Interchange Modification Report
Interstate 85 Exit 95 – Pleasant School Road (S-11-82)
Cherokee County, SC

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South Carolina Department of Transportation

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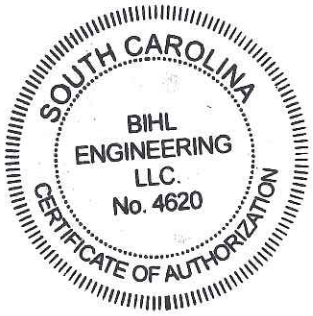

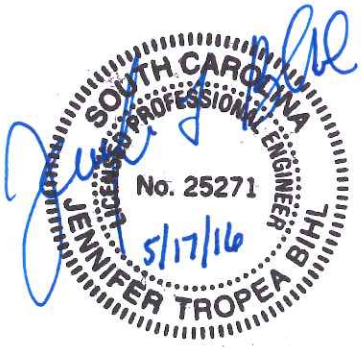

May 2016

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Executive Summary

I-85 is a north-south Interstate highway that begins at I-65 in Montgomery, Alabama. From Montgomery, I-85 runs generally to the northeast through Alabama, Georgia, South Carolina, North Carolina, and Virginia, where it terminates south of Richmond at I-95 in Petersburg, Virginia. Along its 668-mile length, I-85 provides access to Montgomery, Alabama; Atlanta, Georgia; Greenville and Spartanburg, South Carolina; Charlotte, Greensboro, and Durham, North Carolina; and Petersburg, Virginia.

In South Carolina, I-85 covers about 106 miles, and provides connections to I-385 (outside of Greenville) and I-26 (outside of Spartanburg). Within the study area, I-85 crosses portions of Spartanburg and Cherokee Counties, and provides access to the towns of Cowpens, Gaffney, East Gaffney, and Blacksburg. Throughout the majority of the study area, I-85 currently is two lanes in each direction.

The South Carolina Department of Transportation (SCDOT) proposes multiple improvements to the I-85 corridor from mile marker (MM) 80 to MM 96 designed to increase capacity, upgrade interchanges to meet design requirements, and expand vertical clearance at overpass bridges. Specifically, SCDOT proposes widening I-85 from four to six lanes from Exit 80 – Gossett Road (S-57) in Spartanburg County to the Broad River Bridge, which is 1.5 miles north of Exit 96 – Shelby Highway (SC 18) in Cherokee County. Along the approximately 18-mile project area located within Spartanburg and Cherokee Counties, interchanges at Exit 83 – Battleground Road, Exit 87 – Green River Road, Exit 95 – Pleasant School Road (S-11-82), and Exit 96 – Shelby Highway will be improved to bring them into compliance with design requirements. The frontage road at Exit 90 - Hyatt Street will be reconfigured to improve traffic flow. Lastly, the overpass bridge at Sunny Slope Drive will be replaced by one with greater vertical clearance to meet design standards.

The proposed project has two primary purposes: to increase roadway capacity to address the projected increased traffic volumes and to improve geometric deficiencies along the mainline and at several interchanges and overpasses in this section of I-85 by bringing them into compliance with current state and federal design standards. The secondary purpose is to improve safety which will be enhanced by improving the geometric design of the facility.

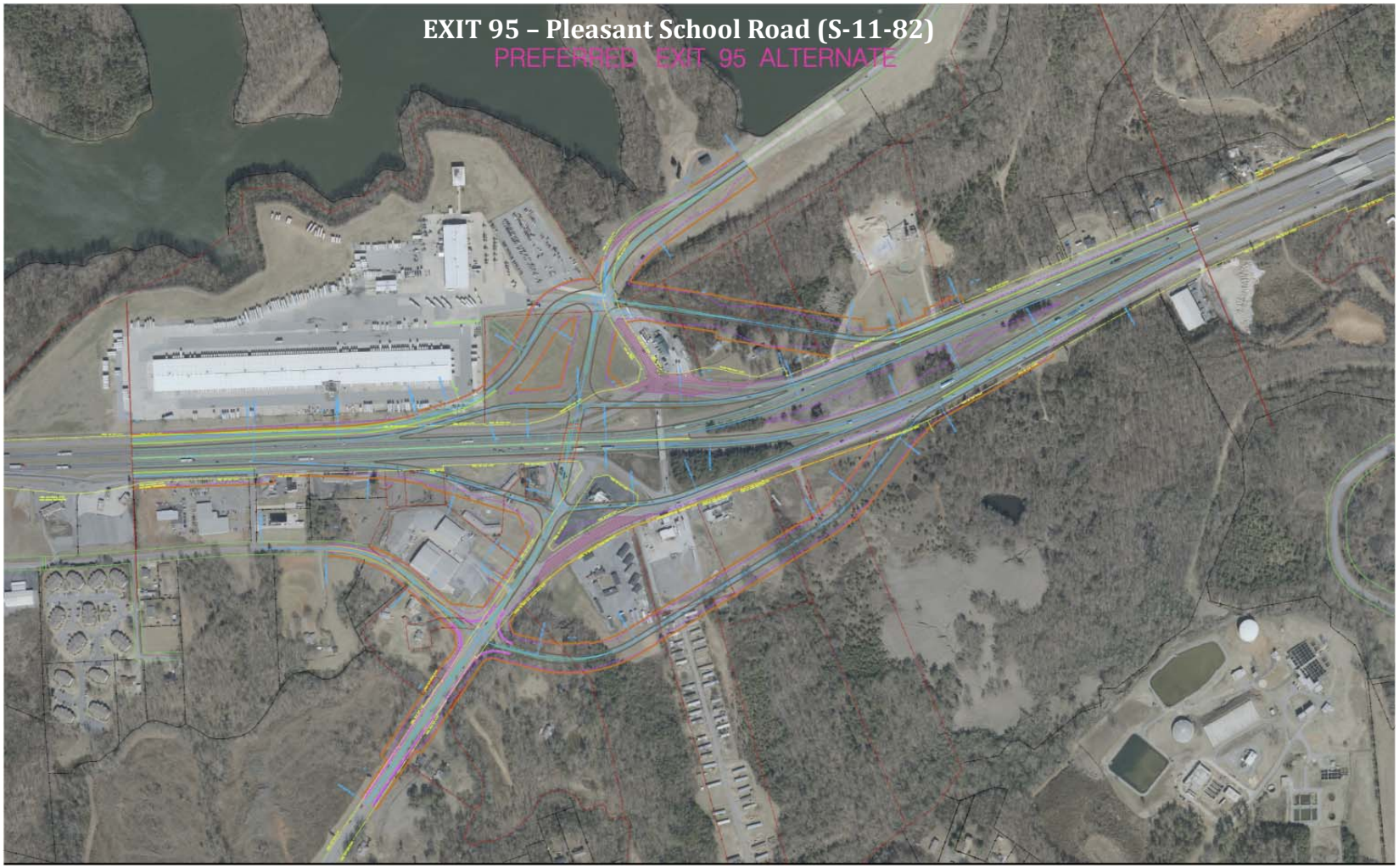
This interchange modification report (IMR) presents information for the proposed interchange modifications at Exit 95 – Pleasant School Road located in Cherokee County,

SC. Exit 95 is a partial diamond interchange. In the northbound direction, there is an off-ramp that intersects Hampshire Drive (S-11-661), and continues to the north (parallel to I-85) providing access to a number of commercial properties before terminating at a signalized five-leg intersection with Shelby Highway and Pleasant School Road. At this intersection, Shelby Highway runs east-west, with Pleasant School Road and Hampshire Drive intersecting Shelby Highway from the north. There is no existing on-ramp to I-85 Northbound at Exit 95. The southbound ramps form a conventional diamond interchange, but their intersection with Pleasant School Road is very close to the adjacent intersection of Pleasant School Road and Wilcox Avenue (approximately 60 feet north of the I-85 Southbound off-ramps).

Information discussed in the report is derived from the following project reports: *Interstate 85 Widening Traffic Analysis Report: I-85 Widening Project MM 80 to MM 96, Accident Analysis Report: I-85 Widening Project MM 80 to MM 96, and Interstate 85 Widening and Improvements Mile Marker 80-96 Environmental Assessment.*

Two alternatives were initially developed for Exit 95. Both alternatives provided an I-85 northbound entrance ramp, which is not part of the existing interchange. This will improve access for all users of the interchange including the UPS freight facility. The alternatives will also improve the existing route for northbound traffic exiting the interstate. This eliminates the need to make consecutive left turns to navigate through the interchange.

Alternative 2, the preferred alternative, is a diamond interchange (**Figure 1**). In this alternative, Pleasant School Road will be realigned to tie directly to Shelby Highway south of the new interchange; the new alignment crosses I-85 on a new bridge, west of the existing bridge. On the north side of I-85, the new frontage road intersects Pleasant School Road, albeit at a distance less than the 750 foot intersection separation requirement outlined in the SCDOT *Access and Roadside Management Standards Manual* to avoid potential stream impacts and to lessen the impacts to the UPS facility adjacent to the facility.



Source: Design Team

Figure 1. Exit 95 – Pleasant School Road (S-11-82) Preferred Alternative 2

On the south side of I-85, Matthew Drive will be realigned and extended to function as the service road, intersecting Shelby Highway approximately 770 feet south of the new interchange. Alternative 2 is rated as Very Constructible which means that closures during construction would not affect the entire interchange, only some specific movements, which would be closed for less than a month, typically less than a week with a projected cost of $27.3 million.

Alternative 2 results in the relocation of four businesses and five residences.

The realignment of Shelby Highway proposed in Alternative 2 would result in modifications to its intersection with Matthew Drive. Shelby Highway also would be realigned to the south to be opposite Matthew Drive, creating a new intersection with North Limestone Street. Access to Hampshire Drive from Fatz Drive and North Limestone Street would be closed. The businesses and residences on Hampshire Drive would use Matthew Drive to either Suzanna or Allison Drives to reach Hampshire Drive. Alternative 2 also proposes improvements to the three-way intersection of Matthew Drive, Allison Drive, and Vaughn Road.

Based on the traffic analysis for Alternative 2, the stop sign controlled approaches at the unsignalized intersections are projected to operate at LOS C or better during the morning and afternoon peak hours, with the exception of the relocated intersection of Green River Road with Shelby Highway and Matthew Drive. At this intersection, the stop sign controlled approaches of Matthew Drive and Shelby Highway are projected to operate at LOS F during the both peak hours. Based on the results of this analysis, the unsignalized intersection of Green River Road with Matthew Drive/Shelby Highway would likely require signalization in the future. With signalization, the intersection could be expected to operate at LOS C during both peak hours.

1.0 Introduction

I-85 is a north-south Interstate highway that begins at I-65 in Montgomery, Alabama. From Montgomery, I-85 runs generally to the northeast through Alabama, Georgia, South Carolina, North Carolina and Virginia, where it terminates south of Richmond at I-95 in Petersburg, Virginia. Along its 668-mile length, I-85 provides access to Montgomery, Alabama; Atlanta, Georgia; Greenville and Spartanburg, South Carolina; Charlotte, Greensboro, and Durham, North Carolina; and Petersburg, Virginia.

In South Carolina, I-85 covers about 106 miles, and provides connections to I-385 (outside of Greenville), and I-26 (outside of Spartanburg). Within the study area, I-85 crosses portions of Spartanburg and Cherokee Counties, and provides access to the towns of Cowpens, Gaffney, East Gaffney and Blacksburg. Throughout nearly all of the study area, I-85 currently provides two lanes in each direction, with a grassed median.

South of the study area limits, I-85 has four northbound through lanes north of the US 221 interchange (Exit 78). The four-lane section of northbound I-85 narrows to three lanes by merging the rightmost lane approximately 1,800 feet south of the northbound exit ramp to the Gossett Road interchange (Exit 80). The three-lane section then merges to a two-lane section, with the leftmost lane merging in to create a two-lane section approximately 350 feet north of the Gossett Road overpass. The northbound on-ramp from Gossett Road merges into a two-lane mainline section. From this point, northbound I-85 continues through the study area with two lanes.

To the north of the study area, I-85 has two southbound lanes. Throughout the study area, the two-lane section is maintained, until it widens from two to three lanes approaching the Gossett Road (Exit 80) southbound off-ramp at a point approximately 550 feet north of the ramp gore and about one-half mile from the Gossett Road overpass. I-85 continues southbound with three lanes through the Gossett Road interchange towards the US 211 interchange (Exit 78) where it picks up a fourth lane from the southbound on-ramp from US 221.

The posted speed limit for I-85 throughout most of the study area is 65 miles per hour. The posted speed limit increases to 70 miles per hour in the southern end of the study area beginning approximately 4,000 feet north of the Gossett Road (Exit 80) overpass.

In general, interstate routes can be characterized as having either level, rolling, or mountainous terrain. Along I-85, the interstate grades fluctuate between a maximum 6.32 percent down grade to a maximum 6.00 percent upgrade. Based on these grades, the portion of I-85 within the study area can be characterized as having a rolling terrain.

A parallel frontage road system is present on both sides of portions of I-85 throughout the study area.

Information discussed in the report is derived from the following project reports: *Interstate 85 Widening Traffic Analysis Report: I-85 Widening Project MM 80 to MM 96, Accident Analysis Report: I-85 Widening Project MM 80 to MM 96, and Interstate 85 Widening and Improvements Mile Marker 80-96 Environmental Assessment.*

1.1 Overall Project

SCDOT is proposing multiple improvements to the I-85 corridor from MM 80 to MM 96 designed to increase capacity, upgrade interchanges to meet design requirements, and expand vertical clearance at overpass bridges. Specifically, SCDOT proposes widening I-85 from four to six lanes from Exit 80 – Gossett Road in Spartanburg County to the Broad River Bridge, which is 1.5 miles north of Exit 96 – Shelby Highway in Cherokee County. Along the approximately 18-mile project area located within Spartanburg and Cherokee Counties, interchanges at Exit 83 – Battleground Road, Exit 87 – Green River Road, Exit 95 – Pleasant School Road, and Exit 96 – Shelby Highway will be improved to bring them into compliance with current design requirements. The frontage road at Exit 90 - Hyatt Street will be reconfigured to improve traffic flow. Lastly, the overpass bridge at Sunny Slope Drive will be replaced by one with greater vertical clearance to meet design standards. The existing right-of-way is approximately 100 feet to either side of the center line (200 feet total). **Figure 2** shows the extents of the study area.

1.2 Existing Conditions

The Exit 95 – Pleasant School Road interchange is a partial diamond interchange. In the northbound direction, there is an off-ramp that intersects Hampshire Drive, which continues to the east parallel to I-85 providing access to a number of commercial properties before terminating at a signalized four legged intersection with Shelby Highway and Pleasant School Road. At this intersection, Shelby Highway runs east-west, while Pleasant School Road intersects from the north immediately to the east of the Hampshire Drive approach. There is no existing northbound on-ramp to I-85 at Exit 95. The southbound ramps form half of a conventional diamond interchange, but the ramp

intersection with Pleasant School Road is very close to the adjacent intersection of Pleasant School Road and Wilcox Avenue, which is approximately 60 feet to the north. The existing configuration of the Exit 95 interchange is shown in **Figure 3**.

During the study period (past three years) for the *I-85 Widening Project MM 80 – MM 96 – Accident Analysis Report*, 116 crashes occurred in the vicinity of Exit 95 – Pleasant School Road on I-85, its ramps, and surrounding roadways. As noted in the report, a review of the crash history shows that the geometric conditions of the interchange and how it ties into the non-interstate roadway system play a large role in the crash locations. With the improved roadway configurations, it is expected that the potential for accidents will decrease. Due to a pedestrian fatality on the northbound ramp, additional lighting may be considered in the future to improve visibility in night conditions.

1.2.1 I-85 Northbound Ramp

The exit is signed with the SC 18 state route shield and the text "Gaffney" in the northbound direction.

The northbound off-ramp, which diverges from northbound I-85 approximately 3,440 feet west of the Pleasant School Road overpass, has a posted 40 mph advisory speed limit. The ramp, which is approximately 460 feet long from the diverging gore point to its intersection with Hampshire Drive, has a 450 feet long parallel deceleration lane with a parallel length of 230 feet. There is an opportunity for off-ramp traffic to turn to travel west on Hampshire Drive about 95 feet in advance of the main portion of the ramp's intersection with Hampshire Drive.

A gas station and a Mr. Waffle restaurant are located adjacent to the Hampshire Drive intersection with the off-ramp. The existing configuration of the intersection of the northbound off-ramp with Hampshire Drive is shown in **Figure 4**.

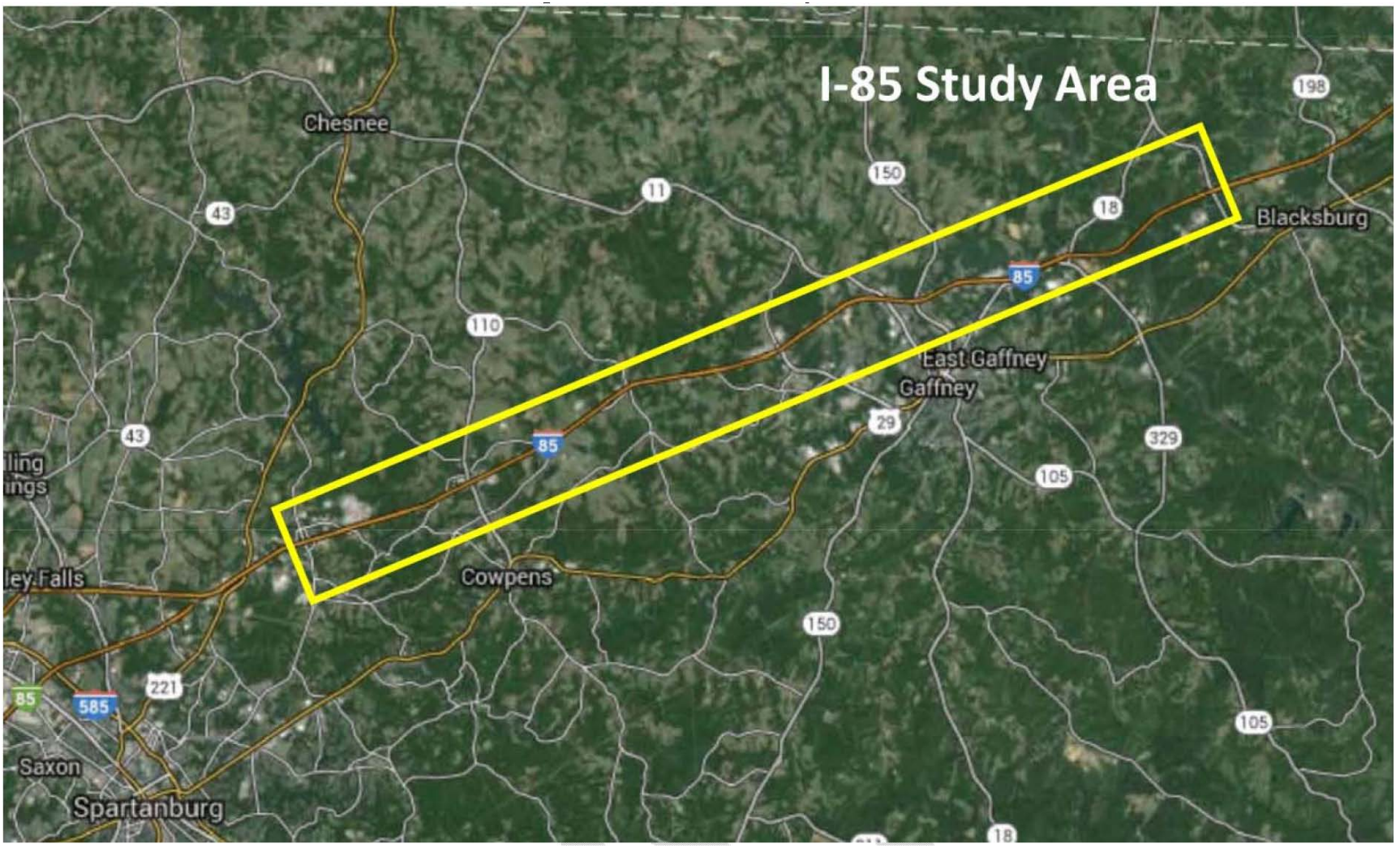
To intersect Pleasant School Road, traffic exiting the off-ramp must continue eastbound on the two-lane, two-way portion of Hampshire Drive, running parallel to I-85 northbound. At Fatz Drive, Hampshire Drive turns to the southeast where it intersects with Shelby Highway and Pleasant School Road.

The intersection of Pleasant School Road with Hampshire Drive and Shelby Highway has an unusual configuration. Both Hampshire Drive and Pleasant School Road intersect Shelby Highway from the north; with the centerline of Hampshire Drive offset

approximately 75 feet east of the centerline of Pleasant School Road. The intersection is controlled by a traffic signal, but right turns from Pleasant School Road to westbound Hampshire Drive are controlled by a stop sign at the intersection.

West of the intersection of Hampshire Drive and Pleasant School Road, Shelby Highway/North Limestone Street is a four-lane roadway. At the intersection, the inside eastbound through lane on Shelby Highway becomes a dedicated left-turn lane for traffic turning to either Hampshire Drive or Pleasant School Road.

East of the intersection, Shelby Highway is a two-lane roadway. The westbound approach of Shelby Highway at the intersection provides a separate through lane and a shared through/right-turn lane, which is added within 100 feet of the stop line.



Source: Figure 1, *Interstate 85 Widening Traffic Analysis Report*

Figure 2. Study Area

Source: Figure 40, *Interstate 85 Widening Traffic Analysis Report*

Figure 3. Existing Interchange

Source: Figure 41, *Interstate 85 Widening Traffic Analysis Report*

Figure 4. Exit 95 I-85 Northbound Off-Ramp and Hampshire Drive

The southbound approaches of both Hampshire Drive and Pleasant School Road provide a single shared lane for left-turn/through/right-turn movements. A gas station/convenience store located on the south side of the intersection receives the through movement from these roadway approaches. The existing configuration of the intersection of Hampshire Drive with Shelby Highway (and with Fatz Drive) is shown in **Figure 5**.

The intersection of Fatz Drive with Shelby Highway is an unsignalized T-intersection with the southbound approach of Fatz Drive controlled by a stop sign. The Fatz Drive approach provides a single shared left-turn/right-turn lane. Shelby Highway provides two through lanes in each direction. At the intersection, the southbound approach lanes of Shelby Highway function as a separate through lane and a shared through/right-turn lane, while the northbound approach lanes function as a shared left-turn/through lane and a separate through lane. The existing configuration of the intersection of Shelby Highway and Fatz Drive is shown in **Figure 6**.

The intersection of Matthew Drive and Shelby Highway is an unsignalized T-intersection with the eastbound approach of Matthew Drive controlled by a stop sign. The Matthew Drive approach provides a single shared left-turn/right-turn lane. Shelby Highway provides two through lanes in each direction. At the intersection, the southbound approach lanes of Shelby Highway function as a separate through lane and a shared through/right-turn lane, while the northbound approach lanes function as a shared left-turn/through lane and a separate through lane. The existing configuration of the intersection of Shelby Highway and Matthew Drive is shown in **Figure 7**.

The Matthew Drive at Suzanna Drive intersection is an unsignalized T-intersection with the southbound approach of Suzanna Drive controlled by a stop sign. The Suzanna Drive approach provides a single shared left-turn/right-turn lane. Matthew Drive provides a one through lane in each direction. At the intersection, the eastbound approach of Matthew Drive functions as a shared through/right-turn lane, while the westbound approach lane functions as a shared left-turn/through lane.

Source: Figure 43, *Interstate 85 Widening Traffic Analysis Report*

Figure 5. Exit 95 Hampshire Drive at Shelby Highway and Fatz Drive

Source: Figure 44, *Interstate 85 Widening Traffic Analysis Report*

Figure 6. Exit 95 Shelby Highway and Matthew Drive

Source: Figure 45, *Interstate 85 Widening Traffic Analysis Report*

Figure 7. Shelby Highway and Matthew Drive

Hampshire Drive at Suzanna Drive is an unsignalized T-intersection with the northbound approach of Suzanna Drive controlled by a stop sign. The Suzanna Drive approach provides a single shared left-turn and right-turn lane. Hampshire Drive provides one through lane in each direction. At the intersection, the eastbound approach of Hampshire Drive functions as a shared through-right turn lane, while the westbound approach lane functions as a shared left turn-through lane.

Hampshire Drive, Matthew Drive and Suzanna Drive are included in the analysis due to the location of the northbound off-ramp and the potential interaction of traffic between these roads. With the existing roadway configuration, it is possible for traffic with destinations to the west and south on Shelby Highway to exit I-85 on the northbound off-ramp and avoid the signal at Hampshire Drive/Shelby Highway by turning right onto Suzanna Drive, left onto Matthew Drive, and right onto Shelby Highway. Providing a northbound off-ramp connection directly to Pleasant School Road would directly affect the traffic flow at the interchange.

The existing configuration of the intersection of Suzanna Drive with Hampshire Drive and with Matthew Drive is shown in **Figure 8.**

Source: Figure 47, *Interstate 85 Widening Traffic Analysis Report*

Figure 8. Suzanna Drive with Hampshire Drive and Matthew Drive

The UPS Driveway located approximately 530 feet north of the southbound ramp intersection is the origin/destination of significant truck traffic traveling through the interchange. At the UPS Driveway intersection, Pleasant School Road provides a single through lane in each direction, with no separate turn lanes for truck traffic entering the driveway. The UPS Driveway has approximately 33 feet wide inbound and outbound lanes separated by a grass median. These lanes are wide enough to provide two ingress and egress lanes for traffic entering and exiting the facility. The existing configuration of the intersection of Pleasant School Road and the UPS Driveway is shown in **Figure 9**.

Source: Figure 46, *Interstate 85 Widening Traffic Analysis Report*

Figure 9. Exit 95 Pleasant School Road and UPS Driveway

1.2.2 I-85 Southbound Ramp

The southbound exit is signed "To Pleasant School Road" with the SC 18 and SC 150 state route shields, "Boiling Springs, N.C.", and "Gaffney". The existing configuration of the Exit 95 interchange is shown in **Figure 3.**

The southbound off-ramp is approximately 650 feet long. The single lane ramp has a 35 mph posted advisory speed limit. It diverges from southbound I-85 with a 350 feet long tapered deceleration lane. At its intersection with Pleasant School Road, the southbound off-ramp provides a shared left-turn/through/right-turn lane that is controlled by a stop sign. The northbound approach of Pleasant School Road consists of a single lane that provides for left turns onto the southbound on-ramp and through movements for traffic to continue traveling north on Pleasant School Road. Similarly, the southbound approach of Pleasant School Road consists of a single lane that provides for through movements and right turns.

The southbound on-ramp is approximately 600 feet long. The ramp merges onto I-85 southbound with a 550 foot long parallel acceleration lane. The southbound off-ramp and on-ramp are separated by 1,310 feet.

The existing configuration of the southbound off-ramp and Wilcox Avenue is shown in **Figure 10.**

Source: Figure 42, *Interstate 85 Widening Traffic Analysis Report*

Figure 10. Southbound Off-Ramp and Wilcox Avenue

1.3 Purpose and Need

The proposed project has two primary purposes: increase roadway capacity to address the projected increased traffic volumes and improve geometric deficiencies along the mainline and at several interchanges and overpasses in this section of I-85 by bringing them into compliance with current state and federal design standards. The secondary purpose is to improve safety, which will be enhanced by improving the geometric design of the facility.

The needs for this project were identified through a comprehensive review of previous studies along with the analysis of current data compiled for this study. This includes information in the project's October 2015 *Traffic Analysis Report* and the March 2015 *Accident Analysis Report*, as well as that collected through meetings with SCDOT; federal, state and local agencies; project stakeholders; and the public.

Existing traffic volumes along I-85 at the southern end of the project study area are higher than the current facility can accommodate at an acceptable level of service, particularly during afternoon peak travel times. Peak travel times are considered business rush hours between 7:00 AM and 9:00 AM and 4:00 PM and 6:00 PM. As traffic increases over time the congestion will also increase.

A high volume of truck traffic further reduces the I-85's capacity to carry traffic. The average percentage of large truck traffic for a rural interstate is 24 percent. The

percentage of large truck traffic along I-85 through the study area is 25 percent during the morning and afternoon/evening peak hour, which is average for the state. However, during non-peak hours the truck percentage along this segment of I-85 increases to 30 percent. This higher percentage of large truck traffic during the non-peak hours combined with rolling terrain along the corridor contributes to the congestion in the area.

1.4 Conceptual Design

Two alternatives were developed for Exit 95. Both alternatives provide a northbound entrance ramp, which is not part of the existing interchange. The alternatives will also improve the existing route for northbound traffic exiting the interstate. Pleasant School Road traffic will not have to make two consecutive left turns in the space of approximately 75 feet to get from I-85 to Pleasant School Road. **Table 1** shows a summary of the interchange configurations studied.

Table 1: Interchange Configurations Studied

Location	Current Interchange Configuration	Interchange Configurations Studied	Preferred Interchange Configuration
I-85 at Pleasant School Road	Half Diamond	Alternative 1 Diamond Bridge location #1	Alternative 2 Diamond Shelby Highway Configuration #2
		Alternative 2 Diamond Shelby Highway Interchange Configuration #1	
		Alternative 1 Diamond Bridge location #2	
		Alternative 2 Diamond Shelby Highway Interchange Configuration #2	

Alternative 2, the preferred alternative, consists of a diamond interchange as shown in **Figure 1**. In this alternative, Pleasant School Road will be realigned to tie directly to Shelby Highway south of the new interchange; the new alignment crosses I-85 on a new bridge, west of the existing S-82 Bridge. On the north side of I-85, the new frontage road intersects Pleasant School Road at a distance less than the 750 foot intersection separation requirement outlined in the SCDOT *Access and Roadside Management Standards Manual* to limit potential stream impacts and to lessen the impacts to the UPS Facility adjacent to the interchange. On the south side of I-85, Matthew Drive will be

realigned and extended to function as the service road, intersecting Shelby Highway approximately 770 feet south of the new interchange. Alternative 2 is also rated as Very Constructible (Closures during construction would not affect the entire interchange, only specific movements, which would be closed for less than a month, typically less than a week), with a projected cost $27.3 million.

Based on the environmental assessment, *Interstate 85 Widening and Improvements Mile Marker 80-96,* Alternative 2 results in the relocation of four businesses, which are all located south of the interchange, and would impact access to the UPS Operations building to the north. Two businesses, the Gaffney Inn and the Shamrock Inn, would be impacted by the diamond interchange exit from I-85 North; one business, the Concealed Weapons Permit School, would be impacted by the realignment of Shelby Highway; and one business, SC Wholesale, would be impacted by the northbound ramp to I-85. The northbound side of the diamond interchange would result in impacts to one vacant commercial building. One building, the former Fatz Café situated at the intersection of Hampshire Drive and Fatz Road, would be impacted by the I-85 North entrance ramp.

In Alternative 2, five residences would also be relocated. Three mobile homes in the Jimmy's Mobile Home Park would be impacted by the realignment of Shelby Highway; and one home would be impacted by the realignment of Matthew Drive. Additionally, one residence located north of the interchange would be relocated due to the frontage road.

The realignment of Shelby Highway proposed in Alternative 2 would result in modifications to its intersection with Matthew Drive. Shelby Highway also would be realigned to the south to oppose Matthew Drive, creating a new intersection with North Limestone Street. Access to Hampshire Drive from Fatz Drive and North Limestone Street would be closed. The businesses and residences on Hampshire Drive would use Matthew Drive to either Suzanna Drive or Allison Drive to reach Hampshire Drive. Alternative 2 also proposes improvements to the three-way intersection of Matthew Drive, Allison Drive, and Vaughn Road.

In Alternative 2, the stop sign controlled approaches at the unsignalized intersections operate at LOS B or better during the morning and afternoon peak hours, with the exception of the relocated intersection of Green River Road with Shelby Highway and Matthew Drive. At this intersection, the stop sign controlled approaches of Matthew Drive and Shelby Highway are projected to operate at LOS F during the both peak hours.

Based on the results of this analysis, the unsignalized intersection of Green River Road with Matthew Drive/Shelby Highway would likely require signalization. With signalization, the intersection could be expected to operate at LOS B during both peak hours.

1.5 Interchange Modification Report Applicant

The interchange policy is administered by the Federal Highway Administration (FHWA). Therefore, FHWA is required to approve all new access or changes in access points pursuant to this policy.

As the owner and operator of the Interstate System, SCDOT is responsible for submitting a formal request to the FHWA in the form of an IMR that documents the analysis, the rationale for the proposed change in access, and the recommended action.

SCDOT is the sponsoring agency for the I-85 Widening project.

2.0 Study Area

In South Carolina, I-85 covers about 106 miles, and provides connections to I-385 outside of Greenville, and I-26 outside of Spartanburg. Within the study area shown on **Figure 2**, I-85 crosses portions of Spartanburg and Cherokee Counties, and provides access to the towns of Cowpens, Gaffney, East Gaffney and Blacksburg.

2.1 Demographics

The United States Census Bureau's decennial data for 2000 and 2010 were used to determine the demographic composition of the State, the two Counties, and the 14 Census tract block groups that fall within the entire I-85 study area. Comparisons of the demographic data indicate the percentage minority population in both Spartanburg County (29.9%) and Cherokee County (26.0%) is below the reported State percentage (35.9%). The population age 65 and older is nearly the same when comparing the two counties (13.4%) to South Carolina as a whole (13.7%). The percent of the population with an income below the poverty level is slightly lower for both Spartanburg County (12.3%) and Cherokee County (13.9%) compared to South Carolina (14.1%). Although both counties experienced population growth between 2000 and 2010, growth in the two counties was less than the 15.3% growth experienced by South Carolina as a whole.

2.2 Land Use

Spartanburg and Cherokee Counties have historically been rural and based on agriculture until highway retail began to develop near the interstates and major highways in the counties. In 1994, the BMW Plant in Spartanburg opened; the campus sits on over 1,000 acres adjacent to I-85 and has helped transform the region. The Spartanburg County Comprehensive Plan points out that the "pull of I-85 has created an elongated east-west development pattern through the center of the County. As a consequence, most major streets and roads in the area have become high intensity use corridors." Due to these types of development demands, land uses have been converted from agricultural and open lands to commercial and industrial uses throughout both counties in recent years.

According to the 2010 Census, Cherokee County has approximately 55,000 residents and Spartanburg County has approximately 284,000. The counties have seen a steady increase in population since the 1950s. Between 2000 and 2010, Cherokee and Spartanburg Counties saw five and 12 percent increases in population, respectively. According to the South Carolina Revenue and Fiscal Affairs Office, Cherokee County is expected to continue to see gradual population growth of 3.5 percent between 2010 and 2030, while Spartanburg County is expected to see more significant population growth by 2030. **Table 2** presents population growth and projections for the two counties.

Land uses in the study area surrounding Exit 95 – Pleasant School Road consist of commercial, institutional, and light industrial land uses. Immediately west of the interchange, the land use is comprised of light industrial (UPS facility) and commercial, with motels, restaurants and other businesses. There are pockets of open/wooded land east of the interchange. Commercial (small businesses), residential (a small mobile home park) and institutional (Encounter Church) land uses are located south of the interchange. Farther southwest are high density residential areas (Iveywood Park), an elementary school, and a community learning facility.

Exit 95 is located within unincorporated Cherokee County north of East Gaffney.

Table 2: Population Growth					
County	**2000 Population**	**2010 Population**	**2030 Population**	**2000-2010 % Growth**	**2010-2030 % Growth**
Cherokee	52,537	55,342	57,300	5.3%	3.5%
Spartanburg	253,791	284,307	331,200	12.0%	16.5%

Source: http://www.sccommunityprofiles.org/census/proj_c2010.html

2.3 Transportation System

The Project study area roadway transportation system is part of the *I-85 Widening Traffic Study* depicted in **Figure 2**. This region of Spartanburg and Cherokee Counties is accessed via I-85, which is a north-south interstate freeway (but physically more northeast-southwest) connecting the Charlotte and Atlanta metro areas.

For the IMR study, a focused roadway system was reviewed. It consisted of the I-85 mainline, frontage roads and interchanges including Exit 95 - Pleasant School Road. Specifically, the I-85 northbound and southbound mainline segments at Exit 95 – Pleasant School Road were reviewed for traffic conditions during different hours of the day.

It should be noted that this IMR study area is a subset of the broader study area that was analyzed during the project and documented in the *I-85 Widening Traffic Analysis Report*. The traffic study reviewed the current and future traffic volumes on the I-85 mainline and interchanges between MM80 and MM96.

The focus of the IMR study is on I-85 Exit 95 – Pleasant School Road.

3.0 Methodology

3.1 Scenarios Analyzed

In October 2015, STV Incorporated prepared the *I-85 Widening Traffic Analysis Report* that included the following scenarios:

- 2014 Existing Conditions
- 2040 No-Build Conditions
- 2040 Build Conditions

Analyses were performed for 2014 Existing Conditions (existing traffic, intersection traffic control, and geometry), 2040 No-Build Conditions (2040 traffic, and existing intersection traffic control and geometry) and 2040 Build Conditions Alternatives (2040 traffic and modified intersection traffic control and geometry reflecting the reasonable interchange improvement alternatives). The Exit 95 alternatives were compared against one another to determine which best met the purpose and need with the least impacts.

The 2040 No-Build Alternative for the Exit 95 interchange represents the existing interchange configuration, intersection traffic control and geometric conditions with no changes to those conditions. Many of the impacts associated with the construction of the interchanges would not occur, but the interchanges would continue to be out of conformance with current state and federal design standards. This would not satisfy the purpose and need for the project.

There were two Reasonable Alternatives developed for Exit 95. These alternatives share many common features. They all would meet the purpose and need for the project by bringing the interchange into compliance with current state and federal design requirements. The safety at the interchange will be improved by providing on and off ramps that separate the interstate traffic from local traffic, and which will be long enough to allow traffic to merge onto the interstate and to store traffic that is exiting the interstate during peak hours. Alternative 2 was recommended as the Preferred Alternative for Exit 95. Therefore, the other alternatives were not carried forward in this document and Alternative 2 was analyzed for the 2040 Build Conditions for Exit 95.

The adjacent interchanges Exit 92 - Chesnee Highway/W Floyd Baker Boulevard (SC 11) and Exit 96 – Shelby Highway (SC 18) were analyzed and results for LOS can be found in the *I-85 Widening Traffic Analysis Report.* There are no planned modifications to Exit 92. Exit 96 is expected to be modified as part of the I-85 Widening Project. Three alternatives were developed and are included in the I-85 Widening Traffic Analysis Report for Exit 96 – Shelby Highway (SC 18).

3.2 Traffic Forecasts

A proposed average annual growth rate for the I-85 study area was estimated based on a comparison of the Annual Average Daily Traffic (AADT) average annual growth rates (for 1996 and 2013) and the South Carolina Statewide Model (SCSWM) average annual growth rates for each of the segments. This proposed growth rate was applied to all mainline, ramp, and arterial turning movement volumes within the I-85 corridor study

areas to generate the design year peak hour volumes for use in the alternatives analysis. In setting the growth rate, an annual percentage that is comparable to, but higher than the observed growth rates is often desirable so a conservative analysis of future traffic conditions may be attained.

Many of the I-85 corridor segments in the study area had estimated growth rates exceeding 1.0 percent per year. Several of the rates estimated using the historic data exceeded 1.25 percent per year. Only the growth rate for the southernmost segment (between Exits 80 and 83) exceeded 1.5 percent per year based on the historic AADT, while the SCSWM projected rate for this segment was approximately 1.0 percent per year. Based on these estimates, an average annual growth rate of 1.5 percent per year was selected to be applied to develop the design year volumes throughout the study area. An annual growth rate of 1.5 percent per year would provide a conservative estimate of future traffic volumes on all freeway segments in the study area.

The 1.5 percent year growth rate was applied to the freeway and ramp traffic to develop projections of the 2040 No-Build and 2040 Build Conditions traffic volumes.

3.3 Traffic Analysis

Capacity analyses were performed based on the methodologies and guidelines contained in the Transportation Research Board's publication *2010 Highway Capacity Manual* (HCM). Various software analysis and simulation packages based on the HCM were used in performing the analyses including:

- McTrans' *HCS 2010* (Version 6.3)
  - Freeway Segments
  - Ramp Merge/Diverge Areas
  - Weaving Segments
- Trafficware's *Synchro* (Version 8.0.806.61)
  - Unsignalized Intersections
  - Signalized Intersections
- PTV's *VISSIM* (Version 7.00-05)
  - Network Simulation
  - Freeway Segments
  - Ramp Merge/Diverge Areas

The analysis methodologies contained in the HCM for the various facility types and users describe the operational conditions in terms of a Level of Service (LOS). The HCM

defines LOS as *"…a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions. Safety is not included in the measures that establish service levels."*

The HCM LOS criteria for the freeway segments, ramp merge/diverge segments, weaving segments, unsignalized intersections and signalized intersections are discussed below.

The HCM characterizes the capacity of a basic freeway segment *"…by three performance measures: density in passenger cars per mile per lane (pc/mi/ln), space mean speed in miles per hour (mi/h), and the ratio of demand flow rate to capacity (v/c). Each of these measures is an indication of how well traffic is being accommodated by the basic freeway segment."* **Table 3** shows the HCM LOS criteria for basic freeway segments. LOS F occurs when either the segment density exceeds 45 pc/mi/ln or when the segment v/c ratio exceeds 1.0 (regardless of the segment density).

Table 3: Basic Freeway Segments Level of Service Criteria

LOS	Density (pc/mi/ln)
A	<11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45 or v/c>1.0

Source: Table 10 – Interstate 85 Widening Traffic Analysis Report

Ramp-freeway junctions occur at merging maneuvers (on-ramps) or at diverging maneuvers (off-ramps). The operations of these merge and diverge areas are affected by a number of factors, including the operation of the adjacent freeway segment and the proximity and flow of adjacent ramps. Typically, the influence area of the ramps is 1,500 feet from a diverge point and a merge point. As with freeway segments and weaving

segments, the LOS of a merge or diverge area is related to the density of the segment. Regardless of the density, the merge or diverge areas are considered to operate at LOS F when the freeway demand exceeds the capacity of the freeway segment (at diverge areas and merge areas), as well as when the ramp demand exceeds the ramp capacity. **Table 4** shows the HCM LOS criteria for Ramp Merge and Diverge areas.

The LOS for unsignalized intersections is based on the average control delay per vehicle. Since major street traffic is seldom controlled by stop signs (except at intersections with all-way stop control or in special circumstances), major street traffic generally will experience virtually no delay. Most of the delay will be encountered by traffic on approaches controlled by stop signs.

Table 4: Ramp Merge and Diverge Areas Level of Service Criteria

LOS	Density (pc/mi/ln)
A	<10
B	>10-20
C	>20-28
D	>28-35
E	>35
F	v/c>1.0

Source: Table 12 – Interstate 85 Widening Traffic Analysis Report

Under certain conditions, delay will also be encountered by left turning traffic on the major street waiting for appropriate sized gaps in the opposing traffic flow to complete their turn. Therefore, the delay experienced by stop-controlled movements and major street left turns, rather than the entire average intersection delay, is used to identify the critical LOS at these intersections. **Table 5** shows the HCM LOS criteria for unsignalized intersections.

Table 5: Unsignalized Intersection Level of Service Criteria	
LOS	**Average Delay (sec/veh)**
A	<10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Source: Table 13 – Interstate 85 Widening Traffic Analysis Report

The LOS for signalized intersections is based on the average control delay per vehicle. LOS can be identified for the entire intersection, individual intersection approaches, and each movement/lane-group. **Table 6** shows the HCM LOS criteria for signalized intersections.

Table 6: Signalized Intersection Level of Service Criteria	
LOS	**Average Delay (sec/veh)**
A	<10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Source: Table 14 – *Interstate 85 Widening Traffic Analysis Report*

4.0 Traffic Volumes

This section presents the traffic volumes utilized in the IMR for 2014 Existing Conditions, and then for 2040 Future No-Build and Build Conditions for Exit 95.

4.1 Existing 2014 Traffic Volumes

Turning movement traffic count data was obtained from SCDOT for a number of ramp termini and other adjacent intersections within the Exit 95 interchange. Additional traffic

counts were performed to supplement the counts provided by SCDOT. The turning movement count data, which is provided in **Appendix A**, includes:

- SCDOT provided counts at:
  - Pleasant School Road at Wilcox Avenue (S-11-668)
  - I-85 Southbound Ramps at Pleasant School Road
  - I-85 Northbound Off-Ramp at Hampshire Drive (S-11-661)
- Additional counts performed at:
  - Pleasant School Road and UPS Terminal Driveway
  - Hampshire Drive (S-11-661) and Suzanna Drive
  - Matthew Road (S-11-615) and Suzanna Drive)
  - Matthew Road (S-11-615) and Shelby Highway
  - Hampshire Drive (S-11-661) and Fatz Drive
  - Shelby Highway and Fatz Drive
  - Shelby Highway at Hampshire Drive (S-11-661)/Pleasant School Road

The turning movement traffic count data obtained from SCDOT and from the additional counts were reviewed. The morning and afternoon peak hour volumes at each of the ramp termini and the adjacent intersections at each interchange were identified and the traffic balanced between intersections. The balanced morning and afternoon peak hour volumes for the Exit 95 interchange are shown in **Figure 11**.

4.2 2040 Traffic Volumes

An annual growth rate of 1.5 percent was applied to the freeway, ramp traffic, and intersection turning movement volumes to develop projections of the 2040 No-Build design hour traffic volumes. The 2040 estimated peak hour turning movement volumes shown on the existing (no-build) network at the Exit 95 interchange are shown in **Figure 12**.

2040 Build turning movement volumes were derived from the 2040 No-Build turning movements. The turning movements were revised based on the existing and proposed ramp locations, and the re-aligned and relocated intersections in the preferred alternative. The 2040 Build volumes for the preferred alternative are shown in **Figure 13.**

5.0 Traffic Operations

5.1 Freeway and Ramp Merge/Diverge Segment Analysis

The analyses of basic freeway segments within the study area were performed for 2014 Existing Conditions and for Future 2040 No-Build and Build Conditions. The following criteria were identified through discussions with SCDOT and used for various inputs within the freeway segment analysis:

- The 30th highest hour volumes based on the P-132 ATR count station data, balanced through the system, were used for the freeway segment mainline volumes.
- To develop Future 2040 traffic volumes, a 1.5 percent annual growth rate was applied to existing volumes in the study area.
- A peak hour factor of 0.90 was used for freeway segments and ramp areas.
- The proportion of peak hour trucks and buses traveling on the freeway segments and ramp movements, based on SCDOT data, is 25 percent.
- Based on the grades through the study area, the terrain was set as "Rolling."
- Free flow speed was set at the posted speed limit along the segment.

The analysis also incorporated the freeway segments, upstream and downstream ramps and their merge/diverge movements adjacent to Exit 95 at Exits 92 and 96.

The 2014 Existing Conditions and 2040 No-Build Conditions analyses were performed using the existing number of freeway lanes present on the segments within the study area. The 2040 Build Conditions analyses were performed assuming I-85 would provide three lanes in each direction on all segments within the study area. The basic freeway segment analysis outputs are provided in **Appendix B** and a summary of results is shown in **Table 7**. In the 2014 Existing Conditions, the following LOS were measured:

- During the morning peak hour, all freeway segments in the vicinity of Exit 95 operate at LOS B or C.
- During the afternoon peak hour, all freeway segments in the vicinity of Exit 95 operate at LOS D.

In the 2040 No-Build Conditions results in increased density and reductions of freeway segment LOS.

- During the 2040 No-Build Conditions morning peak hour:
  - The northbound freeway segments north of Exit 95 will operate at LOS C.
  - The northbound freeway segments south of Exit 95 will operate at LOS D.
  - The southbound freeway segments adjacent to exit 95 will operate at LOS D.
- During the 2040 No-Build Conditions afternoon peak hour:
  - All freeway segments adjacent to Exits 95 in both directions are expected to operate at LOS F.

The additional capacity provided by the construction of a third lane in each direction along I-85 will result in substantial improvement in LOS compared to the 2040 No-Build Conditions, with LOS results comparable to those experienced under existing conditions.

The 2040 Build analysis results indicate that:

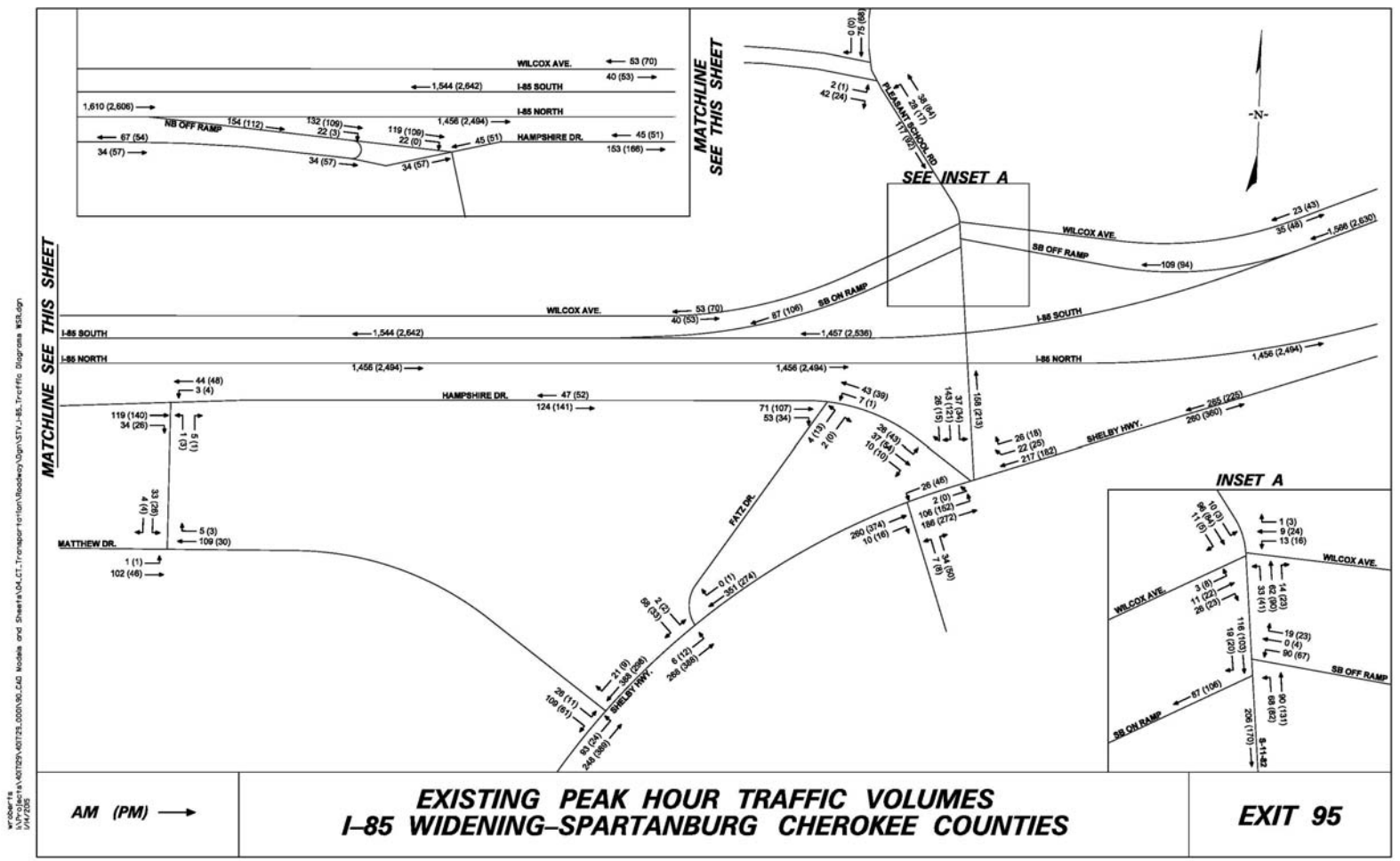
- During the 2040 Build Conditions morning peak hour, all freeway segments in the vicinity of Exit 95 operate at LOS B or C.
- During the 2040 Build Conditions afternoon peak hour, all freeway segments in the vicinity of Exit 95 operate at LOS D.

The Ramp Merge Analyses outputs are provided in **Appendix C** and the summary results are shown in **Table 8**.

- During the morning peak hour, the ramp merge at Exit 95 operates at LOS C.
- During the afternoon peak hour, the ramp merge at Exit 95 operates at LOS D.

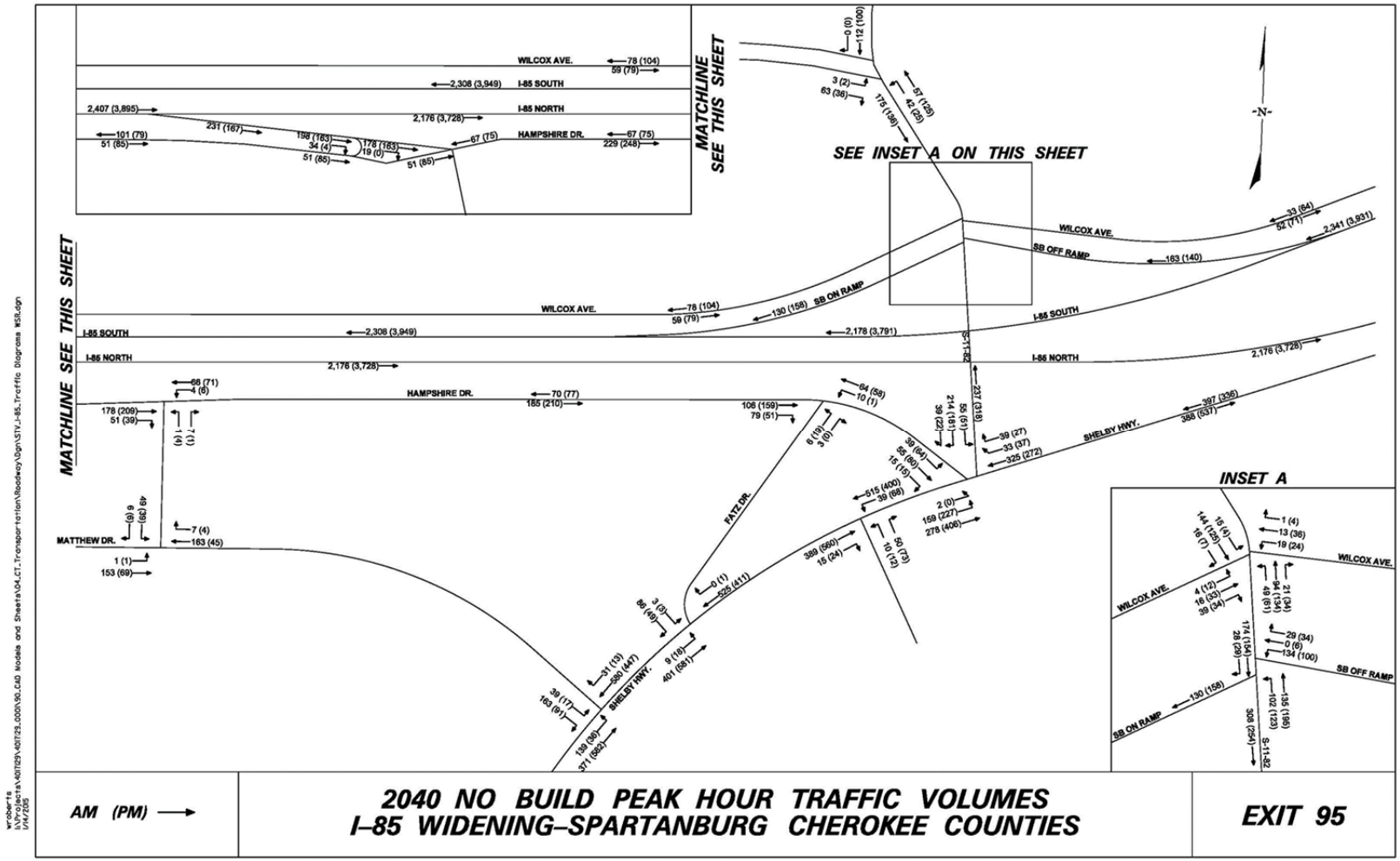
With traffic volumes projected to increase within the corridor for 2040 No-Build Conditions with no improvements to I-85, the increased traffic volumes traveling on the existing interstate capacity at the southbound ramp of Exit 95 will result in increased density and will reduce the merge area LOS.

- During the morning peak hour, the ramp merge at Exit 95 operates at LOS D.
- During the afternoon peak hour, the ramp merge at Exit 95 operates at LOS F.



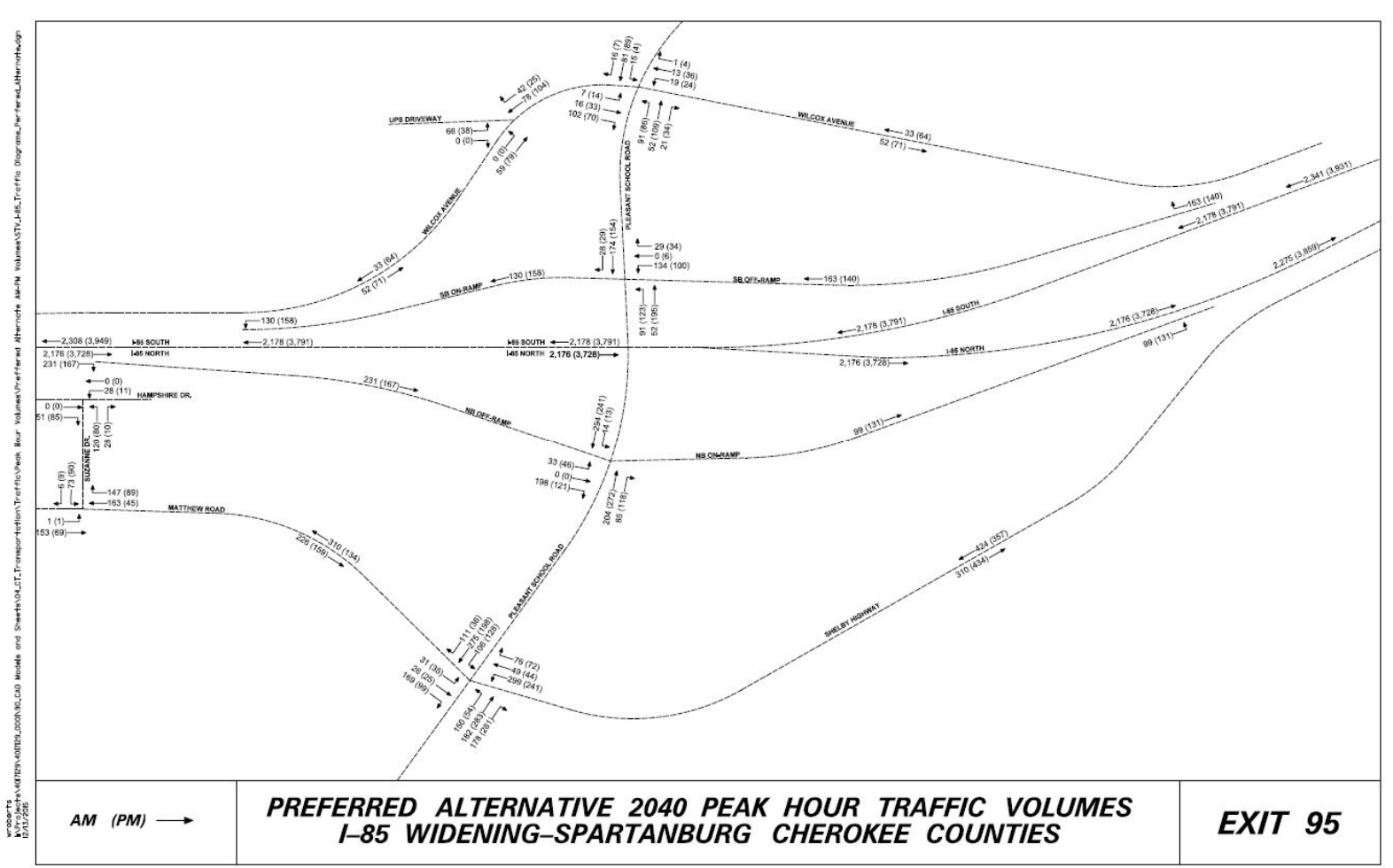
Source: Figure 76, *Interstate 85 Widening Traffic Analysis Report*

Figure 11. Exit 95 - Pleasant School Road Existing Peak Hour Traffic Volumes



Source: Figure 85, *Interstate 85 Widening Traffic Analysis Report*

Figure 12. Exit 95 - Pleasant School Road 2040 No-Build Peak Hour Traffic Volumes



Source: Design Team

Figure 13. Exit 95 - Pleasant School Road Alternative 2 2040 Peak Hour Traffic Volumes

The 2040 Build analysis results indicate that:

- During the morning peak hour, the ramps (northbound and southbound) operate at LOS B.
- During the afternoon peak hour, the ramps (northbound and southbound) operate at LOS C.

The additional capacity provided by the construction of a third lane in each direction along I-85 will lower densities in the ramp merge areas, resulting in substantial improvement in LOS compared to the 2040 No-Build condition, with LOS results comparable to those experienced under existing conditions.

The Ramp Diverge Analyses are also provided in **Appendix C** and the summary results are shown in **Table 9**.

Using the design hour volumes for the morning and afternoon peak hours at Exit 95, the ramp diverge analysis results for 2014 Existing Conditions indicate that:

- During the morning peak hour, the northbound and southbound off-ramps operate at LOS C.
- During the afternoon peak hour, the southbound off-ramp at Exit 95 operates at LOS E and the northbound off-ramp operates at LOS D.

With traffic volumes projected to increase within the corridor for 2040 No-Build Conditions with no improvements to I-85, the increased traffic volumes traveling on the existing interstate capacity at Exit 95 will result in increased density and will reduce the diverge area LOS at the off-ramps.

- During the morning peak hour, both off-ramp diverge areas operate at LOS D.
- During the afternoon peak hour, both off-ramp diverge areas operate at LOS F.

The additional capacity provided by the construction of a third lane in each direction along I-85 will lower densities in the ramp diverge areas, resulting in substantial improvement in LOS compared to the 2040 No-Build Conditions, with LOS results comparable to those experienced under existing conditions. The 2040 Build analysis results indicate that:

- During the morning peak hour, both off-ramp diverge areas operate at LOS C.
- During the afternoon peak hour, both off-ramp diverge areas operate at LOS D.

Table 7: Basic Freeway Segment Analysis Results												
Direction & Segment	**AM Peak Hour**						**PM Peak Hour**					
	2014 Existing		2040 No-Build		2040 Build		2014 Existing		2040 No-Build		2040 Build	
	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB Exit 92-95	C	18.9	D	29.5	C	18.9	D	33.2	F	99.7	D	33.0
NB Exit 95-96	B	17.1	C	26.0	B	17.8	D	31.0	F	80.8	D	32.5
SB Exit 96-95	C	18.4	D	28.4	C	18.3	D	33.6	F	105.1	D	33.4
SB Exit 95-92	C	18.1	D	27.9	C	18.1	D	33.9	F	108.0	D	33.7

Source: Table 15, *Interstate 85 Widening Traffic Analysis Report*

Table 8: Freeway Merge Analysis Results												
Direction & Segment	**AM Peak Hour**						**PM Peak Hour**					
	2014 Existing		2040 No-Build		2040 Build		2014 Existing		2040 No-Build		2040 Build	
	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB Exit 95	n/a	n/a	n/a	n/a	B	15.9	n/a	n/a	n/a	n/a	C	27.4
SB Exit 95	C	20.2	D	29.2	B	14.3	D	33.2	F	48.7	C	26.4

Source: Table 17, *Interstate 85 Widening Traffic Analysis Report*

Table 9: Freeway Diverge Analysis Results												
Direction & Segment	**AM Peak Hour**						**PM Peak Hour**					
	2014 Existing		2040 No-Build		2040 Build		2014 Existing		2040 No-Build		2040 Build	
	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
NB Exit 95	C	21.4	D	31.8	C	21.7	D	34.4	F	51.4	D	31.6
SB Exit 95	C	21.7	D	31.9	C	21.1	E	35.7	F	52.8	D	31.8

Source: Table 18, *Interstate 85 Widening Traffic Analysis Report*

5.1 Existing and 2040 No-Build Intersection Analysis

Capacity analyses for the signalized and unsignalized intersections at the interchanges within the study area were performed. Analyses were performed for 2014 Existing Conditions (existing traffic, intersection traffic control, and geometry) and the 2040 No-Build Conditions (2040 traffic with existing intersection traffic control and geometry).

As stated previously, for unsignalized intersections, the intersection operation is represented by the worst approach delay and LOS of all the stop sign controlled approaches to the intersection. For signalized intersections, the intersection operation is represented by the intersection delay and LOS.

The results of the unsignalized intersection capacity analyses for 2014 Existing Conditions and the 2040 No-Build Conditions are shown in **Table 10.** The Synchro HCM intersection capacity reports for each intersection are provided in the **Appendix D**.

In general, with the forecast increases in traffic and without improvements to the intersections, delay in the 2040 No-Build analyses can be expected to be higher than delay during the Existing Conditions analyses. In some cases, the increases in delay may still result in acceptable LOS. In other cases, the increases in delay may result in LOS E or LOS F conditions. When these results occur, it may be necessary to provide additional capacity (such as constructing separate left-and/or right turn-lanes) and/or changes in the traffic control to reduce delay and improve the LOS.

LOS results for the 2040 No-Build Conditions at Exit 95 are illustrated in **Figure 14**.

The signalized intersection of Pleasant School Road with Shelby Highway/Hampshire Drive operates at LOS B during both peak hours. The stop sign controlled approaches at the remaining unsignalized intersections operate at LOS C or better during the morning and afternoon peak hours.

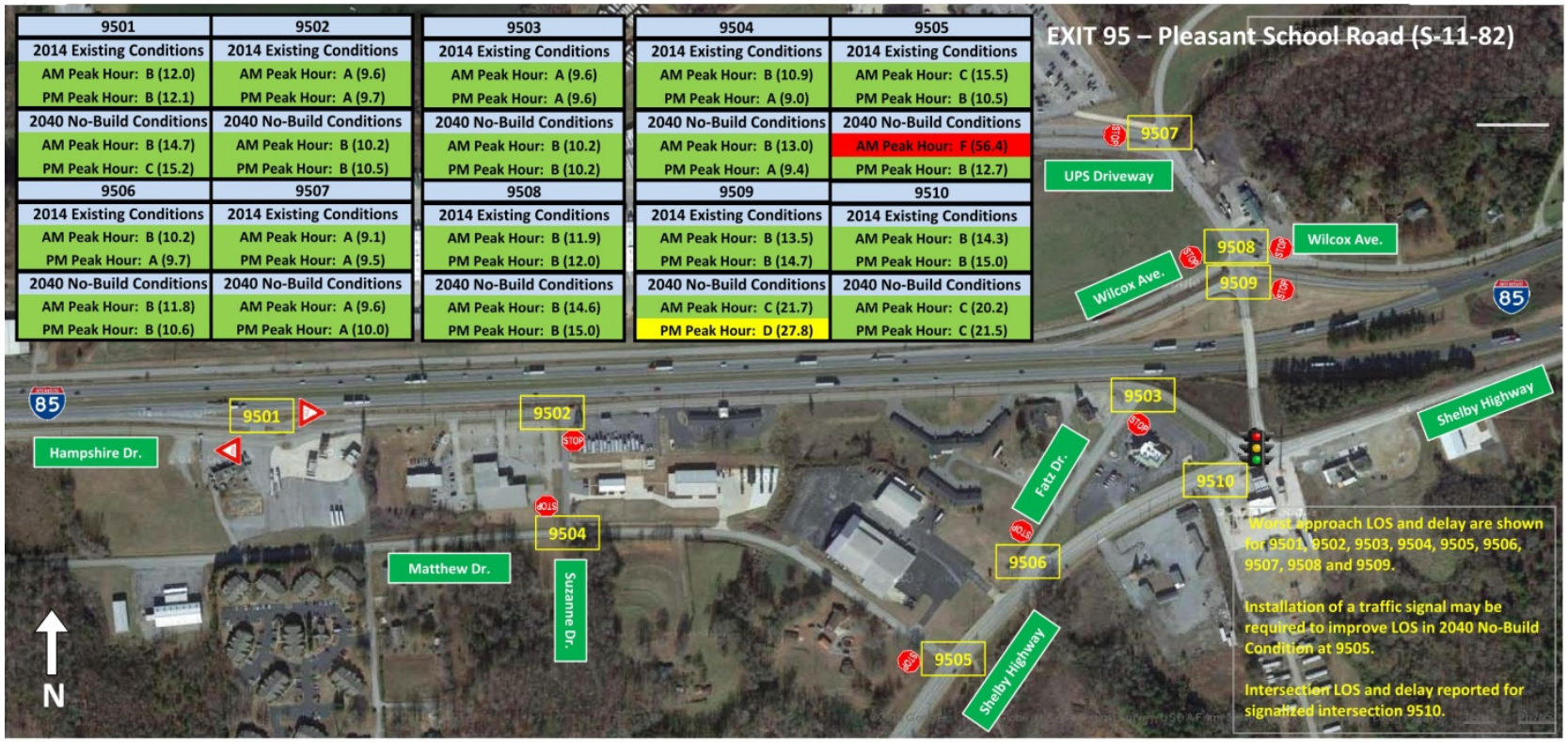
With the forecast increases in traffic and without improvements to the intersection for the 2040 No-Build Conditions, delay can be expected to increase on the intersection approaches.

Table 10: Exit 95 Intersection Capacity Analysis

Intersection Name	ID	2014 Existing Conditions				2040 No-Build Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Hampshire Drive at I-85 Northbound Off-Ramp*	9501	B	12.0	B	12.1	B	14.7	C	15.2
Hampshire Drive at Suzanna Drive*	9502	A	9.6	A	9.7	B	10.2	B	10.5
Hampshire Drive at Fatz Road*	9503	A	9.6	A	9.6	B	10.2	B	10.2
Suzanna Drive at Matthew Road*	9504	B	10.9	A	9.0	B	13.0	A	9.4
Shelby Highway at Matthew Road*	9505	C	15.5	B	10.5	F	56.4	B	12.7
SC 18 at Fatz Drive*	9606	B	10.2	A	9.7	B	11.8	D	10.6
Pleasant School Road at UPS Driveway*	9507	A	9.1	A	9.5	A	9.6	A	10.0
Pleasant School Road at Wilcox Avenue*	9508	B	11.9	B	12.0	B	14.6	B	15.0
Pleasant School Road at Southbound Ramp*	9509	B	13.5	B	14.7	C	21.7	D	27.8
Shelby Highway/Hampshire Drive at Pleasant School Road	9510	B	14.3	B	15.0	C	20.2	C	21.5

*Unsignalized intersection; worst approach LOS and delay reported.

Source: Table 19 Interstate 85 Widening Traffic Analysis Report



Source: Figure 98, *Interstate 85 Widening Traffic Analysis Report*

Figure 14. Exit 95 Intersection LOS Summary

The yield and/or the stop sign controlled approaches at the remaining unsignalized intersections are anticipated to operate at LOS D or better during the morning and afternoon peak hours, with the exception of the eastbound approach of Matthew Road at Shelby Highway, which is projected to operate at LOS F during the morning peak hour.

The intersection of Shelby Highway and Matthew Road may require capacity or traffic control improvements, such as the installation of a traffic signal, to provide acceptable LOS during the 2040 No-Build Conditions.

5.2 2040 Build Intersection Analysis – Preferred Alternative 2

The results of the unsignalized and signalized intersection capacity analyses for the 2040 Build Conditions compared to the 2040 No-Build Conditions are shown in **Table 11**. **Table 12** also summarizes the storage length and queuing for 2040 Build Conditions. The queuing intersection outputs for each intersection are provided in **Appendix D.**

As stated in the previous section, for unsignalized intersections, the intersection operation is represented by the worst approach delay and LOS of all the stop sign controlled approaches to the intersection. For signalized intersections, the intersection operation is represented by the intersection delay and LOS.

The Pleasant School Road interchange is expected to be modified as part of the I-85 widening project. 2040 Build analyses for the intersections within the Exit 95 interchange area were performed for two alternatives. Alternative 2 has been selected as the Preferred Alternative and are presented in this report.

The LOS results for the 2040 Build Conditions at Exit 95 are illustrated in **Figure 15**.

As discussed previously, Alternative 2 replaces the existing Exit 95 interchange with a diamond interchange. Other elements of the Alternative 2 include:

- Constructing a northbound on-ramp
- Realigning Pleasant School Road
- Relocating and adjusting the alignment of the approaches at the intersection of Pleasant School Road with Wilcox Avenue to the north to increase the spacing between that intersection and the southbound ramp intersection

Table 11: Exit 95 Intersection Capacity Analysis Report - 2040 No-Build vs 2040 Build

Intersection Name	ID	2040 No-Build Conditions				2040 Build Conditions (Alternative 2)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Hampshire Drive at I-85 Northbound Off-Ramp*	9501	Intersection incompatible with HCM 2000				Intersection Removed			
Hampshire Drive at Suzanna Drive*	9502	B	10.2	B	10.5	A	10.0	A	9.4
Hampshire Drive at Fatz Road*	9503	B	10.2	B	10.2	Intersection Removed			
Suzanna Drive at Matthew Road*	9504	B	13.0	A	9.4	C	15.9	B	11.1
Shelby Highway at Matthew Road*	9505	F	56.4	B	12.7	F	7,063.8	F	636.7
Shelby Highway at Matthew Road	9505	Same as above				C	29.9	C	20.3
Shelby Highway at Fatz Drive*	9506	B	11.8	D	10.6	Intersection Removed			
Pleasant School Road at UPS Driveway*	9507	A	9.6	A	10.0	Intersection Removed			
Pleasant School Road at Wilcox Avenue*	9508	B	14.6	B	15.0	B	12.3	B	12.4
Pleasant School Road at I-85 Southbound Ramp*	9509	C	21.7	D	27.8	C	20.4	C	22.7
Shelby Highway at Pleasant School Road	9510	C	20.2	C	21.5	Intersection Combined with Matthew Road			
Pleasant School Road at Northbound Ramp*	9511	Intersections added under Build Conditions				B	14.3	B	13.8
Wilcox Avenue at North UPS Driveway*	9512					A	9.6	B	10.1

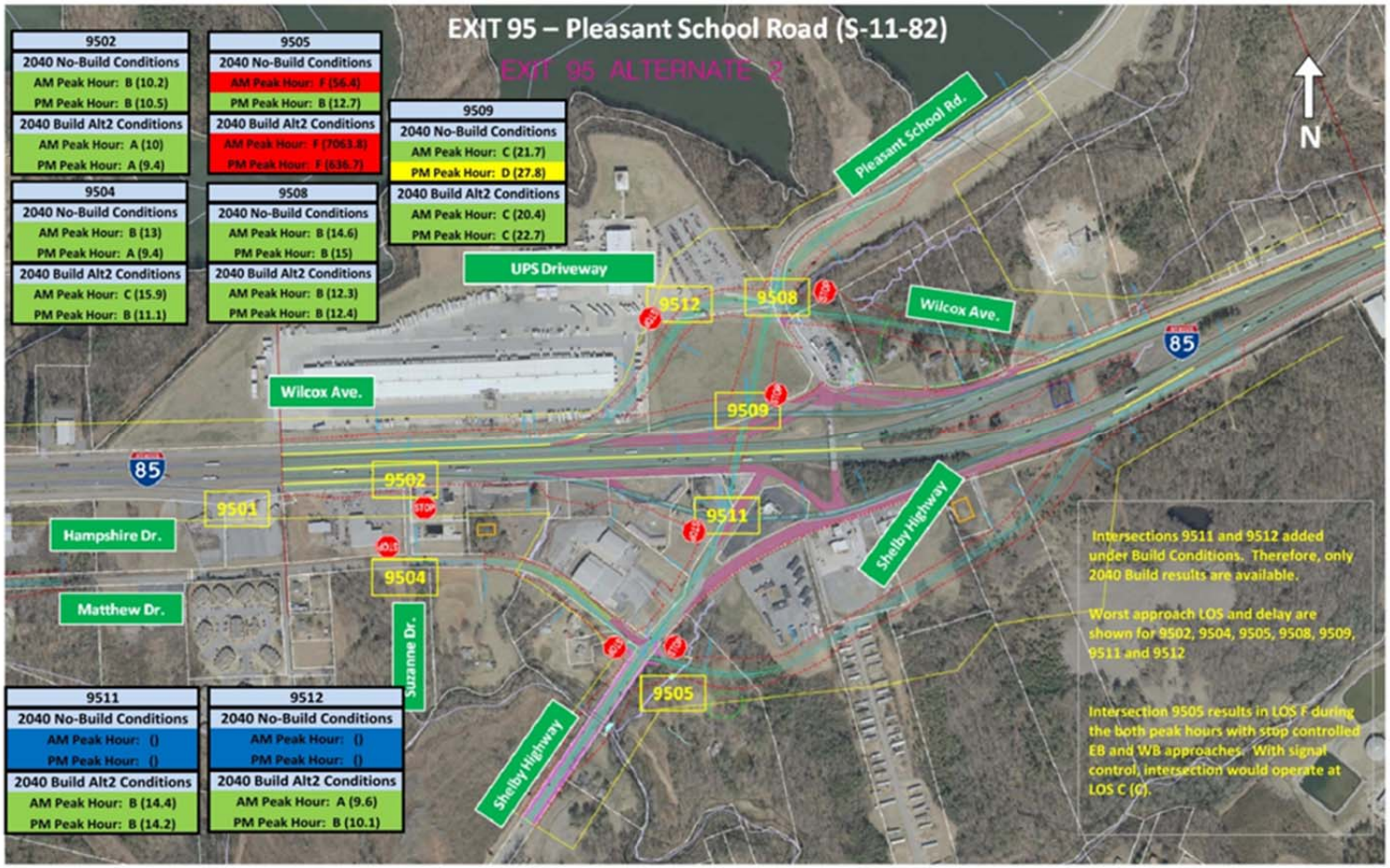
*Unsignalized intersection; worst approach LOS and delay reported.

Source: Table 27 Interstate 85 Widening Traffic Analysis Report

Table 12: 2040 Build Intersection Queue Lengths

Intersection Name	ID	Movement	2040 Base Conditions	2040 Build Conditions (Alternative 2)		Design Storage Length (ft)
				AM Peak	PM Peak	
Shelby Highway at Matthew Road	9505	NBL	Storage bay Added under Build Conditions	85	30	150
		SBL		65	65	150
		EBL		40	40	150
		WBL		275	180	150
Pleasant School Road at Wilcox Avenue	9508	NBL		5	5	150
		SBL		0	0	150
		EBL		0	5	150
		WBL		5	5	150
Pleasant School Road at I-85 SB ramps	9509	NBL		5	10	150
Pleasant School Road at I-85 NB ramps	9511	SBL		0	0	150

Source: Table 28 Interstate 85 Widening Traffic Analysis Report



Source: Figure 111, *Interstate 85 Widening Traffic Analysis Report*

Figure 15 . Exit 95 Improvement Alternative 2

- Relocating and adjusting the alignment of Shelby Highway and its intersections to eliminate its intersection with Hampshire Drive to increase the spacing between the Pleasant School Road intersections with Shelby Highway and the northbound ramp intersection

The intersection analyses were performed assuming all the intersections in the interchange area would be unsignalized.

In the 2040 Build Conditions, the stop sign controlled approaches at the unsignalized intersections operate at LOS B or better during the morning and afternoon peak hours, with the exception of the relocated intersection of Green River Road with Shelby Highway and Matthew Drive. At this intersection, the stop sign controlled approaches of Matthew Drive and Shelby Highway are projected to operate at LOS F during both peak hours. Based on the results of this analysis, the unsignalized intersection of Green River Road with Matthew Drive/Shelby Highway would likely require signalization. With signalization, the intersection could be expected to operate at LOS C during both peak hours as shown in **Table 11.**

The conceptual design of Alternative 2 intersections are illustrated in **Figure 1**.

5.3 VISSIM Network Analysis

VISSIM, a microscopic behavior-based multi-purpose traffic simulation program, was used to analyze the 2014 Existing, No-Build, and preferred alternative freeway networks. VISSIM simulates traffic operations on freeway segments and provides traffic operational data such as vehicle delay, density, travel speeds, travel times, and queuing at ramp terminals on freeway networks. This software has the ability to evaluate each individual vehicle for every model time step in the simulation and then assigns the appropriate behavior logic according to the traffic operations that the particular vehicle encounters. The *Interstate 85 Widening Traffic Analysis Report* includes how the microscopic simulation model was developed for the 18-mile interstate section of the project and the processed used based the Federal Highway Administration Traffic Analysis Toolbox.

There are several limitations of using HCS, which is a macroscopic, deterministic model that uses HCM methodologies. The HCS analysis may show differing conditions than existing operations and conditions in the field because it does not consider upstream and

downstream traffic impacts and is unable to model interactions between the two. The HCS model is a spot check at a certain location; therefore upstream and downstream operations are not taken into consideration and have no effect on the analyses. This is not the case for actual conditions, as upstream or downstream congestion may have direct impacts at a specific segment causing a ripple effect. The VISSIM simulation model evaluated each segment by taking into consideration vehicle interaction and driver behaviors, as well as the operation impacts for both the upstream and downstream traffic conditions.

The 2014 Existing Conditions and 2040 No-Build Conditions VISSIM analysis was performed using the existing number of freeway lanes present on the segments within the study area, similar to the HCS analysis. The only difference between the existing conditions and No-Build networks is the input volumes. The 2040 No-Build Conditions volumes were developed using the 1.5 percent annual growth rate in traffic.

The 2040 Build Conditions Preferred Alternative 2 AM and PM VISSIM models for the 18-mile study area of I-85 were developed by modifying the 2040 No-Build models to incorporate the widening of I-85 from two to three lanes in each direction as well as the preferred alternatives for each interchange. Synchro was used to input the recommended signal timing information into the network for the signalized arterial intersections. Each simulation was run for one hour with 20 minutes of seeding time to load the network. 10 repetitions were used for both the AM and PM peak periods.

The Basic Freeway Segment Analysis outputs for the 2014 Existing Conditions, 2040 No-Build Conditions, and the Preferred Alternative 2 conditions are provided in **Appendix D** and a summary of results are shown in **Table 13**.

Table 13: Freeway Segment Capacity Analysis VISSIM Results

Segment	2014 Existing Conditions				2040 No-Build Conditions				2040 Build Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens
NB												
Exit 92-95	B	14.8	C	25.2	C	22.6	D	32.1	B	15.0	C	24.4
Exit 95-96	B	13.5	C	24.2	C	20.9	D	30.7	B	14.8	C	25.3
SB												
Exit 96-95	B	15.4	D	27.1	C	24.2	F	47.9	B	15.9	D	26.4
Exit 95-92	B	15.3	D	26.8	C	23.7	E	40.4	A	10.1	D	32.6

Source: Table 29 Interstate 85 Widening Traffic Analysis Report

The analysis results for the freeway segments, summarized in **Table 13**, indicate that for the 2014 Existing Conditions:

- During the morning peak hour, northbound and southbound Exit 95 freeway segments operate at LOS B.
- During the afternoon peak hour, northbound and southbound Exit 95 freeway segments operate at LOS C or D.

In the 2040 No-Build Conditions, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and reductions of freeway segment LOS.

- During the morning peak hour:
  - The Exit 95 northbound freeway segments operate at LOS C
  - The Exit 95 southbound freeway segments operate at LOS C
- During the afternoon peak hour:
  - The Exit 95 northbound freeway segments operate at LOS D.
  - The Exit 95 southbound freeway segments operate at LOS E or F.

The additional capacity provided by the widening project results in improved LOS in the 2040 Build Conditions with LOS similar to those indicated in the 2014 Existing Condition analysis. The 2040 Build Conditions analysis indicates that:

- During morning peak hour, the northbound and southbound freeway segments will operate at LOS B or better.
- During afternoon peak hour, the northbound and southbound freeway segments will operate at LOS D or better.

The Ramp Merge Analyses outputs are provided in **Appendix** and the summary results are shown in **Table 14**.

Table 14: Ramp Merge Capacity Analysis VISSIM Results

Segment	2014 Existing Conditions				2040 No-Build Conditions				2040 Build Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens
NB												
Exit 95	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	B	14.6	C	23.4
SB												
Exit 95	B	14.8	C	26.0	C	23.1	E	39.4	B	16.4	D	27.2

Source: Table 30 Interstate 85 Widening Traffic Analysis Report

The analysis results for the ramp merge areas, summarized in **Table 14**, indicate the following:

Using the design hour volumes for the morning and afternoon peak hours, the analysis results for 2014 Existing Conditions indicate that:

- During the morning peak hour, the southbound ramp merge area operates at LOS B.
- During the afternoon peak hour, the southbound ramp merge area operates at LOS C.

In the 2040 No-Build Conditions, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and will reduce the merge area LOS.

- During the 2040 No-Build Conditions morning peak hour the southbound merge areas operate at LOS C.
- During the 2040 No-Build Conditions afternoon peak hour the southbound merge areas operate at LOS E.

The additional capacity provided by the construction of a third lane in each direction along I-85 will lower densities in the ramp merge areas, resulting in substantial improvement in LOS compared to the 2040 No-Build condition, with LOS results comparable to those experienced under existing conditions. The 2040 Build analysis results indicate that:

- During the 2040 Build morning peak hour the northbound and southbound ramp merge areas at Exit 95 will operate at LOS B.
- During the 2040 Build afternoon peak hour, the northbound and southbound ramp merge areas at Exit 95 will operate at LOS D or better.

The outputs for the 2040 Build Condition analyses are provided in **Appendix**.

With the widening of I-85 to accommodate the projected increase in traffic volume within the corridor, the increased traffic volumes in the Exit 95 diverge areas in the 2040 Build Conditions will have densities comparable to those in 2014 Existing Conditions.

The Ramp Diverge Analyses are also provided in **Appendix** and the summary results are shown in **Table 15**.

Table 15: Ramp Diverge Capacity Analysis VISSIM Results

Segment	2014 Existing Conditions				2040 No-Build Conditions				2040 Build Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens	LOS	Dens
NB												
Exit 95	B	13.4	C	24.3	C	21.1	D	31.1	B	15.3	C	24.4
SB												
Exit 95	B	14.9	D	26.5	C	23.9	E	41.6	A	9.4	C	25.8

Source: Table 31 Interstate 85 Widening Traffic Analysis Report

The analysis results for the ramp merge areas, summarized in **Table 15**, indicate the following:

Using the design hour volumes for the morning and afternoon peak hours, the analysis results for 2014 Existing Conditions indicate that:

- During the morning peak hour, all ramp merge areas operate at LOS B.
- During the afternoon peak hour, all ramp merge areas operate at LOS C or D.

With traffic volumes projected to increase for the 2040 No-Build Conditions, the increased traffic volumes traveling on the existing interstate capacity will result in increased density and will reduce the diverge area LOS.

- During the morning peak hour:
  - The northbound off-ramp at Exit 95 will operate at LOS C.
  - The southbound off-ramp at Exit 95 will operate at LOS C.
- During the afternoon peak hour:
  - The diverge area for the northbound off-ramp at Exit 95 will operate at LOS D.
  - The diverge area for the southbound off-ramp at Exit 95 will operate at LOS E.

The additional capacity provided by the construction of a third lane in each direction along I-85 will lower densities in the ramp diverge areas, resulting in substantial improvement in LOS compared to the 2040 No-Build condition, with LOS results comparable to those experienced under existing conditions. The 2040 Build analysis results indicate that:

- During the 2040 Build morning peak hour, both Exit 95 off-ramp diverge areas will operate at LOS B or better.
- During the 2040 Build afternoon peak hour, both Exit 95 off-ramp diverge areas will operate at LOS C.

6.0 Interchange Justifications

A policy statement for justifying the need for additional or modified access to the existing sections of an Interstate System was first published in the Federal Register on October 22, 1990 entitled Access to the Interstate System. It was then modified and updated on February 11, 1998 and on August 27, 2009. The objectives of this policy are to ensure that all new or revised access points do no adversely impact the operations and safety of the Interstate System, and all new or revised access points have been vetted through a systematic evaluation process.

In order to explain the intent and requirements of this new policy, FHWA published the Interstate System Access Information Guide in August 2010. This FHWA Guide was followed in preparing the current Interchange Modification Report (IMR) for the I-85/Exit 95 Interchange Cherokee County, South Carolina. **Appendix E** and **Appendix F** show the striping plan for the interchange and signing plan for the project from Exit 92 to Exit 96, respectively.

6.1 Policy Point 1

The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2 (a)).

The section of I-85 analyzed in this study is a major component of the regional network. Travel demand includes commuter traffic and heavy truck traffic that originates in areas adjacent to the interstate as well as through traffic between Charlotte and Atlanta. The analyses shows that existing operating conditions during the afternoon peak hour are approaching capacity of the four lane freeway, and are projected to be over-capacity during the 2040 No-Build Conditions.

The existing Exit 95 interchange configuration is not in compliance with current state and federal design requirements. Exit 95 is a partial diamond interchange. In the northbound direction, there is an off-ramp that intersects Hampshire Drive, and continues to the north (parallel to I-85) providing access to a number of commercial properties before terminating at a signalized five-leg intersection with Shelby Highway and Pleasant School Road. At this intersection, Shelby Highway runs east-west, with Pleasant School Road and Hampshire Drive intersecting Shelby Highway from the north. There is no on-ramp to I-85 Northbound at Exit 95. The southbound ramps form a conventional diamond interchange, but their intersection with Pleasant School Road is very close to the adjacent intersection of Pleasant School Road and Wilcox Avenue (approximately 60 feet north of the I-85 Southbound off-ramps).

Alternative 2, the preferred alternative, is a diamond interchange. In this alternative, Pleasant School Road will be realigned to tie directly to Shelby Highway south of the new interchange; the new alignment crosses I-85 on a new bridge, west of the existing bridge. On the north side of I-85, the new frontage road intersects Pleasant School Road, albeit at a distance less than the 750 foot intersection separation requirement outlined in the SCDOT *Access and Roadside Management Standards Manual*. On the south side of I-85, Matthew Drive will be realigned and extended to function as the service road, intersecting Shelby Highway approximately 770 feet south of the new interchange.

The proposed changes would meet the purpose and need for the project by bringing the interchange into compliance with current state and federal design requirements and to accommodate design year traffic. The safety at the interchange will be improved by providing on and off ramps that separate the interstate traffic from local traffic on the adjacent frontage roads. The on-ramps and their acceleration lanes will be long enough to allow traffic to get up to freeway speed prior to merging onto the interstate. The off-ramps and their deceleration lanes will be long enough to allow traffic to exit at mainline speed and safely decelerate prior to the ramp terminus as well as provide sufficient vehicle storage during peak hours to keep traffic from backing up into I-85.

The proposed changes would directly connect the on/off-ramps with the crossing arterial roadways in the study area. These proposed changes also conform to state and federal design standards for vertical clearance, merging and sight distances and on/off-ramp geometry.

6.2 Policy Point 2

The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).

The intent of Policy Point 2 is to demonstrate that a new access point would be needed in cases where transportation system management or alternative improvements to the existing interstate system would be inadequate.

Transportation System Management (TSM) can include improvements such as carpooling, ramp metering, reversible lanes, mass transit and high-occupancy vehicle (HOV) lanes to maximize the capacity and efficiency of the existing roadway network.

Typically, the TSM alternatives would be implemented to reduce or eliminate the need for new facility construction. However, the TSM alternative would not satisfy the project's Purpose and Need since it would not increase capacity, upgrade the obsolete interchange to meet current design requirements, and expand vertical clearances at overpass bridges. The provision of HOV facilities would still require widening mainline I-85 and constructing the proposed modifications to the existing interchange. Mass transit services in the I-85 corridor do not exist to the extent that transit could provide a reasonable alternative to relieve congestion in either the near term or for design year travel demand. Therefore, TSM strategies would not be effective in relieving delay and congestion, or addressing the Purpose and Need of the project.

Multiple alternatives were analyzed at Exit 95 as outlined in the *Interstate 85 Widening Traffic Report*. The preferred build alternative (Alternative 2) represents the most feasible option for meeting the purpose and need of the project. The Preferred Build Alternative was selected after considering multiple interchange designs, alternate roadway alignments and bridge locations. The selection process also considered minimizing impacts on the surrounding areas, such as streams, noise and farmland. All alternatives went through extensive review and comments from Public Information Meetings.

6.3 Policy Point 3

An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625. 2(a), 655. 603(d) and 771. 111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

The intent of the Policy Point 3 is to require detailed operational and safety analysis of the relevant interstate segments and provide a comparison of the no-build and build conditions that are anticipated to occur through the design year of the project.

The analysis of the interstate facility and Exit 95 is an extension of the previous project-wide traffic operations and safety analysis as summarized in the *I-85 Widening Traffic Analysis Report* and the *I-85 Widening Project MM 80 – MM 96 Accident Analysis Report*.

Adjacent interchanges, Exit 92 – Chesnee Highway/W Floyd Baker Boulevard (SC 11) is not planned to be modified but Exit 96 – Shelby Highway (SC 18) is planned to be modified as part of the I-85 Widening Project. Exit 92 located approximately 1.9 miles south of Exit 95 and Exit 96 is located approximately 1.1 miles north. These adjacent interchanges are not anticipated to contribute to operation concerns as analysis shows freeway segments operate at LOS D or better.

The analysis was performed using methodologies and procedures outlined in the Transportation Research Board's *Highway Capacity Manual* and used the HCS-2010 analysis and VISSIM simulation model software.

During the study period (past three years) for the *I-85 Widening Project MM 80 – MM 96 – Accident Analysis Report*, 116 crashes occurred in the vicinity of Exit 95 – Pleasant School Road on I-85, its ramps, and surrounding roadways. As noted in the report, a review of the crash history shows that the geometric conditions of the interchange and how it ties into the non-interstate roadway system play a large role in the crash locations. With the improved roadway configurations, it is expected that the potential for accidents will decrease. Due to a pedestrian fatality on the northbound ramp, additional lighting may be considered in the future to improve visibility in night conditions. Note that there are no destinations points of interest for pedestrians on the east side of I-85.

The current IMR study analyzed I-85 operations to explore the full range of likely impacts of the proposed project. The study was performed using HCS-2010 analysis software and VISSIM simulation models. The analysis results have been summarized in Section 5 of this report.

The analysis of the 2040 Build Conditions of the Preferred Alternative (Alternative 2) illustrates that the project would not have any significant negative impact on the safety or the operation of the facilities within the project area. The analysis shows Interstate 85 mainline operations and ramp merge/diverge areas are estimated to operate at LOS D or better during the 2040 Build Conditions. Without the proposed improvement, the freeway segments and ramp merge/diverge areas would operate at LOS C 2040 No-Build morning peak hour and at LOS D to LOS F during the 2040 No-Build afternoon peak hour.

6.4 Policy Point 4

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a) (2), and 655.603 (d)).

The intent of the Policy Point 4 is to require implementation of an interchange design for the new access that allows for all relevant movements for general purpose traffic, whenever feasible.

The existing I-85 interchange at Pleasant School Road is a partial diamond interchange that is missing a northbound on-ramp. The proposed new interchange will replace the existing northbound and southbound ramps and add a new northbound entrance ramp to provide a fully directional interchange that connects directly to the crossing arterial roadways.

6.5 Policy Point 5

The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.

The intent of Policy Point 5 is to ensure consistency of the access request with local and regional plans.

As part of the proposed I-85 widening between MM 80 and MM 96, the proposed project at Exit 95 is included in SCDOT's Statewide Transportation Improvement Program (STIP) for Spartanburg and Cherokee Counties. A source of funding for bridge, resurfacing and mainline interstate projects is available through 11 Act 98 of 2013. Act 98 provides an annual appropriation of $50 million to SCDOT, which in turn transfers an equivalent amount to the South Carolina Transportation Infrastructure Bank (SCTIB) to be utilized to finance an estimated $550 million of interstate improvements. This I-85 Improvement project is fully funded by approximately $262 million of the $550 million SCTIB funds.

6.6 Policy Point 6

In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired

access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111.

The intent of Policy Point 6 is to ensure coordinated network study and evaluation of cumulative effects for those cases when multiple new access requests are involved within the same vicinity.

This IMR study area is an extension of the broader study area that was analyzed during the *Interstate 85 Widening Traffic Analysis Report*. The I-85 Widening study reviewed the current and future traffic volumes on I-85 mainline and interchanges between MM 80 and MM 96. The northbound entrance ramp at Exit 95 is planned to be added as part of this project. No other known proposed or desired access changes are anticipated in the vicinity of this interchange.

6.7 Policy Point 7

When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).

The intent of Policy Point 7 is to ensure coordination and cooperation with relevant stakeholders when the need for interchange is primarily due to new developments.

The analysis assesses the Interstate network and evaluates the improvements required to accommodate the regional growth in traffic. The growth in freeway and local traffic results from incremental changes in land use over time, as represented by the annual growth rate applied to existing traffic to obtain 2040 base traffic volumes. The revisions proposed at Exit 95 are not due to a new, expanded or change in current or future development in the vicinity of the interchange.

6.8 Policy Point 8

The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include

supporting information and current status of the environmental processing (23 CFR 771.111).

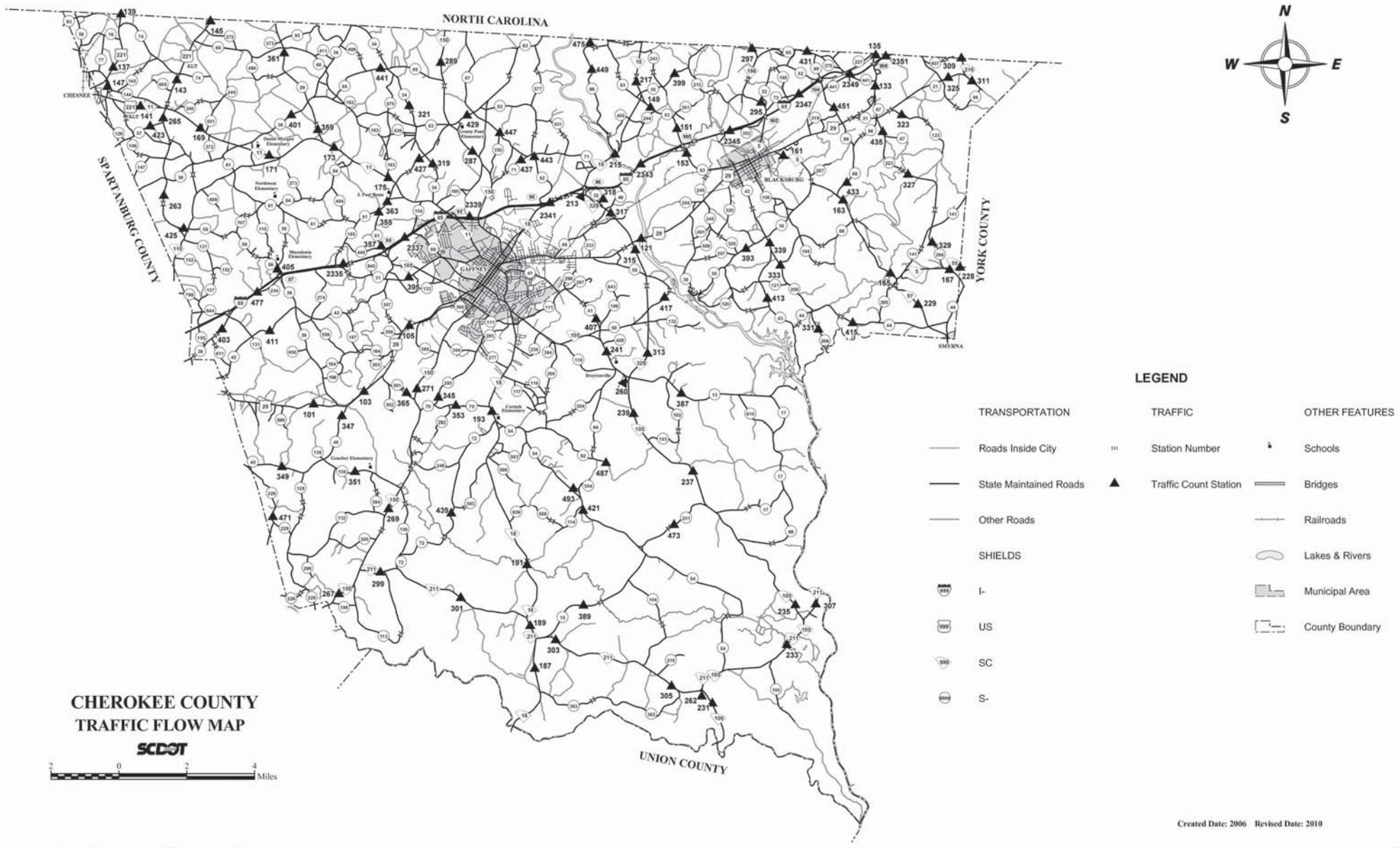
The intent of the Policy Point 8 is to ensure that the National Environmental Policy Act (NEPA) process is completed for environmental evaluation.

This IMR study area is an extension of the project-wide study that was summarized in the *Interstate 85 Widening Traffic Analysis Report*. That analysis considered the Interstate network, the proposed interstate widening, and proposed interchange modifications throughout the corridor and was developed concurrently with the preparation of the Environmental Assessment for the proposed improvements titled *Interstate Widening and Improvements Mile Marker 80-96*. The Environmental Assessment makes use of the same traffic data and improvement alternatives discussed in the project-wide study, including the Preferred Alternative at Exit 95, which was included in the Environmental Assessment as Alternative 2.

Appendix A

Traffic Volume Data

I-85 Mainline



Created Date: 2006 Revised Date: 2010

Produced By: GIS / Mapping, Road Data Services, Traffic Engineering

SHEET 3

GREENVILLE - SPARTANBURG METROPOLITAN AREA

TRAFFIC FLOW MAP

PREPARED BY

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

U.S. DEPARTMENT OF TRANSPORTATION

SCDOT

N

W E

S

2000 0 2000 4000 Feet

LEGEND

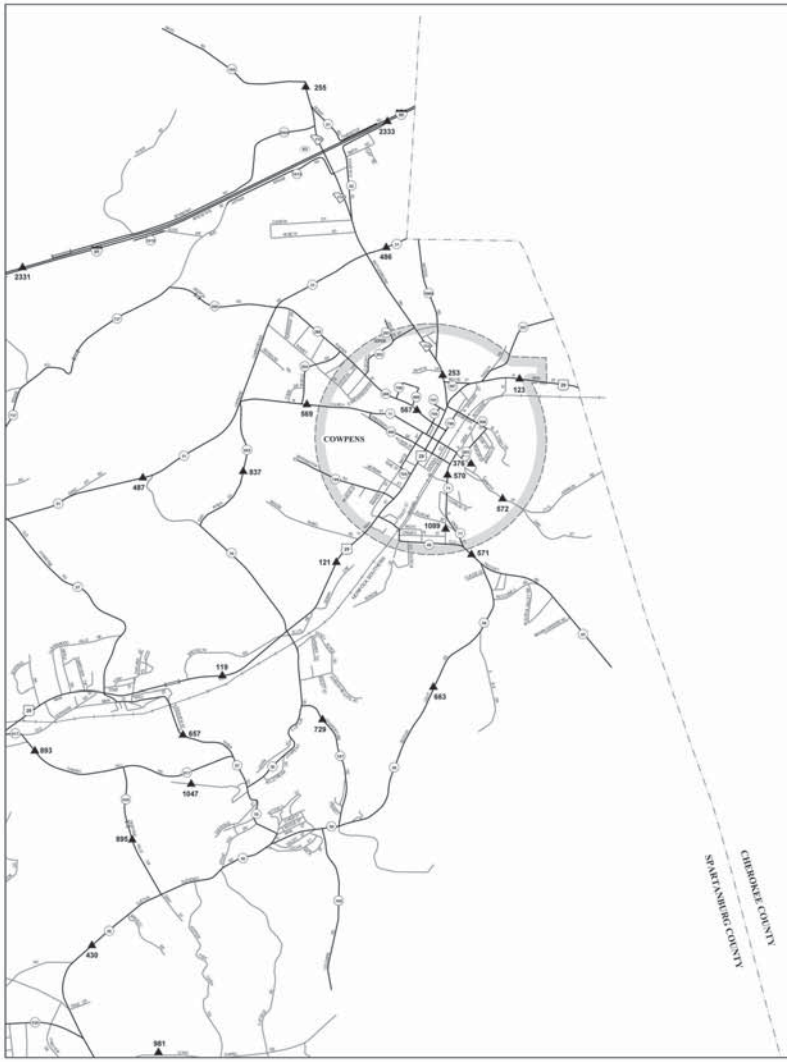
TRANSPORTATION
- State Maintained Roads
- Other Roads

SHIELDS
- I-
- US
- SC
- S-

TRAFFIC
- 111 Station Number
- Traffic Count Station

OTHER FEATURES
- Schools
- Bridges
- Railroads
- Rivers & Lakes
- Municipal Boundary
- County Boundary

Created Date: 2006 Revised Date: 2010



SHEET 4

GREENVILLE - SPARTANBURG METROPOLITAN AREA

TRAFFIC FLOW MAP

PREPARED BY

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

U.S. DEPARTMENT OF TRANSPORTATION

SCDOT

N

W E

S

2000 0 2000 4000 Feet

LEGEND

TRANSPORTATION		TRAFFIC		OTHER FEATURES	
State Maintained Roads		111	Station Number		Schools
Other Roads			Traffic Count Station		Bridges
SHIELDS					Railroads
I-					Rivers & Lakes
US					Municipal Boundary
SC					County Boundary
S-					

Created Date: 2006 Revised Date: 2010

Turning Movement counts

Exit - 95

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: S-82 Minor Rt: S-668

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 3050 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

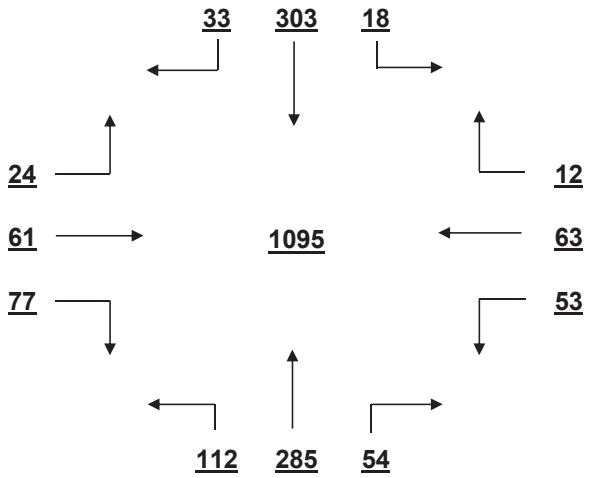
INTERSECTION VOLUME SUMMARY

	From N S-82				From S S-82				From E S-668				From W S-668				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	2	13	3	18	2	13	0	15	4	3	1	8	3	6	4	13	54	0
7:15 - 7:30	1	26	4	31	7	15	2	24	3	1	1	5	1	3	6	10	70	0
7:30 - 7:45	6	25	4	35	9	13	7	29	2	2	0	4	0	4	10	14	82	0
7:45 - 8:00	2	23	1	26	9	13	1	23	3	2	0	5	2	2	8	12	66	0
8:00 - 8:15	1	17	2	20	6	17	3	26	4	4	0	8	0	2	1	3	57	0
8:15 - 8:30	1	16	1	18	10	23	4	37	1	2	0	3	1	5	3	9	67	0
8:30 - 8:45	0	10	4	14	5	11	4	20	2	1	0	3	1	2	2	5	42	0
8:45 - 9:00	1	19	3	23	1	6	6	13	8	6	1	15	2	1	4	7	58	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	2	20	0	22	13	17	7	37	4	5	0	9	3	5	8	16	84	0
16:15 - 16:30	0	22	1	23	11	21	6	38	4	4	0	8	1	4	3	8	77	0
16:30 - 16:45	1	24	3	28	4	16	2	22	4	11	0	15	2	10	6	18	83	0
16:45 - 17:00	0	11	1	12	6	20	4	30	3	4	3	10	2	3	4	9	61	0
17:00 - 17:15	1	17	2	20	8	21	2	31	4	5	3	12	1	1	3	5	68	0
17:15 - 17:30	0	16	2	18	12	28	5	45	4	6	0	10	1	2	7	10	83	0
17:30 - 17:45	0	22	1	23	4	29	1	34	2	4	1	7	2	2	4	8	72	0
17:45 - 18:00	0	22	1	23	5	22	0	27	1	3	2	6	2	9	4	15	71	0
TOTAL	18	303	33	354	112	285	54	451	53	63	12	128	24	61	77	162	1095	0
Trucks	0	59	0	59	8	49	2	59	7	6	2	15	0	2	2	4	137	12.5%
School Buses	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5%

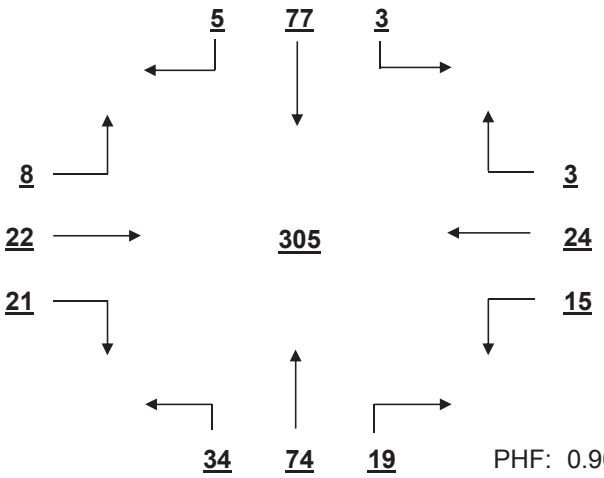
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-82 AT S-668 Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

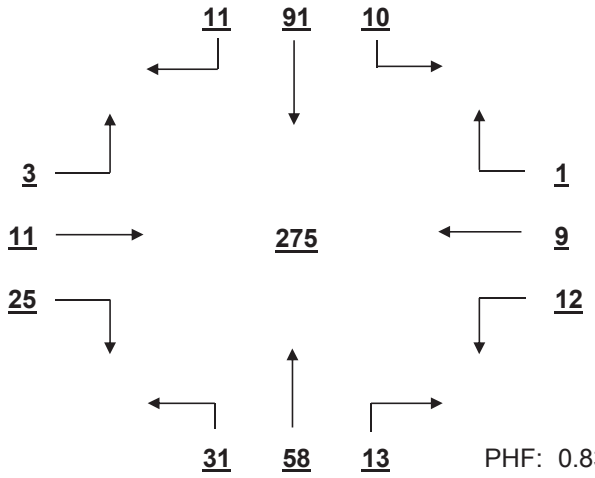


OVERALL PEAK HOUR VOLUME
FROM 16:00 TO 17:00



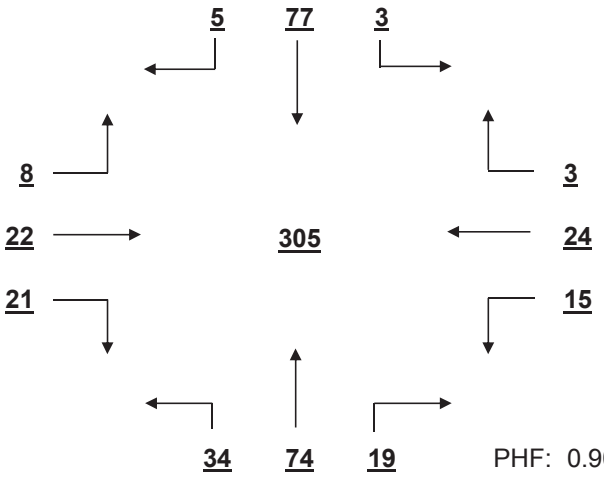
PHF: 0.908

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



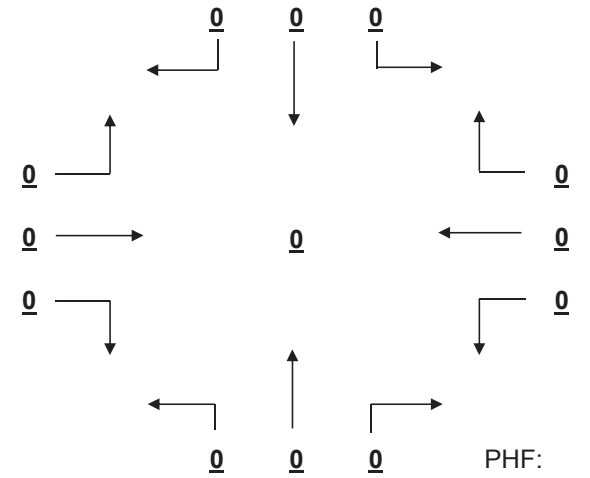
PHF: 0.838

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



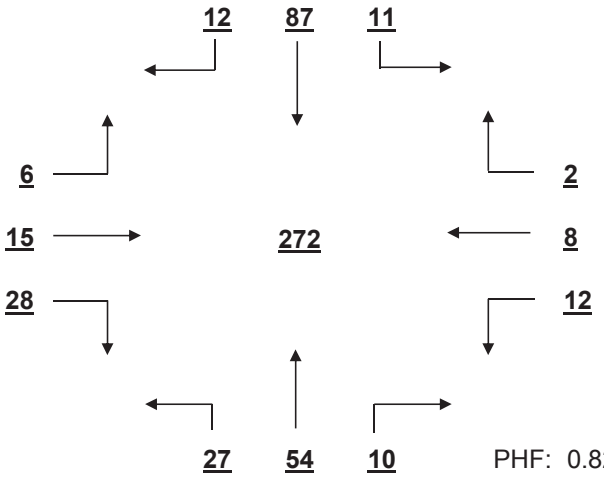
PHF: 0.908

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.829

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: S-82 Minor Rt: I-85 SB Ramp

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 3770 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

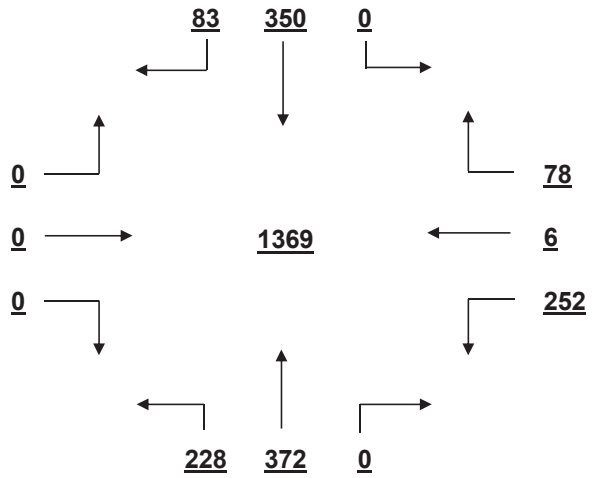
INTERSECTION VOLUME SUMMARY

	From N S-82				From S S-82				From E I-85 SB Ramp				From W I-85 SB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	14	7	21	7	12	0	19	7	0	3	10	0	0	0	0	50	0
7:15 - 7:30	0	26	9	35	20	19	0	39	23	0	5	28	0	0	0	0	102	0
7:30 - 7:45	0	32	5	37	19	22	0	41	23	0	7	30	0	0	0	0	108	0
7:45 - 8:00	0	32	2	34	16	20	0	36	25	0	3	28	0	0	0	0	98	0
8:00 - 8:15	0	19	3	22	8	22	0	30	13	0	4	17	0	0	0	0	69	0
8:15 - 8:30	0	18	2	20	13	23	0	36	25	1	13	39	0	0	0	0	95	0
8:30 - 8:45	0	10	4	14	9	17	0	26	24	1	3	28	0	0	0	0	68	0
8:45 - 9:00	0	23	8	31	5	12	0	17	7	0	1	8	0	0	0	0	56	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	25	7	32	17	33	0	50	19	0	4	23	0	0	0	0	105	0
16:15 - 16:30	0	20	9	29	11	34	0	45	11	0	4	15	0	0	0	0	89	0
16:30 - 16:45	0	29	5	34	18	18	0	36	10	0	4	14	0	0	0	0	84	0
16:45 - 17:00	0	16	2	18	13	26	0	39	9	0	4	13	0	0	0	0	70	0
17:00 - 17:15	0	20	4	24	22	24	0	46	12	0	7	19	0	0	0	0	89	0
17:15 - 17:30	0	25	2	27	25	37	0	62	18	0	8	26	0	0	0	0	115	0
17:30 - 17:45	0	19	9	28	16	30	0	46	11	0	4	15	0	0	0	0	89	0
17:45 - 18:00	0	22	5	27	9	23	0	32	15	4	4	23	0	0	0	0	82	0
TOTAL	0	350	83	433	228	372	0	600	252	6	78	336	0	0	0	0	1369	0
Trucks	0	30	38	68	7	28	0	35	9	1	31	41	0	0	0	0	144	10.5%
School Buses	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0.4%

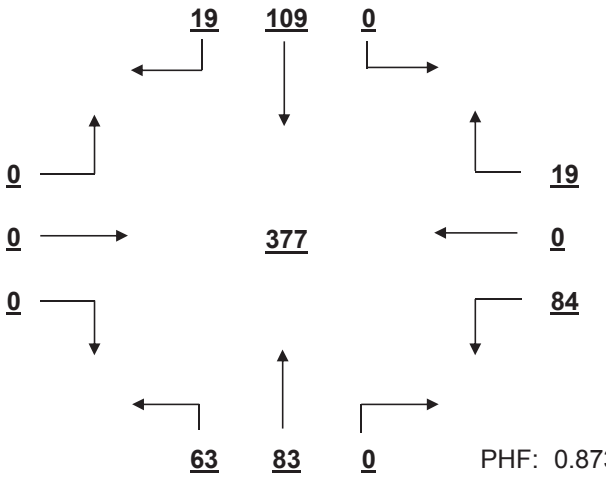
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-82 AT I-85 SB Ramp Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

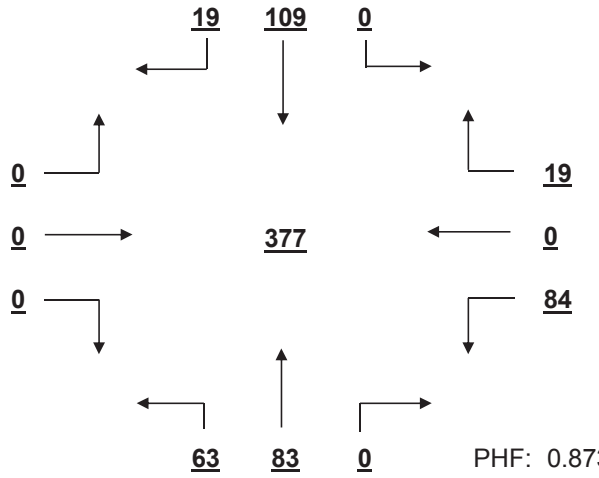


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



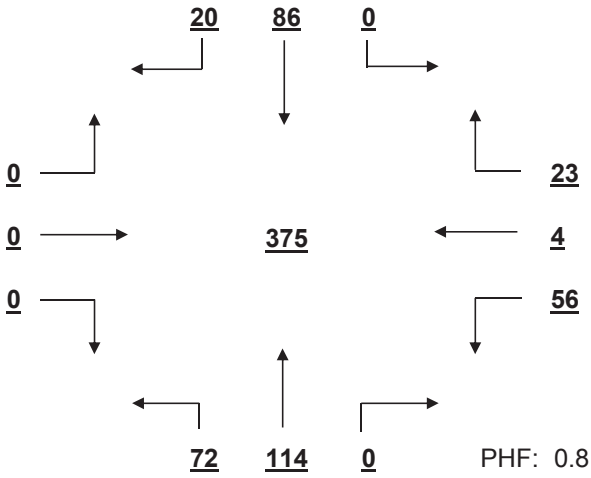
PHF: 0.873

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



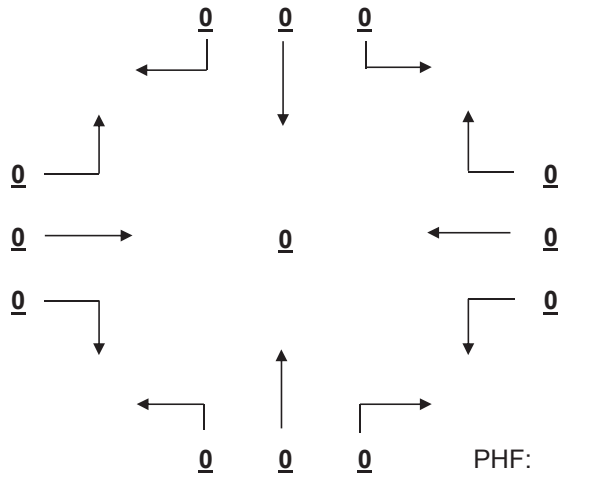
PHF: 0.873

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



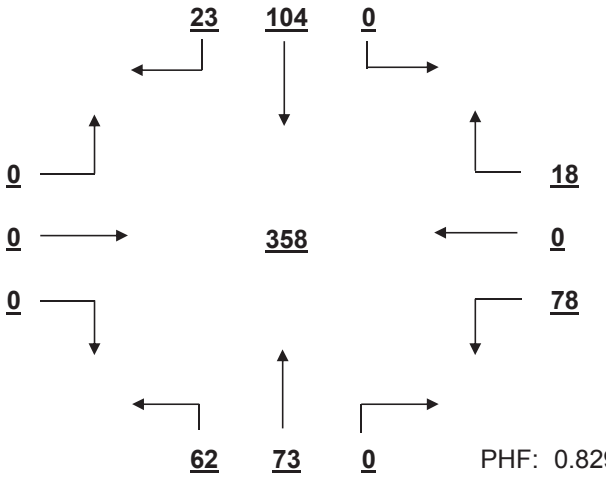
PHF: 0.815

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.829

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: I-85 NB Ramp Minor Rt: S-661

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 2260 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

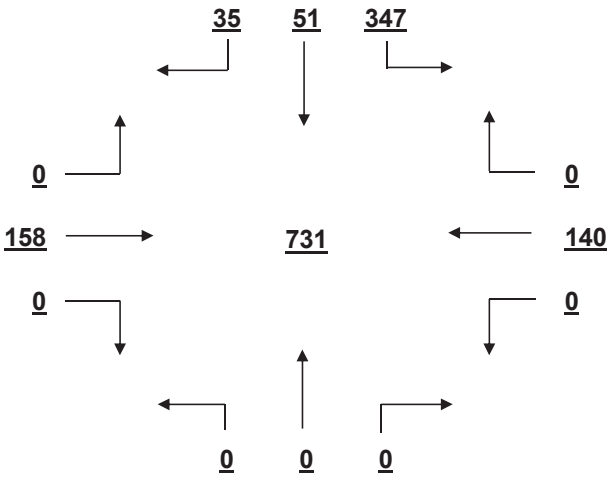
INTERSECTION VOLUME SUMMARY

	From N I-85 NB Ramp				From S I-85 NB Ramp				From E S-661				From W S-661				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	10	0	1	11	0	0	0	0	0	3	0	3	0	1	0	1	15	0
7:15 - 7:30	11	1	4	16	0	0	0	0	0	15	0	15	0	8	0	8	39	0
7:30 - 7:45	27	3	8	38	0	0	0	0	0	11	0	11	0	6	0	6	55	0
7:45 - 8:00	38	1	10	49	0	0	0	0	0	11	0	11	0	6	0	6	66	0
8:00 - 8:15	22	6	2	30	0	0	0	0	0	9	0	9	0	10	0	10	49	0
8:15 - 8:30	32	3	2	37	0	0	0	0	0	7	0	7	0	12	0	12	56	0
8:30 - 8:45	22	6	2	30	0	0	0	0	0	4	0	4	0	3	0	3	37	0
8:45 - 9:00	9	4	0	13	0	0	0	0	0	5	0	5	0	4	0	4	22	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	25	4	2	31	0	0	0	0	0	10	0	10	0	18	0	18	59	0
16:15 - 16:30	20	2	1	23	0	0	0	0	0	11	0	11	0	6	0	6	40	0
16:30 - 16:45	30	3	0	33	0	0	0	0	0	8	0	8	0	15	0	15	56	0
16:45 - 17:00	19	3	0	22	0	0	0	0	0	9	0	9	0	11	0	11	42	0
17:00 - 17:15	19	4	0	23	0	0	0	0	0	12	0	12	0	12	0	12	47	0
17:15 - 17:30	17	2	0	19	0	0	0	0	0	6	0	6	0	12	0	12	37	0
17:30 - 17:45	28	9	2	39	0	0	0	0	0	7	0	7	0	12	0	12	58	0
17:45 - 18:00	18	0	1	19	0	0	0	0	0	12	0	12	0	22	0	22	53	0
TOTAL	347	51	35	433	0	0	0	0	0	140	0	140	0	158	0	158	731	0
Trucks	35	3	0	38	0	0	0	0	0	0	0	0	0	1	0	1	39	5.3%
School Buses	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4	0.5%

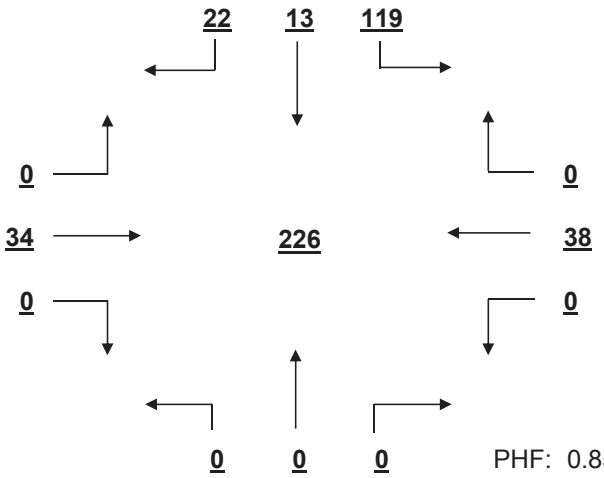
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 NB Ramp AT S-661 Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

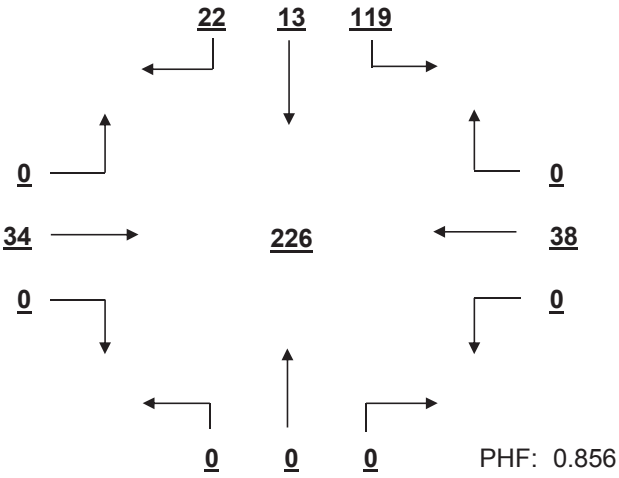


OVERALL PEAK HOUR VOLUME
FROM 7:30 TO 8:30



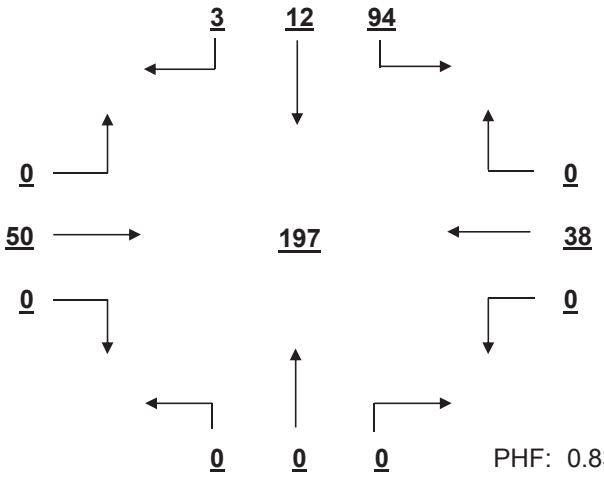
PHF: 0.856

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



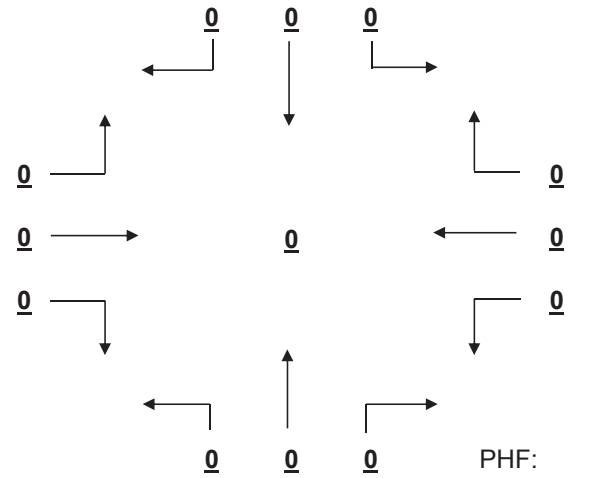
PHF: 0.856

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



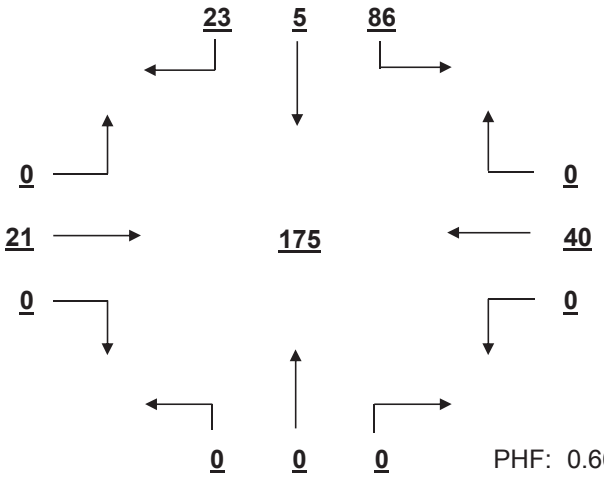
PHF: 0.835

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.663

Quality Counts , LLC

920 Blairhill Rd Ste B106

Charlotte , NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy

Site Code : 12896529

Start Date : 9/25/2014

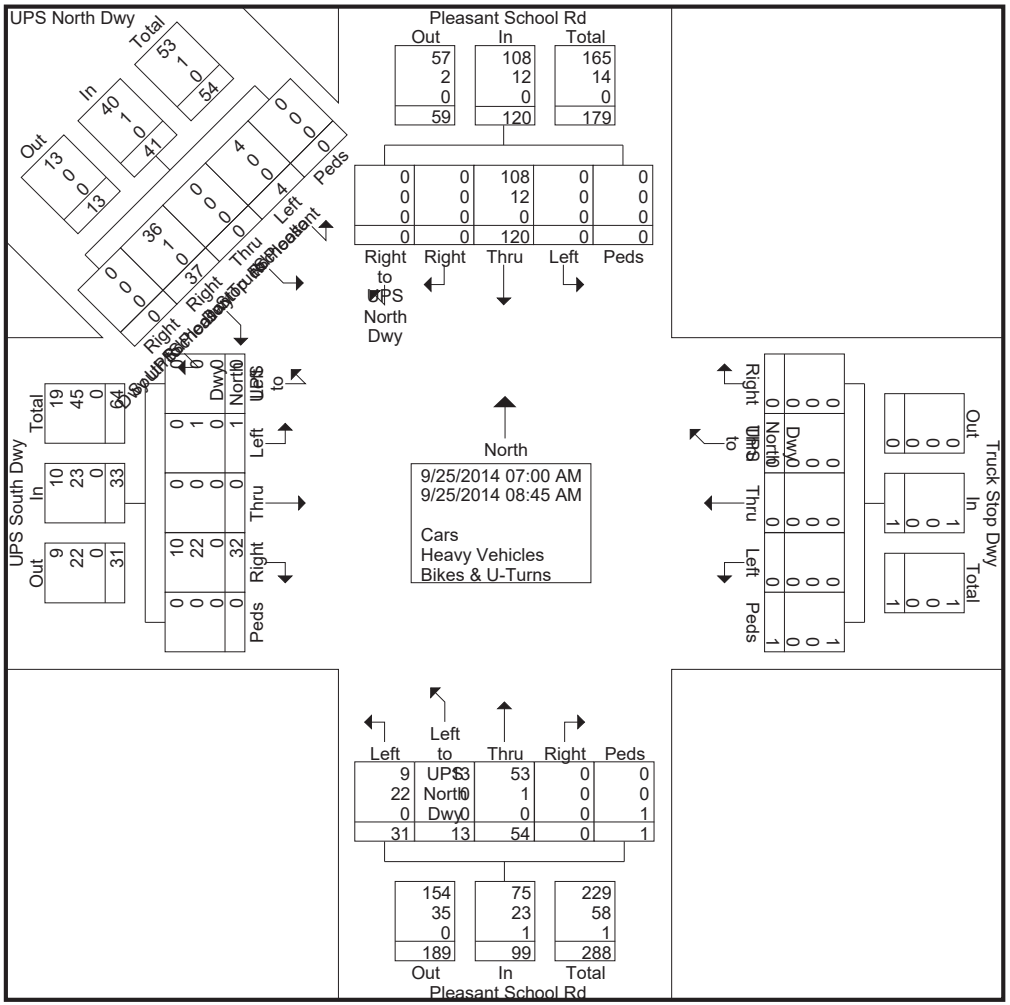
Groups Printed- Cars - Heavy Vehicles - Turns

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
07:00 AM	0	0	13	0	0	13	0	0	0	0	1	1	0	6	1	4	0	11	2	0	0	0	0	2	0	14	0	2	0	16	43
07:15 AM	0	0	21	0	0	21	0	0	0	0	0	0	0	4	0	4	1	9	3	0	0	0	0	3	0	2	0	0	0	2	35
07:30 AM	0	0	19	0	0	19	0	0	0	0	0	0	0	9	3	4	0	16	7	0	0	0	0	7	0	10	0	2	0	12	54
07:45 AM	0	0	17	0	0	17	0	0	0	0	0	0	0	6	4	6	0	16	3	0	0	0	0	3	0	5	0	0	0	5	41
Total	0	0	70	0	0	70	0	0	0	0	1	1	0	25	8	18	1	52	15	0	0	0	0	15	0	31	0	4	0	35	173
08:00 AM	0	0	16	0	0	16	0	0	0	0	0	0	0	9	0	6	0	15	3	0	0	0	0	3	0	2	0	0	0	2	36
08:15 AM	0	0	14	0	0	14	0	0	0	0	0	0	0	10	1	1	0	12	6	0	0	0	0	6	0	1	0	0	0	1	33
08:30 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	6	3	2	0	11	3	0	0	0	0	3	0	1	0	0	0	1	23
08:45 AM	0	0	12	0	0	12	0	0	0	0	0	0	0	4	1	4	0	9	5	0	1	0	0	6	0	2	0	0	0	2	29
Total	0	0	50	0	0	50	0	0	0	0	0	0	0	29	5	13	0	47	17	0	1	0	0	18	0	6	0	0	0	6	121
Grand Total	0	0	120	0	0	120	0	0	0	0	1	1	0	54	13	31	1	99	32	0	1	0	0	33	0	37	0	4	0	41	294
Apprch %	0	0	100	0	0		0	0	0	0	100		0	54.5	13.1	31.3	1		97	0	3	0	0		0	90.2	0	9.8	0		
Total %	0	0	40.8	0	0	40.8	0	0	0	0	0.3	0.3	0	18.4	4.4	10.5	0.3	33.7	10.9	0	0.3	0	0	11.2	0	12.6	0	1.4	0	13.9	
Cars	0	0	108	0	0	108	0	0	0	0	1	1	0	53	13	9	0	75	10	0	0	0	0	10	0	36	0	4	0	40	234
% Cars	0	0	90	0	0	90	0	0	0	0	100	100	0	98.1	100	29	0	75.8	31.2	0	0	0	0	30.3	0	97.3	0	100	0	97.6	79.6
Heavy Vehicles																															
% Heavy Vehicles	0	0	10	0	0	10	0	0	0	0	0	0	0	1.9	0	71	0	23.2	68.8	0	100	0	0	69.7	0	2.7	0	0	0	2.4	20.1
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC
920 Blairhill Rd Ste B106
Charlotte, NC 28217

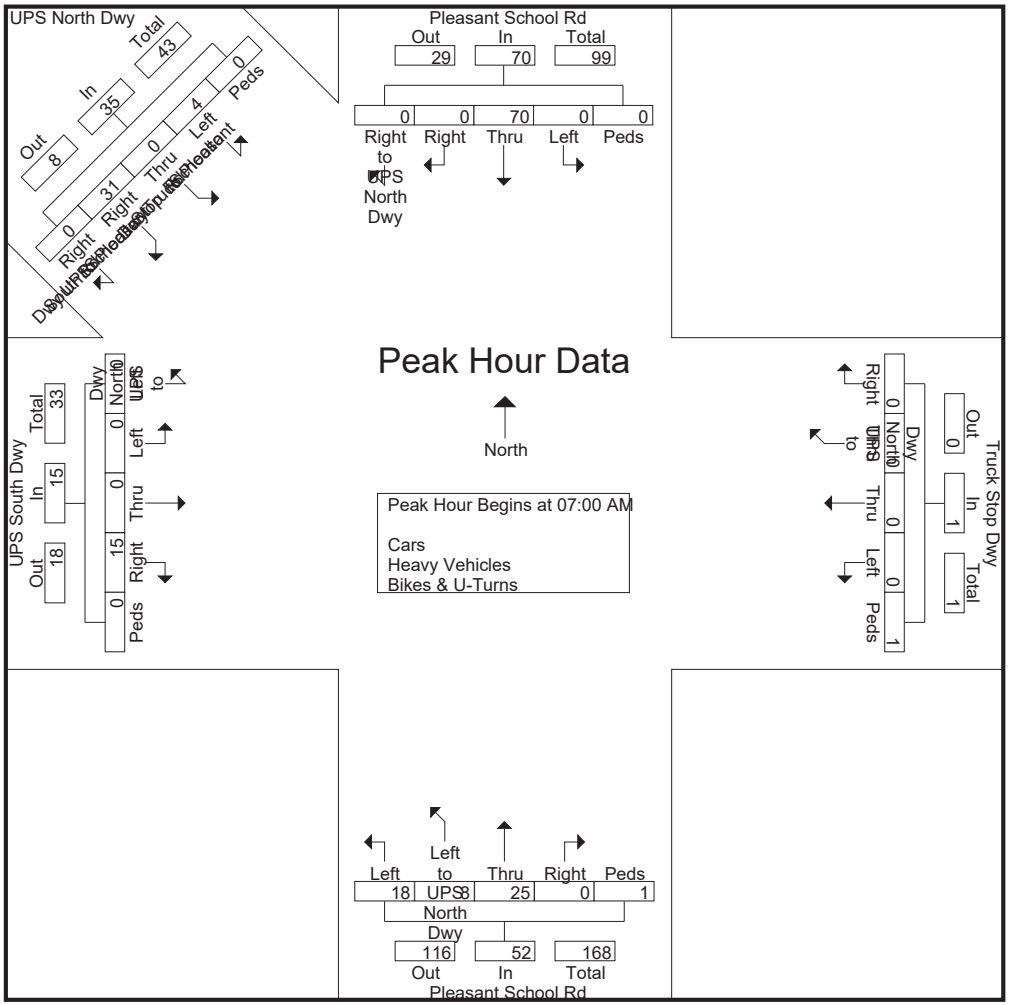
File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 3

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	0	0	13	0	0	13	0	0	0	0	1	1														14		2		**16**	
07:15 AM	0	0	**21**	0	0	**21**	0	0	0	0	0	0	0	4	0	4	**1**	9	3	0	0	0	0	3	0	2	0	0	0	2	35
07:30 AM	0	0	19	0	0	19	0	0	0	0	0	0	0	**9**	3	4	0	**16**	**7**	0	0	0	0	**7**	0	10	0	2	0	12	**54**
07:45 AM	0	0	17	0	0	17	0	0	0	0	0	0	0	6	**4**	**6**	0	16	3	0	0	0	0	3	0	5	0	0	0	5	41
Total Volume	0	0	70	0	0	70	0	0	0	0	1	1	0	25	8	18	1	52	15	0	0	0	0	15	0	31	0	4	0	35	173
% App. Total	0	0	100	0	0		0	0	0	0	100		0	48.1	15.4	34.6	1.9		100	0	0	0	0		0	88.6	0	11.4	0		
PHF	.000	.000	.833	.000	.000	.833	.000	.000	.000	.000	.250	.250	.000	.694	.500	.750	.250	.813	.536	.000	.000	.000	.000	.536	.000	.554	.000	.500	.000	.547	.801

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 1

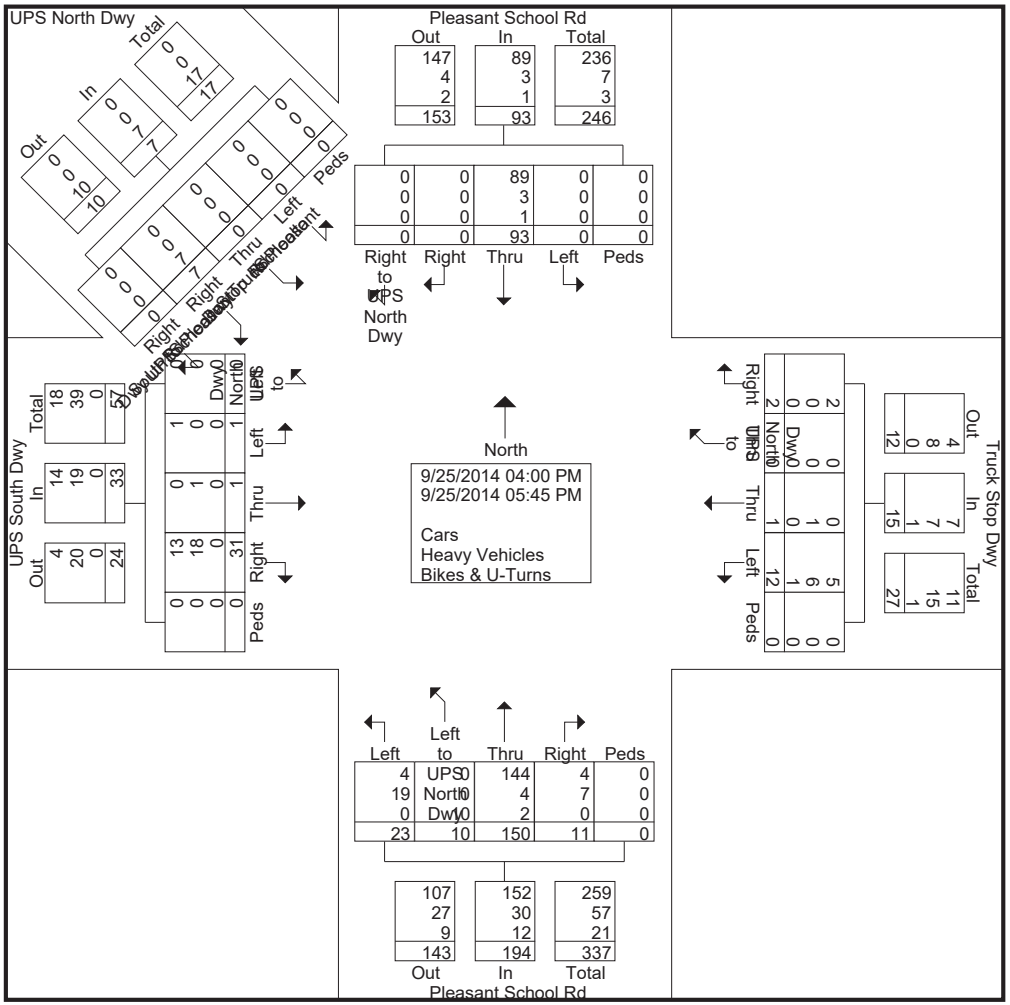
Groups Printed- Cars - Heavy Vehicles - Turns

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
04:00 PM	0	0	14	0	0	14	0	0	0	1	0	1	1	19	0	2	0	22	3	0	0	0	0	3	0	0	0	0	0	0	40
04:15 PM	0	0	8	0	0	8	0	0	0	3	0	3	2	22	0	2	0	26	4	0	0	0	0	4	0	0	0	0	0	0	41
04:30 PM	0	0	18	0	0	18	0	0	0	3	0	3	0	22	1	3	0	26	5	0	0	0	0	5	0	1	0	0	0	1	53
04:45 PM	0	0	11	0	0	11	0	0	1	1	0	2	0	22	1	2	0	25	1	0	0	0	0	1	0	1	0	0	0	1	40
Total	0	0	51	0	0	51	0	0	1	8	0	9	3	85	2	9	0	99	13	0	0	0	0	13	0	2	0	0	0	2	174
05:00 PM	0	0	7	0	0	7	0	0	0	2	0	2	1	22	1	1	0	25	5	0	0	0	0	5	0	0	0	0	0	0	39
05:15 PM	0	0	12	0	0	12	0	0	0	1	0	1	3	22	2	8	0	35	6	1	1	0	0	8	0	1	0	0	0	1	57
05:30 PM	0	0	8	0	0	8	1	0	0	1	0	2	1	8	1	4	0	14	3	0	0	0	0	3	0	4	0	0	0	4	31
05:45 PM	0	0	15	0	0	15	1	0	0	0	0	1	3	13	4	1	0	21	4	0	0	0	0	4	0	0	0	0	0	0	41
Total	0	0	42	0	0	42	2	0	0	4	0	6	8	65	8	14	0	95	18	1	1	0	0	20	0	5	0	0	0	5	168
Grand Total	0	0	93	0	0	93	2	0	1	12	0	15	11	150	10	23	0	194	31	1	1	0	0	33	0	7	0	0	0	7	342
Apprch %	0	0	100	0	0		13.3	0	6.7	80	0		5.7	77.3	5.2	11.9	0		93.9	3	3	0	0		0	100	0	0	0		
Total %	0	0	27.2	0	0	27.2	0.6	0	0.3	3.5	0	4.4	3.2	43.9	2.9	6.7	0	56.7	9.1	0.3	0.3	0	0	9.6	0	2	0	0	0	2	
Cars	0	0	89	0	0	89	2	0	0	5	0	7	4	144	0	4	0	152	13	0	1	0	0	14	0	0	0	0	0	0	262
% Cars	0	0	95.7	0	0	95.7	100	0	0	41.7	0	46.7	36.4	96	0	17.4	0	78.4	41.9	0	100	0	0	42.4	0	0	0	0	0	0	76.6
Heavy Vehicles																															
% Heavy Vehicles	0	0	3.2	0	0	3.2	0	0	100	50	0	46.7	63.6	2.7	0	82.6	0	15.5	58.1	100	0	0	0	57.6	0	0	0	0	0	0	17.3
Bikes & U-Turns	0	0	1	0	0	1	0	0	0	1	0	1	0	2	10	0	0	12	0	0	0	0	0	0	0	7	0	0	0	7	21
% Bikes & U-Turns	0	0	1.1	0	0	1.1	0	0	0	8.3	0	6.7	0	1.3	100	0	0	6.2	0	0	0	0	0	0	0	100	0	0	0	100	6.1

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC
920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 3

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:30 PM																															
04:30 PM	0	0	18	0	0	18	0	0	0	3	0	3	0	**22**	1	3	0	26	5	0	0	0	0	5	0	**1**	0	0	0	**1**	53
04:45 PM	0	0	11	0	0	11	0	0	**1**	1	0	2	0	22	1	2	0	25	1	0	0	0	0	1	0	1	0	0	0	1	40
05:00 PM	0	0	7	0	0	7	0	0	0	2	0	2	1	22	1	1	0	25	5	0	0	0	0	5	0	0	0	0	0	0	39
05:15 PM	0	0	12	0	0	12	0	0	0	1	0	1	**3**	22	**2**	**8**	0	**35**	**6**	**1**	**1**	0	0	**8**	0	1	0	0	0	1	**57**
Total Volume	0	0	48	0	0	48	0	0	1	7	0	8	4	88	5	14	0	111	17	1	1	0	0	19	0	3	0	0	0	3	189
% App. Total	0	0	100	0	0		0	0	12.5	87.5	0		3.6	79.3	4.5	12.6	0		89.5	5.3	5.3	0	0		0	100	0	0	0		
PHF	.000	.000	.667	.000	.000	.667	.000	.000	.250	.583	.000	.667	.333	1.00	.625	.438	.000	.793	.708	.250	.250	.000	.000	.594	.000	.750	.000	.000	.000	.750	.829

Quality Counts, LLC

920 Blairhill Rd Ste B106

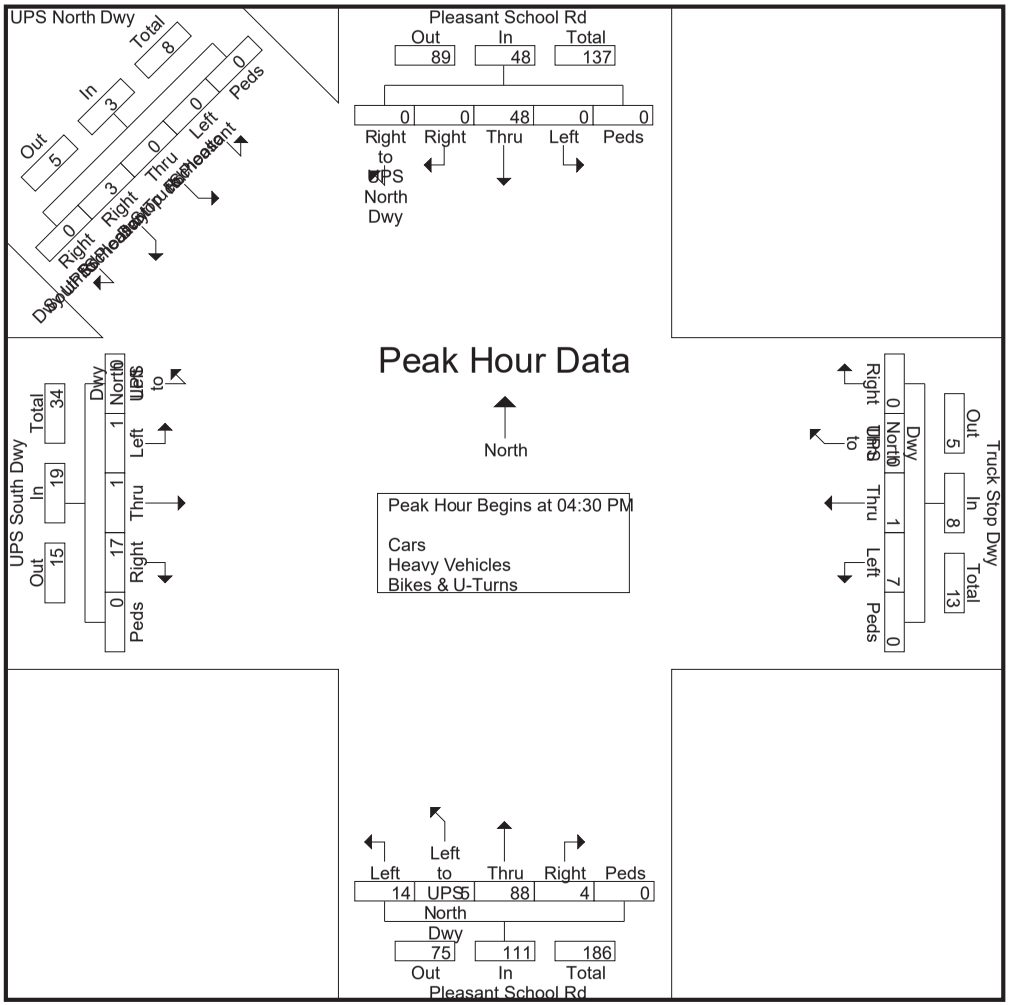
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy

Site Code : 12896530

Start Date : 9/25/2014

Page No : 4



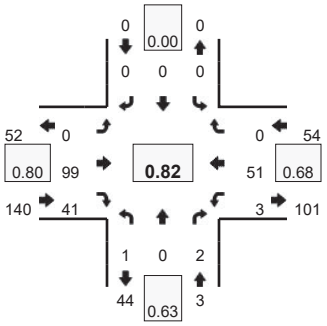
Type of peak hour being reported: Intersection Peak

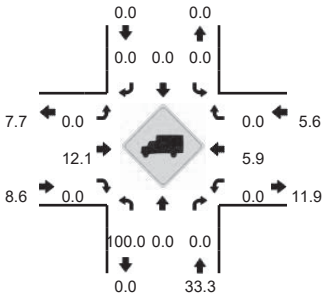
Method for determining peak hour: Total Entering Volume

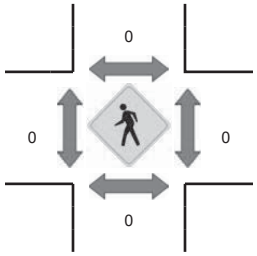
LOCATION: Hampshire Dr -- Suzanna Dr
CITY/STATE: Gaffney, SC

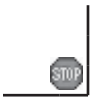
QC JOB #: 12896519
DATE: Thu, Sep 25 2014

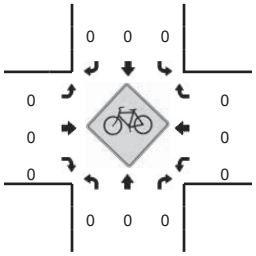
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

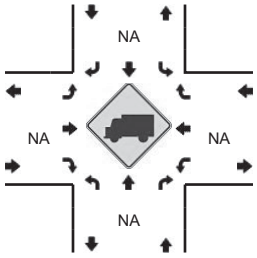


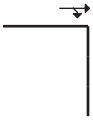


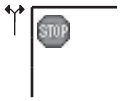


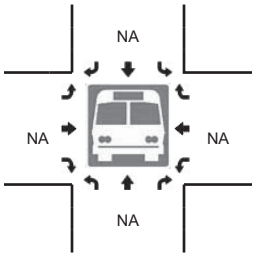












15-Min Count Period Beginning At	Hampshire Dr (Northbound)				Hampshire Dr (Southbound)				Suzanna Dr (Eastbound)				Suzanna Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	18	7	0	1	8	0	0	34	
7:15 AM	0	0	0	0	0	0	0	0	0	17	9	0	0	13	0	0	39	
7:30 AM	0	0	1	0	0	0	0	0	0	30	9	0	2	18	0	0	60	
7:45 AM	0	0	1	0	0	0	0	0	0	31	13	0	0	12	0	0	57	190
8:00 AM	1	0	0	0	0	0	0	0	0	21	10	0	1	8	0	0	41	197
8:15 AM	0	0	1	0	0	0	0	0	0	24	2	0	0	6	0	0	33	191
8:30 AM	0	0	1	0	0	0	0	0	0	19	3	0	1	11	0	0	35	166
8:45 AM	0	0	2	0	0	0	0	0	0	16	1	0	2	15	0	0	36	145

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	0	0	0	120	36	0	8	72	0	0	240
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	8	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

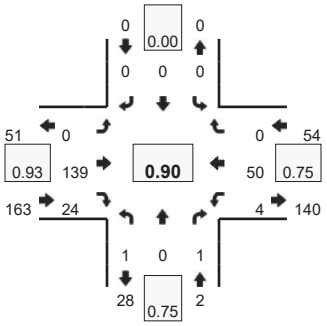
Type of peak hour being reported: Intersection Peak

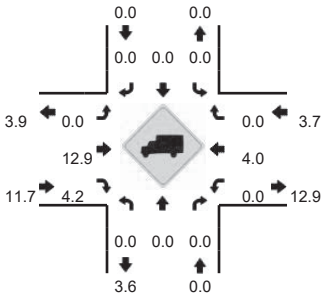
Method for determining peak hour: Total Entering Volume

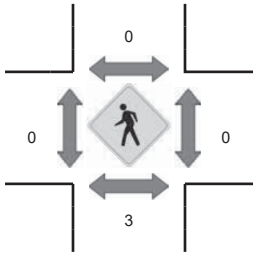
LOCATION: Hampshire Dr -- Suzanna Dr
CITY/STATE: Gaffney, SC

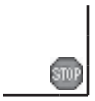
QC JOB #: 12896520
DATE: Thu, Sep 25 2014

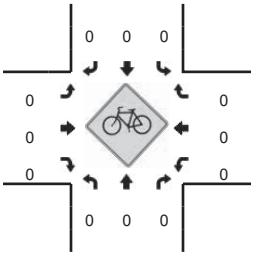
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

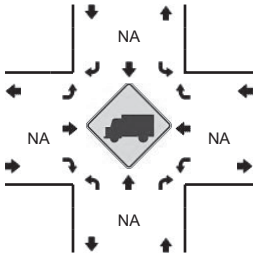


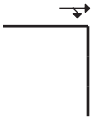


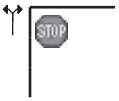


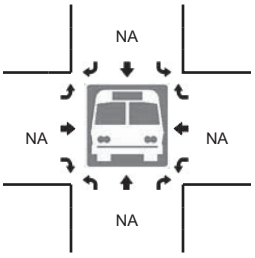












15-Min Count Period Beginning At	Hampshire Dr (Northbound)				Hampshire Dr (Southbound)				Suzanna Dr (Eastbound)				Suzanna Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	36	10	0	1	13	0	0	60	
4:15 PM	0	0	0	0	0	0	0	0	0	25	1	0	1	15	0	0	42	
4:30 PM	0	0	0	0	0	0	0	0	0	27	4	0	1	12	0	0	44	
4:45 PM	1	0	0	0	0	0	0	0	0	33	3	0	0	3	0	0	40	186
5:00 PM	0	0	0	0	0	0	0	0	0	35	9	0	0	9	0	0	53	179
5:15 PM	0	0	1	0	0	0	0	0	0	36	2	0	1	16	0	0	56	193
5:30 PM	1	0	0	0	0	0	0	0	0	34	8	0	3	15	0	0	61	210
5:45 PM	0	0	0	0	0	0	0	0	0	34	5	0	0	10	0	0	49	219

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	0	0	0	136	32	0	12	60	0	0	244
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	0	0		24
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

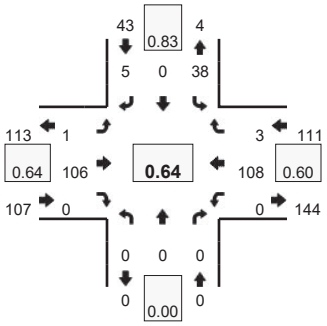
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

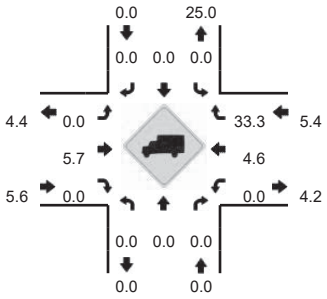
Method for determining peak hour: Total Entering Volume

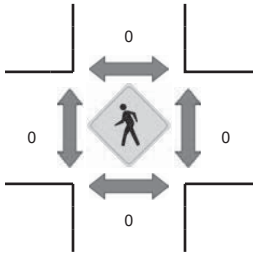
LOCATION: Suzanna Dr -- Matthew Dr
CITY/STATE: Gaffney, SC

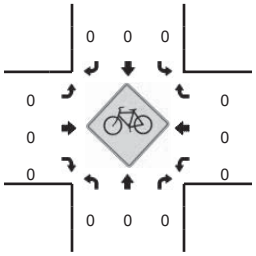
QC JOB #: 12896549
DATE: Thu, Sep 25 2014

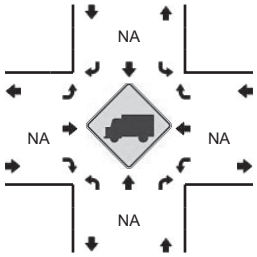


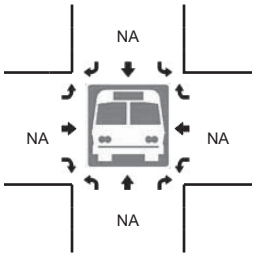
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	Suzanna Dr (Northbound)				Suzanna Dr (Southbound)				Matthew Dr (Eastbound)				Matthew Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	7	0	1	0	0	12	0	0	0	5	0	0	25	
7:15 AM	0	0	0	0	8	0	1	0	0	14	0	0	0	13	0	0	36	
7:30 AM	0	0	0	0	8	0	2	0	0	36	0	0	0	30	1	0	77	
7:45 AM	0	0	0	0	12	0	1	0	1	41	0	0	0	47	0	0	102	240
8:00 AM	0	0	0	0	10	0	1	0	0	15	0	0	0	18	2	0	46	261
8:15 AM	0	0	0	0	3	0	0	0	0	8	0	0	0	13	2	0	26	251
8:30 AM	0	0	0	0	2	0	1	0	1	12	0	1	0	6	0	0	23	197
8:45 AM	0	0	0	0	3	0	0	0	0	10	0	0	0	9	3	0	25	120

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	48	0	4	0	4	164	0	0	0	188	0	0	408
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	12	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

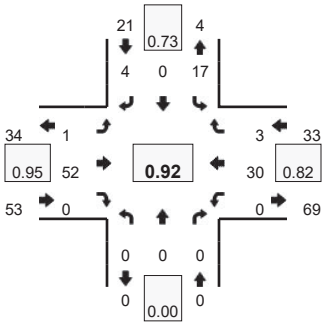
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

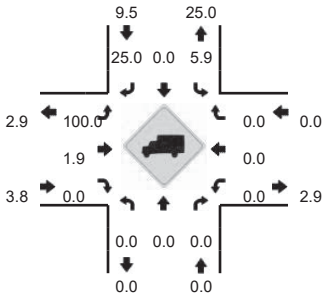
Method for determining peak hour: Total Entering Volume

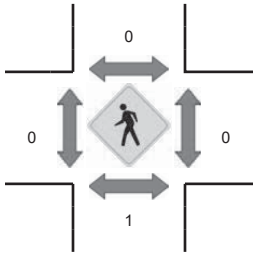
LOCATION: Suzanna Dr -- Matthew Dr
CITY/STATE: Gaffney, SC

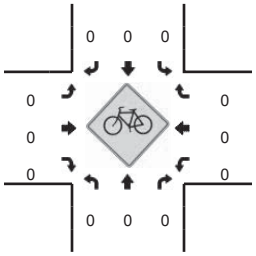
QC JOB #: 12896550
DATE: Thu, Sep 25 2014

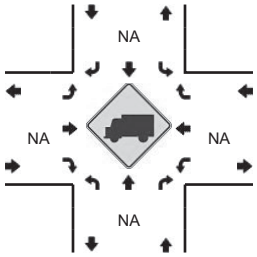


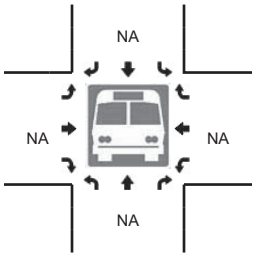
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:45 PM -- 5:00 PM











15-Min Count Period Beginning At	Suzanna Dr (Northbound)				Suzanna Dr (Southbound)				Matthew Dr (Eastbound)				Matthew Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	9	0	2	0	0	3	0	0	0	10	0	0	24	
4:15 PM	0	0	0	0	3	0	0	0	1	13	0	0	0	10	0	0	27	
4:30 PM	0	0	0	0	4	0	2	0	0	13	0	0	0	5	0	0	24	
4:45 PM	0	0	0	0	2	0	2	0	0	14	0	0	0	9	2	0	29	104
5:00 PM	0	0	0	0	8	0	0	0	0	12	0	0	0	6	1	0	27	107
5:15 PM	0	0	0	0	7	0	0	0	0	11	0	0	0	8	0	0	26	106
5:30 PM	0	0	0	0	9	0	2	0	1	8	0	0	0	5	0	0	25	107
5:45 PM	0	0	0	0	6	0	0	0	0	14	0	0	0	5	0	0	25	103

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	8	0	0	56	0	0	0	36	8	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

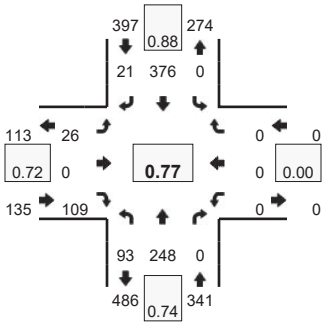
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

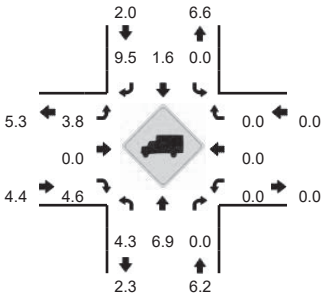
Method for determining peak hour: Total Entering Volume

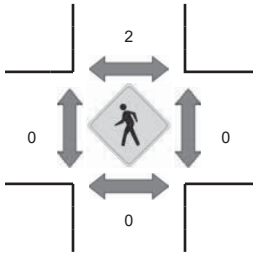
LOCATION: SC 18 -- Matthew Rd
CITY/STATE: Gaffney, SC

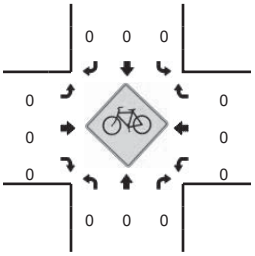
QC JOB #: 12896521
DATE: Thu, Sep 25 2014

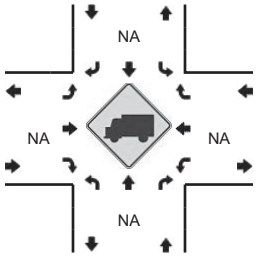


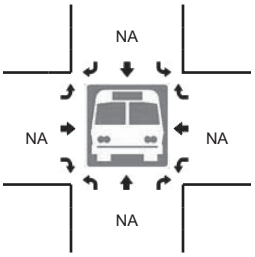
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Matthew Rd (Eastbound)				Matthew Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	40	0	0	0	80	2	0	5	0	13	0	0	0	0	0	143	
7:15 AM	13	61	0	0	0	79	1	0	5	0	18	0	0	0	0	0	177	
7:30 AM	24	61	0	0	0	83	7	0	13	0	30	0	0	0	0	0	218	
7:45 AM	41	77	0	0	0	106	7	0	8	0	43	0	0	0	0	0	282	820
8:00 AM	17	54	0	1	0	90	4	0	5	0	24	0	0	0	0	0	195	872
8:15 AM	10	56	0	0	0	97	3	0	0	0	12	0	0	0	0	0	178	873
8:30 AM	6	39	0	0	0	51	0	0	3	0	11	0	0	0	0	0	110	765
8:45 AM	11	38	0	0	0	64	2	1	4	0	8	0	0	0	0	0	128	611

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	308	0	0	0	424	28	0	32	0	172	0	0	0	0	0	1128
Heavy Trucks	8	16	0		0	4	4		0	0	0		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

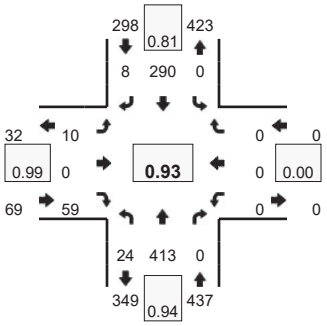
Type of peak hour being reported: Intersection Peak

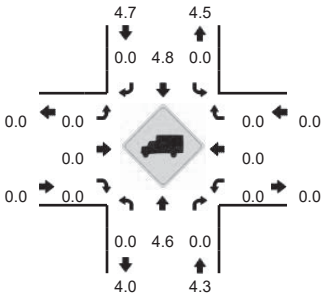
Method for determining peak hour: Total Entering Volume

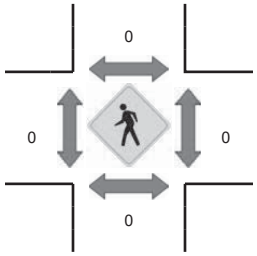
LOCATION: SC 18 -- Matthew Rd
CITY/STATE: Gaffney, SC

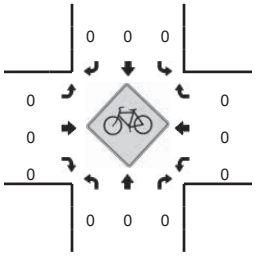
QC JOB #: 12896522
DATE: Thu, Sep 25 2014

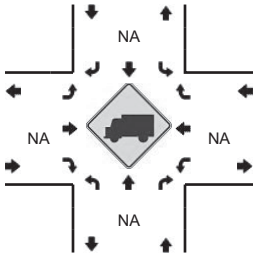
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

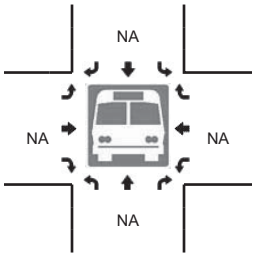












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Matthew Rd (Eastbound)				Matthew Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	109	0	0	0	82	1	0	2	0	10	0	0	0	0	0	212	
4:15 PM	6	88	0	0	0	95	4	0	3	0	13	0	0	0	0	0	209	
4:30 PM	4	108	0	0	0	65	1	0	2	0	13	0	0	0	0	0	193	
4:45 PM	8	88	0	0	0	71	3	0	2	0	14	0	0	0	0	0	186	800
5:00 PM	4	112	0	0	0	70	3	0	3	0	16	0	0	0	0	0	208	796
5:15 PM	8	105	0	0	0	84	1	0	3	0	16	0	0	0	0	0	217	804
5:30 PM	4	84	0	0	0	73	2	0	3	0	15	0	0	0	0	0	181	792
5:45 PM	3	71	0	0	0	62	1	0	4	0	15	0	0	0	0	0	156	762

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	420	0	0	0	336	4	0	12	0	64	0	0	0	0	0	868
Heavy Trucks	0	8	0		0	12	0		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

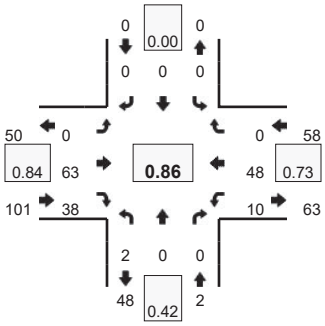
Type of peak hour being reported: Intersection Peak

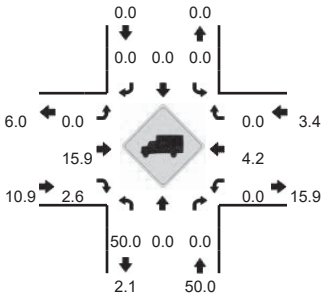
Method for determining peak hour: Total Entering Volume

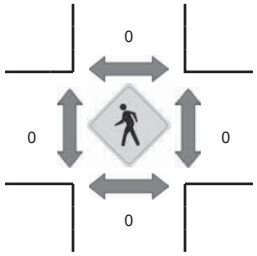
LOCATION: Fatz Dr -- Hampshire Dr
CITY/STATE: Gaffney, SC

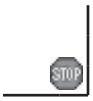
QC JOB #: 12896523
DATE: Thu, Sep 25 2014

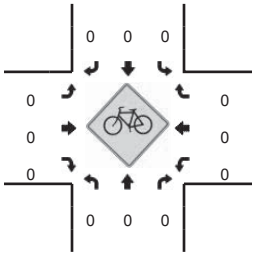
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

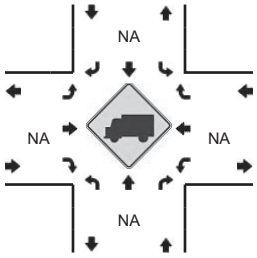


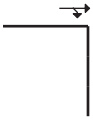


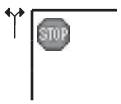


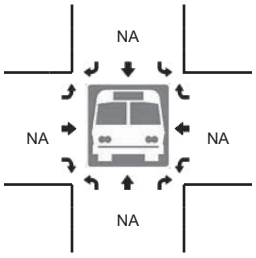












15-Min Count Period Beginning At	Fatz Dr (Northbound)				Fatz Dr (Southbound)				Hampshire Dr (Eastbound)				Hampshire Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	0	0	0	0	0	0	0	15	4	0	2	7	0	0	30	
7:15 AM	0	0	0	0	0	0	0	0	0	12	6	0	3	13	0	0	34	
7:30 AM	0	0	0	0	0	0	0	0	0	18	9	0	2	18	0	0	47	
7:45 AM	2	0	0	0	0	0	0	0	0	17	15	0	4	9	0	0	47	158
8:00 AM	0	0	0	0	0	0	0	0	0	16	8	0	1	8	0	0	33	161
8:15 AM	2	0	2	0	0	0	0	0	0	10	14	0	0	5	0	0	33	160
8:30 AM	0	0	0	0	0	0	0	0	0	13	8	0	0	12	0	0	33	146
8:45 AM	5	0	1	0	0	0	0	0	0	8	9	0	1	12	0	0	36	135

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	72	36	0	8	72	0	0	188
Heavy Trucks	0	0	0		0	0	0		0	8	4		0	8	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

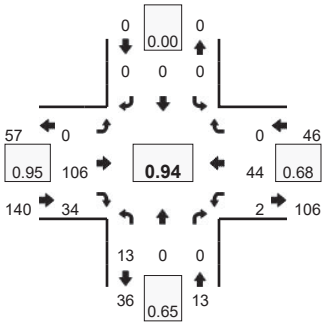
Type of peak hour being reported: Intersection Peak

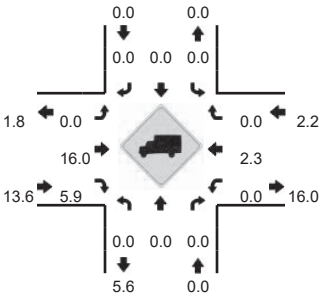
Method for determining peak hour: Total Entering Volume

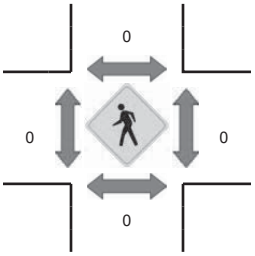
LOCATION: Fatz Dr -- Hampshire Dr
CITY/STATE: Gaffney, SC

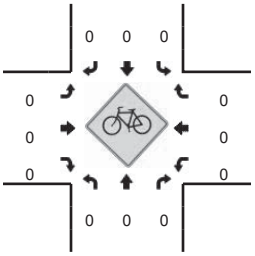
QC JOB #: 12896524
DATE: Thu, Sep 25 2014

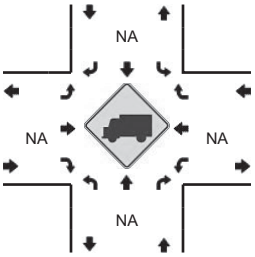
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

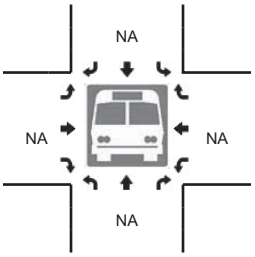












15-Min Count Period Beginning At	Fatz Dr (Northbound)				Fatz Dr (Southbound)				Hampshire Dr (Eastbound)				Hampshire Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	0	0	0	27	5	0	2	11	0	0	47	
4:15 PM	1	0	0	0	0	0	0	0	0	23	1	0	2	13	0	0	40	
4:30 PM	1	0	0	0	0	0	0	0	0	23	4	0	1	10	0	0	39	
4:45 PM	0	0	0	0	0	0	0	0	0	22	9	0	1	3	0	0	35	161
5:00 PM	3	0	0	0	0	0	0	0	0	26	8	0	0	7	0	0	44	158
5:15 PM	5	0	0	0	0	0	0	0	0	27	9	0	0	12	0	0	53	171
5:30 PM	3	0	0	0	0	0	0	0	0	27	6	0	0	17	0	0	53	185
5:45 PM	2	0	0	0	0	0	0	0	0	26	11	0	2	8	0	0	49	199

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	0	0	0	0	0	0	0	108	36	0	0	48	0	0	212
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	0	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

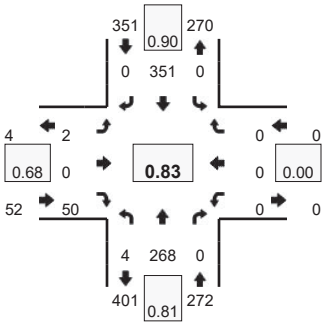
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

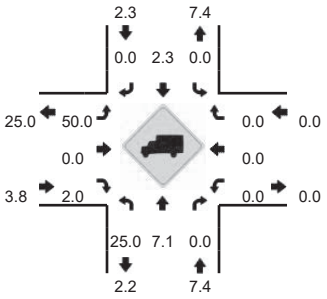
Method for determining peak hour: Total Entering Volume

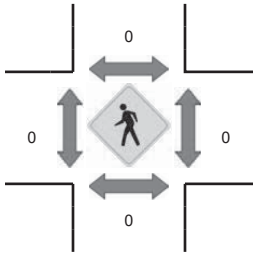
LOCATION: SC 18 -- Fatz Dr
CITY/STATE: Gaffney, SC

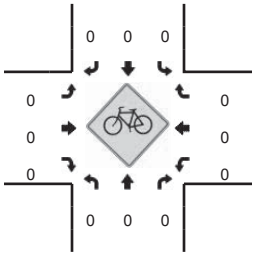
QC JOB #: 12896525
DATE: Thu, Sep 25 2014

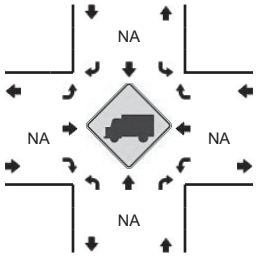


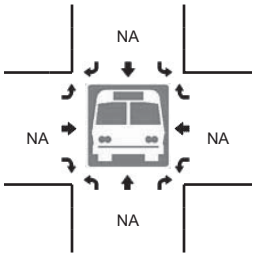
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Fatz Dr (Eastbound)				Fatz Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	41	0	0	0	74	1	0	0	0	6	0	0	0	0	0	123	
7:15 AM	0	64	0	0	0	70	0	0	0	0	8	0	0	0	0	0	142	
7:30 AM	0	72	0	0	0	80	0	0	0	0	12	0	0	0	0	0	164	
7:45 AM	2	85	0	0	0	98	0	0	0	0	19	0	0	0	0	0	204	633
8:00 AM	0	58	0	0	0	85	0	0	1	0	8	0	0	0	0	0	152	662
8:15 AM	2	53	0	0	0	88	0	0	1	0	11	0	0	0	0	0	155	675
8:30 AM	0	45	0	0	0	45	0	0	0	0	9	0	0	0	0	0	99	610
8:45 AM	6	37	0	0	0	59	0	0	0	0	8	0	0	0	0	0	110	516

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	340	0	0	0	392	0	0	0	0	76	0	0	0	0	0	816
Heavy Trucks	4	16	0		0	8	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

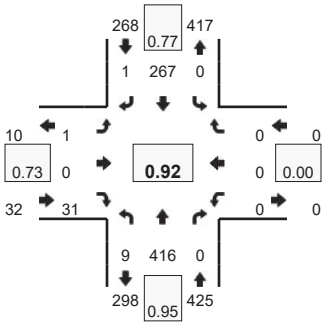
Type of peak hour being reported: Intersection Peak

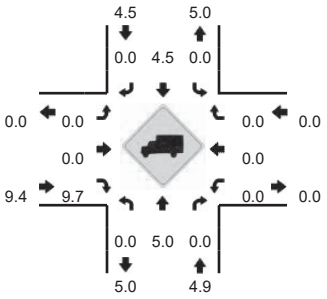
Method for determining peak hour: Total Entering Volume

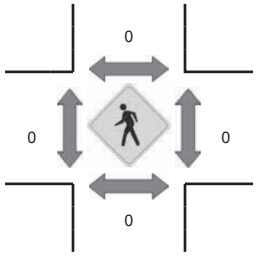
LOCATION: SC 18 -- Fatz Dr
CITY/STATE: Gaffney, SC

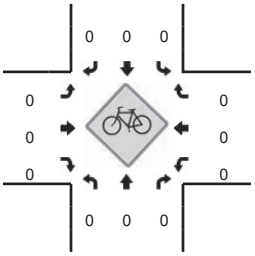
QC JOB #: 12896526
DATE: Thu, Sep 25 2014

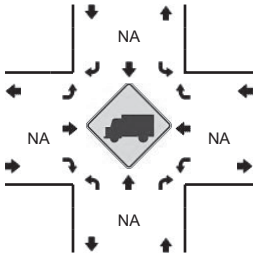
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

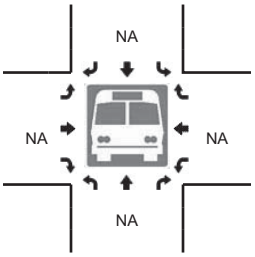












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Fatz Dr (Eastbound)				Fatz Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	109	0	0	0	73	0	0	0	0	7	0	0	0	0	0	191	
4:15 PM	1	90	0	0	0	96	0	0	1	0	3	0	0	0	0	0	191	
4:30 PM	1	111	0	0	0	62	0	0	0	0	5	0	0	0	0	0	179	
4:45 PM	1	88	0	0	0	64	1	0	0	0	9	0	0	0	0	0	163	724
5:00 PM	5	107	0	0	0	65	0	0	0	0	9	0	0	0	0	0	186	719
5:15 PM	2	110	0	0	0	76	0	0	1	0	8	0	0	0	0	0	197	725
5:30 PM	4	82	0	0	0	65	0	0	1	0	6	0	0	0	0	0	158	704
5:45 PM	1	72	0	0	0	50	1	0	1	0	12	0	0	0	0	0	137	678

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	440	0	0	0	304	0	0	4	0	32	0	0	0	0	0	788
Heavy Trucks	0	12	0		0	12	0		0	0	0		0	0	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

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

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 1

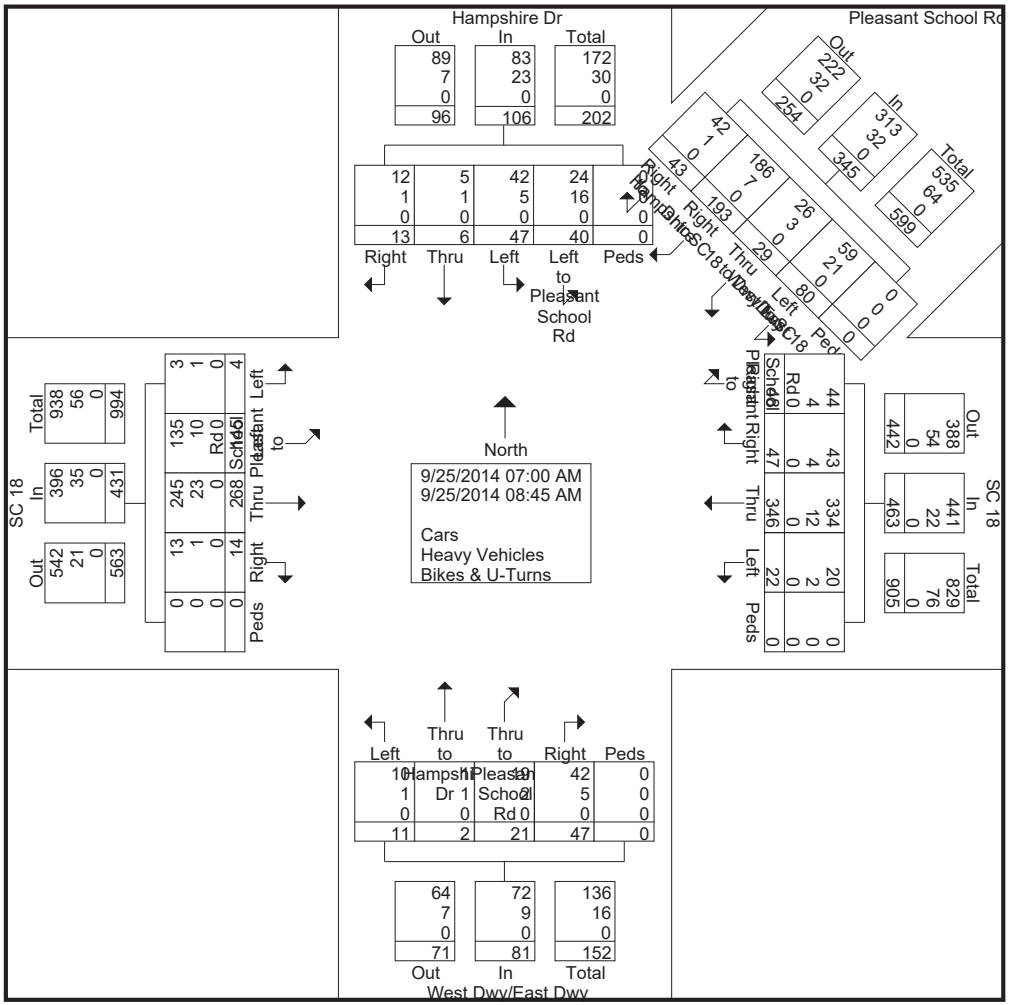
Groups Printed- Cars - Heavy Vehicles - Turns

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	4	5	0	11	3	9	2	10	0	24	6	5	57	3	0	71	8	2	0	3	0	13	1	27	12	1	0	41	160
07:15 AM	1	1	6	6	0	14	8	24	5	16	0	53	5	8	44	4	0	61	5	1	0	0	0	6	1	42	19	1	0	63	197
07:30 AM	2	2	11	5	0	20	11	31	10	11	0	63	7	9	34	4	0	54	6	4	0	5	0	15	3	40	22	0	0	65	217
07:45 AM	2	0	11	6	0	19	7	27	1	16	0	51	6	4	61	1	0	72	4	3	1	1	0	9	3	50	28	0	0	81	232
Total	7	3	32	22	0	64	29	91	18	53	0	191	24	26	196	12	0	258	23	10	1	9	0	43	8	159	81	2	0	250	806
08:00 AM	1	1	5	8	0	15	4	31	1	6	0	42	7	4	52	0	0	63	3	3	0	1	0	7	1	30	17	0	0	48	175
08:15 AM	2	0	5	3	0	10	1	30	2	4	0	37	6	2	46	4	0	58	8	2	0	0	0	10	3	32	19	1	0	55	170
08:30 AM	1	1	3	6	0	11	2	18	6	8	0	34	4	10	20	5	0	39	8	4	1	1	0	14	2	26	16	1	0	45	143
08:45 AM	2	1	2	1	0	6	7	23	2	9	0	41	7	5	32	1	0	45	5	2	0	0	0	7	0	21	12	0	0	33	132
Total	6	3	15	18	0	42	14	102	11	27	0	154	24	21	150	10	0	205	24	11	1	2	0	38	6	109	64	2	0	181	620
Grand Total	13	6	47	40	0	106	43	193	29	80	0	345	48	47	346	22	0	463	47	21	2	11	0	81	14	268	145	4	0	431	1426
Apprch %	12.3	5.7	44.3	37.7	0		12.5	55.9	8.4	23.2	0		10.4	10.2	74.7	4.8	0		58	25.9	2.5	13.6	0		3.2	62.2	33.6	0.9	0		
Total %	0.9	0.4	3.3	2.8	0	7.4	3	13.5	2	5.6	0	24.2	3.4	3.3	24.3	1.5	0	32.5	3.3	1.5	0.1	0.8	0	5.7	1	18.8	10.2	0.3	0	30.2	
Cars	12	5	42	24	0	83	42	186	26	59	0	313	44	43	334	20	0	441	42	19	1	10	0	72	13	245	135	3	0	396	1305
% Cars	92.3	83.3	89.4	60	0	78.3	97.7	96.4	89.7	73.8	0	90.7	91.7	91.5	96.5	90.9	0	95.2	89.4	90.5	50	90.9	0	88.9	92.9	91.4	93.1	75	0	91.9	91.5
Heavy Vehicles																															
% Heavy Vehicles	7.7	16.7	10.6	40	0	21.7	2.3	3.6	10.3	26.2	0	9.3	8.3	8.5	3.5	9.1	0	4.8	10.6	9.5	50	9.1	0	11.1	7.1	8.6	6.9	25	0	8.1	8.5
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 1

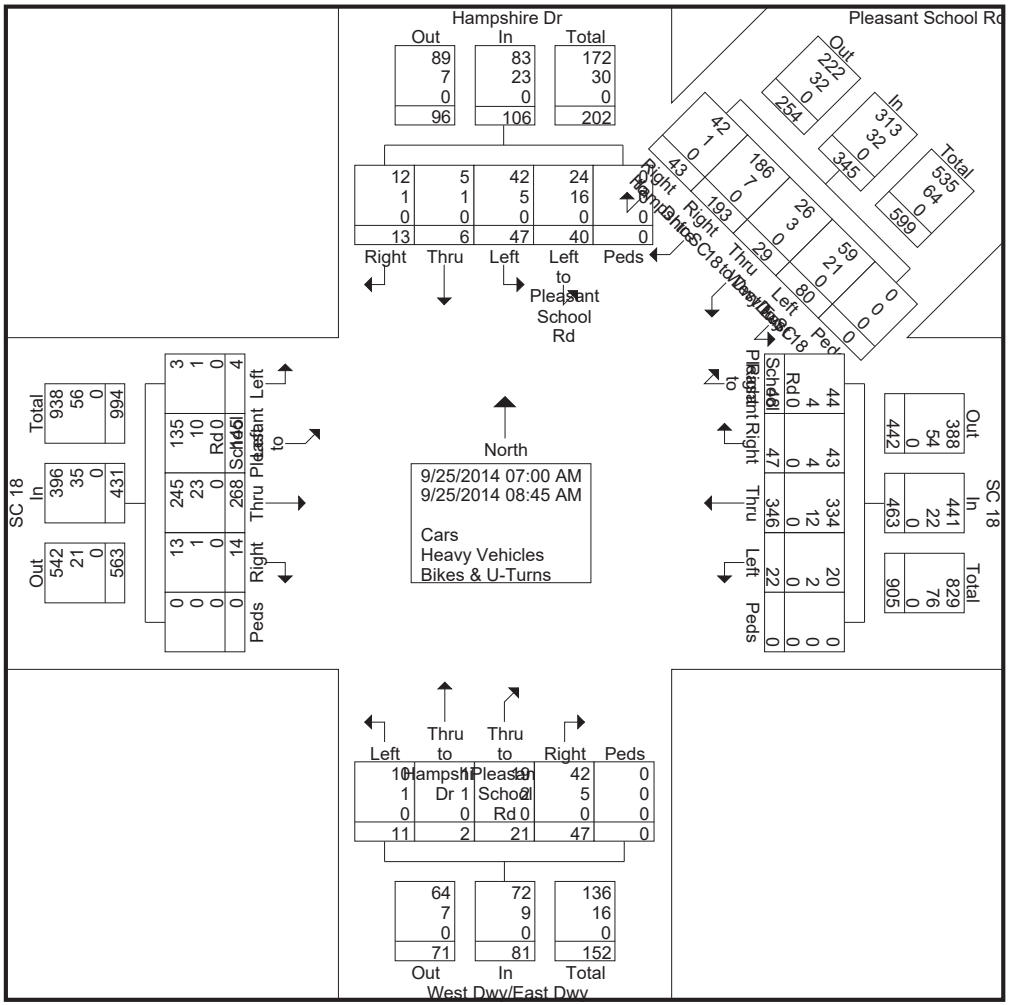
Groups Printed- Cars - Heavy Vehicles - Turns

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	4	5	0	11	3	9	2	10	0	24	6	5	57	3	0	71	8	2	0	3	0	13	1	27	12	1	0	41	160
07:15 AM	1	1	6	6	0	14	8	24	5	16	0	53	5	8	44	4	0	61	5	1	0	0	0	6	1	42	19	1	0	63	197
07:30 AM	2	2	11	5	0	20	11	31	10	11	0	63	7	9	34	4	0	54	6	4	0	5	0	15	3	40	22	0	0	65	217
07:45 AM	2	0	11	6	0	19	7	27	1	16	0	51	6	4	61	1	0	72	4	3	1	1	0	9	3	50	28	0	0	81	232
Total	7	3	32	22	0	64	29	91	18	53	0	191	24	26	196	12	0	258	23	10	1	9	0	43	8	159	81	2	0	250	806
08:00 AM	1	1	5	8	0	15	4	31	1	6	0	42	7	4	52	0	0	63	3	3	0	1	0	7	1	30	17	0	0	48	175
08:15 AM	2	0	5	3	0	10	1	30	2	4	0	37	6	2	46	4	0	58	8	2	0	0	0	10	3	32	19	1	0	55	170
08:30 AM	1	1	3	6	0	11	2	18	6	8	0	34	4	10	20	5	0	39	8	4	1	1	0	14	2	26	16	1	0	45	143
08:45 AM	2	1	2	1	0	6	7	23	2	9	0	41	7	5	32	1	0	45	5	2	0	0	0	7	0	21	12	0	0	33	132
Total	6	3	15	18	0	42	14	102	11	27	0	154	24	21	150	10	0	205	24	11	1	2	0	38	6	109	64	2	0	181	620
Grand Total	13	6	47	40	0	106	43	193	29	80	0	345	48	47	346	22	0	463	47	21	2	11	0	81	14	268	145	4	0	431	1426
Apprch %	12.3	5.7	44.3	37.7	0		12.5	55.9	8.4	23.2	0		10.4	10.2	74.7	4.8	0		58	25.9	2.5	13.6	0		3.2	62.2	33.6	0.9	0		
Total %	0.9	0.4	3.3	2.8	0	7.4	3	13.5	2	5.6	0	24.2	3.4	3.3	24.3	1.5	0	32.5	3.3	1.5	0.1	0.8	0	5.7	1	18.8	10.2	0.3	0	30.2	
Cars	12	5	42	24	0	83	42	186	26	59	0	313	44	43	334	20	0	441	42	19	1	10	0	72	13	245	135	3	0	396	1305
% Cars	92.3	83.3	89.4	60	0	78.3	97.7	96.4	89.7	73.8	0	90.7	91.7	91.5	96.5	90.9	0	95.2	89.4	90.5	50	90.9	0	88.9	92.9	91.4	93.1	75	0	91.9	91.5
Heavy Vehicles																															
% Heavy Vehicles	7.7	16.7	10.6	40	0	21.7	2.3	3.6	10.3	26.2	0	9.3	8.3	8.5	3.5	9.1	0	4.8	10.6	9.5	50	9.1	0	11.1	7.1	8.6	6.9	25	0	8.1	8.5
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC
920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
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	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:15 AM																															
07:15 AM	1	1	6	6	0	14	8	24	5	16						4												1			
07:30 AM	2	**2**	**11**	5	0	**20**	**11**	**31**	**10**	11	0	**63**	**7**	**9**	34	4	0	54	**6**	**4**	0	**5**	0	**15**	**3**	40	22	0	0	65	217
07:45 AM	2	0	11	6	0	19	7	27	1	16	0	51	6	4	**61**	1	0	**72**	4	3	**1**	1	0	9	3	**50**	**28**	0	0	**81**	**232**
08:00 AM	1	1	5	**8**	0	15	4	31	1	6	0	42	7	4	52	0	0	63	3	3	0	1	0	7	1	30	17	0	0	48	175
Total Volume	6	4	33	25	0	68	30	113	17	49	0	209	25	25	191	9	0	250	18	11	1	7	0	37	8	162	86	1	0	257	821
% App. Total	8.8	5.9	48.5	36.8	0		14.4	54.1	8.1	23.4	0		10	10	76.4	3.6	0		48.6	29.7	2.7	18.9	0		3.1	63	33.5	0.4	0		
PHF	.750	.500	.750	.781	.000	.850	.682	.911	.425	.766	.000	.829	.893	.694	.783	.563	.000	.868	.750	.688	.250	.350	.000	.617	.667	.810	.768	.250	.000	.793	.885

Quality Counts, LLC
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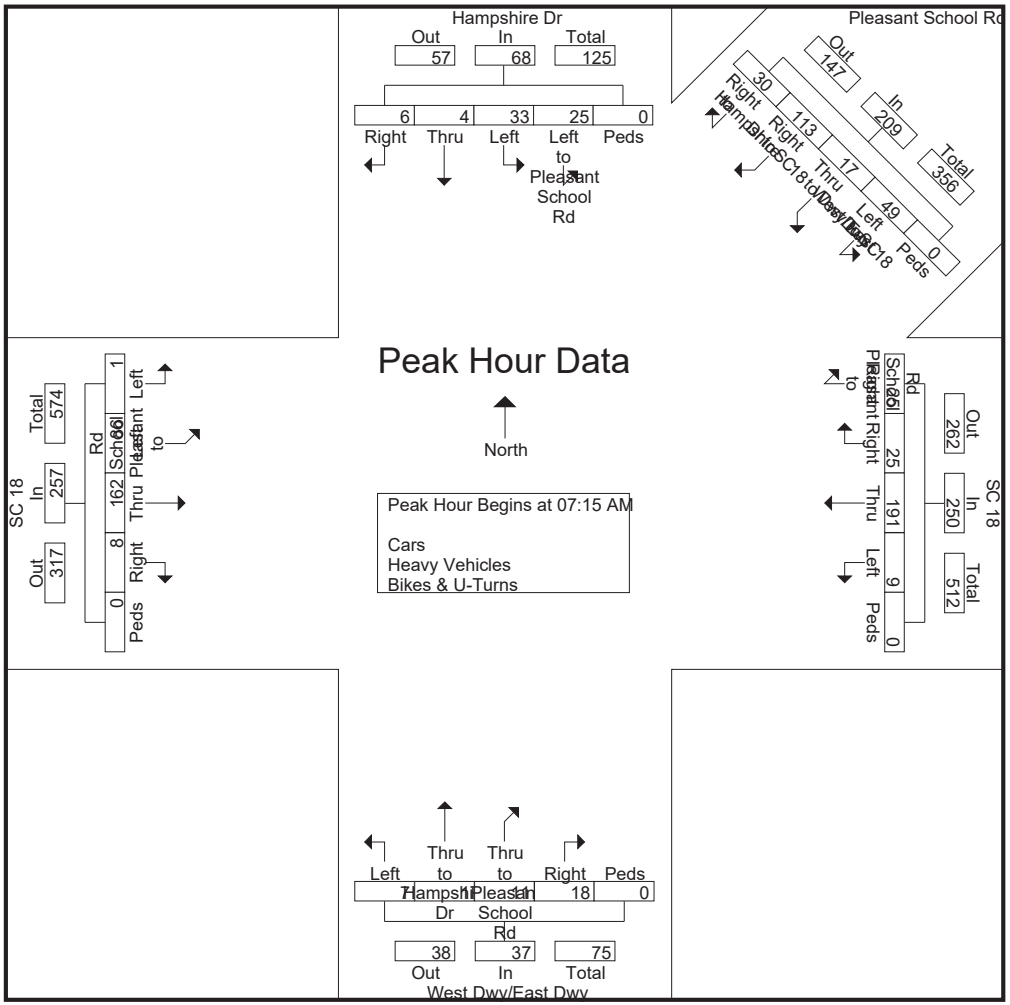

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
Start Date : 9/25/2014
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Groups Printed- Cars - Heavy Vehicles - Turns

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right to Hamshire Dr	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left to Hampshire Dr	Peds	App. Total	Int. Total
04:00 PM	4	1	10	7	0	22	4	22	5	13	0	44	4	5	56	3	0	68	10	2	0	2	0	14	1	70	29	0	0	100	248
04:15 PM	6	1	6	9	0	22	5	24	7	13	0	49	3	6	56	1	0	66	7	6	1	4	0	18	1	53	31	2	0	87	242
04:30 PM	0	0	8	7	0	15	4	29	6	13	0	52	13	5	22	5	0	45	6	2	1	4	0	13	3	54	39	0	0	96	221
04:45 PM	0	0	1	6	0	7	2	20	11	11	0	44	5	1	33	2	0	41	6	4	0	4	0	14	8	53	29	0	0	90	196
Total	10	2	25	29	0	66	15	95	29	50	0	189	25	17	167	11	0	220	29	14	2	14	0	59	13	230	128	2	0	373	907
05:00 PM	1	0	12	10	0	23	2	28	11	10	0	51	5	4	31	3	0	43	7	6	0	2	0	15	1	61	35	0	0	97	229
05:15 PM	0	4	14	8	0	26	4	23	3	7	0	37	5	7	43	2	0	57	7	11	0	1	0	19	3	71	38	0	0	112	251
05:30 PM	0	3	15	10	0	28	7	24	1	6	0	38	3	10	39	4	0	56	8	0	0	1	0	9	3	48	23	0	0	74	205
05:45 PM	4	2	14	6	0	26	2	12	3	6	0	23	6	8	30	3	0	47	4	3	0	1	0	8	1	47	20	0	0	68	172
Total	5	9	55	34	0	103	15	87	18	29	0	149	19	29	143	12	0	203	26	20	0	5	0	51	8	227	116	0	0	351	857
Grand Total	15	11	80	63	0	169	30	182	47	79	0	338	44	46	310	23	0	423	55	34	2	19	0	110	21	457	244	2	0	724	1764
Apprch %	8.9	6.5	47.3	37.3	0		8.9	53.8	13.9	23.4	0		10.4	10.9	73.3	5.4	0		50	30.9	1.8	17.3	0		2.9	63.1	33.7	0.3	0		
Total %	0.9	0.6	4.5	3.6	0	9.6	1.7	10.3	2.7	4.5	0	19.2	2.5	2.6	17.6	1.3	0	24	3.1	1.9	0.1	1.1	0	6.2	1.2	25.9	13.8	0.1	0	41	
Cars	14	11	71	49	0	145	28	172	45	71	0	316	43	44	299	22	0	408	51	31	1	18	0	101	21	443	235	2	0	701	1671
% Cars	93.3	100	88.8	77.8	0	85.8	93.3	94.5	95.7	89.9	0	93.5	97.7	95.7	96.5	95.7	0	96.5	92.7	91.2	50	94.7	0	91.8	100	96.9	96.3	100	0	96.8	94.7
Heavy Vehicles																															
% Heavy Vehicles	6.7	0	11.2	22.2	0	14.2	6.7	5.5	4.3	10.1	0	6.5	2.3	4.3	3.5	4.3	0	3.5	7.3	8.8	50	5.3	0	8.2	0	3.1	3.7	0	0	3.2	5.3
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
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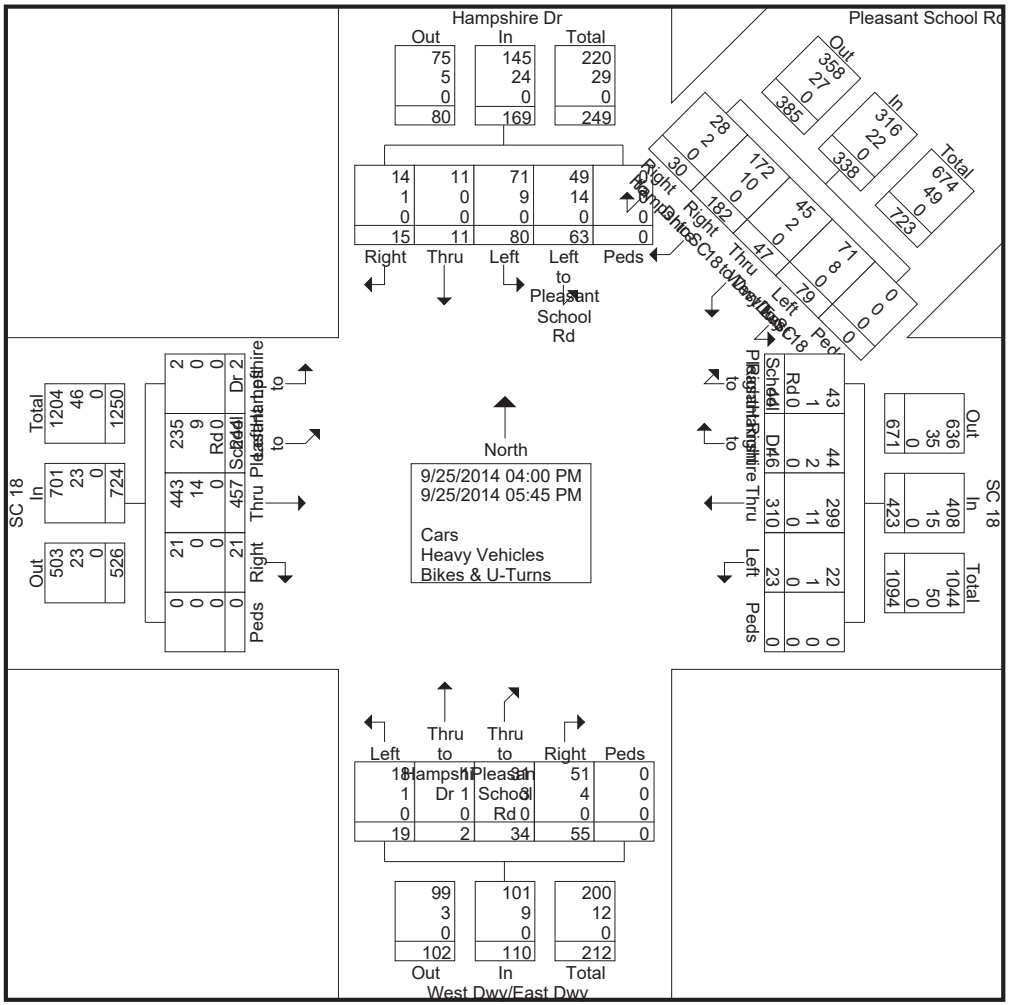
Page No : 2



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	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right to Hamshire Dr	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left to Hampshire Dr	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:00 PM																															
04:00 PM	4	1	10	7	0	22	4	22	5	13	0	44	4	5	**56**	3	0	**68**	**10**	2	0	2	0	14	1	**70**	29	0	0	**100**	**248**
04:15 PM	**6**	1	6	**9**	0	22	**5**	24	7	13	0	49	3	**6**	56	1	0	66	7	**6**	**1**	**4**	0	**18**	1	53	31	**2**	0	87	242
04:30 PM	0	0	8	7	0	15	4	**29**	6	13	0	**52**	**13**	5	22	**5**	0	45	6	2	1	4	0	13	3	54	**39**	0	0	96	221
04:45 PM	0	0	1	6	0	7	2	20	**11**	11	0	44	5	1	33	2	0	41	6	4	0	4	0	14	**8**	53	29	0	0	90	196
Total Volume	10	2	25	29	0	66	15	95	29	50	0	189	25	17	167	11	0	220	29	14	2	14	0	59	13	230	128	2	0	373	907
% App. Total	15.2	3	37.9	43.9	0		7.9	50.3	15.3	26.5	0		11.4	7.7	75.9	5	0		49.2	23.7	3.4	23.7	0		3.5	61.7	34.3	0.5	0		
PHF	.417	.500	.625	.806	.000	.750	.750	.819	.659	.962	.000	.909	.481	.708	.746	.550	.000	.809	.725	.583	.500	.875	.000	.819	.406	.821	.821	.250	.000	.933	.914

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

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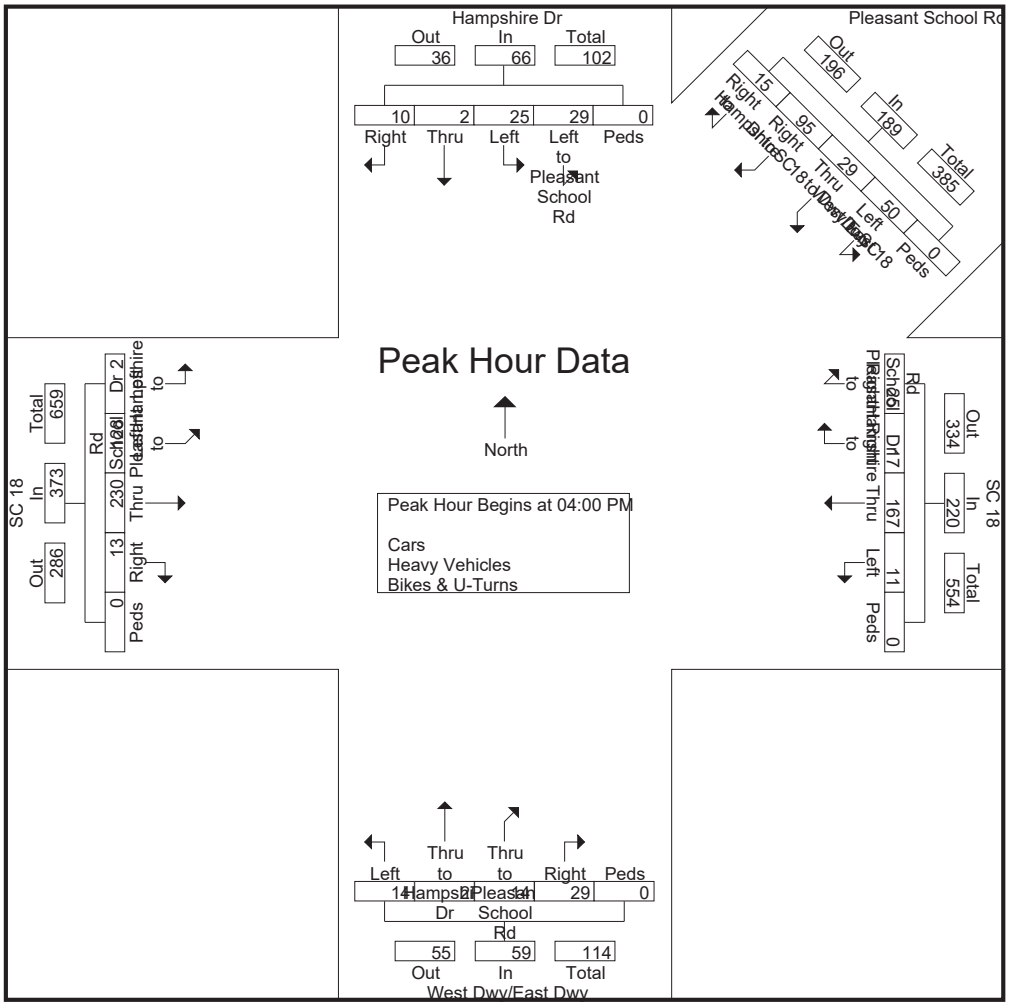
Page No : 4



Appendix B

HCS Freeway and Ramp Merge/Diverge Outputs

Freeway Outputs

Existing AM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1610	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	447	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1230	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1230	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1456	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	404	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1112	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1112	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1566	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	435	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1196	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1544	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	429	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1179	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1179	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Existing PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2606	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	724	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1991	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1991	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2494	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	693	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1905	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1905	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.4	mi/h
Number of lanes, N	2	
Density, D	31.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	731	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2009	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2009	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	2	
Density, D	33.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2642	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	734	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2018	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2018	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	2	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

No Build AM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2407	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1839	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1839	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	29.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2176	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	604	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1662	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	26.0-	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2341	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	650	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1788	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1788	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
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Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2308	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	641	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1763	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1763	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

No Build PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3895	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1082	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2975	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2975	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	29.8	mi/h
Number of lanes, N	2	
Density, D	99.7	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3728	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1036	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2848	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2848	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	35.3	mi/h
Number of lanes, N	2	
Density, D	80.8	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1092	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3003	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3003	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	28.6	mi/h
Number of lanes, N	2	
Density, D	105.1	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
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Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3949	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1097	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3017	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3017	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	27.9	mi/h
Number of lanes, N	2	
Density, D	108.0	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Build AM Peak

I-85 Northbound

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2407	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1226	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1226	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
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Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2176	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	604	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1108	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1108	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2341	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	650	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1192	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1192	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2308	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	641	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1175	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1175	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Build PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3895	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1082	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1984	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1984	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.2	mi/h
Number of lanes, N	3	
Density, D	33.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3728	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1036	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1899	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1899	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1092	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2002	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2002	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.9	mi/h
Number of lanes, N	3	
Density, D	33.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Suite 300
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3949	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1097	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2011	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2011	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	3	
Density, D	33.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Merge Outputs

Existing AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	87	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1457	87		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	405	24		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2226 109 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2226 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2335	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2226 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2335	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	87	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1457	87	109	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	405	24	30	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2226 109 136 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2226 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2335	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2226 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2335	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

Existing PM Peak

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2536	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2536	106		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	704	29		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3874 133 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) = 3874$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4007	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 $v_{12}/2$ No

If yes, v_{12A} = 3874 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4007	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.497

Space mean speed in ramp influence area, S_R = 53.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2536	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	94	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2536	106	94	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	704	29	26	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3874 133 118 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3874 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4007	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3874 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4007	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.497

Space mean speed in ramp influence area, S_R = 53.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.6 mph

No Build AM Peak Hour

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Phone: 803-724-1430 Fax: 803-724-1201
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	605	36		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3327 163 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3327 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3490	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3327 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3490	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.410

Space mean speed in ramp influence area, S_R = 55.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	605	36	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3327 163 204 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3327 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3490	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3327 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3490	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.410

Space mean speed in ramp influence area, S_R = 55.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.6 mph

No Build PM Peak

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1053	44		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5792 198 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 5792 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5990	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5792 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5990	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 48.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.840

Space mean speed in ramp influence area, S_R = 22.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 22.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1053	44	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5792 198 175 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5792 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5990	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5792 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5990	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 48.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.840

Space mean speed in ramp influence area, S_R = 22.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 22.7 mph

No Build PM Peak

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	245	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2176	99	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	604	28	68	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3324	124	306	pcph

Estimation of V12 Merge Areas

L = 1419.76 (Equation 13-6 or 13-7)

P_{EQ} = 0.605 Using Equation 1

$v_{FM} = v_{12} (P_{FM}) =$ 2012 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		3448	7050	No
v_3 or v_{av34}		1312 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2		No	

If yes, v_{12A} = 2012 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3448	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A$ = 15.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.285	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = 62.1	mph
Space mean speed for all vehicles,	S = 59.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	231	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2176	99	231	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	604	28	64	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade %		%	%	
Length mi		mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3324	124	289	pcph

Estimation of V12 Merge Areas

L = 605.63 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 2012 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3448	7050	No
v_3 or v_{av34}	1312 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2012 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3448	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 15.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.285	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = 62.1	mph
Space mean speed for all vehicles,	S = 59.8	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	605	36		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3327	163		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 2044 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3490	7050	No
v or v 3 av34	1283 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2044 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3490	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.264	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 60.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	605	36	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3327	163	204	pcph

Estimation of V12 Merge Areas

L = 761.58 (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 2044 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3490	7050	No
v or v 3 av34	1283 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2044 (Equation 13-15, 13-16, 18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3490	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{12} - 0.00627\ L_{A} = 14.3$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.264	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 60.1	mph

Build PM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	345	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3728	131	345	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1036	36	96	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade %		%	%	
Length mi		mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5696	164	431	pcph

Estimation of V12 Merge Areas

L = 1999.72 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 3447 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5860	7050	No
v or v 3 av34	2249 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3447 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5860	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.7	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	167	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3728	131	167	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1036	36	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade %		%	%	
Length mi		mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5696	164	209	pcph

Estimation of V12 Merge Areas

L = 1121.80 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 3447 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5860	7050	No
v or v 3 av34	2249 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3447 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5860	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.7	mph
Space mean speed for all vehicles,	S = 56.9	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1053	44		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5792	198		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 3559 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5990	7050	No
v or v 3 av34	2233 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3559 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5990	4600	No

Level of Service Determination (if not F)

Density, D = 5.475 + 0.00734 v + 0.0078 v - 0.00627 L = 26.4 pc/mi/ln
R R 12 A
Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M = 0.396
S
Space mean speed in ramp influence area, S = 55.9 mph
R
Space mean speed in outer lanes, S = 58.8 mph
0
Space mean speed for all vehicles, S = 56.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1053	44	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5792	198	175	pcph

Estimation of V12 Merge Areas

L = 1296.58 (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 3559 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5990	7050	No
v or v 3 av34	2233 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3559 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5990	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.8	mph
Space mean speed for all vehicles,	S = 56.9	mph

Diverge Outputs

Existing AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1610	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	164	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	9475	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1610		154		164		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	447		43		46		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2460 193 182 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2460	4700	No
$v_{FO} = v_F - v_R$	2267	4700	No
v_R	193	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2460	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.380

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1610	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1610		154				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	447		43				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 2460 193 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2460	4700	No
$v_{FO} = v_F - v_R$	2267	4700	No
v_R	193	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2460	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.380

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1566	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	87	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1566		109		87		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	435		30		24		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2392 136 97 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2392 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2392	4700	No
$v_{FO} = v_F - v_R$	2256	4700	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2392 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2392	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1566	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1566		109		182		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	435		30		51		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2392 136 202 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2392 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2392	4700	No
$v_{FO} = v_F - v_R$	2256	4700	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2392 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2392	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

Existing PM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	112	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2606		112				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	724		31				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 3981 140 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3981 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3981	4700	No
$v_{FO} = v_F - v_R$	3841	4700	No
v_R	140	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3981 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3981	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.376

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	112	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2606		112			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	724		31			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3981 140 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3981 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3981	4700	No
$v_{FO} = v_F - v_R$	3841	4700	No
v_R	140	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3981 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3981	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.376

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	94	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	106	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		94		106		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	731		26		29		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4018 118 118 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4018 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4018	4700	No
$v_{FO} = v_F - v_R$	3900	4700	No
v_R	118	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4018 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4018	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 35.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	94	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	193	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		94		193		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	731		26		54		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4018 118 214 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4018 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4018	4700	No
$v_{FO} = v_F - v_R$	3900	4700	No
v_R	118	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4018 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4018	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 35.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

No Build AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040_No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2407		231			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		64			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3677 289 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3677 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	4700	No
$v_{FO} = v_F - v_R$	3388	4700	No
v_R	289	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3677 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3677	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2407		231			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		64			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3677 289 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3677 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	4700	No
$v_{FO} = v_F - v_R$	3388	4700	No
v_R	289	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3677 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3677	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.1 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		130		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		36		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3577 204 144 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3577 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	4700	No
$v_{FO} = v_F - v_R$	3373	4700	No
v_R	204	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3577 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3577	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 31.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		272		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		76		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3577 204 302 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3577 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	4700	No
$v_{FO} = v_F - v_R$	3373	4700	No
v_R	204	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3577 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3577	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 31.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

No Build PM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3895		167			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1082		46			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 5951 209 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5951 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	4700	Yes
$v_{FO} = v_F - v_R$	5742	4700	Yes
v_R	209	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 5951 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5951	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3895		167			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1082		46			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 5951 209 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5951 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	4700	Yes
$v_{FO} = v_F - v_R$	5742	4700	Yes
v_R	209	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5951 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5951	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.2 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3931		140		158		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1092		39		44		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6006 175 176 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6006	4700	Yes
$v_{FO} = v_F - v_R$	5831	4700	Yes
v_R	175	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6006	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3931		140		288		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1092		39		80		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6006 175 320 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6006	4700	Yes
$v_{FO} = v_F - v_R$	5831	4700	Yes
v_R	175	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6006	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

Build AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2407	231	99	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	669	64	28	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3677	289	110	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.655 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2507 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3677	7050	No
$v_{FO} = v_F - v_R$		3388	7050	No
v_R		289	2100	No
v_3 or v_{av34}		1170 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_0 = 70.6 mph

Space mean speed for all vehicles, S = 60.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2407		231			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		64			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	3677		289			pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.655 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	7050	No
$v_{FO} = v_F - v_R$	3388	7050	No
v_R	289	2100	No
v_3 or v_{av34}	1170 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.389	
Space mean speed in ramp influence area,	S_R = 56.1	mph
Space mean speed in outer lanes,	S_0 = 70.6	mph
Space mean speed for all vehicles,	S = 60.0	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2341	163	130	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	650	45	36	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3577	204	144	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.661 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2434 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3577	7050	No
$v_{FO} = v_F - v_R$		3373	7050	No
v_R		204	2000	No
v_3 or v_{av34}		1143 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2434 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2434	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 54.7	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 59.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		272		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		76		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3577		204		302		pcph

Estimation of V12 Diverge Areas

L = 2192.11 (Equation 13-12 or 13-13)

P_{EQ} = 0.661 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2434 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3577	7050	No
$v_{FO} = v_F - v_R$		3373	7050	No
v_R		204	2000	No
v_3 or v_{av34}		1143 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2434 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2434	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 54.7	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 59.0	mph

Build PM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	131	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3895	167	131	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1082	46	36	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5951	209	146	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.602 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3663 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	7050	No
$v_{FO} = v_F - v_R$	5742	7050	No
v_R	209	2100	No
v_3 or v_{av34}	2288 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3663 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3663	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_0 = 66.3 mph

Space mean speed for all vehicles, S = 59.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3895	167		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1082	46		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5951	209		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.602 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3663 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	7050	No
$v_{FO} = v_F - v_R$	5742	7050	No
v_R	209	2100	No
v_3 or v_{av34}	2288 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3663 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3663	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.382	
Space mean speed in ramp influence area,	S_R = 56.2	mph
Space mean speed in outer lanes,	S_0 = 66.3	mph
Space mean speed for all vehicles,	S = 59.7	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3931	140	158	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1092	39	44	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6006	175	176	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.602 Using Equation 5
FD
$v_{12} = v_R + (v_F - v_R) P_{FD} = 3684$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6006	7050	No
$v_{FO} = v_F - v_R$	5831	7050	No
v_R	175	2000	No
v_3 or v_{av34}	2322 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, $v_{12A} = 3684$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3684	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 31.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, $D_S = 0.444$

Space mean speed in ramp influence area, $S_R = 54.8$ mph

Space mean speed in outer lanes, $S_0 = 66.1$ mph

Space mean speed for all vehicles, $S = 58.7$ mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3931	140	288	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1092	39	80	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6006	175	320	pcph

Estimation of V12 Diverge Areas

L = 1634.00 (Equation 13-12 or 13-13)

EQ
P = 0.602 Using Equation 5
FD
$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3684 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6006	7050	No
$v_{FO} = v_F - v_R$		5831	7050	No
v_R		175	2000	No
v_3 or v_{av34}		2322 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2		No	

If yes, v_{12A} = 3684 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3684	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_0 = 66.1 mph

Space mean speed for all vehicles, S = 58.7 mph

Appendix C

Intersection HCM Synchro Outputs

Existing Exit 95

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	34	0	0	45	0	0	0	0	119	13	22
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	40	0	0	52	0	0	0	0	138	15	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	331	305	28	324	292	0	15			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	331	305	28	324	292	0	15			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	93	100	100	91	100	100			91		
cM capacity (veh/h)	541	556	1047	559	568	1091	1616			1591		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	52	179
Volume Left	0	0	138
Volume Right	0	0	26
cSH	556	568	1591
Volume to Capacity	0.07	0.09	0.09
Queue Length 95th (ft)	6	8	7
Control Delay (s)	12.0	12.0	5.9
Lane LOS	B	B	A
Approach Delay (s)	12.0	12.0	5.9
Approach LOS	B	B	

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	34	3	44	1	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	149	42	4	55	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			191		232	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			191		232	170
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			100		100	99
cM capacity (veh/h)			1347		698	808

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	191	59	8
Volume Left	0	4	1
Volume Right	42	0	6
cSH	1700	1347	788
Volume to Capacity	0.11	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	71	53	7	43	4	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	84	62	8	51	5	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			146		182	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			146		182	115
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			99		99	100
cM capacity (veh/h)			1412		745	870

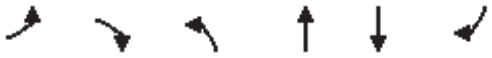
Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	146	59	7
Volume Left	0	8	5
Volume Right	62	0	2
cSH	1700	1412	783
Volume to Capacity	0.09	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	1.1	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	1.1	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		18.2%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	102	109	5	33	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	165	176	8	53	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	184				348	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	184				348	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	99
cM capacity (veh/h)	1373				649	863

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	166	184	60
Volume Left	2	0	53
Volume Right	0	8	6
cSH	1373	1700	666
Volume to Capacity	0.00	0.11	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.1	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.9
Approach LOS			B

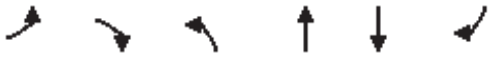
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	109	93	248	388	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	34	142	121	322	504	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1153	
pX, platoon unblocked						
vC, conflicting volume	920	266	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	266	531			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	86	81	88			
cM capacity (veh/h)	234	727	1005			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	175	228	215	336	195
Volume Left	34	121	0	0	0
Volume Right	142	0	0	0	27
cSH	517	1005	1700	1700	1700
Volume to Capacity	0.34	0.12	0.13	0.20	0.11
Queue Length 95th (ft)	37	10	0	0	0
Control Delay (s)	15.5	5.3	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.5	2.8		0.0	
Approach LOS	C				

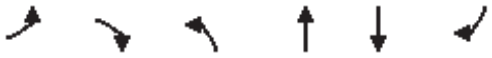
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	58	6	268	351	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	2	70	7	323	423	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					797	
pX, platoon unblocked						
vC, conflicting volume	599	211	423			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	599	211	423			
tC, single (s)	6.9	7.0	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	99	91	99			
cM capacity (veh/h)	423	785	1091			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	115	215	282	141
Volume Left	2	7	0	0	0
Volume Right	70	0	0	0	0
cSH	763	1091	1700	1700	1700
Volume to Capacity	0.09	0.01	0.13	0.17	0.08
Queue Length 95th (ft)	8	1	0	0	0
Control Delay (s)	10.2	0.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.2	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	42	28	38	75	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	3	55	37	50	99	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	222	99	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	99	99			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	94	97			
cM capacity (veh/h)	739	949	1373			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	58	87	99
Volume Left	3	37	0
Volume Right	55	0	0
cSH	937	1373	1700
Volume to Capacity	0.06	0.03	0.06
Queue Length 95th (ft)	5	2	0
Control Delay (s)	9.1	3.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	3.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	11	26	13	9	1	33	62	14	10	96	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	13	31	16	11	1	40	75	17	12	116	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	316	317	122	347	316	83	129			92		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316	317	122	347	316	83	129			92		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.3			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.4			2.3		
p0 queue free %	99	98	97	97	98	100	97			99		
cM capacity (veh/h)	611	578	931	534	553	934	1364			1420		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	28	131	141
Volume Left	4	16	40	12
Volume Right	31	1	17	13
cSH	771	552	1364	1420
Volume to Capacity	0.06	0.05	0.03	0.01
Queue Length 95th (ft)	5	4	2	1
Control Delay (s)	10.0	11.9	2.5	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	10.0	11.9	2.5	0.7
Approach LOS	A	B		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	90	0	19	68	90	0	0	116	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	105	0	22	79	105	0	0	135	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	431	409	146	409	420	105	157			105		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431	409	146	409	420	105	157			105		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	100	100	100	79	100	98	94			100		
cM capacity (veh/h)	503	505	906	509	478	918	1393			1398		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	127	184	157
Volume Left	105	79	0
Volume Right	22	0	22
cSH	552	1393	1700
Volume to Capacity	0.23	0.06	0.09
Queue Length 95th (ft)	22	5	0
Control Delay (s)	13.5	3.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.5	3.6	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	31.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations												
Volume (vph)	2	106	186	217	22	26	37	143	26	26	37	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt		1.00	1.00	1.00	0.85		0.88		0.85		0.98	
Flt Protected		0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)		1671	1759	1810	1538		1357		1258		1639	
Flt Permitted		0.60	1.00	1.00	1.00		0.99		1.00		0.86	
Satd. Flow (perm)		1061	1759	1810	1538		1357		1258		1471	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	2	123	216	252	26	30	43	166	30	30	43	12
RTOR Reduction (vph)	0	0	0	0	38	0	84	0	21	0	77	0
Lane Group Flow (vph)	0	125	216	252	18	0	128	0	6	0	8	0
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	22%	22%	22%	9%	9%	9%
Turn Type	Perm	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases			2	6			8				4	
Permitted Phases	2	2			6				8	4		
Actuated Green, G (s)		15.5	15.5	15.5	15.5		10.6		10.6		4.2	
Effective Green, g (s)		15.5	15.5	15.5	15.5		10.6		10.6		4.2	
Actuated g/C Ratio		0.33	0.33	0.33	0.33		0.22		0.22		0.09	
Clearance Time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)		346	573	590	501		302		280		130	
v/s Ratio Prot			0.12	c0.14			c0.09					
v/s Ratio Perm		0.12			0.01				0.00		c0.01	
v/c Ratio		0.36	0.38	0.43	0.04		0.42		0.02		0.06	
Uniform Delay, d1		12.2	12.3	12.5	10.9		15.8		14.4		19.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2		0.6	0.4	0.5	0.0		1.0		0.0		0.2	
Delay (s)		12.9	12.7	13.0	10.9		16.8		14.4		20.0	
Level of Service		B	B	B	B		B		B		C	
Approach Delay (s)			12.8	12.6			16.5				20.0	
Approach LOS			B	B			B				C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	17.2
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	57	0	0	51	0	0	0	0	109	0	3
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	72	0	0	65	0	0	0	0	138	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	310	278	2	314	276	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310	278	2	314	276	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	88	100	100	89	100	100			91		
cM capacity (veh/h)	552	578	1088	543	579	1091	1636			1566		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	72	65	142
Volume Left	0	0	138
Volume Right	0	0	4
cSH	578	579	1566
Volume to Capacity	0.12	0.11	0.09
Queue Length 95th (ft)	11	9	7
Control Delay (s)	12.1	12.0	7.3
Lane LOS	B	B	A
Approach Delay (s)	12.1	12.0	7.3
Approach LOS	B	B	

Intersection Summary				
Average Delay	9.7			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	140	26	4	48	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	163	30	5	56	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			193		243	178
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			193		243	178
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1357		747	870

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	193	60	5
Volume Left	0	5	3
Volume Right	30	0	1
cSH	1700	1357	775
Volume to Capacity	0.11	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.6	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	107	34	1	39	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	123	39	1	45	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			162		190	143
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		190	143
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1393		803	910

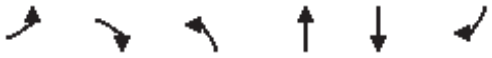
Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	162	46	15
Volume Left	0	1	15
Volume Right	39	0	0
cSH	1700	1393	803
Volume to Capacity	0.10	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		17.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	46	30	3	26	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	50	33	3	28	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	36				86	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	36				86	34
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1569				907	1030

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	36	33
Volume Left	1	0	28
Volume Right	0	3	4
cSH	1569	1700	921
Volume to Capacity	0.00	0.02	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.2	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.2	0.0	9.0
Approach LOS			A

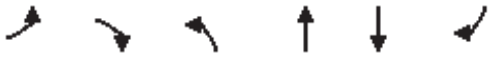
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	61	24	389	298	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	12	67	26	427	327	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1155	
pX, platoon unblocked						
vC, conflicting volume	599	169	337			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	599	169	337			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	92	98			
cM capacity (veh/h)	424	846	1211			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	79	169	285	218	119
Volume Left	12	26	0	0	0
Volume Right	67	0	0	0	10
cSH	734	1211	1700	1700	1700
Volume to Capacity	0.11	0.02	0.17	0.13	0.07
Queue Length 95th (ft)	9	2	0	0	0
Control Delay (s)	10.5	1.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.5	0.5		0.0	
Approach LOS	B				

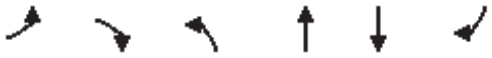
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	33	12	388	274	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	2	37	13	436	308	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					799	
pX, platoon unblocked						
vC, conflicting volume	553	154	308			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	154	308			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	99			
cM capacity (veh/h)	451	854	1235			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	39	159	291	205	104
Volume Left	2	13	0	0	0
Volume Right	37	0	0	0	1
cSH	813	1235	1700	1700	1700
Volume to Capacity	0.05	0.01	0.17	0.12	0.06
Queue Length 95th (ft)	4	1	0	0	0
Control Delay (s)	9.7	0.8	0.0	0.0	0.0
Lane LOS	A	A			
Approach Delay (s)	9.7	0.3		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	24	17	84	68	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	1	33	23	115	93	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	255	93	93			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	255	93	93			
tC, single (s)	6.9	6.7	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.8	2.3			
p0 queue free %	100	96	98			
cM capacity (veh/h)	631	847	1418			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	34	138	93
Volume Left	1	23	0
Volume Right	33	0	0
cSH	836	1418	1700
Volume to Capacity	0.04	0.02	0.05
Queue Length 95th (ft)	3	1	0
Control Delay (s)	9.5	1.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	1.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	22	23	16	24	3	41	90	23	3	84	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	9	26	27	19	28	3	48	105	27	3	98	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	338	334	101	360	324	118	103			131		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	338	334	101	360	324	118	103			131		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	98	95	97	97	95	100	97			100		
cM capacity (veh/h)	572	564	952	533	563	918	1446			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	50	179	107
Volume Left	9	19	48	3
Volume Right	27	3	27	6
cSH	687	567	1446	1366
Volume to Capacity	0.09	0.09	0.03	0.00
Queue Length 95th (ft)	7	7	3	0
Control Delay (s)	10.8	12.0	2.2	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.8	12.0	2.2	0.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	26.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	67	4	23	82	131	0	0	103	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	0	85	5	29	104	166	0	0	130	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	548	516	143	516	529	166	156			166		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	548	516	143	516	529	166	156			166		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	100	100	100	80	99	97	93			100		
cM capacity (veh/h)	407	431	910	431	411	858	1406			1337		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	119	270	156
Volume Left	85	104	0
Volume Right	29	0	25
cSH	490	1406	1700
Volume to Capacity	0.24	0.07	0.09
Queue Length 95th (ft)	24	6	0
Control Delay (s)	14.7	3.4	0.0
Lane LOS	B	A	
Approach Delay (s)	14.7	3.4	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	152	272	182	25	18	34	121	15	43	54	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt	1.00	1.00	1.00	0.85		0.88		0.85		0.99	
Flt Protected	0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)	1752	1845	1827	1553		1455		1346		1678	
Flt Permitted	0.63	1.00	1.00	1.00		0.99		1.00		0.85	
Satd. Flow (perm)	1159	1845	1827	1553		1455		1346		1485	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	173	309	207	28	20	39	138	17	49	61	11
RTOR Reduction (vph)	0	0	0	32	0	87	0	12	0	94	0
Lane Group Flow (vph)	173	309	207	16	0	92	0	3	0	27	0
Heavy Vehicles (%)	3%	3%	4%	4%	4%	14%	14%	14%	7%	7%	7%
Turn Type	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases		2	6			8				4	
Permitted Phases	2			6				8	4		
Actuated Green, G (s)	16.3	16.3	16.3	16.3		9.5		9.5		6.6	
Effective Green, g (s)	16.3	16.3	16.3	16.3		9.5		9.5		6.6	
Actuated g/C Ratio	0.33	0.33	0.33	0.33		0.19		0.19		0.13	
Clearance Time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	380	606	600	510		278		257		197	
v/s Ratio Prot		c0.17	0.11			c0.06					
v/s Ratio Perm	0.15			0.01				0.00		c0.02	
v/c Ratio	0.46	0.51	0.34	0.03		0.33		0.01		0.14	
Uniform Delay, d1	13.1	13.4	12.6	11.3		17.3		16.2		19.0	
Progression Factor	1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.9	0.7	0.3	0.0		0.7		0.0		0.3	
Delay (s)	14.0	14.1	13.0	11.3		18.0		16.3		19.3	
Level of Service	B	B	B	B		B		B		B	
Approach Delay (s)		14.1	12.6			17.9				19.3	
Approach LOS		B	B			B				B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	17.2
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

No Build Exit 95

AM Peak Hour

BIHL ENGINEERING

May 2016

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	51	0	0	67	0	0	0	0	178	19	34
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	59	0	0	78	0	0	0	0	207	22	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	495	456	42	485	436	0	22			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	495	456	42	485	436	0	22			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	86	100	100	83	100	100			87		
cM capacity (veh/h)	380	436	1029	400	450	1091	1607			1591		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	78	269
Volume Left	0	0	207
Volume Right	0	0	40
cSH	436	450	1591
Volume to Capacity	0.14	0.17	0.13
Queue Length 95th (ft)	12	16	11
Control Delay (s)	14.6	14.7	6.1
Lane LOS	B	B	A
Approach Delay (s)	14.6	14.7	6.1
Approach LOS	B	B	

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	23.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	178	51	4	66	1	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	222	64	5	82	1	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			286		347	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			286		347	254
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			100		100	99
cM capacity (veh/h)			1242		597	723

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	286	88	10
Volume Left	0	5	1
Volume Right	64	0	9
cSH	1700	1242	704
Volume to Capacity	0.17	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		22.5%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	106	79	10	64	6	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	125	93	12	75	7	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			218		270	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		270	171
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			99		99	100
cM capacity (veh/h)			1329		659	807

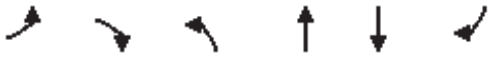
Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	218	87	11
Volume Left	0	12	7
Volume Right	93	0	4
cSH	1700	1329	702
Volume to Capacity	0.13	0.01	0.02
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	1.1	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	1.1	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		21.8%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	7	49	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	11	79	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274				519	269
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274				519	269
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	99
cM capacity (veh/h)	1272				517	770

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	274	89
Volume Left	2	0	79
Volume Right	0	11	10
cSH	1272	1700	536
Volume to Capacity	0.00	0.16	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.1	0.0	13.0
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	13.0
Approach LOS			B

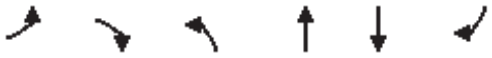
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	39	163	139	371	580	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	51	212	181	482	753	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1153	
pX, platoon unblocked						
vC, conflicting volume	1375	397	794			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1375	397	794			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	51	65	77			
cM capacity (veh/h)	104	597	798			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	262	341	321	502	291
Volume Left	51	181	0	0	0
Volume Right	212	0	0	0	40
cSH	311	798	1700	1700	1700
Volume to Capacity	0.84	0.23	0.19	0.30	0.17
Queue Length 95th (ft)	183	22	0	0	0
Control Delay (s)	56.4	7.0	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	56.4	3.6		0.0	
Approach LOS	F				

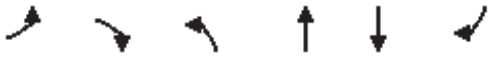
Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	86	9	401	525	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	104	11	483	633	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					797	
pX, platoon unblocked						
vC, conflicting volume	896	316	633			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	316	633			
tC, single (s)	6.9	7.0	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	99	85	99			
cM capacity (veh/h)	271	671	907			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	107	172	322	422	211
Volume Left	4	11	0	0	0
Volume Right	104	0	0	0	0
cSH	639	907	1700	1700	1700
Volume to Capacity	0.17	0.01	0.19	0.25	0.12
Queue Length 95th (ft)	15	1	0	0	0
Control Delay (s)	11.8	0.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.8	0.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	63	42	57	112	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	4	83	55	75	147	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	333	147	147			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	147	147			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	99	91	96			
cM capacity (veh/h)	628	892	1315			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	87	130	147
Volume Left	4	55	0
Volume Right	83	0	0
cSH	875	1315	1700
Volume to Capacity	0.10	0.04	0.09
Queue Length 95th (ft)	8	3	0
Control Delay (s)	9.6	3.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	3.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	16	39	19	13	1	49	94	21	15	144	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	19	47	23	16	1	59	113	25	18	173	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	472	476	183	520	473	126	193			139		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	472	476	183	520	473	126	193			139		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.3			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.4			2.3		
p0 queue free %	99	96	95	94	96	100	95			99		
cM capacity (veh/h)	468	461	862	387	440	883	1290			1363		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	40	198	211
Volume Left	5	23	59	18
Volume Right	47	1	25	19
cSH	666	414	1290	1363
Volume to Capacity	0.11	0.10	0.05	0.01
Queue Length 95th (ft)	9	8	4	1
Control Delay (s)	11.0	14.6	2.6	0.8
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	14.6	2.6	0.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	100	100	100	57	100	96	91			100		
cM capacity (veh/h)	346	373	826	361	349	858	1304			1336		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	190	276	235
Volume Left	156	119	0
Volume Right	34	0	33
cSH	402	1304	1700
Volume to Capacity	0.47	0.09	0.14
Queue Length 95th (ft)	61	7	0
Control Delay (s)	21.7	3.9	0.0
Lane LOS	C	A	
Approach Delay (s)	21.7	3.9	0.0
Approach LOS	C		

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations												
Volume (vph)	2	159	278	325	33	39	55	214	39	39	55	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt		1.00	1.00	1.00	0.85		0.88		0.85		0.98	
Flt Protected		0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)		1671	1759	1810	1538		1357		1258		1640	
Flt Permitted		0.44	1.00	1.00	1.00		0.99		1.00		0.85	
Satd. Flow (perm)		775	1759	1810	1538		1357		1258		1451	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	2	185	323	378	38	45	64	249	45	45	64	17
RTOR Reduction (vph)	0	0	0	0	53	0	80	0	30	0	97	0
Lane Group Flow (vph)	0	187	323	378	30	0	238	0	10	0	29	0
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	22%	22%	22%	9%	9%	9%
Turn Type	Perm	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases			2	6			8				4	
Permitted Phases	2	2			6				8	4		
Actuated Green, G (s)		22.3	22.3	22.3	22.3		16.3		16.3		6.4	
Effective Green, g (s)		22.3	22.3	22.3	22.3		16.3		16.3		6.4	
Actuated g/C Ratio		0.36	0.36	0.36	0.36		0.26		0.26		0.10	
Clearance Time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)		277	630	648	551		355		329		149	
v/s Ratio Prot			0.18	0.21			c0.18					
v/s Ratio Perm		c0.24			0.02				0.01		c0.02	
v/c Ratio		0.68	0.51	0.58	0.05		0.67		0.03		0.20	
Uniform Delay, d1		16.9	15.7	16.2	13.1		20.6		17.1		25.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2		6.4	0.7	1.3	0.0		4.9		0.0		0.6	
Delay (s)		23.2	16.4	17.5	13.1		25.5		17.1		26.2	
Level of Service		C	B	B	B		C		B		C	
Approach Delay (s)			18.9	16.7			24.5				26.2	
Approach LOS			B	B			C				C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	85	0	0	75	0	0	0	0	163	0	4
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	108	0	0	95	0	0	0	0	206	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463	415	3	469	413	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463	415	3	469	413	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	77	100	100	79	100	100			87		
cM capacity (veh/h)	390	461	1087	376	462	1091	1636			1566		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	108	95	211
Volume Left	0	0	206
Volume Right	0	0	5
cSH	461	462	1566
Volume to Capacity	0.23	0.21	0.13
Queue Length 95th (ft)	22	19	11
Control Delay (s)	15.2	14.8	7.5
Lane LOS	C	B	A
Approach Delay (s)	15.2	14.8	7.5
Approach LOS	C	B	

Intersection Summary				
Average Delay	11.2			
Intersection Capacity Utilization	20.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	209	39	6	71	4	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	243	45	7	83	5	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			288		362	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			288		362	266
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1251		637	778

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	288	90	6
Volume Left	0	7	5
Volume Right	45	0	1
cSH	1700	1251	661
Volume to Capacity	0.17	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		23.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	159	51	1	58	19	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	183	59	1	67	22	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			241		281	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		281	212
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1302		713	833

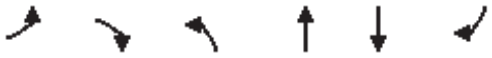
Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	241	68	22
Volume Left	0	1	22
Volume Right	59	0	0
cSH	1700	1302	713
Volume to Capacity	0.14	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		21.5%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	4	39	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	75	49	4	42	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	53				128	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	53				128	51
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1546				858	1008

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	53	49
Volume Left	1	0	42
Volume Right	0	4	7
cSH	1546	1700	876
Volume to Capacity	0.00	0.03	0.06
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.1	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	0.1	0.0	9.4
Approach LOS			A

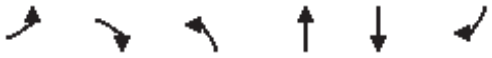
Intersection Summary			
Average Delay		2.6	
Intersection Capacity Utilization		14.4%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	91	36	582	447	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	19	100	40	640	491	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1155	
pX, platoon unblocked						
vC, conflicting volume	897	253	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	897	253	505			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	87	96			
cM capacity (veh/h)	269	747	1048			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	119	253	426	327	178
Volume Left	19	40	0	0	0
Volume Right	100	0	0	0	14
cSH	583	1048	1700	1700	1700
Volume to Capacity	0.20	0.04	0.25	0.19	0.10
Queue Length 95th (ft)	19	3	0	0	0
Control Delay (s)	12.7	1.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.7	0.6		0.0	
Approach LOS	B				

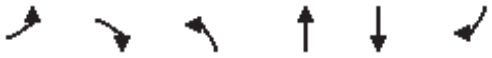
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	49	18	581	411	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	55	20	653	462	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					799	
pX, platoon unblocked						
vC, conflicting volume	829	231	462			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	829	231	462			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	93	98			
cM capacity (veh/h)	297	762	1082			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	238	435	308	155
Volume Left	3	20	0	0	0
Volume Right	55	0	0	0	1
cSH	699	1082	1700	1700	1700
Volume to Capacity	0.08	0.02	0.26	0.18	0.09
Queue Length 95th (ft)	7	1	0	0	0
Control Delay (s)	10.6	0.9	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.6	0.3		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	36	25	125	100	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	49	34	171	137	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	377	137	137			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	377	137	137			
tC, single (s)	6.9	6.7	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.8	2.3			
p0 queue free %	99	94	97			
cM capacity (veh/h)	527	798	1365			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	52	205	137
Volume Left	3	34	0
Volume Right	49	0	0
cSH	777	1365	1700
Volume to Capacity	0.07	0.03	0.08
Queue Length 95th (ft)	5	2	0
Control Delay (s)	10.0	1.5	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	1.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	33	34	24	36	4	61	134	34	4	125	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	14	38	40	28	42	5	71	156	40	5	145	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	502	496	149	535	480	176	153			195		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502	496	149	535	480	176	153			195		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	97	91	96	93	91	99	95			100		
cM capacity (veh/h)	424	448	895	383	450	852	1385			1293		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	92	74	266	158
Volume Left	14	28	71	5
Volume Right	40	5	40	8
cSH	564	434	1385	1293
Volume to Capacity	0.16	0.17	0.05	0.00
Queue Length 95th (ft)	14	15	4	0
Control Delay (s)	12.6	15.0	2.4	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	12.6	15.0	2.4	0.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	36.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	0	127	8	43	156	247	0	0	195	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	818	772	213	772	790	247	232			247		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818	772	213	772	790	247	232			247		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	100	100	100	55	97	94	88			100		
cM capacity (veh/h)	250	294	832	279	276	773	1319			1247		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	177	403	232
Volume Left	127	156	0
Volume Right	43	0	37
cSH	331	1319	1700
Volume to Capacity	0.54	0.12	0.14
Queue Length 95th (ft)	75	10	0
Control Delay (s)	27.8	3.8	0.0
Lane LOS	D	A	
Approach Delay (s)	27.8	3.8	0.0
Approach LOS	D		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	227	406	272	37	27	51	181	22	64	80	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt	1.00	1.00	1.00	0.85		0.88		0.85		0.99	
Flt Protected	0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)	1752	1845	1827	1553		1455		1346		1677	
Flt Permitted	0.53	1.00	1.00	1.00		0.99		1.00		0.84	
Satd. Flow (perm)	973	1845	1827	1553		1455		1346		1465	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	258	461	309	42	31	58	206	25	73	91	17
RTOR Reduction (vph)	0	0	0	46	0	86	0	17	0	91	0
Lane Group Flow (vph)	258	461	309	27	0	181	0	5	0	90	0
Heavy Vehicles (%)	3%	3%	4%	4%	4%	14%	14%	14%	7%	7%	7%
Turn Type	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases		2	6			8				4	
Permitted Phases	2			6				8	4		
Actuated Green, G (s)	23.3	23.3	23.3	23.3		13.2		13.2		10.3	
Effective Green, g (s)	23.3	23.3	23.3	23.3		13.2		13.2		10.3	
Actuated g/C Ratio	0.36	0.36	0.36	0.36		0.21		0.21		0.16	
Clearance Time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	354	671	665	565		300		277		235	
v/s Ratio Prot		0.25	0.17			c0.12					
v/s Ratio Perm	c0.27			0.02				0.00		c0.06	
v/c Ratio	0.73	0.69	0.46	0.05		0.60		0.02		0.38	
Uniform Delay, d1	17.6	17.3	15.6	13.2		23.0		20.2		24.0	
Progression Factor	1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	7.3	2.9	0.5	0.0		3.4		0.0		1.0	
Delay (s)	24.9	20.2	16.1	13.2		26.4		20.3		25.1	
Level of Service	C	C	B	B		C		C		C	
Approach Delay (s)		21.9	15.5			26.0				25.1	
Approach LOS		C	B			C				C	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Build Preferred Alternative Exit 95

AM Peak Hour

BIHL ENGINEERING

May 2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	0	0	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	59	0	0	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		199	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		199	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1544		790	1006

Direction, Lane #	EB 1	WB 1
Volume Total	59	140
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.03	0.08
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	51	28	0	120	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	64	35	0	150	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		102	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		102	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		83	97
cM capacity (veh/h)			1539		876	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	35	185
Volume Left	0	35	150
Volume Right	64	0	35
cSH	1700	1539	903
Volume to Capacity	0.04	0.02	0.20
Queue Length 95th (ft)	0	2	19
Control Delay (s)	0.0	7.4	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	7.4	10.0
Approach LOS			B

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	147	73	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	237	118	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	500				631	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500				631	381
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				73	99
cM capacity (veh/h)	1064				444	666

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	500	127
Volume Left	2	0	118
Volume Right	0	237	10
cSH	1064	1700	456
Volume to Capacity	0.00	0.29	0.28
Queue Length 95th (ft)	0	0	28
Control Delay (s)	0.1	0.0	15.9
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.9
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	26	169	299	49	76	150	182	178	106	275	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.87		1.00	0.91		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1616		1770	1693		1770	1863	1583	1770	1782	
Flt Permitted	0.67	1.00		0.25	1.00		0.17	1.00	1.00	0.61	1.00	
Satd. Flow (perm)	1246	1616		472	1693		309	1863	1583	1140	1782	
Peak-hour factor, PHF	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Adj. Flow (vph)	40	29	219	332	54	84	195	236	198	118	357	144
RTOR Reduction (vph)	0	192	0	0	54	0	0	0	99	0	17	0
Lane Group Flow (vph)	40	56	0	332	84	0	195	236	99	118	484	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases		8		7	4		1	6	7	5	2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	9.8	9.8		28.7	28.7		36.0	27.1	40.0	31.4	24.8	
Effective Green, g (s)	9.8	9.8		28.7	28.7		36.0	27.1	40.0	31.4	24.8	
Actuated g/C Ratio	0.12	0.12		0.36	0.36		0.45	0.34	0.50	0.39	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	151	196		376	604		300	627	905	496	549	
v/s Ratio Prot		0.03		c0.14	0.05		c0.07	0.13	0.02	0.02	c0.27	
v/s Ratio Perm	0.03			c0.17			0.22		0.04	0.07		
v/c Ratio	0.26	0.28		0.88	0.14		0.65	0.38	0.11	0.24	0.88	
Uniform Delay, d1	32.0	32.1		21.5	17.5		16.3	20.2	10.7	16.0	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.8		20.9	0.1		5.0	0.4	0.1	0.2	15.4	
Delay (s)	33.0	32.9		42.3	17.6		21.3	20.6	10.8	16.2	41.8	
Level of Service	C	C		D	B		C	C	B	B	D	
Approach Delay (s)		32.9			35.1			17.7			36.9	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	102	19	13	1	91	52	21	15	81	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	8	19	123	23	16	1	110	63	25	18	98	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434	451	107	561	448	75	117			88		
vC1, stage 1 conf vol	143	143		295	295							
vC2, stage 2 conf vol	291	307		266	153							
vCu, unblocked vol	434	451	107	561	448	75	117			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	87	95	97	100	93			99		
cM capacity (veh/h)	599	565	947	474	563	986	1472			1508		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	142	23	17	110	88	18	117
Volume Left	8	0	23	0	110	0	18	0
Volume Right	0	123	0	1	0	25	0	19
cSH	599	867	474	581	1472	1700	1508	1700
Volume to Capacity	0.01	0.16	0.05	0.03	0.07	0.05	0.01	0.07
Queue Length 95th (ft)	1	15	4	2	6	0	1	0
Control Delay (s)	11.1	10.0	13.0	11.4	7.6	0.0	7.4	0.0
Lane LOS	B	A	B	B	A		A	
Approach Delay (s)	10.0		12.3		4.2		1.0	
Approach LOS	B		B					

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	59	100	96	91			100		
cM capacity (veh/h)	345	371	821	377	364	889	1332			1423		

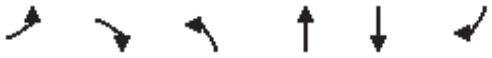
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	190	119	157	235
Volume Left	156	119	0	0
Volume Right	34	0	0	33
cSH	420	1332	1700	1700
Volume to Capacity	0.45	0.09	0.09	0.14
Queue Length 95th (ft)	57	7	0	0
Control Delay (s)	20.4	8.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.4	3.4		0.0
Approach LOS	C			

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	198	0	0	0	0	204	85	14	294	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	0	220	0	0	0	0	227	94	16	327	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								815				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	632	679	327	852	632	274	327			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	577	627	327	811	577	197	327			247		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	69	100	100	100	100			99		
cM capacity (veh/h)	398	372	715	192	397	794	1233			1241		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	257	321	16	327
Volume Left	37	0	16	0
Volume Right	220	94	0	0
cSH	642	1700	1241	1700
Volume to Capacity	0.40	0.19	0.01	0.19
Queue Length 95th (ft)	48	0	1	0
Control Delay (s)	14.3	0.0	7.9	0.0
Lane LOS	B		A	
Approach Delay (s)	14.3	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	66	0	0	59	78	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	73	0	0	66	87	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	110	133			
vC1, stage 1 conf vol	110					
vC2, stage 2 conf vol	66					
vCu, unblocked vol	176	110	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	100	100			
cM capacity (veh/h)	864	935	1458			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	73	66	133
Volume Left	73	0	0
Volume Right	0	0	47
cSH	864	1458	1700
Volume to Capacity	0.08	0.00	0.08
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	85	0	0	79	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	99	0	0	92	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		191	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		191	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1507		798	957

Direction, Lane #	EB 1	WB 1
Volume Total	99	92
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.06	0.05
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	85	11	0	80	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	106	14	0	100	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		81	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		81	53
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		89	99
cM capacity (veh/h)			1497		918	1020

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	14	112
Volume Left	0	14	100
Volume Right	106	0	12
cSH	1700	1497	928
Volume to Capacity	0.06	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	7.4	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	7.4	9.4
Approach LOS			A

Intersection Summary			
Average Delay		5.0	
Intersection Capacity Utilization		19.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	89	90	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	111	73	144	145	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216				259	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216				259	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				80	99
cM capacity (veh/h)	1336				733	908

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	113	216	155
Volume Left	2	0	145
Volume Right	0	144	10
cSH	1336	1700	742
Volume to Capacity	0.00	0.13	0.21
Queue Length 95th (ft)	0	0	20
Control Delay (s)	0.1	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	25	99	241	44	72	54	283	281	128	198	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1617		1770	1689		1770	1863	1583	1770	1820	
Flt Permitted	0.67	1.00		0.39	1.00		0.57	1.00	1.00	0.31	1.00	
Satd. Flow (perm)	1244	1617		735	1689		1069	1863	1583	570	1820	
Peak-hour factor, PHF	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Adj. Flow (vph)	45	28	129	268	49	80	70	368	312	142	257	47
RTOR Reduction (vph)	0	112	0	0	53	0	0	0	183	0	8	0
Lane Group Flow (vph)	45	45	0	268	76	0	70	368	129	142	296	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases		8		7	4		1	6	7	5	2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	9.0	9.0		23.8	23.8		24.6	20.0	28.8	31.4	23.4	
Effective Green, g (s)	9.0	9.0		23.8	23.8		24.6	20.0	28.8	31.4	23.4	
Actuated g/C Ratio	0.13	0.13		0.34	0.34		0.35	0.29	0.41	0.45	0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	160	208		381	575		422	533	789	393	610	
v/s Ratio Prot		0.03		c0.09	0.05		0.01	c0.20	0.02	c0.04	c0.16	
v/s Ratio Perm	0.04			c0.15			0.05		0.06	0.12		
v/c Ratio	0.28	0.21		0.70	0.13		0.17	0.69	0.16	0.36	0.49	
Uniform Delay, d1	27.5	27.2		18.2	15.9		15.2	22.1	12.9	12.4	18.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5		5.8	0.1		0.2	3.8	0.1	0.6	0.6	
Delay (s)	28.4	27.8		24.0	16.0		15.4	26.0	13.0	12.9	19.0	
Level of Service	C	C		C	B		B	C	B	B	B	
Approach Delay (s)		27.9			21.4			19.6			17.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	33	70	24	36	4	86	109	34	4	89	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	17	40	84	29	43	5	104	131	41	5	107	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	486	501	111	580	484	152	116			172		
vC1, stage 1 conf vol	121	121		359	359							
vC2, stage 2 conf vol	365	380		221	125							
vCu, unblocked vol	486	501	111	580	484	152	116			172		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.1		
tC, 2 stage (s)	6.3	5.7		6.2	5.6							
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.2		
p0 queue free %	97	92	91	94	92	99	93			100		
cM capacity (veh/h)	507	516	900	482	535	879	1402			1399		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	17	124	29	48	104	172	5	116
Volume Left	17	0	29	0	104	0	5	0
Volume Right	0	84	0	5	0	41	0	8
cSH	507	727	482	557	1402	1700	1399	1700
Volume to Capacity	0.03	0.17	0.06	0.09	0.07	0.10	0.00	0.07
Queue Length 95th (ft)	3	15	5	7	6	0	0	0
Control Delay (s)	12.4	11.0	12.9	12.1	7.8	0.0	7.6	0.0
Lane LOS	B	B	B	B	A		A	
Approach Delay (s)	11.1		12.4		2.9		0.3	
Approach LOS	B		B					

Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	116	7	40	143	227	0	0	179	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	752	709	196	709	726	227	213			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	752	709	196	709	726	227	213			227		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	62	98	95	89			100		
cM capacity (veh/h)	279	319	845	310	304	793	1284			1269		

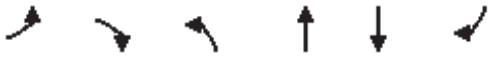
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	163	143	227	213
Volume Left	116	143	0	0
Volume Right	40	0	0	34
cSH	363	1284	1700	1700
Volume to Capacity	0.45	0.11	0.13	0.13
Queue Length 95th (ft)	56	9	0	0
Control Delay (s)	22.7	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.7	3.2		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	121	0	0	0	0	272	118	13	241	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	51	0	134	0	0	0	0	302	131	14	268	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								815				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	664	730	268	799	664	368	268			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	520	597	268	678	520	173	268			249		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	82	100	100	100	100			99		
cM capacity (veh/h)	382	340	750	254	387	743	1279			1108		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	186	433	14	268
Volume Left	51	0	14	0
Volume Right	134	131	0	0
cSH	593	1700	1108	1700
Volume to Capacity	0.31	0.25	0.01	0.16
Queue Length 95th (ft)	33	0	1	0
Control Delay (s)	13.8	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	13.8	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	38	0	0	79	104	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	0	0	88	116	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	129	143			
vC1, stage 1 conf vol	129					
vC2, stage 2 conf vol	88					
vCu, unblocked vol	217	129	143			
tC, single (s)	6.9	6.7	4.1			
tC, 2 stage (s)	5.9					
tF (s)	4.0	3.8	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	744	806	1433			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	88	143
Volume Left	42	0	0
Volume Right	0	0	28
cSH	744	1433	1700
Volume to Capacity	0.06	0.00	0.08
Queue Length 95th (ft)	5	0	0
Control Delay (s)	10.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

VISSIM Freeway and Ramp Merge/Diverge Outputs

Freeway Outputs

Calibration Summary - FHWA Criteria

Criterion	Measures	Calibaration Acceptance Targets	I-85 Model
GEH[1]			
Individual Link Flows (Model vs. Observed)	< 5	>85% of cases	100%
Sum of All Link Flows (Model vs. Observed)	< 4	All Cases	100%
Travel Times (Model vs. Observed)			
Within 15% (or 1 min, if higher) is acceptable; within 5 mph is		>85% of cases	100% (100%
Visual Audits			
Visually Acceptiable Speed-Flow Relationship		To Analyst's Satisfaction	Yes
Bottlenecks			
Visually Acceptable Queuing		To Analyst's Satisfaction	Yes

[1] GEH is a universal measure to compare simulation input and output data.

For hourly flows: $GEH = \sqrt{\frac{(E-V)^2}{0.5(E+V)}}$

V = input volume

E = output volume from the model

GEH Statistic Interpretation	
GEH<5.0	Acceptable
5.0≤GEH≥10.0	May warrant investigation
GEH>10.0	High probability of error

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Northbound I-85	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**
Exit 80 Off-Ramp (Diverge)																		
Lane One	803	15.3	B	1185	23.2	C	1196	23.8	C	1344	129.2	F	1126	22.3	C	1670	38.3	E
Lane Two	722	13.9	B	1124	22.1	C	1042	20.9	C	1240	130.6	F	961	19.1	C	1535	35.8	E
Lane Three	509	9.7	A	868	17.0	B	804	15.7	B	1329	116.1	F	958	18.7	C	1574	35.3	E
Average	**2035**	**13.4**	B	**3177**	**21.1**	C	**3043**	**20.6**	C	**3914**	**125.2**	F	**3045**	**20.2**	C	**4779**	**36.5**	E
From Exit 80 Off-Ramp to Lane Merge (3 Lanes)																		
Lane One	753	14.5	B	1382	27.6	D	1188	23.7	C	1872	96.0	F	812	15.9	B	1379	30.4	D
Lane Two	971	18.7	C	1489	30.5	D	1365	27.7	D	1340	112.3	F	924	17.7	B	1504	32.5	D
Lane Three	26	0.5	A	84	1.9	A	67	1.4	A	430	63.9	F	911	17.8	B	1501	33.1	D
Average	**1749**	**16.6**	B	**2955**	**28.3**	D	**2620**	**25.2**	C	**3643**	**98.2**	F	**2647**	**17.2**	B	**4384**	**32.1**	D
From Lane Merge to Exit 80 On-Ramp (2 Lanes)																		
Lane One	814	15.7	B	1469	29.6	D	1280	25.6	C	2016	62.1	F	N/A					
Lane Two	935	18.2	C	1490	31.1	D	1338	27.5	D	1624	64.0	F						
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-						
Average	**1749**	**17.0**	B	**2958**	**30.4**	D	**2618**	**26.6**	D	**3640**	**62.9**	F						
From Exit 80 On-Ramp (Merge)																		
Lane One	35	0.7	A	25	0.5	A	65	1.4	A	48	1.1	A	50	1.1	A	38	0.8	A
Lane Two	883	16.9	B	1495	30.0	D	1355	27.3	D	1949	51.1	F	883	17.3	B	1452	30.1	D
Lane Three	969	18.9	C	1520	31.3	D	1406	28.9	D	1768	54.3	F	1003	19.2	C	1568	31.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	916	17.9	B	1457	30.4	D
Average	**1887**	**17.6**	B	**3040**	**30.4**	D	**2826**	**27.5**	D	**3766**	**52.0**	F	**2853**	**17.9**	B	**4515**	**30.4**	D
From Exit 80 On-Ramp to Exit 82 Off-Ramp																		
Lane One	944	18.5	C	1531	31.4	D	1426	29.0	D	1902	44.5	E	940	18.6	C	1472	30.5	D
Lane Two	945	19.1	C	1516	31.7	D	1404	29.1	D	1852	45.9	F	1029	19.9	C	1599	32.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	890	17.5	B	1461	30.1	D
Average	**1889**	**18.8**	C	**3047**	**31.5**	D	**2830**	**29.0**	D	**3754**	**45.2**	F	**2858**	**18.7**	C	**4532**	**30.9**	D
Exit 82 Off-Ramp (Diverge)																		
Lane One	29	0.6	A	51	1.1	A	42	0.9	A	63	1.4	A	N/A					
Lane Two	912	18.5	C	1479	30.8	D	1340	29.0	D	1804	43.4	E						
Lane Three	907	18.7	C	1507	31.6	D	1383	30.0	D	1845	45.3	F						
Average	**1847**	**18.3**	C	**3037**	**30.7**	D	**2765**	**29.1**	D	**3713**	**43.6**	E						
From Exit 82 Off-Ramp to Exit 83 Off-Ramp																		
Lane One	981	19.7	C	1542	32.4	D	1432	30.0	D	1831	47.1	F	N/A					
Lane Two	878	17.8	B	1457	30.6	D	1351	28.2	D	1809	45.7	F						
Average	**1859**	**18.8**	C	**2999**	**31.5**	D	**2784**	**29.1**	D	**3640**	**46.4**	F						
Exit 83 Off-Ramp (Diverge)																		
Lane One	865	18.3	C	1391	30.4	D	1274	28.3	D	1611	44.6	E	183	5.8	A	277	8.7	A
Lane Two	919	18.7	C	1496	31.5	D	1399	29.4	D	1874	45.9	F	520	12.9	B	1113	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1086	21.9	C	1591	33.2	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1062	21.6	C	1544	32.3	D
Average	**1784**	**18.5**	C	**2887**	**31.0**	D	**2673**	**28.9**	D	**3486**	**45.3**	F	**2851**	**19.1**	C	**4525**	**29.8**	D
From Exit 83 Off-Ramp to Exit 83 On-Ramp																		
Lane One	793	16.0	B	1325	27.6	D	1189	24.7	C	1610	34.8	D	528	11.0	B	1128	24.1	C
Lane Two	891	17.9	B	1414	29.6	D	1330	27.4	D	1695	37.2	E	1017	20.0	C	1487	30.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1038	20.8	C	1510	31.4	D
Average	**1684**	**17.0**	B	**2739**	**28.6**	D	**2519**	**26.1**	D	**3305**	**36.0**	E	**2583**	**18.5**	C	**4125**	**29.0**	D
Exit 83 On-Ramp (Merge)																		
Lane One	41	1.4	A	55	4.9	A	73	3.8	A	93	16.0	B	24	0.6	A	126	2.5	A
Lane Two	852	17.4	B	1328	28.3	D	1248	26.5	D	1580	36.3	E	648	13.0	B	1221	25.4	C
Lane Three	890	18.1	C	1426	30.1	D	1343	28.2	D	1744	39.2	E	1044	20.4	C	1461	29.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1013	20.5	C	1466	30.2	D
Average	**1783**	**17.4**	B	**2808**	**28.8**	D	**2664**	**26.7**	D	**3417**	**37.2**	E	**2728**	**18.5**	C	**4273**	**27.8**	D
From Exit 83 On-Ramp to Exit 87 Off-Ramp																		
Lane One	901	18.0	B	1418	29.5	D	1342	27.4	D	1732	37.1	E	799	15.6	B	1327	27.4	D
Lane Two	884	17.8	B	1413	29.7	D	1323	27.4	D	1722	37.4	E	998	19.3	C	1444	29.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	935	18.8	C	1370	28.2	D
Average	**1785**	**17.9**	B	**2831**	**29.6**	D	**2665**	**27.4**	D	**3455**	**37.3**	E	**2732**	**18.0**	C	**4141**	**28.2**	D
Exit 87 Off-Ramp (Diverge)																		
Lane One	65	1.5	A	127	2.9	A	97	2.2	A	156	3.6	A	96	2.1	A	177	4.1	A
Lane Two	845	16.9	B	1318	27.3	D	1261	25.9	C	1621	34.2	D	725	14.2	B	1149	23.9	C
Lane Three	870	17.5	B	1379	28.7	D	1304	27.3	D	1685	36.0	E	981	19.1	C	1430	28.7	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	919	18.3	C	1373	28.1	D
Average	**1780**	**16.6**	B	**2824**	**26.9**	D	**2663**	**25.7**	C	**3461**	**33.7**	D	**2720**	**16.9**	B	**4128**	**26.1**	D
From Exit 87 Off-Ramp to Exit 87 On-Ramp																		
Lane One	846	16.7	B	1324	27.3	D	1263	25.6	C	1635	34.2	D	731	14.4	B	1158	23.7	C
Lane Two	857	17.2	B	1355	28.1	D	1285	26.5	D	1645	35.0	D	956	18.7	C	1403	28.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	916	18.2	C	1353	27.7	D
Average	**1703**	**17.0**	B	**2679**	**27.7**	D	**2548**	**26.1**	D	**3279**	**34.6**	D	**2603**	**17.3**	B	**3913**	**26.7**	D
Exit 87 On-Ramp (Merge)																		
Lane One	49	3.7	A	35	7.2	A	81	13.1	B	49	19.5	C	28	0.5	A	34	0.7	A
Lane Two	866	17.7	B	1321	28.3	D	1277	27.5	D	1620	35.6	E	862	16.7	B	1288	26.5	D
Lane Three	867	17.5	B	1358	28.5	D	1313	27.9	D	1658	36.0	E	1062	20.8	C	1490	30.3	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	778	15.5	B	1195	24.4	C
Average	**1781**	**17.2**	B	**2714**	**28.1**	D	**2671**	**27.3**	D	**3328**	**35.6**	E	**2731**	**17.8**	B	**4008**	**27.1**	D
From Exit 87 On-Ramp to Exit 90 Off-Ramp																		
Lane One	920	18.2	C	1390	29.1	D	1350	27.6	D	1698	36.5	E	987	19.8	C	1386	29.1	D
Lane Two	860	17.1	B	1345	28.2	D	1323	27.2	D	1662	35.9	E	942	18.1	C	1368	27.6	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	808	15.8	B	1254	25.6	C
Average	**1780**	**17.7**	B	**2736**	**28.6**	D	**2673**	**27.4**	D	**3359**	**36.2**	E	**2738**	**18.0**	C	**4008**	**27.5**	D
Exit 90 Off-Ramp (Diverge)																		
Lane One	796	16.0	B	1211	26.2	D	1137	24.7	C	1456	33.1	D	372	20.2	C	461	16.2	B
Lane Two	798	15.9	B	1297	28.1	D	1259	27.0	D	1616	36.4	E	450	20.3	C	809	21.6	C
Lane Three	555	11.4	B	1039	27.0	D	854	20.6	C	1540	74.1	F	1063	20.6	C	1442	30.4	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	850	21.2	C	1299	27.0	D
Average	**2149**	**14.7**	B	**3546**	**27.1**	D	**3250**	**24.5**	C	**4613**	**47.9**	F	**2736**	**20.7**	C	**4012**	**25.9**	C
From Exit 90 Off-Ramp to Exit 90 On-Ramp																		
Lane One	663	12.9	B	1077	22.1	C	976	19.7	C	1324	28.0	D	368	7.6	A	780	16.3	B
Lane Two	754	14.8	B	1205	24.7	C	1150	23.2	C	1473	31.0	D	962	18.5	C	1299	26.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	848	16.6	B	1265	26.1	D
Average	**1417**	**13.9**	B	**2282**	**23.5**	C	**2126**	**21.6**	C	**2797**	**29.6**	D	**2177**	**15.9**	B	**3344**	**23.9**	C
Exit 90 On-Ramp (Merge)																		
Lane One	77	2.9	A	151	9.6	A	131	9.5	A	181	22.2	C	86	1.8	A	155	3.7	A
Lane Two	725	14.7	B	1156	25.9	C	1040	22.9	C	1373	33.8	D	569	11.0	A	1047	21.3	C
Lane Three	756	15.0	B	1287	27.1	D	1170	24.4	C	1598	36.3	E	950	18.3	C	1368	27.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	836	16.4	B	1229	25.2	C
Average	**1558**	**14.2**	B	**2593**	**25.5**	C	**2340**	**22.9**	C	**3153**	**34.4**	D	**2441**	**15.4**	B	**3798**	**24.1**	C
From Exit 90 On-Ramp to Exit 92 Off-Ramp																		
Lane One	827	15.8	B	1320	26.7	D	1211	24.0	C	1608	33.3	D	752	14.1	B	1220	23.9	C
Lane Two	766	14.8	B	1277	25.9	C	1174	23.4	C	1566	33.0	D	867	16.2	B	1316	25.7	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	829	16.1	B	1278	25.8	C
Average	**1593**	**15.4**	B	**2597**	**26.3**	D	**2385**	**23.7**	C	**3174**	**33.1**	D	**2448**	**15.5**	B	**3814**	**25.2**	C

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Exit 92 Off-Ramp (Diverge)																		
Lane One	168	3.6	A	217	4.8	A	250	5.5	A	264	5.9	A	251	5.3	A	315	7.0	A
Lane Two	663	12.7	B	1134	22.4	C	982	19.3	C	1391	27.6	D	511	9.6	A	915	17.9	B
Lane Three	764	14.7	B	1241	24.7	C	1152	22.6	C	1522	31.1	D	866	16.1	B	1306	25.1	C
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	814	15.6	B	1277	25.6	C
Average	**1595**	**12.7**	B	**2592**	**22.0**	C	**2384**	**19.5**	C	**3177**	**27.4**	D	**2442**	**13.5**	B	**3813**	**22.0**	C
From Exit 92 Off-Ramp to Exit 92 On-Ramp (Chesnee Highway SB)																		
Lane One	646	12.2	B	1130	22.0	C	972	18.7	C	1398	27.2	D	479	8.9	A	899	17.2	B
Lane Two	741	14.3	B	1197	23.8	C	1105	21.5	C	1460	29.5	D	850	15.8	B	1274	24.5	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	810	15.6	B	1256	25.1	C
Average	**1388**	**13.3**	B	**2328**	**22.9**	C	**2077**	**20.1**	C	**2858**	**28.4**	D	**2140**	**14.2**	B	**3428**	**22.8**	C
Exit 92 On-Ramp (Merge) (Chesnee Highway SB)																		
Lane One	22	0.6	A	21	0.5	A	43	1.1	A	38	1.0	A	19	0.5	A	62	1.4	A
Lane Two	722	13.7	B	1170	23.0	C	1060	20.7	C	1437	28.6	D	556	10.3	A	935	17.9	B
Lane Three	740	14.3	B	1201	24.0	C	1121	21.9	C	1484	30.2	D	887	16.4	B	1290	24.9	C
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	824	15.8	B	1240	24.8	C
Average	**1484**	**13.8**	B	**2392**	**23.3**	C	**2224**	**20.9**	C	**2960**	**29.1**	D	**2287**	**14.6**	B	**3527**	**22.6**	C
From Exit 92 On-Ramp (Chesnee Highway SB) to Exit 92 On-Ramp (Chesnee Highway NB)																		
Lane One	757	14.3	B	1205	23.7	C	1119	21.7	C	1485	29.8	D	568	10.3	A	989	19.1	C
Lane Two	730	14.0	B	1190	23.7	C	1108	21.7	C	1479	30.4	D	886	16.3	B	1294	25.0	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	835	16.1	B	1247	25.0	C
Average	**1487**	**14.1**	B	**2395**	**23.7**	C	**2227**	**21.7**	C	**2964**	**30.1**	D	**2288**	**14.8**	B	**3530**	**23.3**	C
Exit 92 On-Ramp (Merge) (Chesnee Highway NB)																		
Lane One	15	0.3	A	38	0.7	A	29	0.5	A	65	1.2	A	40	0.7	A	49	0.9	A
Lane Two	804	14.9	B	1280	24.7	C	1194	22.6	C	1596	31.6	D	686	12.3	B	1136	21.3	C
Lane Three	766	14.6	B	1259	24.9	C	1154	22.2	C	1574	32.0	D	921	17.1	B	1381	26.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	789	15.2	B	1234	24.7	C
Average	**1585**	**14.6**	B	**2577**	**24.5**	C	**2377**	**22.2**	C	**3234**	**31.2**	D	**2436**	**14.9**	B	**3801**	**24.0**	C
From Exit 92 On-Ramp (Chesnee Highway NB) to Exit 95 Off-Ramp																		
Lane One	807	15.0	B	1308	25.2	C	1207	22.9	C	1638	32.1	D	752	13.4	B	1177	22.0	C
Lane Two	779	14.7	B	1274	25.2	C	1170	22.4	C	1592	32.1	D	896	16.4	B	1359	25.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	791	15.0	B	1261	25.0	C
Average	**1585**	**14.8**	B	**2582**	**25.2**	C	**2377**	**22.6**	C	**3230**	**32.1**	D	**2439**	**15.0**	B	**3797**	**24.4**	C
Exit 95 Off-Ramp (Diverge)																		
Lane One	104	3.0	A	76	2.3	A	156	4.5	A	95	2.8	A	823	15.3	B	1219	23.2	C
Lane Two	728	14.0	B	1256	25.2	C	1064	21.6	C	1551	32.0	D	859	16.1	B	1366	26.0	D
Lane Three	753	14.3	B	1240	24.7	C	1156	22.8	C	1568	31.9	D	751	14.3	B	1210	23.8	C
Average	**1585**	**13.4**	B	**2571**	**24.3**	C	**2376**	**21.1**	C	**3214**	**31.1**	D	**2433**	**15.3**	B	**3795**	**24.4**	C
From Exit 95 Off-Ramp to Exit 95 On-Ramp																		
Lane One													645	12.2	B	1084	20.4	C
Lane Two													796	15.1	B	1334	25.3	C
Lane Three			N/A						N/A				765	14.8	B	1216	23.9	C
Average													**2206**	**14.1**	B	**3633**	**23.4**	C
From Exit 95 On-Ramp Merge																		
Lane One													40	1.1	A	118	2.3	A
Lane Two													809	15.9	B	1213	23.0	C
Lane Three			N/A						N/A				699	13.6	B	1226	23.3	C
Lane Four													759	15.0	B	1208	23.6	C
Average													**2308**	**14.6**	B	**3765**	**22.7**	C
From Exit 95 Off-Ramp to Exit 96 Off-Ramp																		
Lane One	731	13.7	B	1260	24.5	C	1095	21.1	C	1574	31.1	D	797	15.4	B	1156	25.6	C
Lane Two	704	13.2	B	1215	23.9	C	1062	20.7	C	1522	30.4	D	718	13.6	B	1255	25.2	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	780	15.3	B	1235	25.2	C
Average	**1434**	**13.5**	B	**2475**	**24.2**	C	**2156**	**20.9**	C	**3097**	**30.7**	D	**2295**	**14.8**	B	**3646**	**25.3**	C
Exit 96 Off-Ramp (Diverge)																		
Lane One	128	2.7	A	186	4.1	A	196	4.3	A	233	5.1	A	733	14.3	B	829	25.3	C
Lane Two	598	11.4	B	1078	21.0	C	894	17.6	B	1359	26.7	D	724	13.8	B	1285	28.2	D
Lane Three	693	13.0	B	1213	23.7	C	1042	20.4	C	1504	29.9	D	782	15.5	B	1332	29.2	D
Average	**1419**	**11.4**	B	**2477**	**21.1**	C	**2132**	**17.7**	B	**3096**	**26.7**	D	**2240**	**14.5**	B	**3446**	**27.9**	D
From Exit 96 Off-Ramp to Exit 96 On-Ramp																		
Lane One	582	11.0	B	1076	20.6	C	882	17.1	B	1369	26.2	D	559	10.7	A	878	17.1	B
Lane Two	686	12.8	B	1165	22.6	C	1025	19.8	C	1436	28.4	D	708	13.1	B	1194	23.2	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	767	14.9	B	1222	24.5	C
Average	**1268**	**12.0**	B	**2241**	**21.6**	C	**1906**	**18.5**	C	**2805**	**27.3**	D	**2033**	**13.1**	B	**3294**	**22.1**	C
Exit 96 On-Ramp (Merge)																		
Lane One	40	1.0	A	58	2.1	A	71	2.2	A	100	4.8	A	18	0.5	A	22	0.8	A
Lane Two	644	12.4	B	1115	22.1	C	960	19.1	C	1387	28.6	D	736	13.8	B	1081	22.9	C
Lane Three	720	13.5	B	1213	23.8	C	1075	20.7	C	1539	31.3	D	936	17.4	B	1449	28.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	468	9.1	A	845	17.0	B
Average	**1404**	**12.7**	B	**2386**	**22.5**	C	**2107**	**19.4**	C	**3026**	**29.2**	D	455	18.9	C	**3397**	**23.7**	C
From Exit 96 On-Ramp to Exit 98 On-Ramp													From Exit 96 On-Ramp to Exit 100 Off Ramp (3 Lanes)					
Lane One	664	12.2	B	1177	22.5	C	1028	19.2	C	1494	29.2	D	955	17.5	B	1483	41.5	E
Lane Two	745	13.8	B	1215	23.7	C	1081	20.6	C	1537	31.1	D	1170	22.1	C	1776	44.3	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	34	0.7	A	143	3.4	A
Average	**1408**	**13.0**	B	**2392**	**23.2**	C	**2109**	**19.9**	C	**3031**	**30.2**	D	**2160**	**19.7**	C	**3401**	**41.4**	E
Exit 98 On-Ramp (Merge)													Merge from 3 to 2 lanes					
Lane One	687	12.5	B	1189	22.6	C	1063	19.7	C	1514	29.1	D	1004	18.3	C	1631	41.0	E
Lane Two	723	13.4	B	1201	23.4	C	1045	19.8	C	1517	30.3	D	1153	21.7	C	1745	44.6	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	3	0.0	A	30	0.9	A
Average	**1410**	**13.0**	B	**2390**	**23.0**	C	**2108**	**19.8**	C	**3032**	**29.7**	D	**2160**	**20.1**	C	**3406**	**42.5**	E
From Exit 98 On-Ramp to Exit 98 Off-Ramp																		
Lane One	694	12.7	B	1195	22.8	C	1067	19.8	C	1523	29.3	D						
Lane Two	723	13.4	B	1199	23.2	C	1048	19.8	C	1514	30.1	D			N/A			
Average	**1417**	**13.0**	B	**2394**	**23.0**	C	**2115**	**19.8**	C	**3037**	**29.7**	D						
Exit 98 Off-Ramp (Diverge)																		
Lane One	18	0.6	A	4	0.1	A	27	0.8	A	5	0.2	A						
Lane Two	665	12.3	B	1186	22.8	C	1009	19.3	C	1515	29.3	D			N/A			
Lane Three	734	13.6	B	1200	23.3	C	1073	20.3	C	1514	30.1	D						
Average	**1417**	**12.9**	B	**2391**	**23.0**	C	**2110**	**19.6**	C	**3034**	**29.6**	D						
From Exit 98 Off-Ramp to Exit 100 Off-Ramp													From Exit 96 On-Ramp to Exit 100 Off Ramp (2 Lanes)					
Lane One	714	13.2	B	1207	23.3	C	1069	20.3	C	1524	29.9	D	1019	18.5	C	1700	35.5	E
Lane Two	676	12.5	B	1177	22.8	C	998	18.7	C	1501	29.6	D	1138	21.3	C	1699	37.0	E
Average	**1390**	**12.8**	B	**2384**	**23.0**	C	**2067**	**19.5**	C	**3025**	**29.8**	D	**2157**	**20.0**	C	**3398**	**36.3**	E
Exit 100 Off-Ramp (Diverge)																		
Lane One	136	4.0	A	97	3.0	A	202	6.1	A	125	3.9	A	209	6.2	A	140	4.4	A
Lane Two	542	10.8	A	1056	21.9	C	803	17.2	B	1334	28.9	D	668	15.9	B	1514	33.3	D
Lane Three	713	13.3	B	1224	24.2	C	1060	20.4	C	1556	31.8	D	1275	25.5	C	1719	35.6	E
Average	**1391**	**11.4**	B	**2377**	**22.3**	C	**2065**	**17.8**	B	**3015**	**29.3**	D	**2153**	**20.6**	C	**3374**	**33.3**	D
From Exit 100 Off-Ramp to Exit 100 On-Ramp																		
Lane One	508	9.4	A	1053	20.4	C	776	14.8	B	1342	26.5	D	694	13.6	B	1525	30.7	D
Lane Two	679	12.5	B	1183	22.9	C	987	18.4	C	1492	29.5	D	1142	21.6	C	1645	33.3	D
Average	**1187**	**11.1**	B	**2236**	**21.7**	C	**1762**	**16.8**	B	**2833**	**28.1**	D	**1836**	**18.6**	C	**3170**	**32.1**	D
Exit 100 On-Ramp (Merge)																		
Lane One	12	12.5	B	14	0.3	A	22	18.4	C	23	0.5	A	22	0.5	A	24	0.5	A
Lane Two	545	10.3	A	1092	20.9	C	834	16.4	B	1396	27.0	D	778	15.0	B	1585	31.2	D
Lane Three	677	12.8	B	1177	22.6	C	980	18.7	C	1479	28.9	D	1110	21.0	C	1628	32.6	D
Average	**1234**	**11.7**	B	**2283**	**21.7**	C	**1836**	**17.7**	B	**2899**	**27.8**	D	**1910**	**18.3**	C	**3236**	**31.7**	D

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Southbound I-85	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**
Exit 100 Off-Ramp (Diverge)																		
Lane One	667	12.9	B	1186	23.6	C	978	20.0	C	1777	43.1	E	978	20.0	C	1777	43.1	E
Lane Two	679	13.2	B	1180	23.7	C	1038	20.7	C	1765	43.8	E	1038	20.7	C	1765	43.8	E
Average	**1346**	**13.0**	B	**2366**	**23.7**	C	**2015**	**20.3**	C	**3542**	**43.5**	E	**2015**	**20.3**	C	**3542**	**43.5**	E
From Exit 100 Off-Ramp to Exit 100 On-Ramp																		
Lane One	652	12.4	B	1162	22.6	C	961	19.0	C	1743	38.3	E	961	19.0	C	1743	38.3	E
Lane Two	668	12.8	B	1181	23.2	C	1016	20.1	C	1764	38.8	E	1016	20.0	C	1764	38.8	E
Average	**1320**	**12.6**	B	**2343**	**22.9**	C	**1977**	**19.6**	C	**3507**	**38.6**	E	**1977**	**19.5**	C	**3507**	**38.6**	E
Exit 100 On-Ramp (Merge)																		
Lane One	20	0.5	A	44	1.1	A	37	0.9	A	82	2.1	A	38	0.9	A	84	2.1	A
Lane Two	681	13.4	B	1179	23.7	C	1003	20.4	C	1784	40.8	E	1002	20.4	C	1784	40.3	E
Lane Three	740	14.7	B	1298	26.3	D	1118	22.9	C	1906	42.9	E	1119	22.9	C	1908	42.7	E
Average	**1441**	**13.9**	B	**2521**	**24.7**	C	**2158**	**21.4**	C	**3773**	**41.0**	E	**2159**	**21.4**	C	**3775**	**40.7**	E
From Exit 100 On-Ramp to Exit 96 Off-Ramp													From Exit 100 On-Ramp to Exit 96 Off-Ramp (2 Lane)					
Lane One	719	14.1	B	1255	25.2	C	1078	22.1	C	1868	53.2	F	1087	22.2	C	1885	40.8	E
Lane Two	725	14.5	B	1269	25.8	C	1083	22.4	C	1882	53.2	F	1073	22.6	C	1900	41.6	E
Average	**1444**	**14.3**	B	**2524**	**25.5**	C	**2161**	**22.3**	C	**3750**	**53.2**	F	**2160**	**22.4**	C	**3785**	**41.2**	E
From Exit 100 On-Ramp to Exit 96 Off-Ramp (3 Lane													From Exit 100 On-Ramp to Exit 96 Off-Ramp (3 Lane)					
Lane One													973	21.1	C	1448	30.0	D
Lane Two		N/A						N/A					639	14.4	B	1398	27.8	D
Lane Three													550	12.5	B	928	18.4	C
Average													**2161**	**16.9**	B	**3774**	**26.3**	D
Exit 96 Off-Ramp (Diverge)																		
Lane One	692	14.0	B	1237	25.4	C	1026	22.3	C	1793	76.4	F	826	18.4	C	1448	30.0	D
Lane Two	732	14.5	B	1265	25.8	C	1104	23.1	C	1857	76.9	F	674	15.2	B	1398	27.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	649	14.4	B	928	18.4	C
Average	**1424**	**14.3**	B	**2503**	**25.6**	C	**2130**	**22.7**	C	**3651**	**76.6**	F	**2149**	**16.2**	B	**3774**	**26.3**	D
From Exit 96 Off-Ramp to Exit 96 On-Ramp																		
Lane One	652	12.9	B	1177	24.0	C	981	20.3	C	1707	86.4	F	711	14.6	B	1138	23.6	C
Lane Two	732	14.5	B	1270	25.9	C	1089	22.2	C	1856	81.9	F	695	14.0	B	1299	26.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	668	13.7	B	1228	23.7	C
Average	**1384**	**13.7**	B	**2447**	**25.0**	C	**2070**	**21.3**	C	**3564**	**84.0**	F	**2073**	**14.1**	B	**3664**	**24.5**	C
Exit 96 On-Ramp (Merge)																		
Lane One	647	13.0	B	1153	24.5	C	955	20.5	C	1588	92.3	F	52	1.4	A	89	2.5	A
Lane Two	744	14.7	B	1301	26.9	D	1126	23.1	C	1984	78.9	F	690	17.2	B	1168	24.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	865	17.7	B	1368	27.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	738	15.1	B	1308	25.4	C
Average	**1391**	**13.9**	B	**2454**	**25.8**	C	**2081**	**21.9**	C	**3572**	**84.9**	F	**2346**	**16.4**	B	**3933**	**25.5**	C
From Exit 96 On-Ramp to Exit 95 Off-Ramp																		
Lane One	787	15.4	B	1316	26.9	D	1176	24.4	C	1900	47.7	F	614	12.8	B	1186	24.4	C
Lane Two	778	15.3	B	1323	27.3	D	1165	24.0	C	1923	48.0	F	858	16.8	B	1338	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	875	17.2	B	1414	27.6	D
Average	**1566**	**15.4**	B	**2639**	**27.1**	D	**2341**	**24.2**	C	**3823**	**47.9**	F	**2346**	**15.9**	B	**3938**	**26.4**	D
Exit 95 Off-Ramp (Diverge)																		
Lane One	762	14.7	B	1309	26.3	D	1128	23.9	C	1874	41.2	E	581	11.5	B	1108	22.7	C
Lane Two	777	15.1	B	1306	26.6	D	1165	23.9	C	1905	42.0	E	868	16.6	B	1362	27.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	790	15.4	B	1379	26.9	D
Average	**1539**	**14.9**	B	**2615**	**26.5**	D	**2293**	**23.9**	C	**3779**	**41.6**	E	**2240**	**9.4**	A	**3849**	**25.8**	C
From Exit 95 Off-Ramp to Exit 95 On-Ramp																		
Lane One	688	13.2	B	1248	24.9	C	1042	20.6	C	1815	38.0	E	551	10.8	A	1080	22.0	C
Lane Two	771	15.0	B	1296	26.3	D	1131	22.7	C	1858	39.5	E	843	16.1	B	1342	26.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	789	15.3	B	1381	26.8	D
Average	**1459**	**14.2**	B	**2543**	**25.6**	C	**2173**	**21.7**	C	**3673**	**38.8**	E	**2183**	**14.5**	B	**3802**	**25.4**	C
Exit 95 On-Ramp (Merge)																		
Lane One	30	0.8	A	46	1.6	A	50	1.6	A	72	4.2	A	29	0.8	A	44	1.6	A
Lane Two	724	14.4	B	1260	25.5	C	1072	22.7	C	1785	38.5	E	584	14.0	B	1033	24.0	C
Lane Three	795	15.7	B	1339	27.3	D	1179	24.4	C	1936	41.4	E	860	18.0	B	1431	29.3	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	832	17.0	B	1436	28.3	D
Average	**1548**	**14.8**	B	**2646**	**26.0**	C	**2300**	**23.1**	C	**3793**	**39.4**	E	**2305**	**16.4**	B	**3944**	**27.2**	D
From Exit 95 On-Ramp to Exit 92 Off-Ramp																		
Lane One	767	15.1	B	1348	27.2	D	1156	23.8	C	1920	40.9	E	748	16.4	B	1058	32.2	D
Lane Two	784	15.4	B	1306	26.5	D	1154	23.7	C	1887	39.9	E	720	15.2	B	1297	30.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	840	17.7	B	1591	34.6	D
Average	**1551**	**15.3**	B	**2655**	**26.8**	D	**2311**	**23.7**	C	**3808**	**40.4**	E	**2307**	**10.1**	A	**3946**	**32.6**	D
Exit 92 Off-Ramp (Diverge)																		
Lane One	142	4.0	A	199	5.2	A	214	6.3	A	280	7.4	A	211	6.1	A	310	10.3	A
Lane Two	482	11.6	B	1112	23.5	C	786	21.1	C	1622	35.9	E	476	12.7	B	873	23.1	C
Lane Three	927	19.1	C	1341	27.4	D	1316	29.4	D	1906	40.4	E	767	17.3	B	1275	29.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	858	18.8	C	1484	32.7	D
Average	**1551**	**15.4**	B	**2651**	**24.1**	C	**2316**	**24.5**	C	**3808**	**36.1**	E	**2311**	**15.9**	B	**3941**	**27.8**	D
From Exit 92 Off-Ramp to Exit 92 On-Ramp (Chesnee Highway NB)																		
Lane One	483	10.2	A	1100	22.2	C	809	18.4	C	1632	34.2	D	470	10.9	A	870	22.3	C
Lane Two	871	17.5	B	1285	25.9	C	1215	25.6	C	1808	38.1	E	727	15.7	B	1246	27.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	824	17.3	B	1442	31.1	D
Average	**1353**	**14.9**	B	**2386**	**24.1**	C	**2024**	**22.7**	C	**3439**	**36.3**	E	**2021**	**15.2**	B	**3558**	**27.8**	D
Exit 92 On-Ramp (Merge) (Chesnee Highway NB)																		
Lane One	20	0.5	A	56	1.3	A	40	0.9	A	118	3.1	A	24	0.6	A	60	1.4	A
Lane Two	575	11.4	B	1172	23.6	C	930	19.3	C	1688	37.2	E	577	11.8	B	1035	23.2	C
Lane Three	863	17.1	B	1345	27.0	D	1208	24.7	C	1915	41.6	E	777	15.5	B	1322	28.2	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	805	16.3	B	1428	30.6	D
Average	**1458**	**14.6**	B	**2573**	**24.9**	C	**2177**	**22.0**	C	**3721**	**38.4**	E	**2183**	**14.7**	B	**3845**	**27.3**	D
From Exit 92 On-Ramp (Chesnee Highway NB) to Exit 92 On-Ramp (Chesnee Highway SB)																		
Lane One	607	11.6	B	1219	24.1	C	996	19.9	C	1799	39.1	E	598	11.6	B	1098	22.5	C
Lane Two	856	16.8	B	1357	27.4	D	1193	24.2	C	1931	43.4	E	779	15.2	B	1325	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	807	16.1	B	1392	29.2	D
Average	**1463**	**14.7**	B	**2577**	**25.8**	C	**2189**	**22.3**	C	**3729**	**41.4**	E	**2183**	**14.5**	B	**3814**	**26.5**	D
Exit 92 On-Ramp (Merge) (Chesnee Highway SB)																		
Lane One	10	0.2	A	14	0.3	A	18	0.3	A	26	0.5	A	50	1.0	A	21	0.4	A
Lane Two	650	12.1	B	1262	24.7	C	1049	20.4	C	1873	39.2	E	695	13.1	B	1203	23.9	C
Lane Three	837	16.4	B	1358	27.2	D	1174	23.5	C	1919	41.9	E	726	13.8	B	1334	26.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	783	15.4	B	1379	28.7	D
Average	**1497**	**14.4**	B	**2634**	**25.8**	C	**2241**	**21.9**	C	**3818**	**40.3**	E	**2255**	**13.8**	B	**3937**	**26.3**	D
From Exit 92 On-Ramp (Chesnee Highway SB) to Exit 90 Off-Ramp																		
Lane One	746	13.9	B	1317	26.0	C	1157	22.1	C	1926	39.7	E	735	14.0	B	1301	25.5	C
Lane Two	767	14.7	B	1317	26.1	D	1107	21.6	C	1888	39.5	E	772	14.2	B	1353	25.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	755	14.6	B	1285	26.1	D
Average	**1513**	**14.3**	B	**2634**	**26.0**	D	**2264**	**21.8**	C	**3814**	**39.6**	E	**2263**	**14.3**	B	**3939**	**25.8**	C

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Exit 90 Off-Ramp (Diverge)																		
Lane One	547	14.4	B	1044	27.6	D	877	22.9	C	1667	44.3	E	167	5.0	A	231	6.8	A
Lane Two	903	17.9	B	1510	31.0	D	1284	26.5	D	2027	44.9	E	358	8.6	A	983	21.1	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	898	16.9	B	1436	27.7	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	831	16.2	B	1284	26.1	D
Average	**1450**	**16.6**	B	**2554**	**29.6**	D	**2161**	**25.0**	C	**3695**	**44.6**	E	**2254**	**14.4**	B	**3934**	**24.3**	C
From Exit 90 Off-Ramp to Exit 90 On-Ramp																		
Lane One	485	9.7	A	984	21.1	C	788	16.2	B	1590	45.6	F	329	6.3	A	970	19.0	C
Lane Two	855	16.5	B	1427	28.9	D	1212	23.9	C	1896	49.1	F	849	15.6	B	1362	26.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	822	15.8	B	1269	25.6	C
Average	**1340**	**14.1**	B	**2411**	**25.7**	C	**2000**	**20.9**	C	**3486**	**47.5**	F	**2000**	**14.2**	B	**3601**	**24.0**	C
Exit 90 On-Ramp (Merge)																		
Lane One	555	11.4	B	1039	27.0	D	854	20.6	C	1540	74.1	F	246	10.8	A	344	75.8	F
Lane Two	835	16.3	B	1433	32.0	D	1224	25.7	C	1995	69.3	F	673	16.5	B	1211	36.6	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	863	16.4	B	1434	31.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	822	16.0	B	1356	29.6	D
Average	**1390**	**14.3**	B	**2472**	**29.9**	D	**2077**	**23.6**	C	**3536**	**71.4**	F	**2604**	**15.8**	B	**4344**	**35.9**	E
From Exit 90 On-Ramp to Exit 87 Off-Ramp																		
Lane One	846	15.2	B	1445	27.9	D	1307	24.2	C	1958	41.0	E	688	17.2	B	1401	27.0	D
Lane Two	896	16.6	B	1470	29.1	D	1308	25.0	C	1940	41.3	E	899	0.0	A	1511	29.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1022	0.0	A	1434	28.8	D
Average	**1743**	**15.9**	B	**2915**	**28.5**	D	**2615**	**24.6**	C	**3899**	**41.1**	E	**2608**	**4.5**	A	**4346**	**28.3**	D
Exit 87 Off-Ramp (Diverge)																		
Lane One	29	0.8	A	43	1.3	A	46	1.4	A	57	1.9	A	59	1.4	A	63	2.1	A
Lane Two	820	15.0	B	1371	27.6	D	1232	23.8	C	1848	41.1	E	573	13.4	B	1283	26.3	D
Lane Three	878	16.1	B	1495	29.4	D	1317	25.3	C	1973	41.8	E	900	19.3	C	1553	29.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1040	22.0	C	1434	28.2	D
Average	**1727**	**15.4**	B	**2909**	**28.1**	D	**2595**	**24.2**	C	**3878**	**40.9**	E	**2572**	**18.7**	C	**4333**	**27.8**	D
From Exit 87 Off-Ramp to Exit 87 On-Ramp																		
Lane One	820	14.7	B	1375	26.6	D	1240	23.0	C	1853	39.1	E	680	15.3	B	1289	25.0	C
Lane Two	873	16.0	B	1468	28.7	D	1301	24.5	C	1938	40.5	E	854	18.2	C	1513	28.6	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	999	21.1	C	1438	28.2	D
Average	**1693**	**15.3**	B	**2844**	**27.7**	D	**2541**	**23.8**	C	**3791**	**39.8**	E	**2533**	**18.6**	C	**4240**	**27.4**	D
Exit 87 On-Ramp (Merge)																		
Lane One	42	0.9	A	31	0.8	A	79	2.0	A	55	1.8	A	78	2.1	A	64	2.8	A
Lane Two	820	14.8	B	1409	27.2	D	1200	22.7	C	1885	40.1	E	818	17.5	B	1309	26.1	D
Lane Three	853	15.7	B	1491	29.0	D	1290	24.5	C	1980	41.7	E	866	18.0	C	1574	29.8	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1021	21.1	C	1430	28.3	D
Average	**1715**	**14.9**	B	**2932**	**27.8**	D	**2569**	**23.0**	C	**3919**	**40.4**	E	**2783**	**11.2**	B	**4377**	**27.8**	D
From Exit 87 On-Ramp to Exit 83 Off-Ramp																		
Lane One	950	16.9	B	1468	28.1	D	1420	26.3	D	1971	40.2	E	859	15.3	B	1415	27.1	D
Lane Two	916	16.6	B	1465	28.3	D	1370	25.5	C	1954	40.1	E	1002	17.6	B	1530	28.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	931	17.1	B	1437	28.0	D
Average	**1866**	**16.8**	B	**2933**	**28.2**	D	**2790**	**25.9**	C	**3925**	**40.2**	E	**2792**	**16.7**	B	**4382**	**28.0**	D
Exit 83 Off-Ramp (Diverge)																		
Lane One	52	1.4	A	77	2.2	A	77	2.1	A	106	3.0	A	89	2.0	A	132	2.9	A
Lane Two	881	16.6	B	1364	26.9	D	1307	26.9	D	1846	41.3	E	552	11.4	B	1288	25.0	C
Lane Three	925	17.0	B	1480	28.6	D	1392	27.4	D	1953	43.1	E	1060	19.5	C	1522	28.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1089	20.2	C	1433	27.8	D
Average	**1858**	**16.4**	B	**2921**	**27.1**	D	**2777**	**26.5**	D	**3905**	**41.2**	E	**2789**	**17.6**	B	**4375**	**26.5**	D
From Exit 83 Off-Ramp to Exit 83 On-Ramp																		
Lane One	879	16.0	B	1372	26.3	D	1309	25.3	C	1852	47.4	F	572	10.8	A	1301	24.9	C
Lane Two	910	16.5	B	1449	27.8	D	1365	25.8	C	1913	47.8	F	1032	18.4	C	1497	28.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1076	19.7	C	1408	27.2	D
Average	**1789**	**16.3**	B	**2820**	**27.1**	D	**2673**	**25.6**	C	**3765**	**47.6**	F	**2680**	**17.3**	B	**4206**	**26.7**	D
Exit 83 On-Ramp (Merge)																		
Lane One	128	5.4	A	105	7.4	A	241	21.0	C	195	24.1	C	100	2.4	A	92	2.3	A
Lane Two	936	19.3	C	1326	28.4	D	1317	34.2	D	1746	64.5	F	770	16.7	B	1378	27.7	D
Lane Three	1035	19.5	C	1567	31.5	D	1579	33.8	D	2072	62.2	F	1208	21.9	C	1606	30.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1091	20.1	C	1437	28.2	D
Average	**2099**	**18.6**	C	**2998**	**29.3**	D	**3137**	**33.0**	D	**4012**	**61.3**	F	**3169**	**19.4**	C	**4513**	**28.4**	D
From Exit 83 On-Ramp to Exit 80 Off-Ramp																		
Lane One	1048	19.0	C	1502	28.5	D	1588	29.9	D	2012	41.3	E	938	16.6	B	1413	27.0	D
Lane Two	1068	19.3	C	1520	29.5	D	1568	29.6	D	2012	41.8	E	1116	19.4	C	1574	29.5	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1110	20.0	C	1503	29.0	D
Average	**2116**	**19.2**	C	**3022**	**29.0**	D	**3155**	**29.8**	D	**4024**	**41.5**	E	**3164**	**18.8**	C	**4490**	**28.5**	D
Exit 80 Off-Ramp (Diverge)																		
Lane One	237	5.4	A	420	8.2	A	432	9.7	A	682	13.7	B	919	15.8	B	1442	28.3	D
Lane Two	663	12.8	B	1177	20.8	C	1030	20.5	C	1460	27.4	D	1021	17.3	B	1455	28.4	D
Lane Three	1146	20.5	C	1379	25.3	C	1592	30.1	D	1802	34.8	D	1119	19.7	C	1529	30.0	D
Average	**2046**	**16.2**	B	**2975**	**21.1**	C	**3055**	**24.0**	C	**3943**	**28.4**	D	**3058**	**17.7**	B	**4426**	**28.9**	D
Exit 80 Off-Ramp to Exit 80 On-Ramp (Gossett Road NB)																		
Lane One	394	7.1	A	651	11.6	B	724	12.9	B	1031	18.6	C	832	14.0	B	1350	25.2	C
Lane Two	641	10.8	A	1086	18.6	C	972	16.6	B	1356	23.9	C	1008	17.0	B	1457	26.9	D
Lane Three	927	15.9	B	1164	20.9	C	1233	21.7	C	1462	27.1	D	1093	19.2	C	1510	28.8	D
Average	**1962**	**12.5**	B	**2902**	**17.9**	B	**2928**	**17.8**	B	**3850**	**23.7**	C	**2932**	**17.0**	B	**4317**	**27.0**	D
Exit 80 On-Ramp (Gossett Road NB) (Merge)																		
Lane One	64	1.5	A	32	0.7	A	117	2.9	A	58	1.3	A	118	2.8	A	63	1.5	A
Lane Two	579	10.5	A	820	14.4	B	922	16.9	B	1219	21.8	C	1029	18.5	C	1408	26.9	D
Lane Three	712	12.0	B	1100	19.0	C	1086	18.7	C	1403	24.9	C	1198	20.3	C	1563	28.7	D
Lane Four	796	13.8	B	1071	19.3	C	1076	19.1	C	1351	25.1	C	1040	18.0	C	1469	27.4	D
Average	**2151**	**12.0**	B	**3023**	**17.7**	B	**3200**	**17.7**	B	**4031**	**23.7**	C	**3384**	**18.5**	C	**4503**	**27.3**	D
Exit 80 On-Ramp (Gossett Road NB) to Exit 80 On-Ramp (Gossett Road SB)																		
Lane One	640	11.0	A	883	15.1	B	1030	18.0	C	1285	22.6	C	1024	17.8	B	1399	26.2	D
Lane Two	791	13.2	B	1079	18.7	C	1164	20.3	C	1383	24.7	C	1199	20.3	C	1549	28.4	D
Lane Three	832	14.4	B	1038	18.8	C	1169	20.9	C	1333	24.8	C	1137	19.6	C	1517	28.2	D
Average	**2262**	**13.0**	B	**3000**	**17.7**	B	**3363**	**19.8**	C	**4001**	**24.0**	C	**3360**	**19.3**	C	**4466**	**27.6**	D
Exit 80 On-Ramp (Merge)																		
Lane One	12	0.3	A	35	1.6	A	20	0.9	A	57	4.9	A	20	0.9	A	57	4.9	A
Lane Two	660	11.3	B	920	16.0	B	1050	18.2	C	1289	23.3	C	1020	17.6	B	1386	26.4	D
Lane Three	794	13.2	B	1095	19.0	C	1164	19.9	C	1438	25.9	C	1188	20.0	C	1599	29.2	D
Lane Three	797	13.8	B	1018	18.5	C	1125	20.1	C	1315	24.6	C	1125	19.4	C	1523	28.3	D
Average	**2263**	**12.8**	B	**3067**	**17.7**	B	**3359**	**19.3**	C	**4099**	**24.3**	C	**3354**	**19.0**	C	**4565**	**27.7**	D

Merge/Diverge Outputs

Existing AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,286	2,282	-4	0.1	Y	A	0	0
	Approach	***2,286***	***2,282***	***-4***	***0.1***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB On-Ramp	Through	28	28	0	0.0	Y	A	2	0
	Approach	***28***	***28***	***0***	***0.0***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,314**	**2,310**	**-4**	**0.1**	**Y**	**A**	**1.5**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,974	1,963	-11	0.2	Y	A	0	0
	Approach	***1,974***	***1,963***	***-11***	***0.2***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	312	317	5	0.3	Y	A	1	0
	Approach	***312***	***317***	***5***	***0.3***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,286**	**2,280**	**-6**	**0.1**	**Y**	**A**	**0.6**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,974	1,961	-13	0.3	Y	A	2	0
	Approach	***1,974***	***1,961***	***-13***	***0.3***	***Y***	***A***	***1.8***	***0***
SB: I-85 SB Off-Ramp	Through	151	148	-3	0.2	Y	A	6	0
	Approach	***151***	***148***	***-3***	***0.2***	***Y***	***A***	***6.5***	***0***
Overall	**-**	**2,125**	**2,109**	**-16**	**0.3**	**Y**	**A**	**6.5**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,758	1,749	-9	0.2	Y	A	0	13
	Approach	***1,758***	***1,749***	***-9***	***0.2***	***Y***	***A***	***0.1***	***13***
NB: I-85 NB Off-Ramp	Through	300	308	8	0.5	Y	A	0	13
	Approach	***300***	***308***	***8***	***0.5***	***Y***	***A***	***0.5***	***13***
Overall	**-**	**2,058**	**2,057**	**-1**	**0.0**	**Y**	**A**	**0.5**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,758	1,749	-9	0.2	Y	A	0	0
	Approach	***1,758***	***1,749***	***-9***	***0.2***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	141	140	-1	0.1	Y	A	0	0
	Approach	***141***	***140***	***-1***	***0.1***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**1,899**	**1,889**	**-10**	**0.2**	**Y**	**A**	**0.3**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,870	1,860	-10	0.2	Y	A	0	0
	Approach	***1,870***	***1,860***	***-10***	***0.2***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	29	29	0	0.0	Y	A	0	0
	Approach	***29***	***29***	***0***	***0.0***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**1,899**	**1,889**	**-10**	**0.2**	**Y**	**A**	**0.4**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,794	1,788	-6	0.1	Y	A	0	0
	Approach	***1,794***	***1,788***	***-6***	***0.1***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	331	330	-1	0.0	Y	A	2	8
	Approach	***331***	***330***	***-1***	***0.0***	***Y***	***A***	***1.9***	***8***
Overall	**-**	**2,125**	**2,118**	**-7**	**0.1**	**Y**	**A**	**1.9**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,794	1,791	-3	0.1	Y	A	0	0
	Approach	***1,794***	***1,791***	***-3***	***0.1***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	71	74	3	0.4	Y	A	4	0
	Approach	***71***	***74***	***3***	***0.4***	***Y***	***A***	***3.9***	***0***
Overall	**-**	**1,865**	**1,865**	**0**	**0.0**	**Y**	**A**	**3.9**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,695	1,684	-11	0.3	Y	A	0	35
	Approach	***1,695***	***1,684***	***-11***	***0.3***	***Y***	***A***	***0.3***	***35***
NB: I-85 NB Off-Ramp	Through	175	175	0	0.0	Y	A	2	35
	Approach	***175***	***175***	***0***	***0.0***	***Y***	***A***	***2.3***	***35***
Overall	**-**	**1,870**	**1,859**	**-11**	**0.3**	**Y**	**A**	**2.3**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,695	1,684	-11	0.3	Y	A	0	0
	Approach	***1,695***	***1,684***	***-11***	***0.3***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	102	100	-2	0.2	Y	A	2	0
	Approach	***102***	***100***	***-2***	***0.2***	***Y***	***A***	***1.7***	***0***
Overall	**-**	**1,797**	**1,784**	**-13**	**0.3**	**Y**	**A**	**1.7**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,701	1,699	-2	0.0	Y	A	0	0
	Approach	***1,701***	***1,699***	***-2***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	164	165	1	0.1	Y	A	1	0
	Approach	***164***	***165***	***1***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**1,865**	**1,864**	**-1**	**0.0**	**Y**	**A**	**0.6**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,701	1,696	-5	0.1	Y	A	0	0
	Approach	***1,701***	***1,696***	***-5***	***0.1***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	47	45	-2	0.2	Y	A	4	0
	Approach	***47***	***45***	***-2***	***0.2***	***Y***	***A***	***3.7***	***0***
Overall	**-**	**1,748**	**1,741**	**-7**	**0.2**	**Y**	**A**	**3.7**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,721	1,704	-17	0.4	Y	A	1	0
	Approach	***1,721***	***1,704***	***-17***	***0.4***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	76	79	3	0.3	Y	A	2	0
	Approach	***76***	***79***	***3***	***0.3***	***Y***	***A***	***2.3***	***0***
Overall	**-**	**1,797**	**1,783**	**-14**	**0.3**	**Y**	**A**	**2.3**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,721	1,704	-17	0.4	Y	A	0	0
	Approach	***1,721***	***1,704***	***-17***	***0.4***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	84	80	-4	0.4	Y	A	1	0
	Approach	***84***	***80***	***-4***	***0.4***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,805**	**1,784**	**-21**	**0.5**	**Y**	**A**	**0.5**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,342	1,339	-3	0.1	Y	A	0	0
	Approach	***1,342***	***1,339***	***-3***	***0.1***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	406	408	2	0.1	Y	A	3	159
	Approach	***406***	***408***	***2***	***0.1***	***Y***	***A***	***2.8***	***159***
Overall	**-**	**1,748**	**1,747**	**-1**	**0.0**	**Y**	**A**	**2.8**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,342	1,340	-2	0.1	Y	A	1	0
	Approach	***1,342***	***1,340***	***-2***	***0.1***	***Y***	***A***	***1.3***	***0***
SB: I-85 SB Off-Ramp	Through	173	175	2	0.2	Y	A	4	0
	Approach	***173***	***175***	***2***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,515**	**1,515**	**0**	**0.0**	**Y**	**A**	**3.5**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,435	1,417	-18	0.5	Y	A	0	0
	Approach	***1,435***	***1,417***	***-18***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	370	362	-8	0.4	Y	A	1	0
	Approach	***370***	***362***	***-8***	***0.4***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,805**	**1,779**	**-26**	**0.6**	**Y**	**A**	**0.5**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,435	1,415	-20	0.5	Y	A	0	0
	Approach	***1,435***	***1,415***	***-20***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	177	176	-1	0.1	Y	A	3	0
	Approach	***177***	***176***	***-1***	***0.1***	***Y***	***A***	***2.7***	***0***
Overall	**-**	**1,612**	**1,591**	**-21**	**0.5**	**Y**	**A**	**2.7**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,463	1,462	-1	0.0	Y	A	1	0
	Approach	***1,463***	***1,462***	***-1***	***0.0***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	52	51	-1	0.2	Y	A	0	0
	Approach	***52***	***51***	***-1***	***0.2***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**1,515**	**1,513**	**-2**	**0.1**	**Y**	**A**	**0.6**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,358	1,353	-5	0.1	Y	A	1	0
	Approach	***1,358***	***1,353***	***-5***	***0.1***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	105	110	5	0.5	Y	A	0	0
	Approach	***105***	***110***	***5***	***0.5***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**1,463**	**1,463**	**0**	**0.0**	**Y**	**A**	**0.6**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,358	1,353	-5	0.1	Y	A	2	23
	Approach	***1,358***	***1,353***	***-5***	***0.1***	***Y***	***A***	***1.7***	***23***
SB: I-85 SB Off-Ramp	Through	186	197	11	0.8	Y	A	4	23
	Approach	***186***	***197***	***11***	***0.8***	***Y***	***A***	***4.5***	***23***
Overall	**-**	**1,544**	**1,550**	**6**	**0.2**	**Y**	**A**	**4.5**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,406	1,388	-18	0.5	Y	A	0	0
	Approach	***1,406***	***1,388***	***-18***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	206	209	3	0.2	Y	A	1	0
	Approach	***206***	***209***	***3***	***0.2***	***Y***	***A***	***1.1***	***0***
Overall	**-**	**1,612**	**1,597**	**-15**	**0.4**	**Y**	**A**	**1.1**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,406	1,389	-17	0.5	Y	A	0	0
	Approach	***1,406***	***1,389***	***-17***	***0.5***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	103	98	-5	0.5	Y	A	0	0
	Approach	***103***	***98***	***-5***	***0.5***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**1,509**	**1,487**	**-22**	**0.6**	**Y**	**A**	**0.2**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,509	1,488	-21	0.5	Y	A	0	0
	Approach	***1,509***	***1,488***	***-21***	***0.5***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	101	98	-3	0.3	Y	A	0	0
	Approach	***101***	***98***	***-3***	***0.3***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**1,610**	**1,586**	**-24**	**0.6**	**Y**	**A**	**0.2**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,456	1,434	-22	0.6	Y	A	0	0
	Approach	***1,456***	***1,434***	***-22***	***0.6***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	154	151	-3	0.2	Y	A	3	0
	Approach	***154***	***151***	***-3***	***0.2***	***Y***	***A***	***3.2***	***0***
Overall	**-**	**1,610**	**1,585**	**-25**	**0.6**	**Y**	**A**	**3.2**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,457	1,461	4	0.1	Y	A	0	0
	Approach	***1,457***	***1,461***	***4***	***0.1***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB On-Ramp	Through	87	92	5	0.5	Y	A	1	0
	Approach	***87***	***92***	***5***	***0.5***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**1,544**	**1,553**	**9**	**0.2**	**Y**	**A**	**0.6**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,457	1,459	2	0.0	Y	A	0	0
	Approach	***1,457***	***1,459***	***2***	***0.0***	***Y***	***A***	***0.1***	***0***
SB: I-85 SB Off-Ramp	Through	109	106	-3	0.3	Y	A	1	0
	Approach	***109***	***106***	***-3***	***0.3***	***Y***	***A***	***0.7***	***0***
Overall	**-**	**1,566**	**1,565**	**-1**	**0.0**	**Y**	**A**	**0.7**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,384	1,383	-1	0.0	Y	A	0	0
	Approach	***1,384***	***1,383***	***-1***	***0.0***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	182	180	-2	0.1	Y	A	2	73
	Approach	***182***	***180***	***-2***	***0.1***	***Y***	***A***	***2.2***	***73***
Overall	**-**	**1,566**	**1,563**	**-3**	**0.1**	**Y**	**A**	**2.2**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,384	1,385	1	0.0	Y	A	0	0
	Approach	***1,384***	***1,385***	***1***	***0.0***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	59	60	1	0.1	Y	A	2	0
	Approach	***59***	***60***	***1***	***0.1***	***Y***	***A***	***2.1***	***0***
Overall	**-**	**1,443**	**1,445**	**2**	**0.1**	**Y**	**A**	**2.1**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,292	1,269	-23	0.6	Y	A	0	0
	Approach	***1,292***	***1,269***	***-23***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	164	166	2	0.2	Y	A	1	0
	Approach	***164***	***166***	***2***	***0.2***	***Y***	***A***	***1.3***	***0***
Overall	**-**	**1,456**	**1,435**	**-21**	**0.5**	**Y**	**A**	**1.3**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,292	1,268	-24	0.7	Y	A	0	0
	Approach	***1,292***	***1,268***	***-24***	***0.7***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	138	139	1	0.1	Y	A	1	0
	Approach	***138***	***139***	***1***	***0.1***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,430**	**1,407**	**-23**	**0.6**	**Y**	**A**	**0.5**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,430	1,410	-20	0.5	Y	A	0	0
	Approach	***1,430***	***1,410***	***-20***	***0.5***	***Y***	***A***	***0.1***	***0***
NB: I-85 NB On-Ramp	Through	7	7	0	0.0	Y	A	3	20
	Approach	***7***	***7***	***0***	***0.0***	***Y***	***A***	***3.1***	***20***
Overall	**-**	**1,437**	**1,417**	**-20**	**0.5**	**Y**	**A**	**3.1**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,437	1,389	-48	1.3	Y	A	0	0
	Approach	***1,437***	***1,389***	***-48***	***1.3***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB Off-Ramp	Through	28	29	1	0.2	Y	A	3	0
	Approach	***28***	***29***	***1***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,465**	**1,418**	**-47**	**1.2**	**Y**	**A**	**3.5**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,322	1,323	1	0.0	Y	A	0	0
	Approach	***1,322***	***1,323***	***1***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	121	120	-1	0.1	Y	A	0	0
	Approach	***121***	***120***	***-1***	***0.1***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,443**	**1,443**	**0**	**0.0**	**Y**	**A**	**0.5**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,322	1,320	-2	0.1	Y	A	0	78
	Approach	***1,322***	***1,320***	***-2***	***0.1***	***Y***	***A***	***0.3***	***78***
SB: I-85 SB Off-Ramp	Through	56	57	1	0.1	Y	A	1	78
	Approach	***56***	***57***	***1***	***0.1***	***Y***	***A***	***0.7***	***78***
Overall	**-**	**1,378**	**1,377**	**-1**	**0.0**	**Y**	**A**	**0.7**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,201	1,187	-14	0.4	Y	A	0	0
	Approach	***1,201***	***1,187***	***-14***	***0.4***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	208	203	-5	0.3	Y	A	4	0
	Approach	***208***	***203***	***-5***	***0.3***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,409**	**1,390**	**-19**	**0.5**	**Y**	**A**	**3.5**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,201	1,188	-13	0.4	Y	A	0	0
	Approach	***1,201***	***1,188***	***-13***	***0.4***	***Y***	***A***	***0.1***	***0***
NB: I-85 NB On-Ramp	Through	58	56	-2	0.3	Y	A	0	0
	Approach	***58***	***56***	***-2***	***0.3***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**1,259**	**1,244**	**-15**	**0.4**	**Y**	**A**	**0.1**	**-**

Existing PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,040	3,021	-19	0.3	Y	A	0	0
	Approach	***3,040***	***3,021***	***-19***	***0.3***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB On-Ramp	Through	69	71	2	0.2	Y	A	4	0
	Approach	***69***	***71***	***2***	***0.2***	***Y***	***A***	***4.2***	***0***
Overall	**-**	**3,109**	**3,092**	**-17**	**0.3**	**Y**	**A**	**4.2**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,918	2,900	-18	0.3	Y	A	0	0
	Approach	***2,918***	***2,900***	***-18***	***0.3***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	122	126	4	0.4	Y	A	0	0
	Approach	***122***	***126***	***4***	***0.4***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,040**	**3,026**	**-14**	**0.3**	**Y**	**A**	**0.4**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,918	2,903	-15	0.3	Y	A	1	0
	Approach	***2,918***	***2,903***	***-15***	***0.3***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	111	108	-3	0.3	Y	A	2	0
	Approach	***111***	***108***	***-3***	***0.3***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**3,029**	**3,011**	**-18**	**0.3**	**Y**	**A**	**2.5**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,977	2,956	-21	0.4	Y	A	0	47
	Approach	***2,977***	***2,956***	***-21***	***0.4***	***Y***	***A***	***0.4***	***47***
NB: I-85 NB Off-Ramp	Through	237	238	1	0.1	Y	A	1	47
	Approach	***237***	***238***	***1***	***0.1***	***Y***	***A***	***1.0***	***47***
Overall	**-**	**3,214**	**3,194**	**-20**	**0.4**	**Y**	**A**	**1.0**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,977	2,960	-17	0.3	Y	A	1	0
	Approach	***2,977***	***2,960***	***-17***	***0.3***	***Y***	***A***	***1.0***	***0***
NB: I-85 NB On-Ramp	Through	91	88	-3	0.3	Y	A	0	0
	Approach	***91***	***88***	***-3***	***0.3***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**3,068**	**3,048**	**-20**	**0.4**	**Y**	**A**	**1.0**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,015	2,997	-18	0.3	Y	A	0	0
	Approach	***3,015***	***2,997***	***-18***	***0.3***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	53	51	-2	0.3	Y	A	0	0
	Approach	***53***	***51***	***-2***	***0.3***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,068**	**3,048**	**-20**	**0.4**	**Y**	**A**	**0.5**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,825	2,819	-6	0.1	Y	A	1	5
	Approach	***2,825***	***2,819***	***-6***	***0.1***	***Y***	***A***	***0.8***	***5***
SB: I-85 SB Off-Ramp	Through	204	208	4	0.3	Y	A	7	0
	Approach	***204***	***208***	***4***	***0.3***	***Y***	***A***	***6.7***	***0***
Overall	**-**	**3,029**	**3,027**	**-2**	**0.0**	**Y**	**A**	**6.7**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,825	2,821	-4	0.1	Y	A	1	0
	Approach	***2,825***	***2,821***	***-4***	***0.1***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	105	110	5	0.5	Y	A	4	0
	Approach	***105***	***110***	***5***	***0.5***	***Y***	***A***	***4.2***	***0***
Overall	**-**	**2,930**	**2,931**	**1**	**0.0**	**Y**	**A**	**4.2**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,753	2,738	-15	0.3	Y	A	1	14
	Approach	***2,753***	***2,738***	***-15***	***0.3***	***Y***	***A***	***0.5***	***14***
NB: I-85 NB Off-Ramp	Through	262	260	-2	0.1	Y	A	3	14
	Approach	***262***	***260***	***-2***	***0.1***	***Y***	***A***	***2.6***	***14***
Overall	**-**	**3,015**	**2,998**	**-17**	**0.3**	**Y**	**A**	**2.6**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,753	2,739	-14	0.3	Y	A	1	0
	Approach	***2,753***	***2,739***	***-14***	***0.3***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	99	95	-4	0.4	Y	A	8	0
	Approach	***99***	***95***	***-4***	***0.4***	***Y***	***A***	***8.3***	***0***
Overall	**-**	**2,852**	**2,834**	**-18**	**0.3**	**Y**	**A**	**8.3**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,839	2,847	8	0.2	Y	A	1	0
	Approach	***2,839***	***2,847***	***8***	***0.2***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	91	88	-3	0.3	Y	A	1	0
	Approach	***91***	***88***	***-3***	***0.3***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,930**	**2,935**	**5**	**0.1**	**Y**	**A**	**1.5**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,839	2,850	11	0.2	Y	A	1	0
	Approach	***2,839***	***2,850***	***11***	***0.2***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	66	67	1	0.1	Y	A	4	0
	Approach	***66***	***67***	***1***	***0.1***	***Y***	***A***	***4.3***	***0***
Overall	**-**	**2,905**	**2,917**	**12**	**0.2**	**Y**	**A**	**4.3**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,702	2,677	-25	0.5	Y	A	1	0
	Approach	***2,702***	***2,677***	***-25***	***0.5***	***Y***	***A***	***1.0***	***0***
NB: I-85 NB Off-Ramp	Through	150	153	3	0.3	Y	A	2	0
	Approach	***150***	***153***	***3***	***0.3***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**2,852**	**2,830**	**-22**	**0.4**	**Y**	**A**	**2.5**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,702	2,681	-21	0.4	Y	A	1	0
	Approach	***2,702***	***2,681***	***-21***	***0.4***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB On-Ramp	Through	65	61	-4	0.5	Y	C	15	0
	Approach	***65***	***61***	***-4***	***0.5***	***Y***	***C***	***15.5***	***0***
Overall	**-**	**2,767**	**2,742**	**-25**	**0.5**	**Y**	**C**	**15.5**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,410	2,410	0	0.0	Y	A	1	37
	Approach	***2,410***	***2,410***	***0***	***0.0***	***Y***	***A***	***1.3***	***37***
SB: I-85 SB Off-Ramp	Through	495	505	10	0.4	Y	A	10	354
	Approach	***495***	***505***	***10***	***0.4***	***Y***	***A***	***9.9***	***354***
Overall	**-**	**2,905**	**2,915**	**10**	**0.2**	**Y**	**A**	**9.9**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,410	2,411	1	0.0	Y	A	2	181
	Approach	***2,410***	***2,411***	***1***	***0.0***	***Y***	***A***	***1.6***	***181***
SB: I-85 SB Off-Ramp	Through	226	226	0	0.0	Y	A	4	181
	Approach	***226***	***226***	***0***	***0.0***	***Y***	***A***	***3.8***	***181***
Overall	**-**	**2,636**	**2,637**	**1**	**0.0**	**Y**	**A**	**3.8**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,306	2,281	-25	0.5	Y	A	1	337
	Approach	***2,306***	***2,281***	***-25***	***0.5***	***Y***	***A***	***0.9***	***337***
NB: I-85 NB Off-Ramp	Through	461	462	1	0.0	Y	A	1	337
	Approach	***461***	***462***	***1***	***0.0***	***Y***	***A***	***1.0***	***337***
Overall	**-**	**2,767**	**2,743**	**-24**	**0.5**	**Y**	**A**	**1.0**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,306	2,284	-22	0.5	Y	A	1	0
	Approach	***2,306***	***2,284***	***-22***	***0.5***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	314	317	3	0.2	Y	A	6	0
	Approach	***314***	***317***	***3***	***0.2***	***Y***	***A***	***6.3***	***0***
Overall	**-**	**2,620**	**2,601**	**-19**	**0.4**	**Y**	**A**	**6.3**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,576	2,574	-2	0.0	Y	A	1	0
	Approach	***2,576***	***2,574***	***-2***	***0.0***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	60	59	-1	0.1	Y	A	1	0
	Approach	***60***	***59***	***-1***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,636**	**2,633**	**-3**	**0.1**	**Y**	**A**	**0.9**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,381	2,386	5	0.1	Y	A	1	0
	Approach	***2,381***	***2,386***	***5***	***0.1***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	195	193	-2	0.1	Y	A	0	0
	Approach	***195***	***193***	***-2***	***0.1***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**2,576**	**2,579**	**3**	**0.1**	**Y**	**A**	**0.5**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,381	2,386	5	0.1	Y	A	1	68
	Approach	***2,381***	***2,386***	***5***	***0.1***	***Y***	***A***	***0.9***	***68***
SB: I-85 SB Off-Ramp	Through	261	271	10	0.6	Y	A	3	68
	Approach	***261***	***271***	***10***	***0.6***	***Y***	***A***	***2.9***	***68***
Overall	**-**	**2,642**	**2,657**	**15**	**0.3**	**Y**	**A**	**2.9**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,352	2,328	-24	0.5	Y	A	1	0
	Approach	***2,352***	***2,328***	***-24***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	268	267	-1	0.1	Y	A	1	0
	Approach	***268***	***267***	***-1***	***0.1***	***Y***	***A***	***1.3***	***0***
Overall	**-**	**2,620**	**2,595**	**-25**	**0.5**	**Y**	**A**	**1.3**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,352	2,328	-24	0.5	Y	A	1	0
	Approach	***2,352***	***2,328***	***-24***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	73	67	-6	0.7	Y	A	1	0
	Approach	***73***	***67***	***-6***	***0.7***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,425**	**2,395**	**-30**	**0.6**	**Y**	**A**	**0.6**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,425	2,393	-32	0.6	Y	A	0	0
	Approach	***2,425***	***2,393***	***-32***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	181	184	3	0.2	Y	A	0	0
	Approach	***181***	***184***	***3***	***0.2***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**2,606**	**2,577**	**-29**	**0.6**	**Y**	**A**	**0.4**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,494	2,473	-21	0.4	Y	A	1	0
	Approach	***2,494***	***2,473***	***-21***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	112	109	-3	0.3	Y	A	3	0
	Approach	***112***	***109***	***-3***	***0.3***	***Y***	***A***	***3.3***	***0***
Overall	**-**	**2,606**	**2,582**	**-24**	**0.5**	**Y**	**A**	**3.3**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,536	2,545	9	0.2	Y	A	1	0
	Approach	***2,536***	***2,545***	***9***	***0.2***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB On-Ramp	Through	106	106	0	0.0	Y	A	2	0
	Approach	***106***	***106***	***0***	***0.0***	***Y***	***A***	***1.7***	***0***
Overall	**-**	**2,642**	**2,651**	**9**	**0.2**	**Y**	**A**	**1.7**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,536	2,543	7	0.1	Y	A	0	10
	Approach	***2,536***	***2,543***	***7***	***0.1***	***Y***	***A***	***0.3***	***10***
SB: I-85 SB Off-Ramp	Through	94	95	1	0.1	Y	A	1	10
	Approach	***94***	***95***	***1***	***0.1***	***Y***	***A***	***0.8***	***10***
Overall	**-**	**2,630**	**2,638**	**8**	**0.2**	**Y**	**A**	**0.8**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,437	2,446	9	0.2	Y	A	0	8
	Approach	***2,437***	***2,446***	***9***	***0.2***	***Y***	***A***	***0.4***	***8***
SB: I-85 SB Off-Ramp	Through	193	190	-3	0.2	Y	A	6	104
	Approach	***193***	***190***	***-3***	***0.2***	***Y***	***A***	***6.1***	***104***
Overall	**-**	**2,630**	**2,636**	**6**	**0.1**	**Y**	**A**	**6.1**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,437	2,448	11	0.2	Y	A	0	8
	Approach	***2,437***	***2,448***	***11***	***0.2***	***Y***	***A***	***0.4***	***8***
SB: I-85 SB Off-Ramp	Through	82	85	3	0.3	Y	A	2	8
	Approach	***82***	***85***	***3***	***0.3***	***Y***	***A***	***1.9***	***8***
Overall	**-**	**2,519**	**2,533**	**14**	**0.3**	**Y**	**A**	**1.9**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,263	2,242	-21	0.4	Y	A	1	0
	Approach	***2,263***	***2,242***	***-21***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	231	238	7	0.5	Y	A	2	0
	Approach	***231***	***238***	***7***	***0.5***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,494**	**2,480**	**-14**	**0.3**	**Y**	**A**	**1.5**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,263	2,241	-22	0.5	Y	A	1	0
	Approach	***2,263***	***2,241***	***-22***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	150	150	0	0.0	Y	A	2	0
	Approach	***150***	***150***	***0***	***0.0***	***Y***	***A***	***2.3***	***0***
Overall	-	**2,413**	**2,391**	**-22**	**0.4**	**Y**	**A**	**2.3**	-

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,413	2,390	-23	0.5	Y	A	0	0
	Approach	***2,413***	***2,390***	***-23***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	6	6	0	0.0	Y	A	6	34
	Approach	***6***	***6***	***0***	***0.0***	***Y***	***A***	***6.1***	***34***
Overall	-	**2,419**	**2,396**	**-23**	**0.5**	**Y**	**A**	**6.1**	-

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,419	2,384	-35	0.7	Y	A	0	0
	Approach	***2,419***	***2,384***	***-35***	***0.7***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	7	7	0	0.0	Y	A	4	0
	Approach	***7***	***7***	***0***	***0.0***	***Y***	***A***	***3.7***	***0***
Overall	-	**2,426**	**2,391**	**-35**	**0.7**	**Y**	**A**	**3.7**	-

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,340	2,345	5	0.1	Y	A	1	0
	Approach	***2,340***	***2,345***	***5***	***0.1***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	179	177	-2	0.1	Y	A	1	6
	Approach	***179***	***177***	***-2***	***0.1***	***Y***	***A***	***0.6***	***6***
Overall	-	**2,519**	**2,522**	**3**	**0.1**	**Y**	**A**	**0.8**	-

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,340	2,342	2	0.0	Y	A	0	122
	Approach	***2,340***	***2,342***	***2***	***0.0***	***Y***	***A***	***0.5***	***122***
SB: I-85 SB Off-Ramp	Through	58	58	0	0.0	Y	A	1	122
	Approach	***58***	***58***	***0***	***0.0***	***Y***	***A***	***1.3***	***122***
Overall	-	**2,398**	**2,400**	**2**	**0.0**	**Y**	**A**	**1.3**	-

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,269	2,238	-31	0.7	Y	A	1	14
	Approach	***2,269***	***2,238***	***-31***	***0.7***	***Y***	***A***	***0.7***	***14***
NB: I-85 NB Off-Ramp	Through	143	143	0	0.0	Y	A	4	14
	Approach	***143***	***143***	***0***	***0.0***	***Y***	***A***	***3.8***	***14***
Overall	-	**2,412**	**2,381**	**-31**	**0.6**	**Y**	**A**	**3.8**	-

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,269	2,236	-33	0.7	Y	A	0	0
	Approach	***2,269***	***2,236***	***-33***	***0.7***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	47	47	0	0.0	Y	A	0	0
	Approach	***47***	***47***	***0***	***0.0***	***Y***	***A***	***0.1***	***0***
Overall	-	**2,316**	**2,283**	**-33**	**0.7**	**Y**	**A**	**0.3**	-

No Build AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,417	3,387	-30	0.5	Y	A	0	0
	Approach	***3,417***	***3,387***	***-30***	***0.5***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	42	41	-1	0.2	Y	A	4	0
	Approach	***42***	***41***	***-1***	***0.2***	***Y***	***A***	***4.1***	***0***
Overall	**-**	**3,459**	**3,428**	**-31**	**0.5**	**Y**	**A**	**4.1**	**-**

80002: Interstate 85 at SB Off-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,927	-24	0.4	Y	A	1	0
	Approach	***2,951***	***2,927***	***-24***	***0.4***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	466	465	-1	0.0	Y	A	1	0
	Approach	***466***	***465***	***-1***	***0.0***	***Y***	***A***	***1.0***	***0***
Overall	**-**	**3,417**	**3,392**	**-25**	**0.4**	**Y**	**A**	**1.0**	**-**

80003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,929	-22	0.4	Y	A	2	0
	Approach	***2,951***	***2,929***	***-22***	***0.4***	***Y***	***A***	***2.4***	***0***
SB: I-85 SB Off-Ramp	Through	226	221	-5	0.3	Y	A	7	0
	Approach	***226***	***221***	***-5***	***0.3***	***Y***	***A***	***6.8***	***0***
Overall	**-**	**3,177**	**3,150**	**-27**	**0.5**	**Y**	**A**	**6.8**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,628	2,620	-8	0.2	Y	A	1	115
	Approach	***2,628***	***2,620***	***-8***	***0.2***	***Y***	***A***	***0.6***	***115***
NB: I-85 NB Off-Ramp	Through	448	456	8	0.4	Y	A	1	115
	Approach	***448***	***456***	***8***	***0.4***	***Y***	***A***	***1.4***	***115***
Overall	**-**	**3,076**	**3,076**	**0**	**0.0**	**Y**	**A**	**1.4**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,628	2,619	-9	0.2	Y	A	1	0
	Approach	***2,628***	***2,619***	***-9***	***0.2***	***Y***	***A***	***0.9***	***0***
NB: I-85 NB On-Ramp	Through	211	211	0	0.0	Y	A	0	0
	Approach	***211***	***211***	***0***	***0.0***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**2,839**	**2,830**	**-9**	**0.2**	**Y**	**A**	**0.9**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,796	2,784	-12	0.2	Y	A	1	0
	Approach	***2,796***	***2,784***	***-12***	***0.2***	***Y***	***A***	***0.9***	***0***
NB: I-85 NB Off-Ramp	Through	43	42	-1	0.2	Y	A	0	0
	Approach	***43***	***42***	***-1***	***0.2***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**2,839**	**2,826**	**-13**	**0.2**	**Y**	**A**	**0.9**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,671	-11	0.2	Y	A	1	71
	Approach	***2,682***	***2,671***	***-11***	***0.2***	***Y***	***A***	***1.5***	***71***
SB: I-85 SB Off-Ramp	Through	495	492	-3	0.1	Y	A	9	49
	Approach	***495***	***492***	***-3***	***0.1***	***Y***	***A***	***8.8***	***49***
Overall	**-**	**3,177**	**3,163**	**-14**	**0.2**	**Y**	**A**	**8.8**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,676	-6	0.1	Y	A	1	76
	Approach	***2,682***	***2,676***	***-6***	***0.1***	***Y***	***A***	***1.2***	***76***
SB: I-85 SB Off-Ramp	Through	106	109	3	0.3	Y	A	4	76
	Approach	***106***	***109***	***3***	***0.3***	***Y***	***A***	***4.3***	***76***
Overall	**-**	**2,788**	**2,785**	**-3**	**0.1**	**Y**	**A**	**4.3**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,520	-14	0.3	Y	A	1	70
	Approach	***2,534***	***2,520***	***-14***	***0.3***	***Y***	***A***	***0.7***	***70***
NB: I-85 NB Off-Ramp	Through	262	263	1	0.1	Y	A	2	70
	Approach	***262***	***263***	***1***	***0.1***	***Y***	***A***	***2.3***	***70***
Overall	**-**	**2,796**	**2,783**	**-13**	**0.2**	**Y**	**A**	**2.3**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,515	-19	0.4	Y	A	1	0
	Approach	***2,534***	***2,515***	***-19***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	152	152	0	0.0	Y	A	4	0
	Approach	***152***	***152***	***0***	***0.0***	***Y***	***A***	***4.4***	***0***
Overall	**-**	**2,686**	**2,667**	**-19**	**0.4**	**Y**	**A**	**4.4**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,545	2	0.0	Y	A	1	0
	Approach	***2,543***	***2,545***	***2***	***0.0***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	245	244	-1	0.1	Y	A	2	0
	Approach	***245***	***244***	***-1***	***0.1***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,788**	**2,789**	**1**	**0.0**	**Y**	**A**	**1.5**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,547	4	0.1	Y	A	1	0
	Approach	***2,543***	***2,547***	***4***	***0.1***	***Y***	***A***	***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	70	71	1	0.2	Y	A	4	0
	Approach	***70***	***71***	***1***	***0.2***	***Y***	***A***	***4.0***	***0***
Overall	**-**	**2,613**	**2,618**	**5**	**0.1**	**Y**	**A**	**4.0**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,549	-23	0.5	Y	A	1	0
	Approach	***2,572***	***2,549***	***-23***	***0.5***	***Y***	***A***	***1.2***	***0***
NB: I-85 NB Off-Ramp	Through	114	116	2	0.2	Y	A	3	0
	Approach	***114***	***116***	***2***	***0.2***	***Y***	***A***	***2.6***	***0***
Overall	**-**	**2,686**	**2,665**	**-21**	**0.4**	**Y**	**A**	**2.6**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,545	-27	0.5	Y	A	1	0
	Approach	***2,572***	***2,545***	***-27***	***0.5***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB On-Ramp	Through	126	126	0	0.0	Y	A	1	0
	Approach	***126***	***126***	***0***	***0.0***	***Y***	***A***	***1.2***	***0***
Overall	**-**	**2,698**	**2,671**	**-27**	**0.5**	**Y**	**A**	**1.2**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,002	-4	0.1	Y	A	1	19
	Approach	***2,006***	***2,002***	***-4***	***0.1***	***Y***	***A***	***1.0***	***19***
SB: I-85 SB On-Ramp	Through	607	613	6	0.2	Y	A	7	367
	Approach	***607***	***613***	***6***	***0.2***	***Y***	***A***	***7.0***	***367***
Overall	**-**	**2,613**	**2,615**	**2**	**0.0**	**Y**	**A**	**7.0**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,000	-6	0.1	Y	A	2	69
	Approach	***2,006***	***2,000***	***-6***	***0.1***	***Y***	***A***	***1.6***	***69***
SB: I-85 SB Off-Ramp	Through	259	259	0	0.0	Y	A	4	212
	Approach	***259***	***259***	***0***	***0.0***	***Y***	***A***	***3.6***	***212***
Overall	**-**	**2,265**	**2,259**	**-6**	**0.1**	**Y**	**A**	**3.6**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,126	-19	0.4	Y	A	1	212
	Approach	***2,145***	***2,126***	***-19***	***0.4***	***Y***	***A***	***0.9***	***212***
NB: I-85 NB Off-Ramp	Through	553	547	-6	0.3	Y	A	1	212
	Approach	***553***	***547***	***-6***	***0.3***	***Y***	***A***	***1.5***	***212***
Overall	**-**	**2,698**	**2,673**	**-25**	**0.5**	**Y**	**A**	**1.5**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,125	-20	0.4	Y	A	1	0
	Approach	***2,145***	***2,125***	***-20***	***0.4***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	265	264	-1	0.1	Y	A	8	0
	Approach	***265***	***264***	***-1***	***0.1***	***Y***	***A***	***7.6***	***0***
Overall	**-**	**2,410**	**2,389**	**-21**	**0.4**	**Y**	**A**	**7.6**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,187	2,190	3	0.1	Y	A	1	0
	Approach	***2,187***	***2,190***	***3***	***0.1***	***Y***	***A***	***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	78	76	-2	0.3	Y	A	1	0
	Approach	***78***	***76***	***-2***	***0.3***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**2,265**	**2,266**	**1**	**0.0**	**Y**	**A**	**1.1**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y	A	1	0
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***	***A***	***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	157	160	3	0.2	Y	A	0	0
	Approach	***157***	***160***	***3***	***0.2***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**2,187**	**2,184**	**-3**	**0.1**	**Y**	**A**	**1.1**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y	A	3	110
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***	***A***	***2.8***	***110***
SB: I-85 SB Off-Ramp	Through	278	290	12	0.7	Y	A	6	110
	Approach	***278***	***290***	***12***	***0.7***	***Y***	***A***	***5.6***	***110***
Overall	**-**	**2,308**	**2,314**	**6**	**0.1**	**Y**	**A**	**5.6**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,077	-25	0.5	Y	A	1	0
	Approach	***2,102***	***2,077***	***-25***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	308	307	-1	0.1	Y	A	1	0
	Approach	***308***	***307***	***-1***	***0.1***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**2,410**	**2,384**	**-26**	**0.5**	**Y**	**A**	**1.4**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,077	-25	0.5	Y	A	0	0
	Approach	***2,102***	***2,077***	***-25***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	154	150	-4	0.3	Y	A	0	0
	Approach	***154***	***150***	***-4***	***0.3***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**2,256**	**2,227**	**-29**	**0.6**	**Y**	**A**	**0.3**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,256	2,226	-30	0.6	Y	A	0	0
	Approach	***2,256***	***2,226***	***-30***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	151	150	-1	0.0	Y	A	0	0
	Approach	***151***	***150***	***-1***	***0.0***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**2,407**	**2,376**	**-31**	**0.6**	**Y**	**A**	**0.4**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,176	2,153	-23	0.5	Y	A	1	0
	Approach	***2,176***	***2,153***	***-23***	***0.5***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	231	224	-7	0.5	Y	A	3	0
	Approach	***231***	***224***	***-7***	***0.5***	***Y***	***A***	***3.3***	***0***
Overall	**-**	**2,407**	**2,377**	**-30**	**0.6**	**Y**	**A**	**3.3**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,173	-5	0.1	Y	A	1	19
	Approach	***2,178***	***2,173***	***-5***	***0.1***	***Y***	***A***	***0.7***	***19***
SB: I-85 SB On-Ramp	Through	130	132	2	0.2	Y	A	1	0
	Approach	***130***	***132***	***2***	***0.2***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**2,308**	**2,305**	**-3**	**0.1**	**Y**	**A**	**1.4**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,176	-2	0.1	Y	A	0	170
	Approach	***2,178***	***2,176***	***-2***	***0.1***	***Y***	***A***	***0.5***	***170***
SB: I-85 SB Off-Ramp	Through	163	155	-8	0.6	Y	A	1	170
	Approach	***163***	***155***	***-8***	***0.6***	***Y***	***A***	***0.8***	***170***
Overall	**-**	**2,341**	**2,331**	**-10**	**0.2**	**Y**	**A**	**0.8**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,070	1	0.0	Y	A	0	0
	Approach	***2,069***	***2,070***	***1***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	272	272	0	0.0	Y	A	5	109
	Approach	***272***	***272***	***0***	***0.0***	***Y***	***A***	***4.5***	***109***
Overall	**-**	**2,341**	**2,342**	**1**	**0.0**	**Y**	**A**	**4.5**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,070	1	0.0	Y	A	1	0
	Approach	***2,069***	***2,070***	***1***	***0.0***	***Y***	***A***	***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	88	92	4	0.4	Y	A	2	0
	Approach	***88***	***92***	***4***	***0.4***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**2,157**	**2,162**	**5**	**0.1**	**Y**	**A**	**2.5**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,931	1,906	-25	0.6	Y	A	1	0
	Approach	***1,931***	***1,906***	***-25***	***0.6***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	245	252	7	0.5	Y	A	2	0
	Approach	***245***	***252***	***7***	***0.5***	***Y***	***A***	***1.8***	***0***
Overall	**-**	**2,176**	**2,158**	**-18**	**0.4**	**Y**	**A**	**1.8**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,931	1,904	-27	0.6	Y	A	1	0
	Approach	***1,931***	***1,904***	***-27***	***0.6***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	207	207	0	0.0	Y	A	1	0
	Approach	***207***	***207***	***0***	***0.0***	***Y***	***A***	***1.1***	***0***
Overall	-	**2,138**	**2,111**	**-27**	**0.6**	**Y**	**A**	**1.1**	-

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,138	2,107	-31	0.7	Y	A	0	0
	Approach	***2,138***	***2,107***	***-31***	***0.7***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	10	10	0	0.0	Y	A	4	29
	Approach	***10***	***10***	***0***	***0.0***	***Y***	***A***	***4.4***	***29***
Overall	-	**2,148**	**2,117**	**-31**	**0.7**	**Y**	**A**	**4.4**	-

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,148	2,066	-82	1.8	Y	A	0	0
	Approach	***2,148***	***2,066***	***-82***	***1.8***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	42	43	1	0.2	Y	A	3	0
	Approach	***42***	***43***	***1***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	-	**2,190**	**2,109**	**-81**	**1.7**	**Y**	**A**	**3.5**	-

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,980	4	0.1	Y	A	1	22
	Approach	***1,976***	***1,980***	***4***	***0.1***	***Y***	***A***	***1.0***	***22***
SB: I-85 SB Off-Ramp	Through	181	178	-3	0.2	Y	A	1	21
	Approach	***181***	***178***	***-3***	***0.2***	***Y***	***A***	***0.7***	***21***
Overall	-	**2,157**	**2,158**	**1**	**0.0**	**Y**	**A**	**1.0**	-

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,976	0	0.0	Y	A	1	132
	Approach	***1,976***	***1,976***	***0***	***0.0***	***Y***	***A***	***0.5***	***132***
SB: I-85 SB Off-Ramp	Through	84	85	1	0.1	Y	A	1	132
	Approach	***84***	***85***	***1***	***0.1***	***Y***	***A***	***1.0***	***132***
Overall	-	**2,060**	**2,061**	**1**	**0.0**	**Y**	**A**	**1.0**	-

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,765	-30	0.7	Y	A	1	0
	Approach	***1,795***	***1,765***	***-30***	***0.7***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	311	300	-11	0.6	Y	A	4	0
	Approach	***311***	***300***	***-11***	***0.6***	***Y***	***A***	***3.9***	***0***
Overall	-	**2,106**	**2,065**	**-41**	**0.9**	**Y**	**A**	**3.9**	-

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,762	-33	0.8	Y	A	0	0
	Approach	***1,795***	***1,762***	***-33***	***0.8***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	87	88	1	0.1	Y	A	0	0
	Approach	***87***	***88***	***1***	***0.1***	***Y***	***A***	***0.1***	***0***
Overall	-	**1,882**	**1,850**	**-32**	**0.7**	**Y**	**A**	**0.2**	-

No Build PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,544	4,048	-496	7.6	N	A	0	0
	Approach	***4,544***	***4,048***	***-496***	***7.6***	***N***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	103	105	2	0.2	Y	A	9	0
	Approach	***103***	***105***	***2***	***0.2***	***Y***	***A***	***8.6***	***0***
Overall	**-**	**4,647**	**4,153**	**-494**	**7.4**	**N**	**A**	**8.6**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	3,866	-496	7.7	N	A	1	0
	Approach	***4,362***	***3,866***	***-496***	***7.7***	***N***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	182	184	2	0.1	Y	A	1	0
	Approach	***182***	***184***	***2***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**4,544**	**4,050**	**-494**	**7.5**	**N**	**A**	**0.6**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	3,877	-485	7.6	N	A	1	0
	Approach	***4,362***	***3,877***	***-485***	***7.6***	***N***	***A***	***1.5***	***0***
SB: I-85 SB Off-Ramp	Through	166	141	-25	2.0	Y	A	3	0
	Approach	***166***	***141***	***-25***	***2.0***	***Y***	***A***	***3.1***	***0***
Overall	**-**	**4,528**	**4,018**	**-510**	**7.8**	**N**	**A**	**3.1**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,450	3,648	-802	12.6	N	C	25	1,709
	Approach	***4,450***	***3,648***	***-802***	***12.6***	***N***	***C***	***24.9***	***1,709***
NB: I-85 NB Off-Ramp	Through	354	292	-62	3.4	Y	C	23	1,709
	Approach	***354***	***292***	***-62***	***3.4***	***Y***	***C***	***23.4***	***1,709***
Overall	**-**	**4,804**	**3,940**	**-864**	**13.1**	**N**	**C**	**24.9**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,450	3,651	-799	12.6	N	A	6	142
	Approach	***4,450***	***3,651***	***-799***	***12.6***	***N***	***A***	***6.0***	***142***
NB: I-85 NB On-Ramp	Through	136	138	2	0.2	Y	A	1	0
	Approach	***136***	***138***	***2***	***0.2***	***Y***	***A***	***0.9***	***0***
Overall	**-**	**4,586**	**3,789**	**-797**	**12.3**	**N**	**A**	**6.0**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,507	3,720	-787	12.3	N	A	1	19
	Approach	***4,507***	***3,720***	***-787***	***12.3***	***N***	***A***	***0.8***	***19***
NB: I-85 NB Off-Ramp	Through	79	64	-15	1.8	Y	A	1	19
	Approach	***79***	***64***	***-15***	***1.8***	***Y***	***A***	***0.7***	***19***
Overall	**-**	**4,586**	**3,784**	**-802**	**12.4**	**N**	**A**	**0.8**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	3,775	-448	7.1	N	A	7	1,094
	Approach	***4,223***	***3,775***	***-448***	***7.1***	***N***	***A***	***6.6***	***1,094***
SB: I-85 SB Off-Ramp	Through	305	295	-10	0.6	Y	C	16	18
	Approach	***305***	***295***	***-10***	***0.6***	***Y***	***C***	***15.9***	***18***
Overall	**-**	**4,528**	**4,070**	**-458**	**7.0**	**N**	**C**	**15.9**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	3,786	-437	6.9	N	A	2	54
	Approach	***4,223***	***3,786***	***-437***	***6.9***	***N***	***A***	***1.9***	***54***
SB: I-85 SB Off-Ramp	Through	157	149	-8	0.6	Y	A	4	54
	Approach	***157***	***149***	***-8***	***0.6***	***Y***	***A***	***4.5***	***54***
Overall	**-**	**4,380**	**3,935**	**-445**	**6.9**	**N**	**A**	**4.5**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	3,399	-716	11.7	N	A	1	118
	Approach	***4,115***	***3,399***	***-716***	***11.7***	***N***	***A***	***0.8***	***118***
NB: I-85 NB Off-Ramp	Through	392	321	-71	3.8	Y	A	3	118
	Approach	***392***	***321***	***-71***	***3.8***	***Y***	***A***	***2.7***	***118***
Overall	**-**	**4,507**	**3,720**	**-787**	**12.3**	**N**	**A**	**2.7**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	3,399	-716	11.7	N	A	1	5
	Approach	***4,115***	***3,399***	***-716***	***11.7***	***N***	***A***	***1.1***	***5***
NB: I-85 NB On-Ramp	Through	148	141	-7	0.6	Y	C	21	0
	Approach	***148***	***141***	***-7***	***0.6***	***Y***	***C***	***20.6***	***0***
Overall	**-**	**4,263**	**3,540**	**-723**	**11.6**	**N**	**C**	**20.6**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	3,820	-424	6.7	N	A	2	0
	Approach	***4,244***	***3,820***	***-424***	***6.7***	***N***	***A***	***2.2***	***0***
SB: I-85 SB Off-Ramp	Through	136	126	-10	0.9	Y	A	3	0
	Approach	***136***	***126***	***-10***	***0.9***	***Y***	***A***	***2.9***	***0***
Overall	**-**	**4,380**	**3,946**	**-434**	**6.7**	**N**	**A**	**2.9**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	3,825	-419	6.6	N	A	2	0
	Approach	***4,244***	***3,825***	***-419***	***6.6***	***N***	***A***	***1.6***	***0***
SB: I-85 SB Off-Ramp	Through	98	89	-9	0.9	Y	A	5	0
	Approach	***98***	***89***	***-9***	***0.9***	***Y***	***A***	***4.6***	***0***
Overall	**-**	**4,342**	**3,914**	**-428**	**6.7**	**N**	**A**	**4.6**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,349	-690	11.4	N	A	1	0
	Approach	***4,039***	***3,349***	***-690***	***11.4***	***N***	***A***	***1.4***	***0***
NB: I-85 NB Off-Ramp	Through	224	191	-33	2.3	Y	A	3	0
	Approach	***224***	***191***	***-33***	***2.3***	***Y***	***A***	***2.6***	***0***
Overall	**-**	**4,263**	**3,540**	**-723**	**11.6**	**N**	**A**	**2.6**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,346	-693	11.4	N	A	1	0
	Approach	***4,039***	***3,346***	***-693***	***11.4***	***N***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	97	80	-17	1.8	Y	D	27	0
	Approach	***97***	***80***	***-17***	***1.8***	***Y***	***D***	***26.9***	***0***
Overall	**-**	**4,136**	**3,426**	**-710**	**11.5**	**N**	**D**	**26.9**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,526	-76	1.3	Y	A	8	1,028
	Approach	***3,602***	***3,526***	***-76***	***1.3***	***Y***	***A***	***7.6***	***1,028***
SB: I-85 SB On-Ramp	Through	740	400	-340	14.2	N	F	154	1,354
	Approach	***740***	***400***	***-340***	***14.2***	***N***	***F***	***154.4***	***1,354***
Overall	**-**	**4,342**	**3,926**	**-416**	**6.5**	**N**	**F**	**154.4**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,533	-69	1.2	Y	A	3	608
	Approach	***3,602***	***3,533***	***-69***	***1.2***	***Y***	***A***	***3.1***	***608***
SB: I-85 SB Off-Ramp	Through	339	331	-8	0.4	Y	A	5	608
	Approach	***339***	***331***	***-8***	***0.4***	***Y***	***A***	***4.9***	***608***
Overall	**-**	**3,941**	**3,864**	**-77**	**1.2**	**Y**	**A**	**4.9**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	2,842	-605	10.8	N	A	1	440
	Approach	***3,447***	***2,842***	***-605***	***10.8***	***N***	***A***	***1.3***	***440***
NB: I-85 NB Off-Ramp	Through	689	572	-117	4.7	Y	A	1	440
	Approach	***689***	***572***	***-117***	***4.7***	***Y***	***A***	***1.4***	***440***
Overall	**-**	**4,136**	**3,414**	**-722**	**11.7**	**N**	**A**	**1.4**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	2,847	-600	10.7	N	A	1	0
	Approach	***3,447***	***2,847***	***-600***	***10.7***	***N***	***A***	***1.4***	***0***
NB: I-85 NB On-Ramp	Through	469	352	-117	5.8	N	C	16	5
	Approach	***469***	***352***	***-117***	***5.8***	***N***	***C***	***15.8***	***5***
Overall	**-**	**3,916**	**3,199**	**-717**	**12.0**	**N**	**C**	**15.8**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,851	3,778	-73	1.2	Y	A	2	0
	Approach	***3,851***	***3,778***	***-73***	***1.2***	***Y***	***A***	***2.4***	***0***
SB: I-85 SB Off-Ramp	Through	90	89	-1	0.1	Y	A	1	0
	Approach	***90***	***89***	***-1***	***0.1***	***Y***	***A***	***1.2***	***0***
Overall	**-**	**3,941**	**3,867**	**-74**	**1.2**	**Y**	**A**	**2.4**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,494	-65	1.1	Y	A	1	0
	Approach	***3,559***	***3,494***	***-65***	***1.1***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	292	288	-4	0.2	Y	A	0	0
	Approach	***292***	***288***	***-4***	***0.2***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,851**	**3,782**	**-69**	**1.1**	**Y**	**A**	**0.9**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,493	-66	1.1	Y	A	1	0
	Approach	***3,559***	***3,493***	***-66***	***1.1***	***Y***	***A***	***1.4***	***0***
SB: I-85 SB Off-Ramp	Through	390	384	-6	0.3	Y	A	3	0
	Approach	***390***	***384***	***-6***	***0.3***	***Y***	***A***	***3.2***	***0***
Overall	**-**	**3,949**	**3,877**	**-72**	**1.2**	**Y**	**A**	**3.2**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	2,880	-636	11.2	N	A	1	0
	Approach	***3,516***	***2,880***	***-636***	***11.2***	***N***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	400	328	-72	3.8	Y	A	1	0
	Approach	***400***	***328***	***-72***	***3.8***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**3,916**	**3,208**	**-708**	**11.9**	**N**	**A**	**1.4**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	2,881	-635	11.2	N	A	1	0
	Approach	***3,516***	***2,881***	***-635***	***11.2***	***N***	***A***	***0.9***	***0***
NB: I-85 NB On-Ramp	Through	109	104	-5	0.5	Y	A	1	0
	Approach	***109***	***104***	***-5***	***0.5***	***Y***	***A***	***1.0***	***0***
Overall	**-**	**3,625**	**2,985**	**-640**	**11.1**	**N**	**A**	**1.0**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,625	2,986	-639	11.1	N	A	1	0
	Approach	***3,625***	***2,986***	***-639***	***11.1***	***N***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	270	271	1	0.1	Y	A	0	0
	Approach	***270***	***271***	***1***	***0.1***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**3,895**	**3,257**	**-638**	**10.7**	**N**	**A**	**0.6**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,728	3,111	-617	10.5	N	A	1	0
	Approach	***3,728***	***3,111***	***-617***	***10.5***	***N***	***A***	***0.9***	***0***
NB: I-85 NB Off-Ramp	Through	167	137	-30	2.4	Y	A	3	0
	Approach	***167***	***137***	***-30***	***2.4***	***Y***	***A***	***3.4***	***0***
Overall	**-**	**3,895**	**3,248**	**-647**	**10.8**	**N**	**A**	**3.4**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,716	-75	1.2	Y	A	1	99
	Approach	***3,791***	***3,716***	***-75***	***1.2***	***Y***	***A***	***1.3***	***99***
SB: I-85 SB On-Ramp	Through	158	154	-4	0.4	Y	A	7	0
	Approach	***158***	***154***	***-4***	***0.4***	***Y***	***A***	***7.3***	***0***
Overall	**-**	**3,949**	**3,870**	**-79**	**1.3**	**Y**	**A**	**7.3**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,715	-76	1.2	Y	A	1	64
	Approach	***3,791***	***3,715***	***-76***	***1.2***	***Y***	***A***	***0.8***	***64***
SB: I-85 SB Off-Ramp	Through	140	138	-2	0.2	Y	A	1	64
	Approach	***140***	***138***	***-2***	***0.2***	***Y***	***A***	***1.1***	***64***
Overall	**-**	**3,931**	**3,853**	**-78**	**1.3**	**Y**	**A**	**1.1**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,588	-55	0.9	Y	A	8	1,474
	Approach	***3,643***	***3,588***	***-55***	***0.9***	***Y***	***A***	***8.0***	***1,474***
SB: I-85 SB Off-Ramp	Through	288	269	-19	1.1	Y	C	21	325
	Approach	***288***	***269***	***-19***	***1.1***	***Y***	***C***	***21.4***	***325***
Overall	**-**	**3,931**	**3,857**	**-74**	**1.2**	**Y**	**C**	**21.4**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,597	-46	0.8	Y	A	7	1,557
	Approach	***3,643***	***3,597***	***-46***	***0.8***	***Y***	***A***	***7.1***	***1,557***
SB: I-85 SB Off-Ramp	Through	123	124	1	0.1	Y	A	7	1,557
	Approach	***123***	***124***	***1***	***0.1***	***Y***	***A***	***7.1***	***1,557***
Overall	**-**	**3,766**	**3,721**	**-45**	**0.7**	**Y**	**A**	**7.1**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,383	2,819	-564	10.1	N	A	1	0
	Approach	***3,383***	***2,819***	***-564***	***10.1***	***N***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	345	298	-47	2.6	Y	A	2	0
	Approach	***345***	***298***	***-47***	***2.6***	***Y***	***A***	***1.6***	***0***
Overall	**-**	**3,728**	**3,117**	**-611**	**10.4**	**N**	**A**	**1.6**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,383	2,820	-563	10.1	N	A	1	0
	Approach	***3,383***	***2,820***	***-563***	***10.1***	***N***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	224	226	2	0.1	Y	A	4	0
	Approach	***224***	***226***	***2***	***0.1***	***Y***	***A***	***4.3***	***0***
Overall	**-**	**3,607**	**3,046**	**-561**	**9.7**	**N**	**A**	**4.3**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,607	3,037	-570	9.9	N	A	0	0
	Approach	***3,607***	***3,037***	***-570***	***9.9***	***N***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	9	9	0	0.0	Y	B	12	51
	Approach	***9***	***9***	***0***	***0.0***	***Y***	***B***	***11.7***	***51***
Overall	**-**	**3,616**	**3,046**	**-570**	**9.9**	**N**	**B**	**11.7**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,616	3,035	-581	10.1	N	A	1	0
	Approach	***3,616***	***3,035***	***-581***	***10.1***	***N***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	10	7	-3	1.0	Y	A	4	0
	Approach	***10***	***7***	***-3***	***1.0***	***Y***	***A***	***3.9***	***0***
Overall	**-**	**3,626**	**3,042**	**-584**	**10.1**	**N**	**A**	**3.9**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,512	14	0.2	Y	A	3	0
	Approach	***3,498***	***3,512***	***14***	***0.2***	***Y***	***A***	***3.0***	***0***
SB: I-85 SB Off-Ramp	Through	268	264	-4	0.2	Y	A	2	18
	Approach	***268***	***264***	***-4***	***0.2***	***Y***	***A***	***2.2***	***18***
Overall	**-**	**3,766**	**3,776**	**10**	**0.2**	**Y**	**A**	**3.0**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,506	8	0.1	Y	A	2	521
	Approach	***3,498***	***3,506***	***8***	***0.1***	***Y***	***A***	***2.2***	***521***
SB: I-85 SB Off-Ramp	Through	87	85	-2	0.2	Y	A	4	521
	Approach	***87***	***85***	***-2***	***0.2***	***Y***	***A***	***3.8***	***521***
Overall	**-**	**3,585**	**3,591**	**6**	**0.1**	**Y**	**A**	**3.8**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	2,838	-554	9.9	N	A	1	30
	Approach	***3,392***	***2,838***	***-554***	***9.9***	***N***	***A***	***1.0***	***30***
NB: I-85 NB Off-Ramp	Through	214	185	-29	2.1	Y	A	4	30
	Approach	***214***	***185***	***-29***	***2.1***	***Y***	***A***	***3.8***	***30***
Overall	**-**	**3,606**	**3,023**	**-583**	**10.1**	**N**	**A**	**3.8**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	2,836	-556	10.0	N	A	0	0
	Approach	***3,392***	***2,836***	***-556***	***10.0***	***N***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	70	68	-2	0.2	Y	A	0	0
	Approach	***70***	***68***	***-2***	***0.2***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**3,462**	**2,904**	**-558**	**9.9**	**N**	**A**	**0.4**	**-**

Build AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,417	3,381	-36	0.6	Y		0	0
	Approach	***3,417***	***3,381***	***-36***	***0.6***	***Y***		***0.3***	***0***
SB: I-85 SB On-Ramp	Through	42	41	-1	0.2	Y		4	0
	Approach	***42***	***41***	***-1***	***0.2***	***Y***		***3.9***	***0***
Overall	-	**3,459**	**3,422**	**-37**	**0.6**	**Y**		**3.9**	-

80002: Interstate 85 at SB Off-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,931	-20	0.4	Y		0	0
	Approach	***2,951***	***2,931***	***-20***	***0.4***	***Y***		***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	466	458	-8	0.4	Y		1	0
	Approach	***466***	***458***	***-8***	***0.4***	***Y***		***0.8***	***0***
Overall	-	**3,417**	**3,389**	**-28**	**0.5**	**Y**		**0.8**	-

80003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,932	-19	0.4	Y		0	0
	Approach	***2,951***	***2,932***	***-19***	***0.4***	***Y***		***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	226	225	-1	0.1	Y		2	0
	Approach	***226***	***225***	***-1***	***0.1***	***Y***		***1.6***	***0***
Overall	-	**3,177**	**3,157**	**-20**	**0.4**	**Y**		**1.6**	-

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,586	2,648	62	1.2	Y		0	63
	Approach	***2,586***	***2,648***	***62***	***1.2***	***Y***		***0.5***	***63***
NB: I-85 NB Off-Ramp	Through	490	428	-62	2.9	Y		1	63
	Approach	***490***	***428***	***-62***	***2.9***	***Y***		***1.3***	***63***
Overall	-	**3,076**	**3,076**	**0**	**0.0**	**Y**		**1.3**	-

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,586	2,646	60	1.2	Y		0	0
	Approach	***2,586***	***2,646***	***60***	***1.2***	***Y***		***0.4***	***0***
NB: I-85 NB On-Ramp	Through	211	211	0	0.0	Y		0	0
	Approach	***211***	***211***	***0***	***0.0***	***Y***		***0.3***	***0***
Overall	-	**2,797**	**2,857**	**60**	**1.1**	**Y**		**0.4**	-

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,678	-4	0.1	Y		0	0
	Approach	***2,682***	***2,678***	***-4***	***0.1***	***Y***		***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	495	493	-2	0.1	Y		0	0
	Approach	***495***	***493***	***-2***	***0.1***	***Y***		***0.3***	***0***
Overall	-	**3,177**	**3,171**	**-6**	**0.1**	**Y**		**0.3**	-

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,680	-2	0.0	Y		1	0
	Approach	***2,682***	***2,680***	***-2***	***0.0***	***Y***		***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	106	110	4	0.4	Y		2	0
	Approach	***106***	***110***	***4***	***0.4***	***Y***		***2.0***	***0***
Overall	-	**2,788**	**2,790**	**2**	**0.0**	**Y**		**2.0**	-

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,584	50	1.0	Y		0	0
	Approach	***2,534***	***2,584***	***50***	***1.0***	***Y***		***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	263	270	7	0.4	Y		3	0
	Approach	***263***	***270***	***7***	***0.4***	***Y***		***2.8***	***0***
Overall	-	**2,797**	**2,854**	**57**	**1.1**	**Y**		**2.8**	-

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,583	49	1.0	Y		0	0
	Approach	***2,534***	***2,583***	***49***	***1.0***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	152	154	2	0.2	Y		0	0
	Approach	***152***	***154***	***2***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,686**	**2,737**	**51**	**1.0**	**Y**		**0.3**	-

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,540	-3	0.1	Y		2	0
	Approach	***2,543***	***2,540***	***-3***	***0.1***	***Y***		***1.6***	***0***
SB: I-85 SB Off-Ramp	Through	245	248	3	0.2	Y		1	0
	Approach	***245***	***248***	***3***	***0.2***	***Y***		***0.9***	***0***
Overall	-	**2,788**	**2,788**	**0**	**0.0**	**Y**		**1.6**	-

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,537	-6	0.1	Y		2	0
	Approach	***2,543***	***2,537***	***-6***	***0.1***	***Y***		***2.2***	***0***
SB: I-85 SB Off-Ramp	Through	70	70	0	0.0	Y		4	0
	Approach	***70***	***70***	***0***	***0.0***	***Y***		***4.2***	***0***
Overall	-	**2,613**	**2,607**	**-6**	**0.1**	**Y**		**4.2**	-

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,606	34	0.7	Y		0	0
	Approach	***2,572***	***2,606***	***34***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	114	120	6	0.6	Y		1	0
	Approach	***114***	***120***	***6***	***0.6***	***Y***		***1.3***	***0***
Overall	-	**2,686**	**2,726**	**40**	**0.8**	**Y**		**1.3**	-

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,604	32	0.6	Y		0	0
	Approach	***2,572***	***2,604***	***32***	***0.6***	***Y***		***0.4***	***0***
NB: I-85 NB On-Ramp	Through	126	130	4	0.4	Y		0	0
	Approach	***126***	***130***	***4***	***0.4***	***Y***		***0.4***	***0***
Overall	-	**2,698**	**2,734**	**36**	**0.7**	**Y**		**0.4**	-

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,000	-6	0.1	Y		0	0
	Approach	***2,006***	***2,000***	***-6***	***0.1***	***Y***		***0.2***	***0***
SB: I-85 SB On-Ramp	Through	607	606	-1	0.0	Y		3	35
	Approach	***607***	***606***	***-1***	***0.0***	***Y***		***3.1***	***35***
Overall	-	**2,613**	**2,606**	**-7**	**0.1**	**Y**		**3.1**	-

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,002	-4	0.1	Y		1	0
	Approach	***2,006***	***2,002***	***-4***	***0.1***	***Y***		***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	259	258	-1	0.1	Y		5	0
	Approach	***259***	***258***	***-1***	***0.1***	***Y***		***5.2***	***0***
Overall	-	**2,265**	**2,260**	**-5**	**0.1**	**Y**		**5.2**	-

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,178	33	0.7	Y		1	0
	Approach	***2,145***	***2,178***	***33***	***0.7***	***Y***		***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	553	561	8	0.3	Y		5	0
	Approach	***553***	***561***	***8***	***0.3***	***Y***		***5.1***	***0***
Overall	-	**2,698**	**2,739**	**41**	**0.8**	**Y**		**5.1**	-

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,178	33	0.7	Y		0	0
	Approach	***2,145***	***2,178***	***33***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	265	274	9	0.5	Y		1	0
	Approach	***265***	***274***	***9***	***0.5***	***Y***		***0.7***	***0***
Overall	-	**2,410**	**2,452**	**42**	**0.9**	**Y**		**0.7**	-

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,187	2,185	-2	0.0	Y		1	0
	Approach	***2,187***	***2,185***	***-2***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	78	76	-2	0.2	Y		0	0
	Approach	***78***	***76***	***-2***	***0.2***	***Y***		***0.5***	***0***
Overall	-	**2,265**	**2,261**	**-4**	**0.1**	**Y**		**0.9**	-

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y		1	6
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***		***1.1***	***6***
SB: I-85 SB Off-Ramp	Through	157	159	2	0.2	Y		0	0
	Approach	***157***	***159***	***2***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,187**	**2,183**	**-4**	**0.1**	**Y**		**1.1**	-

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,022	-8	0.2	Y		2	133
	Approach	***2,030***	***2,022***	***-8***	***0.2***	***Y***		***2.4***	***133***
SB: I-85 SB Off-Ramp	Through	278	290	12	0.7	Y		6	133
	Approach	***278***	***290***	***12***	***0.7***	***Y***		***5.9***	***133***
Overall	-	**2,308**	**2,312**	**4**	**0.1**	**Y**		**5.9**	-

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,140	38	0.8	Y		0	0
	Approach	***2,102***	***2,140***	***38***	***0.8***	***Y***		***0.2***	***0***
NB: I-85 NB Off-Ramp	Through	308	306	-2	0.1	Y		1	0
	Approach	***308***	***306***	***-2***	***0.1***	***Y***		***1.2***	***0***
Overall	-	**2,410**	**2,446**	**36**	**0.7**	**Y**		**1.2**	-

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,140	38	0.8	Y		0	0
	Approach	***2,102***	***2,140***	***38***	***0.8***	***Y***		***0.2***	***0***
NB: I-85 NB On-Ramp	Through	154	150	-4	0.3	Y		0	0
	Approach	***154***	***150***	***-4***	***0.3***	***Y***		***0.3***	***0***
Overall	-	**2,256**	**2,290**	**34**	**0.7**	**Y**		**0.3**	-

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,256	2,289	33	0.7	Y		0	0
	Approach	***2,256***	***2,289***	***33***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	151	150	-1	0.1	Y		0	0
	Approach	***151***	***150***	***-1***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**2,407**	**2,439**	**32**	**0.7**	**Y**		**0.4**	-

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,176	2,206	30	0.6	Y		0	16
	Approach	***2,176***	***2,206***	***30***	***0.6***	***Y***		***0.4***	***16***
NB: I-85 NB Off-Ramp	Through	231	230	-1	0.1	Y		0	16
	Approach	***231***	***230***	***-1***	***0.1***	***Y***		***0.4***	***16***
Overall	-	**2,407**	**2,436**	**29**	**0.6**	**Y**		**0.4**	-

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,179	1	0.0	Y		0	0
	Approach	***2,178***	***2,179***	***1***	***0.0***	***Y***		***0.3***	***0***
SB: I-85 SB On-Ramp	Through	130	126	-4	0.4	Y		0	0
	Approach	***130***	***126***	***-4***	***0.4***	***Y***		***0.2***	***0***
Overall	-	**2,308**	**2,305**	**-3**	**0.1**	**Y**		**0.3**	-

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,184	6	0.1	Y		0	0
	Approach	***2,178***	***2,184***	***6***	***0.1***	***Y***		***0.1***	***0***
SB: I-85 SB Off-Ramp	Through	163	160	-3	0.2	Y		0	0
	Approach	***163***	***160***	***-3***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,341**	**2,344**	**3**	**0.1**	**Y**		**0.3**	-

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,072	3	0.1	Y		0	0
	Approach	***2,069***	***2,072***	***3***	***0.1***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	272	272	0	0.0	Y		0	0
	Approach	***272***	***272***	***0***	***0.0***	***Y***		***0.2***	***0***
Overall	-	**2,341**	**2,344**	**3**	**0.1**	**Y**		**0.3**	-

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,071	2	0.0	Y		1	29
	Approach	***2,069***	***2,071***	***2***	***0.0***	***Y***		***0.9***	***29***
SB: I-85 SB Off-Ramp	Through	88	92	4	0.4	Y		1	29
	Approach	***88***	***92***	***4***	***0.4***	***Y***		***1.1***	***29***
Overall	-	**2,157**	**2,163**	**6**	**0.1**	**Y**		**1.1**	-

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,030	2,038	8	0.2	Y		1	85
	Approach	***2,030***	***2,038***	***8***	***0.2***	***Y***		***0.6***	***85***
NB: I-85 NB Off-Ramp	Through	245	258	13	0.8	Y		1	85
	Approach	***245***	***258***	***13***	***0.8***	***Y***		***0.9***	***85***
Overall	-	**2,275**	**2,296**	**21**	**0.4**	**Y**		**0.9**	-

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,030	2,036	6	0.1	Y		1	7
	Approach	***2,030***	***2,036***	***6***	***0.1***	***Y***		***0.5***	***7***
NB: I-85 NB On-Ramp	Through	118	124	6	0.5	Y		0	0
	Approach	***118***	***124***	***6***	***0.5***	***Y***		***0.3***	***0***
Overall	-	**2,148**	**2,160**	**12**	**0.3**	**Y**		**0.5**	-

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,980	4	0.1	Y		1	6
	Approach	***1,976***	***1,980***	***4***	***0.1***	***Y***		***1.0***	***6***
SB: I-85 SB Off-Ramp	Through	181	179	-2	0.1	Y		1	21
	Approach	***181***	***179***	***-2***	***0.1***	***Y***		***0.8***	***21***
Overall	-	**2,157**	**2,159**	**2**	**0.0**	**Y**		**1.0**	-

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,976	0	0.0	Y		1	132
	Approach	***1,976***	***1,976***	***0***	***0.0***	***Y***		***0.5***	***132***
SB: I-85 SB Off-Ramp	Through	84	85	1	0.1	Y		1	132
	Approach	***84***	***85***	***1***	***0.1***	***Y***		***1.0***	***132***
Overall	-	**2,060**	**2,061**	**1**	**0.0**	**Y**		**1.0**	-

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,838	43	1.0	Y		1	49
	Approach	***1,795***	***1,838***	***43***	***1.0***	***Y***		***1.3***	***49***
NB: I-85 NB Off-Ramp	Through	311	313	2	0.1	Y		4	49
	Approach	***311***	***313***	***2***	***0.1***	***Y***		***4.3***	***49***
Overall	-	**2,106**	**2,151**	**45**	**1.0**	**Y**		**4.3**	-

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,836	41	1.0	Y		0	0
	Approach	***1,795***	***1,836***	***41***	***1.0***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	87	88	1	0.1	Y		0	0
	Approach	***87***	***88***	***1***	***0.1***	***Y***		***0.1***	***0***
Overall	-	**1,882**	**1,924**	**42**	**1.0**	**Y**		**0.3**	-

Build PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,544	4,497	-47	0.7	Y		2	19
	Approach	***4,544***	***4,497***	***-47***	***0.7***	***Y***		***2.1***	***19***
SB: I-85 SB On-Ramp	Through	103	104	1	0.1	Y		9	335
	Approach	***103***	***104***	***1***	***0.1***	***Y***		***9.4***	***335***
Overall	-	**4,647**	**4,601**	**-46**	**0.7**	**Y**		**9.4**	-

80002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	4,312	-50	0.8	Y		1	0
	Approach	***4,362***	***4,312***	***-50***	***0.8***	***Y***		***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	182	192	10	0.7	Y		2	521
	Approach	***182***	***192***	***10***	***0.7***	***Y***		***2.2***	***521***
Overall	-	**4,544**	**4,504**	**-40**	**0.6**	**Y**		**2.2**	-

80003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	4,312	-50	0.8	Y		1	0
	Approach	***4,362***	***4,312***	***-50***	***0.8***	***Y***		***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	166	160	-6	0.5	Y		3	109
	Approach	***166***	***160***	***-6***	***0.5***	***Y***		***2.6***	***109***
Overall	-	**4,528**	**4,472**	**-56**	**0.8**	**Y**		**2.6**	-

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,384	4,391	7	0.1	Y		9	0
	Approach	***4,384***	***4,391***	***7***	***0.1***	***Y***		***9.4***	***0***
NB: I-85 NB Off-Ramp	Through	420	423	3	0.1	Y		0	0
	Approach	***420***	***423***	***3***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**4,804**	**4,814**	**10**	**0.1**	**Y**		**9.4**	-

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,384	4,388	4	0.1	Y		1	0
	Approach	***4,384***	***4,388***	***4***	***0.1***	***Y***		***0.9***	***0***
NB: I-85 NB On-Ramp	Through	136	139	3	0.3	Y		0	0
	Approach	***136***	***139***	***3***	***0.3***	***Y***		***0.0***	***0***
Overall	-	**4,520**	**4,527**	**7**	**0.1**	**Y**		**0.9**	-

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	4,208	-15	0.2	Y		0	0
	Approach	***4,223***	***4,208***	***-15***	***0.2***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	305	307	2	0.1	Y		1	0
	Approach	***305***	***307***	***2***	***0.1***	***Y***		***0.7***	***0***
Overall	-	**4,528**	**4,515**	**-13**	**0.2**	**Y**		**0.7**	-

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	4,206	-17	0.3	Y		3	109
	Approach	***4,223***	***4,206***	***-17***	***0.3***	***Y***		***2.6***	***109***
SB: I-85 SB Off-Ramp	Through	157	168	11	0.9	Y		1	0
	Approach	***157***	***168***	***11***	***0.9***	***Y***		***0.9***	***0***
Overall	-	**4,380**	**4,374**	**-6**	**0.1**	**Y**		**2.6**	-

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	4,126	11	0.2	Y		2	109
	Approach	***4,115***	***4,126***	***11***	***0.2***	***Y***		***1.7***	***109***
NB: I-85 NB Off-Ramp	Through	405	403	-2	0.1	Y		4	669
	Approach	***405***	***403***	***-2***	***0.1***	***Y***		***3.8***	***669***
Overall	-	**4,520**	**4,529**	**9**	**0.1**	**Y**		**3.8**	-

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	4,126	11	0.2	Y		3	669
	Approach	***4,115***	***4,126***	***11***	***0.2***	***Y***		***2.8***	***669***
NB: I-85 NB On-Ramp	Through	148	148	0	0.0	Y		1	0
	Approach	***148***	***148***	***0***	***0.0***	***Y***		***1.1***	***0***
Overall	-	**4,263**	**4,274**	**11**	**0.2**	**Y**		**2.8**	-

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	4,247	3	0.0	Y		0	0
	Approach	***4,244***	***4,247***	***3***	***0.0***	***Y***		***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	136	138	2	0.2	Y		1	0
	Approach	***136***	***138***	***2***	***0.2***	***Y***		***1.1***	***0***
Overall	-	**4,380**	**4,385**	**5**	**0.1**	**Y**		**1.1**	-

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	4,248	4	0.1	Y		1	0
	Approach	***4,244***	***4,248***	***4***	***0.1***	***Y***		***1.2***	***0***
SB: I-85 SB Off-Ramp	Through	98	97	-1	0.1	Y		0	0
	Approach	***98***	***97***	***-1***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**4,342**	**4,345**	**3**	**0.0**	**Y**		**1.2**	-

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,915	-124	2.0	Y		1	11
	Approach	***4,039***	***3,915***	***-124***	***2.0***	***Y***		***0.7***	***11***
NB: I-85 NB Off-Ramp	Through	224	222	-2	0.1	Y		1	0
	Approach	***224***	***222***	***-2***	***0.1***	***Y***		***0.6***	***0***
Overall	-	**4,263**	**4,137**	**-126**	**1.9**	**Y**		**0.7**	-

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,909	-130	2.1	Y		1	0
	Approach	***4,039***	***3,909***	***-130***	***2.1***	***Y***		***0.5***	***0***
NB: I-85 NB On-Ramp	Through	97	97	0	0.0	Y		1	11
	Approach	***97***	***97***	***0***	***0.0***	***Y***		***0.9***	***11***
Overall	-	**4,136**	**4,006**	**-130**	**2.0**	**Y**		**0.9**	-

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,601	-1	0.0	Y		1	0
	Approach	***3,602***	***3,601***	***-1***	***0.0***	***Y***		***0.5***	***0***
SB: I-85 SB On-Ramp	Through	740	744	4	0.1	Y		4	0
	Approach	***740***	***744***	***4***	***0.1***	***Y***		***3.5***	***0***
Overall	-	**4,342**	**4,345**	**3**	**0.0**	**Y**		**3.5**	-

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,603	1	0.0	Y		1	0
	Approach	***3,602***	***3,603***	***1***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	339	336	-3	0.2	Y		5	0
	Approach	***339***	***336***	***-3***	***0.2***	***Y***		***4.5***	***0***
Overall	-	**3,941**	**3,939**	**-2**	**0.0**	**Y**		**4.5**	-

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	3,345	-102	1.8	Y		1	0
	Approach	***3,447***	***3,345***	***-102***	***1.8***	***Y***		***1.0***	***0***
NB: I-85 NB Off-Ramp	Through	689	670	-19	0.7	Y		2	0
	Approach	***689***	***670***	***-19***	***0.7***	***Y***		***1.7***	***0***
Overall	-	**4,136**	**4,015**	**-121**	**1.9**	**Y**		**1.7**	-

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	3,343	-104	1.8	Y		1	0
	Approach	***3,447***	***3,343***	***-104***	***1.8***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	469	476	7	0.3	Y		1	0
	Approach	***469***	***476***	***7***	***0.3***	***Y***		***0.9***	***0***
Overall	-	**3,916**	**3,819**	**-97**	**1.6**	**Y**		**0.9**	-

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,851	3,849	-2	0.0	Y		1	0
	Approach	***3,851***	***3,849***	***-2***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	90	89	-1	0.1	Y		1	0
	Approach	***90***	***89***	***-1***	***0.1***	***Y***		***0.7***	***0***
Overall	-	**3,941**	**3,938**	**-3**	**0.0**	**Y**		**0.9**	-

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,558	-1	0.0	Y		6	809
	Approach	***3,559***	***3,558***	***-1***	***0.0***	***Y***		***6.0***	***809***
SB: I-85 SB Off-Ramp	Through	292	293	1	0.1	Y		1	0
	Approach	***292***	***293***	***1***	***0.1***	***Y***		***0.6***	***0***
Overall	-	**3,851**	**3,851**	**0**	**0.0**	**Y**		**6.0**	-

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,557	-2	0.0	Y		1	0
	Approach	***3,559***	***3,557***	***-2***	***0.0***	***Y***		***1.4***	***0***
SB: I-85 SB Off-Ramp	Through	390	392	2	0.1	Y		5	0
	Approach	***390***	***392***	***2***	***0.1***	***Y***		***4.7***	***0***
Overall	-	**3,949**	**3,949**	**0**	**0.0**	**Y**		**4.7**	-

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	3,429	-87	1.5	Y		0	0
	Approach	***3,516***	***3,429***	***-87***	***1.5***	***Y***		***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	400	387	-13	0.7	Y		0	0
	Approach	***400***	***387***	***-13***	***0.7***	***Y***		***0.0***	***0***
Overall	-	**3,916**	**3,816**	**-100**	**1.6**	**Y**		**0.5**	-

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	3,428	-88	1.5	Y		1	0
	Approach	***3,516***	***3,428***	***-88***	***1.5***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	109	105	-4	0.4	Y		1	0
	Approach	***109***	***105***	***-4***	***0.4***	***Y***		***0.5***	***0***
Overall	-	**3,625**	**3,533**	**-92**	**1.5**	**Y**		**0.7**	-

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,625	3,531	-94	1.6	Y		1	0
	Approach	***3,625***	***3,531***	***-94***	***1.6***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	270	271	1	0.1	Y		0	0
	Approach	***270***	***271***	***1***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**3,895**	**3,802**	**-93**	**1.5**	**Y**		**0.7**	-

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,728	3,633	-95	1.6	Y		10	0
	Approach	***3,728***	***3,633***	***-95***	***1.6***	***Y***		***9.7***	***0***
NB: I-85 NB Off-Ramp	Through	167	161	-6	0.5	Y		1	2
	Approach	***167***	***161***	***-6***	***0.5***	***Y***		***1.1***	***2***
Overall	-	**3,895**	**3,794**	**-101**	**1.6**	**Y**		**9.7**	-

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,803	12	0.2	Y		0	0
	Approach	***3,791***	***3,803***	***12***	***0.2***	***Y***		***0.4***	***0***
SB: I-85 SB On-Ramp	Through	158	152	-6	0.5	Y		3	0
	Approach	***158***	***152***	***-6***	***0.5***	***Y***		***2.8***	***0***
Overall	-	**3,949**	**3,955**	**6**	**0.1**	**Y**		**2.8**	-

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,802	11	0.2	Y		0	0
	Approach	***3,791***	***3,802***	***11***	***0.2***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	140	142	2	0.2	Y		0	0
	Approach	***140***	***142***	***2***	***0.2***	***Y***		***0.5***	***0***
Overall	-	**3,931**	**3,944**	**13**	**0.2**	**Y**		**0.5**	-

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,665	22	0.4	Y		0	0
	Approach	***3,643***	***3,665***	***22***	***0.4***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	288	276	-12	0.7	Y		0	0
	Approach	***288***	***276***	***-12***	***0.7***	***Y***		***0.2***	***0***
Overall	-	**3,931**	**3,941**	**10**	**0.2**	**Y**		**0.3**	-

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,663	20	0.3	Y		0	31
	Approach	***3,643***	***3,663***	***20***	***0.3***	***Y***		***0.4***	***31***
SB: I-85 SB Off-Ramp	Through	123	125	2	0.2	Y		0	31
	Approach	***123***	***125***	***2***	***0.2***	***Y***		***0.3***	***31***
Overall	-	**3,766**	**3,788**	**22**	**0.4**	**Y**		**0.4**	-

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,514	3,294	-220	3.8	Y		0	0
	Approach	***3,514***	***3,294***	***-220***	***3.8***	***Y***		***0.1***	***0***
NB: I-85 NB Off-Ramp	Through	345	313	-32	1.8	Y		0	0
	Approach	***345***	***313***	***-32***	***1.8***	***Y***		***0.3***	***0***
Overall	-	**3,859**	**3,607**	**-252**	**4.1**	**N**		**0.3**	-

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,514	3,297	-217	3.7	Y		0	0
	Approach	***3,514***	***3,297***	***-217***	***3.7***	***Y***		***0.2***	***0***
NB: I-85 NB On-Ramp	Through	102	102	0	0.0	Y		0	0
	Approach	***102***	***102***	***0***	***0.0***	***Y***		***0.5***	***0***
Overall	-	**3,616**	**3,399**	**-217**	**3.7**	**Y**		**0.5**	-

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,511	13	0.2	Y		6	233
	Approach	***3,498***	***3,511***	***13***	***0.2***	***Y***		***6.0***	***233***
SB: I-85 SB Off-Ramp	Through	268	267	-1	0.1	Y		9	233
	Approach	***268***	***267***	***-1***	***0.1***	***Y***		***9.2***	***233***
Overall	-	**3,766**	**3,778**	**12**	**0.2**	**Y**		**9.2**	-

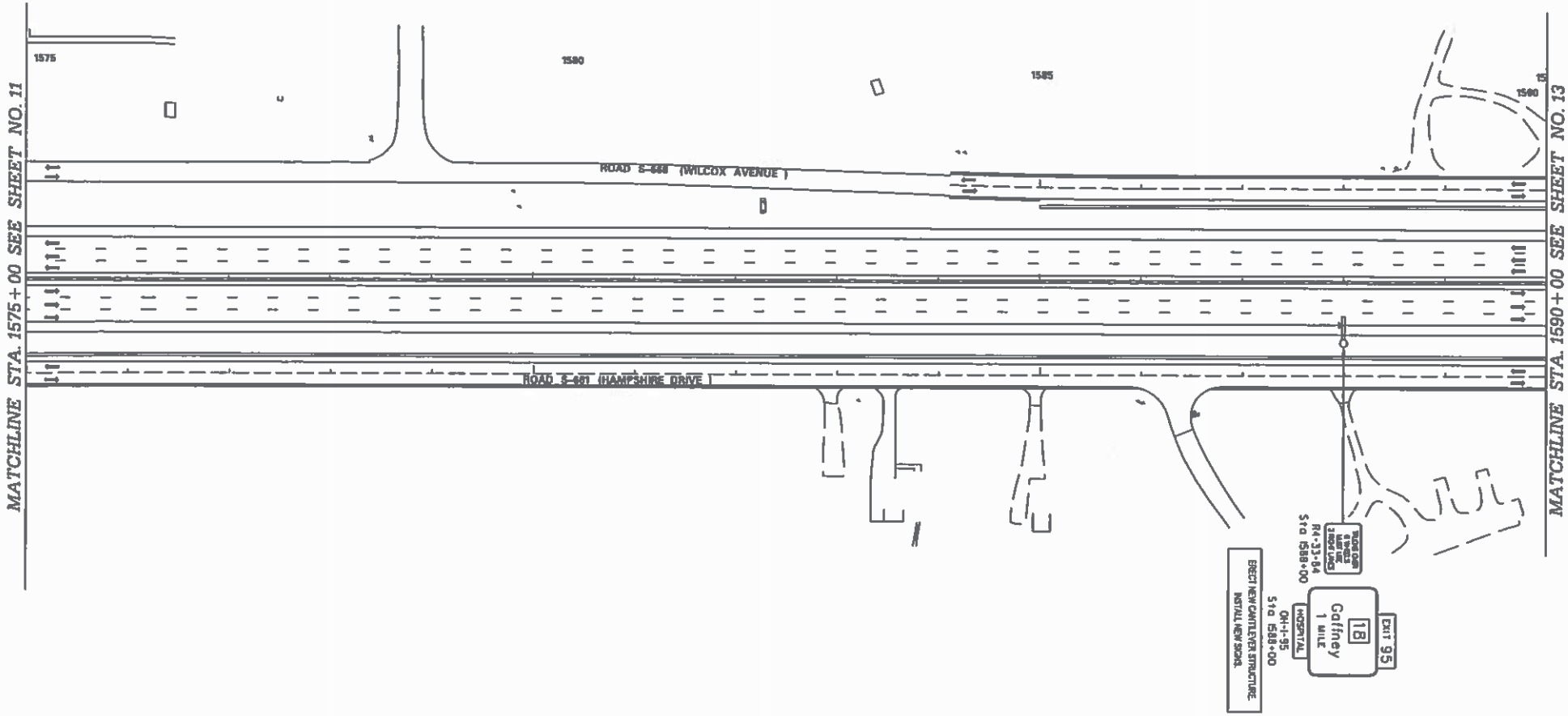
10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,506	8	0.1	Y		19	596
	Approach	***3,498***	***3,506***	***8***	***0.1***	***Y***		***18.6***	***596***
SB: I-85 SB Off-Ramp	Through	87	85	-2	0.2	Y		13	596
	Approach	***87***	***85***	***-2***	***0.2***	***Y***		***12.8***	***596***
Overall	-	**3,585**	**3,591**	**6**	**0.1**	**Y**		**18.6**	-

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	3,173	-219	3.8	Y		0	261
	Approach	***3,392***	***3,173***	***-219***	***3.8***	***Y***		***0.0***	***261***
NB: I-85 NB Off-Ramp	Through	214	207	-7	0.5	Y		23	233
	Approach	***214***	***207***	***-7***	***0.5***	***Y***		***22.7***	***233***
Overall	-	**3,606**	**3,380**	**-226**	**3.8**	**Y**		**22.7**	-

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	3,169	-223	3.9	Y		6	313
	Approach	***3,392***	***3,169***	***-223***	***3.9***	***Y***		***6.1***	***313***
NB: I-85 NB On-Ramp	Through	70	69	-1	0.1	Y		6	169
	Approach	***70***	***69***	***-1***	***0.1***	***Y***		***5.7***	***169***
Overall	-	**3,462**	**3,238**	**-224**	**3.9**	**Y**		**6.1**	-

Appendix E

Exit 95 Striping Plan



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

NO.	BY	DATE	DESCRIPTION OF REVISION
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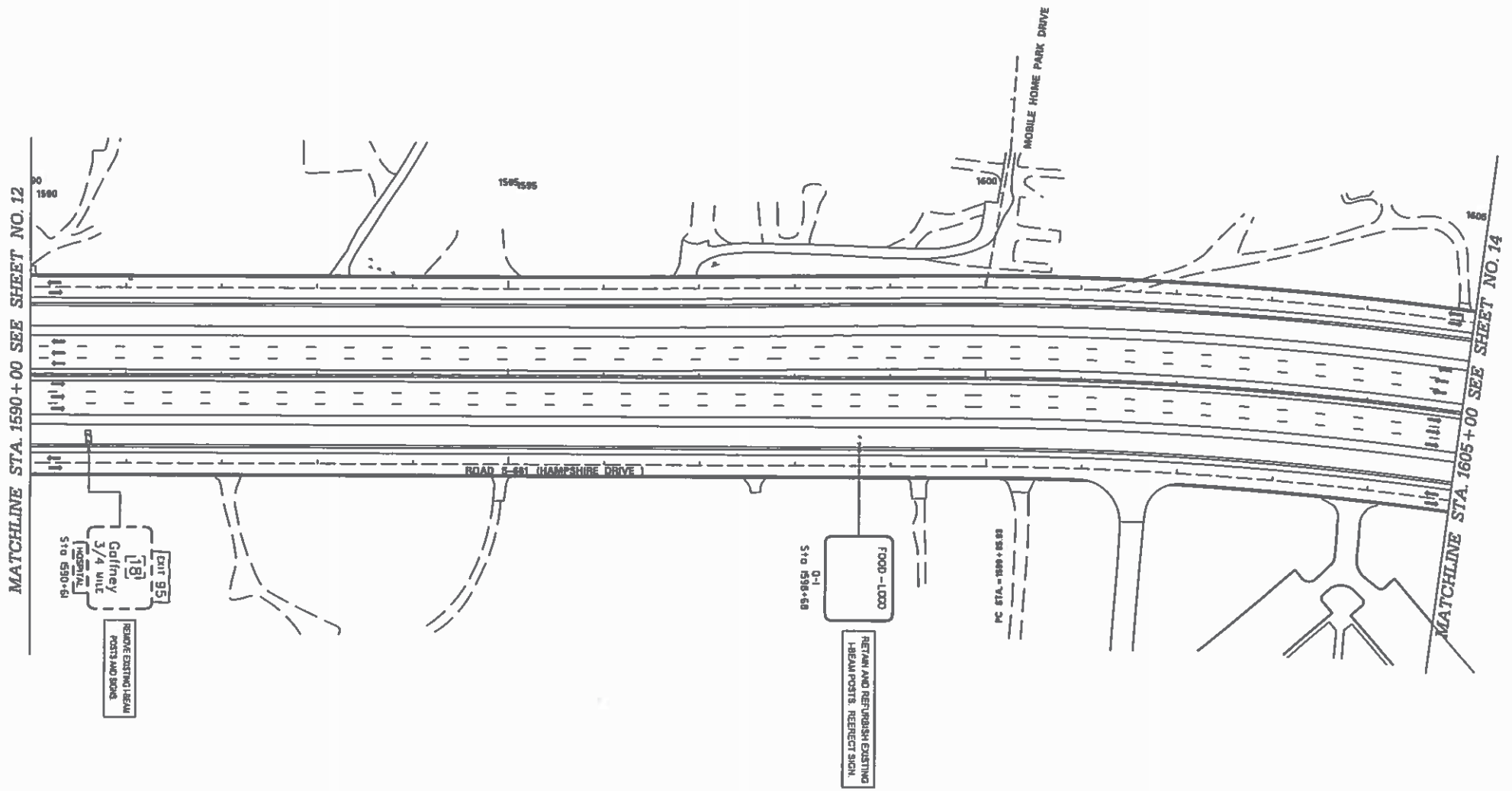
1			

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
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SCALE: 1" = 50'

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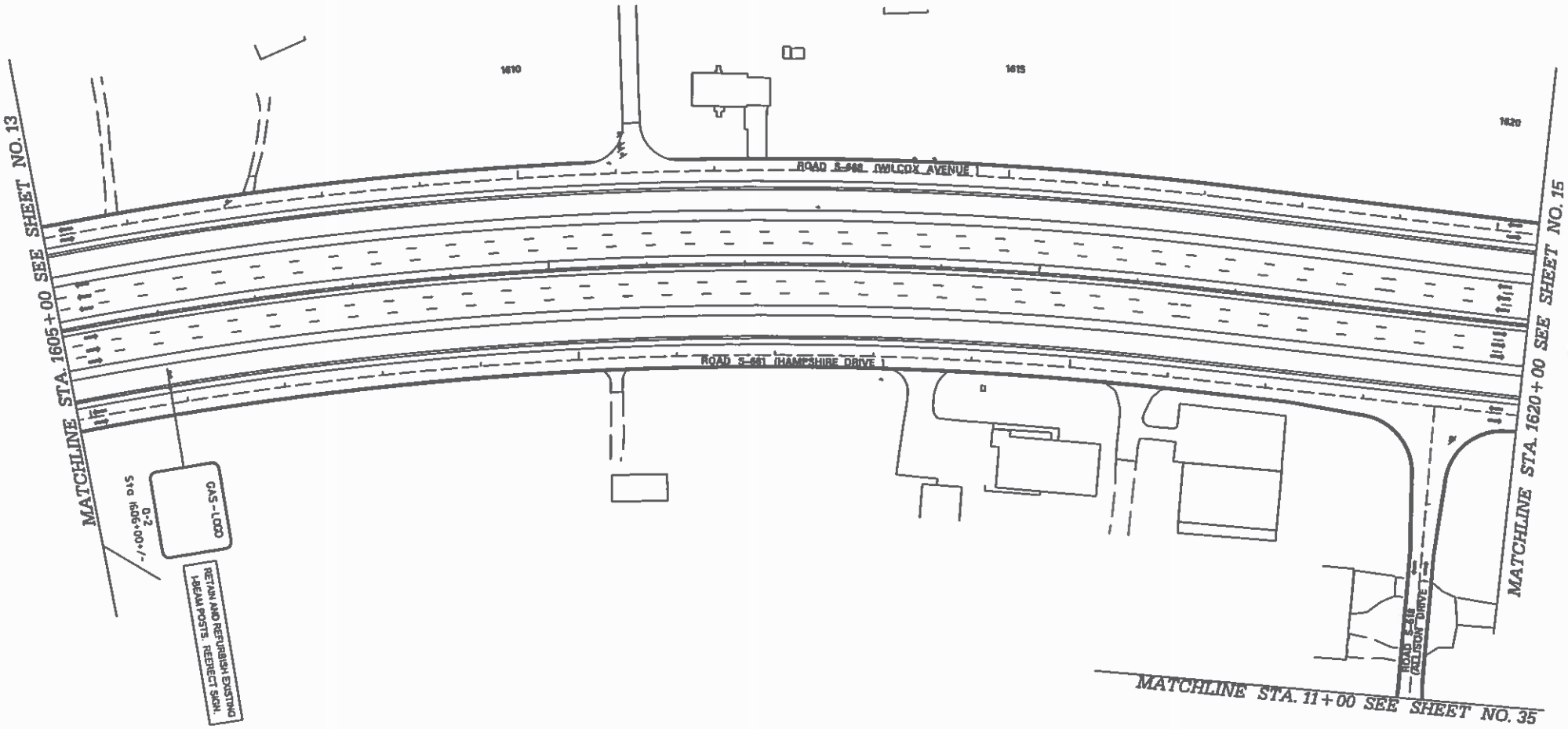
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
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SCALE: 1" = 50'

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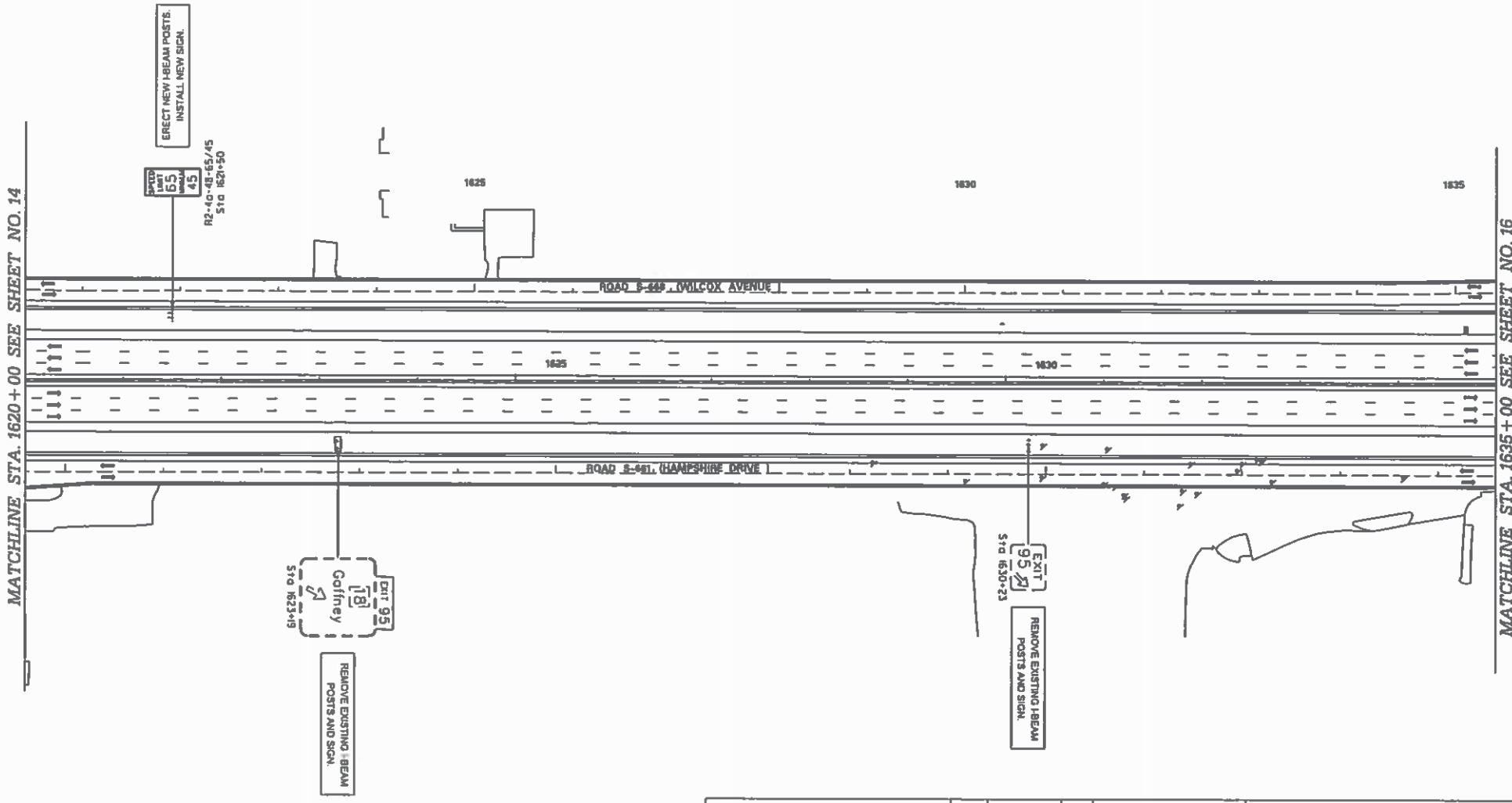
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

NO.	BY	DATE	DESCRIPTION OF REVISION
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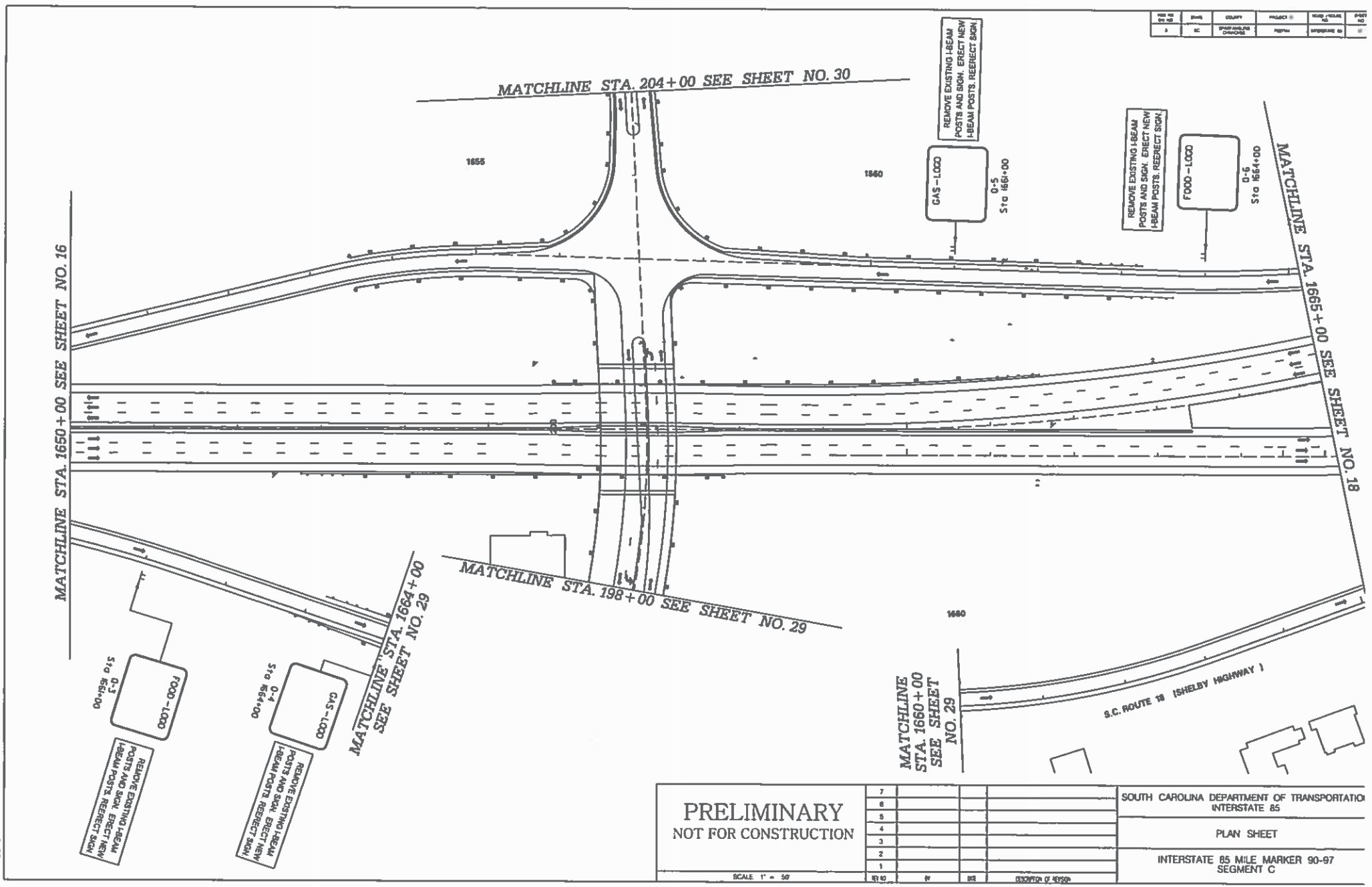
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

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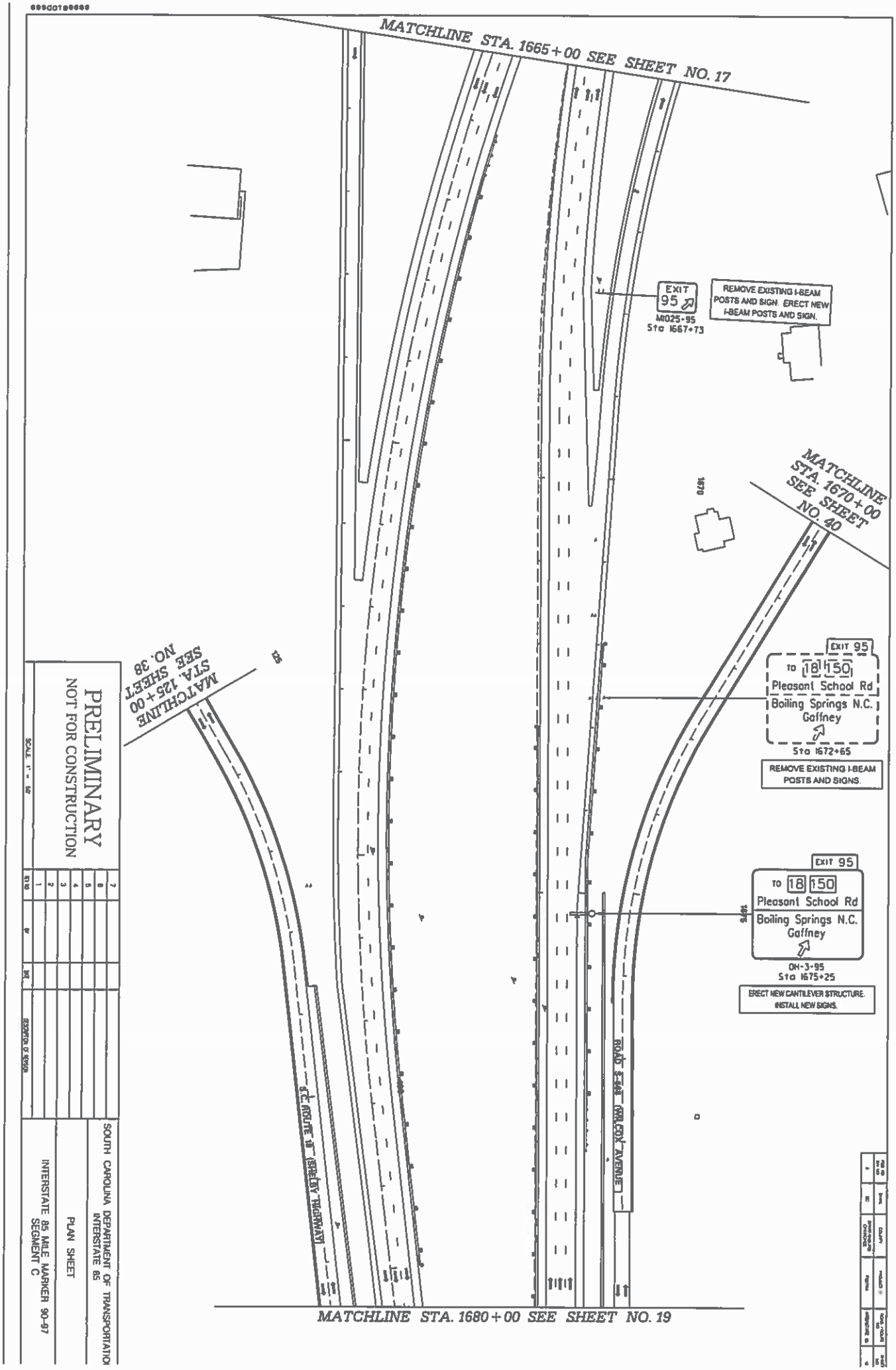
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE 1" = 60'

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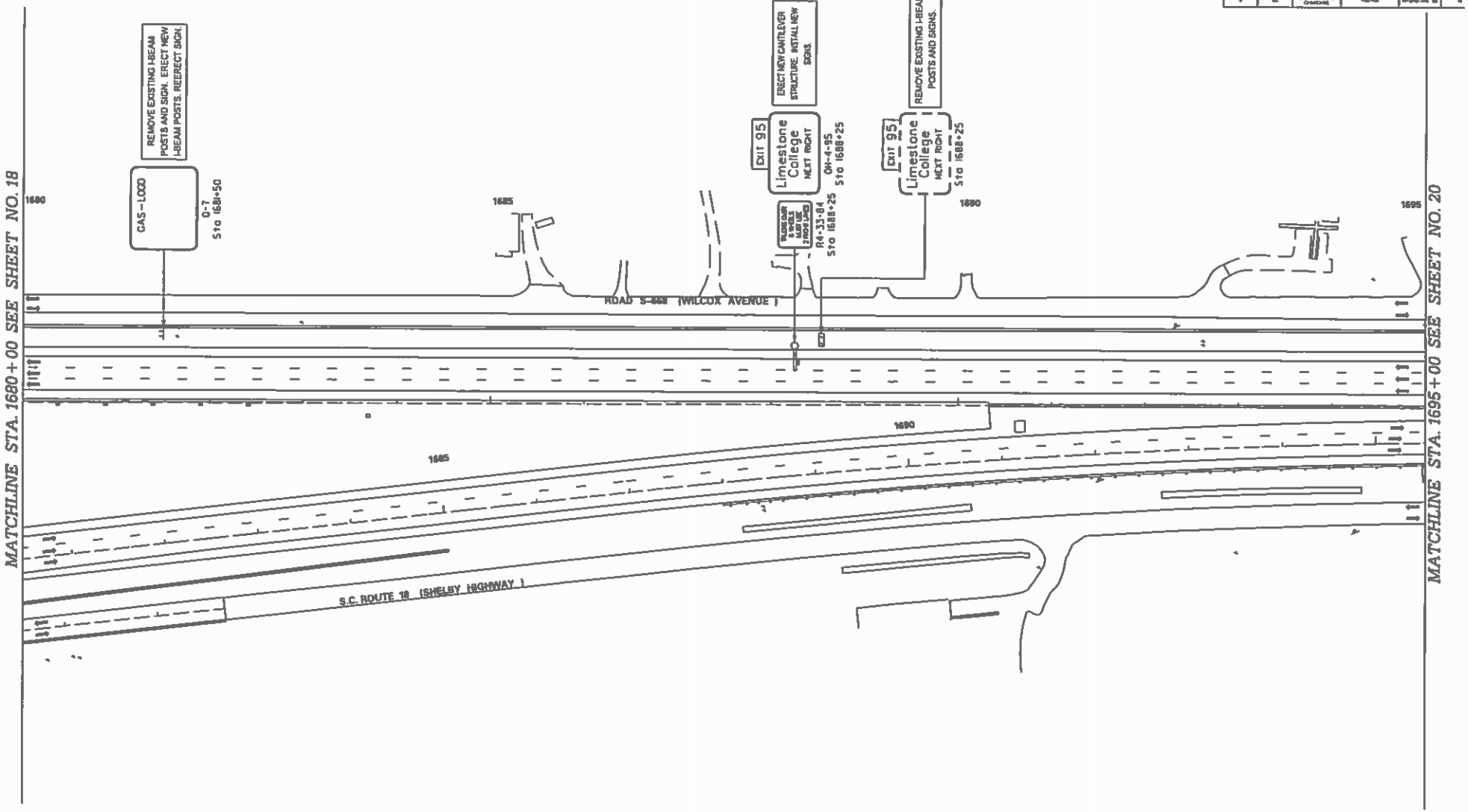
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

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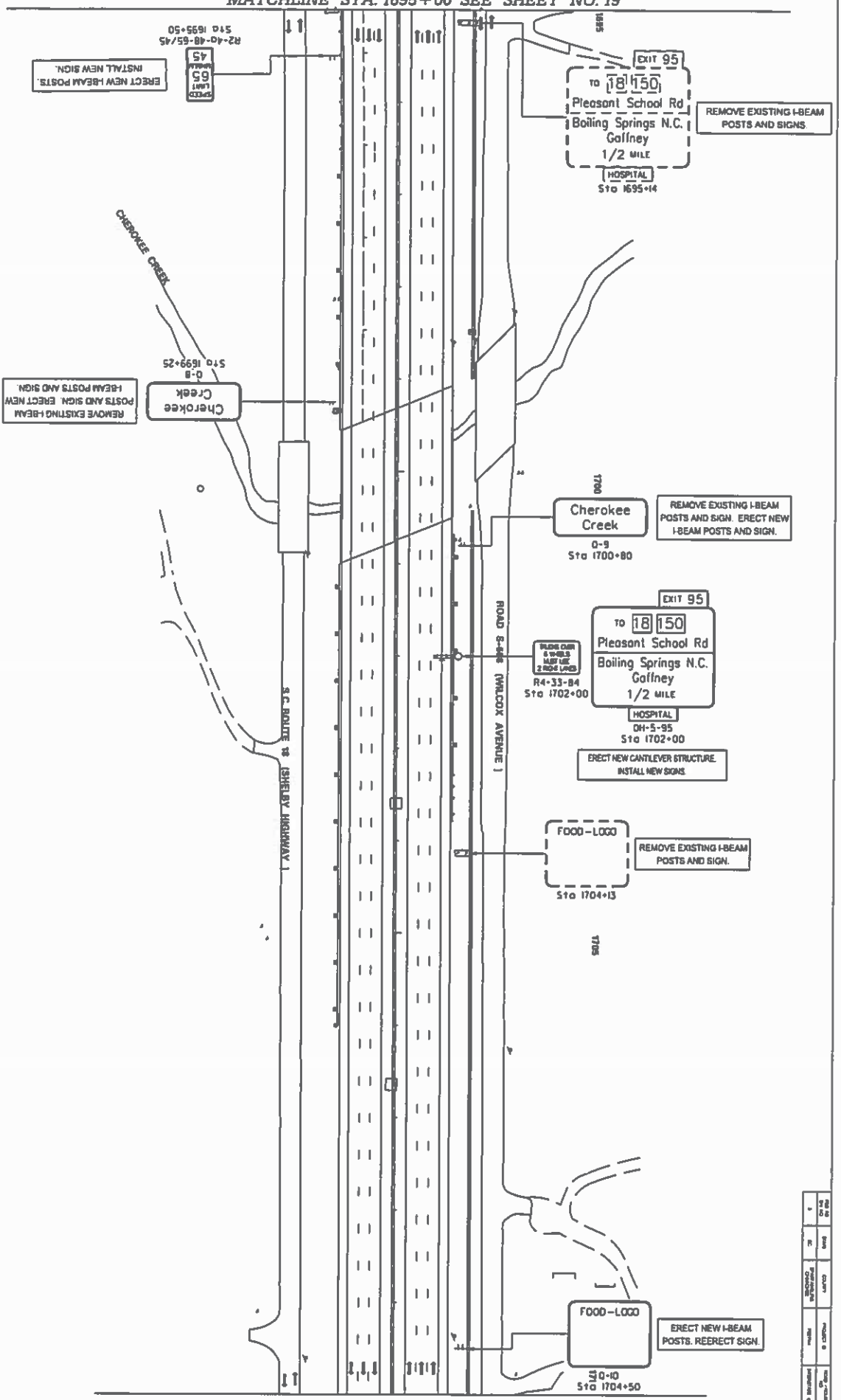
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C

MATCHLINE STA. 1695+00 SEE SHEET NO. 19



MATCHLINE STA. 1710+00 SEE SHEET NO. 21

PRELIMINARY
NOT FOR CONSTRUCTION

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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

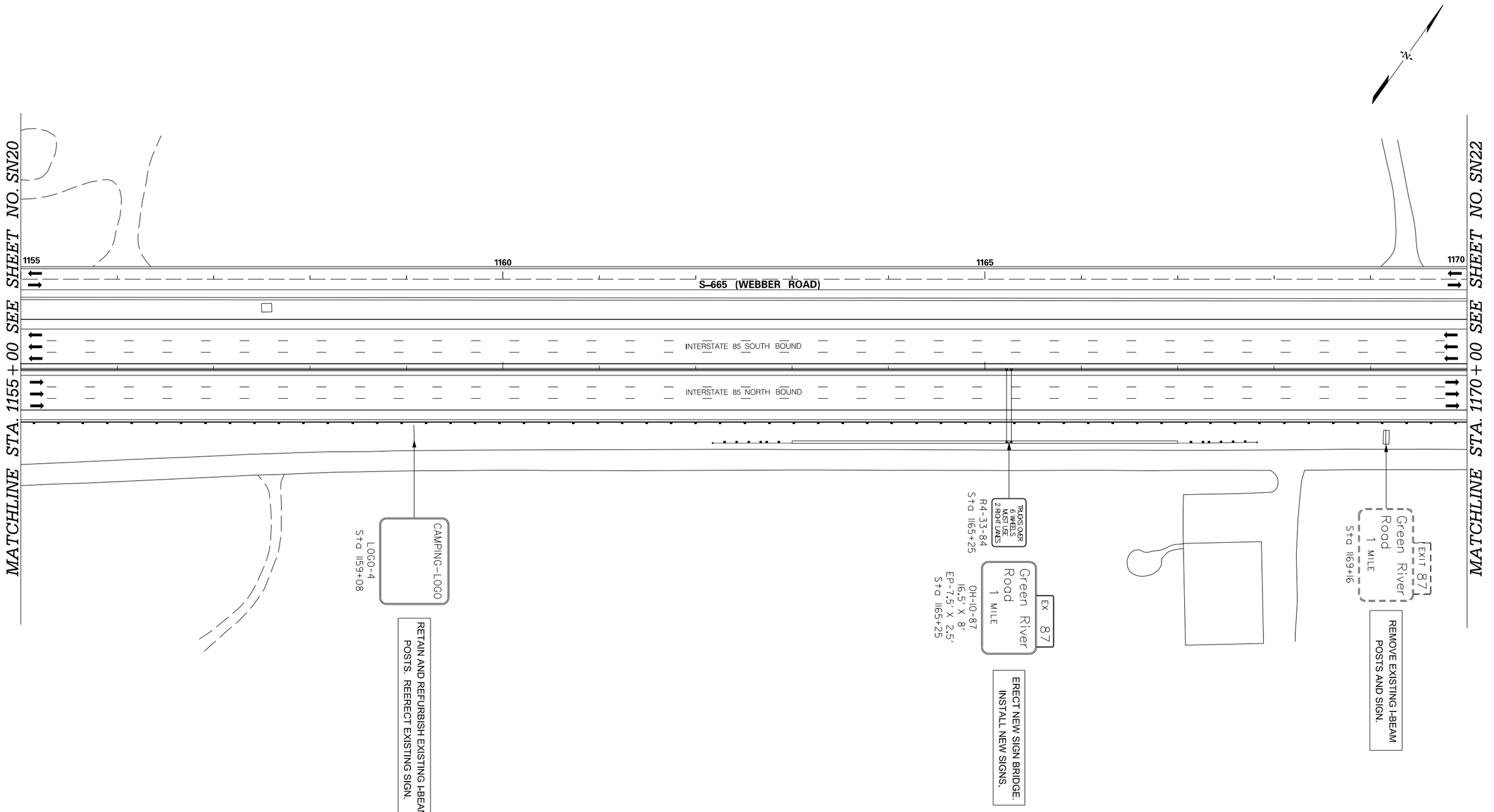
PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97
SEGMENT C

Appendix F

Signage Plan Exit 87 - Exit 95

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN21



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

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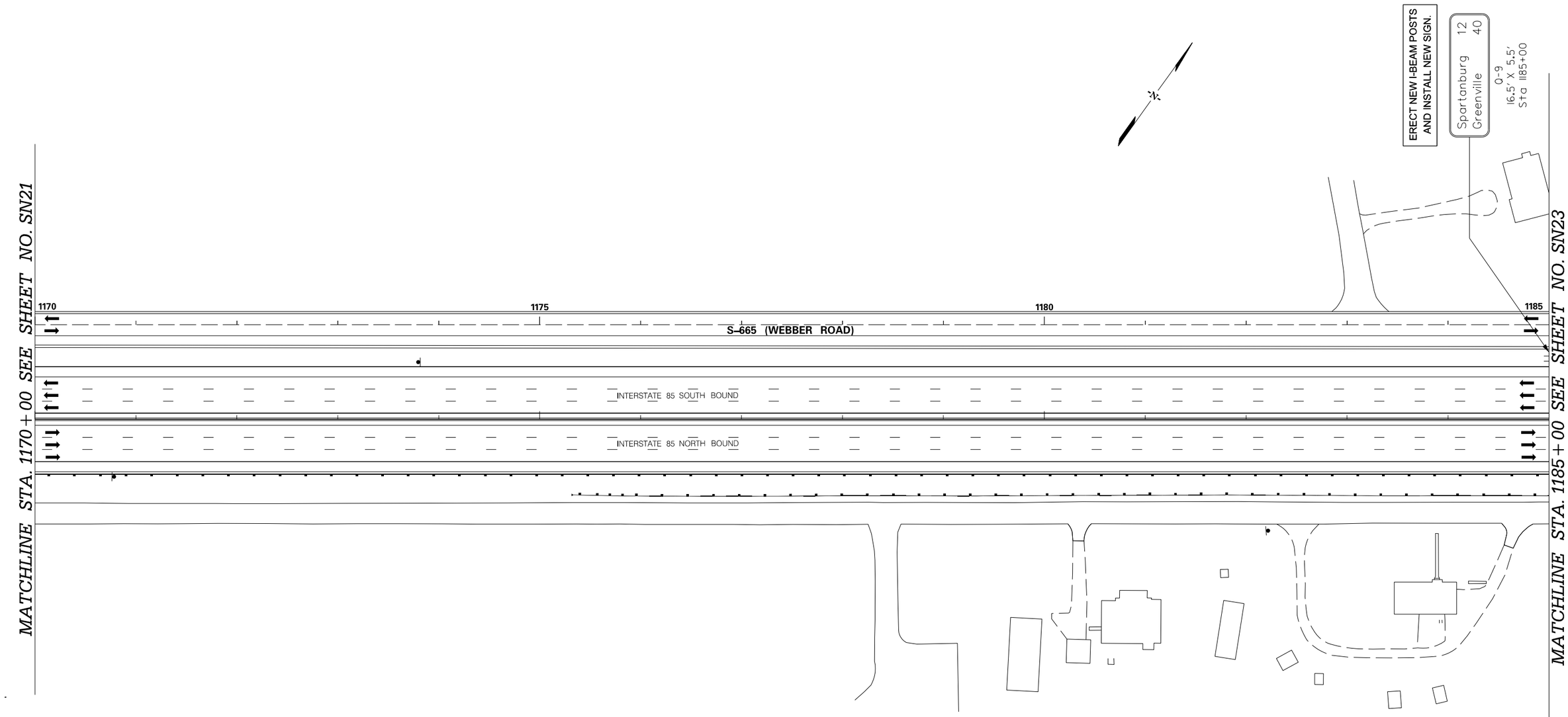
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN22



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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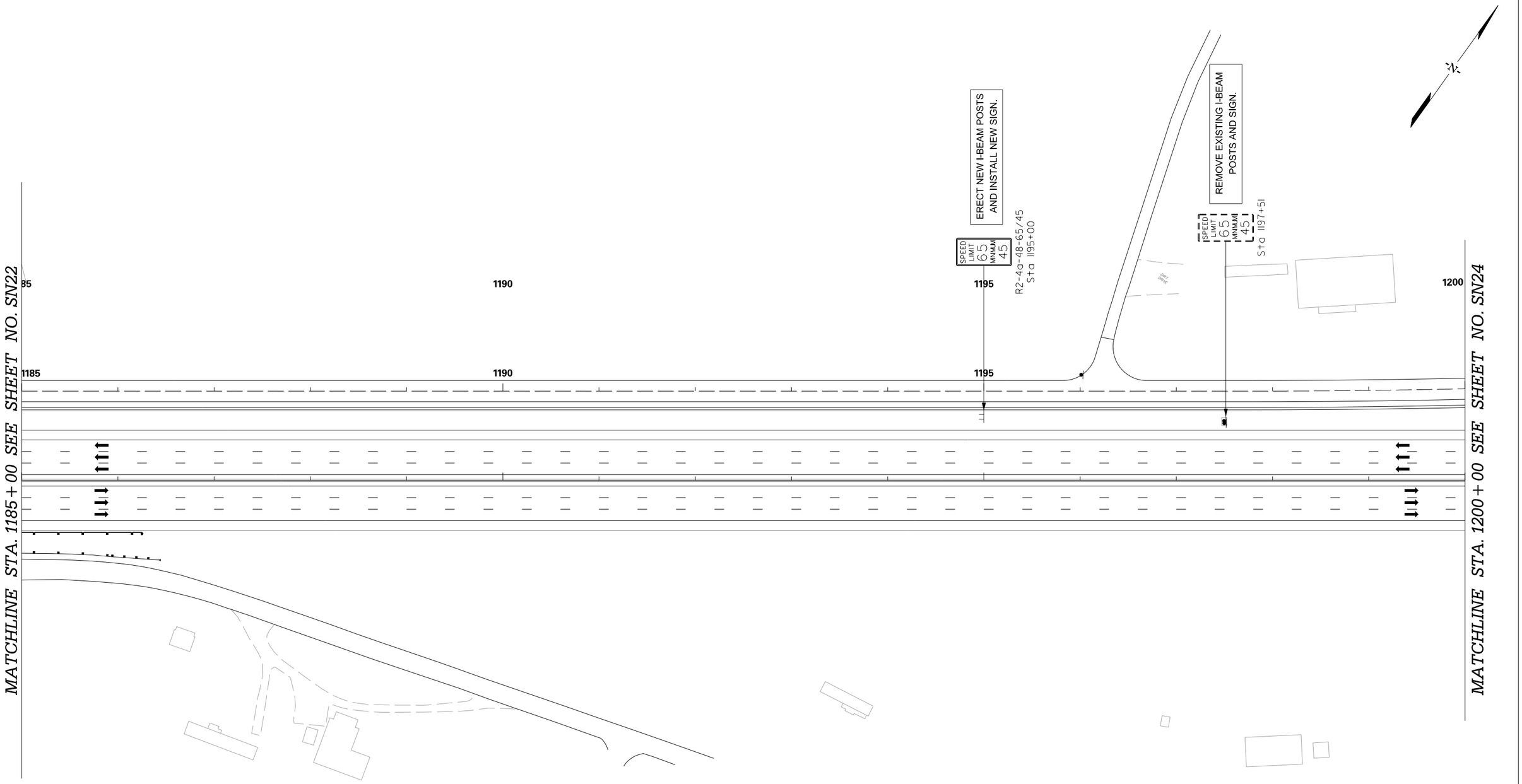
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN23



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN24

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN25

MATCHLINE STA. 1215+00 SEE SHEET NO. SN24

MATCHLINE STA. 1230+00 SEE SHEET NO. SN26

1215 1220 1225 1230

1220 1225

1220 1225

405

Green River Road

EXIT 87

OH-11-87
18.5' X 6'
EP-7.5' X 2.5'
Sta 1218+00

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

EXIT 87

M025-87
Sta 1220+40

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 87

Sta 1224+12

REMOVE EXISTING I-BEAM POSTS AND SIGN.

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN.

L000-5
8.5' X 6.5'
Sta 1225+00

CAMPING-L060

REMOVE EXISTING I-BEAM POSTS AND SIGN.

Sta 1225+46

CAMPING-L060

N

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN26

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN.

REMOVE EXISTING I-BEAM POSTS AND SIGN.

CAMPING-LOGO

LOGO-6
8.5' X 6.5'
Sta 1235+00

CAMPING-LOGO

Sta 1235+03

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 87

M1025-87
Sta 1237+92

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 87

Sta 1238+05

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 87
Green River Road

Sta 1241+36

ERECT NEW CANTILEVER STRUCTURE ON BARRIER WALL. INSTALL NEW SIGNS.

EXIT 87
Green River Road

OH-12-87
18.5' X 6'
EP-7.5' X 2.5'
Sta 1241+85

N

1230 1235 1240 1245

MATCHLINE STA. 1230+00
SEE SHEET NO. SN25

MATCHLINE STA. 1245+00 SEE SHEET NO. SN27

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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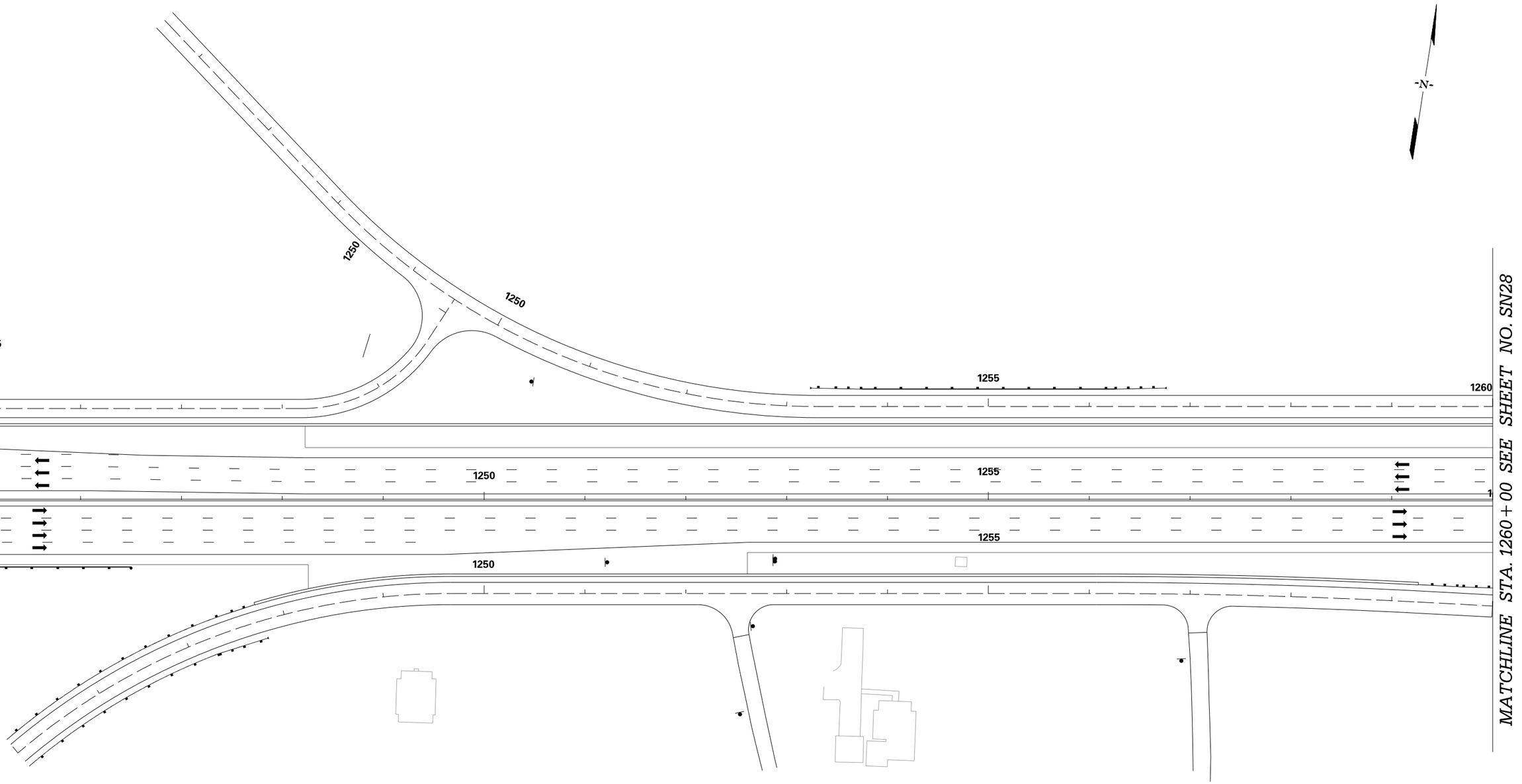
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN27



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN28

-N-

MATCHLINE STA. 1260 + 00 SEE SHEET NO. SN27

1260 1265 1270 1275

260 1265 1270

MATCHLINE STA. 1275 + 00 SEE SHEET NO. SN29

SPEED LIMIT 65 MINIMUM 45

Sta 1261+29

REMOVE EXISTING I-BEAM POSTS AND SIGN.

R2-4a-48-65/45

Sta 1267+50

SPEED LIMIT 65 MINIMUM 45

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

Gaffney 7

Charlotte 58

Sta 1271+88

REMOVE EXISTING I-BEAM POSTS AND SIGN.

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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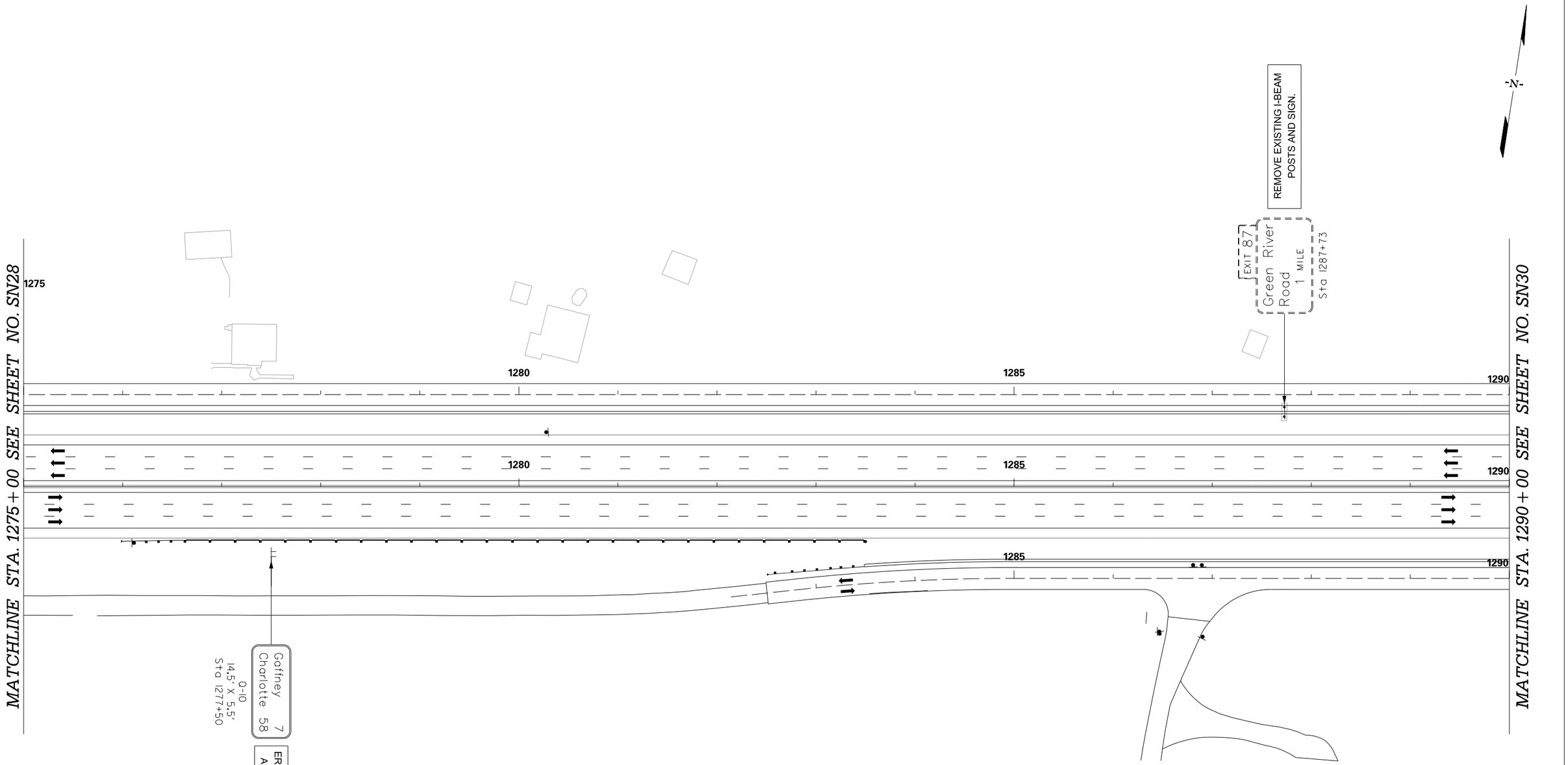
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN29



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

X:\3286900\14146.01\XXXXX (SCDOT Number)\traffic\sheets\SHT_SN29.dgn
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN30

REMOVE EXISTING I-BEAM POSTS. RELOCATE EXISTING SIGN TO STA. 1305+00.

CAMPING-LOGO
Sta 1297+22

ERECT NEW SIGN BRIDGE. INSTALL NEW SIGNS.

EXIT 87
Green River Road
1 MILE

OH-13-87
16.5' X 8'
EP-7.5' X 2.5'
Sta 1300+00

TRUCKS OVER 6 WHEELS MUST USE 2 RIGHT LANES
R4-33-84
Sta 1300+00

REMOVE EXISTING I-BEAM POSTS AND SIGN.

SPEED LIMIT 65 MINIMUM 45
Sta 1301+09

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN FROM STA. 1297+22.

CAMPING-LOGO

LOGO-7
15' X 10'
Sta 1305+00

N

1290

1295

1300

1305

MATCHLINE STA. 1290+00 SEE SHEET NO. SN29

MATCHLINE STA. 1305+00 SEE SHEET NO. SN31

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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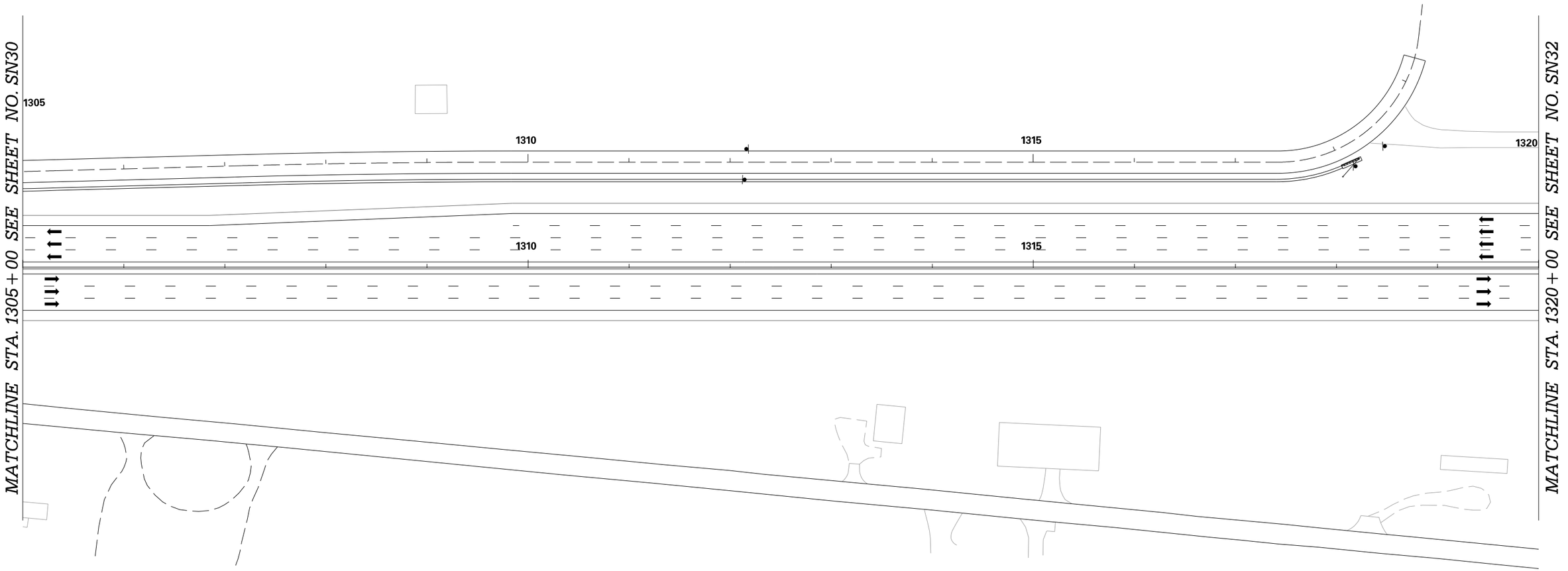
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN31

-N-



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN32

-N-

MATCHLINE STA. 1320+00 SEE SHEET NO. SN31

1320

1325

1330

1335

MATCHLINE STA. 1335+00 SEE SHEET NO. SN33

FOOD/LODGING
LOGO
LOGO-8
Sta 1325+14

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

TRUCKS OVER 6 WHEELS MUST USE 2 RIGHT LANES
R4-33-84
Sta 1331+00

EXIT 90
105
Gaffney
1 MILE
OH-14-90
11.5' X 9.5'
EP-7.5' X 2.5'
Sta 1331+00

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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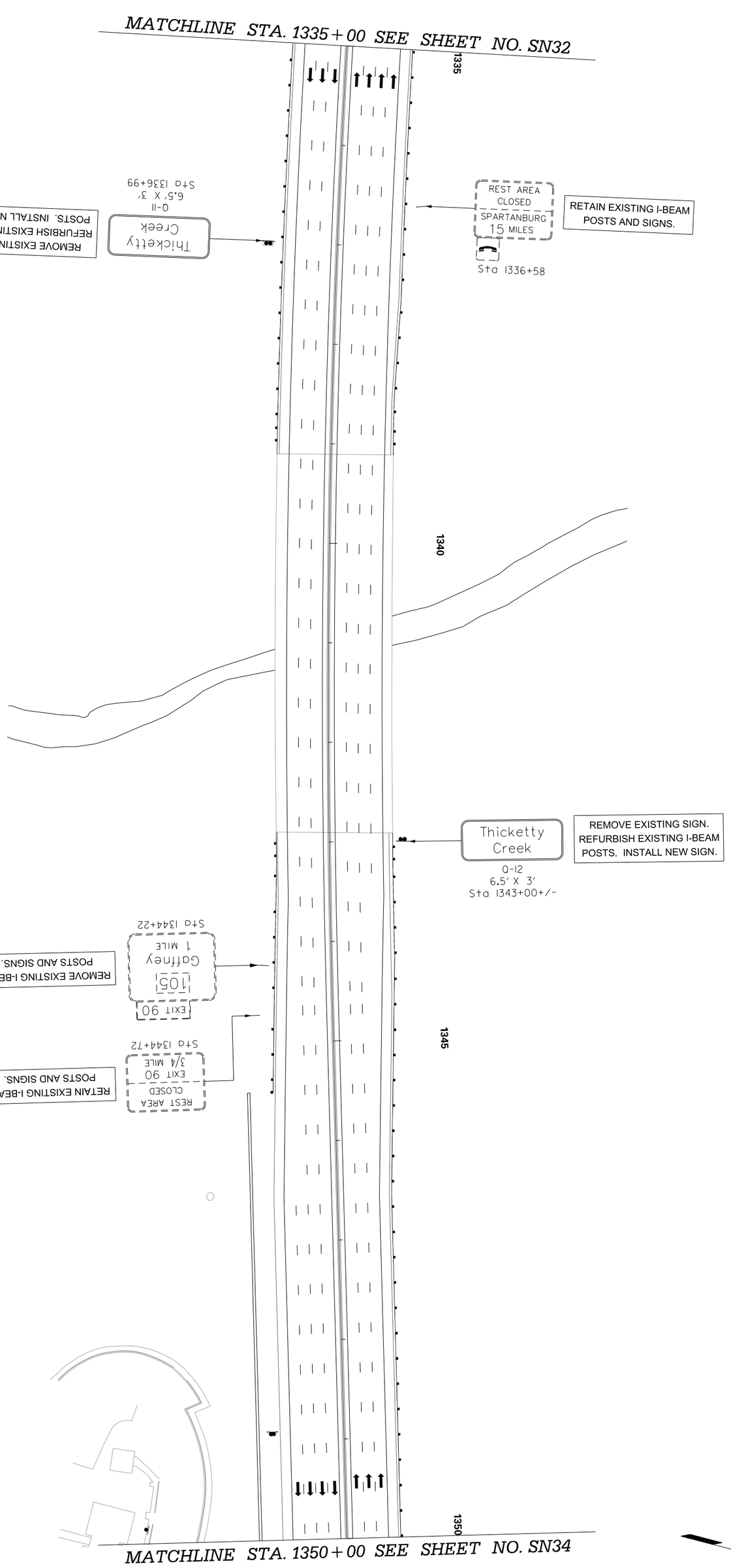
2/17/2016



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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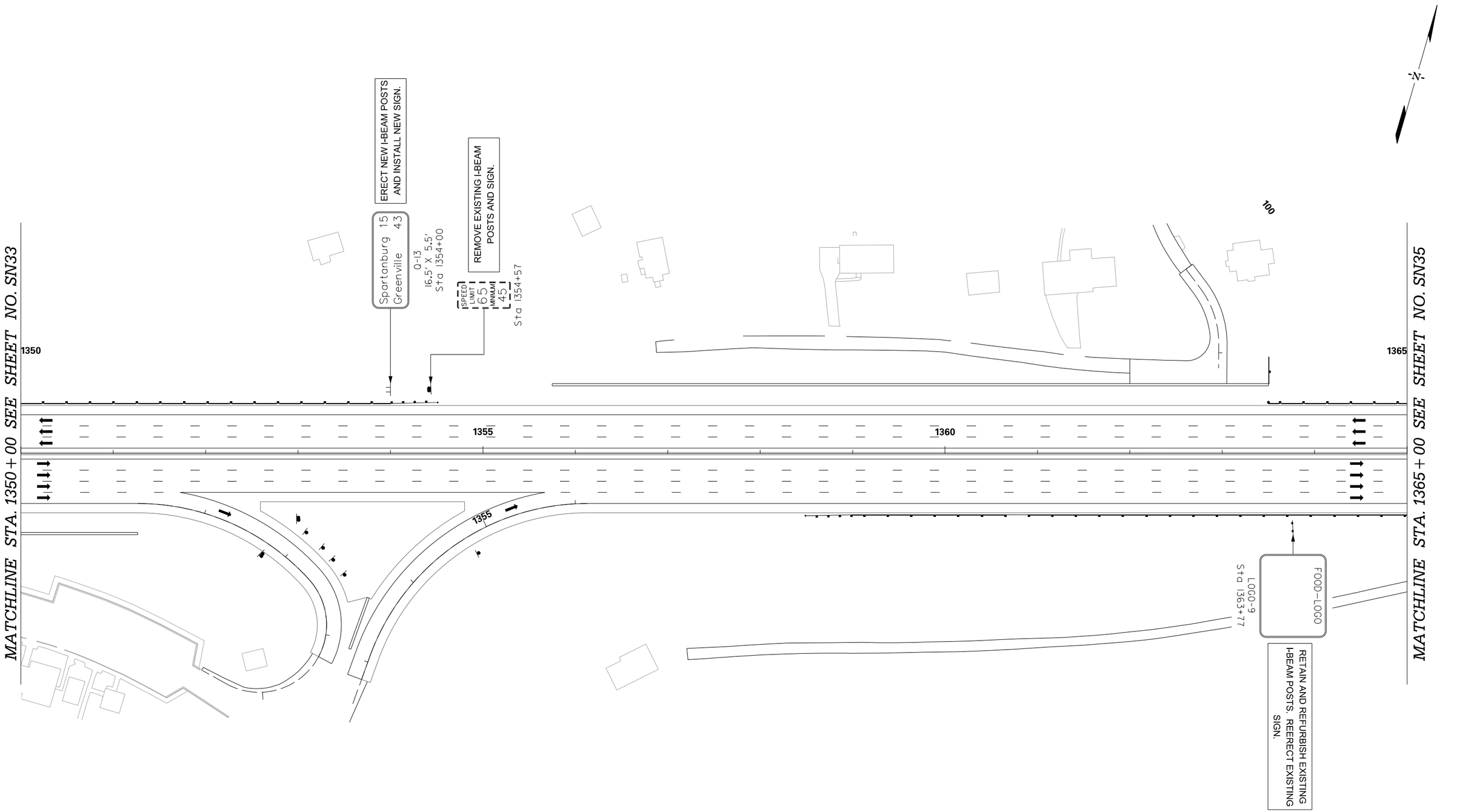
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86-90

REVISED BY NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN33

FED. RD. DN. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN34



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN35

N

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

SPEED LIMIT 65 MMMM 45

R2-4a-48-65/45
Sta 1366+00

1365

1370

1375

1380

MATCHLINE STA. 1365+00 SEE SHEET NO. SN34

MATCHLINE STA. 1380+00 SEE SHEET NO. SN36

1380

GAS-LOGO

LOGO-10
Sta 1371+80

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN36

N

MATCHLINE STA. 1380+00
SEE SHEET NO. SN35

MATCHLINE STA. 1395+00
SEE SHEET NO. SN37

1380
1385
1390
1395

REMOVE EXISTING I-BEAM POSTS AND SIGN.
EXIT 90 Gaffney 105
Sta 1388+49

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.
OH-I5-90
14.5' X 7.5'
EP-7.5' X 2.5'
Sta 1390+35

EXIT 90 Gaffney 105

REMOVE EXISTING I-BEAM POSTS AND SIGN.
EXIT 90
MI025-90
Sta 1392+45

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.
EXIT 90
MI025-90
Sta 1392+55

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN37

MATCHLINE STA. 1395+00 SEE SHEET NO. SN36

MATCHLINE STA. 1410+00 SEE SHEET NO. SN38

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

LODGING–LOGO

LOGO-II
Sta 1404+74

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 90

MI025-90
Sta 1405+30

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 90

Sta 1405+41

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

EXIT 90
105
Gaffney

OH-I6-90
14.5' X 7.5'
EP-7.5' X 2.5'
Sta 1409+75

1395 1400 1405 1410

1395 1400 1405

1405

1400

120

X:\3286900\14416.01\XXXXX (SCDOT Number)\traffic\sheets\SHT_SN37.dgn
2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN38

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 90
105
Gaffney
Sta 1411+31

MATCHLINE STA. 1410+00 SEE SHEET NO. SN37

MATCHLINE STA. 1425+00 SEE SHEET NO. SN39

1410 1415 1420 1425

1410 1415 1420

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P027114	INTERSTATE 85	SN39

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86–90

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2/17/2016

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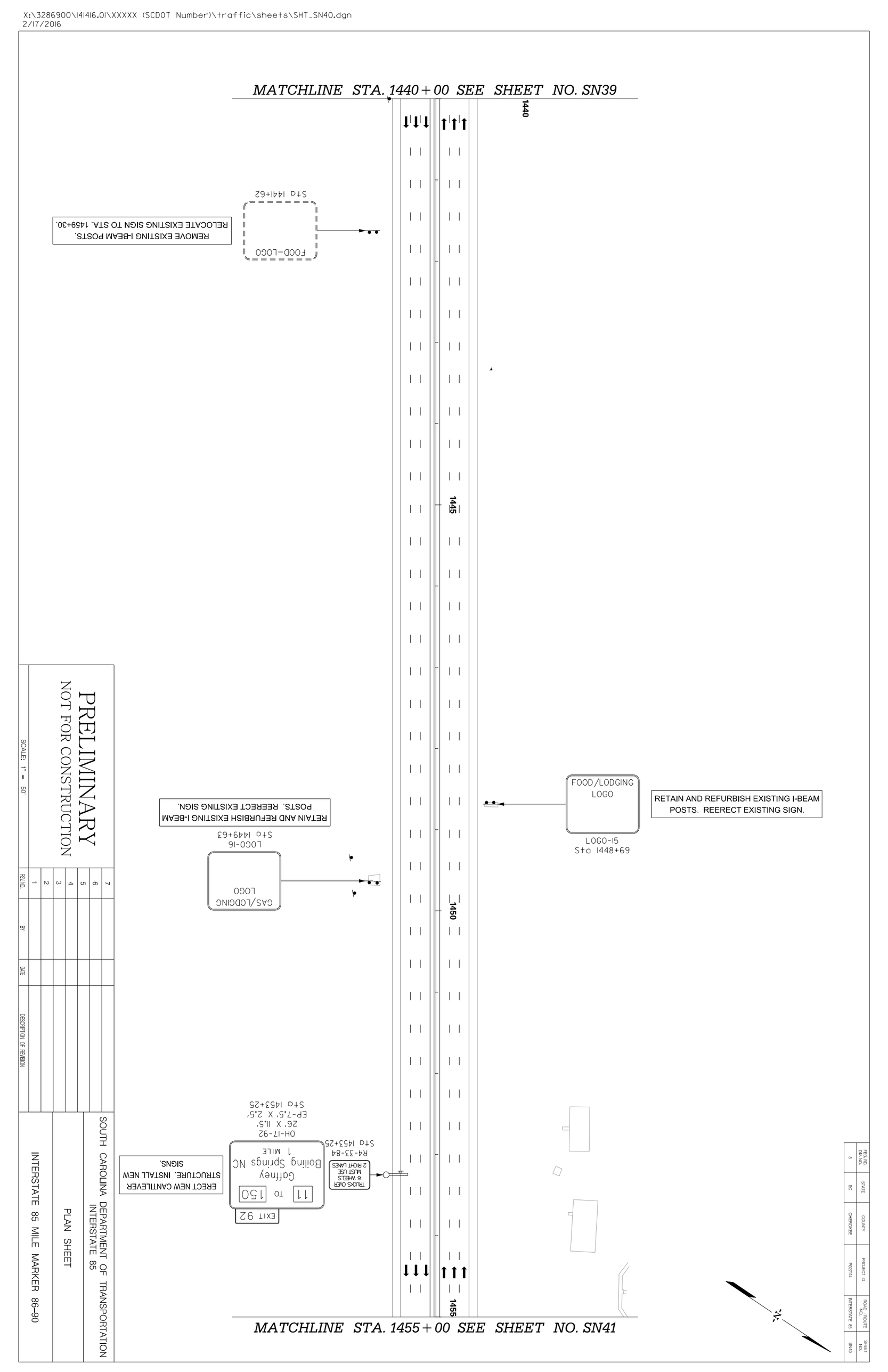
2/17/2016



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
1			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86-90

REVISION NO.	STATE	COUNTY	PROJECT ID	ROUTE/ROUTE NO.	SHEET NO.
3	SC	CHEROKEE	P037H	INTERSTATE 85	SN40

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2/17/2016

MATCHLINE STA. 1455+00 SEE SHEET NO. SN40

1455

EXIT 90
105
Gaffney
1 MILE
Sta 1457+12

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

EXIT 92
Spartanburg Comm. College Cherokee Campus
NEXT RIGHT
Sta 1459+21

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

FOOD-LODG
LODG-17
15' X 10'
Sta 1459+30

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN FROM STA. 1441+62.

1460

1465

EXIT 90
105
Gaffney
1 MILE

TRUCKS OVER 6 WHEELS MUST USE 2 RIGHT LANES
R4-33-84
Sta 1466+00

OH-18-90
11.5' X 9.5'
EP-7.5' X 2.5'
Sta 1466+00

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

Gaffney
City Limit
Sta 1468+11

REMOVE EXISTING I-BEAM POSTS AND SIGN.

Gaffney
City Limit
0-14
6' X 3'
Sta 1468+15

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

1470

MATCHLINE STA. 1470+00 SEE SHEET NO. SN42

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REVISIONS NO.	BY	DATE	DESCRIPTION OF REVISION
1			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86-90

REVISIONS NO.	3
STATE	SC
COUNTY	CHEROKEE
PROJECT ID	P037174
ROAD / ROUTE NO.	INTERSTATE 85
SHEET NO.	SN41

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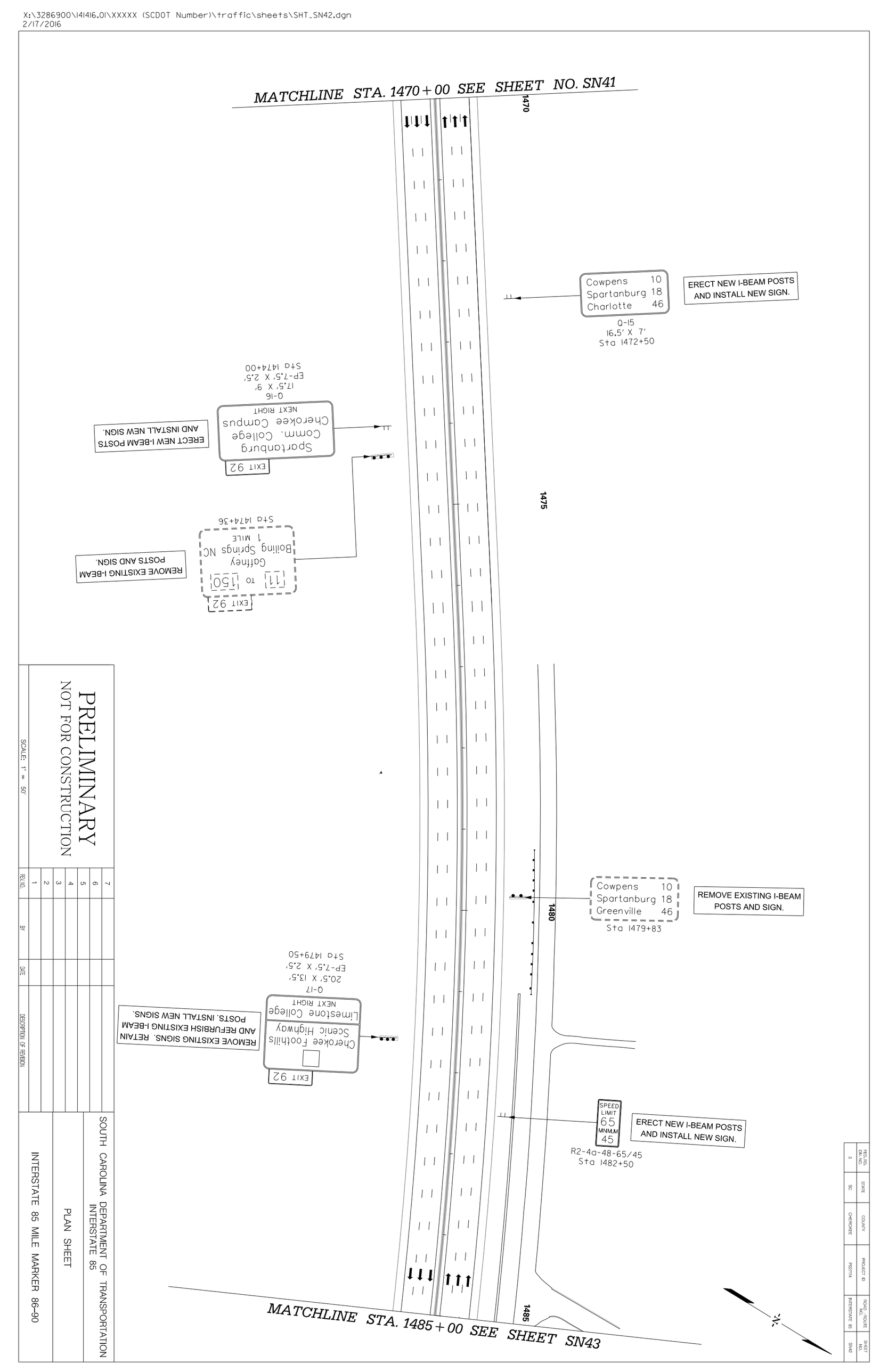
2/17/2016



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REVISION NO.	BY	DATE	DESCRIPTION OF REVISION
1			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 86-90

REVISION NO.	3
STATE	SC
COUNTY	CHEROKEE
PROJECT ID	P027174
ROAD / ROUTE NO.	INTERSTATE 85
SHEET NO.	SN42

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN43

REMOVE EXISTING I-BEAM POSTS AND SIGN.

SPEED LIMIT 65 MINIMUM 45

Sta 1490+58

1485

1490

1495

1500

N

ROAD S-666 (PEACHOID ROAD)

ROAD S-659 (WINDSLOW AVENUE)

MATCHLINE STA. 1485+00 SEE SHEET SN42

MATCHLINE STA. 1500+00 SEE SHEET NO. SN44

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

X:\328900\14146.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN43.dgn
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN44

-N-

1500

1505

1510

1515

ROAD S-666 (PEACHOID ROAD)

ROAD S-659 (WINDSLOW AVENUE)

MATCHLINE STA. 1500+00 SEE SHEET NO. SN43

MATCHLINE STA. 1515+00 SEE SHEET NO. SN45

EXIT 92
Boiling Springs NC
Sta 1510+33
[11] to [150]

REMOVE EXISTING I-BEAM POSTS AND SIGN.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

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2/17/2016

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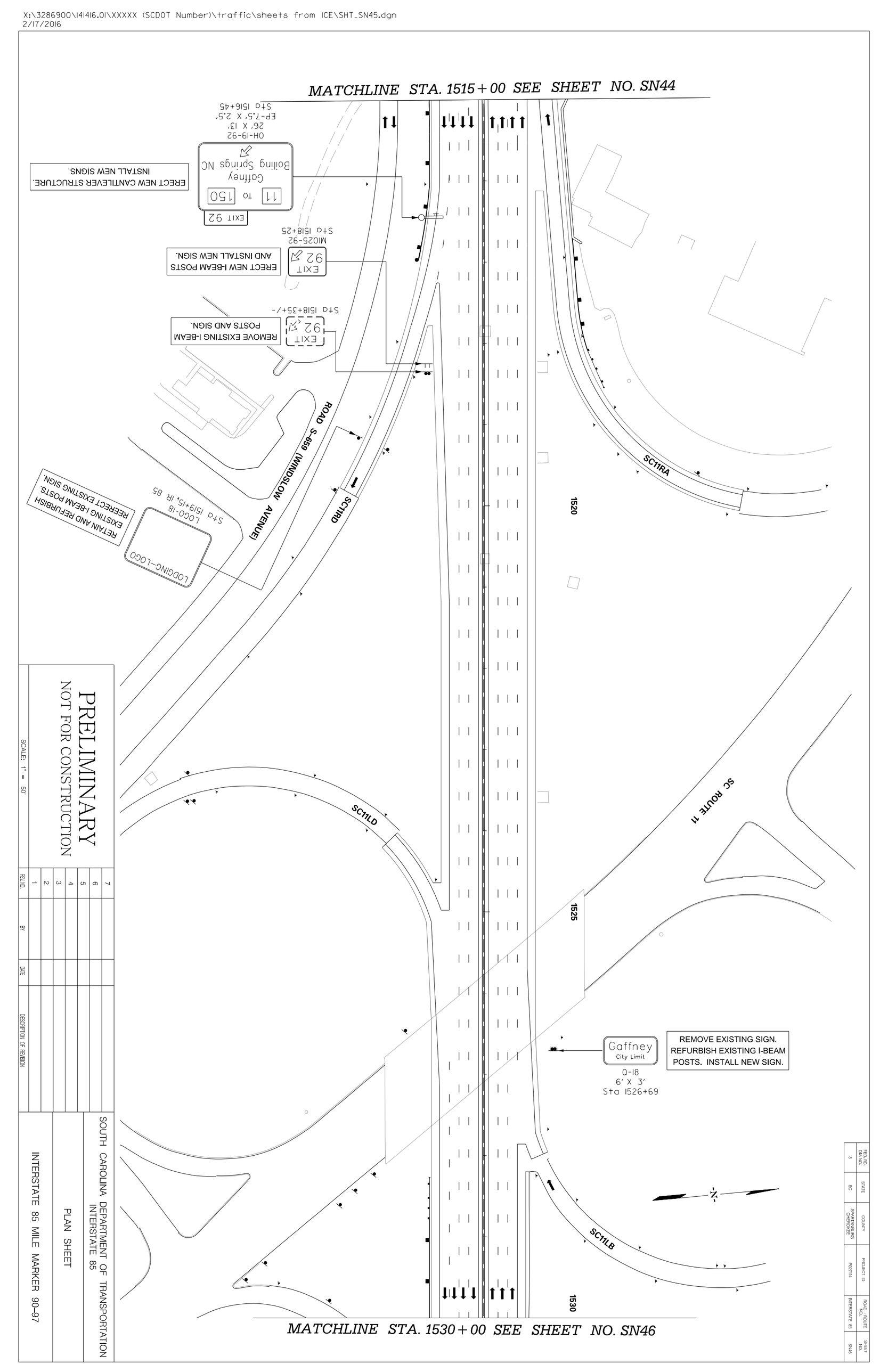
2/17/2016



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

REVISION NO.	3
STATE	SC
COUNTY	SPARTANBURG CHEROKEE
PROJECT ID	P027174
ROAD / ROUTE NO.	INTERSTATE 85
SHEET NO.	SN45

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN46

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 92
MI025-92
Sta 1534+12

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 92
Sta 1534+20

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

EXIT 92
11
Chesnee
Gaffney
OH-20-92
15.5' X 10'
EP-7.5' X 2.5'
Sta 1536+80

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 92
11
Chesnee
Gaffney
Sta 1543+43

-N-

ROAD S-668 (WILCOX AVENUE)

SC11RB

1535

1540

1545

SC11RC

CRESTHAVEN DRIVE

MATCHLINE STA. 1530+00 SEE SHEET NO. SN45

MATCHLINE STA. 1545+00 SEE SHEET NO. SN47

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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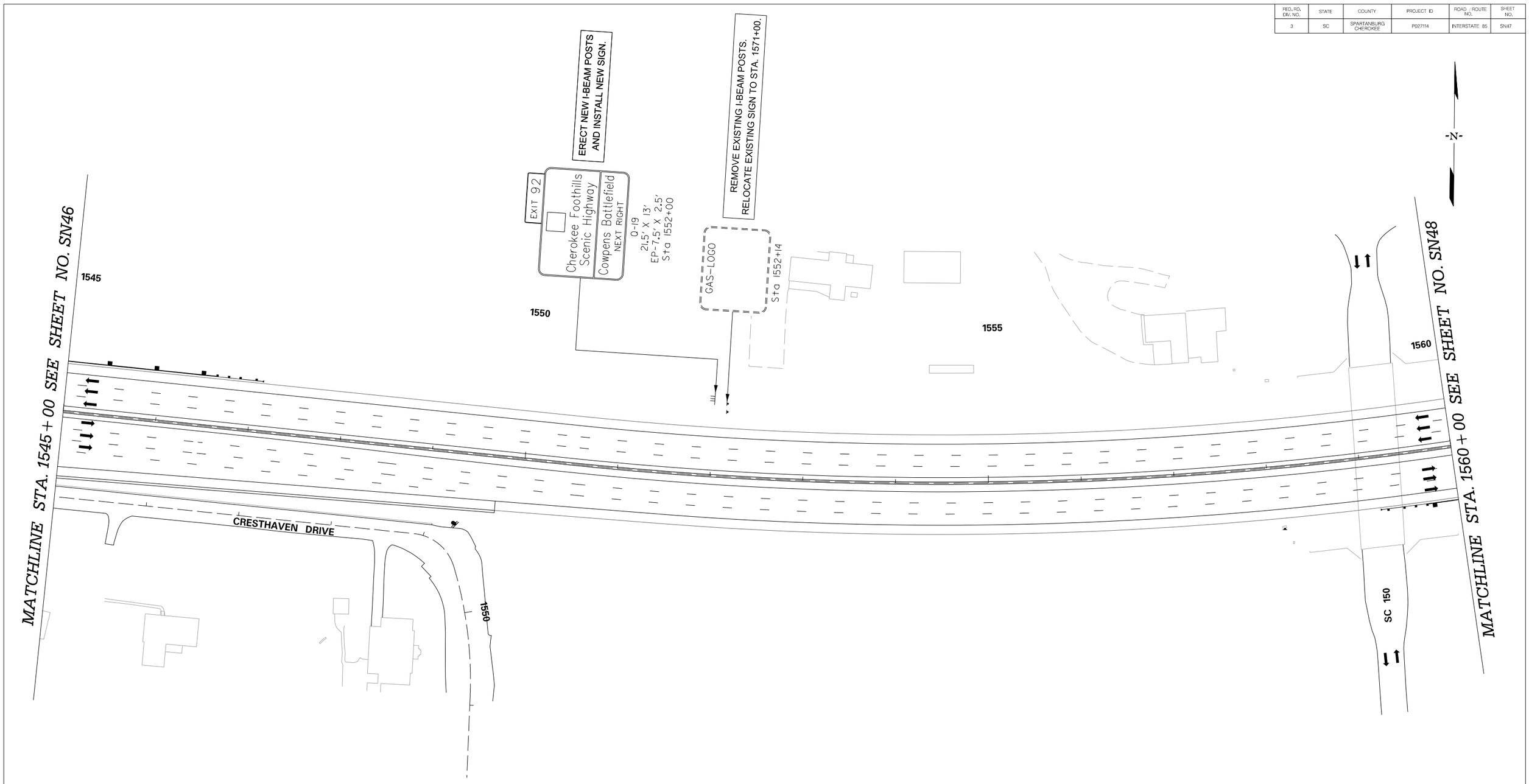
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN47



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN48

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 92
Cherokee Foothills Scenic Highway
Cowpens Battlefield
NEXT RIGHT
Sta 1560+73

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 92
Spartanburg Comm. College Cherokee Campus
NEXT RIGHT

0-20
17.5' X 9'
EP-7.5' X 2.5'
Sta 1560+80

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

FOOD-LOGO

LOGO-19
Sta 1565+67

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

EXIT 92
Spartanburg Comm. College Cherokee Campus
NEXT RIGHT
Sta 1570+54

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN FROM STA. 1552+14.

GAS-LOGO

LOGO-20
15' X 10'
Sta 1571+00

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 92
Chesnee Gaffney
1 MILE
Sta 1574+61

N

1560

1565

1570

1575

MATCHLINE STA. 1560+00 SEE SHEET NO. SN47

MATCHLINE STA. 1575+00 SEE SHEET NO. SN49

ROAD S-668 (WILCOX AVENUE)

CANTY WAY

ROAD S-661 (HAMPSHIRE DRIVE)

R2-4a-48-65/45
Sta 1565+50

SPEED LIMIT
65
MINIMUM
45

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

SPEED LIMIT
65
MINIMUM
45
Sta 1572+15

REMOVE EXISTING I-BEAM POSTS AND SIGN.

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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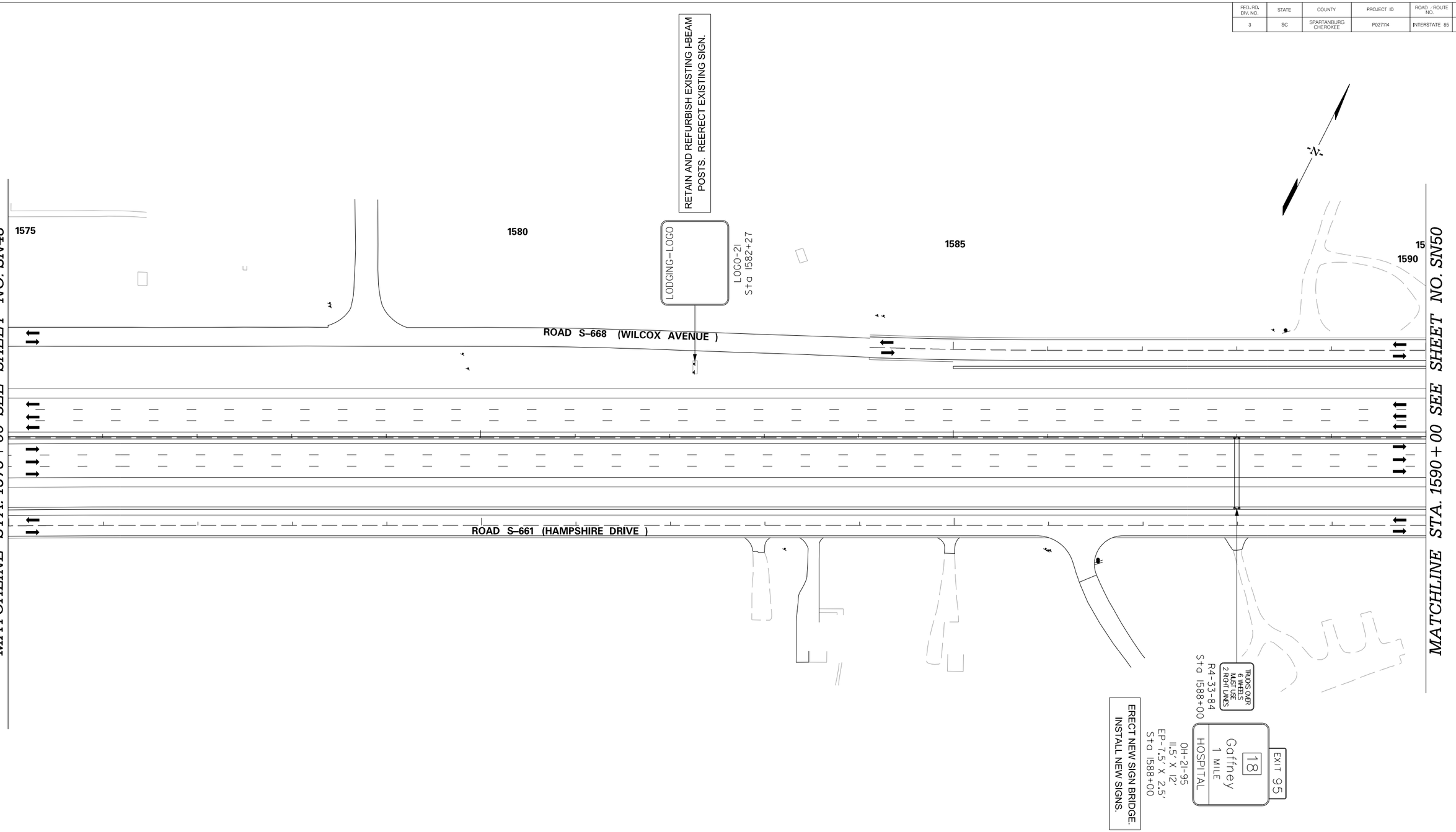
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN49



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN50

MATCHLINE STA. 1590+00 SEE SHEET NO. SN49

MATCHLINE STA. 1605+00 SEE SHEET NO. SN51

1590 1595 1600 1605

ERECT NEW SIGN BRIDGE.
INSTALL NEW SIGNS.

EXIT 92
11
Chesnee
Gaffney
1 MILE

OH-22-92
12' X 11.5'
EP-7.5' X 2.5'
Sta 1596+50

TRUCKS OVER 6 WHEELS MUST USE 2 RIGHT LANES
R4-33-84
Sta 1596+50

MOBILE HOME PARK DRIVE

N

ROAD S-661 (HAMPSHIRE DRIVE)

EXIT 95
18
Gaffney
3/4 MILE
HOSPITAL
Sta 1590+61

REMOVE EXISTING I-BEAM POSTS AND SIGN.

LOGO-22
Sta 1598+68

FOOD – LOGO

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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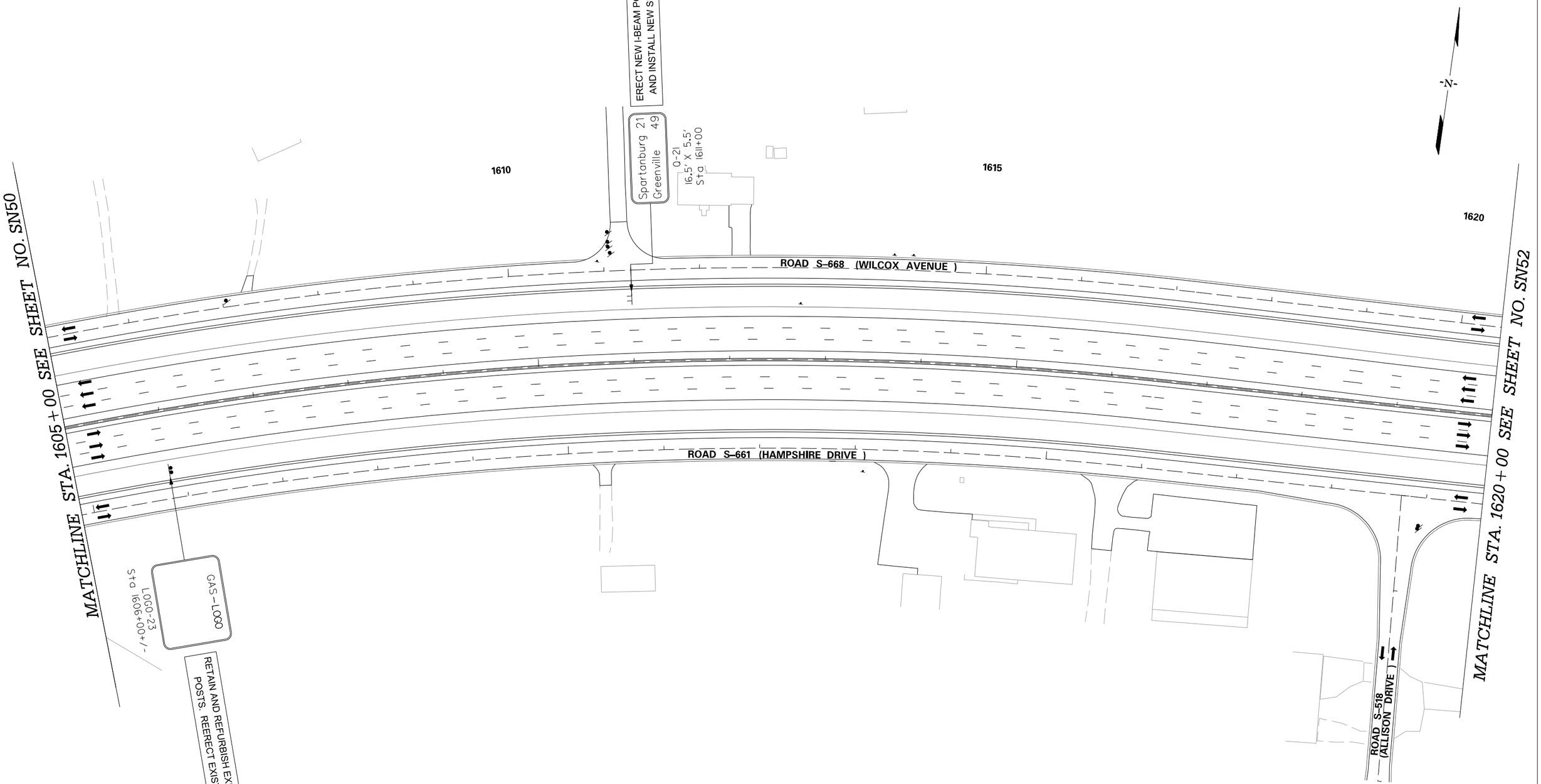
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN51



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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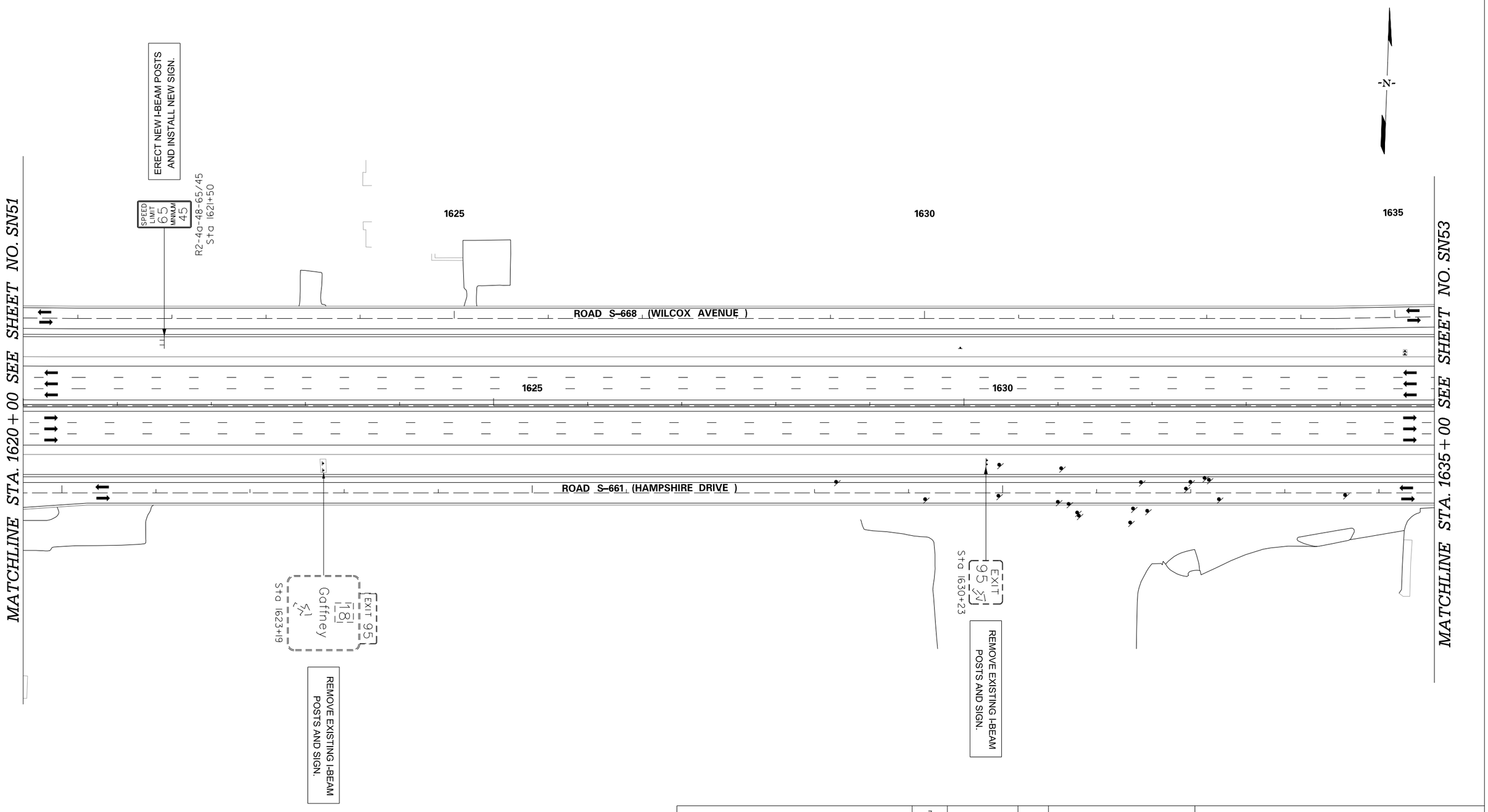
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN52



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

X:\328690\141416.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN52.dgn
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN53

-N-

1650

1640

1645

REMOVE EXISTING I-BEAM POSTS AND SIGN.

SPEED LIMIT 65 MINIMUM 45

Sta 1636+11

RETAIN EXISTING VMS AND STRUCTURE.

VMS

ROAD S-668 (WILCOX AVENUE)

ROAD S-661 (HAMPSHIRE DRIVE)

MATCHLINE STA. 1635+00 SEE SHEET NO. SN52

MATCHLINE STA. 1650+00 SEE SHEET NO. SN54

18 Gaffney EXIT 95

OH-23-95
14' X 7.5'
EP-7.5' X 2.5'
Sta 1643+25

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

EXIT 95

MI025-95
Sta 1647+68

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

1645

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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2/17/2016

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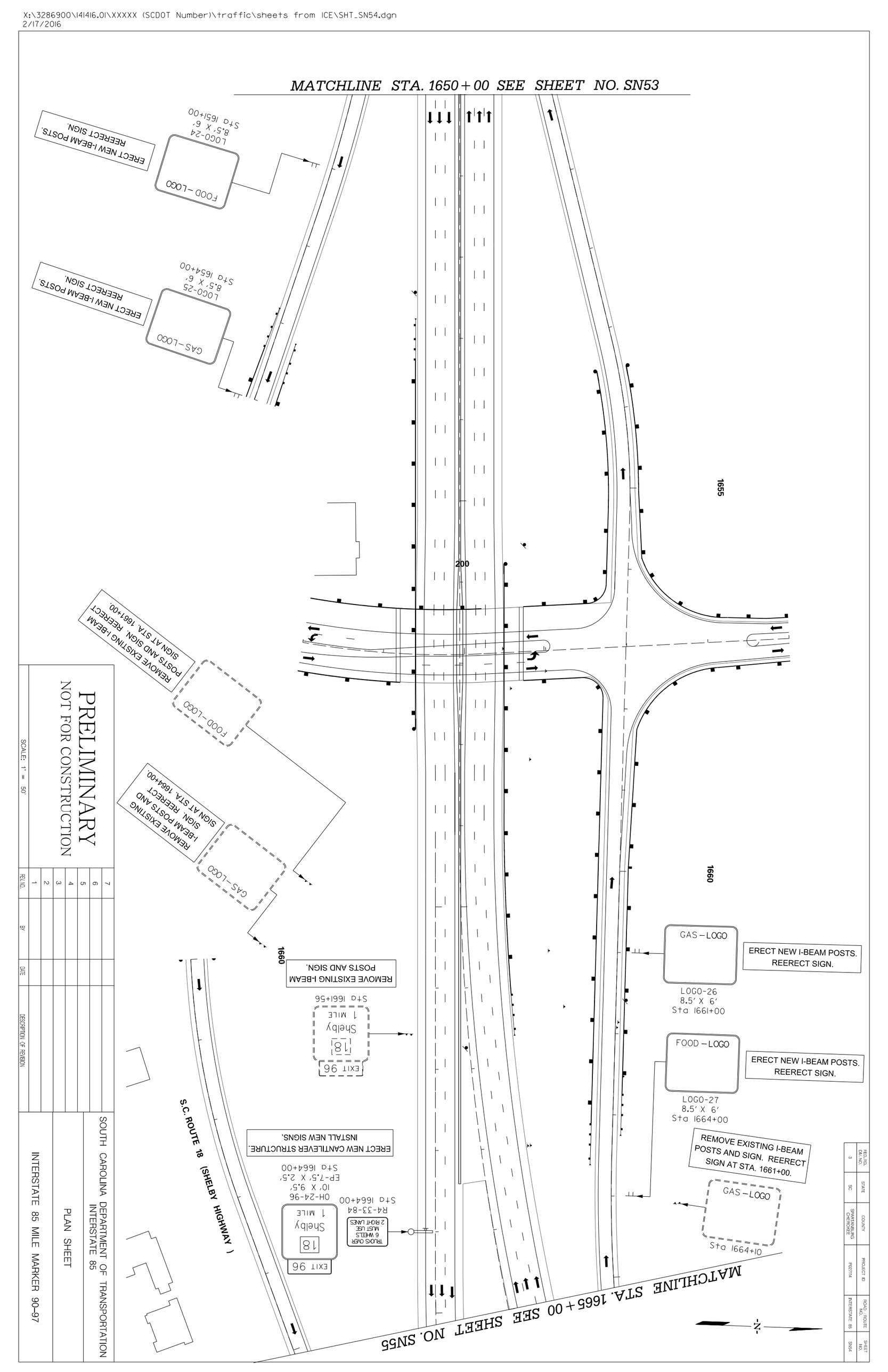
2/17/2016



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

REVISION NO.	3
STATE	SC
COUNTY	SPARTANBURG CHEROKEE
PROJECT ID	P027174
ROAD / ROUTE NO.	INTERSTATE 85
SHEET NO.	SN54

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN55

MATCHLINE STA. 1665+00 SEE SHEET NO. SN54

GAS-LOGO

REMOVE EXISTING I-BEAM POSTS AND SIGN. REERECT SIGN AT STA. 1664+00.

REMOVE EXISTING I-BEAM POSTS AND SIGN.

EXIT 95
MI025-95
Sta 1667+58

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 95
MI025-95
Sta 1668+44

1670

EXIT 95
TO 18 150
Pleasant School Rd
Boiling Springs N.C.
Gaffney
Sta 1672+65

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

EXIT 95
TO 18 150
Pleasant School Rd
Boiling Springs N.C.
Gaffney

1675

OH-25-95
26.5' X 16.5'
EP-7.5' X 2.5'
Sta 1674+90

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

N

ROAD S-668 (WILCOX AVENUE)

130

S.C. ROUTE 18 (SHELBY HIGHWAY)

125

MATCHLINE STA. 1680+00 SEE SHEET NO. SN56

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN56

ERECT NEW I-BEAM POSTS. REERECT SIGN.

GAS–LOGO

LOGO-28
15' X 10'
Sta 1681+50

REMOVE EXISTING I-BEAM POSTS. RETAIN SIGN AND REERECT AT STA. 1681+50.

GAS–LOGO

Sta 1681+65

REMOVE EXISTING SIGNS. RETAIN AND REFURBISH EXISTING I-BEAM POSTS. INSTALL NEW SIGNS.

EXIT 95

Limestone College

NEXT RIGHT

O-22
12' X 6.5'
EP-7.5' X 2.5'
Sta 1688+53

N

1680 1685 1690 1695

ROAD S–668 (WILCOX AVENUE)

MATCHLINE STA. 1680+00 SEE SHEET NO. SN55

MATCHLINE STA. 1695+00 SEE SHEET NO. SN57

1690

1685

S.C. ROUTE 18 (SHELBY HIGHWAY)

GAS/FOOD–LOGO

Sta 1695+00

REMOVE EXISTING I-BEAM POSTS. RETAIN SIGN AND REERECT AT STA. 1701+50.

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2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

X:\3286900\141416.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN57.dgn
2/17/2016

MATCHLINE STA. 1695+00 SEE SHEET NO. SN56

1695

EXIT 95
TO 18 150
Pleasant School Rd
Boiling Springs N.C.
Gaffney
1/2 MILE
HOSPITAL
Sta 1695+14

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

SPEED LIMIT 65 MNMUM 45
R2-4a-48-65/45
Sta 1697+50

ERECT NEW I-BEAM POSTS. INSTALL NEW SIGN.

CHEROKEE CREEK

Cherokee Creek
O-23
6.5' X 3'
Sta 1699+34

REMOVE EXISTING SIGN. REFURBISH EXISTING I-BEAM POSTS. INSTALL NEW SIGN.

1700

Cherokee Creek
O-24
6.5' X 3'
Sta 1700+74

REMOVE EXISTING SIGN. REFURBISH EXISTING I-BEAM POSTS. INSTALL NEW SIGN.

GAS/FOOD-LOGO
LO60-29
15' X 10'
Sta 1701+50

ERECT NEW I-BEAM POSTS AND REERECT EXISTING SIGN FROM STA. 1695+00.

ROAD S-688 (WILCOX AVENUE)

TRUCKS OVER 6 WHEELS MUST USE 2 RIGHT LANES
R4-33-84
Sta 1702+00

EXIT 95
TO 18 150
Pleasant School Rd
Boiling Springs N.C.
Gaffney
1/2 MILE
HOSPITAL
OH-26-95
26.5' X 17.5'
EP-7.5' X 2.5'
Sta 1702+00

ERECT NEW SIGN BRIDGE. INSTALL NEW SIGNS.

S.C. ROUTE 18 (SHELBY HIGHWAY)

FOOD-LOGO
Sta 1704+13

REMOVE EXISTING I-BEAM POSTS. RETAIN SIGN AND REERECT AT STA. 1709+50.

1705

FOOD-LOGO
LOGO-30
15' X 10'
Sta 1709+50

ERECT NEW I-BEAM POSTS. REERECT SIGN.

MATCHLINE STA. 1710+00 SEE SHEET NO. SN58

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

REGION NO.	3
STATE	SC
COUNTY	SPARTANBURG CHEROKEE
PROJECT ID	P037H
ROAD NO. / ROUTE NO.	INTERSTATE 85
SHEET NO.	SN57

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN58

N

MATCHLINE STA. 1710+00 SEE SHEET NO. SN57

REMOVE EXISTING I-BEAM POSTS AND SIGNS.

SPEED LIMIT 65 MINIMUM 45

Sta 1710+92

ROAD S-668 (WILCOX AVENUE)

1720

MATCHLINE STA. 1725+00 SEE SHEET NO. SN59

EXIT 96 (18) Shelby

Sta 1713+85

REMOVE EXISTING I-BEAM POSTS AND SIGN.

S.C. ROUTE 18 (SHELBY HIGHWAY)

OH-27-96
13' X 7.5'
EP-7.5' X 2.5'
Sta 1718+05

EXIT 96 (18) Shelby

ERECT NEW CANTILEVER STRUCTURE. INSTALL NEW SIGNS.

MI025-96
Sta 1722+64

EXIT 96

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

EXIT 96

Sta 1723+61

REMOVE EXISTING I-BEAM POSTS AND SIGN.

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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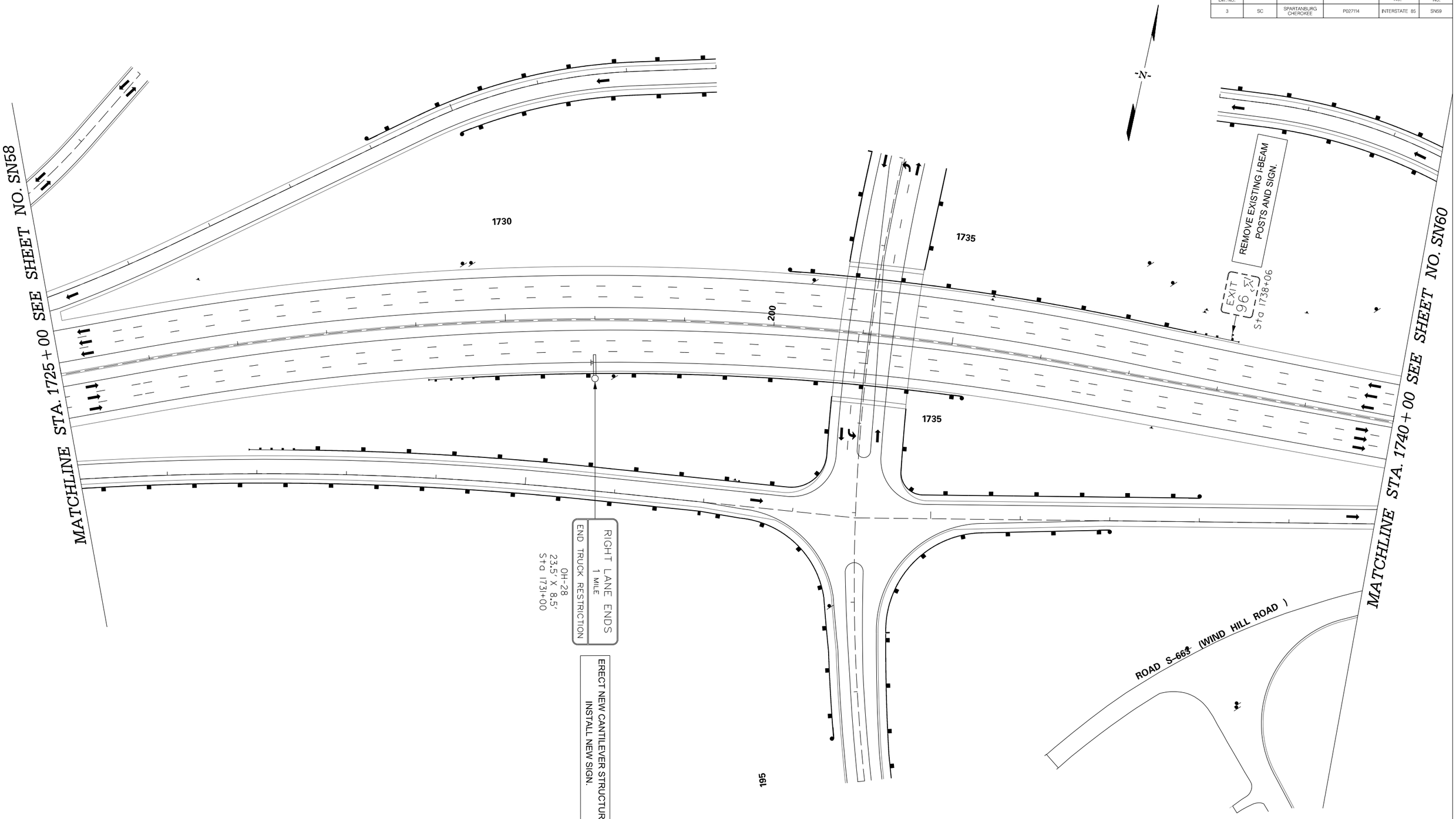
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN59



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

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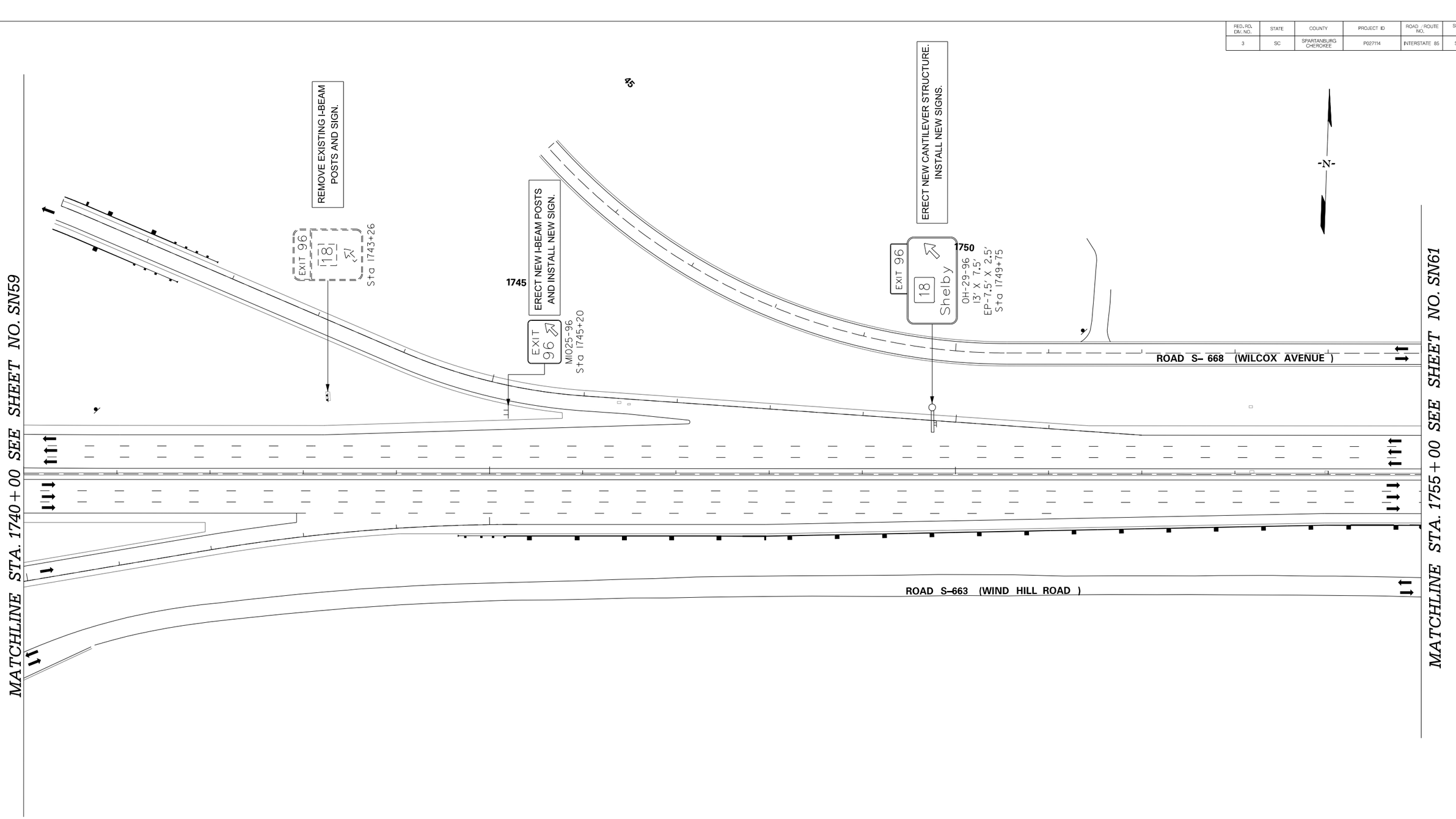
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN60



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

X:\3286900\14146.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN60.dgn
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN61

-N-

MATCHLINE STA. 1755+00 SEE SHEET NO. SN60

1760

ROAD S– 668 (WILCOX AVENUE)

RETAIN AND REFURBISH EXISTING I-BEAM POSTS. REERECT EXISTING SIGN.

GAS/FOOD–LOGO

LOGO-31
Sta 1765+34

1765

1770

MATCHLINE STA. 1770+00 SEE SHEET NO. SN62

ROAD S–663 (WIND HILL ROAD)

Sta 1759+00

SPEED LIMIT 65 MINIMUM 45

REMOVE EXISTING I-BEAM POSTS AND SIGN.

R2-4a-48-65/45
Sta 1769+00

SPEED LIMIT 65 MINIMUM 45

ERECT NEW I-BEAM POSTS AND INSTALL NEW SIGN.

X:\3286900\141416.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN61.dgn
2/17/2016

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

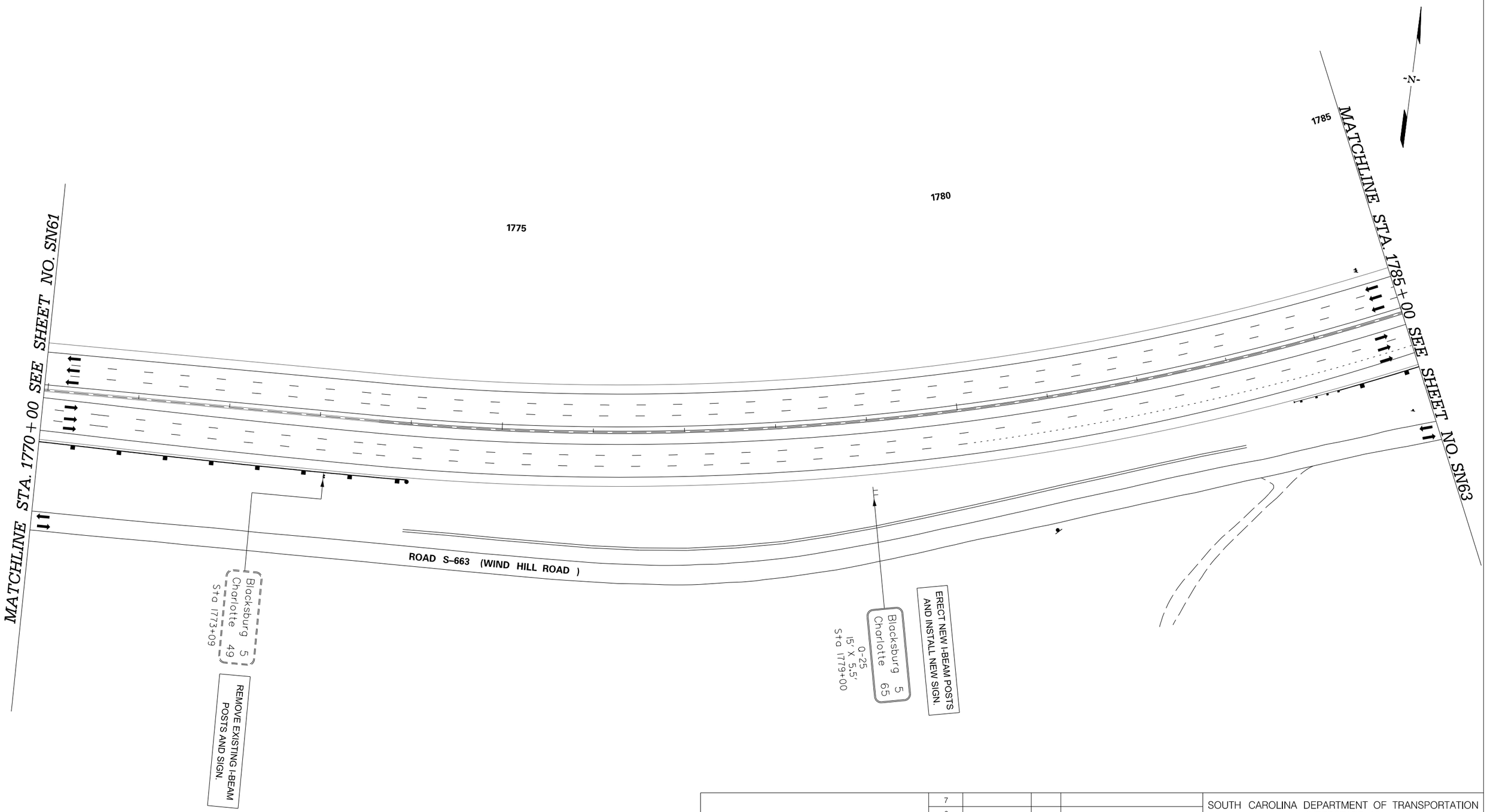
REV.NO.	BY	DATE	DESCRIPTION OF REVISION
7			
6			
5			
4			
3			
2			
1			

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

FED.RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN62



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
7			
6			
5			
4			
3			
2			
1			

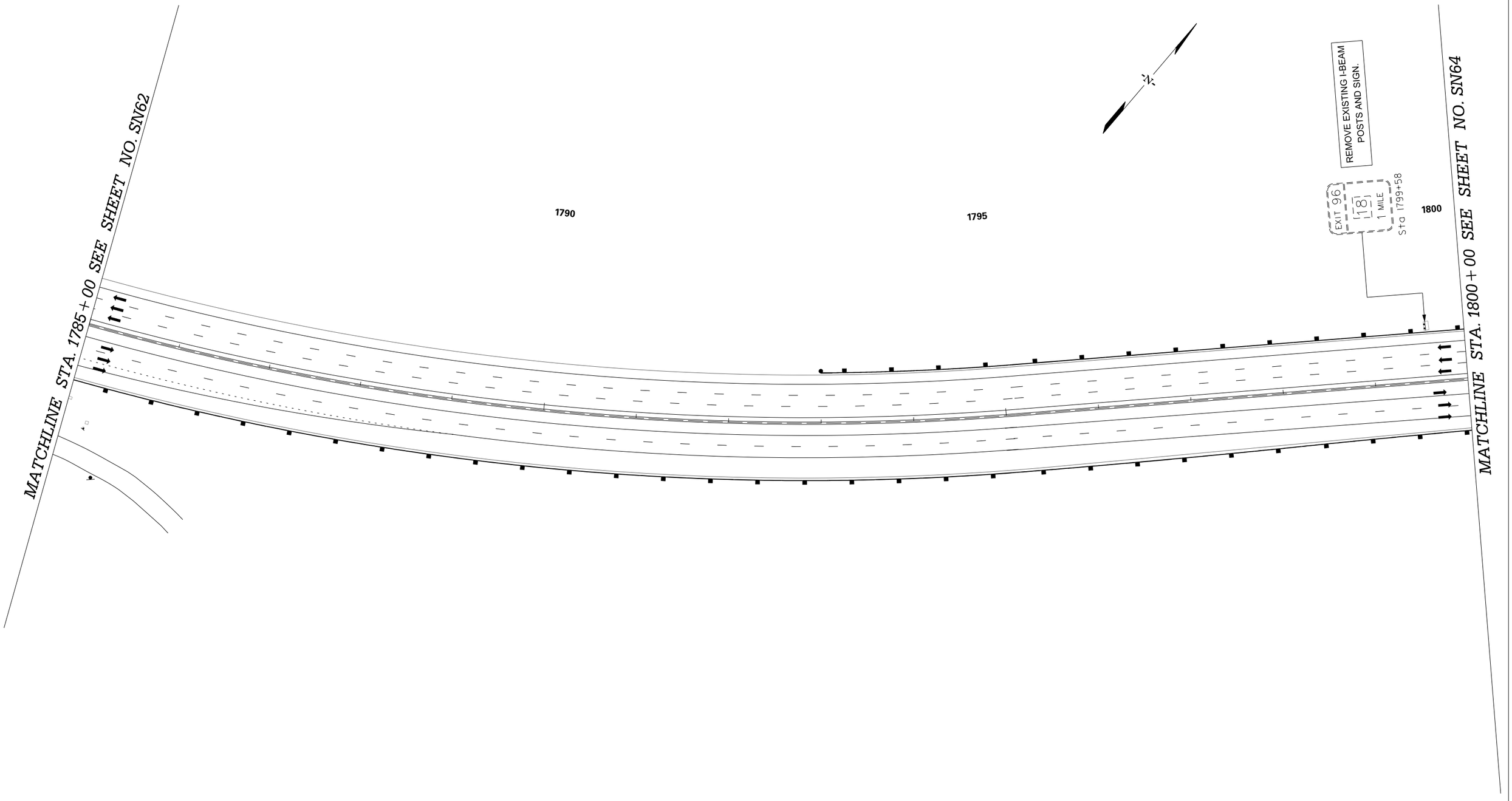
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

X:\3286900\14146.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN62.dgn
2/17/2016

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P027114	INTERSTATE 85	SN63



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
7			
6			
5			
4			
3			
2			
1			

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

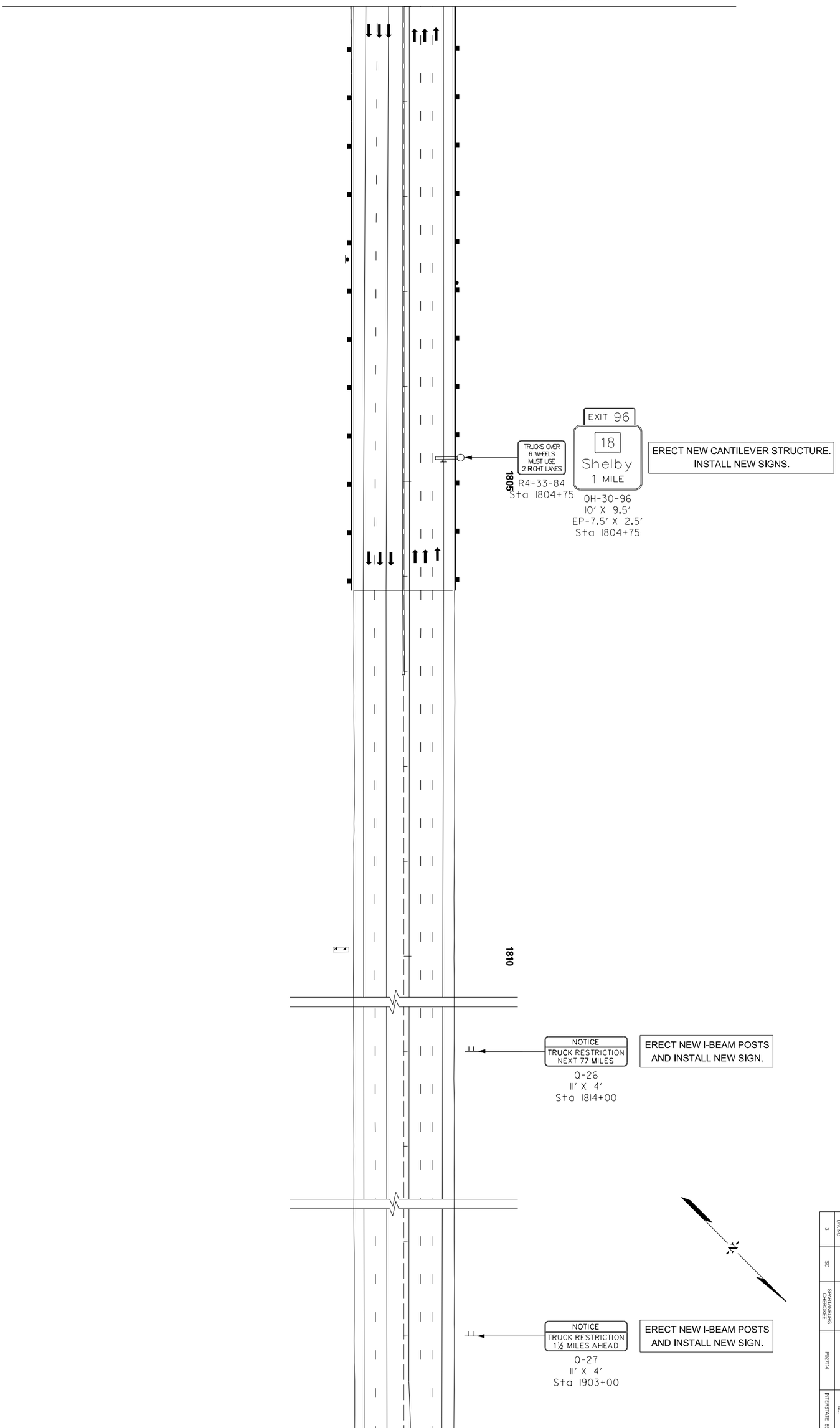
PLAN SHEET

INTERSTATE 85 MILE MARKER 90–97

X:\328900\41416.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN63.dgn
2/17/2016

X:\3286900\141416.01\XXXXX (SCDOT Number)\traffic\sheets from ICE\SHT_SN64.dgn
2/17/2016

MATCHLINE STA. 1800+00 SEE SHEET NO. SN63



PRELIMINARY
NOT FOR CONSTRUCTION

SCALE: 1" = 50'

REVISION NO.	BY	DATE	DESCRIPTION OF REVISION
1			
2			
3			
4			
5			
6			
7			

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
INTERSTATE 85

PLAN SHEET

INTERSTATE 85 MILE MARKER 90-97

REVISION NO.	STATE	COUNTY	PROJECT ID	ROUTE NO. / ROUTE	SHEET NO.
3	SC	SPARTANBURG CHEROKEE	P037174	INTERSTATE 85	SN64