



RESOLUTION TITLE: ZONING MAP CHANGE: CONDITIONAL DISTRICT REZ-23-01-06-00137, RIVERBEND PRESERVE LLC (APPLICANT); PROPERTY PARCEL: PORTION OF 202649 (INDUSTRIAL DEVELOPMENT AREA), LOCATED AT NC 16 AND KILLIAN RD., STANLEY, NC, REZONE FROM (R-1) SINGLE FAMILY LIMITED ZONING DISTRICT WITH SPECIAL HIGHWAY (SH) AND URBAN STANDARDS (US) OVERLAYS TO THE (CD/I-2) CONDITIONAL GENERAL INDUSTRIAL ZONING DISTRICT WITH SPECIAL HIGHWAY (SH) AND URBAN STANDARDS (US) OVERLAYS

WHEREAS, a County Zoning Ordinance was adopted on April 24, 2008 and a public hearing was held on March 28, 2023 by the County Commission, to take citizen comment into a map change application, as follows:

Tax Parcel Number(s): Portion of 202649
Applicant(s): Riverbend Preserve LLC
Owner(s): Riverbend Preserve LLC
Property Location: NC 16 and Killian Rd.
Request: Rezone from (R-1) Single Family Limited Zoning District with Special Highway (SH) and Urban Standards (US) Overlay to the (CD/I-2) Conditional General Industrial Zoning District with Special Highway (SH) And Urban Standards (US) Overlay

public hearing comments are on file in the Commission Clerk's Office as a part of the minutes of the meeting; and,

WHEREAS, the Planning Board recommended disapproval of the map change for parcel: portion of 202649 (Industrial Development Area), located at NC 16 and Killian Rd., Stanley, NC, from (R-1) Single Family Limited Zoning District with Special Highway (SH) and Urban Standards (US) Overlays to the (CD/I-2) Conditional General Industrial Zoning District with Special Highway (SH) and Urban Standards (US) Overlays on March 6, 2023 based on: the request is not reasonable, not in the public interest and inconsistent with the Comprehensive Land Use Plan; the site plan not being representative of the surrounding area and community; the lack of information from the developer and potential impacts to the area; their disappointment in the traffic improvements approved by NCDOT; and, concern over the Mountain Island Watershed.

Motion: Sadler Second: Hurst Vote: Unanimous
Aye: Harris, Brooks, Magee, Horne, Sadler, Hurst
Nay: None
Absent: Houchard, Vinson, Crane
Abstain: None

DO NOT TYPE BELOW THIS LINE

I, Donna S. Buff, Clerk to the County Commission, do hereby certify that the above is a true and correct copy of action taken by the Board of Commissioners as follows:

NO.	DATE	M1	M2	CBrown	CCloninger	AFraley	BHovis	KJohnson	TKelgher	RWorley	Vote
2023-086	03/28/2023	CB	RW	A	A	A	A	A	N	A	6 - 1

DISTRIBUTION:

Laserfiche Users

A=AYE, N=NAY, AB=ABSENT, ABS=ABSTAIN, U=UNANIMOUS

Zoning Map Change: Conditional District REZ-23-01-06-00137, Riverbend Preserve LLC (Applicant);
Property Parcel: Portion of 202649 (Industrial Development Area), Located at NC 16 and Killian Rd.,
Stanley, NC, Rezone from (R-1) Single Family Limited Zoning District with Special Highway (SH) and Urban
Standards (US) Overlays to the (CD/I-2) Conditional General Industrial Zoning District with Special Highway
(SH) and Urban Standards (US) Overlays
Page 2

NOW, THEREFORE, BE IT RESOLVED by the County Commission, upon consideration of the map
change application, public hearing comment and recommendation from the Planning Board
and Planning staff, finds:

1. The map change request is consistent with the County's approved Comprehensive Land Use Plan. In considering the conditional rezoning request REZ-23-01-06-00137, the Board of Commissioners finds: This is a reasonable request and in the public interest because it is consistent with the following goals and vision of the Comprehensive Land Use Plan:
 - Key issues for citizens in the Riverfront Gaston / Northeast Gaston area are being met. These key issues include:
 - i. Preservation of open space, road improvements, and better connectivity to other areas of the county, increased job opportunities, maintaining the rural "feel" of the area, and increased commercial opportunities
 - This development meets the vision of the Suburban development future land use as it will create a significant presence of single-family residences around commercial pockets representing a standard suburban center.
 - Goal 3: This development meets goal 3 of the CLUP as the provision of utilities from Lincoln County meets the following objectives:
 - i. Target funding for utilities to strategic areas where the return on investment will be the greatest
 - ii. Provide utilities in underserved areas to help increase improvement momentum
 - Goal 4: This development meets goal 4 of the CLUP as the development of commercial spaces near residential areas meets the following objective:
 - i. Set aside quality commercial areas along corridors for development to reduce pressure on sensitive natural resources areas
 - Goal 5: This development meets goal 5 of the CLUP as the coordination with Lincoln County meets the following objectives:
 - i. Encourage county-wide partnerships to support local and regional objectives
 - ii. Take a regional approach to improve utilities
 - iii. Municipalities working together with Gaston County to target areas for development
 - Goal 7: This development meets goal 7 of the CLUP as the developer/applicant is proposing large buffers and protective measures for the existing natural resources on the site. A portion of the development site is also being dedicated towards the expansion of the Catawba Thread Trail.
 - Goal 8: This development meets goal 8 of the CLUP as the provision of space for industrial and commercial uses in the overall development site will allow for an increase in economic development and provide new job opportunities for Gaston County residents.

Zoning Map Change: Conditional District REZ-23-01-06-00137, Riverbend Preserve LLC (Applicant);
Property Parcel: Portion of 202649 (Industrial Development Area), Located at NC 16 and Killian Rd.,
Stanley, NC, Rezone from (R-1) Single Family Limited Zoning District with Special Highway (SH) and Urban
Standards (US) Overlays to the (CD/I-2) Conditional General Industrial Zoning District with Special Highway
(SH) and Urban Standards (US) Overlays
Page 3

The Commission considers this action to be reasonable and in the public interest, based on: compatibility with existing land use in the immediate area. Therefore, the map change request for Property parcel: portion of 202649 (Industrial Development Area), is hereby approved as conditioned {Exhibit A}, effective with the passage of this Resolution.

- 2) The County Manager is authorized to make necessary notifications in this matter to appropriate parties.



Chad Brown, Chairman
Gaston County Board of Commissioners

ATTEST:

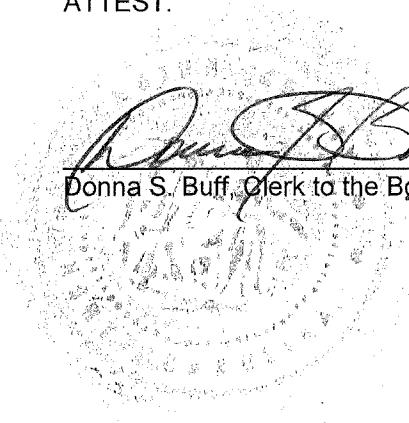

Donna S. Buff, Clerk to the Board

Exhibit A
Conditions of Approval
REZ-23-01-06-00137

1. The development shall meet all federal, state, and local codes and the requirements and conditions outlined in the attached site plan.
2. A reduced setback from Hwy NC 16 may be granted administratively for all industrial uses but shall never be less than 75'. This setback area shall be heavily landscaped or left as wooded area.
3. If the rezoning requests are approved, all impervious calculations will be required for watershed review. If high-density option is triggered, the applicant/development team will need to go before the Watershed Board for high density approval.
4. Engineered and approved by NCDOT plans for all TIA mitigation infrastructure will be required during the final site plan review phase.
5. A copy of the proposed and actual timbering plan shall be provided to Building and Development Services prior to final site plan review to allow staff the opportunity to review the limits of disturbance. If disturbance exceeded the 100' buffer from top of stream bank on each side, the developer shall restore the riparian area using native species as approved by Gaston County Natural Resources Department.
6. If the environmental site survey returns any evidence of species of special concern, then the developer shall follow all recommendations of the environmental impact study and shall obtain Wildlife Friendly Development Certification through North Carolina Wildlife Resources Commission.
7. Reword condition 11 under the Overall Notes Section on page RZ-5 to ensure that 2 and 10-year post-construction stormwater detention requirements as outlined in the NCDEQ stormwater design manual.

GASTON COUNTY REZONING APPLICATIONS

REZ-23-01-06-00137

STAFF REPORT

APPLICATION SUMMARY	
Requests:	
REZ-23-01-06-00137: (Industrial Site) -	
Applicant(s):	Property Owner(s):
Riverbend Preserve LLC	Riverbend Preserve LLC
Parcel Identification (PID):	Property Location:
Portion of 202649	NC 16 and Killian Rd.
Total Property Acreage:	Acreage for Map Change:
Parcel ID 202649 total acreage according to tax records is 309.73 acres	108.87 acres (indicated by applicant)
Current Zoning:	Proposed Zoning:
(R-1) Single Family Limited with (SH) Special Highway and (US) Urban Standards overlays	(CD/I-2) Conditional General Industrial
Existing Land Use:	Proposed Land Use:
Vacant and undeveloped	Industrial

COMPREHENSIVE LAND USE PLAN
Area 3: Riverfront Gaston / Northeast Gaston
<p>This area has the potential for suburban development. The region is unique in that there are high numbers of trips along Highway 27 and NC 16; however, travelers either continue into Lincoln County or into other areas of Gaston County. There are pockets of rural communities and then the comprehensive land use plan envisioned this specific area (the project area) to consist of suburban development.</p> <p>Key issues for citizens in this area include: the preservation of open space, road improvements and better connectivity to other areas of the County and throughout the region, increased job opportunities, maintaining the rural “feel” of the area, and increased commercial opportunities.</p>
Comprehensive Plan Future Land Use: Suburban Development
<p>The Suburban Development future land use envisions a significant presence of single-family residences that exist around commercial pockets representing a standard suburban center. This typically looks like subdivisions built around services for these communities.</p>
Comprehensive Land Use Goals:
<p>This rezoning meets the following goals of the Comprehensive Land Use Plan:</p> <p>Goal 3: Improve energy, water, and telecommunication throughout Gaston County. This development/request meets Goal 3 of the CLUP as the provision of utilities from Lincoln County into Gaston County meets the objectives of this goal.</p> <p>Objectives include:</p> <ul style="list-style-type: none">• Target funding for utilities to strategic areas where the return on investment will be the greatest• Provide utilities in underserved areas to help increase improvement momentum.

Goal 4: Enhance quality of life to absorb growth while focusing on commercial and community resources, walkability, and agricultural preservation.

This development/request meets Goal 4 of the CLUP as the development of industrial and commercial uses near residential uses meet the objectives of this goal. The CLUP states that the County seeks to encourage resources being expanded into the unincorporated areas of the County to support the overall health and well-being of the County. Examples of this include creating different types of neighborhoods to suit different residents and creating better quality communities instead of just increasing quantity.

Objectives include:

- Set aside quality commercial areas along corridors for development to reduce pressure on sensitive natural resources areas
- Work to create a network of walkable communities that can support each other economically

Goal 5: Foster communication and collaboration among the leadership of municipalities and the County to coordinate strategic investments.

This development/request meets Goal 5 of the CLUP as the coordination with Lincoln County that will take place as a result of this development meets the objectives of Goal 5.

Objectives include:

- Encourage a county-wide partnership to support local and regional initiatives
- Take a regional approach to updating utilities for EPA requirements, maintenance needs, and expansion
- Municipalities working together with Gaston County to target areas for development

Goal 7: Emphasize the importance of our natural resources through highlighting natural environments and encouraging the use of environmental recreation.

This development/request meets Goal 7 of the CLUP as the developer/applicant is proposing large buffers and protective measures for the existing natural resources on the lot. They have also agreed to work with the Carolina Thread Trail to create a portion of the trail within the proposed development.

Goal 8: Increase economic development throughout the County by supporting municipalities and improving viable job opportunities.

The provision of space for industrial and commercial uses in the overall development site meet the objectives of goal 8 as the uses will allow for an increase in economic development and provide new job opportunities for Gaston County residents.

Staff Recommendation:

Staff finds that the application, as presented, is consistent with the goals and future land use designation listed in the Comprehensive Land Use Plan. Staff has provided a list of recommended conditions of approval for consideration by the Board of Commissioners.

UTILITIES AND ROAD NETWORK INFRASTRUCTURE

Water/Sewer Provider:

Public water and sewer systems will be provided by Lincoln County.

Road Maintenance:

All proposed streets shall be built to NCDOT standards and petitioned to be turned over to NCDOT for maintenance. If NCDOT does not accept the roads, all roads will be recorded as private roads with maintenance to be completed by the tenants or the development team.

NC 16 is an NCDOT-owned and maintained right-of-way.

Technical Review Committee (TRC) comments:

The following departments did not have any comments at this time:

- Building and Development Services Site Plan Review Team
- Health Department

Comments from the Natural Resources Department:

- All development will need erosion control approval and stormwater approval
- Chewacla Loam soils are on the site. This soil is generally not used for building sites, sanitary facilities, and recreational development as it is frequently flooded
- The Soil & Water Conservation District Board has concerns with the density of this development in the Mountain Island Watershed – IV – they would like to see reduced density and increased stream buffers

Planning and Zoning Staff Input: The comments from the Natural Resources Department have been addressed in the proposed conditions for each of the rezoning requests for this development.

Comments from the Gaston Cleveland Lincoln MPO:

- Letter from the GCLMPO has been included in the staff packet

Gaston County Police and GEMS:

No objections to land dedication for a potential substation.

Planning and Zoning Staff Input: The condition stating that one acre shall be given to Gaston County for the purpose of a police and/or EMS station has been left in the Overall Notes of the site plan. (Item 7)

Gaston County Fire did not have comments, however they received comments from the Fire Chief of the Lucia Riverbend Volunteer Fire Department.

Comments/Concerns from David Toomey:

- Need for another fire station
- Need 6 additional personnel
- Will need at least 1,000 gal/min. on the last fire hydrant *
- Concerns over traffic
- Poor access to the different parcels with no road upgrades
- Hydrant Placement *

Planning and Zoning Staff Input:

*These items are required by fire code and will be addressed during the construction/final site plan review if the rezoning requests are approved.

STAFF SUMMARY

Prepared By: Jamie Mendoza Kanburoglu, Director of Planning and Zoning

Development Area A of the Riverbend Preserve project has a County Line running through the project. A majority of the industrial area is located in Lincoln County and will have access off of NC 16 on the Lincoln County Side. Lincoln County approved the rezoning of this parcel in 2022.

This project was originally brought before the county in 2019, however no action was taken on the request. Since the initial submittal, the following changes have been made:

- Enhanced water quality measures

The applicant/developer's team advertised and held two public interest meetings as required by the UDO. The first meeting was held on-site on February 22nd from 4 pm to 6 pm. The second meeting was held on March 3rd from 6 pm to 8 pm at the Mount Holly Municipal Building. The following topics were brought up by the neighbors who attended the meetings in regard to Development Area A:

- Stormwater Runoff

- Concerns about the existing traffic on NC 16
- Rumors of the Industrial area being for Amazon (*the industrial development team was present at the first PIM and confirmed that there were no plans for Amazon to be a tenant in the Industrial development area*)
- Concerns about water being brought in from Lincoln County
- Concerns as to whether or not there will be a bike lane on NC 16 (Traffic consultant stated that this would be up to NCDOT to require)

Traffic Impact Analysis (TIA)

This project was first brought to the County in 2019. A Traffic Impact Study for the development was completed between 2019 and 2020. Lincoln County and NCDOT both accepted the study. They did not require a new study to be completed as the traffic numbers used in the original TIA were higher than what the numbers would have been if they redid the study as the newer data would have reflected traffic counts during the Covid-19 pandemic, where there was significantly less traffic. The original TIA was also completed with the original number of proposed housing units which was 1,100. The number of proposed lots has come down to 725.

Since the NCDOT has reviewed and accepted the proposed traffic improvements, Gaston County staff did not require a new TIA to be completed. A copy of the TIA is available for review, and a rendering of the required improvements has been included in the site plan. The TIA does reflect the original site entrances that were being proposed in 2019. The access roads on Killian, east of NC 16 have been adjusted since the original TIA was completed.

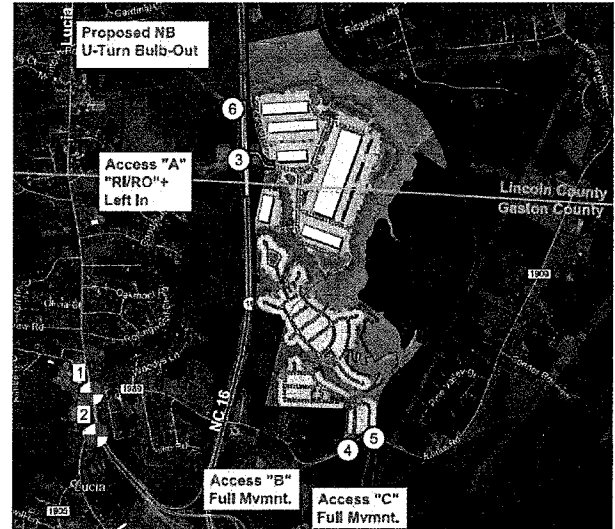


Figure 1 - Access Points for East Side of the Development
- the Industrial site will only have access off if NC 16 on the Lincoln County side of the County Line

Open Space

The applicant is providing more than the required amount of open space for the development as a whole.

Development Area A (to the county line):

Total Acreage: 108.87 AC

Proposed Open Space: 43.15 AC

Stormwater and Erosion Control Measures

The applicant is providing what is required for a high-density development in the Mountain Island Protected IV Watershed. If the development is not classified as high density (which will be determined during final site plan/construction document review), then the proposed measures will exceed what is required by the ordinance.

Proposed Features and Relief Requests

<u>UDO Section</u>	<u>Required</u>	<u>Proposed</u>
Section 7.5 – Bulk and Dimensional Standards	<u>Zoning District: (I-2)</u> Lot Width: 70' Front Yard Setback: 50' Side Yard setback: 20' but increased to 30' if abutting a residential lot Rear Yard Setback: 30'	All required dimensional standards will be met for the industrial and commercial uses

Section 7.6.5 - Special Highway (SH) Overlay Standards		Relief <i>may</i> be needed from Section 7.5.6 (E) for Yard Requirements of the residential lots that will be against the Special Highway Overlay. These measurements will be reviewed by staff during the final site plan and plat phase. A minimum of 75' shall be required from the road right-of-way- to the property lines of the residential areas.
Section 7.6.3 – Urban Standards (US) Overlay Standards		All standards in the (US) overlay for industrial uses will be met and reviewed during site plan review for each individual structure in Development Area A.
Section 8.1.11 – Planned Residential Development (PRD) Supplemental Regulations	Open Space 20% of the gross acreage <u>Development Area A (to the county line):</u> Total Acreage: 108.87 AC Required Open Space: 21.77 AC	Open Space Development Area A (to the county line): Total Acreage: 108.87 AC Proposed Open Space: 43.15 AC
Signage – Chapter 10		Applicant will submit a separate signage package to be reviewed and approved by Building and Development Services Planning and Zoning staff during the final site plan review phase. Signage for this project may allow for up to 200 sqft. Per sign, landscape lighting, and a height up to 10' for primary/entrance signage – secondary signage for this project may allow for up to 150 sqft. Per sign, landscape lighting, and a height up to 8'

PLANNING BOARD MEETING DATE

Meeting Date: March 6, 2023

The Planning unanimously did not recommend approval of this request.

Recommended Conditions of Approval for REZ-23-01-06-00137 (Industrial Site):

1. The development shall meet all federal, state, and local codes and the requirements and conditions outlined in the attached site plan.
2. A reduced setback from Hwy NC 16 may be granted administratively for all industrial uses but shall never be less than 75'. This setback area shall be heavily landscaped or left as wooded area.
3. If the rezoning requests are approved, all impervious calculations will be required for watershed review. If high-density option is triggered, the applicant/development team will need to go before the Watershed Board for high density approval.
4. Engineered and approved by NCDOT plans for all TIA mitigation infrastructure will be required during the final site plan review phase.
5. A copy of the proposed and actual timbering plan shall be provided to Building and Development Services prior to final site plan review to allow staff the opportunity to review the limits of disturbance. If disturbance exceeded the 100' buffer from top of stream bank on each side, the developer shall restore the riparian area using native species as approved by Gaston County Natural Resources Department.
6. If the environmental site survey returns any evidence of species of special concern, then the developer shall follow all recommendations of the environmental impact study and shall obtain Wildlife Friendly Development Certification through North Carolina Wildlife Resources Commission.
7. Reword condition 11 under the Overall Notes Section on page RZ-5 to ensure that 2 and 10-year post-construction stormwater detention requirements as outlined in the NCDEQ stormwater design manual.



GASTON COUNTY PLANNING BOARD

Statement of Consistency

In considering the conditional rezoning case REZ-23-01-06-00137, the planning board finds:

1. This is not a reasonable request and in the public interest because of the following:
 - a. The proposed plan does not represent the surrounding area and community
 - b. The developer's presentation lacked information on the potential development's impacts
 - c. The board was disappointed in the traffic mitigation efforts approved by NCDOT
 - d. There is concern about the impact of the development on the Mountain Island Watershed
2. This request is inconsistent with the goals of the comprehensive land use plan in the area of land use because the suburban development future land use designation is intended for single-family residential areas around commercial pockets representing a standard suburban center.

These findings are supported by a 6-0 vote by the Gaston County Planning Board during its March 6, 2023, meeting.



GASTON COUNTY

Department of Planning & Development Services

Street Address: 128 W. Main Avenue, Gastonia, North Carolina 28052

Phone: (704) 866-3195

Mailing Address: P.O. Box 1578, Gastonia, N.C. 28053-1578

Fax: (704) 866-3966

CONDITIONAL ZONING (CD) APPLICATION

Complete by either typing or printing legibly in black or blue ink

Application Number: CD _____

A.

APPLICANT INFORMATION

Name of Applicant: RIVERBEND PRESERVE, LLC

Mailing Address: 1031 SOUTH CALDWELL ST., STE 110 CHARLOTTE NC 28203

Telephone Numbers: 704-527-0204

843-540-3866 MOBILE

(Area Code) Business

(Area Code) Home

B.

OWNER INFORMATION

Name of Owner: RIVERBEND PRESERVE, LLC

Mailing Address: 1031 SOUTH CALDWELL ST., STE 110 CHARLOTTE NC 28203

Telephone Numbers: 704-527-0204

843-540-3866 MOBILE

(Area Code) Business

(Area Code) Home

C.

PROPERTY INFORMATION

Physical Address or General Street Location of Property: KILLIAN RD. STANLEY

Property Identification Number (PID): PORTION 202649

Acreage of Parcel: APPROX 118.62 AC +/- Acreage to be Rezoned: 118.62 AC +/-

Current Zoning: (R-1)(SC)(CH)(US) Overlay Proposed Zoning: (CD/I-2)

Current Use: VACANT/UNDEVELOPED Proposed Use(s): INDUSTRIAL USES, Commercial Uses,

D.

ADDITIONAL INFORMATION REQUIRED

☐ Copy of Plot Plan or Area Map

☐ PIM 1st. Meeting Date: _____

☐ Copy of Deed

☐ PIM 2nd. Meeting Date: _____

☐ Notarized Authorization

☐ PIM Comments to Planning _____

☐ Payment of Fee

E.

CONDITIONS SETFORTH BY APPLICANT

F.

APPLICATION CERTIFICATION

(I/We), the undersigned being the property owner/authorized representative, hereby certify that the information submitted on the application and any applicable documents is true and accurate.

[Signature]
Signature of property owner or authorized representative

1/2/20
Date

FOR OFFICIAL USE ONLY

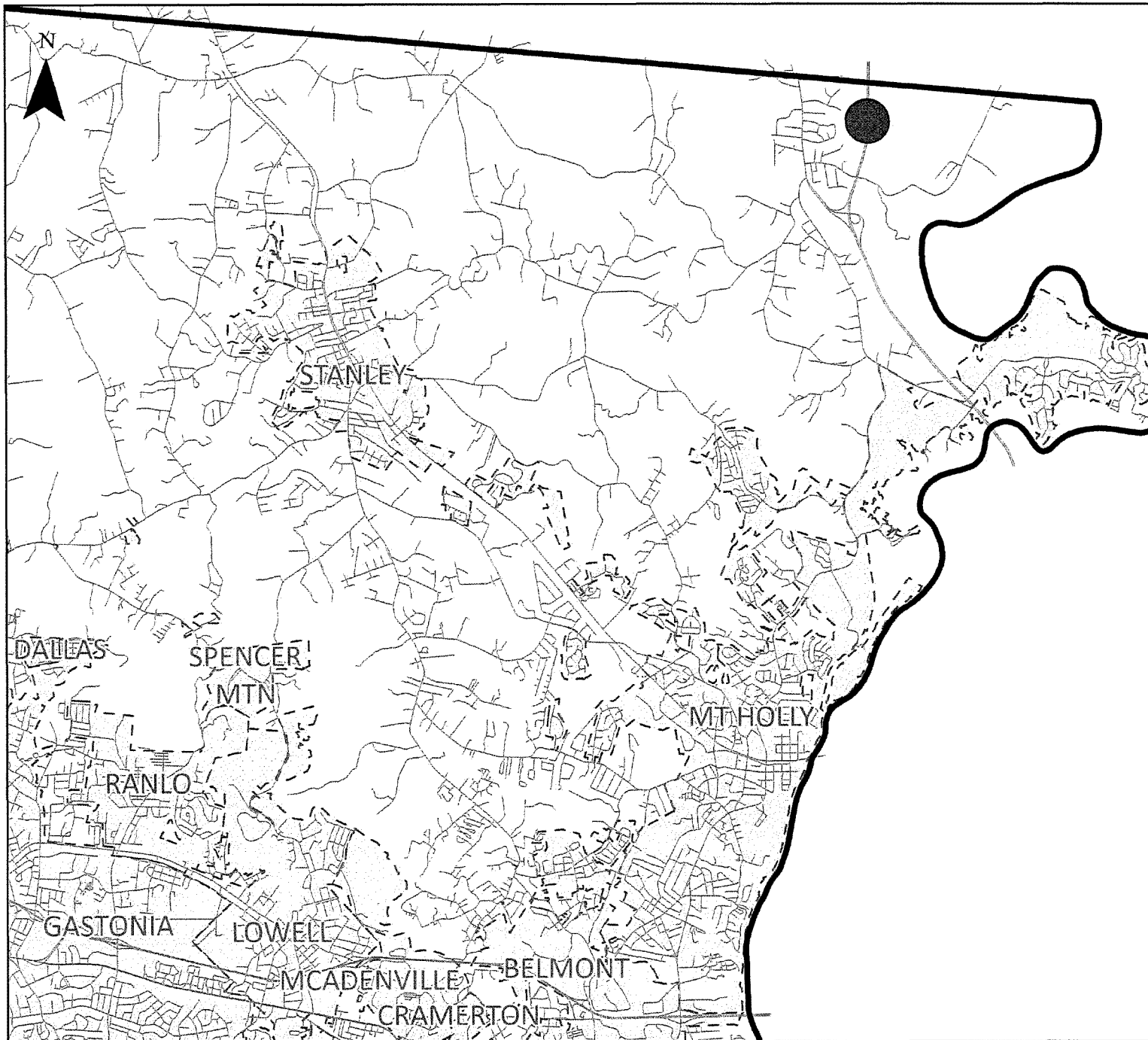
FOR OFFICIAL USE ONLY

FOR OFFICIAL USE ONLY

Date Received: _____ Application Number: PCUP: _____ Fee: _____

Received by Member of Staff: _____ Date of Payment: _____ Receipt Number: _____

(Initial)



GASTON COUNTY
BUILDING AND DEVELOPMENT SERVICES

VICINITY MAP

REZ-00137 and

REZ-00138

Riverbend Preserve
Conditional Districts

Legend

— Roads

⌈ ⌋ Municipalities

● Subject Property

Although strict standards have been employed in the compilation of this map, Gaston County does not make or imply any warranties or assume any responsibility for the information presented on this map or its use.



This map may not be resold or otherwise used for trade of commercial purposes without the expressed written consent of Gaston County, in accordance with North Carolina General Statute 132-10.



GASTON COUNTY
BUILDING AND DEVELOPMENT SERVICES

ORTHOPHOTO MAP
REZ-00137 and
REZ-00138

LEGEND

-  Subject Parcels
 Property Parcels


This map is intended for use by the Gaston County Board of Commissioners, in the review of rezoning requests.

Property parcels, zoning, transportation, and other map information were compiled from one or more data layers. The data is periodically updated, however, all data layers may not be displayed. Street names are subject to change.

Gaston County does not make or imply any warranties or assume any responsibility for the information presented on this map. This map was prepared by the Building and Development Services Department.

This map is for zoning purposes only - Not to be used for conveyance.



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GASTON COUNTY
BUILDING AND DEVELOPMENT SERVICES

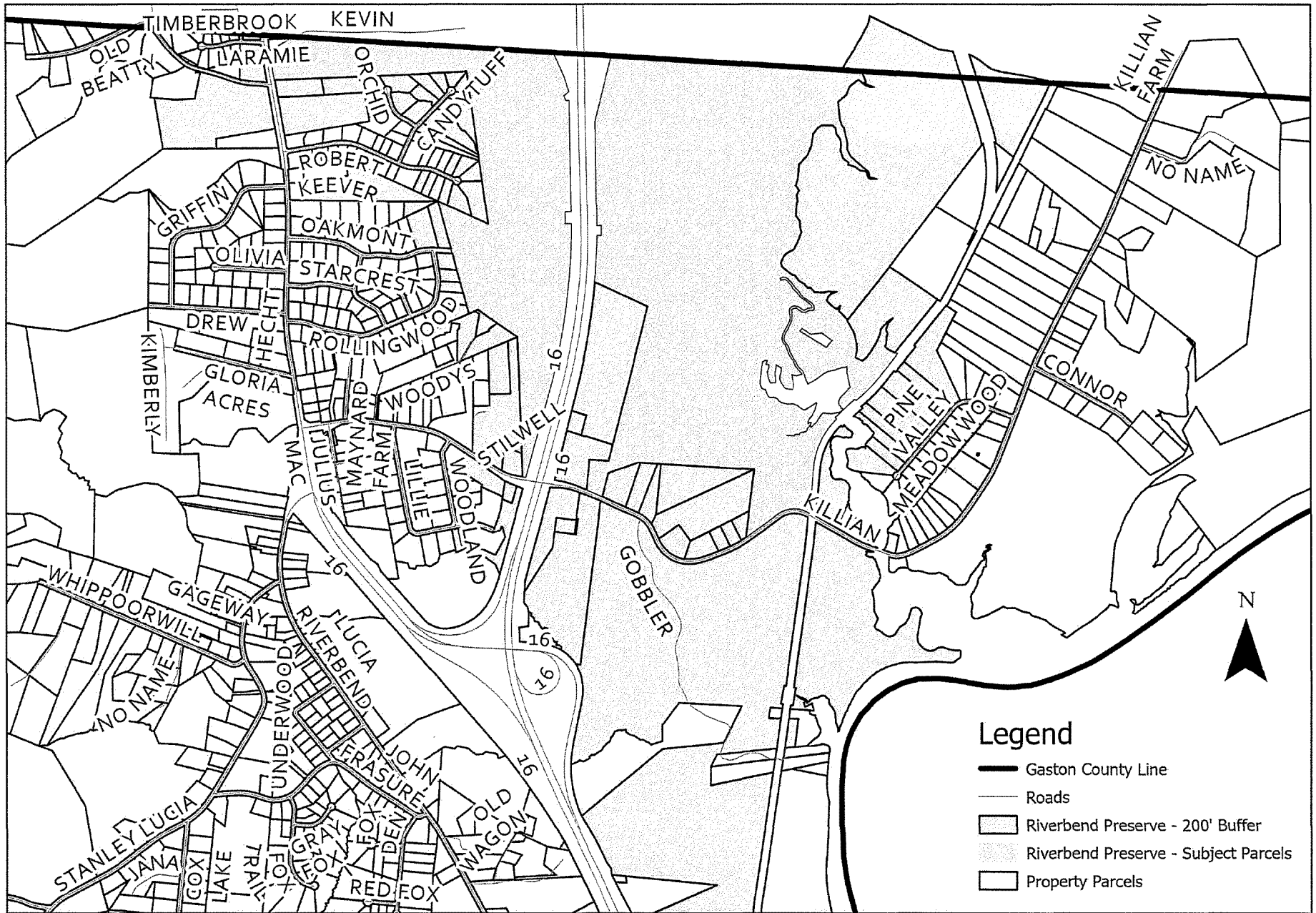
ZONING MAP
REZ-00137 and
REZ-00138
Riverbend Preserve
Conditional Districts

Legend

- Roads
- Parcels
- ▭ Subject Properties

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Riverbend Preserve - Subject Parcels and Properties within a 200' Buffer

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Riverbend Preserve Project - Property Owners within 200' Buffer of Subject Parcels

PARCEL ID	NAME 1	NAME 2	MAILING ADDRESS	CITY	STATE	ZIPCODE
172676	KILLIAN REBECCA KAY		1624 KILLIAN RD	STANLEY	NC	28164
172720	HUBERT MICHAEL D	HUBERT MEGAN L	233 OAKMONT RD	STANLEY	NC	28164
172723	GREEN KYRA	GREEN DAVID L	334 ROLLINGWOOD DRIVE	STANLEY	NC	28164
172748	STOTTLEMYER TARA RUSSELL	STOTTLEMYER VERNON RAY JR	224 CANDYTUFF LN	STANLEY	NC	28164
172762	THE GRACE SCHOOL INC		15447 LUCIA RIVERBEND HWY	STANLEY	NC	28164
172790	SCHULTZ JERE	SCHULTZ LESLIE	314 ROBERT KEEVER RD	STANLEY	NC	28164
172802	BROOKSHIRE GREGORY D	BROOKSHIRE BILLIE T	504 ORCHID CT	STANLEY	NC	28164
173600	COCHRAN DARREN		520 KILLIAN RD	STANLEY	NC	28164
173601	GASTON COUNTY		PO BOX 1578	GASTONIA	NC	28053
173617	MOORE RODNEY DALE	GARZA CELESTE	717 KILLIAN ROAD	STANLEY	NC	28164
173618	ZELENZ JOHN	ZELENZ CHERYL	637 KILLIAN RD	STANLEY	NC	28164
173620	THOMAS SCOTTIE R	THOMAS DELORES W	733 KILLIAN ROAD	STANLEY	NC	28164
173621	GASTON COUNTY		PO BOX 1578	GASTONIA	NC	28053
173622	GASTON COUNTY		PO BOX 1578	GASTONIA	NC	28053
173637	CATAWBA LANDS CONSERVANCY		4530 PARK ROAD SUITE 420	CHARLOTTE	NC	28209
172721	HUBERT MICHAEL D	HUBERT MEGAN L	233 OAKMONT RD	STANLEY	NC	28164
172724	BOYLES FAMILY REVOCABLE TRUST		326 ROLLINGWOOD DR	STANLEY	NC	28164
172735	BROWN PATSY MEACHAM		312 ROLLINGWOOD DR	STANLEY	NC	28164
172745	MARTIN CARLA R		223 CANDYTUFF LN	STANLEY	NC	28164
172747	METHOT CHRISTOPHER		226 CANDYTUFF LN	STANLEY	NC	28164
172791	BARRY THOMAS BRASWELL & PATRICIA SANDERS BRASWELL IRREVOCABLE TRUST		310 ROBERT KEEVER RD	STANLEY	NC	28164
172797	PICKETT MARSHALL KEITH	PICKETT BARBARA A	517 ORCHID COURT	STANLEY	NC	28164
172800	BEACHAM TIMOTHY ROYCE	BEACHAM MELINDA SPRINKLE	522 ORCHID CT	STANLEY	NC	28164
173613	CORE MELVIN D	CORE DEBRA	631 KILLIAN RD	STANLEY	NC	28164
173615	THOMAS SCOTTIE R	THOMAS DELORES W	733 KILLIAN ROAD	STANLEY	NC	28164
173666	YOUNG JOEL D		164 PINE VALLEY DR	STANLEY	NC	28164
173668	MINTKEN RANDALL DEAN		1448 GROVE PARK DR APT 1505	COLUMBUS	GA	31904
172719	ANTHES DAVID	ANTHES KRISTY	315 WOODYS LANE	STANLEY	NC	28164
172727	BOYLES FAMILY REVOCABLE TRUST		326 ROLLINGWOOD DR	STANLEY	NC	28164
172736	SMITH MARCUS ALLEN	SMITH WANDA	318 ROBERT KEEVER RD	STANLEY	NC	28164
172744	PARAMORE DARWIN EARL	PARAMORE KATHY CREECH	219 CANDY TUFF LANE	STANLEY	NC	28164
172746	MCGUIRE WILLIAM B	MCGUIRE SHELBY J	225 CANDYTUFF LN	STANLEY	NC	28164
172794	REAL LIFE CHURCH OF NC		15434 LUCIA RIVERBEND HWY	STANLEY	NC	28164
172799	HELLE ROBERT J	HELLE ANGELA K	525 ORCHID CT	STANLEY	NC	28164
172801	SCHNEIDER WALTER	SCHNEIDER MARY	514 ORCHID CT	STANLEY	NC	28164
173581	WARREN APRIL M LIFE ESTATE	DELLINGER MARCUS ANDREW	433 KILLIAN RD	STANLEY	NC	28164
173616	HEWINS JAMES R		721 KILLIAN RD	STANLEY	NC	28164
173659	RICH FRANK	RICH ANGELA	128 PINE VALLEY DRIVE	STANLEY	NC	28164
173660	WILLIAM D LUCKEY REVOC TR &	LUCKEY DIANE M	130 PINE VALLEY DR	STANLEY	NC	28164
173667	NAPOLITANO CARRIE M	BORNHAUSER MARCUS	170 PINE VALLEY DRIVE	STANLEY	NC	28164
208365	BEATTY THOMAS CALVIN	BEATTY RANDALL GRIFFIN	6632 ALEXANDER HALL DR	CHARLOTTE	NC	28270
211202	FALLETTI ANTHONY		306 ROLLINGWOOD DRIVE	STANLEY	NC	28164
203284	HARRIS DOROTHY LOUISE		15402 LUCIA RIVERVEND HWY	STANLEY	NC	28164
209859	UPRIGHT MARTHA		154 HELTON HARRIS RD	STANLEY	NC	28164
225092	DRUM GREY LEE		1601 KILLIAN FARM RD	STANLEY	NC	28164
225095	PAUL WAYNE AND BETTY JEAN T GALES REVOCABLE TRUST		506 KILIAN RD	STANLEY	NC	28164
212713	KILLIAN REBECCA KAY		1624 KILLIAN RD	STANLEY	NC	28164
301315	BEARD RANDY DEAN JR	BEARD LAUREN PERNELL	415 KILLIAN RD	STANLEY	NC	28164
304412	CORE MELVIN D	CORE DEBRA M	631 KILLIAN RD	STANLEY	NC	28164
304396	COOK JERRY J		17553 JULEES WALK LN	DAVIDSON	NC	28036

218232 MORRIS JOHN WAYNE
 301316 KEEP ROBIN STILWELL
 172647 GIBSON SUMTER A
 172648 WELCH CLAUD W HEIRS
 172714 PELT LINDA A
 172728 TINSLEY ALBERT
 172737 BLACK LARRY KEITH
 172738 BLACKWELDER CLIFF
 172739 HENLEY RICKIE DOYLE
 172740 AUTEN CHAISE DAVIS
 172741 BROWN GEORGE A
 172742 KENNEY DAVID
 172743 MURPHY DAVID SCOTT
 172751 JONES ADAM CHRISTOPHER
 172753 BELCHER CHAD T
 172754 SULLIVAN MARC C
 172798 REAL LIFE CHURCH OF NC
 173607 ZINNERMAN GEORGE LEON
 173610 HENDERSON MICHAEL LEE JR
 173611 CORE MELVIN D
 173612 CORE MELVIN D
 173665 CARROLL GREGORY THOMAS
 198243 PELT LINDA ALLEN
 214196 HENSON JAMES RONALD JR
 217725 DELLINGER MARCUS ANDREW
 218233 MCCLURE STEPHEN W
 305977 STROUD NECODIA L
 305978 ZINNERMAN WILLIE MAE GIBSON

MORRIS DIANE K
 KEEP WILLIAM RANDALL
 GIBSON LINDA H

BLACK JULIE GLAZE
 BLACKWELDER KATHLEEN
 HENLEY MARY ANN
 AUTEN HEATHER A
 BROWN DEBORAH H

MURPHY RUTH RENEE DANNER
 JONES WYNTER NICOLE
 BELCHER GINA E
 SULLIVAN DONNA M

ZINNERMAN WILLIE MAE GIBSON
 HENDERSON KRISTEN DANIELLE
 CORE DEBRA L
 CORE DEBRA M
 CARROLL ELAINE GAY

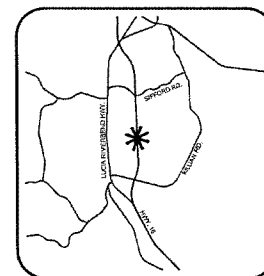
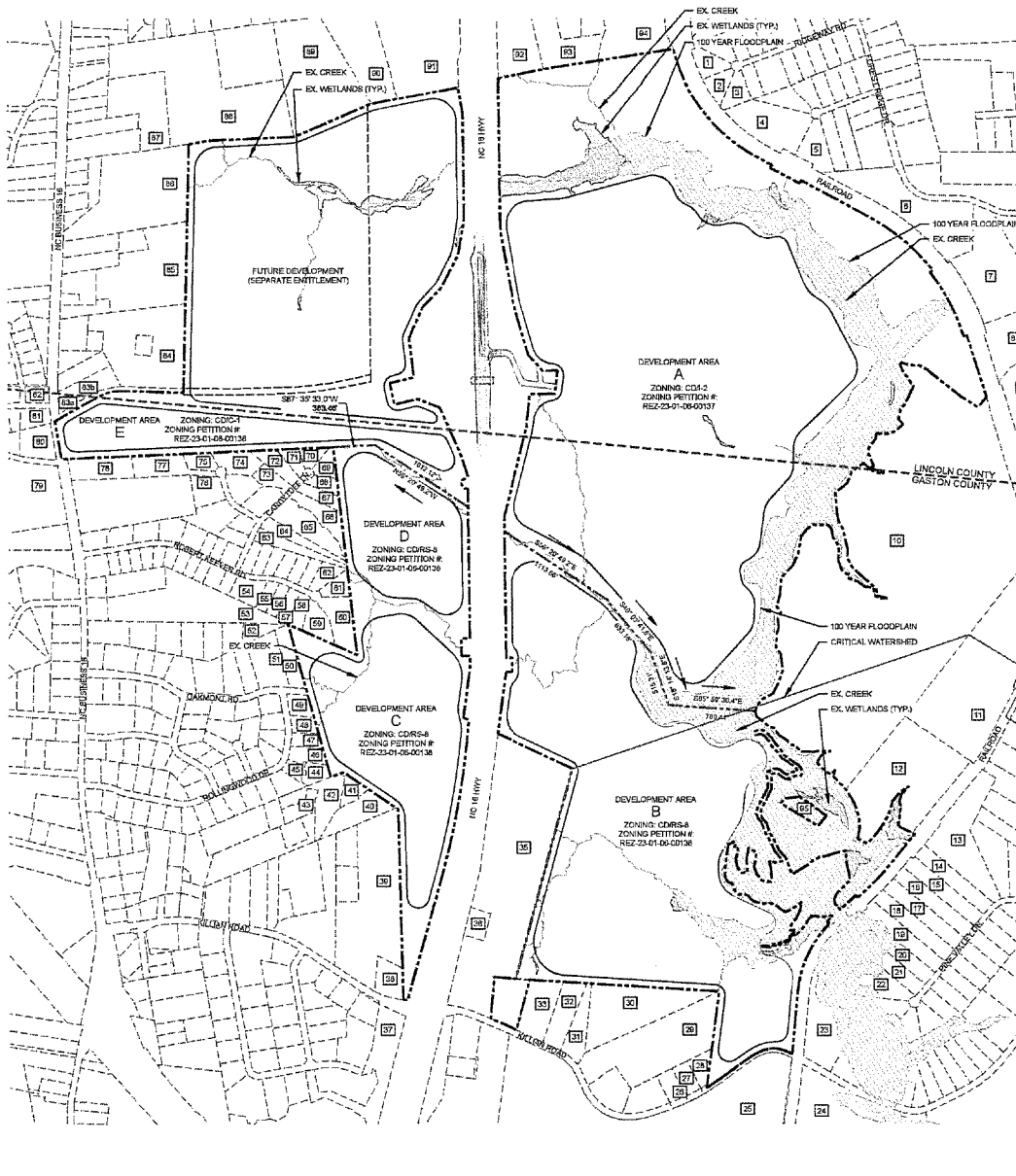
HENSON TERESA BLACK

MCCLURE MARIA H

140 PINE VALLEY	STANLEY	NC	28164
425 KILLIAN RD	STANLEY	NC	28164
700 RIDGECREST DRIVE	STANLEY	NC	28164
105 LARAMIE DR	STANLEY	NC	28164
306 WOODYS LN	STANLEY	NC	28164
3784 OAKWOOD CIRCLE	IRON STATION	NC	28080
322 ROBERT KEEVER RD	STANLEY	NC	28164
326 ROBERT KEEVER RD	STANLEY	NC	28164
328 ROBERT KEEVER RD	STANLEY	NC	28164
327 ROBERT KEEVER RD	STANLEY	NC	28164
325 ROBERT KEEVER RD	STANLEY	NC	28164
321 ROBERT KEEVER RD	STANLEY	NC	28164
215 CANDYTUFF LN	STANLEY	NC	28164
210 CANDYTUFF LANE	STANLEY	NC	28164
200 CANDYTUFF LN	STANLEY	NC	28164
114 CANDYTUFF LN	STANLEY	NC	28164
15434 LUCIA RIVERBEND HWY	STANLEY	NC	28164
503 KILLIAN RD	STANLEY	NC	28164
619 KILLIAN RD	STANLEY	NC	28164
631 KILLIAN RD	STANLEY	NC	28164
631 KILLIAN RD	STANLEY	NC	28164
158 PINE VALLEY DR	STANLEY	NC	28164
306 WOODY'S LANE	STANLEY	NC	28164
119 GRAND CANYON RD	STANLEY	NC	28164
PO BOX 1148	DENVER	NC	28037
148 PINE VALLEY DR	STANLEY	NC	28164
507 KILLIAN ROAD	STANLEY	NC	28164
503 KILLIAN RD	STANLEY	NC	28164

GASTON COUNTY

CD	COUNTY	NAME	OWNER	DEED BOOK	DATE	FX LSE	FX TYPING
1	UNION	75813	JOY RIDGELL	15/56	04	RESIDENTIAL	R,1
1	UNION	75827		1772	123	RESIDENTIAL	R,1
1	UNION	75835	NEARBY VENDOR	1448	81	RESIDENTIAL	R,1
1	UNION	75838	ALLEN ELLIOT	2084	52	RESIDENTIAL	R,1
1	UNION	75839	COODMAN PHILP LEONARD	1097	185	RESIDENTIAL	R,1
1	UNION	75500	RYAN ROBERT JAMES	1310	89	RESIDENTIAL	R,1
1	UNION	75501	ANDREW CAMP	2241	139	RESIDENTIAL	R,1
1	UNION	75509	JOHN ANDREA W	1120	763	VACANT	R,1
1	UNION	75559	KILLIAN REBECCA RAY	218	36	RESIDENTIAL	R,1
1	GAZTON	24373	KILLIAN REBECCA RAY	4513	873	RESIDENTIAL	R,1
1	GAZTON	24374	KILLIAN REBECCA RAY	4513	874	RESIDENTIAL	R,1
1	GAZTON	24375	KILLIAN REBECCA RAY	4513	874	RESIDENTIAL	R,1
1	GAZTON	24376	DOUGHERTY DANIEL	1739	1991	RESIDENTIAL	R,1
1	GAZTON	24363	LOCKY DANIEL M	4997	1053	RESIDENTIAL	R,1
1	GAZTON	24364	ANDREW DART K	2584	194	RESIDENTIAL	R,1
1	GAZTON	24365	MORRIS DANIEL C	2487	218	RESIDENTIAL	R,1
1	GAZTON	24362	MCCLURE MARA B	2857	123	RESIDENTIAL	R,1
1	GAZTON	24363	MCCLURE MARA B	2857	123	RESIDENTIAL	R,1
1	GAZTON	24364	CAMPBELL ELMIE GAY	2584	194	RESIDENTIAL	R,1
1	GAZTON	24365	YOUNG JEROME L	2534	554	RESIDENTIAL	R,1
1	GAZTON	24367	FREEMAN LUCAS TRUST	3113	2127	RESIDENTIAL	R,1
1	GAZTON	24368	YOUNG JEROME L	2534	554	RESIDENTIAL	R,1
1	GAZTON	24367	CATVALLA LINDA CONSTANCE	2018	503	DECEASED	R,1
1	GAZTON	24371	GAZTON COUNTY	3845	212	DECEASED	R,1
1	GAZTON	24362	HEWITT HELEN A	2857	123	DECEASED	R,1
1	GAZTON	24363	THOMAS SCOTT R	4073	1144	RESIDENTIAL	R,1
1	GAZTON	24364	THOMAS SCOTT R	4073	1144	RESIDENTIAL	R,1
1	GAZTON	24363	COOK DEBRA M	2800	572	RESIDENTIAL	R,1
1	GAZTON	24364	COOK DEBRA M	2800	572	RESIDENTIAL	R,1
1	GAZTON	24363	JOHN A MCCORM J	4631	217	RESIDENTIAL	R,1
1	GAZTON	24364	EMLEY CAROL M	3712	629	RESIDENTIAL	R,1
1	GAZTON	24363	COOK DEBRA M	2800	572	RESIDENTIAL	R,1
35	GAZTON	24338	KATE HELEN GIBSON	0916	154	RESIDENTIAL	R,1
36	GAZTON	24307	ZACHARWAG GEORGE LINDA	4946	994	RESIDENTIAL	R,1
36	GAZTON	24372	COLLINGER MARCUS ANDREW	4488	108	RESIDENTIAL	R,1
36	GAZTON	24373	COLLINGER MARCUS ANDREW	4488	108	RESIDENTIAL	R,1
36	GAZTON	24374	KEP BERNARD J	4453	120	RESIDENTIAL	R,1
40	GAZTON	24374	PALTYUNOVA A	4000	277	RESIDENTIAL	R,1
40	GAZTON	24374	FEET LINDA ALLEN	2099	312	RESIDENTIAL	R,1
40	GAZTON	24375	ANDREW KESTY	2099	473	RESIDENTIAL	R,1
40	GAZTON	24372	FEET LINDA ALLEN	2099	312	RESIDENTIAL	R,1
40	GAZTON	24372	MILLS DARRIN W	4238	359	RESIDENTIAL	R,1
40	GAZTON	24373	MILLS DARRIN W	4238	359	RESIDENTIAL	R,1
40	GAZTON	24372	TRUBLY AARON	4261	145	RESIDENTIAL	R,1
40	GAZTON	24373	ITA WOKLES LIVING TRUST	4261	810	RESIDENTIAL	R,1
40	GAZTON	24374	ITA WOKLES LIVING TRUST	4261	808	RESIDENTIAL	R,1
40	GAZTON	24375	TRUBLY AARON	4261	145	RESIDENTIAL	R,1
40	GAZTON	24372	VENTURA LUC	4364	104	RESIDENTIAL	R,1
40	GAZTON	24373	HUBERT NATHAN A	4261	691	RESIDENTIAL	R,1
40	GAZTON	24365	SPRINGHILL NATHAN A	4010	471	RESIDENTIAL	R,1
40	GAZTON	24366	HARRIS GARY D	4010	54	RESIDENTIAL	R,1
40	GAZTON	24372	REYES WILLIAM D R	2348	48	RESIDENTIAL	R,1
40	GAZTON	24371	BARNES BARRY	2348	381	RESIDENTIAL	R,1
40	GAZTON	24370	SCALFE LEE D	2050	1747	RESIDENTIAL	R,1
40	GAZTON	24371	SWATH MARY LINDA	1993	434	RESIDENTIAL	R,1
40	GAZTON	24372	BLACK JAMES BLAZE	199		RESIDENTIAL	R,1
40	GAZTON	24373	BACCHERRELLA DAVIS	2065	76	RESIDENTIAL	R,1
40	GAZTON	24374	WILSON MICHAEL ANN	2396		RESIDENTIAL	R,1
40	GAZTON	24375	ALLEN CHARLE DAVIS	2601	881	RESIDENTIAL	R,1
40	GAZTON	24374	BROWN DEBORAH H	4946	204	RESIDENTIAL	R,1
40	GAZTON	24375	SULLIVAN DANIELA	4946	248	RESIDENTIAL	R,1
40	GAZTON	24374	SCOTT JAMES D	2554	155	RESIDENTIAL	R,1
40	GAZTON	24373	MIDDLETON HELEN ELLEN	3603	65	RESIDENTIAL	R,1
40	GAZTON	24375	COOK JERRY J	4155	379	RESIDENTIAL	R,1
40	GAZTON	24374	COOK JERRY J	4155	379	RESIDENTIAL	R,1
40	GAZTON	24375	STOFFELBERG JAMES A	4158	168	RESIDENTIAL	R,1
40	GAZTON	24372	CASHMAN J R	2776	399	RESIDENTIAL	R,1
40	GAZTON	24373	MCQUIRE STEVE J	2615	234	RESIDENTIAL	R,1
40	GAZTON	24374	MURPHY CARA R	2018	202	RESIDENTIAL	R,1
40	GAZTON	24375	PARASKEAS DANIEL J	2018	202	RESIDENTIAL	R,1
40	GAZTON	24373	MURPHY DANIEL	2003	55	RESIDENTIAL	R,1
40	GAZTON	24374	OGASHIMA HELENA SPINALE	2627	671	RESIDENTIAL	R,1
40	GAZTON	24375	PUTT PATRICIA A	3504	38	RESIDENTIAL	R,1
40	GAZTON	24374	HILLE MARGA R	2658	58	RESIDENTIAL	R,1
40	GAZTON	24375	PUTT PATRICIA A	3504	38	RESIDENTIAL	R,1
40	GAZTON	24373	REAL LIFE CHURCH OF JHC	1946	1019	DECEASED	R,1
78	GAZTON	27079	SHIMODA ARN	626	179	COMMERCIAL	R,1
78	GAZTON	22065	HEATLEY C R HENES	626	757	VACANT	R,1
78	GAZTON	27078	BLATT EUGENE	626	114	RESIDENTIAL	R,1
82	GAZTON	17648	WELCH DAVID W	2070	745	RESIDENTIAL	R,1
82	GAZTON	17647	KINGSMAN MARSHALL	3000	40	RESIDENTIAL	R,1
82A	GAZTON	27996	LIVING WOODS	496	160	RESIDENTIAL	CLD,R,1
82	GAZTON	27997	LIVING WOODS	496	160	RESIDENTIAL	CLD,R,1
84	UNION	29790	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29791	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29792	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29793	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29794	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29795	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29796	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29797	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29798	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29799	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29800	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29801	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29802	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29803	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29804	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29805	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29806	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29807	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29808	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29809	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29810	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29811	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29812	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29813	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29814	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29815	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29816	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29817	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29818	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
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85	UNION	29824	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29825	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29826	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29827	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29828	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29829	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29830	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29831	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29832	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29833	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29834	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29835	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29836	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29837	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29838	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29839	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29840	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29841	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29842	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29843	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29844	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29845	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29846	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29847	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29848	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29849	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29850	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29851	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29852	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29853	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29854	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29855	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29856	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29857	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29858	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29859	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29860	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29861	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29862	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29863	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29864	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29865	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29866	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29867	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29868	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29869	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29870	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29871	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29872	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29873	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29874	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29875	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29876	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29877	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29878	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29879	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29880	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29881	DRILLING JOHN R	17C	174	RESIDENTIAL	R,1
85	UNION	29882	DRILLING JOHN R	17C	174	RES	



VICINITY MAP
NTS

SITE DEVELOPMENT DATA

GASTON COUNTY

ACREAGE: ± 447.32 ACRES

PID: PORTION OF 202649, 226548, 304413

CURRENT ZONING: R-1 WITH SH (SPECIAL HIGHWAY), US

(URBAN STANDARDS)

PROPOSED ZONING: CD/I-2 (GENERAL INDUSTRIAL),
CD/RS-8 (SINGLE FAMILY), CD/C-1 (LIGHT COMMERCIAL)

WITH SH (SPECIAL HIGHWAY), US (URBAN STANDARDS)

EXISTING USES: VACANT/UNDEVELOPED

PROPOSED USES: SEE DEVELOPMENT NOTES.

OWNER

NAME: RIVERBEND PRESERVE LLC

ADDRESS: 1031 S. CALDWELL STREET

SUITE 220
CHARLOTTE, NC 28203

PHONE NUMBER: (704)527-0204 x 4

2/

LandDesign.

223 NORTH GRAHAM STREET
CHARLOTTE, NC 28202
704.333.8325
MIAMI AND OCEAN BLVD

NOT FOR
CONSTRUCTION

RIVERBEND
PRESERVE

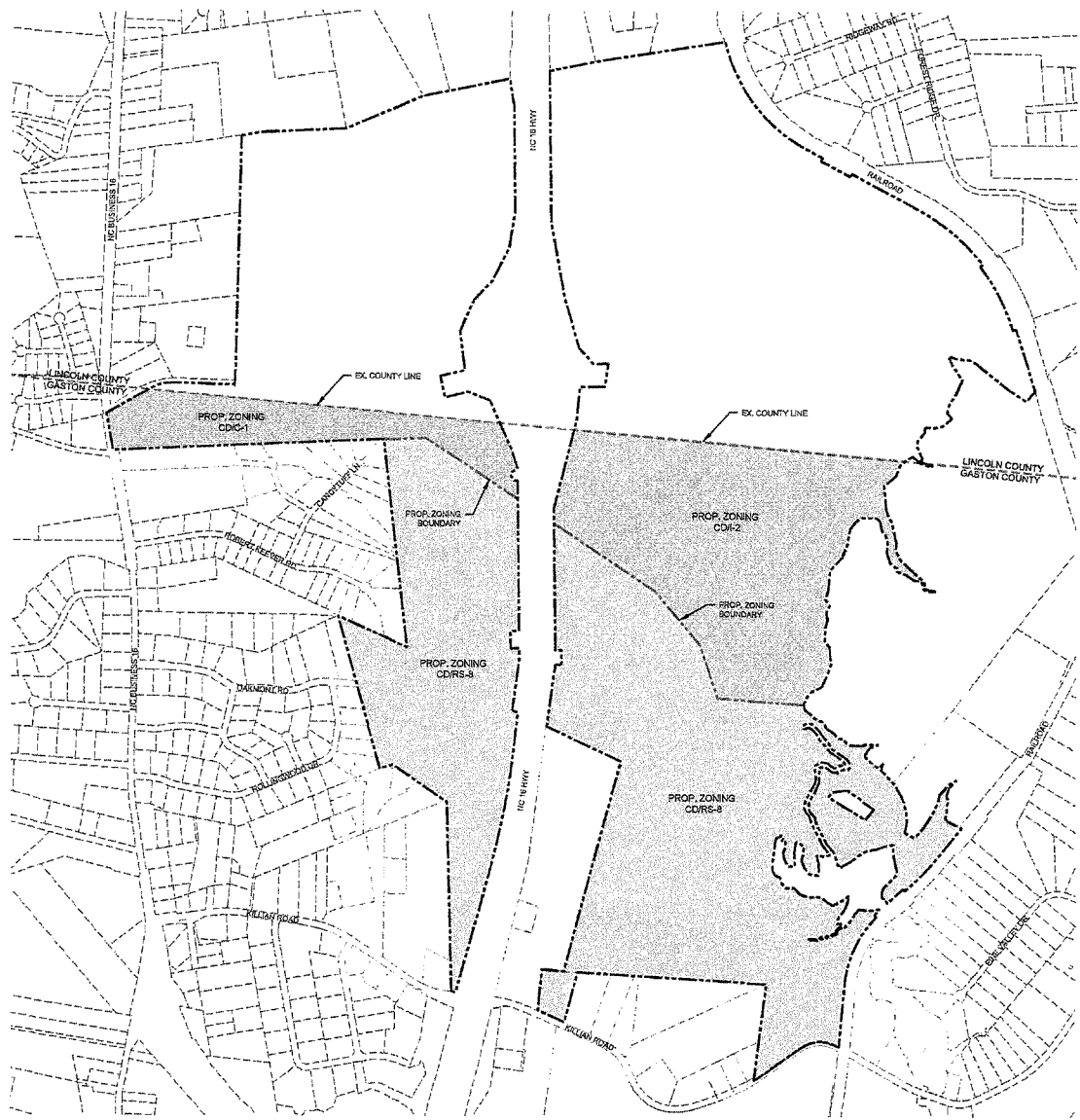
GASTON COUNTY, NC
REZONING # REZ-23-01-06-00136
REZ-23-01-06-00137

[illegible]

DESIGNED BY: KST
DRAWN BY: JRY
CHECKED BY: KST

TECHNICAL DATA SHEET

RZ-1



PROPOSED ZONING DISTRICT

- CDIC-1 [Pattern]
- CDIC-2 [Pattern]
- CDRS-8 [Pattern]

NOT FOR CONSTRUCTION

RIVERBEND PRESERVE

GASTON COUNTY, NC
 REZONING # REC-25-01-06-00126
 # REC-25-01-06-00127

1018503

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	INITIAL SUBMITTAL	9/18/23
2	SUBMITTAL	10/23/23
3	SUBMITTAL	10/27/23
4	SUBMITTAL	11/06/23

DESIGNED BY: KJT
 DRAWN BY: JYV
 CHECKED BY: RST

VERT. SCALE: 1"=40'
 HORIZ. SCALE: 1"=100'
 0 50' 100' 150'

ZONING BOUNDARY

RZ-1A

LEGEND

- PROPERTY LINE
PROP. ZONING BOUNDARY
COUNTY LINE
EX. CREEK
CRITICAL WATERSHED
POTENTIAL THREAD TRAIL ALIGNMENT
50' BUFFER
TYPE D BUFFER
TYPE E BUFFER
POTENTIAL AMENITY LOCATION
EX. WETLANDS
EX. 100 YEAR FLOODPLAIN
100' STREAM BUFFER
OPEN SPACE AREA
PROPOSED STORMWATER FACILITY

RESIDENTIAL UNITS

- 400 LOTS IN DEV. AREA B
175 LOTS IN DEV. AREA C
150 LOTS IN DEV. AREA D

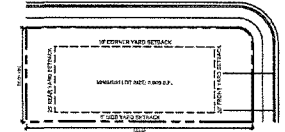
GENERAL NOTES

- ONCE APPROVED, ALL IMPERVIOUS CALCULATIONS WILL BE REQUIRED FOR WATERSHED REVIEW ONE PAGE WITH CALCULATIONS AND APPLICATIONS; IF HIGH DENSITY WILL NEED TO GO TO WATERSHED BOARD FOR APPROVAL WITH HIGH DENSITY APPLICATION.
- ENSURE NOT WITHIN THE NON-ENCROACHMENT AREAS FOR FLOOD - ALONG JOHNSON CREEK VERIFY WITH DETAIL FLOOD HAZARD DATA; IF WITHIN WILL REQUIRE A NO-RISE, CAD/CWG FILE WILL BE REQUIRED FOR FLOOD REVIEW AND FLOOD DEVELOPMENT APPLICATION.

TYPICAL LOT LAYOUT



CORNER LOT LAYOUT



NOT FOR CONSTRUCTION

RIVERBEND PRESERVE

GASTON COUNTY, NC
REZONING # RES-23-01-00-00136
RES-23-01-00-00137

REVISION / ISSUANCE

NO.	DESCRIPTION	DATE
1	INITIAL SUBMITTAL	01.06.23
2	SUBMITTAL	02.21.23
3	SUBMITTAL	03.27.23
4	SUBMITTAL	03.06.23

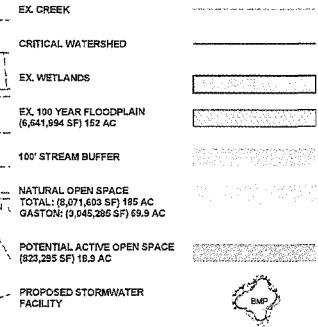
DESIGNED BY: KST
DRAWN BY: JTY
CHECKED BY: KST

SCALE
VERT: 1"=50'
HORIZ: 1"=100'
N

SCHEMATIC SITE PLAN

RZ-2

LEGEND



(RS-8) OPEN SPACE / FLOODPLAIN

OPEN SPACE REQUIRED: 58,314 AC (20% MIN)
OPEN SPACE PROVIDED: 59 AC
IMPROVED OPEN SPACE REQUIRED: 17.7 AC
(30% OF OPEN SPACE)
IMPROVED OPEN SPACE PROVIDED: 17.7 AC

DEVELOPMENT AREA B:

TOTAL ACREAGE: 193.24 AC
(20% MIN) REQUIRED OPEN SPACE: 38.64 AC
PROVIDED OPEN SPACE: 39 AC
IMPROVED OPEN SPACE: 11.7 AC
(MIN 30% OF OVERALL OPEN SPACE)

DEVELOPMENT AREA C:

TOTAL ACREAGE: 65.02 AC
(20% MIN) REQUIRED OPEN SPACE: 13.00 AC
PROVIDED OPEN SPACE: 13.00 AC
IMPROVED OPEN SPACE: 3.9 AC
(MIN 30% OF OVERALL OPEN SPACE)

DEVELOPMENT AREA D:

TOTAL ACREAGE: 33.31 AC
(20% MIN) REQUIRED OPEN SPACE: 6.66 AC
PROVIDED OPEN SPACE: 7 AC
IMPROVED OPEN SPACE: 2.1 AC
(MIN 30% OF OVERALL OPEN SPACE)

(C-1 / I-2) OPEN SPACE / FLOODPLAIN

OPEN SPACE PROVIDED: (GASTON COUNTY) +/- 45.41 AC
DEVELOPMENT AREA A OPEN SPACE: 43.15 AC
DEVELOPMENT AREA E OPEN SPACE: 2.26 AC

GENERAL NOTES

1. ONCE APPROVED, ALL INTERVIEWS CALCULATIONS WILL BE REQUIRED FOR WATERSHED REVIEW ONE PAGE WITH CALCULATIONS AND APPLICATIONS; IF HIGH DENSITY WILL NEED TO GO TO WATERSHED BOARD FOR APPROVAL WITH HIGH DENSITY APPLICATION.
2. ENSURE NOT WITHIN THE NON-ENCRONCHMENT AREAS FOR FLOOD - ALONG JOHN-SON CREEK VERIFY WITH DETAIL FLOOD HAZARD DATA; IF WITHIN WILL REQUIRE A NO-RISE, CAD FILE WILL BE REQUIRED FOR FLOOD REVIEW AND FLOOD DEVELOPMENT APPLICATION.

NOT FOR
CONSTRUCTION


RIVERBEND
PRESERVE

GASTON COUNTY, NC
REZONING # REZ-23-01-00-00138
REZ-23-01-00-00137

[illegible]

DESIGNED BY: KCT
DRAWN BY: JRY
CHECKED BY: KCT

VERT. HORIZ. 1"=500'



0 250' 500' 1000'

OPEN SPACE PLAN

RZ-3



Post Office Box 1748
Gastonia, North Carolina 28053
Phone (704) 866-6837

150 South York Street
Gastonia, North Carolina 28052
Fax (704) 869-1960

Memorandum

To: Jamie Mendoza Kanburoglu—Director of Planning and Zoning, Building and Development Services
From: Julio Paredes, Planner, Gaston—Cleveland—Lincoln MPO
Date: February 27, 2023
Subject: Riverbend Preserve Site Plan —GCLMPO Comments

Thank you for the opportunity to provide transportation comments on a proposed development located within the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) geographic area. My comments are based on the review of the proposed site in accordance with the adopted Comprehensive Transportation Plan (CTP), the adopted 2050 Metropolitan Transportation Plan (MTP), and the current State Transportation Improvement Program (STIP).

On behalf of the GCLMPO I offer the following comments:

1. According to the 2020-2029 STIP and the 2050 MTP, there are no planned transportation improvement projects in the immediate vicinity of this development.
2. The CTP does not show any future highway improvements on any streets adjacent to the subject properties.

The CTP does include a recommended multiuse path along Johnson Creek as part of the Carolina Thread Trail. It is noted on the site plan to work with Catawba Lands Conservancy and Carolina Thread Trail on actual trail location.

3. Please note that any site plan that requires a driveway permit on an NCDOT roadway, or is adjacent to NCDOT roadways, the developer should work with NCDOT on any required driveway permits or any TIA requirements.

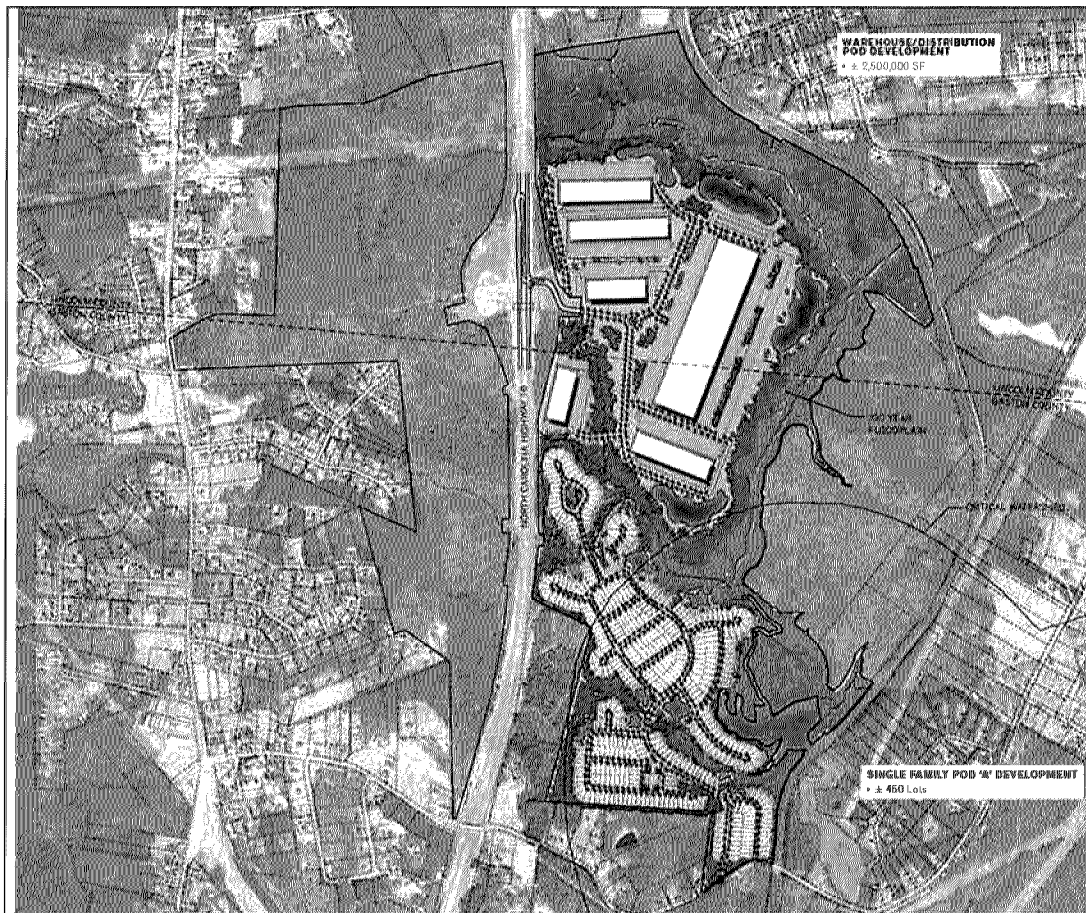
If you have any questions regarding my comments, please do not hesitate to contact me at 704-866-6980 or juliop@cityofgastonia.com.

TRAFFIC IMPACT ANALYSIS

RIVERBEND PRESERVE

North of Killian Road and East of NC 16

Gaston and Lincoln County, North Carolina



for

The Shaw Tate Group

August 2019

811-001 (C-2165)

2459 Wilkinson Boulevard, Suite 200
Charlotte, NC 28208

704.343.0608
www.drgrp.com





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EXECUTIVE SUMMARY

The Shaw Tate Group proposes to develop a site with the following land uses:

- 2,500,000 square feet of Warehousing
- 450 Single-Family Homes

The proposed site is located north of Killian Road and east of NC 16 within both Gaston and Lincoln Counties, NC (see Figure 1). The development is expected to be completed in 2024.



NC 16 Facing north towards Proposed Site

This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C", Lincoln County Unified Development Ordinance (UDO) Section 9.8 and Gaston County's UDO Section 5.11. It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2019 Existing Conditions
- 2024 No Build Conditions
- 2024 Build-out Conditions
- 2034 Build-out + 10 years Conditions (Lincoln Co. Requirement)

The area of influence of the site as defined by North Carolina Department of Transportation (NCDOT), Lincoln County, and Gaston County staff includes the following two existing intersections and four proposed intersections: (See Appendix 1 for the approved scoping information)

1. Killian Road & NC 16 Business (signalized)
2. Lucia Riverbend Highway & NC 16 Business (signalized)
3. NC 16 & Proposed Warehouse Access "A" (unsignalized Cross-Over)
4. Killian Road & Proposed Residential Access "B" (unsignalized)
5. Killian Road & Proposed Residential Access "C" (unsignalized)
6. NC 16 & Proposed Northbound U-Turn Bulb-Out (unsignalized)



According to the preliminary site plan (Concept Exhibit), access to the warehouse is expected to occur via one unsignalized directional cross-over (X-Over) on NC 16 (at a previously approved in control-of-access (C/A)) and access to the residential development is expected to occur via two full-movement unsignalized locations on Killian Road:

- Proposed Access “A” (X-Over): unsignalized access allowing for right-in/right-out and left-in movements located on NC 16 approximately 1 mile north of the Killian Road overpass.
- Proposed Access “B” (Full-Movement): unsignalized access allowing for full movement access located on Killian Road approximately 3,200 feet east of NC 16 overpass.
- Proposed Access “C” (Full-Movement): unsignalized access allowing for full movement located on Killian Road approximately 3,900 feet east of NC 16 overpass.

The trip generation results indicate that the development is expected to generate 652 total AM peak hour trips and 761 total PM peak hour trips.

With the results of our analyses (the specifics are described in the Traffic Analysis section of this report) we suggest the following improvements/modifications at the study intersections/proposed accesses:

2024 Build Suggested Recommendations:

1. Killian Road & NC 16 Business (signalized)

- Construct a separate westbound right turn lane with 175' storage on Killian Road
- Remark the existing combined left-thru-right lane to a combined left-thru lane
- Extend southbound left turn lane storage to 125' on NC 16 Business

2. Lucia Riverbend Highway & NC 16 Business (signalized)

- Implement southbound right turn overlap phasing on NC 16 Business
- Extend eastbound right turn lane to 150' on Lucia Riverbend Highway

3. NC 16 & Proposed Warehouse Access “A” (unsignalized)

We propose the following intersection configuration:

- Convert NC 16 full median opening to a southbound directional X-over with a minimum storage of 150' (or as required to accommodate the appropriate design vehicles)
- Two ingress lanes and one egress lane (a terminating westbound right turn lane on Proposed Access “A”)
- Channelized northbound right turn lane with 100' storage on NC 16
- Minimum internal protected stem of 500'



4. Killian Road & Proposed Residential Access “B” (unsignalized)

We propose the following intersection configuration:

- One ingress and two egress lanes (a terminating southbound right turn lane and left turn lane with 100' storage) on Proposed Access “B”
- Construct an eastbound left turn lane with 100' storage on Killian Road
- Minimum internal protected stem of 100'

5. Killian Road & Proposed Residential Access “C” (unsignalized)

We propose the following intersection configuration:

- One ingress and two egress lanes (a southbound right turn lane and left turn lane with 100' storage on Proposed Access “C”)
- Construct an eastbound left turn lane with 100' storage on Killian Road
- Minimum internal protected stem of 100'

6. NC 16 & Future U-Turn Bulb-Out (unsignalized)

- Convert NC 16 full median opening to a northbound channelized U-turn lane with a minimum storage of 250' (or as required to accommodate the appropriate design vehicles)

In summary, even though the Riverbend Preserve development will increase the amount of vehicular and truck traffic on the adjacent roadways/corridors, the suggested intersection improvements/enhancements will help mitigate the additional site generated trips on the adjacent roadway network. In addition, the suggested recommendations will improve the conditions for the general traveling public as well as the users of the warehouse and the residents of the residential community.



PROPOSED DEVELOPMENT

The Shaw Tate Group proposes to develop a site with the following land uses:

- 2,500,000 square feet of Warehousing
- 450 Single-Family Homes

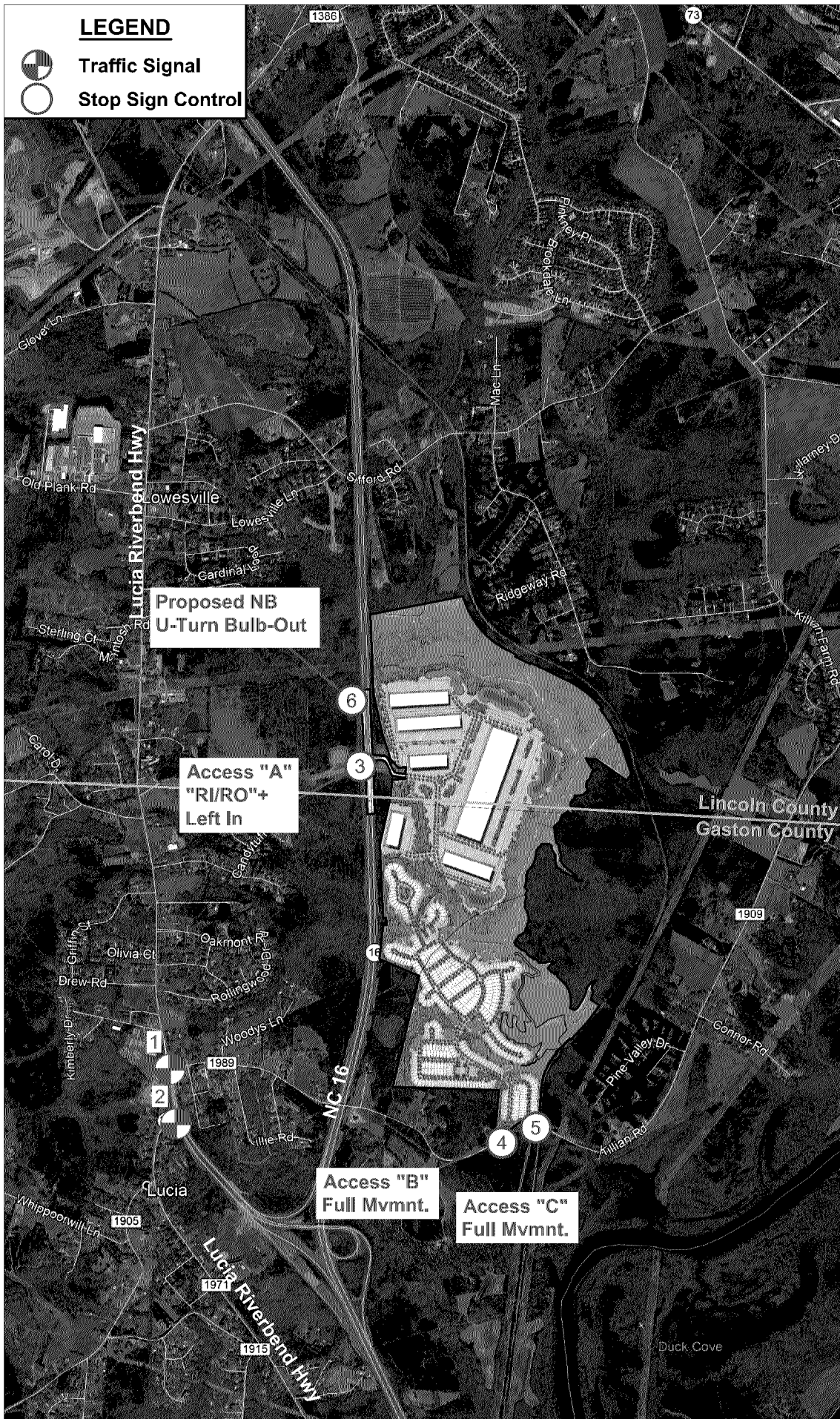
The proposed site is located north of Killian Road and east of NC 16 within both Gaston and Lincoln Counties, NC (see Figure 1). The development is expected to be completed in 2024.



NC 16 Facing north towards Proposed Site

According to the preliminary site plan (Concept Exhibit), access to the warehouse is expected to occur via one unsignalized directional cross-over (X-Over) on NC 16 (at a previously approved break in control-of-access (C/A)) and access to the residential development is expected to occur via two full-movement unsignalized locations on Killian Road:

- Proposed Access "A" (X-Over): unsignalized access allowing for right-in/right-out and left-in movements located on NC 16 approximately 1 mile north of the Killian Road overpass.
- Proposed Access "B" (Full-Movement): unsignalized access allowing for full movement access located on Killian Road approximately 3,200 feet east of NC 16 overpass.
- Proposed Access "C" (Full-Movement): unsignalized access allowing for full movement located on Killian Road approximately 3,900 feet east of NC 16 overpass.



drG

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RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S. CALDWELL STREET
CHARLOTTE, NC 28203

AREA OF INFLUENCE

0 1,200' 2,400' N
SCALE: 1" = 2,400'

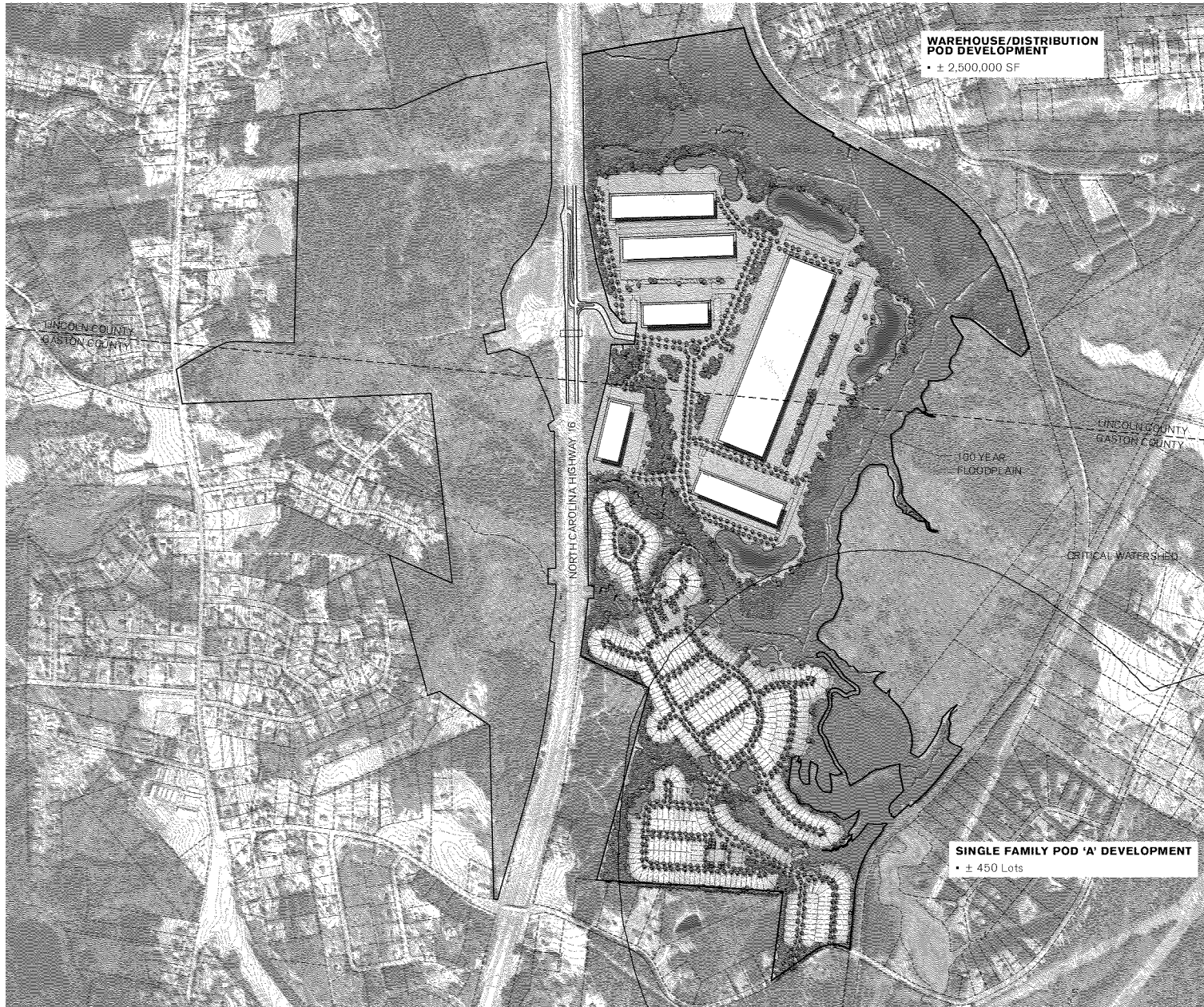
PROJECT #: 811-001
DRAWN BY: SA
CHECKED BY: MW

AUGUST 2019

REVISIONS:

1.	

Figure 1





AREA CONDITIONS

The area of influence of the site as defined by North Carolina Department of Transportation (NCDOT) staff includes the following two existing intersections and four proposed intersections: (See Appendix 1 for the approved scoping information)

1. Killian Road & NC 16 Business (signalized)
2. Lucia Riverbend Highway & NC 16 Business (signalized)
3. NC 16 & Proposed Warehouse Access "A" (unsignalized Cross-Over)
4. Killian Road & Proposed Residential Access "B" (unsignalized)
5. Killian Road & Proposed Residential Access "C" (unsignalized)
6. NC 16 & Proposed Northbound U-Turn Bulb-Out (unsignalized)



NC 16 Facing south towards Proposed Site



Killian Road Facing west towards Proposed Site

Morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) peak period turning movement counts (TMCs) were conducted at the existing two study intersections on Tuesday May 14, 2019. In addition, 24-hour tube counts were taken on Killian Road east of Stilwell Road, where the residential access points are anticipated. See Appendix 2 for raw count data sheets.

According to the latest NCDOT Roadway Functional Classification data, NC 16 is a Principal Arterial with a posted speed limit of 65 mph. The roadway is a two-lane median divided facility, with no bike lanes, curb/gutter, planting strip, or sidewalk present on either side of the roadway in the vicinity of the site.

Killian Road is a secondary route with a posted speed limit of 55 mph. The roadway is a one-lane undivided facility, with no bike lanes, curb/gutter, planting strip, or sidewalk present on either side of the roadway in the vicinity of the site.

In addition to the intersection TMCs, geospatial information provided by NCDOT's ArcGIS portal (*Go! NC*), such as Annual average daily traffic (AADT) and crash data were collected.



AADT for two-way volumes on roadways within the area of influence are depicted in Table 1 based on latest 2016 data.

Table 1: Average Annual Daily Traffic Volumes (vehicles per day)

Roadway	AADT
NC 16 north of Killian Road	26,000
NC 16 Business south of NC 273	8,600
Lucia Riverbend Highway west of NC 16 Business	6,800
Killian Road east of NC 16 Business	1,100

Crash frequency per intersection is reported in Table 2 with data ranging from January 1, 2014 to December 31, 2018.

Table 2: Crash Data from 2014-2018

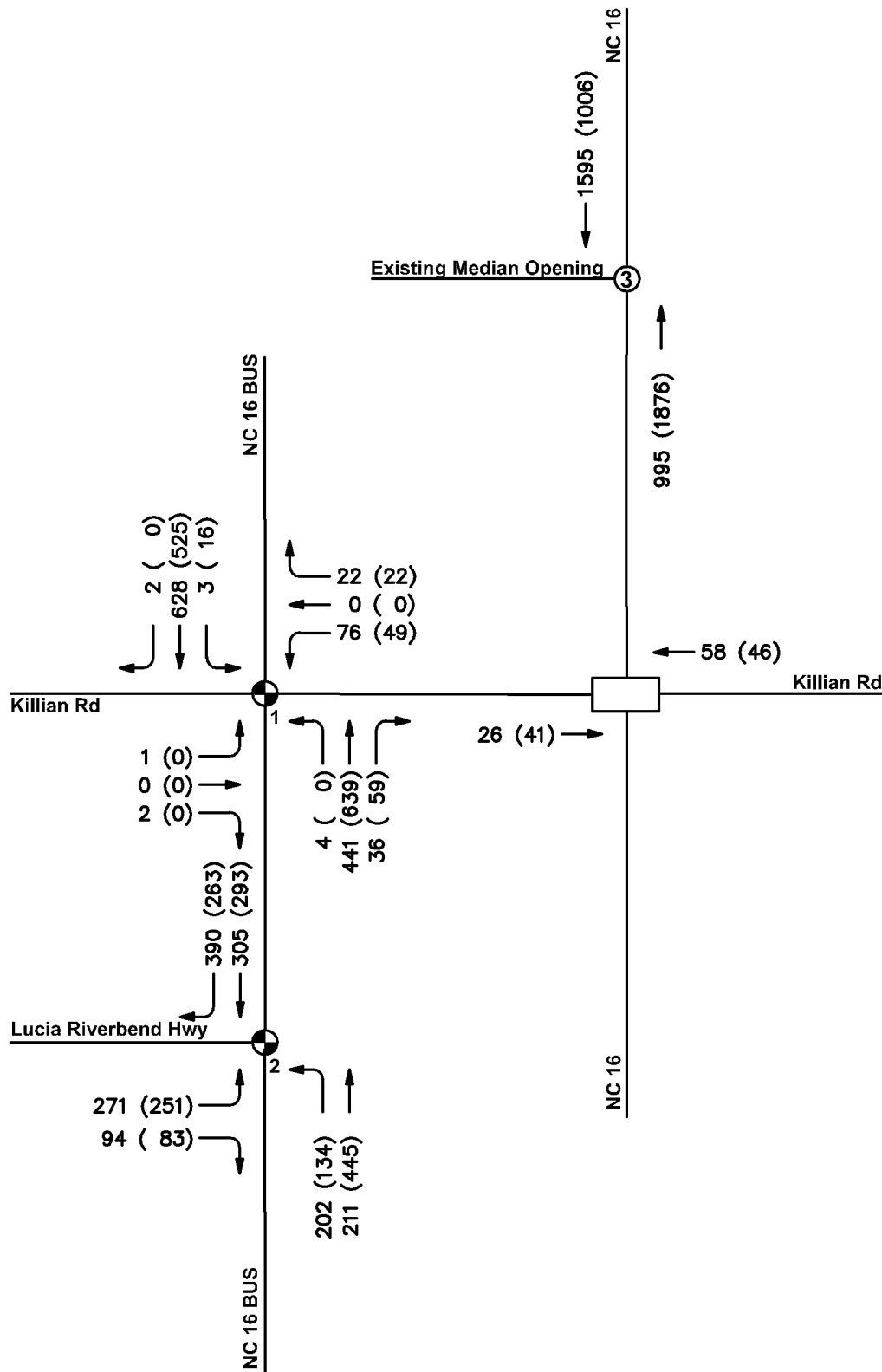
Intersection	Severity Type			Total Crashes
	K Injury	B & C Injury Crashes	PDO Crashes	
NC 16 Bus. & Lucia Riverbend Hwy.	1	4	16	21
Lucia Riverbend Hwy. & Stanley Lucia Rd.	0	1	5	6

Notes:

K: Fatality **B:** B injury type (evident), **C:** injury type (possible), **PDO:** Property Damage Only

Copies of the intersection investigation worksheets are in the Appendix 3 for further existing area conditions as reported in field analysis.

Figure 2 portrays the existing TMCs for the AM and PM peak hours. Figures 3A and 3B includes the directional distribution for the residential site and the warehousing site, respectively. These directional distribution percentages were approved by Division 12 District 3 and Lincoln County staff on June 4, 2019 and Gaston County staff on June 5, 2019 per existing traffic patterns.



Existing traffic volumes were collected on May 14, 2019.

LEGEND

- Traffic Signal
- Stop Sign Control
- Directional Movement

VOLUMES: AM (PM)

RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
 1030 S CALDWELL STREET
 CHARLOTTE, NC 28203

**EXISTING PEAK
 HOUR TRAFFIC
 VOLUMES**

0 NTS
 SCALE: NTS

PROJECT #: 811-001
 DRAWN BY: SA
 CHECKED BY: MW

AUGUST 2019

REVISIONS:
 1.

Figure 2

RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S. CALDWELL STREET
CHARLOTTE, NC 28203

RESIDENTIAL SITE DIRECTIONAL DISTRIBUTION



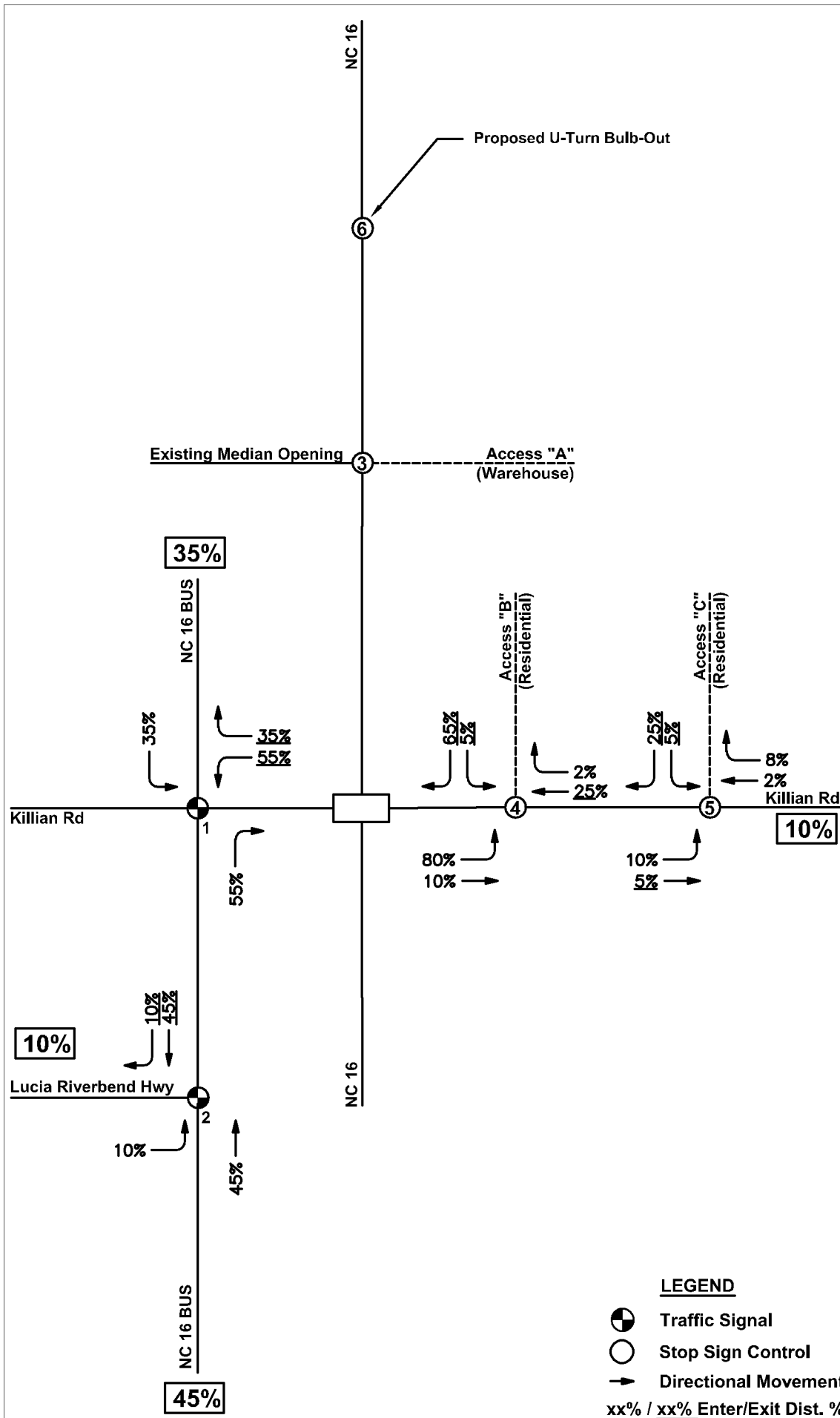
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Figure 3A

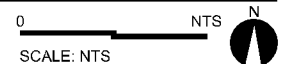


RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
 1030 S. CALDWELL STREET
 CHARLOTTE, NC 28203

WAREHOUSE SITE DIRECTIONAL DISTRIBUTION



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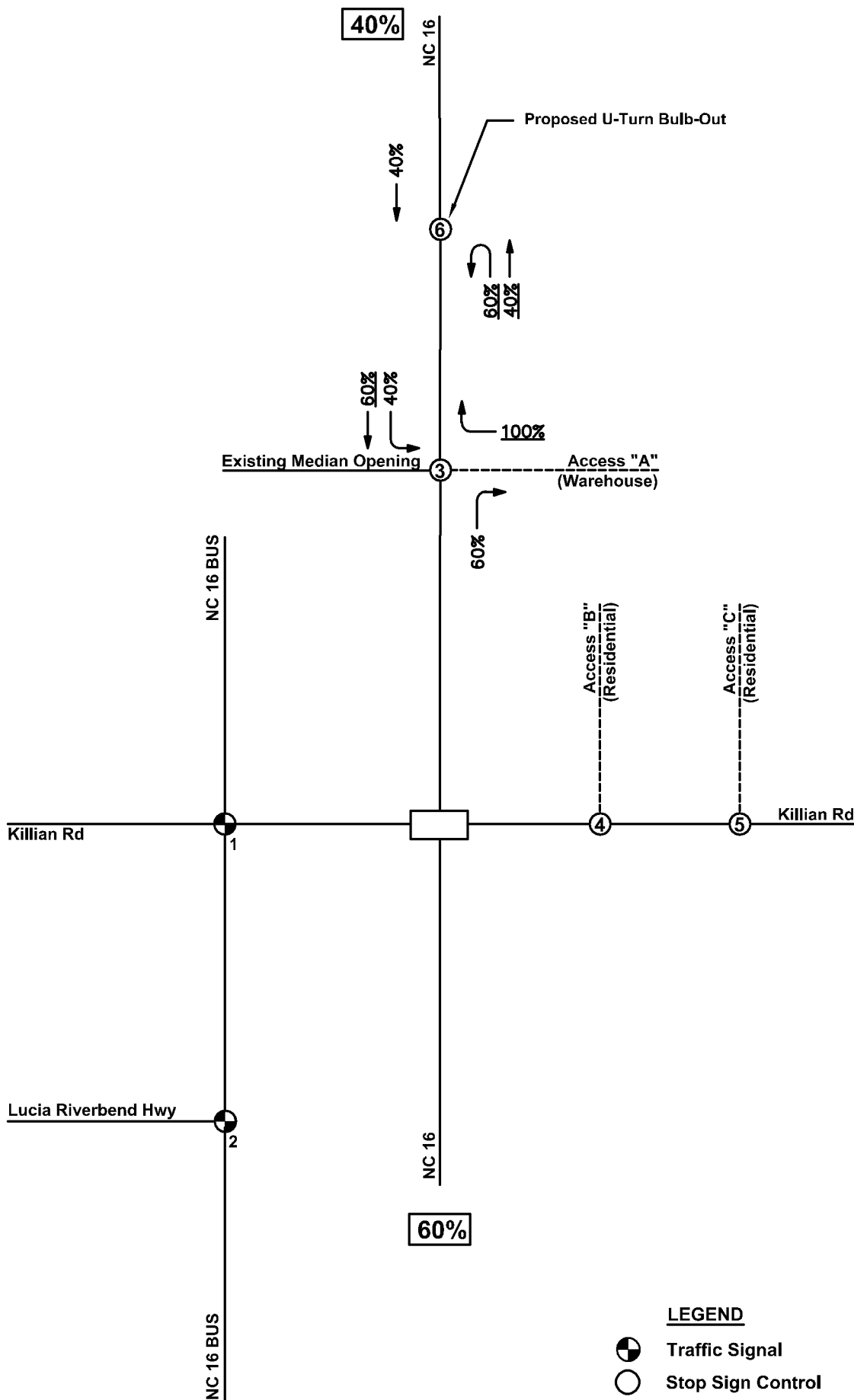
AUGUST 2019

REVISIONS:

1.	

LEGEND

- Traffic Signal
- Stop Sign Control
- Directional Movement
- xx% / xx% Enter/Exit Dist. %





PROJECTED TRAFFIC

The daily and peak-hour trip generation data for the site is presented in Table 3. Values derived for the anticipated trips generated by the site are obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

Table 3: Trip Generation

Land Use [ITE Code]			Weekday Daily	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Northeast									
Warehousing [150]	2,500,000	SF	3,996	251	75	326	89	240	329
Southeast									
Single Family Housing [210]	450	DU	4,149	82	244	326	272	160	432
Proposed Total			8,145	333	319	652	361	400	761
References: Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington, DC. 2017.									

The trip generation results indicate that the development is expected to generate 652 total AM peak hour trips and 761 total PM peak hour trips.

The projected background traffic volumes used in the analyses were developed from the existing peak hour TMCs. Per NCDOT, a 1% per year growth rate was used for the 2024 background volumes. The No Build volumes for AM and PM peaks are presented in Figure 4.

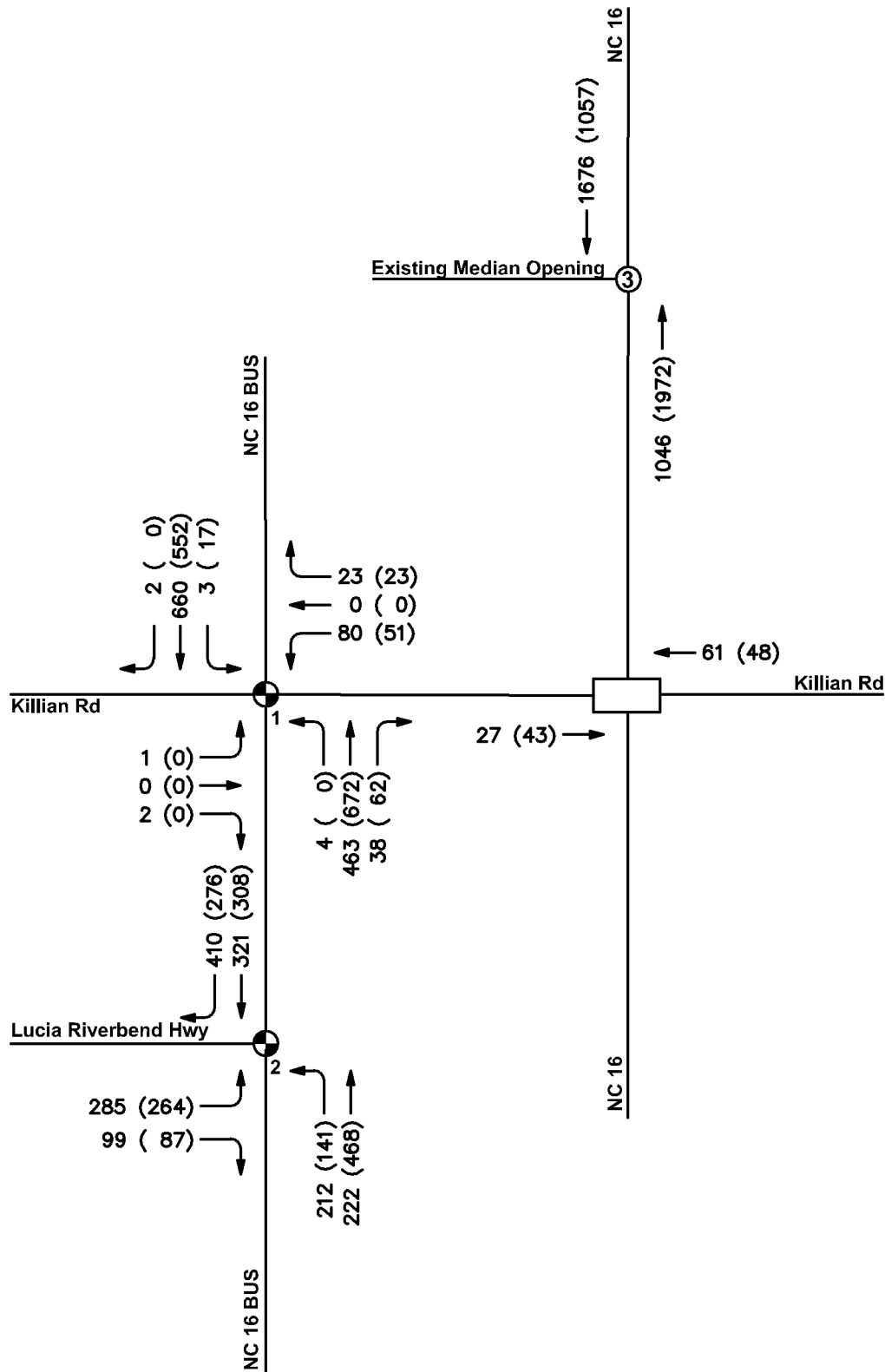
The trip assignments for the 2024 AM and PM peak hour Build traffic volumes are presented in Figures 5 and 6. The trip assignments for the 2034 (Build-out + 10 years per Lincoln County) AM and PM peak hour Build traffic volumes are presented in Figures 7 and 8, respectively. The background traffic is indicated to the far left of the movement arrows followed by the site traffic in parentheses. The two volumes are added to obtain the projected total traffic for that movement:

$$\text{Background} + (\text{Site}) = \text{Total}$$

LEGEND

-  Traffic Signal
-  Stop Sign Control
-  Directional Movement

VOLUMES: AM (PM)



Existing count data were grown by a 1% compounded annual growth rate for No Build conditions.

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RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S CALDWELL STREET
CHARLOTTE, NC 28203

2024 NO BUILD PEAK HOUR TRAFFIC VOLUMES

0 NTS N
SCALE: NTS

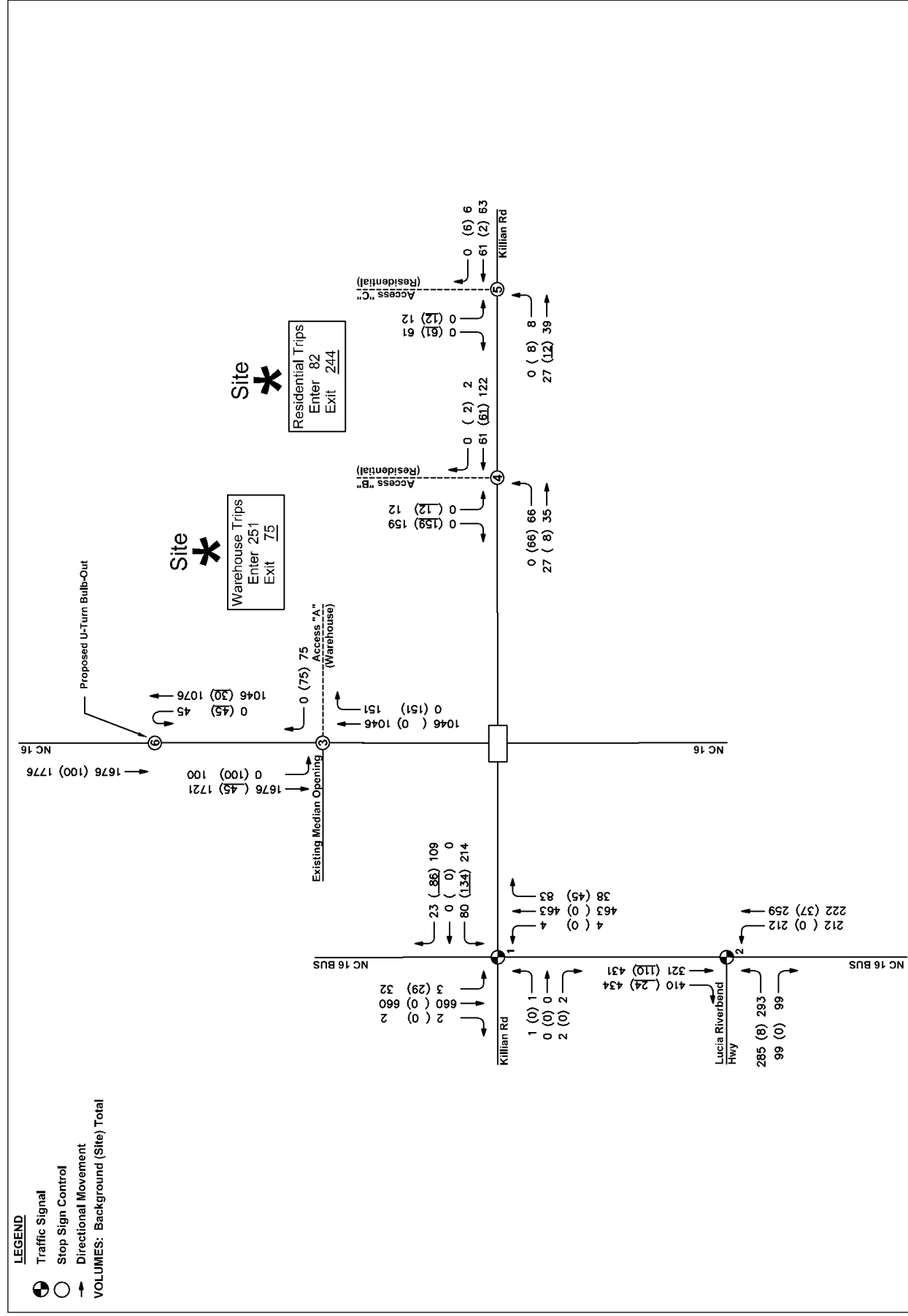
PROJECT #: 811-001
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AUGUST 2019

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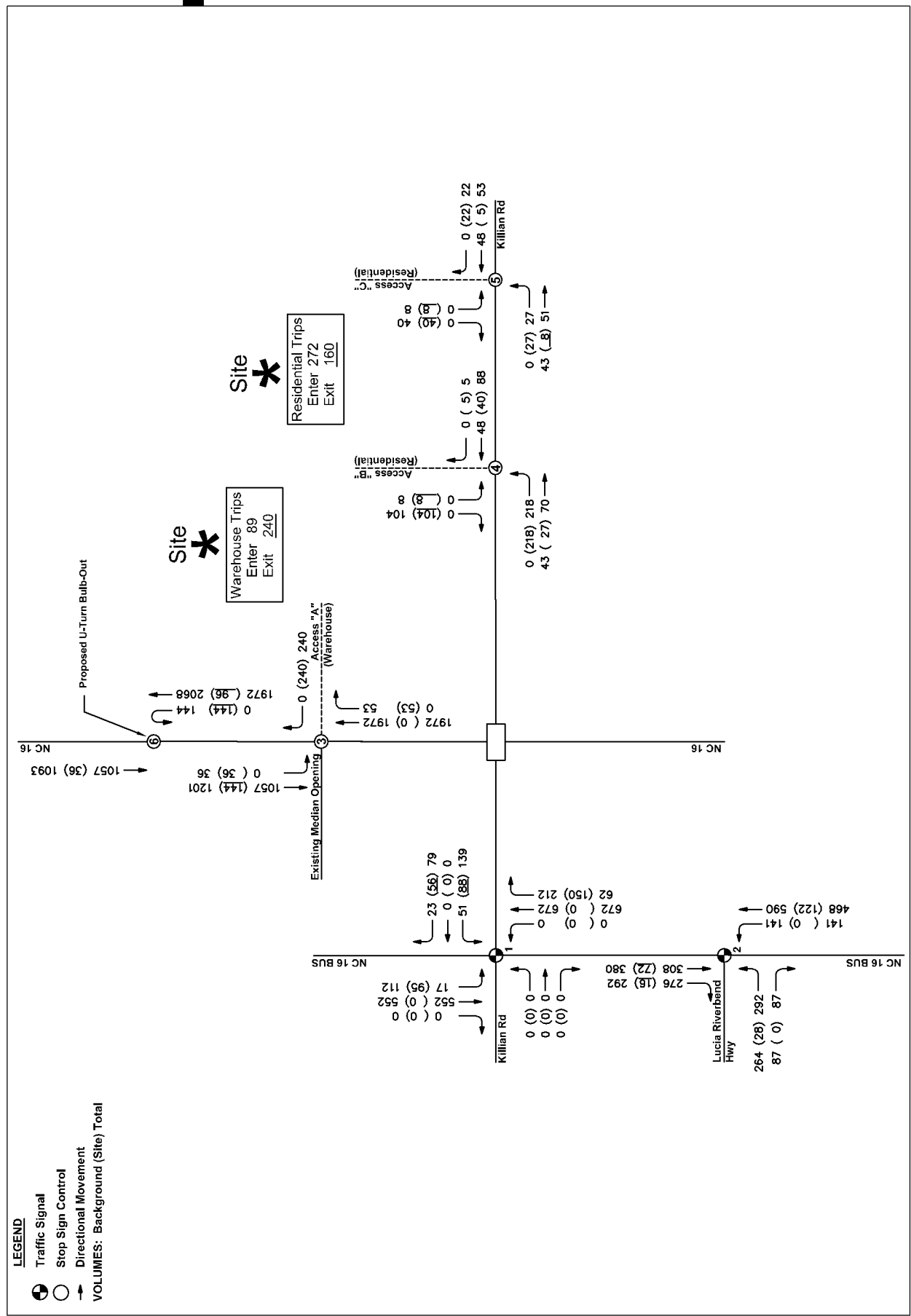
1.

Figure 4



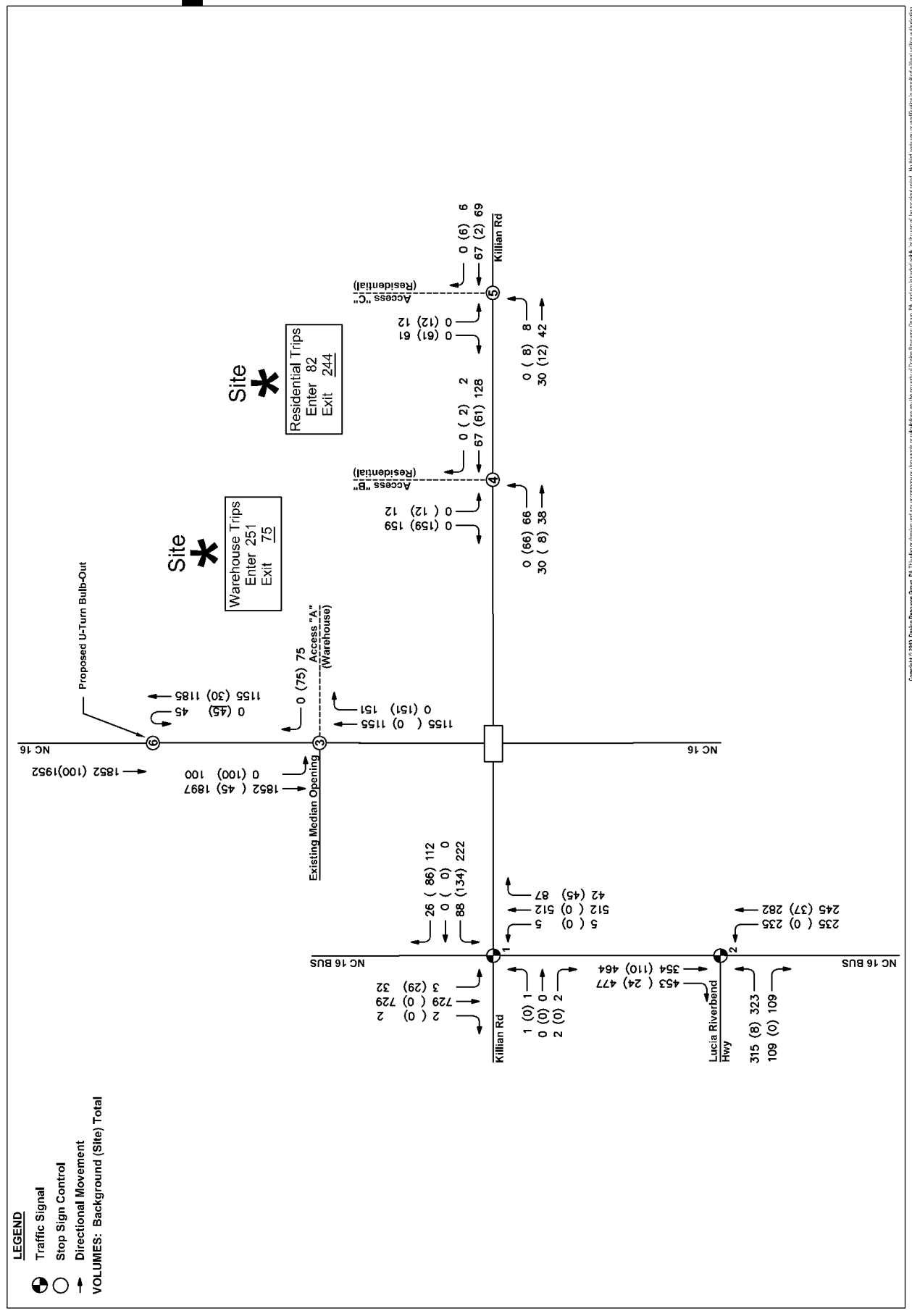
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Figure 6

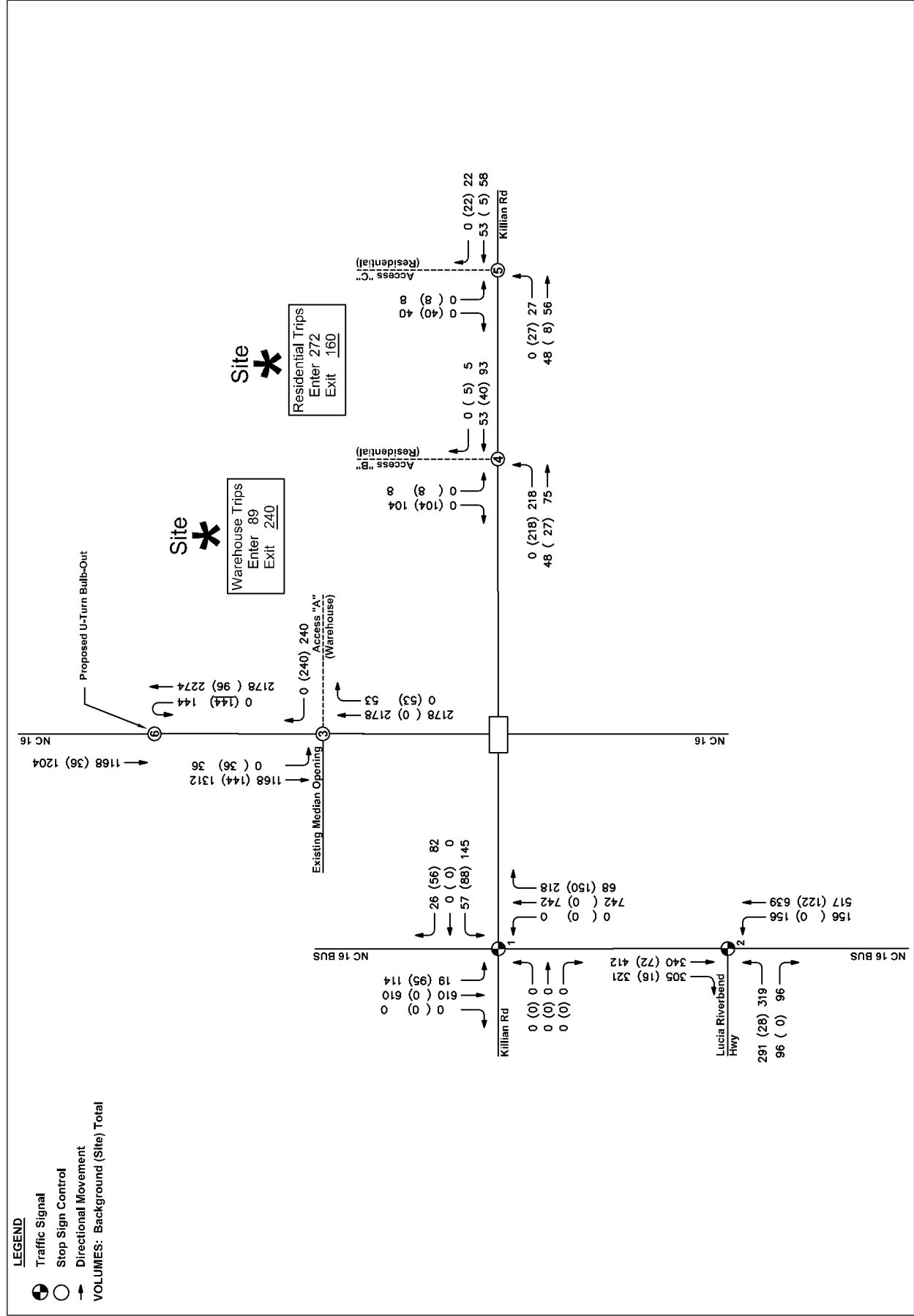


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Figure 7



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TRAFFIC ANALYSIS

The study intersections identified within the area of influence were analyzed to detect the traffic impact that the development has under the build-out (2024) and built-out plus 10 years (2034). The traffic analysis evaluates following measures of effectiveness' (MOEs) and their respective criteria at the intersections assuming the future year conditions of 2024 and 2034 (Build-out + 10 years per Lincoln County).

Level of service (LOS) of an intersection or approach is a qualitative MOE of traffic operations. It is a measure of average control delay in time within a peak period. The Transportation Research Board's Highway Capacity Manual¹ (HCM) defines the LOS thresholds established for signalized and unsignalized intersections per the following exhibits:

Intersection LOS	Exhibit 19-8 Signalized Intersection Control Delay per Vehicle (sec/vehicle)	Exhibit 20-2 Unsignalized Intersection Control Delay per Vehicle (sec/vehicle)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0 and ≤ 15.0
C	> 20.0 and ≤ 35.0	> 15.0 and ≤ 25.0
D	> 35.0 and ≤ 55.0	> 25.0 and ≤ 35.0
E	> 55.0 and ≤ 80.0	> 35.0 and ≤ 50.0
F	> 80.0	> 50.0

For the analysis of unsignalized intersections, intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. It should be noted that stop sign controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C", Lincoln County Unified Development Ordinance (UDO) Section 9.8 and Gaston County's UDO Section 5.11. It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2019 Existing Conditions
- 2024 No Build Conditions
- 2024 Build-out Conditions
- 2034 Build-out + 10 years Conditions (Lincoln Co. Requirement)

¹ National Research Council. Transportation Research Board. Highway Capacity Manual 6th Ed., Washington, DC. 2016.



NCDOT/LINCOLN COUNTY ANALYSIS REQUIREMENTS - In order to determine the mitigation responsibility of the developer, this study compares 2024 and 2034 Build results to the 2024 No Build results. In addition, Lincoln County UDO requires analysis of conditions 10 years after the build-out of the site.

Per Chapter 5, Section J of the *August 2003 NCDOT Policy on Street and Driveway Access to North Carolina Highways*, the applicant shall be required to identify mitigation improvements to the roadway network if at least one of the following conditions exists when comparing base network conditions to project conditions:

- *The total average delay at an intersection or an individual approach increases by 25% or greater, while maintaining the same level of service,*
- *The Level of Service (LOS) degrades by at least one level at an intersection or an individual approach,*
- *Or the Level of Service is "F" for an intersection or an individual approach.*

This section of the NCDOT access policy also states that, *mitigation improvements shall be identified when the analysis indicates that the 95th percentile queue exceeds the storage capacity of the existing lane.*

Per Lincoln County UDO Section 9.8.F the following requirements must also be met:

The County shall utilize means by which to maintain a minimum Grade "C" level of service for intersections affected by proposed developments through improvements mandated or suggested by traffic impact analyses; technical memoranda required by rezoning cases; and through adherence to level-of-service criteria described as follows:

- *Where proposed development lowers any intersection leg impacted by said development below a Grade "C", the developer will be required to provide those transportation improvements necessary to retain a Grade "C".*
- *Where an existing intersection is rated below Grade "C" prior to any proposed development, the developer will be required to maintain existing transportation levels for any/all legs impacted. Final intersection grades shall include the impact of the proposed development.*

SYNCHRO 10.3 was the software tool used in determining the delay, capacity and corresponding LOS at the study intersections. SimTraffic 10.3, a traffic simulation software application for unsignalized and signalized intersections, was used to calculate the maximum queue lengths at the study intersections. The Synchro and SimTraffic results of each scenario is displayed per intersection and are presented in Tables 4 – 15.



Base assumptions for the analysis scenarios include:

- A 1% per year background growth rate between the existing 2019 and future 2024 and 2034 conditions
- All study intersections and movements assume a 0.90 peak hour factor (PHF)
- Observed heavy vehicle percentages (from TMCs) were used in all analysis for all intersections, a minimum of 2% was applied to proposed intersections.
- 20% heavy vehicle percentages were used for the industrial Access "A" entering and exiting movements
- A minimum of 4 vehicles was assumed for all allowed movements
- Existing signal plans were used in the Existing, No Build and Build conditions, coded based on the NCDOT Congestion Management Capacity Analysis Guidelines (2015) See Appendix 4 for existing signal plans:
 - Right turn on red (RTOR) was disabled
 - Permitted-Protected phasing was adjusted to protected only in future conditions
 - Yellow and red times were adjusted to 5 seconds and 2 seconds, respectively with -2 seconds of lost time adjustment
- Signal timings as given by the signal plan were utilized and the intersections were optimized through all scenarios



1. Killian Road & NC 16 Business

Table 4: Killian Rd. & NC 16 Bus. Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	A	8.6	0.55	A	6.1	0.48
Eastbound - NC 16 Business	B	19.3	-	C	21.0	-
Westbound - Killian Road	C	26.5	-	C	24.6	-
Northbound - NC 16 Business	A	5.9	-	A	5.2	-
Southbound - NC 16 Business	A	7.7	-	A	4.6	-
2024 No Build Conditions						
Intersection	A	9.1	0.58	A	7.4	0.55
Eastbound - NC 16 Business	B	19.9	-	C	21.5	-
Westbound - Killian Road	C	26.7	-	C	26.9	-
Northbound - NC 16 Business	A	6.2	-	A	6.5	-
Southbound - NC 16 Business	A	8.3	-	A	5.6	-
2024 Build Conditions						
Intersection	D	38.3	1.21	B	18.5	1.03
Eastbound - NC 16 Business	B	20.0	-	C	22.1	-
Westbound - Killian Road	F	149.0	-	F	97.6	-
Northbound - NC 16 Business	A	7.5	-	A	7.5	-
Southbound - NC 16 Business	B	11.0	-	A	6.9	-
2024 Build Conditions with Improvements (Westbound Right Turn Lane)						
Intersection	B	16.7	0.84	B	11.4	0.73
Eastbound - NC 16 Business	B	20.0	-	C	22.2	-
Westbound - Killian Road	D	44.6	-	D	41.7	-
Northbound - NC 16 Business	A	7.4	-	A	7.2	-
Southbound - NC 16 Business	B	10.8	-	A	6.7	-
2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)						
Intersection	D	42.8	1.28	C	20.5	1.08
Eastbound - NC 16 Business	B	20.0	-	-	-	-
Westbound - Killian Road	F	175.6	-	F	113.8	-
Northbound - NC 16 Business	A	8.0	-	A	8.2	-
Southbound - NC 16 Business	B	12.4	-	A	7.6	-

2019 Existing Conditions

Currently the intersection operates with a LOS "A" in both peak hours.

2024 No Build Conditions

With the inclusion of the growth in the background, the intersection operates with a LOS "A" in both peak hours.



2024 Build Conditions

When comparing the impact of the 2024 Build to the 2024 No Build conditions the intersection LOS becomes a “D” in the AM peak period and a “B” in the PM peak period. The overall intersection delay increases between the No Build and Build scenarios by 320% in the AM peak hour and 150% in the PM peak hour.

2024 Build with Improvements Conditions

Based on NCDOT guidelines, the analysis results indicate the need for mitigation at the study intersection as means to improve LOS and delay.

The following improvements were tested and suggested:

- Construct a separate westbound right turn lane with 175' storage on Killian Road
- Remark the existing combined left-thru-right lane to a combined left-thru lane
- Extend southbound left turn lane storage to 125' on NC 16 Business

Assuming these improvements in place the intersection operates at a LOS “B” in both peak hours, allowed under NCDOT guidelines. Although the overall LOS decreases and delay increases, the intersection is still operating well above acceptable analysis parameters.

2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)

The 2034 Build conditions indicate that the intersection operates at a LOS a “D” in the AM peak period and a “B” in the PM peak period.

Table 5: Killian Rd. & NC 16 Bus. Queue Lengths

Killian Road @ NC 16 Business	Storage (Proposed)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 No Build Conditions					
Eastbound Left-Thru-Right (NC 16 Business)	TERM.	15'	25'	16'	34'
Westbound Left-Thru-Right (Killian Road)	TERM.	83'	102'	67'	83'
Northbound Left-Thru (NC 16 Business)	TERM.	135'	154'	191'	152'
Northbound Right-Turn (NC 16 Business)	175'	13'	36'	16'	40'
Southbound Left-Turn (NC 16 Business)	60'	3'	26'	7'	66'
Southbound Thru-Right (NC 16 Business)	TERM.	229'	194'	139'	227'
2024 Build Conditions with Improvements					
Eastbound Left-Thru-Right (NC 16 Business)	TERM.	15'	29'	16'	25'
Westbound Left-Thru (Killian Road)	TERM.	#209'	191'	#146'	169'
Westbound Right-Turn (Killian Road)	(175')	#88'	151'	#70'	114'
Northbound Left-Thru (NC 16 Business)	TERM.	135'	211'	191'	224'
Northbound Right-Turn (NC 16 Business)	175'	24'	103'	47'	141'
Southbound Left-Turn (NC 16 Business)	(125')	12'	57'	39'	124'
Southbound Thru-Right (NC 16 Business)	TERM.	229'	226'	139'	291'



2. Lucia Riverbend Highway & NC 16 Business

Table 6: Lucia Riverbend Hwy. & NC 16 Bus. Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	C	30.5	0.86	D	35.1	0.84
Eastbound - Lucia Riverbend Highway	D	40.5	-	D	35.9	-
Northbound - NC 16 Business	C	20.8	-	C	27.3	-
Southbound - NC 16 Business	C	31.0	-	D	42.7	-
2024 No Build Conditions						
Intersection	D	36.7	0.98	D	39.3	0.90
Eastbound - Lucia Riverbend Highway	E	63.0	-	D	49.7	-
Northbound - NC 16 Business	B	18.9	-	C	25.1	-
Southbound - NC 16 Business	C	33.5	-	D	47.8	-
2024 Build Conditions						
Intersection	D	43.1	1.02	E	63.8	1.05
Eastbound - Lucia Riverbend Highway	E	70.1	-	E	69.1	-
Northbound - NC 16 Business	C	24.5	-	D	49.4	-
Southbound - NC 16 Business	D	41.0	-	E	76.4	-
2024 Build Conditions with Improvements (Southbound Right Turn Overlap Phasing)						
Intersection	C	29.5	0.88	D	44.2	0.92
Eastbound - Lucia Riverbend Highway	D	43.2	-	E	59.6	-
Northbound - NC 16 Business	C	26.5	-	D	39.3	-
Southbound - NC 16 Business	C	24.9	-	D	41.0	-
2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)						
Intersection	E	57.5	1.13	F	86.5	1.14
Eastbound - Lucia Riverbend Highway	F	95.1	-	F	90.0	-
Northbound - NC 16 Business	C	28.2	-	E	69.4	-
Southbound - NC 16 Business	E	56.3	-	F	103.1	-

2019 Existing Conditions

Currently the intersection operates with a LOS “C” in the AM peak hour and LOS “D” in the PM peak hour.

2024 No Build Conditions

With the inclusion of the growth in the background, the intersection operates with a LOS “D” in the AM peak hour and a LOS “D” in the PM peak hour.

2024 Build Conditions

When comparing the impact of the 2024 Build to the 2024 No Build conditions the intersection LOS remains a “D” in the AM peak hour and becomes a “E” in the PM peak hour. The overall intersection delay increase between the No Build and Build scenario is 17% in the AM peak hour and 62% in the PM peak hour. In addition, the some of the approaches exceed the allowable parameters in both peak hours.



2024 Build with Improvements Conditions

Based on NCDOT guidelines, the analysis results indicate the need to identify mitigation at the study intersection. The following improvements were tested and are suggested:

- Implement for southbound right turn overlap phasing on NC 16 Business
- Extend eastbound right turn lane to 150' on Lucia Riverbend Highway

Assuming these improvements are in place, the intersection LOS becomes a "C" in the AM peak hour and remains a "D" in the PM peak hour (both of which are considered acceptable based on NCDOT guidelines).

2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)

The 2034 Build conditions indicate that the intersection operates at a LOS becomes a "E" in the AM peak period and a "F" in the PM peak period.

Table 7: Lucia Riverbend Hwy. & NC 16 Bus. Queue Lengths

Lucia Riverbend Highway at NC 16 Business	Storage (Proposed)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 No Build Conditions					
Eastbound Left-Turn (Lucia Riverbend Highway)	-	#258'	954'	#233'	512'
Eastbound Right-Turn (Lucia Riverbend Highway)	50'	78'	150'	69'	150'
Northbound Left-Turn (NC 16 Business)	-	53'	170'	36'	95'
Northbound Thru (NC 16 Business)	TERM.	#164'	217'	#314'	315'
Southbound Thru (NC 16 Business)	TERM.	186'	364'	#248'	400'
Southbound Right-Turn (NC 16 Business)	300'	#308'	365'	#238'	312'
2024 Build Conditions with Improvements					
Eastbound Left-Turn (Lucia Riverbend Highway)	-	#259'	539'	#340'	542'
Eastbound Right-Turn (Lucia Riverbend Highway)	(150')	79'	150'	93'	150'
Northbound Left-Turn (NC 16 Business)	-	72'	189'	46'	115'
Northbound Thru (NC 16 Business)	TERM.	#218'	240'	#559'	560'
Southbound Thru (NC 16 Business)	TERM.	#335'	338'	#412'	552'
Southbound Right-Turn (NC 16 Business)	300'	158'	282'	176'	399'



3. NC 16 & Proposed Warehouse Access "A"

Table 8: NC 16 & Proposed Warehouse Access "A" Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2024 Build Conditions						
Westbound - Warehouse Access "A"	C	15.9	-	F	288.0	-
Northbound - NC 16	A	0.0	-	A	0.0	-
Southbound - NC 16	A	0.8	-	A	0.9	-
2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)						
Westbound - Warehouse Access "A"	C	17.3	-	F	427.2	-
Northbound - NC 16	A	0.0	-	A	0.0	-
Southbound - NC 16	A	0.8	-	A	1.0	-

2024 Build Conditions

We propose the following intersection configuration:

- Convert NC 16 full median opening to a southbound directional X-over with a minimum storage of 150' (or as required to accommodate the appropriate design vehicles)
- Two ingress lanes and one egress lane (a terminating westbound right turn lane on Proposed Access "A")
- Channelized northbound right turn lane with 100' storage on NC 16
- Minimum internal protected stem of 500'

Assuming this configuration, the worst leg of the intersection (westbound) operates at a LOS "C" in the AM peak period and LOS "F" in the PM peak hour. It should be noted that stop sign-controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)

10 years after the build-out of the site, the worst leg of the intersection (westbound) remains at a LOS "C" in the AM peak period and LOS "F" in the PM peak hour.

Table 9: NC 16 & Proposed Warehouse Access "A" Queue Lengths

Warehouse Access “A” @ NC 16	Storage (Proposed)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 Build Conditions with Improvements					
Westbound Right-Turn (Warehouse Access “A”)	TERM.	18'	101'	418'	2117'
Northbound Right-Turn (NC 16)	100'	-	65'	-	4'
Southbound Left-Turn (NC 16)	150'	20'	95'	20'	116'



4. Killian Road & Proposed Residential Access “B”

Table 10: Killian Rd. & Proposed Residential Access “B” Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2024 Build Conditions						
Eastbound - Killian Road	A	5.0	-	A	6.0	-
Westbound - Killian Road	A	0.0	-	A	0.0	-
Southbound - Access “B”	B	10.0	-	A	9.7	-
2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)						
Eastbound - Killian Road	A	4.8	-	A	5.9	-
Westbound - Killian Road	A	0.0	-	A	0.0	-
Southbound - Access “B”	B	10.0	-	A	9.7	-

2024 Build Conditions

We propose the following intersection configuration:

- One ingress and two egress lanes (a terminating southbound right turn lane and left turn lane with 100' storage) on Proposed Access “B”
- Construct an eastbound left turn lane with 100' storage on Killian Road
- Minimum internal protected stem of 100'

Assuming this configuration, the worst leg of the intersection (southbound) operates at a LOS “B” in the AM peak period and “A” in the PM peak period. It should be noted that stop sign-controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)

10 years after the build-out of the site, the worst leg of the intersection (southbound) remains at a LOS “B” in the AM peak period and “A” in the PM peak period.

Table 11: Killian Rd. & Proposed Residential Access “B” Queue Lengths

Killian Road @ Access “B”	Storage (Proposed)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 Build Conditions with Improvements					
Eastbound Left-Turn (Killian Road)	(100')	5'	52'	15'	70'
Southbound Left-Turn (Access “B”)	(150')	-	23'	-	19'
Southbound Right-Turn (Access “B”)	TERM.	18'	62'	10'	44'



5. Killian Road & Proposed Residential Access “C”

Table 12: Killian Rd. & Proposed Residential Access “C” Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2024 Build Conditions						
Eastbound - Killian Road	A	1.3	-	A	2.6	-
Westbound - Killian Road	A	0.0	-	A	0.0	-
Southbound - Access “C”	A	9.0	-	A	8.9	-
2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)						
Eastbound - Killian Road	A	1.2	-	A	2.4	-
Westbound - Killian Road	A	0.0	-	A	0.0	-
Southbound - Access “C”	A	9.1	-	A	9.0	-

2024 Build Conditions

We propose the following intersection configuration:

- One ingress and two egress lanes (a southbound right turn lane and left turn lane with 100’ storage on Proposed Access “C”)
- Construct an eastbound left turn lane with 100’ storage on Killian Road
- Minimum internal protected stem of 100’

Assuming this configuration, the worst leg of the intersection (southbound) operates at a LOS “A” in both peak hours. It should be noted that stop sign-controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

2034 Build Conditions (Build - out + 10 years per Lincoln Co. Requirement)

10 years after the build-out of the site, the worst leg of the intersection (southbound) operates at a LOS “A” in during both peak hours. It should be noted that stop sign-controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

Table 13: Killian Rd. & Proposed Residential Access “C” Queue Lengths

Killian Road @ /Access “C”	Storage (Proposed)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 Build Conditions with Improvements					
Eastbound Left-Turn (Killian Road)	(100')	0'	16'	3'	19'
Southbound Left-Turn (Access “C”)	(100')	-	23'	-	23'
Southbound Right-Turn (Access “C”)	TERM.	5'	53'	3'	50'



6. NC 16 & Future U-Turn Bulb-Out

We propose the following intersection configuration:

- Convert NC 16 full median opening to a northbound channelized U-turn lane with a minimum storage of 250' (or as required to accommodate the appropriate design vehicles)

The max queues are maintained within the channelized left-turn lane in both the AM and the PM peak.

Table 15: NC 16 & Future U-Turn Bulb-Out Queue Lengths

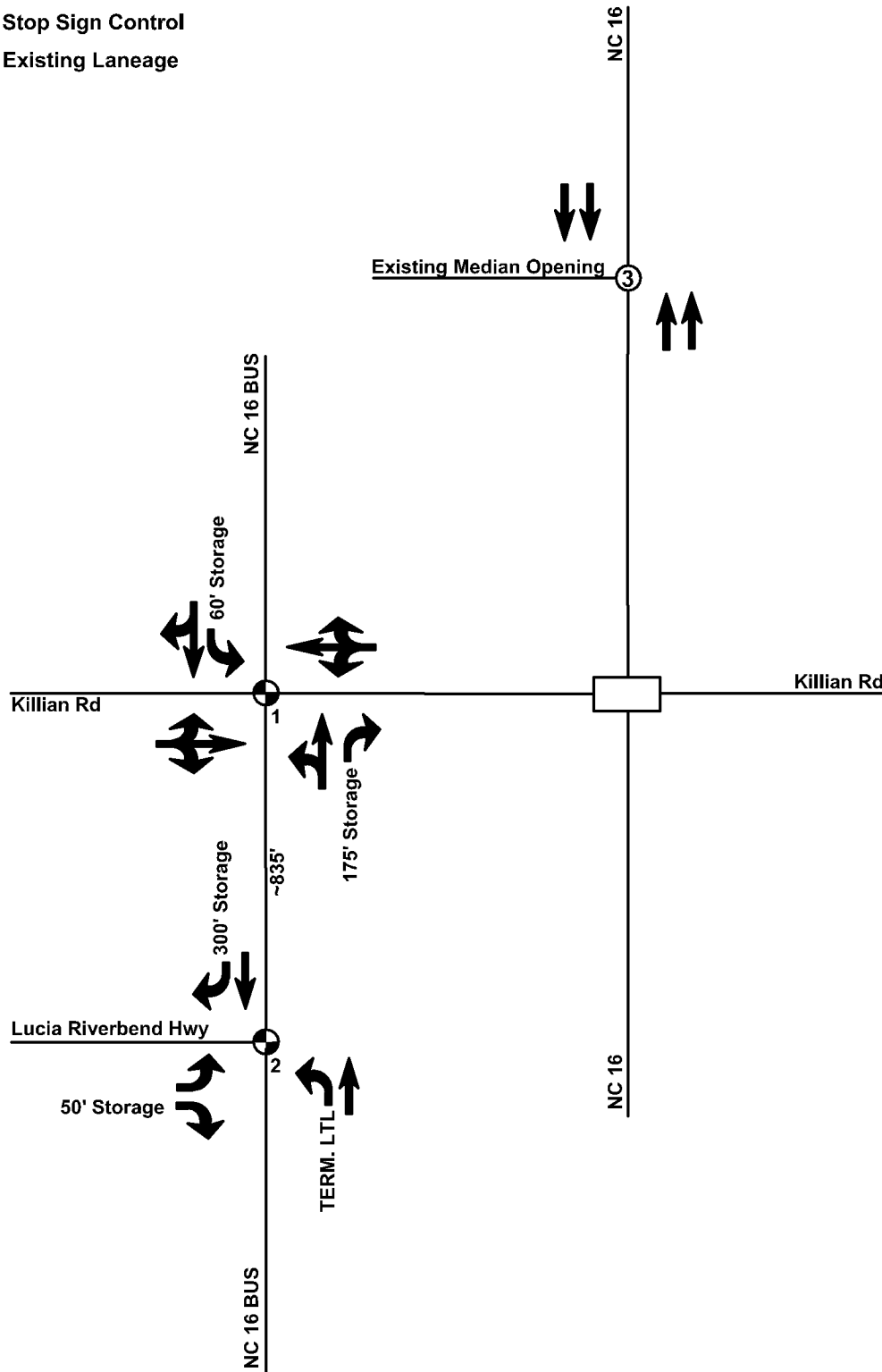
Killian Road @ /Access "C"	Storage	AM PEAK	PM PEAK
		Max Queue	Max Queue
2024 Build Conditions with Improvements			
Northbound U-Turn (Killian Road)	(250')	218'	235'

Analysis software result reports per scenario are provided in the Appendix 5.

The existing/suggested laneage is shown on Figures 9 and 10.

LEGEND

-  Traffic Signal
-  Stop Sign Control
-  Existing Laneage



LANDSCAPE ARCHITECTURE
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RIVERBEND PRESERVE

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S. CALDWELL STREET
CHARLOTTE, NC 28203

EXISTING
LANEAGE

0 NTS N
SCALE: NTS

PROJECT #: 811-001
DRAWN BY: PAH
CHECKED BY: MWW

AUGUST 2019

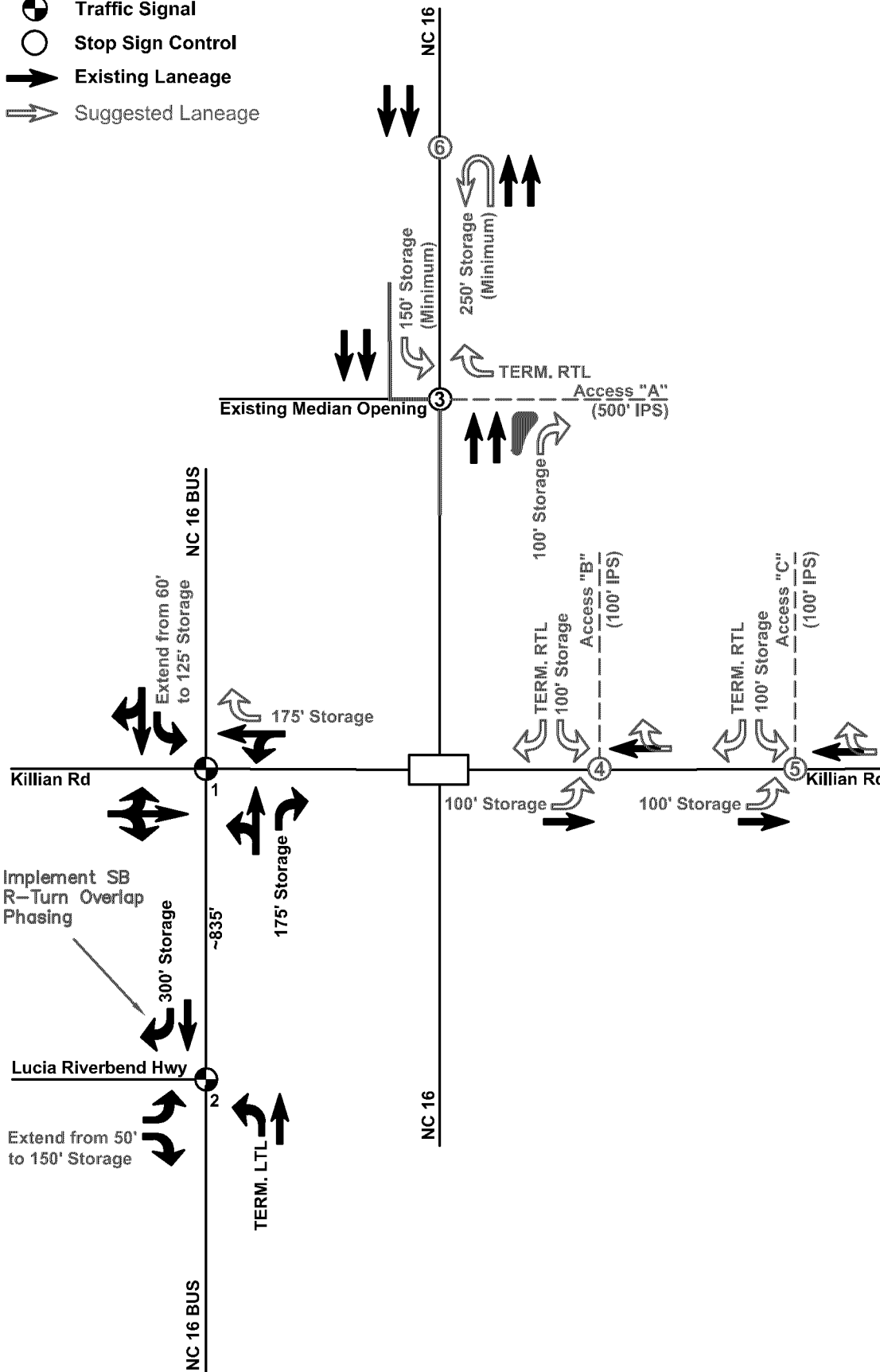
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Figure 9

LEGEND

-  Traffic Signal
-  Stop Sign Control
-  Existing Laneage
-  Suggested Laneage



LANDSCAPE ARCHITECTURE
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CHARLOTTE, NC 28203

SUGGESTED LANEAGE



PROJECT #: 811-001
DRAWN BY: PAH
CHECKED BY: MWW

AUGUST 2019

REVISIONS:

1.	

Figure 10



CONCLUSION

In conclusion, even though the Riverbend Preserve development will increase the amount of vehicular and truck traffic on the adjacent roadways/corridors, the suggested intersection improvements/enhancements will help mitigate the additional site generated trips on the adjacent roadway network. In addition, the suggested recommendations will improve the conditions for the general traveling public as well as the users of the warehouse and the residents of the residential community.



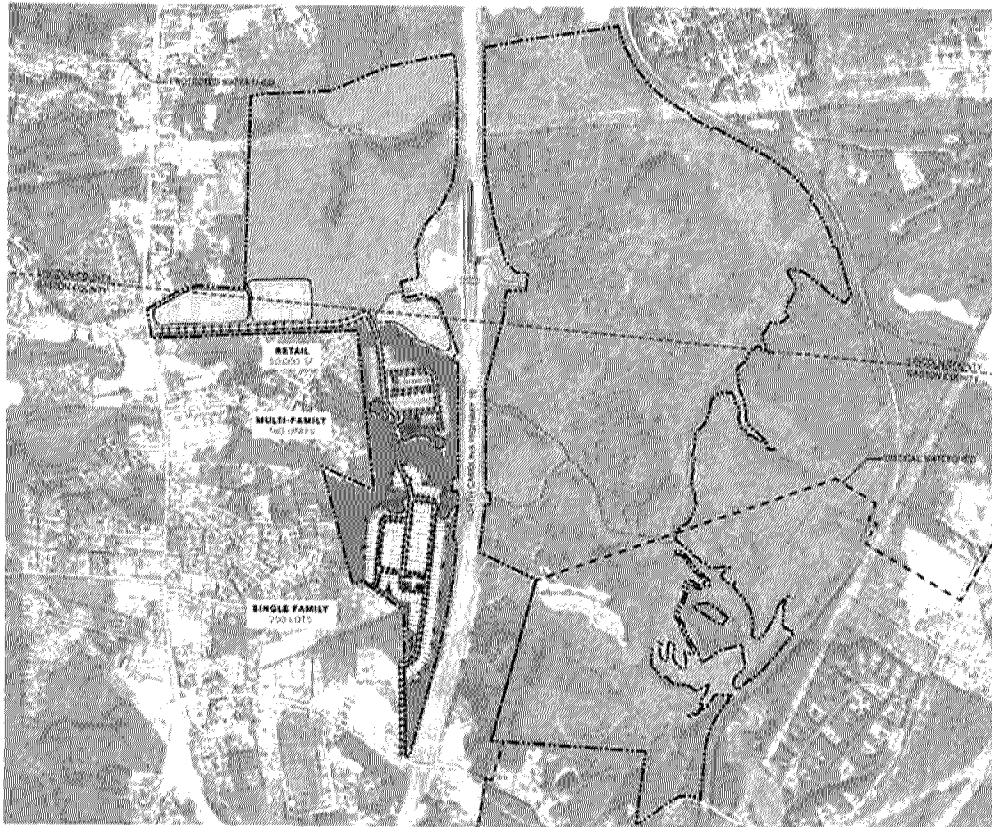
APPENDIX

TRAFFIC IMPACT ANALYSIS (FINAL)

RIVERBEND PRESERVE PHASE 2

North of Killian Road and West of NC 16

Gaston County, North Carolina



for

The Shaw Tate Group

June 2020

811-002 (C-2165)

2459 Wilkinson Boulevard, Suite 200
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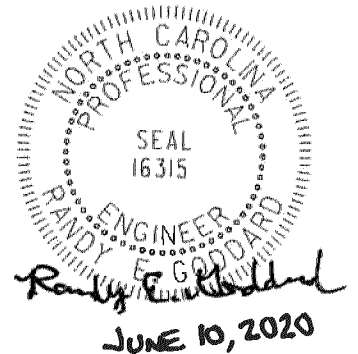




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EXECUTIVE SUMMARY

The Shaw Tate Group proposes to develop a site with the following land uses:

- 250 Single-Family Homes
- 180 Multi-Family (Low-Rise) Units
- 50,000 SF of Retail

The proposed site is located north of Killian Road and west of NC 16 in Gaston County, NC (see Figure 1). The development is expected to be completed in 2024.



This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C", and Gaston County's UDO Section 5.11. It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2019 Existing Conditions
- 2024 No Build Conditions
- 2024 Build-out Conditions

The area of influence of the site as defined by North Carolina Department of Transportation (NCDOT) staff includes the following three existing intersections and one proposed intersection: (See Appendix for the approved scoping information)

1. Lucia Riverbend Highway & NC 16 Business (signalized)
2. Lucia Riverbend Highway & Killian Road (signalized)
3. Lucia Riverbend Highway & Old Beatty Road-Access "A" (unsignalized)
4. Killian Road & Access "B"

According to the preliminary site plan (Concept Exhibit), access to the development is expected to occur via one unsignalized access on Lucia Riverbend Highway and one unsignalized access on Killian Road:

- Proposed Access "A" (Full-Movement): unsignalized access allowing for full movement access located on NC 16 across from Old Beatty Road.
- Proposed Access "B" (Full-Movement): unsignalized access allowing for full movement located on Killian Road approximately 150 feet west of the NC 16 overpass.

The trip generation results indicate that the development is expected to generate 446 total AM peak hour trips and 561 total PM peak hour trips.



With the results of our analyses (the specifics are described in the Traffic Analysis section of this report) we suggest the following improvements/modifications at the study intersections/proposed accesses:

2024 Build Suggested Recommendations:

1. NC 16 Business & Lucia Riverbend Highway

- No suggested improvements.

2. Lucia Riverbend Highway & Killian Road

- Extend northbound right turn lane storage from 175 feet to 275 feet on Lucia Riverbend Highway
- Extend southbound left turn lane storage from 125 feet to 200 feet on Lucia Riverbend Highway

3. Lucia Riverbend Highway & Old Beatty Road-Access "A"

We propose the following intersection configuration:

- Align east/west approaches to a four-legged intersection (right-of-way to be acquired to ensure alignment)
- Construct a southbound left turn lane with 100 feet of storage on Lucia Riverbend Highway
- Construct northbound left turn lane with 100 feet of storage on Lucia Riverbend Highway to allow for intersection alignment
- Construct northbound right turn lane with 100 feet of storage on Lucia Riverbend Highway
- One ingress and two egress lanes (a westbound thru-right turn lane and left turn lane with 200' storage) on Proposed Access "A"
- Minimum internal protected stem of 200'

4. Killian Road & Access "C"

We propose the following intersection configuration:

- Construct an eastbound left turn lane with 100 feet of storage on Killian Road
- One ingress and two egress lanes (a terminating southbound right turn lane and left turn lane with 100' storage) on Proposed Access "B"
- Minimum internal protected stem of 100'

In summary, it was determined that Riverbend Preserve Phase 2 site development will not significantly affect the operations of vehicular traffic on the adjacent roadways with both these suggested improvements as well as, the suggested intersection improvements/enhancements from the approved Riverbend Preserve Phase 1 Traffic Impact Analysis.



PROPOSED DEVELOPMENT

The Shaw Tate Group proposes to develop a site with the following land uses:

- 250 Single-Family Homes
- 180 Multi-Family (Low-Rise) Units
- 50,000 SF of Retail

The proposed site is located north of Killian Road and west of NC 16 in Gaston County, NC (see Figure 1). The development is expected to be completed in 2024.



According to the preliminary site plan (Concept Exhibit), access to the development is expected to occur via one unsignalized access on Lucia Riverbend Highway and one unsignalized access on Killian Road:

- Proposed Access "A" (Full-Movement): unsignalized access allowing for full movement access located on NC 16 across from Old Beatty Road.
- Proposed Access "B" (Full-Movement): unsignalized access allowing for full movement located on Killian Road approximately 150 feet west of the NC 16 overpass.

LEGEND



Traffic Signal

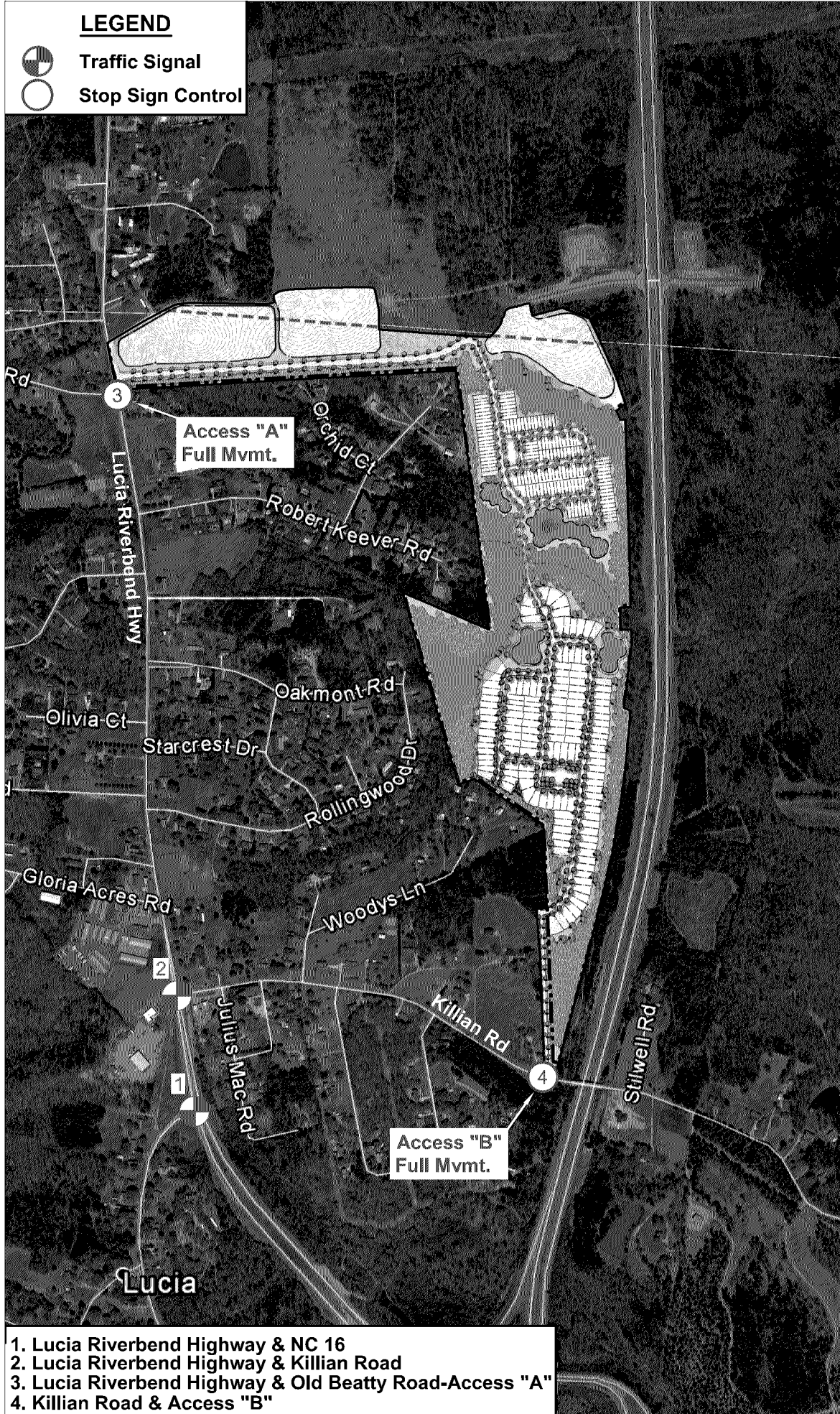


Stop Sign Control



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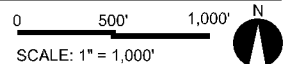
1. Lucia Riverbend Highway & NC 16
2. Lucia Riverbend Highway & Killian Road
3. Lucia Riverbend Highway & Old Beatty Road-Access "A"
4. Killian Road & Access "B"

RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S CALDWELL STREET
CHARLOTTE, NC 28203

AREA OF INFLUENCE



SCALE: 1" = 1,000'

PROJECT #: 811-001
DRAWN BY: SA
CHECKED BY: MW

MARCH 2020

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1.	

Figure 1





AREA CONDITIONS

The area of influence of the site as defined by North Carolina Department of Transportation (NCDOT) staff includes the following three existing intersections and one proposed intersection: (See Appendix for the approved scoping information)

1. Lucia Riverbend Highway & NC 16 Business (signalized)
2. Lucia Riverbend Highway & Killian Road (signalized)
3. Lucia Riverbend Highway & Old Beatty Road-Access "A" (unsignalized)
4. Killian Road & Access "B"



**Old Beatty Road facing south towards
proposed site**



**Old Beatty Road facing north towards
proposed site**

Morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) peak period turning movement counts (TMCs) were conducted at intersections 1 and 2 on Tuesday May 14, 2019. The remaining intersection (#3) was counted on Thursday December 12, 2019. See Appendix for raw count data sheets.

According to the latest NCDOT Roadway Functional Classification data, Lucia Riverbend Highway (NC 16 Business) is a Minor Arterial with a posted speed limit of 50 or 55 mph (in the vicinity of the study area). The roadway is a two-lane undivided facility, with no bike lanes, curb/gutter, planting strip, or sidewalk present on either side of the roadway.

Killian Road is a secondary route with a posted speed limit of 55 mph. The roadway is a one-lane undivided facility, with no bike lanes, curb/gutter, planting strip, or sidewalk present on either side of the roadway in the vicinity of the site.



In addition to the intersection TMCs, geospatial information provided by NCDOT's ArcGIS portal (*Go! NC*), such as Annual average daily traffic (AADT) and crash data were collected.

AADT for two-way volumes on roadways within the area of influence are depicted in Table 1 based on latest 2016 data.

Table 1: Average Annual Daily Traffic Volumes (vehicles per day)

Roadway	AADT
Lucia Riverbend Highway west of NC 16 Business	7,900
Killian Road east of Lucia Riverbend Highway	1,100
Lucia Riverbend Highway south of Old Beatty Road	11,000

Crash frequency per intersection is reported in Table 2 with data ranging from January 1, 2014 to December 31, 2018.

Table 2: Crash Data from 2014-2018




Intersection	Severity Type			Total Crashes
	K Injury	B & C Injury Crashes	PDO Crashes	
Lucia Riverbend Hwy. & Stanley Lucia Rd.	0	1	5	6

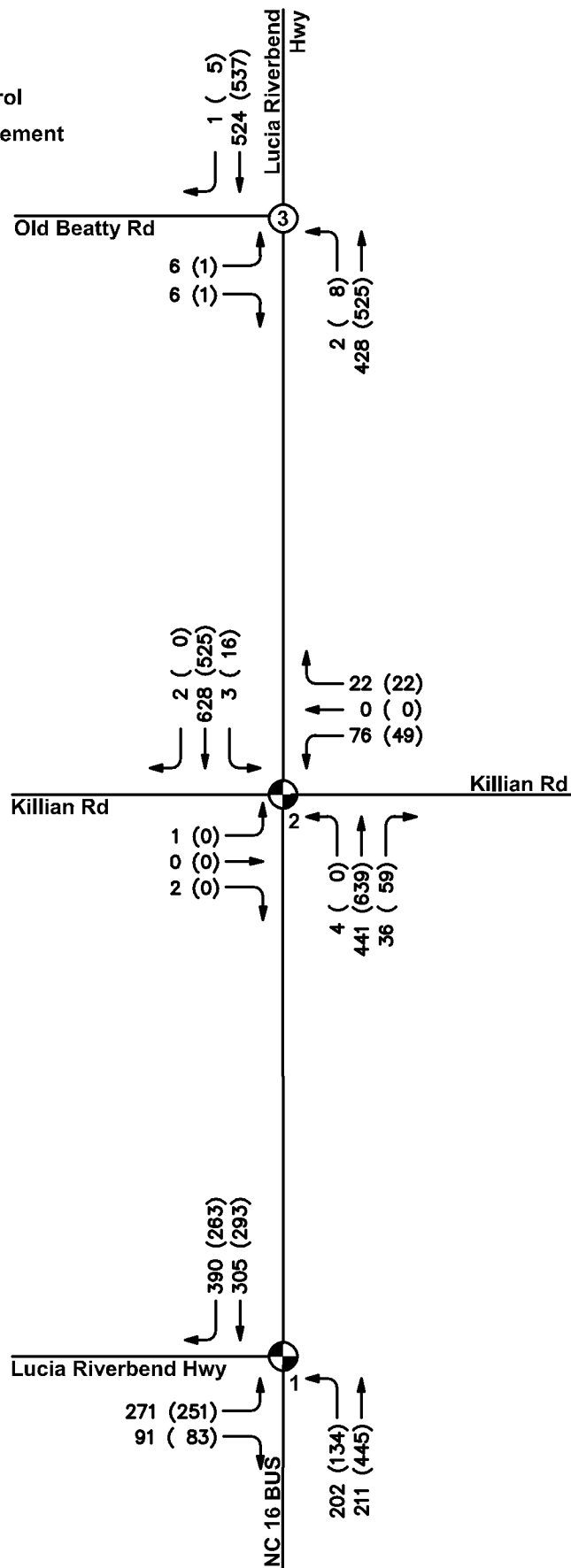
Notes:

K: Fatality **B:** B injury type (evident), **C:** injury type (possible), **PDO:** Property Damage Only

Figure 2 portrays the existing TMCs for the AM and PM peak hours. Figures 3A and 3B includes the directional distribution for the townhomes + retail site and the single-family site, respectively. These directional distribution percentages were approved by NCDOT staff on December 6, 2019 per existing traffic patterns.

LEGEND

-  Traffic Signal
 -  Stop Sign Control
 -  Directional Movement
- VOLUMES: AM (PM)



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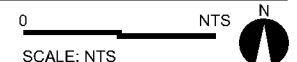
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RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
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EXISTING PEAK HOUR TRAFFIC VOLUMES



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Raw Turning Movement Counts were collected on Tuesday May 14, 2019 for intersections 1 and 2.
Raw Turning Movement Counts were collected on Thursday December 12, 2019 for intersection 3.
Volumes were not balanced between intersections due to local businesses and subdivisions.

Figure 2



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GASTON/ LINCOLN COUNTY, NC

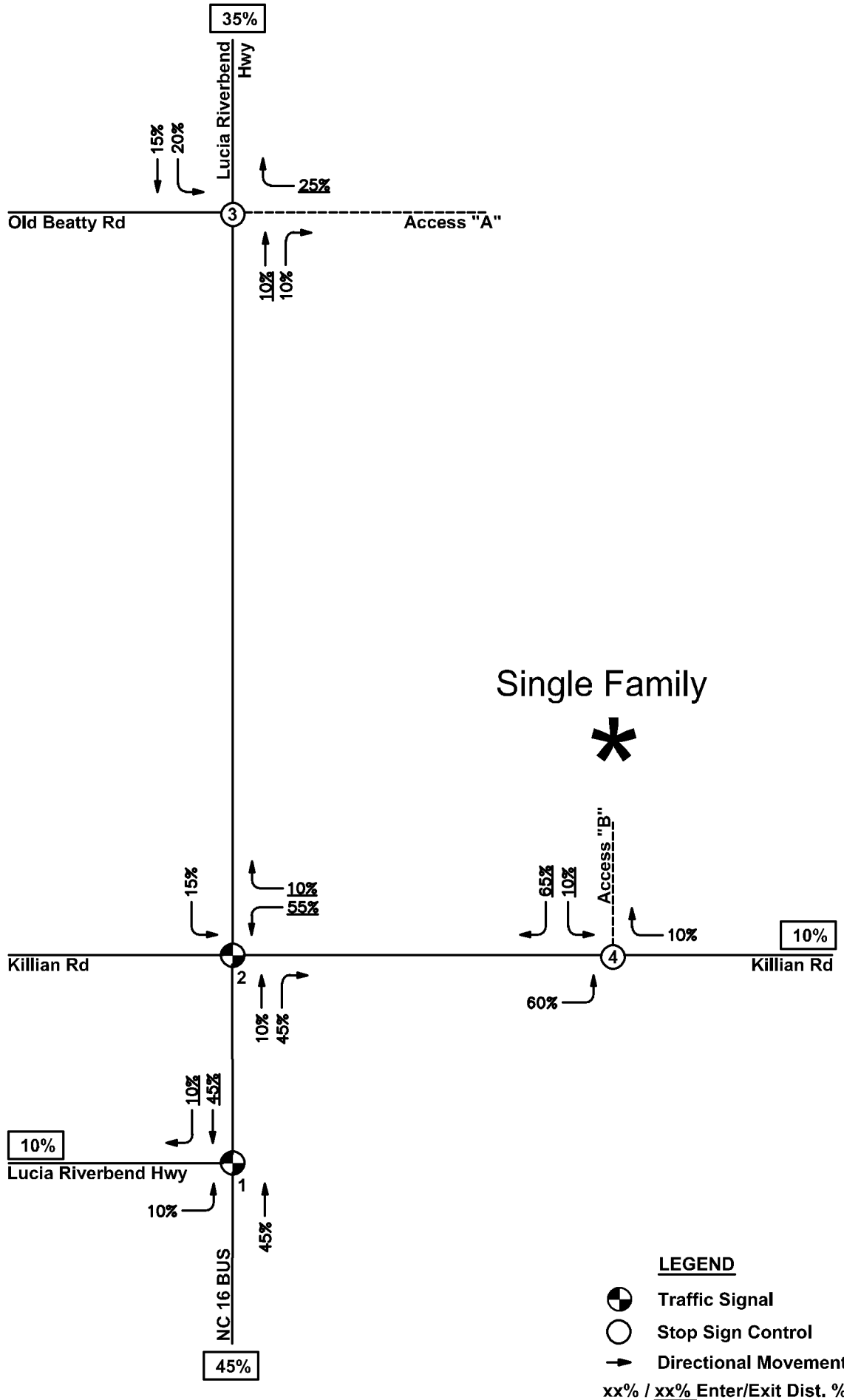
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CHARLOTTE, NC 28203

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RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
 1030 S CALDWELL STREET
 CHARLOTTE, NC 28203

SINGLE FAMILY SITE DIRECTIONAL DISTRIBUTION

0 NTS N
 SCALE: NTS

PROJECT #: 811-001
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Figure 3B



PROJECTED TRAFFIC

The daily and peak-hour trip generation data for the site is presented in Table 3. Values derived for the anticipated trips generated by the site are obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

Table 3: Trip Generation

Land Use [ITE Code]			Daily	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Single-Family Housing [210]	250	DUs	2,416	46	137	183	155	91	246
Single Family Total			2,416	46	137	183	155	91	246
Multi-Family (Low-Rise) [220]	180	DUs	1,320	20	65	85	63	37	100
Retail [820]	50,000	DUs	3,753	110	68	178	157	170	327
Townhomes + Retail Subtotal			5,073	130	133	263	220	207	427
<i>Pass-By Reductions*</i>			-112	0	0	0	-56	-56	-112
Townhomes + Retail w/ Reductions			4,961	130	133	263	164	151	315
Total Trips			7,377	176	270	446	319	242	561

The trip generation results indicate that the development is expected to generate 446 total AM peak hour trips and 561 total PM peak hour trips.

The projected background traffic volumes used in the analyses were developed from the existing peak hour TMCs. Per NCDOT, a 2% per year growth rate was used for the 2024 background volumes. The No Build volumes for the AM and PM peaks are presented in Figures 4 and 5 respectively. The 2024 AM and PM peak hour Build traffic volumes are presented in Figures 6 and 7. The background traffic is indicated to the far left of the movement arrows, followed by the offsite traffic in square brackets, the Townhomes/Retail site traffic in curly brackets and Single Family site traffic parentheses. The four volumes are added to obtain the projected total traffic for that movement:

$$\text{Background} + [\text{Offsite}] + \{\text{Townhomes/Retail Trips}\} + (\text{Single Family Trips}) = \text{Total}$$

LEGEND



Traffic Signal

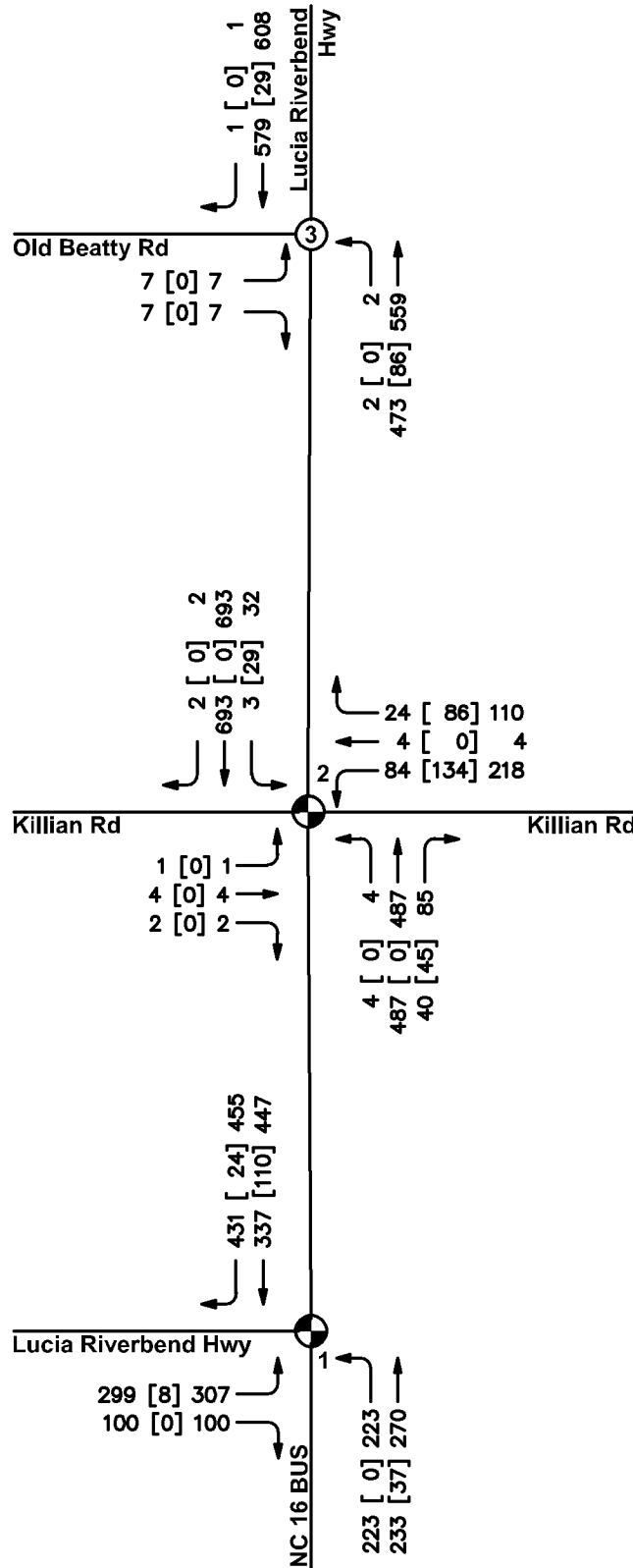


Stop Sign Control



Directional Movement

VOLUMES: Background [Offsite] Total



Existing count data were grown by a 2% compounded annual growth rate for No Build conditions.



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RIVERBEND PRESERVE PHASE 2 TIA

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CHARLOTTE, NC 28203

2024 NO BUILD
CONDITIONS
AM PEAK HOUR
VOLUMES

0 NTS
SCALE: NTS

PROJECT #: 811-001
DRAWN BY: SA
CHECKED BY: MW

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Figure 4

LEGEND



Traffic Signal

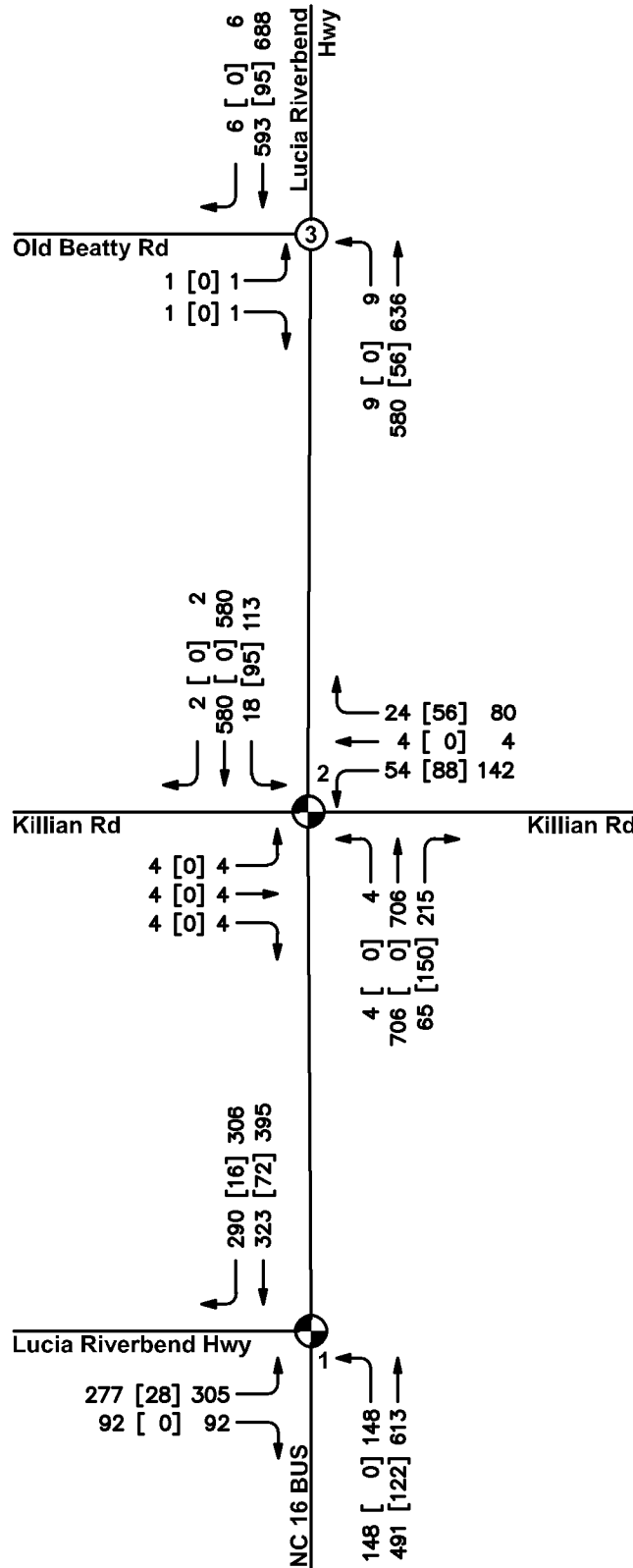


Stop Sign Control



Directional Movement

VOLUMES: Background [Offsite] Total



Existing count data were grown by a 2% compounded annual growth rate for No Build conditions.

RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S CALDWELL STREET
CHARLOTTE, NC 28203

**2024 NO BUILD
CONDITIONS
PM PEAK HOUR
VOLUMES**



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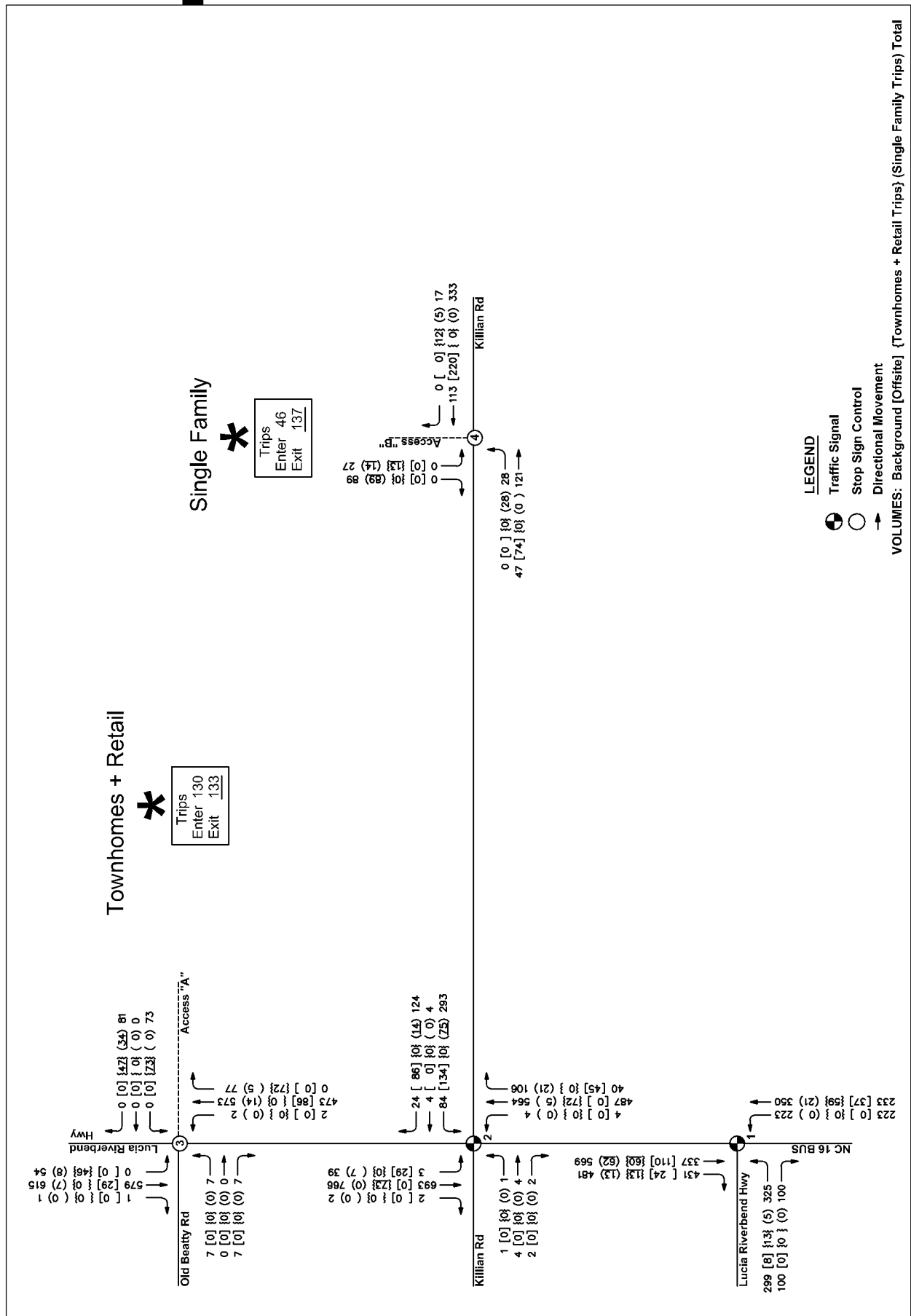
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Figure 5

Figure 6



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TRAFFIC ANALYSIS

The study intersections identified within the area of influence were analyzed to detect the traffic impact that the development has under the build-out year (2024). The traffic analysis evaluates following measures of effectiveness' (MOEs) and their respective criteria at the intersections assuming the future year conditions of 2024.

Level of service (LOS) of an intersection or approach is a qualitative MOE of traffic operations. It is a measure of average control delay in time within a peak period. The Transportation Research Board's Highway Capacity Manual¹ (HCM) defines the LOS thresholds established for signalized and unsignalized intersections per the following exhibits:

Intersection LOS	Exhibit 19-8 Signalized Intersection Control Delay per Vehicle (sec/vehicle)	Exhibit 20-2 Unsignalized Intersection Control Delay per Vehicle (sec/vehicle)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0 and ≤ 15.0
C	> 20.0 and ≤ 35.0	> 15.0 and ≤ 25.0
D	> 35.0 and ≤ 55.0	> 25.0 and ≤ 35.0
E	> 55.0 and ≤ 80.0	> 35.0 and ≤ 50.0
F	> 80.0	> 50.0

For the analysis of unsignalized intersections, intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. It should be noted that stop sign controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C", and Gaston County's UDO Section 5.11. It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2019 Existing Conditions
- 2024 No Build Conditions
- 2024 Build-out Conditions

NCDOT ANALYSIS REQUIREMENTS - In order to determine the mitigation responsibility of the developer, this study compares 2024 Build results to the 2024 No Build results.

Per Chapter 5, Section J of the *August 2003 NCDOT Policy on Street and Driveway Access to North Carolina Highways*, the applicant shall be required to identify mitigation improvements to the roadway network if at least one of the following conditions exists when comparing base network conditions to project conditions:

¹ National Research Council. Transportation Research Board. Highway Capacity Manual 6th Ed., Washington, DC. 2016.



- The total average delay at an intersection or an individual approach increases by 25% or greater, while maintaining the same level of service,
- The Level of Service (LOS) degrades by at least one level at an intersection or an individual approach,
- Or the Level of Service is “F” for an intersection or an individual approach.

This section of the NCDOT access policy also states that, *mitigation improvements shall be identified when the analysis indicates that the 95th percentile queue exceeds the storage capacity of the existing lane.*

SYNCHRO 10.3 was the software tool used in determining the delay, capacity and corresponding LOS at the study intersections. SimTraffic 10.3, a traffic simulation software application for unsignalized and signalized intersections, was used to calculate the maximum queue lengths at the study intersections. The Synchro and SimTraffic results of each scenario is displayed per intersection and are presented in Tables 4 – 17.

Base assumptions for the analysis scenarios include:

- A 2% per year background growth rate between the existing 2019 and future 2024 conditions
- All study intersections and movements assume a 0.90 peak hour factor (PHF)
- Observed heavy vehicle percentages (from TMCs) were used in all analysis for all intersections, a minimum of 2% was applied to proposed intersections.
- A minimum of 4 vehicles was assumed for all allowed movements.
- Existing signal plans were used in the Existing, No Build and Build conditions, coded based on the NCDOT Congestion Management Capacity Analysis Guidelines (2015) See Appendix for existing signal plans:
 - Right turn on red (RTOR) was disabled
 - Permitted-Protected phasing was adjusted to protected only in future conditions
 - Minimum green time was adjusted per speed limit
 - Yellow and red times were adjusted to 5 seconds and 2 seconds, respectively with -2 seconds of lost time adjustment
 - Signals were coordinated in all future scenarios
 - Cycle lengths were adjusted to future minimums per phase
- Signal timings as given by the signal plan were utilized and the intersections were optimized through all future scenarios
- All future scenarios assume the improvements per approved Riverbend Preserve Phase 1 TIA at the intersection of Lucia Riverbend Highway & NC 16 Business and the intersection of Killian Road & NC 16 Business.
 - ❖ Lucia Riverbend Highway & NC 16 Business
 - Implement southbound right turn overlap phasing on NC 16 Business
 - Extend eastbound right turn lane to 150' on Lucia Riverbend Highway
 - ❖ Killian Road & NC 16 Business
 - Construct a separate westbound right turn lane with 175' storage on Killian Road
 - Remark the existing combined left-thru-right lane to a combined left-thru lane
 - Extend southbound left turn lane storage to 125' on NC 16 Business



1. NC 16 Business & Lucia Riverbend Highway

Table 4: NC 16 Bus. & Lucia Riverbend Hwy Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	D	41.5	0.88	D	35.9	0.79
Eastbound - Lucia Riverbend Highway	D	48.5	-	D	40.1	-
Northbound - NC 16	D	38.7	-	C	31.5	-
Southbound - Lucia Riverbend Highway	D	39.6	-	D	38.1	-
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Intersection	C	27.7	0.80	C	22.5	0.74
Eastbound - Lucia Riverbend Highway	D	43.1	-	D	36.9	-
Northbound - NC 16	C	27.3	-	C	19.5	-
Southbound - Lucia Riverbend Highway	C	21.1	-	B	17.7	-
2024 Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Intersection	C	31.2	0.89	C	24.0	0.82
Eastbound - Lucia Riverbend Highway	D	53.4	-	D	42.8	-
Northbound - NC 16	C	28.6	-	C	20.3	-
Southbound - Lucia Riverbend Highway	C	23.5	-	B	18.4	-

2019 Existing Conditions

Currently the intersection operates with a LOS “D” in both peak hours.

2024 No Build Conditions

With the inclusion of the growth in the background and future adjustments to the signal, the intersection operates with a LOS “C” in both peak hours.

2024 Build Conditions

When comparing the impact of the 2024 Build to the 2024 No Build conditions the intersection LOS remains a “C” in both peak periods. The overall intersection delay increases between the No Build and Build scenarios by 13% in the AM peak hour and 7% in the PM peak hour.

It should be noted that improvements from Riverbend Preserve Phase 1 TIA will alleviate the traffic at this intersection with minimal queuing while the majority of the traffic moving through the intersection on the major street experiences little or no delay per Table 5.

This intersection does not require further mitigation under NCDOT guidelines. Therefore, no developer required improvements at this intersection should be deemed necessary.



Table 5: NC 16 Bus. & Lucia Riverbend Hwy Queue Lengths

Lucia Riverbend Highway/ @ NC 16 /Lucia Riverbend Highway	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements					
Eastbound Left-Turn (Lucia Riverbend Highway)	TERM.	#309'	302'	260'	403'
Eastbound Right-Turn (Lucia Riverbend Highway)	150'	98'	227'	84'	216'
Northbound Left-Turn (NC 16)	TERM.	#244'	257'	#192'	202'
Northbound Thru (NC 16)	-	110'	174'	344'	291'
Southbound Thru (Lucia Riverbend Highway)	TERM.	#416'	420'	307'	304'
Southbound Right-Turn (Lucia Riverbend Highway)	300'	281'	396'	m117'	181'
2024 Build Conditions with Phase 2 Improvements					
Eastbound Left-Turn (Lucia Riverbend Highway)	TERM.	#359'	391'	#328'	324'
Eastbound Right-Turn (Lucia Riverbend Highway)	150'	101'	248'	87'	250'
Northbound Left-Turn (NC 16)	TERM.	#266'	325'	149'	218'
Northbound Thru (NC 16)	-	138'	194'	463'	368'
Southbound Thru (Lucia Riverbend Highway)	TERM.	#530'	614'	#446'	493'
Southbound Right-Turn (Lucia Riverbend Highway)	300'	176'	400'	104'	344'



2. Lucia Riverbend Highway & Killian Road

Table 6: Lucia Riverbend Hwy & Killian Rd Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	A	8.6	0.55	A	6.1	0.48
Eastbound - Killian Road	B	19.3	-	C	21.0	-
Westbound - Killian Road	C	26.5	-	C	24.7	-
Northbound - Lucia Riverbend Highway	A	5.9	-	A	5.2	-
Southbound - Lucia Riverbend Highway	A	7.7	-	A	4.5	-
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Intersection	C	20.5	0.78	C	20.2	0.78
Eastbound - Killian Road	C	24.8	-	C	32.2	-
Westbound - Killian Road	D	43.6	-	D	53.0	-
Northbound - Lucia Riverbend Highway	B	14.1	-	B	17.4	-
Southbound - Lucia Riverbend Highway	B	14.9	-	B	13.2	-
2024 Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Intersection	C	25.9	0.89	C	28.9	0.92
Eastbound - Killian Road	C	23.3	-	C	31.3	-
Westbound - Killian Road	D	49.1	-	E	65.7	-
Northbound - Lucia Riverbend Highway	B	17.5	-	C	26.6	-
Southbound - Lucia Riverbend Highway	C	20.9	-	B	19.1	-
2024 Build Conditions with Test Improvements (Westbound LTL)						
Intersection	C	31.5	0.83	C	27.8	0.90
Eastbound - Killian Road	D	53.5	-	C	32.1	-
Westbound - Killian Road	E	56.8	-	E	64.5	-
Northbound - Lucia Riverbend Highway	C	25.3	-	C	24.1	-
Southbound - Lucia Riverbend Highway	C	23.3	-	B	19.9	-

2019 Existing Conditions

Currently the intersection operates with a LOS "A" in both peak hours.

2024 No Build Conditions

With the inclusion of the growth in the background and future adjustments to the signal, the intersection operates with a LOS "C" in both peak hours.

2024 Build Conditions

When comparing the impact of the 2024 Build to the 2024 No Build conditions the intersection LOS remains a "C" in both peak hours. The overall intersection delay increases between the No Build and Build scenario is 26% in the AM peak hour and 43% in the PM peak hour. In addition, the some of the approaches exceed the allowable parameters in both peak hours.



2024 Build with Test Improvements Conditions

Based on NCDOT guidelines, the analysis results indicate the need to identify mitigation at the study intersection as means to improve LOS and delay.

The following improvements are suggested:

- Extend northbound right turn lane storage from 175 feet to 275 feet on Lucia Riverbend Highway
- Extend southbound left turn lane storage from 125 feet to 200 feet on Lucia Riverbend Highway

The following improvement was tested within the analysis:

- Westbound left turn lane on Killian Road

Assuming these improvements are in place, the intersection LOS remains a “C” in both peak hours. The overall intersection delay increases between the No Build and Build scenario is 54% in the AM peak hour and 38% in the PM peak hour.

This tested improvement showed minimal to no improvement to this intersection and therefore, is not suggested as a developer responsibility.

It should be noted that improvements from Riverbend Preserve Phase 1 TIA will alleviate the traffic at this intersection with minimal queuing while the majority of the traffic moving through the intersection on the major street experiences little or no delay per Table 7.

Table 7: Lucia Riverbend Hwy & Killian Rd Queue Lengths

Killian Road @ Lucia Riverbend Highway	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements					
Eastbound Left-Thru-Right (Killian Road)	-	18'	51'	21'	46'
Westbound Left-Thru (Killian Road)	TERM.	#226'	247'	#185'	165'
Westbound Right-Turn (Killian Road)	175'	104'	180'	90'	123'
Northbound Left-Thru (Lucia Riverbend Highway)	-	413'	206'	375'	415'
Northbound Right-Turn (Lucia Riverbend Highway)	175'	m46'	95'	95'	275'
Southbound Left-Turn (Lucia Riverbend Highway)	125	48'	137'	125'	185'
Southbound Thru-Right Turn (Lucia Riverbend Highway)	TERM.	400'	299'	194'	237'
2024 Build Conditions with Phase 2 Improvements					
Eastbound Left-Thru-Right (Killian Road)	-	18'	40'	21'	40'
Westbound Left-Thru (Killian Road)	TERM.	#328'	275'	#261'	209'
Westbound Right-Turn (Killian Road)	175'	113'	241'	99'	127'
Northbound Left-Thru (Lucia Riverbend Highway)	-	#510'	619'	#695'	616'
Northbound Right-Turn (Lucia Riverbend Highway)	175'	74'	275'	150'	275'
Southbound Left-Turn (Lucia Riverbend Highway)	125	56'	88'	#196'	170'
Southbound Thru-Right Turn (Lucia Riverbend Highway)	TERM.	534'	421'	254'	211'



3. Lucia Riverbend Highway & Old Beatty Road-Access “A”

Table 12: Lucia Riverbend Hwy & Old Beatty Rd-Access “A” Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Eastbound - Old Beatty Road	C	16.4	-	C	17.9	-
Northbound - Lucia Riverbend Highway	A	0.0	-	A	0.1	-
Southbound - Lucia Riverbend Highway	A	0.0	-	A	0.0	-
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Eastbound - Old Beatty Road	C	20.2	-	C	23.9	-
Northbound - Lucia Riverbend Highway	A	0.1	-	A	0.1	-
Southbound - Lucia Riverbend Highway	A	0.0	-	A	0.0	-
2024 Build Conditions with Riverbend Preserve Phase 1 TIA Improvements						
Eastbound - Old Beatty Road	C	21.4	-	D	28.6	-
Westbound - Access "A"	C	16.0	-	E	42.5	-
Northbound - Lucia Riverbend Highway	A	0.0	-	A	0.1	-
Southbound - Lucia Riverbend Highway	A	0.8	-	A	1.1	-
2024 Build Conditions with Phase 2 Improvements						
Eastbound - Old Beatty Road	C	21.3	-	D	27.5	-
Westbound - Access "A"	C	23.2	-	E	36.9	-
Northbound - Lucia Riverbend Highway	A	0.1	-	A	0.1	-
Southbound - Lucia Riverbend Highway	A	0.8	-	A	1.1	-

2019 Existing Conditions

Currently the worst approach of the intersection (Eastbound-Old Beatty Road) operates with a LOS “C” both peak hours.

2024 No Build Conditions

With the inclusion of the growth in the background, the worst approach of the intersection (Eastbound-Old Beatty Road) remains at a LOS “C” in both peak hours.

2024 Build Conditions

When comparing the impact of the 2024 Build to the 2024 No Build conditions, the worst approach of the intersection (Eastbound-Old Beatty Road) operates at a “C” in the AM peak hour and becomes a “D” in the PM peak hour. The eastbound delay increases between the No Build and Build scenario is 6% in the AM peak hour and 20% in the PM peak hour.

It should be noted that stop sign controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay.



2024 Build with Improvements Conditions

We propose the following intersection configuration:

- Align east/west approaches to a four-legged intersection (right-of-way to be acquired to ensure alignment)
- Construct a southbound left turn lane with 100 feet of storage on Lucia Riverbend Highway
- Construct northbound left turn lane with 100 feet of storage on Lucia Riverbend Highway to allow for intersection alignment
- Construct northbound right turn lane with 100 feet of storage on Lucia Riverbend Highway
- One ingress and two egress lanes (a westbound thru-right turn lane and left turn lane with 200' storage) on Proposed Access "A"
- Minimum internal protected stem of 200'

Assuming these improvements are in place, the worst approach of the intersection (Eastbound-Old Beatty Road) operates at a "C" in the AM peak hour and becomes a "D" in the PM peak hour (both of which are considered acceptable based on NCDOT guidelines). Sight distance should be verified by site-civil engineer during permitting process.

Table 13: Lucia Riverbend Hwy & Old Beatty Road-Access "A" Queue Lengths

Old Beatty Road/ @ Lucia Riverbend Highway	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 No Build Conditions with Riverbend Preserve Phase 1 TIA Improvements					
Eastbound Left-Right Turn (Old Beatty Road)	-	5'	32'	3'	22'
Northbound Left-Thru (Lucia Riverbend Highway)	-	0'	50'	0'	84'
2024 Build Conditions with Phase 2 Improvements					
Eastbound Left-Thru-Right (Old Beatty Road)	-	8'	29'	5'	50'
Westbound Left-Turn (Access "A")	150'	43'	93'	78'	193'
Westbound Thru-Right (Access "A")	-	20'	85'	23'	80'
Northbound Left-Turn (Lucia Riverbend Highway)	100'	0'	24'	0'	27'
Northbound Thru-Right (Lucia Riverbend Highway)	-	0'	10'	0'	37'
Southbound Left-Turn (Lucia Riverbend Highway)	100'	5'	44'	10'	68'



4. Killian Road & Access “C”

Table 16: Killian Rd & Access “C” Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2024 Build Conditions with Phase 2 Improvements						
Eastbound - Killian Road	A	1.5	-	A	1.8	-
Westbound - Killian Road	A	0.0	-	A	0.0	-
Southbound - Access "B"	B	11.7	-	B	12.4	-

2024 Build with Improvements Conditions

We propose the following intersection configuration:

- Construct an eastbound left turn lane with 100 feet of storage on Killian Road
- One ingress and two egress lanes (a terminating southbound right turn lane and left turn lane with 100' storage) on Proposed Access “B”
- Minimum internal protected stem of 100'

Assuming these improvements are in place, the worst approach of the intersection (Southbound-Access “B”) operates at a “B” in the AM peak hour and becomes a “B” in the PM peak hour. (both of which are considered acceptable based on NCDOT guidelines). Sight distance should be verified by site-civil engineer during permitting process.

Table 17: Killian Rd & Access “C” Queue Lengths

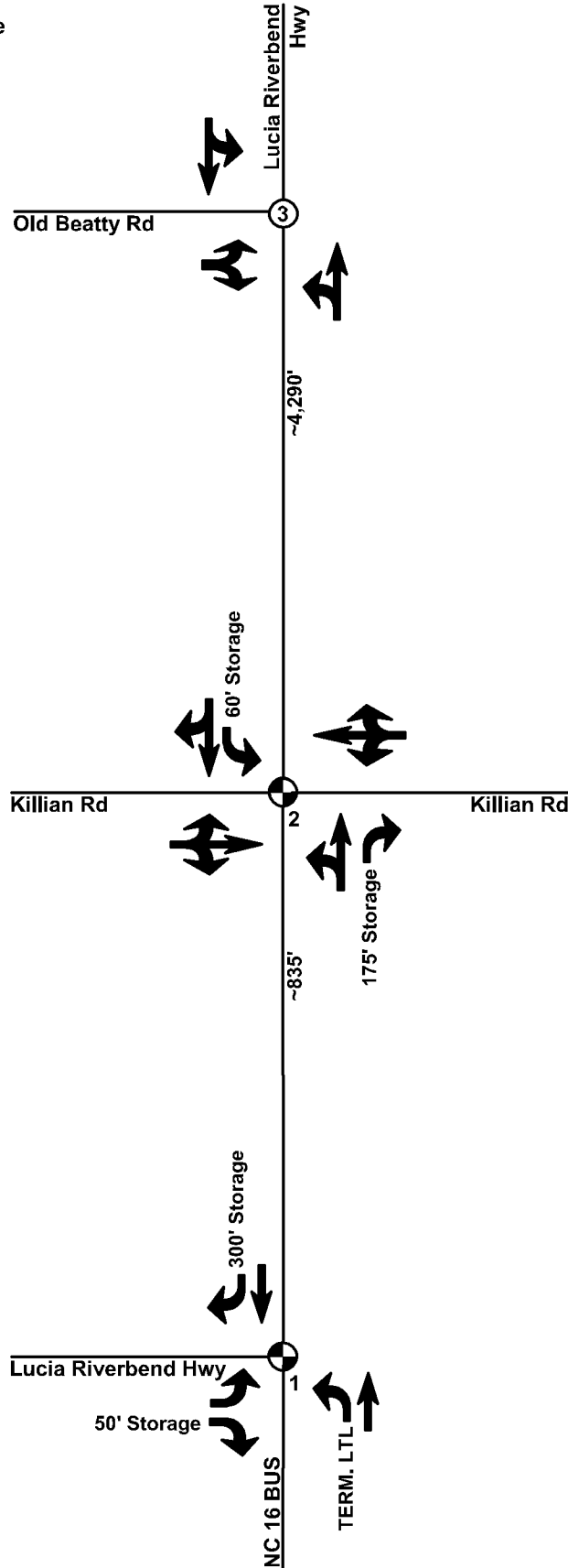
Killian Road @ /Access "B"	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2024 Build Conditions with Phase 2 Improvements					
Eastbound Left-Turn (Killian Road)	100	3'	33'	8'	69'
Southbound Left Turn (Access "B")	-	5'	35'	8'	35'
Southbound Right Turn (Access "B")	-	13'	80'	8'	63'

Analysis software result reports per scenario are provided in the Appendix.

The existing/suggested laneage is shown on Figures 8 and 9.

LEGEND

-  Traffic Signal
-  Stop Sign Control
-  Existing Laneage



LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
TRANSPORTATION PLANNING

2459 Wilkinson Blvd, Ste 200 Charlotte, NC 28208
704.343.0608
www.drgp.com

RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

THE SHAW TATE GROUP
1030 S. CALDWELL STREET
CHARLOTTE, NC 28203

EXISTING LANEAGE



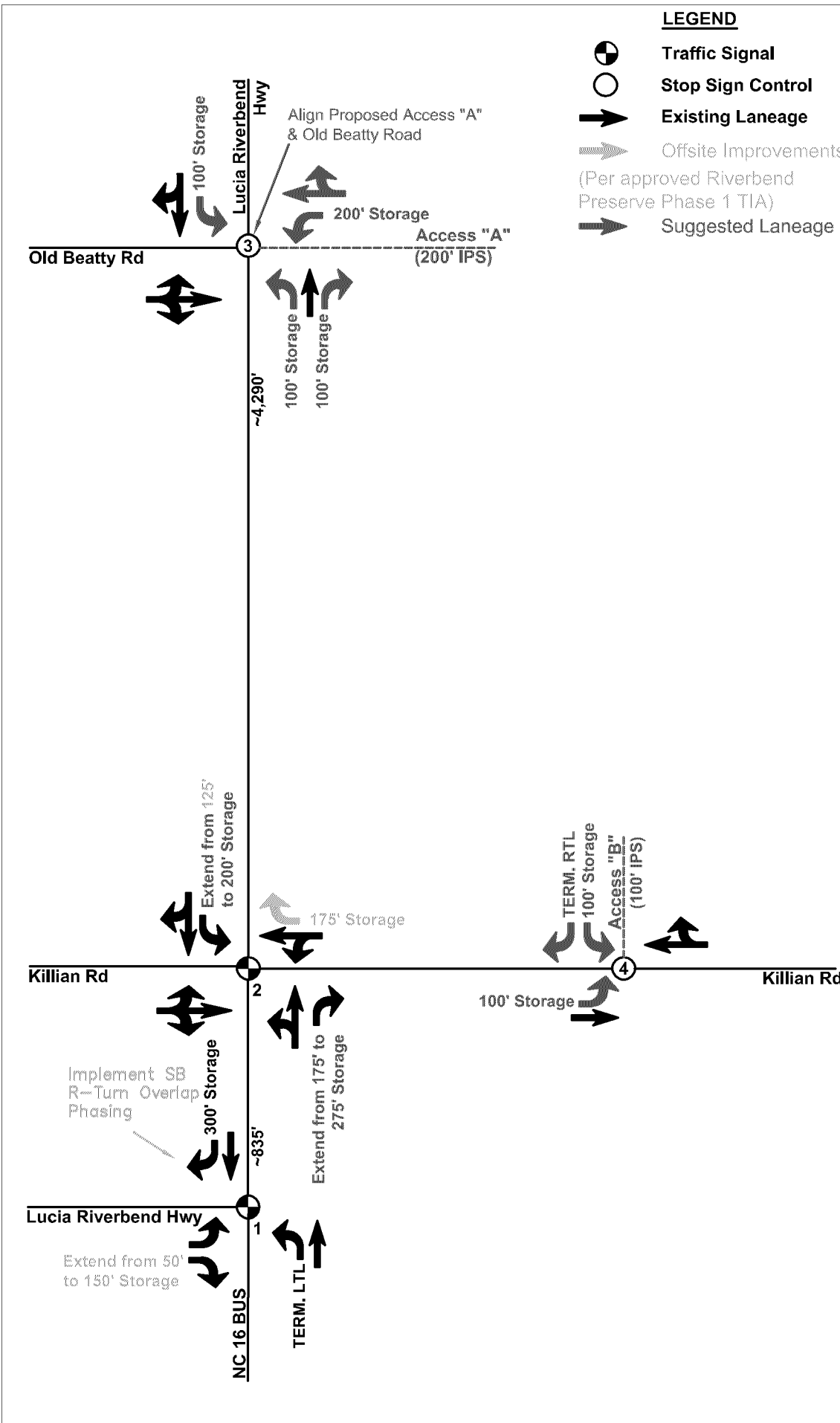
PROJECT #: 811-001
DRAWN BY: SA
CHECKED BY: MW

MARCH 2020

REVISIONS:

1.	

Figure 8



LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
TRANSPORTATION PLANNING

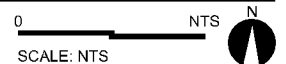
2459 Wilkinson Blvd, Ste 200 Charlotte, NC 28208
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RIVERBEND PRESERVE PHASE 2 TIA

GASTON/ LINCOLN COUNTY, NC

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CHARLOTTE, NC 28203

SUGGESTED LANEAGE



PROJECT #: 811-001
DRAWN BY: SA
CHECKED BY: MW

MARCH 2020

REVISIONS:
1. Revised per Con.Mgmt, comments 5/18/2020

Figure 9



CONCLUSION

In conclusion, it was determined that Riverbend Preserve Phase 2 site development will not significantly affect the operations of vehicular traffic on the adjacent roadways with both these suggested improvements as well as, the suggested intersection improvements/enhancements from the approved Riverbend Preserve Phase 1 Traffic Impact Analysis.



APPENDIX



Gaston County

Gaston County
Board of Commissioners
www.gastongov.com

Building and Development Services

Board Action

File #: 23-104

Commissioner Brown - Building & Development Services - Zoning Map Change: Conditional District REZ-23-01-06-00137, Riverbend Preserve LLC (Applicant); Property Parcel: Portion of 202649 (Industrial Development Area), Located at NC 16 and Killian Rd., Stanley, NC, Rezone from (R-1) Single Family Limited with (SH) Special Highway and (US) Urban Standards Overlays to the (CD/I-2) Conditional General Industrial with Special Highway (SH) and Urban Standards (US) Overlays

STAFF CONTACT

Jamie Kanburoglu - Director of Planning and Zoning - 704-862-5510

BACKGROUND

Chapter 5 of the Unified Development Ordinance requires a public hearing by the Commission, with recommendation by the Planning Board prior to consideration for final action by the Commission. Riverbend Preserve LLC (Applicant); Property Parcel: Portion of 202649 (Industrial Development Area) Located at NC 16 and Killian Rd., Stanley, NC, Rezone from (R-1) Single Family Limited with (SH) Special Highway and (US) Urban Standards Overlays to the (CD/I-2) Conditional General Industrial with Special Highway (SH) and Urban Standards (US) Overlays. A public hearing was advertised and held on March 28, 2023 with Public Hearing comments being on file in the Board of Commission Clerk's Office. Planning Board recommendation was provided on March 6, 2023, and the Commission is requested to consider the public hearing comment, Planning Board recommendation and other pertinent information, then (approve), (disapprove) or (modify) the map change.

ATTACHMENTS

Resolution, Staff Report, Application Packet, Maps, Site Plan, GCLMPO Comments, and TIA Documents

DO NOT TYPE BELOW THIS LINE

I, Donna S. Buff, Clerk to the County Commission, do hereby certify that the above is a true and correct copy of action taken by the Board of Commissioners as follows:

NO.	DATE	M1	M2	CBrown	CCloninger	AFrale	BHovis	KJohnson	TKelgher	RWorley	Vote
2023-086	03/28/2023	CB	RW	A	A	A	A	A	N	A	6 - 1

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