



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**City Hall, 301 E. Poinsett St, Greer, SC 29651**  
**November 5, 2018 @ 5:30 PM**  
**Public Hearing and Business Meeting**

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service or activity of the City of Greer Planning Division, should contact Ruthie Helms, ADA Coordinator at (864) 848-5397 or City Administrator (864) 848-5387 as soon as possible, but no later than 48 hours before the scheduled event.

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**I. ADVISORY MEETING**

- A. October 2018 Minutes

**II. PUBLIC HEARING**

- A. Public Hearing Presentation
- B. BZA 2018-15 and BZA 2018-16
- C. BZA 2018-17 Application
- D. BZA 2018-18 Application

**III. BUSINESS MEETING**

**IV. OLD BUSINESS**

- A. Old Business Presentation
- B. BZA 2018-10 Application, Site Plan, and Traffic Study

**V. NEW BUSINESS**

- A. Approval of Proposed 2019 Calendar

**VI. OTHER BUSINESS**

- A. Planning and Zoning Report

**VII. EXECUTIVE SESSION**

**VIII. ADJOURN**

**Category Number: I.**  
**Item Number: A.**



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**October 2018 Minutes**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
📎 October 2018 Minutes	10/26/2018	Cover Memo



# City of Greer

## Board of Zoning Appeals Minutes

### September 10, 2018

**Members Present:** Steve Griffin  
Lisa H. Lynn  
Thomas McAbee, Vice Chair  
Robbie Septon

**Member(s) Absent:** Glendora Massey  
Monica Ragin Hughey

**Staff Present:** Brandon McMahan, Zoning Coordinator  
Brandy Blake, Development Coordinator

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#### **I. Call to Order**

Dr. McAbee called the meeting to order and read the opening remarks. He then invited Mr. McMahan to speak.

Mr. McMahan asked Ms. Ringer, who was sitting in the audience to please come to the front. He thanked her for her years of service and presented her with a gift.

#### **II. Election of Officers**

Dr. McAbee stated that since Ms. Ringer's resignation, the Board would need a new chair and asked if there were any nominations.

**ACTION** - Ms. Lynn made a motion to nominate Robbie Septon as Chair. Dr. McAbee seconded the motion. The motion carried with a vote of 4 to 0.

At that time, the gavel and all other documents were given to Mr. Septon to finish the meeting as the newly elected Chairman.

#### **III. Minutes of Board of Zoning Appeals Meeting**

Mr. Septon asked that amendments to the minutes from the August 6, 2018 Board of Zoning Appeals meeting be made as follows: a correction to the Board member that made the motion to adjourn the meeting; and to change Mr. Ringer to Mrs. Ringer in the action statement for BZA 2018-12.

Dr. McAbee also asked that the following amendments be made to the minutes: the correction of the name of the book he cited to be National Center for Construction Education and Research; and the word official, to be changed to Occupational, in the sentence Occupational Health and Safety Administration.

**ACTION** – Dr. McAbee made a motion to approve the minutes from the August 6, 2018 Board of Zoning Appeals Meeting as previously amended. Ms. Lynn seconded the motion. The motion carried with a vote of 4 to 0.

#### **IV. Public Hearing**

Mr. Septon read a brief statement about conducting the public hearing portion of the meeting.

##### **A. BZA 2018-13**

Mr. Septon opened the public hearing for BZA 2018-13.

Mr. McMahan read the docket information and gave the basic information for the request.

As there was no one to speak for or against this case. Mr. Ringer closed the public hearing for BZA 2018-13.

#### **V. Old Business**

There was no old business.

#### **VI. New Business**

##### **A. BZA 2018-13**

Mr. Septon read a brief statement about conducting the business meeting and opened a business meeting for BZA 2018-13.

Mr. McMahan presented the details of the request and staff analysis and recommendation for BZA 2018-13.

Amber Brackett, representing the applicant, Lindsay Roberts, was available to answer any questions from the Board.

The Board and staff discussed the details of the facility and the type of program that will be using the space.

Ms. Brackett stated that there are 3 rooms that could potentially be used for the children using the facility.

**ACTION** – Ms. Lynn made a motion to approve BZA 2018-13. Mr. Griffin seconded the motion. The motion carried with a vote of 3 to 0. Dr. McAbee abstained from the vote.

#### **VII. Other Business**

##### **Planning and Zoning Staff Report**

Mr. McMahan updated the Board on the request for the private school off Abner Creek Road. He stated that the applicants were in the process of having a traffic study completed and he anticipated they would want to return to BZA in November. He stated they would contact staff when they are ready to return.

He also gave the details of the decision from the case regarding RV storage and flammable chemicals. Dr. McAbee presented a letter that was sent to him from the State Fire Marshal and the Board requested that staff send them copies of that letter.



Staff then updated the Board on upcoming training opportunities.

#### **VIII. Executive Session**

#### **IX. Adjourn**

There being no other business, Mr. Griffin made a motion to adjourn. Dr. McAbee seconded the motion. The meeting adjourned at 5:53pm.

Category Number: II.  
Item Number: A.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**Public Hearing Presentation**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
☐ Public Hearing Presentation	10/26/2018	Cover Memo



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***City of Greer, SC***

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***Board of Zoning Appeals***

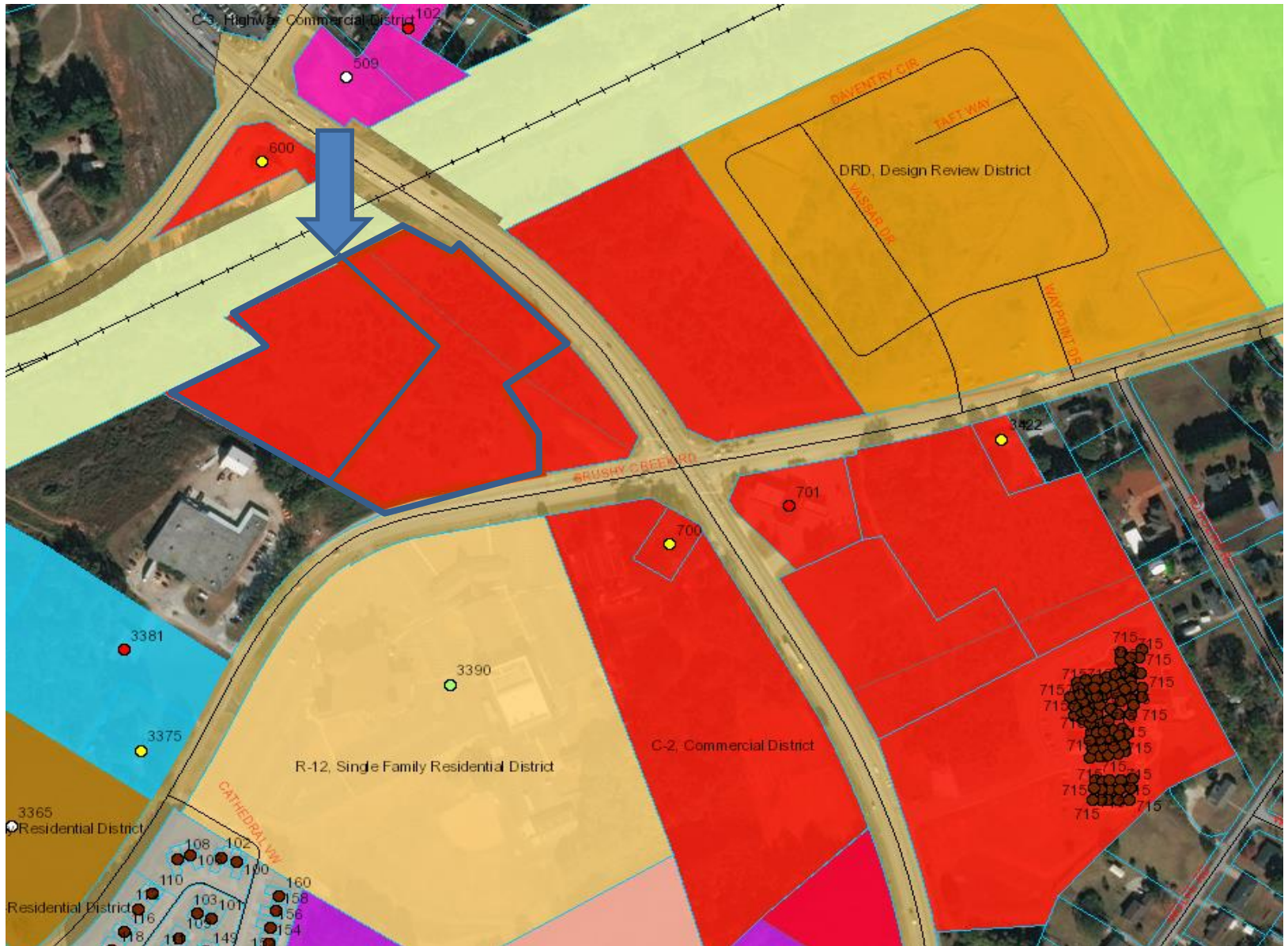
# BZA 2018-15

APPLICANT:	The Claiborne at Greer, LLC
ADDRESS:	Brushy Creek and South Buncombe Rd
PARCEL ID NUMBER:	G006000200400 and 401
USE SOUGHT:	Special Exception
REQUEST:	Nursing Home/Assisted Living Facility

## **5:8.2 Uses Permitted by Special Exception**

Nursing Home/Assisted Living Facility

# BZA 2018-15





# BZA 2018-15





# BZA 2018-15



# BZA 2018-16

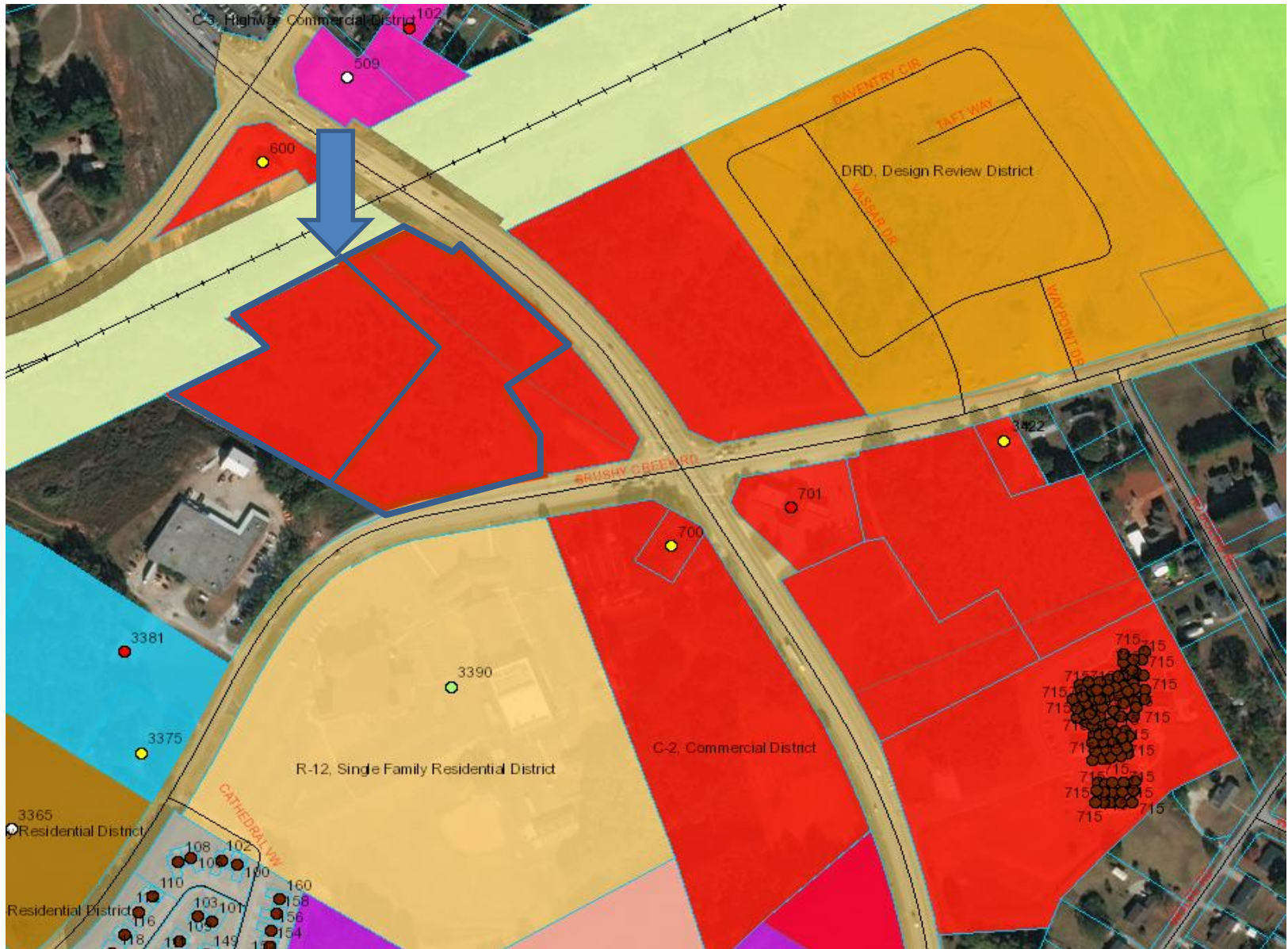
APPLICANT:	The Claiborne at Greer, LLC
ADDRESS:	Brushy Creek and South Buncombe Rd
PARCEL ID NUMBER:	G006000200400 and 401
USE SOUGHT:	Variance
REQUEST:	Increase the height of the building to 45 feet

## **5:8.3 Height Limitation**

No structure shall exceed a height of 35 feet, except as provided in Article 6, Section 6:7.



# BZA 2018-16





# BZA 2018-15





# BZA 2018-16



# BZA 2018-17

APPLICANT:	Thayer Attarifi
ADDRESS:	Corner of Poinsett St and W. Wade Hampton Blvd
PARCEL ID NUMBER:	T017010400700
USE SOUGHT:	Variance
REQUEST:	Reduced Setbacks

## **5:9.4 Dimensional Requirements**

# BZA 2018-17





# BZA 2018-17



# BZA 2018-17



# BZA 2018-18

APPLICANT:	Joshua Gregory - Alston Construction
ADDRESS:	221 GSP Logistics Dr
PARCEL ID NUMBER:	5-18-00-018.03
USE SOUGHT:	Variance
REQUEST:	Reduced Parking

## **6:9.6 Minimum Parking Requirements**

Warehouses

One space for each 1,000 square feet of gross floor area or one space per 3 employees, whichever is greater



# BZA 2018-18





# BZA 2018-18





# BZA 2018-18





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*City of Greer, SC*

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*Board of Zoning Appeals*

Category Number: II.  
Item Number: B.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**BZA 2018-15 and BZA 2018-16**

**ATTACHMENTS:**

<b>Description</b>		<b>Upload Date</b>	<b>Type</b>
□	BZA 2018 15 and BZA 2018-16 Application and Site Plan	10/26/2018	Cover Memo
□	BZA 2018-15 and BZA 2018-16 Site Plan	10/26/2018	Cover Memo



**Board of Zoning Appeals Application**  
**(Variance, Special Exception, Action of Zoning Official)**

*(All Fees are due at time of submittal. Fees are: \$100 for each Residential Request and \$300 for each Commercial Request)*

The applicant hereby appeals: (Check one)

- ☒ Variance – Form 1
- ☒ Special Exception – Form 2
- ☐ Action of Zoning Official – Form 3

***\*\*If not the property owner, an Acting Agent Authorization from will be required at the time of submittal. \*\****

**Applicant Information**

Name The Claiborne at Greer, LLC

Address 11 Parkway Blvd  
Hattiesburg, Ms 39401

Contact Number 601-336-5050

Email ctatum@crpropertiesllc.com

**Property Owner Information**

Name Wyatt Realty Investment Opportunity Fund, Ltd

Address \_\_\_\_\_

Contact Number 803-663-0900

Email \_\_\_\_\_

Tax Map Number(s) G00600200400 and G00600200401

Property Address(s) Brushy Creek and South Buncombe

Business Name \_\_\_\_\_

*\*Complete one of the following attached forms that corresponds with the variance request.\**

<b><u>OFFICE USE ONLY</u></b>	
Received By <u>BB Glade</u>	Date <u>10-10-18</u>
Staff Recommendation _____	Meeting Date <u>11-8-18</u>





## Variance

1. Applicant hereby appeals to the Board of Zoning Appeals for a variance from the strict application to the property described in the Notice of Appeal of the following provisions of the Zoning Ordinance in Section(s): 5.8.3

so that a zoning permit may be issued to allow use of the property in a manner shown on the attached plot plan, described as follows: senior living community (independent living, assisted living, & memory care) for which a permit has been denied by a zoning official on the grounds that the proposal would be in violation of the cited section(s) of the Zoning Ordinance.

2. The application of the ordinance will result in unnecessary hardship, and the standards for a variance set by State law and the ordinance are met by the following facts.

a. There are extraordinary and exceptional conditions pertaining to the particular piece of property as follows: our site being zoned C-2 Commercial has a special exception allowing Assisted Living Facilities but does not address "Independent Living", which is essentially multi-family for senior citizens. The concept is that a resident could move into the community while still in good health, but if their health were to deteriorate, they would have options for aging in place.

b. These conditions do not generally apply to other property in the vicinity as shown by: Multi-family buildings zoned R-M1 and R-M2 are permitted to be 45 ft tall. The portion of our building that will be 45 ft tall is the Independent Living component, so our community will not be any taller than a typical multi-family development.

c. Because of these conditions, the application of the ordinance to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property as follows: Providing a higher density 3-story building (compared to a more sprawling 2-story layout) will serve our target demographic better. For example, the commute to the central dining room would be significantly shorter and more manageable for an elderly resident who likes to get out of their room for meals.

d. The authorization of the variance will not be of substantial detriment to adjacent property or to the public good, and the character of the district will not be harmed by the granting of the variance for the following reasons: There is 10-12 ft grade difference from the front of the site to the rear.

Due to this, the additional 10 ft of height may only be perceived as 5-6 ft from the street.

  
Applicant Signature

Date 10/4/18



## Special Exception

1. Applicant hereby appeals to the Board of Zoning Appeals for a special exception for use of the property described in the Notice of Appeals as: a senior living community consisting of independent living, assisted living, and memory care  
which is a permitted special exception under the district regulation in Section(s) 5:8.2 of the Zoning Ordinance.
2. Applicant will meet the standards in Section(s) 5:8.2 of the Zoning Ordinance which are applicable to the proposed special exception in the following manner:  
We will meet all requirements with the exception of the height limitation. Refer to the variance application above
3. Applicant suggests that the following conditions be imposed to meet the standards in the Zoning Ordinance:  
N/A - Our proposed building is listed as an acceptable special exception in section 5:8.2

  
Applicant Signature

Date 10/4/18



- ① 3-STORY INDEPENDENT LIVING
  - ② 2-STORY ASSISTED LIVING
  - ③ 1-STORY MEMORY CARE
  - ④ LIVING COMMONS
  - ⑤ IL/AL/MC BACK OF HOUSE
- BUILDING: 160,000 SF  
TOTAL PARKING COUNT: 122



Category Number: II.  
Item Number: C.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**BZA 2018-17 Application**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
❏ BZA 2018-17 Application	10/26/2018	Cover Memo
❏ BZA 2018-17 Site Plan	10/26/2018	Cover Memo
❏ BZA 2018-17 Site Plan Request	10/26/2018	Cover Memo



**Board of Zoning Appeals Application**  
(Variance, Special Exception, Action of Zoning Official)

*(All Fees are due at time of submittal. Fees are: \$100 for each Residential Request and \$300 for each Commercial Request)*

The applicant hereby appeals: (Check one)

- ☒ Variance – **Form 1**  
☐ Special Exception – **Form 2**  
☐ Action of Zoning Official – **Form 3**

**\*\*If not the property owner, an Acting Agent Authorization form will be required at the time of submittal. \*\***

**Applicant Information**

Name THAYER ATTARIFI  
Address 6144 N. WASHINGTON  
CHICAGO, IL 60659  
Contact Number (773) 991-8126  
Email t.attarifi@gmail.com

**Property Owner Information**

Name THAYER ATTARIFI  
Address 6144 N. WASHINGTON  
CHICAGO, IL 60659  
Contact Number (773) 991-8126  
Email t.attarifi@gmail.com

Tax Map Number(s) T017010400700

Property Address(s) CORNER OF POINSETT & Hwy 29

Business Name LAND

*\*Complete one of the following attached forms that corresponds with the variance request.\**

<b><u>OFFICE USE ONLY</u></b>	
Received By <u>BBlair</u>	Date <u>9-17-18</u>
Staff Recommendation _____	Meeting Date <u>11-5-18</u>





## Variance

1. Applicant hereby appeals to the Board of Zoning Appeals for a variance from the strict application to the property described in the Notice of Appeal of the following provisions of the Zoning Ordinance in Section(s): S:9(C-3), Setbacks: S:9.4-1, 4-2, 4-3

so that a zoning permit may be issued to allow use of the property in a manner shown on the attached plot plan, described as follows: Front 45' (Hwy 29), Side 25' (Poinsett), Rear 15' (BofA) (Exhibit "A") for which a permit has been denied by a zoning official on the grounds that the proposal would be in violation of the cited section(s) of the Zoning Ordinance.

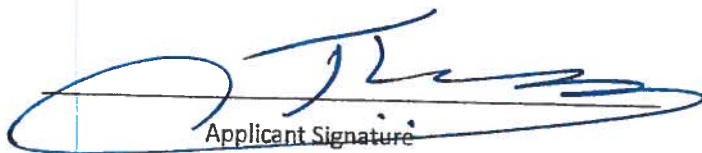
2. The application of the ordinance will result in unnecessary hardship, and the standards for a variance set by State law and the ordinance are met by the following facts.

- a. There are extraordinary and exceptional conditions pertaining to the particular piece of property as follows: Triangle shaped parcel with 45' setbacks on ALL three sides (.5 ac parcel) - (Exhibit "A")

- b. These conditions do not generally apply to other property in the vicinity as shown by: See Exhibit "B"

- c. Because of these conditions, the application of the ordinance to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property as follows: Current setbacks on this .5 ac parcel would definitely restriction the size (sf) of a structure to be built

- d. The authorization of the variance will not be of substantial detriment to adjacent property or to the public good, and the character of the district will not be harmed by the granting of the variance for the following reasons: other parcels (adjacent) are larger and shaped as the subject parcel

  
Applicant Signature

Date 9/10/2019



### Acting Agent Authorization Form

If you are the acting agent for the property owner, we need written documentation granting you the authority to do so. Please have the Property Owner complete and sign the following form.

Date: 9/10/2018

I, THAYER ATTARIFI, am the owner of property located at WADE HAMPTON BLVD. & POINSETT ST., GREER, having Tax Map # T017010400700, located in GREENVILLE County.

I hereby authorize:

TIM ALLENDER, REAL ESTATE AGENT (LANGSTON-BLACK)  
CHUCK LANGSTON, " " (Relationship) " "  
" " (Relationship)  
" " (Relationship)

to act as my agent for the above mentioned property.

[Signature]  
(Property Owner Signature)

[Signature]  
Witness 1

THAYER ATTARIFI  
(Printed Name and Contact Number)

\_\_\_\_\_  
Witness 2

(773) 971-8126

DUPLICATE

City of Greer  
CASH RECEIPT

RECEIPT NO: 146799

DATE: 09/11/2018

RECEIVED FROM: LANGSTON BLACK

AMOUNT: \$ 270.00

ZONING ZONING AND SIGN PERMITS

270.00

ZONING MAP AMENDMENT / LIGHTED INTERSECTION BW WADE HAMPTON & POINSETT

RECEIVED BY: MACOSTA

CHK 3995: 270.00

DEBIT: 11-1-0101-0-01000-000  
CREDIT: 11-4-0322-0-04056-000

CRESKOM BANK OPERATING ACCT  
ZONING FEES

Request withdrawn  
applicant will need  
variance from BZA  
instead - will only pay  
\$30 for BZA app. to  
make \$300 w/ fees already  
Paid. BB9-1318

DUPLICATE

City of Greer  
CASH RECEIPT

RECEIPT NO: 146938

DATE: 09/17/2018

RECEIVED FROM: LANGSTON-BLACK REAL ESTATE, INC AMOUNT: \$ 30.00

ZONING ZONING AND SIGN PERMITS 30.00  
BOARD OF ZONING APPEALS APPLICATION/T017010400700

RECEIVED BY: YEARLE

CHECK: 30.00

DEBIT: 11-1-0101-0-01000-000 CRESCOM BANK OPERATING ACCT  
CREDIT: 11-4-0322-0-04056-000 ZONING FEES







17

5

8

## ZONING

No representation is made for  
is not an expert in the interpre  
scope of this survey. Any use

S.C. HIGH  
WEST PO  
(PUBLIC R/W WIDTH VARI

CURVE TABLE (M)					
CURVE	LENGTH	RADIUS	DELTA	BEARING	CHORD
C1	193.31'	315.00'	035°09'41"	N49°51'37"W	190.29'

CEMETERY

sible evidence of cemeteries on the subject property survey.

W. POINSETT STREET  
(50' PUBLIC R/W)  
(5000' FILE 231650, SHEET 29)

### STATEMENT OF ENCROACHMENTS

Category Number: II.  
Item Number: D.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**BZA 2018-18 Application**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
☐ BZA 2018-18 Application	10/26/2018	Cover Memo
☐ BZA 2018-18 Site Plan	10/26/2018	Cover Memo



OCT 11 2018

**Board of Zoning Appeals Application**  
**(Variance, Special Exception, Action of Zoning Official)**

*(All Fees are due at time of submittal. Fees are: \$100 for each Residential Request and \$300 for each Commercial Request)*

**The applicant hereby appeals: (Check one)**

- ☒ Variance – **Form 1**  
☐ Special Exception – **Form 2**  
☐ Action of Zoning Official – **Form 3**

**\*\*If not the property owner, an Acting Agent Authorization from will be required at the time of submittal. \*\***

**Applicant Information**

Name Alston Construction; Joshua Gregory  
Address 3500 Lenox Rd. Atlanta GA 30326  
Suite 501  
Contact Number 404.569.3666  
Email jgregory@alstonco.com

**Property Owner Information**

Name GSP Airport District  
Address 2000 GSP Drive, Suite 1  
Greer, SC 29651  
Contact Number 864-848-6222  
Email scarr@gspairport.com

**Tax Map Number(s)** 5-18-00-018.33

**Property Address(s)** 221 GSP Logistics Drive, Greer, SC 29651

**Business Name** Project Satellite Warehouse

*\*Complete one of the following attached forms that corresponds with the variance request.\**

**OFFICE USE ONLY**

Received By BBlade Date 10-12-18  
Staff Recommendation \_\_\_\_\_ Meeting Date 11-8-18



## Variance

1. Applicant hereby appeals to the Board of Zoning Appeals for a variance from the strict application to the property described in the Notice of Appeal of the following provisions of the Zoning Ordinance in Section(s): Article 6, Section 6:9 - Offstreet Parking Requirements  
so that a zoning permit may be issued to allow use of the property in a manner shown on the attached plot plan, described as follows: Provide 400 parking spaces in lieu of 567 required by ordinance. for which a permit has been denied by a zoning official on the grounds that the proposal would be in violation of the cited section(s) of the Zoning Ordinance.
2. The application of the ordinance will result in unnecessary hardship, and the standards for a variance set by State law and the ordinance are met by the following facts.
  - a. There are extraordinary and exceptional conditions pertaining to the particular piece of property as follows: The actual employee counts are far below the provided number of spaces (400) and the property cannot accommodate the additional 167 parking spaces required by ordinance without removal of vital portions of the project. The proposed site is preferred by the tenant, as it is immediately adjacent to one of their existing facilities.
  - b. These conditions do not generally apply to other property in the vicinity as shown by: The existing buildings in the industrial park immediately to the north of the proposed project total approximately 1,028,000 SF and provide 515 spaces or .50 spaces per 1,000SF. The proposed project has parking provided at 400 spaces for 567,000 SF, or .71 spaces per 1,000 SF, which exceeds the ratios currently provided in the area.
  - c. Because of these conditions, the application of the ordinance to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property as follows: If additional parking is required, valuable loading dock and trailer storage area required for the project will be lost, and the operation of the new facility will be impacted significantly.
  - d. The authorization of the variance will not be of substantial detriment to adjacent property or to the public good, and the character of the district will not be harmed by the granting of the variance for the following reasons: Granting the variance would allow this project to maintain current site layout and operational efficiencies for the tenant, while maintaining the current standards of the industrial park.



Applicant Signature

Date 10.10.2018

## C1.1

Category Number: III.  
Item Number: A.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**Old Business Presentation**

**ATTACHMENTS:**

Description	Upload Date	Type
❏ Old Business Presentation	10/26/2018	Cover Memo





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*City of Greer, SC*

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*Board of Zoning Appeals*

# BZA 2018-10

APPLICANT:	Harold E. Johnson Jr.
ADDRESS:	1198 Abner Creek Rd
PARCEL ID NUMBER:	5-28-00-027.00
USE SOUGHT:	Private School in R-S, Residential Suburban
REQUEST:	Special Exception

- Section 5:2.2 Use Permitted by Special Exception: Schools-Public, Parochial or Private.

# BZA 2018-10





# BZA 2018-10





# BZA 2018-10

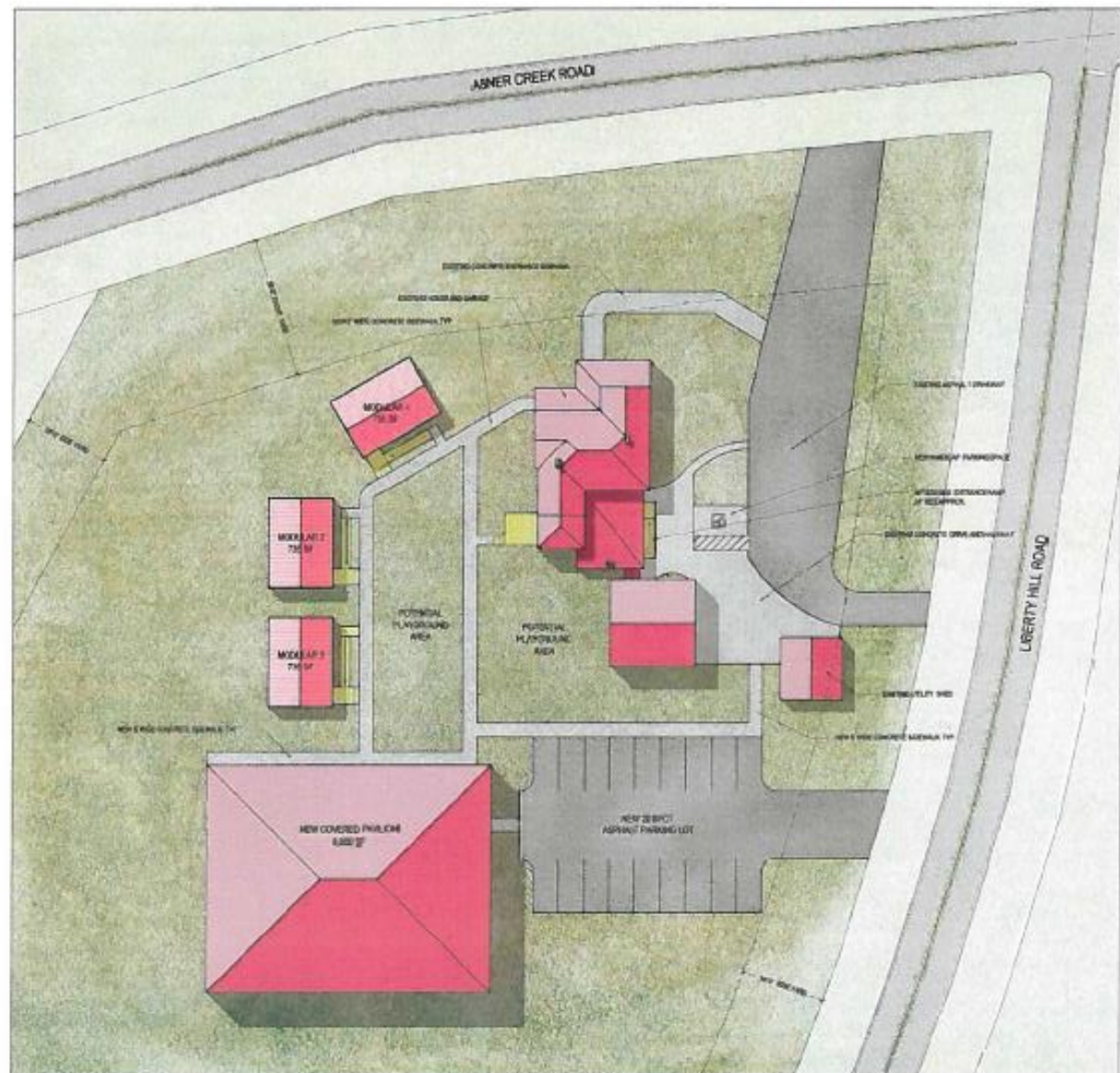




# BZA 2018-10

GSSA

GREENVILLE  
STUDENT  
SUCCESS  
ACADEMY



SITE PLAN



# BZA 2018-10

City of Greer - Board of Zoning Appeals Application

Special Exception – Form 2

## 3. GSSA (Greenville Student Success Academy)

*The goal is to convert the existing residential structure into an independent day school to serve students in grades 1-8 with an expected enrollment of 50 and a maximum enrollment of 75. The academic program will combine grouping multi-age students by ability for instruction and thematic project based learning. There will be no food service.*

# BZA 2018-10

**BZA 2018-10** is a special exception request for Harold Johnson Jr. to open a private school on property zoned R-S, Residential Suburban. This property is located across from an Employment Center. These centers serve as locations for employment in the community. The types of employment centers can range from retail uses to manufacturing uses. The intent of these centers is to provide employment opportunities for city residents as well as for people who may commute to these locations for work. Supportive uses such as recreational, educational, and other public uses can be found in employment centers as well. Therefore most of the city's zoning district allowed land uses are permitted.

## **Surrounding land uses and zoning include:**

North: R-S, Residential Suburban (City of Greer) – Single Family Residences (City of Greer)  
East: R-S, Residential Suburban (City of Greer) – Single Family Residence (City of Greer)  
South: R-S, Residential Suburban (City of Greer) – Single Family Residence (City of Greer)  
and Unzoned (Spartanburg County) Liberty Hill Methodist Church  
West: R-S, Residential Suburban (City of Greer) - Vacant

## **Annexation/Zoning/Rezoning History:**

1994: TR-15 (Ord. 66-1994)

1995: R-S, Residential Suburban (RZ 23-1995)

## **5:2.2 Uses Permitted by Special Exception**

- Schools-Public, Parochial or Private

**STAFF RECOMMENDATION: Approval**

# BZA 2018-10 – Updated Site Plan

## OFF-STREET PARKING

### REQUIRED:

4 ELEMENTARY STAFF \* 2 SPACES PER ELEMENTARY SCHOOL STAFF = 8 SPACES  
5 JUNIOR HIGH STAFF \* 3 SPACES PER JUNIOR HIGH SCHOOL STAFF = 15 SPACES

TOTAL REQUIRED SPACES = 23 SPACES

TOTAL REQUIRED ADA ACCESSIBLE SPACES\* = 1 SPACE/ 25 SPACES

### PROVIDED:

TOTAL PROVIDED PARKING SPACES = 23 SPACES

TOTAL PROVIDED ADA ACCESSIBLE SPACE = 1 SPACE

\*ADA ACCESSIBLE PARKING SPACES INCLUDED IN MINIMUM PARKING REQUIREMENT





# BZA 2018-10 –Traffic Study

*Abner Creek Road/Liberty Hill Road* – As shown in Table 4, this intersection currently operates acceptably and will continue to do so in 2020 with either no build or build volumes.

**Table 4**  
**CAPACITY ANALYSES RESULTS – UNSIGNALIZED INTERSECTION – EXISTING GEOMETRY**  
**ABNER CREEK ROAD/LIBERTY HILL ROAD**  
 Greenville Student Success Academy Traffic Impact Study  
 Greer, South Carolina

Movement	Level of Service/Delay (seconds/vehicle)		
	Existing	2020 No Build	2020 Build
<i>School Arrival Peak Hour</i>			
Eastbound - Left	A/0	A/0	A/0
Westbound - Left	A/7	A/7	A/8
Northbound-Left/through/right	B/10	B/10	B/11
Southbound-Left/through/right	B/11	B/11	B/12
<i>School Dismissal Peak Hour</i>			
Eastbound - Left	A/7	A/7	A/7
Westbound - Left	A/7	A/7	A/8
Northbound-Left/through/right	B/10	B/10	B/10
Southbound-Left/through/right	B/10	B/10	B/11

Notes:

- Abner Creek is east-west. Liberty Hill is north-south.

# BZA 2018-10 – Traffic Study

*Liberty Hill Road/site access* – As shown in Table 5 this intersection will operate acceptably with 2020 build volumes.

Table 5  
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTION – 2020 BUILD VOLUMES  
LIBERTY HILL ROAD/SITE ACCESS  
Greenville Student Success Academy Traffic Impact Study  
Greer, South Carolina

Movement	Level of Service/Delay (seconds/vehicle)	
	School Arrival Peak Hour	School Dismissal Peak Hour
Northbound – Left	A/0	A/0
Eastbound – Left/right	A/9	A/9

Notes:

(1) Site access is east-west. Liberty Hill is north/south.

## Conclusions and Recommendations

- *Abner Creek Road/Liberty Hill Road* – This intersection currently operates acceptably and will continue to do so with existing geometry in 2020 with either no build or build volumes.
- *Liberty Hill Road/site access* – This intersection will operate acceptably with existing geometry and 2020 build volumes.

**STAFF RECOMMENDATION: Approval**



---

*City of Greer, SC*

---

*Board of Zoning Appeals*



Category Number: III.  
Item Number: B.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

---

**BZA 2018-10 Application, Site Plan, and Traffic Study**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
☐ Application	10/26/2018	Cover Memo
☐ Site Plan - Updated	10/26/2018	Cover Memo
☐ Traffic Study	10/26/2018	Cover Memo



**Board of Zoning Appeals Application**  
**(Variance, Special Exception, Action of Zoning Official)**

(All Fees are due at time of submittal. Fees are: \$100 for each Residential Request and \$300 for each Commercial Request)

**The applicant hereby appeals: (Check one)**

- ☐ Variance – Form 1  
☒ Special Exception – Form 2  
☐ Action of Zoning Official – Form 3

**\*\*If not the property owner, an Acting Agent Authorization from will be required at the time of submittal. \*\***

**Applicant Information**

Name HAROLD E. JOHNSON JR.  
Address 316 STONEBROOK FARM WAY  
GREENVILLE, SC 29615  
Contact Number (703) 855-2472  
Email JOHN@JOHNSONJR.US

**Property Owner Information**

Name GREENVILLE EDUCATIONAL SERVICES LLC  
Address SAME AS APPLICANT  
Contact Number \_\_\_\_\_  
Email \_\_\_\_\_

Tax Map Number(s) 5-28-00-027.00  
Property Address(s) ✓ 1198 ABNER CREEK ROAD, GREER, SC 29651  
Business Name GSSA (GREENVILLE STUDENT SUCCESS ACADEMY)

*\*Complete one of the following attached forms that corresponds with the variance request.\**

<b><u>OFFICE USE ONLY</u></b>	
Received By <u>BBlake</u>	Date <u>6-8-18</u>
Staff Recommendation _____	Meeting Date <u>7-2-18</u>



## Special Exception

1. Applicant hereby appeals to the Board of Zoning Appeals for a special exception for use of the property described in the Notice of Appeals as: A PRIVATE SCHOOL

which is a permitted special exception under the district regulation in Section(s) R-S, 5.2.2 of the Zoning Ordinance.

2. Applicant will meet the standards in Section(s) N/A of the Zoning Ordinance which are applicable to the proposed special exception in the following manner:

3. Applicant suggests that the following conditions be imposed to meet the standards in the Zoning Ordinance:

SEE ATTACHED SUMMARY DESCRIPTION  
AND SITE PLAN

Harold E. Johnson Jr.

Applicant Signature

Date JUNE 4, 2018

City of Greer - Board of Zoning Appeals Application

Special Exception – Form 2

**3. GSSA (Greenville Student Success Academy)**

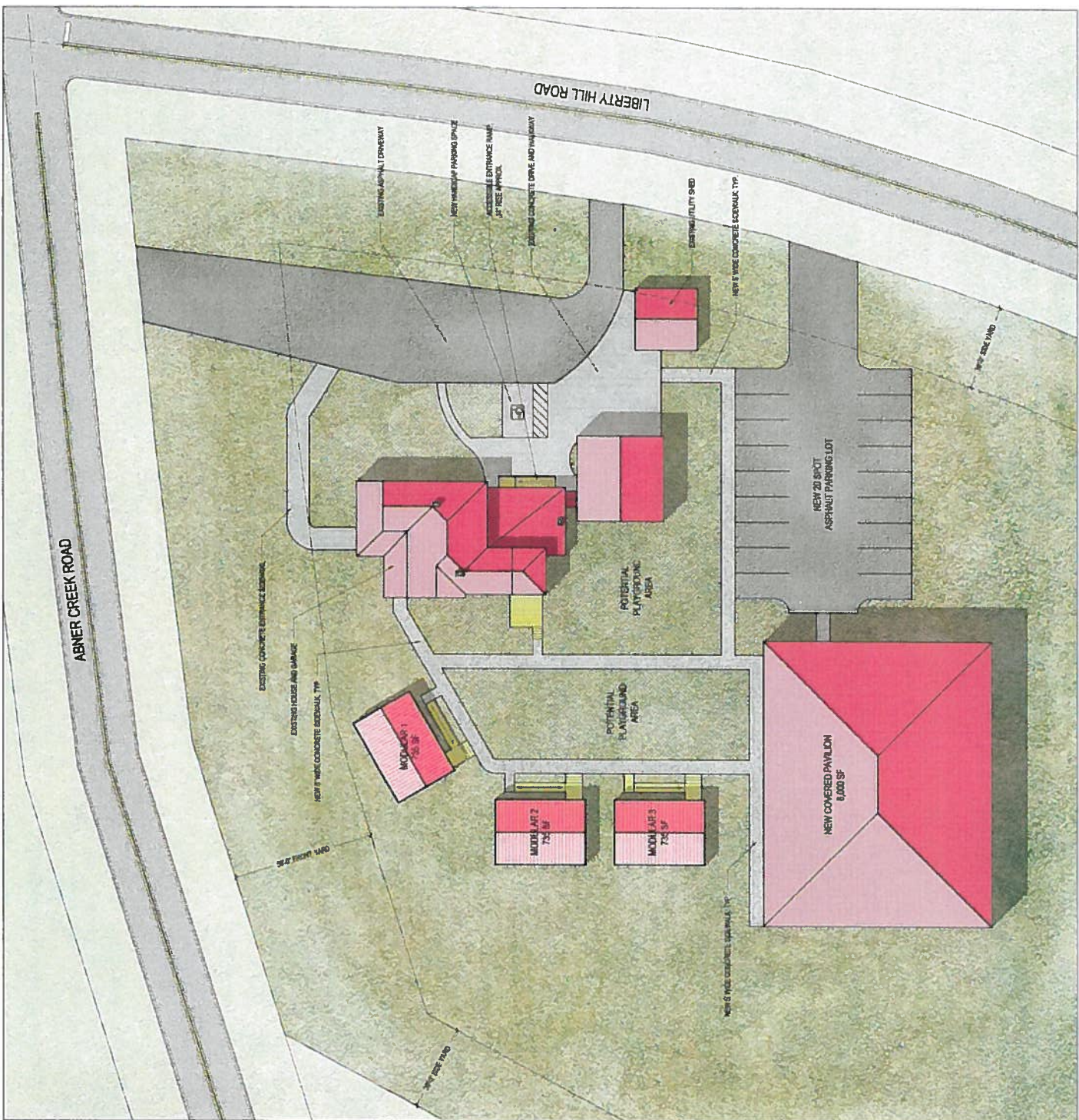
***The goal is to convert the existing residential structure into an independent day school to serve students in grades 1-8 with an expected enrollment of 50 and a maximum enrollment of 75. The academic program will combine grouping multi-age students by ability for instruction and thematic project based learning. There will be no food service.***



GSSA

GREENVILLE  
STUDENT  
SUCCESS  
ACADEMY

SITE PLAN



**GREENVILLE STUDENT SUCCESS ACADEMY  
TRAFFIC IMPACT STUDY  
Greer, South Carolina**


**Prepared for  
Greenville Educational Services, LLC**

**Prepared by**  
 **Sprague & Sprague**  
Consulting Engineers

**October 23, 2018**

Signature Page  
GREENVILLE STUDENT SUCCESS ACADEMY TRAFFIC IMPACT STUDY  
Greer, South Carolina  
October 23, 2018

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*[Handwritten signature]*  
  
*10/23/18*



 **Sprague & Sprague**  
Consulting Engineers  
Post Office Box 9192  
Greenville, South Carolina 29604  
864/346-3106

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**GREENVILLE STUDENT SUCCESS ACADEMY TRAFFIC IMPACT STUDY**  
**Greer, South Carolina**  
**October 23, 2018**

### **Executive Summary**

Greenville Student Success Academy is planned to be housed in an existing structure in the southwest quadrant of the intersection of Abner Creek Road/Liberty Hill Road. An aerial of the site is included in Appendix A. The site currently has access via Abner Creek Road and Liberty Hill Road, but the Academy site, as also shown in Appendix A, will have access via a relocated driveway on Liberty Hill Road. Although the academy will open with only a few students, the ultimate enrollment is planned as 75 students. Opening of the academy is planned in 2019.

The findings of this study are:

- *Abner Creek Road/Liberty Hill Road* – This intersection currently operates acceptably and will continue to do so with existing geometry in 2020 with either no build or build volumes.
- *Liberty Hill Road/site access* – This intersection will operate acceptably with existing geometry and 2020 build volumes.

### **Introduction**

Greenville Student Success Academy is planned to be housed in an existing structure in the southwest quadrant of the intersection of Abner Creek Road/Liberty Hill Road. An aerial of the site is included in Appendix A. The site currently has access via Abner Creek Road and Liberty Hill Road, but the Academy site, as also shown in Appendix A, will have access via a relocated driveway on Liberty Hill Road. Although the academy will open with only a few students, the ultimate enrollment is planned as 75 students. Opening of the academy is planned in 2019.

### **Purpose of Study**

The purpose of this study is to meet the requirements of the South Carolina Department of Transportation in the encroachment permit process and of the City of Greer in the development approval process. The study intersections are:

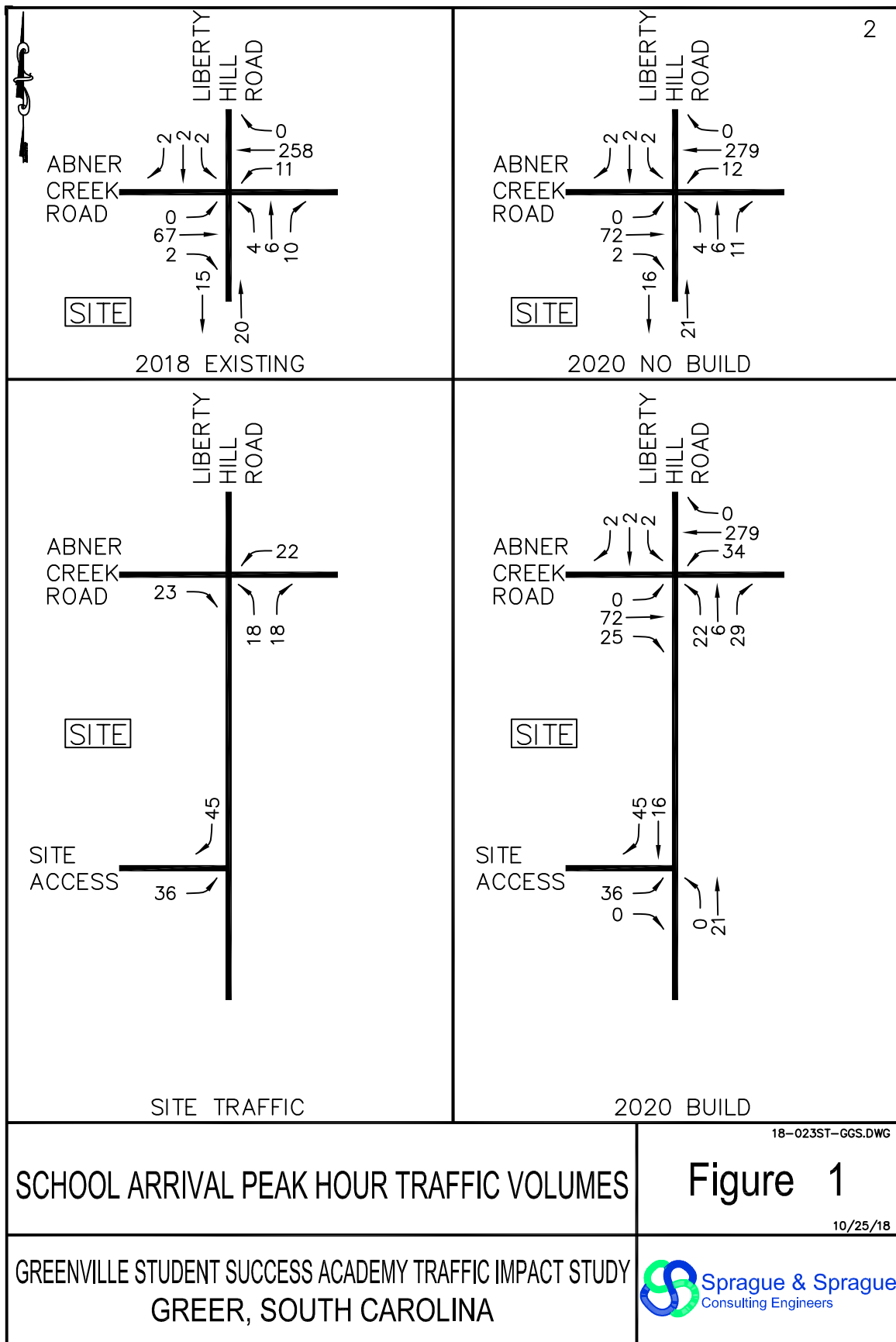
- Abner Creek Road/Liberty Hill Road
- Liberty Hill Road/site access

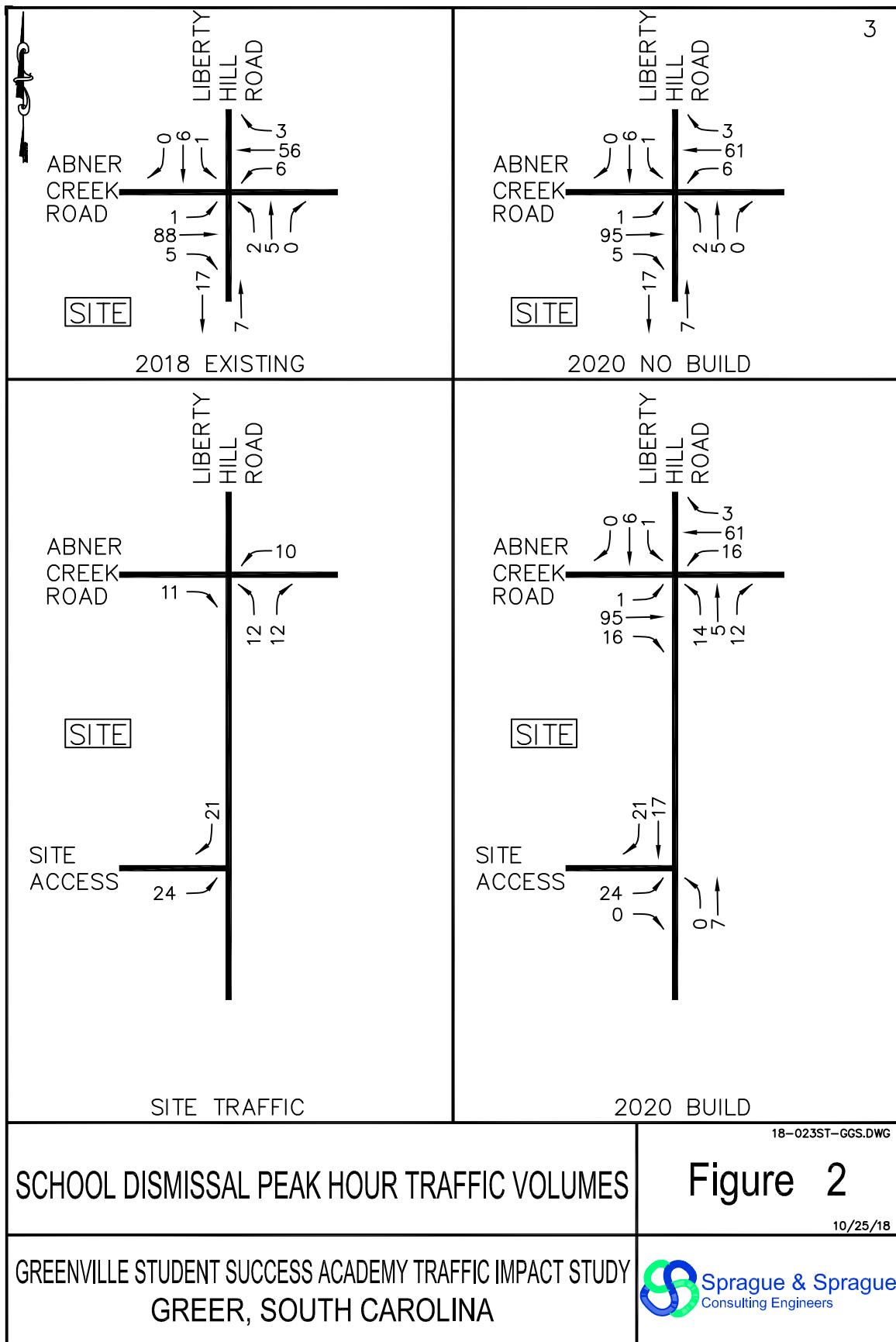
The study periods are school arrival and dismissal peak hours. The study year is build out plus one year. Build out is planned by 2019. Therefore, the study year is 2020.

### **Existing Conditions**

Abner Creek Road and Liberty Hill Road are two-lane roads. Their intersection is controlled by stop signs on Liberty Hill. Speed limits are 40 miles per hour on Abner Creek and 35 miles per hour on Liberty Hill.

Turning movement counts were conducted at the study intersection in October 2018. The counts were conducted during the time periods of 7:00 – 9:00 a.m. and 2:00 – 4:00 p.m. and are included in Appendix B. The 2018 existing peak hour traffic volumes are shown in Figure 1 for school arrival peak hour and in Figure 2 for school dismissal peak hour. These peak hours are 7:00-8:00 am and 3:00-4:00 pm. The peak of school traffic volumes







may occur outside these peaks during periods such as 7:15-8:15 am and 2:00-3:00 pm. To be sure that the school traffic impact was not understated the peak hours of existing traffic during the hours counted were used in this study.

## 2020 No Build Traffic

No build traffic is the traffic that would be at the study intersections in the future without the proposed development. No build traffic is made up of existing traffic and any increase or decrease in volumes which might occur from general growth trends in the surrounding area or from nearby specific developments. One way to estimate background traffic growth is to examine historical SCDOT traffic volumes. As shown in Table 1, SCDOT has an annual traffic count station on Abner Creek Road east of the site. Between 2009 and 2017, traffic volumes went up and down as did volumes at many stations across South Carolina due to the economic downturn at the beginning of this period. It is usually reasonable to use the growth that occurred between 2011 and 2017 as representative of recent traffic volume growth, but in this case the 2011 volume does not indicate any recovery from the recession. Also, the volume at this location went down between 2016 and 2017. It would be reasonable to use no background traffic growth in this study, but there are large undeveloped parcels in the area. Therefore, the growth between 2012 and 2016 was considered, and that growth was four percent per year. Because the time between the counts and the study year is short, it is reasonable to use this higher annual traffic growth. Therefore, four percent per year background traffic growth was used in this study.

The 2018 peak hour traffic volumes were increased by four percent per year for two years, and the 2020 no build peak hour traffic volumes are shown in Figure 1 for the school arrival peak hour and in Figure 2 for the school dismissal peak hour.

**Table 1**  
**HISTORICAL SCDOT TRAFFIC COUNTS**  
**Greenville Student Success Academy Traffic Impact Study**  
**Greer, South Carolina**

Location (Station #)	2017	2016	2015	2014	2013	2012	2011	2010	2009
Abner Creek W of SC 101 (#357)	1600	2100	1750	2000	2000	1800	1600	1600	1550

## Proposed Site

*Trip Generation* – All trip generation information was taken from the 10<sup>th</sup> Edition of Trip Generation, Institute of Transportation Engineers.

- Private School (K-8) (Land Use Code 534) – independent variable is students – 75 students
  - o Morning Peak Hour of Generator:  $T=0.88X+14.85 = 81$ 
    - 56% enter = 45, 44% exit = 36
  - o Afternoon Peak Hour of Generator:  $T=0.63X-1.93 = 45$ 
    - 47% enter = 21, 53% exit = 24

All trips will be new to the street network. The trip generation for Greenville Student Success Academy is shown in Table 2.

**Table 2**  
**TRIP GENERATION**  
**Greenville Student Success Academy Traffic Impact Study**  
**Greer, South Carolina**

Use – Size	Morning Peak Hour			Afternoon Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Private School (K-8) – 75 students	45	36	81	21	24	45

*Trip Distribution* – There is no geographic limitation of residence for the students of the academy. While the heavier population concentration is to the west of the subject site, it appears there are more similar schools to the west also. Therefore, the trip distribution for school traffic was assumed to be:

- 50 percent to/from the east
- 50 percent to/from the west

*Trip Assignment* - Peak hour site trips were assigned to the study intersections using the distribution above and are shown in Figure 1 for school arrival peak hour and in Figure 2 for school dismissal peak hour.

## 2020 Build Traffic

Peak hour site trips were added to the 2020 no build peak hour traffic volumes to obtain the 2020 build peak hour traffic volumes shown in Figure 1 for school arrival peak hour and in Figure 2 for school dismissal peak hour.

## Need for Turn Lanes

In general, it is desirable to have a left turn lane on the major street at a driveway or side street so that vehicles stopped to turn left have a place to store outside the through lane. This arrangement reduces the potential for rear end collisions. The provision of a right turn lane eliminates the delay that can result for through vehicles as the right turn vehicles slow to make the turn. Right turn lanes also reduce the potential for rear end collisions. The disadvantages of the additional lanes besides the construction cost are the right-of-way requirements, maintenance costs, the additional run-off caused by a paved surface, and greater intersection width increasing pedestrian crossing distance as well as the accident potential during construction.

Because there are both advantages and disadvantages to the additional lanes, the lanes should be installed where the advantages outweigh the disadvantages. The SCDOT Highway Design Manual, 2017 offers guidelines for a two-lane highway with a speed of 40 miles per hour (lowest speed for which a graph is available): Figure 9.5G - Volume Guidelines for Left-Turn Lanes at Unsignalized Intersections on Two-Lane Highways (40 MPH). This graph can be used as a guideline in this case and is included in Appendix C. No left turns are projected into the site access, but even if a few lefts are made, it is obvious from comparing the 2020 build volumes to the graph in Figure 9.5G that a left turn lane would not be necessary at the site access. The 2020 build volumes at Abner Creek/Liberty Hill were plotted on the graph and indicate that a left turn lane is not necessary westbound on Abner Creek at Liberty Hill.

The SCDOT Design Manual also offers Figure 9.5A – Guidelines for Right-Turn Lanes at Unsignalized Intersections on Two-Lane Highways. It is obvious from comparing the 2020 build volumes to the graph in Figure 9.5A that a right turn lane is not necessary for the southbound right turn into the sight. The 2020 build volumes at Abner Creek/Liberty Hill were plotted on the graph and indicate that a right turn lane is not necessary eastbound on Abner Creek at Liberty Hill.

## Traffic Operations

Synchro 9.1 is the software used for the traffic operations analyses in this study. The methodology used for assessing the quality of traffic flow is the methodology describe in the 2010 Highway Capacity Manual (HCM), Transportation Research Board. In general, the HCM expresses quality of flow in terms of Level of Service (LOS). The type of transportation facility which was examined in this study is the unsignalized intersection. The criteria for unsignalized intersection LOS are shown in Table 3. The variable used is control delay. This is the delay attributed to traffic control measures and includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. SCDOT uses a guideline of roadway LOS C or no change in LOS if the baseline LOS is below C as not requiring mitigation. It is not unusual for an individual movement, especially on a side street at an unsignalized intersection, to experience LOS E or F during the peak hour.

**Table 3**  
**UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**  
**Greenville Student Success Academy Traffic Impact Study**  
**Greer, South Carolina**

Level of Service	Control Delay Range (seconds/vehicle)
A	<10
B	>10 and <15
C	>15 and <25
D	>25 and <35
E	>35 and <50
F	>50

The study intersections were analyzed for school arrival and dismissal peak hours with existing, 2020 no build, and 2020 build traffic volumes. Percentages of heavy vehicles, peak hour factors, and pedestrians were taken from existing counts. A peak hour factor of 0.70 was used for the school trips into and out of the site access. Lane widths, storage lengths, and grades were measured on aerials. Capacity analysis printouts are included in Appendix D. Although there are no turn lanes for which storage adequacy needs to be checked, SimTraffic was run for the study intersections for information, and the printouts are also included in Appendix D.

*Abner Creek Road/Liberty Hill Road* – As shown in Table 4, this intersection currently operates acceptably and will continue to do so in 2020 with either no build or build volumes.

**Table 4**  
**CAPACITY ANALYSES RESULTS – UNSIGNALIZED INTERSECTION – EXISTING GEOMETRY**  
**ABNER CREEK ROAD/LIBERTY HILL ROAD**  
**Greenville Student Success Academy Traffic Impact Study**  
**Greer, South Carolina**

Movement	Level of Service/Delay (seconds/vehicle)		
	Existing	2020 No Build	2020 Build
<i>School Arrival Peak Hour</i>			
Eastbound - Left	A/0	A/0	A/0
Westbound - Left	A/7	A/7	A/8
Northbound-Left/through/right	B/10	B/10	B/11
Southbound-Left/through/right	B/11	B/11	B/12
<i>School Dismissal Peak Hour</i>			
Eastbound - Left	A/7	A/7	A/7
Westbound - Left	A/7	A/7	A/8
Northbound-Left/through/right	B/10	B/10	B/10
Southbound-Left/through/right	B/10	B/10	B/11

Notes:

- Abner Creek is east-west. Liberty Hill is north-south.

*Liberty Hill Road/site access* – As shown in Table 5 this intersection will operate acceptably with 2020 build volumes.

**Table 5**  
**CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTION – 2020 BUILD VOLUMES**  
**LIBERTY HILL ROAD/SITE ACCESS**  
**Greenville Student Success Academy Traffic Impact Study**  
**Greer, South Carolina**

Movement	Level of Service/Delay (seconds/vehicle)	
	School Arrival Peak Hour	School Dismissal Peak Hour
Northbound – Left	A/0	A/0
Eastbound – Left/right	A/9	A/9

Notes:

- (1) Site access is east-west. Liberty Hill is north/south.

## Conclusions and Recommendations

- *Abner Creek Road/Liberty Hill Road* – This intersection currently operates acceptably and will continue to do so with existing geometry in 2020 with either no build or build volumes.
- *Liberty Hill Road/site access* – This intersection will operate acceptably with existing geometry and 2020 build volumes.



**Appendix A**  
**CONCEPTUAL SITE PLAN AND SITE AERIAL**





NO.	DATE	REVISIONS
1	10/19/18	BOARD OF ZONING APPEALS





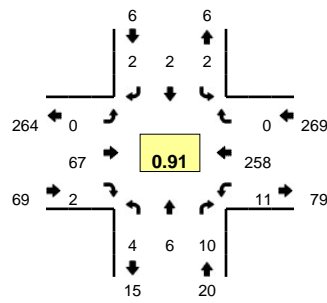


**Appendix B**  
**EXISTING TRAFFIC COUNTS**

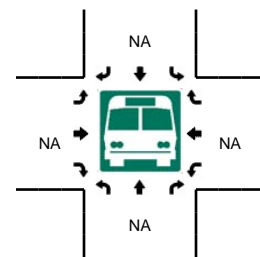
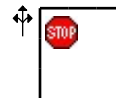
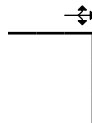
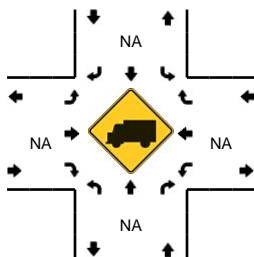
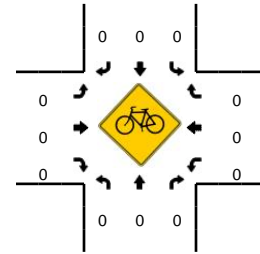
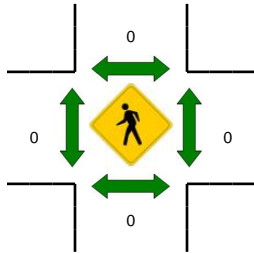
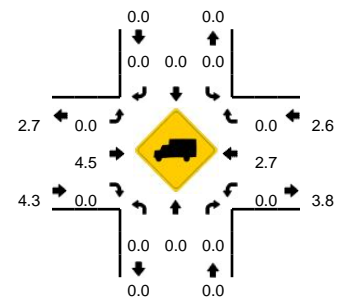


**LOCATION:** Liberty Hill Rd -- Abner Creek Rd  
**CITY/STATE:** Greer, SC

**QC JOB #:** 14800301  
**DATE:** Wed, Oct 03 2018



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

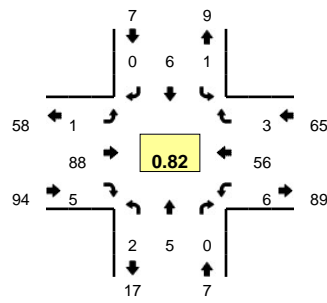


15-Min Count Period Beginning At	Liberty Hill Rd (Northbound)				Liberty Hill Rd (Southbound)				Abner Creek Rd (Eastbound)				Abner Creek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	4	0	1	0	0	0	0	24	0	0	3	61	0	0	95	
7:15 AM	2	2	2	0	0	0	0	0	0	16	1	0	1	71	0	0	95	
7:30 AM	2	1	0	0	0	1	2	0	0	14	1	0	4	75	0	0	100	
7:45 AM	0	1	4	0	1	1	0	0	0	13	0	0	3	51	0	0	74	364
8:00 AM	1	0	1	0	0	1	0	0	0	4	1	0	0	52	1	0	61	330
8:15 AM	3	1	0	0	0	0	0	0	0	6	2	0	0	40	0	0	52	287
8:30 AM	3	0	0	0	0	0	0	0	0	10	0	0	2	22	0	0	37	224
8:45 AM	0	1	1	0	1	0	0	0	0	7	0	0	0	19	0	0	29	179
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	4	0	0	0	4	8	0	0	56	4	0	16	300	0	0	400	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

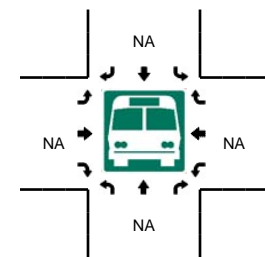
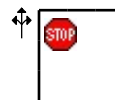
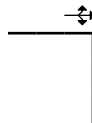
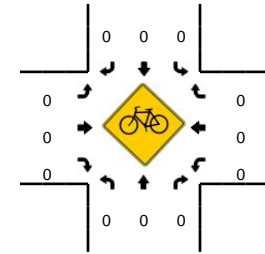
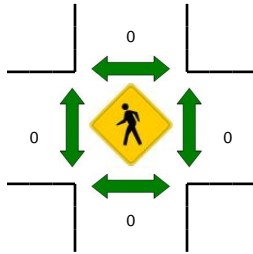
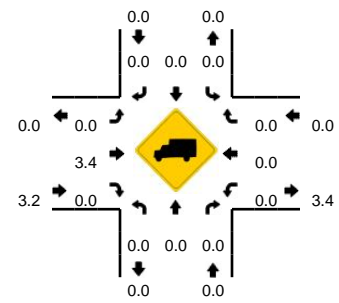
**Comments:**

**LOCATION:** Liberty Hill Rd -- Abner Creek Rd  
**CITY/STATE:** Greer, SC

**QC JOB #:** 14800302  
**DATE:** Wed, Oct 03 2018



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



15-Min Count Period Beginning At	Liberty Hill Rd (Northbound)				Liberty Hill Rd (Southbound)				Abner Creek Rd (Eastbound)				Abner Creek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	1	0	0	0	0	0	0	0	16	0	0	0	10	0	0	27	
2:15 PM	1	0	1	0	0	3	0	0	0	9	2	0	1	13	0	0	30	
2:30 PM	1	1	2	0	1	0	0	0	0	7	1	0	0	19	0	0	32	
2:45 PM	0	0	1	0	1	0	0	0	0	11	1	0	1	12	1	0	28	117
3:00 PM	0	2	0	0	1	0	0	0	0	28	1	0	0	15	0	0	47	137
3:15 PM	1	1	0	0	0	0	0	0	0	13	2	0	2	15	1	0	35	142
3:30 PM	0	0	0	0	0	1	0	0	1	18	1	0	1	14	2	0	38	148
3:45 PM	1	2	0	0	0	5	0	0	0	29	1	0	3	12	0	0	53	173

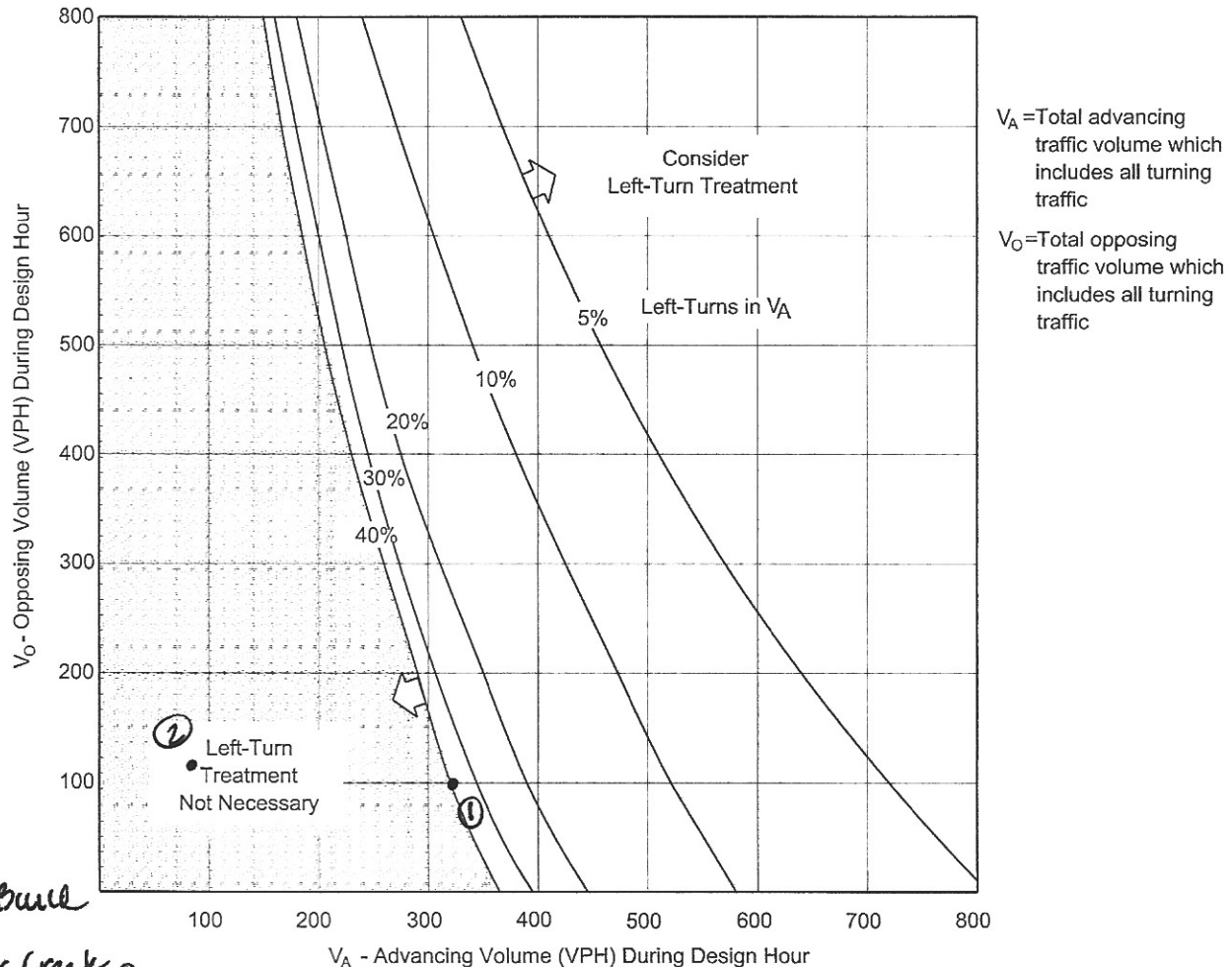
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	8	0	0	0	20	0	0	0	116	4	0	12	48	0	0	212
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

**Comments:**

## Appendix C

### TURN LANE GUIDELINE GRAPHS

Source: SCDOT Roadway Design Manual, 2017



2020 Build

Abner Creek

Liberty Hill

Instructions:

am ①  $V_O = 97$ ;  $V_A = 313$ ;  $\% = 11.1$   
not necessary

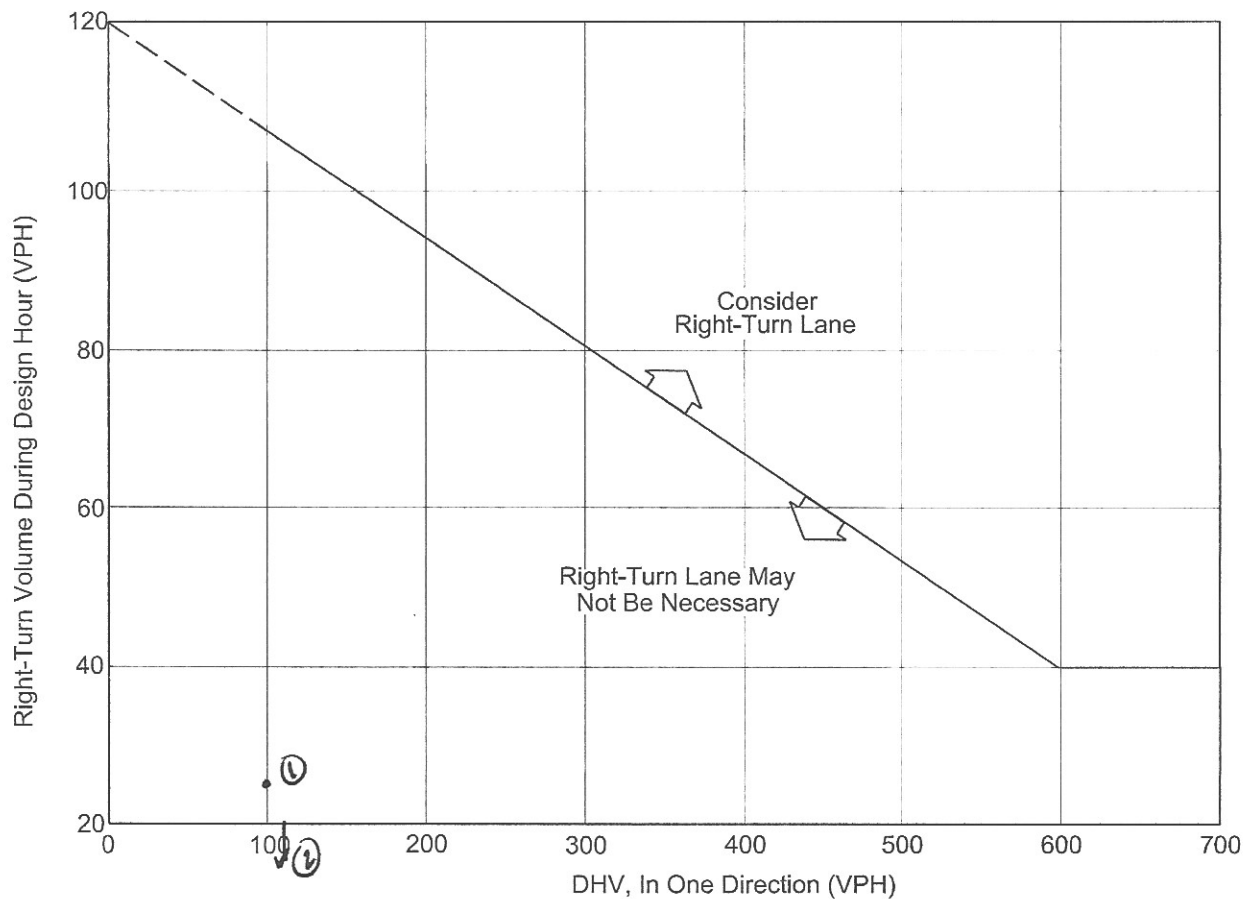
pm ②  $V_O = 112$ ;  $V_A = 80$ ;  $\% = 20.1$   
not necessary

1. The family of curves represents the percent of left turns in the advancing volume ( $V_A$ ). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read  $V_A$  and  $V_O$  into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.

**VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)**

**Figure 9.5-G**





Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

1020 Build

Abner Creek  
Liberty Hill EB

am ①  $V_R = 25$   $DHV = 100$

pm ②  $V_R = 16$   $DHV = 112$

#### Example

Given:

Design Speed	=	35 miles per hour
DHV	=	250 vehicles per hour
Right Turns	=	100 vehicles per hour

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use  $100 - 20 = 80$  vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

### GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 9.5-A

## **Appendix D**

### **CAPACITY ANALYSIS AND QUEUE REPORT PRINTOUTS**

### 3: Liberty Hill Road & Abner Creek Road GSSA TIS

School Arrival Peak Hour  
Existing

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	67	2	11	258	0	4	6	10	2	2	2
Future Vol, veh/h	0	67	2	11	258	0	4	6	10	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	74	2	12	284	0	4	7	11	2	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	284	0	0	76	0	0	385	383	75	392	384	284
Stage 1	-	-	-	-	-	-	75	75	-	308	308	-
Stage 2	-	-	-	-	-	-	310	308	-	84	76	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1290	-	-	1536	-	-	565	542	990	571	553	760
Stage 1	-	-	-	-	-	-	935	833	-	706	664	-
Stage 2	-	-	-	-	-	-	693	653	-	929	836	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1290	-	-	1536	-	-	558	537	990	556	548	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	558	537	-	556	548	-
Stage 1	-	-	-	-	-	-	935	833	-	706	658	-
Stage 2	-	-	-	-	-	-	682	647	-	911	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	10.3	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	703	1290	-	-	1536	-	-	607
HCM Lane V/C Ratio	0.031	-	-	-	0.008	-	-	0.011
HCM Control Delay (s)	10.3	0	-	-	7.4	0	-	11
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

---

Intersection: 3: Liberty Hill Road & Abner Creek Road

---

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	18	31	31
Average Queue (ft)	1	15	4
95th Queue (ft)	9	38	20
Link Distance (ft)	1069	491	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

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Network Summary

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Network wide Queuing Penalty: 0

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


Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	72	2	12	279	0	4	6	11	2	2	2
Future Vol, veh/h	0	72	2	12	279	0	4	6	11	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	79	2	13	307	0	4	7	12	2	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	81	0	0	415	413	80	423	414	307
Stage 1	-	-	-	-	-	-	80	80	-	333	333	-
Stage 2	-	-	-	-	-	-	335	333	-	90	81	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1265	-	-	1529	-	-	539	520	984	545	532	738
Stage 1	-	-	-	-	-	-	929	829	-	685	647	-
Stage 2	-	-	-	-	-	-	671	636	-	922	832	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1265	-	-	1529	-	-	532	515	984	529	527	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	532	515	-	529	527	-
Stage 1	-	-	-	-	-	-	929	829	-	685	641	-
Stage 2	-	-	-	-	-	-	660	630	-	903	832	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	10.4	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	692	1265	-	-	1529	-	-	583
HCM Lane V/C Ratio	0.033	-	-	-	0.009	-	-	0.011
HCM Control Delay (s)	10.4	0	-	-	7.4	0	-	11.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	0	0	21	16	45
Future Vol, veh/h	18	0	0	21	16	45
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	-1	-
Peak Hour Factor	70	70	91	91	91	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	0	23	18	64
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	73	50	82	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	936	1024	1528	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	936	1024	1528	-	-	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1528	-	936	-	-	
HCM Lane V/C Ratio	-	-	0.027	-	-	
HCM Control Delay (s)	0	-	9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection: 3: Liberty Hill Road & Abner Creek Road

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	19	38	30
Average Queue (ft)	1	14	5
95th Queue (ft)	7	39	23
Link Distance (ft)	1069	304	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Liberty Hill Road & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	38
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	459
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0
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
Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	72	25	34	279	0	22	6	29	2	2	2
Future Vol, veh/h	0	72	25	34	279	0	22	6	29	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	5	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	79	27	37	307	0	24	7	32	2	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	107	0	0	477	474	93	493	488	307
Stage 1	-	-	-	-	-	-	93	93	-	381	381	-
Stage 2	-	-	-	-	-	-	384	381	-	112	107	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1265	-	-	1497	-	-	489	479	967	490	483	738
Stage 1	-	-	-	-	-	-	914	818	-	645	617	-
Stage 2	-	-	-	-	-	-	629	604	-	898	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1265	-	-	1497	-	-	475	465	967	458	469	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	475	465	-	458	469	-
Stage 1	-	-	-	-	-	-	914	818	-	645	598	-
Stage 2	-	-	-	-	-	-	606	586	-	861	811	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	11.2	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	639	1265	-	-	1497	-	-	529
HCM Lane V/C Ratio	0.098	-	-	-	0.025	-	-	0.012
HCM Control Delay (s)	11.2	0	-	-	7.5	0	-	11.9
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0



Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	0	0	21	16	45
Future Vol, veh/h	18	0	0	21	16	45
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	-1	-
Peak Hour Factor	70	70	91	91	91	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	0	0	23	18	64

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	73	50	82	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	936	1024	1528	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	936	1024	1528	-	-	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1005	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1528	-	936	-	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection: 3: Liberty Hill Road & Abner Creek Road

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	50	37	31
Average Queue (ft)	6	24	7
95th Queue (ft)	32	45	27
Link Distance (ft)	1069	304	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Liberty Hill Road & Site Access





Movement	EB
Directions Served	LR
Maximum Queue (ft)	38
Average Queue (ft)	19
95th Queue (ft)	44
Link Distance (ft)	459
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0
---------------------------------

### 3: Liberty Hill Road & Abner Creek Road GSSA TIS

School Dismissal Peak Hour  
Existing

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	88	5	6	56	3	2	5	0	1	6	0
Future Vol, veh/h	1	88	5	6	56	3	2	5	0	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	107	6	7	68	4	2	6	0	1	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	113	0	0	201	200	110	201	201	70
Stage 1	-	-	-	-	-	-	113	113	-	85	85	-
Stage 2	-	-	-	-	-	-	88	87	-	116	116	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1541	-	-	1489	-	-	753	692	946	762	699	998
Stage 1	-	-	-	-	-	-	891	801	-	928	828	-
Stage 2	-	-	-	-	-	-	920	823	-	894	803	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1541	-	-	1489	-	-	744	688	946	753	695	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	744	688	-	753	695	-
Stage 1	-	-	-	-	-	-	890	800	-	927	824	-
Stage 2	-	-	-	-	-	-	907	819	-	886	802	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.7			10.2			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	703	1541	-	-	1489	-	-	703
HCM Lane V/C Ratio	0.012	0.001	-	-	0.005	-	-	0.012
HCM Control Delay (s)	10.2	7.3	0	-	7.4	0	-	10.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection: 3: Liberty Hill Road & Abner Creek Road

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	26	31	31
Average Queue (ft)	1	8	11
95th Queue (ft)	8	29	35
Link Distance (ft)	1069	491	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			





Network Summary

Network wide Queuing Penalty: 0
---------------------------------



### 3: Liberty Hill Road & Abner Creek Road GSSA TIS

School Dismissal Peak Hour  
2020 No Build

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	95	5	6	61	3	2	5	0	1	6	0
Future Vol, veh/h	1	95	5	6	61	3	2	5	0	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	116	6	7	74	4	2	6	0	1	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	122	0	0	216	214	119	215	215	76
Stage 1	-	-	-	-	-	-	121	121	-	91	91	-
Stage 2	-	-	-	-	-	-	95	93	-	124	124	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1533	-	-	1478	-	-	736	679	935	746	686	991
Stage 1	-	-	-	-	-	-	882	794	-	921	823	-
Stage 2	-	-	-	-	-	-	912	818	-	885	797	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1533	-	-	1478	-	-	727	675	935	737	682	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	727	675	-	737	682	-
Stage 1	-	-	-	-	-	-	881	793	-	920	819	-
Stage 2	-	-	-	-	-	-	899	814	-	877	796	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.6			10.3			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	689	1533	-	-	1478	-	-	689
HCM Lane V/C Ratio	0.012	0.001	-	-	0.005	-	-	0.012
HCM Control Delay (s)	10.3	7.4	0	-	7.4	0	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

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Intersection: 3: Liberty Hill Road & Abner Creek Road

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Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	17	31	31
Average Queue (ft)	1	7	11
95th Queue (ft)	7	27	35
Link Distance (ft)	1069	491	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

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Network Summary

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Network wide Queuing Penalty: 0




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Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	95	16	16	61	3	14	5	12	1	6	0
Future Vol, veh/h	1	95	16	16	61	3	14	5	12	1	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	3	-	-	-2	-	-	1	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	116	20	20	74	4	17	6	15	1	7	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	135	0	0	247	245	126	253	253	76
Stage 1	-	-	-	-	-	-	128	128	-	115	115	-
Stage 2	-	-	-	-	-	-	119	117	-	138	138	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.3	6.7	6.3	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.7	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1533	-	-	1462	-	-	701	652	927	704	654	991
Stage 1	-	-	-	-	-	-	874	788	-	895	804	-
Stage 2	-	-	-	-	-	-	884	797	-	870	786	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1533	-	-	1462	-	-	687	642	927	680	644	991
Mov Cap-2 Maneuver	-	-	-	-	-	-	687	642	-	680	644	-
Stage 1	-	-	-	-	-	-	873	787	-	894	793	-
Stage 2	-	-	-	-	-	-	864	786	-	849	785	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	10	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	754	1533	-	-	1462	-	-	649
HCM Lane V/C Ratio	0.05	0.001	-	-	0.013	-	-	0.013
HCM Control Delay (s)	10	7.4	0	-	7.5	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	0	0	7	17	21
Future Vol, veh/h	24	0	0	7	17	21
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	-1	-
Peak Hour Factor	70	70	82	82	82	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	0	0	9	21	30

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	45	36	51	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	970	1042	1568	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	970	1042	1568	-	-	-
Mov Cap-2 Maneuver	970	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	1019	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1568	-	970	-	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Intersection: 3: Liberty Hill Road & Abner Creek Road

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	28	31	31
Average Queue (ft)	1	18	7
95th Queue (ft)	9	42	28
Link Distance (ft)	1069	304	1054
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Liberty Hill Road & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	459
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0
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**Category Number: IV.**  
**Item Number: B.**



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**Approval of Proposed 2019 Calendar**

**ATTACHMENTS:**

<b>Description</b>	<b>Upload Date</b>	<b>Type</b>
▣ Proposed 2019 Calendar	10/26/2018	Cover Memo



**Board of Zoning Appeals**  
**2019 Calendar**  
 301 E. Poinsett Street, Greer City Hall  
 5:30 pm

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
<b>APPLICATION DEADLINE</b>	DEC 3	JAN 7	FEB 4	MAR 4	APR 1	MAY 6	JUNE 3	JULY 8	AUG 5	SEPT 9	OCT 7	N O  M E E T I N G
<b>BOARD OF APPEALS MEETING</b>	JAN 7	FEB 4	MAR 4	APR 1	MAY 6	JUNE 3	JULY 8	AUG 5	SEPT 9	OCT 7	NOV 4	

Category Number: V.  
Item Number: A.



**AGENDA**  
**BOARD OF ZONING APPEALS**  
**11/5/2018**

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**Planning and Zoning Report**