
Permitted Phases			2				4					
Minimum Split (s)		17.0	17.0				8.0	14.0				
Total Split (s)		44.0	44.0				31.0	31.0				
Total Split (%)		58.7%	58.7%				41.3%	41.3%				
Yellow Time (s)		4.0	4.0				3.5	4.0				
All-Red Time (s)		2.0	2.0				0.5	2.0				
Lost Time Adjust (s)		-4.0	-4.0				-4.0	-4.0				
Total Lost Time (s)		2.0	2.0				0.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		42.0	42.0				31.0	29.0				
Actuated g/C Ratio		0.56	0.56				0.41	0.39				
v/c Ratio		0.88	0.18				0.06	0.18				
Control Delay		21.5	1.9				13.6	16.0				
Queue Delay		0.0	0.0				0.0	0.0				
Total Delay		21.5	1.9				13.6	16.0				
LOS		C	A				B	B				
Approach Delay		19.8						15.4				
Approach LOS		B						B				
Queue Length 50th (ft)		343	0				11	38				
Queue Length 95th (ft)		#471	24				28	73				
Internal Link Dist (ft)		291			97			755			989	
Turn Bay Length (ft)												
Base Capacity (vph)		1981	961				724	713				
Starvation Cap Reductn		0	0				0	0				
Spillback Cap Reductn		0	0				0	0				
Storage Cap Reductn		0	0				0	0				
Reduced v/c Ratio		0.88	0.18				0.06	0.18				

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Yellow

# Lanes, Volumes, Timings

## 30: Roxboro & Pettigrew Street (No Train)

3/12/2015

Natural Cycle: 45

Control Type: Pretimed

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 19.4

Intersection LOS: B

Intersection Capacity Utilization 84.4%

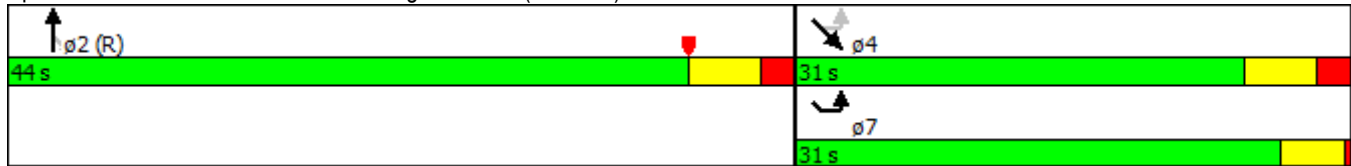
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

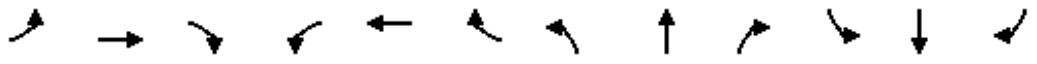
Queue shown is maximum after two cycles.

Splits and Phases: 30: Roxboro & Pettigrew Street (No Train)



Lanes, Volumes, Timings  
31: Roxboro & Dillard Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	156	0	0	191	82	45	1523	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	1770	1863	0	0	1786	0	0	5080	1583	0	0	0
Flt Permitted	0.411							0.999				
Satd. Flow (perm)	766	1863	0	0	1786	0	0	5080	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8				93			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			547			542			292	
Travel Time (s)		7.8			12.4			12.3			6.6	
Lane Group Flow (vph)	184	182	0	0	319	0	0	1829	93	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Detector Phase	4	4			4		2	2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0			7.0		15.0	15.0	15.0			
Minimum Split (s)	25.0	25.0			25.0		26.0	26.0	26.0			
Total Split (s)	29.0	29.0			29.0		41.0	41.0	41.0			
Total Split (%)	41.4%	41.4%			41.4%		58.6%	58.6%	58.6%			
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0			
Total Lost Time (s)	6.0	6.0			6.0			6.0	6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None			None		C-Max	C-Max	C-Max			
Act Effct Green (s)	18.5	18.5			18.5			39.5	39.5			
Actuated g/C Ratio	0.26	0.26			0.26			0.56	0.56			
v/c Ratio	0.92	0.37			0.67			0.64	0.10			
Control Delay	70.3	21.9			28.9			7.5	0.7			
Queue Delay	0.0	0.0			0.0			0.0	0.0			
Total Delay	70.3	21.9			28.9			7.5	0.7			
LOS	E	C			C			A	A			
Approach Delay		46.2			28.9			7.1				
Approach LOS		D			C			A				
Queue Length 50th (ft)	73	61			114			111	0			
Queue Length 95th (ft)	#169	105			182			131	m0			
Internal Link Dist (ft)		264			467			462			212	
Turn Bay Length (ft)	100											
Base Capacity (vph)	251	612			592			2869	934			
Starvation Cap Reductn	0	0			0			0	0			
Spillback Cap Reductn	0	0			0			0	0			
Storage Cap Reductn	0	0			0			0	0			
Reduced v/c Ratio	0.73	0.30			0.54			0.64	0.10			

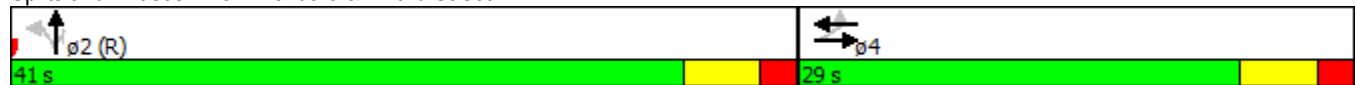
Lanes, Volumes, Timings  
 31: Roxboro & Dillard Street

3/12/2015

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 20 (29%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 15.3 Intersection LOS: B  
 Intersection Capacity Utilization 71.8% 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: 31: Roxboro & Dillard Street



Lanes, Volumes, Timings  
 32: Jackie Robinson Drive & Roxboro

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑	↑	↓	↑↑↑				
Volume (vph)	0	0	0	0	561	657	238	1032	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	3539	1583	1770	5085	0	0	0	0
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						47	264					
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		596			1010			251			542	
Travel Time (s)		13.5			23.0			5.7			12.3	
Lane Group Flow (vph)	0	0	0	0	623	730	264	1147	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					8			2				
Permitted Phases						8	2					
Detector Phase					8	8	2	2				
Switch Phase												
Minimum Initial (s)					7.0	7.0	10.0	10.0				
Minimum Split (s)					14.0	14.0	17.0	17.0				
Total Split (s)					45.0	45.0	25.0	25.0				
Total Split (%)					64.3%	64.3%	35.7%	35.7%				
Yellow Time (s)					4.0	4.0	4.0	4.0				
All-Red Time (s)					2.0	2.0	2.0	2.0				
Lost Time Adjust (s)					-4.0	-2.0	-4.0	-4.0				
Total Lost Time (s)					2.0	4.0	2.0	2.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					None	None	C-Max	C-Max				
Act Effct Green (s)					39.9	37.9	26.1	26.1				
Actuated g/C Ratio					0.57	0.54	0.37	0.37				
v/c Ratio					0.31	0.83	0.32	0.61				
Control Delay					7.9	21.7	3.8	20.3				
Queue Delay					0.0	0.0	0.0	0.0				
Total Delay					7.9	21.7	3.8	20.3				
LOS					A	C	A	C				
Approach Delay					15.4			17.2				
Approach LOS					B			B				
Queue Length 50th (ft)					58	203	0	153				
Queue Length 95th (ft)					82	351	45	200				
Internal Link Dist (ft)		516			930			171			462	
Turn Bay Length (ft)												
Base Capacity (vph)					2173	946	825	1895				
Starvation Cap Reductn					0	0	0	0				
Spillback Cap Reductn					0	0	0	0				
Storage Cap Reductn					0	0	0	0				
Reduced v/c Ratio					0.29	0.77	0.32	0.61				

Intersection Summary

Area Type: Other



# Lanes, Volumes, Timings

## 32: Jackie Robinson Drive & Roxboro

3/12/2015

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 39 (56%), Referenced to phase 2:NBTL, Start of Yellow

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 32: Jackie Robinson Drive & Roxboro



Lanes, Volumes, Timings  
 33: Dillard Street & Holloway Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖			↕	
Volume (vph)	27	310	99	47	290	12	246	22	40	7	28	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1800	0	0	1840	0	1770	1682	0	0	1778	0
Flt Permitted		0.967			0.906		0.782				0.967	
Satd. Flow (perm)	0	1745	0	0	1679	0	1457	1682	0	0	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			6			44				16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1048			976			557				160
Travel Time (s)		23.8			22.2			12.7				3.6
Lane Group Flow (vph)	0	484	0	0	387	0	273	68	0	0	55	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2				2
Permitted Phases	4			4			2			2		
Minimum Split (s)	14.0	14.0		14.0	14.0		14.0	14.0		14.0	14.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-4.0			-4.0		-4.0	-4.0			-4.0	
Total Lost Time (s)		2.0			2.0		2.0	2.0			2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0		18.0	18.0			18.0	
Actuated g/C Ratio		0.63			0.63		0.30	0.30			0.30	
v/c Ratio		0.43			0.36		0.62	0.13			0.10	
Control Delay		6.4			6.3		22.8	6.8			12.5	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		6.4			6.3		22.8	6.8			12.5	
LOS		A			A		C	A			B	
Approach Delay		6.4			6.3			19.6			12.5	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		65			55		88	0			10	
Queue Length 95th (ft)		114			96		142	34			32	
Internal Link Dist (ft)		968			896			477			80	
Turn Bay Length (ft)												
Base Capacity (vph)		1122			1065		437	535			530	
Starvation Cap Reductn		0			0		0	0			0	
Spillback Cap Reductn		0			0		0	0			0	
Storage Cap Reductn		0			0		0	0			0	
Reduced v/c Ratio		0.43			0.36		0.62	0.13			0.10	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 22 (37%), Referenced to phase 2:NBSB, Start of Yellow  
 Natural Cycle: 40

Lanes, Volumes, Timings  
33: Dillard Street & Holloway Street

3/12/2015

Control Type: Pretimed

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 58.2%

ICU Level of Service B




















Analysis Period (min) 15

Splits and Phases: 33: Dillard Street & Holloway Street



Lanes, Volumes, Timings  
34: Dillard Street

3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	175	35	9	165	0	72	260	152	46	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		50	0		0	0		50
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3451	0	0	3529	0	1770	1863	1583	1770	0	1583
Flt Permitted					0.939		0.950			0.522		
Satd. Flow (perm)	0	3451	0	0	3323	0	1770	1863	1583	972	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39							169			68
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		508			557			1032			167	
Travel Time (s)		11.5			12.7			23.5			3.8	
Lane Group Flow (vph)	0	233	0	0	193	0	80	289	169	51	0	68
Turn Type		NA		Perm	NA		Perm	NA	Perm	D.Pm		Perm
Protected Phases		2			2			4				
Permitted Phases				2			4		4	4		4
Minimum Split (s)		14.0		14.0	14.0		17.0	17.0	17.0	17.0		17.0
Total Split (s)		26.0		26.0	26.0		34.0	34.0	34.0	34.0		34.0
Total Split (%)		43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%		56.7%
Yellow Time (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0		4.0
All-Red Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		-4.0		-4.0	-4.0		-4.0	-4.0	-4.0	-4.0		-4.0
Total Lost Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0		2.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		24.0		24.0	24.0		32.0	32.0	32.0	32.0		32.0
Actuated g/C Ratio		0.40		0.40	0.40		0.53	0.53	0.53	0.53		0.53
v/c Ratio		0.17		0.15	0.15		0.08	0.29	0.18	0.10		0.08
Control Delay		13.7		8.8	8.8		7.2	8.7	2.0	7.6		2.4
Queue Delay		0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay		13.7		8.8	8.8		7.2	8.7	2.0	7.6		2.4
LOS		B		A	A		A	A	A	A		A
Approach Delay		13.7		8.8	8.8		6.4					
Approach LOS		B		A	A		A					
Queue Length 50th (ft)		21		14	14		13	52	0	8		0
Queue Length 95th (ft)		40		24	24		30	92	22	23		14
Internal Link Dist (ft)		428		477	477		952				87	
Turn Bay Length (ft)												50
Base Capacity (vph)		1403		1329	1329		944	993	923	518		876
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		0.17		0.15	0.15		0.08	0.29	0.18	0.10		0.08

Intersection Summary

Area Type: Other  
Cycle Length: 60

# Lanes, Volumes, Timings

## 34: Dillard Street

3/12/2015

Actuated Cycle Length: 60

Offset: 2 (3%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 8.2

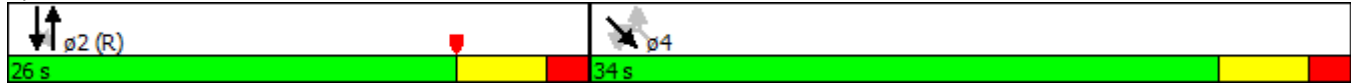
Intersection LOS: A

Intersection Capacity Utilization 38.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 34: Dillard Street



Lanes, Volumes, Timings  
 35: Dillard Street & Main Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	320	49	19	263	65	131	149	62	151	117	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	150		0	0		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1770	1863	1583	1770	1807	0	1770	1781	0	1770	1725	0
Flt Permitted	0.406			0.414			0.541			0.561		
Satd. Flow (perm)	756	1863	1583	771	1807	0	1008	1781	0	1045	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55		26			50			116	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1011			262			692			508	
Travel Time (s)		23.0			6.0			15.7			11.5	
Lane Group Flow (vph)	46	356	54	21	364	0	146	235	0	168	256	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4		4	4			2			2		
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0		-4.0	-4.0		-4.0	-4.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	26.0	26.0	26.0	26.0	26.0		30.0	30.0		30.0	30.0	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43		0.50	0.50		0.50	0.50	
v/c Ratio	0.14	0.44	0.08	0.06	0.46		0.29	0.26		0.32	0.28	
Control Delay	11.7	14.1	3.7	10.7	13.4		10.8	7.6		8.0	2.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.7	14.1	3.7	10.7	13.4		10.8	7.6		8.0	2.8	
LOS	B	B	A	B	B		B	A		A	A	
Approach Delay		12.6			13.2			8.8			4.8	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	10	86	0	4	81		28	34		18	4	
Queue Length 95th (ft)	28	147	16	15	144		61	69		66	18	
Internal Link Dist (ft)		931			182			612			428	
Turn Bay Length (ft)	150		100	150								
Base Capacity (vph)	327	807	717	334	797		504	915		522	920	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.44	0.08	0.06	0.46		0.29	0.26		0.32	0.28	

Intersection Summary

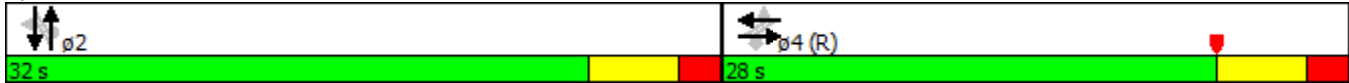
Area Type: Other  
 Cycle Length: 60

Lanes, Volumes, Timings  
35: Dillard Street & Main Street

3/12/2015

Actuated Cycle Length: 60	
Offset: 49 (82%), Referenced to phase 4:EBWB, Start of Yellow	
Natural Cycle: 40	
Control Type: Pretimed	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 59.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 35: Dillard Street & Main Street



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

3/12/2015



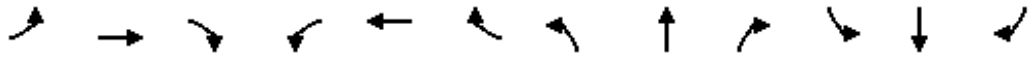
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	103	9	9	0	89	0	188	4	133	217	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	100		0	0		0	150		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	25			0			25			0		
Satd. Flow (prot)	1718	1787	0	0	1578	0	0	1803	0	1718	1809	0
Flt Permitted	0.687				0.979					0.570		
Satd. Flow (perm)	1243	1787	0	0	1553	0	0	1803	0	1031	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			99			2				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1069			779			387			231	
Travel Time (s)		29.2			21.2			10.6			6.3	
Lane Group Flow (vph)	172	124	0	0	109	0	0	213	0	148	241	0
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2						8		
Detector Phase	6	6		2	2			4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0			7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			23.0		23.0	23.0	
Total Split (s)	31.0	31.0		31.0	31.0			34.0		34.0	34.0	
Total Split (%)	47.7%	47.7%		47.7%	47.7%			52.3%		52.3%	52.3%	
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	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max			None		None	None	
Act Effct Green (s)	38.2	38.2			38.2			16.8		16.8	16.8	
Actuated g/C Ratio	0.59	0.59			0.59			0.26		0.26	0.26	
v/c Ratio	0.24	0.12			0.11			0.46		0.56	0.52	
Control Delay	9.0	7.4			2.9			22.1		27.9	23.6	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	9.0	7.4			2.9			22.1		27.9	23.6	
LOS	A	A			A			C		C	C	
Approach Delay		8.3			2.9			22.1			25.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	28	17			1			71		52	83	
Queue Length 95th (ft)	77	50			24			106		88	120	
Internal Link Dist (ft)		989			699			307			151	
Turn Bay Length (ft)	100											
Base Capacity (vph)	730	1053			953			805		459	807	
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	



Lanes, Volumes, Timings

36: Dillard Street & Pettigrew Street (No Train)

3/12/2015

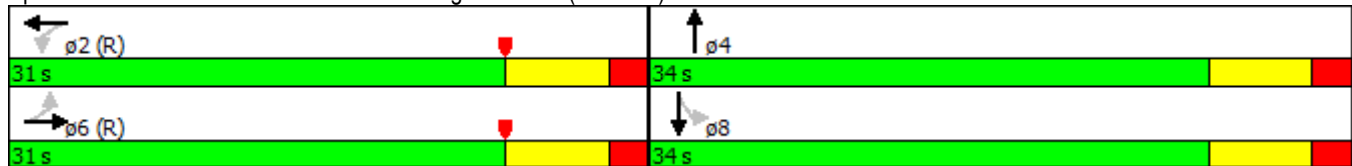


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.24	0.12			0.11			0.26		0.32	0.30	

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	17.2
Intersection LOS:	B
Intersection Capacity Utilization	45.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 36: Dillard Street & Pettigrew Street (No Train)



Lanes, Volumes, Timings

37: Fayetteville Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	125	66	125	46	60	6	372	146	75	692	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	125		300	125		0	0		0	150		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			0			25		
Satd. Flow (prot)	1718	1809	1537	1718	1655	0	1718	3292	0	1718	3436	0
Flt Permitted	0.612			0.555			0.156			0.950		
Satd. Flow (perm)	1107	1809	1537	1004	1655	0	282	3292	0	1718	3436	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164		48			86				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		779			1447			221			262	
Travel Time (s)		15.2			28.2			4.3			5.1	
Lane Group Flow (vph)	6	139	73	139	118	0	7	575	0	83	771	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Prot	NA	
Protected Phases		3	5		3		5	2.4		1	6	
Permitted Phases	3		3	3			2.4					
Detector Phase	3	3	5	3	3		5	2.4		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0			5.0	10.0	
Minimum Split (s)	23.0	23.0	14.0	23.0	23.0		14.0			12.0	27.0	
Total Split (s)	26.0	26.0	35.0	26.0	26.0		35.0			17.0	36.0	
Total Split (%)	21.7%	21.7%	29.2%	21.7%	21.7%		29.2%			14.2%	30.0%	
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	Lead	Lead	Lead	Lead		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None			None	C-Max	
Act Effct Green (s)	19.9	19.9	47.3	19.9	19.9		71.5	76.5		11.3	37.1	
Actuated g/C Ratio	0.17	0.17	0.39	0.17	0.17		0.60	0.64		0.09	0.31	
v/c Ratio	0.03	0.46	0.10	0.84	0.38		0.01	0.27		0.51	0.73	
Control Delay	41.8	50.4	0.3	85.9	30.9		1.5	0.7		63.1	43.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.2		0.0	0.4	
Total Delay	41.8	50.4	0.3	85.9	30.9		1.5	0.9		63.1	44.1	
LOS	D	D	A	F	C		A	A		E	D	
Approach Delay		33.4			60.7			0.9			45.9	
Approach LOS		C			E			A			D	
Queue Length 50th (ft)	4	97	0	105	51		0	2		62	301	
Queue Length 95th (ft)	17	163	0	#217	113		m1	0		116	#403	
Internal Link Dist (ft)		699			1367			141			182	
Turn Bay Length (ft)	125		300	125						150		
Base Capacity (vph)	193	316	736	175	329		529	2099		171	1061	
Starvation Cap Reductn	0	0	0	0	0		0	660		0	0	
Spillback Cap Reductn	0	0	2	0	0		0	0		0	60	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	

Lanes, Volumes, Timings  
 37: Fayetteville Street & Pettigrew Street (No Train)

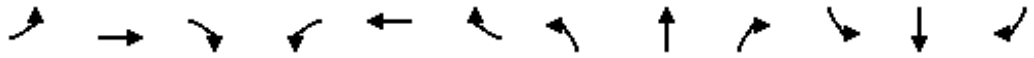
3/12/2015

Lane Group	ø2	ø4	ø7	ø8
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	2	4	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	10.0	7.0	7.0	7.0
Minimum Split (s)	27.0	23.0	14.0	23.0
Total Split (s)	54.0	23.0	14.0	35.0
Total Split (%)	45%	19%	12%	29%
Yellow Time (s)	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	None	None
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				

Lanes, Volumes, Timings

37: Fayetteville Street & Pettigrew Street (No Train)

3/12/2015

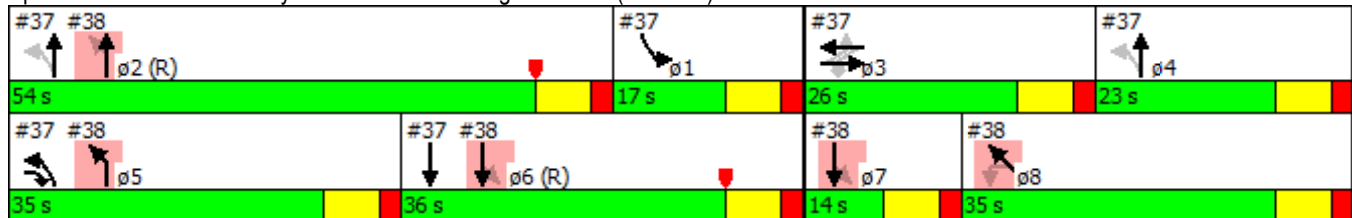


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.03	0.44	0.10	0.79	0.36		0.01	0.40		0.49	0.77	

Intersection Summary

Area Type:	Other	
Cycle Length:	120	
Actuated Cycle Length:	120	
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle:	90	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.94	
Intersection Signal Delay:	32.8	Intersection LOS: C
Intersection Capacity Utilization	55.2%	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.	
m	Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 37: Fayetteville Street & Pettigrew Street (No Train)



















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Lane Group	ø2	ø4	ø7	ø8
Reduced v/c Ratio				
Intersection Summary				

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Lanes, Volumes, Timings

38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	385	519	0	5	878	0	0	0	0	155	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%				2%			2%
Satd. Flow (prot)	1718	3436	0	0	3436	0	0	0	0	0	3265	0
Flt Permitted	0.148				0.951						0.955	
Satd. Flow (perm)	268	3436	0	0	3268	0	0	0	0	0	3265	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)												3
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		334			221			420			322	
Travel Time (s)		6.5			4.3			8.2			6.3	
Lane Group Flow (vph)	428	577	0	0	982	0	0	0	0	0	184	0
Turn Type	pm+pt	NA		Perm	NA					Perm	NA	
Protected Phases	5	2			6 7						8	
Permitted Phases	2			6 7						8		
Detector Phase	5	2		6 7	6 7					8	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0								7.0	7.0	
Minimum Split (s)	14.0	27.0								23.0	23.0	
Total Split (s)	35.0	54.0								35.0	35.0	
Total Split (%)	29.2%	45.0%								29.2%	29.2%	
Yellow Time (s)	5.0	5.0								5.0	5.0	
All-Red Time (s)	2.0	2.0								2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0										-2.0
Total Lost Time (s)	5.0	5.0										5.0
Lead/Lag	Lead	Lead								Lag	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Recall Mode	None	C-Max								None	None	
Act Effct Green (s)	55.9	55.9			51.1							26.5
Actuated g/C Ratio	0.47	0.47			0.43							0.22
v/c Ratio	0.94	0.36			0.71							0.25
Control Delay	56.9	19.2			12.4							37.8
Queue Delay	15.2	0.4			1.3							0.0
Total Delay	72.2	19.6			13.7							37.8
LOS	E	B			B							D
Approach Delay		42.0			13.7							37.8
Approach LOS		D			B							D
Queue Length 50th (ft)	289	132			64							59
Queue Length 95th (ft)	#481	162			78							91
Internal Link Dist (ft)		254			141			340				242
Turn Bay Length (ft)												
Base Capacity (vph)	489	1600			1390							818
Starvation Cap Reductn	58	502			215							0
Spillback Cap Reductn	0	0			0							0
Storage Cap Reductn	0	0			0							0
Reduced v/c Ratio	0.99	0.53			0.84							0.22

Intersection Summary

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

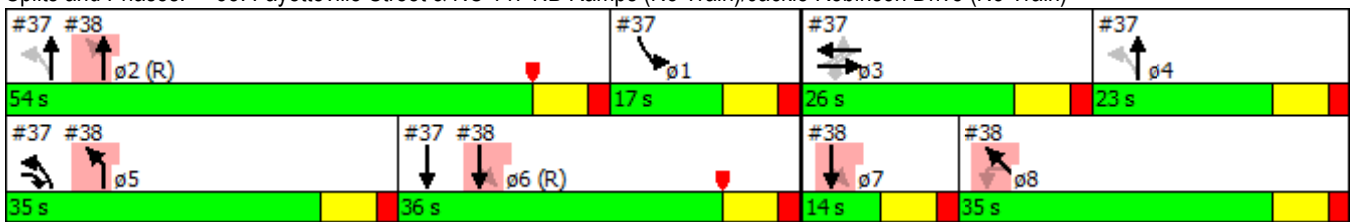
Lane Group	ø1	ø3	ø4	ø6	ø7
Lane Configurations					
Volume (vph)					
Ideal Flow (vphpl)					
Grade (%)					
Satd. Flow (prot)					
Flt Permitted					
Satd. Flow (perm)					
Right Turn on Red					
Satd. Flow (RTOR)					
Link Speed (mph)					
Link Distance (ft)					
Travel Time (s)					
Lane Group Flow (vph)					
Turn Type					
Protected Phases	1	3	4	6	7
Permitted Phases					
Detector Phase					
Switch Phase					
Minimum Initial (s)	5.0	7.0	7.0	10.0	7.0
Minimum Split (s)	12.0	23.0	23.0	27.0	14.0
Total Split (s)	17.0	26.0	23.0	36.0	14.0
Total Split (%)	14%	22%	19%	30%	12%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)					
Total Lost Time (s)					
Lead/Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	C-Max	None
Act Effct Green (s)					
Actuated g/C Ratio					
v/c Ratio					
Control Delay					
Queue Delay					
Total Delay					
LOS					
Approach Delay					
Approach LOS					
Queue Length 50th (ft)					
Queue Length 95th (ft)					
Internal Link Dist (ft)					
Turn Bay Length (ft)					
Base Capacity (vph)					
Starvation Cap Reductn					
Spillback Cap Reductn					
Storage Cap Reductn					
Reduced v/c Ratio					
<b>Intersection Summary</b>					

# Lanes, Volumes, Timings

## 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train) 3/12/2015

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	28.8
Intersection LOS:	C
Intersection Capacity Utilization:	66.8%
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: 38: Fayetteville Street & NC 147 NB Ramps (No Train)/Jackie Robinson Drive (No Train)

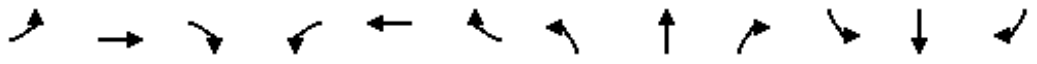




Lanes, Volumes, Timings

39: Fayetteville Street

3/12/2015



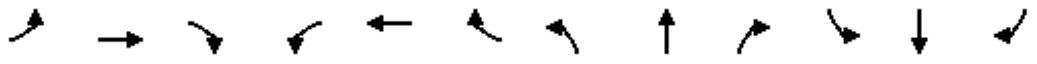
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕↕↕		↖	↕↕	
Volume (vph)	123	0	0	0	0	0	0	781	0	131	902	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	150		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	1736	1827	0	0	0	0	4938	0	1718	3436	0
Flt Permitted		0.950								0.312		
Satd. Flow (perm)	0	1736	1827	0	0	0	0	4938	0	564	3436	0
Right Turn on Red			Yes			No			Yes			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		299			347			255			334	
Travel Time (s)		6.8			7.9			5.0			6.5	
Lane Group Flow (vph)	0	137	0	0	0	0	0	868	0	146	1002	0
Turn Type	Perm	NA	Perm					NA		Perm	NA	
Protected Phases		8						2			6	
Permitted Phases	8		8							6		
Detector Phase	8	8	8					2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					10.0		10.0	10.0	
Minimum Split (s)	14.0	14.0	14.0					17.0		17.0	17.0	
Total Split (s)	31.0	31.0	31.0					89.0		89.0	89.0	
Total Split (%)	25.8%	25.8%	25.8%					74.2%		74.2%	74.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)		-2.0	-2.0					-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0	5.0					5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None					C-Max		C-Max	C-Max	
Act Effct Green (s)		16.8						93.2		93.2	93.2	
Actuated g/C Ratio		0.14						0.78		0.78	0.78	
v/c Ratio		0.57						0.23		0.33	0.38	
Control Delay		56.7						4.1		3.0	1.5	
Queue Delay		0.2						0.0		0.0	0.3	
Total Delay		56.9						4.1		3.0	1.8	
LOS		E						A		A	A	
Approach Delay		56.9						4.1			2.0	
Approach LOS		E						A			A	
Queue Length 50th (ft)		100						55		5	20	
Queue Length 95th (ft)		159						86		m15	42	
Internal Link Dist (ft)		219			267			175			254	
Turn Bay Length (ft)										150		
Base Capacity (vph)		376						3836		438	2669	
Starvation Cap Reductn		0						0		0	909	
Spillback Cap Reductn		30						95		0	0	
Storage Cap Reductn		0						0		0	0	



Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	307	0	215	173	92	58	83	97	118	107	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		75	75		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	1718	1809	0	1718	1715	0	0	1689	0	0	1762	0
Flt Permitted	0.571			0.528				0.869			0.676	
Satd. Flow (perm)	1033	1809	0	955	1715	0	0	1485	0	0	1223	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					58			67				
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1447			807			159			117	
Travel Time (s)		28.2			15.7			3.1			2.3	
Lane Group Flow (vph)	43	341	0	239	294	0	0	264	0	0	250	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
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	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	31.8	31.8		31.8	31.8			18.2			18.2	
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.30			0.30	
v/c Ratio	0.08	0.36		0.47	0.31			0.53			0.67	
Control Delay	5.2	5.3		14.5	8.5			15.9			27.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.2	5.3		14.5	8.5			15.9			27.0	
LOS	A	A		B	A			B			C	
Approach Delay		5.3			11.2			15.9			27.0	
Approach LOS		A			B			B			C	
Queue Length 50th (ft)	3	21		51	44			55			77	
Queue Length 95th (ft)	m12	63		125	100			104			131	
Internal Link Dist (ft)		1367			727			79			37	
Turn Bay Length (ft)				75								
Base Capacity (vph)	546	957		505	934			610			468	
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	

Lanes, Volumes, Timings

40: Grant Street & Pettigrew Street (No Train)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.08	0.36		0.47	0.31			0.43			0.53	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	13.2
Intersection LOS:	B
Intersection Capacity Utilization:	64.5%
ICU Level of Service:	C
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 40: Grant Street & Pettigrew Street (No Train)

<p>→ ø2 (R) 32 s</p>	<p>↑ ø4 28 s</p>
<p>← ø6 (R) 32 s</p>	<p>↓ ø8 28 s</p>

Lanes, Volumes, Timings

41: Chatham Place/Gann Street & Pettigrew Street

3/12/2015



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	410	157	26	420	128	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			2%	2%	
Satd. Flow (prot)	1742	0	1718	1809	1660	0
Flt Permitted			0.950		0.971	
Satd. Flow (perm)	1742	0	1718	1809	1660	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	807			174	514	
Travel Time (s)	18.3			4.0	11.7	
Lane Group Flow (vph)	630	0	29	467	239	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

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

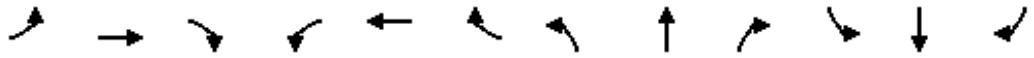


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	175	153	1	150	128	1484	0	0	1346	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	150		0	0		0	100		0	0		200
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			0			25			0		
Satd. Flow (prot)	1718	0	1537	1718	1539	0	1718	3436	0	0	3430	0
Flt Permitted	0.651			0.950			0.950					
Satd. Flow (perm)	1177	0	1537	1718	1539	0	1718	3436	0	0	3430	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			194		21							1
Link Speed (mph)		30			30			35				35
Link Distance (ft)		514			195			219				553
Travel Time (s)		11.7			4.4			4.3				10.8
Lane Group Flow (vph)	38	0	194	170	168	0	142	1649	0	0	1518	0
Turn Type	Perm		Perm	pm+pt	NA		Prot	NA			NA	
Protected Phases				3	8		5	2				6
Permitted Phases	4		4	8								
Detector Phase	4		4	3	8		5	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		7.0	10.0				10.0
Minimum Split (s)	24.0		24.0	14.0	24.0		24.0	24.0				24.0
Total Split (s)	26.0		26.0	21.0	47.0		24.0	73.0				49.0
Total Split (%)	21.7%		21.7%	17.5%	39.2%		20.0%	60.8%				40.8%
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	Lag		Lag	Lead			Lead					Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes					Yes
Recall Mode	None		None	None	None		None	C-Max				C-Max
Act Effct Green (s)	11.7		11.7	31.8	31.8		17.1	78.2				56.1
Actuated g/C Ratio	0.10		0.10	0.26	0.26		0.14	0.65				0.47
v/c Ratio	0.33		0.60	0.37	0.40		0.58	0.74				0.95
Control Delay	60.6		17.7	37.7	33.7		57.0	17.2				44.7
Queue Delay	0.0		0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	60.6		17.7	37.7	33.7		57.0	17.2				44.7
LOS	E		B	D	C		E	B				D
Approach Delay					35.7			20.4				44.7
Approach LOS					D			C				D
Queue Length 50th (ft)	28		16	107	93		104	420				580
Queue Length 95th (ft)	m62		73	162	150		163	576				#884
Internal Link Dist (ft)		434			115			139				473
Turn Bay Length (ft)	150						100					
Base Capacity (vph)	205		429	454	552		284	2240				1605
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

Lanes, Volumes, Timings

42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps

3/12/2015

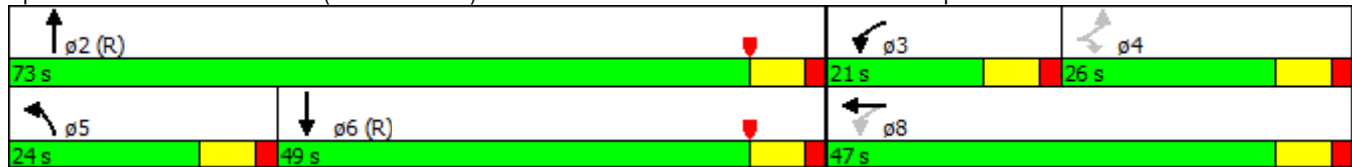


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.19		0.45	0.37	0.30		0.50	0.74			0.95	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	31.5
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.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 42: NC 55 (Alston Avenue) & Chatham Place/Gann Street/NC 147 NB Ramps



Lanes, Volumes, Timings

43: Ninth Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	592	52	204	441	248	47	288	305	237	180	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	200		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1718	1787	0	1718	1711	0	1718	1669	0	1718	1729	0
Flt Permitted	0.117			0.073			0.511			0.078		
Satd. Flow (perm)	212	1787	0	132	1711	0	924	1669	0	141	1729	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			28			40			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		299			755			166			290	
Travel Time (s)		6.8			17.2			3.8			6.6	
Lane Group Flow (vph)	68	716	0	227	766	0	52	659	0	263	282	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	31.0	31.0		14.0	28.0		14.0	36.0		14.0	31.0	
Total Split (s)	56.0	56.0		16.0	72.0		14.0	50.0		18.0	54.0	
Total Split (%)	40.0%	40.0%		11.4%	51.4%		10.0%	35.7%		12.9%	38.6%	
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	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	51.0	51.0		67.0	67.0		54.0	45.0		62.2	51.8	
Actuated g/C Ratio	0.36	0.36		0.48	0.48		0.39	0.32		0.44	0.37	
v/c Ratio	0.88	1.10		1.21	0.92		0.13	1.17		1.26	0.43	
Control Delay	118.4	106.0		150.0	23.7		23.1	134.1		184.3	34.7	
Queue Delay	0.0	0.0		0.0	2.8		0.0	1.7		0.6	0.0	
Total Delay	118.4	106.0		150.0	26.5		23.1	135.7		184.9	34.7	
LOS	F	F		F	C		C	F		F	C	
Approach Delay		107.0			54.7			127.5			107.2	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)	58	~735		~198	491		27	~689		~253	187	
Queue Length 95th (ft)	#160	#982		m#229	m531		53	#932		#435	275	
Internal Link Dist (ft)		219			675			86			210	
Turn Bay Length (ft)	200			150								
Base Capacity (vph)	77	653		187	833		407	563		208	649	
Starvation Cap Reductn	0	0		0	27		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	103		8	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	



Lanes, Volumes, Timings

43: Ninth Street & US 70 (W Main Street)

3/12/2015

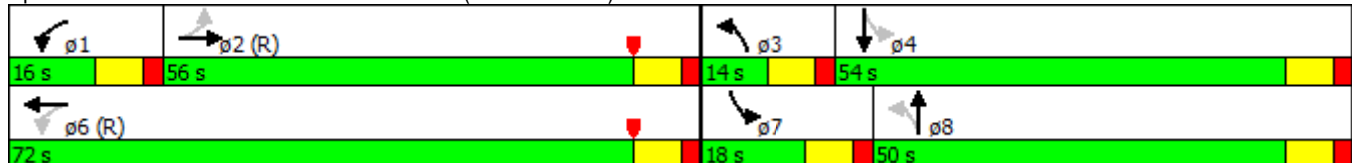


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.88	1.10		1.21	0.95		0.13	1.43		1.31	0.43	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 73 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 94.7      Intersection LOS: F  
 Intersection Capacity Utilization 110.3%      ICU Level of Service H  
 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.  
 m Volume for 95th percentile queue is metered by upstream signal.

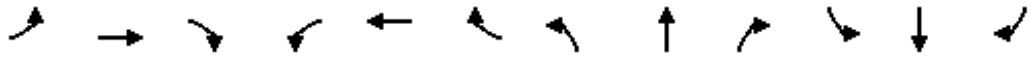
Splits and Phases: 43: Ninth Street & US 70 (W Main Street)



Lanes, Volumes, Timings

44: Swift Avenue/Broad Street & Pettigrew Street

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕			↕	
Volume (vph)	47	2	157	16	5	40	49	789	8	14	1012	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	0		0	0		0	120		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	0			0			25			0		
Satd. Flow (prot)	0	1605	0	0	1630	0	1718	3430	0	0	3412	0
Flt Permitted		0.989			0.987		0.950				0.999	
Satd. Flow (perm)	0	1605	0	0	1630	0	1718	3430	0	0	3412	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		786			333			243			214	
Travel Time (s)		15.3			6.5			4.7			4.2	
Lane Group Flow (vph)	0	228	0	0	68	0	54	886	0	0	1188	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	63.2%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings

59: Erwin Road/Ninth Street & Pettigrew Street

3/12/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	53	587	79	38	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1636	0	1798	0	0	1820
Flt Permitted	0.983					0.996
Satd. Flow (perm)	1636	0	1798	0	0	1820
Link Speed (mph)	30		30			30
Link Distance (ft)	786		232			166
Travel Time (s)	17.9		5.3			3.8
Lane Group Flow (vph)	89	0	740	0	0	484
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	63.9%
	ICU Level of Service B
Analysis Period (min)	15

Lanes, Volumes, Timings

60: Swift Avenue/Broad Street & US 70 (W Main Street)

3/12/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	606	268	171	510	89	263	439	174	112	630	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			2%			2%	
Storage Length (ft)	100		300	200		0	0		0	100		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			25			0			25		
Satd. Flow (prot)	1718	1809	1537	1718	1769	0	1718	1809	1537	1718	3392	0
Flt Permitted	0.089			0.115			0.950			0.950		
Satd. Flow (perm)	161	1809	1537	208	1769	0	1718	1809	1537	1718	3392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140		7				195			7
Link Speed (mph)		35			35			35				35
Link Distance (ft)		755			391			214				263
Travel Time (s)		14.7			7.6			4.2				5.1
Lane Group Flow (vph)	131	673	298	190	666	0	292	488	193	124	769	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	3	1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	37.0		14.0	14.0	14.0	14.0	32.0	
Total Split (s)	14.0	59.0	29.0	16.0	61.0		29.0	49.0	49.0	16.0	36.0	
Total Split (%)	10.0%	42.1%	20.7%	11.4%	43.6%		20.7%	35.0%	35.0%	11.4%	25.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	-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	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	54.0	54.0	78.0	56.0	56.0		24.0	41.9	41.9	13.1	31.0	
Actuated g/C Ratio	0.39	0.39	0.56	0.40	0.40		0.17	0.30	0.30	0.09	0.22	
v/c Ratio	0.81	0.97	0.32	0.95	0.94		0.99	0.90	0.32	0.78	1.02	
Control Delay	30.6	43.1	7.2	104.4	61.6		108.1	67.8	5.9	92.2	89.9	
Queue Delay	0.0	0.4	0.0	0.0	0.0		34.7	0.0	0.0	0.0	0.0	
Total Delay	30.6	43.6	7.2	104.4	61.6		142.8	67.8	5.9	92.2	89.9	
LOS	C	D	A	F	E		F	E	A	F	F	
Approach Delay		32.2			71.1			78.0			90.2	
Approach LOS		C			E			E			F	
Queue Length 50th (ft)	80	602	75	116	572		269	418	0	114	~385	
Queue Length 95th (ft)	m68	m491	m50	#266	#824		#462	#606	55	#241	#518	
Internal Link Dist (ft)		675			311			134			183	
Turn Bay Length (ft)	100		300	200						100		
Base Capacity (vph)	162	697	918	201	711		294	568	616	160	756	
Starvation Cap Reductn	0	2	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		38	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	



# **Appendix C**

## **Existing Traffic Signal Plans**

PHASING DIAGRAM

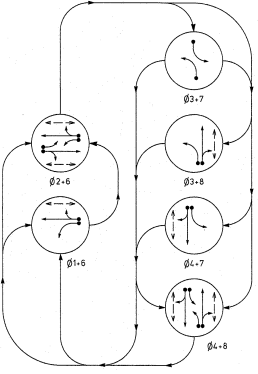
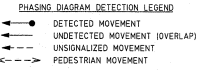


TABLE OF OPERATION

SIGNAL FACE	PHASE							
	1	2	3	4	5	6	7	8
21,22	R	G	R	R	R	R	R	Y
41	R	R	R	R	G	G	R	R
42	R	R	R	R	G	G	R	R
61	G	R	R	R	R	R	R	Y
62	G	R	R	R	R	R	R	Y
81	R	R	R	R	G	G	R	R
82	R	R	R	R	G	G	R	R
P21,P22	D	W	D	W	D	W	D	D
P41,P42	D	W	D	W	D	W	D	D
P61,P62	W	D	W	D	W	D	W	D
P81,P82	D	W	D	W	D	W	D	D

DK = Dark Signal Face  
W = Walk  
DW = Don't Walk



170 LOOP & DETECTOR UNIT INSTALLATION CHART

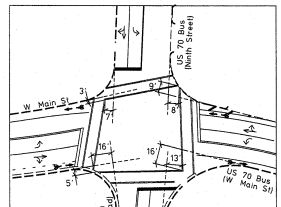
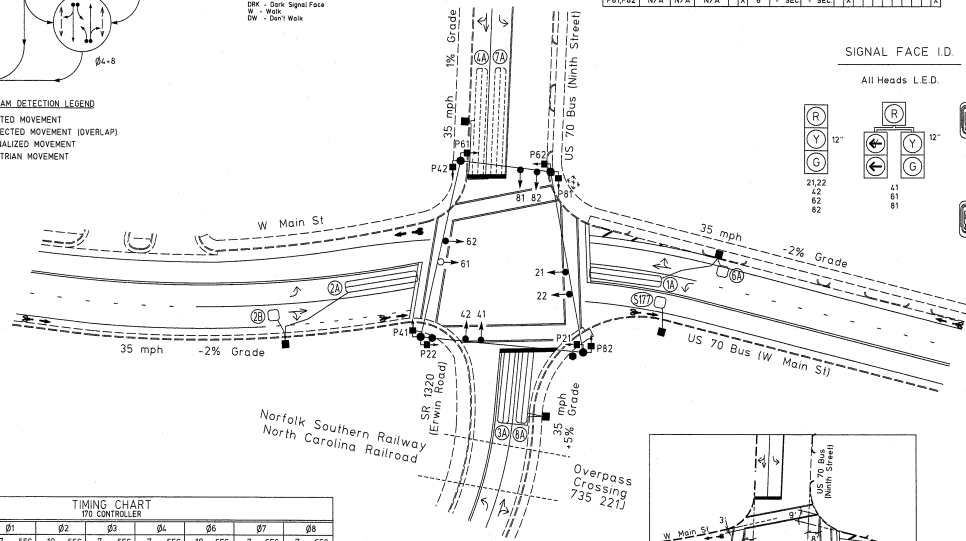
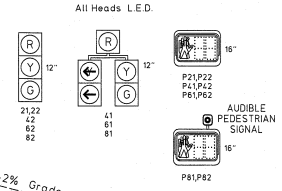
LOOP NO.	INDUCTIVE LOOPS	DETECTOR PROGRAMMING											
		PHASE	DELTA	CARRY	ATTEMPTS	RETRY	EXTEND	STOP	START	STOP	START	STOP	START
1A	6x40 2-4-2 0 X	1	10 SEC	- SEC									
2A	6x40 2-4-2 0 X	2	- SEC	- SEC									
2B	6x6 4 70 X	2	- SEC	- SEC									
3A	6x40 2-4-2 0 X	3	10 SEC	- SEC									
4A	6x60 2-4-2 0 X	4	5 SEC	- SEC									
6A	6x6 4 70 X	6	- SEC	- SEC									
7A	6x60 2-4-2 0 X	7	10 SEC	- SEC									
8A	6x40 2-4-2 0 X	8	3 SEC	- SEC									
S177	6x6 4 120 X	N/A	- SEC	- SEC									

6 Phase Fully Actuated (Durham Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012, and all applicable sections of the latest version of the generic Project Special Provisions.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Program phase 1 as protected/permisive.
- Program phase 3 as protected/permisive.
- Program phase 7 as protected/permisive.
- Program controller to clear from phase 2+6 to phase 1+8 by progressing through phase 4+8 (see Electrical Details).
- Set all detector units to presence mode.
- Reposition existing signal heads numbered 21, 22 and 62.
- Program all timing information into phase banks 1, 2 and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to count down the flashing "Don't Walk" time only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- This intersection features audible pedestrian signals with a "cuckoo" beacon. These audible signals must comply with all guidelines set in the Americans with Disabilities Act.

SIGNAL FACE I.D.

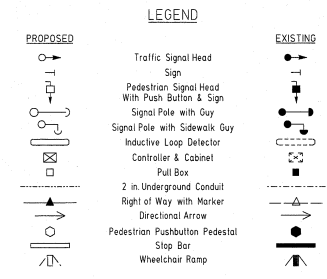


Note: Crosswalk lines are 8 inches thick with 8 feet of separation. Locate stopbars 4 feet behind and parallel to crosswalks.

TIMING CHART  
170 CONTROLLER

PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
MINIMUM INITIAL*	7 SEC	10 SEC	7 SEC	7 SEC	10 SEC	7 SEC	7 SEC
VEHICLE EXTENSION*	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
YELLOW CHANGE INT.	3.3 SEC	4.0 SEC	3.0 SEC	3.8 SEC	4.0 SEC	3.1 SEC	3.6 SEC
RED CLEARANCE	1.7 SEC	1.7 SEC	1.8 SEC	1.7 SEC	1.5 SEC	2.0 SEC	1.6 SEC
MAXIMUM LIMIT*	20 SEC	45 SEC	20 SEC	30 SEC	45 SEC	20 SEC	30 SEC
RECALL POSITION	NONE	VEH RECALL	NONE	NONE	VEH RECALL	NONE	NONE
VEHICLE CALL MEMORY	NONE	YELLOW LOCK	NONE	NONE	YELLOW LOCK	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF	ON	OFF	OFF	ON
WALK*	- SEC	7 SEC	- SEC	7 SEC	7 SEC	- SEC	7 SEC
FLASHING DON'T WALK	- SEC	17 SEC	- SEC	14 SEC	14 SEC	- SEC	16 SEC
TYPE 3 LIMIT	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC
ALTERNATE EXTENSION	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC
ADD PER VEHICLE*	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC
MAXIMUM INITIAL*	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC
MAXIMUM GAP*	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC
REDUCE 0.1 SEC EVERY*	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC	- SEC
MINIMUM GAP	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC	2.0 SEC

\* 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.



SIGNAL UPGRADE

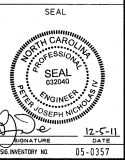


City of Durham  
101 City Hall Plaza  
Durham, NC 27701  
DPH 960-4566

US 70 Business (West Main Street) at US 70 Business (Ninth Street) / SR 1320 (Erwin Road)

DIVISION 5 DURHAM COUNTY DURHAM

PLAN DATE: JANUARY 2011 PREPARED BY: L. TRACET REVIEWED BY: P. NICHOLAS



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **235**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **8/1/07 LT Changed clearance times**

**1/5/09 LT Downloaded AM plan (Sch D)**

**2/3/09 LT Downloaded PM plan (Sch D)**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>4</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>121</b>	<C/0+0+3>
QuicNet Channel	<b>COM121:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

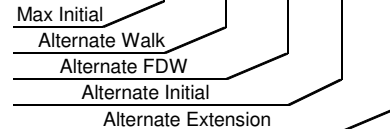
**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	17	0	14	0	14	0	16
2	Min Green	7	10	7	7	0	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
6	Max Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
7	Min Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
8	Max Limit	25	45	20	30	0	45	20	30
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	4.0	3.0	3.8	0.0	4.0	3.1	3.6
F	Red Clear	1.7	1.7	1.8	1.7	0.0	1.5	2.0	1.6

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	0		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

[Miscellaneous Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	1 3 7
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
A	
B	
C	
D	
E	
F	

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
A	
B	
C	
D	
E	
F	

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Miniums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	90	0	90	0	0	0	0	0	0
1	Phase 1 - ForceOff	18	0	15	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	36	0	30	0	0	0	0	0	0
4	Phase 4 - ForceOff	67	0	66	0	0	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	36	0	30	0	0	0	0	0	0
8	Phase 8 - ForceOff	67	0	66	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	15	0	15	0	0	0	0	0	0
B	Offset B	15	0	15	0	0	0	0	0	0
C	Offset C	15	0	15	0	0	0	0	0	0
D	Perm 1 - End	15	0	12	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	9	0	8	0	0	0	0	0	0
2	Perm 2 - End	28	0	30	0	0	0	0	0	0
3	Perm 3 - Start	16	0	16	0	0	0	0	0	0
4	Perm 3 - End	70	0	70	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	1		1			12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	3 7		3 7						
D	Perm 2 Ped Phase	3 7		3 7						
E	Perm 3 Veh Phase	4 8		4 8						
F	Perm 3 Ped Phase	4 8		4 8						

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync		4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4 6 8	3
4	Plan 4 - Lag		4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	55	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	56	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

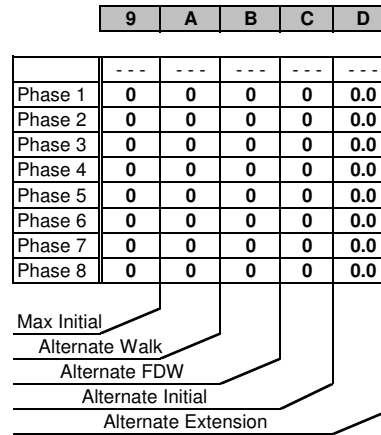
**INTERSECTION: 0357-Erwin Main & Ninth**

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	17	0	14	0	14	0	16
2	Min Green	7	10	7	7	0	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
6	Max Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
7	Min Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
8	Max Limit	25	45	20	30	0	45	20	30
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	4.0	3.0	3.8	0.0	4.0	3.1	3.6
F	Red Clear	1.7	1.7	1.8	1.7	0.0	1.5	2.0	1.6

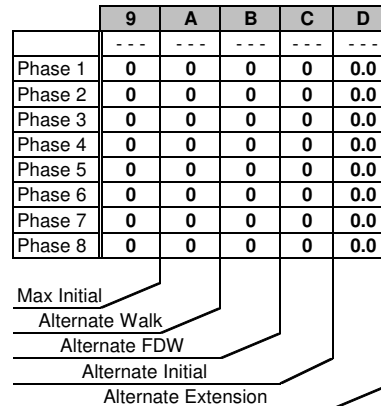
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	17	0	14	0	14	0	16
2	Min Green	7	10	7	7	0	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
6	Max Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
7	Min Gap	2.0	3.0	2.0	3.0	0.0	3.0	2.0	3.0
8	Max Limit	250	250	250	250	0	250	250	250
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	4.0	3.0	3.8	0.0	4.0	3.1	3.6
F	Red Clear	1.7	1.7	1.8	1.7	0.0	1.5	2.0	1.6

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Low Priority  
 1 = Channel A  
 2 = Channel B  
 3 = Channel C  
 4 = Channel D

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 0 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		56	5 7	1	123 8	3.0	0.0
1	2		56	5 7	6	123 8	0.0	0.0
2	3		56	5	4	123 8	3.0	0.0
3	4		39	5 7	2	123 8	0.0	0.0
4	5		43	5 7	2	123 8	0.0	0.0
5	6		58	5 7	3	123 8	10.0	0.0
6	7		58	5 7	8	123 8	3.0	0.0
7	8		41	5 7	4	123 8	5.0	0.0
8	9		40	5 7	6	123 8	0.0	0.0
9	10		57	5 7	7	123 8	10.0	0.0
A	11		57	5 7	4	123 8	3.0	0.0
B	12		42	5 7	8	123 8	0.0	0.0
C	13		69		4		0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection	(Enable Redirection = 30)		Output Bit:	12345678
Max OFF (minutes)	255	<D/0+0+1>	Output Port 1	1
Max ON (minutes)	7	<D/0+0+2>	Output Port 2	2
Detector Failure Monitor	[Miscellaneous Timing]		Output Port 3	3
			Output Port 4	4
			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

DELAY-A	0	Row
DELAY-B	0	A
DELAY-C	0	B
DELAY-D	0	C
DELAY-E	0	D
DELAY-F	0	E
		F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		67	2	2	123	0.0	0.0
1	18		69	2	4	123	0.0	0.0
2	19		68	2	6	123	0.0	0.0
3	20		70	2	8	123	0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

1 = Stop Time  
 2 = Flash Sense  
 3 = Keyboard Entry  
 4 = Manual Plan  
 5 = Police Control  
 6 = External Alarm  
 7 = Detector Failure  
 8 =

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0357-Erwin Main & Ninth**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **226**

N/S Street Name: **Broad St. & Swift St.**  
 E/W Street Name: **West Main (US 70 Bus)**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **8/1/07 LT Changed clearance times**

**1/5/09 LT Downloaded AM plan (Sch D)**

**2/3/09 LT Downloaded PM plan (Sch D)**

**4/4/12 LT Put 1, 2, 5, 6 in max recall for waterline replacement (manual free run)**

**12/4/12 PN Max recall phases 2+6 (loops cut - not extending).**

**10/31/13 CB Uploaded new data from controller (Main St project)**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>7</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>112</b>	<C/0+0+3>
QuicNet Channel	<b>COM121:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

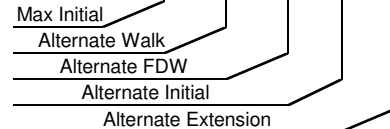
**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

[Miscellaneous Timing]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	7	0	7	0	0
1	Ped FDW	0	0	0	22	0	15	0	0
2	Min Green	7	10	7	7	7	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
6	Max Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
7	Min Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
8	Max Limit	15	50	25	30	15	50	20	30
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	3.9	3.4	3.1	3.2	4.0	3.1	4.1
F	Red Clear	1.5	1.4	2.2	2.5	1.7	1.9	2.2	1.7

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	0		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	20		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	3 8
3	RR-2 Limited Service	2 567
4	Prot / Perm Phases	1 5
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	6
Ped for 2P Output	
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	
Yellow Flash Phases	2 6
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	12345678
Start-up Ped Calls	4 6

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	90	0	90	0	0	0	0	0	100
1	Phase 1 - ForceOff	63	0	65	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	17	0	18	0	0	0	0	0	20
4	Phase 4 - ForceOff	48	0	50	0	0	0	0	0	40
5	Phase 5 - ForceOff	63	0	65	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	17	0	18	0	0	0	0	0	20
8	Phase 8 - ForceOff	48	0	50	0	0	0	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	0	0	0	0	0	0	0	0	0
B	Offset B	0	0	0	0	0	0	0	0	0
C	Offset C	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	8	0	8	0	0	0	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	9	0	9	0	0	0	0	0	0
2	Perm 2 - End	25	0	28	0	0	0	0	0	0
3	Perm 3 - Start	26	0	29	0	0	0	0	0	0
4	Perm 3 - End	50	0	50	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	3 7		3 7		12345678	12345678	12345678	12345678	
B	Perm 1 Ped Phase					12345678	12345678	12345678	12345678	
C	Perm 2 Veh Phase	4 8		4 8						
D	Perm 2 Ped Phase	4		4						
E	Perm 3 Veh Phase	1 5		1 5						
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync		4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4 6 8	3
4	Plan 4 - Lag		4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	225	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	225	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

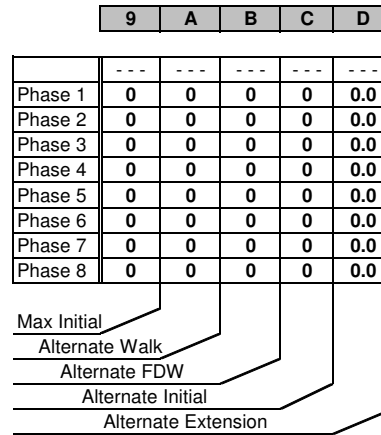
**INTERSECTION: 0356-Broad Swift & Main**

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	7	0	7	0	0
1	Ped FDW	0	0	0	22	0	15	0	0
2	Min Green	7	10	7	7	7	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
6	Max Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
7	Min Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
8	Max Limit	15	50	25	30	15	50	20	30
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	3.9	3.4	3.1	3.2	4.0	3.1	4.1
F	Red Clear	1.5	1.4	2.2	2.5	0.0	1.9	2.2	1.7

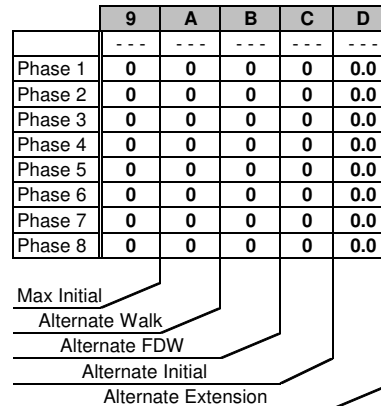
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	7	0	7	0	0
1	Ped FDW	0	0	0	22	0	15	0	0
2	Min Green	7	10	7	7	7	10	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
6	Max Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
7	Min Gap	2.0	3.0	4.0	1.0	2.0	3.0	1.0	4.0
8	Max Limit	250	250	250	250	250	250	250	250
9	Max Limit 2	250	250	250	250	250	250	250	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.3	3.9	3.4	3.1	3.2	4.0	3.1	4.1
F	Red Clear	1.5	1.4	2.2	2.5	1.7	1.9	2.2	1.7

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		56	5 7	1	123 8	10.0	0.0
1	2		56	5 7	6	123 8	3.0	0.0
2	3		56	7	4	123 8	10.0	0.0
3	4		39	5 7	2	123 8	0.0	0.0
4	5		58	5 7	3	123 8	3.0	0.0
5	6		41	5 7	4	123 8	0.0	0.0
6	7		45	5 7	4	123 8	5.0	0.0
7	8		55	5 7	5	123 8	10.0	0.0
8	9		55	5 7	2	123 8	3.0	0.0
9	10		55	7	4	123 8	10.0	0.0
A	11		40	5 7	6	123 8	10.0	0.0
B	12		57	5 7	7	123 8	3.0	0.0
C	13		42	5 7	8	123 8	0.0	0.0
D	14		0				0.0	0.0
E	15		69	2	4	123	0.0	0.0
F	16		68	2	6	123	0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection			12345678	0
(Enable Redirection = 30)				1
[Phase Output Redirection]				2
Max OFF (minutes)	255	<D/0+0+1>		3
Max ON (minutes)	7	<D/0+0+2>		4
Detector Failure Monitor				5
[Miscellaneous Timing]				6
				7

**Dimming** <C+0+E=125>

[Output Dimming]

Output Bit:	12345678	Row
Output Port 1		1
Output Port 2		2
Output Port 3		3
Output Port 4		4
Output Port 5		5
Output Port 6		6
Output Port 7		7

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

DELAY-A	0	Row
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Omit Alarm		<C/5+F+0>
Time	0	<C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		56	5 7	1	123	0.0	0.0
9	26		47	5 7	2	123	0.0	0.0
A	27		58	5 7	3	123	0.0	0.0
B	28		49	5 7	4	123	0.0	0.0
C	29		55	5 7	5	123	0.0	0.0
D	30		48	5 7	6	123	0.0	0.0
E	31		57	5 7	7	123	0.0	0.0
F	32		50	5 7	8	123	0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

**Detector Timing** <C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0356-Broad Swift & Main**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **239**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **12/2/2011 11:07**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>6</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>125</b>	<C/0+0+3>
QuicNet Channel	<b>COM121:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
*[Configuration not in timing menus]*

**Manual Selection**  
*[Set Manual Plan/Offset not timing]*

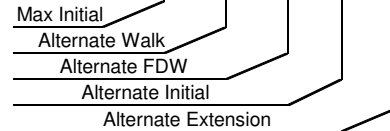
**Start / Revert Times**  
*[Miscellaneous Timing]*

**Exclusive Ped Phase**  
*(Outputs specified in Assignable Outputs at E/127+A+E & F)*

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	16	0	14	0	16	0	14
2	Min Green	4	7	4	7	7	10	18	7
3	Type 3 Disconnect	0	20	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	3.0	2.0	2.0	2.0	3.0	3.0	4.0
6	Max Gap	2.0	3.0	2.0	2.0	2.0	3.0	3.0	4.0
7	Min Gap	2.0	3.0	2.0	2.0	2.0	3.0	3.0	4.0
8	Max Limit	20	30	20	20	10	30	18	20
9	Max Limit 2	30	50	30	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
F	Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

**Phase Timing - Bank 1** <C+0+F=1>

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	20
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	27
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

**Preempt Timing**

*[Miscellaneous Timing]*

	F	Row
Permit	<b>12_456_8</b>	0
Red Lock		1
Yellow Lock	<b>2_6_8</b>	2
Min Recall	<b>2_6</b>	3
Ped Recall		4
View Set Peds	-----	5
Rest In Walk		6
Red Rest		7
Dual Entry	<b>4_8</b>	8
Max Recall		9
Soft Recall		A
Max 2		B
Cond. Service		C
Ext Cont Calls	<b>12_456_8</b>	D
Yellow Start		E
First Phases	<b>2_6</b>	F

**Phase Functions** <C+0+F=1>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	9	10	0	0	0	0	0	0
1	Veh Set 1 - Phases	1	5 7						12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)  
 [Preempt Priority]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	3 8
3	RR-2 Limited Service	2 567
4	Prot / Perm Phases	1 5
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	1 6
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	2 6
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12 456 8
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	12 456 8
Start-up Ped Calls	2 4 6 8

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minimums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	90	0	90	60	0	0	0	0	0
1	Phase 1 - ForceOff	55	0	56	35	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	37	0	40	21	0	0	0	0	0
5	Phase 5 - ForceOff	55	0	56	35	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	37	0	40	21	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	6	0	89	39	0	0	0	0	0
B	Offset B	6	0	89	39	0	0	0	0	0
C	Offset C	6	0	89	39	0	0	0	0	0
D	Perm 1 - End	15	0	18	7	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	15	0	7	7	0	0	0	0	0
2	Perm 2 - End	41	0	21	21	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	4 8		4 8	4 8		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	1 5		1 5	1 5					
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4 6 8	3
4	Plan 4 - Lag	2 4 6 8	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	62	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	60	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	225	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	200	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	200	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	225	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

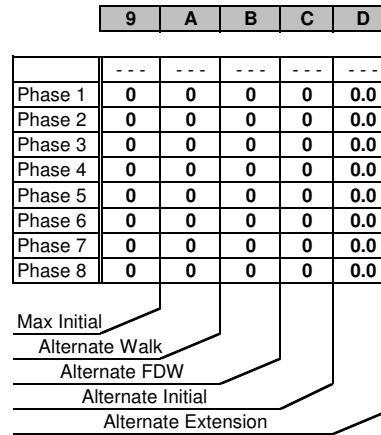
**INTERSECTION: 1022-Buchanan Blvd & Main St**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	4	0	7	0	4	0	7
1	Ped FDW	0	14	0	15	0	14	0	15
2	Min Green	7	10	18	7	7	10	18	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	4.0	4.0	0.0	1.0	4.0	4.0	0.0	1.0
6	Max Gap	4.0	4.0	0.0	1.0	4.0	4.0	0.0	1.0
7	Min Gap	4.0	4.0	0.0	1.0	4.0	4.0	0.0	1.0
8	Max Limit	10	30	18	20	10	30	18	20
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
F	Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

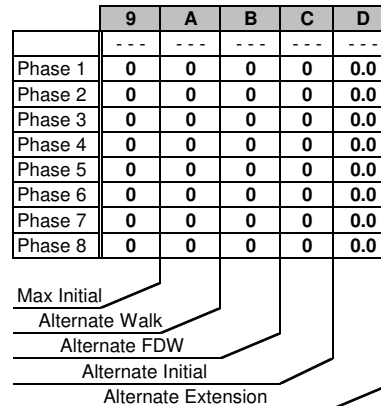
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	7	0	7	0	7	0	7
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	16	0	14	0	16	0	14
2	Min Green	7	10	18	7	7	10	18	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	4.0	0.0	1.0	2.0	4.0	0.0	4.0
6	Max Gap	2.0	4.0	0.0	1.0	2.0	4.0	0.0	4.0
7	Min Gap	2.0	4.0	0.0	1.0	2.0	4.0	0.0	4.0
8	Max Limit	150	250	150	250	150	250	150	250
9	Max Limit 2	150	250	150	250	150	250	150	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
F	Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**  
 [Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**  
 [Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**  
 [Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**  
 [Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**  
 [Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**  
 [Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)  
 [Miscellaneous Timing]

Min Time (seconds) | 1 | <F/1+0+8>

**Min Green Before PE Force Off**  
 [Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**  
 [Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**  
 (Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**  
 [Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		39	5 7	2	123 6 8	0.0	1.5
1	2		40	5 7	6	123 6 8	0.0	1.5
2	3		41	5 7	4	123 6 8	0.0	0.0
3	4		45				0.0	0.0
4	5		42	5 7	8	123 6 8	2.0	0.0
5	6		46	7	1	123 6 8	15.0	0.0
6	7		56	5 7	1	123 6 8	15.0	0.0
7	8		56	1 5	6	123 6 8	3.0	0.0
8	9		56	7	4	123 6 8	25.0	0.0
9	10		55	5 7	5	123 6 8	15.0	0.0
A	11		55	1 5	2	123 6 8	3.0	0.0
B	12		55	7	4	123 6 8	25.0	0.0
C	13		67	2	2	123	0.0	0.0
D	14		68	2	6	123	0.0	0.0
E	15		59	7	5	123 6 8	15.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->	Ped / Phase / Overlap								Row
	1	2	3	4	5	6	7	8	
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0
Phase Green	0	0	0	0	0	0	0	0	0
Phase Yellow	0	0	0	0	0	0	0	0	0
Phase Red	0	0	0	0	0	0	0	0	0
Overlap Green	0	0	0	0	0	0	0	0	0
Overlap Yellow	0	0	0	0	0	0	0	0	0
Overlap Red	0	0	0	0	0	0	0	0	0

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection			12345678	0
(Enable Redirection = 30)				1
Output Bit:				2
Output Port 1				3
Output Port 2				4
Output Port 3				5
Output Port 4				6
Output Port 5				7
Output Port 6				
Output Port 7				

**Detector Failure Monitor**  
 [Miscellaneous Timing]

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

**Dimming** <C+0+E=125>

[Output Dimming]

DELAY-A	0	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		60	4		123 6 8	0.0	0.0
1	18		62	4		123 6 8	0.0	0.0
2	19		0				0.0	0.0
3	20		57	5 7	4	123 6 8	0.0	0.0
4	21		57	5 7	7	123 6 8	0.0	0.0
5	22		69	2	4	123	0.0	0.0
6	23		70	2	8	123	0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

- 1 = Det. Set 1
- 2 = Det. Set 2
- 3 = Det. Set 3
- 4 =
- 5 =
- 6 = Failure - Min Recall
- 7 = Failure - Max Recall
- 8 = Report on Failure

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1022-Buchanan Blvd & Main St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

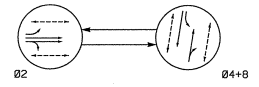
Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

PHASING DIAGRAM

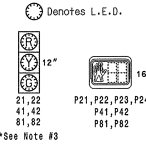


PHASING DIAGRAM DETECTION LEGEND

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

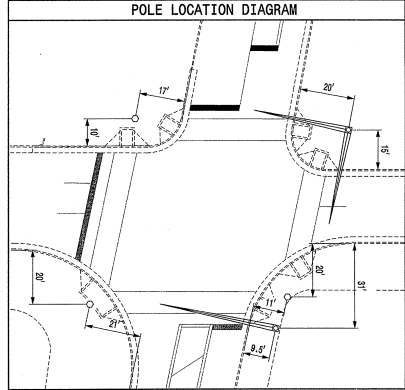
SIGNAL FACE	PHASE	
	DOWN	UP
21,22	G R	R Y
41,42	R G	R R
81,82	R G	R R
P21, P22, P23, P24	W DW	DRX
P41, P42	DW W	DRX
P81, P82	DW W	DRX

SIGNAL FACE I. D.



\*See Note #3

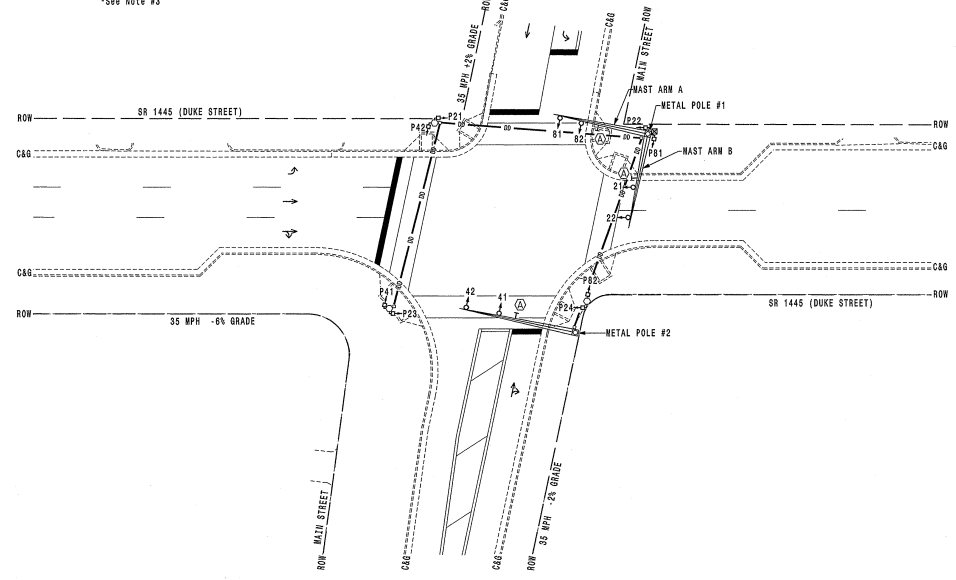
POLE LOCATION DIAGRAM



2 PHASE PRE-TIMED (CITY OF DURHAM SIGNAL SYSTEM)

NOTES

1. Refer to "Roadway Standard Drawings R0007" dated July 2008, "Standard Specifications for Roads and Structures" dated July 2008, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <http://www.sdot.net/infrastructure/traffic/>
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Install lowered backscapes for all signal heads.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
6. Set phase bank 3 maxime limit to 250 seconds for phases used.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. All signal pole, mastarms, luminaires, finials, pedestrian pedestals, vehicle signal heads, pedestrian signal heads, and other visible hardware are to be decorative, designed and manufactured to be similar in appearance to the traffic signal equipment at the intersection of Great Jones Street at West Main Street (US-1025) in downtown Durham, North Carolina. The visible hardware listed above is to be painted black at the fabricator's shop, and the fabricator shall provide a supply of touch-up paint to the City.



TIMING CHART 170 CONTROLLER			
PHASE	02	04	08
MINIMUM INITIAL *	10 SEC	7 SEC	7 SEC
VEHICLE EXTENSION *	0.0 SEC	0.0 SEC	0.0 SEC
YELLOW CHANGE INT.	4.3 SEC	3.7 SEC	4.0 SEC
RED CLEARANCE	1.6 SEC	1.7 SEC	1.5 SEC
MAXIMUM LIMIT *	** SEC	** SEC	** SEC
RECALL POSITION	PED RECALL	PED RECALL	PED RECALL
VEHICLE CALL MEMORY	NONE	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF
WALK *	7 SEC	7 SEC	7 SEC
FLASHING DON'T WALK	10 SEC	11 SEC	5 SEC
TYPE 3 LIMIT	- SEC	- SEC	- SEC
ADD PER VEHICLE *	- SEC	- SEC	- SEC
MAXIMUM INITIAL *	- SEC	- SEC	- SEC
MAXIMUM GAP *	0.0 SEC	0.0 SEC	0.0 SEC
REDUCE 0.1 SEC EVERY *	- SEC	- SEC	- SEC
MINIMUM GAP	0.0 SEC	0.0 SEC	0.0 SEC

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2. Lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.  
\*\* Timing to be determined by the City of Durham.

PROPOSED	LEGEND	EXISTING
	Traffic Signal Head	
	Modified Signal Head	
	Sign	
	Pedestrian Signal Head with Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	Directional Drill	
	2-in Underground Conduit	
	Right of Way	
	Construction Maintenance Easement	
	Directional Arrow	
	Pavement Marking Arrow	
	Metal Pole with Mastarm	
	Pedestrian Signal Pedestal	
	Street Name Sign	

SIGNAL UPGRADE

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
FINAL DRAWING Date: 11/1/2007  
Traffic Engineering Branch

PLANS PROVIDED BY THE OFFICE OF:  
Kimley-Horn and Associates, Inc.  
P.O. Box 13026  
Raleigh, NC 27636  
919-877-0000

	SR 1445 (DUKE STREET) AT MAIN STREET		
	DIVISION 05 DURHAM COUNTY	DURHAM	
PLAN DATE: NOVEMBER 2007	DRAWN BY: J.C. CROSS	REVIEWED BY: C.A. MULLIGREN	DATE: 11/1/07
SCALE: 1"=20'	REVISIONS:	INT.:	DATE:
516. DURHAM RD. 05-1013			8-11-08

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **242**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: 3/11/08 LT Downloaded new AM plan (Sch D), changed plan 1 to end at 8 a.m.  
3/26/08 LT Downloaded new off-peak plan (Sch D)

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>3</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>128</b>	<C/0+0+3>
QuicNet Channel	<b>COM12:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

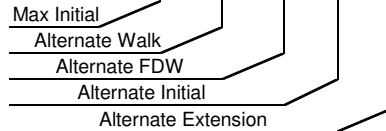
**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	11	0	0	0	5
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	19	0	19	0	0	0	19
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.3	0.0	3.7	0.0	0.0	0.0	4.0
F	Red Clear	0.0	1.6	0.0	1.7	0.0	0.0	0.0	1.5

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	0		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

[Miscellaneous Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	12345678
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4 8
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 8
Start-up Ped Calls	2 4 8

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Miniums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	80	70	90	60	0	0	0	0	100
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	20
4	Phase 4 - ForceOff	34	31	39	31	0	0	0	0	40
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	20
8	Phase 8 - ForceOff	34	31	39	31	0	0	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	0	0	0	41	0	0	0	0	0
B	Offset B	0	0	0	41	0	0	0	0	0
C	Offset C	0	0	0	41	0	0	0	0	0
D	Perm 1 - End	31	20	25	17	0	0	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	0	0	0	0	0	0	0	0	0
2	Perm 2 - End	0	0	0	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4 8	2 4 8	2 4 8	2 4 8					
A	Perm 1 Veh Phase	4 8	4 8	4 8	4 8		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase	4 8	4 8	4 8	4 8		12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 8	0
1	Plan 1 - Lag	2 4 8	1
2	Plan 2 - Lag	2 4 8	2
3	Plan 3 - Lag	2 4 8	3
4	Plan 4 - Lag	2 4 8	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0		0	Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0		0	Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0		0	Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0		0	NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

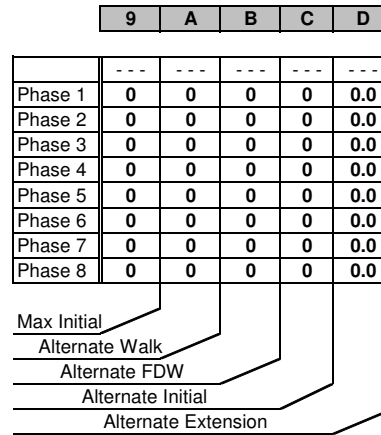
**INTERSECTION: 1013-Duke St & Main St**

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	11	0	0	0	5
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	19	0	19	0	0	0	19
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.3	0.0	3.7	0.0	0.0	0.0	4.0
F	Red Clear	0.0	1.6	0.0	1.7	0.0	0.0	0.0	1.5

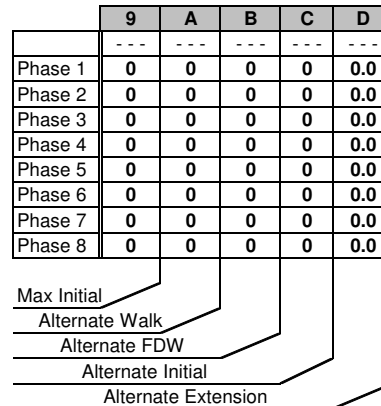
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	11	0	0	0	5
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	250	0	250	0	0	0	250
9	Max Limit 2	0	80	0	80	0	0	0	80
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.3	0.0	3.7	0.0	0.0	0.0	4.0
F	Red Clear	0.0	1.6	0.0	1.7	0.0	0.0	0.0	1.5

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthening

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 C/5+1+1  
 Cycle 2 Fail | 0 C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>

Begin Week | 2 <C/5+2+B>

End Month | 11 <C/5+2+C>

End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>

Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>

Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>

Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 0 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		39	5 7	2	123	0.0	0.0
1	2		41	5 7	4	123	0.0	0.0
2	3		42	5 7	8	123	0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->	Ped / Phase / Overlap								Row
	1	2	3	4	5	6	7	8	
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
Detector Failure Monitor			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

DELAY-A	0	Row
DELAY-B	0	A
DELAY-C	0	B
DELAY-D	0	C
DELAY-E	0	D
DELAY-F	0	E
		F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

1 = Stop Time  
 2 = Flash Sense  
 3 = Keyboard Entry  
 4 = Manual Plan  
 5 = Police Control  
 6 = External Alarm  
 7 = Detector Failure  
 8 =

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1013-Duke St & Main St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **256**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/8/2013 9:54**

Change Record					
Change	By	Date	Change	By	Date

Notes: **3/16/06 on 2/7/06 DB made field changes(increased ph.2 bank 3 max to 40 from 30  
 8/1/07 LT Changed clearance times  
 8/19/10 LT Uploaded timing with new ph 7 detector included**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>15</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>142</b>	<C/0+0+3>
QuicNet Channel	<b>COM12:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

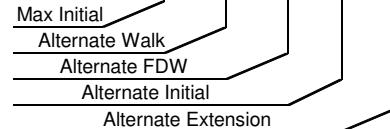
**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

[Miscellaneous Timing]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	10	0	0	0	10
2	Min Green	0	12	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
6	Max Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
7	Min Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
8	Max Limit	0	30	0	25	0	0	12	25
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.8	0.0	3.5	0.0	0.0	3.5	3.5
F	Red Clear	0.0	1.5	0.0	2.1	0.0	0.0	1.5	2.0

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	20		3
EV-B Delay	0		4
EV-B Clear	0		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	7
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	4
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	2
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4 78
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 78
Start-up Ped Calls	2 4 8

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	80	80	90	75	0	0	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	43	0	55	48	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	0	37	17	18	0	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	13	12	17	18	0	0	0	0	0
8	Phase 8 - ForceOff	0	37	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	70	51	42	0	0	0	0	0	0
B	Offset B	70	51	42	0	0	0	0	0	0
C	Offset C	70	51	42	0	0	0	0	0	0
D	Perm 1 - End	6	8	3	4	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	7	9	3	4	0	0	0	0	0
2	Perm 2 - End	28	20	40	28	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	7	7	7	7		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	2	4 8	2	2					
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	4 8	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	4 8	3
4	Plan 4 - Sync	4 8	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 7	0
1	Plan 1 - Lag	2 4 7	1
2	Plan 2 - Lag	2 4 8	2
3	Plan 3 - Lag	2 4 7	3
4	Plan 4 - Lag	2 4 7	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

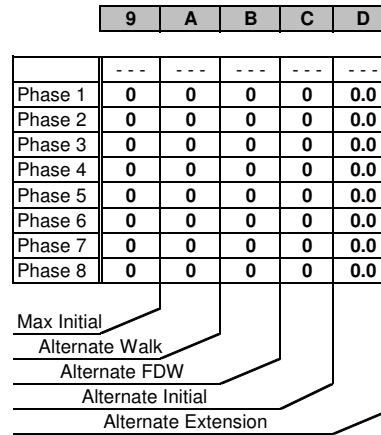
**INTERSECTION: 0341-Chapel Hill St & Duke St**

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	10	0	0	0	10
2	Min Green	0	12	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
6	Max Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
7	Min Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
8	Max Limit	0	30	0	16	0	0	12	16
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0

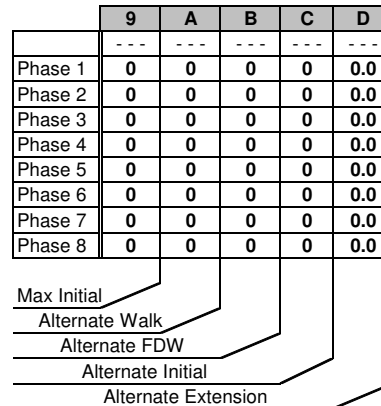
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	10	0	10	0	0	0	10
2	Min Green	0	12	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
6	Max Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
7	Min Gap	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0
8	Max Limit	0	60	0	60	0	0	60	60
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.8	0.0	3.5	0.0	0.0	3.5	3.5
F	Red Clear	0.0	1.5	0.0	2.1	0.0	0.0	1.5	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**

[Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1

Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>

Begin Week | 2 <C/5+2+B>

End Month | 11 <C/5+2+C>

End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>

Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>

Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>

Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

Column Numbers ---->		0	1	2	3	1	3
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	1		57	5 7	7	123 8	10.0 0.0
1	2		0				0.0 0.0
2	3		0				0.0 0.0
3	4		0				0.0 0.0
4	5		0				0.0 0.0
5	6		0				0.0 0.0
6	7		0				0.0 0.0
7	8		0				0.0 0.0
8	9		0				0.0 0.0
9	10		0				0.0 0.0
A	11		0				0.0 0.0
B	12		0				0.0 0.0
C	13		0				0.0 0.0
D	14		0				0.0 0.0
E	15		0				0.0 0.0
F	16		0				0.0 0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
Detector Failure Monitor		[Miscellaneous Timing]	Output Port 4	4
			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm  <C/5+F+0>

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time  0 <C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	17		0				0.0 0.0
1	18		0				0.0 0.0
2	19		0				0.0 0.0
3	20		0				0.0 0.0
4	21		0				0.0 0.0
5	22		0				0.0 0.0
6	23		0				0.0 0.0
7	24		0				0.0 0.0
8	25		0				0.0 0.0
9	26		0				0.0 0.0
A	27		0				0.0 0.0
B	28		0				0.0 0.0
C	29		0				0.0 0.0
D	30		0				0.0 0.0
E	31		0				0.0 0.0
F	32		0				0.0 0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0341-Chapel Hill St & Duke St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

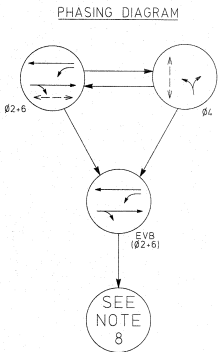
0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

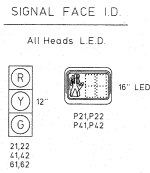
Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]



SIGNAL FACE	PHASE	L		R	
		W	D	W	D
21, 22	G R G Y				
41, 42	R G R R				
61, 62	G R G Y				
P21, P22	W D W D W R K				
P41, P42	D W W D W R K				

OK = Dark Signal Face  
W = Walk  
DW = Don't Walk



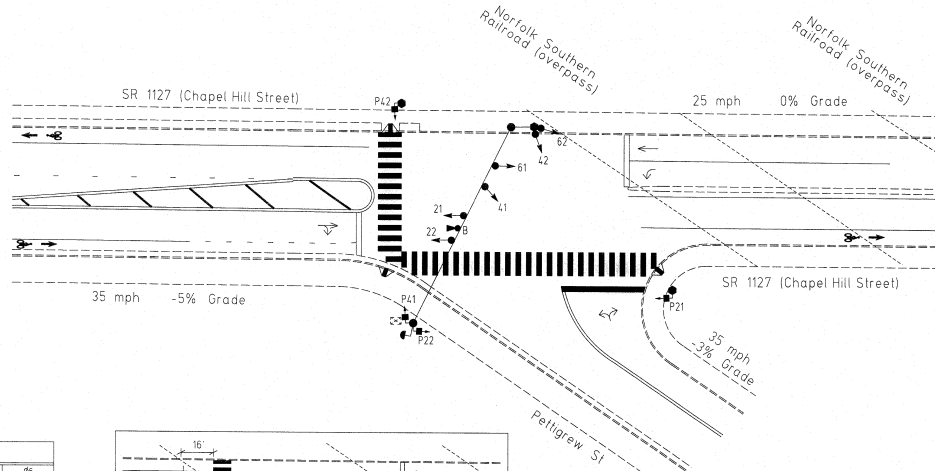
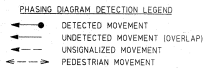
170 EV PREEMPTION	
FUNCTION	EVB
DELAY BEFORE PREEMPT	0
PED CLEAR BEFORE PREEMPT	0
MIN GREEN BEFORE PREEMPT	1.0
CLEARANCE TIME	10.0
PREEMPT EXTEND*	2.0

\*Program Timing on Optical Detection Unit

2 Phase  
Pre-Timed  
with EV Preemption  
(Durham Signal System)

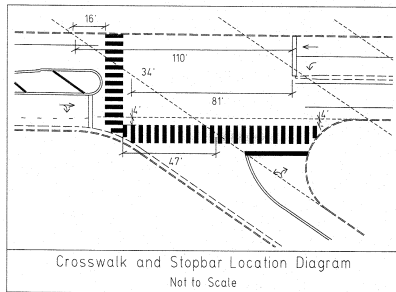
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006, "Standard Specifications for Roads and Structures" dated July 2006, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website:  
<http://www.ncdot.org/doh/preconstruct/traffic/iss/>
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Pavement markings are existing unless otherwise shown.
4. Program all timing information into phase banks 1, 2 and 3 unless otherwise noted.
5. Set phase bank 3 maximum limit to 250 seconds for phases used.
6. Program pedestrian heads to count down the flashing "Don't Walk" time only.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
8. Upon completion of emergency vehicle preemption phase, controller returns to normal operation based on vehicle demand.
9. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.

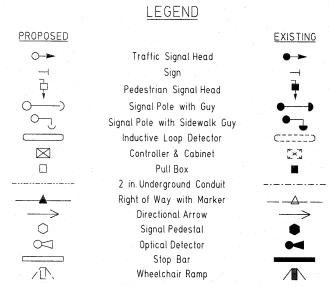


PHASE	02	04	06
MINIMUM INTIAL*	12 SEC	7 SEC	12 SEC
VEHICLE EXTENSION	1.0 SEC	1.0 SEC	1.0 SEC
YELLOW CHANGE INTERVAL	4.2 SEC	3.3 SEC	3.2 SEC
RED CLEARANCE	2.2 SEC	2.9 SEC	2.9 SEC
MAXIMUM LIMIT*	45 SEC	20 SEC	45 SEC
RECALL POSITION	MAX/FED RECALL	MAX/FED RECALL	MAX/FED RECALL
VEHICLE CALL MEMORY	NONE	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF
WALK*	7 SEC	7 SEC	- SEC
FLASHING DON'T WALK	26 SEC	13 SEC	- SEC
TYPE 3 LIMIT	- SEC	- SEC	- SEC
ADD PER VEHICLE*	- SEC	- SEC	- SEC
MAXIMUM INTIAL*	- SEC	- SEC	- SEC
MAXIMUM GAP*	1.0 SEC	1.0 SEC	1.0 SEC
REDUCE D1 SEC EVERY*	- SEC	- SEC	- SEC
MINIMUM GAP*	1.0 SEC	1.0 SEC	1.0 SEC

\* These values may be field adjusted by field engineer. Min. Green and Extension times for phases 02 and 04 lower than who shown. Min. Green for all other phases shall not be lower than 4 seconds. Set Maximum Limit to 250 seconds.



High-intensity crosswalk bars are 10 feet in length and 2 feet in width. Place stopbars 4 feet behind and parallel to crosswalks.



NC Department of TRANSPORTATION  
DIVISION 5 DURHAM  
PROJECT NO. 1403 Date: 3/4/11  
By: [Signature]  
Traffic Engineering Branch

SIGNAL UPGRADE

SR 1127 (Chapel Hill Street) at Pettigrew Street

DIVISION 5 DURHAM COUNTY DURHAM

PLW DATE: JUNE 2010 REVISION: P. NICHOLAS

PREPARED BY: L. TRACEY REVISION: P. LOZLUK

REVISIONS: [Table with columns for NO., DATE, and DESCRIPTION]

SCALE: 1" = 20'

DATE: 2-7-11

BY: [Signature]

PROJECT NO. 05-0382

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **204**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **8/2/07 LT Changed clearance times**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>10</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>90</b>	<C/0+0+3>
QuicNet Channel	<b>COM122:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
*[Configuration not in timing menus]*

**Manual Selection**  
*[Set Manual Plan/Offset not timing]*

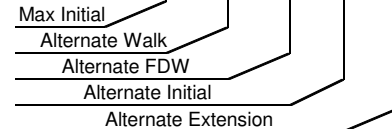
**Start / Revert Times**  
*[Miscellaneous Timing]*

**Exclusive Ped Phase**  
*[Outputs specified in Assignable Outputs at E/127+A+E & F]*

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	30	0	14	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	50	0	18	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.3	0.0	3.5	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.3	0.0	1.7	0.0	0.0	0.0	0.0

**Phase Timing - Bank 1** <C+0+F=1>  
*[Phase Timing Bank 1]*

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
*[Phase Timing Bank 1]*

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	20		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

*[Miscellaneous Timing]*

**Phase Functions** <C+0+F=1>  
*[Phase Functions]*

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	2
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	
Yellow Flash Phases	2
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4
Start-up Ped Calls	2 4

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	75	80	90	75	0	0	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	35	35	30	27	0	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	41	22	45	49	0	0	0	0	0
B	Offset B	46	22	68	46	0	0	0	0	0
C	Offset C	46	22	68	46	0	0	0	0	0
D	Perm 1 - End	21	12	8	10	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	0	0	0	0	0	0	0	0	0
2	Perm 2 - End	0	0	0	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4	2 4	2 4	2 4					
A	Perm 1 Veh Phase	4	4	4	4	12345678	12345678	12345678	12345678	
B	Perm 1 Ped Phase	4	4	4	4	12345678	12345678	12345678	12345678	
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4	0
1	Plan 1 - Lag	2 4	1
2	Plan 2 - Lag	2 4	2
3	Plan 3 - Lag	2 4	3
4	Plan 4 - Lag	2 4	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

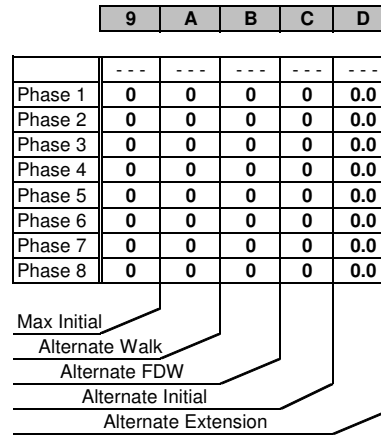
**INTERSECTION: 0382-Chapel Hill & Pettigrew**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	30	0	14	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	50	0	18	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0

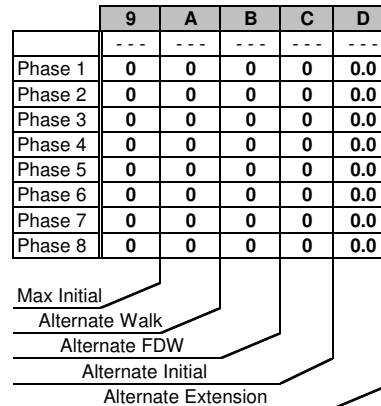
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	30	0	14	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	250	0	250	0	0	0	0
9	Max Limit 2	0	250	0	250	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.3	0.0	3.5	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.3	0.0	1.7	0.0	0.0	0.0	0.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthening

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 C/5+1+1  
 Cycle 2 Fail | 0 C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>  
 Begin Week | 2 <C/5+2+B>  
 End Month | 11 <C/5+2+C>  
 End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>  
 Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>  
 Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>  
 Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		0				0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
Detector Failure Monitor			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

Row	Time	Plan	Offset	Day of Week
0	00:00	4	C	1234567
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	06:30	2	C	23456
5	09:00	4	C	23456
6	00:00	0	0	
7	15:45	3	C	23456
8	18:30	4	C	1234567
9	21:30	4	A	1234567
A	23:30	E	0	1234567
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 (Bank 2)  
 [Time of Day Functions]

Column 4
Phases/Bits
4
4

<C+0+E=27>

Column 4
Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
01	03	1	1
04	03	7	1
26	03	11	2
27	03	11	1
28	03	11	3
24	03	12	2
25	03	12	1
00	00	0	
01	04	1	1
04	04	7	1
24	04	11	2
25	04	11	1
26	04	11	3
24	04	12	2
25	04	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Day	Year	Month	Holiday Type
01	01	1	1
04	01	7	1
21	01	11	2
22	01	11	1
23	01	11	3
24	01	12	2
25	01	12	1
00	00	0	
01	02	1	1
04	02	7	1
27	02	11	2
28	02	11	1
29	02	11	3
24	02	12	2
25	02	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

Time	Plan	Offset	Holiday Type
05:30	0	0	
09:00	0	0	
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]

**T.O.D. Functions**  
 0 =  
 1 = Red Lock  
 2 = Yellow Lock  
 3 = Veh Min Recall  
 4 = Ped Recall  
 5 =  
 6 = Rest In Walk  
 7 = Red Rest  
 8 = Double Entry  
 9 = Veh Max Recall  
 A = Veh Soft Recall  
 B = Maximum 2  
 C = Conditional Service  
 D = Free Lag Phases  
 E = Bit 1 - Local Override  
 Bit 4 - Disable Detector  
 OFF Monitor  
 Bit 7 - Detector Count  
 Monitor  
 Bit 8 - Real Time Split  
 Monitor  
 F = Output Bits 1 thru 8

**Plan Select**  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash

**Offset Select**  
 A = Offset A  
 B = Offset B  
 C = Offset C

**Month Select**  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0382-Chapel Hill & Pettigrew**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

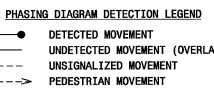
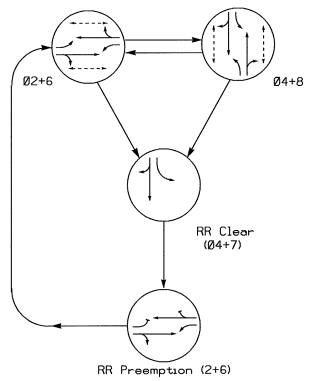
Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

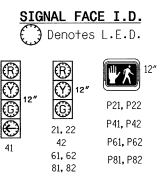
**PHASING DIAGRAM**



**TABLE OF OPERATION**

SIGNAL FACE	PHASE				FLASH
	02+6	04+8	RR PREEMPTION	RR CLEAR	
21,22	G	R	R	O	Y
41	R	G	R	R	
42	R	G	R	R	
81,82	R	G	R	R	
P21, P22	W	D	W	D	W
P41, P42	D	W	D	W	D
P61, P62	W	D	W	D	W
P81, P82	D	W	D	W	D
STGN A	OFF				ON
STGN B	OFF				ON

\* SEE NOTE 8



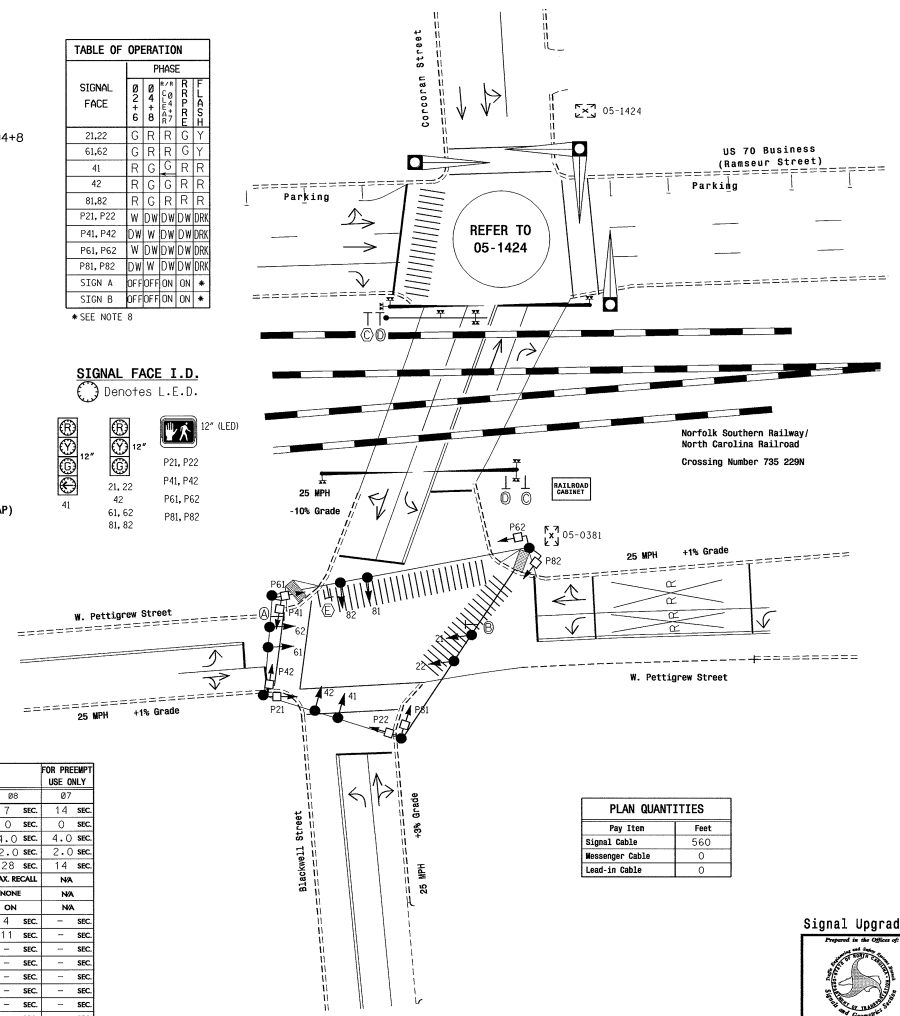
**170 RAILROAD PREEMPTION TIMING CHART**

FUNCTION	TIMING
MIN. GREEN BEFORE PREEMPT	1
PREEMPT DELAY	0
TRACK CLEARANCE	14

**TIMING CHART**

170 CONTROLLER

PHASE	FOR PREEMPT USE ONLY				
	02	04	06	08	07
MINIMUM INITIAL	10 SEC.	7 SEC.	10 SEC.	7 SEC.	14 SEC.
VEHICLE EXTENSION	0 SEC.	0 SEC.	0 SEC.	0 SEC.	0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.	4.0 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.	2.0 SEC.
MAXIMUM LIMIT	20 SEC.	28 SEC.	20 SEC.	28 SEC.	14 SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL	MAX. RECALL	MAX. RECALL	N/A
VEHICLE CALL MEMORY	NONE	NONE	NONE	NONE	N/A
DOUBLE ENTRY	OFF	ON	OFF	ON	N/A
WALK	4 SEC.	4 SEC.	4 SEC.	4 SEC.	- SEC.
FLASHING DON'T WALK	7 SEC.	5 SEC.	17 SEC.	11 SEC.	- SEC.
TYPE 3 LIMIT	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
ALTERNATE EXTENSION	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
ADD FOR VEHICLE	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
MAXIMUM INITIAL	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
MAXIMUM GAP	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
REDUCE 0.1 SEC. EVERY	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
MINIMUM GAP	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.



**PLAN QUANTITIES**

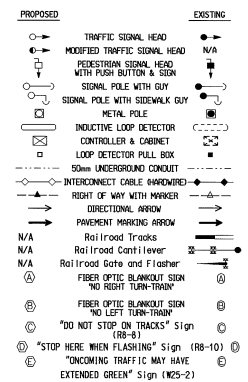
Pay Item	Feet
Signal Cable	560
Messenger Cable	0
Lead-in Cable	0

**2 Phase Pretimed w/ Railroad Preemption (Durham Computerized Signal System)**

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Pavement markings are existing.
- Backplates existing on signal heads numbered 81 and 82.
- Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Ensure flashing operation does not either operation of blinkout signs.
- Phase 7 used during R/R preemption only. Program "Start Vehicle Call" feature for the following phases: 2,4,6,8.

**LEGEND**



**Signal Upgrade**

Prepared in the Office of  
  
**W. Pettigrew Street at Blackwell Street/Corcoran Street**  
 Division 05 Durham County Durham  
 PLAN DATE: July 2004 REVISIONS: [blank]  
 PREPARED BY: S. Krass REVISIONS: [blank] INTL. DATE: [blank]  
 SCALE: 1"=20'  
  
 200 N. McDowell St., Raleigh, NC 27601  
 SIO, Inc./Durham, W. 05-0381

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Blkwel Corcrn & Pettigrw**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **160**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **8/2/07 LT Changed clearance times**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>11</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>46</b>	<C/0+0+3>
QuicNet Channel	<b>COM124:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

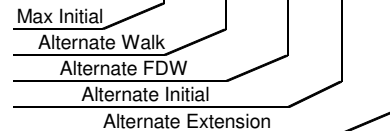
**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	14	0	14	0	14	0	14
2	Min Green	0	10	0	7	0	10	16	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
8	Max Limit	0	20	0	28	0	20	16	28
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.5	0.0	3.8	0.0	3.5	4.0	3.5
F	Red Clear	0.0	1.7	0.0	1.8	0.0	2.5	2.0	1.8

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0	2 4 6 8	2
EV-A Clear	0	2 4 6 8	3
EV-B Delay	0	2 4 6 8	4
EV-B Clear	0	-----	5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0	4 8	8
EV-D Clear	0	2 4 6 8	9
RR-2 Delay	0		A
RR-2 Clear	15		B
View EV Delay	---		C
View EV Clear	---	2 4 6 8	D
View RR Delay	---		E
View RR Clear	---	4 8	F

[Miscellaneous Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Bikwell Corcrn & Pettigrw**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest, and RR-2 is always Second Highest)

[Preempt Parameters]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	4 7
3	RR-2 Limited Service	2 6
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	4 8
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4 6 8
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 6 8
Start-up Ped Calls	2 4 6 8

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Blkwel Corcrn & Pettigw**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	85	75	90	85	0	85	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	50	27	40	50	0	25	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	50	27	40	50	0	25	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	78	32	27	78	0	78	0	0	0
B	Offset B	78	32	27	78	0	78	0	0	0
C	Offset C	78	32	27	78	0	78	0	0	0
D	Perm 1 - End	28	12	25	28	0	12	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	28	0	28	28	0	0	0	0	0
2	Perm 2 - End	71	0	71	71	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8			
A	Perm 1 Veh Phase	4 8	4 8	4 8	4 8	4 8	12345678	12345678	12345678	
B	Perm 1 Ped Phase						12345678	12345678	12345678	
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

**Coord Extra**  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag	2 4 6 8	2
3	Plan 3 - Lag	2 4 6 8	3
4	Plan 4 - Lag	2 4 6 8	4
5	Plan 5 - Lag	2 4 6 8	5
6	Plan 6 - Lag	2 4 6 8	6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Bikwell Corcrn & Pettigrw**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
*[Input Assignments]*

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
*[Output Assignments]*

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

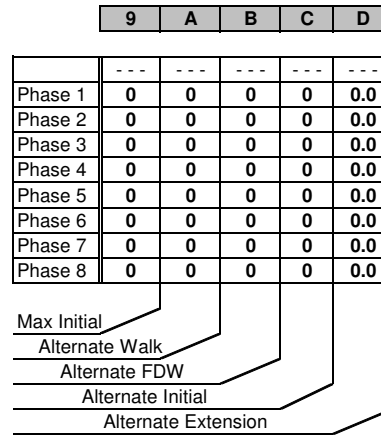
**INTERSECTION: 0381-Blkwel Corcrn & Pettigw**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	14	0	14	0	14	0	14
2	Min Green	0	10	0	7	0	10	16	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
8	Max Limit	0	20	0	28	0	20	16	28
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	4.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0

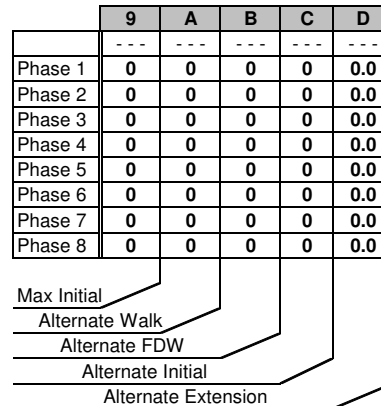
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	7	0	7	0	7	0	7
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	14	0	14	0	14	0	14
2	Min Green	0	10	0	7	0	10	16	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0
8	Max Limit	0	250	0	250	0	250	150	250
9	Max Limit 2	0	250	0	250	0	250	150	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.5	0.0	3.8	0.0	3.5	4.0	3.5
F	Red Clear	0.0	1.7	0.0	1.8	0.0	2.5	2.0	1.8

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Low Priority  
 1 = Channel A  
 2 = Channel B  
 3 = Channel C  
 4 = Channel D

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 0 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Bikwell Corcrn & Pettigrw**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		220	5 7	2 4 6 8	123	0.0	0.0
1	2		221	5 7	2 4 6 8	123	0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
<b>Detector Failure Monitor</b>			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

1 = Stop Time  
 2 = Flash Sense  
 3 = Keyboard Entry  
 4 = Manual Plan  
 5 = Police Control  
 6 = External Alarm  
 7 = Detector Failure  
 8 =

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0381-Blkwel Corcrn & Pettigw**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

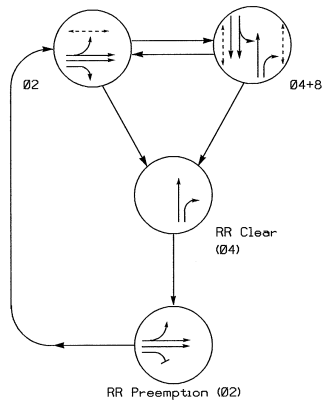
Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

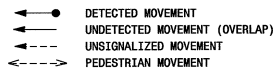
Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

**PHASING DIAGRAM**



**PHASING DIAGRAM DETECTION LEGEND**



**TABLE OF OPERATION**

SIGNAL FACE	PHASE							
	Ø2	Ø4	Ø4+8	Ø2	Ø4	Ø4+8	Ø2	Ø4
21, 22	G	R	R	G	R	R	G	Y
23, 24	G	R	R	G	R	R	G	Y
41, 42	R	G	R	R	R	R	R	R
81, 82	R	G	R	R	R	R	R	R
P21, P22	W	DW	DW	DW	DRK	DRK	DRK	DRK
P41, P42	DW	W	DW	DW	DRK	DRK	DRK	DRK
P81, P82	DW	W	DW	DW	DRK	DRK	DRK	DRK
SIGN A	OFF	OFF	OFF	ON	ON	ON	ON	*

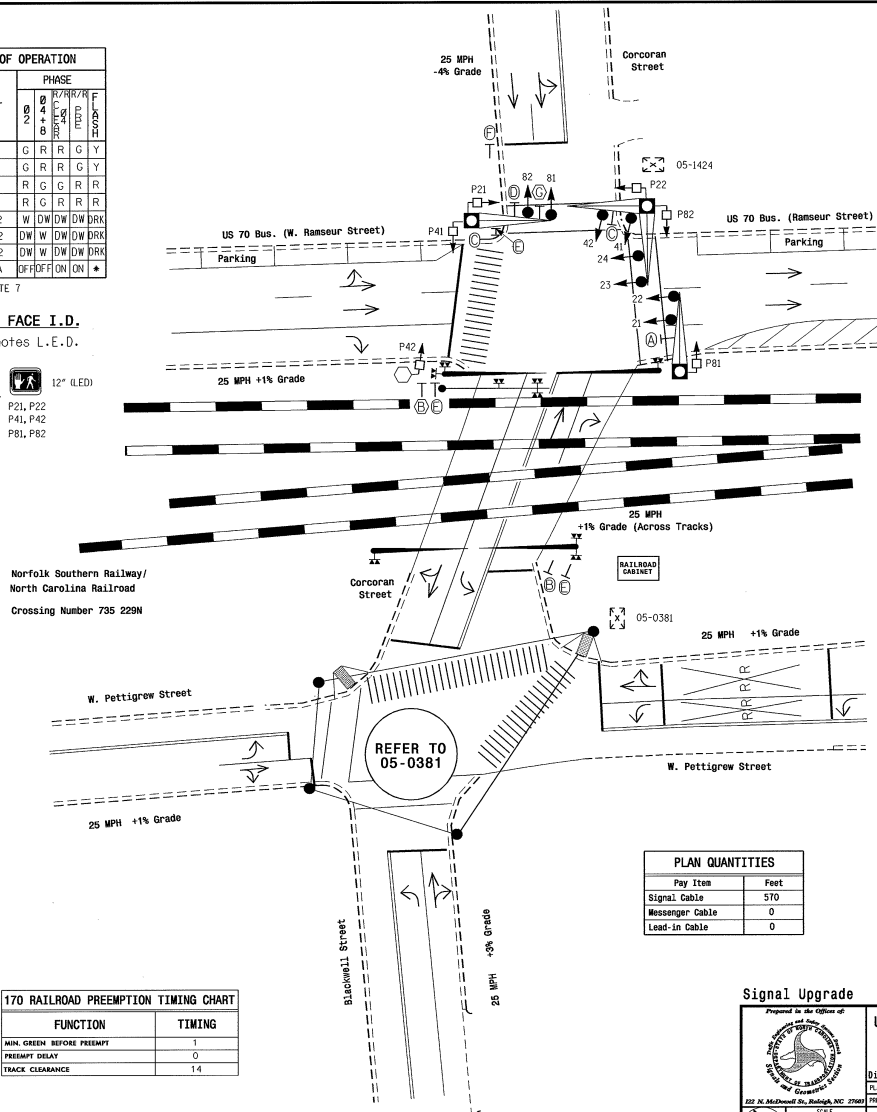
\* SEE NOTE 7

**SIGNAL FACE I.D.**

Denotes L.E.D.



21, 22  
23, 24  
41, 42  
81, 82

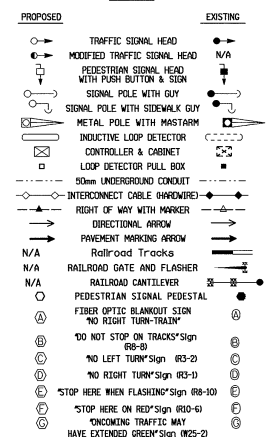


**2 Phase Pretimed w/ Railroad Preemption (Durham Computerized Signal System)**

**NOTES**

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Pavement markings are existing.
4. Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
5. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
6. Set phase bank 3 maximum limit to 250 seconds for phases used.
7. Ensure flashing operation does not alter operation of blackout signs.

**LEGEND**



**TIMING CHART 170 CONTROLLER**

PHASE	Ø2	Ø4	Ø8
MINIMUM INITIAL	10 SEC.	7 SEC.	7 SEC.
VEHICLE EXTENSION	0 SEC.	0 SEC.	0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.0 SEC.	2.0 SEC.	2.0 SEC.
MAXIMUM LIMIT	30 SEC.	24 SEC.	24 SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL	MAX. RECALL
VEHICLE CALL MEMORY	NONE	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF
WALK	4 SEC.	4 SEC.	4 SEC.
FLASHING DON'T WALK	7 SEC.	8 SEC.	9 SEC.
TYPE 3 LIMIT	- SEC.	- SEC.	- SEC.
ALTERNATE EXTENSION	- SEC.	- SEC.	- SEC.
ADD PER VEHICLE	- SEC.	- SEC.	- SEC.
MAXIMUM INITIAL	- SEC.	- SEC.	- SEC.
MAXIMUM GAP	- SEC.	- SEC.	- SEC.
REDUCE Ø1 SEC. EVERY	- SEC.	- SEC.	- SEC.
MINIMUM GAP	- SEC.	- SEC.	- SEC.

**170 RAILROAD PREEMPTION TIMING CHART**

FUNCTION	TIMING
MIN. GREEN BEFORE PREEMPT	1
PREEMPT DELAY	0
TRACK CLEARANCE	14

**PLAN QUANTITIES**

Qty Item	Feet
Signal Cable	570
Messenger Cable	0
Lead-in Cable	0

**Signal Upgrade**

Prepared in the Office of  
  
 Division 05  
 US 70 Bus. (W. Ramseur Street) at Corcoran Street  
 Durham County  
 PLAN DATE: July 2004  
 PREPARED BY: C. KRAUSS  
 REVIEWED BY: [Signature]  
 SCALE: 1"=20'  
 SHEET NO. 05-1424

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **159**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **8/30/07 LT Pretime added**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>2</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>45</b>	<C/0+0+3>
QuicNet Channel	<b>COM116:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	12	0	12	0	0	0	12
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	30	0	24	0	0	0	24
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	2.0

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial  
 Alternate Walk  
 Alternate FDW  
 Alternate Initial  
 Alternate Extension

**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0	2 4 8	2
EV-A Clear	0	2 4 8	3
EV-B Delay	0	2 4 8	4
EV-B Clear	0	-----	5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0	4 8	8
EV-D Clear	0	2 4 8	9
RR-2 Delay	0		A
RR-2 Clear	16		B
View EV Delay	---		C
View EV Clear	---	2 4 8	D
View RR Delay	---		E
View RR Clear	---	4 8	F

**Preempt Timing**  
 [Preempt Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

Column Numbers ---->		Overlap							
Overlap Name ---->		1	2	3	4	5	6	7	8
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest, and RR-2 is always Second Highest)

[Preempt Parameters]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	8
3	RR-2 Limited Service	2
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	4 8
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4 8
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 8
Start-up Ped Calls	

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	85	75	90	85	0	85	0	0	100
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	20
4	Phase 4 - ForceOff	50	35	40	50	0	25	0	0	40
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	20
8	Phase 8 - ForceOff	50	35	40	50	0	25	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	78	38	35	78	0	78	0	0	0
B	Offset B	78	38	35	78	0	78	0	0	0
C	Offset C	78	38	35	78	0	78	0	0	0
D	Perm 1 - End	28	15	20	28	0	12	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	28	0	28	28	0	0	0	0	0
2	Perm 2 - End	71	0	71	71	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4 8	2 4 8	2 4 8	2 4 8		2 4 8			
A	Perm 1 Veh Phase	4 8	4 8	4 8	4 8		4 8	12345678	12345678	12345678
B	Perm 1 Ped Phase							12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync	2	6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 8	0
1	Plan 1 - Lag	2 4 8	1
2	Plan 2 - Lag	2 4 8	2
3	Plan 3 - Lag	2 4 8	3
4	Plan 4 - Lag	2 4 8	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag	2 4 8	6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	231	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	0	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	231	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

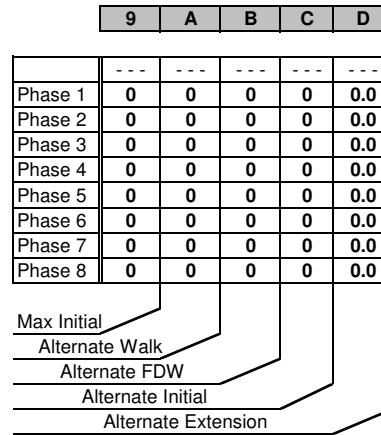
**INTERSECTION: 1424-Corcoran St & Ramseur St**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	12	0	12	0	0	0	12
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	30	0	24	0	0	0	24
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	2.0

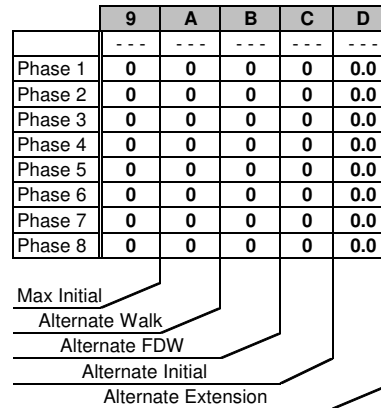
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	7	0	7	0	0	0	7
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	12	0	12	0	0	0	12
2	Min Green	0	10	0	7	0	0	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	1.0
8	Max Limit	0	250	0	250	0	0	0	250
9	Max Limit 2	0	250	0	250	0	0	0	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 1 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		0				0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
Max OFF (minutes)	255	<D/0+0+1>	Output Port 1	1
Max ON (minutes)	7	<D/0+0+2>	Output Port 2	2
Detector Failure Monitor		[Miscellaneous Timing]	Output Port 3	3
			Output Port 4	4
			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm  <C/5+F+0>

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time  0 <C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

<C+0+C=5>

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1424-Corcoran St & Ramseur St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

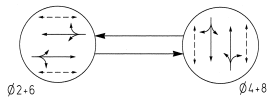
Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

PHASING DIAGRAM

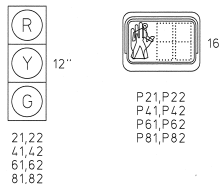


PHASING DIAGRAM DETECTION LEGEND  
 ← VEHICLE MOVEMENT  
 - - - UNSIGNALIZED VEHICLE MOVEMENT  
 ← - - - PEDESTRIAN MOVEMENT

SIGNAL FACE	PHASE		
	Ø	FL	ASH
21, 22	G	R	Y
41, 42	R	G	R
61, 62	G	R	Y
81, 82	R	G	R
P21, P22	W	D	DRK
P41, P42	D	W	DRK
P61, P62	W	D	DRK
P81, P82	D	W	DRK

SIGNAL FACE I.D.

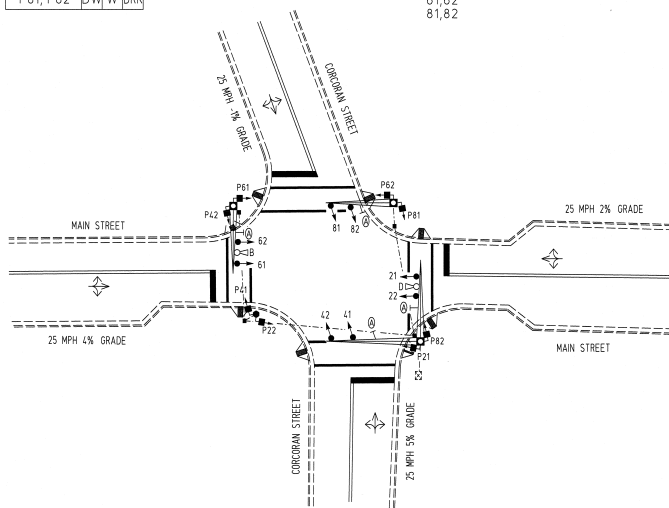
All Heads L.E.D.



2 Phase  
Fixed Time  
with Transit Priority  
(Durham Signal System)

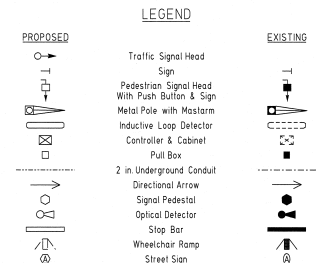
NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated July 2006, "Standard Specifications for Roads and Structures" dated July 2006, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website:  
<http://www.ncdot.org/doh/preconstruct/traffic/its/>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Pavement markings are existing.
- Program all timing information into phase banks 1, 2 and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Program pedestrian heads to count down the flashing "Don't Walk" time only.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- This intersection features an optical detection system. Shown locations of optical detectors are conceptual only.



170 TIMING CHART				
PHASE	Ø2	Ø4	Ø6	Ø8
MINIMUM INITIAL*	15 SEC	15 SEC	15 SEC	15 SEC
VEHICLE EXTENSION*	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC
YELLOW CHANGE INTERVAL	3.0 SEC	3.5 SEC	3.5 SEC	3.0 SEC
RED CLEARANCE	2.5 SEC	2.5 SEC	2.5 SEC	2.5 SEC
MAXIMUM LIMIT*	30 SEC	30 SEC	30 SEC	30 SEC
RECALL POSITION	MAX/PED	MAX/PED	MAX/PED	MAX/PED
VEHICLE CALL MEMORY	NONE	NONE	NONE	NONE
DOUBLE ENTRY	OFF	OFF	OFF	OFF
WALK*	7 SEC	7 SEC	7 SEC	7 SEC
FLASHING DON'T WALK	7 SEC	6 SEC	9 SEC	7 SEC
TYPE 3 LIMIT	- SEC	- SEC	- SEC	- SEC
ADD PER VEHICLE*	- SEC	- SEC	- SEC	- SEC
MAXIMUM INITIAL*	- SEC	- SEC	- SEC	- SEC
MAXIMUM GAP*	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC
REDUCE Ø1 SEC EVERY*	- SEC	- SEC	- SEC	- SEC
MINIMUM GAP*	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC

\* 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.



SIGNAL UPGRADE

 City of Durham Department of Transportation 101 City Hall Plaza Durham, NC 27701 (919) 960-4366	Main Street at Corcoran Street		SEAL  DIVISION 5 DURHAM COUNTY DURHAM PLAN DATE: AUGUST 2011 REVENED BY: P. NICHOLAS PREPARED BY: L. TRACEY REVENED BY: _____ _____ SIGNATURE DATE 50 HISTORY NO. C-0010
	SCALE 20 1" = 20'		

**INTERSECTION: C0010-Corcoran St & Main St**

QuicNet System Parameters

Group Assignment: **Group 0049**  
 Field Master Assignment: **NONE**  
 System Reference Number: **201**  
 Communications Channel: **COM116:**  
 Drop Address: **3**  
 Area Number: **2**  
 Area Address: **87**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last QuicNet Database Change: **12/27/2013 10:11**

**Notes:**  
8/30/07 LT Pretime added

Field Change Record					
Change	By	Date	Change	By	Date

Excl Ped Assignment	_____	<b>Note:</b> Set the Exclusive Ped Outputs on the "Outputs / General" page				
Exclusive Walk	0					
Exclusive FDW	0					
All Red Clear	0.0					
<b>Exclusive Ped Phase</b>		<table border="1"> <tr><td>Walk Output</td><td>0</td></tr> <tr><td>Don't Walk Output</td><td>0</td></tr> </table>	Walk Output	0	Don't Walk Output	0
Walk Output	0					
Don't Walk Output	0					

	Phase							
	1	2	3	4	5	6	7	8
Min Green	0	15	0	15	0	15	0	15
Extension	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
Max	0	30	0	30	0	30	0	30
Max 2	0	0	0	0	0	0	0	0
Cond Serve Check	0	0	0	0	0	0	0	0

	Phase							
	1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 1**

	Phase							
	1	2	3	4	5	6	7	8
Yellow Change	0.0	3.0	0.0	3.5	0.0	3.5	0.0	3.0
Red Clear	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5

Red Lock	_____	Red Rest	_____
Yellow Lock	_____	Dual Entry	_____
Simultaneous Gap	<u>2 4 6 8</u>	Sequential Timing	_____
Rest In Walk	_____	Inhibit Ped Reservice	_____
Advance Walk	_____	Semi-Actuated	_____
Flashing Walk	_____	Guaranteed Passage	_____
Max Extension	_____	Conditional Service	_____

	Phase							
	1	2	3	4	5	6	7	8
Walk	0	7	0	7	0	7	0	7
Ped Clear - FDW	0	7	0	6	0	9	0	7
Adv / Delay Walk	0	0	0	0	0	0	0	0
PE Min Ped FDW	0	0	0	0	0	0	0	0

**Phase Functions - Page 1**

	Phase							
	1	2	3	4	5	6	7	8
Type 3 Disconnect	0	0	0	0	0	0	0	0
Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Added Initial	0	0	0	0	0	0	0	0
Min Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
Max Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 1**

Minimum Recall	_____	Soft Recall	_____
Ped Recall	<u>2 4 6 8</u>	External Recall	_____
Maximum Recall	<u>2 4 6 8</u>	Manual Control Calls	<u>2 4 6 8</u>
Green Flash	_____	Fast Green Flash	_____
Overlap Green Flash	_____	Fast Overlap G. Flash	_____

**Phase Functions - Page 2**



		Phase							
		1	2	3	4	5	6	7	8
Basic Phase Timing	Min Green	0	15	0	15	0	15	0	15
	Extension	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Max	0	30	0	30	0	30	0	30
	Max 2	0	0	0	0	0	0	0	0
	Cond Serve Check	0	0	0	0	0	0	0	0
Clear	Yellow Change	0.0	3.0	0.0	3.5	0.0	3.5	0.0	3.0
	Red Clear	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5
Pedestrian Timing	Walk	0	7	0	7	0	7	0	7
	Ped Clear - FDW	0	7	0	6	0	9	0	7
	Adv / Delay Walk	0	0	0	0	0	0	0	0
	PE Min Ped FDW	0	0	0	0	0	0	0	0
Volume Density	Type 3 Disconnect	0	0	0	0	0	0	0	0
	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Added Initial	0	0	0	0	0	0	0	0
	Min Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Max Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 2**

		Phase							
		1	2	3	4	5	6	7	8
Basic Phase Timing	Min Green	0	15	0	15	0	15	0	15
	Extension	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Max	0	30	0	30	0	30	0	30
	Max 2	0	30	0	30	0	30	0	30
	Cond Serve Check	0	0	0	0	0	0	0	0
Clear	Yellow Change	0.0	3.0	0.0	3.5	0.0	3.5	0.0	3.0
	Red Clear	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5
Pedestrian Timing	Walk	0	7	0	7	0	7	0	7
	Ped Clear - FDW	0	7	0	6	0	9	0	7
	Adv / Delay Walk	0	0	0	0	0	0	0	0
	PE Min Ped FDW	0	0	0	0	0	0	0	0
Volume Density	Type 3 Disconnect	0	0	0	0	0	0	0	0
	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Added Initial	0	0	0	0	0	0	0	0
	Min Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Max Gap	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 3**

		Phase							
		1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 2**

		Phase							
		1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 3**

Note: Set the Limited Service Interval on the "Utilities / Misc" page

Clear Phases	
Delay	0
Clear Time	0

**Railroad - 1**

Clear Phases	
Limited Service Phases	
Delay	0
Clear Time	0

**Railroad - 2**

**Railroad Preempt Parameters**

Min Grn Before PE Force-Off	0
Max Pre-Empt Time	0
Min Time Before Same PE	0

	Delay	Clear	Clear Phases
EV - A	0	0	
EV - B	0	0	
EV - C	0	0	
EV - D	0	0	

**Emergency Vehicle Preempt**

SE - 1	0
SE - 2	0
EV - A	0
EV - B	0
EV - C	0
EV - D	0

**Preempt Priority**

Step	Time	Clear	Ped Call	Hold	Advance	Force Off	Vehicle Call	Permit	Ped Omit	Output
0	0									
1	0									
2	0									
3	0									
4	0									
5	0									
6	0									
7	0									
8	0									
9	0									
10	0									
11	0									
12	0									
13	0									
14	0									
15	0									

**Special Event Sequence - 1**

Step	Time	Clear	Ped Call	Hold	Advance	Force Off	Vehicle Call	Permit	Ped Omit	Output
0	0									
1	0									
2	0									
3	0									
4	0									
5	0									
6	0									
7	0									
8	0									
9	0									
10	0									
11	0									
12	0									
13	0									
14	0									
15	0									

**Special Event Sequence - 2**

Note:  
The Ring-Barrier Sum  
of these Minimums  
will be the Minimum  
Cycle Length  
During Transition

Transition Type	0.0
Coord Extra Functions	
Phase 1 - Minimum	0
Phase 2 - Minimum	0
Phase 3 - Minimum	0
Phase 4 - Minimum	0
Phase 5 - Minimum	0
Phase 6 - Minimum	0
Phase 7 - Minimum	0
Phase 8 - Minimum	0
<b>Coordination - General</b>	

- Coord Extra
- 1 = Programmed Walk Time for Sync Phases
  - 2 = Always Terminate Sync Phase Peds
  - 3 = Use "Floating Force Off"
  - 4 =
  - 5 = Use "Start of Green" for Sync Point

- Transition Type
- 0.X = Shortway
  - 1.X = Lengthen Only
  - 2.X = Shorten Only
  - X.1 thru X.4 = Number of Cycles to get "In Step"

	Coordination Plan								
	1	2	3	4	5	6	7	8	9
Cycle	54	54	0	90	75	0	0	0	0
Offset - 1	18	18	0	73	58	0	0	0	0
Offset - 2	18	18	0	73	58	0	0	0	0
Offset - 3	18	18	0	73	58	0	0	0	0
Zone Offset	0	0	0	0	0	0	0	0	0
Ring Offset	0	0	0	0	0	0	0	0	0
Hold Release	255	255	255	255	255	255	255	255	255
Ped Adjust	0	0	0	0	0	0	0	0	0
Force Off - 1	0	0	0	0	0	0	0	0	0
Force Off - 2	0	0	0	0	0	0	0	0	0
Force Off - 3	0	0	0	0	0	0	0	0	0
Force Off - 4	27	27	0	44	38	0	0	0	0
Force Off - 5	0	0	0	0	0	0	0	0	0
Force Off - 6	0	0	0	0	0	0	0	0	0
Force Off - 7	0	0	0	0	0	0	0	0	0
Force Off - 8	27	0	0	0	0	0	0	0	0
<b>Coordination - Cycle, Offsets, &amp; Force Offs</b>									

	Coordination Plan								
	1	2	3	4	5	6	7	8	9
Perm 1 - Begin	0	0	0	0	0	0	0	0	0
Perm 1 - End	24	24	0	30	24	0	0	0	0
Perm 1 - Veh Phases							12345678	12345678	12345678
Perm 1 - Ped Phases							12345678	12345678	12345678
Perm 2 - Begin	0	0	0	0	0	0	0	0	0
Perm 2 - End	0	0	0	0	0	0	0	0	0
Perm 2 - Veh Phases									
Perm 2 - Ped Phases									
Perm 3 - Begin	0	0	0	0	0	0	0	0	0
Perm 3 - End	0	0	0	0	0	0	0	0	0
Perm 3 - Veh Phases									
Perm 3 - Ped Phases									
Max Inhibit Phases									
Max Recall Phases									
Sync Phases	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6	2 6
Lag Phases	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8	2 4 6 8
Pre-Timed Phases									
<b>Coordination - Permissives &amp; Phase Sequence</b>									

	Overlap Number							
	1	2	3	4	5	6	7	8
Load Switch Number	0	0	0	0	0	0	0	0
Vehicle Set 1	_____	_____	_____	_____	_____	_____	_____	12345678
Vehicle Set 2	_____	_____	_____	_____	_____	_____	_____	_____
Vehicle Set 3	_____	_____	_____	_____	_____	_____	_____	_____
Negative Vehicle	_____	_____	_____	_____	_____	_____	_____	_____
Negative Ped	_____	_____	_____	_____	_____	_____	_____	_____
Green Omit	_____	_____	_____	_____	_____	_____	_____	_____
Green Clear Omit	_____	_____	_____	_____	_____	_____	_____	_____

Green Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlaps**

	AND 1	AND 2	AND 3	AND 4
Input - A	0	0	0	0
Input - B	0	0	0	0
Output	0	0	0	0

**AND Gates**

	NAND 1	NAND 2	NAND 3	NAND 4
Input - A	0	0	0	0
Input - B	0	0	0	0
Output	0	0	0	0

**NAND Gates**

	OR 1	OR 2	OR 3	OR 4	OR 5	OR 6
Input - A	0	0	0	0	0	0
Input - B	0	0	0	0	0	0
Output	0	0	0	0	0	0

**2 Input - OR Gates**

	OR 7	OR 8
Input - A	0	0
Input - B	0	0
Input - C	0	0
Input - D	0	0
Output	0	0

**4 Input - OR Gates**

	NOT 1	NOT 2	NOT 3	NOT 4
Input	0	0	0	0
Output	0	0	0	0

**NOT Gates (Inverters)**

	DELAY 1	DELAY 2	DELAY 3	DELAY 4	DELAY 5	DELAY 6
Input	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0
Output	0	0	0	0	0	0

**DELAY Gates**

Latch:	1	2	3	4	5	6	7	8
Set	0	0	0	0	0	0	0	0
Reset	0	0	0	0	0	0	0	0
Out	0	0	0	0	0	0	0	0
/Out	0	0	0	0	0	0	0	0

**Logic Latches**

Det. #	C-1 Pin #	Delay	Carry-over	Phase Assignmrnts	Detector Attributes	Detector Set Assignments
1	0	0.0	0.0			
2	0	0.0	0.0			
3	0	0.0	0.0			
4	0	0.0	0.0			
5	0	0.0	0.0			
6	0	0.0	0.0			
7	0	0.0	0.0			
8	0	0.0	0.0			
9	0	0.0	0.0			
10	0	0.0	0.0			
11	0	0.0	0.0			
12	0	0.0	0.0			
13	0	0.0	0.0			
14	0	0.0	0.0			
15	0	0.0	0.0			
16	0	0.0	0.0			
17	0	0.0	0.0			
18	0	0.0	0.0			
19	0	0.0	0.0			
20	0	0.0	0.0			
21	0	0.0	0.0			
22	0	0.0	0.0			
23	0	0.0	0.0			
24	0	0.0	0.0			
25	0	0.0	0.0			
26	0	0.0	0.0			
27	0	0.0	0.0			
28	0	0.0	0.0			
29	0	0.0	0.0			
30	0	0.0	0.0			
31	0	0.0	0.0			
32	0	0.0	0.0			

**Detector Assignments**

**Detector Attributes**

- 1 = Full Time Delay
- 2 = Ped Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

**Detector Assignments**

- 1 = Detector Set 1
- 2 = Detector Set 2
- 3 = Detector Set 3
- 4 =
- 5 =
- 6 = Failure - Min Recall
- 7 = Failure - Max Recall
- 8 = Report on Failure

	C-1 Pin #
Flash Sense	81
External Permit - 1	0
External Permit - 2	0
External Permit - 3	0
Exclusive Ped Omit	0
Max. Term Inhibit	0
Max. 2	0
External Lag Phases	0
External Max. Recall	0
Stop Time	82
Manual Control Enable	53
Manual Cont. Advance	80
External Min. Recall	0

**General Inputs**

	C-1 Pin #
Railroad - 1	51
Railroad - 2	52
Special Event - 1	0
Special Event - 2	0
Gate Down	0
EV - A	71
EV - B	72
EV - C	73
EV - D	74

**Preempt Inputs**

	C-1 Pin #
Door Ajar	0
UPS Battery	0
UPS Power	0
Cabinet Temperature	0

	C-1 Pin #
Plan 1	0
Plan 2	0
Plan 3	0
Plan 4	0
Plan 5	0
Plan 6	0
Plan 7	0
Plan 8	0
Plan 9	0
Free	0
Flash	0

**Coordination Plan Inputs**

	C-1 Pin #
Phase Bank - 2	0
Phase Bank - 3	0
Detector Set - 2	0
Detector Set - 3	0
Overlap Vehicle Set - 2	0
Overlap Vehicle Set - 3	0

**Bank & Set Inputs**

	C-1 Pin #
Alarm - 1	75
Alarm - 2	0
Alarm - 3	0
Alarm - 4	0

	C-1 Pin #
Advance Warning - 1	0
Advance Warning - 2	0
Detector Failure	0
Flasher - Alternating 1	0
Flasher - Alternating 2	0
Fast Flasher	0
On Line	0
Exclusive - Walk	0
Exclusive - Don't Walk	0

**General Outputs**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Time of Day Outputs**

	C-1 Pin #
Plan - 1	0
Plan - 2	0
Plan - 3	0
Plan - 4	0
Plan - 5	0
Plan - 6	0
Plan - 7	0
Plan - 8	0
Plan - 9	0
Free	0

**Coordination Plan Out**

	Ped Phase
Ped 2-P Loadswitch	2
Ped 4-P Loadswitch	4
Ped 6-P Loadswitch	6
Ped 8-P Loadswitch	8

**Ped Loadswitch Assignment**

	C-1 Pin #
Dial - 2	0
Dial - 3	0
Offset - 1	0
Offset - 2	0
Offset - 3	0
Free	0
Flash	0

**Seven Wire Outputs**

	C-1 Pin #	
	On	Flash
Railroad - 1	0	0
Railroad - 2	0	0
Special Event - 1	0	0
Special Event - 2	0	0
Preempt Failure	0	0
EV - A	0	0
EV - B	0	0
EV - C	0	0
EV - D	0	0
Any Preempt	0	0

**Preemption Outputs**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Special Event Outputs**

	C-1 Pin #
Phase - 1	0
Phase - 2	0
Phase - 3	0
Phase - 4	0
Phase - 5	0
Phase - 6	0
Phase - 7	0
Phase - 8	0

**FYA PPLT Outputs**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Special Function Output**

	Phase Number							
	1	2	3	4	5	6	7	8
Red	0	0	0	0	0	0	0	0
Yellow	0	0	0	0	0	0	0	0
Green	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0

**Phase Output Redirection**

	Overlap Number							
	1	2	3	4	5	6	7	8
Red	0	0	0	0	0	0	0	0
Yellow	0	0	0	0	0	0	0	0
Green	0	0	0	0	0	0	0	0

**Overlap Output Redirection**

Event	Day of Week	Season	Hour	Minute	Plan	Offset
0			0	0	0	0
1			0	0	0	0
2			0	0	0	0
3			0	0	0	0
4			7	0	0	0
5			9	0	0	0
6			0	0	0	0
7			16	0	0	0
8			18	0	0	0
9			0	0	0	0
10			0	0	0	0
11			0	0	0	0
12			0	0	0	0
13			0	0	0	0
14			0	0	0	0
15			0	0	0	0
16			0	0	0	0
17			0	0	0	0
18			0	0	0	0
19			0	0	0	0
20			0	0	0	0
21			0	0	0	0
22			0	0	0	0
23			0	0	0	0
24			0	0	0	0
25			0	0	0	0
26			0	0	0	0
27			0	0	0	0
28			0	0	0	0
29			0	0	0	0
30			0	0	0	0
31			0	0	0	0

Time Base Coordination Events

Event	Day of Week	Season	Hour	Minute	Funct.	Phase / Bits
0	1234567		0	0	14	78
1			0	0	0	
2			0	0	0	
3			0	0	0	
4			0	0	0	
5			0	0	0	
6			0	0	0	
7			0	0	0	
8			0	0	0	
9			0	0	0	
10			0	0	0	
11			0	0	0	
12			0	0	0	
13			0	0	0	
14			0	0	0	
15			0	0	0	

Time of Day Function Events

TOD Functions

- 0 = Permitted Phases
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Vehicle Min Recall
- 4 = Ped Recall
- 5 =
- 6 = Rest In Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Vehicle Max Recall
- 10 = Soft Recall
- 11 = Max Extension 2
- 12 = Conditional Service
- 13 = Lag Free Phases
- 14, Bit 1 = Local Override
- 14, Bit 4 = Disable Det Off Monitoring
- 15 = TOD Outputs

#	Holiday Type	Day	Month	Year
0		0	0	0
1		0	0	0
2		0	0	0
3		0	0	0
4		0	0	0
5		0	0	0
6		0	0	0
7		0	0	0
8		0	0	0
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0

Holiday Dates

Event	Holiday Type	Hour	Minute	Plan	Offset
0		0	0	0	0
1		0	0	0	0
2		0	0	0	0
3		0	0	0	0
4		0	0	0	0
5		0	0	0	0
6		0	0	0	0
7		0	0	0	0
8		0	0	0	0
9		0	0	0	0
10		0	0	0	0
11		0	0	0	0
12		0	0	0	0
13		0	0	0	0
14		0	0	0	0
15		0	0	0	0
16		0	0	0	0
17		0	0	0	0
18		0	0	0	0
19		0	0	0	0
20		0	0	0	0
21		0	0	0	0
22		0	0	0	0
23		0	0	0	0
24		0	0	0	0
25		0	0	0	0
26		0	0	0	0
27		0	0	0	0
28		0	0	0	0
29		0	0	0	0
30		0	0	0	0
31		0	0	0	0

Holiday Time Base Coordination Events

Event	Holiday Type	Hour	Minute	Funct.	Phase / Bits
0		0	0	0	
1		0	0	0	
2		0	0	0	
3		0	0	0	
4		0	0	0	
5		0	0	0	
6		0	0	0	
7		0	0	0	
8		0	0	0	
9		0	0	0	
10		0	0	0	
11		0	0	0	
12		0	0	0	
13		0	0	0	
14		0	0	0	
15		0	0	0	

Holiday Time of Day Function Events

Season #	Start Month	Start Day	End Month	End Day
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0

Season Definitions



Red Start Time	0.0
Yellow Start Phases	_____
First Green Phases	2 6
Startup Vehicle Calls	2 4 6 8
Startup Ped Calls	2 4 6 8

**Startup**

Max ON Time	255
Max OFF Time	7
Chatter	_____

**Detector Check**

	<b>Sign 1</b>	<b>Sign 2</b>
Phase Number	0	0
Time Before Yellow	0.0	0.0

**Advance Warning Signs**

Flash Entry Phases	_____
Flash Phases Yellow	_____
Flash Overlaps Yellow	_____
Flash Type	_____

**Flash Setup**

Exclusive Phases	_____
Protect / Permissive	_____
Disable Yellow Range	_____
Extra One	1 3 5
Lag Phases - Free	2 4 6 8

**Configuration**

Permitted Phases	2 4 6 8
Restricted Phases	_____
Disable Overlap Range	_____
Extra Two	4
External Permit 1	_____
External Permit 2	_____
External Permit 3	_____

**Configuration**

Keyboard Beep	_____
Backlight Timeout	_____
Spec Evnt 1 - Ltd Serv Interval	0
Spec Evnt 2 - Ltd Serv Interval	0
Red Start	0.0
Flash Start	7
Red Revert	2.0

**Miscellaneous**

Spring Month (Begin)	_____
Spring Week (Begin)	_____
Fall Month (End)	_____
Fall Week (End)	_____

**Daylight Savings Time**

Manual Plan	_____
Manual Offset	_____

**Manual**

Address	_____
Area Number	_____
Area Address	_____
IP Port	_____
IP Address	_____
Subnet Mask	_____
Gateway	_____

**Ethernet Port Address**

	<b>Port 1</b>	<b>Port 2</b>	<b>Port 3</b>	<b>Port 4</b>
Address	_____	_____	_____	_____
Area Number	_____	_____	_____	_____
Area Address	_____	_____	_____	_____
Comm Time Out	_____	_____	_____	_____
CTS Delay	_____	_____	_____	_____
RTS Hold	_____	_____	_____	_____
Baud Rate	_____	_____	_____	_____
Data Format	_____	_____	_____	_____

**Communications Parameters**

Event	Day of Week	Hour	Minute	Headway	Direction
0		0	0	0	0
1		0	0	0	0
2		0	0	0	0
3		0	0	0	0
4		0	0	0	0
5		0	0	0	0
6		0	0	0	0
7		0	0	0	0
8		0	0	0	0
9		0	0	0	0
10		0	0	0	0
11		0	0	0	0
12		0	0	0	0
13		0	0	0	0
14		0	0	0	0
15		0	0	0	0

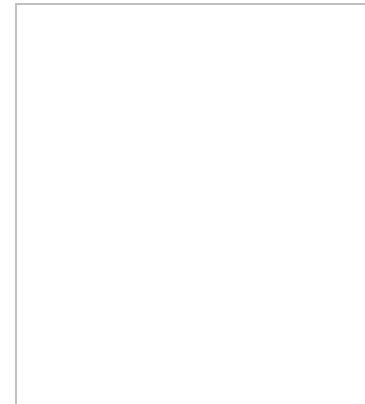
Bus Headway Schedule

Approach	A	B	C	D
Travel Time	0	0	0	0
Passage	0	5	0	5
Extension	0	5	0	5
Phases		6		2

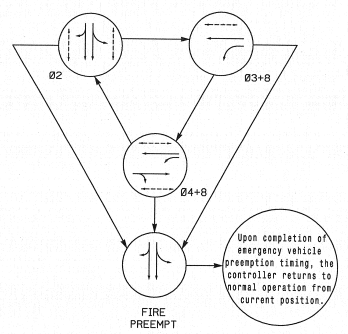
Bus Approach

	A	B	C	D
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	5	0	5
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	5	0	5

Non-Priority Phase Maximums



**PHASING DIAGRAM**

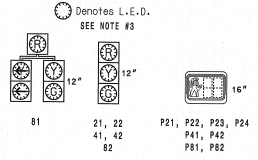


**PHASING DIAGRAM DETECTION LEGEND**  
 ← VEHICLE MOVEMENT  
 - - - UNSIGNALIZED VEHICLE MOVEMENT  
 ← - - - PEDESTRIAN MOVEMENT

**TABLE OF OPERATION**

SIGNAL FACE	PHASE			
	02	03+0	04+0	FLASH
21, 22	G	R	R	Y
41, 42	R	R	G	R
81	R	G	R	R
82	R	G	R	R
P21, P22, P23, P24	W	DW	DW	DRK
P41, P42	DW	DW	W	DRK
P81, P82	DW	W	DW	DRK

**SIGNAL FACE I.D.**



**3 PHASE  
FIXED TIME W/ FIRE PREEMPTION  
(DURHAM SIGNAL SYSTEM)**

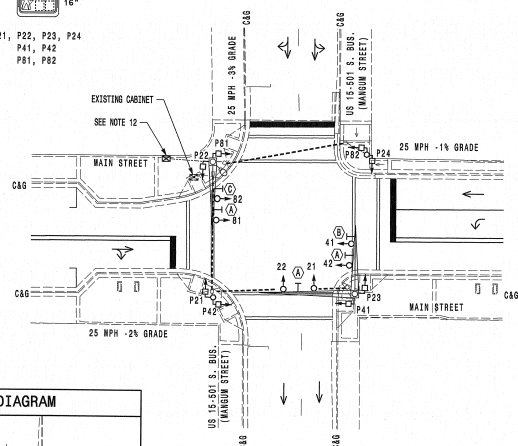
**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <http://www.dot.state.nc.us/projects/standard/specifications/>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Install lowered backplates for all signal heads.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Program all timing information into phase banks 1, 2 and 3 unless otherwise noted.
- Set Phase Bank 3 Maximum Limit to 250 seconds for phases used.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- Preemption sequence shall begin immediately after precept call.
- Relocate and reuse existing cabinet and controller.
- Refer to the Roadway Pavement Marking Plans for installation of all pavement markings.

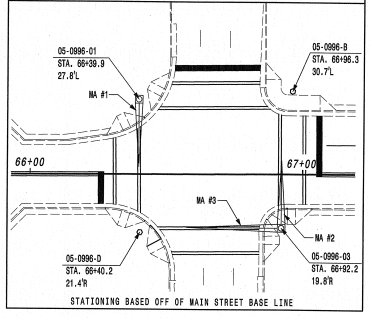
**170 EMERGENCY PREEMPTION TIMING CHART**

FUNCTION	SECONDS
DELAY BEFORE PREEMPT	*
RED CLEAR BEFORE PREEMPT	*
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	*
PREEMPT EXTEND (if optical detection unit is used) **	2.0

\* TIMING TO BE DETERMINED BY THE CITY OF DURHAM  
 \*\* EXTEND TIMING IS TO BE SET ON OPTION UNIT, NOT IN CONTROLLER



**POLE LOCATION DIAGRAM**



**TIMING CHART**

PHASE	02	03	04	0B
MINIMUM INITIAL*	15 SEC	8 SEC	15 SEC	15 SEC
VEHICLE EXTENSION*	- SEC	- SEC	- SEC	- SEC
YELLOW CHANGE INT.	3.3 SEC	3.0 SEC	3.3 SEC	3.2 SEC
RED CLEARANCE	1.5 SEC	1.0 SEC	1.5 SEC	1.7 SEC
MAXIMUM LIMIT*	** SEC	** SEC	** SEC	** SEC
RECALL POSITION	PEDMAX	MAX	PEDMAX	PEDMAX
VEHICLE CALL MEMORY	YELLOWLOCK	YELLOWLOCK	YELLOWLOCK	YELLOWLOCK
DOUBLE ENTRY	OFF	OFF	OFF	OFF
WALK*	7 SEC	- SEC	7 SEC	7 SEC
FLASHING DON'T WALK	7 SEC	- SEC	7 SEC	7 SEC
TYPE 3 LIMIT	- SEC	- SEC	- SEC	- SEC
ALTERNATE EXTENSION	- SEC	- SEC	- SEC	- SEC
ADD TRV VEHICLE*	- SEC	- SEC	- SEC	- SEC
MAXIMUM INITIAL*	- SEC	- SEC	- SEC	- SEC
MAXIMUM GAP*	- SEC	- SEC	- SEC	- SEC
REDUCE 0.1 SEC EVERY*	- SEC	- SEC	- SEC	- SEC
MINIMUM GAP	- SEC	- SEC	- SEC	- SEC

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.  
 \*\* Timing to be determined by the City of Durham

**LEGEND**

PROPOSED	EXISTING
	N/A
	N/A
	N/A

**SIGNAL UPGRADE - DOWNTOWN STREET IMPROVEMENTS**

US 15-501 S. BUS. (MANGUM STREET)  
AT  
MAIN STREET

DIVISION 5 DURHAM COUNTY DURHAM

PLAN DATE: JUNE 2004 REVIEWED BY: CA HULLGREN  
 PREPARED BY: SP PENNINGTON REVIEWED BY: AL WELLFORD

Kimley-Horn and Associates, Inc.  
 P.O. Box 35088  
 Raleigh, NC 27636  
 919.877.2600

SCALE: 1"=20'

DATE: 11-1-05

SIC. INVENTORY NO. 05-0986

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

Group Assignment: p  
 Field Master Assignment: **NONE**  
 System Reference Number: **202**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **11/23/05 Duke Power Construction on vault in Mangum between Parrish & Main. Set 8/30/07 LT Pretime added**  
**3/19/09 LT Revised plan 3 to give more green time on Mangum when lane is closed**  
**6/24/13 changed offset from 70 to 12**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	1	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	2	<C/0+0+2>
Area Address	88	<C/0+0+3>
QuicNet Channel	COM116:	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	0.0	<F/1+C+0>
Flash Start	10	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

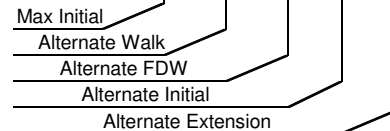
**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	7	0	7	0	0	0	7
2	Min Green	0	15	8	15	0	0	0	15
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Max Limit	0	25	15	25	0	0	0	25
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	1
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.3	3.0	3.3	0.0	0.0	0.0	3.2
F	Red Clear	0.0	1.5	1.6	1.8	0.0	0.0	0.0	1.7

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	20		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

[Miscellaneous Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	3
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	2
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	2
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4 8
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4 8
Start-up Ped Calls	2 4 8

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	90	100	90	75	0	0	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	15	15	15	0	0	0	0	0
4	Phase 4 - ForceOff	30	50	45	45	0	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	30	50	45	45	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	12	24	84	24	0	0	0	0	0
B	Offset B	12	24	84	24	0	0	0	0	0
C	Offset C	12	24	84	24	0	0	0	0	0
D	Perm 1 - End	10	15	15	15	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	0	15	15	0	0	0	0	0	0
2	Perm 2 - End	0	35	35	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4 8	2 4 8	2 4 8	2 4 8					
A	Perm 1 Veh Phase	4 8	3	3	3	12345678	12345678	12345678	12345678	
B	Perm 1 Ped Phase	4 8	8	8	8	12345678	12345678	12345678	12345678	
C	Perm 2 Veh Phase		4 8	4 8						
D	Perm 2 Ped Phase		4 8	4 8						
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 8	0
1	Plan 1 - Lag	2 4 8	1
2	Plan 2 - Lag	2 4 8	2
3	Plan 3 - Lag	2 4 8	3
4	Plan 4 - Lag	2 4 8	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	231	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	231	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

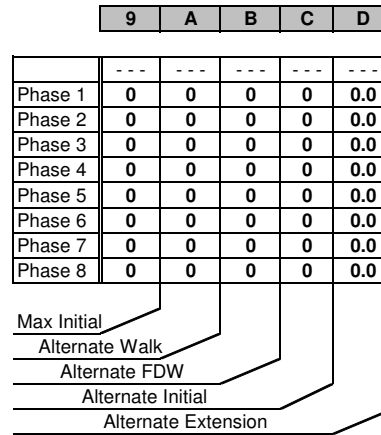
**INTERSECTION: 0996-Main St & Mangum St**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	7	0	7	0	0	0	7
2	Min Green	0	15	8	15	0	0	0	15
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	Max Limit	0	25	15	25	0	0	0	25
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	1
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.3	3.0	3.3	0.0	0.0	0.0	3.2
F	Red Clear	0.0	1.5	1.6	1.8	0.0	0.0	0.0	1.7

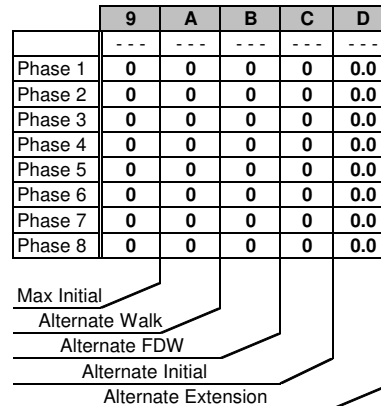
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	7	0	7	0	0	0	7
0	Ped Walk	0	7	0	7	0	0	0	7
1	Ped FDW	0	7	0	7	0	0	0	7
2	Min Green	0	15	8	15	0	0	0	15
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	1.0	2.0	0.0	0.0	0.0	2.0
6	Max Gap	0.0	2.0	1.0	2.0	0.0	0.0	0.0	2.0
7	Min Gap	0.0	2.0	1.0	2.0	0.0	0.0	0.0	2.0
8	Max Limit	0	250	150	250	0	0	0	250
9	Max Limit 2	0	250	150	250	0	0	0	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	1
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	3.3	3.0	3.3	0.0	0.0	0.0	3.2
F	Red Clear	0.0	1.5	1.6	1.8	0.0	0.0	0.0	1.7

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 1 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		0				0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
Max OFF (minutes)	255	<D/0+0+1>	Output Port 1	1
Max ON (minutes)	7	<D/0+0+2>	Output Port 2	2
Detector Failure Monitor		[Miscellaneous Timing]	Output Port 3	3
			Output Port 4	4
			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

DELAY-A	0	Row
DELAY-B	0	A
DELAY-C	0	B
DELAY-D	0	C
DELAY-E	0	D
DELAY-F	0	E
		F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm  <C/5+F+0>

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time  0 <C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

<C+0+C=5>

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

Row	Time	Plan	Offset	Day of Week
0	00:00	4	C	1234567
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	16:00	4	C	23456
7	16:30	3	C	23456
8	17:30	4	C	23456
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
15:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 [Time of Day Functions]

Column 4 Phases/Bits
4 78
78
4 78
78
78

<C+0+E=27>

Day	Year	Month	Holiday Type
24	13	6	5
25	13	6	5
26	13	6	5
27	13	6	5
28	13	6	5
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

T.O.D. Functions

- 0 =
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Veh Min Recall
- 4 = Ped Recall
- 5 =
- 6 = Rest In Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Veh Max Recall
- A = Veh Soft Recall
- B = Maximum 2
- C = Conditional Service
- D = Free Lag Phases
- E = Bit 1 - Local Override
- Bit 4 - Disable Detector
- OFF Monitor
- Bit 7 - Detector Count
- Monitor
- Bit 8 - Real Time Split
- Monitor
- F = Output Bits 1 thru 8

- Plan Select  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash

- Offset Select  
 A = Offset A  
 B = Offset B  
 C = Offset C

- Month Select  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 [Time of Day Functions]

Column 4 Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
06:30	1	C	5
19:30	4	C	5
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0996-Main St & Mangum St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

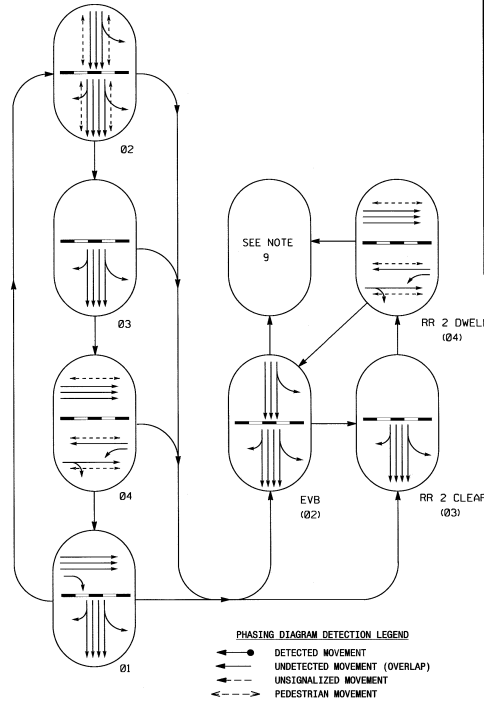
Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

**PHASING DIAGRAM**



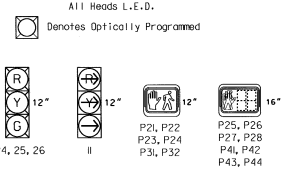
**PHASING DIAGRAM DETECTION LEGEND**

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

**TABLE OF OPERATION**

SIGNAL FACE	PHASE							
	01	02	03	04	RR 2 CLEAR	RR 2 DWELL	RR 2 DWELL	RR 2 DWELL
21, 22, 23	R	G	R	R	G	R	R	R
24, 25, 26	G	G	R	G	R	G	R	Y
31, 32, 33	G	R	R	G	R	R	G	Y
41, 42	R	R	R	G	R	R	G	R
43, 44	R	R	R	G	R	R	G	R
P21, P22	DW	W	DW	DW	DW	DW	DW	DRK
P23, P24	DW	W	DW	DW	DW	DW	DW	DRK
P25, P26	DW	W	DW	DW	DW	DW	DW	DRK
P27, P28	DW	W	DW	DW	DW	DW	DW	DRK
P31, P32	DW	W	DW	DW	DW	DW	DW	DRK
P41, P42	DW	W	DW	DW	DW	DW	DW	DRK
P43, P44	DW	W	DW	DW	DW	DW	DW	DRK

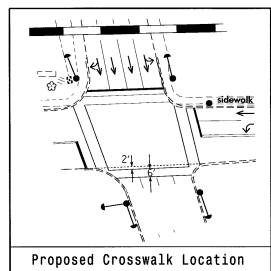
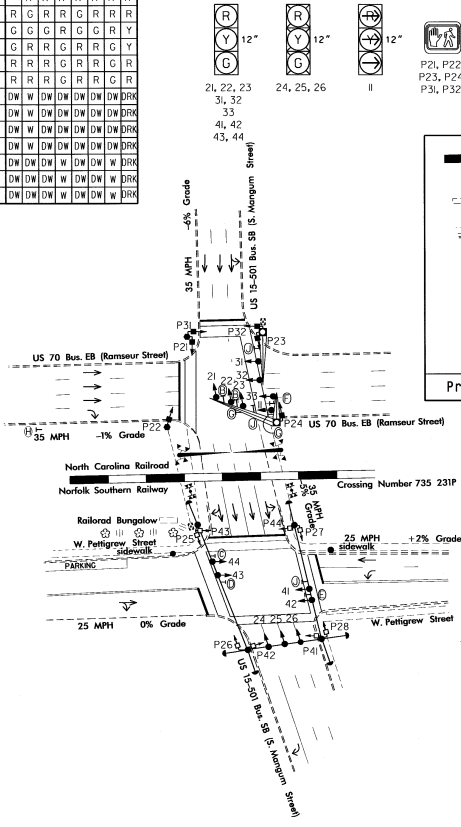
**SIGNAL FACE I.D.**



**4 Phase Pre-Timed With Railroad Preemption & Emergency Vehicle Preemption (Durham Signal System)**

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Existing Left Arrow "ONLY" sign (R3-5L) may be removed.
- Pavement markings are existing unless otherwise shown.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- The City Traffic Engineer will determine the Preempt Dwell Min Green time for the emergency vehicle preemption timing.
- Upon completion of Preemption, controller returns to normal operation based on vehicle demand.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Railroad Preemption has priority over EV Preemption.
- Set Red Revert time to 1 second.
- Program controller to start up in Phase 1 green.



**TIMING CHART**  
170 CONTROLLER

SIGNAL HEADS	11	21, 22, 23	04	41, 42, 43, 44	24, 25, 26	31, 32, 33
PHASE	01	02	03	04	01	02
MINIMUM INITIAL *	7 SEC	19 SEC	3 SEC	7 SEC	0 SEC	0 SEC
VEHICLE EXTENSION *	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC	0 SEC	0 SEC
YELLOW CHANGE INT.	3.9 SEC	4.3 SEC	4.2 SEC	3.2 SEC	4.2 SEC	3.9 SEC
RED CLEARANCE	1.1 SEC	1.5 SEC	1.3 SEC	2.2 SEC	1.3 SEC	1.1 SEC
MAXIMUM LIMIT *	15 SEC	30 SEC	3 SEC	20 SEC	0 SEC	0 SEC
RECALL POSITION	MAX RECALL	MAX RECALL	MAX RECALL	MAX RECALL	MAX RECALL	MAX RECALL
VEHICLE CALL MEMORY	NA	NA	NA	NA	NA	NA
DOUBLE ENTRY	OFF	OFF	OFF	OFF	OFF	OFF
WALK *	— SEC	4 SEC	— SEC	4 SEC	— SEC	— SEC
FLASHING DON'T WALK	— SEC	16 SEC	— SEC	16 SEC	— SEC	— SEC
TYPE 3 LIMIT	— SEC	— SEC	— SEC	— SEC	— SEC	— SEC
ALTERNATE EXTENSION	— SEC	— SEC	— SEC	— SEC	— SEC	— SEC
ADD PER VEHICLE *	— SEC	— SEC	— SEC	— SEC	— SEC	— SEC
MAXIMUM INITIAL *	— SEC	— SEC	— SEC	— SEC	— SEC	— SEC
REDUCE 0.1 SEC EVERY *	— SEC	— SEC	— SEC	— SEC	— SEC	— SEC
MINIMUM GAP	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC
MINIMUM GAP	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC	1.0 SEC

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

**170 EMERGENCY PREEMPTION TIMING CHART**

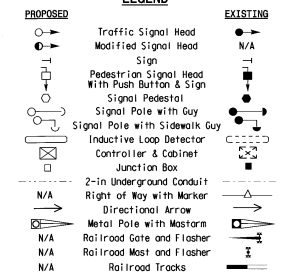
FUNCTION	EV (SEC)
DELAY BEFORE PREEMPT	0
PED. CLEAR BEFORE PREEMPT	1
MIN. GREEN BEFORE PREEMPT	1
EV'S CLEAR	20 *
PREEMPT EXTEND (if optical detection unit is used)	2.0

**170 RAILROAD PREEMPTION**

FUNCTION	RR 2 (SEC)
DELAY BEFORE PREEMPT	0
TRACK CLEARANCE GREEN	19

This signal was designed for simultaneous preemption.

**LEGEND**



- PROPOSED SIGNS**
- ⊖ "DO NOT STOP ON TRACKS" Sign (R8-8)
  - ⊖ No Right Turn Sign (R3-1)
  - ⊖ Left Arrow "ONLY" Sign (R3-5L)
  - ⊖ No Left Turn Sign (R3-2)
  - ⊖ "NO TURN ON RED" Sign (R10-11)
  - ⊖ Right Arrow "ONLY" Sign (R3-5R)
  - ⊖ "RIGHT LANE MUST TURN RIGHT" Sign (R3-7R)
  - ⊖ Street Sign

**Signal Upgrade**

Prepared by the Office of  
  
 2700 N. University Road, Durham, NC 27705

US 15-501 Bus. SB (S. Mangum St.)  
 at  
 US 70 Bus. EB (Ramsour Street)/  
 W. Pettigrew Street

Division 5 Durham County Durham

PLW SWS December 2010  
 PREPARED BY: Sterpling  
 REVIEWED BY: [Signature]

REVISIONS: [Table with columns for REVISIONS, INTL., DATE]

SCALE: 1"=40'

SIG. INVENTORY NO. 05-0990

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **323**

N/S Street Name: **Mangum St**  
 E/W Street Name: **Pettigrew/Ramseur Sts**

Last Database Change: **11/7/2013 10:51**

Change Record					
Change	By	Date	Change	By	Date

Notes: **Completed ped upgrade/signal upgrade on 3/24/2011. RA/TB/DRS**  
**9/12/12 Resurface Pettigrew/Blackwell detour set chg time to run plan 3 all day inc**  
**forceoff 1,3,4 by 10 sec. 9/13/12 returned to normal surface done.BE**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>17</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>3</b>	<C/0+0+2>
Area Address	<b>9</b>	<C/0+0+3>
QuicNet Channel	<b>COM124:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

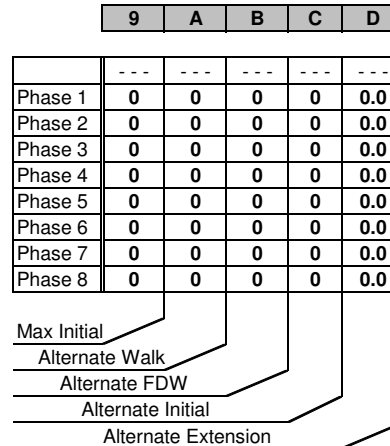
**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	4	0	4	0	0	0	0
1	Ped FDW	0	16	0	16	0	0	0	0
2	Min Green	7	19	3	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	18	25	3	45	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.9	4.3	4.2	3.2	0.0	0.0	0.0	0.0
F	Red Clear	1.1	1.5	1.3	2.2	0.0	0.0	0.0	0.0

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	20		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	19		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

**Preempt Timing**  
 [Preempt Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	9	10	0	0	0	0	0	0
1	Veh Set 1 - Phases	123	1 4						12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases	4	23						
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.2	3.9	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	3
3	RR-2 Limited Service	4
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	1
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	12
A	EV-A Phases	
B	EV-B Phases	2
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	
Ped for 4P Output	4
Ped for 8P Output	
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	34

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	1234
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	1234
Start-up Ped Calls	2 4

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	75	100	90	75	90	0	0	0	0
1	Phase 1 - ForceOff	52	57	52	49	65	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	9	9	9	9	9	0	0	0	0
4	Phase 4 - ForceOff	37	34	34	34	47	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	34	34	80	34	34	0	0	0	0
B	Offset B	34	34	80	34	34	0	0	0	0
C	Offset C	34	34	80	34	34	0	0	0	0
D	Perm 1 - End	1	1	1	1	1	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	1	1	1	1	1	0	0	0	0
2	Perm 2 - End	19	19	19	19	30	0	0	0	0
3	Perm 3 - Start	19	19	19	19	30	0	0	0	0
4	Perm 3 - End	32	32	32	32	52	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall		1234	1234	1234	1234				
A	Perm 1 Veh Phase	3	3	3	3	3	12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	4	4	4	4	4				
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase	1	1	1	1	1				
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync	2	5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4	0
1	Plan 1 - Lag	2 4	1
2	Plan 2 - Lag	2 4	2
3	Plan 3 - Lag	2 4	3
4	Plan 4 - Lag	2 4	4
5	Plan 5 - Lag	2 4	5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	231	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	231	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

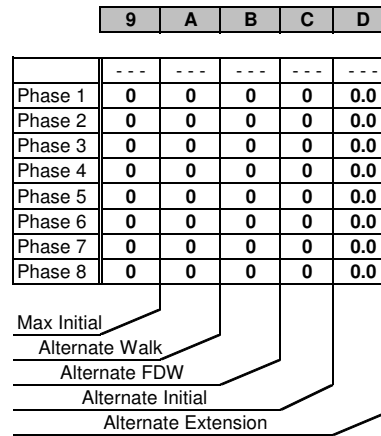
**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	4	0	4	0	0	0	0
1	Ped FDW	0	16	0	16	0	0	0	0
2	Min Green	7	19	3	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	15	30	3	20	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.9	4.3	4.2	3.2	0.0	0.0	0.0	0.0
F	Red Clear	1.1	1.5	1.3	2.2	0.0	0.0	0.0	0.0

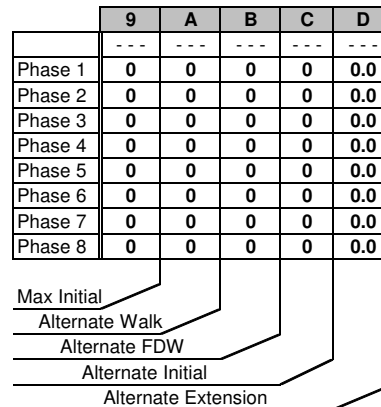
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	4	0	4	0	0	0	0
1	Ped FDW	0	16	0	16	0	0	0	0
2	Min Green	7	19	3	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	250	250	250	250	0	0	0	0
9	Max Limit 2	250	250	250	250	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	1	0	1	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.9	4.3	4.2	3.2	0.0	0.0	0.0	0.0
F	Red Clear	1.1	1.5	1.3	2.2	0.0	0.0	0.0	0.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Low Priority  
 1 = Channel A  
 2 = Channel B  
 3 = Channel C  
 4 = Channel D

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**

[Coordination Functions]

Cycle 1 Fail | 0 C/5+1+1

Cycle 2 Fail | 0 C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>

Begin Week | 2 <C/5+2+B>

End Month | 11 <C/5+2+C>

End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>

Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>

Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>

Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		0				0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->	Ped / Phase / Overlap								Row
	1	2	3	4	5	6	7	8	
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
<b>Detector Failure Monitor</b>			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Disable Alarms**

1 = Stop Time  
 2 = Flash Sense  
 3 = Keyboard Entry  
 4 = Manual Plan  
 5 = Police Control  
 6 = External Alarm  
 7 = Detector Failure  
 8 =

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0990-Mangum Ramseur & Pettigrew**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

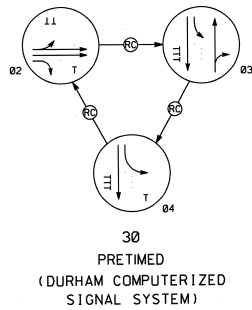
**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

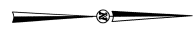
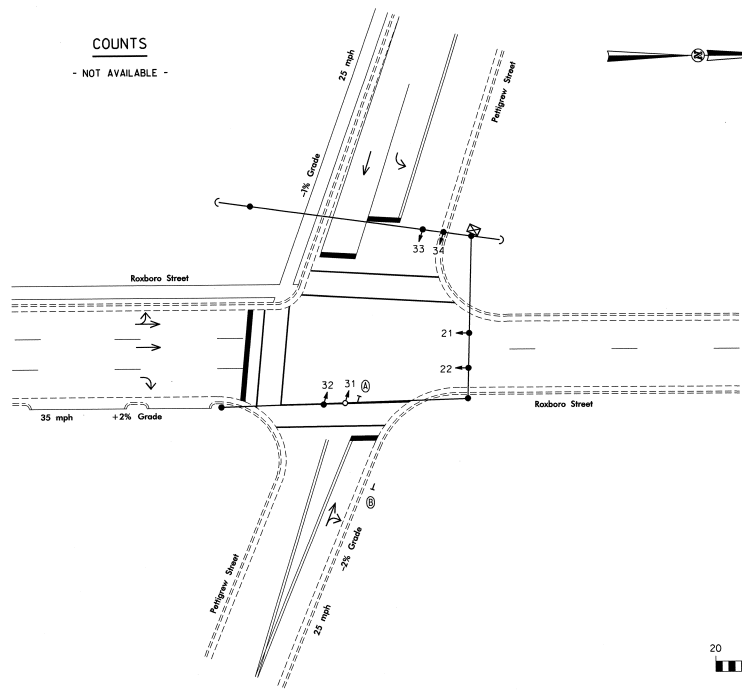
**0** <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	8.2351801		
T.A. POLANO			
PROJECT G. NO.			

**PHASING DIAGRAM**



**COUNTS**  
- NOT AVAILABLE -



**NOTES**

1. SIGNAL UPGRADE.
2. THIS SIGNAL IS TO BE PART OF THE DURHAM COMPUTERIZED SIGNAL SYSTEM.
3. PAVEMENT MARKINGS ARE EXISTING.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 1993 NCDOT TRAFFIC SIGNAL SPECIFICATIONS AND ANY SUBSEQUENT ADDENDA.
5. MAXIMUM TIMES SHOWN IN TIMING CHART ARE FOR FREE-RUN OPERATION ONLY. COORDINATED SIGNAL SYSTEM TIMING VALUES SHALL SUPERSEDE THESE VALUES.
6. SIGNAL TO FLASH FROM 11:00 PM UNTIL 6:00 AM UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. PLAN IS TO BE CONSIDERED "AS-BUILT" FOR DURHAM CONTROLLER CHANGE-OUT PROJECT.

**COLOR SEQUENCE CHART**

SIGNAL FACE	02		03		04		F L A S H
	R	CLEAR	R	CLEAR	R	CLEAR	
21, 22	G	Y	R	R	R	R	Y
31	R	R	R	G	G	G	R
32	R	R	R	G	G	G	R
33, 34	R	R	R	G	Y	R	R

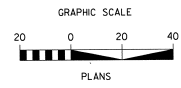
**TIMING CHART**

PHASE	02	03	04
MINIMUM GREEN	* SEC.	* SEC.	* SEC.
PASSAGE/GAP	0.0 SEC.	0.0 SEC.	0.0 SEC.
YELLOW CHANGE INT.	4.0 SEC.	4.0 SEC.	4.0 SEC.
RED CLEARANCE	2.0 SEC.	2.0 SEC.	2.0 SEC.
MAX. 1	* SEC.	* SEC.	* SEC.
MAX. 2	- SEC.	- SEC.	- SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL	MAX. RECALL
VEHICLE CALL MEMORY	N/A	N/A	N/A

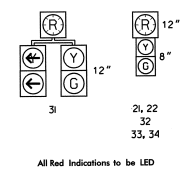
\* Timing to be determined by the City of Durham

**LEGEND**

- | PROPOSED | EXISTING |
|----------|----------|
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
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|          |          |
|          |          |
|          |          |



**SIGNAL FACE I.D.**



**Type 170 Controller**

Roxboro Street at Pettigrew Street		
Division 5	Durham County	
REVISIONS		
N.C. DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH		
PREPARED BY: P. Alexander / DL Jones DATE: 05-09-98		SEAL DATE: 05-09-98

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

Group Assignment: p  
 Field Master Assignment: **NONE**  
 System Reference Number: **163**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: 3/28/2013 14:14

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	12	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	2	<C/0+0+2>
Area Address	49	<C/0+0+3>
QuicNet Channel	COM124:	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	0.0	<F/1+C+0>
Flash Start	10	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

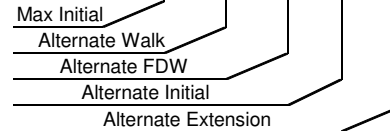
**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

[Miscellaneous Timing]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	13	0	9	0	0	0	0
2	Min Green	0	10	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
8	Max Limit	0	35	0	13	0	0	10	13
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0

**Phase Timing - Bank 1** <C+0+F=1>

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

**Preempt Timing**

	F	Row
Permit	2 4 78	0
Red Lock		1
Yellow Lock	2 4 78	2
Min Recall	2 4 78	3
Ped Recall	2 4	4
View Set Peds	-----	5
Rest In Walk		6
Red Rest		7
Dual Entry		8
Max Recall	2 4 78	9
Soft Recall		A
Max 2		B
Cond. Service		C
Ext Cont Calls	2 4 78	D
Yellow Start		E
First Phases	2	F

**Phase Functions** <C+0+F=1>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

Column Numbers ---->		Overlap							
Row	Overlap Name ---->	1	2	3	4	5	6	7	8
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)  
 [Preempt Priority]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	
1	
2	
3	
4	
5	
6	2
7	4
8	
9	2
A	
B	
C	
D	
E	
F	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	
1	
2	
3	
4	
5	2 4 78
6	
7	
8	
9	
A	
B	
C	
D	
E	2 4 78
F	2 4

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minimums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	75	75	90	75	85	0	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	36	30	40	36	40	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	36	0	40	36	40	0	0	0	0
8	Phase 8 - ForceOff	18	30	25	18	25	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	65	0	68	65	0	0	0	0	0
B	Offset B	65	0	68	65	0	0	0	0	0
C	Offset C	65	0	68	65	0	0	0	0	0
D	Perm 1 - End	4	15	20	15	4	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	4	0	20	15	4	0	0	0	0
2	Perm 2 - End	22	0	35	22	22	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	4 8	4 8	4 8	4 8	4 8	12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase			4	4		12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	4 7		4 7	4 7	4 7				
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync	2	2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync	2	5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 7	0
1	Plan 1 - Lag	2 4 7	1
2	Plan 2 - Lag	2 4 8	2
3	Plan 3 - Lag	2 4 7	3
4	Plan 4 - Lag	2 4 7	4
5	Plan 5 - Lag	2 4 7	5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
*[Input Assignments]*

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
*[Output Assignments]*

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

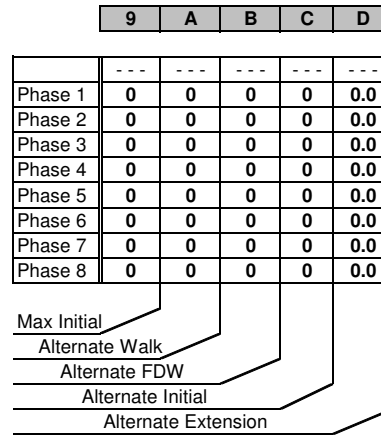
**INTERSECTION: 0998-Pettigrew St & Roxboro St**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	13	0	9	0	0	0	0
2	Min Green	0	10	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
8	Max Limit	0	35	0	13	0	0	10	13
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0

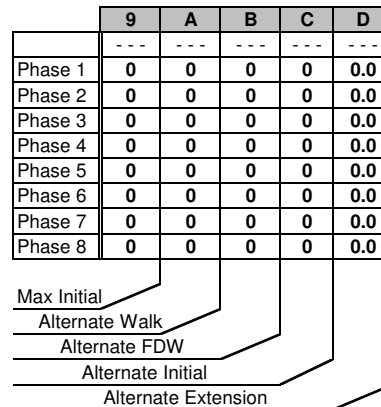
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	7	0	7	0	0	0	0
1	Ped FDW	0	13	0	9	0	0	0	0
2	Min Green	0	10	0	7	0	0	7	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	1.0	1.0
8	Max Limit	0	250	0	250	0	0	150	250
9	Max Limit 2	0	250	0	250	0	0	150	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 0 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extenion  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

Column Numbers ---->		0	1	2	3	1	3
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	1		220	5 7	2 4 78	123	0.0
1	2		221	5 7	2 4 78	123	0.0
2	3		0				0.0
3	4		0				0.0
4	5		0				0.0
5	6		0				0.0
6	7		0				0.0
7	8		0				0.0
8	9		0				0.0
9	10		0				0.0
A	11		0				0.0
B	12		0				0.0
C	13		0				0.0
D	14		0				0.0
E	15		0				0.0
F	16		0				0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
Max OFF (minutes)	255	<D/0+0+1>	Output Port 1	1
Max ON (minutes)	7	<D/0+0+2>	Output Port 2	2
Detector Failure Monitor		[Miscellaneous Timing]	Output Port 3	3
			Output Port 4	4
			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm <C/5+F+0>

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time 0 <C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	17		0				0.0
1	18		0				0.0
2	19		0				0.0
3	20		0				0.0
4	21		0				0.0
5	22		0				0.0
6	23		0				0.0
7	24		0				0.0
8	25		0				0.0
9	26		0				0.0
A	27		0				0.0
B	28		0				0.0
C	29		0				0.0
D	30		0				0.0
E	31		0				0.0
F	32		0				0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0998-Pettigrew St & Roxboro St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]

PHASING DIAGRAM

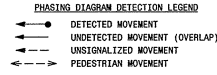
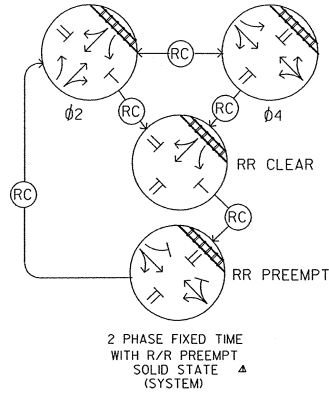


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	Ø2	Ø4	RR CLEAR	RR PREEMPT
21,22	G	R	R	Y
23	G	R	R	Y
24	G	R	R	Y
41,42	R	G	R	R
43,44	R	G	R	R

STANDARD SIGNAL FACE CLEARANCES

TO	FROM															
	C	S	W	E	N	W	E	N	W	E	N	W	E	N	W	E
G																
R																
Y																
W																
WALK																
OFF																

Y = WALK  
W = FLASHING DON'T WALK  
OR DON'T WALK

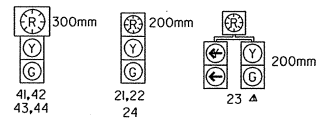
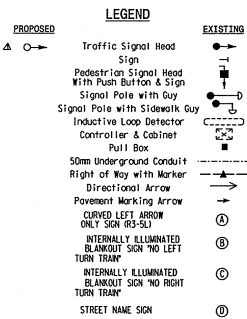
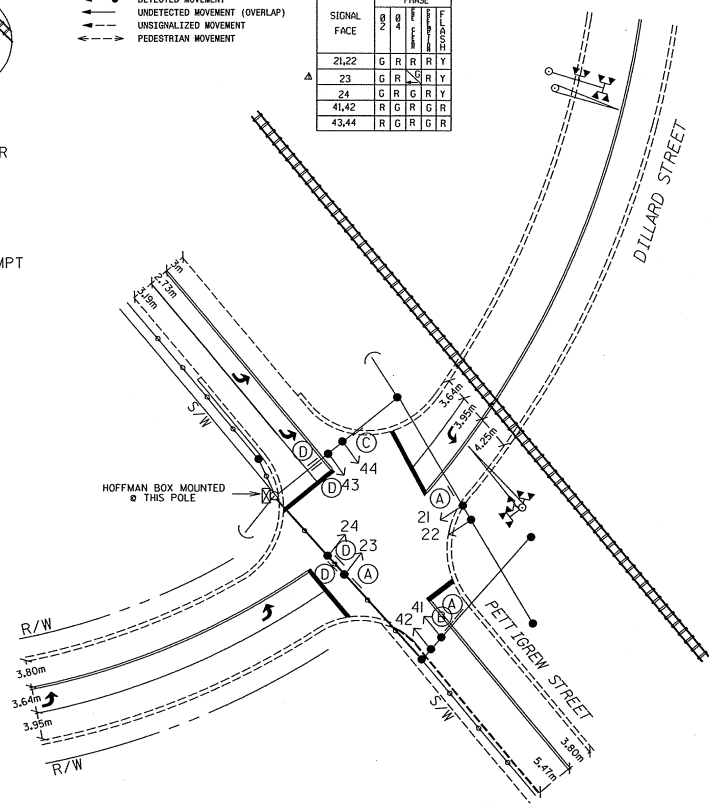
NOTES:

1. PETTIGREW ST. & DILLARD ST. ARE IN RAILROAD RIGHT OF WAY.
2. START UP IN Ø2 GREEN.
3. PHASES 2,4 VC GROUNDED FOR MAX.
4. GRADES NOT AVAILABLE.
5. DO NOT PLACE THIS TRAFFIC SIGNAL IN SERVICE UNTIL IT HAS BEEN PROPERLY INTERCONNECTED WITH THE RAILROAD HIGHWAY CROSSING DEVICES AND THE NECESSARY RAILROAD PREEMPTION PHASING IS OPERATING PROPERLY.
6. THE TRAFFIC ENGINEER WILL DETERMINE THE DELAY BEFORE PREEMPT AND PREEMPT DWELL MIN GREEN TIME.
7. PREEMPTION TIMING.
7. ENSURE FLASHING OPERATION DOES NOT ALTER OPERATION OF BLANKOUT SIGNS.

TIMING CHART

PHASE	Ø2	Ø4	PREEMPTION
MINIMUM INITIAL	10 SEC.	7 SEC.	- SEC.
TYPE 3 LIMIT	- SEC.	- SEC.	- SEC.
VEHICLE EXTENSION	2 SEC.	3 SEC.	- SEC.
ALTERNATE EXTENSION	- SEC.	- SEC.	- SEC.
MAX. LIMIT	+ SEC.	+ SEC.	+ SEC.
MAX. 2	- SEC.	- SEC.	- SEC.
YELLOW CHANGE INTERVAL	4 SEC.	4 SEC.	4 SEC.
RED CLEARANCE	2 SEC.	2 SEC.	2 SEC.
VEHICLE CALL MEMORY	YELLOW LOCK	NO LOCK	
VEHICLE WALK CALL	ON	OFF	
DOUBLE ENTRY	OFF	OFF	

\* TIMING TO BE DETERMINED BY THE CITY OF DURHAM



TYPE 170 CONTROLLER

		PETTIGREW ST. & DILLARD		SEAL
CITY: DURHAM COUNTY: DURHAM				B-043
PLAN DATE: _____ REVIEWED BY: _____				
PREPARED BY: _____				
SCALE: 10 0 20 1:250	REVISIONS: _____ SIGNAL HEAD SPACING: _____	DATE: _____	DATE: _____	SHEET NO. 1 SIC. INQUIRY NO. C-0015

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **157**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: **11/18/2013 8:12**

Change Record					
Change	By	Date	Change	By	Date

Notes: **10/31/08 Downloaded new AM plan (Sch D) LT**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	<b>7</b>	<C/0+0+0>
Zone Number	<b>1</b>	<C/0+0+1>
Area Number	<b>2</b>	<C/0+0+2>
Area Address	<b>43</b>	<C/0+0+3>
QuicNet Channel	<b>COM107:</b>	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	<b>0.0</b>	<F/1+C+0>
Flash Start	<b>10</b>	<F/1+0+E>
Red Revert	<b>5.0</b>	<F/1+0+F>

Exclusive Walk	<b>0</b>	<F/1+0+0>
Exclusive FDW	<b>0</b>	<F/1+0+1>
All Red Clear	<b>0.0</b>	<F/1+0+2>

**Communication Addresses**  
*[Configuration not in timing menus]*

**Manual Selection**  
*[Set Manual Plan/Offset not timing]*

**Start / Revert Times**  
*[Miscellaneous Timing]*

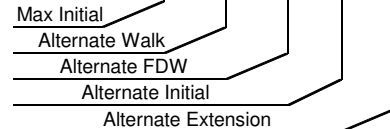
**Exclusive Ped Phase**  
*(Outputs specified in Assignable Outputs at E/127+A+E & F)*

*[Miscellaneous Timing]*

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	15	10	0	7	0	10	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
6	Max Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
7	Min Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
8	Max Limit	15	26	0	26	0	26	0	26
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0
F	Red Clear	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

**Phase Timing - Bank 1** <C+0+F=1>  
*[Phase Timing Bank 1]*

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
*[Phase Timing Bank 1]*

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	15
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

**Preempt Timing**  
*[Preempt Timing]*

	F	Row
Permit	<b>2 4 6 8</b>	0
Red Lock		1
Yellow Lock	<b>2 4 6 8</b>	2
Min Recall	<b>2 4 6 8</b>	3
Ped Recall		4
View Set Peds	-----	5
Rest In Walk		6
Red Rest		7
Dual Entry	<b>4 8</b>	8
Max Recall		9
Soft Recall		A
Max 2		B
Cond. Service		C
Ext Cont Calls	<b>12 4 6 8</b>	D
Yellow Start		E
First Phases	<b>2 6</b>	F

**Phase Functions** <C+0+F=1>  
*[Phase Functions]*

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Column Numbers ---->		Overlap							
Overlap Name ---->		1	2	3	4	5	6	7	8
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	1 6
3	RR-2 Limited Service	4 8
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	Ext. Permit 1 Phases
1	Ext. Permit 2 Phases
2	Exclusive Ped Assign
3	Preempt Non-Lock
4	Ped for 2P Output
5	Ped for 6P Output
6	Ped for 4P Output
7	Ped for 8P Output
8	Yellow Flash Phases
9	Low Priority A Phases
A	Low Priority B Phases
B	Low Priority C Phases
C	Low Priority D Phases
D	Restricted Phases
E	Extra 2 Config. Bits
F	

**Configuration** <C+0+E=125>  
 [Configuration Data]

Row	F
0	Fast Green Flash Phase
1	Green Flash Phases
2	Flashing Walk Phases
3	Guaranteed Passage
4	Simultaneous Gap Term
5	Sequential Timing
6	Advance Walk Phases
7	Delay Walk Phases
8	External Recall
9	Start-up Overlap Green
A	Max Extension
B	Inhibit Ped Reserve
C	Semi-Actuated
D	Start-up Overlap Yellow
E	Start-up Vehicle Calls
F	Start-up Ped Calls

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
Phase 1	14	0
Phase 2	20	1
Phase 3	14	2
Phase 4	14	3
Phase 5	14	4
Phase 6	20	5
Phase 7	14	6
Phase 8	14	7

**Coordination Transition Minimums**  
 <C+0+C=5>  
 [Coordination Functions]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
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 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	75	0	60	50	0	0	0	0	100
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	20
4	Phase 4 - ForceOff	38	0	30	23	0	0	0	0	40
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	20
8	Phase 8 - ForceOff	38	0	30	23	0	0	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	2	0	16	41	0	0	0	0	0
B	Offset B	2	0	16	41	0	0	0	0	0
C	Offset C	2	0	16	41	0	0	0	0	0
D	Perm 1 - End	15	0	16	11	0	0	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	0	0	0	0	0	0	0	0	0
2	Perm 2 - End	0	0	0	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	2 4 6 8		2 4 6 8	2 4 6 8					
A	Perm 1 Veh Phase	4 8		4 8	4 8		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4 6 8	3
4	Plan 4 - Lag	2 4 6 8	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	225	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	225	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
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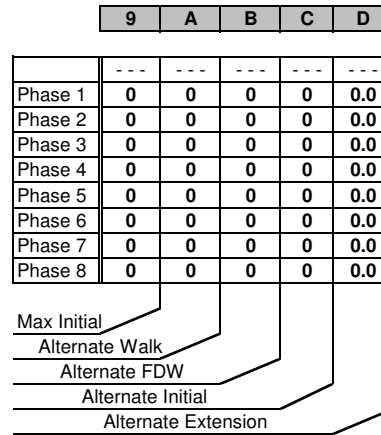
**INTERSECTION: C0015-Dillard St & Pettigrew St**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	15	10	0	7	0	10	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
6	Max Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
7	Min Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
8	Max Limit	15	26	0	26	0	26	0	26
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0
F	Red Clear	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

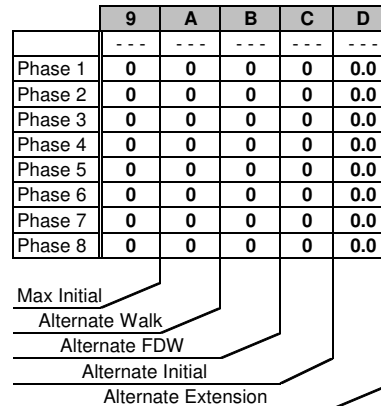
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	15	10	0	7	0	10	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
6	Max Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
7	Min Gap	1.0	2.0	0.0	1.0	0.0	2.0	0.0	1.0
8	Max Limit	150	250	0	250	0	250	0	250
9	Max Limit 2	150	250	0	250	0	250	0	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0
F	Red Clear	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**

[Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1

Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>

Begin Week | 2 | <C/5+2+B>

End Month | 11 | <C/5+2+C>

End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>

Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>

Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>

Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 0 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		0				0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
Detector Failure Monitor			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm  <C/5+F+0>

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time  0 <C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Row	Time	Plan	Offset	Day of Week
0	00:00	4	C	1234567
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	07:00	4	C	23456
5	09:00	4	C	23456
6	00:00	0	0	
7	16:00	3	C	23456
8	18:00	4	C	23456
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Column 4
Phases/Bits
4
4

<C+0+E=27>

Day	Year	Month	Holiday Type
01	03	1	1
04	03	7	1
26	03	11	2
27	03	11	1
28	03	11	3
24	03	12	2
25	03	12	1
00	00	0	
01	04	1	1
04	04	7	1
24	04	11	2
25	04	11	1
26	04	11	3
24	04	12	2
25	04	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

**T.O.D. Functions**  
 0 =  
 1 = Red Lock  
 2 = Yellow Lock  
 3 = Veh Min Recall  
 4 = Ped Recall  
 5 =  
 6 = Rest In Walk  
 7 = Red Rest  
 8 = Double Entry  
 9 = Veh Max Recall  
 A = Veh Soft Recall  
 B = Maximum 2  
 C = Conditional Service  
 D = Free Lag Phases  
 E = Bit 1 - Local Override  
 Bit 4 - Disable Detector  
 OFF Monitor  
 Bit 7 - Detector Count  
 Monitor  
 Bit 8 - Real Time Split  
 Monitor  
 F = Output Bits 1 thru 8

**Plan Select**  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash

**Offset Select**  
 A = Offset A  
 B = Offset B  
 C = Offset C

**Month Select**  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 (Bank 2)  
 [Time of Day Functions]

Column 4
Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
01	01	1	1
04	01	7	1
21	01	11	2
22	01	11	1
23	01	11	3
24	01	12	2
25	01	12	1
00	00	0	
01	02	1	1
04	02	7	1
27	02	11	2
28	02	11	1
29	02	11	3
24	02	12	2
25	02	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
05:30	0	0	
09:00	0	0	
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0015-Dillard St & Pettigrew St**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**0** <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

Group Assignment: p  
 Field Master Assignment: **NONE**  
 System Reference Number: 154

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last Database Change: 11/7/2013 10:51

Change Record					
Change	By	Date	Change	By	Date

Notes: **Changed max time on 2 and 6 from 15 sec to 25 sec 5/24/07 PML**  
**12/23/09 Added max 2 for ph 4 because of broken loops; increased min time for ph 1/20/10 Put ph 2 and 6 in max recall in TOD -- midn to 7 a.m. LT**  
**5/17/11 Milling -- Put ph 2 and 6 in max recall, 5 in min recall and increased min ti for ph 5 (7 to 12 s)**

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	4	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	2	<C/0+0+2>
Area Address	40	<C/0+0+3>
QuicNet Channel	COM107:	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	0.0	<F/1+C+0>
Flash Start	10	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

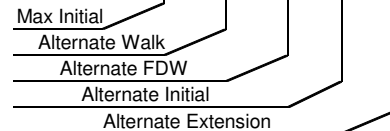
**Start / Revert Times**  
 [Miscellaneous Timing]

**Exclusive Ped Phase**  
 (Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	7	12	1	7	12	12	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
6	Max Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
7	Min Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
8	Max Limit	0	25	0	15	15	25	0	15
9	Max Limit 2	0	0	0	15	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.5	4.5	3.0	4.5	4.5	4.5	0.0	4.5
F	Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	20		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	15		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

[Miscellaneous Timing]

**Phase Functions** <C+0+F=1>  
 [Phase Functions]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	9	10	11	0	0	0	0	0
1	Veh Set 1 - Phases	1 4 6	2 8	5 8					12345678
2	Veh Set 2 - Phases	1 4 6		5 8					
3	Veh Set 3 - Phases								
4	Neg Veh Phases	5 8	1 34	1 34 6					
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.5	4.5	4.5	0.0	0.0	0.0	0.0	0.0
F	Red Clear	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	34 8
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	1 6
3	RR-2 Limited Service	45 8
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2 6
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	2 4
A	EV-A Phases	
B	EV-B Phases	1 6
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	
Ped for 6P Output	
Ped for 4P Output	
Ped for 8P Output	
Yellow Flash Phases	2 6
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	23456
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	23456
Start-up Ped Calls	

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minimums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	100	0	110	90	0	0	0	0	0
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	4	0	4	4	0	0	0	0	0
4	Phase 4 - ForceOff	18	0	17	17	0	0	0	0	0
5	Phase 5 - ForceOff	52	0	60	48	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	34	0	39	27	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	84	0	89	81	0	0	0	0	0
B	Offset B	84	0	89	81	0	0	0	0	0
C	Offset C	84	0	89	81	0	0	0	0	0
D	Perm 1 - End	7	0	6	6	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	8	0	8	8	0	0	0	0	0
2	Perm 2 - End	25	0	30	18	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall	3		3	3					
A	Perm 1 Veh Phase	345		345	345		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase	8		8	8					
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync		9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4 6	0
1	Plan 1 - Lag	2 4 6	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4 6	3
4	Plan 4 - Lag	2 4 6	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag		9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	226	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	225	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	225	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	226	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	220	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	225	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

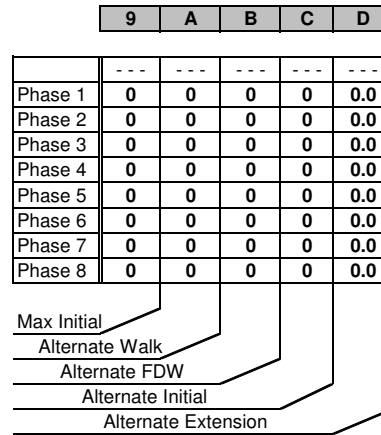
**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	7	7	1	7	7	7	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	3.0	2.0	0.0	3.0
6	Max Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	3.0
7	Min Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	3.0
8	Max Limit	0	15	0	15	15	15	0	15
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.5	4.5	3.0	4.5	4.5	4.5	0.0	4.5
F	Red Clear	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

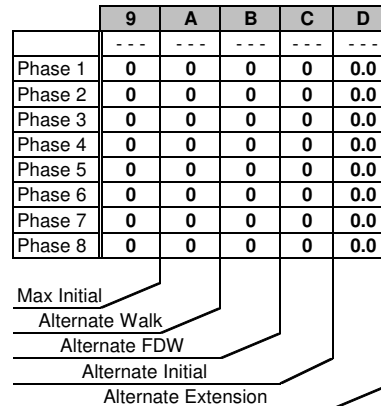
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	7	10	1	7	7	10	0	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
6	Max Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
7	Min Gap	0.0	2.0	0.0	2.0	3.0	2.0	0.0	2.0
8	Max Limit	0	250	0	250	250	250	0	15
9	Max Limit 2	0	250	0	250	250	250	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.5	4.5	3.0	4.5	4.5	4.5	0.0	4.5
F	Red Clear	2.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Low Priority  
 1 = Channel A  
 2 = Channel B  
 3 = Channel C  
 4 = Channel D

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 C/5+1+1  
 Cycle 2 Fail | 0 C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>  
 Begin Week | 2 <C/5+2+B>  
 End Month | 11 <C/5+2+C>  
 End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>  
 Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>  
 Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>  
 Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

Column Numbers ---->		0	1	2	3	1	3
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	1		39	45 7	2	123 8	0.0 0.0
1	2		43	45 7	2	123 8	0.0 0.0
2	3		63	45 7	2	123 8	0.0 0.0
3	4		76				0.0 0.0
4	5		40	45 7	6	123 8	0.0 0.0
5	6		44	45 7	6	123 8	0.0 0.0
6	7		64	45 7	6	123 8	0.0 0.0
7	8		77				0.0 0.0
8	9		41	45 7	34	123 8	0.0 0.0
9	10		45	1 45 7	34	123 8	5.0 0.0
A	11		65	45 7	34	123 8	0.0 0.0
B	12		78	1 45 7	34	123 8	5.0 0.0
C	13		49	45 7	34	123 8	0.0 0.0
D	14		42	45 7	3 8	123 8	10.0 0.0
E	15		46	45 7	3 8	123 8	0.0 0.0
F	16		0				0.0 0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection			12345678	0
(Enable Redirection = 30)				1
[Phase Output Redirection]				2
Max OFF (minutes)	255	<D/0+0+1>		3
Max ON (minutes)	7	<D/0+0+2>		4
Detector Failure Monitor				5
[Miscellaneous Timing]				6
				7

**Dimming** <C+0+E=125>

[Output Dimming]

Output Bit:	12345678	Row
Output Port 1		1
Output Port 2		2
Output Port 3		3
Output Port 4		4
Output Port 5		5
Output Port 6		6
Output Port 7		7

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

DELAY-A	0	Row
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Omit Alarm		<C/5+F+0>
Time	0	<C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	17		55	5 7	2 5	123 8	0.0 0.0
1	18		55	7	34	123 8	0.0 0.0
2	19		0				0.0 0.0
3	20		0				0.0 0.0
4	21		0				0.0 0.0
5	22		0				0.0 0.0
6	23		0				0.0 0.0
7	24		0				0.0 0.0
8	25		0				0.0 0.0
9	26		0				0.0 0.0
A	27		0				0.0 0.0
B	28		0				0.0 0.0
C	29		0				0.0 0.0
D	30		0				0.0 0.0
E	31		0				0.0 0.0
F	32		0				0.0 0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**

1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

Row	Time	Plan	Offset	Day of Week
0	00:00	E	C	23456
1	06:30	E	C	23456
2	08:45	E	C	23456
3	00:00	0	0	
4	16:00	E	C	23456
5	18:15	E	C	23456
6	22:15	E	C	23456
7	00:00	0	0	
8	07:00	E	C	1 7
9	23:00	E	C	1 7
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Column 4 Phases/Bits
4 8
8
4 8

<C+0+E=27>

Day	Year	Month	Holiday Type
01	03	1	1
04	03	7	1
26	03	11	2
27	03	11	1
28	03	11	3
24	03	12	2
25	03	12	1
00	00	0	
01	04	1	1
04	04	7	1
24	04	11	2
25	04	11	1
26	04	11	3
24	04	12	2
25	04	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

T.O.D. Functions

- 0 =
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Veh Min Recall
- 4 = Ped Recall
- 5 =
- 6 = Rest In Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Veh Max Recall
- A = Veh Soft Recall
- B = Maximum 2
- C = Conditional Service
- D = Free Lag Phases
- E = Bit 1 - Local Override
- Bit 4 - Disable Detector
- OFF Monitor
- Bit 7 - Detector Count
- Monitor
- Bit 8 - Real Time Split
- Monitor
- F = Output Bits 1 thru 8

- Plan Select  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash

- Offset Select  
 A = Offset A  
 B = Offset B  
 C = Offset C

- Month Select  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 (Bank 2)  
 [Time of Day Functions]

Column 4 Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
01	01	1	1
04	01	7	1
21	01	11	2
22	01	11	1
23	01	11	3
24	01	12	2
25	01	12	1
00	00	0	
01	02	1	1
04	02	7	1
27	02	11	2
28	02	11	1
29	02	11	3
24	02	12	2
25	02	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
05:30	0	0	
09:00	0	0	
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 0321-Fayetteville St & NC 147 NB**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayetteville/Morehd/NC 147**

Group Assignment: p  
 Field Master Assignment: NONE  
 System Reference Number: 153

N/S Street Name: Not Assigned  
 E/W Street Name: Not Assigned

Last Database Change: 11/7/2013 10:51

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	3	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	2	<C/0+0+2>
Area Address	39	<C/0+0+3>
QuicNet Channel	COM107:	(QuicNet)

Manual Plan	<C/0+A+1>
Manual Offset	<C/0+B+1>

Red Start	0.0	<F/1+C+0>
Flash Start	10	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

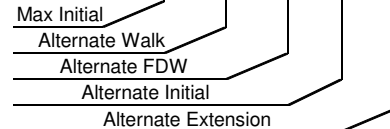
**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

[Miscellaneous Timing]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	0	0	20	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 1** <C+0+F=1>  
 [Phase Timing Bank 1]

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>  
 [Phase Timing Bank 1]

	E	F	Row
RR-1 Delay	0		0
RR-1 Clear	0		1
EV-A Delay	0		2
EV-A Clear	0		3
EV-B Delay	0		4
EV-B Clear	20		5
EV-C Delay	0		6
EV-C Clear	0		7
EV-D Delay	0		8
EV-D Clear	0		9
RR-2 Delay	0		A
RR-2 Clear	0		B
View EV Delay	---		C
View EV Clear	---		D
View RR Delay	---		E
View RR Clear	---		F

**Phase Functions** <C+0+F=1>  
 [Phase Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayetteville/Morehd/NC 147**

		Overlap							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest,  
 and RR-2 is always  
 Second Highest)

[Preempt Parameters]

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	2
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	
B	EV-B Phases	2
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	
Ped for 6P Output	
Ped for 4P Output	
Ped for 8P Output	
Yellow Flash Phases	2
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	2 4
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	2
Start-up Overlap Yellow	
Start-up Vehicle Calls	2 4
Start-up Ped Calls	

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minimums**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayettevle/Morehd/NC 147**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	100	0	110	90	0	0	0	0	100
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	20
4	Phase 4 - ForceOff	38	0	33	20	0	0	0	0	40
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	20
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	6	0	11	24	0	0	0	0	0
B	Offset B	6	0	11	24	0	0	0	0	0
C	Offset C	6	0	11	24	0	0	0	0	0
D	Perm 1 - End	24	0	19	6	0	0	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	24	0	19	6	0	0	0	0	0
2	Perm 2 - End	86	0	96	76	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	4		4	4		12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>  
 [Coordination Timing 2 ]

Coord Extra  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync	2	1
2	Plan 2 - Sync		2
3	Plan 3 - Sync	2	3
4	Plan 4 - Sync	2	4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag	2 4	0
1	Plan 1 - Lag	2 4	1
2	Plan 2 - Lag		2
3	Plan 3 - Lag	2 4	3
4	Plan 4 - Lag	2 4	4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayetteville/Morehd/NC 147**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

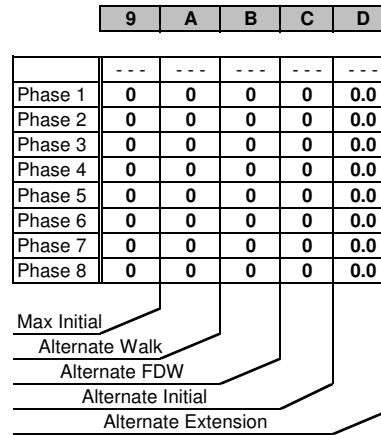
**INTERSECTION: 1035-Fayetteville/Morehd/NC 147**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	0	0	20	0	0	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0

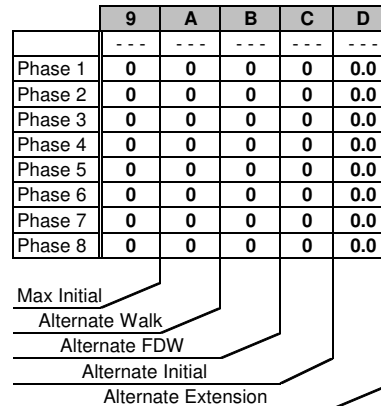
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	0	7	0	0	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
6	Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
7	Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
8	Max Limit	0	250	0	250	0	0	0	0
9	Max Limit 2	0	250	0	250	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Transition Type | 0.2 <C/5+1+9>

**TBC Transition**

[Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1

Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 <C/5+2+A>

Begin Week | 2 <C/5+2+B>

End Month | 11 <C/5+2+C>

End Week | 1 <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 <F/1+C+E>

Phase Number | 0 <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 <F/1+D+E>

Phase Number | 0 <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 <F/1+0+6>

Short Failure | 0.7 <F/1+0+7>

**Power Cycle Correction (Default = 0.7)**

[Miscellaneous Timing]

Min Time (seconds) | 1 <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

INTERSECTION: 1035-Fayetteville/Morehd/NC 147

Column Numbers ---->		0	1	2	3	1	3	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	1		41	5 7	4	123 6 8	0.0	0.0
1	2		0				0.0	0.0
2	3		0				0.0	0.0
3	4		0				0.0	0.0
4	5		0				0.0	0.0
5	6		0				0.0	0.0
6	7		0				0.0	0.0
7	8		0				0.0	0.0
8	9		0				0.0	0.0
9	10		0				0.0	0.0
A	11		0				0.0	0.0
B	12		0				0.0	0.0
C	13		0				0.0	0.0
D	14		0				0.0	0.0
E	15		0				0.0	0.0
F	16		0				0.0	0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial"  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection			12345678	0
(Enable Redirection = 30)				1
[Phase Output Redirection]				2
Max OFF (minutes)	255	<D/0+0+1>		3
Max ON (minutes)	7	<D/0+0+2>		4
Detector Failure Monitor				5
[Miscellaneous Timing]				6
				7

**Dimming** <C+0+E=125>

[Output Dimming]

Output Bit:	12345678	Row
Output Port 1		1
Output Port 2		2
Output Port 3		3
Output Port 4		4
Output Port 5		5
Output Port 6		6
Output Port 7		7

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

DELAY-A	0	Row
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Omit Alarm		<C/5+F+0>
Time	0	<C/5+C+0>

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4	
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0	17		0				0.0	0.0
1	18		0				0.0	0.0
2	19		0				0.0	0.0
3	20		0				0.0	0.0
4	21		0				0.0	0.0
5	22		0				0.0	0.0
6	23		0				0.0	0.0
7	24		0				0.0	0.0
8	25		0				0.0	0.0
9	26		0				0.0	0.0
A	27		0				0.0	0.0
B	28		0				0.0	0.0
C	29		0				0.0	0.0
D	30		0				0.0	0.0
E	31		0				0.0	0.0
F	32		0				0.0	0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

<C+0+D=0>

[Detector Timing]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayetteville/Morehd/NC 147**

Row	Time	Plan	Offset	Day of Week
0	00:00	E	C	23456
1	06:30	1	C	23456
2	08:45	4	C	23456
3	00:00	0	0	
4	16:00	3	C	23456
5	18:15	4	C	23456
6	22:15	E	C	23456
7	00:00	0	0	
8	00:00	E	C	1 7
9	07:00	4	C	1 7
A	23:59	E	C	1 7
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 [Time of Day Functions]

Column 4
Phases/Bits
4
4

<C+0+E=27>

Day	Year	Month	Holiday Type
01	03	1	1
04	03	7	1
26	03	11	2
27	03	11	1
28	03	11	3
24	03	12	2
25	03	12	1
00	00	0	
01	04	1	1
04	04	7	1
24	04	11	2
25	04	11	1
26	04	11	3
24	04	12	2
25	04	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 [Time of Day Functions]

Column 4
Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
01	01	1	1
04	01	7	1
21	01	11	2
22	01	11	1
23	01	11	3
24	01	12	2
25	01	12	1
00	00	0	
01	02	1	1
04	02	7	1
27	02	11	2
28	02	11	1
29	02	11	3
24	02	12	2
25	02	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
05:30	0	0	
09:00	0	0	
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]

T.O.D. Functions

- 0 =
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Veh Min Recall
- 4 = Ped Recall
- 5 =
- 6 = Rest In Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Veh Max Recall
- A = Veh Soft Recall
- B = Maximum 2
- C = Conditional Service
- D = Free Lag Phases
- E = Bit 1 - Local Override
- Bit 4 - Disable Detector
- OFF Monitor
- Bit 7 - Detector Count
- Monitor
- Bit 8 - Real Time Split
- Monitor
- F = Output Bits 1 thru 8

- Plan Select  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash

- Offset Select  
 A = Offset A  
 B = Offset B  
 C = Offset C

- Month Select  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: 1035-Fayettevle/Morehd/NC 147**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]





Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Group Assignment: p  
 Field Master Assignment: NONE  
 System Reference Number: 175

N/S Street Name: Not Assigned  
 E/W Street Name: Not Assigned

Last Database Change: 3/28/2013 14:14

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan  
 0 = Automatic  
 1-9 = Plan 1-9  
 14 = Free  
 15 = Flash

Manual Offset  
 0 = Automatic  
 1 = Offset A  
 2 = Offset B  
 3 = Offset C

Drop Number	5	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	2	<C/0+0+2>
Area Address	61	<C/0+0+3>
QuicNet Channel	COM111:	(QuicNet)

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Red Start	0.0	<F/1+C+0>
Flash Start	10	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

**Communication Addresses**  
 [Configuration not in timing menus]

**Manual Selection**  
 [Set Manual Plan/Offset not timing]

**Start / Revert Times**  
 [Miscellaneous Timing]

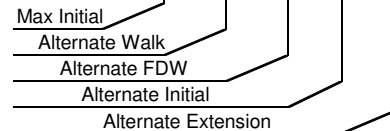
**Exclusive Ped Phase**  
 (Outputs specified in Assignable  
 Outputs at E/127+A+E & F)

[Miscellaneous Timing]

Row	Phase Names ---->	Phase							
		1	2	3	4	5	6	7	8
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	7	4	0	10	15	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	3.0	2.0	2.0	0.0	3.0	0.0	0.0
6	Max Gap	0.0	3.0	2.0	2.0	0.0	3.0	0.0	0.0
7	Min Gap	0.0	3.0	2.0	2.0	0.0	3.0	0.0	0.0
8	Max Limit	0	25	25	25	0	25	15	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	4.0	4.0	0.0	4.0	4.0	0.0
F	Red Clear	0.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0

**Phase Timing - Bank 1** <C+0+F=1>

	9	A	B	C	D
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0



**Alternate Timing** <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	15
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

**Preempt Timing**

	F	Row
Permit	234_67_	0
Red Lock		1
Yellow Lock	2_6_	2
Min Recall	2_6_	3
Ped Recall		4
View Set Peds	-----	5
Rest In Walk		6
Red Rest		7
Dual Entry		8
Max Recall		9
Soft Recall		A
Max 2		B
Cond. Service		C
Ext Cont Calls	234_67_	D
Yellow Start		E
First Phases	3	F

**Phase Functions** <C+0+F=1>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Column Numbers ---->		Overlap							
Overlap Name ---->		1	2	3	4	5	6	7	8
0	Load Switch Number	4	8	0	0	0	0	0	0
1	Veh Set 1 - Phases	34 7	34						12345678
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases	2 6	2 67						
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0

**Extra 1 Flags**  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 = Extended Status  
 6 = International Ped  
 7 = Flash - Clear Outputs  
 8 = Split Ring

**Extra 2 Flags**  
 1 = AWB During Initial  
 2 = LMU Installed  
 3 = Disable Min Walk  
 4 = QuicNet/4 System  
 5 = Ignore P/P on EV  
 6 =  
 7 = Reserved  
 8 =

	C	Row
EV-A	0	0
EV-B	0	1
EV-C	0	2
EV-D	0	3
RR-1 *	---	4
RR-2 *	---	5
SE-1	0	6
SE-2	0	7

**Preempt Priority**  
 <C+0+E=125>  
 (\* RR-1 is always Highest, and RR-2 is always Second Highest)  
 [Preempt Priority]

**Overlap Assignments** <C+0+E=29>  
 [Overlap Configuration]

Row	Column Numbers ---->	E
0	Exclusive Phases	34 78
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	7
3	RR-2 Limited Service	2 6
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	4
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	12
A	EV-A Phases	
B	EV-B Phases	
C	EV-C Phases	
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	
Ped for 6P Output	
Ped for 4P Output	
Ped for 8P Output	
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

**Configuration** <C+0+E=125>  
 [Configuration Data]

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	234 67
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reserve	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	234 6
Start-up Ped Calls	

**Specials** <C+0+F=2>  
 [Phase Functions]

**Flash to PE & PE Non-Lock**  
 1 = EV A 5 = RR 1  
 2 = EV B 6 = RR 2  
 3 = EV C 7 = SE 1  
 4 = EV D 8 = SE 2

**IC Select Flags**  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

	2	Row
		0
Phase 1	14	1
Phase 2	20	2
Phase 3	14	3
Phase 4	14	4
Phase 5	14	5
Phase 6	20	6
Phase 7	14	7
Phase 8	14	8

**Coordination Transition Minims**  
 <C+0+C=5>  
 [Coordination Functions]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

		Plan								
Column Numbers ---->		1	2	3	4	5	6	7	8	9
Row	Plan Name ---->									
0	Cycle Length	0	0	0	0	0	0	0	0	100
1	Phase 1 - ForceOff	0	0	0	0	0	0	0	0	55
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	20
4	Phase 4 - ForceOff	0	0	0	0	0	0	0	0	40
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	55
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	20
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	40
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset A	0	0	0	0	0	0	0	0	0
B	Offset B	0	0	0	0	0	0	0	0	0
C	Offset C	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	0	0	0	0	0	0	0	0	15
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

**Coordination - Bank 1** <C+0+C=1>  
 [Coordination Timing 1 - ]

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	0	0	0	0	0	0	0	0	0
2	Perm 2 - End	0	0	0	0	0	0	0	0	0
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0
4	Perm 3 - End	0	0	0	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase						12345678	12345678	12345678	12345678
B	Perm 1 Ped Phase						12345678	12345678	12345678	12345678
C	Perm 2 Veh Phase									
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase									
F	Perm 3 Ped Phase									

**Coordination - Bank 2** <C+0+C=2>

**Coord Extra**  
 1 = Programmed WALK Time for Sync Phases  
 2 = Always Terminate Sync Phase Peds

Row		E	Row
0			0
1	Plan 1 - Sync		1
2	Plan 2 - Sync		2
3	Plan 3 - Sync		3
4	Plan 4 - Sync		4
5	Plan 5 - Sync		5
6	Plan 6 - Sync		6
7	Plan 7 - Sync		7
8	Plan 8 - Sync		8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

**Sync Phases** <C+0+C=1>  
 [Coordination Functions]

Row		F	Row
0	Free Lag		0
1	Plan 1 - Lag		1
2	Plan 2 - Lag		2
3	Plan 3 - Lag		3
4	Plan 4 - Lag		4
5	Plan 5 - Lag		5
6	Plan 6 - Lag		6
7	Plan 7 - Lag		7
8	Plan 8 - Lag		8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

**Lag Phases** <C+0+C=1>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set DOW	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	40	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	44	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	0	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	53	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	80	NOT-1	220	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	75	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	221	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

**Assignable Inputs**  
 [Input Assignments]

<C=0+E=126>

Row	Column 9	Column A	Column B	Column C	Column D	Column E	Column F	Row							
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	220	NOT-1	221	TOD Out 1	201	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	211	OR-1	0	TOD Out 2	202	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	209	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	212	OR-2	0	TOD Out 3	203	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	213	OR-3	0	TOD Out 4	204	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	214	AND-1	0	TOD Out 5	205	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	215	AND-2	0	TOD Out 6	206	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	216	AND-3	0	TOD Out 7	207	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	217	NOT-2	0	TOD Out 8	208	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	218	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	219	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	19	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

**Assignable Outputs**  
 [Output Assignments]

<C=0+E=127>

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extension  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

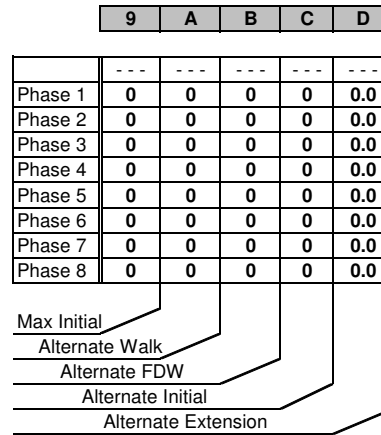
**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

		Phase							
Column Numbers ---->		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	0	7	0	10	15	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
6	Max Gap	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
7	Min Gap	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
8	Max Limit	0	25	0	25	0	25	15	25
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	4.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0

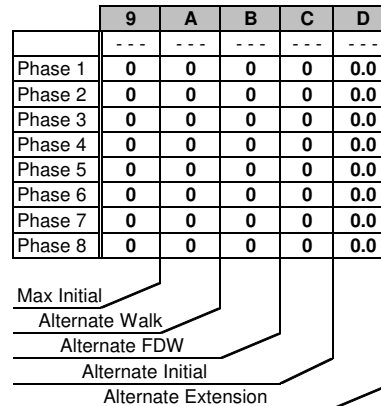
**Phase Timing - Bank 2** <C=0+F=2>  
 [Phase Timing Bank2]

		1	2	3	4	5	6	7	8
Row	Phase Names ---->	0	0	0	0	0	0	0	0
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	0	10	0	7	0	10	15	7
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
6	Max Gap	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
7	Min Gap	0.0	3.0	0.0	2.0	0.0	3.0	0.0	2.0
8	Max Limit	0	250	0	250	0	250	150	250
9	Max Limit 2	0	250	0	250	0	250	150	250
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Min	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	4.0	0.0	4.0	0.0	4.0	4.0	4.0
F	Red Clear	0.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0

**Phase Timing - Bank 3** <C=0+F=3>  
 [Phase Timing Bank 3]



**Alternate Timing**  
 [Phase Timing Bank2]



**Alternate Timing**  
 [Phase Timing Bank 3]

Transition Type  
 0.X = Shortway  
 1.X = Lengthen  
 X.1 thru X.4 =  
 Number of  
 cycles when  
 lengthing

Daylight Savings  
 Date  
 If set to all zeros,  
 standard dates  
 will be used.

Low Priority  
 1 = Channel A  
 2 = Channel B  
 3 = Channel C  
 4 = Channel D

Transition Type | 0.2 | <C/5+1+9>

**TBC Transition**  
 [Coordination Functions]

Cycle 1 Fail | 0 | C/5+1+1  
 Cycle 2 Fail | 0 | C/5+1+2

**Cycle Fail Thresholds (minutes)**

[Coordination Functions]

Lag Hold Phases | | <C/5+1+A>

**Coordinated Lag Hold Phases**

[Coordination Functions]

Sync Output Time | 0.0 | <C/5+1+C>

**7-Wire Master**

[Coordination Function/ called Sync Time]

Begin Month | 3 | <C/5+2+A>  
 Begin Week | 2 | <C/5+2+B>  
 End Month | 11 | <C/5+2+C>  
 End Week | 1 | <C/5+2+D>

**Daylight Savings Time**

[Dialback and Daylight Saving]

Time B4 Yellow | 0.0 | <F/1+C+E>  
 Phase Number | 0 | <F/1+C+F>

**Advance Warning Beacon - Sign 1**

[Miscellaneous Timing]

Time B4 Yellow | 0.0 | <F/1+D+E>  
 Phase Number | 0 | <F/1+D+F>

**Advance Warning Beacon - Sign 2**

[Miscellaneous Timing]

Long Failure | 0.7 | <F/1+0+6>  
 Short Failure | 0.7 | <F/1+0+7>

**Power Cycle Correction** (Default = 0.7)

[Miscellaneous Timing]

Min Time (seconds) | 0 | <F/1+0+8>

**Min Green Before PE Force Off**

[Preempt Parameters]

Max Time (minutes) | 255 | <F/1+0+9>

**Max Preempt Time Before Failure**

[Preempt Parameters]

Min Time (seconds) | 0 | <F/1+0+A>

**Min Time Between Same Preempts**

(Does Not Apply To Railroad Preempt)

Low Pri. Channel | | <E/125+C+8>

**Disable Low Priority Channel**

[Preempt Parameters]

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Column Numbers ---->		0	1	2	3	1	3
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	1		39	5 7	2	123 8	0.0 0.0
1	2		41	5 7	3	123 8	0.0 0.0
2	3		40	5 7	6	123 8	0.0 0.0
3	4		42	5 7	3	123 8	5.0 0.0
4	5		45	5 7	3	123 8	0.0 0.0
5	6		0				0.0 0.0
6	7		209	7	4	123	0.0 0.0
7	8		0				0.0 0.0
8	9		58	5 7	3	123	0.0 0.0
9	10		0				0.0 0.0
A	11		0				0.0 0.0
B	12		0				0.0 0.0
C	13		0				0.0 0.0
D	14		0				0.0 0.0
E	15		0				0.0 0.0
F	16		0				0.0 0.0

**Detector Types**  
 EXTENTION: Detector only active during the Phase Green Interval  
 COUNT: used in computing "Added Initial  
 CALL: Detector only active during the non green phase will not extend the phases  
 TYPE 3: will allow a call detector to extend its phase until the call first drops or the type 3 limit is reached

Column Numbers ---->		Ped / Phase / Overlap								Row
		1	2	3	4	5	6	7	8	
Walk		0	0	0	0	0	0	0	0	0
Don't Walk		0	0	0	0	0	0	0	0	1
Phase Green		0	0	0	0	0	0	0	0	2
Phase Yellow		0	0	0	0	0	0	0	0	3
Phase Red		0	0	0	0	0	0	0	0	4
Overlap Green		0	0	0	0	0	0	0	0	5
Overlap Yellow		0	0	0	0	0	0	0	0	6
Overlap Red		0	0	0	0	0	0	0	0	7

**Redirect Phase Outputs** <C+0+E=127>

[Phase Output Redirections]

Cabinet Type	0	<E/125+D+0>	D	Row
Enable Redirection		(Enable Redirection = 30)	Output Bit:	12345678
[Phase Output Redirection]			Output Port 1	1
Max OFF (minutes)	255	<D/0+0+1>	Output Port 2	2
Max ON (minutes)	7	<D/0+0+2>	Output Port 3	3
Detector Failure Monitor			Output Port 4	4
[Miscellaneous Timing]			Output Port 5	5
			Output Port 6	6
			Output Port 7	7

**Dimming** <C+0+E=125>

[Output Dimming]

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

**Delay Logic Times**

<C+0+D=0> (seconds)

[Miscellaneous Timing]

Omit Alarm		<C/5+F+0>
------------	--	-----------

**Disable Alarm Reporting**

[Dialback and Daylight Saving]

Time	0	<C/5+C+0>
------	---	-----------

**Redial Time** (minutes)

(View Redial Timer at E/2+D+6)

[Dialback and Daylight Saving]

Column Numbers ---->		4	5	6	7	2	4
Row	Det Num	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Carry-over
0	17		0				0.0 0.0
1	18		0				0.0 0.0
2	19		0				0.0 0.0
3	20		0				0.0 0.0
4	21		0				0.0 0.0
5	22		0				0.0 0.0
6	23		0				0.0 0.0
7	24		0				0.0 0.0
8	25		0				0.0 0.0
9	26		0				0.0 0.0
A	27		0				0.0 0.0
B	28		0				0.0 0.0
C	29		0				0.0 0.0
D	30		0				0.0 0.0
E	31		0				0.0 0.0
F	32		0				0.0 0.0

**Detector Attributes**  
 1 = Full Time Delay  
 2 = Ped Call  
 3 =  
 4 = Count  
 5 = Extension  
 6 = Type 3  
 7 = Calling  
 8 = Alternate

**Det. Assignments**  
 1 = Det. Set 1  
 2 = Det. Set 2  
 3 = Det. Set 3  
 4 =  
 5 =  
 6 = Failure - Min Recall  
 7 = Failure - Max Recall  
 8 = Report on Failure

**Detector Assignments** <C+0+E=126>

[Detector Attributes]

**Detector Timing** <C+0+D=0>

[Detector Timing]

Number of Digits	D
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

**Dial-Back Telephone Number**

[Dialback and Daylight Saving]

**Disable Alarms**

- 1 = Stop Time
- 2 = Flash Sense
- 3 = Keyboard Entry
- 4 = Manual Plan
- 5 = Police Control
- 6 = External Alarm
- 7 = Detector Failure
- 8 =

Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Row	Time	Plan	Offset	Day of Week
0	00:00	E	0	1234567
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.1>  
 (Bank 1)  
 [Time of Day Functions]

Time	Funct.	Day of Week
00:00	E	1234567
06:00	E	1234567
23:00	E	1234567
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**TOD Function** <C+0+7=0.1>  
 [Time of Day Functions]

Column 4 Phases/Bits
4 8
8
4 8

<C+0+E=27>

Day	Year	Month	Holiday Type
01	03	1	1
04	03	7	1
26	03	11	2
27	03	11	1
28	03	11	3
24	03	12	2
25	03	12	1
00	00	0	
01	00	1	1
04	00	7	1
22	00	11	2
23	00	11	1
24	00	11	3
24	00	12	2
25	00	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.1>  
 (Bank 1)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
00:00	4	C	123
00:00	0	0	
06:00	1	C	2
09:00	4	C	2
12:00	3	C	2
20:00	4	C	2
00:00	0	0	
05:00	1	C	3
09:00	4	C	3
16:00	3	C	3
19:00	4	C	3
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.1>  
 (Bank 1)  
 [Holiday TBC Plans]

**T.O.D. Functions**  
 0 =  
 1 = Red Lock  
 2 = Yellow Lock  
 3 = Veh Min Recall  
 4 = Ped Recall  
 5 =  
 6 = Rest In Walk  
 7 = Red Rest  
 8 = Double Entry  
 9 = Veh Max Recall  
 A = Veh Soft Recall  
 B = Maximum 2  
 C = Conditional Service  
 D = Free Lag Phases  
 E = Bit 1 - Local Override  
 Bit 4 - Disable Detector  
 OFF Monitor  
 Bit 7 - Detector Count  
 Monitor  
 Bit 8 - Real Time Split  
 Monitor  
 F = Output Bits 1 thru 8

**Plan Select**  
 1 thru 9 = Coordination  
 Plan 1 thru 9  
 14 or E = Free  
 15 or F = Flash  
  
**Offset Select**  
 A = Offset A  
 B = Offset B  
 C = Offset C

**Month Select**  
 1 = January  
 2 = February  
 3 = March  
 4 = April  
 5 = May  
 6 = June  
 7 = July  
 8 = August  
 9 = September  
 A = October  
 B = November  
 C = December

Row	Time	Plan	Offset	Day of Week
0	00:00	0	0	
1	00:00	0	0	
2	00:00	0	0	
3	00:00	0	0	
4	00:00	0	0	
5	00:00	0	0	
6	00:00	0	0	
7	00:00	0	0	
8	00:00	0	0	
9	00:00	0	0	
A	00:00	0	0	
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

**TOD Coordination** <C+0+9=0.2>  
 (Bank 2)  
 [Time Base Coordination]

Time	Funct.	Holiday Type
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	
00:00	0	

**Holiday TOD Function** <C+0+7=0.2>  
 [Time of Day Functions]

Column 4 Phases/Bits

<C+0+E=28>

Day	Year	Month	Holiday Type
01	01	1	1
04	01	7	1
21	01	11	2
22	01	11	1
23	01	11	3
24	01	12	2
25	01	12	1
00	00	0	
01	02	1	1
04	02	7	1
20	02	11	2
21	02	11	1
22	02	11	3
24	02	12	2
25	02	12	1
00	00	0	

**Holiday Dates** <C+0+8=1.2>  
 (Bank 2)  
 [Holiday Dates]

Time	Plan	Offset	Holiday Type
05:30	0	0	
09:00	0	0	
00:00	0	0	
00:00	0	0	
16:00	0	0	
19:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

**Holiday Events** <C+0+9=1.2>  
 (Bank 2)  
 [Holiday TBC Plans]



Display Indications:  
 0=Walk  
 1=Flashing Don't Walk  
 2=Minimum Green

4=Variable Initial  
 5=Extention  
 7=Reduce GAP  
 8=Red Rest  
 9=Preemption  
 A=Stop Time

B=Red Revert  
 C=Yellow Gap Term  
 D=Yellow Gap Max Term  
 E=Yellow Force-Off Term  
 F=Red Clearance

**INTERSECTION: C0139-Grant Ramseur & Pettigrew**

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 1** <C+0+E=27>  
 [Special Event Sequence 1]

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

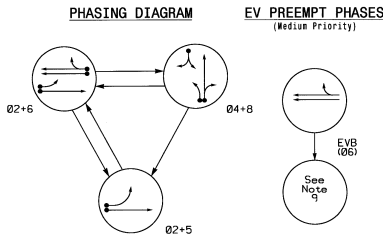
0 <E/27+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 1]

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Circuit
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

**Special Event Schedule -- Table 2** <C+0+E=28>  
 [Special Event Sequence 2]

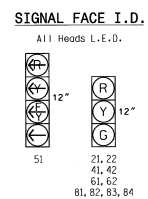
Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

0 <E/28+5+F>  
**Limited Service Interval**  
 [Special Event Sequence 2]



SIGNAL FACE	PHASE					
	02+5	02+6	04+8	04+9	04+7	04+6
21, 22	G	R	R	R	Y	
41, 42	R	R	G	R	R	
51	-	Y	-	-	-	Y
61, 62	R	G	R	G	R	Y
81, 82, 83, 84	R	R	G	R	R	Y

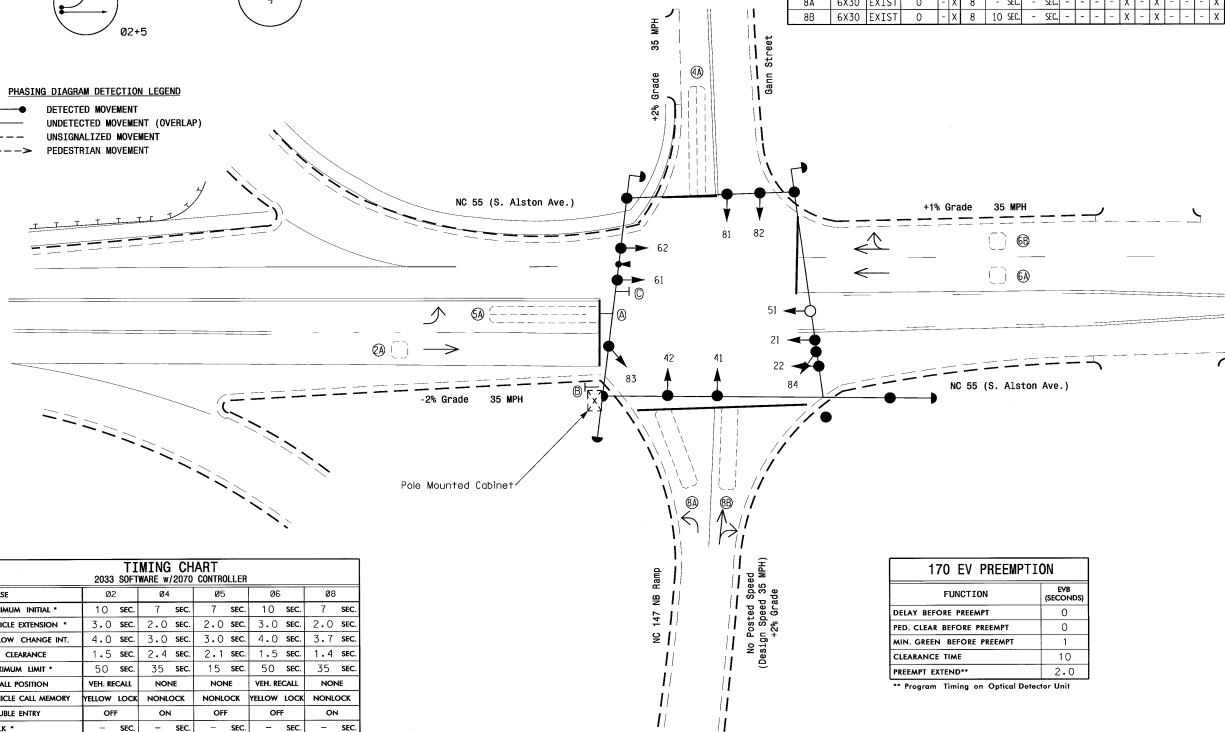
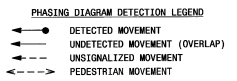
Y = Flashing Yellow Arrow



2033 SOFTWARE w/ 2070 CONTROLLER LOOP & DETECTOR UNIT INSTALLATION CHART									
INDUCTIVE LOOPS					DETECTOR PROGRAMMING				
LOOP NO.	SIZE (ft)	TURNS	ORF FROM STOPBAR (ft)	ORF TO DETECTOR	DETECTABLE	DELAY	CARRY (SECONDS)	ATTRIBUTES	STATUS
2A	6X6	EXIST	70	-	X	2	-	SEC	-
4A	6X40	2-4-2	0	-	X	4	10	SEC	-
5A	6X40	2-4-2	0	-	X	5	15	SEC	-
6A	6X6	EXIST	70	-	X	6	-	SEC	-
6B	6X6	EXIST	70	-	X	6	-	SEC	-
8A	6X30	EXIST	0	-	X	8	-	SEC	-
8B	6X30	EXIST	0	-	X	8	10	SEC	-

3 Phase Fully Actuated w/Emergency Vehicle Preemption (Durham Signal System)

- NOTES**
- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
  - Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
  - Phase 5 may be logged.
  - Set all detector units to presence mode.
  - Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
  - Set phase bank 3 maximum limit to 250 seconds for phases used.
  - Pavement markings are existing.
  - This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
  - Upon completion of Emergency Vehicle Preemption, controller returns to normal operation based on vehicle demand.
  - Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

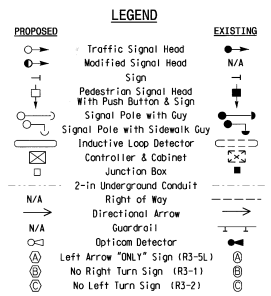


PHASE	2033 SOFTWARE w/ 2070 CONTROLLER				
	02	04	05	06	08
MINIMUM INITIAL *	10 SEC	7 SEC	7 SEC	10 SEC	7 SEC
VEHICLE EXTENSION *	3.0 SEC	2.0 SEC	2.0 SEC	3.0 SEC	2.0 SEC
YELLOW CHANGE INT.	4.0 SEC	3.0 SEC	3.0 SEC	4.0 SEC	3.7 SEC
RED CLEARANCE	1.5 SEC	2.4 SEC	2.1 SEC	1.5 SEC	1.4 SEC
MAXIMUM LIMIT *	50 SEC	35 SEC	15 SEC	50 SEC	35 SEC
RECALL POSITION	VEH. RECALL	NONE	NONE	VEH. RECALL	NONE
VEHICLE CALL MEMORY	YELLOW LOCK	NONLOCK	NONLOCK	YELLOW LOCK	NONLOCK
DOUBLE ENTRY	OFF	ON	OFF	OFF	ON
WALK *	- SEC	- SEC	- SEC	- SEC	- SEC
FLASHING DON'T WALK	- SEC	- SEC	- SEC	- SEC	- SEC
TYPE B LIMIT	- SEC	- SEC	- SEC	- SEC	- SEC
ALTERNATE EXTENSION	- SEC	- SEC	- SEC	- SEC	- SEC
JUDO FOR VEHICLE *	- SEC	- SEC	- SEC	- SEC	- SEC
MAXIMUM INITIAL *	- SEC	- SEC	- SEC	- SEC	- SEC
MAXIMUM GAP*	3.0 SEC	2.0 SEC	2.0 SEC	3.0 SEC	2.0 SEC
REDUCE 0.3 SEC EVERY *	- SEC	- SEC	- SEC	- SEC	- SEC
MINIMUM GAP	3.0 SEC	2.0 SEC	2.0 SEC	3.0 SEC	2.0 SEC

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

170 EV PREEMPTION	
FUNCTION	EVB (SECONDS)
DELAY BEFORE PREEMPT	0
FED. CLEAR BEFORE PREEMPT	0
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	10
PREEMPT EXTEND**	2.0

\*\* Program Timing on Optical Detector Unit



Signal Upgrade

NC 55 (South Alston Avenue) at NC 147 NB Ramp/Gann Street

Division 5 Durham County Durham

PLAN DATE: April 2013 REVIEWED BY:

PREPARED BY: L. BLOUNT REVIEWED BY:

SCALE: 1"=20'

DATE: 05/15/13

SIG. INVENTORY NO. 05-0284

**INTERSECTION: 0284-Alston Gann & NC 147 NB**

QuicNet System Parameters

Group Assignment: **p**  
 Field Master Assignment: **NONE**  
 System Reference Number: **173**  
 Communications Channel: **COM111:**  
 Drop Address: **1**  
 Area Number: **2**  
 Area Address: **59**

N/S Street Name: **Not Assigned**  
 E/W Street Name: **Not Assigned**

Last QuicNet Database Change: 11/7/2013 10:51

Notes:

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Field Change Record					
Change	By	Date	Change	By	Date

Excl Ped Assignment	_____	<b>Note:</b> Set the Exclusive Ped Outputs on the "Outputs / General" page
Exclusive Walk	0	
Exclusive FDW	0	
All Red Clear	0.0	

Walk Output	0
Don't Walk Output	0

**Exclusive Ped Phase**

	Phase							
	1	2	3	4	5	6	7	8
Min Green	0	10	0	7	0	0	0	0
Extension	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
Max	0	20	0	14	0	0	0	0
Max 2	0	0	0	0	0	0	0	0
Cond Serve Check	0	0	0	0	0	0	0	0

	Phase							
	1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 1**

Yellow Change	0.0	4.0	0.0	3.8	0.0	0.0	0.0	0.0
Red Clear	0.0	1.5	0.0	1.5	0.0	0.0	0.0	0.0

Red Lock	_____	Red Rest	_____
Yellow Lock	2	Dual Entry	_____
Simultaneous Gap	_____	Sequential Timing	_____
Rest In Walk	_____	Inhibit Ped Reservice	_____
Advance Walk	_____	Semi-Actuated	_____
Flashing Walk	_____	Guaranteed Passage	_____
Max Extension	_____	Conditional Service	_____

Walk	0	0	0	0	0	0	0	0
Ped Clear - FDW	0	0	0	0	0	0	0	0
Adv / Delay Walk	0	0	0	0	0	0	0	0
PE Min Ped FDW	0	0	0	0	0	0	0	0

**Phase Functions - Page 1**

Type 3 Disconnect	0	0	0	0	0	0	0	0
Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Added Initial	0	0	0	0	0	0	0	0
Min Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
Max Gap	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Minimum Recall	2	Soft Recall	_____
Ped Recall	_____	External Recall	_____
Maximum Recall	2	Manual Control Calls	2 4
Green Flash	_____	Fast Green Flash	_____
Overlap Green Flash	_____	Fast Overlap G. Flash	_____

**Phase Functions - Page 2**

**Phase Timing - Bank 1**

		Phase							
		1	2	3	4	5	6	7	8
Basic Phase Timing	Min Green	0	0	10	0	7	0	0	0
	Extension	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Max	0	0	16	0	20	0	0	0
	Max 2	0	0	0	0	0	0	0	0
	Cond Serve Check	0	0	0	0	0	0	0	0
Clear	Yellow Change	0.0	0.0	4.0	0.0	4.0	0.0	0.0	0.0
	Red Clear	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0
Pedestrian Timing	Walk	0	0	0	0	0	0	0	0
	Ped Clear - FDW	0	0	0	0	0	0	0	0
	Adv / Delay Walk	0	0	0	0	0	0	0	0
	PE Min Ped FDW	0	0	0	0	0	0	0	0
Volume Density	Type 3 Disconnect	0	0	0	0	0	0	0	0
	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Added Initial	0	0	0	0	0	0	0	0
	Min Gap	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Max Gap	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 2**

		Phase							
		1	2	3	4	5	6	7	8
Basic Phase Timing	Min Green	0	0	10	0	7	0	0	0
	Extension	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Max	0	0	250	0	20	0	0	0
	Max 2	0	0	250	0	20	0	0	0
	Cond Serve Check	0	0	0	0	0	0	0	0
Clear	Yellow Change	0.0	0.0	4.0	0.0	3.8	0.0	0.0	0.0
	Red Clear	0.0	0.0	1.5	0.0	1.5	0.0	0.0	0.0
Pedestrian Timing	Walk	0	0	0	0	0	0	0	0
	Ped Clear - FDW	0	0	0	0	0	0	0	0
	Adv / Delay Walk	0	0	0	0	0	0	0	0
	PE Min Ped FDW	0	0	0	0	0	0	0	0
Volume Density	Type 3 Disconnect	0	0	0	0	0	0	0	0
	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max Added Initial	0	0	0	0	0	0	0	0
	Min Gap	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Max Gap	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0
	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Phase Timing - Bank 3**

		Phase							
		1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 2**

		Phase							
		1	2	3	4	5	6	7	8
Alternate Walk	0	0	0	0	0	0	0	0	0
Alternate Ped Clear	0	0	0	0	0	0	0	0	0
Alternate Minimum	0	0	0	0	0	0	0	0	0
Alternate Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Alternate Timing - Bank 3**

Note: Set the Limited Service Interval on the "Utilities / Misc" page

Clear Phases	
Delay	0
Clear Time	0
<b>Railroad - 1</b>	

Clear Phases	
Limited Service Phases	
Delay	0
Clear Time	0
<b>Railroad - 2</b>	

**Railroad Preempt Parameters**

Min Grn Before PE Force-Off	0
Max Pre-Empt Time	255
Min Time Before Same PE	0

	Delay	Clear	Clear Phases
EV - A	0	0	
EV - B	0	20	
EV - C	0	0	
EV - D	0	0	

**Emergency Vehicle Preempt**

SE - 1	1
SE - 2	1
EV - A	1
EV - B	1
EV - C	1
EV - D	1

**Preempt Priority**

Step	Time	Clear	Ped Call	Hold	Advance	Force Off	Vehicle Call	Permit	Ped Omit	Output
0	254		234	4						
1	254		234							
2	254		234	4						
3	0									
4	0									
5	0									
6	0									
7	0									
8	0									
9	0									
10	0									
11	0									
12	0									
13	0									
14	0									
15	0									

**Special Event Sequence - 1**

Step	Time	Clear	Ped Call	Hold	Advance	Force Off	Vehicle Call	Permit	Ped Omit	Output
0	0									
1	0									
2	0									
3	0									
4	0									
5	0									
6	0									
7	0									
8	0									
9	0									
10	0									
11	0									
12	0									
13	0									
14	0									
15	0									

**Special Event Sequence - 2**

Note:  
The Ring-Barrier Sum of these Minimums will be the Minimum Cycle Length During Transition

Transition Type	0.3
Coord Extra Functions	
Phase 1 - Minimum	10
Phase 2 - Minimum	10
Phase 3 - Minimum	10
Phase 4 - Minimum	10
Phase 5 - Minimum	10
Phase 6 - Minimum	10
Phase 7 - Minimum	10
Phase 8 - Minimum	10
<b>Coordination - General</b>	

- Coord Extra
- 1 = Programmed Walk Time for Sync Phases
  - 2 = Always Terminate Sync Phase Peds
  - 3 = Use "Floating Force Off"
  - 4 =
  - 5 = Use "Start of Green" for Sync Point

- Transition Type
- 0.X = Shortway
  - 1.X = Lengthen Only
  - 2.X = Shorten Only
  - X.1 thru X.4 = Number of Cycles to get "In Step"

	Coordination Plan								
	1	2	3	4	5	6	7	8	9
Cycle	0	75	0	80	85	0	0	0	0
Offset - 1	0	54	0	26	60	0	0	0	0
Offset - 2	0	54	0	26	60	0	0	0	0
Offset - 3	0	54	0	26	60	0	0	0	0
Zone Offset	0	0	0	0	0	0	0	0	0
Ring Offset	0	0	0	0	0	0	0	0	0
Hold Release	0	255	255	255	255	255	255	255	255
Ped Adjust	0	0	0	0	0	0	0	0	0
Force Off - 1	1	0	0	0	0	0	0	0	0
Force Off - 2	0	0	0	0	0	0	0	0	0
Force Off - 3	0	0	0	0	0	0	0	0	0
Force Off - 4	0	25	0	25	20	0	0	0	0
Force Off - 5	0	0	0	0	0	0	0	0	0
Force Off - 6	0	0	0	0	0	0	0	0	0
Force Off - 7	0	0	0	0	0	0	0	0	0
Force Off - 8	0	0	0	0	0	0	0	0	0
<b>Coordination - Cycle, Offsets, &amp; Force Offs</b>									

	Coordination Plan								
	1	2	3	4	5	6	7	8	9
Perm 1 - Begin	0	0	0	0	0	0	0	0	0
Perm 1 - End	0	12	0	12	6	0	0	0	0
Perm 1 - Veh Phases		4		4	4		12345678	12345678	12345678
Perm 1 - Ped Phases							12345678	12345678	12345678
Perm 2 - Begin	0	0	0	0	0	0	0	0	0
Perm 2 - End	0	0	0	0	0	0	0	0	0
Perm 2 - Veh Phases									
Perm 2 - Ped Phases									
Perm 3 - Begin	0	0	0	0	0	0	0	0	0
Perm 3 - End	0	0	0	0	0	0	0	0	0
Perm 3 - Veh Phases									
Perm 3 - Ped Phases									
Max Inhibit Phases									
Max Recall Phases		2		2	2				
Sync Phases									
Lag Phases	2 6		2 6	2 6					2 6
Pre-Timed Phases									
<b>Coordination - Permissives &amp; Phase Sequence</b>									

	Overlap Number							
	1	2	3	4	5	6	7	8
Load Switch Number	0	0	0	0	0	0	0	0
Vehicle Set 1	_____	_____	_____	_____	_____	_____	_____	_____
Vehicle Set 2	_____	_____	_____	_____	_____	_____	_____	_____
Vehicle Set 3	_____	_____	_____	_____	_____	_____	_____	_____
Negative Vehicle	_____	_____	_____	_____	_____	_____	_____	_____
Negative Ped	_____	_____	_____	_____	_____	_____	_____	_____
Green Omit	_____	_____	_____	_____	_____	_____	_____	_____
Green Clear Omit	_____	_____	_____	_____	_____	_____	_____	_____
Green Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Overlaps**

	AND 1	AND 2	AND 3	AND 4
Input - A	0	0	0	0
Input - B	0	0	0	0
Output	0	0	0	0

**AND Gates**

	NAND 1	NAND 2	NAND 3	NAND 4
Input - A	0	0	0	0
Input - B	0	0	0	0
Output	0	0	0	0

**NAND Gates**

	OR 1	OR 2	OR 3	OR 4	OR 5	OR 6
Input - A	0	0	0	0	0	0
Input - B	0	0	0	0	0	0
Output	0	0	0	0	0	0

**2 Input - OR Gates**

	OR 7	OR 8
Input - A	0	0
Input - B	0	0
Input - C	0	0
Input - D	0	0
Output	0	0

**4 Input - OR Gates**

	NOT 1	NOT 2	NOT 3	NOT 4
Input	0	0	0	0
Output	0	0	0	0

**NOT Gates (Inverters)**

	DELAY 1	DELAY 2	DELAY 3	DELAY 4	DELAY 5	DELAY 6
Input	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0
Output	0	0	0	0	0	0

**DELAY Gates**

Latch:	1	2	3	4	5	6	7	8
Set	0	0	0	0	0	0	0	0
Reset	0	0	0	0	0	0	0	0
Out	0	0	0	0	0	0	0	0
/Out	0	0	0	0	0	0	0	0

**Logic Latches**

Det. #	C-1 Pin #	Delay	Carry-over	Phase Assignmnrnts	Detector Attributes	Detector Set Assignments
1	41	0.0	0.0	4	5 7	123 8
2	45	3.0	0.0	4	5 7	123 8
3	55	0.0	0.0	4	5 7	123 8
4	0	0.0	0.0			
5	0	0.0	0.0			
6	0	0.0	0.0			
7	0	0.0	0.0			
8	0	0.0	0.0			
9	0	0.0	0.0			
10	0	0.0	0.0			
11	0	0.0	0.0			
12	0	0.0	0.0			
13	0	0.0	0.0			
14	0	0.0	0.0			
15	0	0.0	0.0			
16	0	0.0	0.0			
17	0	0.0	0.0			
18	0	0.0	0.0			
19	0	0.0	0.0			
20	0	0.0	0.0			
21	0	0.0	0.0			
22	0	0.0	0.0			
23	0	0.0	0.0			
24	0	0.0	0.0			
25	0	0.0	0.0			
26	0	0.0	0.0			
27	0	0.0	0.0			
28	0	0.0	0.0			
29	0	0.0	0.0			
30	0	0.0	0.0			
31	0	0.0	0.0			
32	0	0.0	0.0			

**Detector Assignments**

**Detector Attributes**

- 1 = Full Time Delay
- 2 = Ped Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

**Detector Assignments**

- 1 = Detector Set 1
- 2 = Detector Set 2
- 3 = Detector Set 3
- 4 =
- 5 =
- 6 = Failure - Min Recall
- 7 = Failure - Max Recall
- 8 = Report on Failure

	C-1 Pin #
Flash Sense	81
External Permit - 1	0
External Permit - 2	0
External Permit - 3	0
Exclusive Ped Omit	0
Max. Term Inhibit	0
Max. 2	0
External Lag Phases	0
External Max. Recall	0
Stop Time	82
Manual Control Enable	0
Manual Cont. Advance	0
External Min. Recall	0

**General Inputs**

	C-1 Pin #
Railroad - 1	51
Railroad - 2	52
Special Event - 1	0
Special Event - 2	0
Gate Down	0
EV - A	71
EV - B	72
EV - C	73
EV - D	74

**Preempt Inputs**

	C-1 Pin #
Door Ajar	0
UPS Battery	0
UPS Power	0
Cabinet Temperature	0

	C-1 Pin #
Plan 1	0
Plan 2	0
Plan 3	0
Plan 4	0
Plan 5	0
Plan 6	0
Plan 7	0
Plan 8	0
Plan 9	0
Free	0
Flash	0

**Coordination Plan Inputs**

	C-1 Pin #
Phase Bank - 2	0
Phase Bank - 3	0
Detector Set - 2	0
Detector Set - 3	0
Overlap Vehicle Set - 2	0
Overlap Vehicle Set - 3	0

**Bank & Set Inputs**

	C-1 Pin #
Alarm - 1	0
Alarm - 2	0
Alarm - 3	0
Alarm - 4	0



	C-1 Pin #
Advance Warning - 1	0
Advance Warning - 2	0
Detector Failure	0
Flasher - Alternating 1	0
Flasher - Alternating 2	0
Fast Flasher	0
On Line	0
Exclusive - Walk	0
Exclusive - Don't Walk	0

**General Outputs**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Time of Day Outputs**

	C-1 Pin #
Plan - 1	0
Plan - 2	0
Plan - 3	0
Plan - 4	0
Plan - 5	0
Plan - 6	0
Plan - 7	0
Plan - 8	0
Plan - 9	0
Free	0

**Coordination Plan Out**

	Ped Phase
Ped 2-P Loadswitch	2
Ped 4-P Loadswitch	4
Ped 6-P Loadswitch	6
Ped 8-P Loadswitch	8

**Ped Loadswitch Assignment**

	C-1 Pin #
Dial - 2	0
Dial - 3	0
Offset - 1	0
Offset - 2	0
Offset - 3	0
Free	0
Flash	0

**Seven Wire Outputs**

	C-1 Pin #	
	On	Flash
Railroad - 1	0	0
Railroad - 2	0	0
Special Event - 1	0	0
Special Event - 2	0	0
Preempt Failure	0	0
EV - A	0	0
EV - B	0	0
EV - C	0	0
EV - D	0	0
Any Preempt	0	0

**Preemption Outputs**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Special Event Outputs**

	C-1 Pin #
Phase - 1	0
Phase - 2	0
Phase - 3	0
Phase - 4	0
Phase - 5	0
Phase - 6	0
Phase - 7	0
Phase - 8	0

**FYA PPLT Outputs**

	Phase Number							
	1	2	3	4	5	6	7	8
Red	0	0	0	0	0	0	0	0
Yellow	0	0	0	0	0	0	0	0
Green	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0

**Phase Output Redirection**

	C-1 Pin #
Output - 1	0
Output - 2	0
Output - 3	0
Output - 4	0
Output - 5	0
Output - 6	0
Output - 7	0
Output - 8	0

**Special Function Output**

	Overlap Number							
	1	2	3	4	5	6	7	8
Red	0	0	0	0	0	0	0	0
Yellow	0	0	0	0	0	0	0	0
Green	0	0	0	0	0	0	0	0

**Overlap Output Redirection**

Event	Day of Week	Season	Hour	Minute	Plan	Offset
0	1234567		0	0	E	0
1	1234567		6	0	E	0
2	1234567		23	0	E	0
3	_____		0	0	0	0
4	_23456_		6	0	1	C
5	_____		0	0	0	0
6	_____		0	0	0	0
7	_____		0	0	0	0
8	_23456_		16	0	3	C
9	_23456_		19	0	E	0
10	_____		0	0	0	0
11	_____		0	0	0	0
12	_____		0	0	0	0
13	_____		0	0	0	0
14	_____		0	0	0	0
15	_____		0	0	0	0
16	_____		0	0	0	0
17	_____		0	0	0	0
18	_____		0	0	0	0
19	_____		0	0	0	0
20	_____		0	0	0	0
21	_____		0	0	0	0
22	_____		0	0	0	0
23	_____		0	0	0	0
24	_____		0	0	0	0
25	_____		0	0	0	0
26	_____		0	0	0	0
27	_____		0	0	0	0
28	_____		0	0	0	0
29	_____		0	0	0	0
30	_____		0	0	0	0
31	_____		0	0	0	0

Time Base Coordination Events

Event	Day of Week	Season	Hour	Minute	Funct.	Phase / Bits
0	_____		0	0	0	_____
1	_____		0	0	0	_____
2	_____		0	0	0	_____
3	_____		0	0	0	_____
4	_____		0	0	0	_____
5	_____		0	0	0	_____
6	_____		0	0	0	_____
7	_____		0	0	0	_____
8	_____		0	0	0	_____
9	_____		0	0	0	_____
10	_____		0	0	0	_____
11	_____		0	0	0	_____
12	_____		0	0	0	_____
13	_____		0	0	0	_____
14	_____		0	0	0	_____
15	_____		0	0	0	_____

Time of Day Function Events

TOD Functions

- 0 = Permitted Phases
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Vehicle Min Recall
- 4 = Ped Recall
- 5 =
- 6 = Rest In Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Vehicle Max Recall
- 10 = Soft Recall
- 11 = Max Extension 2
- 12 = Conditional Service
- 13 = Lag Free Phases
- 14, Bit 1 = Local Override
- 14, Bit 4 = Disable Det Off Monitoring
- 15 = TOD Outputs

#	Holiday Type	Day	Month	Year
0		0	0	0
1	123	0	0	0
2	2 4	0	0	0
3	123	0	0	0
4	123	0	0	0
5	123	0	0	0
6	2 4	0	0	0
7	123	0	0	0
8	123	0	0	0
9		0	0	2
10	2	0	0	0
11	1	0	0	0
12	23	0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0

Holiday Dates

Event	Holiday Type	Hour	Minute	Plan	Offset
0	123	0	0	4	C
1		0	0	0	0
2	2	6	0	1	C
3	2	9	0	4	C
4	2	12	0	3	C
5	2	20	0	4	C
6		0	0	0	0
7	3	5	0	1	C
8	3	9	0	4	C
9	3	16	0	3	C
10	3	19	0	4	C
11		0	0	0	0
12		0	0	0	0
13		0	0	0	0
14		0	0	0	0
15		0	0	0	0
16		5	30	0	0
17		9	0	0	0
18		0	0	0	0
19		0	0	0	0
20		16	0	0	0
21		19	0	0	0
22		0	0	0	0
23		0	0	0	0
24		0	0	0	0
25		0	0	0	0
26		0	0	0	0
27		0	0	0	0
28		0	0	0	0
29		0	0	0	0
30		0	0	0	0
31		0	0	0	0

Holiday Time Base Coordination Events

Event	Holiday Type	Hour	Minute	Funct.	Phase / Bits
0		0	0	0	
1		0	0	0	
2		0	0	0	
3		0	0	0	
4		0	0	0	
5		0	0	0	
6		0	0	0	
7		0	0	0	
8		0	0	0	
9		0	0	0	
10		0	0	0	
11		0	0	0	
12		0	0	0	
13		0	0	0	
14		0	0	0	
15		0	0	0	

Holiday Time of Day Function Events

Season #	Start Month	Start Day	End Month	End Day
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0

Season Definitions

Red Start Time	0.0
Yellow Start Phases	_____
First Green Phases	2
Startup Vehicle Calls	_____
Startup Ped Calls	_____

**Startup**

Max ON Time	255
Max OFF Time	0
Chatter	_____

**Detector Check**

	<b>Sign 1</b>	<b>Sign 2</b>
Phase Number	0	0
Time Before Yellow	0.0	0.0

**Advance Warning Signs**

Flash Entry Phases	_____
Flash Phases Yellow	_____
Flash Overlaps Yellow	_____
Flash Type	_____

**Flash Setup**

Exclusive Phases	_____
Protect / Permissive	_____
Disable Yellow Range	_____
Extra One	1 3 5
Lag Phases - Free	_____

**Configuration**

Permitted Phases	2 4
Restricted Phases	_____
Disable Overlap Range	_____
Extra Two	_____
External Permit 1	_____
External Permit 2	_____
External Permit 3	_____

**Configuration**

Keyboard Beep	_____
Backlight Timeout	_____
Spec Evnt 1 - Ltd Serv Interval	0
Spec Evnt 2 - Ltd Serv Interval	0
Red Start	0.0
Flash Start	7
Red Revert	2.0

**Miscellaneous**

Spring Month (Begin)	_____
Spring Week (Begin)	_____
Fall Month (End)	_____
Fall Week (End)	_____

**Daylight Savings Time**

Manual Plan	_____
Manual Offset	_____

**Manual**

Address	_____
Area Number	_____
Area Address	_____
IP Port	_____
IP Address	_____
Subnet Mask	_____
Gateway	_____

**Ethernet Port Address**

	<b>Port 1</b>	<b>Port 2</b>	<b>Port 3</b>	<b>Port 4</b>
Address	_____	_____	_____	_____
Area Number	_____	_____	_____	_____
Area Address	_____	_____	_____	_____
Comm Time Out	_____	_____	_____	_____
CTS Delay	_____	_____	_____	_____
RTS Hold	_____	_____	_____	_____
Baud Rate	_____	_____	_____	_____
Data Format	_____	_____	_____	_____

**Communications Parameters**

Event	Day of Week	Hour	Minute	Headway	Direction
0		0	0	0	0
1		0	0	0	0
2		0	0	0	0
3		0	0	0	0
4		0	0	0	0
5		0	0	0	0
6		0	0	0	0
7		0	0	0	0
8		0	0	0	0
9		0	0	0	0
10		0	0	0	0
11		0	0	0	0
12		0	0	0	0
13		0	0	0	0
14		0	0	0	0
15		0	0	0	0

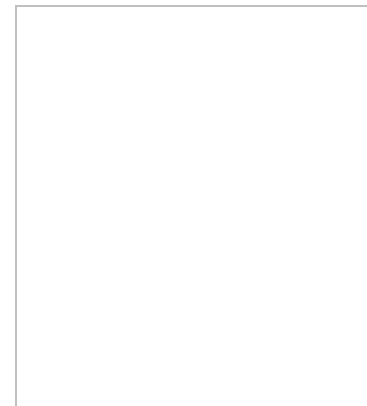
**Bus Headway Schedule**

Approach	A	B	C	D
Travel Time	0	0	0	0
Passage	0	0	0	0
Extension	0	0	0	0
Phases				

**Bus Approach**

	A	B	C	D
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0

**Non-Priority Phase Maximums**

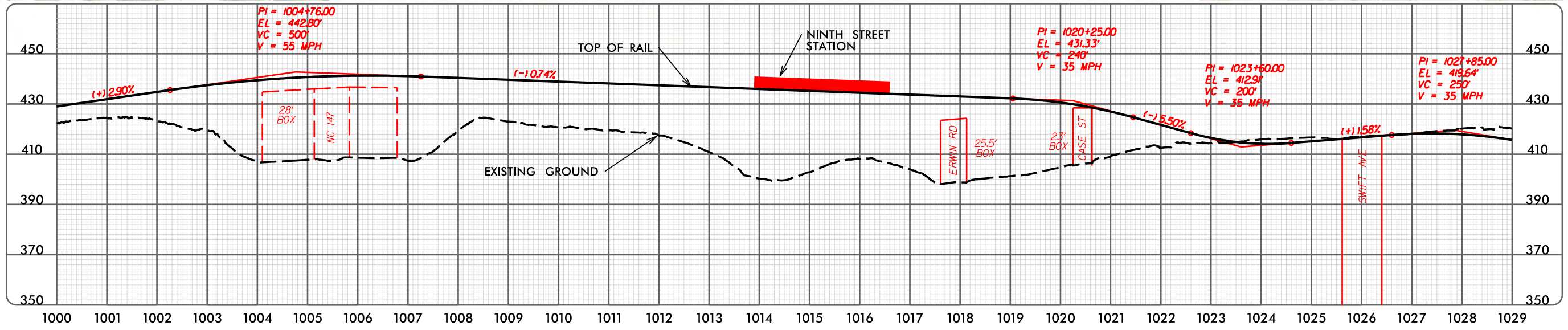
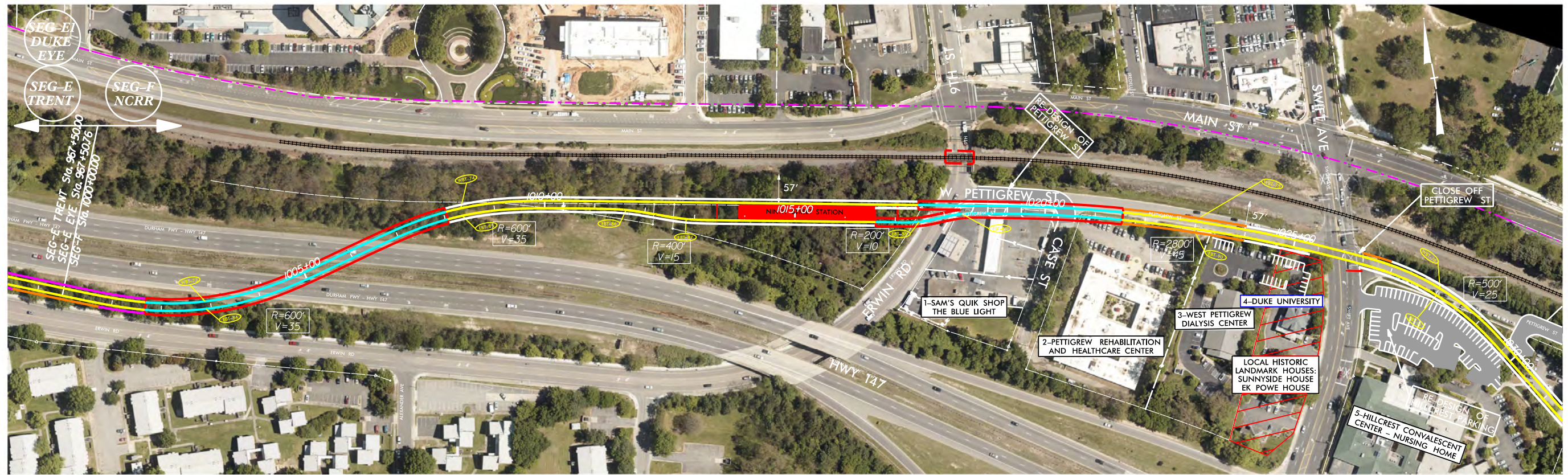


# **Appendix D**

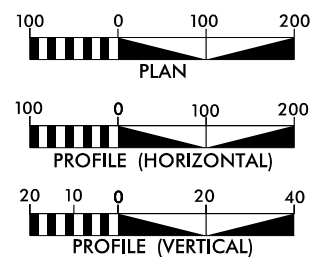
## **LRT Options Design Plans**

# Alternative 1

# NARR CORRIDOR - NINTH STREET STATION



### GRAPHIC SCALES



CONCEPT PLANS ONLY  
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### LEGEND

- AT-GRADE
- ELEVATED
- - - EXIST NARR
- WETLANDS
- STATION



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### PLAN AND PROFILE

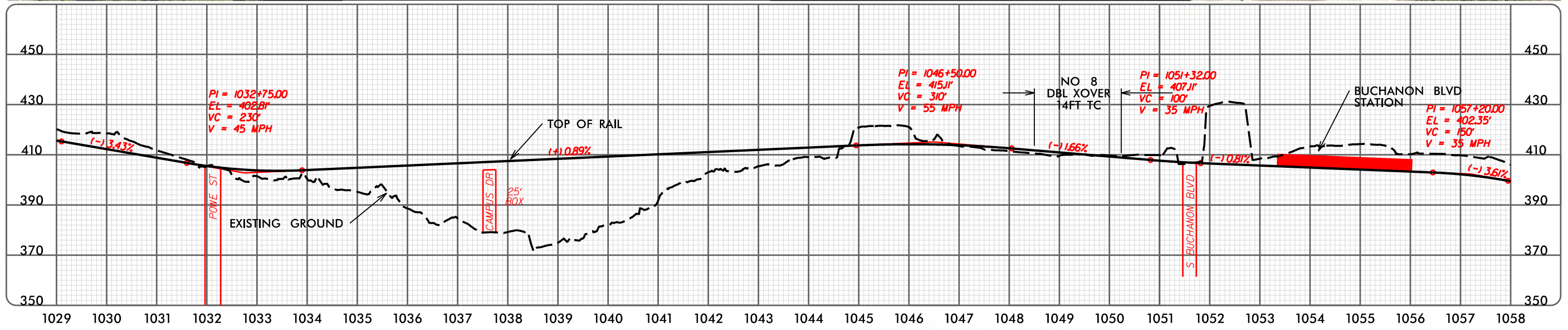
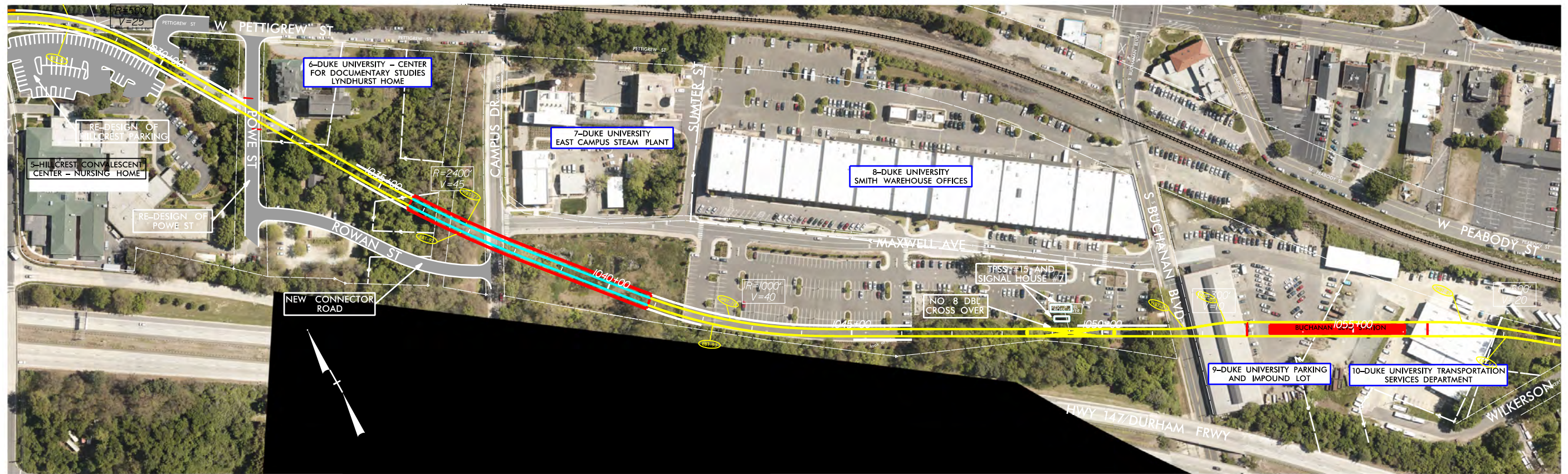
SEGMENT F

PLAN &  
PROFILE

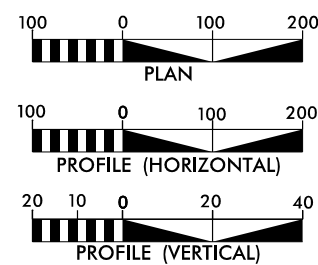
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# BUCHANAN BLVD STATION



### GRAPHIC SCALES



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### LEGEND

- AT-GRADE
- ELEVATED
- - - - - EXIST NCRR
- WETLANDS
- █ STATION



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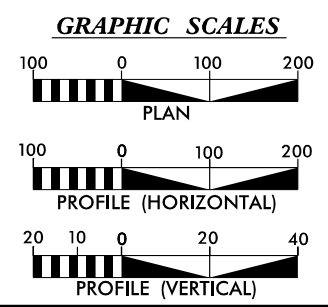
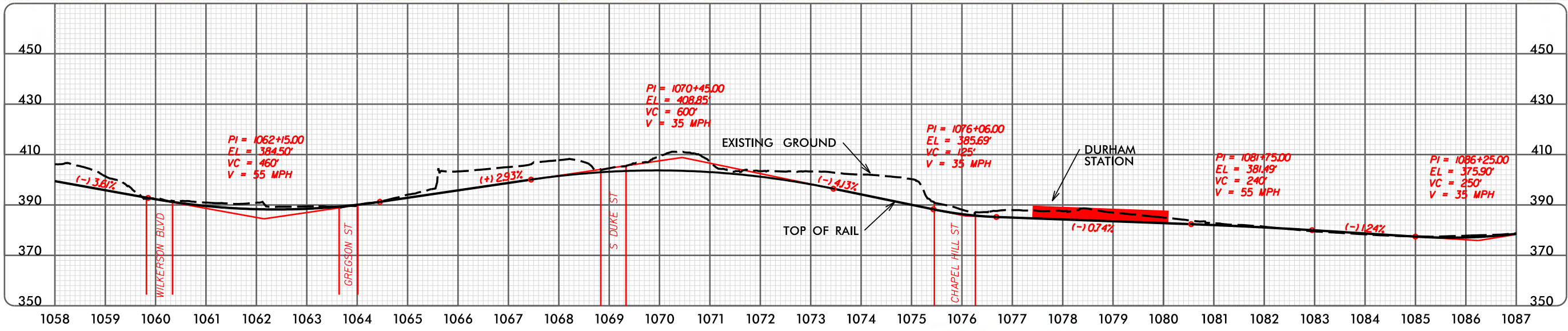
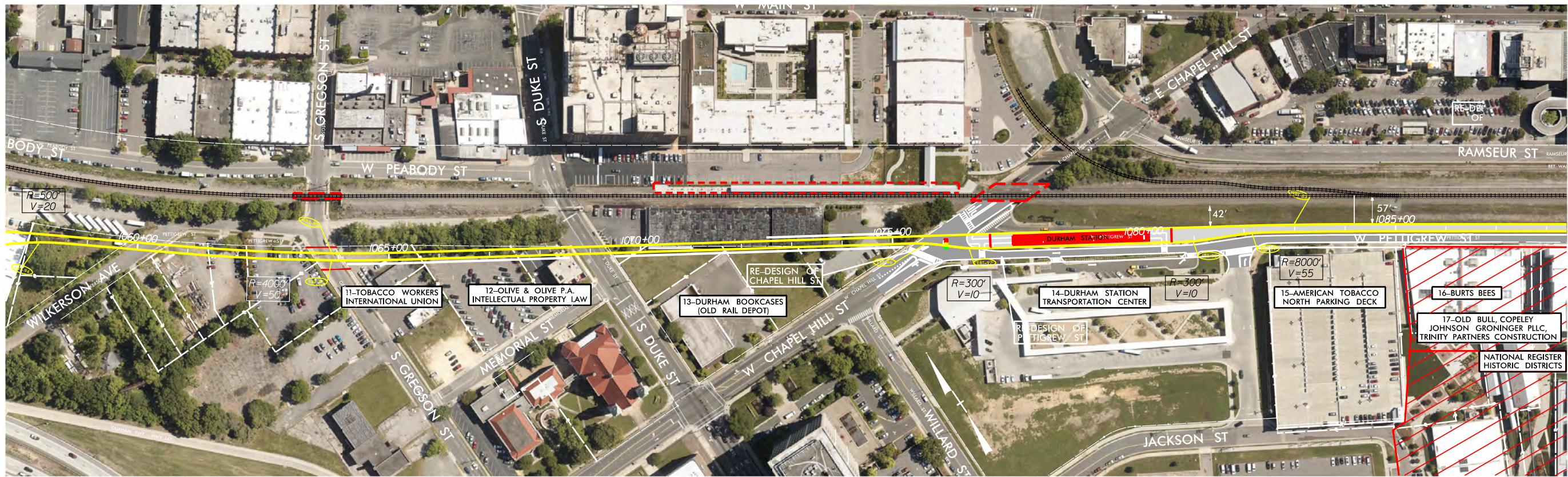
SEGMENT F

PLAN &  
PROFILE

SHEET:  
F - 02

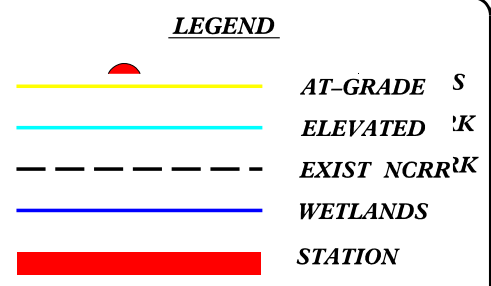


# NCRR CORRIDOR - DURHAM STATION



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**PLAN AND PROFILE**

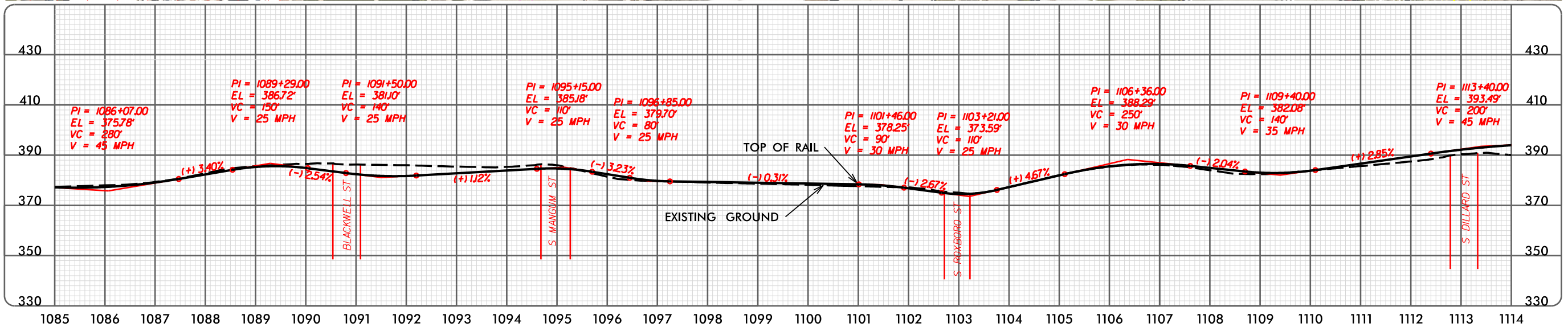
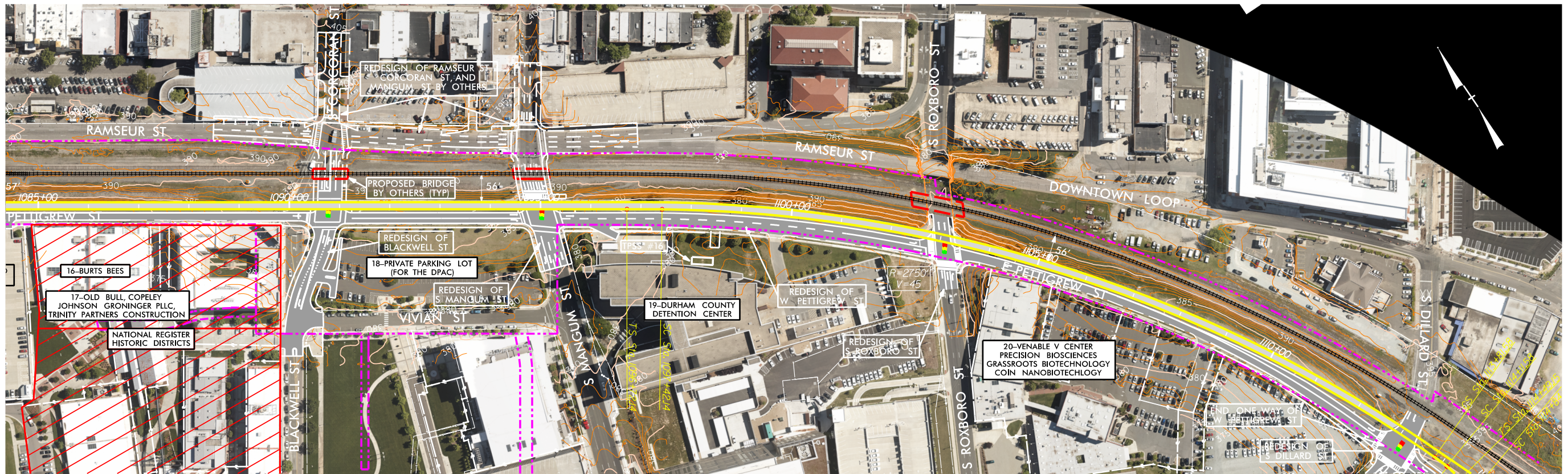
**SEGMENT F**

**PLAN & PROFILE**

**SHEET:**  
F - 03

2/10/2015

# NCRR CORRIDOR - ALONG PETTIGREW STREET



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**LEGEND**

●	<b>BRIDGE PIERS</b>
—	<b>AT-GRADE TRK</b>
—	<b>ELEVATED TRK</b>
	<b>EXIST NCRR</b>
—	<b>WETLANDS</b>
■	<b>STATION</b>

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**PLAN AND PROFILE**

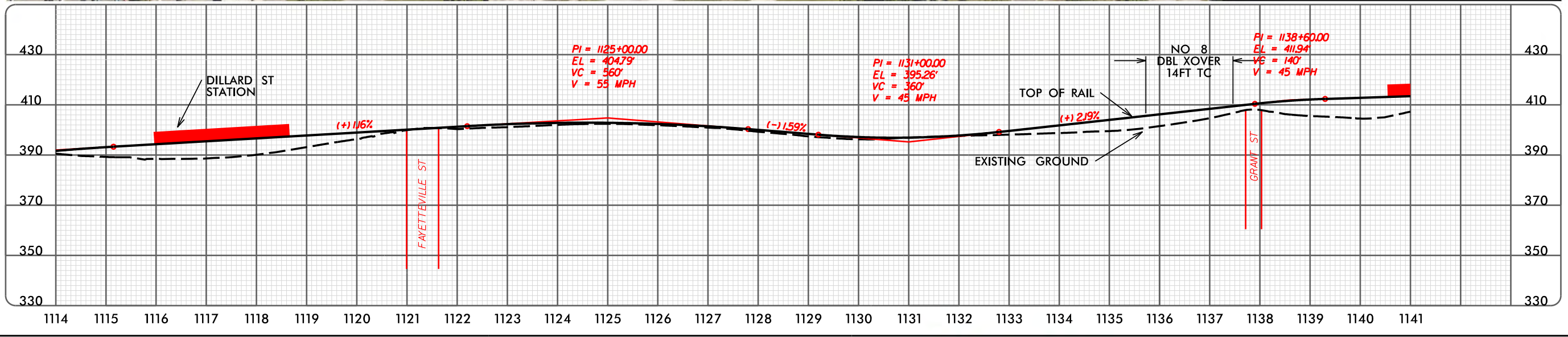
**SEGMENT F**

**PLAN & PROFILE**

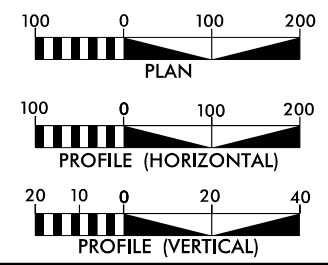
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# NCRR CORRIDOR - DILLARD STREET STATION



### GRAPHIC SCALES



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### LEGEND

- AT-GRADE
- ELEVATED
- - - - - EXIST NCRR
- WETLANDS
- █ STATION



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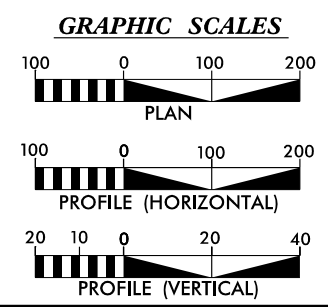
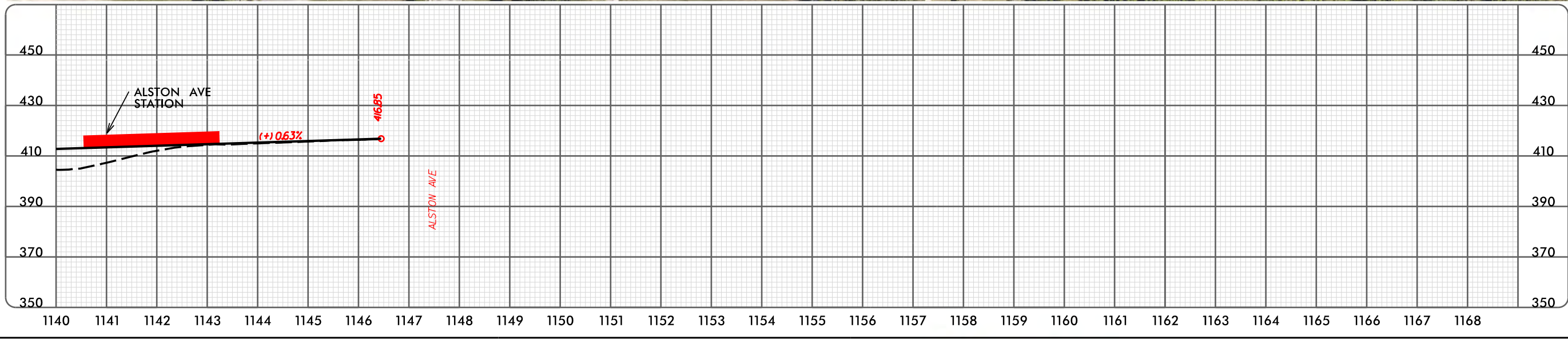
SEGMENT F

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PROFILE

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F - 05

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# NCRR CORRIDOR – ALSTON AVENUE STATION



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**LEGEND**

	AT-GRADE
	ELEVATED
	EXIST NCRR
	WETLANDS
	STATION

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**PLAN AND PROFILE**

**SEGMENT F**

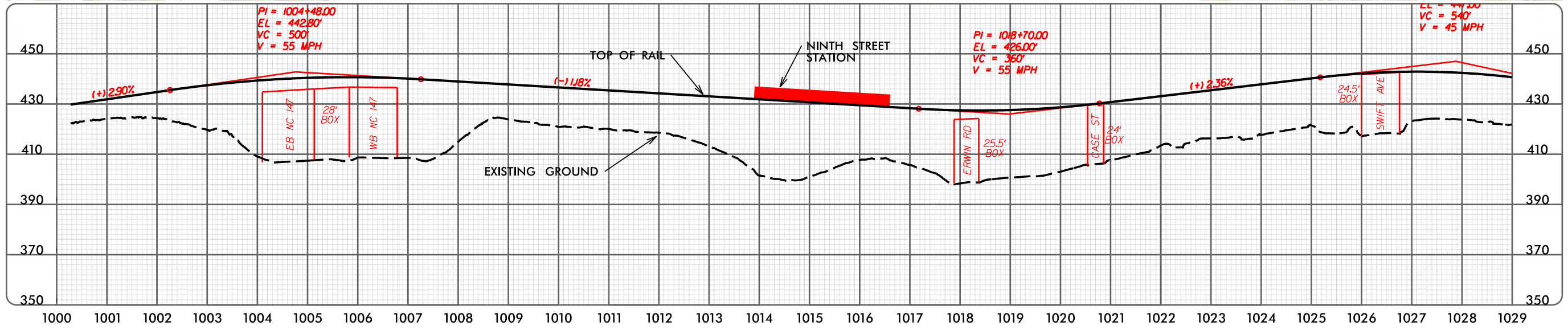
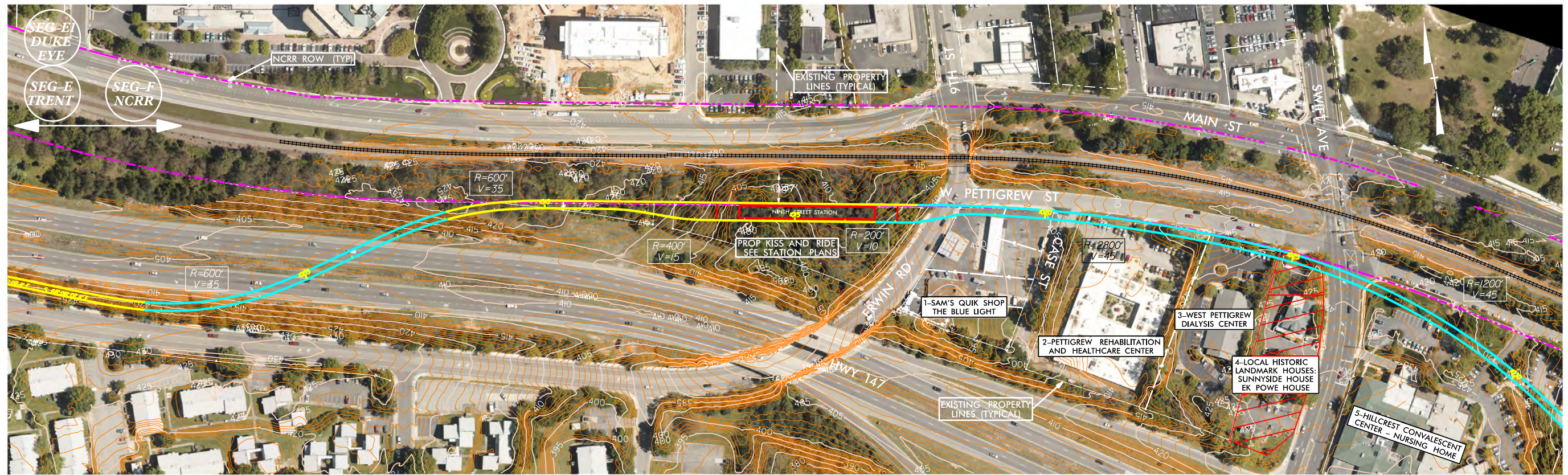
**PLAN &  
PROFILE**

**SHEET:**  
**F - 06**

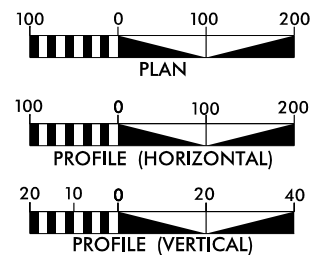
2/10/2015

# Alternative 2

# NARR CORRIDOR - NINTH STREET STATION



### GRAPHIC SCALES



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### LEGEND

- BRIDGE PIERS
- AT-GRADE TRK
- ELEVATED TRK
- EXIST NCRR
- WETLANDS
- STATION



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### PLAN AND PROFILE

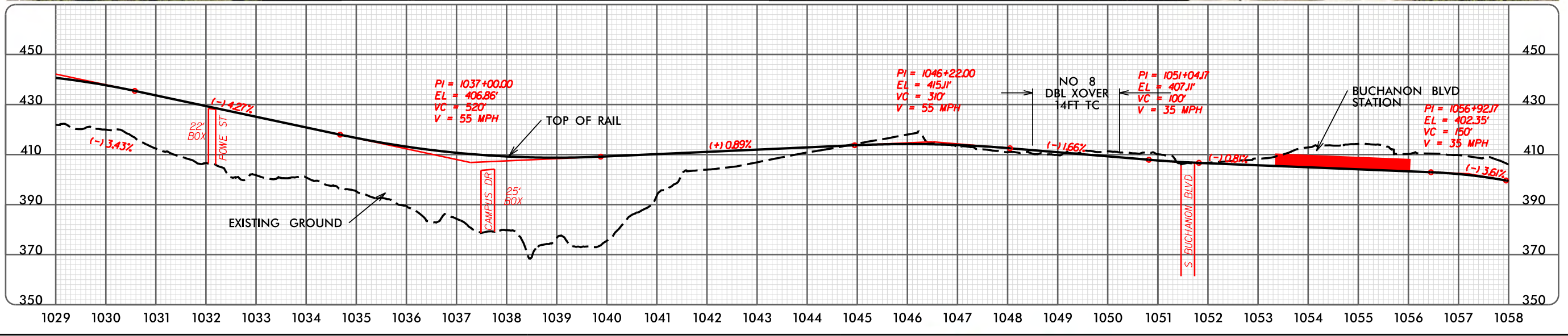
### SEGMENT F

PLAN &  
PROFILE

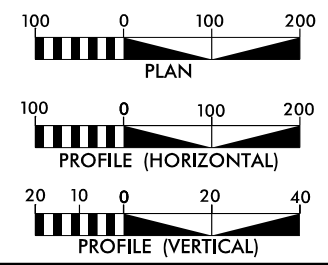
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F - 01

2/25/2015

# BUCHANAN BLVD STATION



### GRAPHIC SCALES



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### LEGEND

- BRIDGE PIERS
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- ELEVATED TRK
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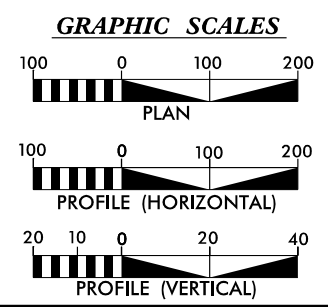
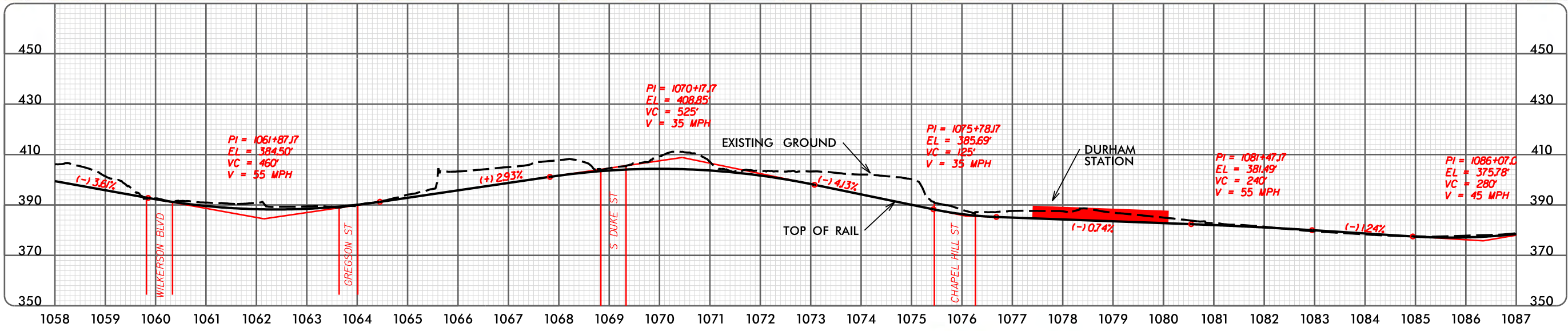
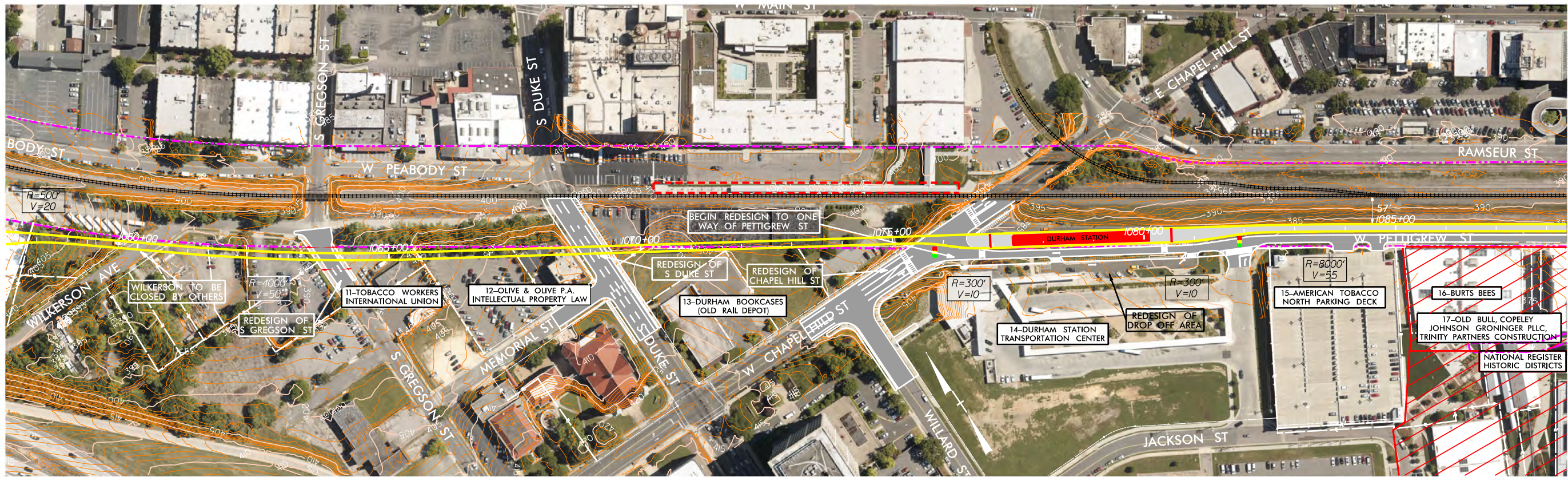
SEGMENT F

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PROFILE

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F - 02

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# NCRR CORRIDOR - DURHAM STATION



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**LEGEND**

●	<b>BRIDGE PIERS</b>
—	<b>AT-GRADE TRK</b>
—	<b>ELEVATED TRK</b>
	<b>EXIST NCRR</b>
—	<b>WETLANDS</b>
■	<b>STATION</b>

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**PLAN AND PROFILE**

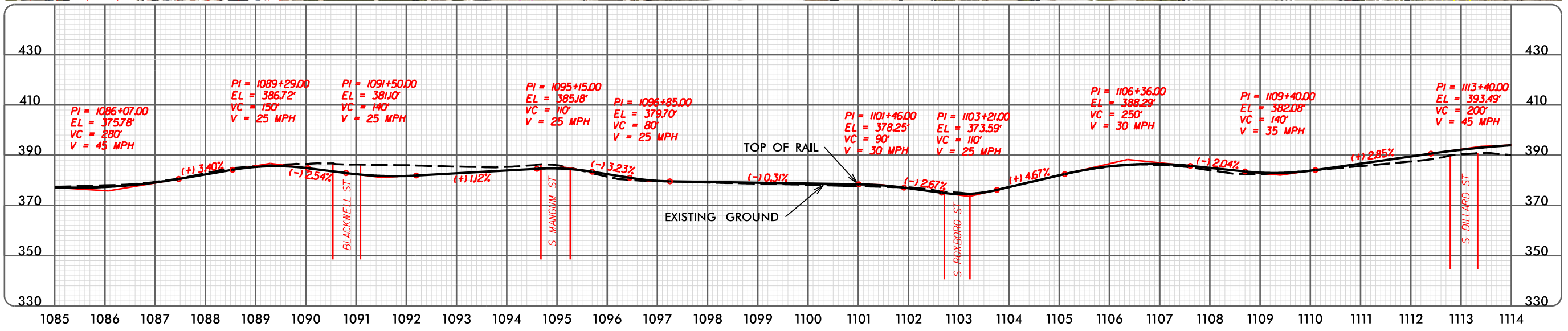
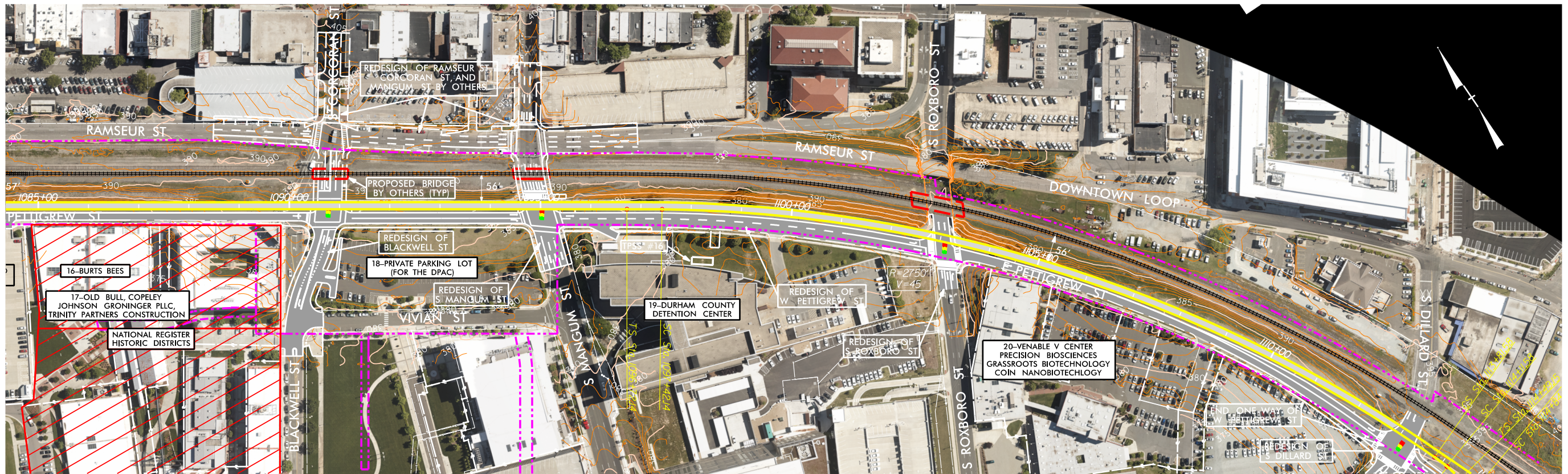
**SEGMENT F**

**PLAN & PROFILE**

**SHEET:**  
**F - 03**

2/25/2015

# NCRR CORRIDOR - ALONG PETTIGREW STREET



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**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

**LEGEND**

●	<b>BRIDGE PIERS</b>
— (yellow)	<b>AT-GRADE TRK</b>
— (cyan)	<b>ELEVATED TRK</b>
— (dashed)	<b>EXIST NCRR</b>
— (blue)	<b>WETLANDS</b>
— (red)	<b>STATION</b>

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**PLAN AND PROFILE**

**SEGMENT F**

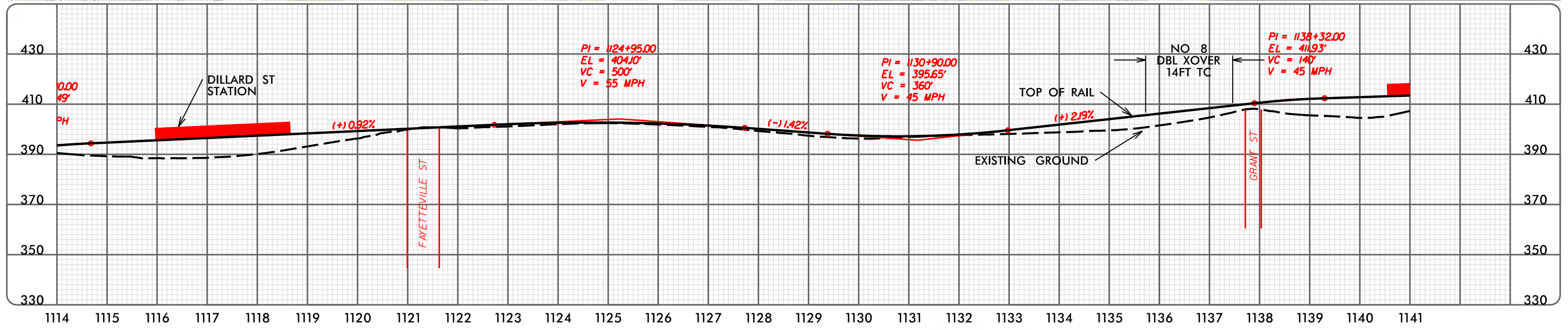
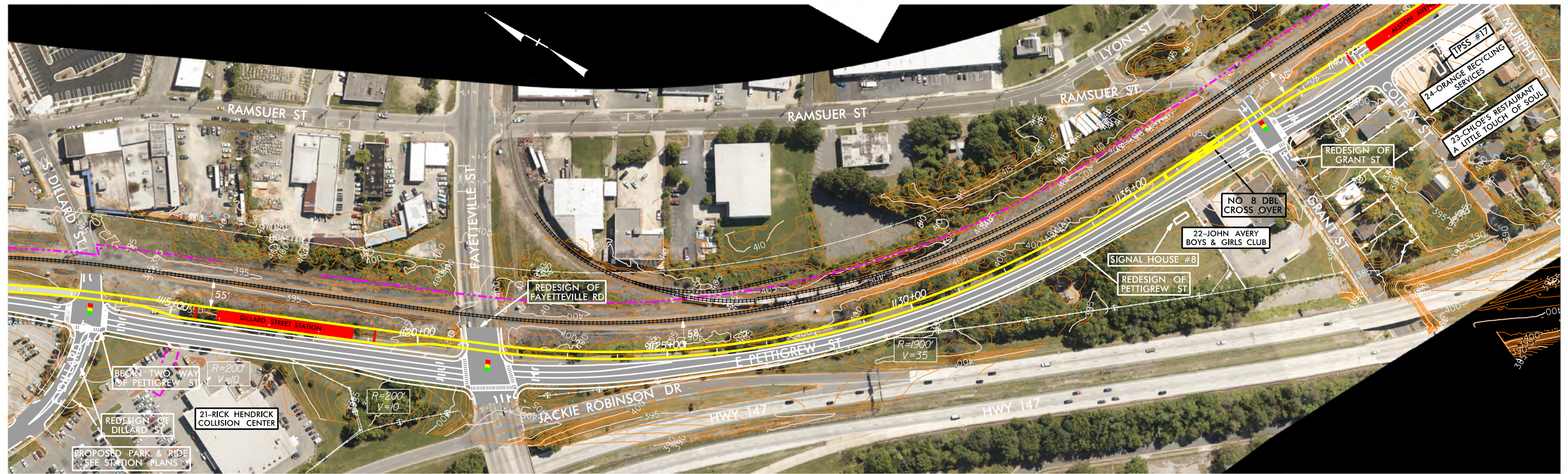
**PLAN & PROFILE**

**SHEET:**  
**F - 04**

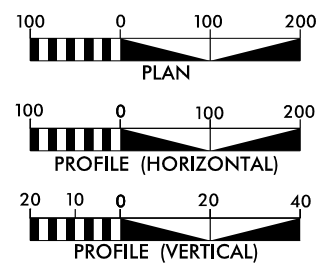
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# NCRR CORRIDOR - DILLARD STREET STATION



### GRAPHIC SCALES



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### LEGEND

- BRIDGE PIERS
- AT-GRADE TRK
- ELEVATED TRK
- + + + + + EXIST NCRR
- WETLANDS
- █ STATION



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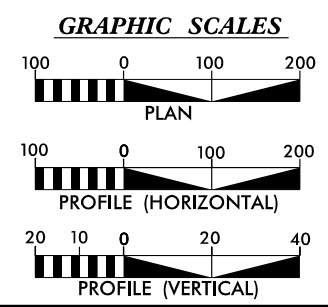
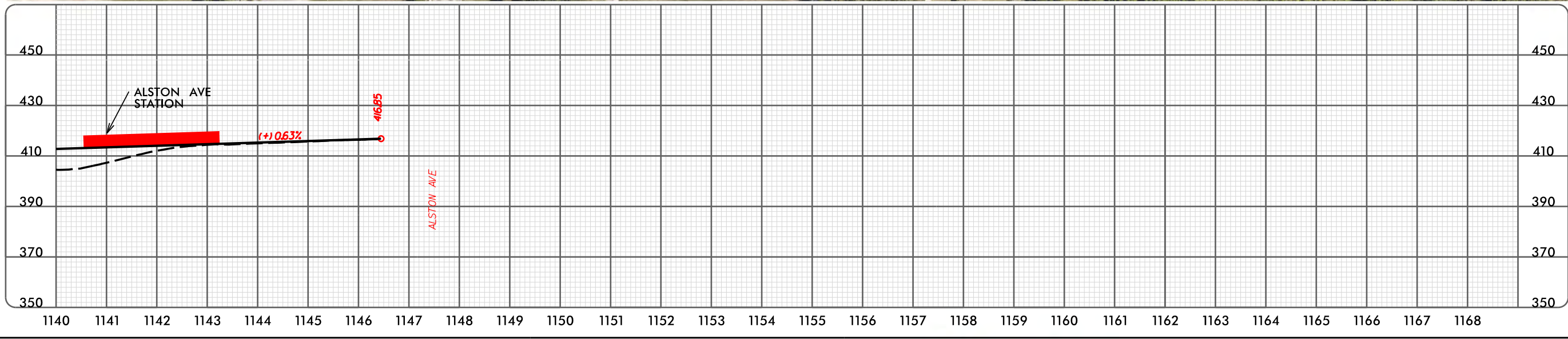
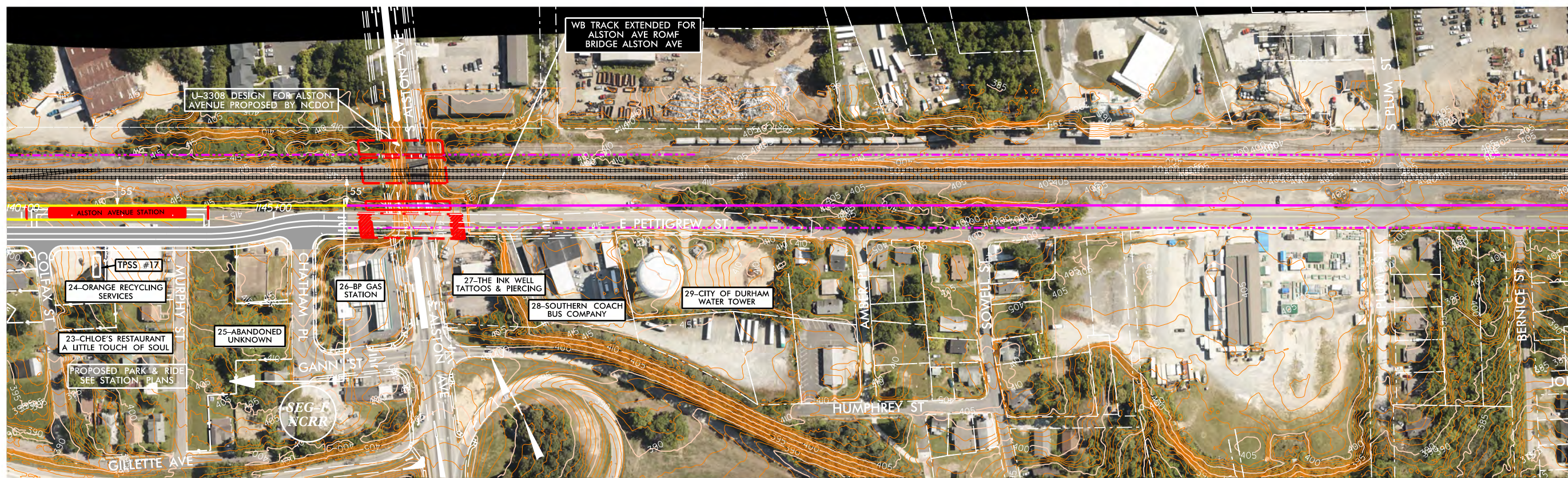
### PLAN AND PROFILE

SEGMENT F

PLAN &  
PROFILE

SHEET:  
F - 05

# NCRR CORRIDOR – ALSTON AVENUE STATION



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**LEGEND**

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—	<b>ELEVATED TRK</b>
	<b>EXIST NCRR</b>
—	<b>WETLANDS</b>
█	<b>STATION</b>

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**PLAN AND PROFILE**

**SEGMENT F**

**PLAN & PROFILE**

**SHEET:**  
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