

**BEAUFORT–PORT ROYAL
METROPOLITAN PLANNING COMMISSION**

AGENDA

1911 Boundary Street, Beaufort, SC 29902
Phone: 843-525-7011 ~ Fax: 843-986-5606

Monday, April 19, 2021, 5:00 P.M.

~~City Hall, Planning Conference Room—1911 Boundary Street, Beaufort, SC~~

Please click the link below to join the webinar:

<https://us02web.zoom.us/j/82815109574?pwd=cDBxVG5neU80MitZU2Ewd1JwaElmZz09>

Password: 201517 Meeting ID: 828 1510 9574 Call in Phone #: 1 + 929 205 6099

STATEMENT OF MEDIA NOTIFICATION: "In accordance with South Carolina Code of Laws, 1976, Section 30-4-80(d), as amended, all local media were duly notified of the time, date, place and agenda of this meeting."

- I. **Call to Order**
- II. **Pledge of Allegiance**
- III. **Review Commission Meeting Minutes:**
 - A. **March 15, 2021 Regular Meeting Minutes**
- IV. **Questions Relating to Military Operations**
- V. **Review of Projects for the City of Beaufort:**
 - A. **Rezoning** of 0.69 acres at 1703 Lafayette Street. The property is further identified as Parcel R120 001 000 0196 0000. The current zoning is T3-Suburban District (T3-S). The requested zoning is T3-Neighborhood District (T3-N). The applicant and owner is Beaufort Midway Development, LLC.
 - A. **Beaufort Station Sketch Plan.** The applicant, The Morgan Companies, on behalf of the owner Myrtle Beach Farms LP, is requesting sketch plan approval for the major subdivision of a parcel located at the southwest corner of the intersection of Robert Smalls Parkway (SC Route 170) and Parris Island Gateway (SC Route 21). The proposed development, Beaufort Station, will be a large-scale mixed-use retail center that totals 28.42 acres subdivided out of the parent parcel further identified as R120 028 000 0138 0000.
 - B. **Update of Council Actions**
- VI. **Review of Projects for the Town of Port Royal:**
 - A. **None**
- VII. **Review of Projects for Beaufort County:**
 - A. **None**
- VIII. **Discussion:**
- IX. **Adjournment**

Note: If you have special needs due to a physical challenge, please call Julie Bachety at (843) 525-7011.



Metropolitan Planning Commission

Meeting Minutes – March 15, 2021

1. CALL TO ORDER 3:00

A meeting of the Metropolitan Planning Commission was held via Zoom on March 15, 2021, at 5:11 pm.

2. ATTENDEES

Members in attendance: Michael Tomy (Chairman), James Crower (Vice-Chair), Bill Bardenwerper, Caroline Fermin, and Jason Hinchler.

Member absent: Judy Alling

Staff in attendance: Linda Bridges (Town of Port Royal Director) and Rob Merchant (Beaufort County Acting Director).

3. REVIEW OF MINUTES 3:38

Mr. Crower made a motion to accept the February 8, 2021 meeting minutes; seconded by Ms. Fermin. The motion passed unanimously.

Disclaimer: All Metropolitan Planning Commission Meeting minutes are recorded and can be found on the City's website at <http://www.cityofbeaufort.org/AgendaCenter>. Audio recordings are available upon request by contacting the City Clerk, Ivette Burgess at 843-525-7018 or by email at iburgess@cityofbeaufort.org.

4. QUESTIONS RELATING TO MILITARY OPERATIONS 4:06

None.

5. REVIEW OF PROJECTS FOR THE CITY OF BEAUFORT 4:27

No projects.

6. UPDATE OF COUNCIL ACTIONS 4:31

None.

7. REVIEW OF PROJECTS OF TOWN OF PORT ROYAL 4:45

- A. **Town of Port Royal Text Amendment** to Article 3, Division 3.3 Overlay Codes of The Port Royal Code to add a Coastal Resilience Overlay District to require real estate disclosure when property is transferred in low-lying areas.

The chairman, Mike Tomy, invited the public to comment.

Motion: Ms. Fermin made a motion to approve the text amendment for the overlay; seconded by Mr. Hinchler. The motion passed unanimously.

- B. **Town of Port Royal Text Amendment** to Article 5, of The Port Royal Code adding a new division 5.12 titled "Fill Standards" to limit the amount of fill on low-lying areas. 18:56

The chairman, Mike Tomy, invited the public to comment.

Motion: Ms. Fermin made a motion to accept the text amendment for fill-in; seconded by Mr. Hinchler. The motion passed unanimously.

8. UPDATE OF COUNCIL ACTIONS 30:06

Ms. Bridges gave an updated of the Council Actions.

9. ADJOURN 32:55

Ms. Fermin made a motion to adjourn the meeting; seconded by Mr. Crower. The motion passed unanimously. The meeting ended at 5:43 pm.

Chair

Date of approval



REZONING APPLICATION (EXCEPT FOR PUDS)

PAID 3/2/14

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: \$200 +
\$10 for each additional lot
Receipt # 143271

R221-01

OFFICE USE ONLY: Date Filed: 3/2 Application #: 21671 Zoning District: T3-S

Submittal Requirements: You must attach a boundary map prepared by a registered land surveyor of the tract, plot, or properties, in question, and all other adjoining lots of properties under the same ownership. 12 copies of all application materials are required.

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? [] Yes [X] No

Applicant, Owner and Property Information

Property Address: 1703 Lafayette St.

Property Identification Number (Tax Map & Parcel Number): R120 001 000 0196 0000

Applicant Name: Beaufort Midway Development, LLC

Applicant Address: P.O. Box 27 Port Royal SC 29935

Applicant E-mail: cpost70@aol.com Applicant Phone Number: 843-263-1223

Property Owner (if other than the Applicant): -

Property Owner Address: SAME.

Have any previous applications been made for a map amendment affecting these same premises? () YES [X] NO

If yes, give action(s) taken:

Present zone classification: T3-S

Requested zone classification: T3-N

Total area of property: 20,800 sq. ft.

Existing land use: Vacant

Desired land use: Residential Cottages

Reasons for requesting rezoning: Increase of Density

Applicant's Signature: [Signature] Date: 2-20-21

NOTE: If the applicant is not the property owner, the property owner must sign below.

Property Owner's Signature: Date:



Figure 1 City of Beaufort, SC Zoning Map

T3-SUBURBAN DISTRICT (T3-S)

T3-Suburban district is single-family residential in character, with less development than other Transect-based districts within the city. While almost exclusively residential, civic and park functions are also complementary to the character within this district.

T3-NEIGHBORHOOD DISTRICT (T3-N)

The T3-Neighborhood district is residential in character and includes a mixture of residential and civic uses. Residential units are an assortment of sizes and types including cottages, small houses, two- and three-family dwellings, village houses, and cottage courts. Carriage houses, located behind single family homes, and on the interior of lots, may contain studios or other small businesses.

T4-NEIGHBORHOOD (T4-N)

The T4-Neighborhood district is a mixed-use zone of urban residential units and limited commercial development. A wide range of building types exist in the T4-Neighborhood district, including, but not limited to, apartment buildings, mixed-use buildings, rowhomes, duplexes, corner stores, and both attached and detached single-family housing.

T1-NATURAL PRESERVE DISTRICT (T1)

The T1-Natural Preserve district is intended to preserve areas that contain sensitive habitats, active or passive open spaces and urban parks, cemeteries, and limited agricultural uses. This district typically does not contain buildings, with the exception of small civic buildings, interpretive centers, or supportive recreation facilities. There are no specific development standards listed for this district.

2.4: DISTRICT DEVELOPMENT STANDARDS

2.4.1 TRANSECT-BASED DISTRICT STANDARDS

DISTRICT	T3-S	T3-N	T4-HN	T4-N	T5-DC	T5-UC
A. LOT CONFIGURATION						
1. Lot Width at Front Setback	75 ft min; for waterfront lots see Section 2.5.4	40 ft min, 60 ft min in the Hundred Pines neighborhood	40 ft min, 60 ft min in The Point	n/a	n/a	n/a
2. Lot Size	9,000 sf min; for waterfront lots see Section 2.5.4	4,000 sf min; 3,000 sf min for alley-served lots	4,000 sf min; 6,000 sf min in The Point	n/a	n/a	n/a
3. Maximum Lot Coverage ¹	30% of lot area	45% of lot area	55% of lot area	70% of lot area	100%	100%
4. Frontage Build-Out ²	n/a	n/a	75% max	60% min; 85% max	75% min	60% min
¹ This percentage indicates maximum lot coverage by roofs; total impervious coverage may be an additional 10%. Parcels may also be subject to Section 8.3 (Stormwater). ² See Section 2.5.1.B for additional frontage build-out standards.						
B. PRIMARY BUILDING PLACEMENT						
1. Front Setback; <i>for infill lots also see Section 2.5.2</i>	20 ft min No max	15 ft min 30 ft max ³	average Prevailing Setback on block	0 ft min 15 ft max	0 ft min max. Prevailing Setback on block	0 ft min 15 ft max
2. Side Setback - Corner /Alley	15 ft min No max	6 ft min No max	5 ft min No max	0 ft min 10 ft max	0 ft min 15 ft max	0 ft min 15 ft max
3. Side Setback - Interior	10 ft min	6 ft min	6 ft min, 10 ft min in The Point	5 ft min, or 0 ft if attached	0 ft min	0 ft min
4. Rear Setback ⁴	15 ft min	15 ft min	15 ft min	10 ft min	0 ft min	5 ft min
5. Rear Setback from Alley ⁴	n/a	0 ft	0 ft	0 ft	0 ft	0 ft
6. Attached Garage/Carport Setback (from front facade) ^{5,6}	5 ft min	5 ft min	attached garages shall only be accessed via an alley; garage doors shall not face the street			
C. ACCESSORY BUILDING PLACEMENT - see section 3.11 for additional requirements						
1. Front Setback	accessory structures shall be located behind the front facade of the primary structure, except as provided for in Section 2.5.4 (Waterfront Lots) and Section 4.5.3 (Carriage House); see item 6 below for setback for detached garage doors					
2. Side Setback - Corner / Alley ⁵	5 ft min	5 ft min	5 ft min	3 ft min	0 ft min	0 ft min
3. Side Setback - Interior	5 ft min	5 ft min	5 ft min	5 ft min	0 ft min	0 ft min
4. Rear Setback ⁴	5 ft min	5 ft min	5 ft min	5 ft min	0 ft min	0 ft min
5. Rear Setback from Alley ⁴	3 ft min	3 ft min	3 ft min	3 ft min	3 ft min	3 ft min
6. Detached Garage Door/Carport Setback (from front facade) ⁵	5 ft min	20 ft min	20 ft min	20 ft min	shall be located behind primary building and accessed via alley or side street ⁷	
³ When lot width is 75 ft or greater, there is no maximum front setback. ⁴ Garage doors shall be 15 ft min from alley centerline. ⁵ In addition to the setback requirements listed above, garage doors/carports which face a public right-of-way, except for rear alleys, shall be set back a minimum of 20 ft from that right-of-way. ⁶ The Battery Shores and Islands of Beaufort neighborhoods are exempt from this standard when garage doors do not face a public right-of-way. In the Jericho Woods neighborhood, carports are exempt from this standard. ⁷ Also see Section 2.5.7 (Street Access Standards).						
D. BUILDING FORM						
1. Primary Building Height - see Section 2.6	No min 2.5 stories max	No min 2.5 stories max	No min 3 stories max	2 stories min ⁸ 4 stories max; 3.5 stories max in & fronting Historic District & interior lots along Allison Rd.	2 stories min 3 stories max at property line, see 2.6.1.G	2 stories min ⁸ 5 stories max; 3.5 stories max in & fronting Historic District
2. Accessory Building Height	2 stories or 30 ft max	2 stories or 30 ft max	2 stories or 30 ft max	2 stories or 30 ft max	2 stories max	2 stories max
3. Building Width at Frontage	n/a	n/a	n/a	100 ft max	100 ft max ⁹	160 ft max ⁹
⁸ 2 stories are only required at significant intersections, in accordance with Section 2.6.3 and the Street Hierarchy Diagram in Appendix C.3 ⁹ Buildings exceeding this maximum shall comply with the Large Footprint Building standards in Section 4.5.10.						
E. PARKING PAD LOCATION - there are no interior side setbacks for parking unless buffers are required per Section 5.5. See Section 2.5.8 for additional provisions						
1. Front Setback	there are no parking setbacks, however, driveways shall be located to the side of the lot/primary structure except on waterfront lots meeting the conditions stated in 2.5.4.		40 ft min	40 ft min	40 ft min	40 ft min
2. Side Setback - Corner			5 ft min	15 ft min	5 ft min	5 ft min
3. Rear Setback			5 ft min	5 ft min	0 ft min	0 ft min

District. Conditions may be listed in the “Additional Standards” section as appropriate. Other uses permitted in the general T4-N district may have special conditions for T4-NA; those conditions are also listed in the additional standards section as appropriate.

G. **Prohibited Uses (—):** The use is prohibited in the specified district.

3.2 TABLE OF PERMITTED USES

Land uses in transect-based and conventional districts shall be permitted in accordance with the table below. Special provisions related to uses in the AICUZ Overlay District are in Section 2.7.4. The zoning designation of water is the same as the land it is adjacent to.

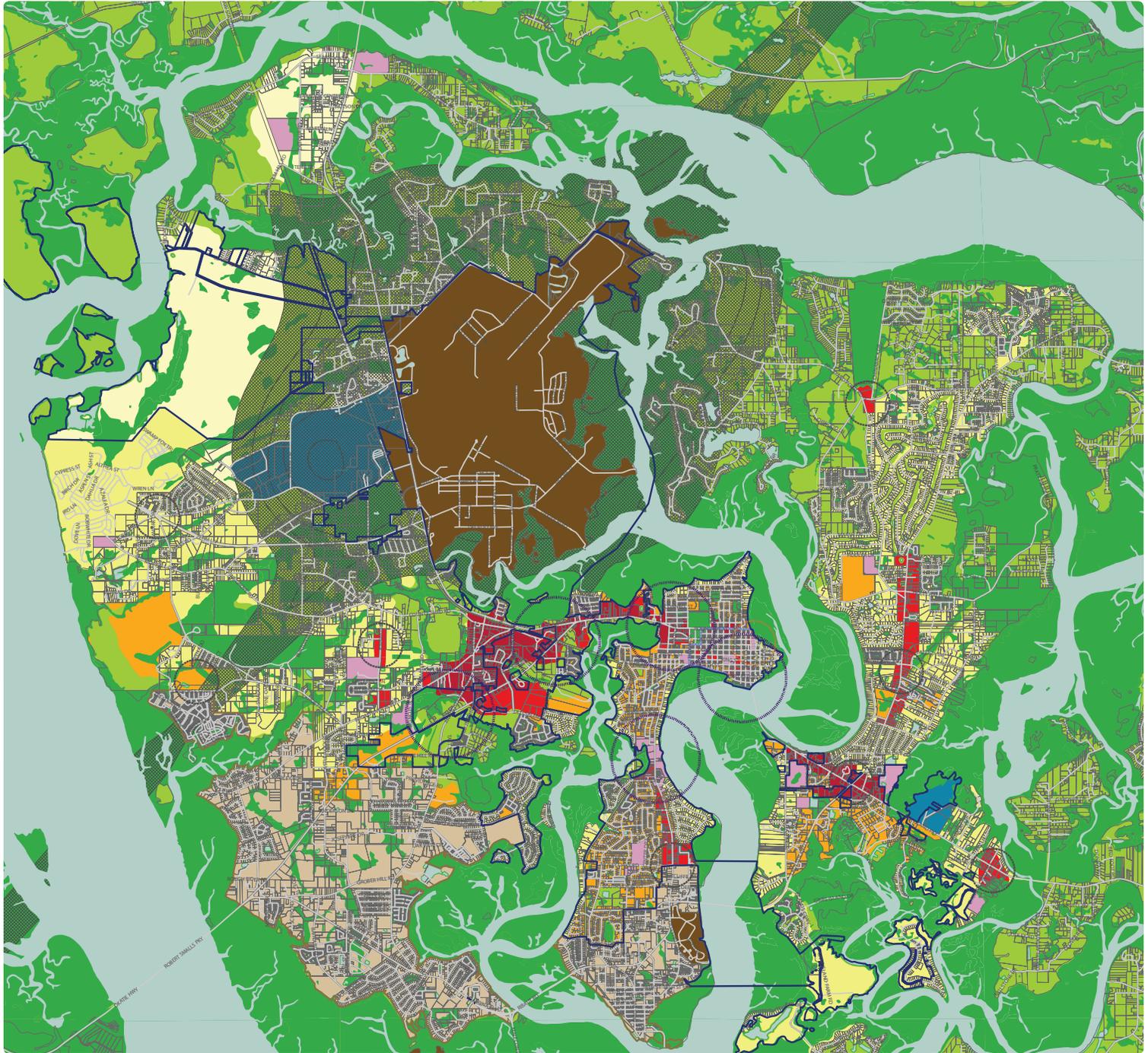
DISTRICT	T1	T3-S	T3-N	T4-HN	T4-N	T5-DC	T5-UC	RMX	LI	IC	MHP	ADD'L STANDARDS WHEN APPLICABLE
RESIDENTIAL												3.3
Household Living												
Single-Family Dwelling	—	P	P	P	P	E	E	E	E	E	—	—
2- or 3-Unit Dwelling	—	—	C	P	P	P	P	—	—	P	—	4.5.5
Rowhome	—	—	—	—	C	P	P	P	—	P	—	4.5.6
Apartment House (a.k.a. Multifamily Dwelling - 4+ units)	—	—	—	—	C	P	P	P	—	P	—	4.5.7
Home Occupation - Minor	—	C	C	C	C	P	P	P	—	—	—	3.3.2.D
Home Occupation - Major	—	SE	SE	SE	C	P	P	—	—	—	—	
Live-Aboard Boat	C	C	C	C	C	C	C	C	C	C	C	3.3.2.D
Live/Work Unit	—	—	—	—	C	P	P	P	C	P	—	4.5.8
Manufactured Home	—	—	—	—	—	—	—	—	—	—	C	3.3.2.G
Group Living												
Group Dwelling (≤ 8 residents)	—	—	—	—	P	P	P	P	—	—	—	—
Group Dwelling (> 8 residents)	—	—	—	—	SE	SE	P	P	—	P	—	—
PUBLIC AND CIVIC												3.4
Civic/ Government Facilities	C	—	SE	SE	P	P	P	P	P	P	—	3.4.2.A
Educational Facilities												
College/University/Trade/Vocational	—	—	—	—	C	P	P	P	C	P	—	3.4.2.B.1
School, Public or Private	—	C	C	C	P	P	P	P	—	P	—	3.4.2.B.2
Parks and Open Space												
Cemetery	C	E	E	E	E	E	E	C	E	E	E	3.4.2.C
Park/Open Space	P	P	P	P	P	P	P	P	P	P	P	7.4
INSTITUTIONAL												3.5
Community Service	—	SE	SE	SE	P	P	P	P	SE	P	—	—
Day Care Facility												
Family Day Care Home (≤ 6 clients)												see Home Occupation — Minor
<i>P=Permitted Use C=Conditional Use SE=Special Exception E=in Existing Building/Facility Only RF=Retail Frontage Only A=T4-Neighborhood Artisan subdistrict Only —=Prohibited use</i>												

DISTRICT	T1	T3-S	T3-N	T4-HN	T4-N	T5-DC	T5-UC	RMX	LI	IC	MHP	ADD'L STANDARDS WHEN APPLICABLE
Group Day Care Home (7-12 clients) & Commercial Day Care Center (>12 clients)	—	—	SE	C	C	P	P	P	P	P	—	3.5.2.A
Treatment Facility	—	—	—	—	SE	SE	SE	P	—	SE	—	—
Health Care Facilities	—	—	—	—	—	—	P	P	—	P	—	—
Religious Institution	—	C	C	P	P	P	P	P	—	P	—	3.5.2.B
COMMERCIAL												3.6
Entertainment												
Indoor Entertainment	—	C	C	—	C	P	P	P	P	P	—	3.6.2.A
Outdoor Entertainment	—	—	—	—	C	P	P	P	—	P	—	3.6.2.A
Sexually-Oriented Business	—	—	—	—	—	—	—	—	C	—	—	13.2.1
Office	—	—	—	—	P	P	P	P	P	P	—	—
Overnight Guest Accommodation												
Bed and Breakfast	—	—	SE	SE	P	P	P	—	—	—	—	3.6.2.C.1
Short-Term Rental	—	C	C	C	C	C	C	—	—	C	—	3.6.2.C.2
Inn/Motel/Hotel	—	—	—	—	C	P	P	P	—	—	—	3.6.2.C.3
Recreational Vehicle Park	—	—	—	—	—	—	—	SE	—	—	—	—
Retail & Restaurants					C	C	C	P	—	C	—	3.6.2.D
VEHICLE- AND BOAT-RELATED USES												3.7
Vehicle and Boat Sales and Rental	—	—	—	—	A	—	C	P	—	—	—	3.7.2.A
Drive-Thru Facility	—	—	—	—	—	—	C	C	SE	—	—	3.7.2.B
Fuel Sales / Car Wash	—	—	—	—	—	—	C	C	P	—	—	3.7.2.C
Vehicle Service and Repair	—	—	—	—	C	—	C	C	P	—	—	3.7.2.D
Parking, Commercial, Surface	—	—	—	—	C	C	P	P	P	P	—	3.7.2.F
Parking, Structure	—	—	—	—	RF	P	P	P	P	P	—	—
Passenger Terminals	—	—	—	—	—	—	SE	P	P	—	—	3.7.2.G
Water/Marine-Oriented Facilities	P	—	—	—	P	P	P	—	—	P	—	—
INDUSTRIAL												3.8
Aviation Services	—	—	—	—	—	—	—	—	P	—	—	—
Light Industrial Services	—	—	—	—	A	—	C	C	P	—	—	3.8.2.A
Manufacturing and Production Services	—	—	—	—	A	—	—	C	P	—	—	3.8.2.B
Truck Terminal	—	—	—	—	—	—	—	—	P	—	—	—
COMMUNICATION & INFRASTRUCTURE USES												3.9
Major Infrastructure/Utilities	—	—	—	—	A	—	—	SE	P	—	—	3.9.2.A
Minor Infrastructure/Utilities	E	C	C	C	C	C	C	C	P	C	—	3.9.2.B
Waste Related Services	—	—	—	—	—	—	—	—	SE	—	—	3.9.2.C
Wireless Communications Facility	—	—	—	—	—	—	—	C	C	—	—	3.9.2.D
FORESTRY, AGRICULTURE, HORTICULTURE												3.10
<i>P=Permitted Use C=Conditional Use SE=Special Exception E=in Existing Building/Facility Only RF=Retail Frontage Only A=T4-Neighborhood Artisan subdistrict Only —=Prohibited use</i>												



VISION BEAUFORT

2009 Comprehensive Plan



- PRESERVED OPEN SPACE (O-1)**
 The O-1 sector represents the basic "green infrastructure" of the community providing critical habitat for wildlife; protection of water quality and protection from flooding and erosion; and needed recreation and greenspace for the human habitat. This category, indicated in dark green on the Framework Map, comprises lands that are already non-developable, such as wetlands, conservation easements, required stream buffers, and parks.
- RURAL/CONSERVATION LANDS (O-2)**
 This sector includes areas that are prime candidates for moving into the O-1 sector through conservation easements or other open space acquisition/protection measures. This sector consists of lands that should be off-limits to development except occasional conservation neighborhoods at very low densities due to environmental conditions, urban service factors, and proximity to the MCAS operations.
- GROWTH RESERVE SECTOR (GR-1)**
 The GR-1 sector is intended as a holding zone or reserve area for future urbanization in the northern Beaufort County region. Care should be taken to ensure that this area not be developed as a low-density suburban subdivision as there is sufficient land area to create an urban center supported by walkable neighborhoods.
- MODERATE DENSITY RESIDENTIAL NEIGHBORHOODS (G-1)**
 The G-1 sector is intended for relatively moderate density residential development. It includes areas that are not likely locations for redevelopment, as well as lands that are not proximate to thoroughfares and are not projected to be high growth areas due to limited access to transportation networks, existing services, and utilities. In addition, poor/wet soils that not typically appropriate for development are included in this sector, which is intended for relatively low-density development.
- URBAN NEIGHBORHOODS/TNDS (G-2)**
 The G-2 sector contains denser, mixed-use development at the scale of neighborhood centers, indicated by the small (1/4 mile) circles, and suburban, residential development at the scale of walkable "traditional neighborhoods" shown in orange. This type of residential development creates an identifiable center organized around a small public square or green, often with some civic facilities or a building such as a church or a small store.
- NEIGHBORHOOD MIXED USE & CORRIDOR MIXED USE (G-3)**
 The G-3 sector is intended to apply along high capacity regional thoroughfares at major transportation nodes, or along portions of highly-traveled corridors. G-3 land generally falls within areas for higher-intensity regional-serving development, marked by the dark purple 1/2 mile radius circles. Neighborhood Mixed-Use designations (G-3A) are intended for a mixture of uses intended to serve the surrounding neighborhoods. Corridor Mixed-Use areas (G-3B) are intended for a mixture of regional-serving commercial, residential, and institutional destinations.
- DOWNTOWN BEAUFORT (G-4)**
 This sector is comprised of areas with existing development, with a relatively dense street grid, and which are appropriate for redevelopment or additional development. This area is, in large respect, appropriate for redevelopment and new infill development and well served with infrastructure (roads, utilities, etc.), and access to services and amenities.
- CIVIC & INSTITUTIONAL USES**
 In addition to the geographic sectors, the Framework Plan indicates two related special land uses: the existing schools and other civic sites such as the hospital, the university and technical college, and the library. These civic and institutional uses properties are related to the community's permanent civic and green infrastructure since large pieces of land on which these properties will continue to be undeveloped open space.
- INDUSTRIAL/EMPLOYMENT CENTERS: SPECIAL DISTRICT (SD)**
 As regional employment centers, industrial districts also fall into the G-3 sector. Industrial development is shown around the existing Beaufort Commerce Park and in areas where industrial and distribution facilities are currently located or approved for development by zoning.
- NEIGHBORHOOD CENTERS**
 Neighborhood Centers, shown as the small black circles on the Framework Map, are based on a 1/4 mile radius (a typical 5-minute walk) from a key intersection. They are intended to be mixed-use activity centers serving surrounding neighborhoods with retail, services, civic uses, and higher density housing.
- REGIONAL CENTERS**
 Regional Centers are mixed-use activity centers with employment and commercial uses that attract people from beyond the immediate neighborhoods and from surrounding communities. These centers are appropriate for commercial and employment development as well as the area's highest density housing. The area of these centers is based on a 1/2 mile radius (a typical 10-minute walk)—the larger circles on the map.



DEVELOPMENT TOTALS

- Conservation Area
- Single Family Lots
- Linear Park w/ Parkway Street
- Parkway Street
- Townhome Lots
- Enhanced Park Area

▲ REGENERATION OF LAFAYETTE STREET

Existing Development

Detached Homes/Empty Lots: 127
 Parks & Open Space: 9 Acres (Ballfields)

Conceptual Redevelopment

Townhomes: 72
 Detached Homes: 184
 Total: 256 Units (Increase of 129)

Parks & Open Space

9 acre Ballfields (Improved)
 2 acre Linear Park (with bioremediation)
 .35 acre Square
 2750 linear feet of Parkway Street



▲ EXISTING CONDITIONS

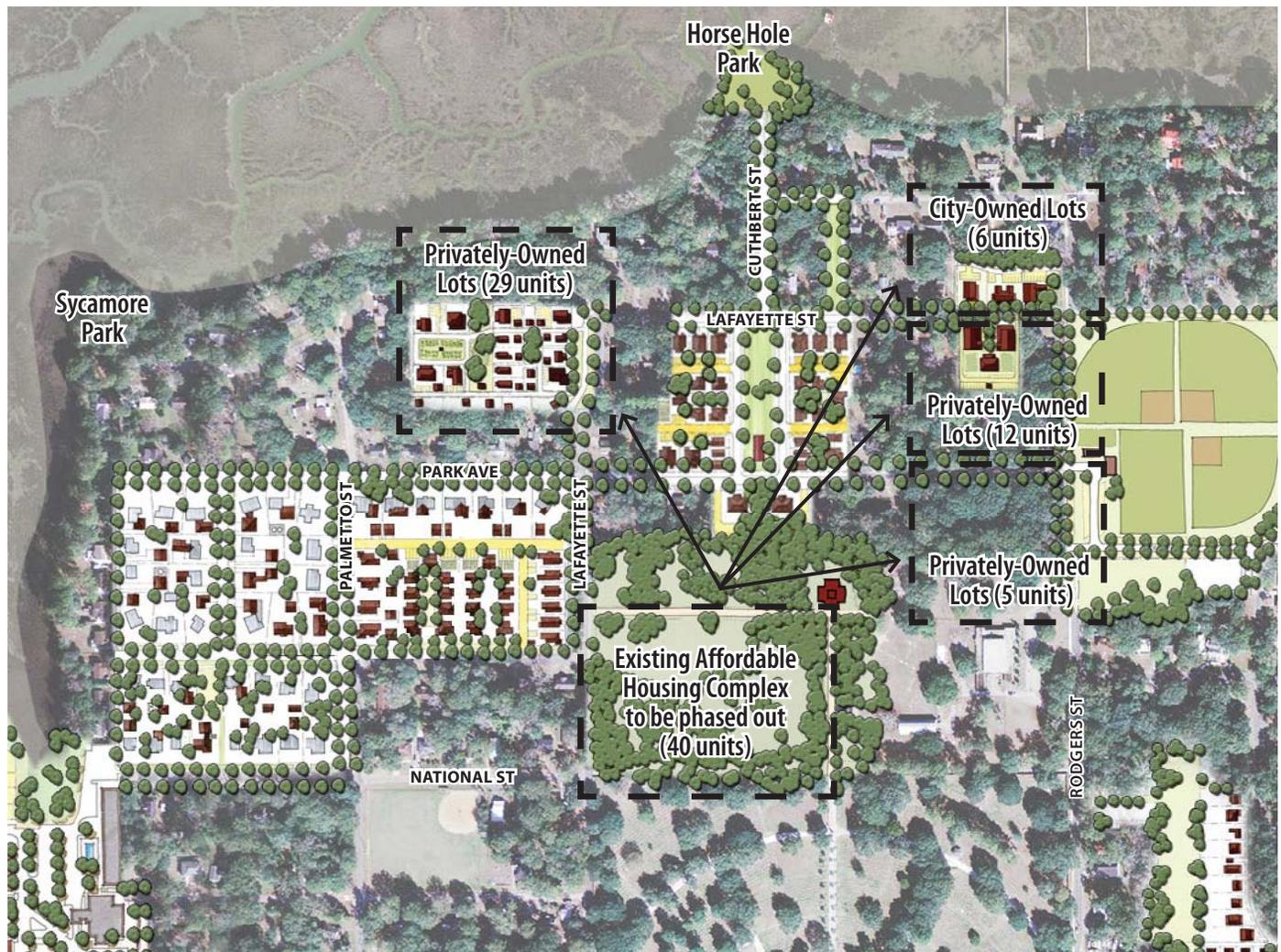
Higginsonville

While a large portion of the Higginsonville neighborhood is occupied by the expansive Beaufort National Cemetery, this plan proposes a conceptual redevelopment plan that would take advantage of this network of residential streets that wrap the cemetery and provide convenient access to Albergotti Creek, the Basil Green Complex, and amenities along Boundary Street,

This plan proposes strengthening Higginsonville's relationship to Albergotti Creek and the Beaufort River through to two small waterfront parks, Sycamore Park and Horse Hole Park. This would require that the city acquire the two privately-owned parcels where Sycamore Park would be located, at the northwest corner of the downtown peninsula. Improvements to the existing Horse Hole park could also be tied to a new green space at the south side of Lafayette Street that would act

as a pedestrian extension of Cuthbert Street and neighborhood focal point that leads directly north through Horse Hole Park and to the waterfront.

The plan also recommends a strategy of incremental infill housing development within Higginsonville's residential blocks, including a variety of housing options that could replace the current affordable housing units if the cemetery expands to the north. Proposed accessory dwelling units would be built at the rear of residential lots to allow for a greater density without changing the character of the street or neighborhood. Several blocks would include bungalow courts, in which small homes are arranged around interior public open spaces (see 6.1 for example). This traditional arrangement would allow a more efficient use of Higginsonville's block structure, create more affordable housing units, promote civic engagement, and provide more housing choices within the city.



▲ CONCEPTUAL INFILL AND REDEVELOPMENT OF HIGGINSONVILLE



▲ CONCEPTUAL ILLUSTRATION OF CIVIC SPACE IN HIGGINSONVILLE



▲ CONCEPTUAL EXAMPLE OF BUNGALOW COURT INFILL



Staff Report for Metropolitan Planning Commission

From the Department of Community and Economic Development

April 19, 2021

1 SUBJECT

Rezoning of approximately 0.69 acres at 1703 Lafayette Street. The property is further identified as Parcel R120 001 000 0196 0000. The current zoning is T3-Suburban District (T3-S). The requested zoning is T3-Neighborhood District (T3-N). The applicant and owner is Beaufort Midway Development, LLC.

Current Zoning: Subject parcel R120 001 000 0196 0000 is currently zoned T3-Suburban District (T3-S)

Requested Zoning: T3-Neighborhood District (T3-N)

Size: 29,977 s.f. (0.69 acres)

Current Land Use: Vacant

Public Hearing: Scheduled for April 13, 2021 at 7 pm via Zoom.



Zoning District Overview

The property is currently zoned T3-S. Adjacent properties to the west, north, and across Cuthbert St. to the east are also zoned T3-S. The property across Lafayette St. to the south is zoned T3-N. See the attached zoning map and zoning district descriptions.

The applicant is requesting to re-zone the property to T3-N in order to increase the allowable density. This will reduce the minimum lot size by 55% and reduce the minimum lot width by 47%. See the attached Beaufort Code Section 2.4, District Development Standards. The allowable land uses are mostly identical between T3-S and T3-N. The notable differences are that 2-3 unit dwellings are not allowed in T3-S but are allowed conditionally in T3-N. Civic facilities, group day care homes, and beds & breakfasts are not allowed in T3-S but are allowed in T3-N by special exception. See the attached Section 3.2, Permitted Uses.

In accordance with The Beaufort Development Code §9.16.3.C., the MPC shall recommend approval, modified approval, or denial of the proposed map amendment taking into account all factors that it may deem relevant, including but not limited to:

- A. Consistency with the Comprehensive Plan and Civic Master Plan;
- B. Compatibility with the present zoning, with conforming uses of nearby property, and with the character of the neighborhood;
- C. Suitability of the property that would be affected by the amendment;
- D. Compatibility with the natural features of, and any archaeological or cultural resources on, the property;
- E. Marketability of the property that would be affected by the amendment; and
- F. Availability of roads, sewer, water, and stormwater facilities generally suitable and adequate for the affected property.

2 STAFF ASSESSMENT

Staff has assessed the rezoning request in accordance with §9.16.3.C. *supra*, with the following findings:

A. Consistency with the Comprehensive Plan and Civic Master Plan

Background:

The Vision Beaufort 2009 Comprehensive Plan lays out the future land use of the city through *the framework plan*. This Framework Plan provides guidance on where and how the community should grow by identifying the boundaries of Regional Sectors (Framework Zones) that provide the basis for detailing appropriate land uses and development standards. To help guide individual zoning decisions, the Comprehensive Plan includes a Framework Plan Conversion Matrix table that identifies the appropriate Transect Zone(s) and Zoning Categories for each Framework Zone.

The purpose of the *Civic Master Plan* is to develop a detailed plan for public investment based on the framework adopted in the Comprehensive Plan. *The Civic Master Plan* not only foresees the necessary infrastructure improvements and prioritizes such improvements to leverage private development where possible, it also serves to catalog and illustrate major redevelopment project opportunities by type and location.

Assessment:

The subject parcel lies within the Framework Zone G1 Moderate Density Residential Neighborhoods, which foresees the following zoning districts: T2, T3 and T4. The G-1 sector is intended for relatively moderate density residential development. Properties immediately south and east of the subject property are within the Framework Zone G-2 Urban Neighborhoods/TNDs, which foresees zoning districts T2, T3, T4 and T5. The G-2 sector is intended for denser, mixed-use development at the scale of neighborhood centers. See the attached Vision Beaufort 2009 Comprehensive Plan Framework Map.

The 2009 Comprehensive Plan includes this neighborhood as a focus area entitled Regeneration of Lafayette Street. A primary recommendation for the regeneration is to “construct a linear park

along Cuthbert Street that serves a dual purpose as a parkway for the proposed higher density housing along its frontage and as a bio-retention area for improving stormwater quality before it reaches the marsh. The attached 2009 Comprehensive Plan – Lafayette Area illustrates this proposed linear park, identifying the subject property, and properties north and south of the subject property, as townhome lots. The Civic Master Plan indicates a similar vision for the parcels along Cuthbert Street, as shown on the attached Civic Master Plan – Higginsonville Neighborhood Strategy.

The request to rezone the subject property from T3-S to T3-N is consistent with the vision and recommendations included in the Comprehensive Plan and the Civic Master Plan, as the G1 Framework Zone foresees the T3 zone district, and both the Comprehensive Plan and the Civic Master Plan envision higher-density residential development in this location as part of the vision for regeneration of the neighborhood.

B. Compatibility with the present zoning, with conforming uses of nearby property, and with the character of the neighborhood.

The property is currently zoned T3-S. Adjacent properties to the west, north, and across Cuthbert Street to the east are also zoned T3-S. The property across Lafayette Street to the south is zoned T3-N. Nearly all of the neighborhood south and southeast of the property is zoned T3-N. The residential uses in the immediate vicinity of the subject property are single-family detached homes. The requested T3-N district would allow 2-3 unit dwellings that would not be consistent with the present zoning and residential character of nearby properties zoned T3-S, however it would be a permitted use for adjacent and nearby properties zoned T3-N. Therefore, the request is compatible with the present zoning, with conforming uses of nearby property, and with the character of the immediate neighborhood.

C. Suitability of the property that would be affected by the amendment.

The currently vacant property is suitable for future development as T3-N in terms of size and location.

D. Compatibility with the natural features of – and any archaeological or cultural resources on – the property

Staff is unaware of any archaeological or cultural resources on the property.

E. Marketability of the property that would be affected by the amendment.

The property is currently zoned T3-S and the request is to be rezoned to T3-N. The rezoning would allow an increase in density as the T3-S district minimum lot width is 75 feet and minimum lot size is 9,000 square feet, while the T3-N district minimum lot width is 40 feet and minimum lot size is 4,000 square feet. This potential increase in density would result in an increase in the property's marketability.

F. Availability of roads, sewer, water, and stormwater facilities generally suitable and adequate for the affected property.

Public infrastructure currently exists. Suitability and adequacy of the infrastructure, with regard to any future-plans for the property, will be assessed during development review by the Technical Review Committee in accordance with the Beaufort Development Code Chapter 7 (Land Development) and Chapter 9 (Development Review Procedures).

3 STAFF OPINION

In accordance with considerations set forth in The Beaufort Development Code §9.16.3.C., it is the Staff's opinion that the request to rezone Parcel R120 001 000 0196 0000 to T3-N is acceptable.

PUBLIC COMMENTS

1703 LAFYETTE STREET REZONING

Everett Ballenger
1707 Lafayette St
Beaufort, SC 29902



3/15/2021

Dear Metropolitan Planning Commission,

I am writing concerning the proposed rezoning of 1703 Lafayette St from T3-S to (T3 Suburban District).

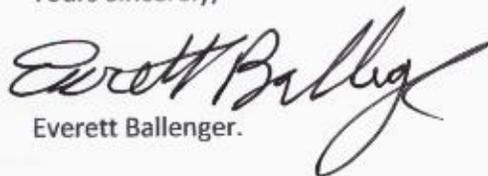
I must say I am totally opposed to this change and what it would bring to this very well established and quiet neighborhood.

The change would allow other activities such as small businesses etc. The change would be the thin edge of the wedge. There are numerous small houses on very large lots by today's standards. I can see developers buying small houses, knocking them down and building multiple multifamily homes on a single lot.

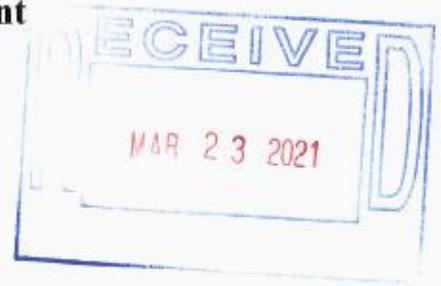
I am real estate agent and would be the last person to dictate what a landowner should or should not do with their land...unless it would affect their neighbors and the neighborhood in general.

Again I must ask the Commission to reject the proposed zoning change.

Yours Sincerely,


Everett Ballenger.

1703 Lafayette St re-zoning application Written Comment



We are Mike and Sara Bruns and our family lives at 2000 Cuthbert St. This has been our home for over 20 years. We share a property line with 1703 Lafayette St.

We are strongly opposed to the rezoning from T3-S to T3-N.

We feel that allowing any more than one home on this lot is too many. Our neighborhood is made up of small to mid-size homes on large tree filled lots. This would be multiple (we have even heard 4!!!) homes crammed on one lot. When we chose to move to Beaufort we sought out a neighborhood where the houses were spaced on big lots. We could have moved to Habersham, New Point, or Battery Point but we chose Cuthbert St because of the spacing. There is nothing wrong with these other neighborhoods because that is the character and design of the neighborhood but it is not the design or character of our neighborhood. One of the designs we saw for this lot had the back of one of the homes within yards of our front screened in porch. Multiple homes on this lot will look ridiculous and probably lower the value of our home and will certainly lower our quality of life.

We have concerns about the lot being clear cut as well. Our lots are all filled with trees of various types including huge Live Oaks. 1703 looks to be marked to be clear cut except for one tree. This one tree that is left is a Live Oaks and it looks like it is marked for huge limb cuts. I assume we cannot do anything to protect that live oak since it is not our property but we also have a live oak in our front yard that has limbs hanging over the property line. Since one of the houses is nearly on top of ours we are concerned that it will be cut as well.

Our last concern is parking. Where will cars for multiple houses go? I feel like this will lead people to park on our narrow street.

We would like the zoning change request change to be denied.

We welcome a new home on the property but would like it to be one new home that retains the character of the neighborhood, allows the trees to stay, and minimizes increased traffic.

Sincerely,
Mike & Sara Bruns and Family

Recvd 4/7/21
JB

April 5, 2021

The Honorable Stephen Murray, Mayor
City Council Members
Members, Zoning Board of Appeals
City of Beaufort
1911 Boundary Street
Beaufort, SC 29902

Subject: Rezoning Application (#RZ 21-01/Application No. 21671): 1703 Lafayette Street

Dear Mayor, Council Members and ZBOA Members:

This letter is written by concerned property owners of Higginsonville and Pigeon Point in connection with a rezoning application for property located at 1703 Lafayette Street. The application is requesting a rezoning from T3-S, Suburban District to T3-N, Neighborhood District for the development of four small cottages. The zoning district, in which the subject property is located, is a very established single-family residential area in the Higginsonville neighborhood and is currently characterized by low density development of individual houses on large to larger lots. The property located at the intersection of Lafayette and Cuthbert Streets also serves as the visual and physical entry to Cuthbert Park which provides an incredibly special view of the intra-coastal waterway.

As you review the zoning of all or most of the properties adjacent to the marshlands in both Pigeon Point and Higginsonville you will note that the designation is T3-S, single family residential. There was obviously a valuable vision in this zoning designation for this area, including for the subject property. One can assume that the wisdom of this designation was to prevent large-scale development along the marshland such as commercial uses, high-rise residential and multi-family developments. A down-zoning density change to one property in this district will only lead to more high density development, which in turn, will lead to more traffic, parking challenges, and stormwater drainage issues, and eventually could act as a catalyst for similar re-zonings along the marshland in both Higginsonville and Pigeon Point.

We strongly encourage you to consider the original vision for the single-family residential designation for the subject property and deny the rezoning application. Substantial investment is being made in Higginsonville residential properties and the vacant property at 1703 Lafayette is supremely suitable for investment in and development of one single-family structure. The reason for this rezoning request is not to improve the neighborhood but to merely increase the profit motive of the developer. Please deny this rezoning to preserve the single-structure, single-family, owner-occupied character of the area.

Thank you for your consideration of our request.

Enclosure

SIGNATURES OF CONCERNED PROPERTY OWNERS

Arthur Ellis
Name

1705 Lafayette Beaufort
Address

Kathy Laurin
Name

1705 Lafayette St. Beaufort
Address

[Signature]
Name

1411 LAFAYETTE BEAUFORT
Address

Prance Arberman
Name

2215 Wilson Drive Beaufort
Address

May Sepsona
Name

2407 Piquette Rd Beaufort
Address

[Signature]
Name

2215 Wilson Dr Beaufort
Address

[Signature]
Name

1212 Laudonniere St Beaufort
Address

Albert Baskin
Name

1212 LAUDONNIERE ST BFL
Address

Jenida Berg
Name

2005 Cuthbert
Address

Ewert Ballag
Name

1707 LAFAYETTE ST 29902
Address

[Signature]
Name

1714 Lafayette St 29902
Address

[Signature]
Name

1702 Lafayette St 29902
Address

[Signature]
Name

1604 Lafayette St Beaufort 29902
Address

[Signature]
Name

1604 Lafayette St Beaufort 29902
Address

Jonathan Owens
Name

2201 Boundary Street Apt 314
Address

[Signature]
Name

1504 Sycamore St. 29902
Address

[Signature]
Name

Address

Judy Conroy
Name

1504 Sycamore St.
Address

Sara Bruns
Name

2000 Cuthbert St
Address

Mike Bruns
Name

2000 Cuthbert St
Address

Michelle Sherman
Name

1709 LAFA YETIE ST
Address

Sheena Mullis
Name

1709 La Fayette St
Address

Sheila Mullis
Name

1502 Landonniere St.
Address

BRANNE MULLIS
Name

1502 LANDONNIERE ST
Address

R. John Hill
Name

1305 CHEROKEE RD.
Address

D. Hill
Name

1305 Cherokee Rd Bgr 2990a
Address

Name

Address

SIGNATURES OF CONCERNED PROPERTY OWNERS

Joanne Brink
Name

1105 Woodward Ave.
Address

Laurence Mahorney
Name

1105 Woodward Ave.
Address

Stephanie Braswell
Name

2200 Wilson Dr
Address

Greg Braswell
Name

2200 Wilson Dr.
Address

Don Campbell
Name

1500 LAUDONNIERE ST.
Address

Brenda Voorhees
Name

1715 Pigeon Point Rd
Address

Name

Address

April 9, 2021

Metropolitan Planning Commission Members
City of Beaufort
1911 Boundary Street
Beaufort, SC 29902

Subject: Rezoning Application (#RZ 21-01/Application No. 21671): 1703 Lafayette Street

Dear MPC Members:

This letter is written by concerned property owners of Higginsonville and Pigeon Point in connection with a rezoning application for property located at 1703 Lafayette Street. The application is requesting a rezoning from T3-S, Suburban District to T3-N, Neighborhood District for the development of four small cottages. The zoning district, in which the subject property is located, is a very established single-family residential area in the Higginsonville neighborhood and is currently characterized by low density development of individual houses on large to larger lots. The property located at the intersection of Lafayette and Cuthbert Streets also serves as the visual and physical entry to Cuthbert Park which provides an incredibly special view of the intra-coastal waterway.

As you review the zoning of all or most of the properties adjacent to the marshlands in both Pigeon Point and Higginsonville you will note that the designation is T3-S, single family residential. There was obviously a valuable vision in this zoning designation for this area, including for the subject property. One can assume that the wisdom of this designation was to prevent large-scale development along the marshland such as commercial uses, high-rise residential and multi-family developments. A down-zoning density change to one property in this district will only lead to more high-density development, which in turn, will lead to more traffic, parking challenges, and stormwater drainage issues, and eventually could act as a catalyst for similar re-zonings along the marshland in both Higginsonville and Pigeon Point.

We strongly encourage you to consider the original vision for the single-family residential designation for the subject property and deny the rezoning application. Substantial investment is being made in Higginsonville residential properties and the vacant property at 1703 Lafayette is supremely suitable for investment in and development of one single-family structure. The reason for this rezoning request is not to improve the neighborhood but to merely increase the profit motive of the developer. Please deny this rezoning to preserve the single-structure, single-family, owner-occupied character of the area.

Thank you for your consideration of our request.

Enclosure

SIGNATURES OF CONCERNED PROPERTY OWNERS

Arthur Ellis
Name

1705 Lafayette Beaufort
Address

Kathleen L. Smith
Name

1705 Lafayette St. Beaufort
Address

[Signature]
Name

1411 LAFAYETTE BEAUFORT
Address

Francis Arkelman
Name

2215 Wilson Drive Beaufort
Address

May Sepemba
Name

2407 Piquant Rd. Beaufort
Address

[Signature]
Name

2215 Wilson Dr Beaufort
Address

[Signature]
Name

[Signature]
Address

Albert [Signature]
Name

1213 LUDLOW FOREST B/P
Address

Jenifer Berg
Name

2005 Cumber
Address

Ernest Ballou
Name

1707 LAFAYETTE ST 29902
Address

Ad. [Signature]
Name

1714 Lafayette St 29902
Address

[Signature]
Name

1702 Lafayette St 29902
Address

[Signature]
Name

1604 Lafayette St Beaufort 29902
Address

[Signature]
Name

1604 Lafayette St Beaufort 29902
Address

Jonathan Owens
Name

2201 Boundary St apt 314
Address

Thos. S. [Signature]
Name

1504 Sycamore St. 29902
Address

Judy Conroy
Name

1504 Sycamore St.
Address

Sara Bruns
Name

2000 Cutbert St
Address

Mike Bruns
Name

2000 Cutbert St
Address

Mark Shaw
Name

1709 LAFFAYETTE ST
Address

Heroldigha Newman
Name

1709 La Fayette St
Address

Sheila Mullis
Name

1502 Landonnie St.
Address

Beth Mullis
Name

1502 LANDONNIE ST
Address

R. Bob. Hill
Name

1305 CHEROKEE RD.
Address

Dee Hill
Name

1305 Cherokee Rd Bgr 29909
Address

Susan Corner
Name

1405 Landonnie Street
Address

Name

Address

Name

Address

Name

Address

Name

Address

Name

Address

Name

Address

SIGNATURES OF CONCERNED PROPERTY OWNERS

Wanna Brindz
Name

1105 Woodward Ave.
Address

Laurie O'Mahoney
Name

1105 Woodward Ave.
Address

Lizandra Braswell
Name

2200 Wilson Dr
Address

Greg Braswell
Name

2200 Wilson Dr
Address

Don Campbell
Name

1500 Hambouviere St.
Address

Brenda Voorhees
Name

1715 Pigeon Pond Rd
Address

Name

Address



MAJOR SUBDIVISION PROCESS
CONCEPTUAL / SKETCH PLAT APPLICATION

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606
www.cityofbeaufort.org

Application Fee: \$0

OFFICE USE ONLY: Date Filed: Application #: Zoning District:
Site Area: Meeting Date:

Schedule: The Metropolitan Planning Commission (MPC) typically meets the 3rd Monday of each month at 5:30pm. The complete schedule, along with the list of deadlines, may be found here - http://www.cityofbeaufort.org/metropolitan-planning-commission.aspx

Review Request: [X] Conceptual/Sketch

Submittal Requirements: 7 hard copies and 1 digital copy of all forms and information are required. In addition to a complete application form, applicants are required to submit the following information. Additional information, such as traffic studies, stormwater concepts/calculations, arborist report, may be required.

Conceptual Request: Sketch Plan as described in Section 9.3.1.B, Conceptual Plat showing lots, roads and street sections, sidewalks, existing/proposed trees, open space.

Pursuant to Section 6-29-1145 of the South Carolina Code of Laws, is this tract or parcel restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the activity described in this application? [] Yes [X] No

Applicant, Property, and Project Information

Applicant Name: The Morgan Companies

Applicant Address: 13024 Ballantyne Corporate Place, Suite 500, Charlotte, NC 28277

Applicant E-mail: jsurrency@themorgancos.com Applicant Phone Number: 704-909-4502

Applicant Title: [] Homeowner [] Tenant [] Architect [] Engineer [X] Developer [] Contractor

Owner (if other than the Applicant): Myrtle Bush Farms LP

Owner Address: PO Box 4037 Beaufort, SC 29903

Project Name: Beaufort Station

Property Address: 301 Robert Smalls Pkwy Beaufort, SC 29903

Property Identification Number (s):(Tax Map & Parcel Number): R120 028 000 0138 0000

Meeting Date Requested: 4/19/21

Certification of Correctness: I/we certify that the information in this application is correct.

Applicant's Signature: [Signature] Date: March 22, 2021



**MAJOR SUBDIVISION APPLICATION
SUBDIVISIONS 10 ACRES OR MORE**

Community & Economic Development Department
1911 Boundary Street, Beaufort, South Carolina, 29902
p. (843) 525-7011 / f. (843) 986-5606 | www.cityofbeaufort.org

Appt# 21793
Application Fees:
\$ 1,080.00

Receipt # _____

Applicant Name: The Morgan Companies

Applicant Address: 13024 Ballantyne Corporate Place, Suite 500, Charlotte, NC 28277

Applicant E-mail: jsurrency@themorgancos.com Applicant Phone Number: 704-909-4502

Applicant Title: Homeowner Tenant Architect Engineer Developer

Property Owner (if other than the Applicant): Myrtle Bush Farms LP

Property Owner Address: PO Box 4037 Beaufort, SC 29903

Property Owner E-Mail: _____ Property Owner Phone Number: _____

Property Address: 301 Robert Smalls Pkwy Beaufort, SC 29903

Property Identification Number (Tax Map & Parcel Number): R120 028 000 0138 0000

SC CODE OF LAW §6-29-1110 (4) "Subdivision" means all divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose, whether immediate or future, of sale, lease, or building development, and includes all division of land involving a new street or change in existing streets, and includes re-subdivision which would involve the further division or relocation of lot lines of any lot or lots within a subdivision previously made and approved or recorded according to law; or, the alteration of any streets or the establishment of any new streets within any subdivision previously made and approved or recorded according to law, and includes combinations of lots of record; however, the following exceptions are included within this definition only for the purpose of requiring that the local planning agency be informed and have a record of the subdivisions:

- (a) the combination or recombination of portions of previously platted lots where the total number of lots is not increased and the resultant lots are equal to the standards of the governing authority.
- (b) the division of land into parcels of five acres or more where no new street is involved, and plats of these exceptions must be received as information by the planning agency which shall indicate that fact on the plats; and
- (c) the combination or recombination of entire lots of record where no new street or change in existing streets is involved.

Submittal Requirements

Topographic Survey in accordance with SC Code of Laws §

Provide 2 copies of the Subdivision Plat showing:

- North arrow, graphic scale
- Vicinity Map
- Property lines, bearings, and distances
- Existing covenants or restrictions
- Flood hazard district line
- Existing and proposed lots, buildings, structures, etc.
- Existing and proposed roads, parking, ditches, open space, and recreation areas and amenities, rivers, creeks, marshes, and other wetlands
- Adjacent roads, highways (name, number, right-of-way width, public or private)
- Existing and proposed easements (type, size, holder)
- Proposed street names
- Open space areas/calculations
- Seal of Registered Surveyor

Applicant's Signature: _____ Date: March 22, 2021

Property Owner's Signature: _____ Date: _____



McADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

CLIENT

NAME
ADDRESS
ADDRESS
PHONE: XXX. XXX. XXXX

**BEAUFORT COUNTY
SHOPPING CENTER**
CONSTRUCTION DRAWING
SC HIGHWAY 170 AND US HIGHWAY 21
BEAUFORT, SC, 29906

REVISIONS

NO. DATE

PLAN INFORMATION

PROJECT NO. 2020210005
FILENAME
CHECKED BY MDD
DRAWN BY
SCALE 1"=100'
DATE 03.08.2021

SHEET

OVERALL SITE PLAN

C2.00

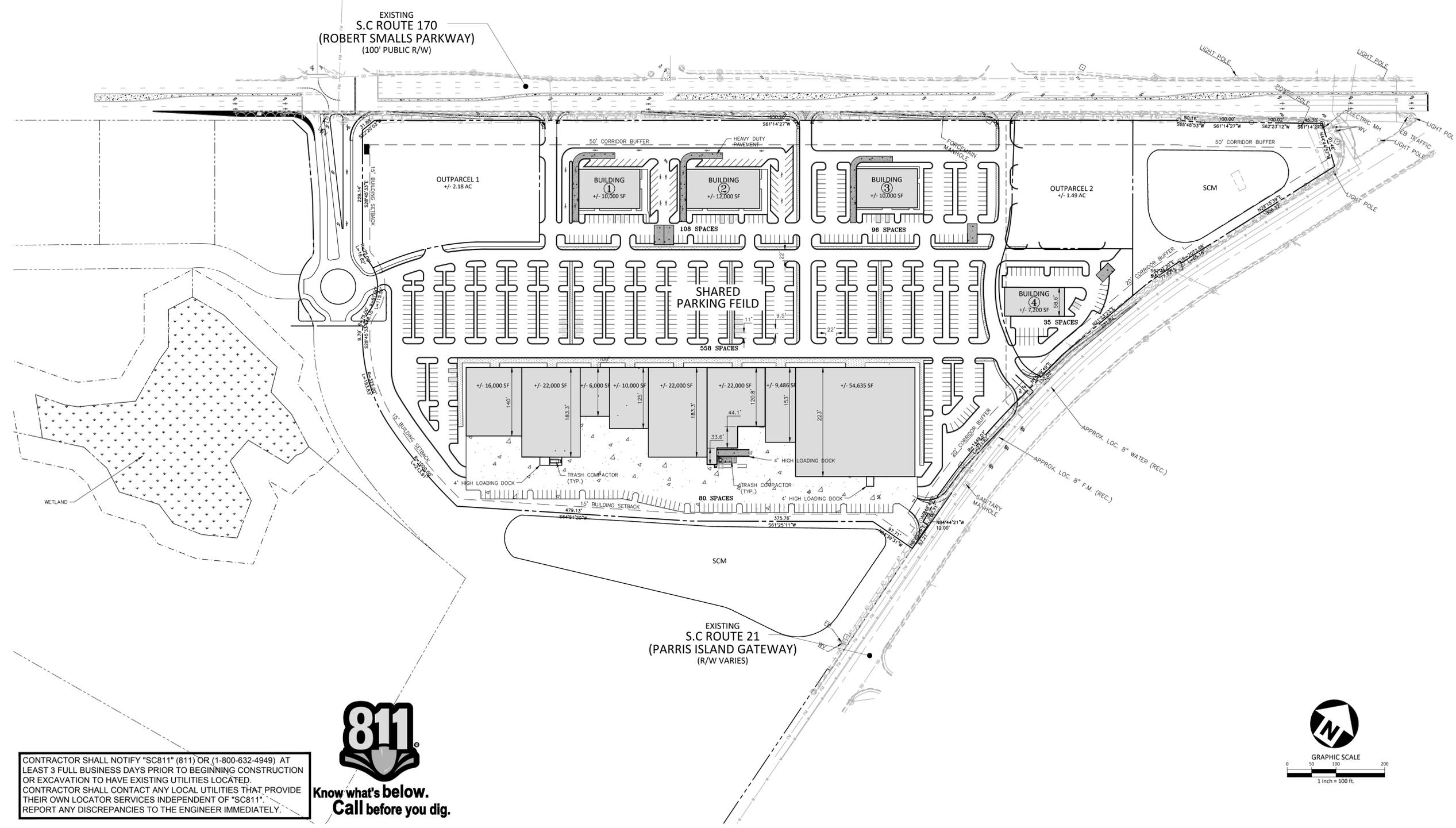
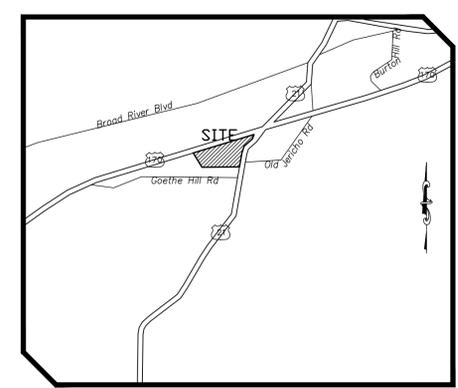
VEHICULAR PARKING	
BUILDING USE:	199,935 SF
PARKING REQUIRED:	800 (1 SPACE/250 SF)
PARKING PROVIDED:	877
OUTPARCEL DEVELOPMENT PARKING:	
OUTPARCEL 1	94,891 SF
PARKING REQUIRED:	380 (1 SPACE/250 SF)
OUTPARCEL 2	64,997 SF
PARKING REQUIRED:	260 (1 SPACE/200 SF)
ACCESSIBLE PARKING	
BUILDING USE	
ADA PARKING REQUIRED*:	18 (2% OF TOTAL)
*MINIMUM VAN ACCESSIBLE PARKING:	5 (1 IN EVERY 6 ADA SPACES)
VAN ACCESSIBLE SPACES PROVIDED:	9
ACCESSIBLE SPACES PROVIDED:	16
TOTAL ADA SPACES	27

SITE LEGEND

	PAINT STRIPING		CENTERLINE
	HEAVY DUTY CONCRETE		CURB AND GUTTER
	CONCRETE SIDEWALK		LOT LINE
			RIGHT-OF-WAY LINE
			SETBACK LINE

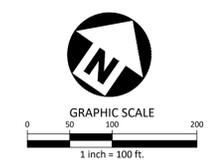
EXISTING LEGEND

	DRAINAGE EASEMENT
	COMPORIUM UTILITY EASEMENT
	PIPELINE EASEMENT
	STREAM BUFFER
	ADJACENT PROPERTY LINE
	ROAD CENTERLINE
	CURB AND GUTTER
	WETLAND



**Know what's below.
Call before you dig.**

CONTRACTOR SHALL NOTIFY "SC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "SC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



M:\Projects\WorganCompany\20210210005\04-Production\Engineering\Construction Drawings\Current Files\20210210005-S1.dwg, 3/22/2021 9:58:23 AM, Gilleson, James



McADAMS

The John R. McAdams Company, Inc.
2905 Meridian Parkway
Durham, NC 27713

phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

www.mcadamsco.com

CLIENT

NAME
ADDRESS
ADDRESS
PHONE: XXX. XXX. XXXX

**BEAUFORT COUNTY
SHOPPING CENTER**
CONSTRUCTION DRAWING
SC HIGHWAY 170 AND US HIGHWAY 21
BEAUFORT, SC, 29906

REVISIONS

NO. DATE

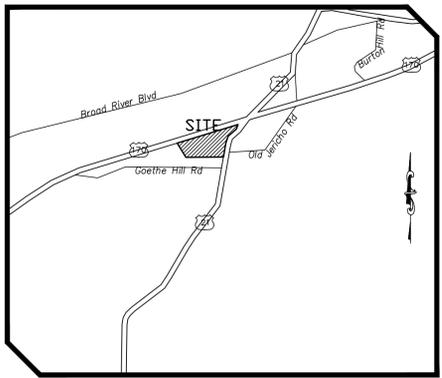
PLAN INFORMATION

PROJECT NO. 2020210005
FILENAME
CHECKED BY MDD
DRAWN BY
SCALE 1"=100'
DATE 03.08.2021

SHEET

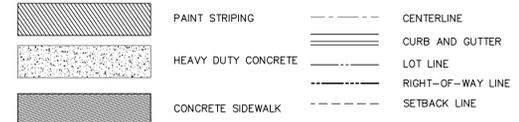
CODE LANDSCAPE PLAN

L1.00

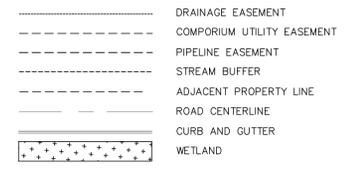


STREET FRONTAGE PLANTING REQUIREMENTS:
ROBERT SMALLS PARKWAY FRONTAGE
50' BUFFER REQUIRED INCLUDING:
3 OVERSTORY TREES AND 8 UNDERSTORY TREES FOR EVERY 100' OF ROAD FRONTAGE PLUS SHRUBS TO REACH 25% TOTAL COVERAGE.
ROBERT SMALLS PARKWAY FRONTAGE = 1946'
OVERSTORY TREES REQUIRED = (1946/100) X 3 = 59 TREES REQUIRED
OVERSTORY TREES PROVIDED = 59 TREES PROVIDED
UNDERSTORY TREES REQUIRED = (1946/100) X 8 = 156 TREES REQUIRED
UNDERSTORY TREES PROVIDED = 181 TREES PROVIDED
PARRIS ISLAND GATEWAY FRONTAGE
20' BUFFER REQUIRED INCLUDING:
3 OVERSTORY TREES AND 6 UNDERSTORY TREES FOR EVERY 100' OF ROAD FRONTAGE PLUS SHRUBS TO REACH 25% TOTAL COVERAGE.
PARRIS ISLAND GATEWAY FRONTAGE = 1202'
OVERSTORY TREES REQUIRED = (1202/100) X 3 = 37 TREES REQUIRED
OVERSTORY TREES PROVIDED = 38 TREES PROVIDED
UNDERSTORY TREES REQUIRED = (1946/100) X 6 = 73 TREES REQUIRED
UNDERSTORY TREES PROVIDED = 73 TREES PROVIDED

SITE LEGEND

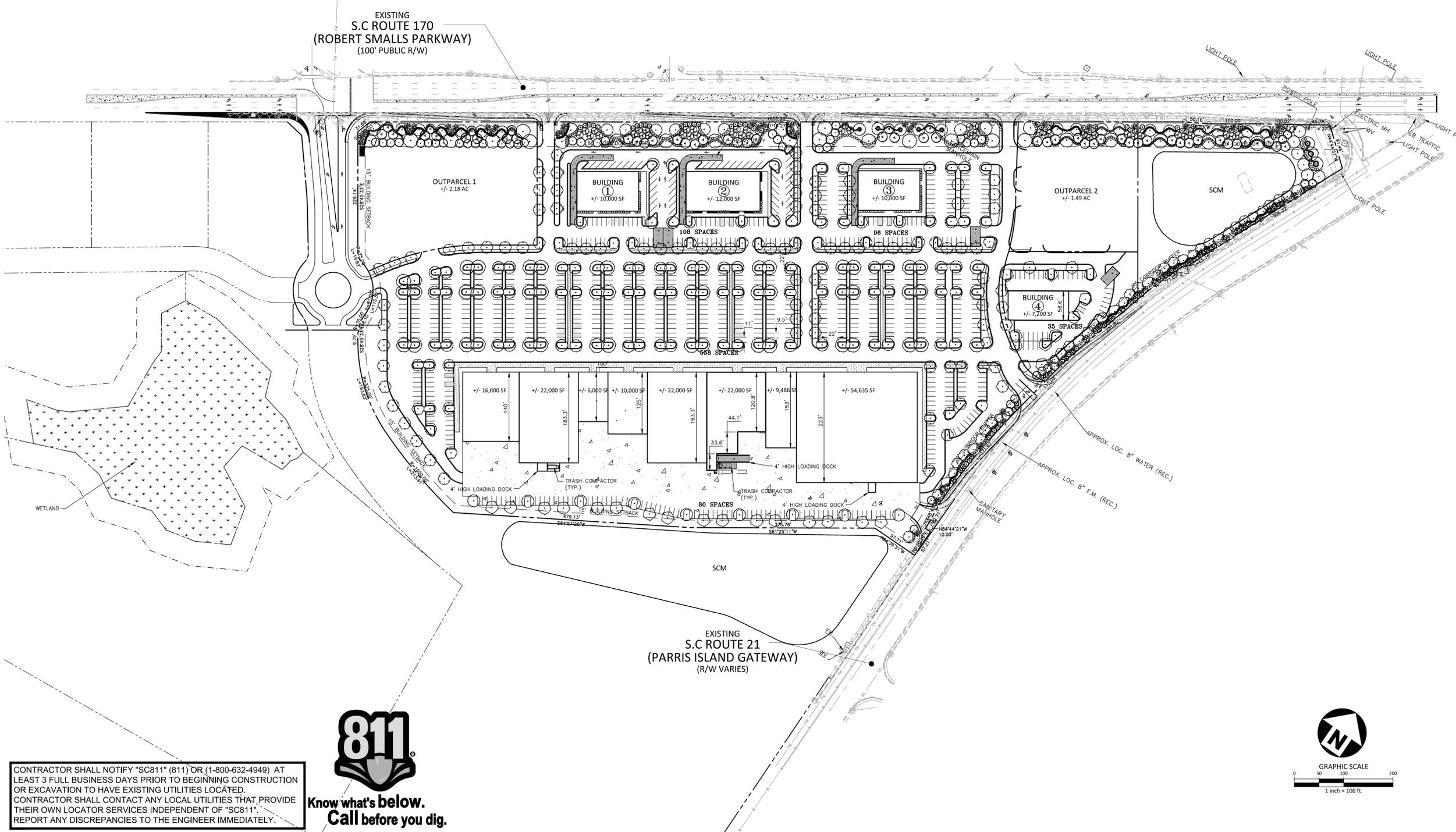


EXISTING LEGEND



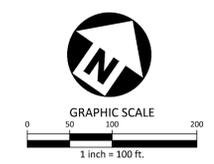
PARKING SUMMARY

VEHICULAR PARKING	
BUILDING USE:	199,935 SF
PARKING REQUIRED:	800 (1 SPACE/250 SF)
PARKING PROVIDED:	877
OUTPARCEL DEVELOPMENT PARKING:	
OUTPARCEL 1	94,891 SF
PARKING REQUIRED:	380 (1 SPACE/250 SF)
OUTPARCEL 2	64,997 SF
PARKING REQUIRED:	260 (1 SPACE/250 SF)
ACCESSIBLE PARKING	
BUILDING USE	
ADA PARKING REQUIRED*:	18 (2% OF TOTAL)
*MINIMUM VAN ACCESSIBLE PARKING:	5 (1 IN EVERY 6 ADA SPACES)
VAN ACCESSIBLE SPACES PROVIDED:	9
ACCESSIBLE SPACES PROVIDED:	16
TOTAL ADA SPACES	27



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CONTRACTOR SHALL NOTIFY "SC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "SC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



P:\Projects\MorganCompany\2020210005\04-Production\Engineering\Construction Drawings\Construction Drawings\2020210005_L1.dwg, 3/22/2021 8:50:23 PM, Lambert, Dan

PLANT SCHEDULE

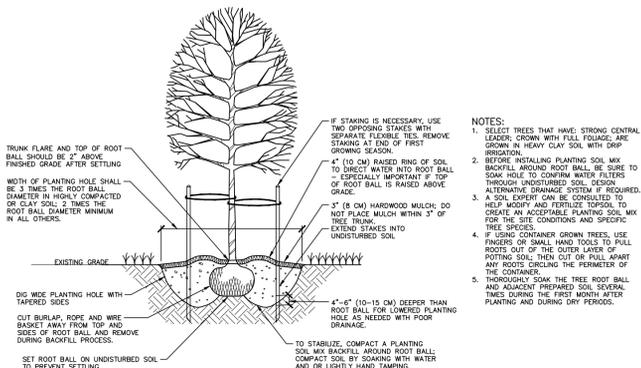
TREES	CODE	QTY	COMMON NAME	BOTANICAL NAME	CAL	HEIGHT	CONT
	AO	123	October Glory Red Maple	Acer rubrum 'October Glory'	2.5" Min.	12' Min.	B&B
	CI	52	Imperial White Dogwood	Cornus florida 'Imperial White'	1.5" Min.	8' Min.	B&B
	IO	52	East Palatka American Holly	Ilex opaca 'East Palatka'	2" Min.	10' Min.	B&B
	LC	52	Cherokee Crape Myrtle	Lagerstroemia indica 'Cherokee'	1.5" per Stem	8' Min.	B&B
	LN	111	New Orleans Crape Myrtle	Lagerstroemia indica 'New Orleans'	1" per Stem	4' Min.	15 gal
	QH	82	Highrise Live Oak	Quercus virginiana 'QV7IA'	2.5" Min.	12' Min.	B&B
	SS	39	Cabbage Palmetto	Sabal palmetto	-	9'-10'	B&B
	UA	127	Allee Lacebark Elm	Ulmus parvifolia 'Allee' TM	2.5" Min.	12' Min.	B&B
	ZG	47	Green Vase Sawleaf Zerkova	Zelkova serrata 'Green Vase'	2.5" Min.	12' Min.	B&B
SHRUBS	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	HEIGHT	SPREAD
	CB	247	Cleyera japonica 'Bronze Beauty'	Cleyera japonica 'Bronze Beauty'	15 gal	36" min	24" min
	ID	156	Schillings Dwarf Yaupon Holly	Ilex vomitoria 'Schillings Dwarf'	7 gal	18" min	18" min
	LJ	113	Japanese Privet	Ligustrum japonicum	25 gal	48" min	30" min
	MC	154	Wax Myrtle	Myrica cerifera	15 gal	36" min	24" min
	OF	203	Fortune Osmanthus	Osmanthus x fortunei	15 gal	36" min	24" min
	PT	79	Japanese Pittosporum	Pittosporum tobira	15 gal	36" min	24" min
	PW	139	Wheeler's Dwarf Pittosporum	Pittosporum tobira 'Wheeler's Dwarf'	7 gal	24" min	18" min

GENERAL LANDSCAPE NOTES:

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF BEAUFORT AND THE STATE OF SOUTH CAROLINA STANDARDS AND SPECIFICATIONS.
- CONTRACTOR IS RESPONSIBLE FOR THE SITE INSPECTION BEFORE LANDSCAPE CONSTRUCTION AND INSTALLATION IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE BEGINNING DEMOLITION OR INSTALLATION.
- CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE NOTES, SPECIFICATIONS, DRAWINGS OR SITE CONDITIONS FOR RESOLUTION PRIOR TO INSTALLATION.
- ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THIS PLAN IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION REGARDING BUILDINGS, GRADING, WALLS, ETC., REFER TO ARCHITECTURE, SITE AND GRADING PLANS.
- VERIFICATION OF TOTAL PLANT QUANTITIES AS SHOWN IN THE PLANT SCHEDULE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
- CONTRACTOR TO ENSURE PROPER STABILIZATION AND SEEDING OF THE SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.
- LANDSCAPE MATERIAL SHALL BE WELL FORMED, VIGOROUS, GROWING SPECIMENS WITH GROWTH TYPICAL OF VARIETIES SPECIFIED AND SHALL BE FREE FROM DAMAGE, INSECTS AND DISEASES. MATERIAL SHALL EQUAL OR SURPASS #1 QUALITY AS DEFINED IN THE CURRENT ISSUE OF "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION.
- ALL PLANT MATERIAL IS TO BE CAREFULLY HANDLED BY THE ROOT BALL, NOT THE TRUNK, BRANCHES AND/OR FOLIAGE OF THE PLANT. MISHANDLED PLANT MATERIAL MAY BE REJECTED BY THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIALS TO BE WELL ROOTED, NOT ROOT BOUND, SUCH THAT THE ROOT BALL REMAINS INTACT THROUGHOUT THE PLANTING PROCESS. DEFICIENT PLANT MATERIAL MAY BE REJECTED BY THE LANDSCAPE ARCHITECT OR OWNER.
- ALL PLANTS TO BE A MINIMUM OF WHAT IS SPECIFIED IN THE PLANT SCHEDULE. ANY CHANGES OR SUBSTITUTIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND GOVERNING JURISDICTION PRIOR TO ANY HOLE BEING DUG.
- ALL LANDSCAPE BEDS SHALL BE MULCHED WITH DOUBLE SHREDDED HARDWOOD MULCH TO A DEPTH OF 3" ONCE PLANTING IS COMPLETE. CONTRACTOR TO COORDINATE WITH OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT TO ESTABLISH THE EXTENTS OF MULCH/SEED/SOD IF NOT SPECIFICALLY SHOWN ON PLANS.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE IN ALL PLANTING AREAS.
- PROPOSED TREES TO BE PLANTED A MINIMUM 10 FEET FROM ANY LIGHT POLE AS MEASURED FROM TRUNK OF THE TREE TO THE POLE.
- PROPOSED TREES TO BE PLANTED A MINIMUM 5 FEET FROM ANY FIRE HYDRANT AS MEASURED FROM TRUNK OF THE TREE TO THE HYDRANT.
- CONTRACTOR SHALL COMPLETE SOIL TEST IN ALL PLANTING AREAS TO DETERMINE SOIL AMENDMENT REQUIREMENTS UNLESS WAIVED BY OWNER'S REPRESENTATIVE. CONTRACTOR SHALL ADJUST PH AND FERTILITY BASED UPON THE SOIL TEST RESULTS.
- TOPSOIL SHALL BE FREE OF MATERIAL LARGER THAN 1.0 INCH IN DIAMETER OR LENGTH AND SHALL NOT CONTAIN SLAG, CINDERS, STONES, LUMPS OF SOIL, STICKS, ROOTS, TRASH, OR OTHER EXTRANEOUS MATERIAL.
- LOOSEN SUBGRADE / SURFACE SOIL TO A MINIMUM DEPTH OF 6 INCHES. APPLY SOIL AMENDMENTS AND FERTILIZERS AS REQUIRED BY THE SOIL TEST RESULTS TO ACHIEVE A HEALTHY GROWING MEDIA AND MIX THOROUGHLY INTO TOP 4 INCHES OF SOIL. SPREAD PLANTING SOIL MIX TO A DEPTH OF 6 INCHES BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. DO NOT SPREAD IF PLANTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
- IF IMPORTED TOPSOIL IS REQUIRED, THE SUBGRADE SHALL BE SCARIFIED OR TILLED TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO INSTALLATION OF IMPORTED TOPSOIL. FOLLOWING INSTALLATION OF IMPORTED TOPSOIL, THE TOPSOIL SHALL BE TILLED TO INTEGRATE THE SOIL PROFILES.
- PLANT MATERIALS ARE TO BE GUARANTEED FOR A PERIOD OF 12 MONTHS. PLANT MATERIALS WHICH REMAIN UNHEALTHY WILL BE REPLACED BY THE LANDSCAPE CONTRACTOR BEFORE THE EXPIRATION OF THE GUARANTEE PERIOD OR IMMEDIATELY IF SO DIRECTED BY THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.
- ALL TREE PLANTINGS SHALL BE MULCHED TO A DEPTH OF 3 INCHES, AND WITH A MINIMUM 3 FOOT RADIUS FROM BASE OF TREE OR TO DRIPLINE. MULCH SHALL BE FREE OF TRASH AND MAINTAINED WEED FREE. MULCH SHALL NOT COVER THE ROOT FLARE. CONFIRM MULCH SPECIFICATIONS WITH OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.
- DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF EXTERIOR PLANTS DURING DELIVERY. DO NOT DROP EXTERIOR PLANTS DURING DELIVERY AND HANDLING.
- DELIVER EXTERIOR PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY. IMMEDIATELY AFTER UNLOADING, STAND THE TREES UP TO REDUCE THE RISK OF SUN SCALD. PROPERLY STAGED TREES ARE STANDING, UNTIED AND SPACED. UNLESS IMMEDIATELY INSTALLED, SET EXTERIOR PLANTS AND TREES IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
- SEE LANDSCAPE DETAILS FOR TREE STAKING REQUIREMENTS.
- EXCAVATE EDGES OF ALL PLANTING BEDS TO 2 INCH DEPTH TO FORM A NEAT AND CRISP DEFINITION.
- CONTRACTOR SHALL REMOVE DEBRIS AND FINE GRADE ALL PLANTING AREAS PRIOR TO INSTALLATION.
- REMOVE GUY WIRES AND STAKES AT END OF WARRANTY PERIOD OR ESTABLISHMENT.
- FINISH GRADING: GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS 1/2 INCH OF FINISH ELEVATION. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISHED GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE.
- DEVELOPER RESERVES THE RIGHT TO REDUCE NUMBER OF PLANTINGS SHOWN THAT ARE ABOVE THE COUNTS REQUIRED BY CITY OF BEAUFORT ORDINANCES IN FUTURE SUBMITTALS PRIOR TO FINAL PLAN APPROVALS.

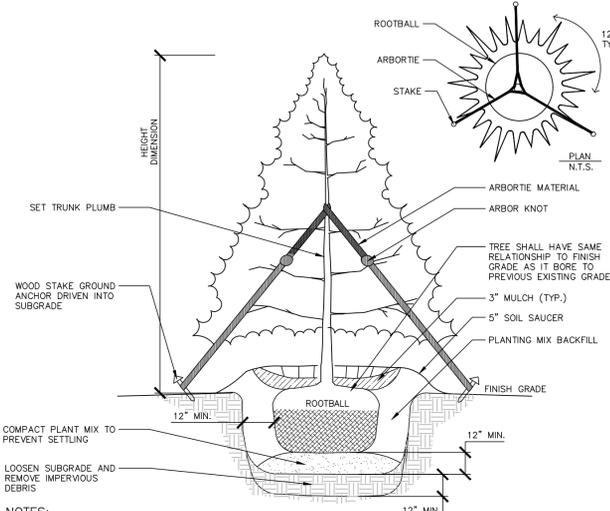
01 TREE INSTALLATION

SCALE: 3/8"=1'-0"



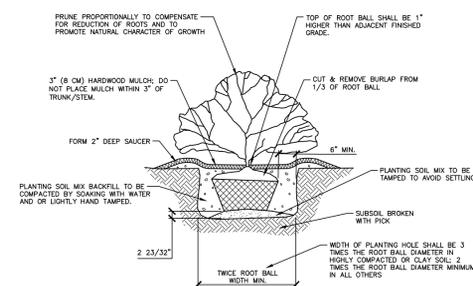
02 EVERGREEN TREE INSTALLATION

SCALE: 3/8"=1'-0"



03 SHRUB INSTALLATION

SCALE: 3/8"=1'-0"



CONTRACTOR SHALL NOTIFY "SC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "SC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



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BEAUFORT COUNTY
SHOPPING CENTER
CONSTRUCTION DRAWING
SC HIGHWAY 170 AND US HIGHWAY 21
BEAUFORT, SC, 29906

REVISIONS

NO.	DATE

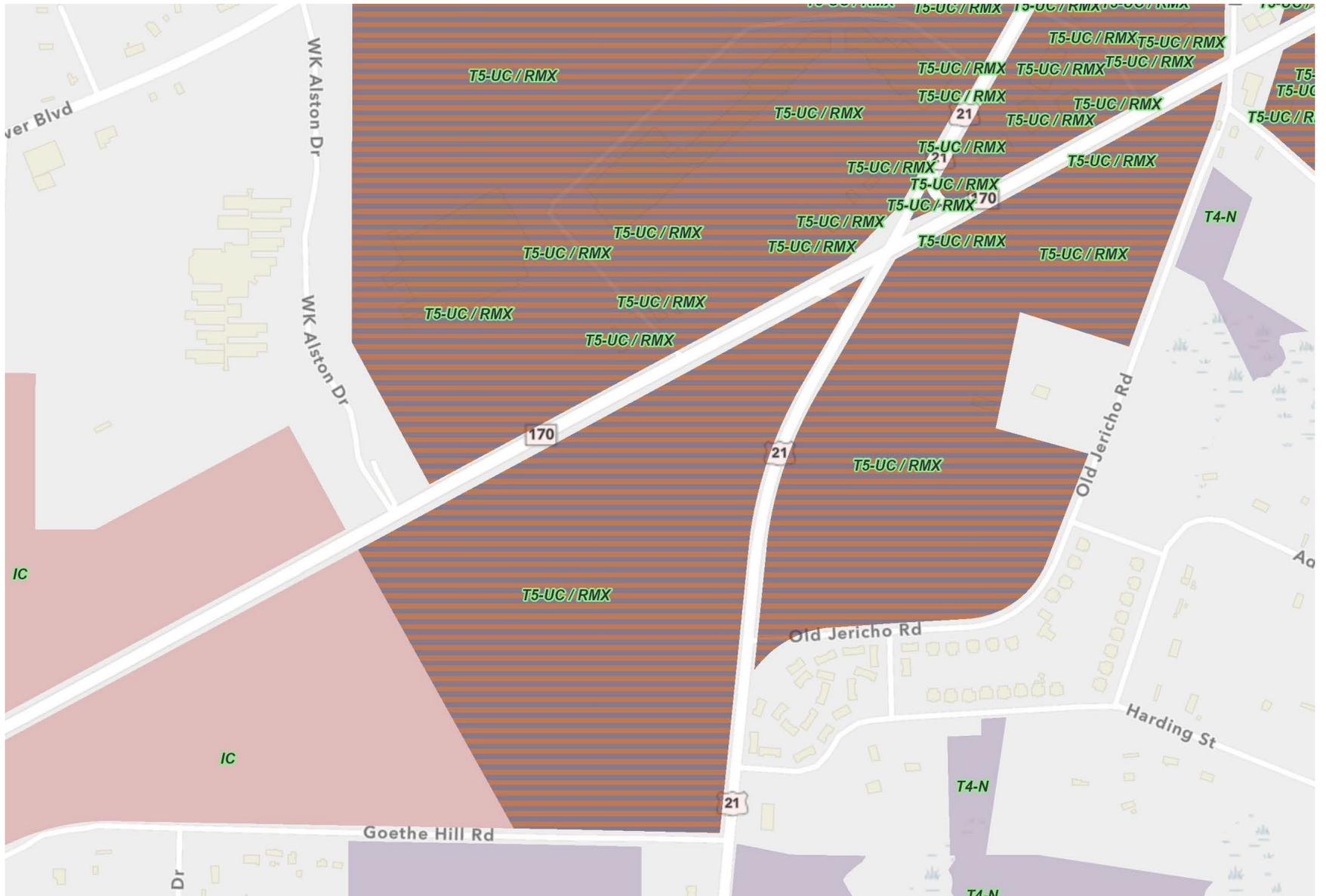
PLAN INFORMATION

PROJECT NO.	2020210005
FILENAME	
CHECKED BY	MDD
DRAWN BY	-
SCALE	1"=100'
DATE	03.08.2021

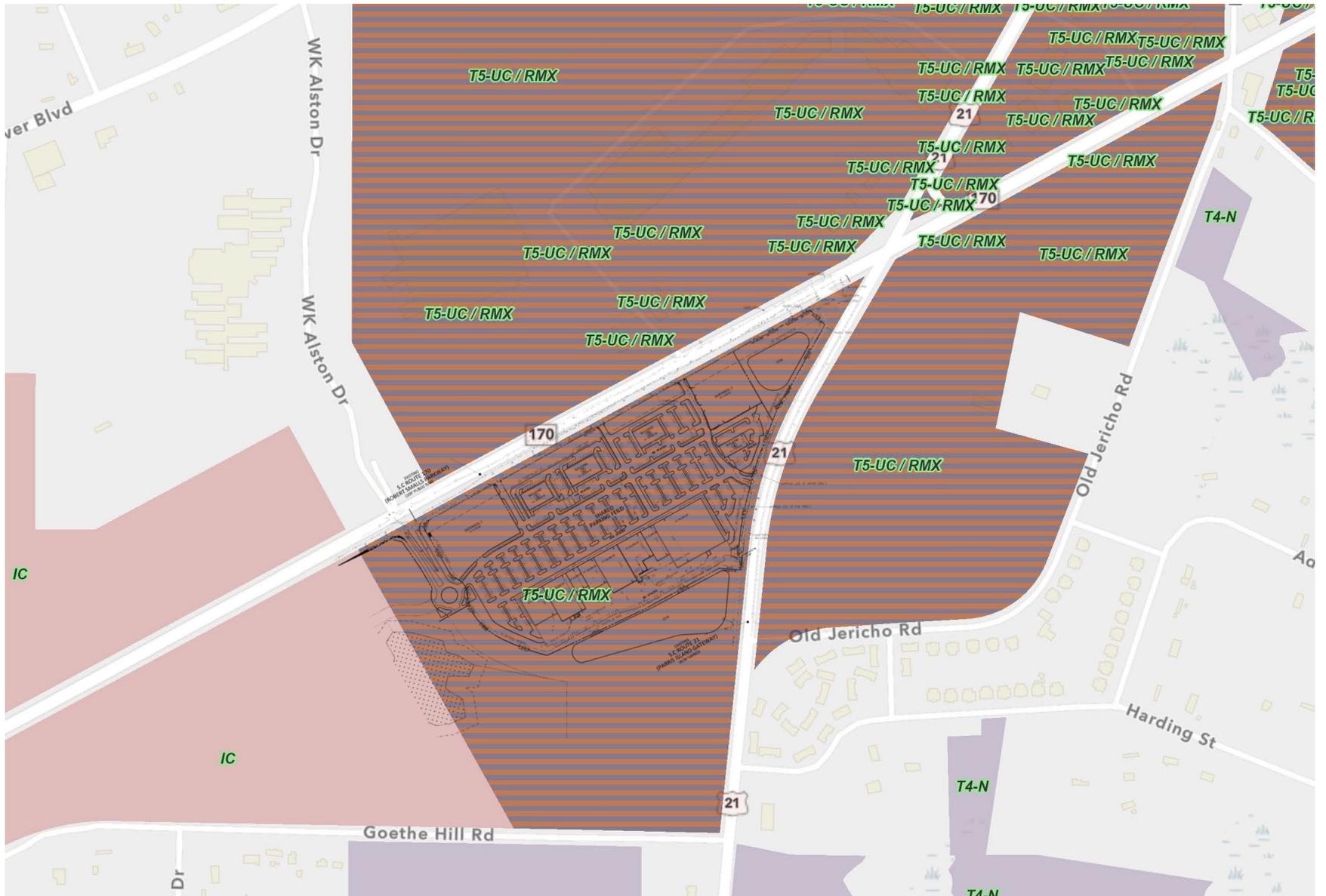
SHEET

LANDSCAPE DETAILS
L1.01

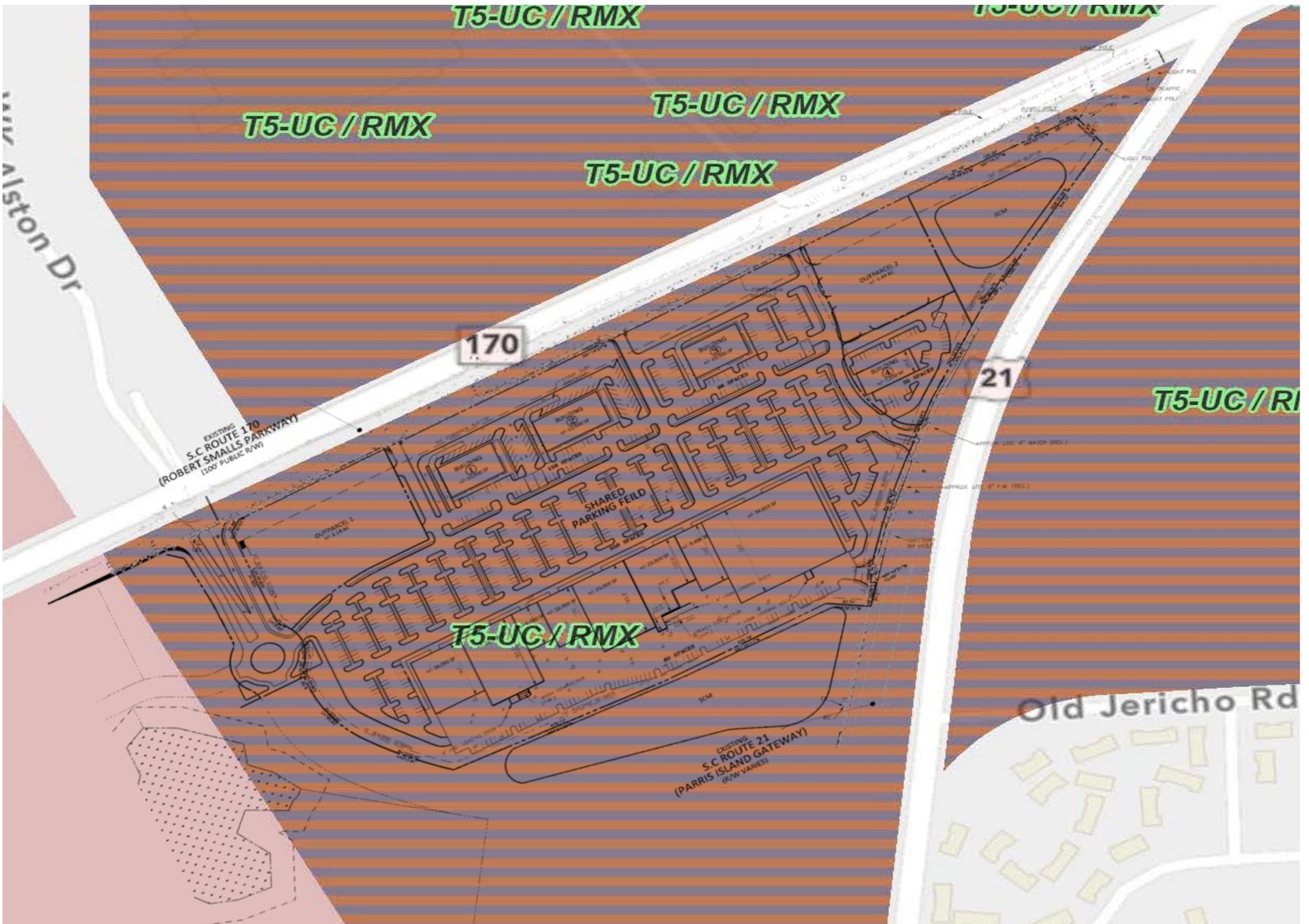
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Regional Zoning Map



Regional Zoning Map with Conceptual Site Plan



Regional Zoning Map with Conceptual Site Plan



Regional Aerial Map with Conceptual Site Plan

The Beaufort Code
Appendix C: Street Infrastructure Plans





Staff Report for Metropolitan Planning Commission

From the Department of Community and Economic Development

April 19, 2021

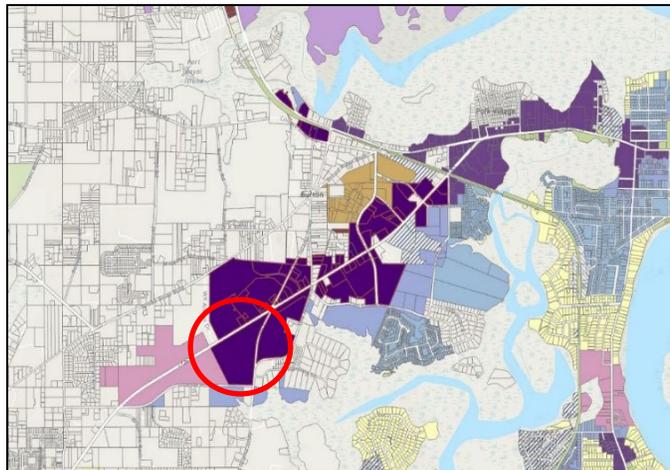
1 SUMMARY OF REQUEST

The applicant, The Morgan Companies, on behalf of the owner Myrtle Beach Farms LP, is requesting sketch plan approval for the major subdivision of a parcel located at the southwest corner of the intersection of Robert Smalls Parkway (SC Route 170) and Parris Island Gateway (SC Route 21). The proposed development, Beaufort Station, will be a large-scale mixed-use retail center that totals 28.42 acres subdivided out of the parent parcel further identified as R120 028 000 0138 0000.

The Sketch Plan application describes the project as a retail center that will contain approximately 165,000 s.f. of retail space and approximately six outparcels of various sizes. The property is zoned T5-Urban Corridor/Regional Mixed Use (T5-UC/RMX). The proposed development is located on the south side of Robert Smalls Parkway, directly opposite the Walmart Supercenter. Adjacent zoning to the north and the east is predominantly T5-UC/RMX. Adjacent zoning to the west is Institutional & Campus (IC), and adjacent zoning to the south is T4-Neighborhood (T4-N). A Traffic Impact and Assess Study prepared by EPC, LLC was completed in April 2020 and has been included in this Conceptual/Sketch Plan Application submittal.

Sketch Plan Review Process

Since the project involves the creation of new streets and the subdivision of a parcel more than 10 acres in size, it is considered a Major subdivision. Per Section 9.9.3 of the Beaufort Code, Major subdivisions require sketch plan review approval by the MPC. A sketch plan review is a ministerial decision; the MPC determines that the provisions of the code regarding the subdivision of land have been met.



Sketch plans are to provide the general layout of lots and streets, reviewed by the MPC, for the sole purpose of subdividing the land. The intent is to provide the applicant confirmation that the “simple line drawing” is consistent with the development code in terms of lot dimensions, street connectivity, street dimensions, and the allocation of required open space, in order for the applicant to confidently proceed with investing in technical drawings. It is not a building development plan.

In accordance with Section 9.9.3.E, the MPC “shall approve, approve with conditions, or disapprove the sketch plan within 60 days after submission”. If the MPC approves the sketch plan, the applicant will submit a preliminary plat incorporating any conditions required by the MPC. The preliminary plat will inform the site plan for the development and will be reviewed by the Technical Review Committee (TRC).

2 STAFF ASSESSMENT

Staff has reviewed the proposed development subject to the Sketch Plan requirements set forth in Section 9.3.1.B and 9.9.3, with the following findings:

Project Overview

The applicant proposes a large-scale mixed-use retail center on 28.42 acres. The retail center will contain approximately 165,000 square feet of junior anchor shop space and approximately six outparcels of varying sizes. The sketch plan (titled Overall Site Plan) identifies three points of parking lot access along Robert Smalls Parkway, one point of parking lot access and one point of rear/loading dock access along Parris Island Gateway, and one parking lot access via a new road southern extension of W.K. Alston Drive.

Section 2.4 District Development Standards (T5-UC/RMX)

The sketch plan meets all T5-UC/RMX District development standards.

Section 5.7.4 Parking Space Requirements

Per Section 5.7.4, retail use requires one parking space per 300 square feet of retail space. The proposed Beaufort Station retail center sketch plan includes approximately 200,000 s.f. of retail in the primary building and four outparcel buildings. The sketch plan currently identifies 877 spaces which exceeds the minimum parking required. Two additional outparcels do not show conceptual layouts but total approximately 3.67 acres. The site plans for these outparcels would be required to provide one parking space per 300 square feet of retail space contained within the limits of the outparcel boundaries. It should be recognized that parking space requirements will vary depending on final retail square footage and retail use.

Section 7.1 Improvement Requirements

The Beaufort Code Section 7.1.3 lists the required improvements for proposed developments by zoning district. The suitability and adequacy of required improvements will be assessed during preliminary plat review by the Technical Review Committee (TRC).

Section 7.3 Street Engineering Standards

A Traffic Impact and Access Study has been submitted with the application and the mitigation measures identified in the study have been incorporated into the sketch plan. Per Section 7.3.2.G “The TRC shall review all TIAs as part of the applicable Design Review phase. Final TIAs shall be approved prior to the applicant submitting a Project Permit application”. In addition, the new road southern extension of W K Alston Drive is consistent with the Beaufort Code Appendix C: Street Infrastructure Plan recommendations.

Section 7.4 – Community Green Space and Open Space Requirement

The proposed development is zoned T5-UC/RMX and is exempt from open/civic space requirements per Section 7.4.2, Community Green Space and Open Space Requirements. However, the applicant's application states that 5.72 acres (20%) has been allocated to open space. This area includes proposed stormwater management areas, and required corridor and site landscaping.

Technical Review Committee (TRC)

The Suitability and adequacy of required infrastructure will be assessed during preliminary plat review by the Technical Review Committee in accordance with the Beaufort Development Code Chapter 7 (Land Development), Chapter 8 (Environmental & Resource Protection) and Chapter 9 (Development Review Procedures).

Design Review Board (DRB)

Per Section 9.8.2, any nonresidential development projects having more than a 10,000 square foot building footprint shall be subject to review and approval by the Design Review Board. Building form, orientation, landscaping, and access will be evaluated as part of development design review (Section 9.8) prior to the submittal for a project permit.

3 STAFF RECOMMENDATION

Recommendation: Approval of the sketch plan as submitted.

TRAFFIC IMPACT AND ACCESS STUDY

**PROPOSED RETAIL CENTER
SC 170 AT US 21
BEAUFORT COUNTY, SOUTH CAROLINA**

Prepared for:

**Alliance Consulting Engineers
Columbia, SC**

**Submitted
March, 2020
*Finalized April 15, 2020***

Prepared by:



EPC, LLC

*2404 Taylor Road
Cayce, SC 29033*

*(803) 794 7018
(803) 794 9216 Fax*



March 18, 2020
Finalized April 15, 2020

Mr. Kyle M. Clampitt, PE
Vice President
Alliance Consulting Engineers, Inc.
P O Box 8147
Columbia, SC 29202

Phone: 803 779 2078
Cell: 803 394 3660
E-Mail: kclampitt@alliancece.com

**RE: Traffic Impact and Access Study
Proposed Commercial Center
SC 170 at US 21
Beaufort County, SC**

As requested, Encroachment Permit Clearinghouse (EPC) has completed an assessment of the traffic impacts associated with the development of a new commercial retail center to be located along SC 170 (Robert Smalls Parkway) and US 21 (Parris Island Gateway) in Beaufort County, SC. The following provides a summary of this study's findings.

PROJECT DESCRIPTION

The project site is generally located in the southwest quadrant of the SC 170 at US 21 intersection opposite of the CrossCreek Center/Wal*Mart in Beaufort County, SC. The project proposal is to construct a large-scale mixed-use retail center providing a total of 195,300 square-feet (sf) which will provide a range of retail uses as outlined below:

- General Retail: 158,000 square-feet (sf);
- Super Convenience Store (C-store)/Gas Station: 4,400 sf C-Store;
- Starbucks: 2,400 sf;
- Three High Turnover Sit-down Restaurants: 26,000 sf (3 restaurants); and
- Fast Food Restaurant: 4,500 sf.

As scheduled, this project is planned to be constructed and fully operational by 2023. **Figure 1** depicts the site location in relation to the regional roadway system (Figures located at end of report.). As planned, direct access to/from the site will be provided via six access points as depicted by **Figure 2**; four along SC 170 and two along US 21 as described below:

SC 170

- Full access aligning opposite WK Alston Drive, intersection to be signalized;
- Three right-in/right-out drives located between WK Alston Drive and US 21 (the eastern access will allow left-turn in movements);

US 21

- Full access approx. 750-feet south of SC 170; and
- Service access approx. 330-feet south of full-access.

EXISTING CONDITIONS

A comprehensive field inventory of the project study area was conducted in February 2020 while schools were in session. The field inventory included a collection of geometric data, traffic volumes and traffic control within the study area. The following sections detail the current traffic conditions and include a description of roadways/intersections serving the site and traffic flow in close proximity to the project.

Study Area Intersections

As identified by SCDOT District #6 staff, the following intersections have been required to be analyzed in order to determine project impact on the surrounding roadway network:

- SC 170 at US 21;
- SC 170 at WK Alston Drive;
- SC 170 at Goethe Hill Road; and
- US 21 at Goethe Hill Road.

Figure 3 illustrates the existing geometrics and traffic control for the study area intersections and surrounding roadways.

Traffic Volumes

In order to determine the existing traffic volume flow patterns within the study area, manual turning movement counts were performed. Weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) peak period turning movement specific counts were conducted at the above referenced study area intersections.

Summarized count sheets for the study area intersection are included in the Appendix of this report. **Figures 4** and **5** graphically depict the respective Existing AM and PM peak-hour traffic volumes at the study area intersections to be used for analytical purposes.

FUTURE CONDITIONS

Traffic analyses for future conditions have been conducted for two separate scenarios: first, 2023 No-Build conditions, which include an annual normal growth in traffic, all pertinent background development traffic, and any pertinent planned roadway/intersection improvements; and secondly, 2023 Build conditions, which account for all No-Build conditions PLUS traffic generated by the proposed development.

Future No-Build Traffic Conditions

Background Development

Based on information provided by SCDOT staff, there are no background developments in the immediate area of the planned development.

Planned Roadway Improvements

Two projects are planned in the study area by the SCDOT. The first is a safety improvement project which will add a raised concrete median within both US 21 and SC 170 along the frontage of the CrossCreek Center. This improvement is combined with the signaling of SC170 at WK Alston Drive along with some minor geometric improvements which will aid in U-turn movements. Concept drawings of both of these improvements are located in the appendix.

Annual Growth Rate

Based on SCDOT count data gathered from counts stations located along SC 170 (#175) and US 21 (#197) two growth rates have been developed and applied to the study area network. Along SC 170, a 5½-percent per year growth was defined based on the comparison of historical volumes between 2019 and 2017. This annual growth rate (factor of 1.17) has been applied to all volumes along SC 170 and WK Alston Drive. Along US 21, a smaller growth rate of 1½-percent per year was developed using the same methodology. Volumes along US 21 were upwardly increased using a rate of 1.05. This annual growth rates will account for all unspecified traffic growth, was applied to the Existing peak-hour traffic volumes.

The anticipated 2023 No-Build AM and PM peak-hour traffic volumes, which reflect the specified annual growth rates are shown in **Figures 6** and **7**.

Site-Generated Traffic

Traffic volumes expected to be generated by the proposed project were forecasted using the Tenth Edition of the ITE *Trip Generation* manual, as published by the Institute of Transportation Engineers. As required by SCDOT, components of the development (typically out-parcels which have identified end users) have each used specific land-use to develop the estimated trip generation. For this project, Land-Use Codes #820 (Shopping Center), #960 (Super Gas-Station/Convenience Store), #937 (Coffee Shop), #932 (High Turn-over Sit-Down Restaurant) and #934 (Fast-Food w/Drive-Thru) were selected to estimate the specific site-generated traffic. **Table 1** depicts the anticipated site-generated traffic.

Table 1
PROJECT TRIP-GENERATION SUMMARY¹
Retail Center
Beaufort County, SC

Land Use	Size (sf)	LUC	Var	Daily	AM Peak-Hour			PM Peak-Hour		
				Two-Way	Enter	Exit	Total	Enter	Exit	Total
Shopping Center	158,000	820	sf	8,210	143	88	231	366	396	762
<i>25% Pass-By²</i>				<i>-2,050</i>	<i>-22</i>	<i>-22</i>	<i>-44</i>	<i>-92</i>	<i>-92</i>	<i>-184</i>
<i>New Trips</i>				6,160	121	66	187	274	304	578
Parkers Gas/C-Store	4,400	960	sf	3,690	183	183	366	153	153	306
<i>40% Pass-By</i>				<i>-1,480</i>	<i>-73</i>	<i>-73</i>	<i>-146</i>	<i>-61</i>	<i>-61</i>	<i>-122</i>
<i>New Trips</i>				2,210	110	110	220	92	92	184
Starbucks	2,400	937	sf	1,970	109	116	225	52	52	104
<i>25% Pass-By</i>				<i>-490</i>	<i>-27</i>	<i>-27</i>	<i>-54</i>	<i>-13</i>	<i>-13</i>	<i>-26</i>
<i>New Trips</i>				1,480	82	89	171	39	39	78
High Turnover Restaurants	26,000	932	sf	2,920	142	116	258	157	97	254
<i>25% Pass-By</i>				<i>-730</i>	<i>-29</i>	<i>-29</i>	<i>-58</i>	<i>-24</i>	<i>-24</i>	<i>-48</i>
<i>New Trips</i>				2,190	113	87	200	133	73	206
Fast Food Restaurants	4,500	934	sf	2,120	92	89	181	76	71	147
<i>25% Pass-By</i>				<i>-530</i>	<i>-22</i>	<i>-22</i>	<i>-44</i>	<i>-18</i>	<i>-18</i>	<i>-36</i>
<i>New Trips</i>				1,590	70	67	137	58	53	111
TOTAL PROJECT TRIPS				18,910	669	592	1,261	804	769	1,573
TOTAL PROJECT PASS-BY TRIPS				<i>-5,280</i>	<i>-173</i>	<i>-173</i>	<i>-346</i>	<i>-208</i>	<i>-208</i>	<i>-416</i>
TOTAL PROJECT NEW TRIPS				13,630	496	419	915	596	561	1,157

¹ ITE Trip Generation manual, 10th Ed. 2017.

² Twenty-five percent pass-by assumed for all retail/food uses in order to provide a conservative analyses. Pass-by for Gas/C-Store which could be high as 60% however, 40% has been used based on volumes on SC 170 .

As shown, the proposed development will be comprised of multiple retail tenants which sum to a total of 195,300-sf. Using the ITE references, the project can be expected to generate a total of 18,910 two-way daily trips of which a total of 1,261 trips (669 entering and 592 exiting) are expected during the AM peak-hour. During the PM peak-hour, a total of 1,573 trips (804 entering, 769 exiting) are expected.

Typically, a significant portion of vehicle trips generated by these types of land-use attracted to the site from the traffic passing on the adjacent street, are referred to as *pass-by/diverted* or *impulse* trips. Pass-by trips are trips made to the proposed development as intermediate stops on the way from an origin to a primary trip destination. It is important to note that pass-by trips do not reduce the amount of traffic generated by the site, and the “total trips” generated are expected to enter and exit the site no matter what percentage of pass-by trips is used. Pass-by trips are simply that portion of the site-generated traffic that are not a function of the land uses in the area, but are only a function of the type of use proposed on the site and the volume of traffic on the adjacent roadways. For this particular project, a *pass-by* reduction of 25-percent has been used for the retail and restaurants uses in order to provide a conservative analyses framework. Pass-by for the Parkers has been assumed at 40-percent which again is conservative as gas/c-stores can be as high as 60-percent.

Once the pass-by reduction was applied to the anticipated external trips, the proposed development can be expected to generate 13,630 *new* external trips on a weekday daily basis, of which a total of 915 *new* trips (496 entering, 419 exiting) can be expected during the AM peak-hour. During the PM peak-hour, 1,157 *new* trips (596 entering, 561 exiting) can be expected.

Distribution Pattern

The directional distribution of site-generated traffic on the study area roadways has been based on an evaluation of existing travel patterns along SC 170, US 21 and to a lesser extent from WK Alston Drive. These anticipated patterns are shown in **Table 2**. This distribution pattern has been applied to the site-generated traffic volumes from Table 1 to develop the site-generated specific volumes for the study area intersections. Based on the development plan, distribution of site traffic was completed for the multiple out-parcel “pods” as well as the general shopping center. Individual trip assignment of each “pod” are located in the appendix of this report with the over-all sum of the peak-hour site-generated volumes shown by **Figures 8 & 9**.

Table 2
TRIP DISTRIBUTION PATTERN
Retail Center
Beaufort County, SC

Roadways	Directional Flow	Percent Enter/Exit
SC 170	East	30
	West	20
US 21	North	20
	South	25
WK Alston Drive	North	5
	Total	100

Note: Based on the existing traffic patterns along SC 170 and US 21.

The assignment of pass-by trips along both SC 170 and US 21 have been based on the existing directional flow patterns on these roadways. Since traffic flow patterns are different during the AM and PM peak hours, so are the percentages used to assign these trips. **Table 3** depicts both the directional percentage used for the assignment of the pass-by trips.

Table 3
PASS-BY TRIP ASSIGNMENT
Retail Center
Beaufort County, SC

Roadways	Directional Flow	Percent (%) of Pass-by	
		AM Peak	PM Peak
SC 170	Eastbound	32	23
	Westbound	24	32
US 21	Northbound	22	26
	Southbound	22	19
Total		100	100

Note: Based on the existing traffic patterns along SC 170 and US 21.

Future Build Traffic Conditions

The site-generated traffic, as depicted in Figures 8 and 9, have been added to the respective 2023 No-Build traffic volumes shown in Figures 6 and 7. This results in the peak-hour Build traffic volumes, which are graphically depicted in **Figures 10** and **11**. These volumes were used as the basis to determine potential improvement measures necessary to mitigate traffic impacts caused by the project.

TRAFFIC OPERATIONS

Analysis Methodology

A primary result of capacity analysis is the assignment of Level-of-Service (LOS) to traffic facilities under various traffic flow conditions. The concept of Level-of-Service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A Level-of-Service designation provides an index to the quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six Levels-of-Service are defined for each type of facility (signalized and unsignalized intersections). They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst.

Since the Level-of-Service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of Levels-of-Service depending on the time of day, day of week, or period of a year.

Analysis Results

As part of this TIAS, capacity analyses have been performed at the study area intersections under both Existing and Future (No-Build & Build) conditions. The results of these analyses are summarized in **Table 4**.

Table 4
LEVEL-OF-SERVICE SUMMARY¹
Retail Center
Beaufort County, SC

<u>Signalized Intersections</u>	<u>Time Period</u>	<u>Existing</u>		<u>2023 No-Build</u>		<u>2023 Build</u>	
		<u>Delay^a</u>	<u>LOS^b</u>	<u>Delay</u>	<u>LOS</u>	<u>Delay</u>	<u>LOS</u>
SC 170 at US 21	AM	32.0	C	37.0	D	37.9	D
	PM	42.3	D	45.7	D	74.6	E
SC 170 at WK Alston Drive ^c	AM	To be Signalized		19.8	B	23.3	C
	PM	To be Signalized		6.4	A	29.1	C
<u>Unsignalized Intersections</u>							
SC 170 at WK Alston Drive	AM	95.9	F	Future Conditions are Signalized			
	PM	>300.0	F	See Above			
SC 170 at Goethe Hill Road	AM	28.2	D	41.7	E	53.5	F
	PM	35.9	E	60.4	F	90.8	F
US 21 at Goethe Hill Road	AM	21.9	C	23.2	C	27.9	D
	PM	21.2	C	22.6	C	28.0	D
SC 170 at Western Access RIRO	AM	To be Developed by Project				19.2	C
	PM	To be Developed by Project				16.3	C
SC 170 at Center Access RIRO	AM	To be Developed by Project				15.7	C
	PM	To be Developed by Project				14.5	B
SC 170 at Eastern Access RIRO & Left -In	AM	To be Developed by Project				16.8	C
	PM	To be Developed by Project				15.5	C
US 21 at Northern Full-Movement Access	AM	To be Developed by Project				21.8	C
	PM	To be Developed by Project				36.1	E
US 21 at Southern Service Access RIRO	AM	To be Developed by Project				11.3	B
	PM	To be Developed by Project				11.6	B

a. Delay in seconds-per-vehicle.

b. LOS = Level-of-Service.

c. Intersection to be signalized by SCDOT, Build conditions reflect the addition of a northbound approach leg (site access).

GENERAL NOTES:

1. Signalized intersections, Delay is a weighted average of each lane group/approach.

2. For unsignalized intersections, Delay is representative of critical movement/lane group/approach.

As shown in Table 3, under Existing conditions, the signalized intersection of SC 170 at US 21 operates at a LOS C and LOS D during the respective AM and PM peak hours. The unsignalized intersection of SC 170 at WK Alston Drive operates poorly during both peak hours studied however, as was indicated earlier, this intersection is scheduled for installation of traffic signal control in the near future. The unsignalized intersection of SC 170 at Goethe Hill Road operates with delays during the PM peak-hour and the remaining US 21 at Goethe Hill Road intersection operates acceptably during both peaks.

Future 2023 No-Build conditions include growth expected in the area (annual percentage rates) as well as the safety improvement project along SC 170 and signalization of the SC 170 at WK Alston Drive intersection. As shown, the SC 170 at US 21 intersection continues to operate at good service levels during both peak hours. Due to the SCDOT safety project and signalization, the SC 170 at WK Alston Drive intersection improves to very good service levels during both peak hours. The unsignalized intersection of SC 170 at Goethe Hill Road continues to operate poorly now during both peak hours. Just as was identified in Existing conditions, this is due to the minor street left-turn delay. US 21 at Goethe Hill Road continues to operate acceptably during both peaks.

Under Build 2023 conditions, the SC 170 at US 21 signalized intersection will operate acceptably during the AM peak-hour and at a LOS E (74.6-sec delay) during the PM peak-hour. The main issue at this intersection is the southbound approach (US 21 to westbound SC 170) where a heavy right-turn volume (300 veh.) operates from the outside (#2) through lane as a shared through/right-turn lane. The SC 170 at WK Alston Drive intersection continues to operate at good service levels now with the addition of a new northbound approach leg serving the site. The unsignalized intersection of SC 170 at Goethe Hill Road continues to operate poorly during both peak hours just as it had under future No-Build conditions and the SC US 21 at Goethe Hill Road intersection continues to operate acceptably.

The western and center site access drives along SC 170 operate under RIRO restrictions and are each expected to operate acceptably during both peak hours. The eastern access which will operate as a RIRO with left-turn movements entering is expected to operate at good service levels. On US 21, the full-movement access is expected to operate acceptably during the AM peak-hour and with some delays during the PM peak-hour. This delay is due to the minor street left-turn movement. The RIRO service access, has a relatively minor volume of traffic (service/deliveries) and is expected to operate acceptably during both peak hours.

MITIGATION

The final phase of the analysis process is to identify mitigating measures which may either minimize the impact of the project on the transportation system or tend to alleviate poor service levels not caused by the project. The following describes measures necessary to mitigate the project's impact.

Site Access Drives

As planned, access to the site will be provided via four drives to/from SC 170 (opposite WK Alston Drive and two RIRO's and one RIRO/Left-in) and two drives along US 21 one of which is a service access. The following present recommended geometries and traffic control for each of these drives:

Access Opposite WK Alston Drive- Access to be located opposite WK Alston Drive resulting in four-legged signalized intersection. This access should be constructed to provide the following:

- ***Northbound (Site Access) Approach:*** Construct site access as a three-lane cross-section with a single inbound lane and two lanes exiting the site designated as separate left-turn lane and a shared through/right-turn. Directional traffic (entering and exiting) will be separated by a raised median. In order to align with the current geometrics of WK Alston Drive, a second median (painted) is needed which will align the opposing northbound and southbound left-turn lanes as well as align the northbound/right-turn lane to the WK Alston receiving lane;

- ***Southbound (WK Alston Drive) Approach:*** Some minor pavement markings including left-turn guidance skip-lines may be required;
- ***Eastbound (SC 170) Approach:*** With operations of this intersection under signal control, a right-turn deceleration lane entering the site is recommended. This lane should provide a 100-foot lane (*ref. ARMS Table 5-8*) and a taper of 200-feet (*ref. Fig. 5-21:55mph*);
- ***Westbound (SC 170) Approach:*** The existing TWTL lane should be re-stripped to provide a formal left-turn lane with 200-feet of storage (*ref. ARMS Table 5-9*);
- ***Traffic Control:*** Revise traffic signal to optimize operating conditions with the addition of this fourth approach leg. Initial analyses indicate the need for protected/permissive left turn phases in both the eastbound and westbound directions of SC 170. Split phasing is not recommended as the northbound and southbound left-turn lanes are planned on aligning.

SC 170 Access Drives- Three access drives are planned between the intersection of WK Alston Drive and the intersection of US 21. Separation between each intersection is as follows:

- WK Alston Drive to Western RIRO: 400-feet separation;
- Western Access to Center Access: 500-feet;
- Center Access to Eastern Access: 385-feet; and
- Eastern Access to US 21: 630-feet.

Each of these access locations, are in accordance with the *ARMS Manual, Figure 3-9* which is applicable for major development out-parcel access (*twice normal spacing*). Recommended geometrics and traffic control are as follows:

1. Western RIRO Access:

- ***Northbound (Site Access) Approach:*** Construct the access drive as a two-lane cross-section with a single inbound lane and one lane exiting the site designated as a right-turn only;
- ***Eastbound (SC 170) Approach:*** Based on projected peak-hour volumes, a separate right-turn lane entering the site accesses is recommended (*ref. Design Manual, Fig. 9.5-B*). This lane should provide a full width length of 100-feet (*ref. ARMS Table 5-8*), a taper of 200-feet (*ref. Fig. 5-21:55mph*) and a minimum of a 50-foot transition; and
- ***Traffic Control:*** Place intersection under STOP sign control where right-turn movements exiting the site will be required to stop. It should be noted that the raised median as planned under the SCDOT safety improvement project will control all left-turn movements at this access drive.

2. Center RIRO Access:

- ***Northbound (Site Access) Approach:*** Construct the access drive as a two-lane cross-section with a single inbound lane and one lane exiting the site designated as a right-turn only;
- ***Eastbound (SC 170) Approach:*** Based on projected peak-hour volumes, a separate right-turn lane entering the site accesses is not needed due to the minor volume of traffic expected to enter and exit this access (*ref. Design Manual, Fig. 9.5-B*); and

- **Traffic Control:** Place intersection under STOP sign control where right-turn movements exiting the site will be required to stop. It should be noted that the raised median as planned under the SCDOT safety improvement project will control all left-turn movements at this access drive.

3. Eastern RIRO & Left-In Access:

- **Northbound (Site Access) Approach:** Construct the access drive as a two-lane cross-section with a single inbound lane and one lane exiting the site designated as a right-turn only;
- **Eastbound (SC 170) Approach:** Based on projected peak-hour volumes, a separate right-turn lane entering the site accesses is recommended (*ref. Design Manual, Fig. 9.5-B*). This lane should provide a full width length of 100-feet (*ref. ARMS Table 5-8*), a taper of 200-feet (*ref. Fig. 5-21:55mph*);
- **Westbound (SC 170) Approach:** The SCDOT safety improvement project will allow a left-turn movement entering the site at this access which aligns opposite the eastbound left-turn entering lane for the eastern/centralized Cross Creek Shopping Center access. This lane should provide a full width length of 200-feet (*ref. ARMS Table 5-9*), a taper of 200-feet (*ref. Fig. 5-21:55mph*). This taper will likely be “back-to-back” with the taper for the adjacent intersection of SC 170 at US 21; and
- **Traffic Control:** Place intersection under STOP sign control where right-turn movements exiting the site will be required to stop. It should be noted that the raised median as planned under the SCDOT safety improvement project will control all left-turn exiting movements while allowing the left-turn movement from the major approach.

US 21 Full-Movement Access- Access to be located approximately 750-feet south of SC 170 and 330-feet north of the proposed service access. This access should be constructed to provide the following:

- **Northbound (US 21) Approach:** The existing TWTL lane should be re-stripped to provide a formal left-turn lane with 200-feet of storage (*ref. ARMS Table 5-9*);
- **Southbound (US 21) Approach:** Based on projected peak-hour volumes, a separate right-turn lane entering the site access is recommended (*ref. Design Manual, Fig. 9.5-B*). This lane should provide a full width length of 100-feet (*ref. ARMS Table 5-8*) and a taper of 180-feet (*ref. Fig. 5-21:45mph*);
- **Eastbound (Site Access) Approach:** Construct site access drive to provide a three-lane cross-section with one lane entering and two lanes exiting the site designated as a left-turn lane and a right-turn lane. Throat distance/separation from US 21 to the first cross-movement is recommended at minimum of 150-feet based on projected traffic volumes; and
- **Traffic Control:** Place intersection under STOP sign control where traffic exiting the site will be required to stop.

US 21 Service Access (RIRO)- Access to be located approximately 330-feet south of the full-movement site access and 230-feet north of Old Jericho Road. This access is expected to provide access to the loading area of the facility for delivery vehicles. This access will operate as a RIRO access and be constructed to provide the following:

- ***Southbound (US 21) Approach:*** Based on projected peak-hour volumes, a separate right-turn lane entering the site access is not needed due to the low volume expected (*ref. ARMS Table 5-8*);
- ***Eastbound (Site Access) Approach:*** Construct site access drive to provide a two-lane cross-section with one lane entering and one lane exiting the site designated as a right-turn only lane. Adequate lane width and turning radii will be needed to accommodate the entry and exit of delivery truck movements;
- ***US 21:*** Construct a raised median within US 21 that will prohibit all left-turn movements (both major and minor approaches) at this intersection; and
- ***Traffic Control:*** Place intersection under STOP sign control where right-turn traffic exiting the site will be required to stop.

Sight Distance Considerations

The access drive intersections should be designed/constructed to meet current applicable SCDOT standards and/or guidelines in terms of sight distance. It is assumed that this will be the responsibility of the project's civil engineer and will be depicted by the site plan/submittal information.

Off-Site Study Area Intersections

As shown in Table 3, the off-site study area intersections of SC 170 at US 21 and SC 170 at Goethe Hill Road operate poorly during one or both of the peak hours studied. The following present each of these intersections:

SC 170 at US 21- this intersection is expected to degrade to a LOS E under the PM peak-hour Build conditions. The main reason for this is the southbound approach of US 21 where the volume of right-turn vehicles is 300 vehicles in the outside (#2) through lane. To improve operations at this intersection to acceptable conditions the following is recommended:

- ***Southbound (US 21) Approach:*** Construct a separate right-turn lane which should provide a full width length of 250-feet (*ref. ARMS Table 5-8*) and a taper of 180-feet (*ref. Fig. 5-21:45mph*). It This lane can be accommodated without impacting the adjacent access to the CrossCreek Center which is located 470-feet north of SC 170; and
- ***Traffic Control:*** Revise traffic signal to optimize operating conditions with the addition of this right-turn lane. Critical to the improved operations is the addition of a right-turn over-lap which will operate concurrently with the east/west left-turn protected phase of SC 170.

Assuming this new right-turn lane and phasing change results in the following:

<u>Signalized Intersection</u>	<u>Time Period</u>	<u>2023 No-Build</u>		<u>2023 Build</u>		<u>2023 Build Mitigated (SB RT US 21)</u>	
		<u>Delay^a</u>	<u>LOS^b</u>	<u>Delay</u>	<u>LOS</u>	<u>Delay</u>	<u>LOS</u>
SC 170 at US 21	AM	37.0	D	37.9	D	32.4	C
	PM	45.7	D	74.6	E	52.1	D

a. Delay in seconds-per-vehicle.

b. LOS = Level-of-Service.

GENERAL NOTES:

1. Signalized intersections, Delay is a weighted average of each lane group/approach.

As shown by the above, the resultant service levels with the suggested improvement are better than the Build conditions during the AM peak-hour and very near the No-Build conditions during the PM peak-hour.

SC 170 at Goethe Road- this unsignalized intersection operates poorly under Existing, No-Build and Build conditions. The main issue here is the minor street left-turn movement from northbound Goethe Hill Road which is delayed due to the heavy volume of through traffic on eastbound and westbound SC 170. The project is not the main cause of these issue and is not expected to add any significant volume to the minor street Goethe Hill approach. It does increase traffic on both eastbound and westbound SC 170. Based on this, no improvements are recommended at this time.

SUMMARY

EPC has completed a Traffic Impact and Access Study relative to the development of a new retail center to be located in the southwest corner of the SC 170 at SC 21 intersection in Beaufort County, SC. As planned, this new center will provide a total of 195,300 sf of retail space which include six out-parcels. As planned, access to this new facility will be provided to/from SC 170 via a signalized intersection by constructing a new approach leg to the WK Alston Drive intersection as well as three limited movement access drives. Access along US 21 is planned via a full-movement intersection accessing the front of the center and a RIRO service access accessing the back of the center. This project is expected to be constructed and operational in 2023.

Detailed analyses have been conducted for the adjacent study area intersections along SC 170 and US 21 which include the site access drives. Analyses have included the SCDOT planned Safety Improvement project which includes signalization of SC 170 at WK Alston Drive as well as a raised median between the US 21 and WK Alston Drive intersections. These analyses indicated that in general, operations are expected to be acceptable with the exception of the signalized intersection of SC 170 at US 21 and the two unsignalized intersections of SC 170 at Goethe Road and the commercial access along US 21.

Recommendations have been made to the SC 170 at US 21 intersection to add a separate southbound right-turn lane which will aid in operations by removing right-turn traffic from the outside through lane as well as allowing an over-lap operation in the signal phasing.

Recommendation have also been made for the site access drives which include the alignment of the access opposite WK Alston Drive as well as roadway cross-sections. Auxiliary left-turn and right-turn deceleration lanes have been recommended for proposed access drives that warrant turning lanes along with appropriate signage to restrict prohibited turning movements.

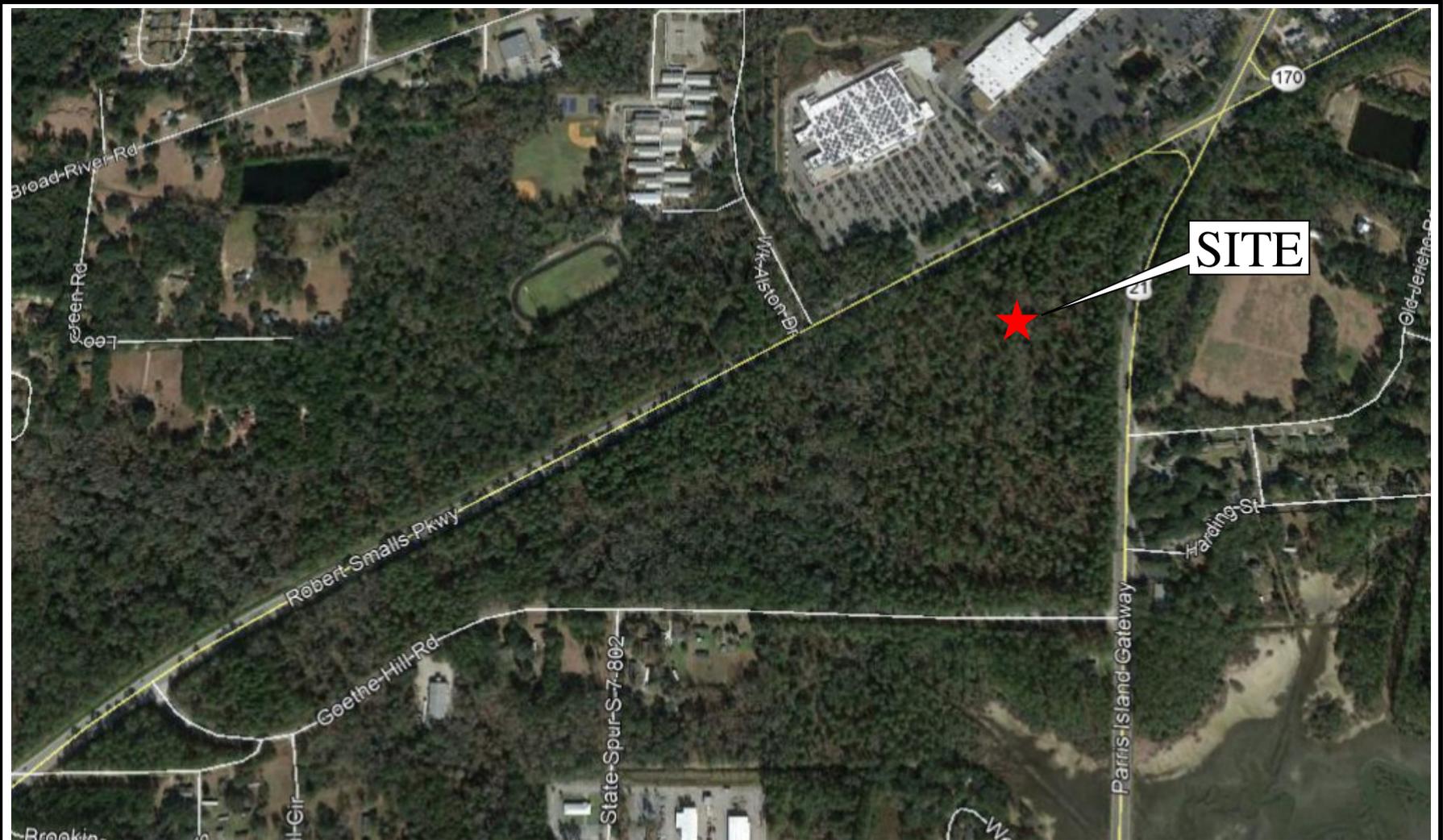
If you have any questions, please contact me at 803 361 3265.



Todd E. Salvagin
EPC, LLC

Attachments





NOT TO SCALE

Figure 1
SITE LOCATION MAP
Retail Center
Beaufort County, SC



EPC, LLC

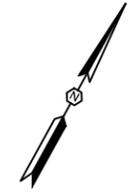


BEAUFORT COUNTY, SC PARKING REQUIREMENTS	
General Retail (<25k SF)	= 1 space per 300 SF
General Retail (>25k SF)	= 1 space per 250 SF
Gas Station	= 1 space per pump plus 1 space per 300 SF
Restaurant/Cafe/Coffee Shop	= 1 space per 100 SF
<i>(Every store except for Hobby Lobby is < 25k SF)</i>	
General Retail (<25k SF): 103,000 SF X (1 space / 300 SF)	= 344 spaces
General Retail (>25k SF): 55,000 SF X (1 space / 250 SF)	= 220 spaces
Gas Station: 4,400 SF X (1 space / 300 SF)	= 15 spaces
Restaurant/Cafe/Coffee Shop: 32,900 SF X (1 space / 100 SF)	= 329 spaces
TOTAL Required Spaces = 908	
Actual Parking Space Count = 925	

NOTE: OPEN SPACE TO BE UTILIZED TO MEET BUFFER, LANDSCAPE, AND/OR STORMWATER REQUIREMENTS PER ORDINANCES OF STATE AND LOCAL AGENCIES AT THE TIME OF DEVELOPMENT.



Project No.: 20120-0007 (IN FEET)
April 9, 2020



Conceptual Site Plan for the ± 30-Acre Site along SC Highway 170 and US Highway 21 in the City of Beaufort, Beaufort County, South Carolina



PRELIMINARY



Prepared by Alliance Consulting Engineers, Inc.

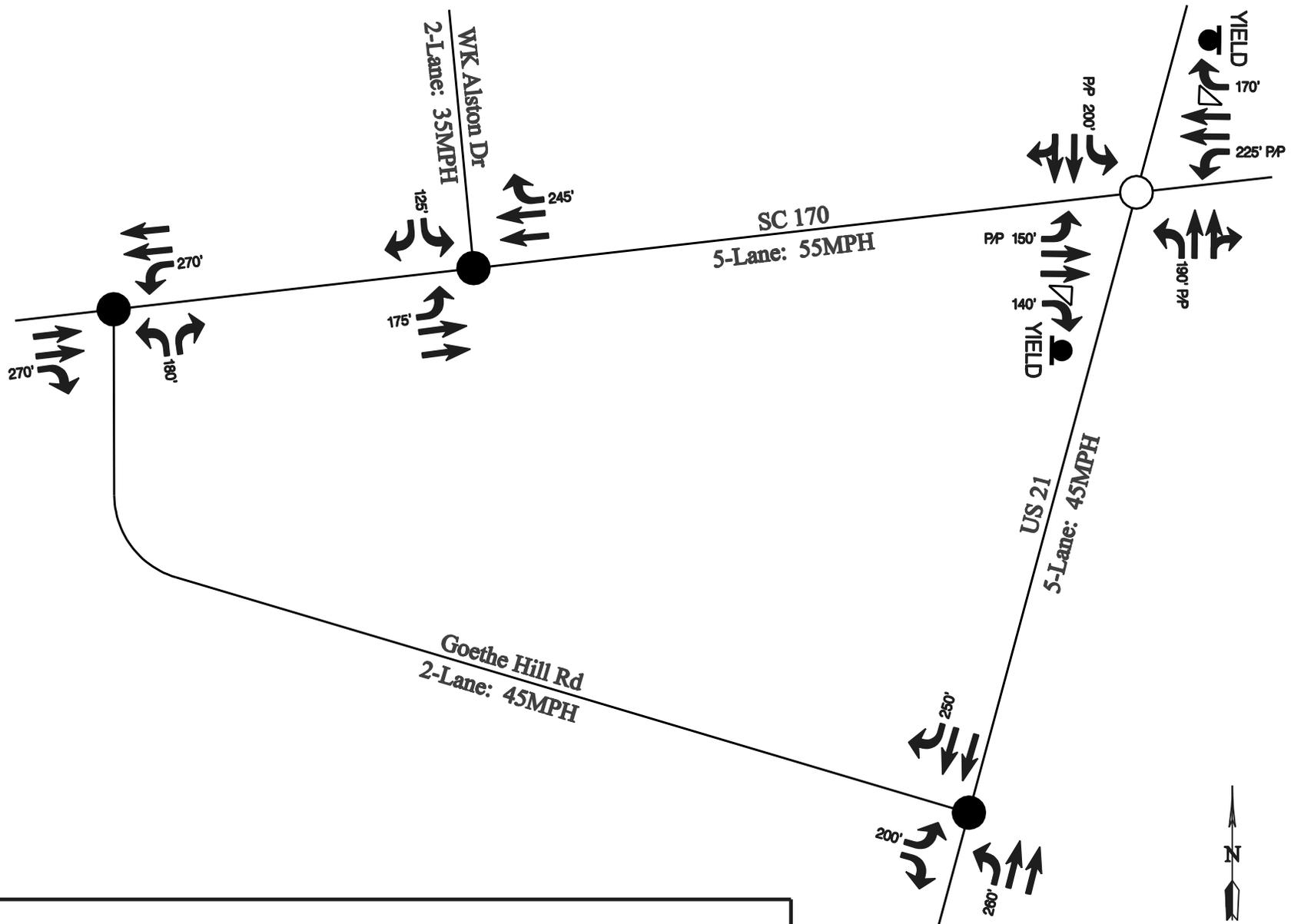


Figure 3
**EXISTING GEOMETRICS
 & TRAFFIC CONTROL**
Retail Center: Beaufort County, SC

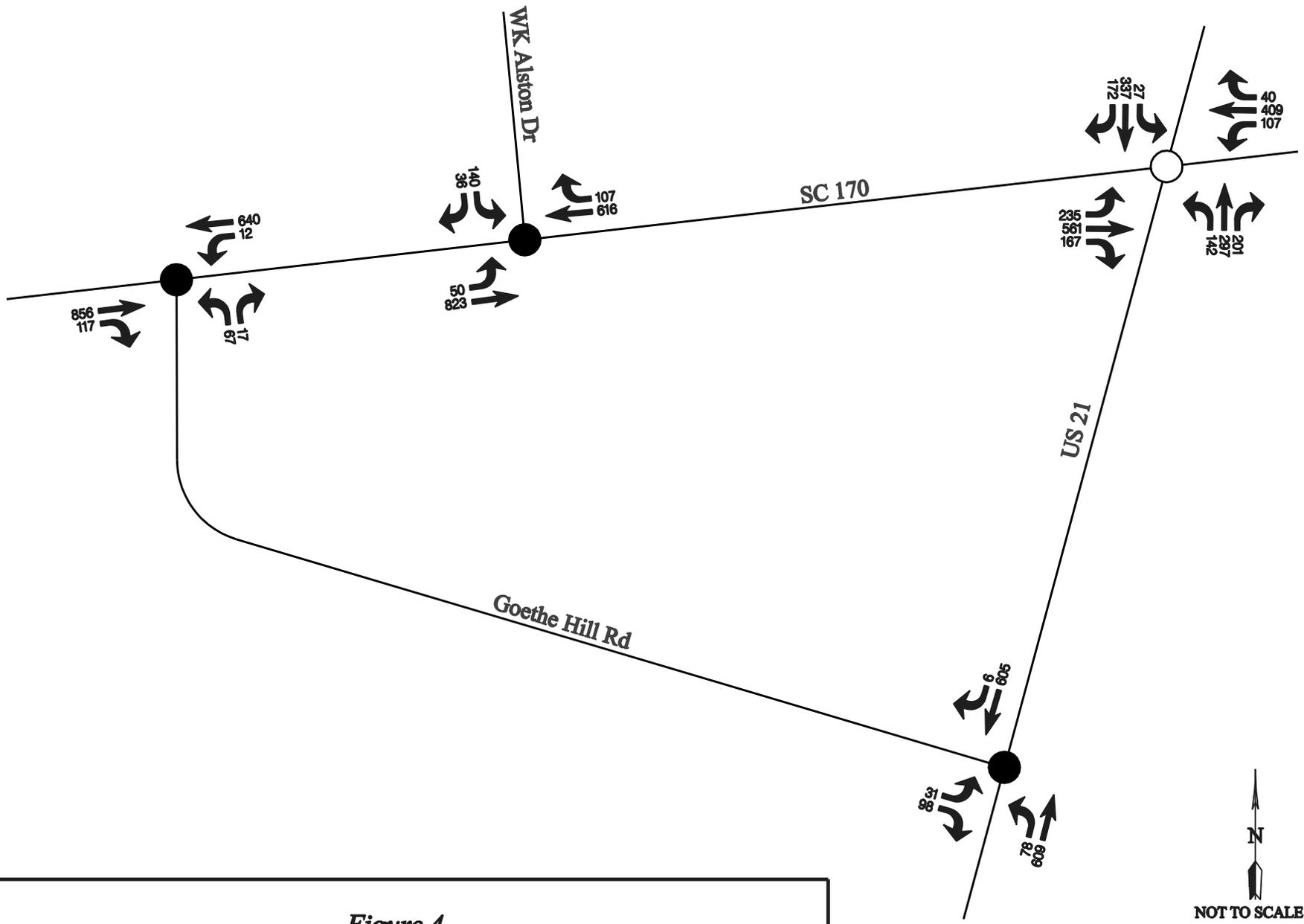
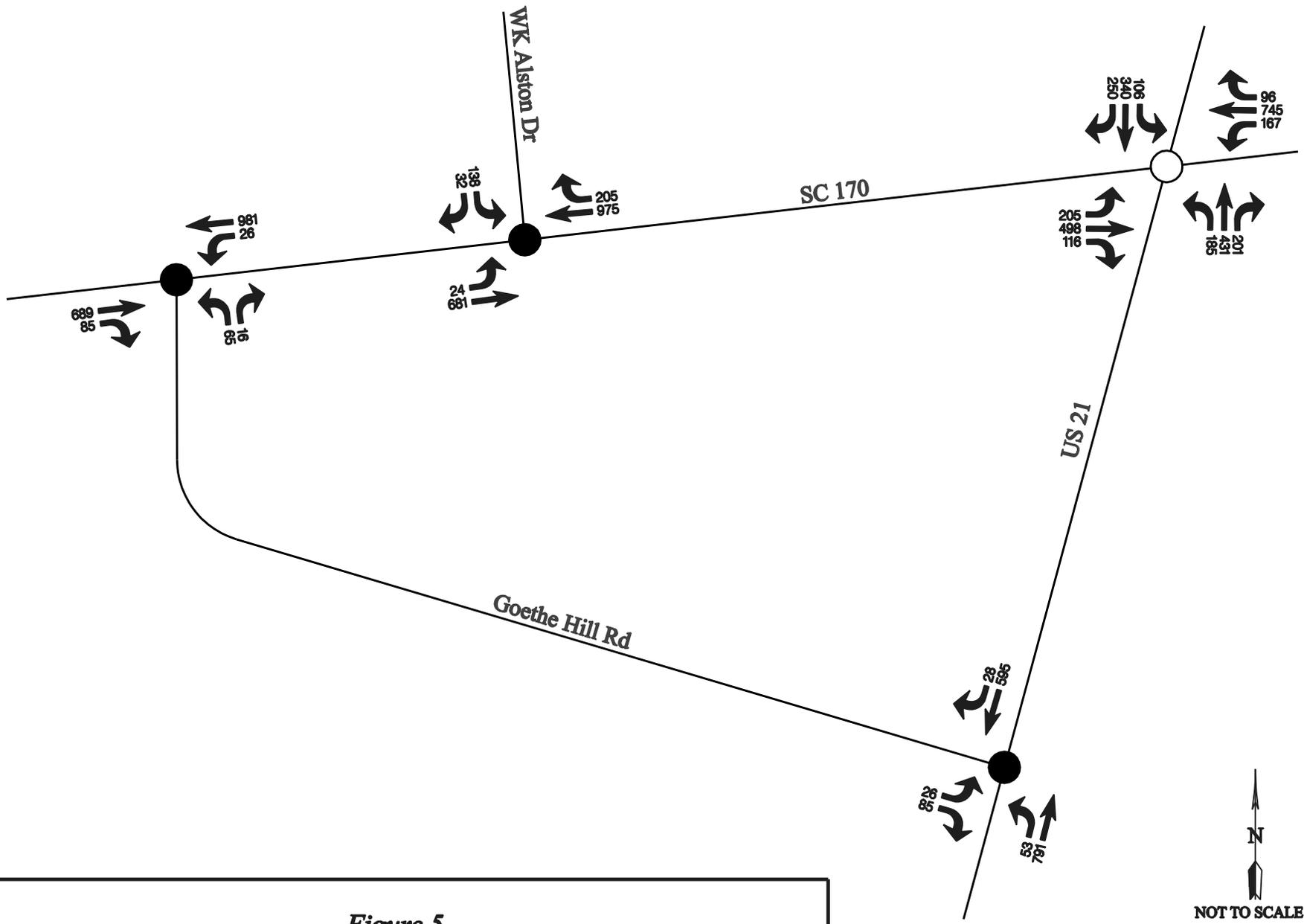


Figure 4
2020 EXISTING TRAFFIC VOLUMES
AM PEAK HOUR
Retail Center: Beaufort County, SC

NOT TO SCALE



 = Lane Assignment
 = Signalized Intersection
 = Unsignalized Intersection



N
NOT TO SCALE

 = Lane Assignment
 = Signalized Intersection
 = Unsignalized Intersection

Figure 5
2020 EXISTING TRAFFIC VOLUMES
PM PEAK HOUR
Retail Center: Beaufort County, SC

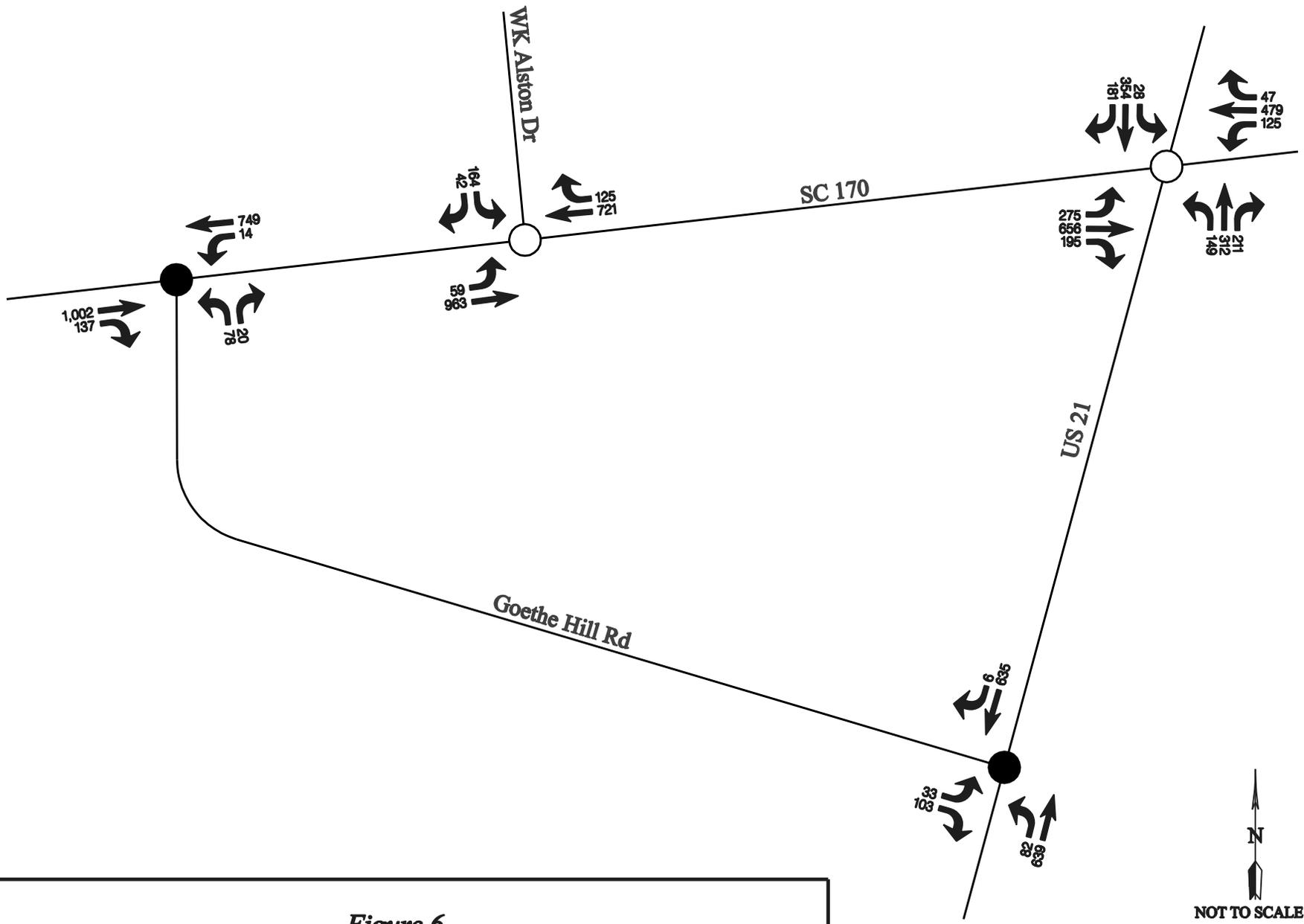
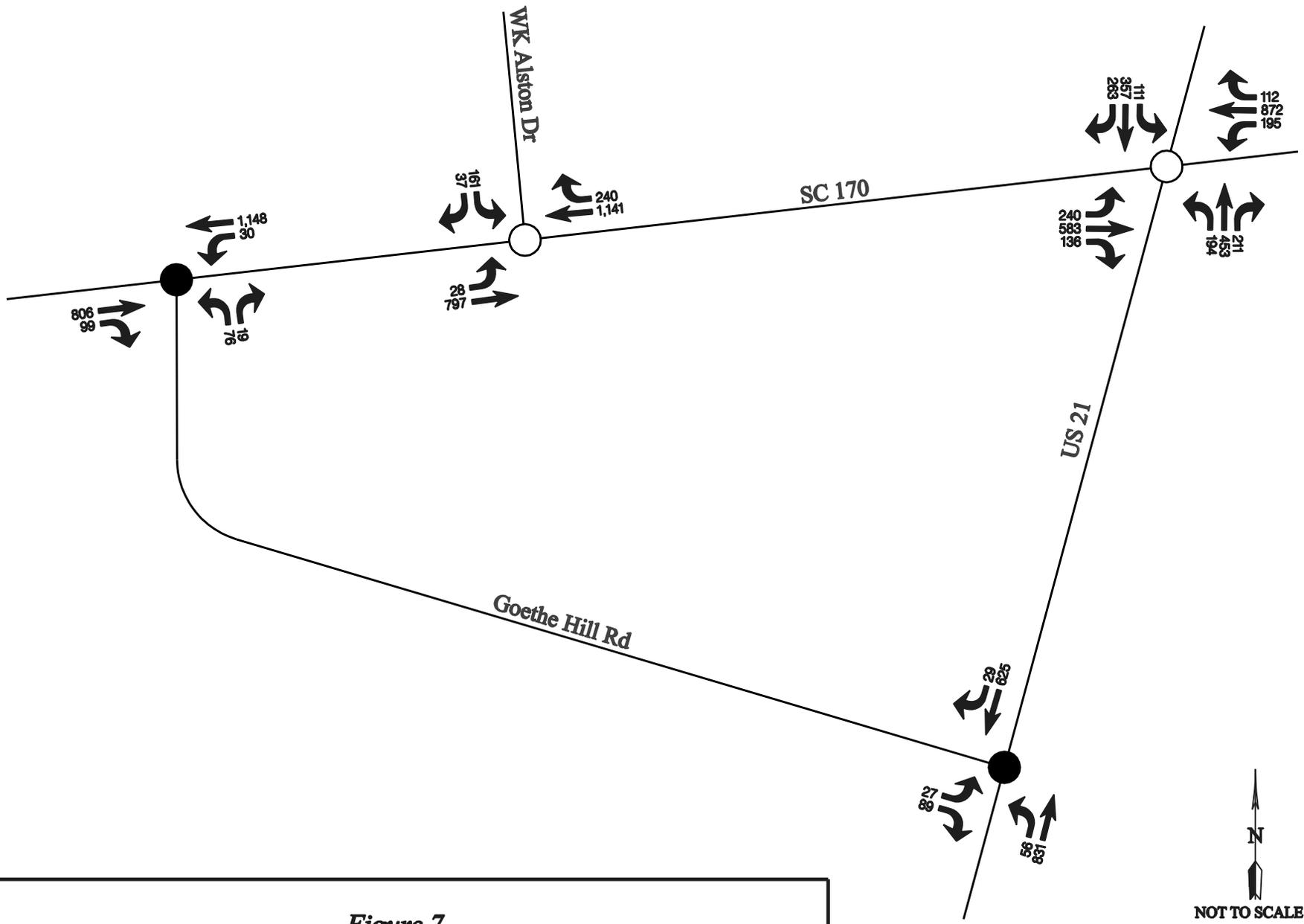


Figure 6

2024 NO BUILD TRAFFIC VOLUMES
AM PEAK HOUR

Retail Center: Beaufort County, SC

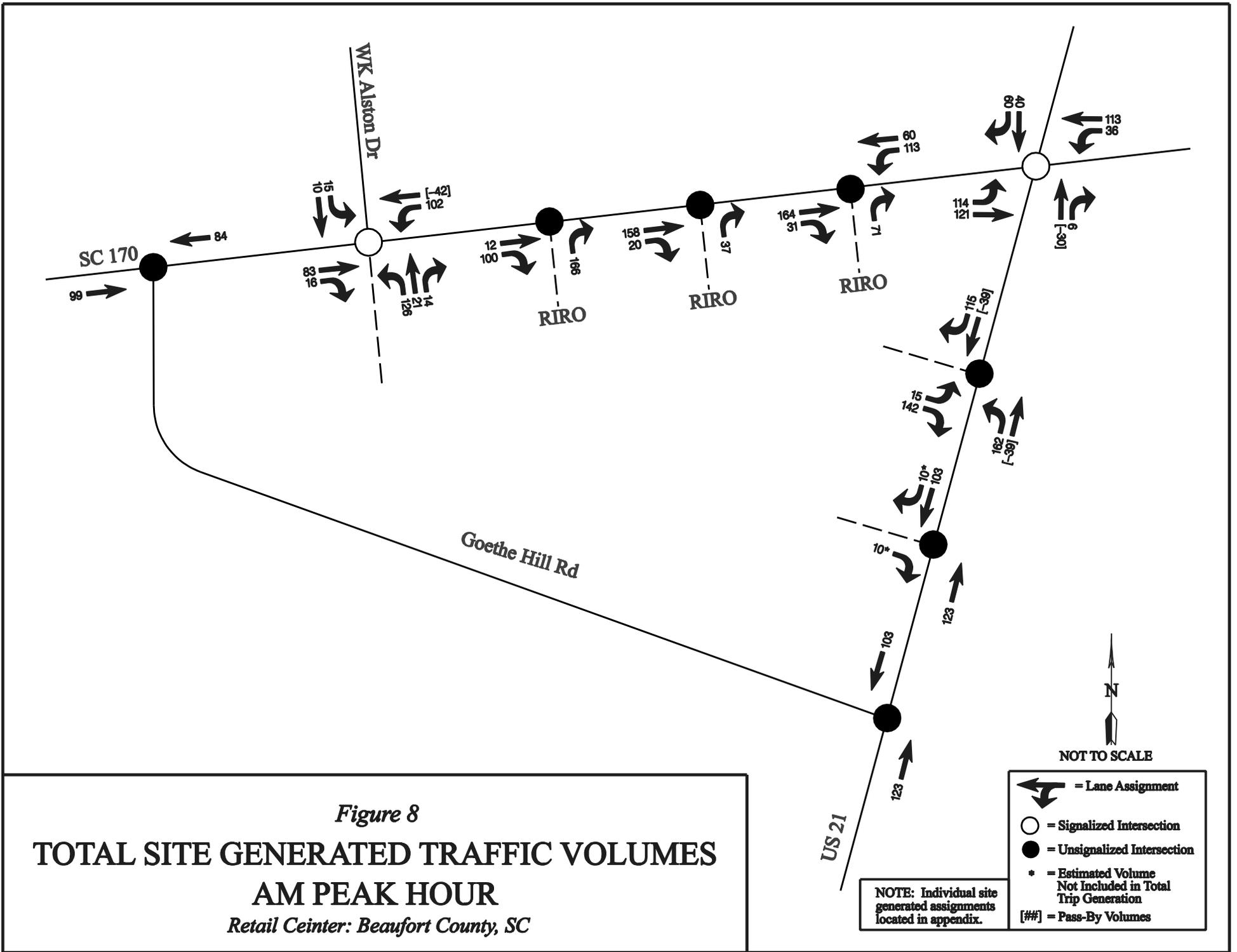
 = Lane Assignment
 = Signalized Intersection
 = Unsignalized Intersection



N
NOT TO SCALE

- = Lane Assignment
- = Signalized Intersection
- = Unsignalized Intersection

Figure 7
2024 NO BUILD TRAFFIC VOLUMES
PM PEAK HOUR
Retail Center: Beaufort County, SC



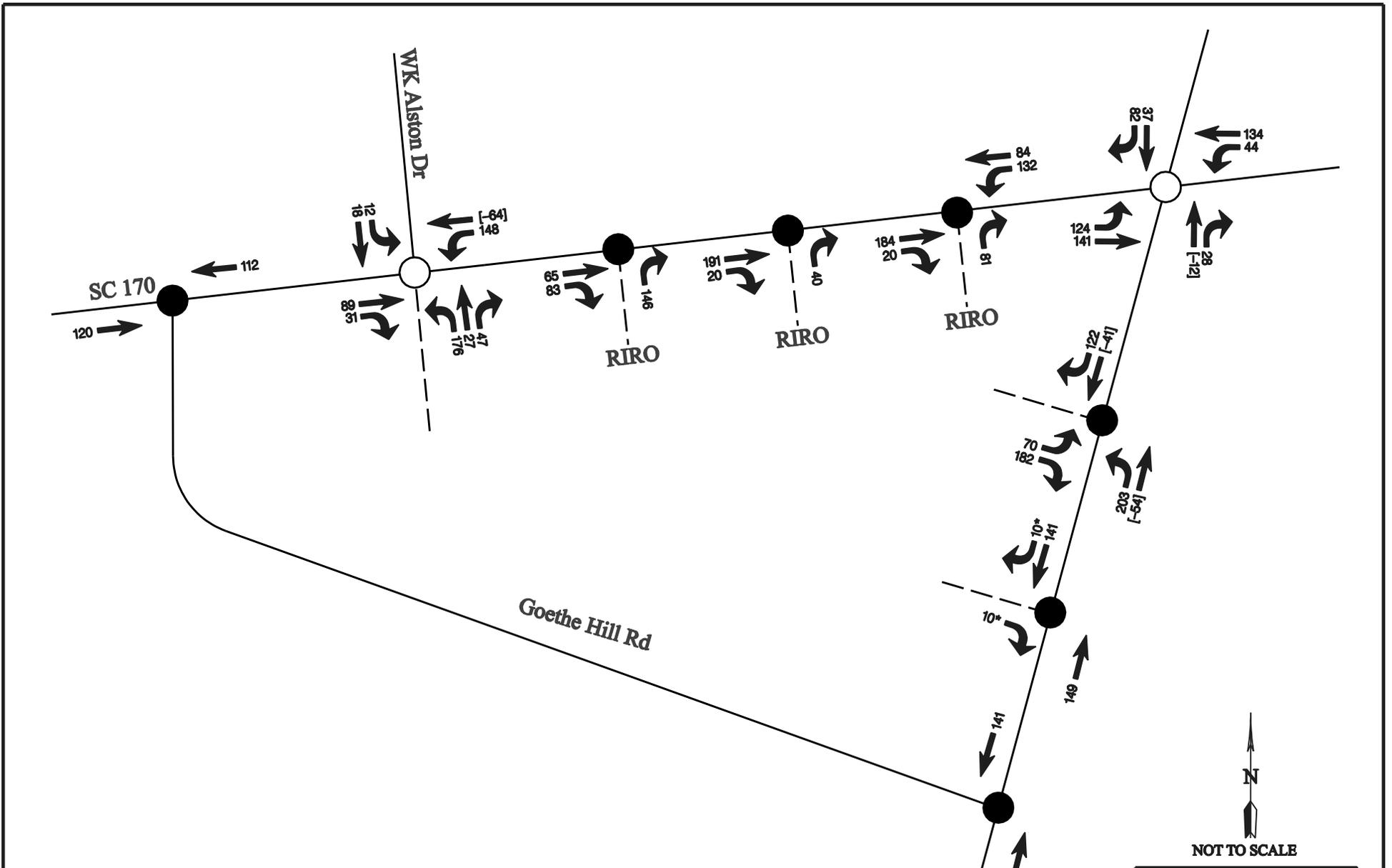
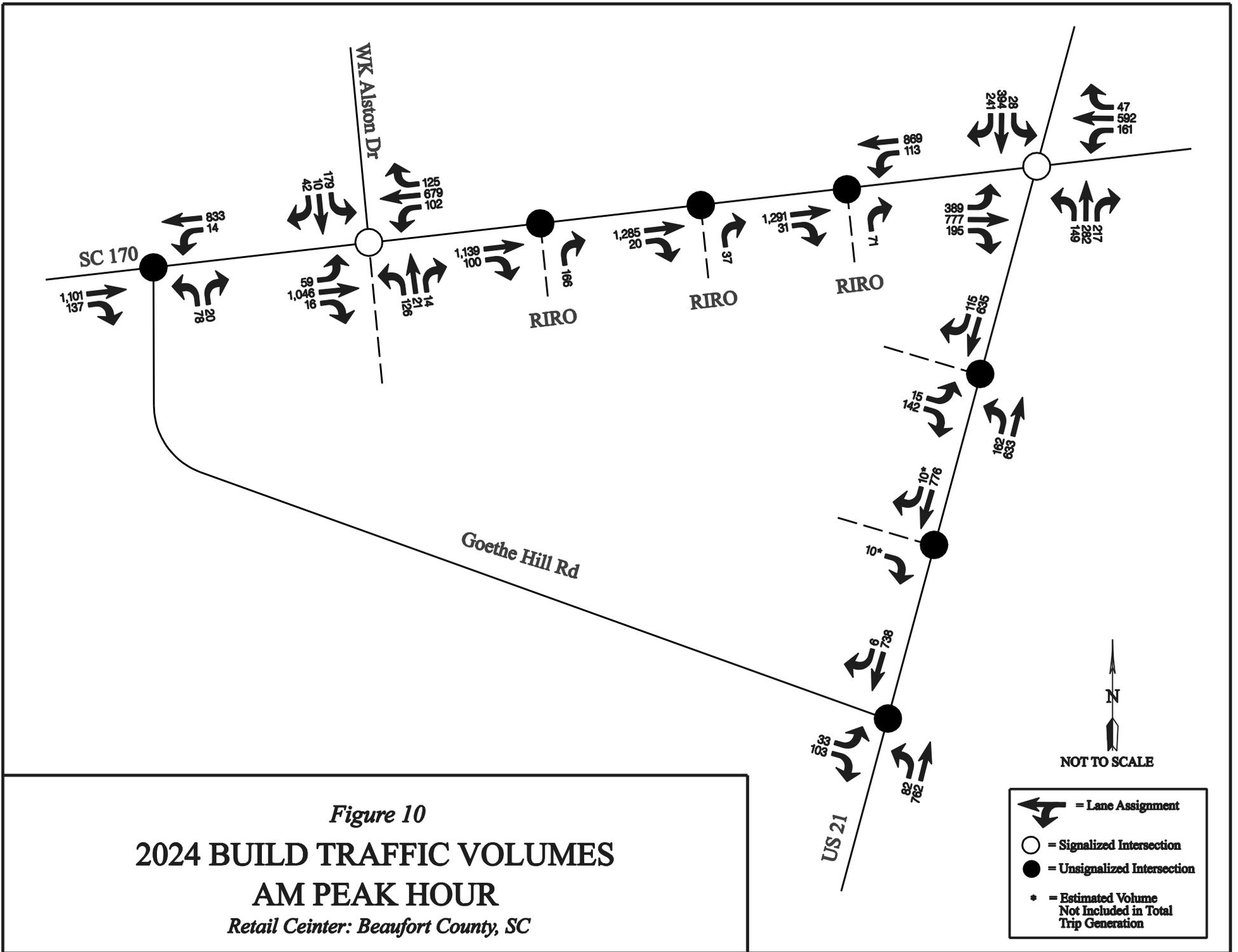
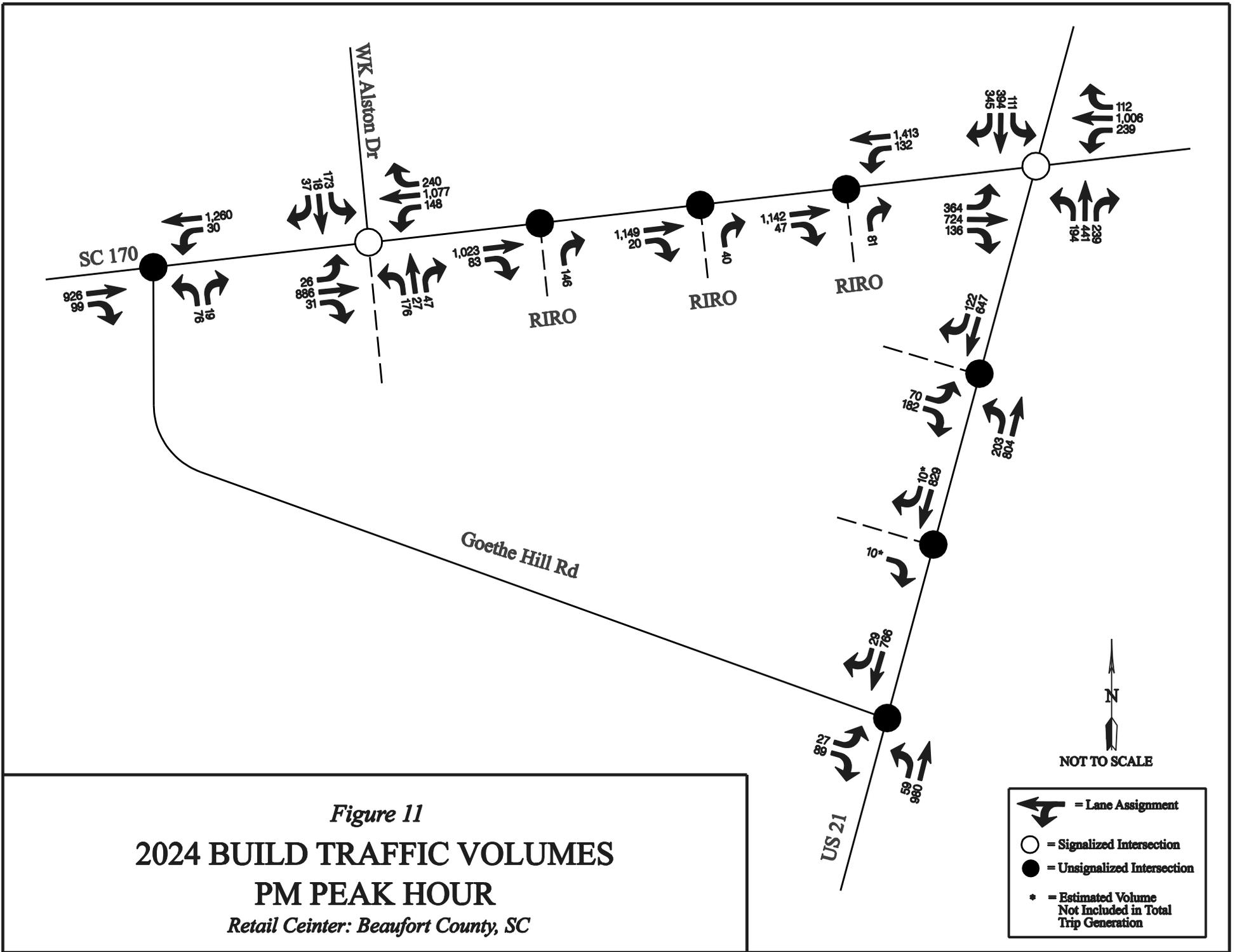


Figure 9
TOTAL SITE GENERATED TRAFFIC VOLUMES
PM PEAK HOUR
Retail Ceinter: Beaufort County, SC

- = Lane Assignment
- = Signalized Intersection
- = Unsignalized Intersection
- * = Estimated Volume Not Included in Total Trip Generation
- [##] = Pass-By Volumes





COUNT DATA

Parris Island Gateway at Goethe Hill Rd AMPK

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	goethe hill at parris island am			724	
	Location			% Bank 1	% Bank 2
	Beaufort SC			95.9%	4.1%
	Performed By			% Bank 3	% Bank 4
	KR			0.0%	0.0%
	Date			Pedestrians Volume	
Thursday, February 27, 2020	0				

Peak Hour Data

Time Period	SB Goethe Hill Rd							NB Parris Island Gateway							SB Parris Island Gateway							Total Vehicles	Total Pedestrians							
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh									
7:10 AM	0	2	0	9	0	0	11	0	0	0	0	0	0	0	0	10	72	0	0	0	82	0	0	72	4	0	0	76	169	0
7:25 AM	0	0	0	17	0	0	17	0	0	0	0	0	0	0	0	10	69	0	0	0	79	0	0	66	4	0	0	70	166	0
7:40 AM	0	0	0	24	0	0	24	0	0	0	0	0	0	0	0	19	65	0	0	0	84	0	0	69	4	0	0	73	181	0
7:55 AM	0	1	0	30	0	0	31	0	0	0	0	0	0	0	0	13	77	0	0	0	90	0	0	84	3	0	0	87	208	0

Vehicle Movement Summary

Movement / Details	SB Goethe Hill Rd							NB Parris Island Gateway							SB Parris Island Gateway							Entire Intersection								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians							
Movement Volume	0	3	0	80	0	0	83	0	0	0	0	0	0	0	0	52	283	0	0	0	335	0	0	291	15	0	0	306	724	0
PHF	-	0.38	-	0.67	-	-	0.67	-	-	-	-	-	-	-	-	0.68	0.92	-	-	-	0.93	-	-	0.87	0.94	-	-	0.88	0.87	-
% Bank 1	0.0%	66.7%	0.0%	96.3%				0.0%	0.0%	0.0%	0.0%				0.0%	96.2%	96.5%	0.0%				0.0%	0.0%	95.5%	93.3%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	33.3%	0.0%	3.8%				0.0%	0.0%	0.0%	0.0%				0.0%	3.8%	3.5%	0.0%				0.0%	0.0%	4.5%	6.7%					
% Bank 3	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%	0.0%					
% Bank 4	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%	0.0%					

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	Parris Island Gateway (US 21) at Goethe Hill Road PM PK			891	
	Location			% Bank 1	% Bank 2
	Unknown, Not Available			94.7%	5.3%
	Performed By			% Bank 3	% Bank 4
	KR			0.0%	0.0%
	Date			Pedestrians Volume	
Thursday, February 27, 2020	0				

Peak Hour Data

Time Period	EB Goethe Hill Rd							NB Parris Island Gateway							SB Parris Island Gateway							Total Vehicles	Total Pedestrians							
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh									
4:00 PM	0	8	0	27	0	0	35	0	0	0	0	0	0	0	0	17	118	0	0	0	135	0	0	95	12	0	0	107	277	0
4:15 PM	0	7	0	29	0	0	36	0	0	0	0	0	0	0	0	8	116	0	0	0	124	0	0	110	8	0	0	118	278	0
4:30 PM	0	1	0	18	0	0	19	0	0	0	0	0	0	0	0	17	59	0	0	0	76	0	0	63	3	0	0	66	161	0
4:45 PM	0	10	0	16	0	0	26	0	0	0	0	0	0	0	0	11	71	0	0	0	82	0	0	62	5	0	0	67	175	0

Vehicle Movement Summary

Movement / Details	EB Goethe Hill Rd							NB Parris Island Gateway							SB Parris Island Gateway							Entire Intersection								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians							
Movement Volume	0	26	0	90	0	0	116	0	0	0	0	0	0	0	0	53	364	0	0	0	417	0	0	330	28	0	0	358	891	0
PHF	-	0.65	-	0.78	-	-	0.81	-	-	-	-	-	-	-	-	0.78	0.77	-	-	-	0.77	-	-	0.75	0.58	-	-	0.76	0.80	-
% Bank 1	0.0%	96.2%	0.0%	86.7%				0.0%	0.0%	0.0%	0.0%				0.0%	96.2%	97.3%	0.0%				0.0%	0.0%	93.6%	96.4%	Need a custom report? Contact: support@portablestudies.com				
% Bank 2	0.0%	3.8%	0.0%	13.3%				0.0%	0.0%	0.0%	0.0%				0.0%	3.8%	2.7%	0.0%				0.0%	0.0%	6.4%	3.6%					
% Bank 3	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%	0.0%					
% Bank 4	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%	0.0%					

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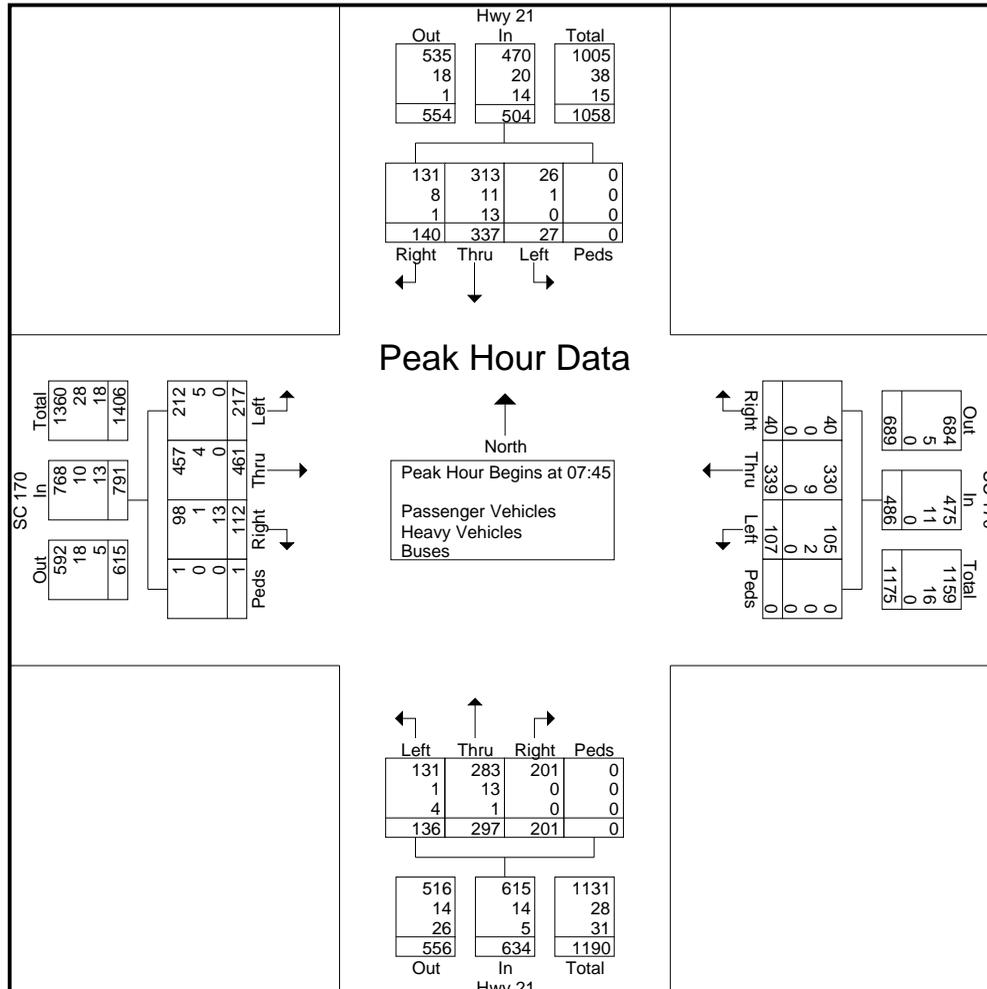
File Name : SC 170 @ Hwy 21

Site Code :

Start Date : 02/26/2020

Page No : 3

Start Time	Hwy 21 Southbound					SC 170 Westbound					Hwy 21 Northbound					SC 170 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	10	103	35	0	148	24	90	7	0	121	22	79	52	0	153	69	136	16	0	221	643
08:00	4	71	44	0	119	19	104	9	0	132	38	71	46	0	155	51	106	20	0	177	583
08:15	8	86	31	0	125	35	83	10	0	128	48	72	45	0	165	52	104	48	0	204	622
08:30	5	77	30	0	112	29	62	14	0	105	28	75	58	0	161	45	115	28	1	189	567
Total Volume	27	337	140	0	504	107	339	40	0	486	136	297	201	0	634	217	461	112	1	791	2415
% App. Total	5.4	66.9	27.8	0		22	69.8	8.2	0		21.5	46.8	31.7	0		27.4	58.3	14.2	0.1		
PHF	.675	.818	.795	.000	.851	.764	.815	.714	.000	.920	.708	.940	.866	.000	.961	.786	.847	.583	.250	.895	.939
Passenger Vehicles	26	313	131	0	470	105	330	40	0	475	131	283	201	0	615	212	457	98	1	768	2328
% Passenger Vehicles																					
Heavy Vehicles	1	11	8	0	20	2	9	0	0	11	1	13	0	0	14	5	4	1	0	10	55
% Heavy Vehicles	3.7	3.3	5.7	0	4.0	1.9	2.7	0	0	2.3	0.7	4.4	0	0	2.2	2.3	0.9	0.9	0	1.3	2.3
Buses	0	13	1	0	14	0	0	0	0	0	4	1	0	0	5	0	0	13	0	13	32
% Buses	0	3.9	0.7	0	2.8	0	0	0	0	0	2.9	0.3	0	0	0.8	0	0	11.6	0	1.6	1.3



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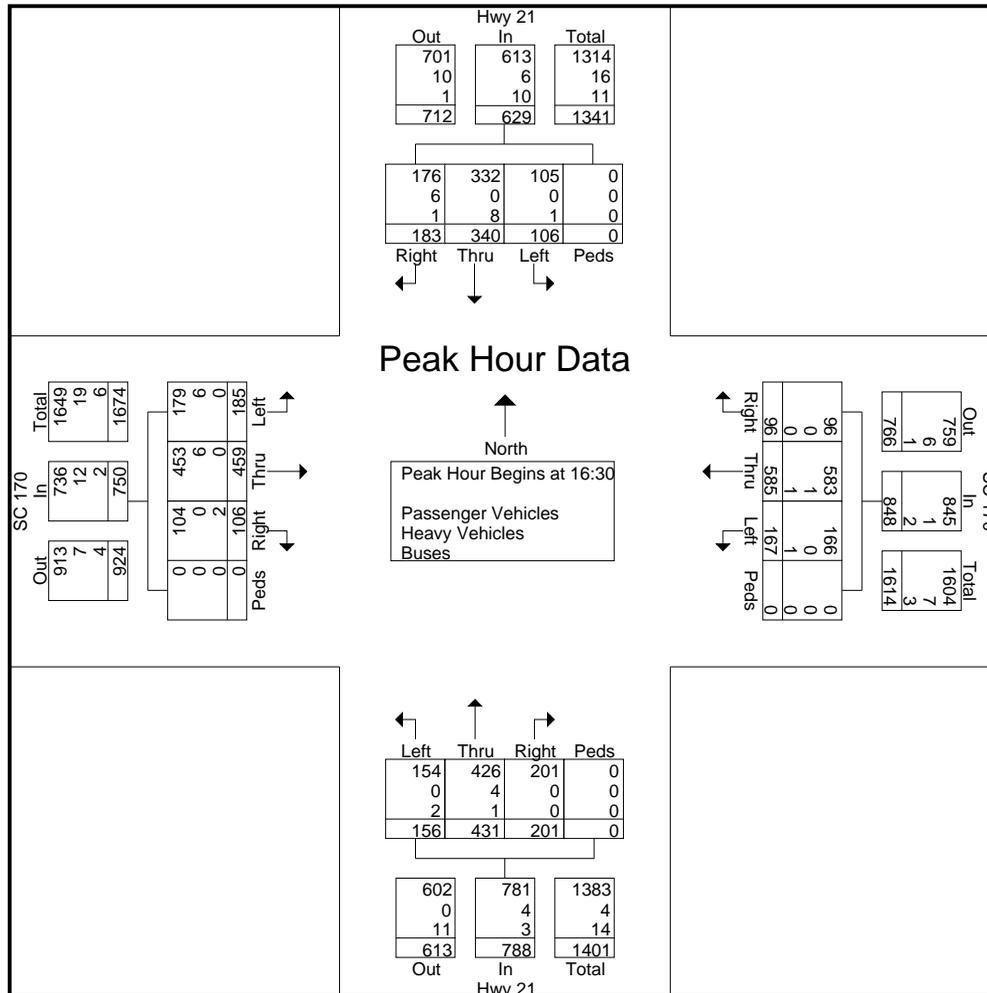
File Name : SC 170 @ Hwy 21

Site Code :

Start Date : 02/26/2020

Page No : 4

Start Time	Hwy 21 Southbound					SC 170 Westbound					Hwy 21 Northbound					SC 170 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	29	80	39	0	148	43	113	18	0	174	44	106	52	0	202	43	110	35	0	188	712
16:45	31	85	50	0	166	30	136	24	0	190	34	104	57	0	195	44	91	27	0	162	713
17:00	25	72	42	0	139	59	174	28	0	261	34	126	53	0	213	40	136	22	0	198	811
17:15	21	103	52	0	176	35	162	26	0	223	44	95	39	0	178	58	122	22	0	202	779
Total Volume	106	340	183	0	629	167	585	96	0	848	156	431	201	0	788	185	459	106	0	750	3015
% App. Total	16.9	54.1	29.1	0		19.7	69	11.3	0		19.8	54.7	25.5	0		24.7	61.2	14.1	0		
PHF	.855	.825	.880	.000	.893	.708	.841	.857	.000	.812	.886	.855	.882	.000	.925	.797	.844	.757	.000	.928	.929
Passenger Vehicles	105	332	176	0	613	166	583	96	0	845	154	426	201	0	781	179	453	104	0	736	2975
% Passenger Vehicles																					
Heavy Vehicles	0	0	6	0	6	0	1	0	0	1	0	4	0	0	4	6	6	0	0	12	23
% Heavy Vehicles	0	0	3.3	0	1.0	0	0.2	0	0	0.1	0	0.9	0	0	0.5	3.2	1.3	0	0	1.6	0.8
Buses	1	8	1	0	10	1	1	0	0	2	2	1	0	0	3	0	0	2	0	2	17
% Buses	0.9	2.4	0.5	0	1.6	0.6	0.2	0	0	0.2	1.3	0.2	0	0	0.4	0	0	1.9	0	0.3	0.6



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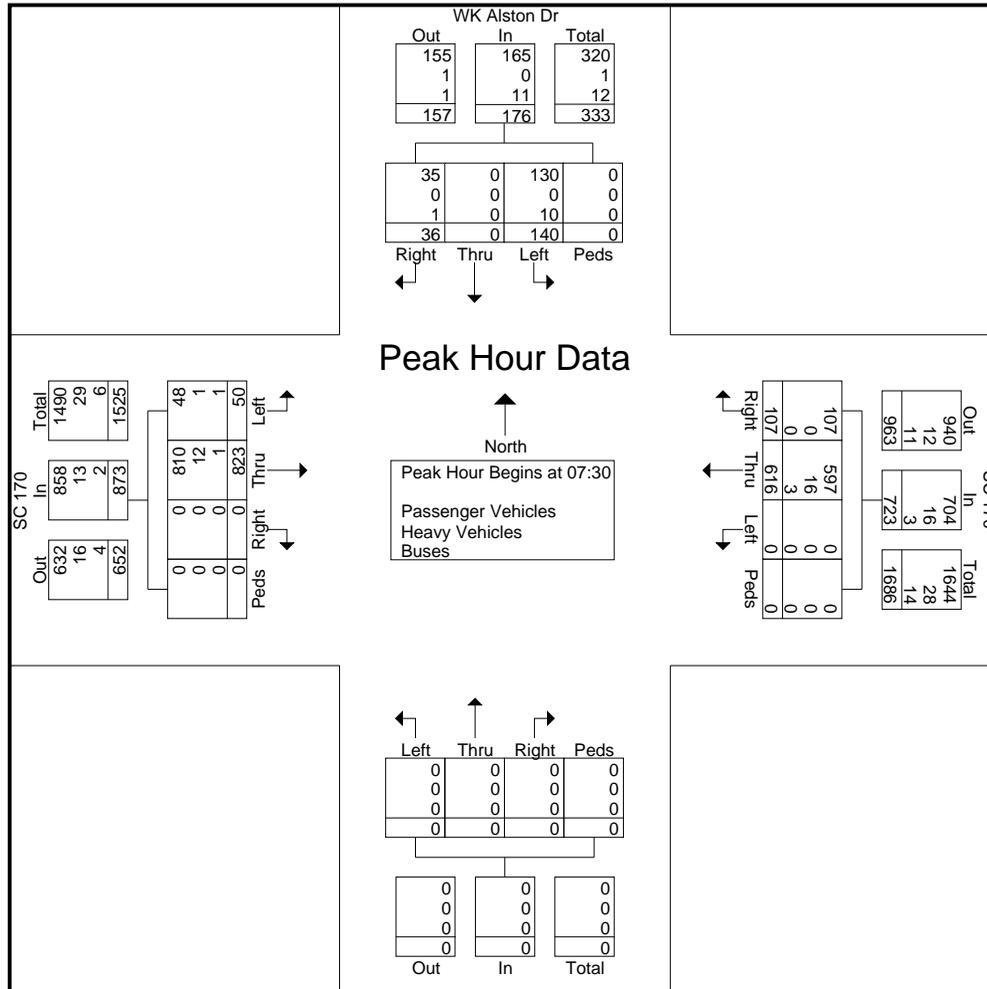
File Name : SC 170 @ WK Alston Dr

Site Code :

Start Date : 02/26/2020

Page No : 3

Start Time	WK Alston Dr Southbound					SC 170 Westbound					Northbound					SC 170 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	30	0	8	0	38	0	165	18	0	183	0	0	0	0	0	7	217	0	0	224	445
07:45	23	0	5	0	28	0	152	21	0	173	0	0	0	0	0	15	244	0	0	259	460
08:00	21	0	9	0	30	0	162	37	0	199	0	0	0	0	0	16	185	0	0	201	430
08:15	66	0	14	0	80	0	137	31	0	168	0	0	0	0	0	12	177	0	0	189	437
Total Volume	140	0	36	0	176	0	616	107	0	723	0	0	0	0	0	50	823	0	0	873	1772
% App. Total	79.5	0	20.5	0		0	85.2	14.8	0		0	0	0	0		5.7	94.3	0	0		
PHF	.530	.000	.643	.000	.550	.000	.933	.723	.000	.908	.000	.000	.000	.000	.000	.781	.843	.000	.000	.843	.963
Passenger Vehicles	130	0	35	0	165	0	597	107	0	704	0	0	0	0	0	48	810	0	0	858	1727
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	1	12	0	0	13	29
% Heavy Vehicles	0	0	0	0	0	0	2.6	0	0	2.2	0	0	0	0	0	2.0	1.5	0	0	1.5	1.6
Buses	10	0	1	0	11	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	16
% Buses	7.1	0	2.8	0	6.3	0	0.5	0	0	0.4	0	0	0	0	0	2.0	0.1	0	0	0.2	0.9



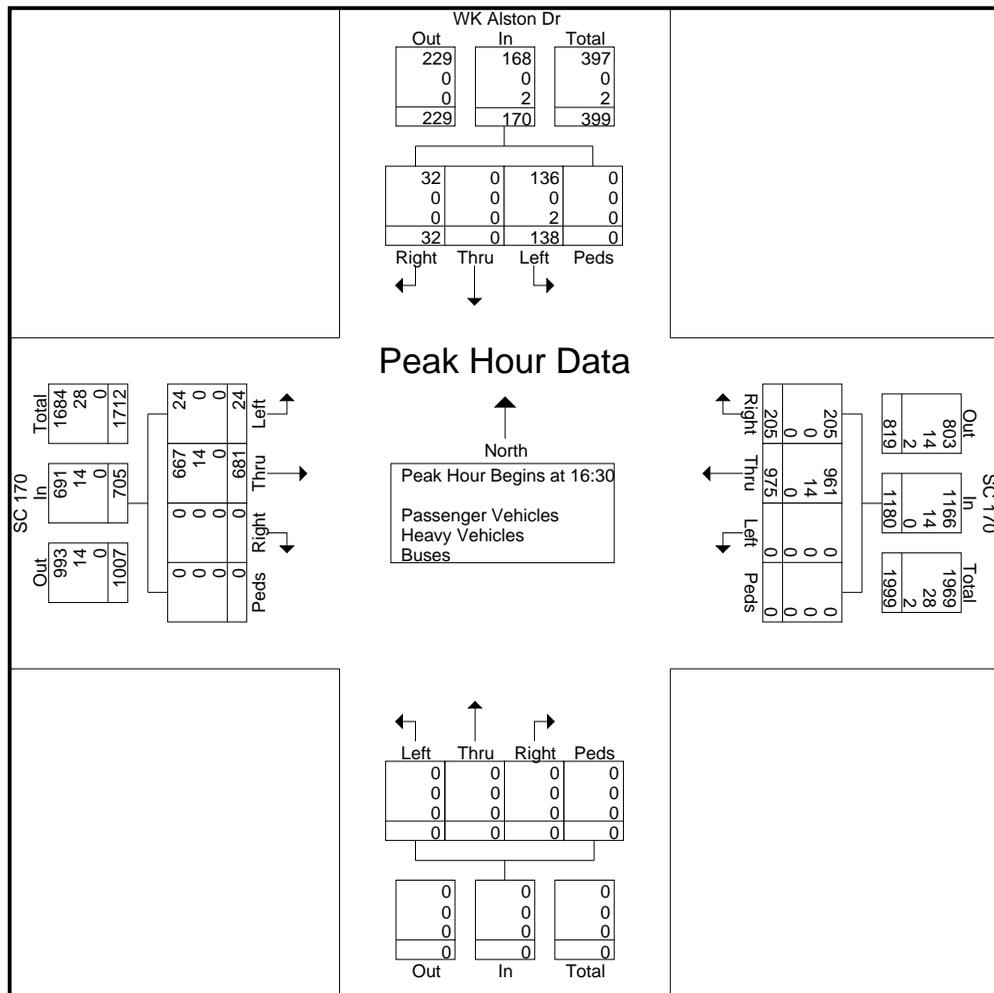
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File Name : SC 170 @ WK Alston Dr
Site Code :
Start Date : 02/26/2020
Page No : 4

Start Time	WK Alston Dr Southbound					SC 170 Westbound					Northbound					SC 170 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	47	0	8	0	55	0	196	52	0	248	0	0	0	0	0	7	152	0	0	159	462
16:45	31	0	10	0	41	0	222	49	0	271	0	0	0	0	0	4	167	0	0	171	483
17:00	27	0	7	0	34	0	280	46	0	326	0	0	0	0	0	7	168	0	0	175	535
17:15	33	0	7	0	40	0	277	58	0	335	0	0	0	0	0	6	194	0	0	200	575
Total Volume	138	0	32	0	170	0	975	205	0	1180	0	0	0	0	0	24	681	0	0	705	2055
% App. Total	81.2	0	18.8	0		0	82.6	17.4	0		0	0	0	0	0	3.4	96.6	0	0		
PHF	.734	.000	.800	.000	.773	.000	.871	.884	.000	.881	.000	.000	.000	.000	.000	.857	.878	.000	.000	.881	.893
Passenger Vehicles	136	0	32	0	168	0	961	205	0	1166	0	0	0	0	0	24	667	0	0	691	2025
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	14	0	0	14	28
% Heavy Vehicles	0	0	0	0	0	0	1.4	0	0	1.2	0	0	0	0	0	0	2.1	0	0	2.0	1.4
Buses	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	1.4	0	0	0	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1



Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	SC 170 at Goethe Hill Rd AM PK			1327	
	Location			% Bank 1	% Bank 2
	Beaufort SC			96.5%	3.5%
	Performed By			% Bank 3	% Bank 4
	KR			0.0%	0.0%
	Date			Pedestrians Volume	
Wednesday, February 26, 2020	0				

Peak Hour Data

Time Period	EB SC 170							WB SC 170							NB Goethe Hill Rd							Total Vehicles	Total Pedestrians							
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			U	L	T	R	P1	P2	Veh
7:30 AM	0	0	141	21	0	0	162	0	2	107	0	0	0	109	0	18	0	1	0	0	19	0	0	0	0	0	0	0	290	0
7:45 AM	0	0	198	46	0	0	244	0	2	120	0	0	0	122	0	21	0	3	0	0	24	0	0	0	0	0	0	0	390	0
8:00 AM	0	0	150	28	0	0	178	0	2	134	0	0	0	136	0	10	0	8	0	0	18	0	0	0	0	0	0	0	332	0
8:15 AM	0	0	139	25	0	0	164	0	6	122	0	0	0	128	0	18	0	5	0	0	23	0	0	0	0	0	0	0	315	0

Vehicle Movement Summary

Movement / Details	EB SC 170							WB SC 170							NB Goethe Hill Rd							Entire Intersection								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	0	628	120	0	0	748	0	12	483	0	0	0	495	0	67	0	17	0	0	84	0	0	0	0	0	0	0	1327	0
PHF	-	-	0.79	0.65	-	-	0.77	-	0.50	0.90	-	-	-	0.91	-	0.80	-	0.53	-	-	0.88	-	-	-	-	-	-	-	0.85	-
% Bank 1	0.0%	0.0%	96.8%	99.2%				0.0%	100.0%	95.9%	0.0%				0.0%	94.0%	0.0%	94.1%				0.0%	0.0%	0.0%	0.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	3.2%	0.8%				0.0%	0.0%	4.1%	0.0%				0.0%	6.0%	0.0%	5.9%				0.0%	0.0%	0.0%	0.0%					
% Bank 3	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%	0.0%					
% Bank 4	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%	0.0%					

Turning Movement Count Report

Report Generated Using Turning Movement Count for Android by PortableStudies.com

Study Information

Study Summary	Count Name	Notes	U = U Turn L = Left Turn T = Thru R = Right Turn P1 = Pedestrian Direction 1 P2 = Pedestrian Direction 2 Veh = Total Vehicles for Approach	Peak Hour Volume	
	SC 170 at Goethe Hill Rd PM PK			1327	
	Location			% Bank 1	% Bank 2
	Unknown, Not Available			97.8%	2.2%
	Performed By			% Bank 3	% Bank 4
	KR			0.0%	0.0%
	Date			Pedestrians Volume	
Wednesday, February 26, 2020	0				

Peak Hour Data

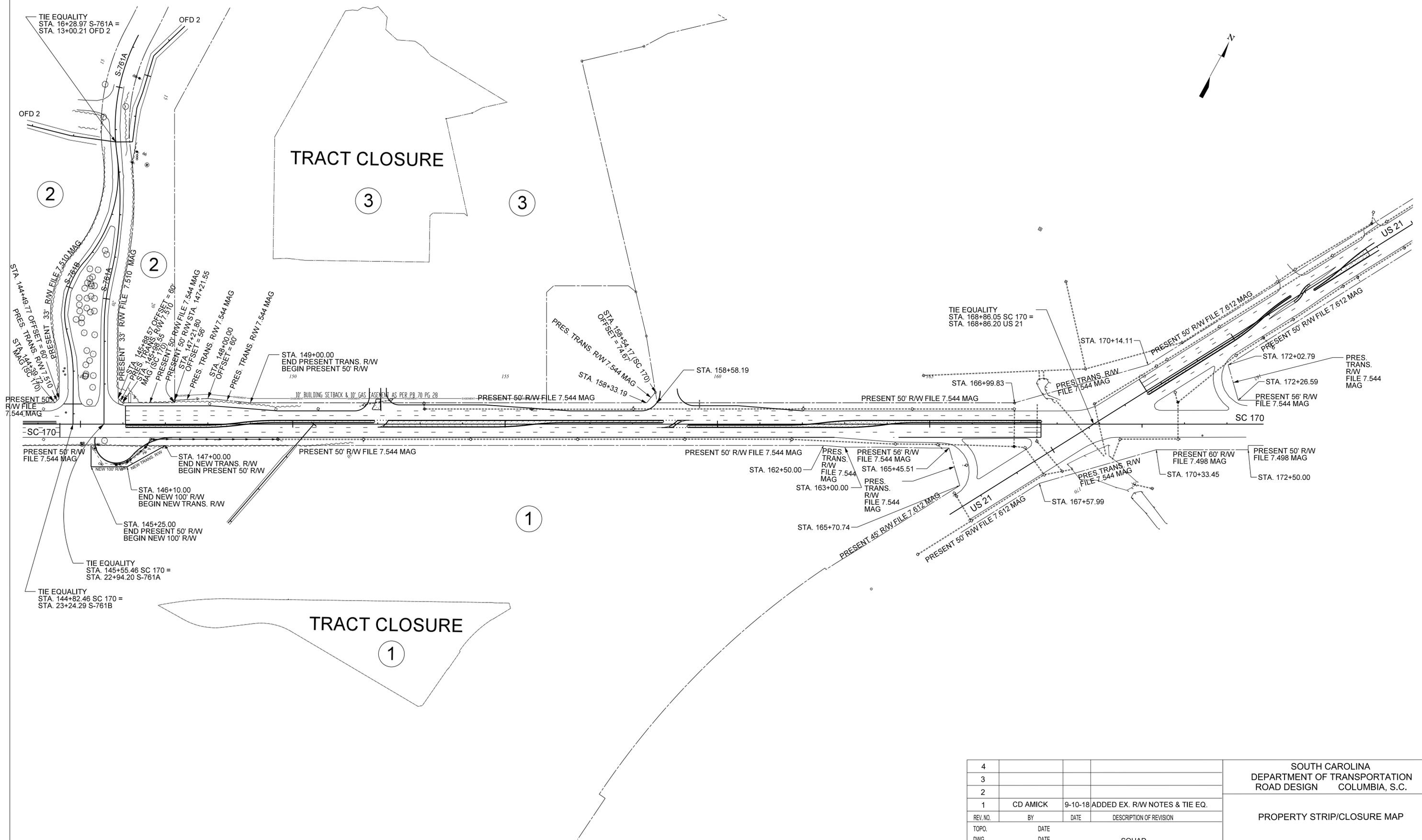
Time Period	EB SC 170							WB SC 170							NB Goethe Hill Rd							Total Vehicles	Total Pedestrians							
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh			U	L	T	R	P1	P2	Veh
5:00 PM	0	0	87	14	0	0	101	0	6	77	0	0	0	83	0	10	0	5	0	0	15	0	0	0	0	0	0	0	199	0
5:15 PM	0	0	139	14	0	0	153	0	3	185	0	0	0	188	0	16	0	2	0	0	18	0	0	0	0	0	0	0	359	0
5:30 PM	0	0	216	16	0	0	232	0	12	195	1	0	0	208	0	9	0	3	0	0	12	0	0	0	0	0	0	0	452	0
5:45 PM	0	0	154	13	0	0	167	0	5	136	0	0	0	141	0	6	0	3	0	0	9	0	0	0	0	0	0	0	317	0

Vehicle Movement Summary

Movement / Details	EB SC 170							WB SC 170							NB Goethe Hill Rd							Entire Intersection								
	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	U	L	T	R	P1	P2	Veh	Vehicles	Pedestrians
Movement Volume	0	0	596	57	0	0	653	0	26	593	1	0	0	620	0	41	0	13	0	0	54	0	0	0	0	0	0	0	1327	0
PHF	-	-	0.69	0.89	-	-	0.70	-	0.54	0.76	0.25	-	-	0.75	-	0.64	-	0.65	-	-	0.75	-	-	-	-	-	-	-	0.73	-
% Bank 1	0.0%	0.0%	97.7%	96.5%				0.0%	100.0%	98.0%	100.0%				0.0%	97.6%	0.0%	100.0%				0.0%	0.0%	0.0%	0.0%				Need a custom report? Contact: support@portablestudies.com	
% Bank 2	0.0%	0.0%	2.3%	3.5%				0.0%	0.0%	2.0%	0.0%				0.0%	2.4%	0.0%	0.0%				0.0%	0.0%	0.0%	0.0%					
% Bank 3	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%	0.0%					
% Bank 4	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%	0.0%					

SCDOT PROJECTS

FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	BEAUFORT	P028659		SC 170	4A	

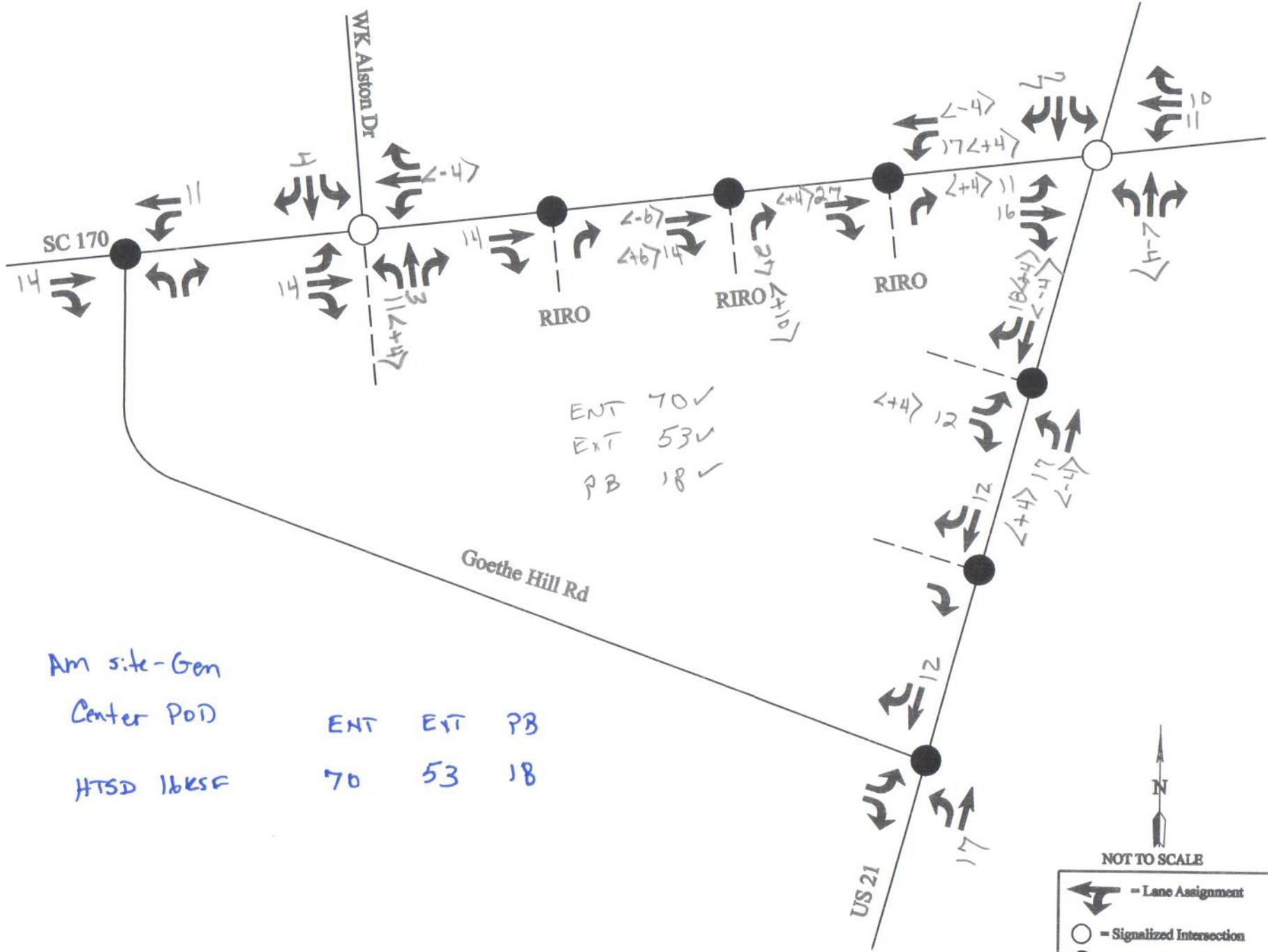


4				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.
3				
2				
1	CD AMICK	9-10-18	ADDED EX. R/W NOTES & TIE EQ.	
REV. NO.	BY	DATE	DESCRIPTION OF REVISION	PROPERTY STRIP/CLOSURE MAP
TOPO.		DATE		
DWG.		DATE	SQUAD	
R/W		DATE		SCALE 1"= 100' RTE. DWG. NO.

GemenskyTD
 028659_Beaufort_SC_170_US_21_Sheet4A_Stripmap.dgn
 05-MAR-2020

SITE-GENERATED POD ASSIGNMENTS

- **Western Out-Parcels**
- **Center Out-Parcels**
- **Eastern Out-Parcels**
- **Shopping Center**



ENT 70 ✓
 EXT 53 ✓
 PB 18 ✓

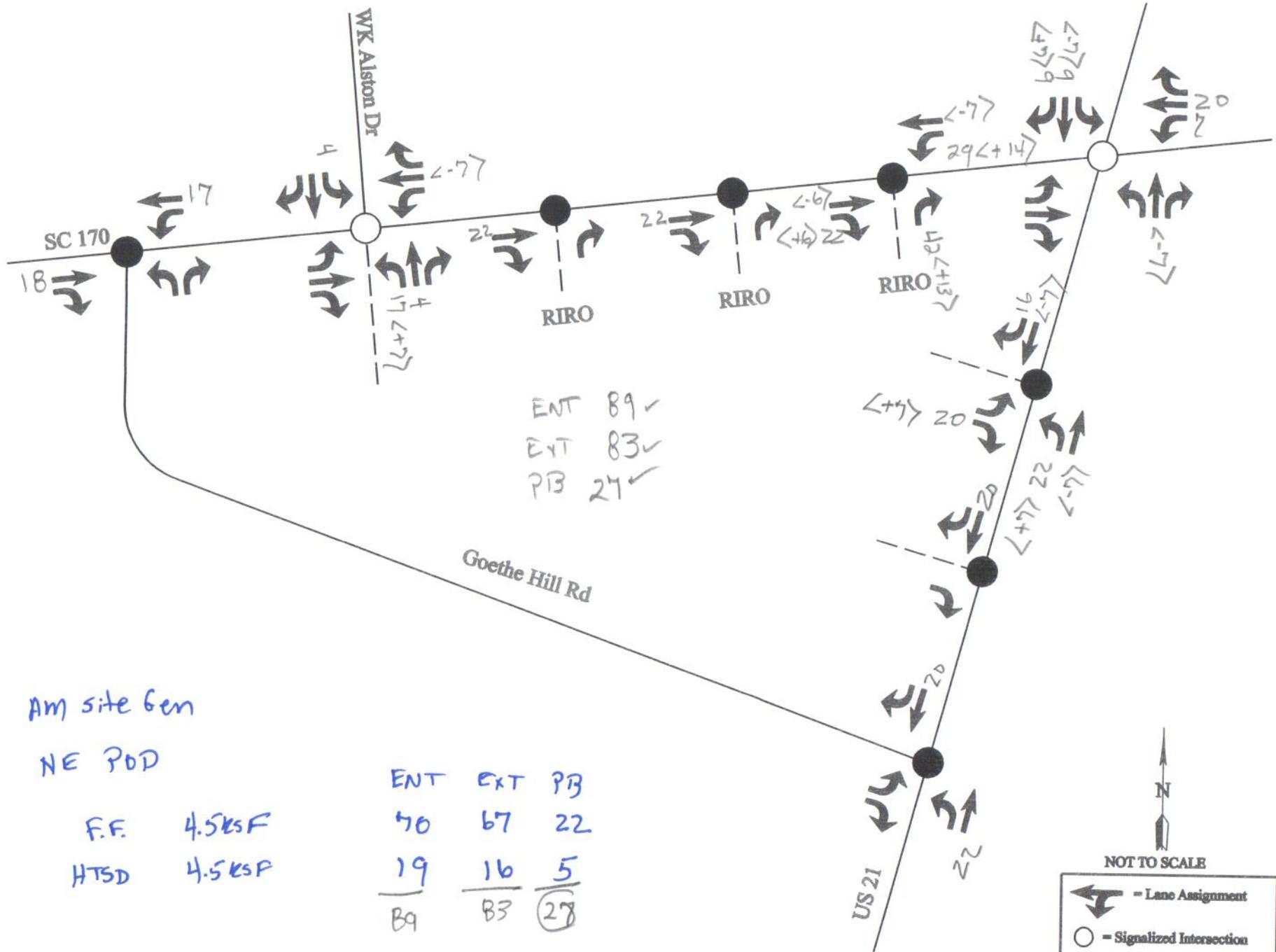
Am site-Gen
 Center PoD
 HTSD 16KSF

	ENT	EXT	PB
HTSD 16KSF	70	53	18



NOT TO SCALE

 - Lane Assignment
 - Signalized Intersection
 - Unsignalized Intersection
 [##] - Pass-By Volumes



ENT 89 ✓
 EXT 83 ✓
 PIB 27 ✓

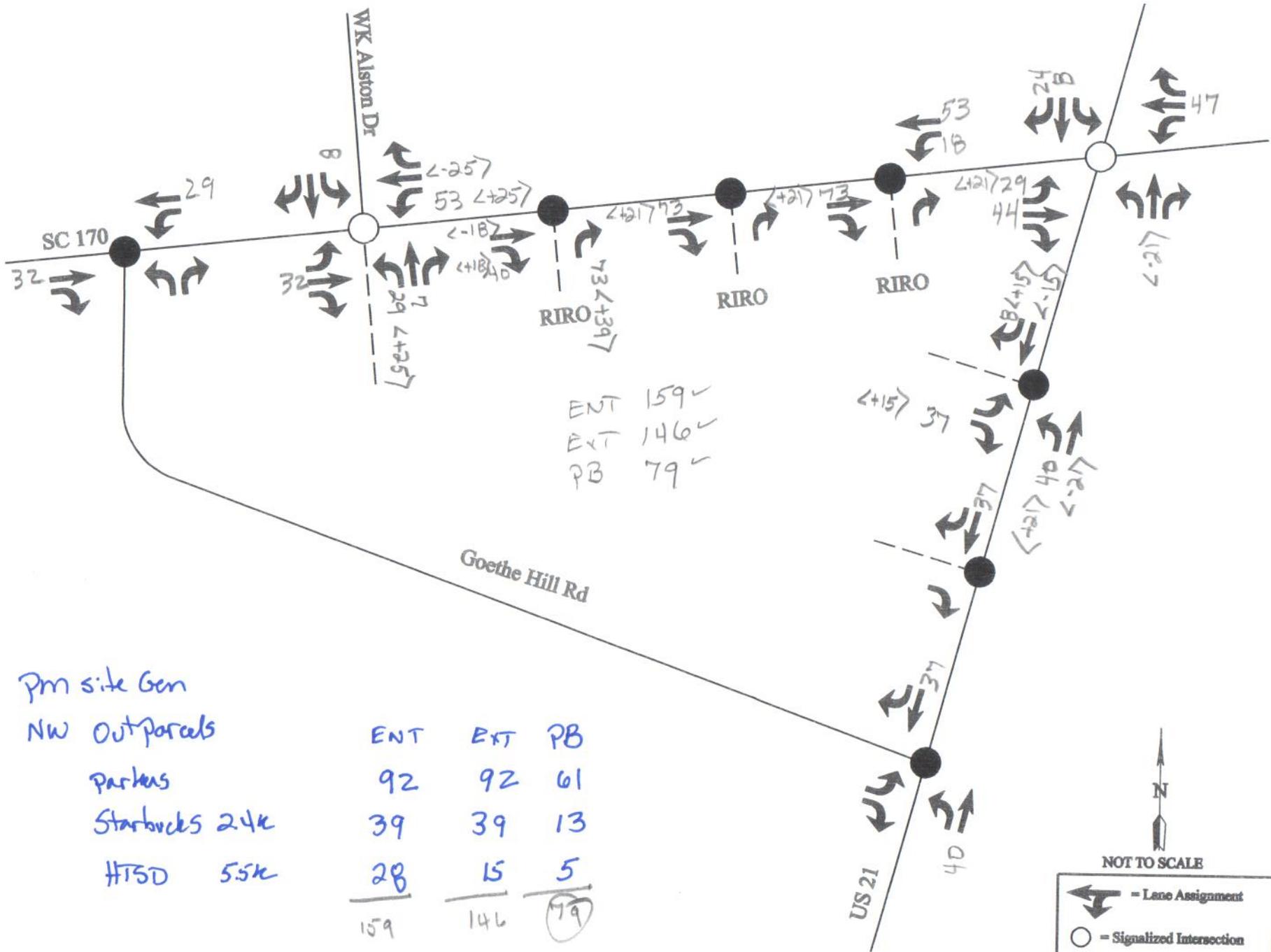
Am site Gen
 NE POD

F.F. 4.5KSF
 HTSD 4.5KSP

ENT	EXT	PIB
50	67	22
19	16	5
<u>69</u>	<u>83</u>	<u>27</u>

NOT TO SCALE

- Lane Assignment
 - Signalized Intersection
 - Unsignalized Intersection
 - Pass-By Volumes

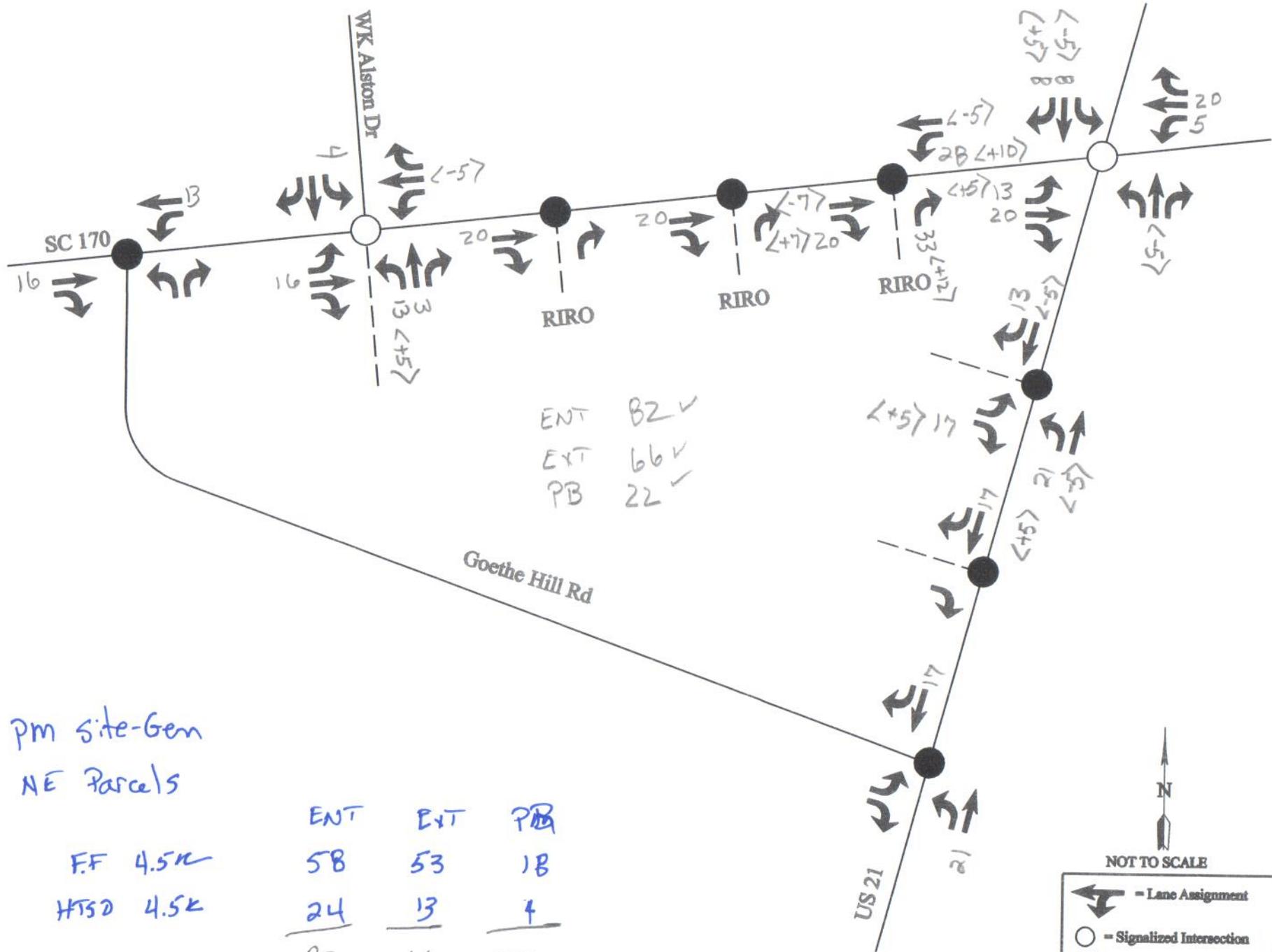


Pm site Gen
 NW Outparcels

	ENT	EXT	PB
Parkus	92	92	61
Starbucks 24k	39	39	13
HTSD 55k	28	15	5
	<u>159</u>	<u>146</u>	<u>79</u>

NOT TO SCALE

- Lane Assignment
 - Signalized Intersection
 - Unsignalized Intersection
 [#] - Pass-By Volumes



ENT 82 ✓
 EXT 66 ✓
 PB 22 ✓

pm site-Gen
 NE Parcels

	ENT	EXT	PB
F.F 4.5K	58	53	18
HTSD 4.5K	24	13	4
	<u>82</u>	<u>66</u>	<u>22</u>

NOT TO SCALE

- Lane Assignment
 - Signalized Intersection
 - Unsignalized Intersection
 - Pass-By Volumes

CAPACITY ANALYSIS

- **Existing**
- **2024 No-Build**
- **2024 Build**

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

AM EXISTING
03/03/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗↗		↘	↗↗	
Traffic Volume (veh/h)	235	561	167	107	409	40	142	297	201	27	337	172
Future Volume (veh/h)	235	561	167	107	409	40	142	297	201	27	337	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1856	1870	1870	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	250	597	0	114	435	0	151	316	214	29	359	183
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	2	2	2	3	2	2	5	5	4	4	4
Cap, veh/h	454	1266		352	1064		344	717	474	307	701	351
Arrive On Green	0.11	0.36	0.00	0.06	0.30	0.00	0.07	0.36	0.36	0.03	0.31	0.31
Sat Flow, veh/h	1767	3554	1585	1781	3526	1585	1781	2000	1323	1753	2256	1130
Grp Volume(v), veh/h	250	597	0	114	435	0	151	273	257	29	277	265
Grp Sat Flow(s),veh/h/ln	1767	1777	1585	1781	1763	1585	1781	1735	1588	1753	1749	1637
Q Serve(g_s), s	11.2	15.6	0.0	5.2	11.8	0.0	6.7	14.4	14.9	1.3	15.6	16.0
Cycle Q Clear(g_c), s	11.2	15.6	0.0	5.2	11.8	0.0	6.7	14.4	14.9	1.3	15.6	16.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.69
Lane Grp Cap(c), veh/h	454	1266		352	1064		344	622	569	307	544	509
V/C Ratio(X)	0.55	0.47		0.32	0.41		0.44	0.44	0.45	0.09	0.51	0.52
Avail Cap(c_a), veh/h	591	1266		409	1064		421	622	569	335	544	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	29.9	0.0	26.5	33.4	0.0	25.3	29.3	29.5	27.2	33.9	34.0
Incr Delay (d2), s/veh	1.0	1.3	0.0	0.5	1.2	0.0	0.9	2.2	2.6	0.1	3.4	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.5	0.0	2.2	4.9	0.0	2.8	6.2	5.9	0.6	6.9	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	31.1	0.0	27.1	34.5	0.0	26.2	31.6	32.1	27.3	37.2	37.8
LnGrp LOS	C	C		C	C		C	C	C	C	D	D
Approach Vol, veh/h		847	A		549	A		681			571	
Approach Delay, s/veh		29.2			33.0			30.6			37.0	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	48.8	14.8	43.3	19.7	42.2	9.1	49.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	37.0	14.0	34.0	23.0	25.0	5.0	43.0				
Max Q Clear Time (g_c+I1), s	7.2	17.6	8.7	18.0	13.2	13.8	3.3	16.9				
Green Ext Time (p_c), s	0.1	3.3	0.2	2.7	0.5	1.8	0.0	3.1				

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

PM EXISTING
03/03/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗↗		↘	↗↗	
Traffic Volume (veh/h)	205	498	116	167	745	96	185	431	201	106	340	250
Future Volume (veh/h)	205	498	116	167	745	96	185	431	201	106	340	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856
Adj Flow Rate, veh/h	220	535	0	180	801	0	199	463	216	114	366	269
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	371	1473		465	1415		260	576	267	221	401	290
Arrive On Green	0.09	0.41	0.00	0.08	0.40	0.00	0.10	0.24	0.24	0.07	0.21	0.21
Sat Flow, veh/h	1753	3554	1585	1781	3554	1585	1781	2358	1092	1781	1951	1413
Grp Volume(v), veh/h	220	535	0	180	801	0	199	348	331	114	330	305
Grp Sat Flow(s),veh/h/ln	1753	1777	1585	1781	1777	1585	1781	1777	1674	1781	1763	1601
Q Serve(g_s), s	8.8	12.5	0.0	7.1	21.0	0.0	10.3	22.1	22.4	6.0	22.0	22.4
Cycle Q Clear(g_c), s	8.8	12.5	0.0	7.1	21.0	0.0	10.3	22.1	22.4	6.0	22.0	22.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		0.88
Lane Grp Cap(c), veh/h	371	1473		465	1415		260	434	409	221	362	329
V/C Ratio(X)	0.59	0.36		0.39	0.57		0.76	0.80	0.81	0.52	0.91	0.93
Avail Cap(c_a), veh/h	457	1473		479	1415		312	444	418	267	367	334
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	24.2	0.0	19.0	28.1	0.0	34.3	42.6	42.7	35.6	46.6	46.8
Incr Delay (d2), s/veh	1.5	0.7	0.0	0.5	1.6	0.0	8.9	10.0	11.2	1.9	26.0	30.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	5.0	0.0	2.8	8.6	0.0	5.0	10.6	10.2	2.6	11.9	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	24.9	0.0	19.6	29.7	0.0	43.2	52.6	53.9	37.5	72.6	77.7
LnGrp LOS	C	C		B	C		D	D	D	D	E	E
Approach Vol, veh/h		755	A		981	A		878			749	
Approach Delay, s/veh		24.1			27.8			51.0			69.3	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.1	55.7	18.5	30.7	17.1	53.8	13.9	35.3				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	10.0	45.0	16.0	25.0	17.0	38.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	9.1	14.5	12.3	24.4	10.8	23.0	8.0	24.4				
Green Ext Time (p_c), s	0.0	3.2	0.2	0.2	0.3	4.2	0.1	1.9				

Intersection Summary

HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗	↗↗	↘	↘	↘
Traffic Vol, veh/h	50	823	616	107	140	36
Future Vol, veh/h	50	823	616	107	140	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	245	125	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	7	3
Mvmt Flow	52	857	642	111	146	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	753	0	-	0	1175 321
Stage 1	-	-	-	-	642 -
Stage 2	-	-	-	-	533 -
Critical Hdwy	4.14	-	-	-	6.94 6.96
Critical Hdwy Stg 1	-	-	-	-	5.94 -
Critical Hdwy Stg 2	-	-	-	-	5.94 -
Follow-up Hdwy	2.22	-	-	-	3.57 3.33
Pot Cap-1 Maneuver	853	-	-	-	177 672
Stage 1	-	-	-	-	473 -
Stage 2	-	-	-	-	539 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	853	-	-	-	166 672
Mov Cap-2 Maneuver	-	-	-	-	166 -
Stage 1	-	-	-	-	444 -
Stage 2	-	-	-	-	539 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	78.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	853	-	-	-	166	672
HCM Lane V/C Ratio	0.061	-	-	-	0.879	0.056
HCM Control Delay (s)	9.5	-	-	-	95.9	10.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	6.2	0.2

Intersection						
Int Delay, s/veh	24.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗↗	↗↗	↗	↘	↗
Traffic Vol, veh/h	24	681	975	205	138	32
Future Vol, veh/h	24	681	975	205	138	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	245	125	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	3	2	2	2	2
Mvmt Flow	27	765	1096	230	155	36

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1326	0	-	0	1533 548
Stage 1	-	-	-	-	1096 -
Stage 2	-	-	-	-	437 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	517	-	-	-	~ 107 480
Stage 1	-	-	-	-	282 -
Stage 2	-	-	-	-	619 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	517	-	-	-	~ 101 480
Mov Cap-2 Maneuver	-	-	-	-	~ 101 -
Stage 1	-	-	-	-	267 -
Stage 2	-	-	-	-	619 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	293.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	517	-	-	-	101	480
HCM Lane V/C Ratio	0.052	-	-	-	1.535	0.075
HCM Control Delay (s)	12.3	-	-	-	\$ 358.9	13.1
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	11.7	0.2

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

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	856	117	12	640	67	17
Future Vol, veh/h	856	117	12	640	67	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	2	2	5	6	6
Mvmt Flow	1007	138	14	753	79	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1145	0	1412
Stage 1	-	-	-	-	1007
Stage 2	-	-	-	-	405
Critical Hdwy	-	-	4.14	-	6.92
Critical Hdwy Stg 1	-	-	-	-	5.92
Critical Hdwy Stg 2	-	-	-	-	5.92
Follow-up Hdwy	-	-	2.22	-	3.56
Pot Cap-1 Maneuver	-	-	606	-	124
Stage 1	-	-	-	-	305
Stage 2	-	-	-	-	630
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	606	-	121
Mov Cap-2 Maneuver	-	-	-	-	233
Stage 1	-	-	-	-	305
Stage 2	-	-	-	-	616

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	233	503	-	-	606	-
HCM Lane V/C Ratio	0.338	0.04	-	-	0.023	-
HCM Control Delay (s)	28.2	12.5	-	-	11.1	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	689	85	26	981	65	16
Future Vol, veh/h	689	85	26	981	65	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	3	4	2	2	3	2
Mvmt Flow	944	116	36	1344	89	22

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1060	0	1688
Stage 1	-	-	-	-	944
Stage 2	-	-	-	-	744
Critical Hdwy	-	-	4.14	-	6.86
Critical Hdwy Stg 1	-	-	-	-	5.86
Critical Hdwy Stg 2	-	-	-	-	5.86
Follow-up Hdwy	-	-	2.22	-	3.53
Pot Cap-1 Maneuver	-	-	653	-	~ 84
Stage 1	-	-	-	-	336
Stage 2	-	-	-	-	428
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	653	-	~ 79
Mov Cap-2 Maneuver	-	-	-	-	203
Stage 1	-	-	-	-	336
Stage 2	-	-	-	-	404

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	31.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	538	-	-	653	-
HCM Lane V/C Ratio	0.439	0.041	-	-	0.055	-
HCM Control Delay (s)	35.9	12	-	-	10.8	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th %tile Q(veh)	2	0.1	-	-	0.2	-

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

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	98	78	609	605	6
Future Vol, veh/h	31	98	78	609	605	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	4	2	4	3	7	2
Mvmt Flow	39	123	98	761	756	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1333	378	764	0	-	0
Stage 1	756	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Critical Hdwy	6.88	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	143	620	832	-	-	-
Stage 1	419	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	620	832	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	519	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	832	-	252	620	-	-
HCM Lane V/C Ratio	0.117	-	0.154	0.198	-	-
HCM Control Delay (s)	9.9	-	21.9	12.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	0.7	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕↕	↕↕	↗
Traffic Vol, veh/h	26	85	53	791	595	28
Future Vol, veh/h	26	85	53	791	595	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	100	80	80	80	80
Heavy Vehicles, %	4	14	4	3	7	4
Mvmt Flow	33	85	66	989	744	35

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1371	372	779	0	0
Stage 1	744	-	-	-	-
Stage 2	627	-	-	-	-
Critical Hdwy	6.88	7.18	4.18	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-
Follow-up Hdwy	3.54	3.44	2.24	-	-
Pot Cap-1 Maneuver	135	592	821	-	-
Stage 1	425	-	-	-	-
Stage 2	489	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	124	592	821	-	-
Mov Cap-2 Maneuver	254	-	-	-	-
Stage 1	391	-	-	-	-
Stage 2	489	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	821	-	254	592	-	-
HCM Lane V/C Ratio	0.081	-	0.128	0.144	-	-
HCM Control Delay (s)	9.8	-	21.2	12.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	0.5	-	-

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

AM 2023 NB
03/03/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑		↘	↑↑	
Traffic Volume (veh/h)	235	561	167	107	409	40	142	297	201	27	337	172
Future Volume (veh/h)	235	561	167	107	409	40	142	297	201	27	337	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1856	1870	1870	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	292	698	0	133	509	0	159	332	225	30	376	192
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	2	2	2	3	2	2	5	5	4	4	4
Cap, veh/h	435	1232		302	1006		337	716	475	297	695	349
Arrive On Green	0.04	0.11	0.00	0.07	0.29	0.00	0.08	0.36	0.36	0.03	0.31	0.31
Sat Flow, veh/h	1767	3554	1585	1781	3526	1585	1781	1997	1325	1753	2252	1133
Grp Volume(v), veh/h	292	698	0	133	509	0	159	287	270	30	291	277
Grp Sat Flow(s),veh/h/ln	1767	1777	1585	1781	1763	1585	1781	1735	1587	1753	1749	1637
Q Serve(g_s), s	13.1	22.3	0.0	6.3	14.5	0.0	7.0	15.3	15.7	1.4	16.5	16.9
Cycle Q Clear(g_c), s	13.1	22.3	0.0	6.3	14.5	0.0	7.0	15.3	15.7	1.4	16.5	16.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.69
Lane Grp Cap(c), veh/h	435	1232		302	1006		337	622	569	297	539	505
V/C Ratio(X)	0.67	0.57		0.44	0.51		0.47	0.46	0.47	0.10	0.54	0.55
Avail Cap(c_a), veh/h	544	1232		343	1006		409	622	569	323	539	505
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	44.6	0.0	28.2	35.8	0.0	25.5	29.6	29.8	27.4	34.4	34.6
Incr Delay (d2), s/veh	2.0	1.7	0.0	1.0	1.8	0.0	1.0	2.5	2.8	0.1	3.8	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	10.8	0.0	2.6	6.1	0.0	2.9	6.6	6.2	0.6	7.4	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	46.3	0.0	29.2	37.6	0.0	26.5	32.1	32.6	27.6	38.3	38.8
LnGrp LOS	C	D		C	D		C	C	C	C	D	D
Approach Vol, veh/h		990	A		642	A		716			598	
Approach Delay, s/veh		41.3			35.9			31.0			38.0	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	47.6	15.2	43.0	21.6	40.2	9.2	49.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	37.0	14.0	34.0	23.0	25.0	5.0	43.0				
Max Q Clear Time (g_c+I1), s	8.3	24.3	9.0	18.9	15.1	16.5	3.4	17.7				
Green Ext Time (p_c), s	0.1	3.3	0.2	2.8	0.5	1.9	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

PM NB 2034
03/03/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗		↘	↗	
Traffic Volume (veh/h)	205	498	116	167	745	96	185	431	201	106	340	250
Future Volume (veh/h)	205	498	116	167	745	96	185	431	201	106	340	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856
Adj Flow Rate, veh/h	258	627	0	210	937	0	209	487	227	120	384	282
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	339	1423		426	1335		261	585	271	219	406	295
Arrive On Green	0.11	0.40	0.00	0.08	0.38	0.00	0.11	0.25	0.25	0.07	0.21	0.21
Sat Flow, veh/h	1753	3554	1585	1781	3554	1585	1781	2358	1093	1781	1950	1414
Grp Volume(v), veh/h	258	627	0	210	937	0	209	366	348	120	347	319
Grp Sat Flow(s),veh/h/ln	1753	1777	1585	1781	1777	1585	1781	1777	1674	1781	1763	1601
Q Serve(g_s), s	10.7	15.4	0.0	8.7	26.8	0.0	10.8	23.4	23.7	6.3	23.3	23.7
Cycle Q Clear(g_c), s	10.7	15.4	0.0	8.7	26.8	0.0	10.8	23.4	23.7	6.3	23.3	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		0.88
Lane Grp Cap(c), veh/h	339	1423		426	1335		261	441	415	219	367	334
V/C Ratio(X)	0.76	0.44		0.49	0.70		0.80	0.83	0.84	0.55	0.94	0.96
Avail Cap(c_a), veh/h	398	1423		426	1335		306	444	418	261	367	334
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	26.2	0.0	20.8	31.8	0.0	33.9	42.7	42.8	35.4	46.8	47.0
Incr Delay (d2), s/veh	6.6	0.9	0.0	0.9	3.1	0.0	12.3	12.5	13.8	2.1	32.8	37.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.3	0.0	3.4	11.3	0.0	5.4	11.5	11.0	2.8	13.2	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	27.1	0.0	21.7	34.9	0.0	46.2	55.2	56.6	37.6	79.6	84.9
LnGrp LOS	C	C		C	C		D	E	E	D	E	F
Approach Vol, veh/h		885	A		1147	A		923			786	
Approach Delay, s/veh		28.1			32.5			53.7			75.3	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	54.0	19.0	31.0	19.0	51.1	14.2	35.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	10.0	45.0	16.0	25.0	17.0	38.0	11.0	30.0				
Max Q Clear Time (g_c+I1), s	10.7	17.4	12.8	25.7	12.7	28.8	8.3	25.7				
Green Ext Time (p_c), s	0.0	3.8	0.2	0.0	0.3	3.8	0.1	1.6				

Intersection Summary

HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

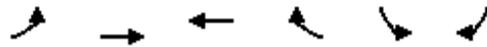
Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
14: SC 170 & WK Alston Dr

AM 2023 NB

03/03/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↕	↕	↗	↖	↗
Traffic Volume (veh/h)	50	823	616	107	140	36
Future Volume (veh/h)	50	823	616	107	140	36
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1796	1856
Adj Flow Rate, veh/h	61	1003	751	130	171	44
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	7	3
Cap, veh/h	335	2191	2191	1427	485	446
Arrive On Green	0.62	0.62	0.20	0.20	0.28	0.28
Sat Flow, veh/h	630	3647	3647	1585	1711	1572
Grp Volume(v), veh/h	61	1003	751	130	171	44
Grp Sat Flow(s),veh/h/ln	630	1777	1777	1585	1711	1572
Q Serve(g_s), s	7.3	18.1	21.7	2.1	9.6	2.5
Cycle Q Clear(g_c), s	29.0	18.1	21.7	2.1	9.6	2.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	335	2191	2191	1427	485	446
V/C Ratio(X)	0.18	0.46	0.34	0.09	0.35	0.10
Avail Cap(c_a), veh/h	335	2191	2191	1427	485	446
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00
Uniform Delay (d), s/veh	21.2	12.3	27.0	1.5	34.2	31.7
Incr Delay (d2), s/veh	1.2	0.7	0.3	0.1	2.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.3	10.3	2.9	4.3	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	13.0	27.3	1.6	36.2	32.1
LnGrp LOS	C	B	C	A	D	C
Approach Vol, veh/h		1064	881		215	
Approach Delay, s/veh		13.5	23.5		35.4	
Approach LOS		B	C		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		80.0		40.0		80.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		74.0		34.0		74.0
Max Q Clear Time (g_c+I1), s		31.0		11.6		23.7
Green Ext Time (p_c), s		8.2		0.6		5.5
Intersection Summary						
HCM 6th Ctrl Delay			19.8			
HCM 6th LOS			B			

BEAUFORT RETAIL CENTER
14: SC 170 & WK Alston Dr

PM NB 2023

03/03/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↖
Traffic Volume (veh/h)	24	681	975	205	138	32
Future Volume (veh/h)	24	681	975	205	138	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	895	1282	269	181	42
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	3	2	2	2	2
Cap, veh/h	320	2747	2769	1427	215	191
Arrive On Green	0.78	0.78	1.00	1.00	0.12	0.12
Sat Flow, veh/h	333	3618	3647	1585	1781	1585
Grp Volume(v), veh/h	32	895	1282	269	181	42
Grp Sat Flow(s),veh/h/ln	333	1763	1777	1585	1781	1585
Q Serve(g_s), s	2.8	9.0	0.0	0.0	11.9	2.9
Cycle Q Clear(g_c), s	2.8	9.0	0.0	0.0	11.9	2.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	320	2747	2769	1427	215	191
V/C Ratio(X)	0.10	0.33	0.46	0.19	0.84	0.22
Avail Cap(c_a), veh/h	320	2747	2769	1427	445	396
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.57	0.57	1.00	1.00
Uniform Delay (d), s/veh	3.2	3.9	0.0	0.0	51.6	47.7
Incr Delay (d2), s/veh	0.6	0.3	0.3	0.2	8.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.1	0.1	9.0	5.8	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	4.2	0.3	0.2	60.2	48.2
LnGrp LOS	A	A	A	A	E	D
Approach Vol, veh/h		927	1551		223	
Approach Delay, s/veh		4.2	0.3		58.0	
Approach LOS		A	A		E	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		99.5		20.5		99.5
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		78.0		30.0		78.0
Max Q Clear Time (g_c+I1), s		11.0		13.9		2.0
Green Ext Time (p_c), s		7.4		0.6		13.0
Intersection Summary						
HCM 6th Ctrl Delay			6.4			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	856	117	12	640	67	17
Future Vol, veh/h	856	117	12	640	67	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	2	2	5	6	6
Mvmt Flow	1178	161	17	881	92	23

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1339	0	1653
Stage 1	-	-	-	-	1178
Stage 2	-	-	-	-	475
Critical Hdwy	-	-	4.14	-	6.92
Critical Hdwy Stg 1	-	-	-	-	5.92
Critical Hdwy Stg 2	-	-	-	-	5.92
Follow-up Hdwy	-	-	2.22	-	3.56
Pot Cap-1 Maneuver	-	-	511	-	~ 86
Stage 1	-	-	-	-	247
Stage 2	-	-	-	-	580
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	511	-	~ 83
Mov Cap-2 Maneuver	-	-	-	-	187
Stage 1	-	-	-	-	247
Stage 2	-	-	-	-	561

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	36
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	187	442	-	-	511	-
HCM Lane V/C Ratio	0.493	0.053	-	-	0.032	-
HCM Control Delay (s)	41.7	13.6	-	-	12.3	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th %tile Q(veh)	2.4	0.2	-	-	0.1	-

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

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	689	85	26	981	65	16
Future Vol, veh/h	689	85	26	981	65	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	3	4	2	2	3	2
Mvmt Flow	1104	136	42	1572	104	26

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1240	0	1974
Stage 1	-	-	-	-	1104
Stage 2	-	-	-	-	870
Critical Hdwy	-	-	4.14	-	6.86
Critical Hdwy Stg 1	-	-	-	-	5.86
Critical Hdwy Stg 2	-	-	-	-	5.86
Follow-up Hdwy	-	-	2.22	-	3.53
Pot Cap-1 Maneuver	-	-	557	-	~ 54
Stage 1	-	-	-	-	277
Stage 2	-	-	-	-	368
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	557	-	~ 50
Mov Cap-2 Maneuver	-	-	-	-	162
Stage 1	-	-	-	-	277
Stage 2	-	-	-	-	340

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	51
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	477	-	-	557	-
HCM Lane V/C Ratio	0.643	0.054	-	-	0.075	-
HCM Control Delay (s)	60.4	13	-	-	12	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	3.6	0.2	-	-	0.2	-

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

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↗
Traffic Vol, veh/h	31	98	78	609	605	6
Future Vol, veh/h	31	98	78	609	605	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	4	2	4	3	7	2
Mvmt Flow	41	129	102	799	794	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1398	397	802	0	-	0
Stage 1	794	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Critical Hdwy	6.88	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	129	602	804	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	602	804	-	-	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	804	-	238	602	-	-
HCM Lane V/C Ratio	0.127	-	0.171	0.214	-	-
HCM Control Delay (s)	10.1	-	23.2	12.6	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.6	0.8	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↗
Traffic Vol, veh/h	26	85	53	791	595	28
Future Vol, veh/h	26	85	53	791	595	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	100	80	80	80	80
Heavy Vehicles, %	4	14	4	3	7	4
Mvmt Flow	34	89	70	1038	781	37

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1440	391	818	0	-	0
Stage 1	781	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.88	7.18	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.44	2.24	-	-	-
Pot Cap-1 Maneuver	121	575	793	-	-	-
Stage 1	407	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	110	575	793	-	-	-
Mov Cap-2 Maneuver	239	-	-	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	471	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	793	-	239	575	-	-
HCM Lane V/C Ratio	0.088	-	0.143	0.155	-	-
HCM Control Delay (s)	10	-	22.6	12.4	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	0.5	-	-

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

AM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗↗		↘	↗↗	
Traffic Volume (veh/h)	389	777	195	161	59	47	149	282	217	26	394	241
Future Volume (veh/h)	389	777	195	161	59	47	149	282	217	26	394	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1856	1870	1870	1826	1826	1841	1841	1841
Adj Flow Rate, veh/h	414	827	0	171	63	0	159	300	231	28	419	256
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	2	2	2	3	2	2	5	5	4	4	4
Cap, veh/h	752	1390		346	1048		245	567	425	245	510	309
Arrive On Green	0.18	0.39	0.00	0.08	0.30	0.00	0.08	0.30	0.30	0.03	0.24	0.24
Sat Flow, veh/h	1767	3554	1585	1781	3526	1585	1781	1889	1416	1753	2094	1267
Grp Volume(v), veh/h	414	827	0	171	63	0	159	275	256	28	349	326
Grp Sat Flow(s),veh/h/ln	1767	1777	1585	1781	1763	1585	1781	1735	1571	1753	1749	1613
Q Serve(g_s), s	18.7	22.2	0.0	7.9	1.5	0.0	7.7	15.8	16.4	1.4	22.6	23.0
Cycle Q Clear(g_c), s	18.7	22.2	0.0	7.9	1.5	0.0	7.7	15.8	16.4	1.4	22.6	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.79
Lane Grp Cap(c), veh/h	752	1390		346	1048		245	520	471	245	426	393
V/C Ratio(X)	0.55	0.60		0.49	0.06		0.65	0.53	0.54	0.11	0.82	0.83
Avail Cap(c_a), veh/h	821	1390		419	1048		293	520	471	274	426	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	29.0	0.0	26.1	30.2	0.0	31.8	34.9	35.1	33.0	42.9	43.0
Incr Delay (d2), s/veh	0.7	1.9	0.0	1.1	0.1	0.0	3.7	3.8	4.5	0.2	16.0	18.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	9.1	0.0	3.2	0.6	0.0	3.5	7.0	6.6	0.6	11.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	30.9	0.0	27.2	30.3	0.0	35.6	38.7	39.6	33.2	58.9	61.1
LnGrp LOS	C	C		C	C		D	D	D	C	E	E
Approach Vol, veh/h		1241	A		234	A		690			703	
Approach Delay, s/veh		27.6			28.0			38.3			58.9	
Approach LOS		C			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	52.9	15.8	35.2	27.3	41.7	9.0	42.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	15.0	40.0	13.0	28.0	26.0	29.0	5.0	36.0				
Max Q Clear Time (g_c+I1), s	9.9	24.2	9.7	25.0	20.7	3.5	3.4	18.4				
Green Ext Time (p_c), s	0.2	4.4	0.1	1.1	0.6	0.2	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

PM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘	↘	↗		↘	↗	
Traffic Volume (veh/h)	364	724	136	295	1006	112	194	441	239	111	394	345
Future Volume (veh/h)	364	724	136	295	1006	112	194	441	239	111	394	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1856
Adj Flow Rate, veh/h	391	778	0	317	1082	0	209	474	257	119	424	371
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	397	1318		440	1155		223	502	270	189	357	311
Arrive On Green	0.18	0.37	0.00	0.14	0.32	0.00	0.09	0.22	0.22	0.07	0.20	0.20
Sat Flow, veh/h	1753	3554	1585	1781	3554	1585	1781	2229	1202	1781	1785	1554
Grp Volume(v), veh/h	391	778	0	317	1082	0	209	377	354	119	419	376
Grp Sat Flow(s),veh/h/ln	1753	1777	1585	1781	1777	1585	1781	1777	1654	1781	1763	1576
Q Serve(g_s), s	21.5	21.2	0.0	14.0	35.5	0.0	11.0	25.1	25.3	6.3	24.0	24.0
Cycle Q Clear(g_c), s	21.5	21.2	0.0	14.0	35.5	0.0	11.0	25.1	25.3	6.3	24.0	24.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		0.99
Lane Grp Cap(c), veh/h	397	1318		440	1155		223	400	372	189	353	315
V/C Ratio(X)	0.99	0.59		0.72	0.94		0.94	0.94	0.95	0.63	1.19	1.19
Avail Cap(c_a), veh/h	397	1318		536	1155		223	400	372	189	353	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	30.4	0.0	23.0	39.3	0.0	37.0	45.8	45.8	36.9	48.0	48.0
Incr Delay (d2), s/veh	41.4	1.9	0.0	3.7	15.1	0.0	42.7	32.9	35.7	6.5	109.4	114.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	8.8	0.0	5.8	16.8	0.0	7.4	14.3	13.7	3.0	20.9	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	32.3	0.0	26.7	54.4	0.0	79.7	78.6	81.5	43.4	157.4	162.1
LnGrp LOS	E	C		C	D		E	E	F	D	F	F
Approach Vol, veh/h		1169	A		1399	A		940			914	
Approach Delay, s/veh		47.3			48.1			79.9			144.5	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.5	50.5	17.0	30.0	28.0	45.0	14.0	33.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	23.0	38.0	11.0	24.0	22.0	39.0	8.0	27.0				
Max Q Clear Time (g_c+I1), s	16.0	23.2	13.0	26.0	23.5	37.5	8.3	27.3				
Green Ext Time (p_c), s	0.5	4.0	0.0	0.0	0.0	1.0	0.0	0.0				

Intersection Summary

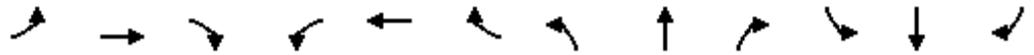
HCM 6th Ctrl Delay	74.6
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
14: Site Access/WK Alston Dr & SC 170

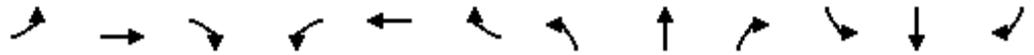
AM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	59	1046	16	102	679	125	126	21	14	179	10	42
Future Volume (veh/h)	59	1046	16	102	679	125	126	21	14	179	10	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	61	1090	17	111	707	130	137	23	15	186	11	44
Peak Hour Factor	0.96	0.96	0.92	0.92	0.96	0.96	0.92	0.92	0.92	0.96	0.92	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	7	2	2
Cap, veh/h	388	1872	835	285	1887	841	424	315	205	426	97	389
Arrive On Green	0.03	0.53	0.53	0.04	0.53	0.53	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1349	1057	689	1315	327	1308
Grp Volume(v), veh/h	61	1090	17	111	707	130	137	0	38	186	0	55
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1349	0	1746	1315	0	1635
Q Serve(g_s), s	2.0	27.4	0.7	3.8	15.3	5.5	10.8	0.0	2.0	15.5	0.0	3.2
Cycle Q Clear(g_c), s	2.0	27.4	0.7	3.8	15.3	5.5	14.0	0.0	2.0	17.5	0.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		0.80
Lane Grp Cap(c), veh/h	388	1872	835	285	1887	841	424	0	520	426	0	487
V/C Ratio(X)	0.16	0.58	0.02	0.39	0.37	0.15	0.32	0.00	0.07	0.44	0.00	0.11
Avail Cap(c_a), veh/h	395	1872	835	285	1887	841	424	0	520	426	0	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	21.2	14.8	16.9	18.0	15.7	38.5	0.0	33.0	39.3	0.0	33.4
Incr Delay (d2), s/veh	0.2	1.3	0.0	0.9	0.1	0.1	2.0	0.0	0.3	3.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	10.7	0.2	1.5	5.8	1.9	3.8	0.0	0.9	5.4	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	22.5	14.9	17.8	18.1	15.8	40.5	0.0	33.3	42.6	0.0	33.9
LnGrp LOS	B	C	B	B	B	B	D	A	C	D	A	C
Approach Vol, veh/h		1168			948			175				241
Approach Delay, s/veh		21.9			17.8			39.0				40.6
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	75.0		45.0	10.5	75.5		45.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		39.0	5.0	69.0		39.0				
Max Q Clear Time (g_c+I1), s	5.8	29.4		19.5	4.0	17.3		16.0				
Green Ext Time (p_c), s	0.0	8.3		0.8	0.0	5.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				23.3								
HCM 6th LOS				C								

BEAUFORT RETAIL CENTER
14: Site Access/WK Alston Dr & SC 170

PM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	28	886	31	148	1077	240	176	27	47	173	18	37
Future Volume (veh/h)	28	886	31	148	1077	240	176	27	47	173	18	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	996	35	166	1210	270	198	30	53	194	20	42
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	3	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1076	484	290	1265	564	495	185	327	476	164	345
Arrive On Green	0.03	0.31	0.31	0.08	0.36	0.36	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1781	3526	1585	1781	3554	1585	1340	606	1071	1315	538	1129
Grp Volume(v), veh/h	31	996	35	166	1210	270	198	0	83	194	0	62
Grp Sat Flow(s),veh/h/ln	1781	1763	1585	1781	1777	1585	1340	0	1678	1315	0	1667
Q Serve(g_s), s	0.7	16.1	0.9	3.7	19.6	7.8	7.4	0.0	2.1	7.5	0.0	1.6
Cycle Q Clear(g_c), s	0.7	16.1	0.9	3.7	19.6	7.8	9.0	0.0	2.1	9.6	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.64	1.00		0.68
Lane Grp Cap(c), veh/h	191	1076	484	290	1265	564	495	0	512	476	0	509
V/C Ratio(X)	0.16	0.93	0.07	0.57	0.96	0.48	0.40	0.00	0.16	0.41	0.00	0.12
Avail Cap(c_a), veh/h	281	1076	484	290	1265	564	495	0	512	476	0	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	19.9	14.6	14.8	18.5	14.7	18.0	0.0	15.0	18.5	0.0	14.8
Incr Delay (d2), s/veh	0.4	14.6	0.3	2.7	16.0	0.6	2.4	0.0	0.7	2.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.3	0.3	1.3	8.8	2.2	2.4	0.0	0.8	2.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	34.4	14.9	17.5	34.5	15.4	20.4	0.0	15.7	21.1	0.0	15.3
LnGrp LOS	B	C	B	B	C	B	C	A	B	C	A	B
Approach Vol, veh/h		1062			1646			281			256	
Approach Delay, s/veh		33.2			29.7			19.0			19.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	24.0		24.0	8.0	27.0		24.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	18.0		18.0	5.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	5.7	18.1		11.6	2.7	21.6		11.0				
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	0.0		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				29.1								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	1101	137	14	833	78	20
Future Vol, veh/h	1101	137	14	833	78	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	4	2	2	5	6	6
Mvmt Flow	1295	161	16	980	92	24

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1456	0	1817
Stage 1	-	-	-	-	1295
Stage 2	-	-	-	-	522
Critical Hdwy	-	-	4.14	-	6.92
Critical Hdwy Stg 1	-	-	-	-	5.92
Critical Hdwy Stg 2	-	-	-	-	5.92
Follow-up Hdwy	-	-	2.22	-	3.56
Pot Cap-1 Maneuver	-	-	461	-	~66
Stage 1	-	-	-	-	213
Stage 2	-	-	-	-	549
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	461	-	~64
Mov Cap-2 Maneuver	-	-	-	-	161
Stage 1	-	-	-	-	213
Stage 2	-	-	-	-	530

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	45.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	161	404	-	-	461	-
HCM Lane V/C Ratio	0.57	0.058	-	-	0.036	-
HCM Control Delay (s)	53.5	14.5	-	-	13.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	3	0.2	-	-	0.1	-

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

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	926	99	30	1260	76	19
Future Vol, veh/h	926	99	30	1260	76	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	270	270	-	180	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	3	4	2	2	3	2
Mvmt Flow	1268	136	41	1726	104	26

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1404	0	2213
Stage 1	-	-	-	-	1268
Stage 2	-	-	-	-	945
Critical Hdwy	-	-	4.14	-	6.86
Critical Hdwy Stg 1	-	-	-	-	5.86
Critical Hdwy Stg 2	-	-	-	-	5.86
Follow-up Hdwy	-	-	2.22	-	3.53
Pot Cap-1 Maneuver	-	-	482	-	~ 37
Stage 1	-	-	-	-	226
Stage 2	-	-	-	-	336
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	482	-	~ 34
Mov Cap-2 Maneuver	-	-	-	-	134
Stage 1	-	-	-	-	226
Stage 2	-	-	-	-	307

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	75.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	134	422	-	-	482	-
HCM Lane V/C Ratio	0.777	0.062	-	-	0.085	-
HCM Control Delay (s)	90.8	14.1	-	-	13.2	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	4.7	0.2	-	-	0.3	-

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

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕↕	↕↕	↗
Traffic Vol, veh/h	33	103	82	762	738	6
Future Vol, veh/h	33	103	82	762	738	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	4	2	4	3	7	2
Mvmt Flow	41	129	103	953	923	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1606	462	931	0	-	0
Stage 1	923	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Critical Hdwy	6.88	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	94	547	718	-	-	-
Stage 1	343	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	547	718	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	718	-	198	547	-	-
HCM Lane V/C Ratio	0.143	-	0.208	0.235	-	-
HCM Control Delay (s)	10.8	-	27.9	13.6	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.8	0.9	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕↕	↕↕	↗
Traffic Vol, veh/h	27	89	56	980	766	29
Future Vol, veh/h	27	89	56	980	766	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	260	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	4	14	4	3	7	4
Mvmt Flow	34	111	70	1225	958	36

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1711	479	994	0	-	0
Stage 1	958	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Critical Hdwy	6.88	7.18	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.44	2.24	-	-	-
Pot Cap-1 Maneuver	80	502	680	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	72	502	680	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	421	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	680	-	190	502	-	-
HCM Lane V/C Ratio	0.103	-	0.178	0.222	-	-
HCM Control Delay (s)	10.9	-	28	14.2	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.6	0.8	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑		↑
Traffic Vol, veh/h	1139	100	0	0	0	166
Future Vol, veh/h	1139	100	0	0	0	166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1238	109	0	0	0	180

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	619
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	432
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	432	-	-	-
HCM Lane V/C Ratio	0.418	-	-	-
HCM Control Delay (s)	19.2	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	2	-	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑		↑↑		↑
Traffic Vol, veh/h	1023	83	0	0	0	146
Future Vol, veh/h	1023	83	0	0	0	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1112	90	0	0	0	159

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	556
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	475
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	475
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	475	-	-	-
HCM Lane V/C Ratio	0.334	-	-	-
HCM Control Delay (s)	16.3	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.5	-	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1285	20	0	0	0	37
Future Vol, veh/h	1285	20	0	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1397	22	0	0	0	40

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	710
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	376
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	376
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	376	-	-	-
HCM Lane V/C Ratio	0.107	-	-	-
HCM Control Delay (s)	15.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1149	20	0	0	0	40
Future Vol, veh/h	1149	20	0	0	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1249	22	0	0	0	43

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	636
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	0	-	0	421
Stage 1	-	0	-	0	-
Stage 2	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	421
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	421	-	-	-
HCM Lane V/C Ratio	0.103	-	-	-
HCM Control Delay (s)	14.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1291	31	113	869	0	71
Future Vol, veh/h	1291	31	113	869	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1403	34	123	945	0	77

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1437	0	- 702
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	- 3.32
Pot Cap-1 Maneuver	-	-	468	-	0 381
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	468	-	- 381
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	381	-	-	468	-
HCM Lane V/C Ratio	0.203	-	-	0.262	-
HCM Control Delay (s)	16.8	-	-	15.4	-
HCM Lane LOS	C	-	-	C	-
HCM 95th %tile Q(veh)	0.7	-	-	1	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑		↑
Traffic Vol, veh/h	1142	47	132	1413	0	81
Future Vol, veh/h	1142	47	132	1413	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1241	51	143	1536	0	88

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1292	0	- 621
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	- 3.32
Pot Cap-1 Maneuver	-	-	532	-	0 430
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	532	-	- 430
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	430	-	-	532	-
HCM Lane V/C Ratio	0.205	-	-	0.27	-
HCM Control Delay (s)	15.5	-	-	14.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	1.1	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↕↕	↕↕	↗
Traffic Vol, veh/h	15	142	162	633	635	115
Future Vol, veh/h	15	142	162	633	635	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	154	176	688	690	125

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1386	345	815	0	-	0
Stage 1	690	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	134	651	808	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	105	651	808	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	359	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	808	-	230	651	-	-
HCM Lane V/C Ratio	0.218	-	0.071	0.237	-	-
HCM Control Delay (s)	10.7	-	21.8	12.2	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	0.9	-	-

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕↕	↕↕	↗
Traffic Vol, veh/h	70	182	203	804	647	122
Future Vol, veh/h	70	182	203	804	647	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	198	221	874	703	133

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1582	352	836	0	-	0
Stage 1	703	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	99	644	794	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 71	644	794	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	326	-	-	-	-	-
Stage 2	366	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	794	-	190	644	-	-
HCM Lane V/C Ratio	0.278	-	0.4	0.307	-	-
HCM Control Delay (s)	11.3	-	36.1	13	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	1.1	-	1.8	1.3	-	-

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

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↗
Traffic Vol, veh/h	0	10	0	798	776	10
Future Vol, veh/h	0	10	0	798	776	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	867	843	11

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	422	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	580	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	580	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	580	-	-
HCM Lane V/C Ratio	-	0.019	-	-
HCM Control Delay (s)	-	11.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	↗
Traffic Vol, veh/h	0	10	0	1006	829	10
Future Vol, veh/h	0	10	0	1006	829	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	1093	901	11

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	451	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	556	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	556	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	556	-	-
HCM Lane V/C Ratio	-	0.02	-	-
HCM Control Delay (s)	-	11.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

MITIGATED AM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗↗		↘	↗↗	↗
Traffic Volume (veh/h)	389	777	195	161	59	47	149	282	217	26	394	241
Future Volume (veh/h)	389	777	195	161	59	47	149	282	217	26	394	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1856	1870	1870	1826	1826	1841	1841	1811
Adj Flow Rate, veh/h	414	827	0	171	63	0	159	300	231	28	419	256
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	2	2	2	3	2	2	5	5	4	4	6
Cap, veh/h	793	1523		371	1199		287	504	378	211	723	575
Arrive On Green	0.17	0.43	0.00	0.08	0.34	0.00	0.09	0.27	0.27	0.03	0.21	0.21
Sat Flow, veh/h	1767	3554	1585	1781	3526	1585	1781	1889	1416	1753	3497	1535
Grp Volume(v), veh/h	414	827	0	171	63	0	159	275	256	28	419	256
Grp Sat Flow(s),veh/h/ln	1767	1777	1585	1781	1763	1585	1781	1735	1571	1753	1749	1535
Q Serve(g_s), s	17.4	20.8	0.0	7.4	1.4	0.0	8.1	16.6	17.2	1.5	13.0	15.0
Cycle Q Clear(g_c), s	17.4	20.8	0.0	7.4	1.4	0.0	8.1	16.6	17.2	1.5	13.0	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	793	1523		371	1199		287	463	419	211	723	575
V/C Ratio(X)	0.52	0.54		0.46	0.05		0.55	0.59	0.61	0.13	0.58	0.44
Avail Cap(c_a), veh/h	879	1523		437	1199		343	463	419	239	723	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	25.5	0.0	23.0	26.6	0.0	32.7	38.3	38.6	36.4	42.9	28.1
Incr Delay (d2), s/veh	0.5	1.4	0.0	0.9	0.1	0.0	1.7	5.5	6.5	0.3	3.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	8.4	0.0	3.0	0.6	0.0	3.5	7.5	7.2	0.6	5.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	26.9	0.0	23.8	26.7	0.0	34.3	43.9	45.1	36.7	46.2	30.6
LnGrp LOS	B	C		C	C		C	D	D	D	D	C
Approach Vol, veh/h		1241	A		234	A		690			703	
Approach Delay, s/veh		24.0			24.6			42.1			40.2	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	57.4	16.2	30.8	26.2	46.8	9.0	38.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	14.0	45.0	14.0	23.0	26.0	33.0	5.0	32.0				
Max Q Clear Time (g_c+I1), s	9.4	22.8	10.1	17.0	19.4	3.4	3.5	19.2				
Green Ext Time (p_c), s	0.2	5.0	0.1	1.8	0.7	0.3	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

BEAUFORT RETAIL CENTER
3: US 21 & SC 170

MITIGATED PM BUILD
04/13/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗		↖	↗	↘
Traffic Volume (veh/h)	364	724	136	295	1006	112	194	441	239	111	394	345
Future Volume (veh/h)	364	724	136	295	1006	112	194	441	239	111	394	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1870	1870	1870	1870	1870	1870	1870	1870	1856	1841
Adj Flow Rate, veh/h	391	778	0	317	1082	0	209	474	257	119	424	371
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	2	2	2	2	2	2	2	2	2	3	4
Cap, veh/h	419	1497		469	1330		261	464	250	134	529	508
Arrive On Green	0.18	0.42	0.00	0.13	0.37	0.00	0.10	0.21	0.21	0.04	0.15	0.15
Sat Flow, veh/h	1753	3554	1585	1781	3554	1585	1781	2229	1202	1781	3526	1560
Grp Volume(v), veh/h	391	778	0	317	1082	0	209	377	354	119	424	371
Grp Sat Flow(s),veh/h/ln	1753	1777	1585	1781	1777	1585	1781	1777	1654	1781	1763	1560
Q Serve(g_s), s	18.6	19.5	0.0	12.9	32.9	0.0	11.7	25.0	25.0	5.0	13.9	18.0
Cycle Q Clear(g_c), s	18.6	19.5	0.0	12.9	32.9	0.0	11.7	25.0	25.0	5.0	13.9	18.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	419	1497		469	1330		261	370	345	134	529	508
V/C Ratio(X)	0.93	0.52		0.68	0.81		0.80	1.02	1.03	0.89	0.80	0.73
Avail Cap(c_a), veh/h	477	1497		566	1330		261	370	345	134	529	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	25.7	0.0	19.5	33.8	0.0	38.0	47.5	47.5	47.2	49.3	35.8
Incr Delay (d2), s/veh	23.8	1.3	0.0	2.4	5.5	0.0	16.1	51.7	55.4	45.5	12.1	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	7.9	0.0	5.1	14.1	0.0	6.1	16.0	15.2	2.8	6.9	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	27.0	0.0	21.9	39.3	0.0	54.1	99.2	102.9	92.8	61.4	44.7
LnGrp LOS	D	C		C	D		D	F	F	F	E	D
Approach Vol, veh/h		1169	A		1399	A		940			914	
Approach Delay, s/veh		36.0			35.4			90.6			58.7	
Approach LOS		D			D			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.4	56.6	18.0	24.0	27.1	50.9	11.0	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	22.0	44.0	12.0	18.0	25.0	41.0	5.0	25.0				
Max Q Clear Time (g_c+I1), s	14.9	21.5	13.7	20.0	20.6	34.9	7.0	27.0				
Green Ext Time (p_c), s	0.5	4.7	0.0	0.0	0.5	3.3	0.0	0.0				

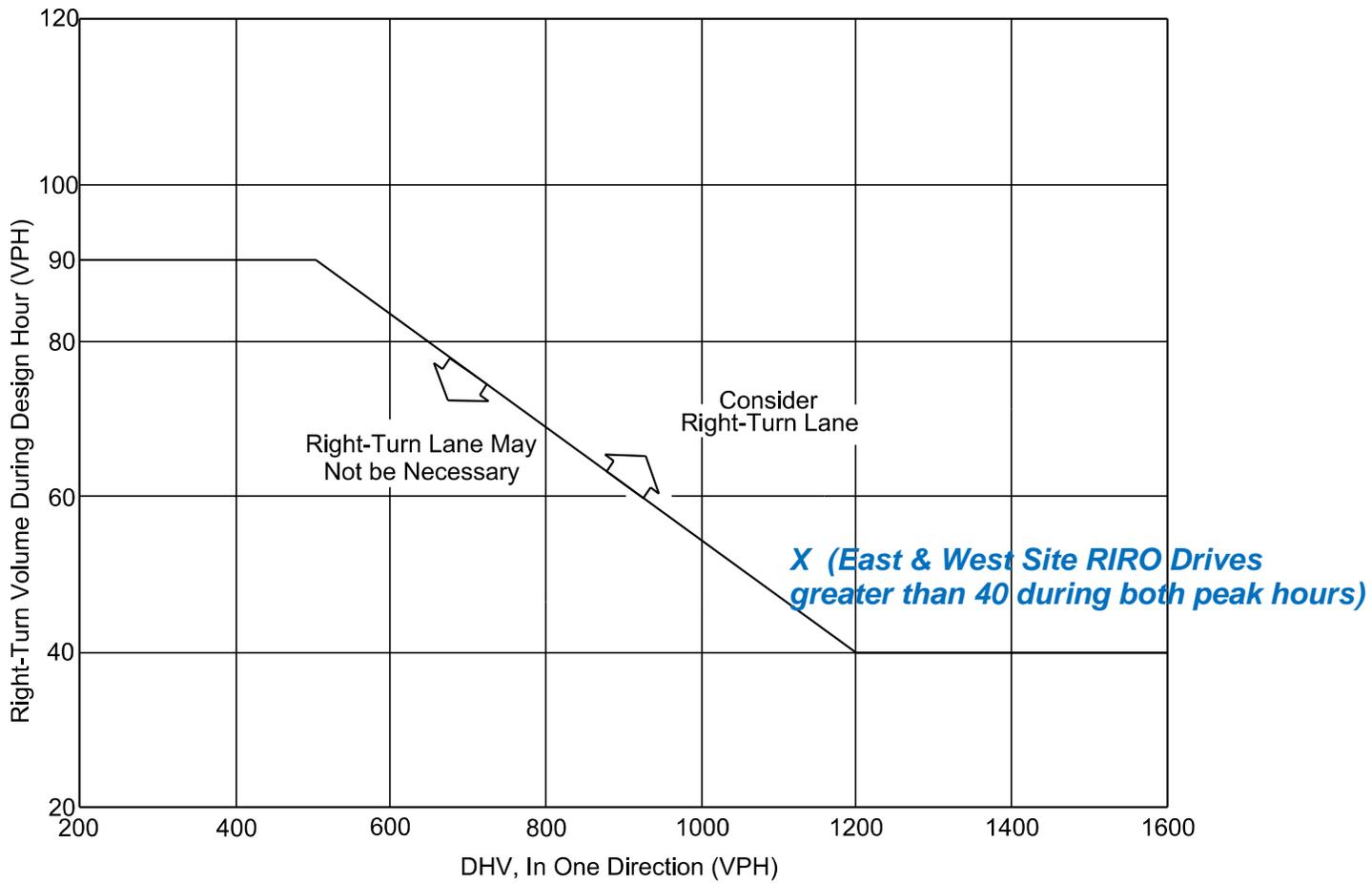
Intersection Summary

HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

TURNING LANE WARRANT



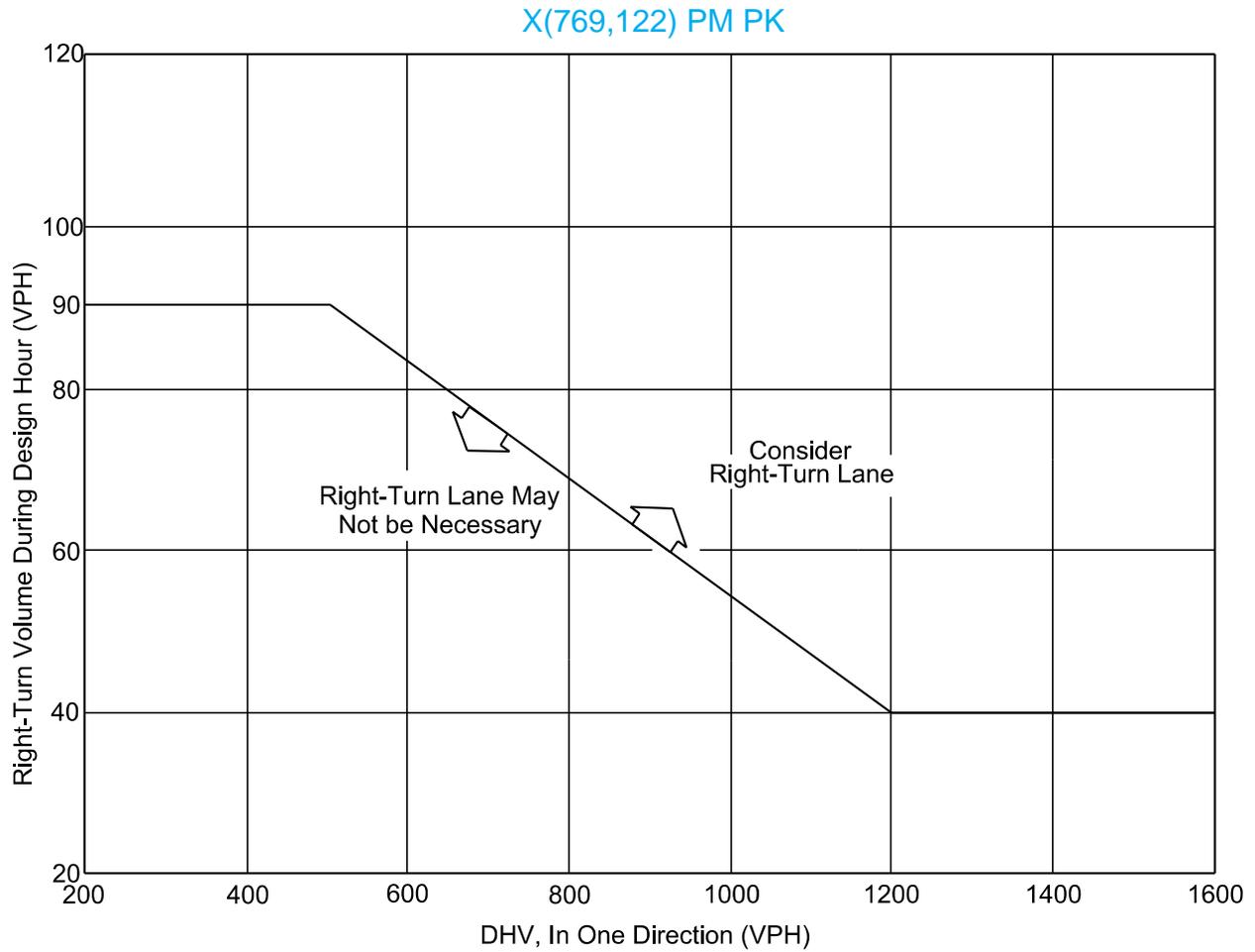
SC 170 at RIRO Access Drives

Note: Center access right-turn mvt less than 40 during both peak hours.

Note: Figure is only applicable on highways with a design speed of 50 miles per hour or greater.

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS
ON FOUR-LANE HIGHWAYS**

Figure 9.5-B



US 21 at Full-Mvt Access

Note: Figure is only applicable on highways with a design speed of 50 miles per hour or greater.

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS
ON FOUR-LANE HIGHWAYS**

Figure 9.5-B