

**ZEBULON  
BOARD OF COMMISSIONERS  
AGENDA  
May 6, 2024  
6:00pm**

**1. PLEDGE OF ALLEGIANCE**

*A. Boy Scout Troop 522*

**2. APPROVAL OF AGENDA**

**3. RECOGNITIONS**

*A. Zebulon Elementary School*

- i. Sunquinn Broome – Student*
- ii. Melanie Cline-Pierce – Teacher*

*B. Boy Scout Troop 522*

**4. PROCLAMATION**

- A. Mental Health Month*
- B. Foster Care Awareness Month*
- C. Municipal Clerks Week*
- D. Police Appreciation Week*
- E. Public Works Week*

**5. PUBLIC COMMENT**

All wishing to speak must sign up prior to 5:50pm. The comment period will be no longer than 15 minutes with speakers having three minutes each to speak. No speaker can speak on a public hearing item or any item that would need to be discussed under Closed Session. Speakers cannot give their minutes to another speaker. If you would like to submit comments to be read into the record at the meeting, please send comments, of 400 words or less, to Stacie Paratore at [sparatore@townofzebulon.org](mailto:sparatore@townofzebulon.org) by 3:00pm on May 6, 2024.

**6. CONSENT AGENDA**

*A. Minutes*

- i. February 15, 2024 Work Session*

*B. Finance*

- i. Wake County Tax Report – February 2024*
- ii. Budget Amendment – Police and Fire off-duty work reimbursement – Ordinance 2024-43*

*C. Police*

- i. 2024 Governor’s Highway Safety Program Grant Application – Resolution 2024-21

*D. Planning*

- i. Letter of Support – Wake County Historic Preservation Commission
- ii. Memorandum of Understanding – Capital Area Metropolitan Organization

*E. Public Works*

- i. Budget Amendment – HVAC Replacement at Zebulon Community Center – Ordinance 2024-45

**7. OLD BUSINESS**

*A. Planning*

- i. Zebulon South Planned Development – Ordinance 2024-39

*B. Fire*

- i. Participation in Wake County Fire Academy – Funding Agreement

*C. General*

- i. Bond Referendum – Notice of Intent – Resolution 2024-22 and Ordinance 2024-46

**8. NEW BUSINESS**

*A. Parks and Recreation*

- i. Angel Prints Corporation – Special Event Application – Resolution 2024-23
- ii. Norse Brewing Market Events – Resolution 2024-24

*B. Public Works*

- i. Paint the Pavement – Pilot Program Request
- ii. Public Works Maintenance Yard Expansion – Ordinance 2024-44

**9. BOARD COMMENTS**

**10. MANAGERS REPORT**

**11. ADJOURN**

# ZEBULON

NORTH CAROLINA

## PROCLAMATION MENTAL HEALTH MONTH

**WHEREAS**, mental health is an essential part of overall well-being, impacting individuals, families, and communities across the Town of Zebulon, Wake County, North Carolina and the Nation; and

**WHEREAS**, one in five American adults experiences a mental health condition each year and everyone faces challenges in life that can impact their mental health; and

**WHEREAS**, despite its prevalence, mental health remains shrouded in stigma, preventing many from seeking help; and

**WHEREAS**, early intervention and access to quality care are crucial for managing mental health conditions and improving quality of life for those struggling with their mental health but also their loved ones; and

**WHEREAS**, May is recognized nationally as Mental Health Awareness Month, providing an opportunity to raise awareness, combat stigma, and promote mental health and the many available resources;

**NOW, THEREFORE**, the Zebulon Board of Commissioners does hereby proclaim May 2024 as Mental Health Month in the Town of Zebulon, NC.

**FURTHERMORE**, we encourage all residents of the Town of Zebulon to:

- Educate themselves and others about mental health conditions, treatment options, and available resources.
- Challenge stigma by speaking respectfully and inclusively about mental health.
- Seek help if they are struggling with their mental health and encourage others to do the same.
- Support organizations that provide mental health services and advocacy.
- Create safe and supportive environments for open conversations about mental health.
- Together, we can create a community where everyone feels empowered to prioritize their mental wellbeing and seek help when needed.

ADOPTED this the 6<sup>th</sup> day of May 2024

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Glenn L. York – Mayor

*Seal*

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Lisa M. Markland, CMC – Town Clerk

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# ZEBULON

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NORTH CAROLINA

## PROCLAMATION FOSTER CARE AWARENESS MONTH

**WHEREAS**, the youth of North Carolina are our most precious resource and hope for the future, and all children deserve a safe, loving, and nurturing place to call home; and

**WHEREAS**, there are approximately 10,150 children and youth in the foster care system, and approximately 841 young adults ages 18 to 20 in extended foster care in North Carolina; and

**WHEREAS**, the purpose of foster care is to provide temporary safe, secure, and stable homes through the compassion and nurturing of a foster family or kinship family; and

**WHEREAS**, foster families and kinship families open their homes and hearts to children whose families are in crisis, and play a vital role in helping children and families heal and reunify, while launching children into successful adulthood; and

**WHEREAS**, we encourage the citizens of Zebulon and North Carolina to think about how they can help meet the need for more foster, kinship, and adoptive families; and

**WHEREAS**, there are numerous individuals, communities, and public and private organizations working to increase public awareness of the needs of children both in foster care and exiting foster care, and of the enduring and valuable contributions made by foster and kinship families; and

**WHEREAS**, Foster Care Month is an opportunity to recognize the foster parents, kinship families, child welfare professionals, and advocates working to ensure children's safety and well-being, and to spread awareness on behalf of the thousands of children in foster care in North Carolina; and

**WHEREAS**, the Town of Zebulon encourages residents to volunteer their time, energy, and talents on behalf of children in foster care and their biological families, kinship caregivers, and foster parents during this month and throughout the year;

**NOW, THEREFORE**, the Zebulon Board of Commissioners, does hereby proclaim May, 2024, as "**FOSTER CARE MONTH**" in the Town of Zebulon.

ADOPTED this the 6<sup>th</sup> day of May 2024

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Glenn L. York – Mayor

*Seal*

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Lisa M. Markland, CMC – Town Clerk

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# ZEBULON

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NORTH CAROLINA

***PROCLAMATION  
MUNICIPAL CLERKS WEEK  
May 5 - May 11, 2024***

***WHEREAS***, The Office of the Municipal Clerk, a time honored and vital part of local government exists throughout the world, and

***WHEREAS***, The Office of the Municipal Clerk is the oldest among public servants, and

***WHEREAS***, The Office of the Municipal Clerk provides the professional link between the citizens, the local governing bodies and agencies of government at other levels, and

***WHEREAS***, Municipal Clerks have pledged to be ever mindful of their neutrality and impartiality, rendering equal service to all.

***WHEREAS***, The Municipal Clerk serves as the information center on functions of local government and community.

***WHEREAS***, Municipal Clerks continually strive to improve the administration of the affairs of the Office of the Municipal Clerk through participation in education programs, seminars, workshops and the annual meetings of their state, province, county and international professional organizations.

***WHEREAS***, It is most appropriate that we recognize the accomplishments of the Office of the Municipal Clerk.

***NOW, THEREFORE***, we, the Board of Commissioners of the Town of Zebulon, do recognize the week of May 5 through May 11, 2024 as the 55<sup>th</sup> Annual Municipal Clerks Week, and further extend appreciation to our Municipal Clerk and to all Municipal Clerks for the vital services they perform and their exemplary dedication to the communities they represent.

Adopted this the 6<sup>th</sup> day of May, 2024

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*Glenn L. York—Mayor*

*Seal*

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*Lisa M. Markland, CMC—Town Clerk*

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# ZEBULON

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NORTH CAROLINA

***PROCLAMATION***  
***NATIONAL POLICE APPRECIATION WEEK***  
**May 11 - May 17, 2024**

**WHEREAS**, in 1963 the Congress and President of the United States have designated May 15 as Peace Officers' Memorial Day, and the week in which May 15 falls as National Police Week; and

**WHEREAS**, there are approximately 900,000 law enforcement officers serving across the United States, including the dedicated members of the Town of Zebulon Police Department; and

**WHEREAS**, the members of the Zebulon Police Department play an essential role in safeguarding the rights and freedoms of our community; and

**WHEREAS**, it is important that all citizens know and understand the duties, responsibilities, and sacrifices of their law enforcement agencies, and that officers of the Town of Zebulon recognize their duty to serve the people by safeguarding life and property, by protecting them against violence and disorder, and by protecting the innocent against deception and the weak against oppression; and

**WHEREAS**, the men and women of law enforcement of the Town of Zebulon unceasingly provide a vital public service by their faithful and loyal devotion to their responsibilities have rendered a dedicated service to this community and in so doing, have established for themselves an enviable and enduring reputation for preserving the rights and security of all citizens;

**NOW, THEREFORE**, the Town of Zebulon Board of Commissioners proclaims the week of May 11 – May 17, 2024 as Police Week and call upon all citizens of Zebulon and upon all patriotic, civic, and educational organizations to observe May 15, 2024, as Peace Officers' Memorial Day in which people may join in commemorating law enforcement officers, past and present, who have made the ultimate sacrifice in service to their community or have become disabled in the performance of their duty.

ADOPTED this the 6<sup>th</sup> day of May 2024.

SEAL

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Glenn L. York—Mayor

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Lisa M. Markland, CMC—Town Clerk

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# ZEBULON

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NORTH CAROLINA

## PROCLAMATION NATIONAL PUBLIC WORKS WEEK May 19 – May 25, 2024

**WHEREAS**, Public Works professionals focus on infrastructure, facilities, and services that are of vital importance to sustainable and resilient communities and the public health, high quality of life, and well-being of the citizens of Zebulon; and

**WHEREAS**, those facilities and services could not be provided without the dedicated efforts of Public Works Professionals; and

**WHEREAS**, those individuals build, operate, maintain and administer the streets, sidewalks, stormwater infrastructure, solid waste and recycling collections, public buildings, and other structures and facilities that are vital to the citizens of Zebulon; and

**WHEREAS**, it is in the interest of the public for citizens, civic leaders and children to continue to gain information and to understand the role Public Works plays in the Town of Zebulon; and

**WHEREAS**, 2024 marks the 64<sup>th</sup> annual National Public Works Week;

**NOW, THEREFORE**, the Board of Commissioners of the Town of Zebulon joins the American Public Works Association in recognizing the contributions of Public Works professionals to the health, safety, and quality of life in Zebulon. The Board of Commissioners also encourages all residents of Zebulon to thank the Public Works Professionals for their continued dedication and hard work to this community. We the Board of Commissioners of the Town of Zebulon proclaims the week of May 19 through May 25, 2024 as “National Public Works Week.”

ADOPTED this the 6<sup>th</sup> day of May 2024

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Glenn L. York – Mayor

*Seal*

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Lisa M. Markland, CMC – Town Clerk

**Zebulon Board of Commissioners**  
**Work Session**  
**Minutes**  
**February 15, 2024**

Present: Mayor Glenn York, Jessica Harrison, Quentin Miles, Beverly Clark, Amber Davis, Joe Moore-Town Manager, Chris Ray-Public Works, Bobby Fitts-Finance, Jacqui Boykin-Police, Michael Clark-Planning, Sheila Long-Parks and Recreation, Kaleb Harmon-Communications, Shannon Johnson-Community and Economic Development, Eric Vernon-Attorney

Absent: Shannon Baxter

Mayor York called the meeting to order at 5:00pm.

Mayor York stated Commissioner Baxter would not be in attendance.

**APPROVAL OF AGENDA**

Commissioner Clark made a motion, second by Commissioner Harrison to approve the agenda. There was no discussion and the motion passed unanimously.

**FY '25 REQUESTED BUDGETS**

Joe Moore gave an overview of the items to be presented at the meeting and gave dates for budget items.

**POLICE**

Jacqui Boykin spoke about the goals and priorities of the department. There were details given about the applicant pool and job openings. The department received a low number of applications. Local agency salaries were shown to compare to the Town's current police salaries. It was explained how officers were leaving to go to other departments and some of the reasons why they left. Jacqui Boykin explained to increase the applicant pool and remain competitive the base salary needed to be increased. The department's demographics and the efforts being taken to diversify the department were explained.

The service metrics were shown. The calls for service had more than doubled, average daily road trips increased by 50% and the population had doubled. There was a need for more personnel in the department to keep up with the increase in service calls. The department would be requesting five additional employees in the FY '25 budget. Those requested positions included two patrol officers, two lieutenants, and a detective. Chief Boykin spoke about minimum staffing and additional positions necessary. Examples of how minimum staffing affected the department were given. There were increases in operational lines to accommodate for the new position requests. Chief Boykin spoke about the CARE initiative.

Commissioner Harrison asked about the goals of the CARE initiative. Chief Boykin explained how children who witnessed trauma often become offenders and the CARE initiative will allow social workers to intervene early with children and families at the first incident of trauma. The detective and social worker interns would work together, and the interns would manage resource referrals.



## **PARKS AND RECREATION**

Sheila Long spoke about the needs of new residents and how the department was responding to growth. The growth was affecting capacity, and the needs of the community were changing. An example given was programs were being capped due to not having enough space available. Registration in summer camps and programs increased significantly and the department was near capacity. It was explained why a new programmer was needed.

There was information given about the parks and facilities the department supported. Ms. Long spoke about the Tree City USA and Bee City USA initiative. A sustainability intern was hired to engage the public and assess internal operations. Staff recommended establishing a sustainability committee and details of that committee were given.

Staff spoke about the need for two maintenance workers and a facility maintenance worker position to help meet the needs of the community. For the department to meet the vision goals of the master plan a Park Planner position would be needed and staff spoke about how they would support park planning and project management. Details of the Gill Street playground engagement process was given. A park planner would lead a playground engagement project.

The CIP highlights were shown and included fleet and equipment, disc golf course enhancements, pickleball courts, Whitley Park playground, ZES improvements, Gill St. Park, ZCP bridge and trail head, Community Center floor replacement, property acquisition, open space standards, and fields at Whitley Park expansion.

Mayor York stated there would be a ten-minute break.

The meeting reconvened at 6:37pm.

Commissioner Harrison asked about the possibility of Gill Street Park becoming a community park. Sheila Long explained a community park was 20 acres or more and spoke about having conversations to assess the needs of the citizens. Other items could be added to provide for community needs.

Commissioner Davis inquired about a second community center. Sheila Long stated the master plan included a second facility which was needed and spoke about the next steps.

## **PLANNING: ECONOMIC DEVELOPMENT**

Shannon Johnson spoke about the creation of the economic development strategic plan. A draft plan would go before the Board by May to offer feedback to the consultant. The findings of the community survey and engagement sessions were explained. The overall themes included infrastructure, business, and quality of life.

The actions and activities for economic development were detailed by staff with examples of short-range, mid-range and long-range actions. Some additional projects included managing studies to determine project feasibility, tasks related to the HUD Downtown Revitalization grant, and the National Register Historic District – Barbee Street project.

Commissioner Miles asked for more details about the Barbee Street project. Shannon Johnson explained there were several phases to a historic district and the first would be a research phase.

Joe Moore explained the HUD Downtown Revitalized grant was a congressional earmark the Town secured through Representative David Price to revitalize downtown. Mr. Moore also gave details about the funds that were available to move forward with the National Register Historic District.

Commissioner Davis left the meeting at 7:30pm.

### **MAIN STREET PROGRAM: MUNICIPAL DISTRICTS**

Shannon Johnson explained Municipal Service Districts (“MSD”) and stated it was a way to generate consistent funding for additional services and projects at a greater extent than those provided on a Town-wide basis. Information of the legal foundation of MSDs and a chart of MSDs in North Carolina were shown. MSDs fund breach erosion and floor and hurricane protection work, downtown revitalization, urban revitalization, transit-oriented development projects, sewerage collection and disposal systems, off-street parking facilities, and watershed improvements, drainage, and water resource development. Staff explained how districts can be managed. Some similar towns with MSDs were Kinston, Smithfield, Wake Forest, and Wilson. Staff stated the average MSD tax rate was \$.25/\$100.

The current Main Street boundary was shown on a map, but the boundary was able to be modified. The different tax rates were shown to give an example of the tax revenue based on \$.06, \$.09 and \$.12 tax rates. Staff proposed a modified Main Street boundary and gave an example of the tax revenue based on \$.06, \$.09 and \$.12 tax rates. Staff spoke about ways to leverage funds and gave a 10-year outlook.

The steps to establish an MSD were to complete a feasibility report, staff to present the report to the Board, staff to update report based on feedback. Commissioners review boundaries and tax implications, Commissioners schedule a public hearing, the Town to mail notices to all property owners within the proposed MSD to include the proposed boundary map, Board to review petitions for exclusion from the proposed MSD, hold another public hearing, vote on an ordinance establishing the MSD, and the tax levy would be effective July 1 following the establishment of the MSD.

Commissioner Miles asked about the cost of a feasibility study. Shannon Johnson stated she would research the costs for the Board.

### **FIRE STATION**

Chris Perry gave background of the Zebulon South Fire Station Assessment. Chief Perry spoke about the location, site and cost.

Commissioner Miles asked if the site was close to the cemetery. Michael Clark explained the site was not near the cemetery.

Commissioner Harrison stated she wanted to know if the site could be used as a fire station before the Board moved forward with the Zebulon South development.

Commissioner Harrison made a motion, second by Commissioner Clark to approve Ordinance 2024-33. There was no discussion and the motion passed unanimously.

Board of Commissioners  
Minutes  
February 15, 2024

Commissioner Harrison made a motion, second by Commissioner Clark to adjourn. There was no discussion and the motion passed unanimously.

Adopted this the 6<sup>th</sup> day of May 2024.

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Glenn L. York—Mayor

SEAL

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Lisa M. Markland, CMC—Town Clerk



**Board of Commissioners**  
P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6180  
FAX 919 856 5699

SHINICA THOMAS, CHAIR  
SUSAN EVANS, VICE-CHAIR  
VICKIE ADAMSON  
MATT CALABRIA  
DON MIAL  
CHERYL STALLINGS  
TARA WATERS

April 2, 2024

Ms. Lisa Markland  
Town Clerk  
Town of Zebulon  
1003 North Arendell Avenue  
Zebulon, North Carolina 27597

Dear Ms. Markland:

The Wake County Board of Commissioners, in regular session on April 1, 2024, approved and accepted the enclosed tax report for the Town of Zebulon.

The attached adopted actions are submitted for your review; no local board action is required.

Sincerely,

A handwritten signature in blue ink that reads "Yvonne Gilyard".

Yvonne Gilyard  
Clerk to the Board

Wake County Board of Commissioners

Enclosure(s)



Wake County Tax Administration

Rebate Details  
 02/01/2024 - 02/29/2024  
**ZEBULON**

DATE 03/07/2024  
 TIME 1:04:32 PM  
 PAGE 1

REBATE NUMBER	PROPERTY	CITY TAG	LATE LIST	BILLED INTEREST	TOTAL REBATED	PROCESS DATE	ACCOUNT NUMBER	TAX YEAR	BILLING YEAR	OWNER
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WILDLIFE BOAT ACCOUNTS

871368	304.75	0.00	0.00	0.00	304.75	02/13/2024	0004214774	2023	000000	WELLS, RICHARD BRANDON
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SUBTOTALS FOR WILDLIFE BOAT ACCOUNTS: 304.75 0.00 0.00 0.00 304.75 1 Properties Rebated

TOTAL REBATED FOR ZEBULON: 304.75 0.00 0.00 0.00 304.75 1 Properties Rebated for City



**Wake County Tax Administration**

Rebate Details  
02/01/2024 - 02/29/2024

ZEBULON

DATE 03/07/2024  
TIME 1:04:32 PM  
PAGE 1

REBATE NUMBER	PROPERTY	CITY TAG	LATE LIST	BILLED INTEREST	TOTAL REBATED	PROCESS DATE	ACCOUNT NUMBER	TAX YEAR	BILLING YEAR	OWNER
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Grand Total: 17,944.63 1,340.00 304.42 0.00 19,589.05 129 Properties Rebated for All Cities

STAFF REPORT  
ORDINANCE 2024-43  
BUDGET AMENDMENT APPROPRIATING FUNDS  
FOR POLICE & FIRE OFF-DUTY EMPLOYMENT REIMBURSEMENT  
MAY 6, 2024

**Topic: FY 2024 Budget Amendment Request – Ordinance 2024-43**

Speaker: Bobby Fitts, Finance Director (if pulled from Consent)

Prepared by: Bobby Fitts, Finance Director

Approved by: Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will appropriate \$35,175 in revenues received for the employment of off-duty officers at US Foods and Five County Stadium.

**Background:**

Local businesses, such as the Carolina Mudcats and GSK formerly paid directly for off-duty Town of Zebulon Police officers hired for security. With the change within the last couple of years in Carolina Mudcats ownership, it was requested that off-duty employment be paid through the Town and then reimbursed by the business requesting the service. With this change, to simplify things and be consistent for all parties, off-duty employment is paid through the Town and reimbursed by businesses.

**Fiscal Impact:**

The rate of pay includes benefits (FICA, retirement). For fiscal year-to-date 2024, this total of \$35,175 will cover employment for assignments worked in July 2023 through January 2024.

**Procedure:**

Per NCGS 159-15, the Board must recognize revenue received in order to assign that revenue to a particular function or line item.

**Policy Analysis:**

NCGS 159-15, as part of The Local Government Budget and Fiscal Control Act, allows amendments to the budget ordinance with Board approval.

**Staff Recommendation:**

Staff recommends approval of Ordinance 2024-43.

**Attachments:**

1. Ordinance 2024-43

ORDINANCE 2024-43

BE IT ORDAINED by the Board of Commissioners of the Town of Zebulon, that pursuant to North Carolina General Statutes 159-15, the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Section 1. To amend the General Fund budget as follows:

	INCREASE	DECREASE
REVENUES		
Police/Fire Off-Duty Employment Reimbursement	\$35,175.00	
EXPENDITURES		
Police—Salaries	\$27,100.00	
Police—FICA	2,020.00	
Police—Retirement	5,125.00	
Fire—Salaries	380.00	
Fire—Part-time Salaries	450.00	
Fire—FICA	60.00	
Fire—Retirement	40.00	

Section 2. Copies of this amendment shall be furnished to the Town Clerk, and to the Budget Officer, and to the Finance Officer for their direction.

Adopted: May 6, 2024

Effective: May 6, 2024

\_\_\_\_\_  
Glenn L. York - Mayor

ATTEST:


\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk



**Topic:** Resolution 2024-21— 2024 Governor's Highway Safety Program Grant Application

**Speaker:** Jacqui Boykin (if pulled from Consent)

**From:** Jacqui Boykin, Chief of Police

**Prepared by:**  Jacqui Boykin, Chief of Police

**Approved by:** Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider contracting with the Governor's Highway Safety Program to receive grant proceeds.

**Background:**

The Governor's Highway Safety Program (GHSP) provides support to law enforcement agencies in their effort to increase roadway safety. GHSP's grant programs provide "seed" funding for dedicated traffic personnel and equipment. The program steps down funding over the course of four years.

The Town of Zebulon submitted a grant application to GHSP in January and has been notified that the application is moving forward in their funding process. The Town must enter into a contract with GHSP to receive the funds.

**Discussion:**

The discussion before the Board is whether to enter into a contract with the Governor's Highway Safety Program by adopting the attached Resolution.

**Policy Analysis:**

The Town would be growing smart by utilizing grant funds to cover expenses associated with the new traffic unit.

**Financial Analysis:**

The Governor's Highway Safety Program provides funding for salary, benefits, and equipment for dedicated traffic personnel. This is the third year of the grant/project. In the first two years, the grant reimbursed a portion of salaries, benefits, and vehicle equipment for two officers. The program will fund *up to* 50% of costs related to 2 officer's base salary and traditional benefits this year. Next year, the Town will assume full financial responsibility for the program.

The matching funds required for this grant are included in the FY24 budget.

This grant will help offset a portion of the *salary and benefit* costs associated with maintaining dedicated traffic personnel within the police department. Estimated cost reimbursement is \$45,000 - \$85,000, depending on the amount of time spent on traffic enforcement.

**Staff Recommendation:**

Staff Recommends approving the Resolution.

**Attachments:**

1. Resolution 2024-21

North Carolina Governor's Highway Safety Program
LOCAL GOVERNMENTAL RESOLUTION

WHEREAS, the Town of Zebulon Police Department (herein called the "Agency") (The Applicant Agency)

has completed an application contract for traffic safety funding; and that Town of Zebulon Board of Commissioners (The Governing Body of the Agency)

(herein called the "Governing Body") has thoroughly considered the problem identified and has reviewed the project as described in the contract;

THEREFORE, NOW BE IT RESOLVED BY THE Town of Zebulon Board of Commissioners IN OPEN MEETING ASSEMBLED IN THE CITY OF Zebulon (Governing Body), NORTH CAROLINA,

THIS 6 DAY OF May, 20 24, AS FOLLOWS:

- 1. That the project referenced above is in the best interest of the Governing Body and the general public; and
2. That Manager Joseph M. Moore or his designee is authorized to file, on behalf of the Governing Body, an application contract in the form prescribed by the Governor's Highway Safety Program for federal funding in the amount of \$ 170,518.00 to be made to the Governing Body to assist in defraying the cost of the project described in the contract application; and
3. That the Governing Body has formally appropriated the cash contribution of \$ 85,259.00 as required by the project contract; and
4. That the Project Director designated in the application contract shall furnish or make arrangement for other appropriate persons to furnish such information, data, documents and reports as required by the contract, if approved, or as may be required by the Governor's Highway Safety Program; and
5. That certified copies of this resolution be included as part of the contract referenced above; and
6. That this resolution shall take effect immediately upon its adoption.

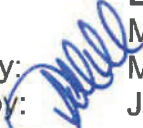
DONE AND ORDERED in open meeting by (Chairperson/Mayor)

ATTESTED BY (Clerk)

SEAL

DATE

STAFF REPORT  
WAKE COUNTY HISTORIC  
PRESERVATION COMMISSION  
LETTER OF SUPPORT  
MAY 6, 2024

**Topic:** Letter of Support – WCHPC  
**Speaker:** Michael J. Clark, AICP, CNU-A, Planning Director (if pulled from Consent)  
**Prepared by:** Michael J. Clark, AICP, CNU-A, Planning Director  
**Approved by:**  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

Wake County Historic Preservation Commission (WCHPC) is seeking support from local municipalities for a State Historic Preservation Office (SHPO) grant to update the Wake County Principles and Standards used to make decisions on Certificate of Appropriateness applications.

**Background:**

The Town of Zebulon has several Wake County Historic Landmarks and utilizes WCHPC to oversee requests to restore or modify these structures. The standards used to determine if the work is appropriate for these structures needs to be reviewed and updated periodically to reflect changing technologies, materials, and methods to preserve the historic integrity of the structure while considering new methods and materials.

**Discussion:**

The Board shall determine if the Town wishes to support the request from WCHPC in their request to the SHPO for a matching grant to hire a consultant to review the existing standards and make recommendations. Staff will prepare letter of intent.

**Policy Analysis:**

Grow Zebulon: Comprehensive Land Use Plan (Land Use Plan):

Housing and Neighborhoods Policy J states "Strike a balance in using historic preservation tools to safeguard properties and neighborhood areas with clear historic significance and integrity while not applying such methods too broadly in areas that need redevelopment and infill activity to remain viable long term." Furthermore, Economic and Development's Action – Regulations and Standards #2 states "Continue to assist small businesses and building owners to navigate code requirements and other potential challenges to locating in and renovating spaces within older and/or historic structures.


**Fiscal Analysis:**

The request letter of support would not have direct financial implications to the Town. If awarded the grant, it would be financially beneficial to Wake County to conduct the study, make recommendations, and potentially save owners of local historic landmark properties money when conducting restorations and renovations to their structures.

**Staff Recommendation:**

Staff recommends approving the Town's position to support Wake County Historic Preservation Commission's request for a grant to hire a consultant to study and update the Wake County Principles and Standards as requested finding that the request is consistent with the Grow Zebulon Comprehensive Land Use Plan's Housing and Neighborhoods Policy J and the Economic and Development Action – Regulations and Standards #2.

STAFF REPORT  
CAPITAL AREA METROPOLITAN  
PLANNING ORGANIZATION  
MOU  
MAY 6, 2024

**Topic:** MEMORANDUM OF UNDERSTANDING - CAMPO  
**From:** Michael J. Clark, AICP, CNU-A, Planning Director  
**Prepared by:** Michael J. Clark, AICP, CNU-A, Planning Director  
**Approved by:**  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The North Carolina Capital Area Metropolitan Planning Organization (CAMPO) is requesting adoption of the Memorandum of Understanding (MOU) for the Town to have continued participation with the regional planning entity.

**Background:**

CAMPO is our regional planning organization tasked with the collaboration with local municipalities and counties, North Carolina Department of Transportation (NCDOT), Federal Transit Authority (FTA), and Federal Highway Authority (FHWA) for transportation related concerns. They also oversee the distribution of several grants, including the Locally Administered Project Program (LAPP) grant which we received in 2017 for North Arendell Improvements and in 2018 for Beaver Dam Greenway, and the Community Funding Area Program (CFAP) which we are a partner community in a 2024 grant request to fund half of the Smart Ride micro-transit program. These, and several others, are distributed on a competitive basis using a quantitative approach.

CAMPO is overseen by an Executive Board comprised of elected and appointed officials representing all the member municipalities and counties. They act based on recommendations and guidance from the Technical Coordinating Committee (TCC) comprised of staff from each of the representative municipalities, counties, and non-voting organizations. CAMPO produces regular regional transportation plans, including the Northeast Area Study (NEAS) which covers Zebulon, and provides guidance on regional NCDOT projects to enhance safety, reduce congestion, and explore alternative transportation options such as rail, bus, and bike & pedestrian routes.

The proposed MOU expands membership to include Lillington, Coats, and Chatham County along with some administrative updates to reflect current codes and practices. This version was approved unanimously by the CAMPO executive Board, of which Zebulon is a voting member. Adoption by the Board of Commission is requested as soon as possible, but not later than June 30, 2024.

**Discussion:**

The discussion before the Board of Commissioners is whether to approve the proposed MOU and continue participation in CAMPO.

**Policy Analysis:**

The Grow Zebulon Transportation Plan discusses multiple projects with CAMPO collaboration and assistance and assumes continued participation.

STAFF REPORT  
CAPITAL AREA METROPOLITAN  
PLANNING ORGANIZATION  
MOU  
MAY 6, 2024

**Fiscal Analysis:**

The Town contributes funding towards the operations of CAMPO each year and the amount is calculated based on a proportional percentage of the population of the region that CAMPO represents. Currently that amount is approximately \$4,100 per year. Failure to continue participation would put funding for Smart Ride and other transportation projects in jeopardy. The total cost of these outstanding expenditures is approximately \$2.1 Million.

**Staff Recommendation:**

Staff recommends adoption of the proposed MOU and continuance as a member community of the North Carolina Capital Area Metropolitan Organization.

**Attachments:**

1. CAMPO Memorandum of Understanding

**NORTH CAROLINA  
CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION**

**MEMORANDUM OF UNDERSTANDING  
BETWEEN**

**THE GOVERNOR OF THE STATE OF NORTH CAROLINA,  
TOWN OF ANGIER, TOWN OF APEX, TOWN OF ARCHER LODGE, TOWN OF  
BUNN, TOWN OF CARY, TOWN OF COATS, TOWN OF CLAYTON, CITY OF  
CREEDMOOR, TOWN OF FRANKLINTON, TOWN OF FUQUAY-VARINA, TOWN  
OF GARNER, TOWN OF HOLLY SPRINGS, TOWN OF KNIGHTDALE, TOWN OF  
LILLINGTON, TOWN OF MORRISVILLE, CITY OF RALEIGH, TOWN OF  
ROLESVILLE, TOWN OF WAKE FOREST, TOWN OF WENDELL, TOWN OF  
YOUNGSVILLE, TOWN OF ZEBULON, COUNTY OF CHATHAM, COUNTY OF  
FRANKLIN, COUNTY OF GRANVILLE, COUNTY OF HARNETT, COUNTY OF  
JOHNSTON, COUNTY OF WAKE, TRIANGLE TRANSIT AUTHORITY, AND THE  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
(Hereinafter referred to as the Municipalities, the Agencies, the Counties and the State)**

**IN COOPERATION WITH  
THE UNITED STATES DEPARTMENT OF TRANSPORTATION,**

**Agreement No. 2024-04-17**

**WITNESSETH THAT**

**WHEREAS, Chapter 136, Article 3A, Section 136.66.2(d) provides that:**

*"For MPOs, either the MPO or the Department of Transportation may propose changes in the plan at any time by giving notice to the other party, but no change shall be effective until it is adopted by both the Department of Transportation and the MPO."; and*

**WHEREAS, Section 134(a) of Title 23 United States Code states:**

*"It is in the national interest to encourage and promote the development of transportation systems embracing various modes of transportation in a manner which will efficiently maximize mobility of people and goods within and through urbanized areas and minimize transportation-related fuel consumption and air pollution. To accomplish this objective, metropolitan planning organizations, in cooperation with the State, shall develop transportation plans and programs for urbanized areas of the State. Such plans and programs shall provide for the development of transportation facilities (including pedestrian walkways and bicycle transportation facilities)*

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

*which will function as an intermodal transportation system for the State, the metropolitan areas, and the Nation. The process for developing such plans and programs shall provide for consideration of all modes of transportation and shall be continuing, cooperative, and comprehensive to the degree appropriate, based on the complexity of the transportation problems.";* and

**WHEREAS, Section 134(c) of Title 23 United States Code states:**

*Development of long-range plans and TIPs.— To accomplish the objectives in subsection (a), metropolitan planning organizations designated under subsection (d), in cooperation with the State and public transportation operators, shall develop long-range transportation plans and transportation improvement programs for metropolitan planning areas of the State; and*

**WHEREAS, Chapter 136, Article 3A, 66.2(a) of the General Statutes of North Carolina require that:**

*"Each MPO, with cooperation of the Department of Transportation, shall develop a comprehensive transportation plan in accordance with 23 U.S.C. § 134. In addition, an MPO may include projects in its transportation plan that are not included in a financially constrained plan or are anticipated to be needed beyond the horizon year as required by 23 U.S.C. § 134. For municipalities located within an MPO, the development of a comprehensive transportation plan will take place through the metropolitan planning organization. For purposes of transportation planning and programming, the MPO shall represent the municipality's interests to the Department of Transportation.";* and,

**WHEREAS, Chapter 136, Article 3A, 66.2(b) provides that:**

*"After completion and analysis of the plan, the plan shall be adopted by both the governing body of the municipality or MPO and the Department of Transportation as the basis for future transportation improvements in and around the municipality or within the MPO. The governing body of the municipality and the Department of Transportation shall reach agreement as to which of the existing and proposed streets and highways included in the adopted plan will be a part of the State highway system and which streets will be a part of the municipal street system. As used in this Article, the State highway system shall mean both the primary highway system of the State and the secondary road system of the State within municipalities.";* and,

**WHEREAS, a transportation planning process includes the operational procedures and working arrangements by which short and long-range transportation plans are soundly conceived and developed and continuously evaluated in a manner that will:**

1. Assist governing bodies and official agencies in determining courses of action and in formulating attainable capital improvement programs in anticipation of community needs; and,
2. Guide private individuals and groups in planning their decisions which can be important factors in the pattern of future development and redevelopment of the area; and,

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

**WHEREAS**, it is the desire of these agencies that a continuing, cooperative, and comprehensive transportation planning process as set forth in a Memorandum of Understanding dated January 28, 1993 comply with Title 23 U.S.C. Section 134; and any subsequent amendments to that statute, and any implementing regulations; Title 49 U.S.C. Chapter 53 and any subsequent amendments to these statutes and any implementing regulations; and the Clean Air Act of 1970, as amended, [42 U.S.C.7504 and 7506].

**NOW THEREFORE**, the following **Memorandum of Understanding** is made:

**Section I. Membership**

It is hereby agreed that the Municipalities, the agencies, the Counties and the State in cooperation with the United States Department of Transportation, will participate in a continuing, cooperative and comprehensive (“3-C”) transportation planning process with responsibilities and undertakings as related in the following paragraphs:

1. The **N. C. Capital Area Metropolitan Planning Area** (as defined by the Metropolitan Area Boundary, also known as the Planning Area Boundary) will be all of Wake County and parts of Chatham, Franklin, Granville, Harnett, and Johnston Counties.
2. The **N. C. Capital Area Metropolitan Planning Organization (MPO)** shall include the local governments of the Municipalities and the Counties, the North Carolina Department of Transportation, an **Executive Board** hereinafter defined, a **Technical Coordinating Committee** hereinafter defined, and the various agencies and units of local, regional, and state government participating in the transportation planning for the area.
3. The **Urbanized Area Boundary** and the **Metropolitan Area Boundary** shall be periodically reviewed and revised in light of new developments and basic data projections.
4. The continuing transportation planning process will be a cooperative one reflective of and responsive to the programs of the North Carolina Department of Transportation, and to the comprehensive plans for growth and development of the Municipalities and the Counties in the Triangle Region with attention being given to cooperative planning with the neighboring metropolitan and rural planning organizations.
5. The continuing transportation planning process will be in accordance with the intent, procedures and programs of Title VI of the Civil Rights Act of 1964, as amended.
6. The continuing transportation planning process will be in accordance with the intent, procedures, and programs of the Clean Air Act of 1970, as amended.



**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

7. Transportation policy decisions within the planning area are the shared responsibility of the North Carolina Board of Transportation, the Executive Board and the governing bodies of the participating local governments.
8. Transportation plans and programs and land use policies and programs having regional impacts will be coordinated with the applicable regional Councils of Governments.
9. **An Executive Board is hereby established** with the responsibility for cooperative transportation planning decision making for the MPO. The **Executive Board** shall have the responsibility for keeping the policy boards of the participating local governments informed of the status and requirements of the transportation planning process; for assisting in the dissemination and clarification of the decisions and policies of the policy boards; for providing opportunities for citizen participation in the transportation planning process; and all other duties and responsibilities customary for a governing board of a public authority.

The **Executive Board** will be responsible for carrying out the provisions of 23 U.S.C. Section 134 and Title 49 U.S.C. Chapter 53; and 42 U.S.C.; including, but not necessarily limited to:

- a. Establishment of goals and objectives for the transportation planning process.
- b. Review and approval of a **Prospectus** for transportation planning which defines work tasks and responsibilities for the various agencies participating in the transportation planning process;
- c. Review and approval of changes to the **Metropolitan Area Boundary** as well as review and recommendation for changes to the **National Highway System**;
- d. Review and approval of the transportation **Unified Planning Work Program**;
- e. Review and approval of the adopted **Comprehensive and Metropolitan Transportation Plans**. As specified in General Statutes Section 136-66.2(a), the Comprehensive Transportation Plan shall include the projects in the Metropolitan Area's Transportation Plan as well as projects that are not included in the financially constrained plan or are anticipated to be needed beyond the horizon year as required by 23 U.S.C. Section 134. As specified in General Statutes Section 136-66.2(d) certain revisions to the **Comprehensive Transportation Plan** may be required to be jointly approved by the North Carolina Department of Transportation;
- f. Review and approval of the MPO's **Transportation Improvement Program** for multimodal capital and operating expenditures ensuring coordination between local and State capital improvement and operating programs. As specified in 23 U.S.C. Section 134(k), all federally funded projects carried out within the boundaries of a metropolitan planning area serving a transportation

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

- management area (excluding projects carried out on the National Highway System) shall be selected for implementation from the approved TIP by the metropolitan planning organization designated for the area in consultation with the State and any affected public transportation operator;
- g. Review and approval of planning procedures for air quality conformity and review and approval of air quality conformity determination for projects, programs, and plans;
  - h. Review and approval of a Congestion Management Process;
  - i. Review and approval of the distribution and oversight of federal funds designated for the Raleigh Urbanized Area under the provisions of IJJA and any other subsequent Transportation Authorizations;
  - j. Review and approval of a policy for public involvement for the MPO;
  - k. Review and approval of an agreement between the MPO, the State, and public transportation operators serving the Metropolitan Planning Area that defines mutual responsibilities for carrying out the metropolitan planning process in accordance with 23 C.F.R. 450
  - l. Development and approval of committee by-laws for the purpose of establishing operating policies and procedures;
  - m. Oversight of the MPO Staff;
  - n. Revisions to membership of Technical Coordinating Committee as defined herein;
  - o. Review and approval of cooperative agreements with other transportation organizations, transportation providers, counties, and municipalities.

The membership of the **Executive Board** shall include:

- One member of the Angier Town Board of Commissioners
- One member of the Apex Town Council
- One member of the Archer Lodge Town Council
- One member of the Bunn Town Council
- One member of the Cary Town Council
- One member of the Clayton Town Council
- One Member of the Coats Board of Commissioners
- One member of the Creedmoor Board of Commissioners
- One member of the Franklinton Town Board of Commissioners

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

- One member of the Fuquay-Varina Town Board of Commissioners
- One member of the Garner Town Council
- One member of the Holly Springs Town Council
- One member of the Knightdale Town Council
- One member of the Lillington Board of Commissioners
- One member of the Morrisville Town Council
- One member of the Raleigh City Council
- One member of the Rolesville Town Board of Commissioners
- One member of the Wake Forest Town Board of Commissioners
- One member of the Wendell Town Board of Commissioners
- One member of the Youngsville Town Board of Commissioners
- One member of the Zebulon Town Board of Commissioners
- One member of the Chatham County Board of Commissioners
- One member of the Franklin County Board of Commissioners
- One member of the Granville County Board of Commissioners
- One member of the Harnett County Board of Commissioners
- One member of the Johnston County Board of Commissioners
- One member of the Wake County Board of Commissioners
- Four members of the North Carolina Board of Transportation representing the Highway Divisions (currently 4, 5, 6 and 8) within the Metropolitan Planning Area
- One member of the Research Triangle Regional Public Transportation Authority Board of Trustees; and
- The Division Administrator of the Federal Highway Administration or his or her representative who shall serve as an advisory, non-voting member.
- The Regional Administrator of the Federal Transit Administration or his or her representative, who shall serve as an advisory, non-voting member.
- The Regional Administrator of the Federal Rail Administration or his or her representative, who shall serve as an advisory, non-voting member.

Municipal and county public transit providers shall be represented on the Executive Board through their respective municipal and county local government board members.

Voting representatives of the Municipalities and the Counties shall be designated by their respective governing boards. Requirements for voting, quorums, and membership in good standing shall be included in the adopted bylaws of the Executive Board. Weighted voting shall be applied as invoked by any voting member of the Executive

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)**

April 17, 2024

Board. In the instance of a weighted vote, each member government shall be apportioned weighted voting based on the most recent certified North Carolina Population Estimates for Municipalities and Counties utilizing a vote weighting formula of one vote for each 10,000 of population, or portion thereof. Other voting agencies without population-based representation on the Executive Board shall vote in accordance with the most recent voting schedule. The most recent voting schedule will be maintained by the CAMPO staff and updated with the most recent certified North Carolina Population Estimates for Municipalities and Counties.

At the invitation of the **Executive Board**, other local, regional, State or Federal agencies impacting transportation within the planning area may serve as non-voting members of the **Executive Board**.

As established in its adopted bylaws, the **Executive Board** shall meet as deemed appropriate and shall elect officers with the responsibility for coordination of the committee's activities. A member of the MPO staff will serve as secretary to the Committee.

As established in its adopted bylaws, the Executive Board may create an executive committee and/or subcommittees to carry out its responsibilities.

10. **A Technical Coordinating Committee (TCC) shall be established** with the responsibility of general review, guidance and coordination of the transportation planning process for the planning area and with the responsibility for making recommendations to the Executive Board and to other entities designated by the Executive Board regarding any necessary actions relating to the continuing transportation planning process. The TCC shall be responsible for development, review and recommendations of the **Prospectus, Unified Planning Work Program, Transportation Improvement Program, Metropolitan Area Boundary, Urbanized Area Boundary, and National Highway System**, for revisions to the **Transportation Plan**, for planning citizen participation and for documenting reports of the transportation study.

**Membership of Technical Coordinating Committee (TCC)** shall include technical representatives from local, regional and State governmental agencies; as well as major modal transportation providers directly related to and concerned with the transportation planning process for the planning area. Each member agency's representative(s) shall be designated by the chief administrative officer of that agency. Departments or divisions within local and state agencies that should be represented on the TCC include, but are not limited to, those responsible for transportation planning, land use planning, transportation operations, public works and construction, engineering, public transportation, environmental conservation and planning, bicycle and pedestrian planning, and economic development. The voting membership shall include, at a minimum, representation from the following agencies/organizations, with specific numbers of members from each agency/organization outlined in the Technical Coordinating Committee's adopted bylaws:

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

- Town of Angier
- Town of Apex
- Town of Archer Lodge
- Town of Bunn
- Town of Cary
- Town of Clayton
- Town of Coats
- City of Creedmoor
- Town of Franklinton
- Town of Fuquay-Varina
- Town of Garner
- Town of Holly Springs
- Town of Knightdale
- Town of Lillington
- Town of Morrisville
- City of Raleigh
- Town of Rolesville
- Town of Wake Forest
- Town of Wendell
- Town of Youngsville
- Town of Zebulon
- County of Chatham
- County of Franklin
- County of Granville
- County of Harnett
- County of Johnston
- County of Wake
- Central Pines Regional Council
- Capital Area Transit
- Cary Transit
- Raleigh-Durham Airport Authority
- Research Triangle Transit Regional Public Transportation Authority
  
- North Carolina Department of Transportation

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

- Rural Transit Systems Serving Franklin , Granville, Harnett, Johnston and Wake Counties
- North Carolina State University
- Research Triangle Foundation
- Triangle North Executive Airport

The host agency's membership shall not include members of the MPO staff.

In addition to voting membership, the TCC shall invite officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations, and freight movements) to coordinate their planning process, to the maximum extent practicable, with MPO planning activities. Such organizations and agencies may include:

- a. The Federal Highway Administration
  - b. The Federal Transit Administration
  - c. The Federal Rail Administration
  - d. The U.S. Army Corps of Engineers
  - e. The U.S. Environmental Protection Agency
  - f. The U.S. Fish and Wildlife Service
  - g. The N.C. Department of Cultural Resources
  - h. The N.C. Department of Commerce
  - i. The U.S. Department of Housing and Urban Development
  - j. The N.C. Railroad Company
  - k. The N.C. Trucking Association
  - l. The N.C. Motorcoach Association
  - m. Regional Transportation Alliance
11. The Technical Coordinating Committee shall operate as determined by its adopted bylaws. Any agency not listed above which wishes representation on the TCC may request such representation for consideration under the adopted bylaws of the TCC. As established in its adopted bylaws, the TCC may create an executive committee and/or subcommittees to carry out its responsibilities.
  12. The governing boards of the Municipalities and the Counties and the North Carolina Board of Transportation shall serve as the primary means for citizen input to the continuing transportation planning process. Citizen involvement will also be obtained through procedures outlined in the MPO's policy for public participation and through various special studies and projects undertaken by the MPO.

The Executive Board should also provide opportunities for citizen participation in the transportation planning process.

## Section II. Responsibilities

It is further agreed that the subscribing agencies will have the following responsibilities, these responsibilities being those most logically assumed by the several agencies:

### **The Municipalities and the Counties**

The Municipalities and the Counties will assist in the transportation planning process by providing assistance, data and inventories in accordance with the Prospectus. The Municipalities and the Counties shall coordinate zoning and subdivision approval within their respective jurisdictions in accordance with the adopted Metropolitan Transportation Plan. Additionally, the a host agency, as designated by the Executive Board will serve as the **Lead Planning Agency** for the MPO. Services provided by the Lead Planning Agency on behalf of the MPO will be governed by mutual agreement(s).

The Municipalities and the Counties will participate in funding the portion of the costs of the MPO's work program not covered by federal or state funding (minimum 20% match of actual annual expenditures) as approved by the Executive Board. The portion to be paid by each Municipal and County member government will be based upon its pro rata share of population within the MPO Planning Area, utilizing the most recent certified North Carolina Office of State Planning municipal and county population estimates. In addition, MPO members may also voluntarily contribute additional funds for other purposes such as to participate in funding the costs of special studies, or other specialized services as mutually agreed upon.

Failure to pay the approved share of costs shall invalidate the MPO's Unified Planning Work Program and annual MPO self-certification as required by 23 CFR 450. Failure to certify shall result in the withholding of transportation project funds to the metropolitan planning area in accordance with federal law. In order to avoid this, the Executive Board shall amend the Unified Planning Work Program.

The municipalities and the counties receiving federal transportation funding designated for the Urbanized Areas within the MPO Planning Area as approved by the Executive Board through the Unified Planning Work Program shall comply with adopted reporting and oversight procedures.

### **North Carolina Department of Transportation**

The Department will assist in the transportation planning process by providing planning assistance, data and inventories in accordance with the Prospectus. The Department, to the fullest extent possible, and as permitted by existing State and Federal regulations, will provide assistance in the protection of necessary rights-of-way for those transportation corridors designated on the Transportation Plan.

### **Research Triangle Regional Public Transportation Authority**

Triangle Transit will assist in the transportation planning process by providing planning assistance, data, and inventories in accordance with the Prospectus. Triangle Transit shall comply with adopted reporting and oversight procedures for the receipt of federal

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

transportation funding designated for the region's Urbanized Areas as approved by the Executive Board through the Unified Planning Work Program

**Section III. Termination**

Parties to this Memorandum of Understanding may terminate their participation in the N. C. Capital Area Metropolitan Planning Organization by giving thirty (30) days written notice to the other parties prior to the date of termination. If any party should terminate participation, this memorandum of understanding shall remain in force and the MPO shall continue to operate as long as 75% or more of the population within the Metropolitan Planning Area is represented by the remaining members.

**Section IV. Ratification**

In witness whereof, the parties of this Memorandum of Understanding have been authorized by appropriate and proper resolutions to sign the same, The Town of Angier by its Mayor, the Town of Apex by its Mayor, the Town of Archer Lodge by its Mayor, the Town of Bunn by its Mayor, the Town of Cary by its Mayor, the Town of Clayton by its Mayor, the Town of Coats by its Mayor, the City of Creedmoor by its Mayor, the Town of Franklinton by its Mayor, the Town of Fuquay-Varina by its Mayor, the Town of Garner by its Mayor, the Town of Holly Springs by its Mayor, the Town of Knightdale by its Mayor, the Town of Lillington by its Mayor, the Town of Morrisville by its Mayor, the City of Raleigh by its Mayor, the Town of Rolesville by its Mayor, the Town of Wake Forest by its Mayor, the Town of Wendell by its Mayor, the Town of Youngsville by its Mayor, the Town of Zebulon by its Mayor, the Triangle Transit Authority by its Chair, Chatham County by its Chairman of the Board of Commissioners, Franklin County by its Chairman of the Board of Commissioners, Granville County by its Chairman of the Board of Commissioners, Harnett County by its Chairman of the Board of Commissioners, Johnston County by its Chairman of the Board of Commissioners, Wake County by its Chairman of the Board of Commissioners, and by the Secretary of Transportation on behalf of the Governor of the State of North Carolina and the North Carolina Department of Transportation, this the \_\_\_\_\_ day of \_\_\_\_\_, 2024.

**[SIGNATURE PAGES TO FOLLOW]**



**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**TOWN OF ANGIER**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF APEX**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF ARCHER LODGE**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF BUNN**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**TOWN OF CARY**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF CLAYTON**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor



**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**CITY OF CREEDMOOR**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor



**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)  
April 17, 2024**

(Seal)

**TOWN OF FRANKLINTON**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF FUQUAY-VARINA**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF GARNER**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**TOWN OF HOLLY SPRINGS**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF KNIGHTDALE**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)  
April 17, 2024**

**(Seal)**

**TOWN OF LILLINGTON**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF MORRISVILLE**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**CITY OF RALEIGH**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor



**N. C. Capital Area Metropolitan Planning Organization  
Memorandum of Understanding (cont.)  
April 17, 2024**

(Seal)

**TOWN OF ROLESVILLE**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF WAKE FOREST**

\_\_\_\_\_ Clerk                      By \_\_\_\_\_ Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF WENDELL**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**TOWN OF YOUNGSVILLE**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**TOWN OF ZEBULON**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Mayor

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**RESEARCH TRIANGLE TRANSIT  
REGIONAL PUBLIC  
TRANSPORTATION AUTHORITY**

\_\_\_\_\_ By \_\_\_\_\_  
Clerk Chair

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**CHATHAM COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**FRANKLIN COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman



**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**GRANVILLE COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

**(Seal)**

**HARNETT COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**JOHNSTON COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**WAKE COUNTY**

\_\_\_\_\_ By \_\_\_\_\_  
County Manager Chairman

**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

(Seal)

**STATE OF NORTH CAROLINA AND  
DEPARTMENT OF TRANSPORTATION**

By \_\_\_\_\_  
Secretary of Transportation

Approved for Execution

By \_\_\_\_\_  
Assistant Attorney General


**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

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**N. C. Capital Area Metropolitan Planning Organization**  
**Memorandum of Understanding (cont.)**  
April 17, 2024

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STAFF REPORT  
ORDINANCE 2024-45  
HVAC REPLACEMENT AT COMMUNITY CENTER  
BUDGET ADJUSTMENT  
MAY 6, 2024

**Topic:** FY 2024 Budget Amendment: HVAC Replacement at Zebulon Community Center (Ordinance 2024-45)  
**Speaker:** Chris D. Ray, Public Works Director (if pulled from consent)  
**From:** Chris D. Ray, Public Works Director  
**Prepared by:** Chris D. Ray, Public Works Director  
**Approved by:**  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

Budget amendment to fund replacement of HVAC Split Unit system for Fitness Room at Community Center

**Background:**

During the Zebulon Community Center renovation in 2009, all new HVAC units were installed. These units were installed in 2009 and have now reached the end of their useful life (HVAC units typically last 12-15 years). The FY 2025 budget requests \$240,000 for the replacement of 11 units on site including the Parks and Recreation Maintenance Shop.

On April 16, 2024, the fitness room HVAC split system had its A/C compressor go out. Due to the unit age, and limited availability to find a 15-year-old compressor, we recommend the replacement of the unit. A new unit will improve unit efficiency and reliability.

**Discussion:**

The discussion before the Board is whether to fund replacement of HVAC unit serving the Fitness Room at the Zebulon Community Center.

**Fiscal Analysis:**

The estimated construction/installation cost to replace the damaged 5-Ton HVAC unit is \$13,100.00, which includes a 15% contingency amount. We recommend an appropriation from General Fund Balance to cover the unexpected cost.

**Policy/Program Analysis:**

The Fitness Room is at the community center consistently sees heavy use from patrons working to improve fitness levels and improve overall health.

**Staff Recommendation:**

Staff recommends approval of the ordinance 2024-45 of appropriation of funds to replace the HVAC unit at the Community Center.

**Attachments:**

1. Ordinance 2024-45



ORDINANCE 2024-45

BE IT ORDAINED by the Board of Commissioners of the Town of Zebulon, that pursuant to North Carolina General Statutes 159-15, the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Section 1. To amend the General Fund budget as follows:

	INCREASE	DECREASE
REVENUES		
Fund Balance Appropriated	\$13,100.00	
EXPENDITURES		
PW Property & Proj Mgmt – Community Center HVAC		13,100.00

Section 2. Copies of this amendment shall be furnished to the Town Clerk, and to the Budget Officer, and to the Finance Officer for their direction.


Adopted: May 6, 2024

Effective: May 6, 2024

\_\_\_\_\_  
Glenn L. York - Mayor

ATTEST:

\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk

**Topic:** Ordinance 2024-39 - Zebulon South, PD2024-01  
**Speaker:** Michael J. Clark, AICP, CNU-A, Planning Director  
**From:** Michael J. Clark, AICP, CNU-A, Planning Director  
**Prepared by:** Michael J. Clark, AICP, CNU-A, Planning Director  
Adam Culpepper, Senior Planner  
**Approved by:**  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider a Planned Development Rezoning for 751 S Wakefield St (PIN# 2704492511), 700 S Arendell Ave (PIN# 2705512202), 0 S Wakefield (PIN# 2705413075). This is a legislative case.

**Background:**

The Town received a Planned Development request to develop 320 residential units (townhomes and single-family detached units) on 116.14 acres. The land is owned by Harold Narron and Fred Corbett (PIN# 2704492511); Joseph Temple Sr and Alexander Harrison (PIN# 2705512202); Watson Family II LLC (PIN# 2705413075), and is currently in the Town of Zebulon ETJ, and zoned R-2 and R-4.

The Board of Commissioners Tabled this request at the April 1, 2024, meeting to allow the applicant time to revise the Planned Development document to reflect agreed upon changes. These changes include increasing the affordable housing units to five, maximum rental percentage, and eliminating the driveway length deviation.

**Discussion:**

The Board shall consider the following questions to determine whether the rezoning is consistent with the intent of the Unified Development Ordinance (Section 2.2.24.J):

1. Does the request advance the public health, safety, or welfare?
2. Is the request appropriate for its proposed location, and is consistent with the purposes, goals, objectives, and Town’s policies?
3. Is the request reasonable and in the public interest?
4. Are there other factors which the Board of Commissioners determines relevant?

**Policy Analysis:**

Grow Zebulon: Comprehensive Land Use Plan (Land Use Plan):

The application is consistent with the Town’s Land Use Plan goals for density in proximity to downtown. The Land Use Plan designated this area “Suburban Residential” and “General Residential”, which allows a mixture of product types, with increased open space to preserve an overall suburban character and encourages density with the inclusion of single family attached lots (see Land Use and Development excerpt). This increased density is both appropriate for a site less than 0.75 miles from Downtown Zebulon and a nearby customer base to spur additional economic growth within Downtown.

and recreation impact fees, while still leaving the Town in search of land to acquire for Fire Station #3.

**Planning Board Recommendation:**

At the March 12, 2024 Planning Board meeting, the Board voted 4-3 to recommend denial of the proposed request, citing that standard 4 of Section 2.2.24.J was not met in that the deviations related to lot width and lot access were too great and concerns regarding increased traffic generation.

**Staff Recommendation:**

Staff recommends approving Ordinance 2024-39 for Zebulon South (PD2024-01) as amended by the applicant, finding that the request is consistent with the Standards of Section 2.2.25.J and 3.5.5 of the UDO, Comprehensive Transportation Plan, Comprehensive Parks and Recreation Plan, and the Land Use Plan Land Use and Development Goals 1 and 3, Growth Capacity Goal 3, Housing and Neighborhoods Goal 2, and Policy E.

**Attachments:**

1. Application
2. Site Plan
3. Amended Planned Development Narrative & Redlined Showing Changes
4. Utility Allocation Worksheet
5. TIA Review Letter from Town Engineer
6. TIA Applicant Response
7. TIA
8. Future Land Use and Character Map
9. Aerial Map
10. Zoning Map
11. Site Pictures
12. Public Hearing Notice Affidavit
13. UDO Section 3.5.5 Planned Development
14. Comprehensive Land Use Plan (Excerpts)
15. Comprehensive Transportation Plan (Excerpts)
16. Ordinance 2024-39



# Town of Zebulon

## Planning Department

1003 N. Arendell Avenue, Zebulon, NC 27597  
Phone: (919) 823-1810 Fax: (919) 887-2824  
www.townofzebulon.org

## PLANNED DEVELOPMENT APPLICATION

### GENERAL INFORMATION:

A Planned Development in accordance with Section 2.2.13 and 3.5.5 of the UDO is intended to provide flexibility by establishing site specific regulations including permitted uses, dimensional standards, phasing schedules and additional details to allow for a development that is better than what would otherwise be permitted under the strict interpretation of the UDO. All site-specific standards and conditions must be consistent with the objectives of these regulations, the adopted Comprehensive Land Use Plan, Transportation Plan, and Vision 2030 Strategic Plan. The review process established in this part provides for the accommodation of such uses by a reclassification of property into a Planned Development, subject to site-specific standards and conditions.

### INSTRUCTIONS:

**PRE-APPLICATION MEETING:** A pre-application meeting with staff in accordance with Section 2.3.2 of the UDO to verify the application requirements, processes, and procedures regarding a proposed request. To schedule a meeting, applicants must e-mail a pdf map, drawing, model, site or sketch plan to Assistant Planning Director Meade Bradshaw ([mbradshaw@TownofZebulon.org](mailto:mbradshaw@TownofZebulon.org)) no later than five (5) working days prior to the desired meeting day.

**NEIGHBORHOOD MEETING:** Neighborhood meetings are required in accordance with Section 2.3.4 of the UDO prior to application submission. The applicant is required to notify property owners and any neighborhood association that represents citizens within that area within 300 feet of the subject property via first class mail a minimum of 10 days in advance of the neighborhood meeting. The applicant shall use their own return address on the envelopes as the meeting is a private meeting between the developer and the neighbors. The applicant shall submit the "Certified List of Property Owners" and "Neighborhood Meeting Packet" forms included in this application packet with their initial submittal.

**ANNEXATION REQUIREMENTS:** If a property or portion thereof subject to this rezoning is outside the corporate limits and ETJ, an annexation petition is **required** to be submitted on the same day as this application in accordance with section 2.2.2 of the UDO.

**APPLICATION PROCEDURE** – The applicant requesting a Planned Development must submit a written application to the Zebulon Planning Department using the forms included in this packet.

- Completed Application Form
- 8 Full Size Plan Sets and 1 PDF set on USB drive. (see site plan checklist)
- Comprehensive Planned Development Document
- Petition Fee (Please See Fee Schedule)
- One (1) Legal Description (metes and bounds) of subject property
- Registered survey of subject property
- Certified List of Property Owners within 150 feet of subject property
- Owner's Consent Form
- Neighborhood Meeting Packet
- Stamped envelopes addressed to Certified List of Property Owners all the homeowners associations of those properties within 150 feet of the outer boundary subject property or properties affixed with the following return address:
  - Town of Zebulon
  - Planning Department
  - 1003 N. Arendell Ave
  - Zebulon, NC 27597



## APPLICATION FOR PLANNED DEVELOPMENT

**PUBLIC HEARING PROCEDURE** – Upon submittal of a complete application, the Planning Department will schedule the application for a joint public hearing before the Planning Board and the Board of Commissioners. **APPLICANTS ARE STRONGLY ENCOURAGED TO CONTACT PLANNING STAFF AS SOON AS POSSIBLE TO ADDRESS ANY QUESTIONS ABOUT THE PUBLIC HEARING.** Notices of the public hearing will be mailed to all adjacent property owners of the property being considered for a Planned Development Amendment. At the public hearing, the applicant, proponents, and opponents will be given the opportunity to offer evidence in favor of or against the proposal. After completion of the public hearing, the Planning Board will deliberate and forward its recommendation to the Board of Commissioners for final consideration. **Deadline dates and Joint Public Hearing dates can be found on the Town of Zebulon's website.**



# APPLICATION FOR PLANNED DEVELOPMENT

<b>PART 1. DESCRIPTION OF REQUEST/PROPERTY</b>		
Street Address of the Property: <b>751 S Wakefield St &amp; 700 S Arendell Ave</b>	Acreage: <b>118.6 acres</b>	
Parcel Identification Number (NC PIN): <b>2704492511, 2705512202, 2705413075</b>	Deed Book: <b>see attached</b>	Deed Page(s): <b>see attached</b>
Existing Zoning of the Property: <b>R2, R4</b>	Proposed Zoning of the Property: <b>Planned Development</b>	
Existing Use of the Property: <b>Agriculture</b>	Proposed Use of the Property: <b>single family attached &amp; detached residential</b>	
Reason for rezoning to a Planned Unit Development:  Deacon Development Corp. is under contract to purchase the properties that are subject to this application. The applicant desires to develop the properties into a high quality master planned community that will provide a variety of housing types and amenities. By utilizing the Planned Development ("PD") zoning, the master plan containing site specific regulations will guide the development resulting in a well-integrated mix of housing types, lot sizes and densities with open space and preservation of environmentally sensitive area. The flexibility offered by a PD will result in a more efficient use of the land and network of utilities and streets.		

<b>PART 2. APPLICANT/AGENT INFORMATION</b>		
Name of Applicant/Agent: <b>Andrew Suriano Deacon Development</b>		
Street Address of Applicant/Agent: <b>PO Box 1080</b>		
City: <b>Wake Forest</b>	State: <b>NC</b>	Zip Code: <b>27588</b>
Email of Applicant/Agent: <b>andrew@deaconcompanies.com</b>	Telephone Number of Applicant/Agent: <b>919-608-3542</b>	Fax Number of Applicant/Agent:
Are you the owner of the property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Are you the owner's agent? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Note: If you are not the owner of the property, you <u>must</u> obtain the Owner's consent and signature giving you permission to submit this application.</b>

<b>PART 3. PROPERTY OWNER INFORMATION</b>		
Name of Property Owner: <b>see attached</b>		
Street Address of Property Owner:		
City:	State:	Zip Code:
Email of Property Owner:	Telephone Number of Property Owner:	Fax Number of Property Owner:
<b><i>I hereby state that the facts related in this application and any documents submitted herewith are complete, true, correct, and accurate to the best of my knowledge.</i></b>		
Signature of Applicant:  <i>Andrew Suriano</i>	Print Name: <b>Andrew Suriano</b>	Date: <b>10/31/2022</b>
Signature of Owner:	Print Name:	Date:

PIN 2704492511  
751 S Wakefield St  
DB 3452 PG 715  
Narron, Harold Corbett, C Fred  
3941 Zebulon Rd  
Zebulon, NC 27597  
Email:  
Phone:

PIN 2705512202  
700 S Arendell Ave  
DB 8545 PG 1076  
Temple, Joseph Wood Sr Hughes, Harrison Alexander  
PO Box 548  
Zebulon, NC 27597-0548  
Email:  
Phone:

PIN 2705413075  
O S Wakefield St  
DB 8099 PG 2738  
Watson Family II LLC  
6220 Forestville Rd  
Raleigh, NC 27604  
Email:  
Phone:



**LEGISLATIVE CONSIDERATIONS – PLANNED DEVELOPMENT**

The applicant shall propose site-specific standards and conditions that take into account the following considerations, which are considerations that are relevant to the legislative determination of whether or not the proposed planned development is in the public interest. These considerations do not exclude the legislative consideration of any other factor that is relevant to the public interest. Failure to adequately address the findings below may result in denial of the application. Please provide responses to the following standards as outlined in Section 2.2.13 of the Unified Development Ordinance.

<p><b>1. Please provide details on how the proposed Planned Development advances the public health, safety, or welfare</b></p>	<p>Consistent with the Grow Zebulon Comprehensive Land Use Plan (“LUP”), the master planned community will provide both quality and a variety of residential choices for existing residents of Zebulon and newcomers to the community. The development will provide a safe internal street system that is pedestrian friendly. Active open space amenities together with a system of trails will promote a healthy lifestyle for the residents and provide community gathering areas. Transportation improvements associated with the development will increase connectivity and improve the safety of the community’s transportation network. The PD allows for extensive preservation of environmentally sensitive areas that will be accessible via a system of trails integrated into the development.</p>
<p><b>2. Please provide details on how the proposed Planned Development is appropriate for its proposed location, and is consistent with the purposes, goals, objectives, and policies of the Town’s adopted policy guidance.</b></p>	<p>The LUP classifications for the property are Suburban Residential (“SR”) and General Residential (“GR”). The LUP specifically identifies a PD as being a primary land use type in the SR and GR LUP classifications. The proposed PD is consistent with the LUP. The development will have an integrated mix of housing types, consistent with the LUP’s recommendations for providing a diverse stock of residential choices. 35% of the residential uses are proposed to be attached single family dwellings. The balance of the residential dwellings will be single family homes on lots that range from 4,800 sq. ft to 7,200 sq. ft. The diverse housing choices will promote varied price points, consistent with the LUP. The development will include extensive open space and recreational areas, consistent with the LUP.</p>
<p><b>3. Please provide details on how the proposed Planned Development is reasonable and in the public interest.</b></p>	<p>The development will be consistent with the goals and policies for housing and neighborhoods found in the LUP. The development as proposed is consistent with the LUP map classifications. The development will be a master planned community that provides quantity and diversity of housing options. Active and passive open spaces and recreational features will provide the residents with excellent on-site amenities. Improvements to the transportation network will increase community connectivity and provide a safe internal street system that is pedestrian friendly.</p>
<p><b>4. Please provide details on how the proposed Planned Unit Development provides for innovative land planning and site design concepts that support a high quality of life and achieve a high quality of development, environmental sensitivity, energy efficiency, and other Town goals and objectives.</b></p>	<p>PD allows for development flexibility and promotes innovative land planning and site design. The master plan utilizes existing wetlands, open space and larger lots as an external buffers of the development, mitigating affects of the development on the surrounding community. Open space, common amenities and an integrated system of walking trails support a high quality of life for the residents of the development. The site design incorporates in a variety of lot sizes supporting the LUP’s goal of increasing a diverse housing stock for the community</p>
<p><b>5. Please provide details on how the proposed planned unit development provides improved means of access, open space, and design amenities;</b></p>	<p>The development includes the construction of a street connecting S. Wakefield Street and S. Arendell Street, improving community connectivity. The internal street network includes three (3) access points to existing public roads promoting access options for residents of the development. The development provides over eleven (11) acres of open space, including over five (5) acres of active open space. Walking trails traverse open space and environmentally sensitive areas providing a unique amenity for a development of this size. An on-site swimming pool and clubhouse provide pedestrian accessible amenities for the residents of the development.</p>





## APPLICATION FOR PLANNED DEVELOPMENT

6. Please provide details on how the proposed Planned Unit Development provides a well-integrated mix of residential and nonresidential land uses in the same development, including a mix of housing types, lot sizes, and densities;

Three hundred and forty (340) residential lots are proposed. 35% of the lots are designed for single family attached homes and 65% are designed for detached single family homes. The master plan contains four (4) minimum lot sizes: 20' x 100' (2,200 SF); 40' x 120' (4,800 SF); 50' x 120' (6,000 SF); and 60' x 120' (7,200 SF). 10% of the total area is development is designed as open space that includes active and passive recreational opportunities. The maximum density proposed is 2.9 dwelling units per acre.

7. Please provide details on how the proposed Planned Unit Development creates a system of incentives for redevelopment and infill in order to revitalize established areas;

The development will be a quality master planned community and substantial real estate investment on the fringe of downtown Zebulon. Retail and services offered in downtown Zebulon will benefit, as residents of the development will be a short distance from downtown. The development will help mitigate the presence of the solar farm to the North of the development and result in increased property values for surrounding properties.

8. Please provide details on how the proposed Planned Unit Development promotes a vibrant public realm by placing increased emphasis on active ground floor uses, pedestrian-oriented building façade design, intensive use of sidewalks, and establishment of public gathering areas;

A major benefit of a master planned community is that it creates a sense of place in contrast with a traditional residential subdivision. The active open space includes a playground, swimming pool, clubhouse, and dog park, providing public gathering spaces and on-site amenities. The development will have an extensive network of sidewalks and a walking trail through the open space and in close proximity to environmentally sensitive areas.

9. Please provide details on how the proposed Planned Unit Development provides for efficient use of land resulting in smaller networks of utilities and streets and thereby lowering development and housing costs; and

The properties have significant amounts of environmentally sensitive areas. These areas are substantially preserved by the design of the master plan. The environmentally sensitive areas, to a large degree, or located on the perimeter of the development, allowing for concentration of infrastructure improvements in the central area of the development.

10. Please provide details on how the proposed Planned Unit Development provides quality design and environmentally sensitive development that respects surrounding established land use character and respects and takes advantage of a site's natural and man-made features, such as trees, estuaries, shorelines, special flood hazard area, and historic features.

The master plan utilizes existing wetlands, open space and larger lots as an external buffers of the development, mitigating affects of the development on the surrounding community while preserving environmentally significant land features. Stormwater control measures are strategically located near environmentally sensitive areas, which provide additional buffer areas internal to the development and externally to the surrounding community.

11. Other factors as the Board of Commissioners may determine to be relevant.

The development is consistent with the LUP and the Town's Unified Development Ordinance. It will offer residents a variety of housing choices in a quality master planned community on the fringe of downtown Zebulon.



APPLICATION FOR  
PLANNED DEVELOPMENT  
Watson Family II LLC

OWNER'S CONSENT FORM

Name of Project: Zebulon South Submittal Date: 11/01/2022

OWNER'S AUTHORIZATION

I hereby give CONSENT to Andrew Suriano, Deacon Development (type, stamp or print clearly full name of agent) to act on my behalf, to submit or have submitted this application and all required material and documents, and to attend and represent me at all meetings and public hearings pertaining to the application(s) indicated above. Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify I have full knowledge the property I have an ownership interest in is the subject of this application. I acknowledge and agree that, pursuant to Section 2.2.13. of the Town of Zebulon Unified Development Ordinance, that lands subject to a Planned Development shall be subject to all the standards, conditions, and plans approved as part of that application. These standards, plans, and approved conditions are perpetually binding on the land as an amendment to this Ordinance and the Official Zoning Map, and may only be changed in accordance with the procedures established in this Ordinance. Development located outside the Town of Zebulon's corporate limits shall comply with all Town policies related to annexation and the extension of utilities. I understand that all other applicable standards and regulations of the UDO will remain applicable to the subject lands unless specifically listed as conditions or deviations as part of this request. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I acknowledge that additional information may be required to process this application. I further consent to the Town of Zebulon to publish, copy or reproduce any copyrighted document submitted as a part of this application for any third party. I further agree to all terms and conditions, which may be imposed as part of the approval of this application.

DocuSigned by:  
 Johnny Watson 10/28/2022 | 11:22 AM PDT  
*Signature of Owner* *Print Name* *Date*

CERTIFICATION OF PROPERTY OWNER

I hereby certify the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Zebulon, North Carolina, and will not be returned.

DocuSigned by:  
 Johnny Watson 10/28/2022 | 11:22 AM PDT  
*Signature of Owner* *Print Name* *Date*

\*Owner of record as shown by the Wake County Revenue Department ([www.wakegov.com](http://www.wakegov.com)). An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this form.



APPLICATION FOR PLANNED DEVELOPMENT

Temple

OWNER'S CONSENT FORM

Name of Project: Zebulon South

Submittal Date: 11/01/2022

OWNER'S AUTHORIZATION

I hereby give CONSENT to Andrew Suriano, Deacon Development (type, stamp or print clearly full name of agent) to act on my behalf, to submit or have submitted this application and all required material and documents, and to attend and represent me at all meetings and public hearings pertaining to the application(s) indicated above. Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

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DocuSigned by: Joseph W Temple, Jr. 10/31/2022 | 8:20 AM PDT
Signature of Owner Joseph W Temple, Jr.
DocuSigned by: Harrison Alexander Hughes 10/29/2022 | 7:28 AM CDT
Print Name Holly T Hughes Harrison Alexander Hughes
Date 10/31/2022 | 10:26 AM CDT

CERTIFICATION OF PROPERTY OWNER

I hereby certify the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Zebulon, North Carolina, and will not be returned.

DocuSigned by: Joseph W Temple, Jr. 10/31/2022 | 8:20 AM PDT
Signature of Owner Joseph W Temple, Jr.
DocuSigned by: Harrison Alexander Hughes 10/29/2022 | 7:28 AM CDT
Print Name Holly T Hughes Harrison Alexander Hughes
Date 10/31/2022 | 10:26 AM CDT

\*Owner of record as shown by the Wake County Revenue Department (www.wakegov.com). An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this form.



APPLICATION FOR  
PLANNED DEVELOPMENT

Narron

OWNER'S CONSENT FORM

Name of Project: Zebulon South Submittal Date: 11/01/2022

OWNER'S AUTHORIZATION

I hereby give CONSENT to Andrew Suriano, Deacon Development (type, stamp or print clearly full name of agent) to act on my behalf, to submit or have submitted this application and all required material and documents, and to attend and represent me at all meetings and public hearings pertaining to the application(s) indicated above. Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify I have full knowledge the property I have an ownership interest in is the subject of this application. I acknowledge and agree that, pursuant to Section 2.2.13. of the Town of Zebulon Unified Development Ordinance, that lands subject to a Planned Development shall be subject to all the standards, conditions, and plans approved as part of that application. These standards, plans, and approved conditions are perpetually binding on the land as an amendment to this Ordinance and the Official Zoning Map, and may only be changed in accordance with the procedures established in this Ordinance. Development located outside the Town of Zebulon's corporate limits shall comply with all Town policies related to annexation and the extension of utilities. I understand that all other applicable standards and regulations of the UDO will remain applicable to the subject lands unless specifically listed as conditions or deviations as part of this request. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I acknowledge that additional information may be required to process this application. I further consent to the Town of Zebulon to publish, copy or reproduce any copyrighted document submitted as a part of this application for any third party. I further agree to all terms and conditions, which may be imposed as part of the approval of this application.

DocuSigned by:

Charles K. Corbett  
*Signature of Owner*

Charles K. Corbett  
*Print Name*

10/28/2022 | 10:57 AM PDT  
*Date*

CERTIFICATION OF PROPERTY OWNER

I hereby certify the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Zebulon, North Carolina, and will not be returned.

DocuSigned by:

Charles K. Corbett  
*Signature of Owner*

Charles K. Corbett  
*Print Name*

10/28/2022 | 10:57 AM PDT  
*Date*

\*Owner of record as shown by the Wake County Revenue Department ([www.wakegov.com](http://www.wakegov.com)). An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this form.



### CONCEPT PLAN REQUIREMENTS

Every applicant requesting Planned Development approval shall submit **8 copies and 1 pdf (e-mail or USB Drive)** of a concept plan drawing with the application for a Planned Development. The concept plan shall contain sufficient information to adequately determine the type of development being proposed. The concept plan drawing shall include, at a minimum, the following features unless otherwise specified by the Planning Department:

CHECK IF  
SUBMITTED

**ITEM**

1.	Plot plan showing all existing and planned structures, building setback lines, perimeter boundaries, and easements.	<u>✓</u>
2.	Elevation drawings of all buildings indicating the proposed exterior finish materials.	<u>✓</u>
3.	Landscaping plan, lighting, fencing, screening, and walls, indicating all heights and locations.	<u>✓</u>
4.	Location of all ingress and egress.	<u>✓</u>
5.	Off-street parking and loading facilities, with calculations showing how the quantities were obtained.	<u>✓</u>
6.	All pedestrian walks and open areas for use by residents, tenants, or the public.	<u>✓</u>
7.	Proposed land uses indicating areas in square feet.	<u>✓</u>
8.	The location and types of all signs, including lighting and heights, with elevation drawings.	<u>N/A</u>
9.	Existing and/or proposed street names.	<u>✓</u>
10.	Proposed potable or reuse water, wastewater connections, and storm sewer line; proposed grading and drainage patterns; proposed water and sewer allocations.	<u>✓</u>
11.	Such additional items and conditions, including design standards as the Planning Board and Board of Commissioners deems necessary.	<u>✓</u>
12.	Trip generation data and TIA	<u>✓</u>



### PROPOSED USES

An application has been duly filed requesting that the property described in this application be rezoned from R2 & R4 to Planned Development. It is understood and acknowledged that if the property is rezoned as requested, the property described in this request will be perpetually bound to the use(s) authorized and subject to such conditions as imposed, unless subsequently changed or amended as provided for in the Unified Development Ordinance. It is further understood and acknowledged that final plans for any specific development to be made pursuant to any such Planned Development shall be submitted for site or subdivision plan approval. Use additional pages as needed.

The Rezoned Lands may be used for, and only for, the uses listed immediately below. The permitted uses are subject to the limitations and regulations stated in the Use Table and any additional limitations or regulations stated below. For convenience, some relevant sections of the Unified Development Ordinance may be referenced; such references do not imply that other sections of the Unified Development Ordinance do not apply.

1.	Single Family Attached Dwelling	25.	
2.	Single Family Detached Dwelling	26.	
3.		27.	
4.		28.	
5.		29.	
6.		30.	
7.		31.	
8.		32.	
9.		33.	
10.		34.	
11.		35.	
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17.		41.	
18.		42.	
19.		43.	
20.		44.	
21.		45.	
22.		46.	
23.		47.	
24.		48.	





# APPLICATION FOR PLANNED DEVELOPMENT

## ADJACENT OWNERS

Provide a certified list of property owners subject to this application and all properties owners within 150-feet feet of the subject property, and any HOA Contacts for developments which fall within 300-feet of the subject property.

Parcel Address	Parcel ID Number	Owner's Name
717 S ARENDELL AVE	2705518689	CHURCH OF GOD EASTERN NC STATE OFFICE
609 S ARENDELL AVE	2705526056	MCNABB, INEZ PITTS HEIRS
0 MORPHUS BRIDGE RD	2704287413	RAPER, F WAYNE TRUSTEE RAPER, JEAN D TRUSTEE
1051 PULLEY GORDON RD	2704484644	AGARWAL ASSOCIATES LLC
729 S ARENDELL AVE	2705516356	VILLALPANDO, MIGUEL ANGEL
707 S WAKEFIELD ST	2705305594	BLOUNT, BARBARA ANN
700 S ARENDELL AVE	2705512202	TEMPLE, JOSEPH WOOD SR HUGHES, HARRISON ALEXANDER
0 S WAKEFIELD ST	2705413075	WATSON FAMILY II LLC
604 S ARENDELL AVE	2705429117	DEAN, ATWELL STUART
301 SIR DAVID DR	2705303716	BARRERA, EMILIO VILLEGAS ARMENTA, BERTHA CORTEZ
751 S WAKEFIELD ST	2704492511	NARRON, HAROLD CORBETT, C FRED
745 S ARENDELL AVE	2705610110	HILL, TIMOTHY GORDON HILL, LILLIAN AVENT
812 S WAKEFIELD ST	2704392692	CARRILLO, JOSE SANTOS CARRILLO, MARY D
738 S WAKEFIELD ST	2705303119	SHAW, SHIRLEY D
300 SIR DAVID DR	2705302989	C W S SYSTEMS INC
737 S ARENDELL AVE	2705518284	HOLLAND, JIMMY LEON HOLLAND, HELEN M
728 S WAKEFIELD ST	2705303434	GILL, WILLIAM E GILL, GENEVIEVE M
720 S WAKEFIELD ST	2705303532	GILL, W E GILL, GENEVIEVE M
0 N ARENDELL AVE	2705513114	TEMPLE, J M
697 S WAKEFIELD ST	2705306724	BRADSHAW, BETTIE SUE
631 S WAKEFIELD ST	2705306922	CONYERS, BEVERLY A CONYERS, CASSANDRA L
614 S ARENDELL AVE	2705520074	CREECH, ROBERT E CREECH, KATHEY P
828 S WAKEFIELD ST	2704297696	SILBER, EVA TRUSTEE EVA SILBER LIVING TRUST THE
610 S WAKEFIELD ST	2705302674	HERNANDEZ, LYDIA FABIOLA MATEO
601 S WAKEFIELD ST	2705315336	SANTOS, ALEJANDRO WILIBALDO ROSALES CASTILLO, ELIA ORTEGA
753 S ARENDELL AVE	2705601920	FOX, JEFFERY M FOX, PENNY M
701 S WAKEFIELD ST	2705305694	STANCIL, L J
505 S WAKEFIELD ST	2705410911	VINSON, MARTHA H
709 S WAKEFIELD ST	2705306404	HINTON, MARY E HEIRS HOLDER, MARY A HEIRS
755 S ARENDELL AVE	2705601533	ESTRADA, JILBER VELAZQUEZ
611 S WAKEFIELD ST	2705316119	MCCULLERS, JAMIE
1028 S ARENDELL AVE	2704693410	JAYS ARENDELL PROPERTIES LLC
621 S WAKEFIELD ST	2705316027	GARCIA, LAURA A REYES, GERARDO REYES

## HOA CONTACTS

Development Name	Contact Person	Address
Lindsey Pointe	DAVID BULLOCK CONSTRUCTION INC	2805 AUBURN KNIGHTDALE RD RALEIGH NC 27610-9712





Beginning at an existing iron pipe along the eastern right of way of Pulley Gordon Road, having a North Carolina State Plane Coordinate (NAD 1983-2011) value of North 749044.53 feet, East 2203638.58 feet. Thence S89° 06' 44"W, 43.52' to a point in the centerline of Pulley Gordon Road; thence with the centerline of Pulley Gordon Road N31° 40' 13"W, 17.82' to a point; thence with a curve to the right having a radius of 745.63', a length of 258.84', and a chord bearing and distance of N21° 43' 32"W, 257.54' to a point; thence N11° 46' 51"W, 141.30' to a point in the centerline of South Wakefield Street; thence with the centerline of South Wakefield Street with a curve to the left having a radius of 898.66', a length of 224.11', and a chord bearing and distance of N1° 14' 44"E, 223.53' to a point; thence N5° 53' 55"W, 188.25' to a point; thence with a curve to the right having a radius of 2330.34', a length of 135.93', and a chord bearing and distance of N4° 13' 39"W, 135.91' to a point; thence N2° 33' 23"W, 47.94' to a point; thence with a curve to the right having a radius of 1695.94', a length of 104.97', and a chord bearing and distance of N0° 47' 00"W, 104.96' to a point; thence with a curve to the left having a radius of 4451.25', a length of 133.35', and a chord bearing and distance of N0° 07' 54"E, 133.35' to a point; thence N0° 43' 36"W, 120.66' to a point; thence leaving the centerline of the aforesaid road S88° 41' 25"E, 331.00' to an existing iron pipe; thence N0° 50' 44"W, 407.57' to an existing iron pipe; thence N89° 19' 57"W, 330.04' to a point in the centerline of South Wakefield Street; thence with the centerline of South Wakefield Street N0° 43' 36"W, 59.99' to a point; thence leaving the aforesaid centerline S89° 19' 57"E, 330.02' to an existing iron pipe; thence N0° 44' 29"W, 389.63' to an existing iron pipe; thence N89° 53' 37"W, 129.83' to an existing iron pipe; thence N3° 52' 53"E, 233.74' to an existing iron pipe; thence S89° 15' 00"E, 1384.54' to an existing iron pipe; thence N1° 20' 40"E, 480.67' to an existing iron pipe; thence N78° 36' 17"E, 124.17' to an existing iron pipe; thence continuing N78° 36' 17"E, 30.59' to a point in the centerline of South Arendell Avenue; thence with the centerline of South Arendell Avenue S28° 50' 24"E, 761.08' to a point; thence S28° 50' 24"E, 425.02' to a point; thence S29° 13' 43"E, 667.05' to a point; thence leaving the centerline of the aforesaid road N88° 26' 36"W, 584.64' to an existing iron pipe; thence S89° 11' 28"W, 68.13' to a 5/8" capped iron rod set; thence S2° 12' 27"E, 1759.55' to a 5/8" capped iron rod set; thence S88° 17' 33"W, 346.50' to an existing iron pipe; thence N3° 17' 33"E, 478.27' to an existing iron pipe; thence S89° 06' 44"W, 1540.50' to the Beginning, containing 118.61 acres more, or less.

**SAVE AND EXCEPT** the cemetery that exist on the above-described property, described as Beginning at the southeast corner of the cemetery, having a North Carolina State Plane Coordinate (NAD 1983-2011) value as North 751140.59', East 2205340.06'. Thence N90° 00' 00"W, 30.56' to a point; thence N0° 00' 00"E, 32.27' to a point; thence N90° 00' 00"E, 30.56' to a point; thence S0° 00' 00"E, 32.27' to the Beginning, containing 986 square feet more, or less.

**THIS DESCRIPTION IS PROVIDED WITHOUT THE BENEFIT OF A TITLE COMMITMENT**



5410 Trinity Road  
Suite 102  
Raleigh, NC 27607

P 919.866.4951  
F 919.859.5663  
[www.timmons.com](http://www.timmons.com)

September 22, 2022

## Notice of Proposed Zoning Change

Wake County PINs 2705-41-3075, 2704-49-2511, & 2705-51-2202

Dear Property Owner:

On behalf of the applicant and property owners, Timmons Group would like to invite you to attend a neighborhood information meeting concerning the following proposal. Timmons Group will be submitting a request to rezone the property located between the intersections of S Wakefield Street and Morphus Bridge Road and the intersection at S Arendell Ave and Perry Curtis Road. The parcels under consideration are shown on the attached map.

The existing zoning is Zebulon Residential Neighborhood District (R4) & Residential Suburban District (R2), and the proposed zoning classification requested is Zebulon Planned Development District (PD). The proposed rezoning will not change the existing zoning status of surrounding properties. The proposed development will consist of a variety of lot sizes, including attached and detached single family.

Per Town of Zebulon ordinance requirements, we are notifying you of this meeting because your property is located within the written notification area for public hearings. While this meeting is not a public hearing, it is an opportunity for you to meet with the owners and/or applicants to hear about their intention to rezone the land. You are encouraged to ask questions and express concerns so that we may help you to understand the proposed project more fully. There will not be an in-person meeting.

The meeting participation options are as follows:

1. An online virtual meeting to be held on October 05, 2022 at 6:00 pm.
  - a) Virtual meeting link:  
<https://timmons.zoom.us/j/99067768952?pwd=MGU0WGRRampkMWgvOGhOYVgrUEgzQT09>
  - b) Password: **942736**
  - c) Instructions: You may join from any browser. Upon joining, you be placed in the waiting room until the meeting host allows entrance. At the start of the meeting, we will take some time to gather the required information (Name, Address, Email and Phone number) though the chat feature on screen.

2. A toll-free conference call for audio only access to the virtual meeting held on October 05, 2022 at 6:00 pm.

a) Call about five (5) minutes prior to the aforementioned date and time:

- Phone Number: +1 646 558 8656

b) You may be asked to dial the following information:

- Meeting ID: **990 6776 8952**
- Password: **942736**

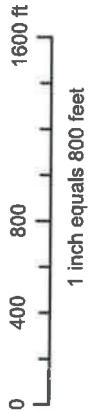
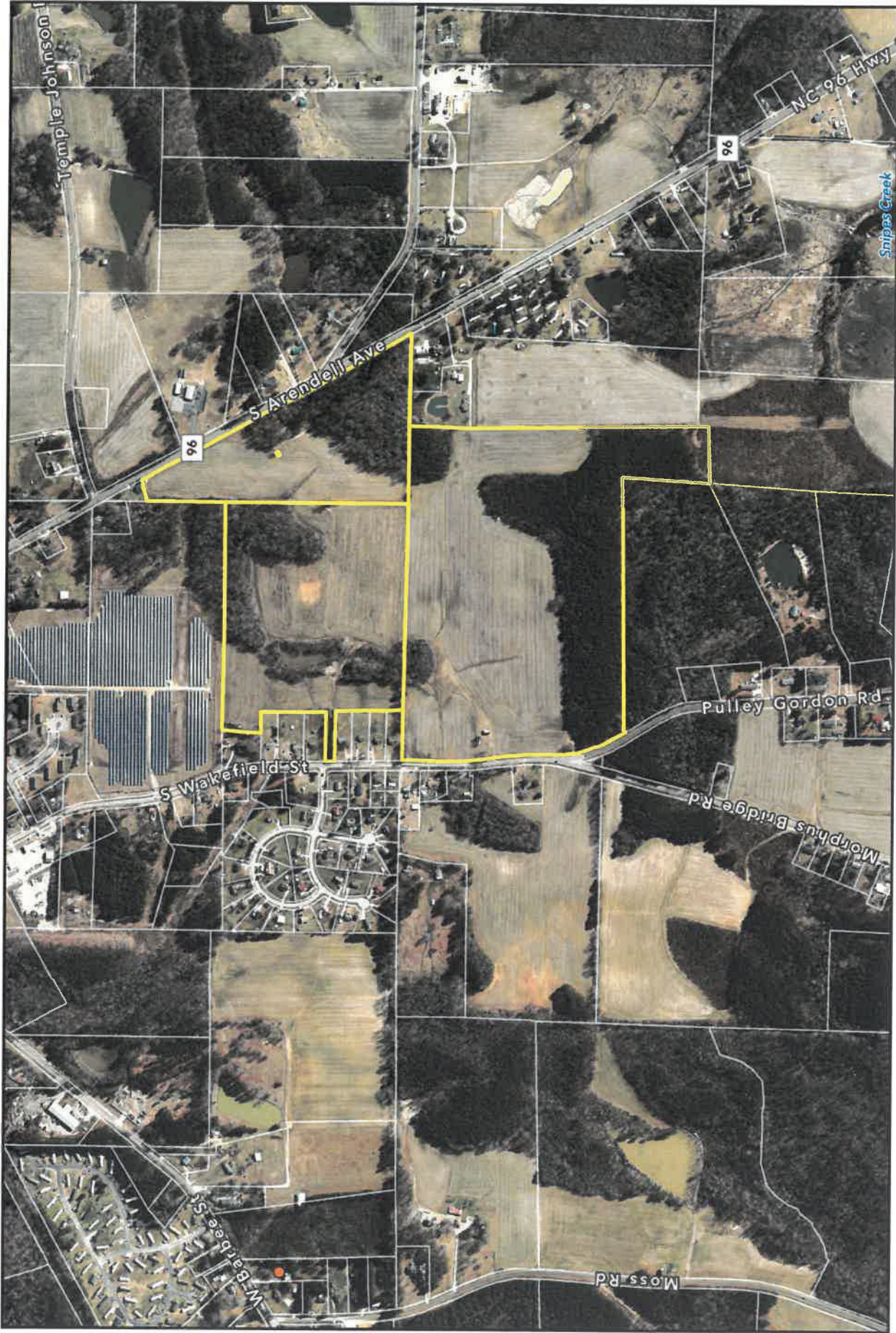
If you have any questions about this neighborhood information meeting, or if you are unable to attend and would like to leave comments for our consideration, please feel free to contact me at 919-866-4509 or [beth.blackmon@timmons.com](mailto:beth.blackmon@timmons.com).

Thank you for your interest.

Sincerely,

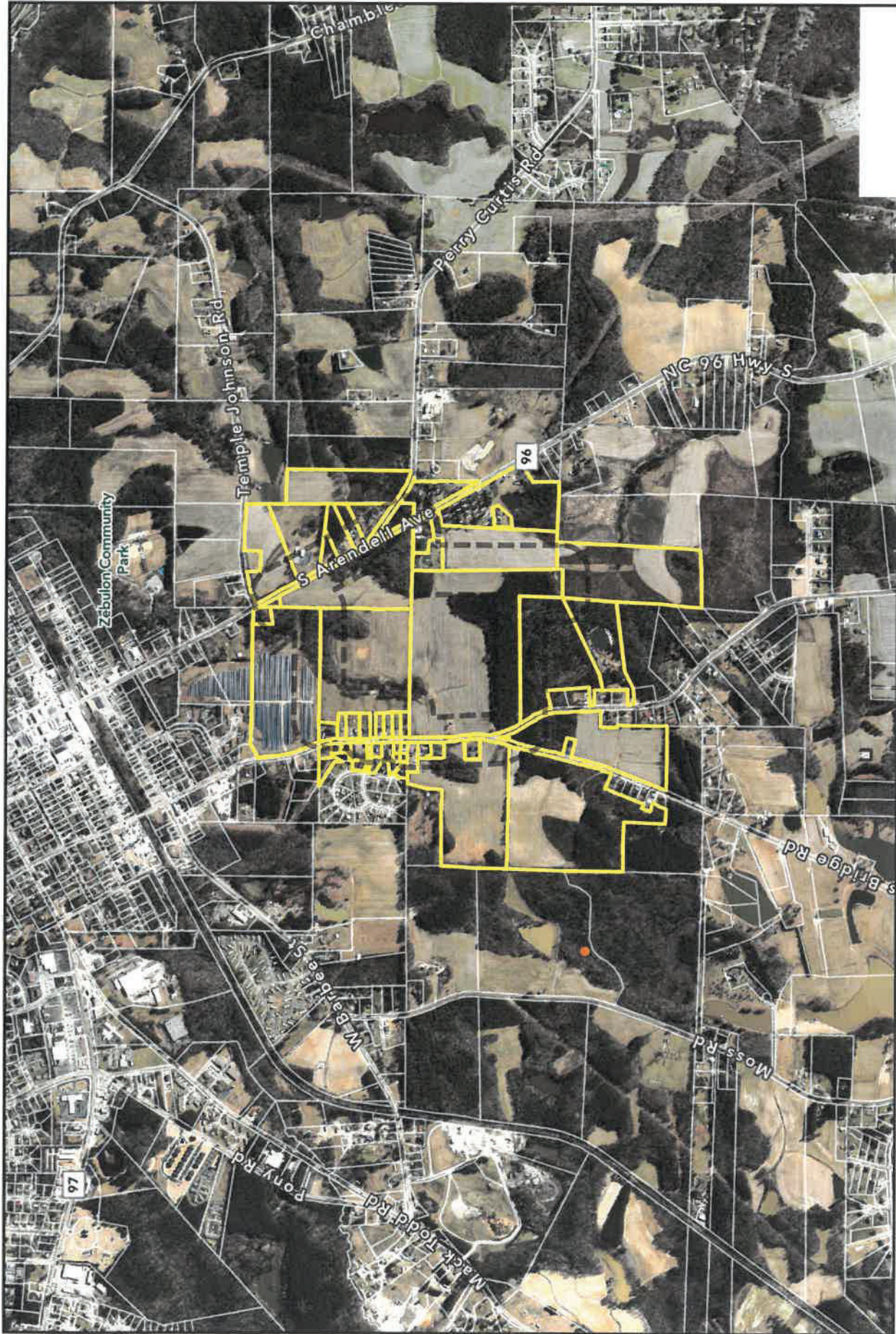
A handwritten signature in blue ink that reads "Beth Blackmon". The signature is written in a cursive, flowing style.

Beth Blackmon, PE  
Sr. Project Manager

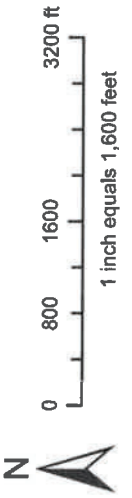


**Zebulon South Neighborhood Meeting**

**Disclaimer**  
iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are NOT surveys. No warranties, expressed or implied, are provided for the data therein, its use, or its interpretation.



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**Zebulon South Mailing List**

PIN_NUM	OWNER	ADDR1	ADDR2
2704484644	AGARWAL ASSOCIATES LLC	2000 KILLEARN MILL CT	CARY NC 27513-4293
2705303716	BARRERA, EMILIO VILLEGAS ARMENTA, BE	301 SIR DAVID DR	ZEBULON NC 27597-6801
2705305594	BLOUNT, BARBARA ANN	707 S WAKEFIELD ST	ZEBULON NC 27597-2567
2705306724	BRADSHAW, BETTIE SUE	697 S WAKEFIELD ST	ZEBULON NC 27597-2565
2705302989	C W S SYSTEMS INC	500 W MONROE ST STE 3600	CHICAGO IL 60661-3779
2704392692	CARRILLO, JOSE SANTOS CARRILLO, MARY	812 S WAKEFIELD ST	ZEBULON NC 27597-2568
2705518689	CHURCH OF GOD EASTERN NC STATE OFFI	PO BOX 100	KENLY NC 27542-0100
2705306922	CONYERS, BEVERLY A CONYERS, CASSAND	631 S WAKEFIELD ST	ZEBULON NC 27597-2565
2705520074	CREECH, ROBERT E CREECH, KATHEY P	13713 POSSUM TRACK RD	RALEIGH NC 27614-9381
2705311337	DAVID BULLOCK CONSTRUCTION INC	2805 AUBURN KNIGHTDALE RD	RALEIGH NC 27610-9712
2705429117	DEAN, ATWELL STUART	604 S ARENDELL AVE	ZEBULON NC 27597-8202
2705601533	ESTRADA, JILBER VELAZQUEZ	106 WOODGATE DR	GARNER NC 27529-2738
2705601920	FOX, JEFFERY M FOX, PENNY M	753 S ARENDELL AVE	ZEBULON NC 27597-8205
2705301515	FUENTES, BAYRON JOSUE LOPEZ HILARIO,	709 CHANCE CIR	ZEBULON NC 27597-6809
2705316027	GARCIA, LAURA A REYES, GERARDO REYES	621 S WAKEFIELD ST	ZEBULON NC 27597-2565
2705302523	GILL, W E	PO BOX 474	ZEBULON NC 27597-0474
2705303532	GILL, W E GILL, GENEVIEVE M	PO BOX 474	ZEBULON NC 27597-0474
2705302424	GILL, WILLIAM E GILL, GENEVIEVE M	PO BOX 474	ZEBULON NC 27597-0474
2705303434	GILL, WILLIAM E GILL, GENEVIEVE M	PO BOX 474	ZEBULON NC 27597-0474
2705301927	HANNAH, KRYSTAL	304 SIR DAVID DR	ZEBULON NC 27597-6800
2705302674	HERNANDEZ, LYDIA FABIOLA MATEO	610 S WAKEFIELD ST	ZEBULON NC 27597-2564
2705302314	HICKS, MELVILLE HOWARD JR	PO BOX 660	ZEBULON NC 27597-0660
2705610110	HILL, TIMOTHY GORDON HILL, LILLIAN AVI	745 S ARENDELL AVE	ZEBULON NC 27597-8205
2705306404	HINTON, MARY E HEIRS HOLDER, MARY A	709 S WAKEFIELD ST	ZEBULON NC 27597-2567
2705518284	HOLLAND, JIMMY LEON HOLLAND, HELEN	737 S ARENDELL AVE	ZEBULON NC 27597-8205
2704693410	JAYS ARENDELL PROPERTIES LLC	2709 BELMONT VIEW LOOP	CARY NC 27519-7725
2705506134	LONG, RANDALL S	908 S ARENDELL AVE	ZEBULON NC 27597-8208
2704485074	MARTIN, COY BERKLEY SR MARTIN, COY B	2202 NC 561 HWY	LOUISBURG NC 27549-8469
2705316119	MCCULLERS, JAMIE	611 S WAKEFIELD ST	ZEBULON NC 27597-2565
2705526056	MCNABB, INEZ PITTS HEIRS	1900 LITTLE ELM TRL APT 70	CEDAR PARK TX 78613-2834
2704492511	NARRON, HAROLD CORBETT, C FRED	3941 ZEBULON RD	ZEBULON NC 27597-8187
2705509203	PARKER, LARRY N	900 S ARENDELL AVE	ZEBULON NC 27597-8208
2704597445	PARKER, LARRY N PARKER, TAMMY M	900 S ARENDELL AVE	ZEBULON NC 27597-8208
2704574734	PARKER, LARRY N PARKER, TAMMY M	900 S ARENDELL AVE	ZEBULON NC 27597-8208
2704287413	RAPER, F WAYNE TRUSTEE RAPER, JEAN D	1317 MORPHUS BRIDGE RD	WENDELL NC 27591-8377
2705312399	ROSSMAN, MAXINE	108 REGGIE OWENS DR	HARBINGER NC 27941-9704
2705315336	SANTOS, ALEJANDRO WILIBALDO ROSALE	PO BOX 332	WENDELL NC 27591-0332
2705303119	SHAW, SHIRLEY D	738 S WAKEFIELD ST	ZEBULON NC 27597-2566
2704297696	SILBER, EVA TRUSTEE EVA SILBER LIVING T	15117 MELBOURNE RD	RALEIGH NC 27606-1747
2705301759	SPRUILL, JOSEPH PAUL SPRUILL, CONNIE S	305 SIR DAVID DR	ZEBULON NC 27597-6801
2705305694	STANCIL, L J	701 S WAKEFIELD ST	ZEBULON NC 27597-2567
2705513114	TEMPLE, J M	PO BOX 548	ZEBULON NC 27597-0548
2705614179	TEMPLE, JOSEPH WOOD	PO BOX 548	ZEBULON NC 27597-0548
2705512202	TEMPLE, JOSEPH WOOD SR HUGHES, HAR	PO BOX 548	ZEBULON NC 27597-0548
2705302076	TISDALE, ALICE KIRK DUNN, MARY FRANCI	748 S WAKEFIELD ST	ZEBULON NC 27597-2566
2705300426	VILLA FRANCA, IRIS	713 CHANCE CIR	ZEBULON NC 27597-6809
2705516356	VILLALPANDO, MIGUEL ANGEL	110 LEGEND VALLEY LN UNIT 13	ZEBULON NC 27597-9503
2705410911	VINSON, MARTHA H	500 PERRY CURTIS RD	ZEBULON NC 27597-8877
2705413075	WATSON FAMILY II LLC	6220 FORESTVILLE RD	RALEIGH NC 27604-8618
2705520074	Current Resident	614 S ARENDELL AVE	ZEBULON NC 27597
2705303532	Current Resident	720 S WAKEFIELD ST	ZEBULON NC 27597
2705303434	Current Resident	728 S WAKEFIELD ST	ZEBULON NC 27597
2705302314	Current Resident	734 S WAKEFIELD ST	ZEBULON NC 27597
2704485074	Current Resident	1131 PULLEY GORDON RD	ZEBULON NC 27597
2705312399	Current Resident	600 S WAKEFIELD ST	ZEBULON NC 27597

2705315336	Current Resident	601 S WAKEFIELD ST	ZEBULON NC 27597
	Current Resident	100 Bingo Blvd	ZEBULON NC 27597
	Current Resident	100 Bingo Blvd LT 27	ZEBULON NC 27597
	Current Resident	100 Green Grove Ln	ZEBULON NC 27597
	Current Resident	100 Green Grove Ln LT 5	ZEBULON NC 27597
	Current Resident	100 Legend Valley Ln	ZEBULON NC 27597
	Current Resident	100 Legend Valley Ln LT 12	ZEBULON NC 27597
	Current Resident	100 Long Park Dr	ZEBULON NC 27597
	Current Resident	100 Long Park Dr LOT 1	ZEBULON NC 27597
	Current Resident	100 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	100 Rocky Road Dr LT 19	ZEBULON NC 27597
	Current Resident	100 Royal View Dr	ZEBULON NC 27597
	Current Resident	100 Royal View Dr LT 34	ZEBULON NC 27597
	Current Resident	1007 S Arendell Ave	ZEBULON NC 27597
	Current Resident	1014 S Arendell Ave	ZEBULON NC 27597
	Current Resident	1020 S Arendell Ave	ZEBULON NC 27597
	Current Resident	1028 S Arendell Ave	ZEBULON NC 27597
	Current Resident	105 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	105 Rocky Road Dr LT 15	ZEBULON NC 27597
	Current Resident	106 Long Park Dr	ZEBULON NC 27597
	Current Resident	106 Long Park Dr LT 11	ZEBULON NC 27597
	Current Resident	108 Long Park Dr	ZEBULON NC 27597
	Current Resident	108 Long Park Dr LT 10	ZEBULON NC 27597
	Current Resident	110 Bingo Blvd	ZEBULON NC 27597
	Current Resident	110 Bingo Blvd LT 28	ZEBULON NC 27597
	Current Resident	110 Green Grove Ln	ZEBULON NC 27597
	Current Resident	110 Green Grove Ln LT 6	ZEBULON NC 27597
	Current Resident	110 Legend Valley Ln LT 13	ZEBULON NC 27597
	Current Resident	110 Long Park Dr	ZEBULON NC 27597
	Current Resident	110 Long Park Dr LT 9	ZEBULON NC 27597
	Current Resident	110 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	111 Rocky Road Dr LT 20	ZEBULON NC 27597
	Current Resident	110 Royal View Dr	ZEBULON NC 27597
	Current Resident	110 Royal View Dr LT 23	ZEBULON NC 27597
	Current Resident	1100 S Arendell Ave	ZEBULON NC 27597
	Current Resident	115 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	115 Rocky Road Dr LT 16	ZEBULON NC 27597
	Current Resident	120 Bingo Blvd	ZEBULON NC 27597
	Current Resident	120 Bingo Blvd LT 29	ZEBULON NC 27597
	Current Resident	120 Legend Valley Ln	ZEBULON NC 27597
	Current Resident	120 Legend Valley Ln LT 14	ZEBULON NC 27597
	Current Resident	120 Long Park Dr	ZEBULON NC 27597
	Current Resident	120 Long Park Dr LT 8	ZEBULON NC 27597
	Current Resident	120 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	120 Rocky Road Dr LT 21	ZEBULON NC 27597
	Current Resident	120 Royal View Dr	ZEBULON NC 27597
	Current Resident	120 Royal View Dr LT 24	ZEBULON NC 27597
	Current Resident	125 Legend Valley Ln	ZEBULON NC 27597
	Current Resident	125 Legend Valley Ln LT 33	ZEBULON NC 27597
	Current Resident	125 Rocky Road Dr	ZEBULON NC 27597
	Current Resident	125 Rocky Road Dr LT 17	ZEBULON NC 27597
	Current Resident	130 Bingo Blvd	ZEBULON NC 27597
	Current Resident	130 Bingo Blvd LT 30	ZEBULON NC 27597
	Current Resident	130 Long Park Dr	ZEBULON NC 27597
	Current Resident	130 Long Park Dr LT 7	ZEBULON NC 27597
	Current Resident	130 Rocky Road Dr	ZEBULON NC 27597



Current Resident	130 Rocky Road Dr LT 22	ZEBULON NC 27597
Current Resident	130 Royal View Dr	ZEBULON NC 27597
Current Resident	130 Royal View Dr LT 25	ZEBULON NC 27597
Current Resident	135 Rocky Road Dr	ZEBULON NC 27597
Current Resident	135 Rocky Road Dr LT 18	ZEBULON NC 27597
Current Resident	140 Bingo Blvd	ZEBULON NC 27597
Current Resident	140 Bingo Blvd LT 31	ZEBULON NC 27597
Current Resident	140 Royal View Dr	ZEBULON NC 27597
Current Resident	150 Bingo Blvd	ZEBULON NC 27597
Current Resident	150 Bingo Blvd LT 32	ZEBULON NC 27597
Current Resident	805 S Arendell Ave	ZEBULON NC 27597
Current Resident	805 S Arendell Ave Lot LT 4	ZEBULON NC 27597
Current Resident	845 S Arendell Ave	ZEBULON NC 27597


NORTH CAROLINA  
WAKE COUNTY

AFFIDAVIT OF MAILING

I, Elizabeth Ange, Project Engineer III with Timmons Group, being first duly sworn, deposes and says as follows:

1. That I am a project engineer regarding a rezoning petition to be filed with the Town of Zebulon (the "Town"), for a project known as "Zebulon South" (the "Project").
2. In accordance with the Town's Unified Development Ordinance (the "UDO"), a Neighborhood Meeting for the Project was scheduled for and did occur on October 5, 2022.
3. In accordance with the Town's UDO, a notice of the Neighborhood Meeting was mailed to those individuals and property addresses identified on the exhibit attached hereto. To the best of my knowledge, the individuals identified on the attached exhibit are all of the landowners and occupants within 300 linear feet of the outer perimeter of the site where the Project is proposed.
4. The notice of the Neighborhood Meeting was mailed no less than ten days prior to the date of the Neighborhood Meeting.

This the 22 day of September, 2022.

  
 Elizabeth Ange  
 Project Engineer III  
 Timmons Group  
 5410 Trinity Road, Suite 102  
 Raleigh, NC 27607

NORTH CAROLINA  
COUNTY OF Wake

BEFORE ME, the undersigned authority, this day personally appeared Elizabeth Ange, who, being first duly sworn, deposes and says that she has read the foregoing Affidavit of Mailing and knows the facts contained therein to be true and correct to the best of her knowledge and belief.

SWORN TO AND SUBSCRIBED before me this Oct. 12, 2022.

  
 Notary Public

My commission expires: 8/8/26

(SEAL)

Karen L. Haas NOTARY PUBLIC Wake County North Carolina My Commission Expires August 8, 2026
---

202122500189





Meeting Sign-in Sheet			
<b>Project:</b>	Zebulon South	<b>Meeting Date:</b>	5-Oct-22
<b>Faciliator:</b>	Timmons Group	<b>Place/ Room:</b>	Zoom

Name	Address	Phone	Email	Sent presentation to
Beth Blackmon	5410 Trinity Rd, Suite 102, Raleigh NC 27607	919-866-4509	beth.blackmon@timmons.com	
Elizabeth Ange	5410 Trinity Rd, Suite 102, Raleigh NC 27607	984-255-2366	elizabeth.ange@timmons.com	
John Adcock	PO Box 1478, Fuquay-Varina, NC 27526	919-552-6600	john@adcocklawfirm.com	
Andrew Suriano	PO Box 1080, Wake Forest, NC 27588	919-608-3542	andrew@deaconcompanies.com	
Jeff Hochanadel	5410 Trinity Rd, Suite 102, Raleigh NC 27607	919-866-4511	jeff.hochanadel@timmons.com	
Hunter Mullins	5410 Trinity Rd, Suite 102, Raleigh NC 27607	919-532-3272	hunter.mullins@timmons.com	
Lynn Mcnabb	1900 Little Elm Trail Apt. 70, Cedar Park Tx		mcnabbvolunteer1@aol.com	X
Tracie Hicks	PO Box 251, Pittsfield, ID	919-868-7592	tracie.hicks@whitetailproperties.com	
Jane Mccullers	611 S Wakefield St, Zebulon NC 27597		jamie.mccullers@yahoo.com	X
Temple	PO Box 548, Zebulon NC 27597			
Chuck, Fred Corbett				
Apurva			JAYSarendellProperties@gmail.com	X
Jack Yen			jackyen@gmail.com	X



<b>Summary of Discussion From the Neighborhood Meeting</b>			
<b>Project:</b>	Zebulon South	<b>Meeting Date:</b>	Wednesday, October 5, 2022
<b>Applicant:</b>	Timmons Group - Beth Blackmon	<b>Place/ Room:</b>	Zoom
<b>Contact Information:</b>	beth.blackmon@timmons.com 919-866-4509	<b>Time:</b>	6:00 PM

Summary of questions/ comments and responses from the neighborhood meeting:

**Questions/ Concern #1:** Is there a chance that I might have to move?

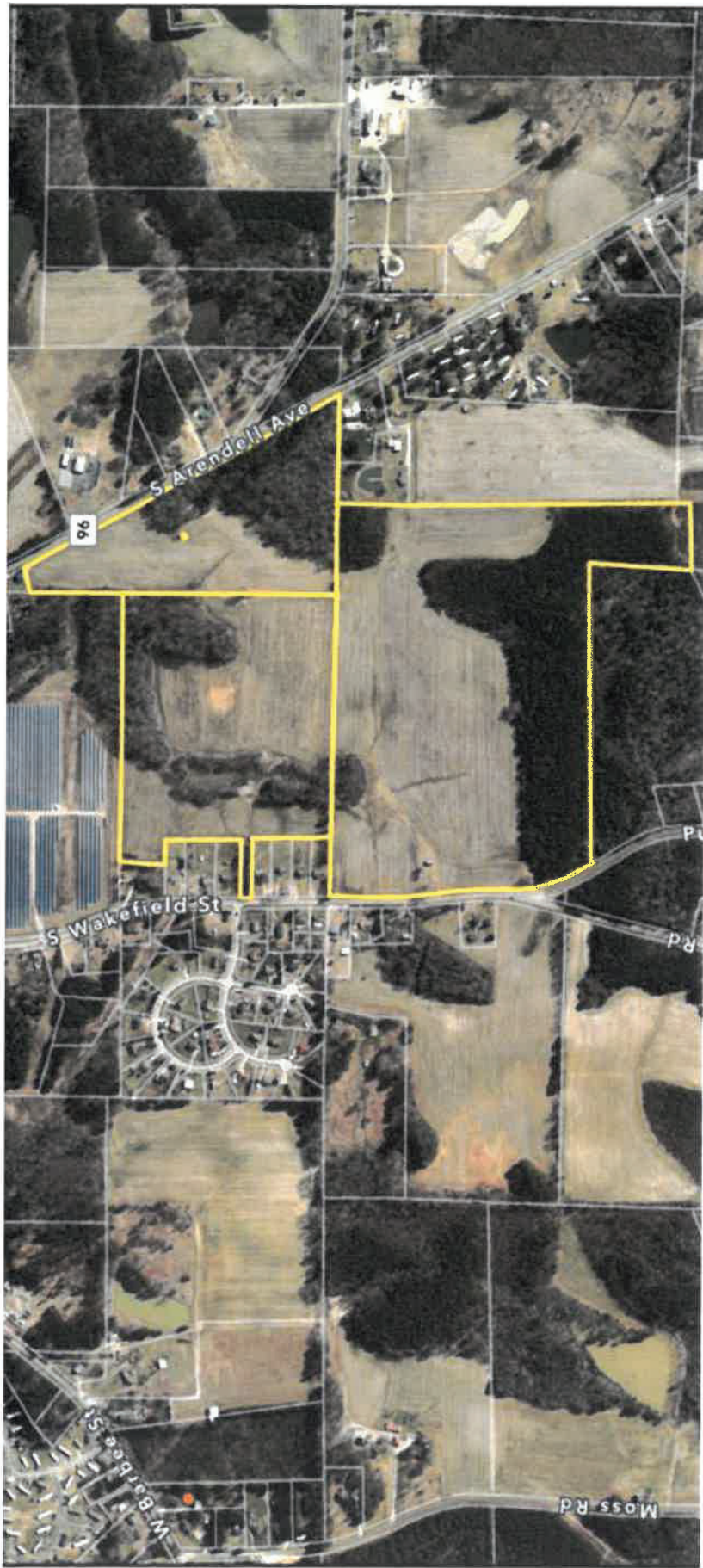
**Applicant Response:** No ma'am, your property is not on site and we are not allowed to put anything on your property. Additionally, there is environmental, streams and wetlands, behind your home and will likely not be putting anything except recreation area behind you.

**Questions/ Concern #2:** Are you going to build the thoroughfare road? That will be good for the town!

**Applicant Response:** Yes, because it shows on the transportation plan, it is required to be built. It is a 2 lane divided road.

**Questions/ Concern #3:** What's the plan for this site? Will there be a new development?

**Applicant Response:** There are 3 properties and the developer is going to submit a rezoning application to rezone to PD, Planned Development. The PD allows for an initiative design. As of right now, it is proposed to be a residential development with single family housing and townhomes. The proposed density is 2.67 du/a. 314 lots are proposed, 108 are rear load lots.



# ZEBULON SOUTH NEIGHBORHOOD MEETING

October 5, 2022

TIMMONS GROUP

**INTRODUCTIONS**

**PURPOSE OF MEETING**

**THE DEVELOPMENT PROCESS**

**PROJECT INFORMATION**

**LOCATION**

**CURRENT ZONING**

**FUTURE LAND USE MAP**

**COMPREHENSIVE TRANSPORTATION PLAN**

**EXISTING CONDITIONS**

**PD REZONING TIMELINE**

**Q&A**

# **AGENDA**



**TIMMONS GROUP**

# INTRODUCTIONS

## TIMMONS GROUP:

Beth Blackmon, PE

Sr. Project Manager

919-866-4509

[beth.blackmon@timmons.com](mailto:beth.blackmon@timmons.com)

## ADCOCK LAW FIRM:

John Adcock, Esq.

919-552-6600

[john@adcocklawfirm.com](mailto:john@adcocklawfirm.com)

Attendees





# PURPOSE

## WHO RECEIVED NOTIFICATION?

Property owners within 300 feet of the proposal

## WHY ARE WE HOLDING THIS MEETING?

Unified Development Ordinance requirement to meet with adjacent property owners

To have an opportunity before submittal to receive feedback

To improve the proposal with that feedback

## HOW WILL WE DO THAT?

Following tonight's meeting, the applicant & Town staff will discuss your comments

Look for ways to improve the proposal using your comments

# THE DEVELOPMENT PROCESS

## PLANNED DEVELOPMENT REZONING (PD)

Master plan rezoning with concept plan and conditions to guide future development

## PRELIMINARY SUBDIVISION PLAT/CONSTRUCTION DOCUMENTS

Detailed subdivision plans to establish streets, lot layout and utilities

Proposing single family detached homes and attached townhomes

Both rear load and front load homes will be proposed

Reviewed by staff for conformance with PD master plan rezoning

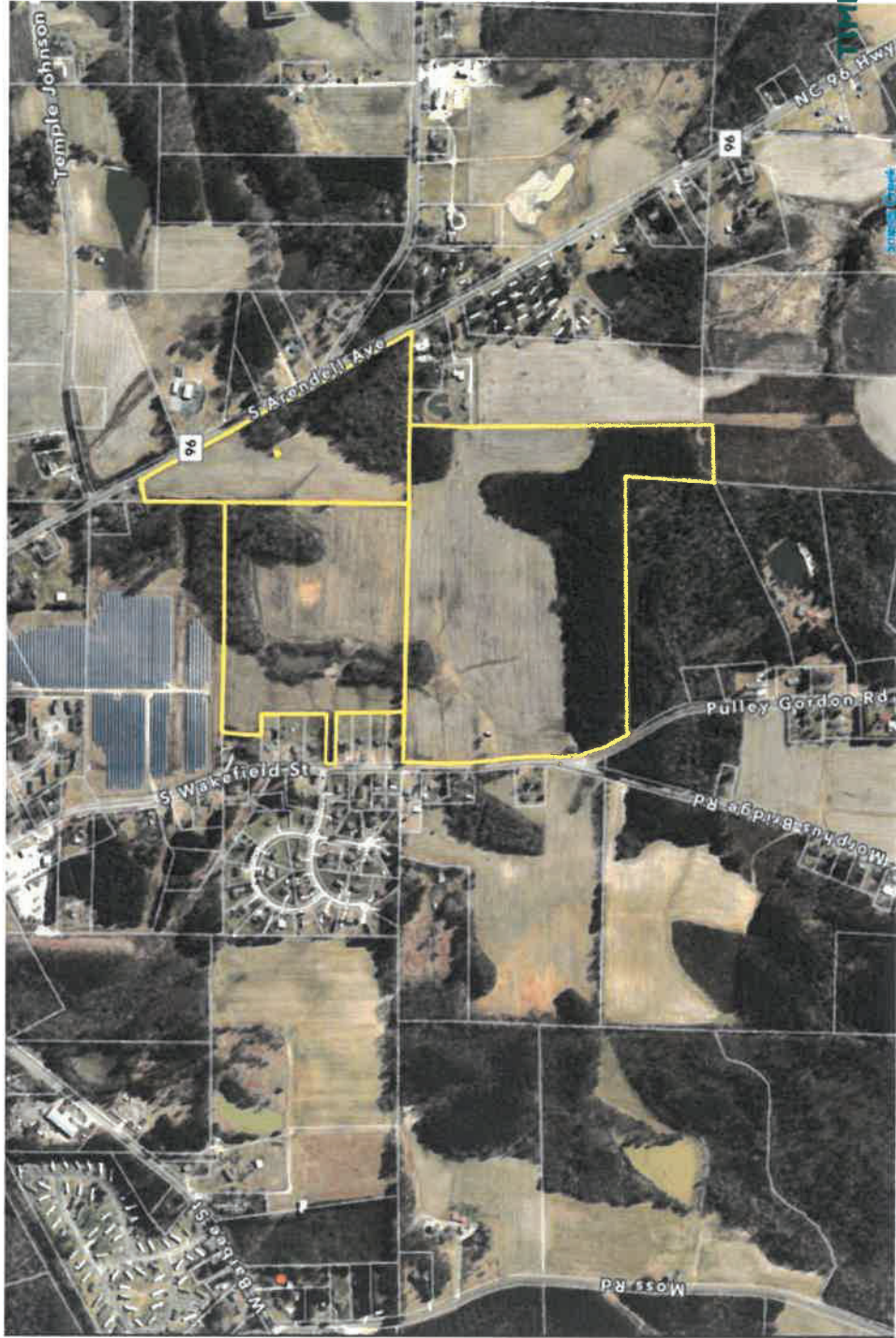
Detailed plans to be utilized for construction of infrastructure

Including erosion control, road improvements, streets, utilities and stormwater

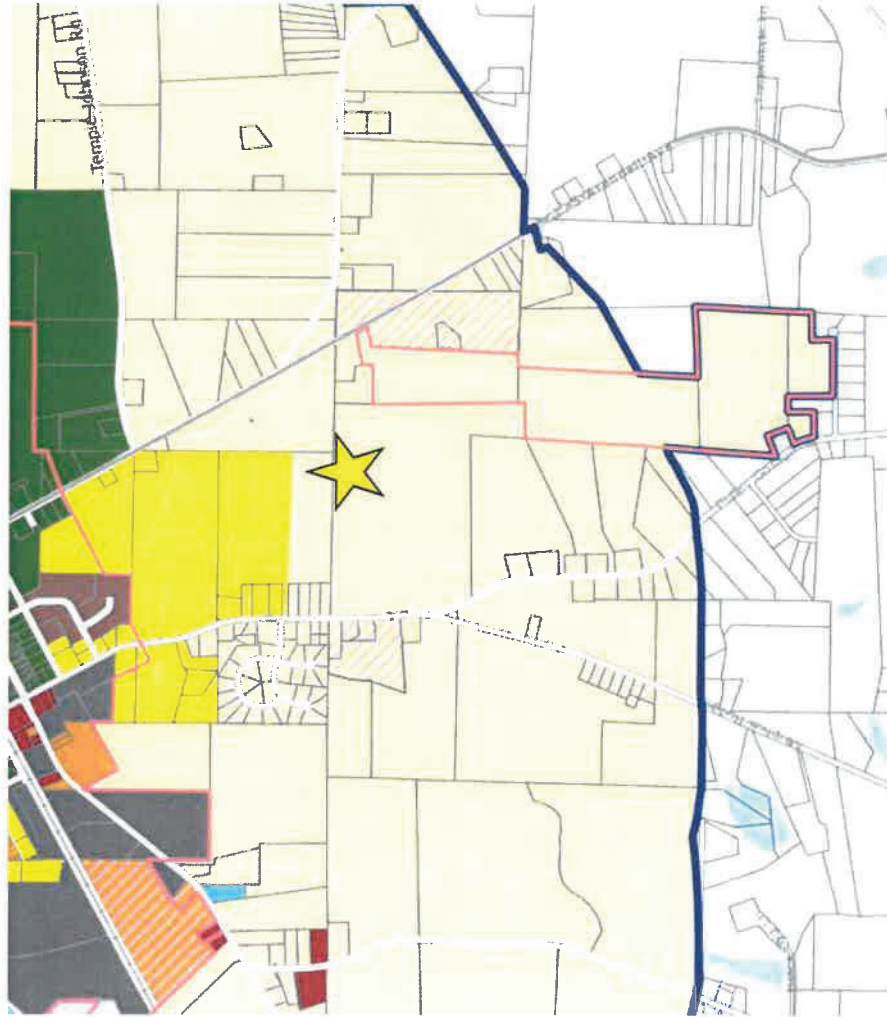


**TIMMONS GROUP**

# LOCATION



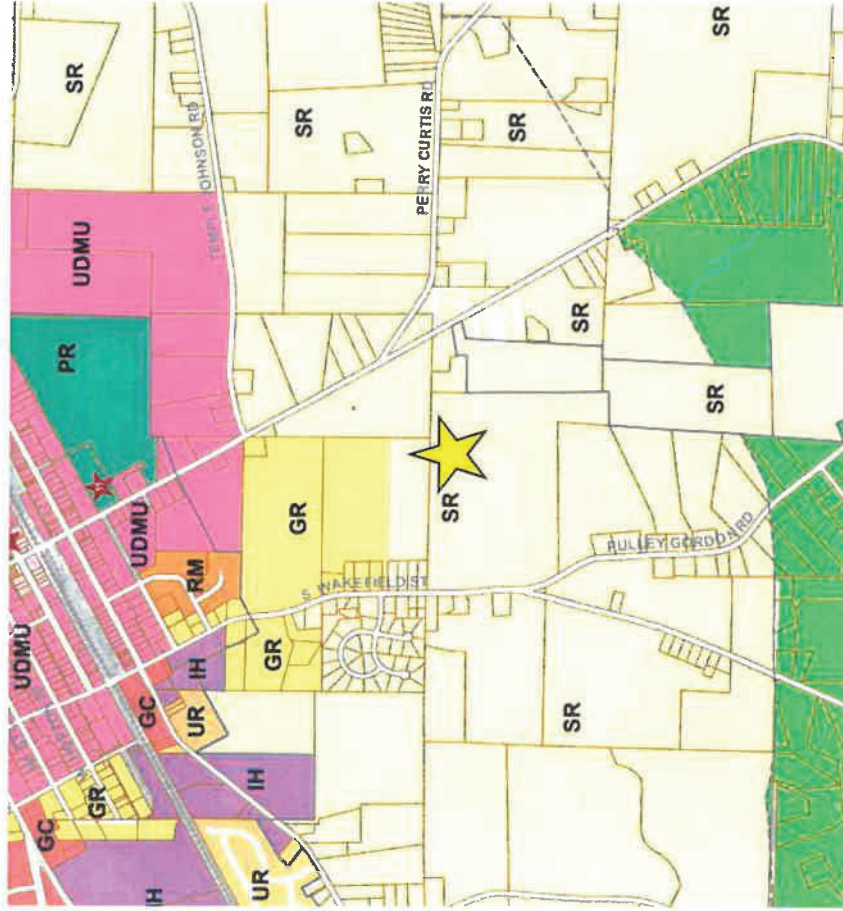
# CURRENT ZONING



- R2, RESIDENTIAL SUBURBAN
- R4, RESIDENTIAL NEIGHBORHOOD



# FUTURE LAND USE MAP



- Suburban Residential (SR)
- General Residential (GR)



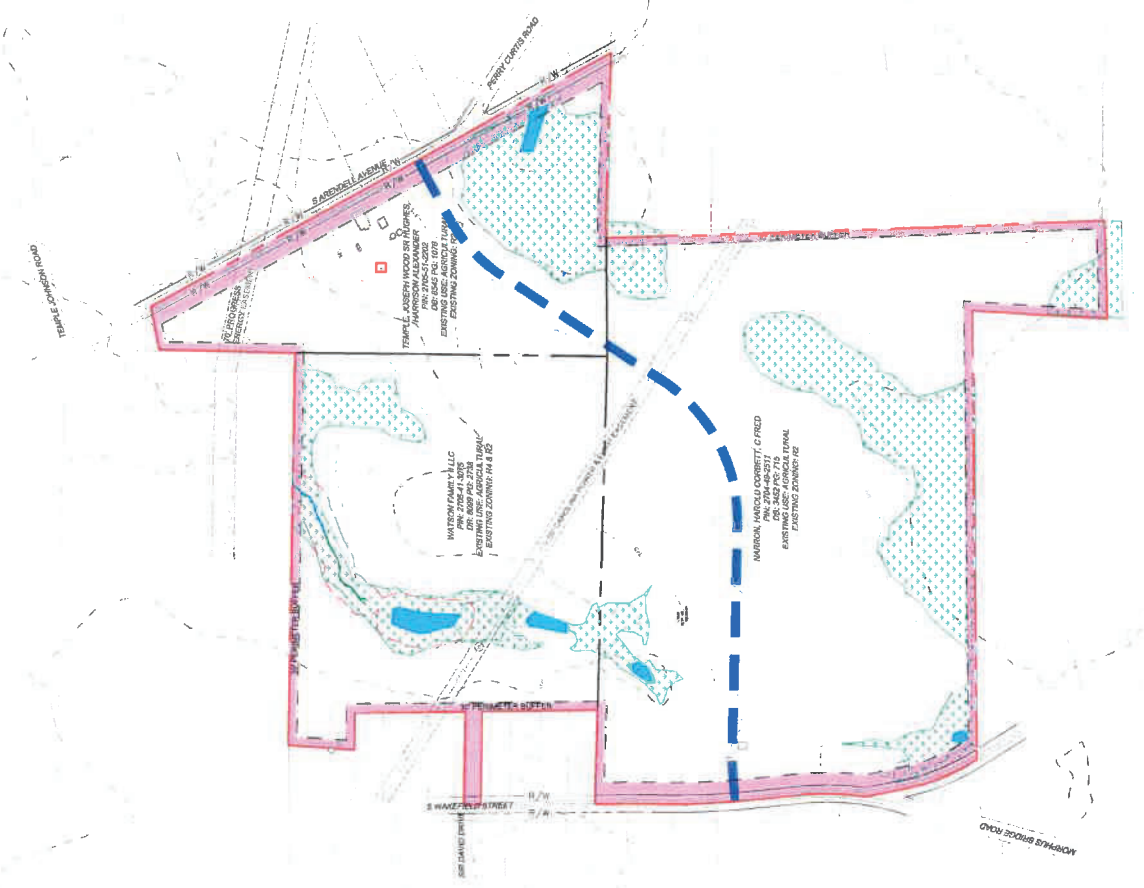
# COMPREHENSIVE TRANSPORTATION PLAN



- 4-Lane Divided  
Widening /  
Altering
- 4-Lane Divided  
New Roadway
- 2-Lane Divided  
Widening /  
Altering
- 2-Lane Divided  
New Roadway
- 2-Lane  
Undivided New  
Roadway
- Greenway

# ZEBULON SOUTH

Existing Conditions - October 4, 2022



# PD REZONING TIMELINE

NEIGHBORHOOD MEETING DATE:

October 5, 2022

ANTICIPATED APPLICATION SUBMITTAL DATE:

November 1, 2022

ANTICIPATED JOINT PUBLIC HEARING MEETING:

January 23, 2023

ANTICIPATED PLANNING BOARD RECOMMENDATION:

January 30, 2023

ANTICIPATED BOARD OF COMMISSIONERS DECISION:

February 6, 2023





# Q & A

## TIMMONS GROUP:

Beth Blackmon, PE

Sr Project Manager

919-866-4509

[beth.blackmon@timmons.com](mailto:beth.blackmon@timmons.com)

## ADCOCK LAW FIRM:

John Adcock, Esq.

919-552-6600

[john@adcocklawfirm.com](mailto:john@adcocklawfirm.com)

## ZEBULON PLANNING DEPARTMENT CONTACT:

Michael Clark

Planning Director

919-828-1808

[mclark@townofzebulon.org](mailto:mclark@townofzebulon.org)



**TIMMONS GROUP**

INS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



ROSSMAN, MAXINE  
108 REGGIE OWENS DR  
HARBINGER NC 27941-9704

275 NEE 1 42110210/03/22  
FORWARD TIME EXP RTN TO SEND  
ROSSMAN  
600 S WAKEFIELD ST  
ZEBULON NC 27597-2564  
RETURN TO SENDER

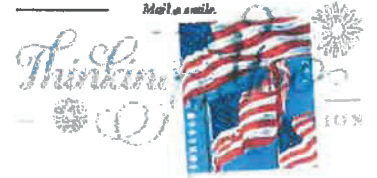
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INT  
27597-2564  
27941-970400

Returned Letter

INS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



ROSSMAN, MAXINE  
108 REGGIE OWENS DR  
HARBINGER NC 27941-9704

1A259301E709288888

INT

2760776883  
27941-970408

276 NEE J 42110210/09/22  
FORWARD TIME EXP RTN TO SEND  
ROSSMAN  
608 S WARFIELD ST  
ZEBULON NC 27597-2564  
RETURN TO SENDER

DNS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



Current Resident  
110 Royal View Dr LT 23  
ZEBULON NC 27597

NIXIE 276 CE 1 0210/08/22

RETURN TO SENDER  
VACANT  
UNABLE TO FORWARD

27597-9558 VAC  
27607-6003 BC: 27607600327 \*0880-02677-28-41

28 SEP 2022 PM 3 L



TEMPLE, JOSEPH WOOD  
PO BOX 548  
ZEBULON NC 27597-0548

NIXIE 276 NEE 1 2210210/01/22

RETURN TO SENDER  
NOT DELIVERABLE AS ADDRESSED  
UNABLE TO FORWARD

INT  
27597-0548  
MANUAL PROC REQ \*0880-02599-28-41

28 SEP 2022 PM 3 L



*Temple*

TEMPLE, JOSEPH WOOD  
HARRISON ALEXANDER  
PO BOX 548  
ZEBULON NC 27597-0548

*[Handwritten mark]*

\* 276 NCE 1 2200210/08/22

RETURN TO SENDER  
NOT DELIVERABLE AS ADDRESSED  
UNABLE TO FORWARD

FWD  
27607-6003  
27597-0548 BC: 27607600327 \*0880-03099-28-41

AK1: 9409227802812

*Joseph*

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



*Joseph Temple*

TEMPLE, J M  
PO BOX 548  
ZEBULON NC 27597-0548

(4)

^1: 94009227802812

FWD  
27607>6003  
27597-054848

276 NCE 1 22C0210/08/22  
RETURN TO SENDER  
NOT DELIVERABLE AS ADDRESSED  
UNABLE TO FORWARD  
BC: 27607600327 \*0880-02709-28-41

BEHNKE, DEBRA ANN  
4313 FRIENDSHIP RD  
APEX NC 27539-8759

*NSN*

*NSN*  
27600-0759  
27607>6003

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HINTON, MARY E HEIRS HOLDER, MARY  
A HEIRS  
709 S WAKEFIELD ST  
ZEBULON NC 27597-2567

308920860271988

*NSS*  
27607-2567  
27607>6003

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UNABLE TO FORWARD  
BC: 27607600327 \*0780-00772-28-41

IONS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



Current Resident  
720 S WAKEFIELD ST  
ZEBULON NC 27597

NIXIE 276 CE 1 0210/05/22

RETURN TO SENDER  
NO MAIL RECEIPTABLE  
UNABLE TO FORWARD

8009208860211880

27607600327 BC: 27607600327 \*0880-02957-28-41  
27607600327

28 SEP 2022 PM 3 L



Current Resident  
728 S WAKEFIELD ST  
ZEBULON NC 27597

NIXIE 276 CE 1 0210/05/22

RETURN TO SENDER  
NO MAIL RECEIPTABLE  
UNABLE TO FORWARD

8009208860211880

27607600327 BC: 27607600327 \*0880-02713-28-41  
27607600327

Research Triangle Region  
28 SEP 2022 PM 4 L



Current Resident  
734 S WAKEFIELD ST  
ZEBULON NC 27597

NIXIE 276 CE 1 0210/05/22

RETURN TO SENDER  
NO MAIL RECEIPTABLE  
UNABLE TO FORWARD

8009208860211880

27607600327 BC: 27607600327 \*0980-01557-28-41  
27607600327

110

NS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 2 L

97424, v. 0802L

Thinking  
ACTION



Current Resident  
111 Rocky Road Dr LT 20  
ZEBULON NC 27597

NIXIE 276 4E 1 0210/05/22

RETURN TO SENDER  
NO SUCH NUMBER  
UNABLE TO FORWARD

1009208880211988

NSN  
~~27587-8883~~ 11

BC: 27607600327 \*0780-00779-28-41



NS GROUP

PALEIGH NC 275  
Research Triangle Region  
16 SEP 2022 PM 3 L

Med

Thinking



DNS GROUP

RALEIGH NC 275  
Research Triangle Region  
28 SEP 2022 PM 3 L



Current Resident  
110 Royal View Dr  
ZEBULON NC 27597

NIXIE 276 4E 1 0210/09/22

RETURN TO SENDER  
VACANT  
UNABLE TO FORWARD

27597-9999  
569987-9999

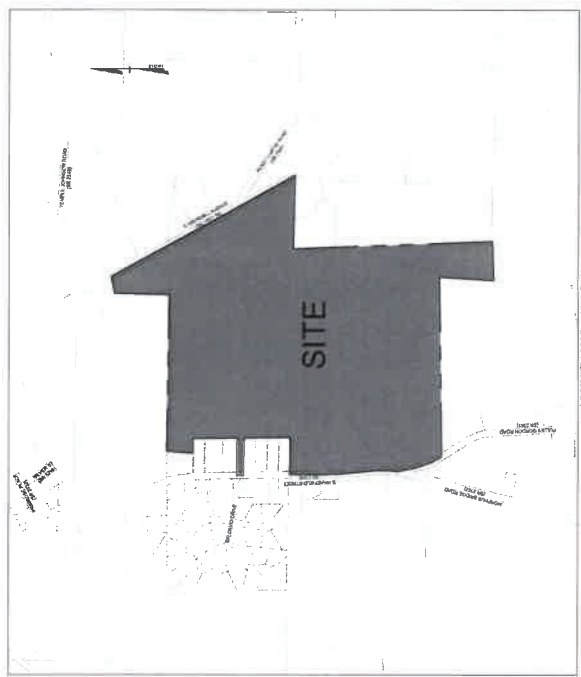
MANUAL PROC REQ \*0880-82688-28-41





# ZEBULON SOUTH PRELIMINARY PLAN

TOWN OF ZEBULON, WAKE COUNTY, NORTH CAROLINA



VICINITY MAP - 1" = 500'

**Sheet List Table**

Sheet Number	Sheet Title
CVR	COVER
C1D	EXISTING CONDITIONS
C1E	OVERALL SITE PLAN SHEET 1 OF 4
C2D	DETAILED SITE PLAN SHEET 2 OF 4
C2E	DETAILED SITE PLAN SHEET 3 OF 4
C2F	DETAILED SITE PLAN SHEET 4 OF 4
C3D	OVERALL UTILITY PLAN
C3E	DETAILED UTILITY PLAN SHEET 1 OF 4
C3F	DETAILED UTILITY PLAN SHEET 2 OF 4
C3G	DETAILED UTILITY PLAN SHEET 3 OF 4
C3H	DETAILED UTILITY PLAN SHEET 4 OF 4
C4D	DETAILED GRADING & DRAINAGE PLAN SHEET 1 OF 4
C4E	DETAILED GRADING & DRAINAGE PLAN SHEET 2 OF 4
C4F	DETAILED GRADING & DRAINAGE PLAN SHEET 3 OF 4
C4G	DETAILED GRADING & DRAINAGE PLAN SHEET 4 OF 4
C5D	OVERALL LANDSCAPE PLAN
C5E	DETAILED LANDSCAPE PLAN SHEET 1 OF 4
C5F	DETAILED LANDSCAPE PLAN SHEET 2 OF 4
C5G	DETAILED LANDSCAPE PLAN SHEET 3 OF 4
C5H	DETAILED LANDSCAPE PLAN SHEET 4 OF 4
C6D	OVERALL SIGN & MARKINGS PLAN
C7D	DETAILED SIGNS & MARKINGS PLAN SHEET 1 OF 4
C7E	DETAILED SIGNS & MARKINGS PLAN SHEET 2 OF 4
C7F	DETAILED SIGNS & MARKINGS PLAN SHEET 3 OF 4
C7G	DETAILED SIGNS & MARKINGS PLAN SHEET 4 OF 4
C8D	DETAILED AUTHORITY PLAN
C8E	SINGLE FAMILY CONCEPTUAL ELEVATIONS
C8F	TOWNHOUSE CONCEPTUAL ELEVATIONS
C8G	CONCEPTUAL IDENTITY

**SITE DATA**

**PROJECT:**  
ZEBULON SOUTH  
TIMMONS GROUP, SUITE 102  
PALESTINE, NC 27807  
PHONE: 919-698-4099  
FAX: 919-698-4098  
WWW.TIMMONSGROUP.COM

**ENGINEER:**  
BETH BLACKMON, PE  
EMAIL: BETH.BLACKMON@TIMMONS.COM

**DEVELOPER:**  
DEACON DEVELOPMENT GROUP  
PO BOX 1090  
705 S ARENDELL AVE  
ZEBULON, NC 27897  
PHONE: 919-806-3242  
FAX: 919-806-3242  
WWW.DCDEVELOPMENT.COM

**PROPERTY LOCATION:**  
751 S WAKEFIELD ROAD  
700 S ARENDELL AVE  
075 WAKEFIELD STREET  
075 ARENDELL AVE

**PERMITS:**  
2705-41-3075, 2704-48-2511, &  
2705-51-3202, 2705-51-3114

**EXISTING ZONING:** R4 & RZ  
**PROPOSED ZONING:** PD  
**EXISTING USE:** AGRICULTURAL  
**TOTAL TRACT AREA:** 118.62 ACRES

**OWNERS OF RECORD**

PNL 2704-48-2511  
751 S WAKEFIELD ROAD  
ZEBULON, NC 27897  
FAX: 2705-51-3202  
HARRISON ALEXANDER  
HARRISON ALEXANDER  
ZEBULON, NC 27897

PNL 2705-51-3114  
TEMP E. J.M.  
WAKEFIELD RD  
WAKEFIELD, NC 27884

PNL 2705-41-3075  
4200 FORCISTALL RD  
FOURCISH, NC 27044



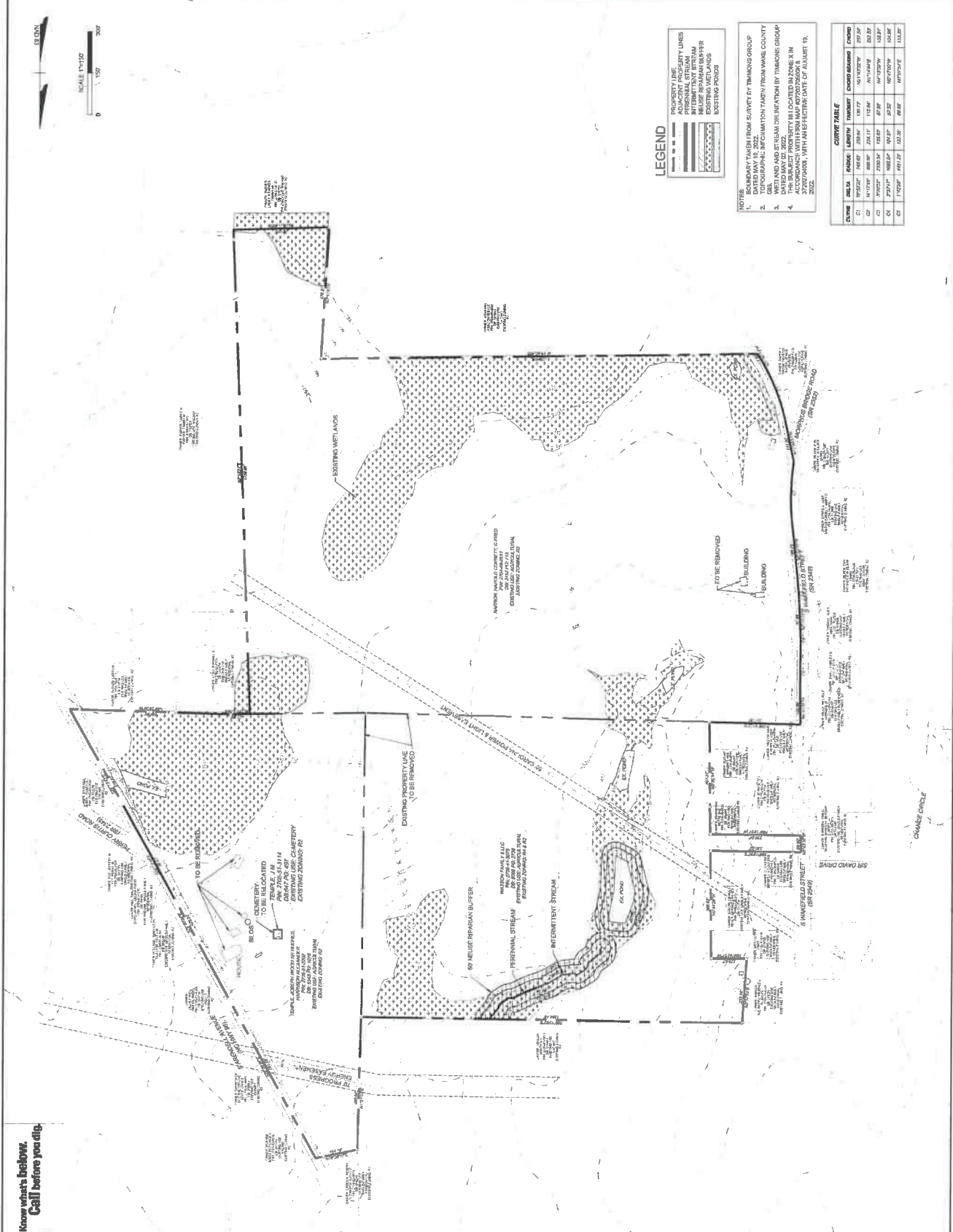
**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652  
751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA  
COVER

DATE: 01/16/2014  
DRAWN BY: JJJ  
CHECKED BY: B. BLACKMON  
SCALE: 1" = 300'

THIS DRAWING PREPARED AT THE  
1518 15th Street, Suite 102 | Raleigh, NC 27607  
TEL: 919-698-4099 | FAX: 919-698-4098 | WWW.TIMMONSGROUP.COM

YOUR DESIGN ACHIEVED THROUGH OURS.

SHEET NO. 49064  
PROJECT NO. CVR



**LEGEND**

- PROPERTY LINE
- ADJACENT PROPERTY LINES
- PERMANENT STREAM
- INTERMITTENT STREAM
- EXISTING BUILDING
- EXISTING WETLANDS
- EXISTING PONDS

**NOTES**

- BOUNDARY TAKEN FROM SURVEY BY TIMMONS GROUP
- TOPOGRAHY: RECONSTRUCTION TAKEN FROM WAKE COUNTY
- WETLAND AND STREAM DELINEATION BY TIMMONS GROUP DATED MAY 05, 2009
- ACCURACIES: WITH LRM MAP REVISIONS IN ACCORDANCE WITH LRM MAP REVISIONS DATED 08/15/13.

**CURVE TABLE**

CURVE	CHORD BEARS	LENGTH	TANGENT	CHORD BEARS	CHORD
C1	101°15'00"	101.15'	101.15'	101°15'00"	227.24'
C2	101°15'00"	101.15'	101.15'	101°15'00"	227.24'
C3	101°15'00"	101.15'	101.15'	101°15'00"	227.24'
C4	101°15'00"	101.15'	101.15'	101°15'00"	227.24'
C5	101°15'00"	101.15'	101.15'	101°15'00"	227.24'

**TIMMONS GROUP**  
NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA

**EXISTING CONDITIONS**

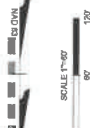
DATE: 03/15/2014  
DRAWN BY: JJJ  
CHECKED BY: B. BLACKWOOD  
SCALE: 1" = 150'  
SHEET NO.: 490064  
SHEET TOTAL: C1.0

YOUR VISION ACHIEVED THROUGH OURS.  
THIS QUANTITY REPORTED AT THE BOTTOM OF THIS SHEET.  
TEL: 919.866.4958 FAX: 919.837.8155 WWW.TGCGROUP.COM



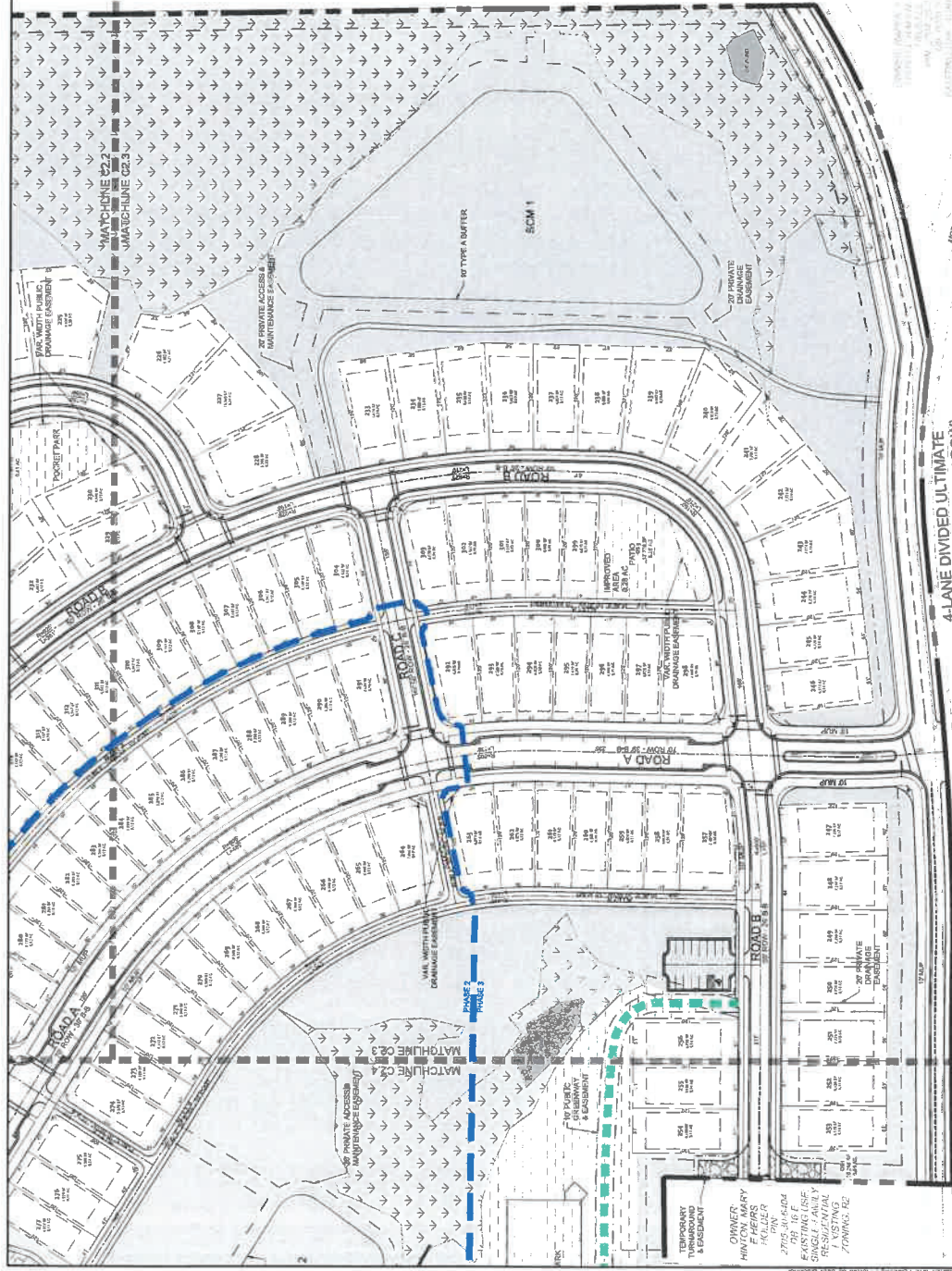






**LEGEND**

[Symbol]	PROPERTY LINE
[Symbol]	UTILITY LINE
[Symbol]	PERMETER BUFFER
[Symbol]	PROPOSED DRIVEWAY
[Symbol]	PROPOSED LOT LINE
[Symbol]	EXISTING WETLANDS
[Symbol]	EXISTING WETLANDS BUFFER
[Symbol]	NATURE RESERVE BUFFER
[Symbol]	ACTIVE OPEN SPACE
[Symbol]	PAVING
[Symbol]	PAVING PUBLIC GREENWAY
[Symbol]	PAVING PRIVATE TROIL



4-LANE DIVIDED ULTIMATE CROSS-SECTION (100' ROW)

2-LANE DIVIDED ULTIMATE CROSS-SECTION (80' ROW)

OWNER:  
HINTON MARY  
FOLLER  
2701 W. 16th St  
DORSET NC 28526  
EXISTING USE:  
RESIDENTIAL  
RESIDENTIAL  
RESIDENTIAL  
ZONING: R2

DATE	07/18/2024
DESIGNED BY	311
CHECKED BY	232
SCALE	1" = 60'
PROJECT NO.	49084
SHEET NO.	C2.3

THIS DRAWING PREPARED AT THE  
1415 W. 16th St. Raleigh, NC 27603  
TEL: 919.496.4931 FAX: 919.493.0124 WWW.TIMMONSGROUP.COM

THIS DRAWING IS THE PROPERTY OF TIMMONS GROUP AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF TIMMONS GROUP.

**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652

ZEBULON SOUTH

751 S WAKEFIELD STREET ZEBULON, WAKE COUNTY, NORTH CAROLINA

DETAILED SITE PLAN SHEET 3 OF 4









**UTILITY LEGEND**

—	PROPERTY LINE
—	ADJACENT PROPERTY LINE
—	PROPOSED RIGHT-OF-WAY
—	CRANSHAW EASEMENT
—	SANITARY SEWER EASEMENT
—	STORMWATER EASEMENT
—	WATER EASEMENT
—	GAS EASEMENT
—	ELECTRIC EASEMENT
—	70' PROGRESS ENERGY EASEMENT
—	PROPOSED SANITARY SEWER
—	EXISTING SANITARY SEWER
—	PROPOSED STORMWATER
—	EXISTING STORMWATER
—	PROPOSED WATER
—	EXISTING WATER
—	PROPOSED GAS
—	EXISTING GAS
—	PROPOSED ELECTRIC
—	EXISTING ELECTRIC
—	PROPOSED 70' PROGRESS ENERGY
—	EXISTING 70' PROGRESS ENERGY
—	PROPOSED CRANSHAW
—	EXISTING CRANSHAW
—	PROPOSED SANITARY SEWER EASEMENT
—	EXISTING SANITARY SEWER EASEMENT
—	PROPOSED STORMWATER EASEMENT
—	EXISTING STORMWATER EASEMENT
—	PROPOSED WATER EASEMENT
—	EXISTING WATER EASEMENT
—	PROPOSED GAS EASEMENT
—	EXISTING GAS EASEMENT
—	PROPOSED ELECTRIC EASEMENT
—	EXISTING ELECTRIC EASEMENT
—	PROPOSED 70' PROGRESS ENERGY EASEMENT
—	EXISTING 70' PROGRESS ENERGY EASEMENT
—	PROPOSED CRANSHAW EASEMENT
—	EXISTING CRANSHAW EASEMENT
—	PROPOSED SANITARY SEWER
—	EXISTING SANITARY SEWER
—	PROPOSED STORMWATER
—	EXISTING STORMWATER
—	PROPOSED WATER
—	EXISTING WATER
—	PROPOSED GAS
—	EXISTING GAS
—	PROPOSED ELECTRIC
—	EXISTING ELECTRIC
—	PROPOSED 70' PROGRESS ENERGY
—	EXISTING 70' PROGRESS ENERGY
—	PROPOSED CRANSHAW
—	EXISTING CRANSHAW

**LEGEND**

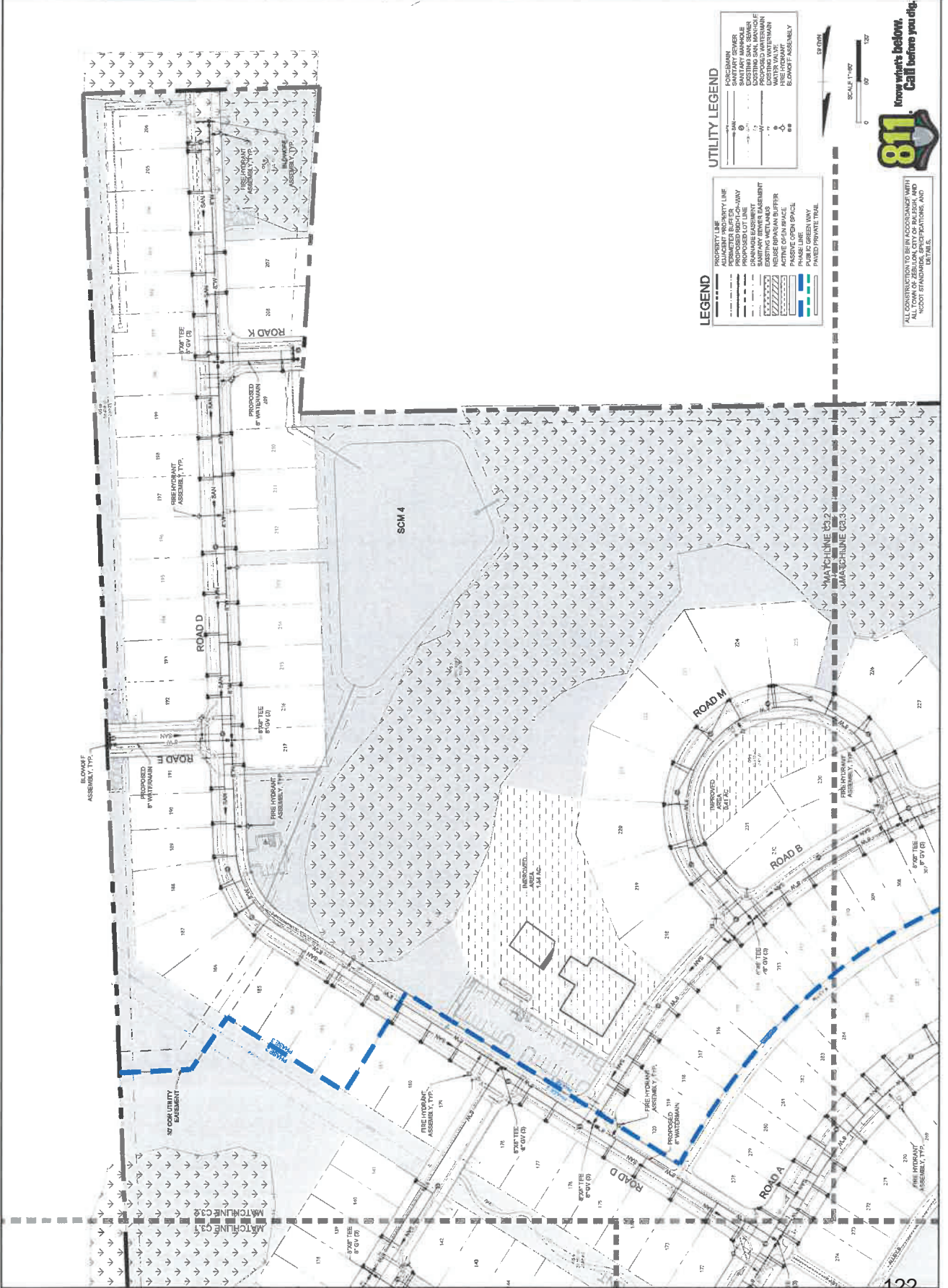
—	PROPERTY LINE
—	ADJACENT PROPERTY LINE
—	PROPOSED RIGHT-OF-WAY
—	CRANSHAW EASEMENT
—	SANITARY SEWER EASEMENT
—	STORMWATER EASEMENT
—	WATER EASEMENT
—	GAS EASEMENT
—	ELECTRIC EASEMENT
—	70' PROGRESS ENERGY EASEMENT
—	PROPOSED SANITARY SEWER
—	EXISTING SANITARY SEWER
—	PROPOSED STORMWATER
—	EXISTING STORMWATER
—	PROPOSED WATER
—	EXISTING WATER
—	PROPOSED GAS
—	EXISTING GAS
—	PROPOSED ELECTRIC
—	EXISTING ELECTRIC
—	PROPOSED 70' PROGRESS ENERGY
—	EXISTING 70' PROGRESS ENERGY
—	PROPOSED CRANSHAW
—	EXISTING CRANSHAW

**811**  
 Know what's below.  
 Call before you dig.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH  
 THE 2018 NORTH CAROLINA CONSTRUCTION CODE  
 AND ALL APPLICABLE REGULATIONS, AND  
 NOT BY LOCAL ORDINANCES, AND  
 DETAILS.

0 50' 100' 150'

60' 120' 180'



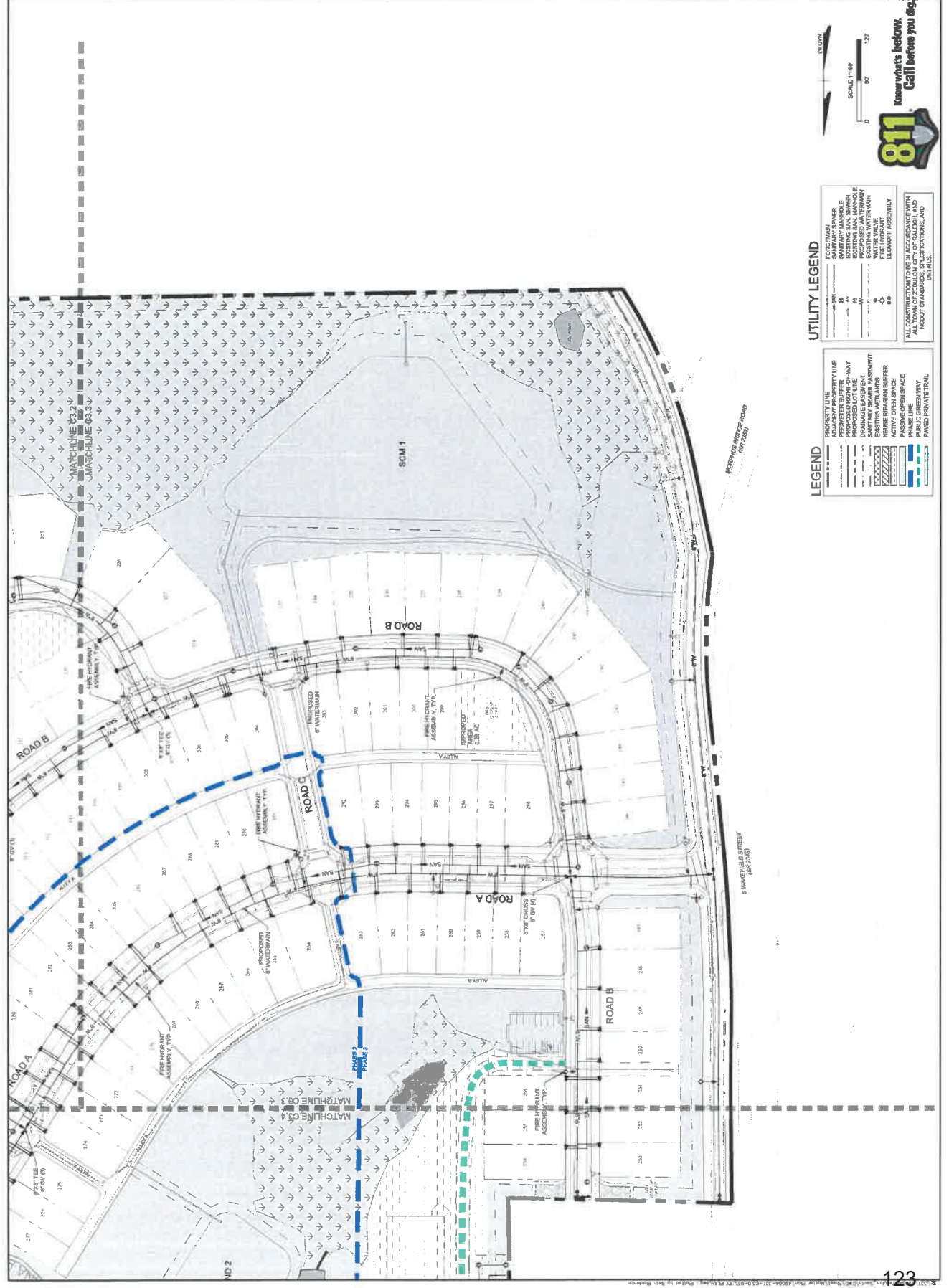
# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

YOUR VISION ACHIEVED THROUGH OURS.

7-15 DRAWING PREPARED AT THE  
R. L. LUMBER OFFICE  
1410 7th Ave. Suite 103 | Raleigh, NC 27605  
TEL 919.666.9951 FAX 919.333.8124 WWW.TIMMONSGROUP.COM

REVISION DESCRIPTION



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

SCALE 1"=60'  
0 30 60 90 120

### UTILITY LEGEND

- SANITARY MAIN
- SANITARY MANHOLE
- WATER MAIN
- EXISTING SANITARY MANHOLE
- EXISTING WATER MAIN
- WITH VALVE
- BLANKOFF ASSEMBLY

ALL CONDUITS TO BE INSTALLED WITH A MINIMUM OF 24" COVER UNLESS OTHERWISE SPECIFIED. ALL CONDUITS TO BE INSTALLED WITH A MINIMUM OF 24" COVER UNLESS OTHERWISE SPECIFIED.

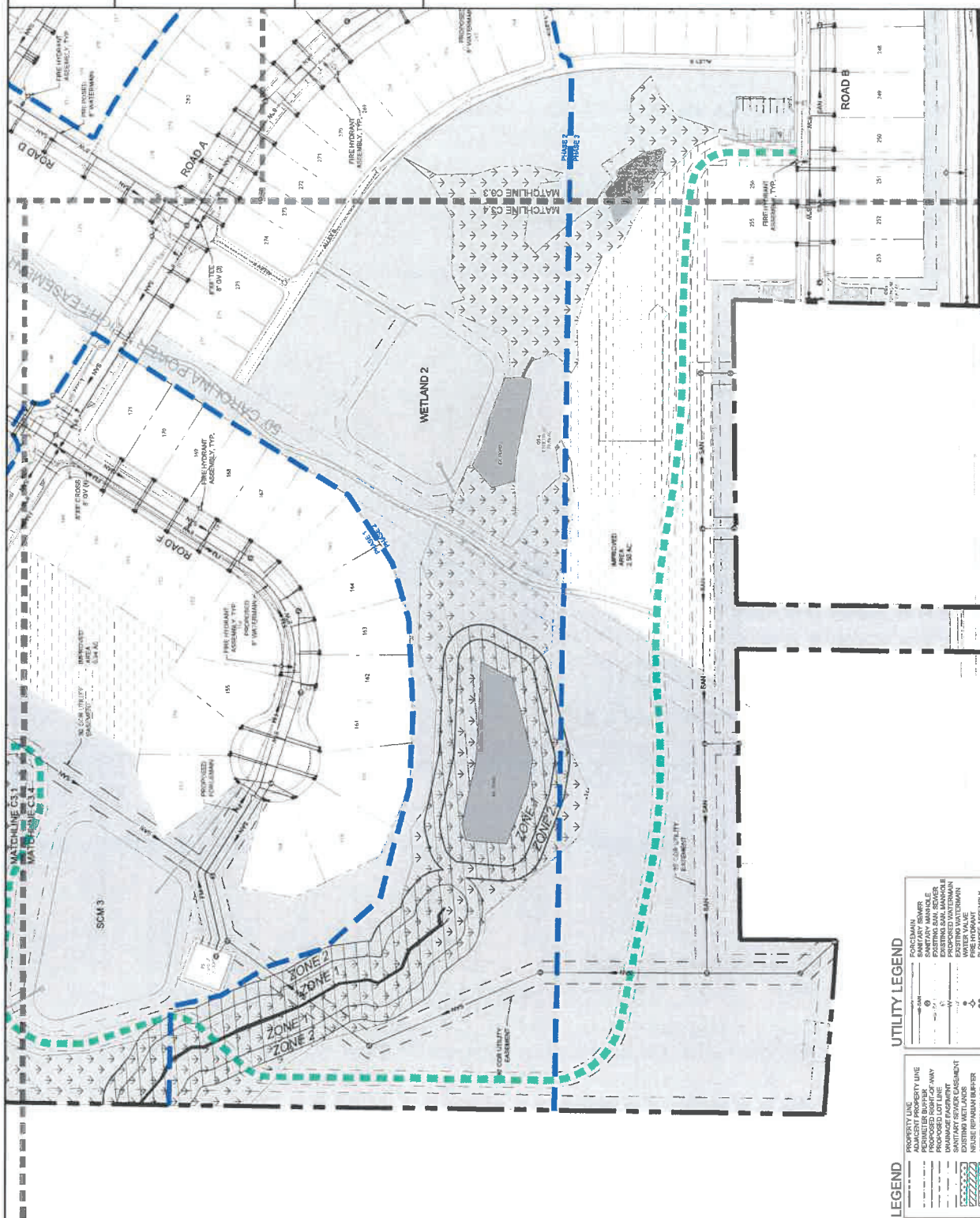
### LEGEND

- ADJACENT PROPERTY LINE
- PROPOSED BUFFER
- PROPOSED LOT LINE
- DRAINAGE EASEMENT
- EXISTING UTILITIES
- NEIGHBORHOOD BUFFER
- PHASE LINE
- PHASE OPEN SPACE
- PAVED PRIVATE TRAIL

DATE: 07/26/2014  
 DRAWN BY: JLT  
 CHECKED BY: JLT  
 SCALE: 1" = 60'  
 SHEET NO: 49004  
 SHEET OF: C3.4

ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652  
 751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 DETAILED UTILITY PLAN SHEET 4 OF 4

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811  
 Means what's below  
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SCALE 1" = 60'

0 60 120

811

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**ZEBULON SOUTH**  
 751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA  
**OVERALL GRADING & DRAINAGE PLAN**

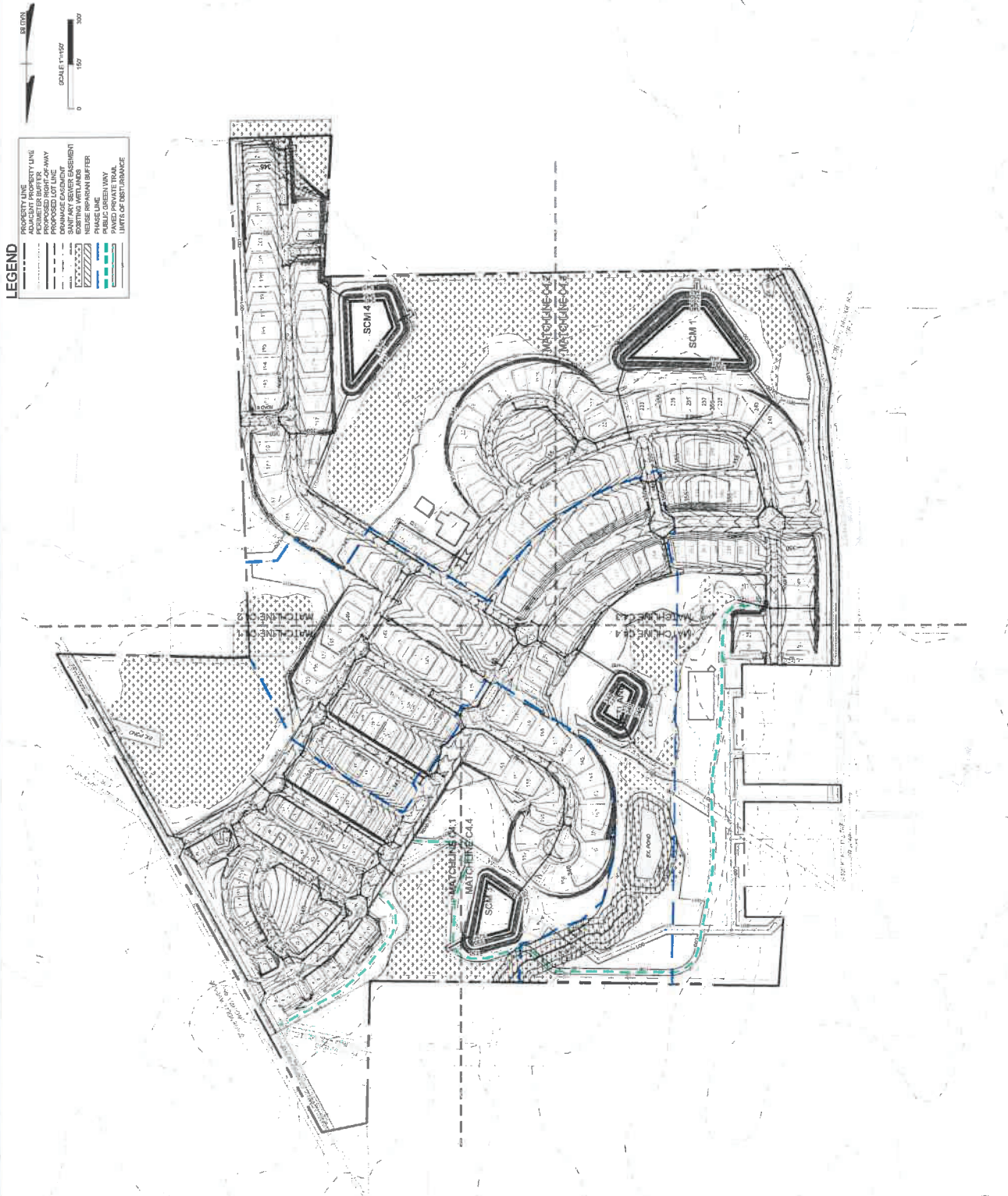
DATE: 02/16/2024  
 DRAWN BY: JJJ  
 CHECKED BY: JJJ  
 SCALE: 1" = 150'

REVISION DESCRIPTION

YOUR VISION ACHIEVED THROUGH OURS.  
 THIS DRAWING RESERVED AT THE BALDWIN OFFICE  
 5413 TERRY ROAD, SUITE 1021, RALEIGH, NC 27603  
 TEL: 919.586.0521 FAX: 919.523.4328 WWW.TIMMONS.COM



NORTH CAROLINA LICENSE NO. C-1652



**LEGEND**

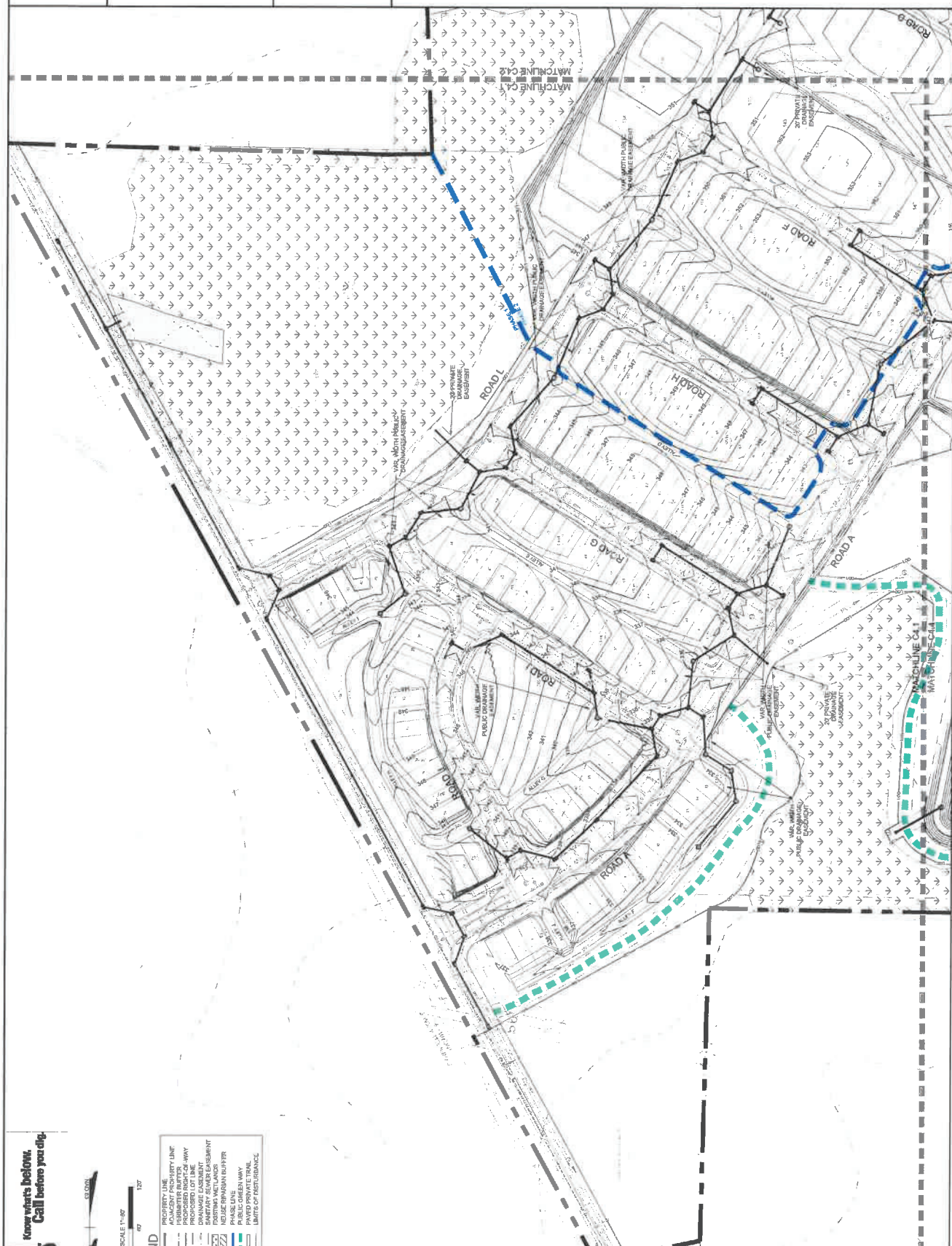
	PROPERTY LINE
	PROPOSED RIGHT-OF-WAY
	EASEMENT
	DRAINAGE EASEMENT
	SANITARY SEWER EASEMENT
	NEUSE RIPARIAN BUFFER
	PHASE LINE
	UTILITY
	PAVED PRIVATE TRAIL
	LIMITS OF DISTURBANCE

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



**LEGEND**

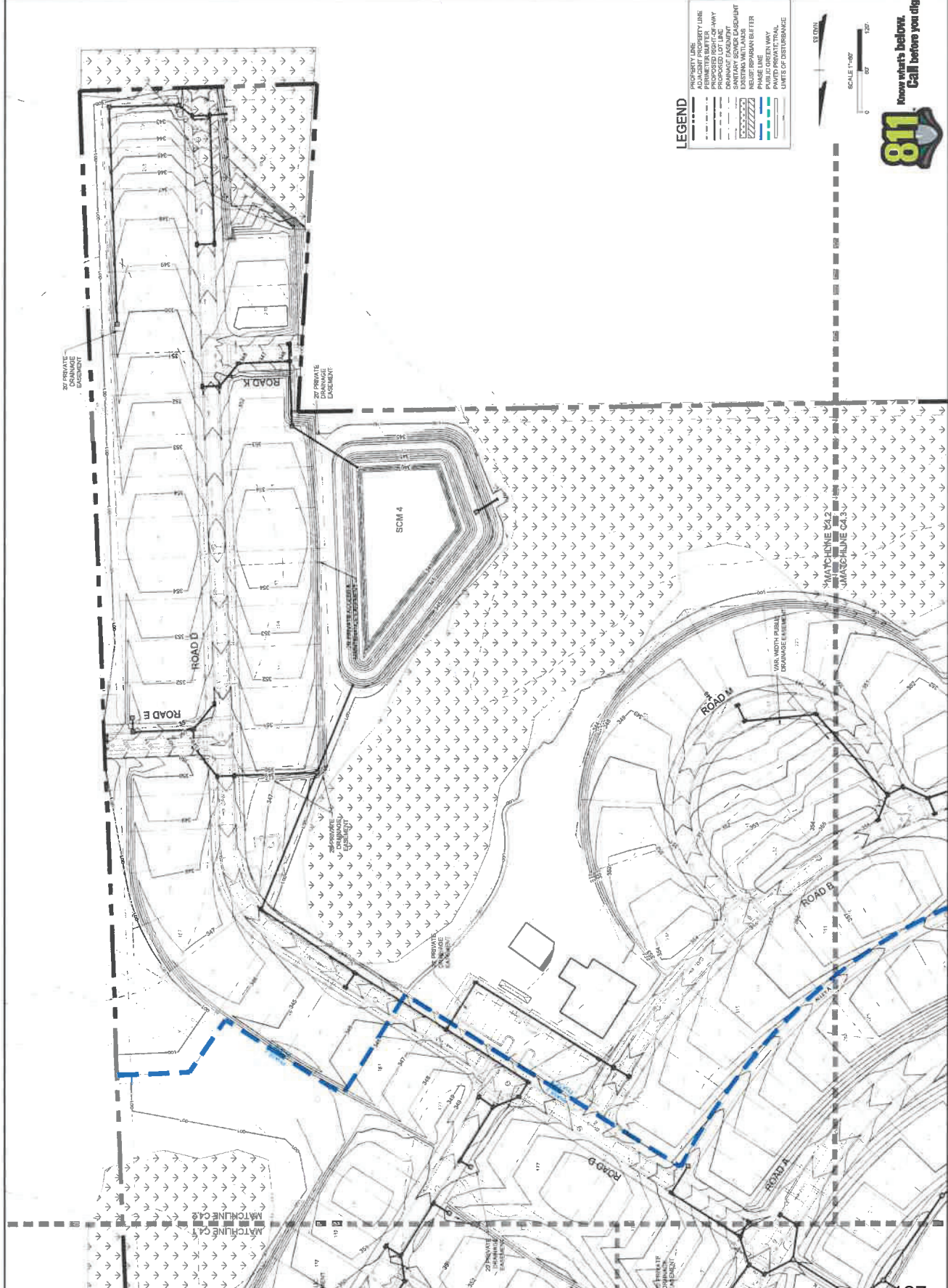
	EASEMENT
	UTILITY LINE
	PROPERTY BOUNDARY
	RIGHT-OF-WAY
	PROPOSED LOT LINE
	DRAINAGE EASEMENT
	WETLANDS
	NEUSE RIPARIAN BUFFER
	PUBLIC GREEN WAY
	PAVED PRIVATE TRAIL
	LIMITS OF JURISDICTION



<p><b>TIMMONS GROUP</b> NORTH CAROLINA LICENSE NO. C-1652</p>		<p>DATE: 02/27/2024 DRAWN BY: JJI CHECKED BY: B. BLACKMON SCALE: 1" = 40' SHEET NO.: 49084 JOB NO.: C-1</p>
<p>YOUR VISION ACHIEVED THROUGH OURS. THIS DRAWING PREPARED AT THE BALESTRA OFFICE 1619 N. HARRIS STREET, SUITE 101   RALEIGH, NC 27607 TEL: 919.886.4954   FAX: 919.886.1234   WWW.TIMMONSGROUP.COM</p>		<p>751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA <b>DETAILED GRADING &amp; DRAINAGE PLAN SHEET 1 OF 4</b></p>
<p><b>ZEBULON SOUTH</b></p>		

**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652  
 ZEBULON SOUTH

YOUR VISION AGREED THROUGH OURS.  
 THIS DRAWING REVEALS THE  
 BATHROOM OFFICE  
 5415 TRAVIS DRIVE, SUITE 112  
 RALEIGH, NC 27617  
 WWW.TIMMONSGROUP.COM



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**LEGEND**

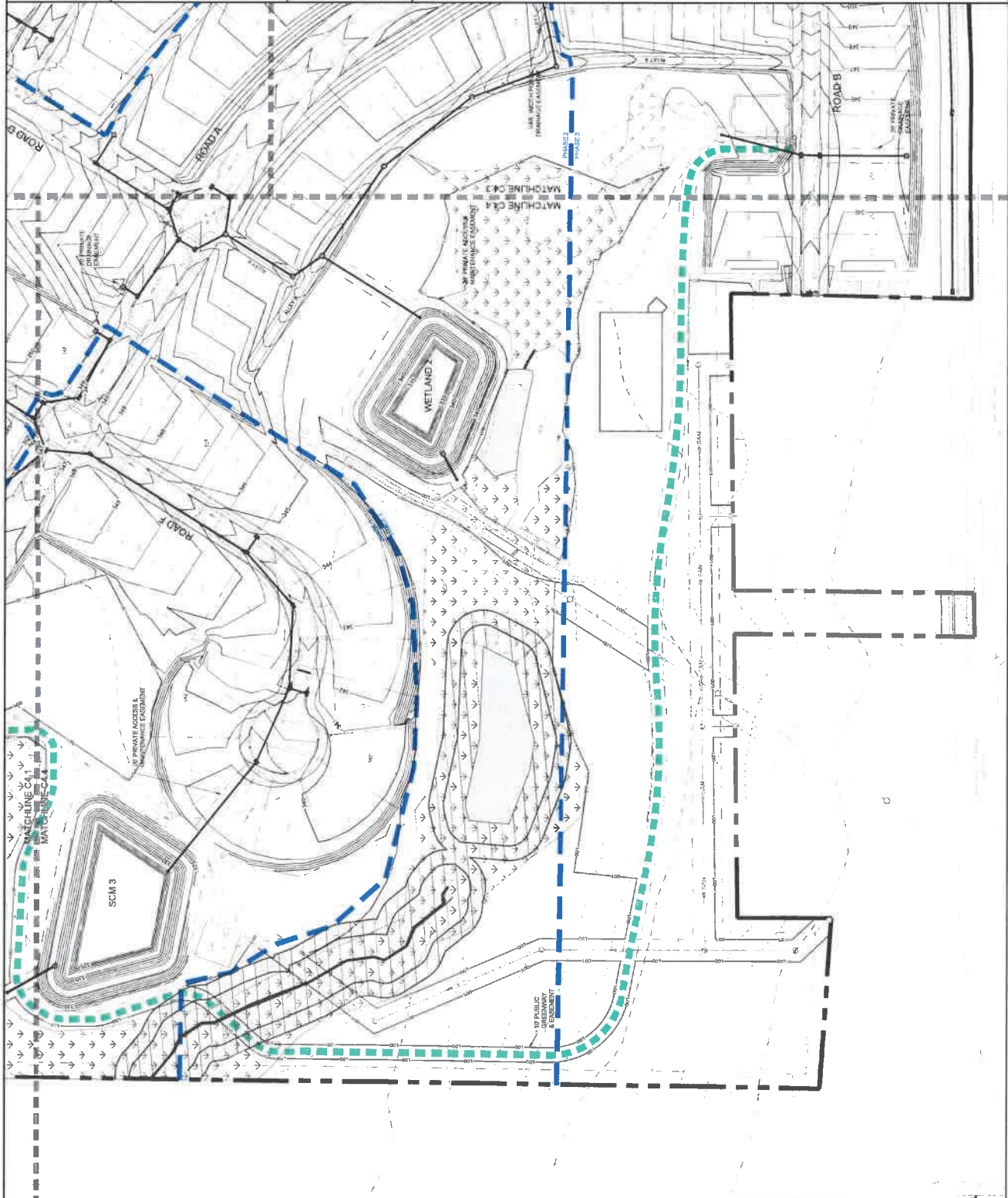
PROPERTY LINE	ADJACENT PROPERTY LINE
PROPOSED RIGHT-OF-WAY	PROPOSED RIGHT-OF-WAY
EXISTING ROAD	EXISTING ROAD
PROPOSED ROAD	PROPOSED ROAD
DRAINAGE EASEMENT	DRAINAGE EASEMENT
SANITARY SERVICE EASEMENT	SANITARY SERVICE EASEMENT
EXISTING DRAINAGE	EXISTING DRAINAGE
PROPOSED DRAINAGE	PROPOSED DRAINAGE
PHASE LINE	PHASE LINE
PUBLIC/PRIVATE WAY	PUBLIC/PRIVATE WAY
LIMITS OF DISTURBANCE	LIMITS OF DISTURBANCE





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<b>TIMMONS GROUP</b> NORTH CAROLINA LICENSE NO. C-1652		JOB NO. 490864 SHEET NO. CA.4
YOUR VISION ACHIEVED THROUGH OURS. THIS DRAWING PREPARED AT THE MAIN OFFICE 5410 RAYMOND ROAD, SUITE 101 RALEIGH, NC 27604 TEL: 919.864.9324 FAX: 919.864.9324 WWW.TIMMONS.COM		<b>DETAILED GRADING &amp; DRAINAGE PLAN SHEET 4 OF 4</b> 751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA ZEBULON SOUTH
REVISION DESCRIPTION DATE	DRAWN BY CHECKED BY IN CHARGE BY DATE	SCALE 1" = 60'



**LEGEND**

- PROPERTY LINE
- PERMANENT BARRIER
- PROPOSED LOT LINE
- PROPOSED DRIVEWAY
- PROPOSED CATCH BASIN
- EXISTING WETLANDS
- NEUSE-ROPERMAN BUFFER
- PUBLIC GREENWAY
- PAVED PRIVATE TRAIL
- LIMITS OF DISTURBANCE

10' 0" 20' 0" 30' 0"

SCALE 1"=60'

**811**  
 Know what's below.  
 Call before you dig.

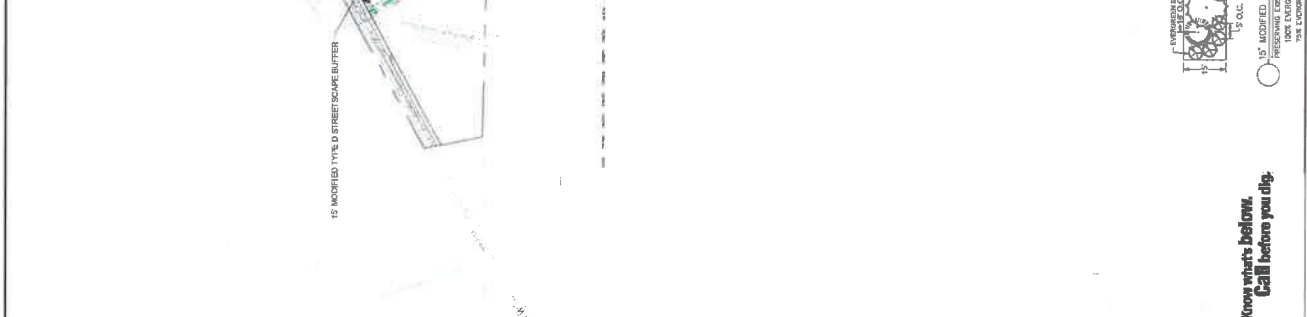
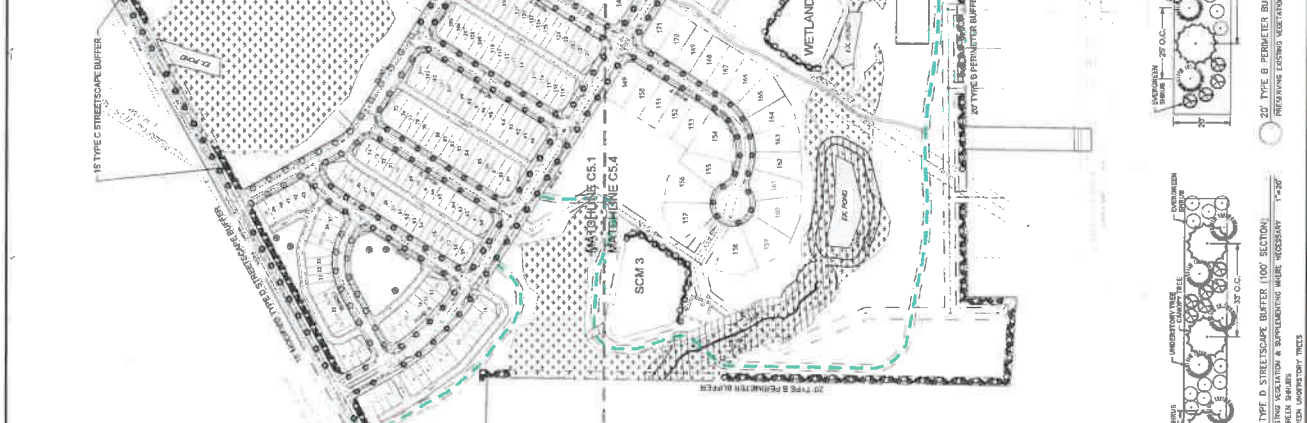
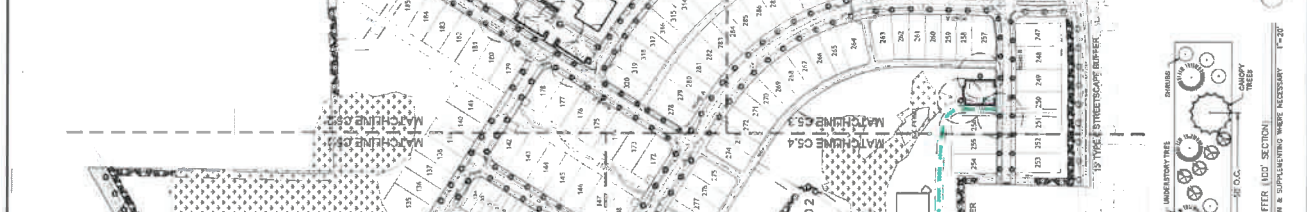
DATE	07/18/2023
REVISION DESCRIPTION	
DESIGNED BY	B. BLACKBURN
CHECKED BY	B. BLACKBURN
SCALE	1" = 150'
PROJECT	ZEBULON SOUTH
DATE	07/18/2023

YOUR VISION ACHIEVED THROUGH OURS.  
 811 NORTH VISION ACHIEVED THROUGH OURS.  
 811 NORTH VISION ACHIEVED THROUGH OURS.  
 811 NORTH VISION ACHIEVED THROUGH OURS.



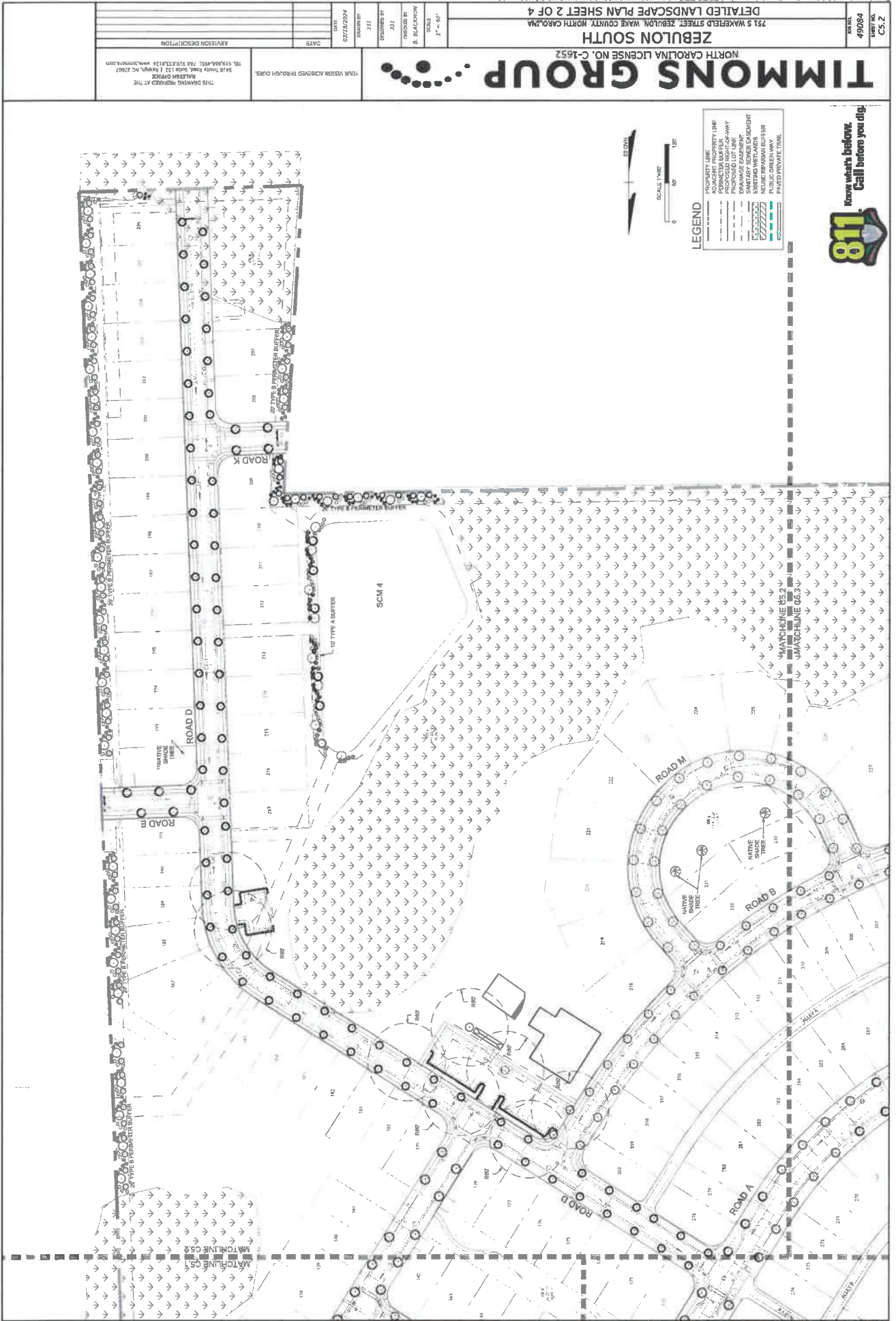
**STREET TREE PLANT SCHEDULE**

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	MINIMUM TREE CALIBER	MINIMUM TREE HEIGHT
○	95	WEIR BACCHARIS 'TISHNET'	SLIMM MAPLE	2.5" CAL.	2.5' CAL.
○	94	FRAXINUS AMERICANA	WHITE ASH	2.5" CAL.	2.5' CAL.
○	113	QUERCUS BENTLEYI	NORTON OAK	2.5" CAL.	2.5' CAL.
○	90	QUERCUS LAEVOGATA	BLACK TUPELD	2.5" CAL.	2.5' CAL.
○	92	QUERCUS LYNCHA	OVERCUP OAK	2.5" CAL.	2.5' CAL.



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THIS DRAWING PREPARED AT THE ALLEN ORICK 5410 Trinity Road, Suite 102   Raleigh, NC 27607 TEL: 919.866.4955 FAX: 919.833.8134 WWW.AORICK.COM		YOUR VISION ACHIEVED THROUGH OURS.	
REVISION DESCRIPTION DATE DRAWN BY CHECKED BY & BLACKBOX SCALE 1" = 60'	DRAWN BY 3/11	CHECKED BY 3/11	DATE 02/28/2004

**TIMMONS GROUP**  
 NORTH CAROLINA LICENSE NO. C-1652  
**ZEBULON SOUTH**  
 751 S WAKEFIELD STREET ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 DETAILED LANDSCAPE PLAN SHEET 2 OF 4

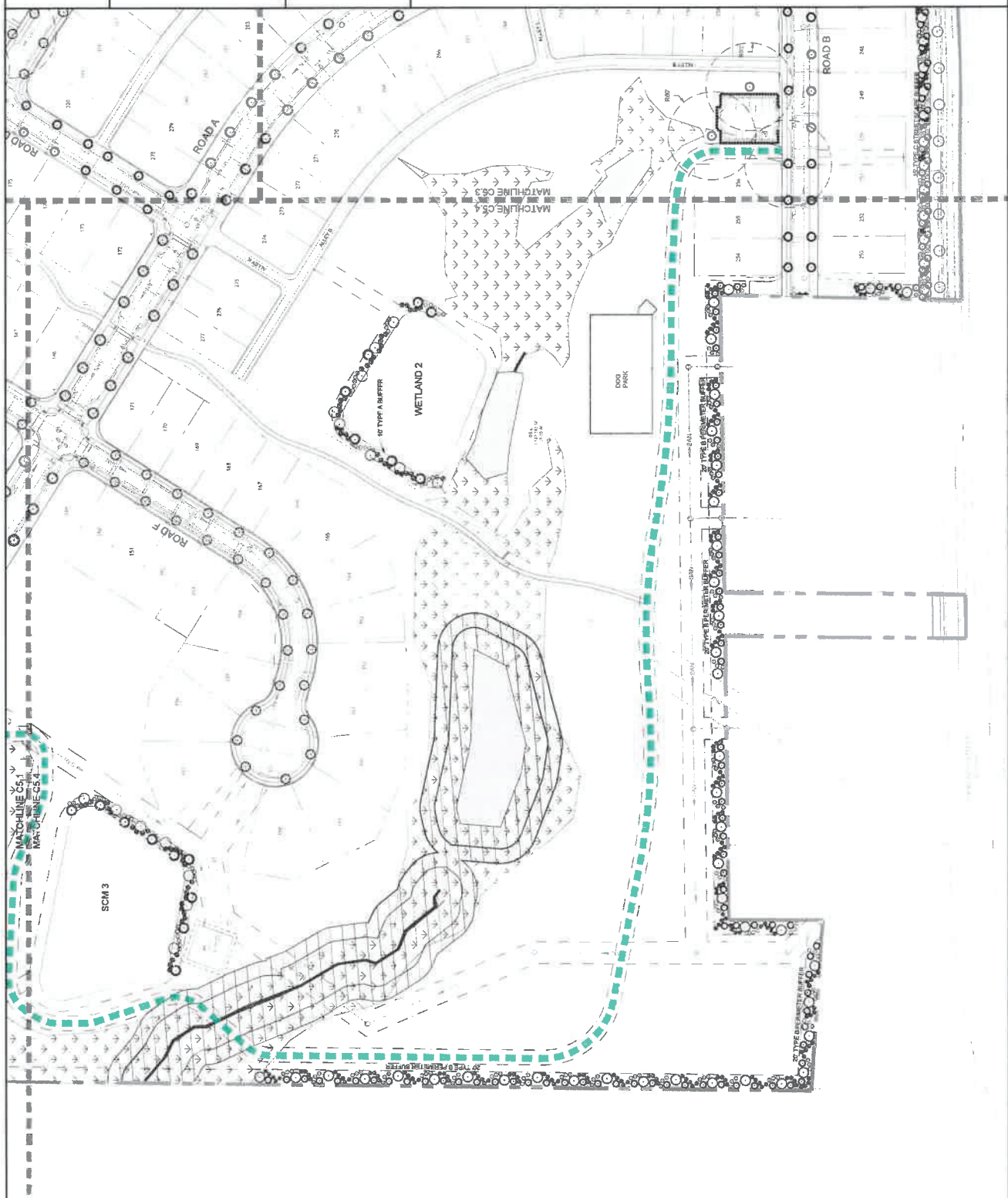
DRAWING NO. 490084  
 SHEET NO. C5.2

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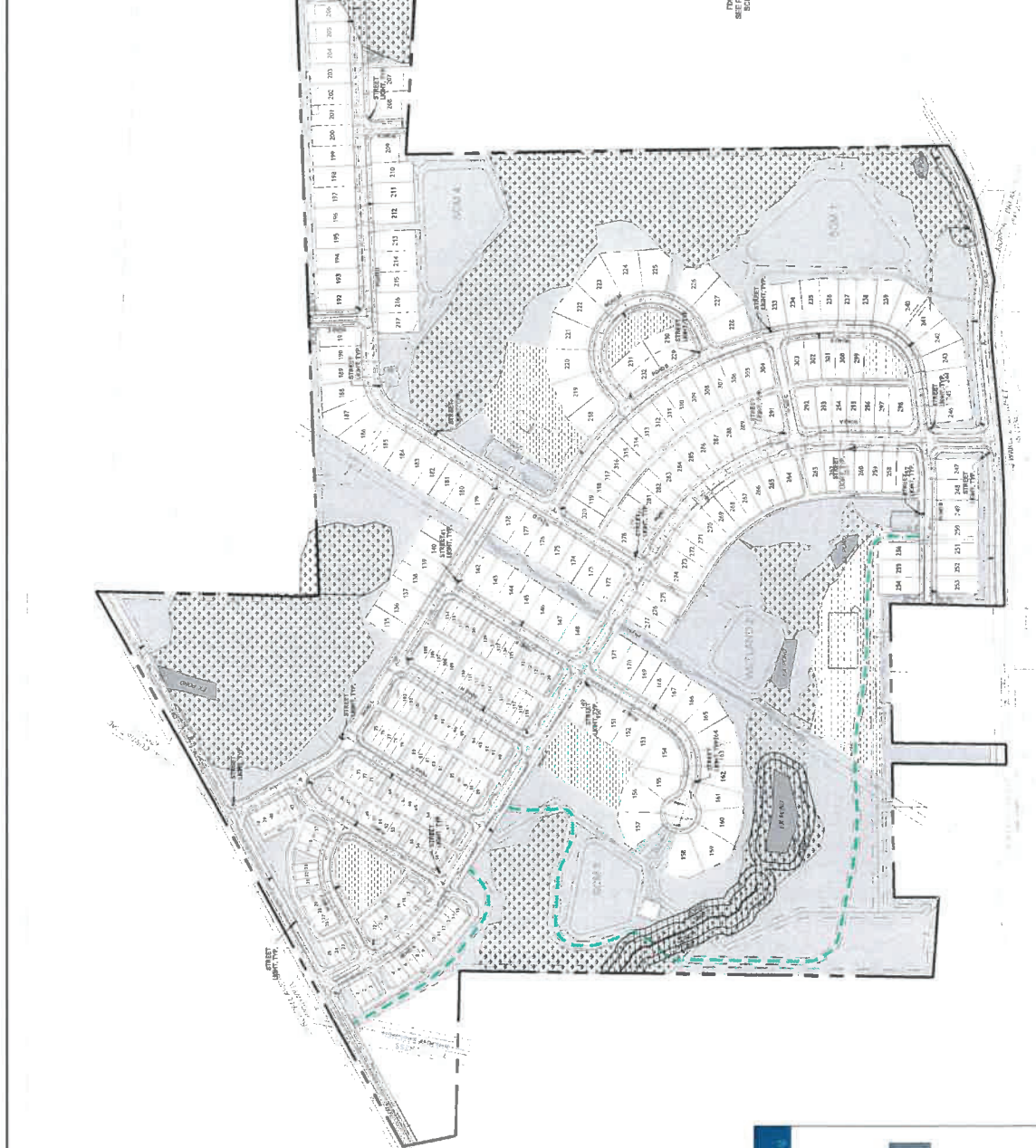
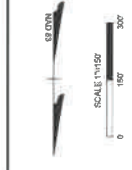


**LEGEND**

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED SIDEWALK
- PROPOSED BIKEWAY
- PROPOSED LOT LINE
- PROPOSED DRIVEWAY
- EXISTING WETLANDS
- EXISTING WETLANDS
- EXISTING WETLANDS
- PAVED PRIVATE TRAIL

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HAILEEN SERVICE  
5415 TRINITY ROAD, SUITE 102 | RALEIGH, NC 27607  
TEL: 919.966.4931 FAX: 919.933.8324 WWW.TIMMONSGROUP.COM

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652  
ZEBULON SOUTH  
753 S WAKEFIELD STREET ZEBULON, WAKE COUNTY, NORTH CAROLINA  
LIGHTING PLAN

JOB NO. 49084  
SHEET NO. C6.7

DESIGNED BY	J.J.I.
CHECKED BY	J.J.I.
DATE	11.11.17
SCALE	1" = 150'

**LEGEND**

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- EXISTING LOT LINE
- SANITARY SEWER easement
- WATER easement
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE
- PAVED PRIVATE TRAIL

**LIGHTING LEGEND**

- LED STREET LIGHTS
- ALUMINUM PULB LIGHT FIXTURE



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

Case Lighting  
P.O. Box 1000  
Raleigh, NC 27602  
Phone: 919.833.1111  
Fax: 919.833.1112  
www.case-lighting.com



Know what's below.  
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136

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1692  
ZEBULON SOUTH  
751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA  
OVERALL SIGNS & MARKINGS PLAN

C7.0  
SHEET NO.  
490064

DATE	03/18/2024
DESIGNED BY	331
CHECKED BY	331
SCALE	1" = 150'

THIS DRAWING PREPARED AT THE  
ADDRESS OF  
5412 Trinity Road, Suite 102 Raleigh, NC 27607  
TEL: 919.856.4921 FAX: 919.853.8324 WWW.TIMMONS.COM

LEGEND

- PROPERTY LINE
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED EASEMENT
- EXISTING EASEMENT
- EXISTING DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- PROPOSED BIKEWAY
- PROPOSED UTILITY
- PROPOSED FUTURE UTILITY
- PROPOSED FUTURE DRIVEWAY
- PROPOSED FUTURE SIDEWALK
- PROPOSED FUTURE BIKEWAY
- PROPOSED FUTURE UTILITY
- PROPOSED FUTURE DRIVEWAY
- PROPOSED FUTURE SIDEWALK
- PROPOSED FUTURE BIKEWAY
- PROPOSED FUTURE UTILITY



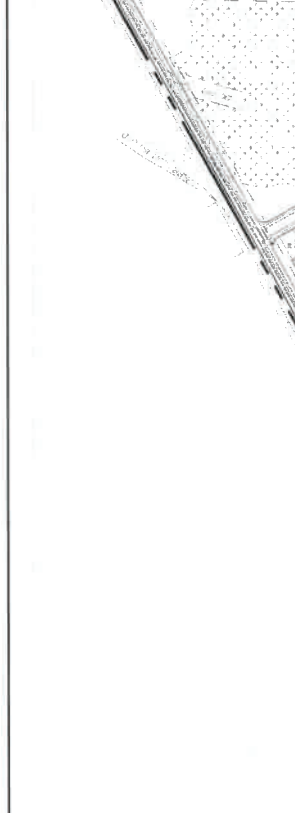
THIS DRAWING SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

1. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

2. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

3. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

4. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)



ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

1. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

2. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

3. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

4. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

THIS DRAWING SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

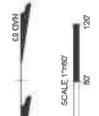
1. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

2. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

3. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)

4. ALL SET BACKS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM  
CONTROLLED EXPANSION (M.U.C.E.)





**LEGEND**

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	ADJACENT LOT LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED EASEMENT
	DRAINAGE EASEMENT
	SALE AND SERVICE EASEMENT
	EXISTING EASEMENT
	PUBLIC GREENWAY
	PAVED PRIORITY TRAIL

**SIGN LEGEND**

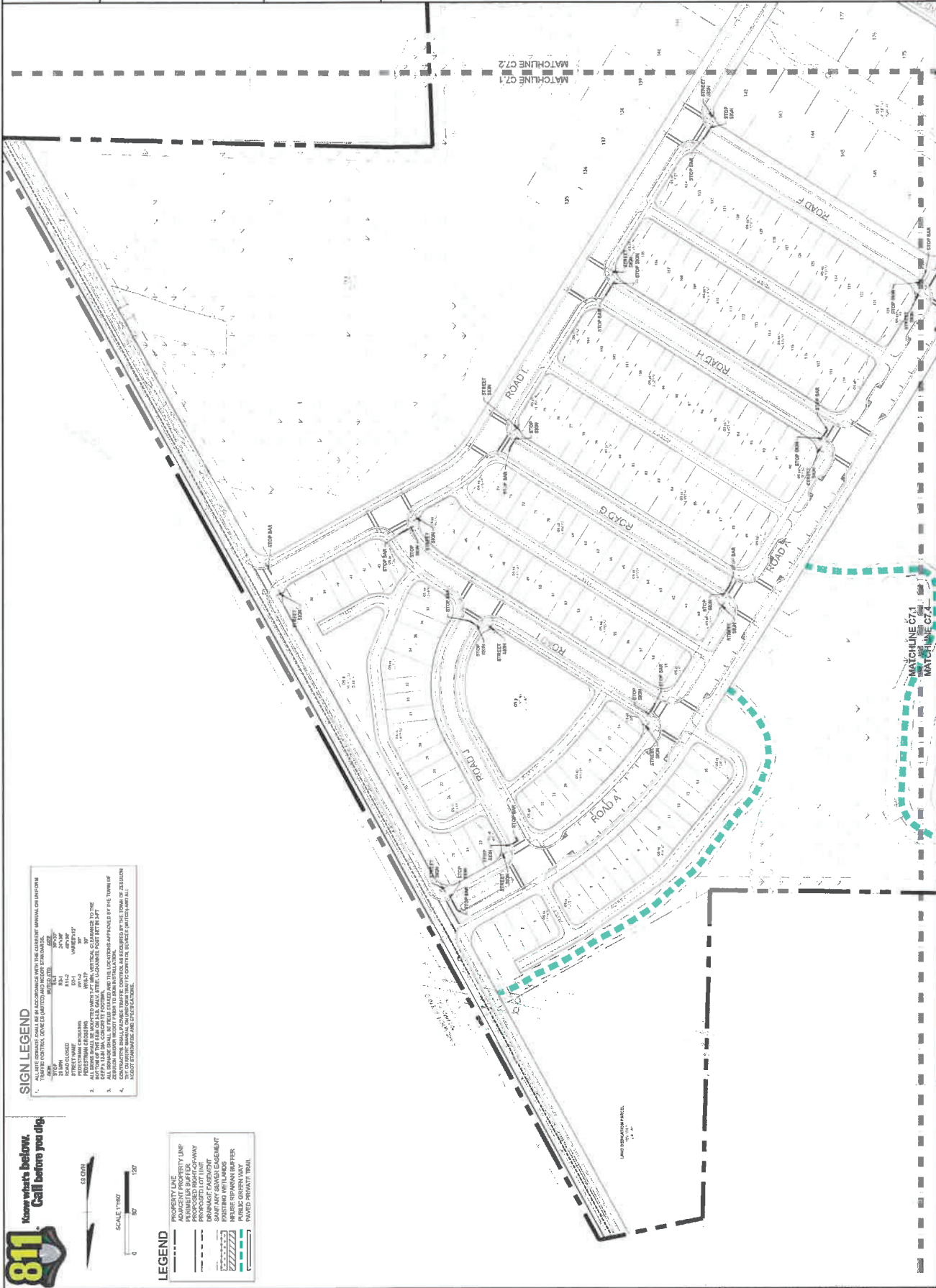
1. ALL SIGN ERECTION SHALL BE IN ACCORDANCE WITH THE CURRENT MANUAL ON SIGNING.

2. ALL SIGN CONTROL DEVICES LIMITED TO THE FOLLOWING:

TYPE	HEIGHT	SPACING
ROAD CLOSURE	8'-12"	20'-30'
STOP SIGN	36"	30'-40'
YIELD SIGN	36"	30'-40'
PROHIBITION SIGN	36"	30'-40'
PRECAUTION SIGN	36"	30'-40'

3. ALL SIGNS SHALL BE MOUNTED ON A 4" X 4" ALUMINUM CHANNEL OR WOODEN POST TO THE HEIGHT OF 5'-0" TO 5'-6" TO THE TOP OF THE SIGN. THE SIGN SHALL BE MOUNTED ON A 4" X 4" ALUMINUM CHANNEL OR WOODEN POST TO THE HEIGHT OF 5'-0" TO 5'-6" TO THE TOP OF THE SIGN. THE SIGN SHALL BE MOUNTED ON A 4" X 4" ALUMINUM CHANNEL OR WOODEN POST TO THE HEIGHT OF 5'-0" TO 5'-6" TO THE TOP OF THE SIGN.

4. THE SIGN SHALL BE MOUNTED ON A 4" X 4" ALUMINUM CHANNEL OR WOODEN POST TO THE HEIGHT OF 5'-0" TO 5'-6" TO THE TOP OF THE SIGN.



**TIMMONS GROUP**

NORTH CAROLINA LICENSE NO. C-1652

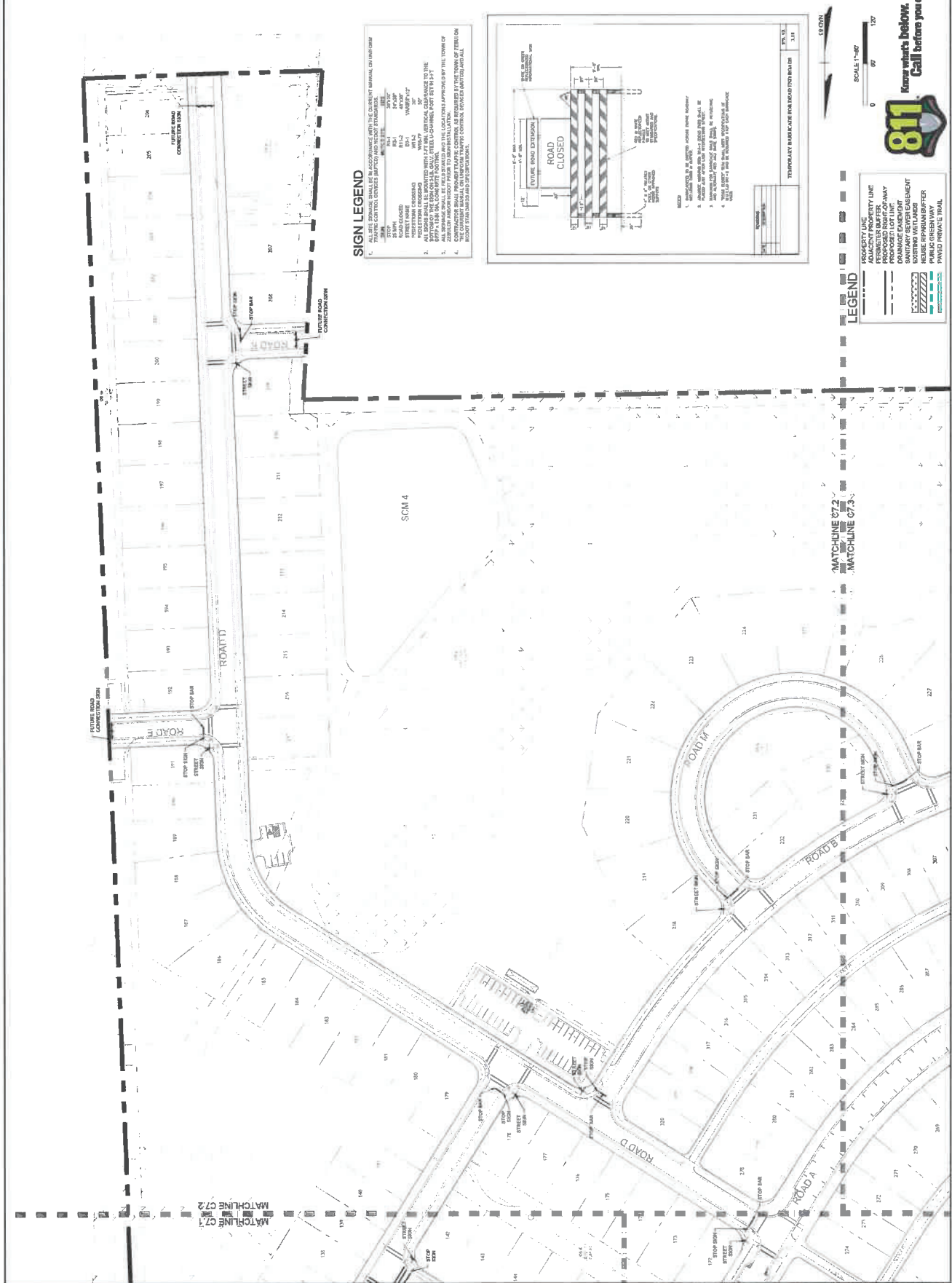
751 S WAKEFIELD STREET, ZEBULON, WAKE COUNTY, NORTH CAROLINA

DETAILED SIGNS & MARKINGS PLAN SHEET 1 OF 4

DATE	REVISION DESCRIPTION

THIS DRAWING PREPARED AT THE HEADQUARTERS OF THE FIRM.

5415 TIMMONS ROAD, SUITE 101, RALEIGH, NC 27627  
TEL: 919.846.4911 FAX: 919.846.4912 WWW.TIMMONSGROUP.COM



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 1415 TRIMBLE ROAD, SUITE 101 | RALEIGH, NC 27607  
 TEL: 919.986.4951 FAX: 919.873.8124 WWW.BPWGROUP.COM

YOUR DESIGN AGREED THROUGH OURS.  
 REVISION DESCRIPTION  
 DATE

DATE: 03/25/2024  
 DRAWN BY: 311  
 CHECKED BY: 311  
 B. BLACK/CHRY  
 CHRYSTOPHER B.  
 SCALE: 1" = 60'

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

SHEET NO. 49084  
 SHEET NO. C7.2

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

751 S WAKEFIELD STREET ZEBULON WAKE COUNTY, NORTH CAROLINA  
 ZEBULON SOUTH  
 NORTH CAROLINA LICENSE NO. C-1652

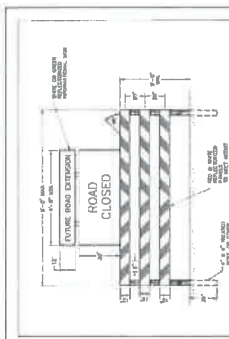
SCM 4

MATCHLINE C7.2  
 MATCHLINE C7.1

MATCHLINE C7.2  
 MATCHLINE C7.3

**SIGN LEGEND**

1. ALL SIGN CONTROL DEVICES IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
2. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
3. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
4. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
5. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
6. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
7. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
8. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
9. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
10. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.



1. ALL SIGN CONTROL DEVICES IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
2. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
3. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
4. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
5. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
6. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
7. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
8. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
9. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.
10. ALL SIGN CONTROL DEVICES SHALL BE IN ACCORD WITH THE CURRENT NATIONAL SIGN MANUAL.

**LEGEND**

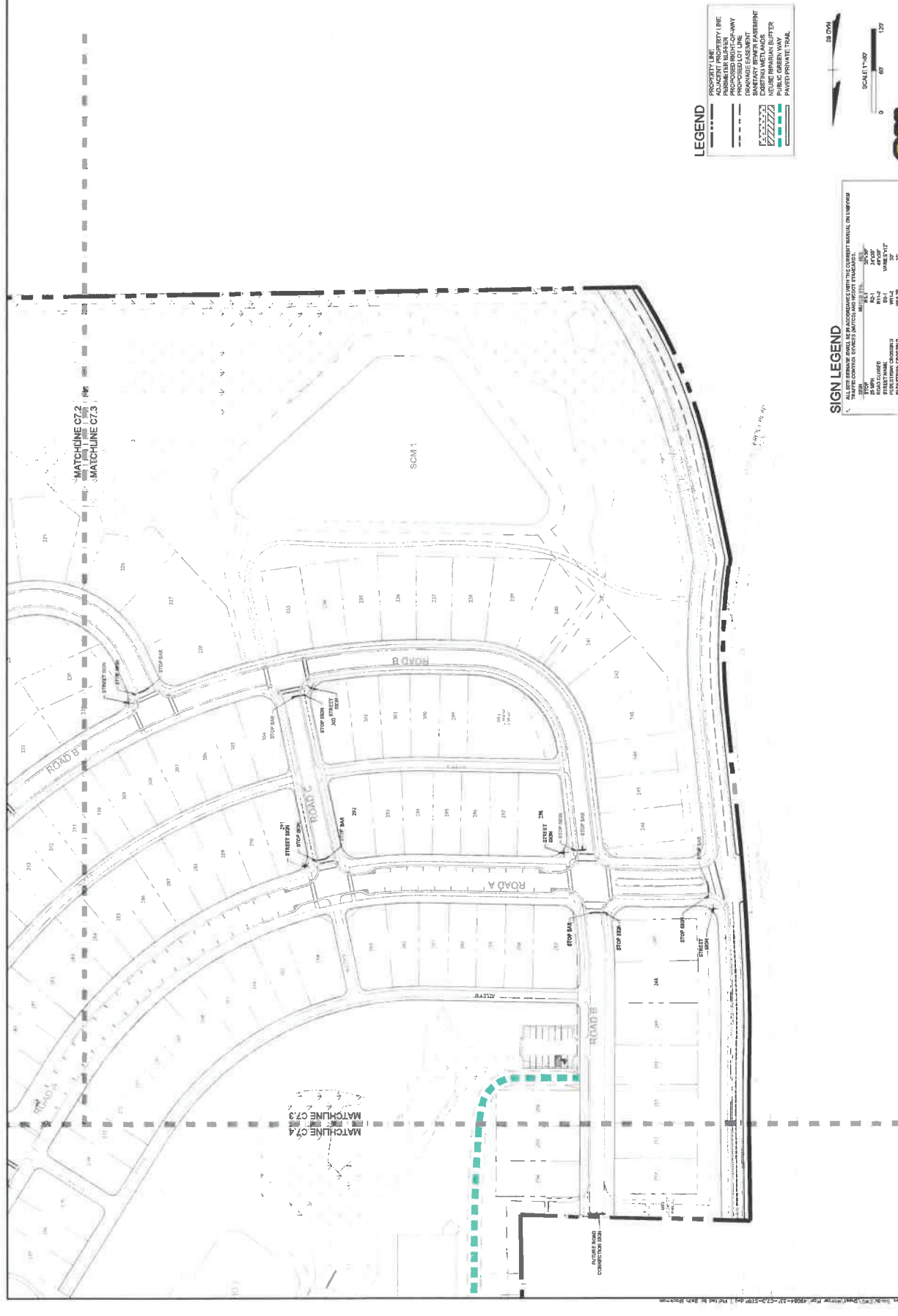
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY
- PROPOSED HIGHWAY



DESIGNED BY	JJJ
CHECKED BY	ZJJ
DATE	11/11/11
AS SHOWN	
DATE	
NO. OF SHEETS	4
TOTAL SHEETS	4

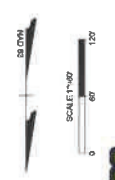
THIS DRAWING PREPARED AT THE  
OFFICE OF  
TIMMONS GROUP  
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TEL: 919.866.4951 FAX: 919.833.8124 WWW.TIMMONSGROUP.COM

YOUR VISION ACHIEVED THROUGH OURS.



**LEGEND**

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- DAMAGED FACILITIES
- SANITARY SWAMP FACILITY
- WATER FACILITY
- HOUSE BRUSH WAY
- PUBLIC GREEN WAY
- PAVED PRIVATE TROIL



**811**  
Know what's below.  
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**SIGN LEGEND**

- ALL SIGN DIMENSIONS SHALL BE ACCORDANCE WITH THE CURRENT MANUAL ON THE SIGN.
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STOP SIGN	30" X 30"
STREET SIGN	18" X 24"
STREET NAME	18" X 24"
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STREET COLOR	18" X 24"
STREET MATERIAL	18" X 24"
STREET GRADE	18" X 24"
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STREET SIDEWALK	18" X 24"
STREET LIGHT	18" X 24"
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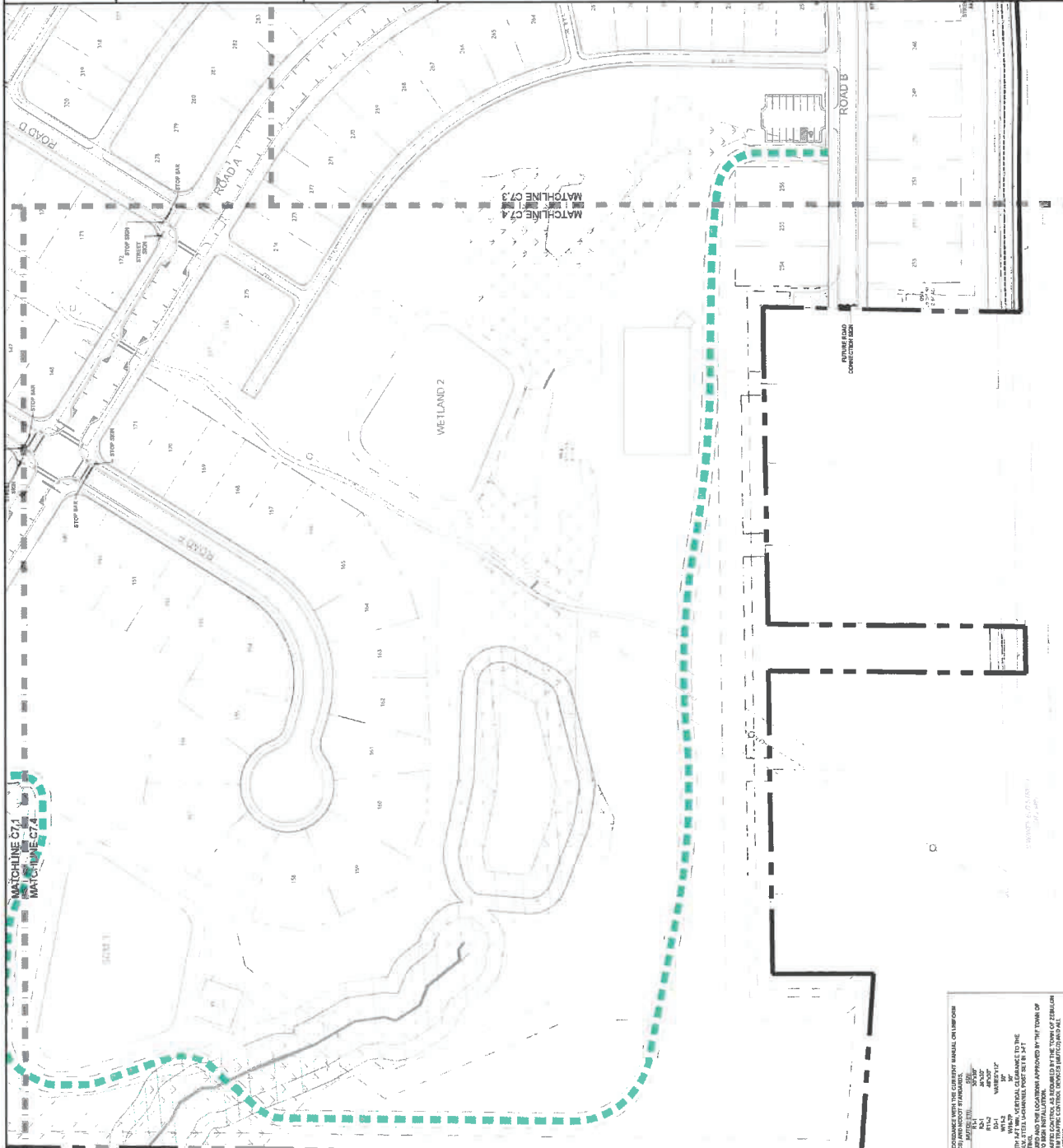


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DEPARTMENT

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5412 TIMMONS ROAD, SUITE 102 | RALEIGH, NC 27607  
TEL: 919.966.9551 FAX: 919.933.8124 WWW.TIMMONSGROUP.COM

REVISION DESCRIPTION	DATE



**LEGEND**

	PROPERTY LINE
	ADJACENT PROPERTY LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED EASEMENT
	SANITARY SEWER EASEMENT
	WETLAND
	PUBLIC GREEN WAY
	PAVED PRIVATE TRAIL

SCALE 1"=40'

0 20' 40'



**SIGN LEGEND**

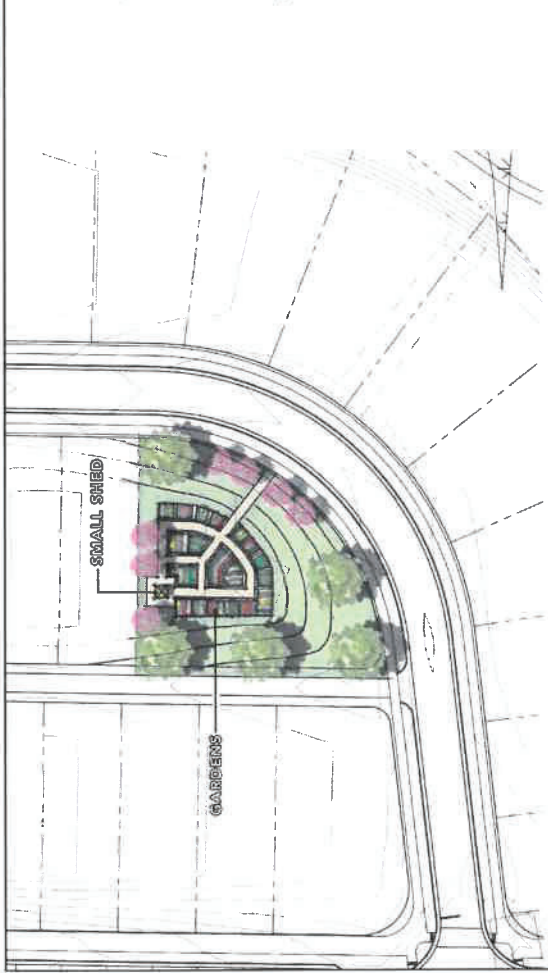
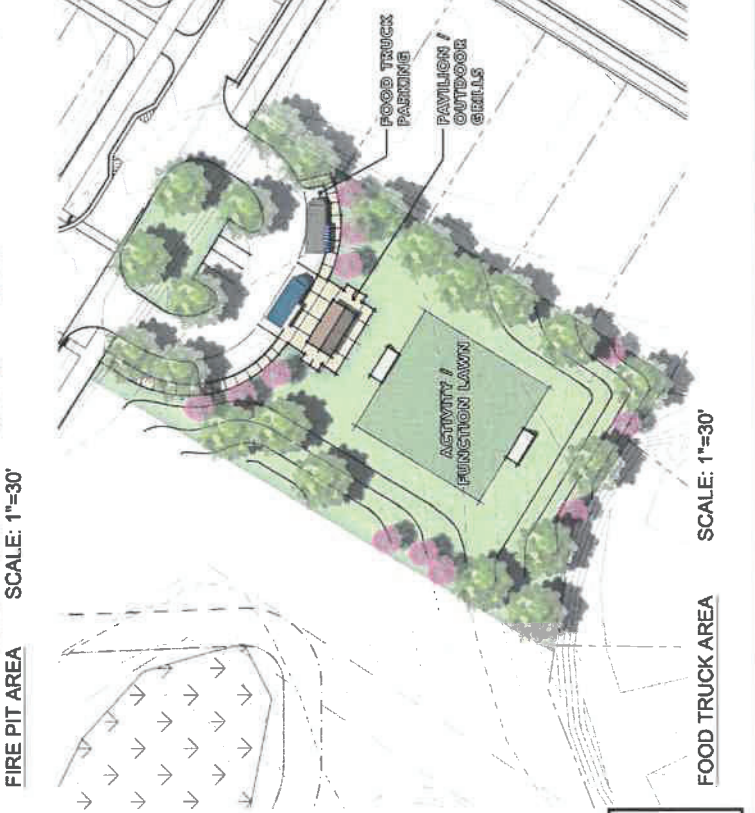
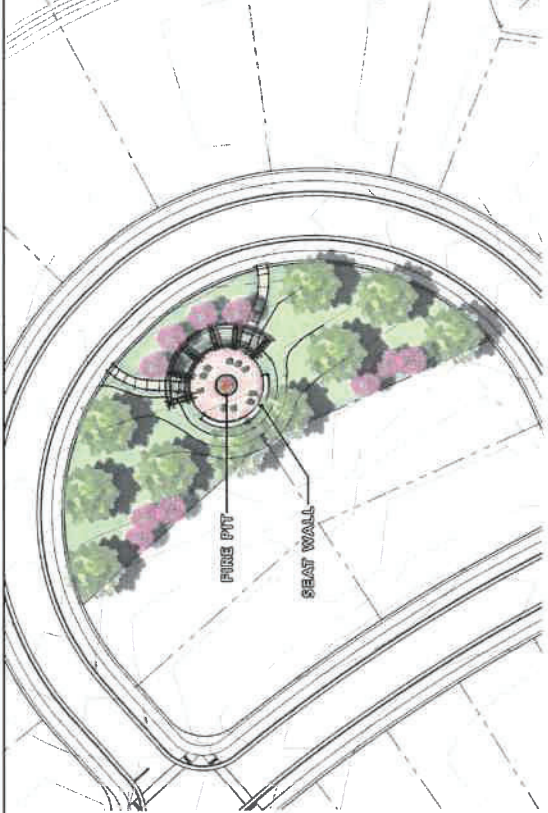
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2. ALL SIGNS SHALL BE MOUNTED WITH AN APPROVED MOUNTING SYSTEM AS APPROVED BY THE TOWN OF ZEBULON.

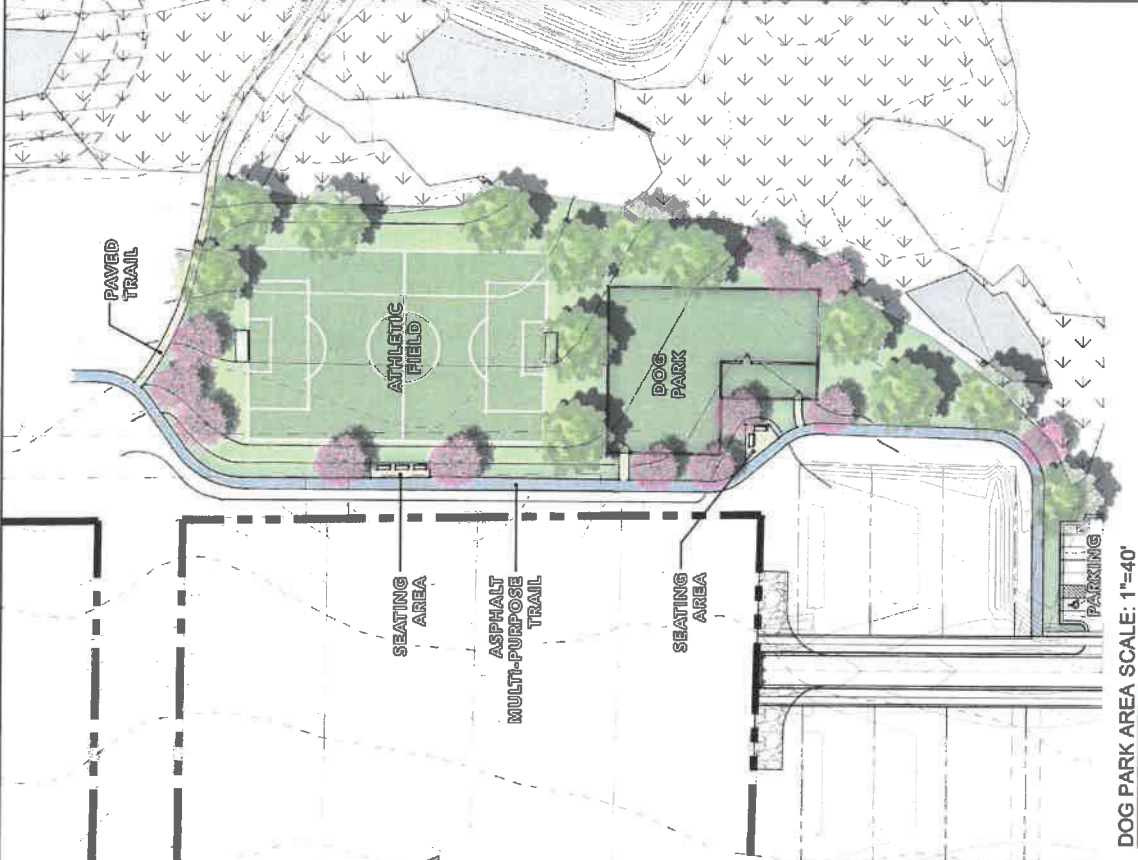
3. ALL SIGNS SHALL BE MOUNTED WITH AN APPROVED MOUNTING SYSTEM AS APPROVED BY THE TOWN OF ZEBULON.

4. ZEBULON INDIAN RESERVATION PRIOR TO SIGN INSTALLATION.

5. THE TOWN OF ZEBULON IS NOT RESPONSIBLE FOR THE MAINTENANCE OF ANY SIGNS OR MARKINGS INSTALLED BY THE TOWN OF ZEBULON.

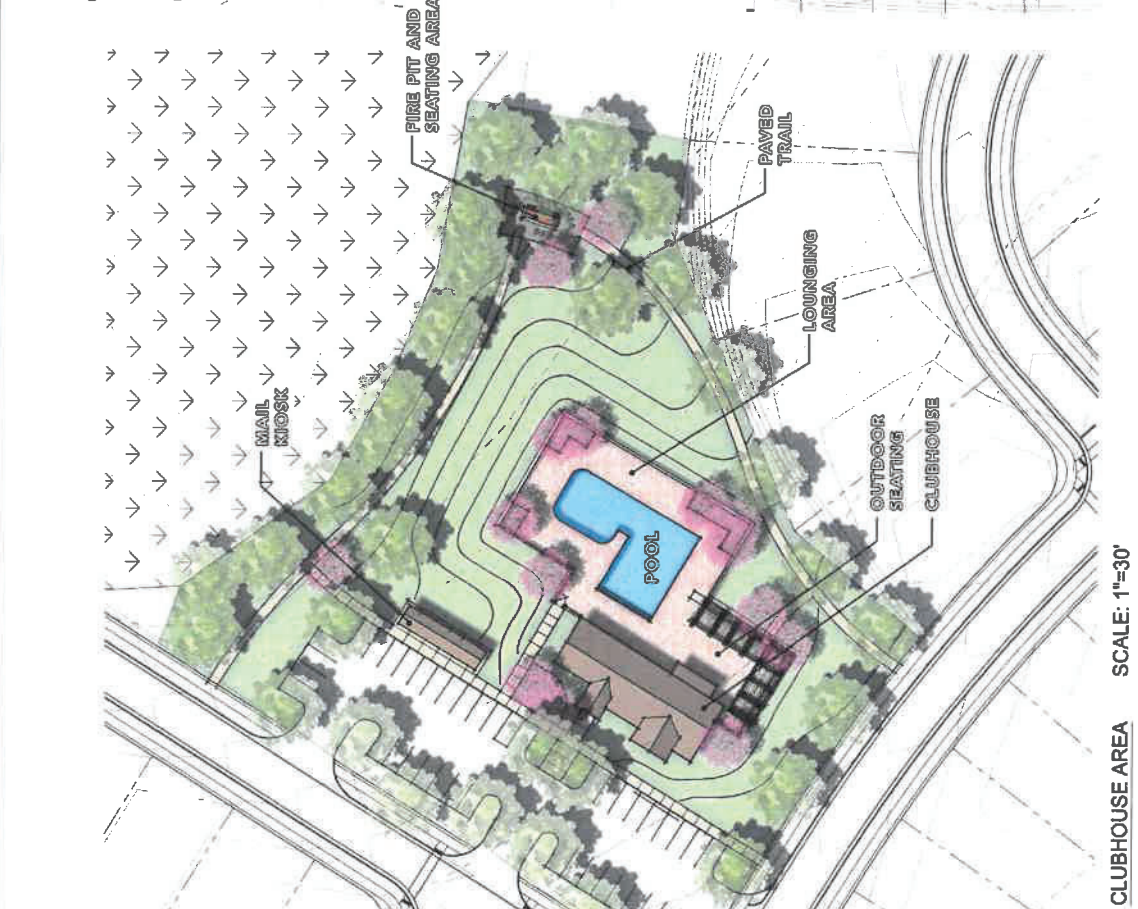


**NOTE:**  
 AMENITY CENTER AND POCKET PARK DESIGNS  
 ARE CONCEPTUAL IN NATURE AND SUBJECT TO  
 CHANGE BASED UPON FINAL DESIGN AND REVIEW.  
 ELEMENTS SHOWN ARE INTENDED TO DEPICT  
 POSSIBLE OPEN SPACE CONFIGURATIONS AND  
 ARRANGEMENT OF SITE ELEMENTS.



DOG PARK AREA SCALE: 1"=40'

**NOTE:**  
 AMENITY CENTER AND POCKET PARK DESIGNS  
 ARE CONCEPTUAL IN NATURE AND SUBJECT TO  
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 POSSIBLE OPEN SPACE CONFIGURATIONS AND  
 ARRANGEMENT OF SITE ELEMENTS.



CLUBHOUSE AREA SCALE: 1"=30'

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151 S WAKEFIELD STREET ZEBULON, WAKE COUNTY, NORTH CAROLINA  
 SINGLE FAMILY CONCEPTUAL ELEVATIONS

490064  
 SHEET NO.  
 CS-1

# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

YOUR VISION ACHIEVED THROUGH OURS.

THIS DRAWING PREPARED AT THE  
 WAKEFIELD OFFICE  
 5410 TRINITY ROAD, SUITE 100 | WAKEFIELD, NC 27587  
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SECTION DESCRIPTION

DATE

BY

DATE





# TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

YOUR VISION ACHIEVED THROUGH OURS.  
 751 S WAKEFIELD STREET ZEBULON, WAKE COUNTY, NORTH CAROLINA  
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ZEBULON SOUTH  
 TOWNHOME CONCEPTUAL ELEVATIONS

DATE	DATE	DATE	DATE	DATE	DATE	DATE

JOB NO. 49084  
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## 1.0 Introduction

Zebulon South is a proposed residential community utilizing the Town of Zebulon Planned Development Zoning as outlined in the Unified Development Ordinance (UDO). The assemblage is made up of three parcels with frontage on both S. Wakefield Street and S. Arendell Avenue. The total existing tract area is about 118.6 acres.

The development is bordered to the north by an existing solar farm. To the east across S. Arendell Avenue are existing single-family homes and a church. South and southeast of the property are existing single-family homes and agricultural fields as well as wooded properties. Existing single-family homes and agricultural fields are located west of the property.

Zebulon South PD will be a phased development of a high-quality master planned community that will provide a variety of housing types and amenities. By utilizing the PD zoning, the master plan containing site specific regulations will guide the development resulting in a well-integrated mix of housing types, lot sizes and densities with open space and preservation of environmentally sensitive areas. The flexibility offered by a PD zoning will result in a more efficient use of the land and network of utilities and streets.

The proposed community will consist of single family detached and attached residential development. The current zoning is R-2 and R-4. The Grow Zebulon Comprehensive Land Use Plan (LUP) designations are General Residential (GR) and Suburban Residential (SR) for the property. The LUP specifically identifies a PD as being a primary land use type in the SR and GR LUP classifications. The development will have an integrated mix of housing types, consistent with the LUP's recommendations for providing a diverse stock of residential choices. The diverse housing choices will promote varied price points, consistent with the LUP. The proposed zoning is Planned Development (PD) which is consistent with the LUP designations.

With over 50% open space (five times the minimum requirement) and at least 15% tree save (three times the minimum requirement), Zebulon South preserves a significant amount of environmentally sensitive areas in the design of the Master Plan, consistent with Land Use and Development Policy E, General Policies G1 and G6, Residential Policy R4, and Parks and Open Space Policy P5. The preserved areas, to a large degree, are located on the perimeter of the development, allowing for concentration of infrastructure improvements in the central area of the development. The Master Plan utilizes existing wetlands, open space and larger lots as buffer for the development, mitigating effects of the development on the surrounding community. Open space, common amenities and an integrated system of walking trails, including a publicly accessible greenway, support a high quality of life for the residents in and around the development. Open space shall exceed the Town of Zebulon minimum requirement for PD zoning.

The development includes the construction of a collector street connecting S. Wakefield Street and S. Arendell Street as shown on the Grow Zebulon Comprehensive Transportation Plan, at a location where it will clearly be a safe distance from the Perry Curtis/S. Arendell intersection, improving connectivity for the community. This is consistent with Land Use and Development Goal 3, Land Use and Development Policy G, General Policy G3, and Residential Policy R3. The internal street network includes three access points to existing public roads promoting access options for residents of the development.



### 3.0 Permitted Uses

Zebulon South PD proposes to allow the development of residential uses including Single Family Detached and Single Family Attached along with accessory uses as permitted in the R6 zoning district. Figure 2 below provides a listing of the proposed permitted uses. The uses are subject to the regulations of the Town of Zebulon UDO.

Use Category	Specific Use	PD
Residential Uses	Single Family Detached and permitted accessory uses	P
	Single Family Attached and permitted accessory uses	P

FIGURE 2

In addition, on the portion of the Master Plan designated as the “Dedication of Land for Fire Station,” all permitted and special uses in R6 shall be permitted, including the “Fire/EMS/Police Station” use.

### 4.0 Design Controls

#### 1. Residential Development Area – 116.1 acres

**Density:**

Maximum Density: 2.75 dwelling units per acre  
 Units: 320 dwelling units  
 (maximum 186 SF detached & 134 SF attached)

**Building Height:**

Maximum Building Height / # of stories: 50 feet / 3 stories

**Building Setbacks:**

**Single Family Detached Front Loaded:**

Front: 20'  
Side: 5'  
Corner Side: 10'  
Rear: 15'

**Single Family Detached Rear Loaded:**

Front: 10' max  
Side: 5'  
Corner Side: 10'  
Rear: 20'

**Single Family Attached Rear Loaded:**

Front: 10' max  
Building Separation: 10'  
Rear: 20'

**Buffers:**

Streetscape Buffers: 15' Type C Streetscape Buffer (Wakefield St)  
15' Modified Type D\* Streetscape Buffer (Arendell Ave)  
\*For additional opacity, this buffer shall be comprised of 100% evergreen shrubs and 75% evergreen understory trees

Perimeter Buffers: 20' Type B Perimeter Buffer

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is only allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved master subdivision plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within

buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.

**2. Land Dedication Parcel Development Area - 2.48 Acres**

**Building Setbacks**

Front:	20'
Side:	20'
Corner Side:	5'
Rear:	5'

**Maximum Lot Coverage:** 85%

**Building Height:**

Maximum Building Height / # of stories: 50 feet / 3 stories

**Buffers**

Streetscape Buffers: 15' Type C Streetscape Buffer

Perimeter Buffers: 20' Type B Perimeter Buffer adjacent to parcels with residential or recreational uses; no perimeter buffer required adjacent to PIN 2705410911

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved site plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within

buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.

- c. Any other necessary disturbances shall be permitted, as approved by the Technical Review Committee.

## 5.0 Architectural Standards

To encourage multiple architectural styles, buildings will be any variety of Craftsman, Traditional, Colonial, etc. While each of the architectural offerings proposed will have its own identity, a number of common threads will link the homes in the development, including color palettes, materials, roofing, and decorative garage doors. Elevations have been included in an effort to represent the bulk, massing, scale and architectural style of the development.

These standards do not apply to the Land Dedication Parcel.

### Requirements for All Homes:

#### Roofs:

Roof lines shall vary to reduce the scale of the structure and add visual interest. Roof shapes (flat, hip, mansard, gable, or shed for example) and material shall be architecturally compatible with façade elements and the rest of the structure. Shed roofs may be used on porches and dormers.

3-tab/235 shingles are not permitted.

#### Façades:

The principal structure's front façade must incorporate recesses and projections along at least 50% of the length of the façade. Windows, awnings, and porch area shall total at least 50% of the façade length abutting a public street.

Façades shall incorporate a repeating pattern of change in color, texture, and material modules.

No venting will be provided on any front facades except that when a bathroom is located on the front of the unit, a vent of a similar color to either the siding or the trim may be provided on the front of the unit.

#### Entryways:

Doors shall have built-in windows; alternatively, a solid door is allowed provided side lights (side windows) are installed immediately adjacent to the solid door. Double front doors are allowed as an option.

Front doors shall be illuminated.

Variations in color schemes and textures are encouraged in order to articulate entryways so as to give greater recognition to these features.



An option to include an overhang on rear exterior doors shall be provided. When this option is chosen by homeowner, the overhang shall extend at least 24 inches.

**Windows:**

All street-facing exterior windows shall have trim and screens. Trim shall be a minimum of 3 inches wide.

**Materials and Color Palette:**

Predominant exterior building materials shall be high quality materials including brick, wood, stone, fiber cement, and/or wood composite.

Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.

Trim color shall be distinct from façade color.

Front and side porches with open foundations shall have brick or stone piers and openings shall be fully screened with evergreen plantings.

A varied color palette shall be utilized on homes throughout the subdivision and shall include siding, trim, shutter, and accent colors complementing the siding colors.

Porch railings, if included on homes, shall be a complimentary color of the house and shall be made of either aluminum, or composite material.

Accessory buildings, if constructed, shall be of similar materials and colors as the primary single-family home.

All homes will have two or more of the following design features on the front façade (not including foundation):

- a. stone
- b. brick
- c. lap siding
- d. shakes
- e. board and batten
- f. window pediments
- g. recessed windows
- h. side and/or front window box bays
- i. roof gables
- j. roof dormers
- k. roofline cornices

l. metal roofing as accent

m. columns

n. shutters

o. other decorative features approved by the Planning Director

### **Screening:**

All residential structures shall have screening by vinyl privacy fence installed on the sides or rear of the structure to prevent visibility of roll out refuse carts from the public right-of-way or adjacent properties.

Vegetative screening for HVAC units shall be provided.

### **Requirements for Single-family Detached Front Loaded Homes:**

1. Each home shall have a minimum of one story and a maximum of three stories.
2. Each home may have a raised slab foundation. Raised slab foundation shall contain stone or brick.
3. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.
4. UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
5. Front porches shall extend beyond the front plane of the garage by a minimum of 12" on 25% of the homes constructed. Front Porches shall be allowed to extend beyond the minimum front setback a maximum of 10".
6. Garage doors must have windows, decorative details or carriage-style hardware.
7. Each garage will either have one light on each side or two lights above the garage door.
8. Eaves shall project at least 8 inches from the wall of the structure.
9. All gutter downspouts shall discharge to the side or rear of the structure.
10. The front elevation and all sides that abut a public street shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
11. A minimum 18-inch masonry (brick or stone) water table on the front façade shall be provided.
12. On at least 30% of units, masonry (brick or stone) shall extend the full height of the ground floor.
13. Each front porch shall contain a covered stoop.
14. No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

### **Requirements for Single-family Detached Rear Loaded Homes:**

15. Each home shall have a minimum of one story and a maximum of three stories.
16. Each home may have a raised slab foundation or crawl space. Raised slab foundation shall contain stone or brick.
17. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.

- 18.UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
- 19.Eaves shall project at least 8 inches from the wall of the structure.
- 20.All gutter downspouts shall discharge to the side or rear of the structure.
- 21.The front elevation of each unit shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
- 22.A minimum 24-inch masonry (brick or stone) water table on the front façade shall be provided.
- 23.All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above.
- 24.No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

### **Requirements for Single-family Attached Rear Loaded Homes:**

- 25.Each home shall have a minimum of two stories and a maximum of three stories.
- 26.Each home may have a raised slab foundation.
- 27.The front elevation and all sides that abut a public street shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
- 28.No two consecutive units within a single building shall contain the exact same front elevation regarding materials or color palette.
- 29.All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above.
- 30.The building façade cannot be a single mass; it must be broken up by home articulations of at least 12 inches, at minimum, between every two homes.
- 31.The roofline of each attached building cannot be a single mass; it must be broken up either horizontally and/or vertically between, at a minimum every two homes.

### **Requirements for Amenities:**

A mail kiosk shall be located adjacent to the clubhouse and pool. The kiosk shelter shall be designed with similar architectural style, materials and color palette as the homes in the neighborhood. Cluster mailboxes shall meet the requirements of Section 6.12.7 of the Town of Zebulon UDO.

The clubhouse shall match residential buildings with regard to style, materials and color palette.

### **Architectural Guidelines:**

We commit to the architectural requirements in Section 5.2.4 of the UDO. We will work with Town Planning and Building staff to provide additional architectural features with the exception of Section 5.2.4.E.3.e. Garage doors will not be required to be located at least two or more feet behind the front porch or the primary entrance to the dwelling.

## 6.0 Parking and Loading

All Residential Development Area parking and loading areas shall comply with applicable requirements of the Town of Zebulon UDO Section 5.8. Guest parking shall be constructed for each phase to meet the requirements of that phase, and the total number of guest parking spaces shall exceed the minimum requirement by 76 spaces, which is almost double the requirement.

Recognizing the unique parking needs of fire stations and other public-serving uses, and in order to give additional site design flexibility for public-serving development, the Land Dedication Parcel shall not be subject to the requirements of Zebulon UDO Section 5.8. Parking configuration for this parcel shall be approved by the Technical Review Committee upon a showing that the provided parking will adequately serve the fire station or other public-serving development.

## 7.0 Signs

All signage shall comply with applicable standards and requirements of the Town of Zebulon UDO Section 5.11.

## 8.0 Infrastructure

### 8.1 Public Water

Public water will be provided via extensions of the existing City of Raleigh water system. Existing water is located in S. Arendell Avenue closer to the Town of Zebulon near Temple Johnson Road. Water infrastructure will be extended from the current terminus and along the site frontage of S. Arendell Avenue and S. Wakefield Street. Infrastructure shall be extended throughout the site as required for development to provide public water to all lots.

### 8.2 Sanitary Sewer

Public sanitary sewer will be provided via extensions of the existing City of Raleigh sanitary system. A pump station will be constructed on site. Existing gravity sanitary sewer is located north of the site closer to the Town of Zebulon near Temple Johnson Road. The forcemain connection will be made to this existing gravity sewer. The gravity sanitary sewer infrastructure will be extended throughout the site as required.

### 8.3 Streets and Alleys

All streets shall be in conformance with the Town of Zebulon Transportation Plan and shall be constructed to Town of Zebulon standards and specifications. The project proposes an 70' right-of-way two-lane collector street with on-street parking protected by bump-outs and 10' multiuse paths on either side for additional pedestrian and cyclist safety, and has been shown on the Master Plan connecting S. Wakefield Street and S. Arendell Avenue. This section will create the connectivity envisioned in the CTP, with a cross section that will fit in the proposed neighborhood. The collector street construction shall follow the phasing of the project. Each section shall be constructed within the phase which it is located.

The ultimate cross section of S. Arendell Avenue is an 80' right-of-way 2-lane median divided roadway. The ultimate cross section of S. Wakefield Street starts as an 80' right-of-way 2-lane median divided roadway that transitions on the south side of the proposed collector street to a 100' right-of-way 4-lane median divided roadway. This project shall construct half of the cross-section along the property frontage. The Parks and Recreation Master Plan proposes a greenway along each of these roads. These greenways shall be incorporated as a 10' mixed use path along the roadway in place of a traditional 5' sidewalk.

Alleys shall be located within a 20' right-of-way with 10' of asphalt pavement width.

## 8.4 Pedestrian Connectivity

Zebulon South has over 6 miles of greenways, multiuse paths, trails, and sidewalks. Sidewalks shall be provided on both sides of all streets throughout Zebulon South PD. Alleys shall not have sidewalks. Multiuse paths will also be provided on Wakefield St and S Arendell Ave, and will connect the greenway to Wakefield St. Multiuse paths are provided on both sides of Road A. The neighborhood sections shall also be connected for pedestrians by several 6' paved private trails, which will include at least three (3) exercise stations along the trails.

The public greenway shown on the Town's Comprehensive Transportation Plan shall be constructed through the site along the north side of the development. A private trail shall connect the sidewalk system to the public greenway approximately as shown on the Master Plan.

## 9.0 Stormwater Management

The proposed development will meet all applicable requirements and standards as outlined in the Town of Zebulon Street and Storm Drainage Standard and Specifications Manual. Zebulon South PD will meet all stormwater quantity and quality reduction requirements. Proposed stormwater control measures (SCMs) will typically consist of wet ponds and other approved measures. SCMs will be located within open space areas and be maintained by the HOA. At least one stormwater control pond shall contain a fountain. At least seventy-five percent (75%) of any required plants in the Stormwater Control Measure ponds, excluding grasses, shall be pollinator plants such as native milkweeds and other nectar-rich flowers.

## 10.0 Natural Resources and Environmental Data

The development site consists mostly of agricultural fields along with wooded areas surrounding the streams, wetlands and existing pond.

Existing streams and wetlands have been delineated and buffered as required by Town, State and Federal agencies. The site is located within the Neuse River Basin. Any impacts requiring permits shall be obtained and permitted through the Town of Zebulon, NC Division of Water Resources and US Army Corps of Engineers as applicable.

No special flood hazard areas are located onsite per FEMA FIRM Map 3720270500k & 3720270400L dated 7/19/2022.

## 11.0 Pocket Parks and Open Space

Active and passive open spaces and recreational features will provide the residents with excellent on-site amenities. An integrated system of walking trails traverses open space and environmentally sensitive areas providing a unique amenity for the development. The development provides over eleven acres of open space, including over five acres of active open space. An on-site swimming pool and clubhouse provide pedestrian accessible amenities for the residents of the development.

### **Pool:**

- Minimum 1,000 square foot water surface area

### **Clubhouse:**

- No meeting space, bathrooms and changing rooms only

### **Tot Lot:**

- Minimum 600 square feet including ASTM fall zones
- IPEMA Certified Playground Equipment
- Target age: 2-12 years

### **Yard Games:**

- At least one amenity area shall provide a yard game, such as cornhole or outdoor ping pong
- Target age: 12+

### **Dog Park:**

- Minimum 6,000 square feet of fenced area
- Fence shall be a minimum of 4' tall galvanized or vinyl-coated chain link fence
- Shall include a minimum of two benches, one trash can and one dog waste station

### **Pocket Park:**

- Minimum of 8,000 square feet of area for multi-purpose play
- May include benches, paths, trashcans and enhanced landscaping
- Located adjacent to the greenway, along the Arendell/Wakefield St connector
- Pollinator Garden

### **Private Trails:**

- Minimum 6' wide paved trail connecting from sidewalk system to Public Greenway as illustrated on Master Plan. At least two (2) dog waste stations and three (3) exercise stations will be provided along trails.

## 12.0 Homeowner's Association

Prior to the issuance of the first certificate of occupancy for the development, a Homeowner's Association (HOA) shall be formed to govern the affairs of the development. The HOA shall be responsible for maintaining the common areas of the development including any shared stormwater facilities, landscaping, hardscape structures (such as signage, irrigation, lighting, and fountains) and recreation amenities. The Homeowners Association shall appoint two residents to the advisory board at 25% resident occupied, two residents at 50% occupied and two residents at 75% occupied.

## 13.0 Residential Lot Landscaping

Individual residential lots shall be landscaped per Town of Zebulon UDO for foundation plantings and site landscaping.

Foundation plantings consisting of evergreen shrubs or decorative grasses with a minimum height of 18 inches shall be located within 10 feet of any foundation wall visible from a public street excluding alleys. Shrubs shall maintain a maximum on-center placement of three feet.

Site landscaping consisting of one canopy tree for every 2,000 square feet of lot area is required. Canopy trees may be located anywhere within the residential lot except where limited by easements, sight distance triangles or buffer areas.

HVACs and ground-based mechanical equipment shall be screened utilizing evergreen shrubs on sides visible from a public street.

## 14.0 Consistency with Comprehensive Plan and Land Use Map

Zebulon South PD is consistent with the Town of Zebulon Comprehensive Plan and Land Use Map goals and objectives. The development is located in SR and GR land use categories where PD zoning is a recommended land use type particularly where a mix of housing types and varying densities is proposed.

Proposing both single-family detached and attached product supports the Town's desire for a variety of housing types and price points. This draws new residents and provides additional housing choices for existing residents.

The site design incorporates in a variety of lot sizes supporting the goal of increasing a diverse housing stock for the Town. The variety ensures additional housing choices as well as a variety of price points.

Providing more concentrated development while preserving environmentally sensitive areas and perimeter buffers provides a transition to the existing single-family homes and agricultural properties adjacent to the development.

The integrated system of streets, sidewalks, trails and greenways provide a cohesive pedestrian and vehicular network adhering to the Town's Comprehensive Transportation Plan and provided a thoughtfully planned neighborhood.

## 15.0 Compliance with the UDO

This Master Plan shall be the primary governing document for the development of Zebulon South PD. All standards and regulations in this Master Plan shall control over general standards of the UDO. Provided, however, that if a specific regulation is not addressed in this Master Plan, UDO regulations shall control. Zebulon South PD will comply with all other relevant portions of the Town of Zebulon Unified Development Ordinance.

## 16.0 Preliminary Residential Plan Review

Pursuant to UDO Section 3.5.5.B.4, the applicant requests an exemption from subsequent residential preliminary plan review. This PD includes a master plan that is detailed and meets the requirements for a residential preliminary plan. Therefore, upon approval of this PD, the applicant shall be exempt from subsequent residential preliminary plan review.

## 17.0 Additional Zoning Conditions (not applicable to Land Dedication Parcel)

In addition to conditions contained throughout the visual and written document, additional written voluntary conditions have been offered to ensure a quality development.

1. Single family detached rear load lots shall have a minimum lot size of 4,800 sf.
2. Single family detached front load lots shall have a minimum lot size of 6,000 sf.
3. Single family attached lots shall have a minimum lot size of 1,260 sf.
4. The minimum lot width for front loaded lots shall be 50' reduced from 70'.
5. All single family detached rear loaded homes shall have a sidewalk connection from the front door or porch to the public sidewalk.
6. The clubhouse and pool shall be completed before the 150<sup>th</sup> Certificate of Occupancy for any dwelling is issued.
- 8.. Zebulon South will apply a maximum 35% impervious requirement for the development as a whole (based on total acreage).
9. The applicant commits to provide a minimum 15% Tree Save, three times the minimum requirement.
10. All planned improvements to roadways and right-of-way owned and maintained by the NC Department of Transportation (NCDOT), including improvements that require off-site property acquisition and/or easements, are subject to NCDOT approval during subsequent phases of development. If any improvements are not approved by NCDOT, alternative designs may be administratively approved by Town staff.



11. If a bus pickup location is approved by Wake County Public Schools in the neighborhood, one bust stop area, including a shelter, a bench, a trash can, and at least 5 bicycle spaces shall be provided with the second phase of development.
12. To support community gatherings and active neighborhoods, the applicant commits to providing one neighborhood congregation area, to include:
  - a. a minimum of two (2) larger parking spaces designed for food trucks or delivery vehicles (mobile vendors), with an electrical outlet available;
  - b. one (1) covered seating area with at least 10 designated public seating spaces will be provided adjacent to the Mobile Vendor spaces.
  - c. at least one (1) outdoor grill will be provided adjacent to the covered seating area,

This area may be classified as active open space under UDO § 5.7.

13. The development shall include a minimum of five (5) affordable single-family detached ownership units (the "Affordable Units"), which shall be located on different streets in the neighborhood. The Developer shall vet qualified buyers for the Affordable Units and shall ensure, in the first sale of the Affordable Units, that they are affordable households earning no more than eighty percent (80%) of the Area Median Income (AMI). Prior to Subdivision closeout, the Developer shall submit documentation and an affidavit of compliance with this zoning condition. Following the first sale of each of the Affordable Units, Developer shall have no further obligations under this condition.
14. Final alignment of the greenway will be reviewed and approved by TRC during construction drawings.
15. Unless not approved by Wake County, the grave site(s) located at 0 N Arendell Ave (PIN 2705513114) shall be relocated prior to approval of construction drawings.

## 18.0 Land Dedication Parcel

The owner shall designate, for the benefit of the Town, a minimum of 2 acres of land (excluding right-of-way dedication and easements required for frontage improvements) located on Hwy 96/Arendell Ave abutting the property lines of Wake County PINs 2705410911 (Deed book 16651/page 25) and 2705520074 (Deed book 9289/page 1838) for the future development of a Town of Zebulon Fire Station or other public-serving use, as determined by the Town (the "Land Dedication Parcel"). The location of the Land Dedication Parcel is identified on the Master Plan, and the surveyed boundary line will be identified and approved by the Town prior to Final Plat approval for the phase of development adjacent to the Land Dedication Parcel. After approval of the boundary line, but no later than the approval of the Final Plat for the phase of development adjacent to the Land Dedication Parcel, the developer shall dedicate to the Town an easement (or superior title) by deed or other instrument, approved by the Town Attorney as to form, for the Land Dedication Parcel. The Residential Development Area developer shall construct all curb, gutter, road widening and pedestrian improvements on Arendell Ave for the Land Dedication Parcel and stub potable water and sanitary sewer to the Land Dedication Parcel prior to plat recordation, or provide a surety for completion thereof. The actual design,

construction, and installation of the fire station and associated amenities, or other permitted public use as determined by the Town, shall be done by the Town, or another public entity and are not commitments of this zoning case. This zoning condition may also be satisfied by the Town Manager, or his/her designee, stating, in writing, that the Town does not wish to accept the land for the development of a fire station or other public use.

## 19.0 Transportation Impact Analysis Summary

A Traffic Impact Analysis (TIA) was conducted by the Timmons Group in accordance with the Zebulon (Town) Unified Development Ordinance (UDO) and the North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. A full copy of the TIA was submitted for review and approval with the PD submittal, and a voluntary additional analysis incorporating anticipated traffic from the nearby recently-approved Chamblee Lake PD was submitted for review and approval with the applicant’s final master plan submittal. The listed recommended improvements are subject to further review and final approval by NCDOT.

### Study Area

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

- NC 96 and Site Access #1
- NC 96 and Site Access #2
- S Wakefield St and Site Access # 3
- NC 97 and S Wakefield St
- NC 97 and NC 96
- NC 96 and W Barbee St
- NC 96 and Perry Curtis Rd

### Recommended Improvements

Based on the analysis of the TIA (including improvements to be installed by the Chamblee Lake development), the following improvements have been recommended to be constructed by the developer to both mitigate traffic impacts by the proposed development.

#### NC 96 and Site Access #1

- Site Access 1 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.
- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

#### NC 96 and Site Access #2

- Site Access 2 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.

- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

### Wakefield St and Site Access #3

- Site Access 3 to include a two-lane cross-section with one westbound egress lane and one eastbound ingress lane.
- Provide stop control on the westbound approach of the site drive.
- Construct a southbound left-turn lane on Wakefield Street with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.

## 19.1 Additional Transportation & Pedestrian Safety Enhancements

### Safety Enhancements at Pulley Gordon Road/Morphus Bridge Road Intersection

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the Pulley Gordon Road/Morphus Bridge Road intersection in the existing right-of-way and pavement and right-of-way and frontage improvements required to be dedicated by the developer at this intersection. These safety enhancements are subject to approval by the Technical Review Committee and NCDOT.

### Safety Enhancements on NC 96 between Zebulon Community Park and Zebulon Community Center

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the section of NC 96 between the entrance to the Zebulon Community Park and entrance to the Zebulon Community Center, in the existing right-of-way and pavement. These enhancements will include a crosswalk and/or appropriate warning signage. These safety enhancements is subject to approval by the Technical Review Committee and NCDOT.

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## 1.0 Introduction

Zebulon South is a proposed residential community utilizing the Town of Zebulon Planned Development Zoning as outlined in the Unified Development Ordinance (UDO). The assemblage is made up of three parcels with frontage on both S. Wakefield Street and S. Arendell Avenue. The total existing tract area is about 118.6 acres.

The development is bordered to the north by an existing solar farm. To the east across S. Arendell Avenue are existing single-family homes and a church. South and southeast of the property are existing single-family homes and agricultural fields as well as wooded properties. Existing single-family homes and agricultural fields are located west of the property.

Zebulon South PD will be ~~developed into~~ a phased development of a high-quality master planned community that will provide a variety of housing types and amenities. By utilizing the PD zoning, the master plan containing site specific regulations will guide the development resulting in a well-integrated mix of housing types, lot sizes and densities with open space and preservation of environmentally sensitive areas. The flexibility offered by a PD zoning will result in a more efficient use of the land and network of utilities and streets.

The proposed community will consist of single family detached and attached residential development. The current zoning is R-2 and R-4. The Grow Zebulon Comprehensive Land Use Plan (LUP) designations are General Residential (GR) and Suburban Residential (SR) for the property. The LUP specifically identifies a PD as being a primary land use type in the SR and GR LUP classifications. The development will have an integrated mix of housing types, consistent with the LUP's recommendations for providing a diverse stock of residential choices. The diverse housing choices will promote varied price points, consistent with the LUP. The proposed zoning is Planned Development (PD) which is consistent with the LUP designations.

~~Preserving the~~ With over 50% open space (five times the minimum requirement) and at least 15% tree save (three times the minimum requirement), Zebulon South preserves a significant amount of environmentally sensitive areas ~~is ain the~~ design of the Master Plan. ~~The environmentally sensitive, consistent with Land Use and Development Policy E, General Policies G1 and G6, Residential Policy R4, and Parks and Open Space Policy P5. The preserved~~ areas, to a large degree, are located on the perimeter of the development, allowing for concentration of infrastructure improvements in the central area of the development. The Master Plan utilizes existing wetlands, open space and larger lots as buffer for the development, mitigating effects of the development on the surrounding community. Open space, common amenities and an integrated system of walking trails, including a publicly accessible greenway, support a high quality of life for the residents ~~ofin and around~~ the development. Open space shall exceed the Town of Zebulon minimum requirement for PD zoning.

The development includes the construction of a collector street connecting S. Wakefield Street and S. Arendell Street as shown on the Grow Zebulon Comprehensive Transportation Plan, ~~improving community connectivity~~ at a location where it will clearly be a safe distance from the Perry Curtis/S. Arendell intersection, improving connectivity for the community. This is consistent with Land Use and Development Goal 3, Land Use and Development Policy G, General Policy G3, and Residential Policy R3. The internal street network includes three access points to existing public roads promoting access options for residents of the development.

Finally, the proposed project will provide an additional benefit for all current and future area residents: dedication of land for a needed second fire station in the growing southern Zebulon, or

any other public-serving use, as decided by the Town. The location of the land dedication is shown on the master plan, is centrally located for a public use to serve Southern Zebulon.

~~Zebulon South development shall be developed in phases.~~

## 2.0 Vicinity Map

Zebulon South PD is located between S. Wakefield Street and S. Arendell Ave as shown on the vicinity map in Figure 1.

(Modified graphics)

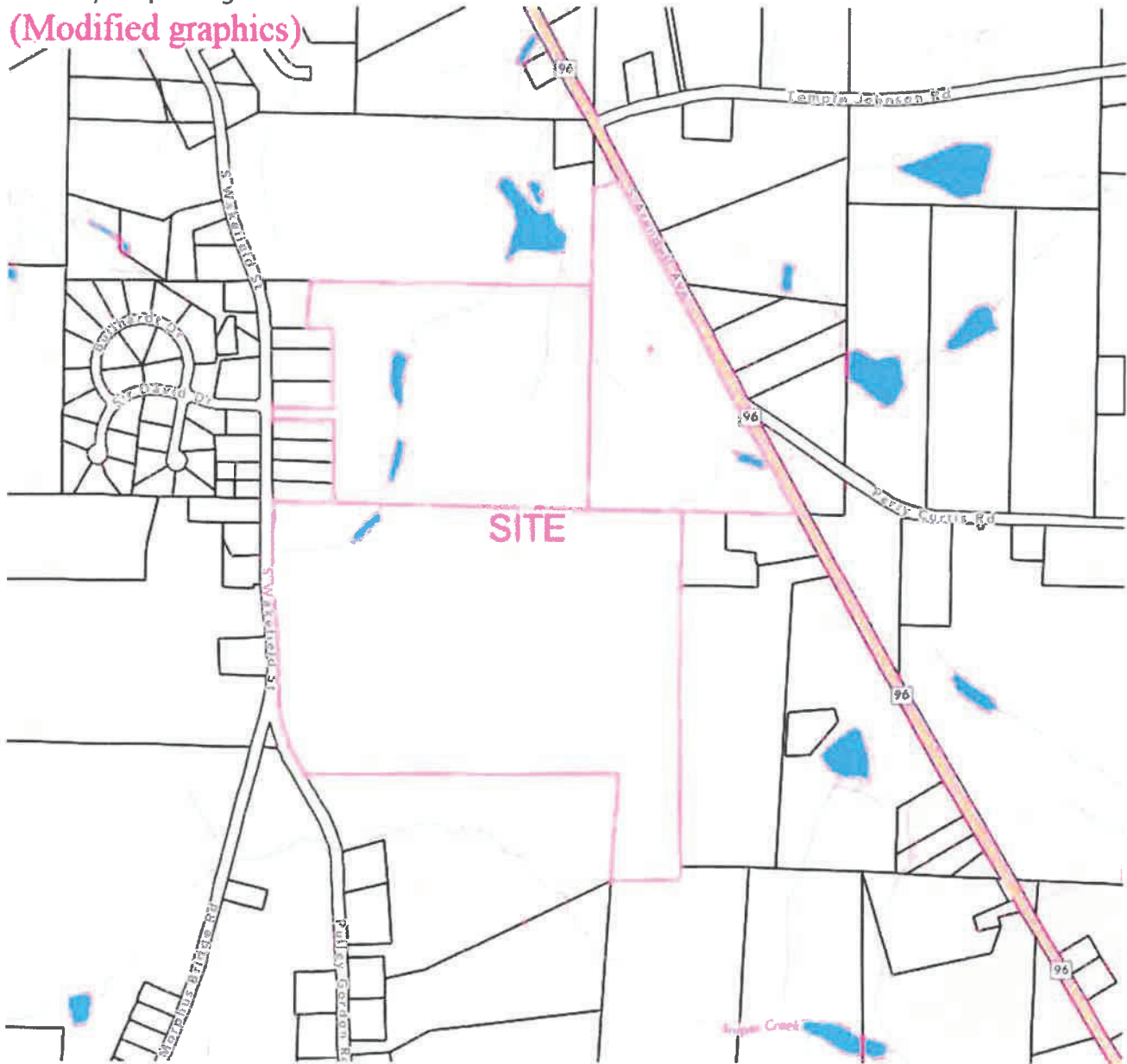


FIGURE 1



### 3.0 Permitted Uses

Zebulon South PD proposes to allow the development of residential uses including Single Family Detached and Single Family Attached along with ~~permitted~~ accessory uses as permitted in the R6 zoning district. Figure 2 below provides a listing of the proposed permitted uses. The uses are subject to the regulations of the Town of Zebulon UDO.

(Add) Category	Specific Use	PD
Residential Uses	Single Family Detached and permitted accessory uses	P
	Single Family Attached and permitted accessory uses	P

FIGURE 2

In addition, on the portion of the Master Plan designated as the “Dedication of Land for Fire Station,” all permitted and special uses in R6 shall be permitted, including the “Fire/EMS/Police Station” use.

Use-Category	Specific-Use	PD
Residential Uses	Single Family Detached and permitted accessory uses	P
	Single Family Attached and permitted accessory uses	P

FIGURE 2

## 4.0 Design Controls

### 1. Residential Development Area – ~~118.6~~116.1 acres

#### Density:

Maximum Density: ~~2.9~~ 2.75 dwelling units per acre

Units: ~~340~~ 320 dwelling units

(maximum ~~220~~186 SF detached & ~~120~~134 SF attached)

#### Building Height:

Maximum Building Height / # of stories: 50 feet / 3 stories

#### Building Setbacks:

#### Single Family Detached Front Loaded:

Front: 20'  
Side: 5'  
Corner Side: 10'  
Rear: 15'

**Single Family Detached Rear Loaded:**

Front: 10' max  
Side: 3 5'  
Corner Side: 10'  
Rear: 20'

**Single Family Attached Rear Loaded:**

Front: 10' max  
Building Separation: 10'  
Rear: 20'

**Buffers:**

Streetscape Buffers: ~~30~~ 15' Type ~~A-Perimeter~~C Streetscape Buffer (Wakefield St)  
15' Modified Type D\* Streetscape Buffer (Arendell Ave)  
\*For additional opacity, this buffer shall be comprised of 100% evergreen shrubs and 75% evergreen understory trees

Perimeter Buffers: ~~30~~ 20' Type ~~A~~B Perimeter Buffer

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is only allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved master subdivision plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.

2. Land Dedication Parcel Development Area - 2.48 Acres

Building Setbacks

Front: 20'  
Side: 20'  
Corner Side: 5'  
Rear: 5'

Maximum Lot Coverage: 85%

Building Height:

Maximum Building Height / # of stories: 50 feet / 3 stories

## Buffers

Streetscape Buffers: 15' Type C Streetscape Buffer

Perimeter Buffers: 20' Type B Perimeter Buffer adjacent to parcels with residential or recreational uses; no perimeter buffer required adjacent to PIN 2705410911

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved site plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.
- c. Any other necessary disturbances shall be permitted, as approved by the Technical Review Committee.

## ~~5.0~~ 5.0 Architectural Standards

~~To encourage multiple architectural styles, buildings will be any variety of Craftsman, Traditional, Colonial, etc.~~

To encourage multiple architectural styles, buildings will be any variety of Craftsman, Traditional, Colonial, etc. While each of the architectural offerings proposed will have its own identity, a number of common threads will link the homes in the development, including color palettes, materials, roofing, and decorative garage doors. Elevations have been included in an effort to represent the bulk, massing, scale and architectural style of the development.

These standards do not apply to the Land Dedication Parcel.

### **Requirements for All Homes:**

~~All residential structures shall have three or more of the following features:~~

- ~~• Front Porch~~
- ~~• Awnings~~
- ~~• Columns~~

- ~~Balconies~~
- ~~Broken Roof Lines~~
- ~~Dormer~~
- ~~Other architectural features approved by the Planning Director~~

All residential structures shall have at least four of the following features:

- ~~Decorative Shake~~
- ~~Decorative Porch Railings/Posts~~
- ~~Shutters~~
- ~~Decorative/Functional Air Vents on Roof or Foundation~~
- ~~Trimmed Windows or Recessed Windows~~
- ~~Decorative Stone or Brick (10% minimum required on front elevation)~~
- ~~Decorative Gables~~

- ~~Decorative Cornices~~
- ~~Tin/Metal Roof~~
- ~~Other decorative features approved by the Planning Director~~

### **Roofs:**

Roof lines shall vary to reduce the scale of the structure and add visual interest. Roof shapes (flat, hip, mansard, gable, or shed for example) and material shall be architecturally compatible with façade elements and the rest of the structure. Shed roofs may be used on porches and dormers.

3-tab/235 shingles are not permitted.

### **Façades:**

The principal structure's front façade must incorporate recesses and projections along at least 50% of the length of the façade. Windows, awnings, and porch area shall total at least 50% of the façade length abutting a public street.

Façades shall incorporate a repeating pattern of change in color, texture, and material modules.

No venting will be provided on any front façades except that when a bathroom is located on the front of the unit, a vent of a similar color to either the siding or the trim may be provided on the front of the unit.

### **Entryways:**

Doors shall have built-in windows; alternatively, a solid door is allowed provided side lights (side windows) are installed immediately adjacent to the solid door. Double front doors are allowed as an option.

Front doors shall be illuminated.

Variations in color schemes and textures are encouraged in order to articulate entryways so as to give greater recognition to these features.

An option to include an overhang on rear exterior doors shall be provided. When this option is chosen by homeowner, the overhang shall extend at least 24 inches.

### **Windows:**

All street-facing exterior windows shall have trim and screens. Trim shall be a minimum of 3 inches wide.

### **Materials and Color Palette:**

Predominant exterior building materials shall be high quality materials including brick, wood, stone, fiber cement, and/or wood composite.

Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.

Trim color shall be distinct from façade color.

Front and side porches with open foundations shall have brick or stone piers and openings shall be fully screened with evergreen plantings.

A varied color palette shall be utilized on homes throughout the subdivision and shall include siding, trim, shutter, and accent colors complementing the siding colors.

Porch railings, if included on homes, shall be a complimentary color of the house and shall be made of either aluminum, or composite material.

Accessory buildings, if constructed, shall be of similar materials and colors as the primary single-family home.

All homes will have two or more of the following design features on the front façade (not including foundation):

a. stone

b. brick

c. lap siding

d. shakes

e. board and batten

f. window pediments

g. recessed windows

h. side and/or front window box bays

i. roof gables

j. roof dormers

k. roofline cornices

l. metal roofing as accent

m. columns

n. shutters

o. other decorative features approved by the Planning Director

### **Screening:**

All residential structures shall have screening by vinyl privacy fence installed on the sides or rear of the structure to prevent visibility of roll out refuse carts from the public right-of-way or adjacent properties.

Vegetative screening for HVAC units shall be provided.

### **Requirements for Single-family Detached Front Loaded Homes:**

1. ♦ Each home shall have a minimum of one story and a maximum of three stories.  
♦ ~~Minimum dwelling size shall be 1,600 square feet.~~
2. ♦ Each home may have a raised slab foundation. Raised slab foundation shall contain stone or brick.

3. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.
4. UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
5. Front porches shall extend beyond the front plane of the garage by a minimum of 12" on 25% of the homes constructed. Front Porches shall be allowed to extend beyond the minimum front setback a maximum of 10".
6. ♦Garage doors must have windows, decorative details or carriage-style hardware.
7. Each garage will either have one light on each side or two lights above the garage door.
8. ♦Eaves shall project at least 8 inches from the wall of the structure.



- 9. All gutter downspouts shall discharge to the side or rear of the structure.
- 10. ~~•The front elevation of each unit and all sides that abut a public street shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).~~
- ~~•All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above. This is in addition to the required form of ingress/egress on every side of the structure for single-family detached units as noted in Section 4.3.3.P.2 of the Town of Zebulon UDO.~~
- 11. A minimum 18-inch masonry (brick or stone) water table on the front façade shall be provided.
- 12. On at least 30% of units, masonry (brick or stone) shall extend the full height of the ground floor.
- 13. Each front porch shall contain a covered stoop.
- 14. No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

**Requirements for Single-family Detached Rear Loaded Homes:**

- 15. ~~•Each home shall have a minimum of one story and a maximum of three stories.~~
- ~~•Minimum dwelling size shall be 1,600 square feet.~~
- 16. ~~•Each home may have a raised slab foundation or crawl space. Raised slab foundation shall contain stone or brick.~~
- 17. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.
- 18. UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
- 19. ~~•Eaves shall project at least 8 inches from the wall of the structure.~~
- 20. All gutter downspouts shall discharge to the side or rear of the structure.
- 21. ~~•The front elevation of each unit shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).~~
- 22. A minimum 24-inch masonry (brick or stone) water table on the front façade shall be provided.
- 23. ~~•All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above. This is in addition to the required form of ingress/egress on every side of the structure for single-family detached units as noted in Section 4.3.3.P.2 of the Town of Zebulon UDO.~~
- 24. No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

**Requirements for Single-family Attached Rear Loaded Homes:**

- 25. ~~•Each home shall have a minimum of two stories and a maximum of three stories.~~
- ~~•Minimum dwelling size shall be 1,200 square feet.~~
- 26. ~~•Each home may have a raised slab foundation.~~

- 27. ~~The front elevation of each unit and all sides that abut a public street~~ shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
- 28. ~~No two consecutive units within a single building shall contain the exact same front elevation regarding materials or color palette.~~
- 29. ~~All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above.~~
- 30. ~~The building façade cannot be a single mass; it must be broken up by home articulations of at least 12 inches, at minimum, between every two homes.~~
- 31. ~~The roofline of each attached building cannot be a single mass; it must be broken up either horizontally and/or vertically between, at a minimum every two homes.~~

**Requirements for Amenities:**

A mail kiosk shall be located adjacent to the clubhouse and pool. The kiosk shelter shall be designed with similar architectural style, materials and color palette as the homes in the neighborhood. Cluster mailboxes shall meet the requirements of Section 6.12.7 of the Town of Zebulon UDO.

The clubhouse shall match residential buildings with regard to style, materials and color palette.

**~~Deviations for Architectural Requirements~~ Guidelines:**

We commit to the architectural requirements in Section 5.2.4 of the UDO. We will work with Town Planning and Building staff to provide additional architectural features with the

exception of Section 5.2.4.E.3.e. Garage doors ~~shall~~will not be required to be located at least two or more feet behind ~~at~~the front porch or the primary entrance to the dwelling.

## 6.0 Parking and Loading

All Residential Development Area parking and loading areas shall comply with applicable requirements of the Town of Zebulon UDO Section 5.8. Guest parking shall be constructed for each phase to meet the requirements of that phase, and the total number of guest parking spaces shall exceed the minimum requirement by 76 spaces, which is almost double the requirement.

Recognizing the unique parking needs of fire stations and other public-serving uses, and in order to give additional site design flexibility for public-serving development, the Land Dedication Parcel shall not be subject to the requirements of Zebulon UDO Section 5.8. Parking configuration for this parcel shall be approved by the Technical Review Committee upon a showing that the provided parking will adequately serve the fire station or other public-serving development.

## 7.0 Signs

All signage shall comply with applicable standards and requirements of the Town of Zebulon UDO Section 5.11.

## ~~8.0~~8.0 Infrastructure

### ~~8.1~~8.1 Public Water

Public water will be provided via extensions of the existing City of Raleigh water system. Existing water is located in S. Arendell Avenue closer to the Town of Zebulon near Temple Johnson Road. Water infrastructure will be extended from the current terminus and along the site frontage of S. Arendell Avenue and S. Wakefield Street. Infrastructure shall be extended throughout the site as required for development to provide public water to all lots.

### ~~8.2~~8.2 Sanitary Sewer

Public sanitary sewer will be provided via extensions of the existing City of Raleigh sanitary system. A pump station will be constructed on site. Existing gravity sanitary sewer is located north of the site closer to the Town of Zebulon near Temple Johnson Road. The forcemain connection will be made to this existing gravity sewer. The gravity sanitary sewer infrastructure will be extended throughout the site as required.

### ~~8.3~~8.3 Streets and Alleys

All streets shall be in conformance with the Town of Zebulon Transportation Plan and shall be constructed to Town of Zebulon standards and specifications. ~~A proposed 80' right-of-way median divided two-lane collector street with on-street parking protected by bump-outs and 10' multiuse paths on either side for additional pedestrian and cyclist safety, and~~ The project proposes an 70' right-of-way median divided two-lane collector street with on-street parking protected by bump-outs and 10' multiuse paths on either side for additional pedestrian and cyclist safety, and has been shown on the Master Plan connecting S. Wakefield Street and S. Arendell Avenue ~~as shown on the Town's Transportation Plan.~~ This section will create the connectivity envisioned in the CTP, with a cross section that will fit in the proposed neighborhood. The collector street construction shall follow the phasing of the project. Each section shall be constructed within the phase which it is located.

The ultimate cross section of S. Arendell Avenue is an 80' right-of-way 2-lane median divided roadway. The ultimate cross section of S. Wakefield Street starts as an 80' right-of-way 2-lane median divided roadway that transitions on the south side of the proposed collector street to a 100' right-of-way 4-lane median divided roadway. This project shall construct half of the cross-section along the property frontage. The Parks and Recreation Master Plan proposes a greenway along each of these roads. These greenways shall be incorporated as a 10' mixed use path along the roadway in place of a traditional 5' sidewalk.

Alleys shall be located within a 20' right-of-way with 10' of asphalt pavement width.

#### ~~8.4~~ 8.4 Pedestrian Connectivity

~~Sidewalks shall be provided on both sides of all streets throughout Zebulon South PD. Alleys shall not have sidewalks.~~

Zebulon South has over 6 miles of greenways, multiuse paths, trails, and sidewalks. Sidewalks shall be provided on both sides of all streets throughout Zebulon South PD. Alleys shall not have sidewalks. Multiuse paths will also be provided on Wakefield St and S Arendell Ave, and will connect the greenway to Wakefield St. Multiuse paths are provided on both sides of Road A. The neighborhood sections shall also be connected for pedestrians by several 6' paved private trails, which will include at least three (3) exercise stations along the trails.

The public greenway shown on the Town's Comprehensive Transportation Plan shall be constructed through the site along the north side of the development. A private trail shall connect the sidewalk system to the public greenway approximately as shown on the Master Plan. ~~Additional private trails may be constructed as desired by the Homeowner's Association (HOA).~~

## 9.0 Stormwater Management

The proposed development will meet all applicable requirements and standards as outlined in the Town of Zebulon Street and Storm Drainage Standard and Specifications Manual. Zebulon South PD will meet all stormwater quantity and quality reduction requirements. Proposed stormwater control measures (SCMs) will typically consist of wet ponds and other approved measures. SCMs will be located within open space areas and be maintained by the HOA. At least one stormwater control pond shall contain a fountain. At least seventy-five percent (75%) of any required plants in the Stormwater Control Measure ponds, excluding grasses, shall be pollinator plants such as native milkweeds and other nectar-rich flowers.

## 10.0 Natural Resources and Environmental Data

The development site consists mostly of agricultural fields along with wooded areas surrounding the streams, wetlands and existing pond.

Existing streams and wetlands have been delineated and buffered as required by Town, State and Federal agencies. The site is located within the Neuse River Basin. Any impacts requiring permits shall be obtained and permitted through the Town of Zebulon, NC Division of Water Resources and US Army Corps of Engineers as applicable.

No special flood hazard areas are located onsite per FEMA FIRM Map 3720270500k & 3720270400L dated 7/19/2022.

## ~~11.0~~ 11.0 Pocket Parks and Open Space

Active and passive open spaces and recreational features will provide the residents with excellent on-site amenities. An integrated system of walking trails traverses open space and environmentally sensitive areas providing a unique amenity for the development. The development provides over eleven acres of open space, including over five acres of active open space. An on-site swimming pool and clubhouse provide pedestrian accessible amenities for the residents of the development.

### Pool:

- Minimum 1,000 square foot water surface area

### Clubhouse:

- ~~Minimum 1,500 square foot clubhouse without kitchen~~
- No meeting space, bathrooms and changing rooms only

### Tot Lot:

- Minimum 600 square feet including ASTM fall zones
- IPEMA Certified Playground Equipment
- Target age: 2-12 years

### Yard Games:

- At least one amenity area shall provide a yard game, such as cornhole or outdoor ping pong
- Target age: 12+

**Dog Park:**

- Minimum 6,000 square feet of fenced area
- Fence shall be a minimum of 4' tall galvanized or vinyl-coated chain link fence
- Shall include a minimum of two benches, one trash can and one dog waste station

### Pocket Park:

- Minimum of 8,000 square feet of area for multi-purpose play
- May include benches, paths, trashcans and enhanced landscaping
- Located adjacent to the greenway, along the Arendell/Wakefield St connector
- Pollinator Garden

### Private Trails:

- Minimum 6' wide naturepaved trail connecting from sidewalk system to Public Greenway as illustrated on Master Plan. At least two (2) dog waste stations and three (3) exercise stations will be provided along trails.

## 12.0 Homeowner's Association

Prior to the issuance of the first certificate of occupancy for the development, a Homeowner's Association (HOA) shall be formed to govern the affairs of the development. The HOA shall be responsible for maintaining the common areas of the development including any shared stormwater facilities, landscaping, hardscape structures (such as signage, irrigation, lighting, and fountains) and recreation amenities. The Homeowners Association shall appoint two residents to the advisory board at 25% resident occupied, two residents at 50% occupied and two residents at 75% occupied.

## 13.0 Residential Lot Landscaping

Individual residential lots shall be landscaped per Town of Zebulon UDO for foundation plantings and site landscaping.

Foundation plantings consisting of evergreen shrubs or decorative grasses with a minimum height of 18 inches shall be located within 10 feet of any foundation wall visible from a public street excluding alleys. Shrubs shall maintain a maximum on-center placement of three feet.

Site landscaping consisting of one canopy tree for every 2,000 square feet of lot area is required. Canopy trees may be located anywhere within the residential lot except where limited by easements, sight distance triangles or buffer areas.

HVACs and ground-based mechanical equipment shall be screened utilizing evergreen shrubs on sides visible from a public street.

## ~~12.0~~14.0 Consistency with Comprehensive Plan and Land Use Map

Zebulon South PD is consistent with the Town of Zebulon Comprehensive Plan and Land Use Map goals and objectives. The development is located in SR and GR land use categories where PD zoning is a recommended land use type particularly where a mix of housing types and varying densities is proposed.

Proposing both single-family detached and attached product supports the Town's desire for a variety of housing types and price points. This draws new residents and provides additional housing choices for existing residents.

The site design incorporates in a variety of lot sizes supporting the goal of increasing a diverse housing stock for the Town. The variety ensures additional housing choices as well as a variety of price points.

Providing more concentrated development while preserving environmentally sensitive areas and perimeter buffers provides a transition to the existing single-family homes and agricultural properties adjacent to the development.

The integrated system of streets, sidewalks, trails and greenways provide a cohesive pedestrian and vehicular network adhering to the Town's Comprehensive Transportation Plan and provided a thoughtfully planned neighborhood.

### ~~13.0~~ 15.0 Compliance with the UDO

~~Zebulon South PD will comply with all other relevant portions of the Town of Zebulon Unified Development Ordinance.~~

This Master Plan shall be the primary governing document for the development of Zebulon South PD. All standards and regulations in this Master Plan shall control over general standards of the UDO. Provided, however, that if a specific regulation is not addressed in this Master Plan, UDO regulations shall control. Zebulon South PD will comply with all other relevant portions of the Town of Zebulon Unified Development Ordinance.

### 16.0 Preliminary Residential Plan Review

Pursuant to UDO Section 3.5.5.B.4, the applicant requests an exemption from subsequent residential preliminary plan review. This PD includes a master plan that is detailed and meets the requirements for a residential preliminary plan. Therefore, upon approval of this PD, the applicant shall be exempt from subsequent residential preliminary plan review.

### ~~14.0~~ 17.0 Additional Zoning Conditions (not applicable to Land Dedication Parcel)

In addition to conditions contained throughout the visual and written document, additional written voluntary conditions have been offered to ensure a quality development.

- ~~1. Uses shall be limited to single family detached, single family attached and permitted accessory uses.~~
- ~~2. Minimum driveway stem length shall be 20'.~~
- ~~3. The development shall utilize mass grading.~~



1. ~~4.~~ Single family detached rear load lots shall have a minimum lot size of 4,800 sf.
2. ~~5.~~ Single family detached front load lots shall have a minimum lot size of 6,000 sf.
3. ~~6.~~ Single family attached lots shall have a minimum lot size of ~~2,000~~ 1,260 sf.
4. The minimum lot width for front loaded lots shall be 50' reduced from 70'.
5. All single family detached rear loaded homes shall have a sidewalk connection from the front door or porch to the public sidewalk.
6. The clubhouse and pool shall be completed before the 150<sup>th</sup> Certificate of Occupancy for any dwelling is issued.
8. Zebulon South will apply a maximum 35% impervious requirement for the development as a whole (based on total acreage).
9. The applicant commits to provide a minimum 15% Tree Save, three times the minimum requirement.
10. All planned improvements to roadways and right-of-way owned and maintained by the NC Department of Transportation (NCDOT), including improvements that require off-site property acquisition and/or easements, are subject to NCDOT approval during subsequent phases of development. If any improvements are not approved by NCDOT, alternative designs may be administratively approved by Town staff.
11. If a bus pickup location is approved by Wake County Public Schools in the neighborhood, one bust stop area, including a shelter, a bench, a trash can, and at least 5 bicycle spaces shall be provided with the second phase of development.
12. To support community gatherings and active neighborhoods, the applicant commits to providing one neighborhood congregation area, to include:
  - a. a minimum of two (2) larger parking spaces designed for food trucks or delivery vehicles (mobile vendors), with an electrical outlet available;
  - b. one (1) covered seating area with at least 10 designated public seating spaces will be provided adjacent to the Mobile Vendor spaces.
  - c. at least one (1) outdoor grill will be provided adjacent to the covered seating area.

This area may be classified as active open space under UDO § 5.7.
13. The development shall include a minimum of five (5) affordable single-family detached ownership units (the "Affordable Units"), which shall be located on different streets in the neighborhood. The Developer shall vet qualified buyers for the Affordable Units and shall ensure, in the first sale of the Affordable Units, that they are affordable households earning no more than eighty percent (80%) of the Area Median Income (AMI). Prior to Subdivision closeout, the Developer shall submit documentation and an affidavit of

compliance with this zoning condition. Following the first sale of each of the Affordable Units, Developer shall have no further obligations under this condition.

14. Final alignment of the greenway will be reviewed and approved by TRC during construction drawings.

15. Unless not approved by Wake County, the grave site(s) located at 0 N Arendell Ave (PIN 2705513114) shall be relocated prior to approval of construction drawings.

## 18.0 Land Dedication Parcel

The owner shall designate, for the benefit of the Town, a minimum of 2 acres of land (excluding right-of-way dedication and easements required for frontage improvements) located on Hwy 96/Arendell Ave abutting the property lines of Wake County PINs 2705410911 (Deed book 16651/page 25) and 2705520074 (Deed book 9289/page 1838) for the future development of a Town of Zebulon Fire Station or other public-serving use, as determined by the Town (the "Land Dedication Parcel"). The location of the Land Dedication Parcel is identified on the Master Plan, and the surveyed boundary line will be identified and approved by the Town prior to Final Plat approval for the phase of development adjacent to the Land Dedication Parcel. After approval of the boundary line, but no later than the approval of the Final Plat for the phase of development adjacent to the Land Dedication Parcel, the developer shall dedicate to the Town an easement (or superior title) by deed or other instrument, approved by the Town Attorney as to form, for the Land Dedication Parcel. The Residential Development Area developer shall construct all curb, gutter, road widening and pedestrian improvements on Arendell Ave for the Land Dedication Parcel and stub potable water and sanitary sewer to the Land Dedication Parcel prior to plat recordation, or provide a surety for completion thereof. The actual design, construction, and installation of the fire station and associated amenities, or other permitted public use as determined by the Town, shall be done by the Town, or another public entity and are not commitments of this zoning case. This zoning condition may also be satisfied by the Town Manager, or his/her designee, stating, in writing, that the Town does not wish to accept the land for the development of a fire station or other public use.

## 19.0 Transportation Impact Analysis Summary

A Traffic Impact Analysis (TIA) was conducted by the Timmons Group in accordance with the Zebulon (Town) Unified Development Ordinance (UDO) and the North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. A full copy of the TIA was submitted for review and approval with the PD submittal, and a voluntary additional analysis incorporating anticipated traffic from the nearby recently-approved Chamblee Lake PD was submitted for review and approval with the applicant's final master plan submittal. The listed recommended improvements are subject to further review and final approval by NCDOT.

### Study Area

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

Zebulon South  
Zebulon South #49084  
Timmons Group  
PPAB 10510911, 10510911

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- NC 96 and Site Access #1
- NC 96 and Site Access #2
- S Wakefield St and Site Access # 3
- NC 97 and S Wakefield St
- NC 97 and NC 96
- NC 96 and W Barbee St
- NC 96 and Perry Curtis Rd

## **Recommended Improvements**

Based on the analysis of the TIA (including improvements to be installed by the Chamblee Lake development), the following improvements have been recommended to be constructed by the developer to both mitigate traffic impacts by the proposed development.

### NC 96 and Site Access #1

- Site Access 1 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.
- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

### NC 96 and Site Access #2

- Site Access 2 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.
- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

### Wakefield St and Site Access #3

- Site Access 3 to include a two-lane cross-section with one westbound egress lane and one eastbound ingress lane.
- Provide stop control on the westbound approach of the site drive.
- Construct a southbound left-turn lane on Wakefield Street with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.

## **19.1 Additional Transportation & Pedestrian Safety Enhancements**

### **Safety Enhancements at Pulley Gordon Road/Morphus Bridge Road Intersection**

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the Pulley Gordon Road/Morphus Bridge Road intersection in the existing right-of-way and pavement and right-of-way and frontage improvements required to be dedicated by the developer at this intersection. These safety enhancements are subject to approval by the Technical Review Committee and NCDOT.

**Safety Enhancements on NC 96 between Zebulon Community Park and Zebulon Community Center**

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the section of NC 96 between the entrance to the Zebulon Community Park and entrance to the Zebulon Community Center, in the existing right-of-way and pavement. These enhancements will include a crosswalk and/or appropriate warning signage. These safety enhancements is subject to approval by the Technical Review Committee and NCDOT.

**MUNICIPAL UTILITY ALLOCATION POLICY**

**Statement of Purpose and Goals**

***Introduction***

Drinking water supplies throughout the greater City of Raleigh distribution system are finite, subject to disruption by drought and/or other calamity and Zebulon’s allocation is contractually limited. The Town staff, the Planning Board, and the Board of Commissioners have given a great deal of thought and study as to the best utilization of this valuable resource to benefit current and future citizens.

The Town of Zebulon’s municipal water and sewer capacity is a valuable resource that must be conserved and apportioned to new development projects that promote the Town’s policy of ensuring a diversified tax base and housing supply. Such an allocation policy will tend to promote diversity of housing available to a wide cross section of citizens of diverse socio-economic backgrounds and promote economic viability and sustainability by providing for retail and other commercial development within the Town of Zebulon.

In order to preserve and enhance property values, manage its limited water supply as a vital natural resource, promote economic development, and incentivize smart growth practices, the allocation of Zebulon’s potable water capacity shall hereafter be in accordance with this policy.

***Land Use and the Tax Base***

The local government expense of providing fire and police protection, schools, parks, social services, water and sewage systems and other essential public services to residential neighborhoods is generally greater than the ad valorem tax revenue generated by such neighborhoods. On the other hand, the cost of providing services to commercial and industrial development is generally less than the tax revenue accruing to the local government. Having a predominantly residential tax base would require the Town of Zebulon over time to assess a higher tax levy to raise funds to provide essential services or to reduce the level of public services provided. This is one reason among many why local governments including Zebulon strive to achieve a balance of both residential and non-residential growth.

Zebulon’s historical development is transitioning from industrial to residential, leading to a current tax base of approximately 40% residential and 60% commercial/industrial. The following table shows Zebulon’s tax base over the past five years <sup>1</sup>

**Zebulon Tax Base (Past Five Years)**

Fiscal Year	Commercial	Residential
2021-2022	60%	40%
2020-2021	65%	35%
2019-2020	72%	28%
2018-2019	73%	27%
2017-2018	71%	29%

<sup>1</sup> “Tax Base Components | Wake County Government,” *Wake County North Carolina*, <https://www.wakegov.com/departments-government/tax-administration/data-files-statistics-and-reports/tax-base-components>

As shown in the table above, the residential tax base has steadily increased proportionally over the past five years. This trend in the tax base data, combined with the vested planned residential development in the coming years, demonstrates the need for the Town to address this shift through policy. The Zebulon Board of Commissioners believes that it is fiscally responsible and otherwise in the public interest to promote and encourage non-residential development in the jurisdiction as an alternative to rapid residential development to keep the ratio between the two development types well balanced. A goal of maintaining a tax base of 60% residential and 40% commercial/industrial is hereby established.

***Development Goals for the Full Build-Out of Zebulon***

Communities without a wide variety of housing types and styles also put pressure on the Wake County Public School System which remains committed to having students of a wide range of socio-economic backgrounds attend each local school. In addition to the goal of maintaining a balanced tax base, the Town of Zebulon is committed to achieving a balance of housing types within its jurisdiction.

This commitment is consistent with both the Town’s Strategic Plan and Comprehensive Plan. The *Town of Zebulon: Vision 2030 Strategic Plan* lists “Growing Smart” as one of its three focus areas, calling for the planning of appropriate land uses and affordability of the community. The *Grow Zebulon Comprehensive Land Use Plan* identifies six guiding principles for the town. Two of those principles are “Zebulon will be BALANCED” and “Zebulon will be PRUDENT.” A balance should be achieved for the Town’s tax base, its land uses, and its housing types to allow for an affordable community with employment and business opportunities that will help the community prosper. The achievement of balance in Zebulon will contribute to the Town being prudent. As stated previously, a local government’s cost of providing services to commercial properties is generally less than that of residential properties. Having a balanced tax base that is not proportionally over-saturated with residential properties will contribute to keeping the Town financially sound.

Below are three development goals that are integral to the utility allocation policy and the future of the Town. These development goals apply to the entire, future Zebulon jurisdiction including the ETJ, short-range and long-range urban service areas.

**GOAL #1:** Maintain 60%-40% ratio of residential to non-residential tax values.

<u>Upon Adoption-January 2021</u> 60% Residential - 40% Non-Residential
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**GOAL #2:** Residential Housing Percentage Breakdown  
SFD|TH|MF – 75%|10%|15% (Note – Duplex counted as MF)

<u>Upon Adoption-January 2021</u> 80.5%   0.5%   19%
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**GOAL #3:** Encourage Mixed Use Development to improve pedestrian connectivity to non-residential activity.

## Policy and Procedures

### ***Water Allocation***

All existing parcels of real property within the corporate limits of Zebulon, regardless of proposed acreage, shape, or location as of the adoption of this ordinance are entitled to **115 gallons per day** of water allocation to build and sustain a single family or a limited business or commercial use. No additional water allocation will be awarded for proposed development except in accordance with the requirements of this policy.

### ***Wastewater Connection***

All projects considered for utility allocation must provide a wastewater system connection with adequate receiving capacity, as determined by the Wake County Health Department and/or City of Raleigh Public Utilities Department and approved by the Town of Zebulon Planning Director.

### ***General Conditions & Requirements***

- All proposed projects must be within the existing corporate limits or have filed a valid and complete petition for Voluntary Annexation.
- All proposed projects under consideration must have a complete application submitted for the appropriate Master Plan, Subdivision, Site Plan, Special Use Permit, Conditional Zoning Request, Zoning Compliance Permit, Building Permit, or any other necessary approval.
- All projects are subject to a Utility Allocation or Developer's Agreement approved by the Town's Board of Commissioners. If the Developer/Applicant fails to meet all terms of that agreement the unused allocation will be reclaimed, no new building permits will be issued, and no new connections to the water or wastewater systems will be permitted. Active building permits will have certificates of occupancy held until mitigating measures are agreed to by all parties.
- Projects with proven vested rights upon adoption of this ordinance will be permitted to finish their projects as previously approved.
- Public water may be utilized for irrigation purposes so long as the Primary Use associated with the site has previously gained water allocation through the Town.
- Any third parties who buy land to build upon are bound by the approved Utility Allocation Agreement or Development Agreement for that property. If the agreement is not fulfilled, the above terms and conditions still apply regardless of who owns the land.

### ***Compliance Required***

This policy allocates municipal water in gallons per day for new development proposals, master plans, site plans, building plans, and/or structures seeking construction approval. Each phase of a phased development must comply with the terms and development schedule of an approved Utility Allocation Agreement before the next phase can begin or the development risks loss of previously reserved allocation.

Previously dedicated but unused allocation can be reclaimed by the Town's Board of Commissioners for:

- (1) the lack of compliance with any existing Utility Allocation or Developer's Agreement;
- (2) violation of applicable town policy provision, ordinance standard, condition of approval;
- (3) violation of federal or state regulation; or
- (4) other good cause.

### *Utility Allocation Application Process*

Upon receiving a new development proposal requesting water capacity, the Planning Staff shall direct the Developer/Applicant to demonstrate the project's qualifications. A Developer/Applicant shall state on the appropriate application, and stipulate within an approved Utility Allocation Agreement, the use or uses proposed to be built as part of the project along with the construction design and materials. Town action on the request will be deferred until the application is complete and the requested information has been provided.

Proposed projects shall complete the UTILITY ALLOCATION WORKSHEET according to its instructions to determine the total number of points achieved. The Utility Allocation Application package will be reviewed for completeness and compliance by the Technical Review Committee (TRC) in conjunction with the applicable development approval for the subject property (conditional rezoning, planned development, site plan, etc.).

Qualification for water allocation is judged by:

- The level of developer investment
- Anticipated increases in the Town's ad valorem tax base
- Construction and dedication of public infrastructure
- Provision of employment opportunities for Zebulon citizens
- Provisions of diversified housing stock
- Preservation of open space
- Protection of existing tree canopy
- Conservation of existing habitat
- The provision of recreational amenities for current or future Zebulon residents

Projects must be awarded **60 TOTAL POINTS** or more to merit water allocation.

Points are awarded in two categories, BASE POINTS and BONUS POINTS. BONUS POINTS are broken down into six categories.

1. Nonconformity Abatement and Public Infrastructure Improvements
2. Green Development Standards
3. Gateway and Transit Improvements
4. Amenities
5. Affordable Housing
6. Other

Unless a project can gain all necessary BONUS POINTS from a single improvement identified in the approved list, improvements must be made from at least two of the categories of BONUS POINTS.

All features and/or improvements that earn a projects BONUS POINTS must be clearly shown on a development plan for each application type.



### ***Expiration of Allocation Award***

A developer/applicant who has secured allocation according to this policy and hasn't progressed in construction plan approval, building permit approval, or on-site construction for a period of 12 months will lose the award of allocation without benefit.

### ***Annual Review of Policy & Appeals***

This policy shall be reviewed in January of each year and, when appropriate, readjusted by the Town's Board of Commissioners. The Town's overall progress on policy goals will be considered and the multipliers and/or point thresholds readjusted accordingly.

Appeals of any provision of this ordinance shall be decided upon by the Town's Board of Commissioners upon receiving a recommendation from the Planning Board.

### **BASE POINTS: List of Preferred Land Uses and Required Characteristics:**

The uses listed below have been determined to be the most desirable and important uses for the Town of Zebulon to promote and maintain economic and housing diversity. Only projects that completely meet the stated performance characteristics will be considered for utility allocation. Please select one of the following Base Point classifications.

60 Base Points	<b>Single Family Homes (Expedited Subdivision or Recombination)</b> Newly constructed Single Family Homes built upon new lots created via the minor subdivision, exempt subdivision, expedited subdivision (3 or fewer lots) or recombination process.
60 Base Points	<b>Change of Use</b> This category captures renovation, rehabilitation, up-fit or retrofit of existing buildings or portions of buildings that pre-date this policy and require a code summary sheet, change in building occupancy, certificate of occupancy, building permit and/or building inspections and do not increase the utility demand from the previous use of the building.
45 Base Points	<b>Business Office/Finance/ Insurance / Professional Services Center - Large</b> Qualifying projects must exceed 100,000 square feet of heated floor space and create at least 150 employment positions that exceed the average annual Wake County salary according to Wake County Economic Development or the Employment Security Commission. Employees perform professional, scientific, and technical services for others. Such services require a high degree of expertise and training and provide high salaried employment opportunities. Examples include software engineering, legal, medical, accounting, consulting, architectural, biomedical, chemical, research and development, and administrative services. Finance or Insurance Centers shall also pool financial risks by underwriting insurance and annuities. Some establishments support employee benefit programs. Examples include bank or credit union headquarters, brokerages, investments, insurance, financing, and data processing establishments.
45 Base Points	<b>Manufacturing/Industrial Employment Center</b> Manufacturing or Industrial establishments in this category exceed 200,000 square feet of floor space located in plants, factories, or mills and employ power-

	<p>driven machines and materials-handling equipment. They may also employ workers who assemble or create new products by hand, without the characteristic machinery-intensive enterprise. Many manufacturing establishments process products of agriculture, forestry, fishing, mining, or quarrying as well as products of other manufacturing establishments. Most manufacturing establishments have some form of captive services (e.g., research and development, and administrative operations, such as accounting, payroll, or management) in conjunction on-site.</p>
45 Base Points	<p><b>Governmental Uses/Public Administration</b>  This category encompasses centers for all government functions; it includes federal, state, and local government agencies that administer, oversee, and manage public programs and budgets and have executive, legislative, or judicial authority. Establishments develop policy, create laws, adjudicate civil and criminal legal cases, and provide for public safety and national defense.</p>
40 Base Points	<p><b>Single Use Retail</b>  Newly constructed single use, stand-alone building used primarily for retail, restaurant, or similar commercial use.</p>
40 Base Points	<p><b>Hotels, Motels, or other Accommodation Service Establishments</b>  This category serves lodging and short-term accommodations for travelers. They may offer a wide range of services, from overnight sleeping space to full-service hotel suites. They may offer these services in conjunction with other activities, such as entertainment or recreation. Stays in these establishments are generally less than one month. This classification does not include boarding or rooming houses.</p>
40 Base Points	<p><b>Arts/Entertainment/Museums</b>  These establishments operate facilities or provide services for a variety of cultural, entertainment, and performing art functions. Establishments include those that produce, promote, or participate in live performances, events, or exhibits intended for public viewing; those that preserve and exhibit objects and sites of historical, cultural, or educational interest; and those that operate facilities or provide services to serve activities associated with the aforementioned.</p>
40 Base Points	<p><b>Amusement, Sports or Recreational Establishment</b>  Establishments in this category operate either indoor or outdoor facilities offering family activities (i.e. sports, recreation, or amusement) and provide services, such as facilitating amusement in places operated by others, operating recreational sports groups and leagues. Examples include golf courses, indoor sports venues, bowling alleys, miniature golf courses, athletic clubs, skating rinks and arcades. This category may be used in conjunction with a commercial or residential development as a mixed use development.</p>
40 Base Points	<p><b>Mixed Use Development (Transit Oriented)</b>  Newly constructed or substantially rehabilitated collection of vertically mixed retail, office and residential uses in multi-story buildings centered within a one-half mile radius of an existing rail or bus transit station or the intersection of</p>

	Horton Street and North Arendell Avenue in Downtown Zebulon. In order to qualify as mixed use, developments must dedicate at least one-third of the total heated square footage to residential use and the remainder to a mix of retail and office uses. All three use types must be represented and at least 10% of the heated square footage must be dedicated to street level, storefront retail uses.
40 Base Points	<b>Mixed Use Development (Urban Infill)</b> Newly constructed or substantially rehabilitated collection of mixed retail, office and residential uses in a multi-story building on a previously developed parcel within the corporate limits. In order to qualify as mixed use, developments must dedicate at least one-third of the total heated square footage to residential use and the remainder to a mix of retail and office uses. All three use types must be represented and at least 10% of the heated square footage must be dedicated to street level, storefront retail uses.
40 Base Points	<b>Mixed Use Development (Greenfield)</b> Newly constructed collection of mixed retail, office and residential uses in a multi-story building or buildings on a previously undeveloped parcel. In order to qualify as mixed use, developments must dedicate at least one-third of the total heated square footage to residential use and the remainder to a mix of retail and office uses. All three use types must be represented and at least 10% of the heated square footage must be dedicated to street level, storefront retail uses.
35 Base Points	<b>Housing Services for the Elderly Establishments</b> This category offers housing services for the aged, not requiring a license from the North Carolina Department of Health and Human Services, such as independent retirement housing, multi-unit assisted housing with services (MAHS), and continuing care retirement centers. All facilities must provide, but not necessarily be limited to, the following services/facilities: On-site laundry facilities, on site management, guaranteed transportation services at least four days per week, on-site exercise facilities, on-site computer access, and a clubhouse/common lounge area for all residents.
35 Base Points	<b>Mixture of Use Development (Retail/Office-Institutional/Commercial)</b> Newly constructed collection of horizontally arranged uses including retail, office-institutional and commercial within a master planned project on a previously undeveloped parcel or parcels totaling at least 10 acres. Mixture of use projects must include at least two (2) use types with at least 25% of the space devoted to each use type included in the development.
30 Base Points	<b>Retail/Commercial Center</b> Newly constructed center of at least 50,000 square feet, typically containing an anchor such as a grocery store and other smaller spaces and/or outparcels for subordinate uses. Uses are entirely consumer-driven and include all manner of retail, service and office possibilities.
30 Base Points	<b>Business Office/Finance/ Insurance / Professional Services Center – Medium</b> Qualifying projects must exceed 50,000 square feet of heated floor space and create at least 75 employment positions that exceed the average annual Wake County salary according to Wake County Economic Development or the

	<p>Employment Security Commission. Employees perform professional, scientific, and technical services for others. Such services require a high degree of expertise and training and provide high salaried employment opportunities. Examples include software engineering, legal, medical, accounting, consulting, architectural, biomedical, chemical, research and development, and administrative services. Finance or Insurance Centers shall also pool financial risks by underwriting insurance and annuities. Some establishments support employee benefit programs. Examples include bank or credit union headquarters, brokerages, investments, insurance, financing, and data processing establishments.</p>
30 Base Points	<p><b>Business Office/Finance/ Insurance / Professional Services Center – Small</b>  Qualifying projects 50,000 square feet of heated floor space or less. Employees perform professional, scientific, and technical services for others. Such services require a high degree of expertise and training and provide high salaried employment opportunities. Examples include software engineering, legal, medical, accounting, consulting, architectural, biomedical, chemical, research and development, and administrative services. Finance or Insurance Centers shall also pool financial risks by underwriting insurance and annuities. Some establishments support employee benefit programs. Examples include bank or credit union headquarters, brokerages, investments, insurance, financing, and data processing establishments.</p>
30 Base Points	<p><b>Multi-Tenant Retail Center</b>  Newly constructed center 50,000 square feet or less, typically containing a more than one tenant space within a single structure. Uses are entirely consumer-driven and include all manner of retail, service and office possibilities.</p>
30 Base Points	<p><b>Single Use Office</b>  Newly constructed single use, stand-alone building used primarily for office and professional.</p>
30 Base Points	<p><b>Bungalow Court or Pocket Neighborhood</b>  Newly constructed Bungalow Court or Pocket Neighborhood per the standards of the Unified Development Ordinance.</p>
30 Base Points	<p><b>Distribution/Trucking Center</b>  Newly constructed center of at least 500,000 square feet where products and resources are transported to and delivered from via truck or rail.</p>
25 Base Points	<p><b>Warehouse</b>  Newly constructed center of at least 500,000 square feet where products and resources are stored.</p>
25 Base Points	<p><b>Religious Institutions</b>  Any facility such as a church, temple, synagogue, mosque or monastery used for worship by a non-profit organization and their customarily related uses.</p>
20 Base Points	<p><b>Intensive Industrial Uses:</b>  Uses classified as Special Land Uses within the Industrial Classification.</p>

20 Base Points	<b>Multi-Family Residential &amp; Condo Units</b>
20 Base Points	<b>Major Subdivision 4- 25 Lots</b> Any subdivision of land of four (4) – 25 Lots.
10 Base Points	<b>Major Subdivision 26 lots or more</b> Any subdivision of land of 26 or more lots. <span style="float: right; color: red;">10</span>
Board Determination	<b>All Other Uses Not Categorized</b> This category of use captures all other uses not categorized elsewhere. Allocations for such uses are left to the discretion of the Town’s Board of Commissioners upon recommendation of the Planning Board and acted on a case-by-case basis.

## BONUS POINTS

Proposed projects can gain BONUS POINTS by agreeing to provide any of the following items over and above the UDO or Standard Specification requirements for their development proposal.

NOTE: No bonus points are given for UDO requirements.

### CATEGORY 1 – Non-Conformity Abatement and Public Infrastructure Improvements

<b>Section 1A - Abatement of Nonconformities</b>		(Max - 3 points)
	Abatement of any existing non-conforming structures	3
	Abatement of any existing non-conforming use of land	2
	Abatement of any existing non-conforming lots	1

<b>Section 1B - Roadway Infrastructure Not Warranted by TIA/UDO/CTP</b>		(Max - 10 points)
	Construction of full cross section of existing off-site public street	5
	Nearby intersection improvements	5
	Traffic signal improvements	4
	Signage or striping improvements	1

<b>Section 1C - Off-Site Public Greenway Improvements</b>		(Max - 10 points)
	Construct more than 4000 linear feet of 10-foot-wide path	10
	Construct more than 3000 linear feet of 10-foot-wide path	8
	Construct more than 2000 linear feet of 10-foot-wide path	6
	Construct more than 1000 linear feet of 10-foot-wide path	4
	Construct 500 to 1000 linear feet of 10-foot-wide path	2

<b>Section 1D – Off-Site Bike-Ped Improvements</b>		(Max – 5 points)
	Construction of off-site sidewalk improvements (Subject to TRC Approval)	2
	Construction of off-site bike lane improvements (Subject to TRC Approval)	3

### CATEGORY 2. Green Development Standards/ Building & Site Design

<b>Section 2A - Conservation of Natural Habitat Meeting Active Open Space Requirements as Defined in the UDO</b>		(Max - 10 points)
	One point per acre up to 10 acres	1 - 10

<b>Section 2B - Parking</b>		(Max – 15 points)
	Structured Parking Facilities - must reduce footprint by 20%	10
	EV Charging Stations (two-port)	5
	Provision of on-street public parking (1 point per stall up to 10 Max)	1 - 10 <span style="color: red;">10</span>

<b>Section 2C - Stormwater SCM's</b>		(Max – 10 points)
	Stormwater - Restored Riparian Buffer	10
	Construct a fountain or other stormwater amenity within the BMP/SCM (as approved by Staff)	4 <span style="color: red;">4</span>
	Stormwater - Landscaped Green Roof	5
	Stormwater - Underground capture system for on-site irrigation	5
	Stormwater - Bioretention	5
	Stormwater - Wetland	5 <span style="color: red;">5</span>
	Exclusive use of porous pavement in parking areas where suitable	2

<b>Section 2D - Building/Site Design</b>		(Max - 20 points)
	Compliance with residential design guidelines per Section 5.2 of the UDO	10 <span style="color: red;">10</span>
	Non-Residential building design that incorporates an active upper story.	5
	Pedestrian oriented and walkable site design which promotes alternatives to vehicular travel within the development. (Subject to TRC Approval)	5

<b>Section 2E - Infill/Redevelopment</b>		(Max – 16 points)
	Development or Redevelopment within DTC	10
	Development or Redevelopment within DTP	6
	Redevelopment of previously vacant building space over 20,000 square feet	6
	Redevelopment of previously vacant building space under 20,000 square feet	5

<b>Section 2F - Historic Preservation</b>		
	Historic Structure Preservation via Deed Restriction (Determined by TRC)	10
	Restoration of Historic Structure (Must be approved by TRC)	5

<b>Section 2G – LEED Certification</b>		(Max – 10 points)
	LEED Certification for Neighborhood Development (LEED ND)	10
	Platinum LEED Certification	10
	Gold LEED Certification	8
	Silver LEED Certification	6
	Bronze LEED Certification	4
	LEED Certified Certification	2

### CATEGORY 3 – Outdoor Enhancement and Transit Improvements

<b>Section 3A – Outdoor Enhancement</b>		(Max – 12 points)
	Construction of a Parkway Street Section on a Collector level street	5

Construction or Preservation of Gateway Landscaping or Structure (Subject to Comprehensive Plan Consistency and TRC approval)	5
Outdoor Display of Public Art (Subject to TRC Approval)	4
Public Facing Outdoor Mural (Subject to TRC Approval)	4
Maintenance of Roadside Gateway Plant Bed (requires maintenance agreement)	3
Planting Pollinator Garden (225 Square Foot Minimum)	3 <b>3</b>
Exclusive use of xeriscaping techniques and drought tolerant species	3
Enhanced Roadside Landscaping (Subject to TRC Approval)	2
Enhanced Buffer Landscaping (Subject to TRC Approval)	2
Construction of a Parkway Street Section on a Local level street	2
Installation of Native Shade Tree Species (per Tree up to 10 Trees)	1 <b>9</b>

<b>Section 3B – Transit (Pursuant to location being adjacent to a planned or active transit route)</b>	(Max - 8 points)
Provision of more than 50 designated Park & Ride Stalls	8
Provision of 25 designated Park & Ride Stalls	5
Provision of 10 designated Park & Ride Stalls	3
Provision of mass transit easement w/ structure (bus stop with shelter & bench)	2

#### CATEGORY 4 - Amenities

<b>Section 4A - Private Greenway</b>	(Max - 3 points)
Construction of more than 3000 linear feet private greenway meeting Town of Zebulon standards	3
Construction of more than 2000 linear feet of private greenway meeting Town of Zebulon standards	2 <b>2</b>
Construction of more than 1000 linear feet of private greenway meeting Town of Zebulon standards	1

<b>Section 4B – Pool (Combinations may be approved by TRC)</b>	(Max - 8 points)
Olympic Pool and Aquatic Center	8
Junior Olympic Pool	5
Lap Pool (four lane minimum)	3
Resort Style Pool	2 <b>2</b>
Any Other Pool	1

<b>Section 4C - Outdoor Deck/Patio</b>	(Max - 3 points)
Deck/Patio - More than 3000 square feet	3
Deck/Patio - More than 2000 square feet	2
Deck/Patio - More than 1000 square feet	1 <b>1</b>

<b>Section 4D - Pool Amenities</b>	(Max - 2 points)
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Jacuzzi/Hot Tub/Whirlpool	2
Water Playground with apparatus	2
Sauna/Steam room	2

<b>Section 4E - Clubhouse</b>		(Max - 10 points)
Commercial Coffee Shop with at least 10 designated public seating spaces.	10	
With full kitchen and over 4000 square feet of meeting space	10	
With full kitchen and less than 4000 square feet of meeting space	9	
Meeting space without kitchen more than 3500 square feet	8	
Meeting space without kitchen 2500 - 3499 square feet	7	
Meeting Space without kitchen 1500 - 2499 square feet	5	
Meeting Space without kitchen less than 1500 square feet	4	
No meeting space, bathrooms and changing rooms only	3	3
Outdoor Kitchen or Grills	2	2

<b>Section 4F - Additional Active Recreation</b>		(Max - 10 points)
Gymnasium (regulation size indoor basketball court)	10	
Baseball/Softball Field (regulation size)	5	
Football/Soccer Field (regulation size)	5	
Skate Park	5	
Tennis Courts (two regulation courts, fenced)	5	
Multi-Use Hardcourt (two regulation basketball courts, street hockey, fenced)	5	
Pickleball Court (three regulation courts, fenced)	5	
Pocket Park – 5,000 square feet	3	3
IPEMA Certified Playground Equipment	4	4
Lighted Field of Play for nighttime use	3	
Electronic Scoreboard or Covered Dugouts or Bleachers	3	
Community Garden – 15-foot by 15-foot, with water access and potting shed.	3	

<b>Section 4G – Additional Urban Open Space Enhancements (Within Non Residential Zoning Districts)</b>		(Max – 10 points)
Fountain	2	
Canopy Including Fixed Permanent Seating	2	
Drinking Fountain with Pet Fountain	2	
Permanent Game Tables	1	
Permanent Tables with Shade Cover	1	
All Weather Bulletin Board	1	
Covered or Internal Bicycle Parking	1	
Artist-Design Bicycle Racks	1	
Little Free Library	1	
Drinking Fountain	1	
Public Work Bike Stand With Tools	1	

CATEGORY 5 – Affordable Housing

<b>Inclusion of a percentage of the provided housing stock of a proposed development cost no more than 30% of a household income not exceeding 80% of the Area Median Income (AMI)</b>		(Max – 10 Points)
	15% Affordable Housing	10
	10% Affordable Housing	5

CATEGORY 6 – Other

(Max 5 Points)

	Integrated public safety operation systems (EX. Flock Safety or others as approved by the Police Department)	3
	Smart Waste and Recycling Stations	2

Total 68



Date: January 23, 2024

To: Adam Culpepper, Senior Planner, Town of Zebulon  
Andrew Suriano, Managing Partner, Deacon Development Group  
Beth Blackmon, Senior Project Manager, Timmons Group  
Jeff Hochanadel, Principal, Timmons Group  
Ashley Honeycutt Terrazas, Associate, Parker Poe

From: Sravya Suryadevara, PE, Traffic Engineering Director, WSP USA Inc.

Subject: Zebulon South Supplemental Traffic Impact Analysis Review

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Per your request, WSP has performed a review of the Zebulon South development traffic impact study resubmitted by Timmons Group, dated January 2024 and the supplemental memo, also dated January 2024. We have the following comments:

- Based on the updated site plan, the number of units has changed for the site since the TIA was completed. Please add a note in the body of the TIA report discussing this change and confirming that the analysis is still valid because it is more conservative than the current site plan.
- Please confirm site access locations in the Build Synchro files matches the site plan. If Site Access 2 is within 165 feet of Perry Curtis Road, this access will need to be right-in/right-out only. This is based on the 2003 NCDOT's Policy on Street and Driveway Access.
- For tables 3-1, 3-2, and 5-1 in the TIA and tables 1 and 2 in the supplemental, please provide a footnote to describe the meaning of the “#” symbol in the queue lengths.
- For tables 3-1, 3-2, 5-1, and 5-2 in the TIA and tables 1 and 2 in the supplemental, please designate which intersections are unsignalized/signalized to aid in the differentiation of queues which are in feet and queues which are number of cars.
- For tables 3-1, 3-2, 5-1, and 5-2 in the TIA and tables 1 and 2 in the supplemental, please add units for queues.
- Include NCDOT comments from July 2022 referenced in section 6 in the appendix of the TIA if available.
- Please add a complete list of recommended improvements to the supplemental memo for clarity, even though the recommendations do not change from the TIA.
- The following comment responses were provided by Timmons Group based on the initial submittal review. Please add these explanations in the body of the TIA report to provide a full picture of the analysis methodology:
  - Include discussion on why count data was not balanced between intersections and why Perry Curtis Road volumes were used for site access 1 and 2.  

TG Response: Traffic volumes were not balanced to the presence of commercial site driveways and various side streets. To provide the most accurate analyses, corridor volumes were not balanced. Site Access 1 and 2 volumes were balanced with Perry Curtis due to the driveways' proximities.
  - Please provide justification for the 3% growth rate used for background volume development.  

TG Response: The 3% growth rate is based on published AADTs.



- In the Build scenario turn lane analysis, it's mentioned that both S Wakefield Street and NC 96 will have 2026 AADTs higher than 4,000 vpd. Please clarify if this is based on the existing AADT value and an assumption of growth or if this is based on the existing AADT including an assumed growth rate.

TG Response: NC-96's AADT currently exceeds 4,000 VPD. Per future projections, this value is not projected to decrease. S Wakefield Street AADT projections are based on recent AADT counts (grown at 3% annually to 2026) and 30% of daily site trips on S Wakefield Street north of Site Access 3.

- Site access roads are listed as needing 100-feet of IPS. Please ~~define IPS as internal protected stem in the text and~~ reference the standards that guide this recommendation.

TG Response: ~~IPS was defined as "internal protected stem" in the updated TIA.~~ IPS requirements are defined in the NCDOT's Driveway Manual.

- The alignment of the S Wakefield Street/Morphius Bridge and Pully Gordon Road intersection is not ideal for safe operations, but no improvements are required currently.

We do not anticipate any of the above comments to impact the analysis or recommendations in the TIA. If you have any questions about this review, please do not hesitate to contact me at (984) 389-2944 or [sravya.suryadevara@wsp.com](mailto:sravya.suryadevara@wsp.com).



January 2<sup>nd</sup>, 2023

Michael Clark  
Planning Director  
Town of Zebulon  
1003 N. Arendell Avenue  
Zebulon, NC 27597  
919-823-1808  
mclark@townofzebulon.org

**RE: Zebulon South Memo**

Dear Mr. Clark,

This memorandum is a supplement to the Zebulon South Traffic Impact Analysis (TIA). The TIA was initially scoped with the Town of Zebulon (Town) and NCDOT in March 2022. Originally sealed June 28<sup>th</sup>, 2022, the NCDOT provided final comments on July 26<sup>th</sup>, 2022. On November 27<sup>th</sup>, 2023, WSP provided Town comments to Timmons Group. The TIA was updated and resubmitted (sealed January 2<sup>nd</sup>, 2023). At the time of scoping, there were no approved area developments that would contribute trips during the Background or Build analyses. In the interim, the Chamblee Lake Planned Development TIA was approved. Due to traffic concerns expressed by Town Council and area citizens, the project team determined that additional analyses should be conducted including the proposed Chamblee Lake Planned Development. This memorandum's purpose is to determine 1) the Zebulon South Development site trip impacts to study area intersections (including the Chamblee Lake Planned Development), and 2) if improvement recommendations are changed from the original TIA.

The following intersections were analyzed:

- NC-97 (Gannon Ave) / SR-2349 (South Wakefield Street);
- NC-97 (Gannon Ave) / NC-96 (Arendell Ave);
- NC-96 (Arendell Ave) / SR-2348 (West Barbee Street);
- NC-96 (Arendell Ave) / Site Access 1\*;
- NC-96 (Arendell Ave) / Site Access 2\*;
- NC-96 (Arendell Ave) / SR-2347 (Perry Curtis Road); and
- SR-2349 (South Wakefield Street) / Site Access 3\*.

\* Build conditions only

Upgraded 2026 Background and Build + Improvement AM and PM peak hour capacity analyses were performed including the Chamblee Lake Planned Development site trips. As discussed below, it was determined that with the Chamblee Lake Planned Development site trip addition, all study area intersection approaches are projected to perform acceptably. Therefore, no additional improvement recommendations were necessary.

5410 Trinity Rd. Suite 102 | Raleigh, NC 27607

TEL 919.866.4952 FAX 919.859.5663

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## 2026 Background

**Table 1** below summarizes the intersection LOS and delay based on existing intersection geometry (see **Figure A**) and the 2026 Background traffic volumes (see **Figure D**). 2026 Background volumes were calculated by summing 2026 ambient traffic volumes (**Figure B – Zebulon South TIA Figure 3-1**) and Chamblee Lake Planned Development traffic volumes (**Figure C<sup>^</sup> and Appendix B**). The corresponding SYNCHRO outputs are located in **Appendix A**. As shown in **Table 1**, all intersection approaches are projected to operate acceptably during both 2026 Background peak hours. Optimized timings were used for all signalized intersection analyses (adhering to NCDOT minimum cycle length requirements).

<sup>^</sup> For purposes of analysis (and to be more conservative), it was assumed that all traffic projected along Horton Street turned right onto NC-96 south of NC-97. Traffic was then split between northbound left and through at NC-97. All traffic wishing to travel west (towards US-264) will likely utilize NC-39.

**Table 1: Intersection Approach Level of Service and Delay  
2026 Background Traffic Volumes**

Intersection	Approach / Overall	AM PEAK HOUR		PM PEAK HOUR		Movement	Turn Lane Storage (ft)	AM PEAK HOUR	PM PEAK HOUR
		Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>			*95th Percentile Queue Length	*95th Percentile Queue Length
1: S Wakefield Street & NC-97 (Gannon Avenue)	Eastbound	22.4	C	31.1	C	EB Left	125	10	11
						EB Thru/Right		380	#744
	Westbound	13.9	B	11.3	B	WB Left	125	63	72
						WB Thru/Right		265	237
	Northbound	31.8	C	46.4	D	WB Approach		--	--
	Southbound					NB Left/Thru/Right		199	169
						NB Approach		--	--
Overall	20.2	C	25.1	C	SB Left/Thru/Right		35	63	
2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)	Eastbound					SB Approach		--	--
		33.2	C	38.0	D	Overall		--	--
						EB Left	200	46	73
	Westbound					EB Thru		367	#136
		23.6	C	28.4	C	EB Right	100	69	100
						EB Approach		--	--
	Northbound					WB Left	350	#238	#276
		40.1	D	38.7	D	WB Thru/Right		166	348
	Southbound					WB Approach		--	--
		29.7	C	27.8	C	NB Left	125	124	96
						NB Thru/Right		#352	#452
Overall	31.5	C	33.2	C	NB Approach		--	--	
3: NC-96 (Arendell Avenue) & Barbee Street	Eastbound	14.9	B	22.1	C	SB Left		36	#77
						SB Thru/Right		203	230
	Westbound	14.1	B	16.7	C	SB Approach		--	--
	Northbound	1.0	A	1.0	A	Overall		--	--
	Southbound	0.2	A	0.1	A				
6: NC-96 (Arendell Avenue) & Perry Curtis Road	Westbound	11.1	B	11.1	B	EB Left/Thru/Right		0.5	1.9
						EB Approach		--	--
	Northbound	0.0	A	0.0	A	WB Left/Thru/Right		0.1	0.2
						WB Approach		--	--
Southbound	1.8	A	2.6	A	NB Left/Thru/Right		0.1	0.1	
					NB Approach		--	--	

<sup>1</sup> Overall intersection LOS and delay not reported for TWSC intersections.  
\* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

**2026 Build + Improvements**

The Zebulon South trip generation and distribution are located in the Zebulon South TIA (see Section 4 and Figure 4-2, respectively). 2026 Build traffic volumes (see Figure E) were calculated by summing the 2026 Background traffic volumes (Figure D) and projected Zebulon South site trips (Figure 4-2 – Zebulon South TIA). Table 2 below summarizes the intersection LOS and delay based on the future lane configuration (see Figure F) and 2026 Build traffic volumes (see Figure E). The corresponding SYNCHRO outputs are located in Appendix A. As shown in Table 2, all intersection approaches are projected to operate acceptably during the 2026 Build + Improvements AM and PM peak hours. Optimized timings were used for all signalized intersection analyses (adhering to NCDOT minimum cycle length requirements). Because all approaches are projected to operate acceptably, no additional study area intersection improvements are recommended.

**Table 2: Intersection Approach Level of Service and Delay  
2026 Build + Improvements Traffic Volumes**

Intersection	Approach / Overall	AM PEAK HOUR		PM PEAK HOUR		Movement	Turn Lane Storage (ft)	AM PEAK HOUR	PM PEAK HOUR
		Delay <sup>1</sup> (sec/veh)	LOS <sup>2</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>2</sup>			95th Percentile Queue Length	95th Percentile Queue Length
1: S Wakefield Street & NC-97 (Gannon Avenue)	Eastbound	25.1	C	41.0	D	EB Left	125	10	11
						EB Thru/Right		405	#825
	Westbound	15.9	B	12.9	B	WB Left	125	68	90
						WB Thru/Right		287	244
	Northbound	35.1	D	54.8	D	NB Left/Thru/Right		#273	#232
					NB Approach		--	--	
Southbound	23.0	C	30.9	C	SB Left/Thru/Right		35	63	
Overall	23.0	C	31.9	C	SB Approach		--	--	
2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)	Eastbound	38.5	D	47.1	D	EB Left	200	48	77
						EB Thru		#439	#399
						EB Right	100	76	121
	Westbound					EB Approach		--	--
		27.9	C	33.2	C	WB Left	350	#268	#321
						WB Thru/Right		185	385
	Northbound					WB Approach		--	--
		41.6	D	40.2	D	NB Left	125	134	106
	Southbound					NB Thru/Right		#407	#494
		27.7	C	28.0	C	NB Approach		--	--
Overall	34.8	C	37.4	D	SB Left	250	36	#83	
3: NC-96 (Arendell Avenue) & Barbee Street	Eastbound	17.0	C	30.0	D	SB Thru/Right		0.6	2.8
						EB Approach		--	--
	Westbound	16.1	C	20.2	C	WB Left/Thru/Right		0.1	0.2
						WB Approach		--	--
	Northbound	0.9	A	1.0	A	NB Left/Thru/Right		0.1	0.2
					NB Approach		--	--	
Southbound	0.2	A	0.1	A	SB Left/Thru/Right		0	0	
4: NC-96 (Arendell Avenue) & Site Access 1	Eastbound	13.1	B	16.0	C	SB Approach		0.4	0.3
						EB Left/Right		--	--
	Northbound	0.1	A	0.3	A	EB Approach		0	0
						NB Left/Thru		--	--
Southbound	0.0	A	0.0	A	NB Approach		0	0	
5: NC-96 (Arendell Avenue) & Site Access 2	Eastbound	12.3	B	14.9	B	SB Thru	50	0	0
						SB Right		0	0
	Northbound	0.1	A	0.6	A	SB Approach		--	--
						EB Left/Right		0.4	0.3
Southbound	0.0	A	0.0	A	EB Approach		--	--	
6: NC-96 (Arendell Avenue) & Perry Curtis Road	Westbound	11.3	B	11.3	B	NB Left/Thru		0	0
						WB Left/Right		0.7	0.5
	Northbound	0.0	A	0.0	A	WB Approach		--	--
Southbound	1.9	A	2.6	A	NB Thru/Right		0	0	
					NB Approach		--	--	
7: S Wakefield Street & Site Access 3	Westbound	10.1	B	9.9	A	SB Left/Thru		0.1	0.4
						SB Approach		--	--
	Northbound	0.0	A	0.0	A	WB Left/Right		0.3	0.2
						WB Approach		--	--
Southbound	1.1	A	1.8	A	NB Thru/Right	50	0	0	
					NB Approach		--	--	
					SB Left		0	0.1	
					SB Thru		0	0	
					SB Approach		--	--	

<sup>1</sup> Overall intersection LOS and delay not reported for TWSC intersections.  
<sup>2</sup> - 95th percentile queues for unsignalized intersections reported in number of vehicles.





# TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

## Conclusions

Per the provided analyses, it was determined that inclusion of Chamblee Lake Planned Development site trips does not result in changes to original Zebulon South TIA recommendations.

Should you have any questions regarding this memorandum, please do not hesitate to contact me.

Sincerely,

The seal is circular with the text "NORTH CAROLINA PROFESSIONAL ENGINEER" around the top and "JEFFREY P. HOCHANADEL" around the bottom. In the center, it says "SEAL" and "28430".

1/2/24

Jeffrey P. Hochanadel, PE, PTOE  
Principal | North Carolina Transportation Group Leader



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FIGURE B – 2026 AMBIENT TRAFFIC VOLUMES

FIGURE C – CHAMBLEE LAKE PLANNED DEVELOPMENT TRAFFIC VOLUMES

FIGURE D – 2026 BACKGROUND TRAFFIC VOLUMES

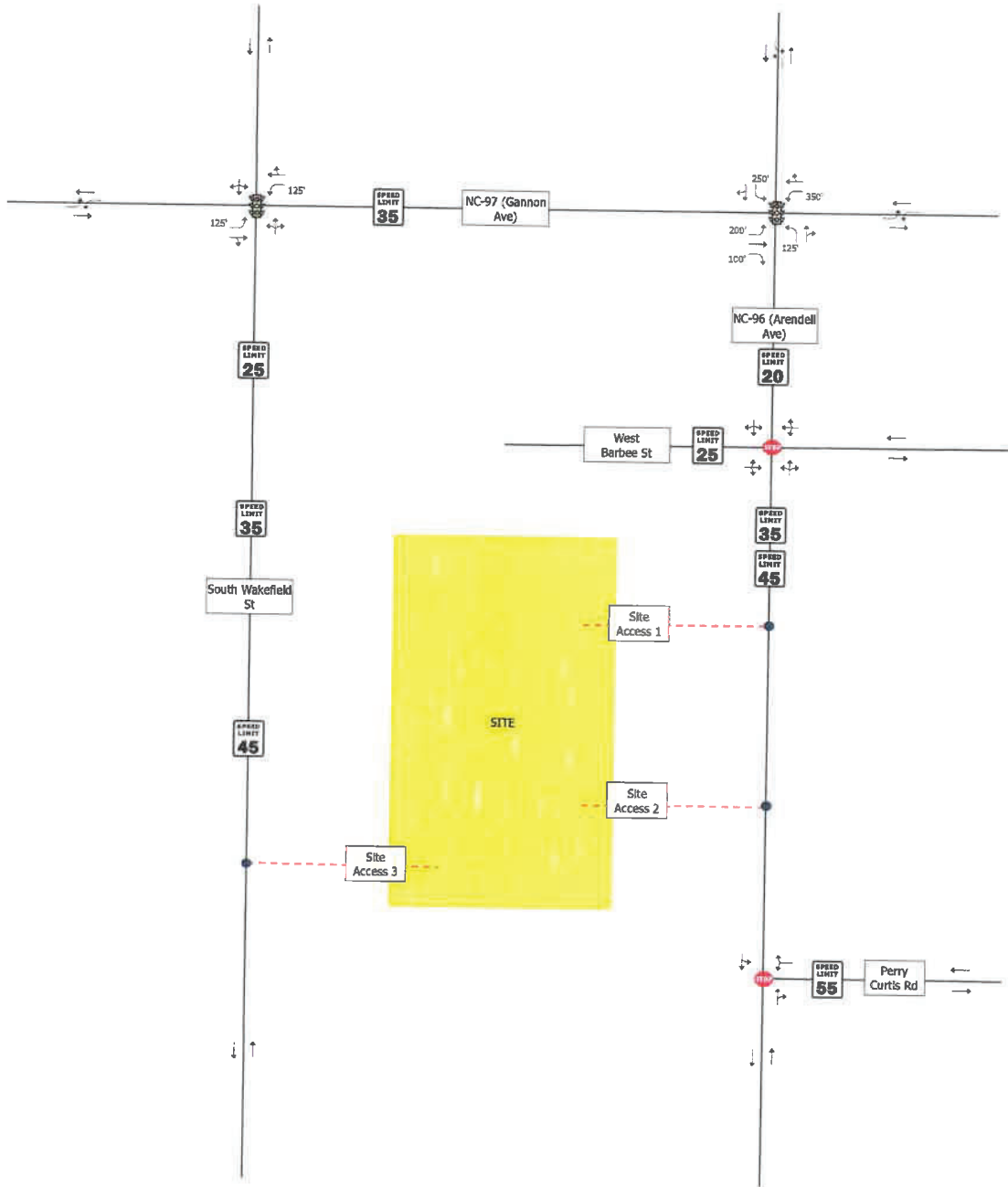
FIGURE E – 2026 BUILD TRAFFIC VOLUMES

FIGURE F – FUTURE LANE CONFIGURATION

### **APPENDICES**

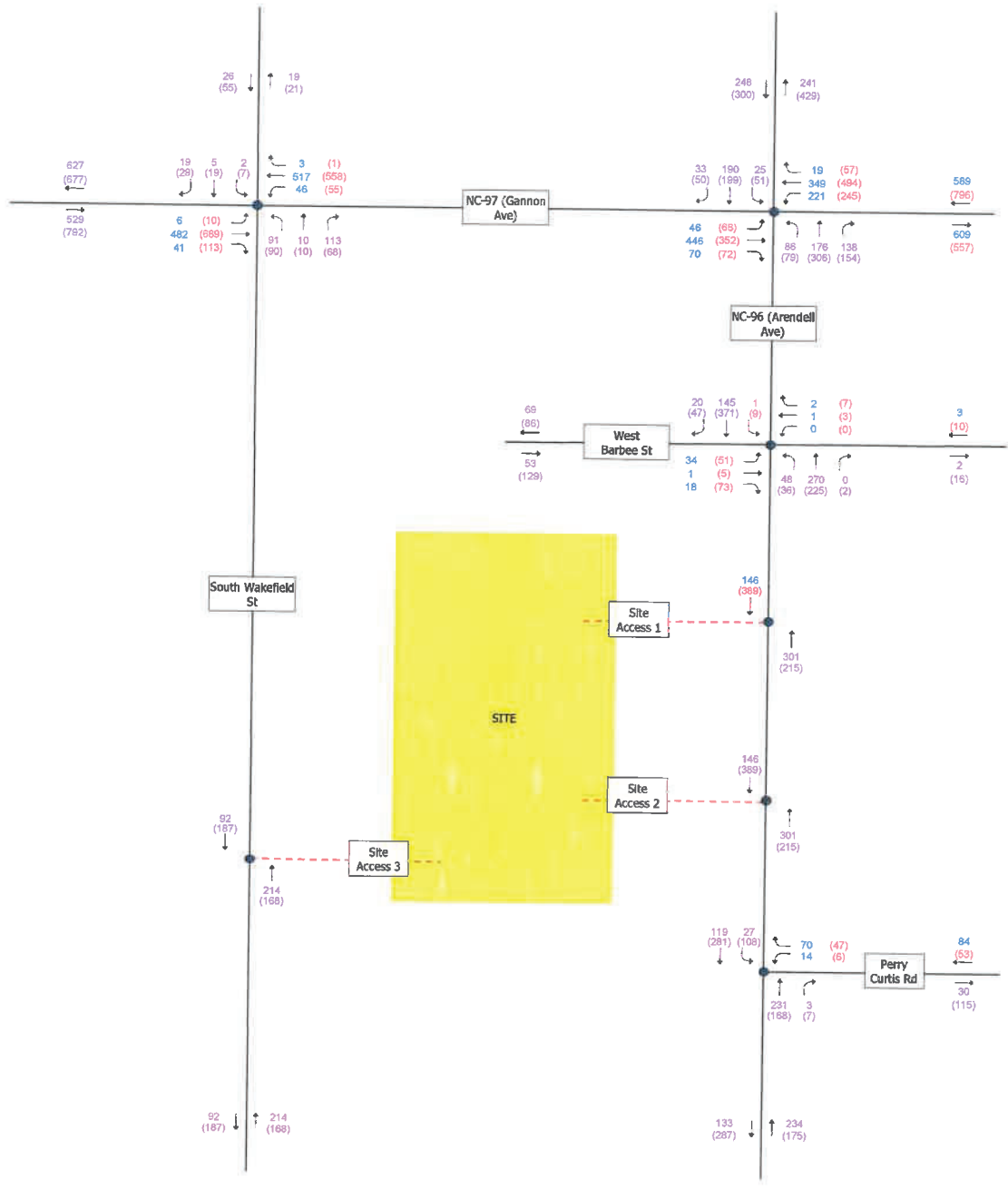
Appendix A – Synchro Output

Appendix B – Chamblee Lake Planned Development



**LEGEND:**

	Existing Road
	Proposed Road
	Signalized Intersection
	Unsignalized Intersection
	Existing Lane Configuration



**LEGEND:**

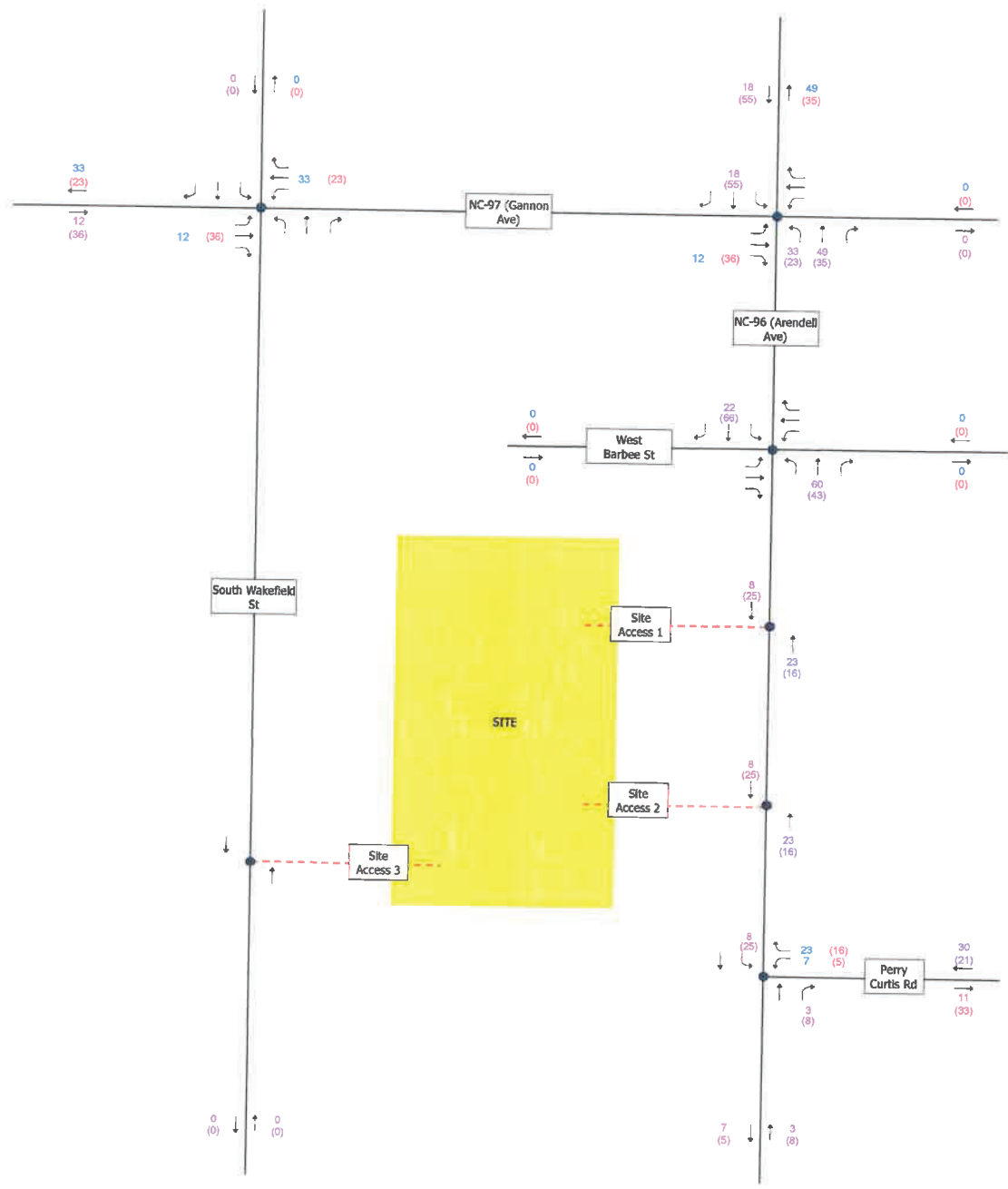
- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



## Zebulon South Traffic Impact Analysis

### 2026 Ambient Traffic Volumes

Figure B  
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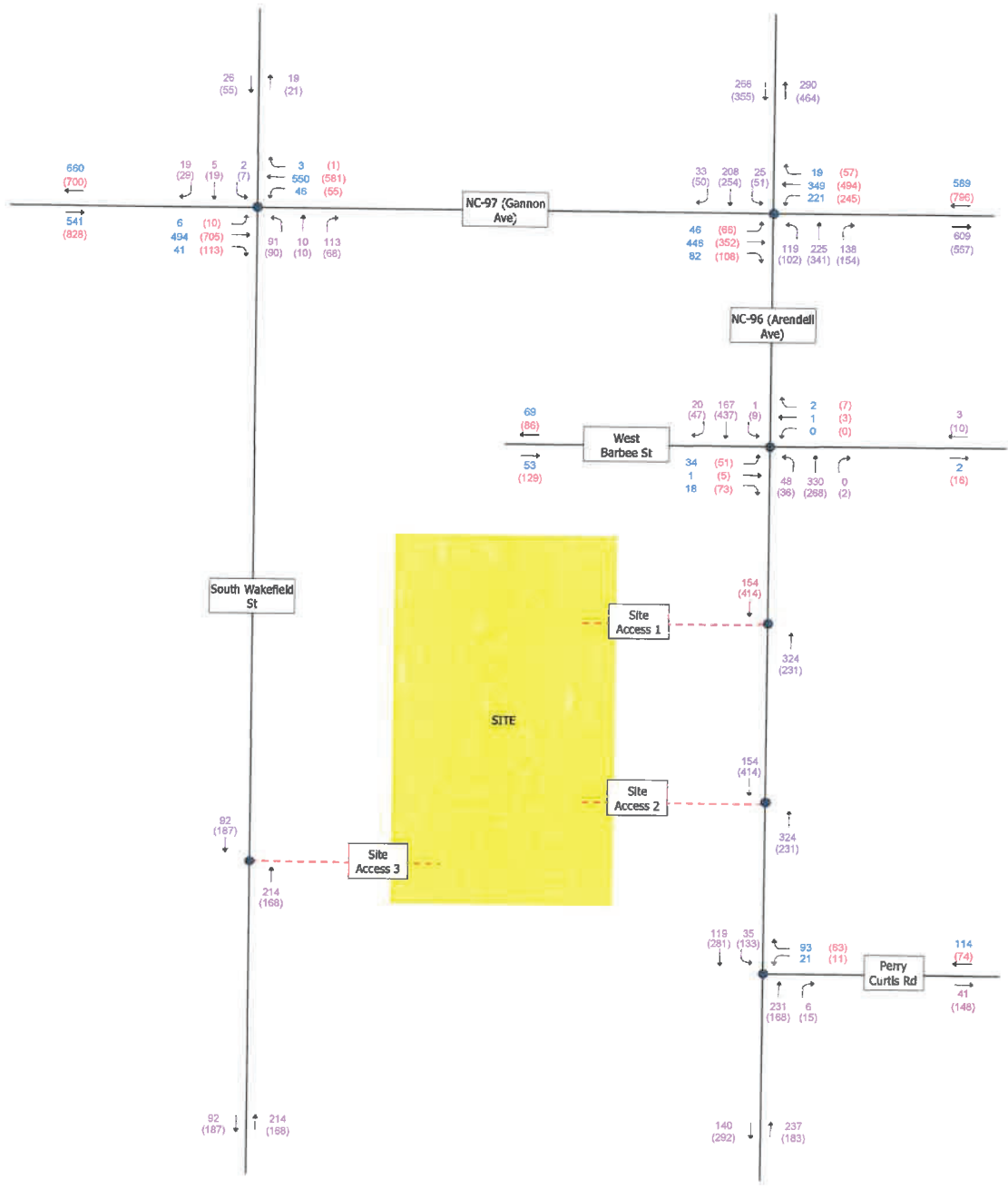


**LEGEND:**

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**Zebulon South Traffic Impact Analysis**  
 Chamblee Lake Planned Development Traffic Volumes



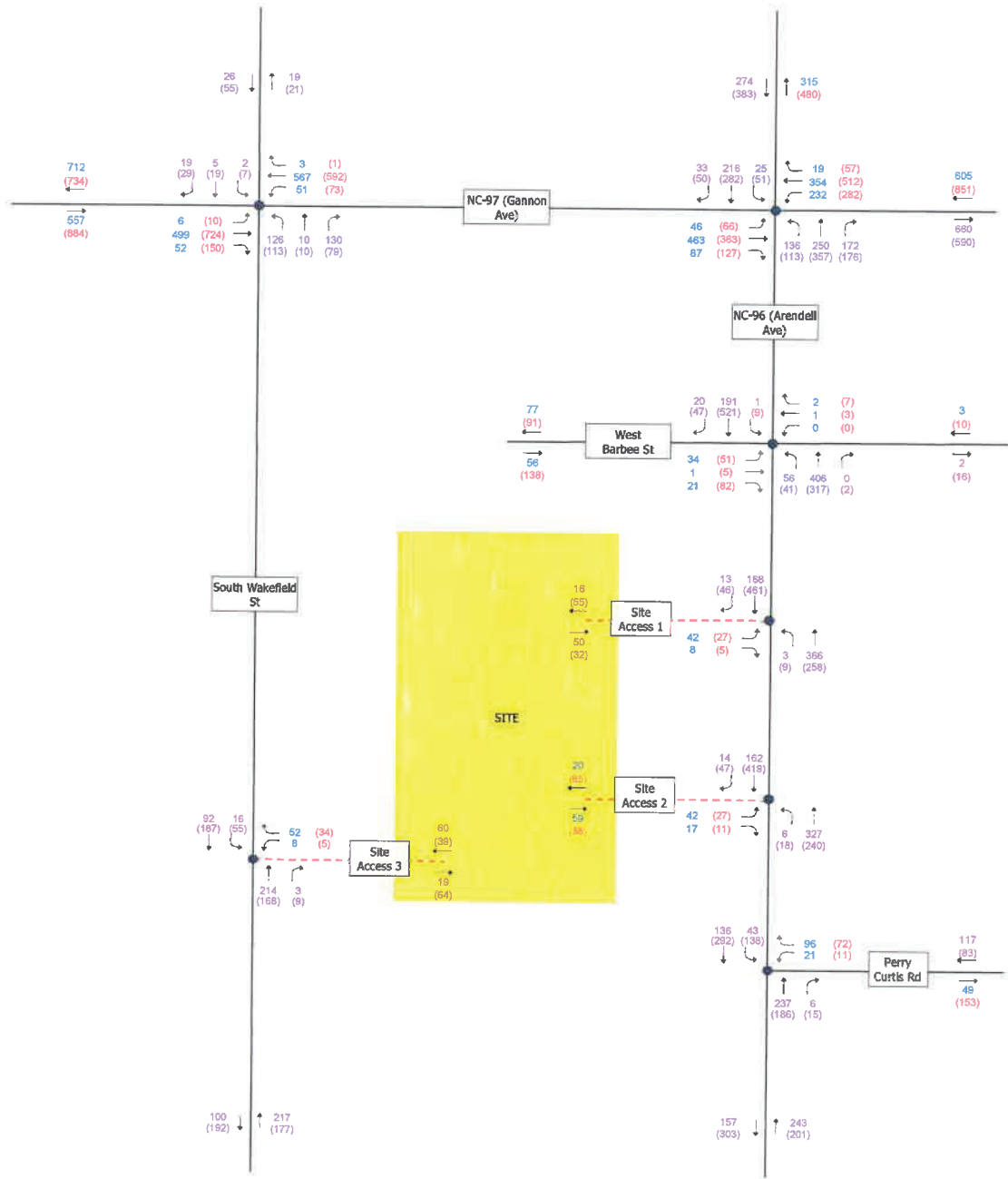
**LEGEND:**

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



### Zebulon South Traffic Impact Analysis 2026 Background Traffic Volumes

Figure D  
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**LEGEND:**

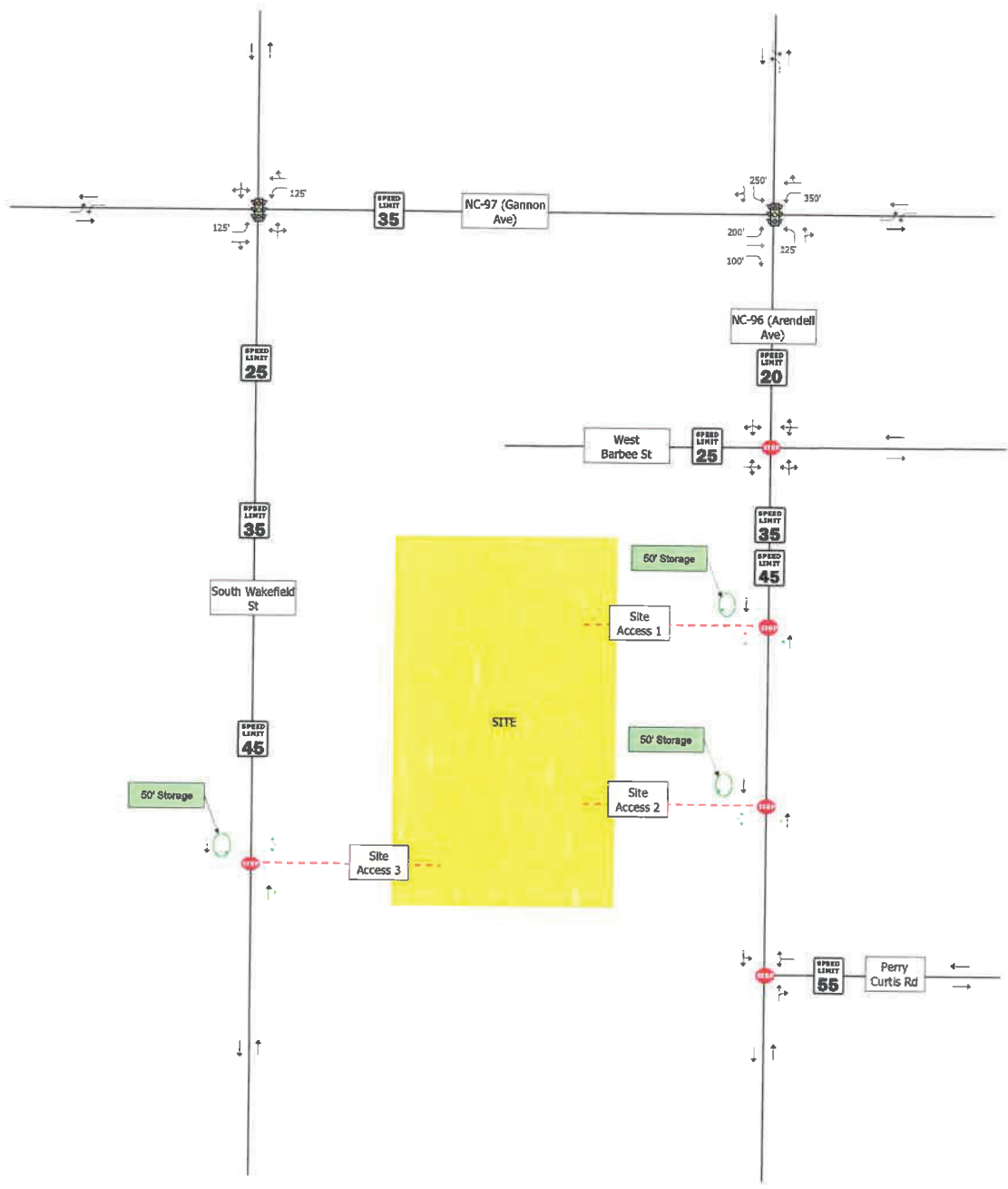
- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



## Zebulon South Traffic Impact Analysis

### 2026 Build Traffic Volumes

Figure E  
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**LEGEND:**

- Existing Road
- - - Proposed Road
- ⦿ Signalized Intersection
- ⦿ Unsignalized Intersection
- ↔ Existing Lane Configuration
- ↔ Proposed Lane Configuration



## **Appendix A – Synchro Output**

## **2026 Background Traffic Volumes**

Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	494	41	46	550	4	91	10	113	4	5	19
Future Volume (vph)	6	494	41	46	550	4	91	10	113	4	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.988			0.989			0.929			0.909	
Fl <sub>t</sub> Protected	0.950			0.950				0.979			0.994	
Satd. Flow (prot)	1778	1850	0	1770	1861	0	0	1669	0	0	1675	0
Fl <sub>t</sub> Permitted	0.432			0.950				0.848			0.952	
Satd. Flow (perm)	809	1850	0	1770	1861	0	0	1445	0	0	1604	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			482	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	549	46	51	611	4	101	11	126	4	6	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	595	0	51	615	0	0	238	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	47.0	47.0		14.0	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	52.2%	52.2%		15.6%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	40.0	40.0		7.0	54.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	28.8	28.8		10.3	35.5			17.7			17.7	
Actuated g/C Ratio	0.45	0.45		0.16	0.55			0.27			0.27	
v/c Ratio	0.02	0.72		0.18	0.60			0.60			0.07	
Control Delay	13.3	22.6		35.1	12.1			31.8			23.4	

Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/14/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.3	22.6		35.1	12.1			31.8			23.4	
LOS	B	C		D	B			C			C	
Approach Delay		22.4			13.9			31.8			23.4	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	2	221		21	142			94			10	
Queue Length 95th (ft)	10	380		63	265			199			35	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	575	1317		281	1518			612			680	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.45		0.18	0.41			0.39			0.05	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 64.6  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 20.2  
 Intersection Capacity Utilization 65.7%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service C

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/14/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	446	82	221	349	19	119	225	138	25	208	33
Future Volume (vph)	46	446	82	221	349	19	119	225	138	25	208	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt			0.850		0.992			0.943			0.979	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1866	0	1787	1774	0	1752	1805	0
Fit Permitted	0.522			0.950			0.463			0.259		
Satd. Flow (perm)	963	1844	1567	1787	1866	0	871	1774	0	478	1805	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20				35
Link Distance (ft)		1453			677			1822				478
Travel Time (s)		28.3			13.2			62.1				9.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	496	91	246	388	21	132	250	153	28	231	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	496	91	246	409	0	132	403	0	28	268	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							Yes
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8				4
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0		7.0
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0		14.0
Total Split (s)	37.0	37.0	37.0	22.0	59.0		31.0	31.0		31.0		31.0
Total Split (%)	41.1%	41.1%	41.1%	24.4%	65.6%		34.4%	34.4%		34.4%		34.4%
Maximum Green (s)	30.0	30.0	30.0	15.0	52.0		24.0	24.0		24.0		24.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0		-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0		2.0
Recall Mode	Min	Min	Min	None	Min		None	None		None		None
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effect Green (s)	27.0	27.0	27.0	15.5	47.6		22.9	22.9		22.9		22.9

2026 Background AM Peak Hour  
 Timmons Group

Synchro 11 Report

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/14/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.33	0.33	0.33	0.19	0.59		0.28	0.28		0.28	0.28	
v/c Ratio	0.16	0.81	0.17	0.72	0.37		0.53	0.80		0.21	0.52	
Control Delay	21.4	36.7	21.0	45.9	10.1		35.5	41.7		28.7	29.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.4	36.7	21.0	45.9	10.1		35.5	41.7		28.7	29.8	
LOS	C	D	C	D	B		D	D		C	C	
Approach Delay		33.2			23.6			40.1			29.7	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	20	245	35	129	109		61	203		12	123	
Queue Length 95th (ft)	46	367	69	#238	166		124	#352		36	203	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	391	749	637	385	1311		287	585		158	596	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.66	0.14	0.64	0.31		0.46	0.69		0.18	0.45	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 80.8  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 31.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 78.5%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)






















Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕			
Traffic Vol, veh/h	34	4	18	4	4	4	48	330	4	4	167	20
Future Vol, veh/h	34	4	18	4	4	4	48	330	4	4	167	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	4	20	4	4	4	53	367	4	4	186	22
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	684	682	197	692	691	369	208	0	0	371	0	0
Stage 1	205	205	-	475	475	-	-	-	-	-	-	-
Stage 2	479	477	-	217	216	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	363	372	844	358	368	677	1363	-	-	1188	-	-
Stage 1	797	732	-	570	557	-	-	-	-	-	-	-
Stage 2	568	556	-	785	724	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	343	352	844	332	348	677	1363	-	-	1188	-	-
Mov Cap-2 Maneuver	343	352	-	332	348	-	-	-	-	-	-	-
Stage 1	758	729	-	542	530	-	-	-	-	-	-	-
Stage 2	532	529	-	759	721	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.9		14.1		1		0.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1363	-	-	425	407	1188	-	-				
HCM Lane V/C Ratio	0.039	-	-	0.146	0.033	0.004	-	-				
HCM Control Delay (s)	7.7	0	-	14.9	14.1	8	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %ile Q(veh)	0.1	-	-	0.5	0.1	0	-	-				

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	21	93	231	6	35	119
Future Vol, veh/h	21	93	231	6	35	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	103	257	7	39	132
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	471	261	0	0	264	0
Stage 1	261	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	551	778	-	-	1300	-
Stage 1	783	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	533	778	-	-	1300	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.1	0	1.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	717	1300	-	
HCM Lane V/C Ratio	-	-	0.177	0.03	-	
HCM Control Delay (s)	-	-	11.1	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	



Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	705	113	55	581	4	90	10	68	7	19	29
Future Volume (vph)	10	705	113	55	581	4	90	10	68	7	19	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frict		0.979			0.999			0.945			0.929	
Fit Protected	0.950			0.950				0.974			0.993	
Satd. Flow (prot)	1778	1833	0	1770	1861	0	0	1689	0	0	1710	0
Fit Permitted	0.418			0.950				0.815			0.956	
Satd. Flow (perm)	783	1833	0	1770	1861	0	0	1413	0	0	1646	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	783	126	61	646	4	100	11	76	8	21	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	909	0	61	650	0	0	187	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	52.0	52.0		14.0	66.0		24.0	24.0		24.0	24.0	
Total Split (%)	57.9%	57.8%		15.6%	73.3%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	45.0	45.0		7.0	59.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	46.7	46.7		9.2	57.2			16.2			16.2	
Actuated g/C Ratio	0.56	0.56		0.11	0.68			0.19			0.19	
v/c Ratio	0.03	0.89		0.31	0.51			0.68			0.19	
Control Delay	10.7	31.4		42.3	8.4			46.4			31.2	

Zebulon South TIA

1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.7	31.4		42.3	8.4			46.4			31.2	
LOS	B	C		D	A			D			C	
Approach Delay		31.1			11.3			46.4			31.2	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	3	452		32	153			97			29	
Queue Length 95th (ft)	11	#744		72	237			169			63	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	448	1051		194	1385			327			381	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.86		0.31	0.47			0.57			0.16	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 83.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 25.1

Intersection LOS: C

Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

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

























Queue shown is maximum after two cycles.

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA  
2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	352	108	245	494	57	102	341	154	51	254	50
Future Volume (vph)	66	352	108	245	494	57	102	341	154	51	254	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.985			0.953			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1853	0	1787	1793	0	1752	1798	0
Flt Permitted	0.433			0.950			0.418			0.170		
Satd. Flow (perm)	799	1844	1567	1787	1853	0	786	1793	0	313	1798	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	391	120	272	549	63	113	379	171	57	282	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	391	120	272	612	0	113	550	0	57	338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	30.0	30.0	30.0	22.0	52.0		38.0	38.0		38.0	38.0	
Total Split (%)	33.3%	33.3%	33.3%	24.4%	57.8%		42.2%	42.2%		42.2%	42.2%	
Maximum Green (s)	23.0	23.0	23.0	15.0	45.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effct Green (s)	22.2	22.2	22.2	16.2	43.5		29.5	29.5		29.5	29.5	

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023

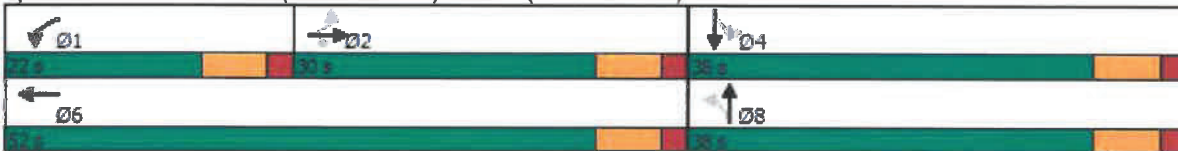


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.27	0.27	0.27	0.19	0.52		0.35	0.35		0.35	0.35	
v/c Ratio	0.34	0.79	0.29	0.78	0.63		0.41	0.86		0.52	0.53	
Control Delay	31.3	42.4	27.5	51.2	18.3		26.5	41.3		41.7	25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.3	42.4	27.5	51.2	18.3		26.5	41.3		41.7	25.4	
LOS	C	D	C	D	B		C	D		D	C	
Approach Delay		38.0			28.4			38.7			27.8	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	33	203	53	149	235		47	281		25	147	
Queue Length 95th (ft)	73	#336	100	#276	348		96	#462		#77	230	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	244	564	479	371	1065		317	724		126	726	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.69	0.25	0.73	0.57		0.36	0.76		0.45	0.47	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 83.2  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 33.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 87.6%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)



Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	🚗			🚗			🚗			🚗		
Traffic Vol, veh/h	51	5	73	4	4	7	36	268	4	9	437	47
Future Vol, veh/h	51	5	73	4	4	7	36	268	4	9	437	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	6	81	4	4	8	40	298	4	10	486	52
Major/Minor	Minor2	Minor1		Major1		Major2						
Conflicting Flow All	918	914	512	956	938	300	538	0	0	302	0	0
Stage 1	532	532	-	380	380	-	-	-	-	-	-	-
Stage 2	386	382	-	576	558	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	252	273	562	238	264	740	1030	-	-	1259	-	-
Stage 1	531	526	-	642	614	-	-	-	-	-	-	-
Stage 2	637	613	-	503	512	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	235	257	562	192	249	740	1030	-	-	1259	-	-
Mov Cap-2 Maneuver	235	257	-	192	249	-	-	-	-	-	-	-
Stage 1	506	520	-	612	585	-	-	-	-	-	-	-
Stage 2	596	584	-	421	506	-	-	-	-	-	-	-
Approach	EB	WB		NB		SB						
HCM Control Delay, s	22.1	16.7		1		0.1						
HCM LOS	C	C										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1030	-	-	352	324	1259	-	-				
HCM Lane V/C Ratio	0.039	-	-	0.407	0.051	0.008	-	-				
HCM Control Delay (s)	8.6	0	-	22.1	16.7	7.9	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.2	0	-	-				

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		P			4
Traffic Vol, veh/h	11	63	168	15	133	281
Future Vol, veh/h	11	63	168	15	133	281
Conflicting Peds. #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	70	187	17	148	312

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	804	196	0	0	204
Stage 1	196	-	-	-	-
Stage 2	608	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	352	845	-	-	1368
Stage 1	837	-	-	-	-
Stage 2	543	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	306	845	-	-	1368
Mov Cap-2 Maneuver	306	-	-	-	-
Stage 1	837	-	-	-	-
Stage 2	472	-	-	-	-




















Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	670	1368
HCM Lane V/C Ratio	-	-	0.123	0.108
HCM Control Delay (s)	-	-	11.1	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.4

## **2026 Build + Improvement Traffic Volumes**

Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	499	52	51	567	4	126	10	130	4	5	19
Future Volume (vph)	6	499	52	51	567	4	126	10	130	4	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999			0.934			0.909	
Flt Protected	0.950			0.950				0.977			0.994	
Satd. Flow (prot)	1778	1846	0	1770	1861	0	0	1874	0	0	1675	0
Flt Permitted	0.405			0.950				0.833			0.951	
Satd. Flow (perm)	758	1846	0	1770	1861	0	0	1428	0	0	1602	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	554	58	57	630	4	140	11	144	4	6	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	612	0	57	634	0	0	295	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	46.0	46.0		14.0	60.0		30.0	30.0		30.0	30.0	
Total Split (%)	51.1%	51.1%		15.6%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	39.0	39.0		7.0	53.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effect Green (s)	30.6	30.6		10.1	37.4			21.0			21.0	
Actuated g/C Ratio	0.44	0.44		0.14	0.54			0.30			0.30	
v/c Ratio	0.02	0.76		0.22	0.64			0.68			0.06	
Control Delay	14.0	25.3		37.3	14.0			35.1			23.0	



Zebulon South TIA

1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	14.0	25.3		37.3	14.0			35.1			23.0	
LOS	B	C		D	B			D			C	
Approach Delay		25.1			15.9			35.1			23.0	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	2	262		26	182			131			11	
Queue Length 95th (ft)	10	405		68	287			#273			35	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	483	1177		257	1463			575			646	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.52		0.22	0.43			0.51			0.05	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	69.7
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	23.0
Intersection LOS:	C
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15
* 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

























Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA

2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	463	87	232	354	19	136	250	172	25	216	33
Future Volume (vph)	46	463	87	232	354	19	136	250	172	25	216	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.939			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1866	0	1787	1767	0	1752	1807	0
Flt Permitted	0.520			0.950			0.466			0.205		
Satd. Flow (perm)	959	1844	1567	1787	1866	0	877	1767	0	378	1807	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	514	97	258	393	21	151	278	191	28	240	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	514	97	258	414	0	151	469	0	28	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	35.0	35.0	35.0	21.0	56.0		34.0	34.0		34.0	34.0	
Total Split (%)	38.9%	38.9%	38.9%	23.3%	62.2%		37.8%	37.8%		37.8%	37.8%	
Maximum Green (s)	28.0	28.0	28.0	14.0	49.0		27.0	27.0		27.0	27.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effct Green (s)	27.4	27.4	27.4	15.3	47.8		26.3	26.3		26.3	26.3	

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023

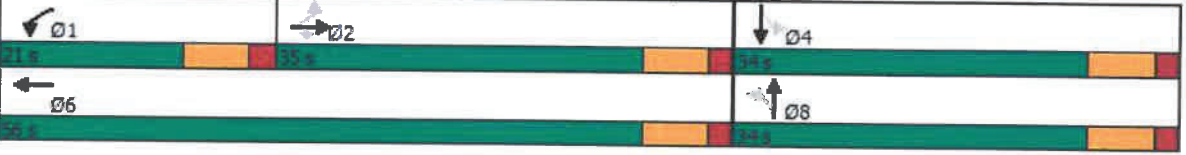


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.33	0.33	0.33	0.18	0.57		0.31	0.31		0.31	0.31	
v/c Ratio	0.16	0.86	0.19	0.79	0.39		0.55	0.85		0.24	0.49	
Control Delay	22.9	43.1	22.5	53.8	11.8		33.9	44.1		28.7	27.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.9	43.1	22.5	53.8	11.8		33.9	44.1		28.7	27.6	
LOS	C	D	C	D	B		C	D		C	C	
Approach Delay		38.5			27.9			41.6			27.7	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	20	267	39	142	122		70	244		12	125	
Queue Length 95th (ft)	48	#439	76	#268	185		134	#407		36	200	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	346	666	566	344	1146		306	617		132	631	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.77	0.17	0.75	0.36		0.49	0.76		0.21	0.44	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 84.2  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 34.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 83.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)



Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕			↕			↕		
Traffic Vol, veh/h	34	4	21	4	4	4	56	406	4	4	191	20
Future Vol, veh/h	34	4	21	4	4	4	56	406	4	4	191	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	4	23	4	4	4	62	451	4	4	212	22

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	812	810	223	822	819	453	234	0	0	455	0	0
Stage 1	231	231	-	577	577	-	-	-	-	-	-	-
Stage 2	581	579	-	245	242	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	298	314	817	293	310	607	1333	-	-	1106	-	-
Stage 1	772	713	-	502	502	-	-	-	-	-	-	-
Stage 2	499	501	-	759	705	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	278	293	817	267	290	607	1333	-	-	1106	-	-
Mov Cap-2 Maneuver	278	293	-	267	290	-	-	-	-	-	-	-
Stage 1	724	710	-	471	471	-	-	-	-	-	-	-
Stage 2	460	470	-	730	702	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	17		16.1			0.9		0.2		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBREBLn	WB Ln1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	365	339	1106	-
HCM Lane V/C Ratio	0.047	-	-	0.18	0.039	0.004	-
HCM Control Delay (s)	7.8	0	-	17	16.1	8.3	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			←	↑	↑
Traffic Vol, veh/h	42	8	4	366	168	13
Future Vol, veh/h	42	8	4	366	168	13
Conflicting Peds. #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	9	4	407	167	14

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	602	187	201	0	0
Stage 1	187	-	-	-	-
Stage 2	415	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	463	855	1371	-	-
Stage 1	845	-	-	-	-
Stage 2	666	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	461	855	1371	-	-
Mov Cap-2 Maneuver	461	-	-	-	-
Stage 1	842	-	-	-	-
Stage 2	666	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1371	-	498	-
HCM Lane V/C Ratio	0.003	-	0.112	-
HCM Control Delay (s)	7.6	0	13.1	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.4	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	↑
Traffic Vol, veh/h	42	17	6	327	162	14
Future Vol, veh/h	42	17	6	327	162	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	19	7	363	180	16

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	557	180	196	0	- 0
Stage 1	180	-	-	-	- -
Stage 2	377	-	-	-	- -
Critical Hdwy	6.42	6.22	4.12	-	- -
Critical Hdwy Stg 1	5.42	-	-	-	- -
Critical Hdwy Stg 2	5.42	-	-	-	- -
Follow-up Hdwy	3.518	3.318	2.218	-	- -
Pot Cap-1 Maneuver	491	863	1377	-	- -
Stage 1	851	-	-	-	- -
Stage 2	694	-	-	-	- -
Platoon blocked, %				-	- -
Mov Cap-1 Maneuver	488	863	1377	-	- -
Mov Cap-2 Maneuver	488	-	-	-	- -
Stage 1	846	-	-	-	- -
Stage 2	694	-	-	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1377	- 558	-	-
HCM Lane V/C Ratio	0.005	- 0.117	-	-
HCM Control Delay (s)	7.6	0 12.3	-	-
HCM Lane LOS	A	A B	-	-
HCM 95th %tile Q(veh)	0	- 0.4	-	-

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	21	96	237	6	43	136
Future Vol, veh/h	21	96	237	6	43	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	107	263	7	48	151
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	514	267	0	0	270	0
Stage 1	267	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	521	772	-	-	1293	-
Stage 1	778	-	-	-	-	-
Stage 2	794	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	500	772	-	-	1293	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.3	0	1.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	703	1293	-	
HCM Lane V/C Ratio	-	-	0.185	0.037	-	
HCM Control Delay (s)	-	-	11.3	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-	

Zebulon South TIA  
7: S Wakefield Street & Site Access 3

12/05/2023

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	↑
Traffic Vol, veh/h	8	52	214	4	16	92
Future Vol, veh/h	8	52	214	4	16	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	58	238	4	18	102

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	378	240	0	0	242
Stage 1	240	-	-	-	-
Stage 2	138	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	624	799	-	-	1324
Stage 1	800	-	-	-	-
Stage 2	889	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	615	799	-	-	1324
Mov Cap-2 Maneuver	615	-	-	-	-
Stage 1	800	-	-	-	-
Stage 2	877	-	-	-	-




















Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	768	1324
HCM Lane V/C Ratio	-	-	0.087	0.013
HCM Control Delay (s)	-	-	10.1	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0



Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	724	150	73	592	4	113	10	79	7	19	29
Future Volume (vph)	10	724	150	73	592	4	113	10	79	7	19	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.974			0.999			0.947			0.929	
Flt Protected	0.950			0.950				0.973			0.993	
Satd. Flow (prot)	1778	1823	0	1770	1861	0	0	1691	0	0	1710	0
Flt Permitted	0.413			0.950				0.812			0.953	
Satd. Flow (perm)	773	1823	0	1770	1861	0	0	1411	0	0	1541	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	804	167	81	658	4	126	11	88	8	21	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	971	0	81	662	0	0	225	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	52.0	52.0		14.0	66.0		24.0	24.0		24.0	24.0	
Total Split (%)	57.8%	57.8%		15.6%	73.3%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	45.0	45.0		7.0	59.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	48.3	48.3		9.1	59.1			17.5			17.5	
Actuated g/C Ratio	0.56	0.56		0.11	0.68			0.20			0.20	
v/c Ratio	0.03	0.96		0.44	0.52			0.79			0.18	
Control Delay	10.8	41.4		46.3	8.8			54.8			30.9	

Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.8	41.4		46.3	8.8			54.8			30.9	
LOS	B	D		D	A			D			C	
Approach Delay		41.0			12.9			54.8			30.9	
Approach LOS		D			B			D			C	
Queue Length 50th (ft)	3	-557		44	164			121			29	
Queue Length 95th (ft)	11	#825		90	244			#232			63	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	430	1016		185	1318			311			362	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.03	0.96		0.44	0.50			0.72			0.17	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 86.6  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 31.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 83.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 - Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	363	127	282	512	57	113	357	176	51	282	50
Future Volume (vph)	66	363	127	282	512	57	113	357	176	51	282	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt			0.850		0.985			0.950			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1853	0	1787	1787	0	1752	1802	0
Flt Permitted	0.425			0.950			0.392			0.146		
Satd. Flow (perm)	784	1844	1567	1787	1853	0	737	1787	0	269	1802	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	403	141	313	569	63	126	397	196	57	313	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	403	141	313	632	0	126	593	0	57	369	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	27.0	27.0	27.0	23.0	50.0		40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%	30.0%	25.6%	55.6%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	20.0	20.0	20.0	16.0	43.0		33.0	33.0		33.0	33.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effct Green (s)	21.3	21.3	21.3	17.5	43.9		32.1	32.1		32.1	32.1	

2026 Build + IMP PM Peak Hour  
 Timmons Group

Synchro 11 Report

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

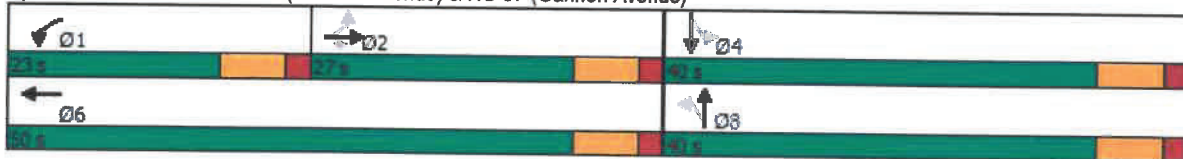
12/05/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.25	0.25	0.25	0.20	0.51		0.37	0.37		0.37	0.37	
v/c Ratio	0.38	0.88	0.36	0.86	0.67		0.46	0.89		0.57	0.55	
Control Delay	35.0	54.9	31.1	58.3	20.7		27.1	43.0		47.6	25.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.0	54.9	31.1	58.3	20.7		27.1	43.0		47.6	25.0	
LOS	D	D	C	E	C		C	D		D	C	
Approach Delay		47.1			33.2			40.2			28.0	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	35	222	67	174	260		52	303		25	158	
Queue Length 95th (ft)	77	#389	121	#321	385		106	#494		#83	243	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	201	474	403	376	975		301	731		109	737	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.85	0.35	0.83	0.65		0.42	0.81		0.52	0.50	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 86.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 37.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 90.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)



Zebulon South TIA  
3: NC-96 (Arendell Avenue) & Barbee Street

12/05/2023

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	51	5	82	4	4	7	41	317	4	9	521	47
Future Vol, veh/h	51	5	82	4	4	7	41	317	4	9	521	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	6	91	4	4	8	46	352	4	10	579	52

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	1077	1073	605	1120
Stage 1	625	625	-	446
Stage 2	452	448	-	674
Critical Hdwy	7.12	6.52	6.22	7.12
Critical Hdwy Stg 1	6.12	5.52	-	6.12
Critical Hdwy Stg 2	6.12	5.52	-	6.12
Follow-up Hdwy	3.518	4.018	3.318	3.518
Pot Cap-1 Maneuver	197	220	498	184
Stage 1	473	477	-	591
Stage 2	587	573	-	444
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	181	204	498	139
Mov Cap-2 Maneuver	181	204	-	139
Stage 1	445	471	-	556
Stage 2	541	539	-	354

Approach	EB	WB	NB	SB
HCM Control Delay, s	30	20.2	1	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	951	-	-	293	254	1203	-	-
HCM Lane V/C Ratio	0.048	-	-	0.523	0.066	0.008	-	-
HCM Control Delay (s)	9	0	-	30	20.2	8	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	2.8	0.2	0	-	-

Zebulon South TIA  
4: NC-96 (Arendell Avenue) & Site Access 1

12/05/2023

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	↑
Traffic Vol, veh/h	27	5	9	258	461	46
Future Vol, veh/h	27	5	9	258	461	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	6	10	287	512	51

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	819	512	563	0	0
Stage 1	512	-	-	-	-
Stage 2	307	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	345	562	1008	-	-
Stage 1	602	-	-	-	-
Stage 2	746	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	341	562	1008	-	-
Mov Cap-2 Maneuver	341	-	-	-	-
Stage 1	595	-	-	-	-
Stage 2	746	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1008	-	363	-
HCM Lane V/C Ratio	0.01	-	0.098	-
HCM Control Delay (s)	8.6	0	16	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0	-	0.3	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↔	↑	↔
Traffic Vol, veh/h	27	11	18	240	419	47
Future Vol, veh/h	27	11	18	240	419	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	12	20	267	466	52

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	773	466	518	0	0
Stage 1	466	-	-	-	-
Stage 2	307	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	367	597	1048	-	-
Stage 1	632	-	-	-	-
Stage 2	746	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	359	597	1048	-	-
Mov Cap-2 Maneuver	359	-	-	-	-
Stage 1	618	-	-	-	-
Stage 2	746	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1048	- 406	-	-
HCM Lane V/C Ratio	0.019	- 0.104	-	-
HCM Control Delay (s)	8.5	0 14.9	-	-
HCM Lane LOS	A	A B	-	-
HCM 95th %tile Q(veh)	0.1	- 0.3	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	11	72	186	15	138	292
Future Vol, veh/h	11	72	186	15	138	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	80	207	17	153	324
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	846	216	0	0	224	0
Stage 1	216	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	333	824	-	-	1345	-
Stage 1	820	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	287	824	-	-	1345	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.3	0	2.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT		
Capacity (veh/h)	-	-	660	1345	-	
HCM Lane V/C Ratio	-	-	0.14	0.114	-	
HCM Control Delay (s)	-	-	11.3	8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.5	0.4	-	



Intersection	
Int Delay, s/veh	1.8

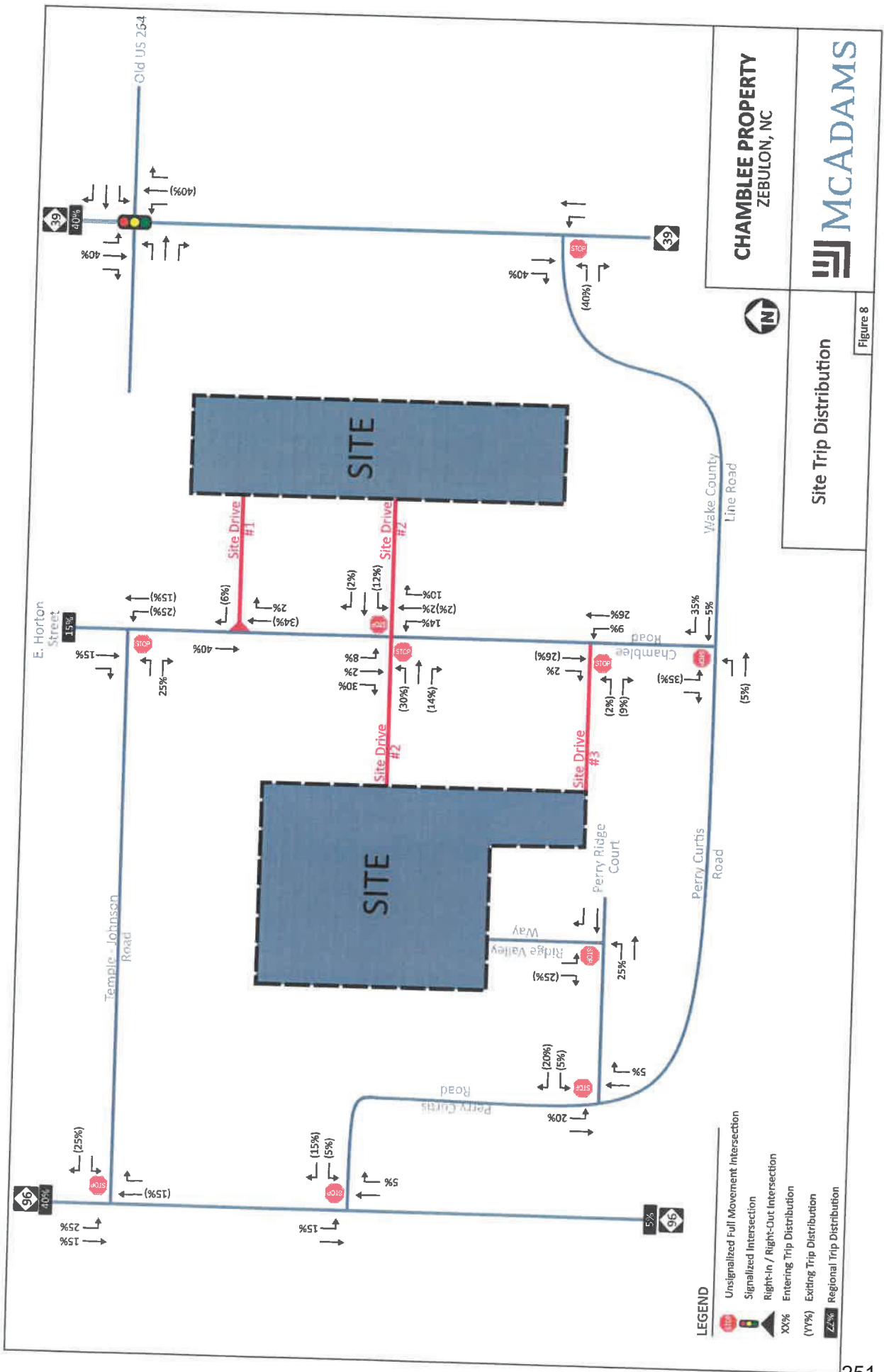
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	5	34	168	9	55	187
Future Vol, veh/h	5	34	168	9	55	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	38	187	10	61	208

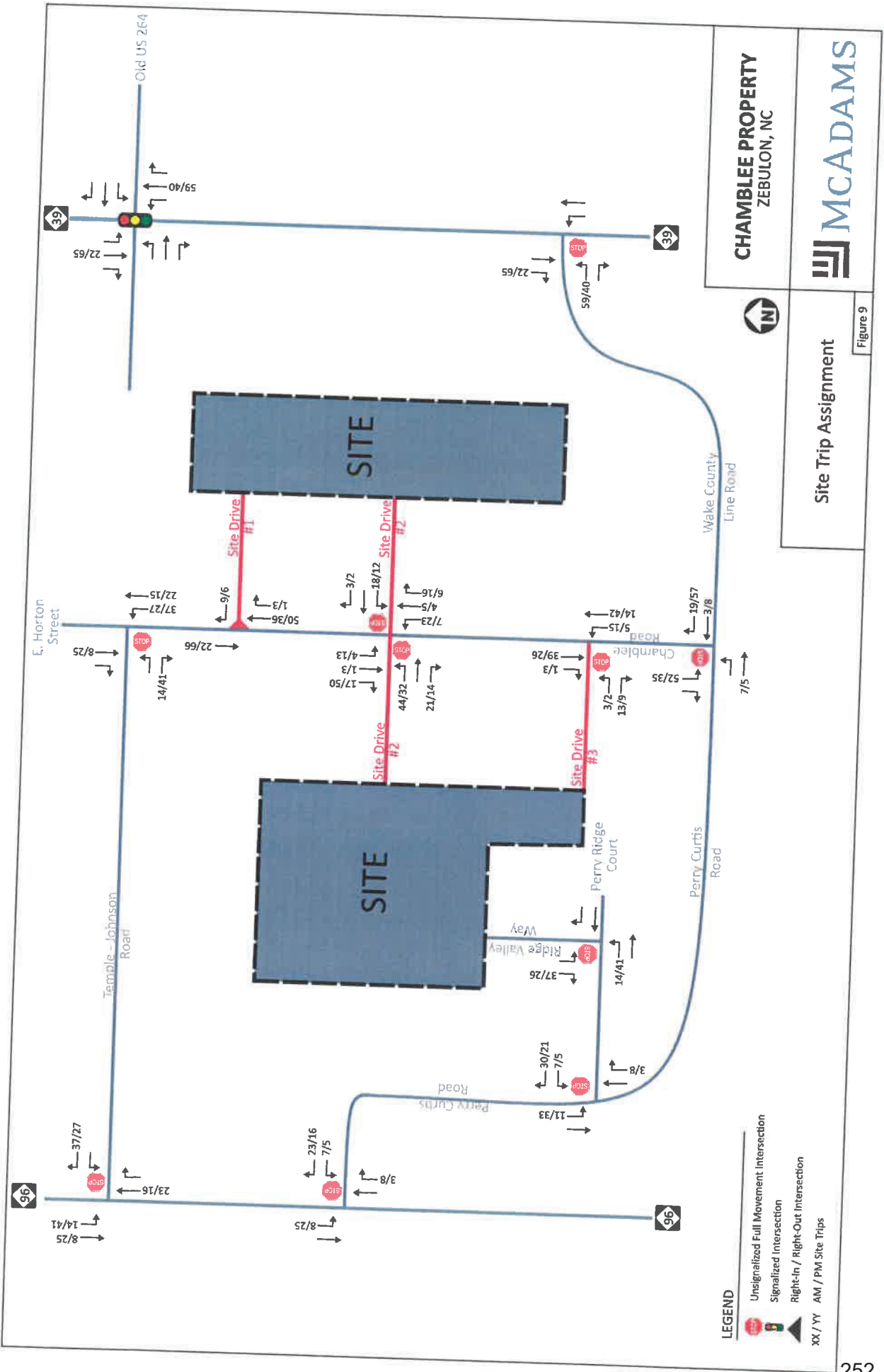
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	522	192	0
Stage 1	192	-	-
Stage 2	330	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	515	850	1376
Stage 1	841	-	-
Stage 2	728	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	492	850	1376
Mov Cap-2 Maneuver	492	-	-
Stage 1	841	-	-
Stage 2	696	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	777	1376
HCM Lane V/C Ratio	-	-	0.056	0.044
HCM Control Delay (s)	-	-	9.9	7.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

## **Appendix B – Chamblee Lake Planned Development**





**CHAMBLEE PROPERTY**  
ZEBULON, NC



Site Trip Assignment

Figure 9

To: Adam Culpepper, Town of Zebulon  
From: Jeff Hochanadel, PE, PTOE (Timmons Group)  
RE: Zebulon South TIA Response to Comments  
Date: January 26, 2024

---

Timmons Group prepared the Zebulon South Traffic Impact Analysis (TIA) – sealed / submitted June 22<sup>nd</sup>, 2022, and submitted an updated TIA sealed / submitted on January 3<sup>rd</sup>, 2024. On January 24<sup>th</sup>, 2024, WSP issued comments (on the Town's behalf). Timmons Group (TG) reviewed WSP's comments (in **bold below**) and prepared the responses below.

**Site Plan and Site Access:**

1. **Based on the updated site plan, the number of units has changed for the site since the TIA was completed. Please add a note in the body of the TIA report discussing this change and confirming that the analysis is still valid because it is more conservative than the current site plan.**

TG Response: This was noted on pages 1-1 and 4-1

2. **Please confirm site access locations in the Build Synchro files matches the site plan. If Site Access 2 is within 165 feet of Perry Curtis Road, this access will need to be right-in/right-out only. This is based on the 2003 NCDOT's Policy on Street and Driveway Access.**

TG Response: Noted. The proposed centerline to centerline measurement between Site Access 2 and Perry Curtis Road is approximately 200-feet. Potential turning movement restrictions will be determined with the Town / NCDOT at the next stage of development when the Driveway permit is requested.

3. **For tables 3-1, 3-2, and 5-1 in the TIA and tables 1 and 2 in the supplemental, please provide a footnote to describe the meaning of the “#” symbol in the queue lengths.**

TG Response: The subject tables were updated accordingly.

4. **For tables 3-1, 3-2, 5-1, and 5-2 in the TIA and tables 1 and 2 in the supplemental, please designate which intersections are unsignalized/signalized to aid in the differentiation of queues which are in feet and queues which are number of cars.**

TG Response: The subject tables were updated accordingly.

5. **For tables 3-1, 3-2, 5-1, and 5-2 in the TIA and tables 1 and 2 in the supplemental, please add units for queues.**

TG Response: Units were clarified in the table headers and footnotes. To match Synchro reporting, 95<sup>th</sup> percentile queues were reported in feet (for signalized intersections) and 95<sup>th</sup> percentile queues were reported in car lengths (for unsignalized intersections)

6. **Include NCDOT comments from July 2022 referenced in section 6 in the appendix of the TIA if available.**

TG Response: This was added as Appendix F.

7. **Please add a complete list of recommended improvements to the supplemental memo for clarity, even though the recommendations do not change from the TIA.**

TG Response: The memo was updated accordingly.

8. **The following comment responses were provided by Timmons Group based on the initial submittal review. Please add these explanations in the body of the TIA report to provide a full picture of the analysis methodology:**

- **Include discussion on why count data was not balanced between intersections and why Perry Curtis Road volumes were used for site access 1 and 2. TG Response: Traffic volumes were not balanced to the presence of commercial site driveways and various side streets. To provide the most accurate analyses, corridor volumes were not balanced. Site Access 1 and 2 volumes were balanced with Perry Curtis due to the driveways' proximities.**

TG Response: Additional explanation provided on page 2-2.

- **Please provide justification for the 3% growth rate used for background volume development. TG Response: The 3% growth rate is based on published AADTs.**

TG Response: Justification was provided on page 3-2.

- **In the Build scenario turn lane analysis, it's mentioned that both S Wakefield Street and NC 96 will have 2026 AADTs higher than 4,000 vpd. Please clarify if this is based on the existing AADT value and an assumption of growth or if this is based on the existing AADT including an assumed**

growth rate. **TG Response:** NC-96's AADT currently exceeds 4,000 VPD. Per future projections, this value is not projected to decrease. S Wakefield Street AADT projections are based on recent AADT counts (grown at 3% annually to 2026) and 30% of daily site trips on S Wakefield Street north of Site Access 3.

TG Response: Additional description was provided in Section 5.1 for the three site access intersections (pages 5-1 and 5-2)

- **Site access roads are listed as needing 100-feet of IPS. Please define IPS as internal protected stem in the text and reference the standards that guide this recommendation. TG Response:** IPS was defined as "internal protected stem" in the updated TIA. IPS requirements are defined in the NCDOT's Driveway Manual.

TG Response: Additional description provided on page 6-1

9. **The alignment of the S Wakefield Street/Morphius Bridge and Pully Gordon Road intersection is not ideal for safe operations, but no improvements are required currently.**

TG Response: Noted. This intersection was not included in the previously negotiated TIA scope.

# Zebulon South

## Traffic Impact Analysis

Zebulon, North Carolina

January 2024



*Prepared for:*

1/26/24

# Deacon Development Group



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**APPENDICES**

Appendix A – Scoping Information

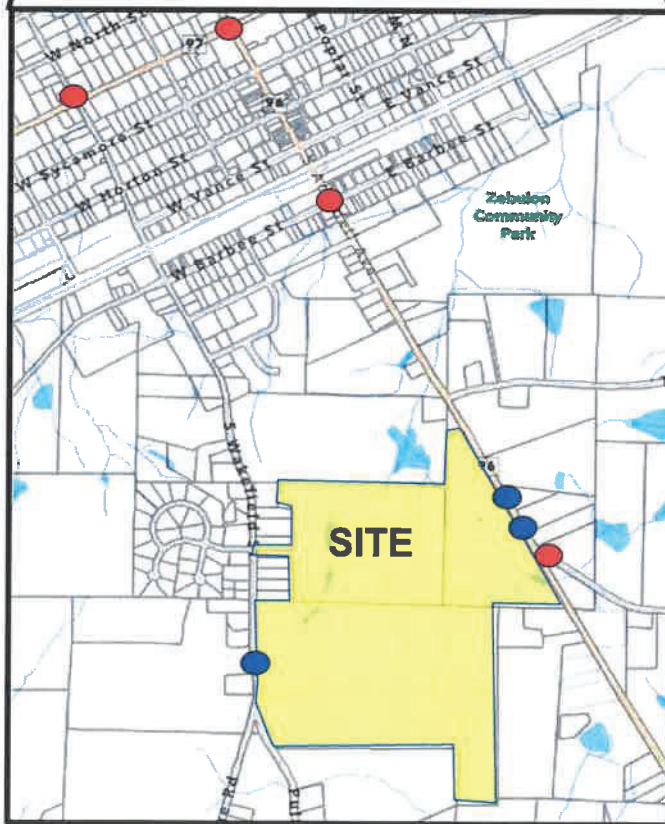
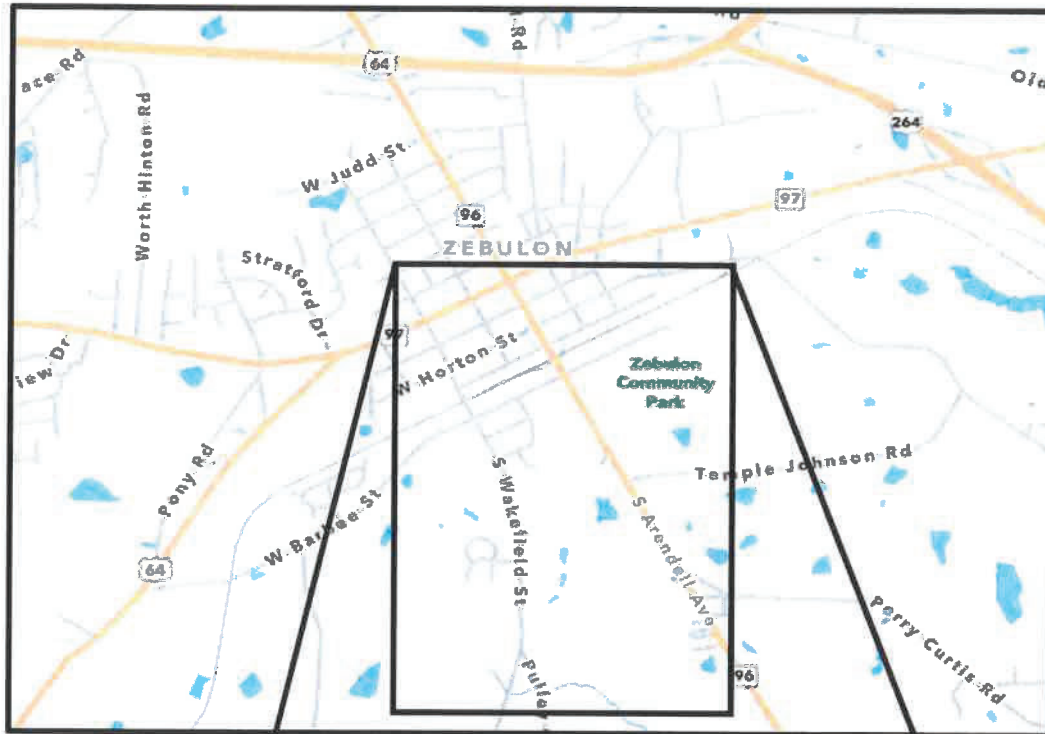
Appendix B – Traffic Counts

Appendix C – Traffic Signal Plans

Appendix D – Synchro Output

Appendix E – NCDOT Nomographs

Appendix F – NCDOT Requirements



NOT TO SCALE

**Legend**

- = Study Area Intersection
- = Driveway Intersection



## Zebulon South Traffic Impact Analysis Site Location Map

Figure  
1-1

### 2.3 EXISTING INTERSECTIONS

Using available aerial imagery, Timmons Group compiled the existing geometry for each study area intersection. The existing intersection geometry is shown in **Figure 2-2**.

NC-97 / South Wakefield Street is a two-phase signalized intersection. The north and southbound intersection approaches include a single shared left / through / right-turn lane. The east and westbound intersection approaches include of an exclusive left-turn lane and a shared through / right-turn lane.

NC-97 / NC-96 is an eight-phase signalized intersection. The north, south, and westbound intersection approaches include an exclusive left-turn lane and a shared through / right-turn lane. The eastbound approach includes exclusive right-turn, through, and left-turn lanes.

NC-96 / West Barbee Street is an unsignalized intersection with the east and westbound approaches encountering the stopped condition. All approaches include a single shared lane that serves all movements.

NC-96 / Perry Curtis Road is an unsignalized intersection with the westbound approach encountering the stopped condition. The northbound approach includes a shared through / right-turn lane. The southbound approach includes a shared through / left-turn lane. The westbound approach includes a shared left / right-turn lane.

### 2.4 TRAFFIC VOLUMES

Timmons Group calculated peak hour volumes at the study area intersections using the collected AM (7:00 – 9:00) and PM (4:00 – 6:00) peak period turning movement counts undertaken in April 2022. Collected traffic count data is summarized in **Figure 2-3**. The complete traffic count data is found in **Appendix B**.

Traffic volumes were not balanced to the presence of commercial site driveways and various side streets. To provide the most accurate analyses, corridor volumes were not balanced. Site Access 1 and 2 volumes were balanced with Perry Curtis due to the driveways' proximities.

### 2.5 CAPACITY ANALYSIS

Using field observations, aerial photography, and traffic count data, traffic operations were analyzed during 2022 (existing) and 2026 (without and with the proposed development site trips).

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies govern how the capacity analyses are conducted and how the results are interpreted. There are six letter grades of Levels of Service (LOS) from A to F, with LOS A representing the best operating conditions and LOS F the worst operating conditions. At signalized intersections, an overall intersection LOS E is generally considered unacceptable. At unsignalized intersections, a LOS E is generally considered acceptable only if the side street encounters delay. Nevertheless, side streets typically function at a LOS F during peak traffic periods, because the traffic volumes often do not warrant a traffic signal to assist side street traffic. **Table 2-1** shows in detail how each of these levels of service are interpreted.

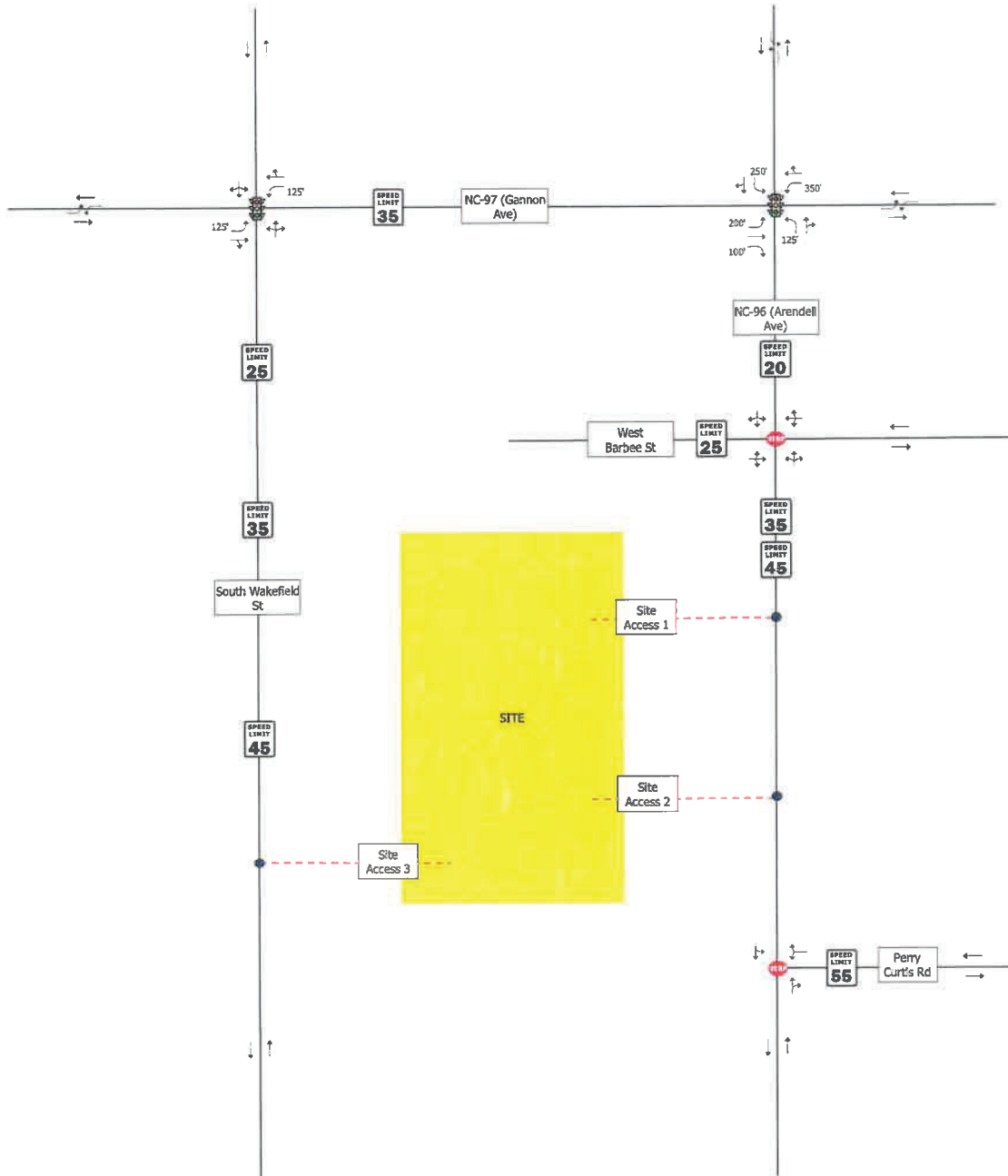
**Table 2-2: Signalized and Unsignalized Intersection Level of Service Criteria**

Signalized Intersections		Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤ 10	A	0 to 10
B	> 10 to ≤ 20	B	> 10 to ≤ 15
C	> 20 to ≤ 35	C	> 15 to ≤ 25
D	> 35 to ≤ 55	D	> 25 to ≤ 35
E	> 55 to ≤ 80	E	> 35 to ≤ 50
F	> 80	F	> 50

*Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"*

Capacity analyses were performed to assess operational conditions. Study area intersections were analyzed using Synchro Version 11.1 based on Highway Capacity Manual (HCM) methodologies with the following assumptions:

- Existing grades;
- 12-foot lane widths;
- No parking activity, bus stops, or pedestrians;
- Peak hour factor (PHF) of 0.90;
- Heavy vehicle percentages 2%; and
- Minimum turning movement volume of 4 vehicles per hour (VPH) for all allowed movements; and
- Existing traffic signal plan signal data (see **Appendix C**).



**LEGEND:**

- Existing Road
- - - Proposed Road
- Ⓢ Signalized Intersection
- Ⓢ Unsignalized Intersection
- ↔ Existing Lane Configuration

### 3 EXISTING AND BACKGROUND CONDITIONS AND ANALYSIS

#### 3.1 2022 EXISTING ANALYSES

**Table 3-1** summarizes the 2022 Existing intersection LOS and delay based on the geometry shown in **Figure 2-2** and the 2022 Existing traffic volumes shown in **Figure 2-3**. The corresponding Synchro output is included in **Appendix D**.

The signalized intersection of NC-97 / South Wakefield Street is currently operating at an overall LOS B during both 2022 Existing peak hours. All intersection approaches are currently operating at a LOS C or better during both peak hours.

The signalized intersection of NC-97 / NC-96 is currently operating at an overall LOS C during both 2022 Existing peak hours. All intersection approaches are currently operating at a LOS D or better during both peak hours.

All NC-96 / West Barbee Street unsignalized intersection approaches are currently operating at a LOS C or better during the 2022 Existing AM and PM peak hours.

All NC-96 / Perry Curtis Road unsignalized intersection approaches are currently operating at a LOS B or better during the 2022 Existing AM and PM peak hours.

### **3.3 2026 BACKGROUND ANALYSIS**

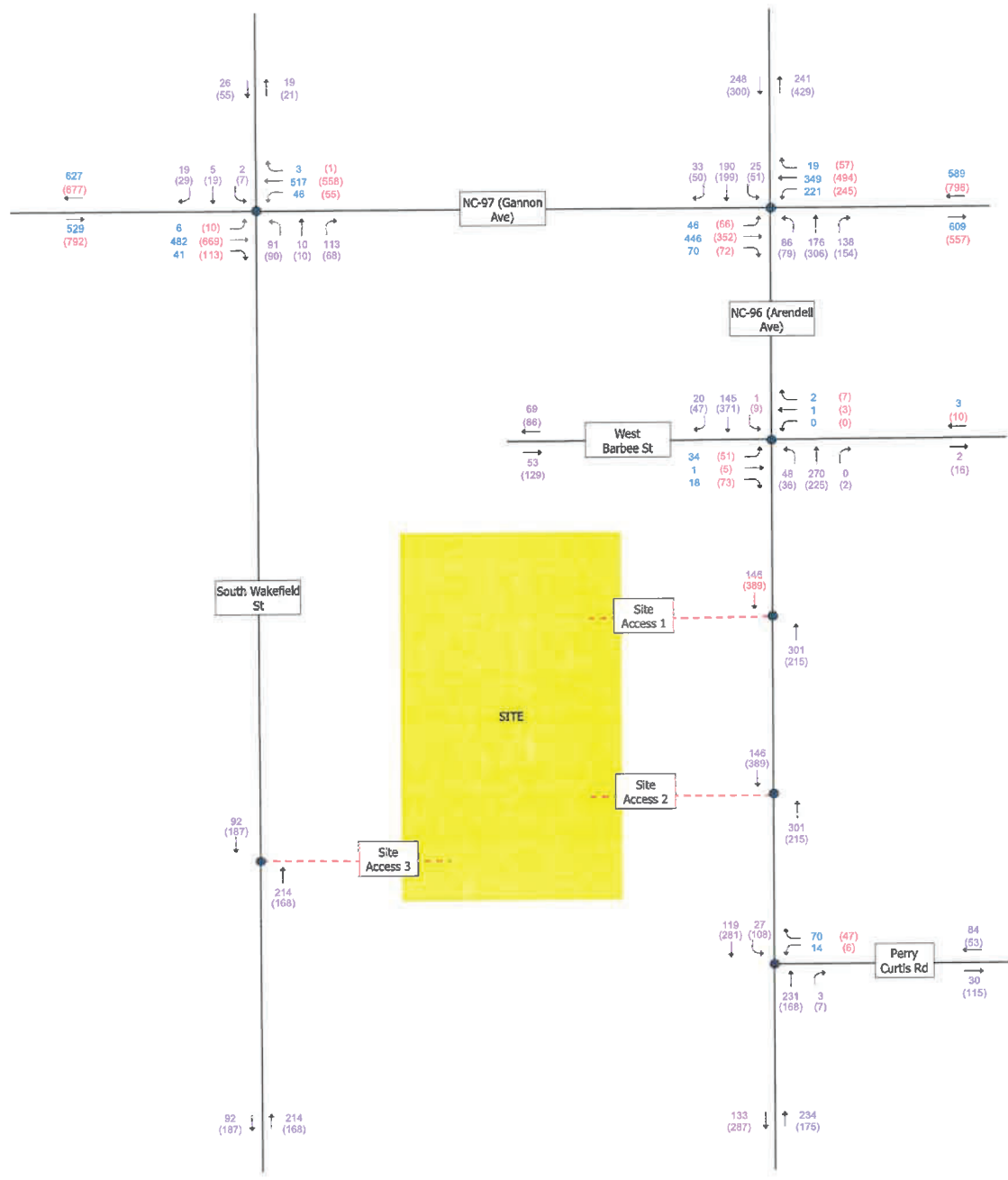
**Table 3-2** summarizes the intersection LOS and delay based on the geometry shown in **Figure 2-2** and the 2026 Background traffic volumes shown in **Figure 3-1**. The corresponding Synchro output is included in **Appendix D**.

The signalized intersection of NC-97 / South Wakefield Street is projected to operate at an overall LOS B and C during the 2026 Background AM and PM peak hours, respectively. All intersection approaches are projected to operate at a LOS D or better during both peak hours.

The signalized intersection of NC-97 / NC-96 is projected to operate at an overall LOS C during the 2026 Background peak hours. All intersection approaches are projected to operate at a LOS D or better during both peak hours.

All NC-96 / West Barbee Street unsignalized intersection approaches are projected to operate at a LOS C or better during the 2026 Background AM and PM peak hours.

All NC-96 / Perry Curtis Road unsignalized intersection approaches are projected to operate at a LOS B or better during the 2026 Background AM and PM peak hours.



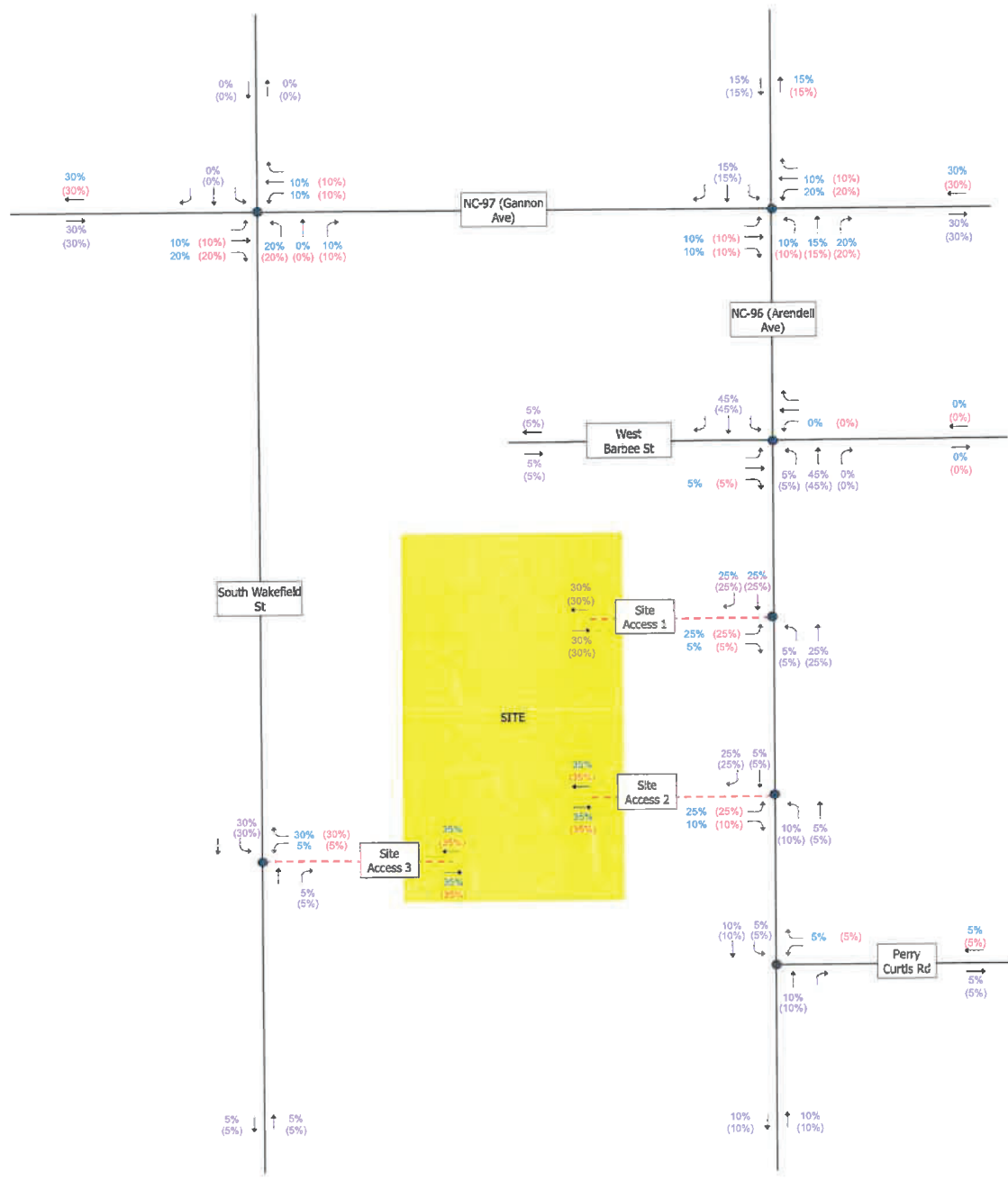
**LEGEND:**

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



## Zebulon South Traffic Impact Analysis 2026 Background Traffic Volumes





**LEGEND:**

- Existing Road
- - - Proposed Road
- XX% AM Peak Hour Percents
- (XX%) PM Peak Hour Percents

## 5 2026 BUILD CONDITION AND ANALYSIS

To complete the 2026 Build analyses (including proposed development), the estimated site trips were added to the 2026 Background traffic volumes. The projected total volumes, along with the existing intersection geometry, were used to complete the capacity analyses. The 2026 Background traffic volumes (**Figure 3-1**) were added to the projected site trips (**Figure 4-2**) to generate the 2026 Build traffic volumes (background + site) shown in **Figure 5-1**.

To summarize, the 2026 Build traffic volumes shown in **Figure 5-1** contain the following:

- Existing 2022 traffic volumes grown by a 3% per year ambient growth rate for 4 years; and
- Site trips generated by the subject development.

### 5.1 2026 BUILD ANALYSIS

**Table 5-1** summarizes the intersection LOS and delay based on the geometry shown in **Figure 2-2** and the 2026 Build traffic volumes shown in **Figure 5-1**. The corresponding Synchro output is included in **Appendix D**.

The signalized intersection of NC-97 / South Wakefield Street is projected to operate at an overall LOS C during both 2026 Build peak hours. All intersection approaches are projected to operate at a LOS D or better during both peak hours. No improvements are recommended at this intersection due to the proposed development's construction.

The signalized intersection of NC-97 / NC-96 is projected to operate at an overall LOS C and D during the 2026 Build AM and PM peak hours, respectively. All intersection approaches are projected to operate at a LOS D or better during both peak hours. No improvements are recommended at this intersection due to the proposed development's construction.

All NC-96 / West Barbee Street unsignalized intersection approaches are projected to operate at a LOS C or better during the 2026 Background AM and PM peak hours. No improvements are recommended at this intersection due to the proposed development's construction.

All NC-96 / Site Access 1 unsignalized intersection approaches are projected to operate at a LOS C or better during the 2026 Background AM and PM peak hours. Per the NCDOT Policy on Street and Driveway Access to North Carolina Highways Manual:

*"Generally left and right turn lanes and tapers shall be considered when:*

- *In accordance with G.S. 136-18(29), the average daily traffic meets or exceeds 4,000 vehicles per day on any secondary route (the average daily traffic should include both the existing traffic plus traffic generated by the proposed development)"*

The 2026 AADT along NC-96 currently exceeds 4,000 VPD and is not projected to decrease. Because of this, turn lanes were considered at Site Access 1. Per the NCDOT Nomograph (see **Appendix E**) and projected 2026 peak hour volumes, a 50-foot southbound right-turn lane (with appropriate taper) is recommended. As shown in **Table 5-2**, all intersection movements are projected to operate acceptably following the turn-lane's construction. No additional improvements are recommended at this intersection due to the proposed development's construction.

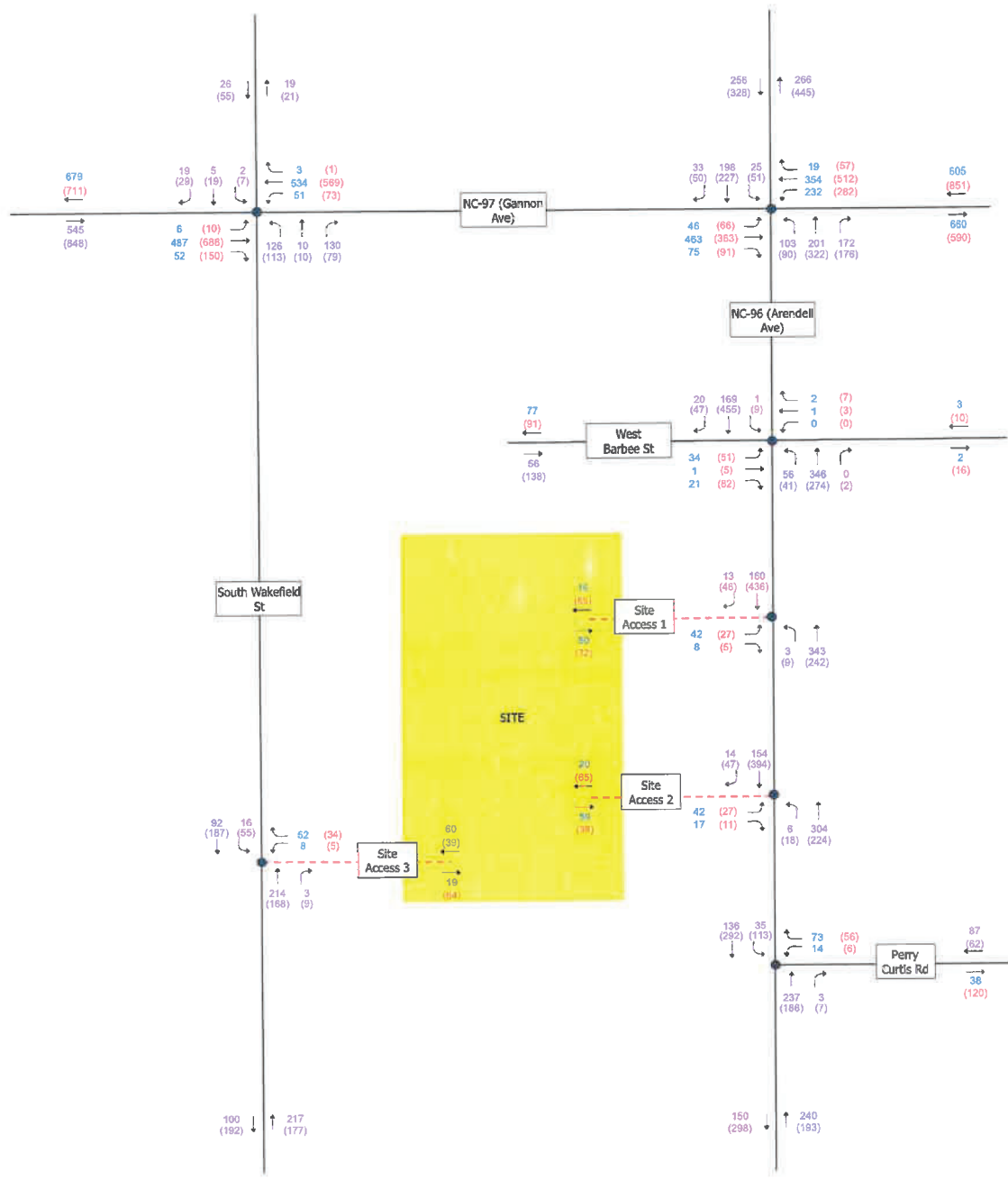
**Table 5-1: Intersection Level of Service and Delay Summary  
2026 Build Traffic Volumes**

Intersection	Approach / Overall	AM PEAK HOUR		PM PEAK HOUR		Movement	Turn Lane Storage (ft)	AM PEAK HOUR	PM PEAK HOUR
		Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>	Delay <sup>1</sup> (sec/veh)	LOS <sup>1</sup>			95th Percentile Queue Length (ft)*	95th Percentile Queue Length (ft)*
1: S Wakefield Street & NC-97 (Gannon Avenue) <i>Signalized</i>	Eastbound	25.4	C	37.5	D	EB Left	125	10	13
						EB Thru/Right		403	#774
						EB Approach		--	--
	Westbound	15.7	B	12.9	B	WB Left	125	68	90
						WB Thru/Right		272	229
						WB Approach		--	--
	Northbound	33.9	C	53.0	D	NB Left/Thru/Right		#264	#234
Southbound	22.5	C	30.8	C	NB Approach		34	63	
Overall	22.9	C	30.0	C	SB Left/Thru/Right		--	--	
					SB Approach		--	--	
					Overall		--	--	
2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue) <i>Signalized</i>	Eastbound	33.6	C	42.2	D	EB Left	200	45	75
						EB Thru		378	#365
						EB Right	100	63	87
	Westbound	25.9	C	29.9	C	EB Approach		--	--
						WB Left	350	#268	#309
						WB Thru/Right		168	356
	Northbound	41.6	D	42.1	D	WB Approach		--	--
					NB Left	125	106	85	
					NB Thru/Right		#370	#481	
Southbound	29.4	C	29.1	C	NB Approach		--	--	
					SB Left	250	36	#84	
					SB Thru/Right		195	212	
Overall	32.6	C	35.7	D	SB Approach		--	--	
					Overall		--	--	
3: NC-96 (Arendell Avenue) & Barbee Street <i>Unsignalized</i>	Eastbound	15.4	C	23.7	C	EB Left/Thru/Right		0.6	2.2
	Westbound	14.7	B	17.7	C	EB Approach		--	--
	Northbound	1.1	A	1.1	A	WB Left/Thru/Right		0.1	0.2
	Southbound	0.2	A	0.1	A	WB Approach		--	--
						NB Left/Thru/Right		0.1	0.1
	0.0	A	0.0	A	NB Approach		--	--	
4: NC-96 (Arendell Avenue) & Site Access 1 <i>Unsignalized</i>	Eastbound	12.9	B	15.7	C	SB Left/Thru/Right		0.4	0.3
	Northbound	0.1	A	0.3	A	SB Approach		--	--
	Southbound	0.0	A	0.0	A	EB Left/Right		--	--
						EB Approach		0	0
5: NC-96 (Arendell Avenue) & Site Access 2 <i>Unsignalized</i>	Eastbound	12.1	B	14.7	B	NB Left/Thru		0	0.1
	Northbound	0.1	A	0.6	A	NB Approach		--	--
	Southbound	0.0	A	0.0	A	SB Thru/Right		0	0
						SB Approach		--	--
6: NC-96 (Arendell Avenue) & Perry Curtis Road <i>Unsignalized</i>	Westbound	10.8	B	10.5	B	WB Left/Right		0.5	0.3
	Northbound	0.0	A	0.0	A	WB Approach		--	--
	Southbound	1.6	A	2.2	A	NB Thru/Right		0	0
						NB Approach		0.1	0.3
7: S Wakefield Street & Site Access 3 <i>Unsignalized</i>	Westbound	10.1	B	9.9	A	SB Left/Thru		--	--
	Northbound	0.0	A	0.0	A	SB Approach		0.3	0.2
	Southbound	1.1	A	1.8	A	WB Left/Right		--	--
						WB Approach		0	0

<sup>1</sup> Overall intersection LOS and delay not reported for TWSC intersections.

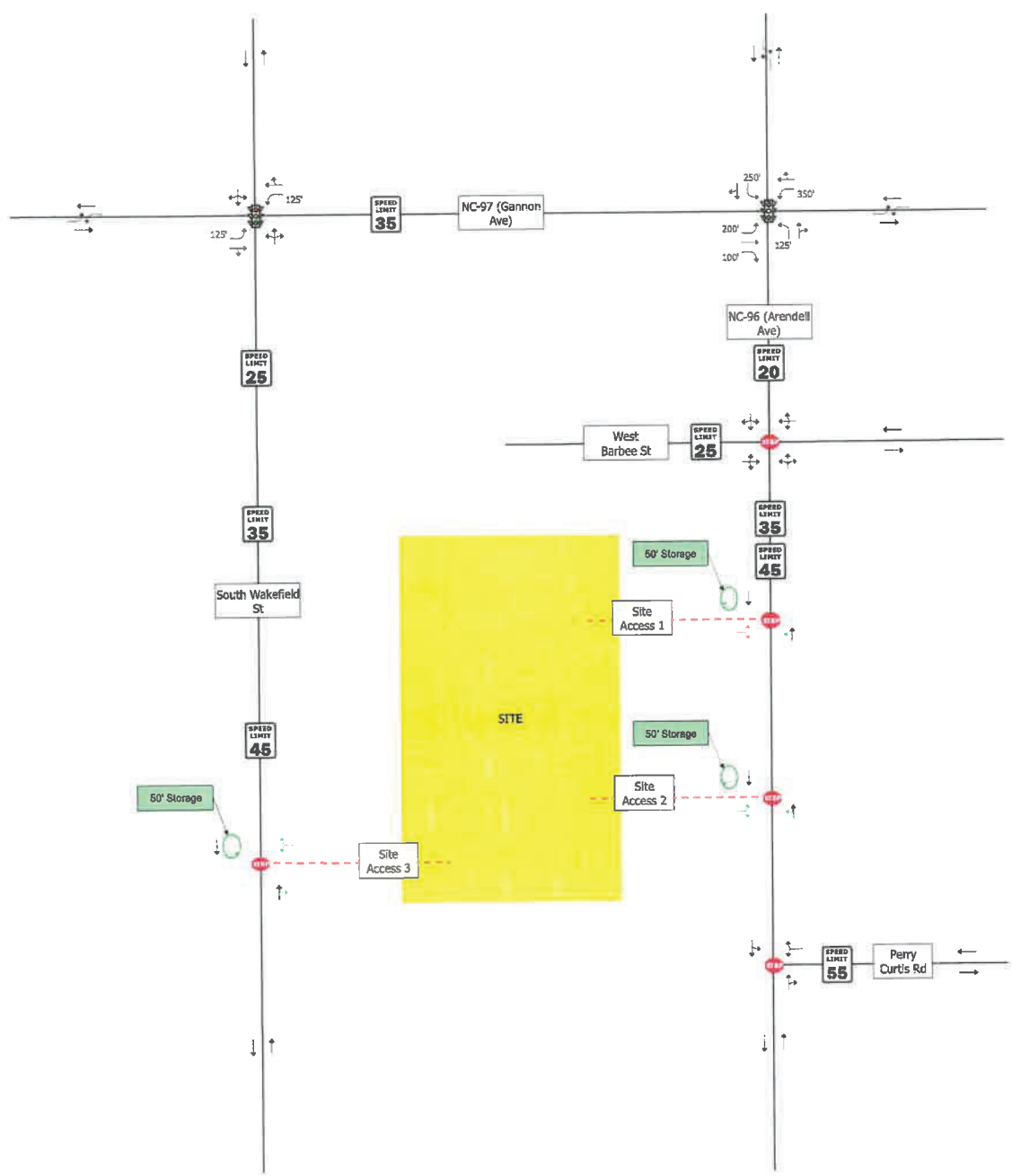
\* - 95th percentile queues for unsignalized intersections reported in number of vehicles.

# - 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles



**LEGEND:**

- Existing Road
- - - Proposed Road
- XX AM Peak Hour Volume (vph)
- (XX) PM Peak Hour Volume (vph)



**LEGEND:**

- Existing Road
- - - Proposed Road
- Signalized Intersection
- Unsignalized Intersection
- Existing Lane Configuration
- Proposed Lane Configuration

**From:** [Brennan, Sean P](#)  
**To:** [Jeff Hochanadel](#); [Meade Bradshaw](#); [Warren, Jeremy L](#); [Ishak, Doumit Y](#); [Bunting, Clarence B](#); [Lineberger, Nicholas C](#); [Walker, Braden M](#)  
**Cc:** [Cliff Lawson](#); [Beth Blackmon](#)  
**Subject:** Re: [External] Zebulon South TIA Scoping  
**Date:** Friday, April 1, 2022 10:20:18 AM  
**Attachments:** [49084-331C-SPLAYO3-Layout1.pdf](#)

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Jeff,

Isn't there a 3<sup>rd</sup> site access that connects to S Wakefield St? So you might want to include S Wakefield and W Gannon Ave as well.

I have some concerns with the site access to S Arendell located across from Perry Curtis Rd. The geometry of that intersection makes adding a 4<sup>th</sup> leg difficult.

Regards,

**Sean Brennan, PE**  
Senior Assistant District Engineer  
Division 5/District 1  
Department of Transportation

919-733-3213 office  
919-715-5778 fax  
[spbrennan@ncdot.gov](mailto:spbrennan@ncdot.gov)

4009 District Drive (Physical Address)  
Raleigh, NC 27607

1575 Mail Service Center (Mailing Address)  
Raleigh, NC 27699-1575

cid:image001.png@01D10DA4.5CC88DA0



*Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.*

---

**From:** Jeff Hochanadel <Jeff.Hochanadel@timmons.com>  
**Sent:** Thursday, March 31, 2022 4:51 PM  
**To:** Meade Bradshaw <Mbradshaw@townofzebulon.org>; Brennan, Sean P <spbrennan@ncdot.gov>; Warren, Jeremy L <jlwarren@ncdot.gov>; Ishak, Doumit Y <dishak@ncdot.gov>; Bunting, Clarence B <cbunting@ncdot.gov>; Lineberger, Nicholas C <nlineberger@ncdot.gov>; Walker, Braden M <bmwalker1@ncdot.gov>

**Jeff Hochanadel, PE, PTOE**

Principal | North Carolina Transportation Group Leader

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5410 Trinity Rd, Suite 102 | Raleigh, NC 27607

Office: 919.866.4511 | Fax: 919.859.5663

Cell: 919.426.8405

[jeff.hochanadel@timmons.com](mailto:jeff.hochanadel@timmons.com)

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TRAFFIC DATA COLLECTION

File Name : Zebulon(NC 96 and Barbee)  
 Site Code :  
 Start Date : 4/5/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound				W Barbee Street Westbound				NC 96 Northbound				E Barbee Street Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
07:00 AM	7	15	0	22	1	0	0	1	1	47	7	55	7	1	5	13	91
07:15 AM	3	18	1	22	1	1	0	2	1	67	11	79	2	0	5	7	110
07:30 AM	5	27	0	32	0	0	0	0	0	62	12	74	2	1	5	8	114
07:45 AM	7	33	0	40	1	0	0	1	0	73	9	82	6	0	10	16	139
Total	22	93	1	116	3	1	0	4	2	249	39	290	17	2	25	44	454
08:00 AM	2	34	0	36	1	0	0	1	0	53	12	65	7	0	5	12	114
08:15 AM	4	35	1	40	0	1	0	1	0	52	10	62	1	0	10	11	114
08:30 AM	5	26	1	32	1	0	0	1	0	52	7	59	4	0	10	14	106
08:45 AM	8	26	0	34	0	0	0	0	0	50	14	64	6	1	6	13	111
Total	19	121	2	142	2	1	0	3	0	207	43	250	18	1	31	50	445
Grand Total	41	214	3	258	5	2	0	7	2	456	82	540	35	3	56	94	899
Apprch %	15.9	82.9	1.2		71.4	28.6	0		0.4	84.4	15.2		37.2	3.2	59.6		
Total %	4.6	23.8	0.3	28.7	0.6	0.2	0	0.8	0.2	50.7	9.1	60.1	3.9	0.3	6.2	10.5	
Cars +	37	195	3	235	5	2	0	7	2	436	81	519	34	3	53	90	851
% Cars +	90.2	91.1	100	91.1	100	100	0	100	100	95.6	98.8	96.1	97.1	100	94.6	95.7	94.7
Trucks	4	19	0	23	0	0	0	0	0	20	1	21	1	0	3	4	48
% Trucks	9.8	8.9	0	8.9	0	0	0	0	0	4.4	1.2	3.9	2.9	0	5.4	4.3	5.3





TRAFFIC DATA COLLECTION

File Name : Zebulon(NC 96 and Barbee)  
 Site Code :  
 Start Date : 4/5/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound				W Barbee Street Westbound				NC 96 Northbound				E Barbee Street Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
04:00 PM	11	71	1	83	0	1	1	2	0	47	6	53	13	1	13	27	165
04:15 PM	14	57	2	73	0	0	0	0	1	52	14	67	14	0	16	30	170
04:30 PM	12	72	0	84	1	1	0	2	0	49	6	55	22	2	12	36	177
04:45 PM	14	75	0	89	2	2	0	4	0	44	12	56	14	2	12	28	177
Total	51	275	3	329	3	4	1	8	1	192	38	231	63	5	53	121	689
05:00 PM	12	80	3	95	0	1	0	1	0	42	11	53	15	0	7	22	171
05:15 PM	9	90	1	100	2	1	0	3	0	55	7	62	17	3	14	34	199
05:30 PM	8	75	1	84	1	1	0	2	1	52	7	60	18	1	11	30	176
05:45 PM	13	85	3	101	3	0	0	3	1	51	7	59	15	0	13	28	191
Total	42	330	8	380	6	3	0	9	2	200	32	234	65	4	45	114	737
Grand Total	93	605	11	709	9	7	1	17	3	392	70	465	128	9	98	235	1426
Apprch %	13.1	85.3	1.6		52.9	41.2	5.9		0.6	84.3	15.1		54.5	3.8	41.7		
Total %	6.5	42.4	0.8	49.7	0.6	0.5	0.1	1.2	0.2	27.5	4.9	32.6	9	0.6	6.9	16.5	
Cars +	87	593	11	691	9	7	1	17	3	379	66	448	127	9	96	232	1388
% Cars +	93.5	98	100	97.5	100	100	100	100	100	96.7	94.3	96.3	99.2	100	98	98.7	97.3
Trucks	6	12	0	18	0	0	0	0	0	13	4	17	1	0	2	3	38
% Trucks	6.5	2	0	2.5	0	0	0	0	0	3.3	5.7	3.7	0.8	0	2	1.3	2.7



TRAFFIC DATA COLLECTION

File Name : Zebulon(NC 96 and NC 97)  
 Site Code :  
 Start Date : 4/7/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound					NC 97 Westbound					NC 96 Northbound					NC 97 Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	4	32	6	1	43	1	38	28	0	67	22	23	4	0	49	9	59	3	0	71	230
07:15 AM	9	59	7	0	75	1	56	42	0	99	30	21	8	0	59	16	62	7	0	85	318
07:30 AM	7	47	9	0	63	6	83	39	0	128	25	36	16	0	77	22	94	7	0	123	391
07:45 AM	9	42	4	0	55	4	94	52	0	150	46	35	26	0	107	11	111	9	0	131	443
Total	29	180	26	1	236	12	271	161	0	444	123	115	54	0	292	58	326	26	0	410	1382
08:00 AM	11	37	5	0	53	3	83	56	0	142	19	41	19	1	80	16	109	10	0	135	410
08:15 AM	2	43	4	0	49	4	50	49	0	103	33	44	15	0	92	13	82	15	0	110	354
08:30 AM	7	44	5	0	56	8	35	42	0	85	40	41	9	0	90	12	46	9	0	67	298
08:45 AM	7	46	10	0	63	9	55	44	0	108	39	36	6	0	81	11	57	1	0	69	321
Total	27	170	24	0	221	24	223	191	0	438	131	162	49	1	343	52	294	35	0	381	1383
Grand Total	56	350	50	1	457	36	494	352	0	882	254	277	103	1	635	110	620	61	0	791	2765
Apprch %	12.3	76.6	10.9	0.2		4.1	56	39.9	0		40	43.6	16.2	0.2		13.9	78.4	7.7	0		
Total %	2	12.7	1.8	0	16.5	1.3	17.9	12.7	0	31.9	9.2	10	3.7	0	23	4	22.4	2.2	0	28.6	
Cars +	55	336	48	1	440	34	482	341	0	857	244	260	100	1	605	104	599	60	0	763	2665
% Cars +	98.2	96	96	100	96.3	94.4	97.6	96.9	0	97.2	96.1	93.9	97.1	100	95.3	94.5	96.6	98.4	0	96.5	96.4
Trucks	1	14	2	0	17	2	12	11	0	25	10	17	3	0	30	6	21	1	0	28	100
% Trucks	1.8	4	4	0	3.7	5.6	2.4	3.1	0	2.8	3.9	6.1	2.9	0	4.7	5.5	3.4	1.6	0	3.5	3.6



TRAFFIC DATA COLLECTION

File Name : Zebulon(NC 96 and NC 97)  
 Site Code :  
 Start Date : 4/7/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound					NC 97 Westbound					NC 96 Northbound					NC 97 Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	15	56	17	0	88	10	115	61	0	186	33	67	17	0	117	12	84	17	0	113	504
04:15 PM	7	38	7	0	52	10	98	40	0	148	34	64	25	0	123	19	93	15	0	127	450
04:30 PM	11	44	8	0	63	19	117	59	0	195	36	75	14	0	125	16	69	9	0	94	477
04:45 PM	11	39	13	0	63	12	109	58	0	179	34	66	14	0	114	17	67	18	0	102	458
Total	44	177	45	0	266	51	439	218	0	708	137	272	70	0	479	64	313	59	0	436	1889
05:00 PM	8	54	13	0	75	9	117	64	0	190	37	57	17	0	111	15	70	16	0	101	477
05:15 PM	12	47	9	0	68	9	111	56	0	176	29	56	13	1	99	21	87	11	0	119	462
05:30 PM	11	59	9	0	79	16	94	63	0	173	37	61	16	0	114	9	61	15	0	85	451
05:45 PM	12	48	8	0	68	10	106	48	0	164	52	62	13	0	127	17	60	16	0	93	452
Total	43	208	39	0	290	44	428	231	0	703	155	236	59	1	451	62	278	58	0	398	1842
Grand Total	87	385	84	0	556	95	867	449	0	1411	292	508	129	1	930	126	591	117	0	834	3731
Apprch %	15.6	69.2	15.1	0		6.7	61.4	31.8	0		31.4	54.6	13.9	0.1		15.1	70.9	14	0		
Total %	2.3	10.3	2.3	0	14.9	2.5	23.2	12	0	37.8	7.8	13.6	3.5	0	24.9	3.4	15.8	3.1	0	22.4	
Cars +	86	384	82	0	552	94	858	442	0	1394	284	497	124	1	906	126	581	117	0	824	3676
% Cars +	98.9	99.7	97.6	0	99.3	98.9	99	98.4	0	98.8	97.3	97.8	96.1	100	97.4	100	98.3	100	0	98.8	98.5
Trucks	1	1	2	0	4	1	9	7	0	17	8	11	5	0	24	0	10	0	0	10	55
% Trucks	1.1	0.3	2.4	0	0.7	1.1	1	1.6	0	1.2	2.7	2.2	3.9	0	2.6	0	1.7	0	0	1.2	1.5



TRAFFIC DATA COLLECTION

File Name : Zebulon-Zebulon(NC 97 and Wakefield)  
 Site Code :  
 Start Date : 4/5/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	N Wakefield Street Southbound				NC 97 Westbound				N Wakefield Street Northbound				NC 97 Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
07:00 AM	2	1	0	3	0	85	8	93	30	1	16	47	6	59	2	67	210
07:15 AM	1	1	1	3	0	92	12	104	22	3	15	40	5	89	0	94	241
07:30 AM	3	0	0	3	1	104	8	113	25	3	26	54	14	127	0	141	311
07:45 AM	8	3	1	12	1	125	10	136	26	1	24	51	6	119	3	128	327
<b>Total</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>21</b>	<b>2</b>	<b>406</b>	<b>38</b>	<b>446</b>	<b>103</b>	<b>8</b>	<b>81</b>	<b>192</b>	<b>31</b>	<b>394</b>	<b>5</b>	<b>430</b>	<b>1089</b>
08:00 AM	5	0	0	5	1	138	11	150	27	2	16	45	11	93	2	106	306
08:15 AM	2	4	1	7	0	125	8	133	12	2	14	28	12	59	0	71	239
08:30 AM	1	1	0	2	0	115	6	121	22	1	16	39	15	78	1	94	256
08:45 AM	3	6	0	9	0	111	5	116	17	0	21	38	11	73	3	87	250
<b>Total</b>	<b>11</b>	<b>11</b>	<b>1</b>	<b>23</b>	<b>1</b>	<b>489</b>	<b>30</b>	<b>520</b>	<b>78</b>	<b>5</b>	<b>67</b>	<b>150</b>	<b>49</b>	<b>303</b>	<b>6</b>	<b>358</b>	<b>1051</b>
<b>Grand Total</b>	<b>25</b>	<b>16</b>	<b>3</b>	<b>44</b>	<b>3</b>	<b>895</b>	<b>68</b>	<b>966</b>	<b>181</b>	<b>13</b>	<b>148</b>	<b>342</b>	<b>80</b>	<b>697</b>	<b>11</b>	<b>788</b>	<b>2140</b>
Apprch %	56.8	36.4	6.8		0.3	92.7	7		52.9	3.8	43.3		10.2	88.5	1.4		
Total %	1.2	0.7	0.1	2.1	0.1	41.8	3.2	45.1	8.5	0.6	6.9	16	3.7	32.6	0.5	36.8	
Cars +	24	16	3	43	3	873	68	944	177	13	144	334	78	665	11	754	2075
% Cars +	96	100	100	97.7	100	97.5	100	97.7	97.8	100	97.3	97.7	97.5	95.4	100	95.7	97
Trucks	1	0	0	1	0	22	0	22	4	0	4	8	2	32	0	34	65
% Trucks	4	0	0	2.3	0	2.5	0	2.3	2.2	0	2.7	2.3	2.5	4.6	0	4.3	3



TRAFFIC DATA COLLECTION

File Name : Zebulon-Zebulon(NC 97 and Wakefield)  
 Site Code :  
 Start Date : 4/5/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	N Wakefield Street Southbound				NC 97 Westbound				N Wakefield Street Northbound				NC 97 Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
04:00 PM	9	10	1	20	0	132	10	142	22	2	20	44	22	127	2	151	357
04:15 PM	3	3	0	6	2	88	8	98	16	2	18	36	34	158	2	194	334
04:30 PM	7	4	2	13	0	118	12	130	12	1	20	33	27	158	6	191	367
04:45 PM	6	4	0	10	0	135	14	149	13	2	26	41	21	157	2	180	380
Total	25	21	3	49	2	473	44	519	63	7	84	154	104	600	12	716	1438
05:00 PM	8	5	3	16	1	113	13	127	13	4	16	33	18	151	0	169	345
05:15 PM	5	4	1	10	0	130	10	140	22	2	18	42	34	128	1	163	355
05:30 PM	11	1	3	15	0	113	10	123	16	1	16	33	24	136	0	160	331
05:45 PM	5	2	1	8	0	116	13	129	18	2	15	35	22	128	2	152	324
Total	29	12	8	49	1	472	46	519	69	9	65	143	98	543	3	644	1355
Grand Total	54	33	11	98	3	945	90	1038	132	16	149	297	202	1143	15	1360	2793
Apprch %	55.1	33.7	11.2		0.3	91	8.7		44.4	5.4	50.2		14.9	84	1.1		
Total %	1.9	1.2	0.4	3.5	0.1	33.8	3.2	37.2	4.7	0.6	5.3	10.6	7.2	40.9	0.5	48.7	
Cars +	53	33	11	97	3	914	88	1005	127	16	144	287	197	1120	15	1332	2721
% Cars +	98.1	100	100	99	100	96.7	97.8	96.8	96.2	100	96.6	96.6	97.5	98	100	97.9	97.4
Trucks	1	0	0	1	0	31	2	33	5	0	5	10	5	23	0	28	72
% Trucks	1.9	0	0	1	0	3.3	2.2	3.2	3.8	0	3.4	3.4	2.5	2	0	2.1	2.6



TRAFFIC DATA COLLECTION

File Name : Zebulon(NC96 and Perry)  
 Site Code :  
 Start Date : 4/12/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound			Perry Curtis Road Westbound			NC 96 Northbound			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
07:00 AM	17	3	20	17	3	20	2	42	44	84
07:15 AM	20	2	22	13	0	13	0	64	64	99
07:30 AM	20	4	24	9	3	12	0	61	61	97
07:45 AM	31	5	36	19	3	22	1	57	58	116
Total	88	14	102	58	9	67	3	224	227	396
08:00 AM	27	6	33	13	2	15	1	49	50	98
08:15 AM	28	9	37	21	4	25	1	38	39	101
08:30 AM	17	8	25	8	2	10	2	47	49	84
08:45 AM	24	2	26	19	3	22	1	43	44	92
Total	96	25	121	61	11	72	5	177	182	375
Grand Total	184	39	223	119	20	139	8	401	409	771
Apprch %	82.5	17.5		85.6	14.4		2	98		
Total %	23.9	5.1	28.9	15.4	2.6	18	1	52	53	
Cars +	166	38	204	117	19	136	5	378	383	723
% Cars +	90.2	97.4	91.5	98.3	95	97.8	62.5	94.3	93.6	93.8
Trucks	18	1	19	2	1	3	3	23	26	48
% Trucks	9.8	2.6	8.5	1.7	5	2.2	37.5	5.7	6.4	6.2



TRAFFIC DATA COLLECTION

File Name : Zebulon(NC96 and Perry)  
 Site Code :  
 Start Date : 4/12/2022  
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	NC 96 Southbound			Perry Curtis Road Westbound			NC 96 Northbound			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
04:00 PM	56	20	76	12	4	16	2	35	37	129
04:15 PM	50	12	62	21	2	23	1	37	38	123
04:30 PM	52	28	80	14	1	15	2	41	43	138
04:45 PM	63	24	87	17	1	18	0	32	32	137
Total	221	84	305	64	8	72	5	145	150	527
05:00 PM	49	24	73	13	2	15	1	31	32	120
05:15 PM	72	23	95	10	2	12	3	40	43	150
05:30 PM	64	19	83	8	0	8	1	36	37	128
05:45 PM	65	30	95	11	1	12	1	42	43	150
Total	250	96	346	42	5	47	6	149	155	548
Grand Total	471	180	651	106	13	119	11	294	305	1075
Apprch %	72.4	27.6		89.1	10.9		3.6	96.4		
Total %	43.8	16.7	60.6	9.9	1.2	11.1	1	27.3	28.4	
Cars +	461	178	639	104	11	115	11	280	291	1045
% Cars +	97.9	98.9	98.2	98.1	84.6	96.6	100	95.2	95.4	97.2
Trucks	10	2	12	2	2	4	0	14	14	30
% Trucks	2.1	1.1	1.8	1.9	15.4	3.4	0	4.8	4.6	2.8

## **Appendix C – Signal Timing Plans**



**2 Phase Fully Actuated (Isolated)**

**NOTES**

1. Refer to "Roadway Standard Drawings NCdot" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
2. Set all detector units to presence mode.
3. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red. Pavement markings are existing.

**OASIS 2070L LOOP & DETECTOR INSTALLATION CHART**

LOOP	SIZE (FT)	INDUCTIVE LOOP	DETECTOR PROGRAMMING		NEW LOOP	CLASH	MULTI-TIME	DETECT TIME	RECALL TIME	NEW CAB
			NON SPINAL (Y)	SPINAL (N)						
2A	6X6	TO EXISTING	2	Y	Y	-	-	-	-	Y
4A	6X6	+S	2-4-2	4	Y	Y	-	5	-	Y
5A	6X6	TO EXISTING	6	Y	Y	-	-	-	-	Y
8A	6X6	+S	2-4-2	8	Y	Y	-	5	-	Y

**TABLE OF OPERATION**

SIGNAL FACE	PHASE	
	8	6
2L, 2R	G R	Y
4L, 4R	R C	R
5L, 5R	G R	Y
8L, 8R	R C	R

**SIGNAL FACE I.D.**



**PHASING DIAGRAM**



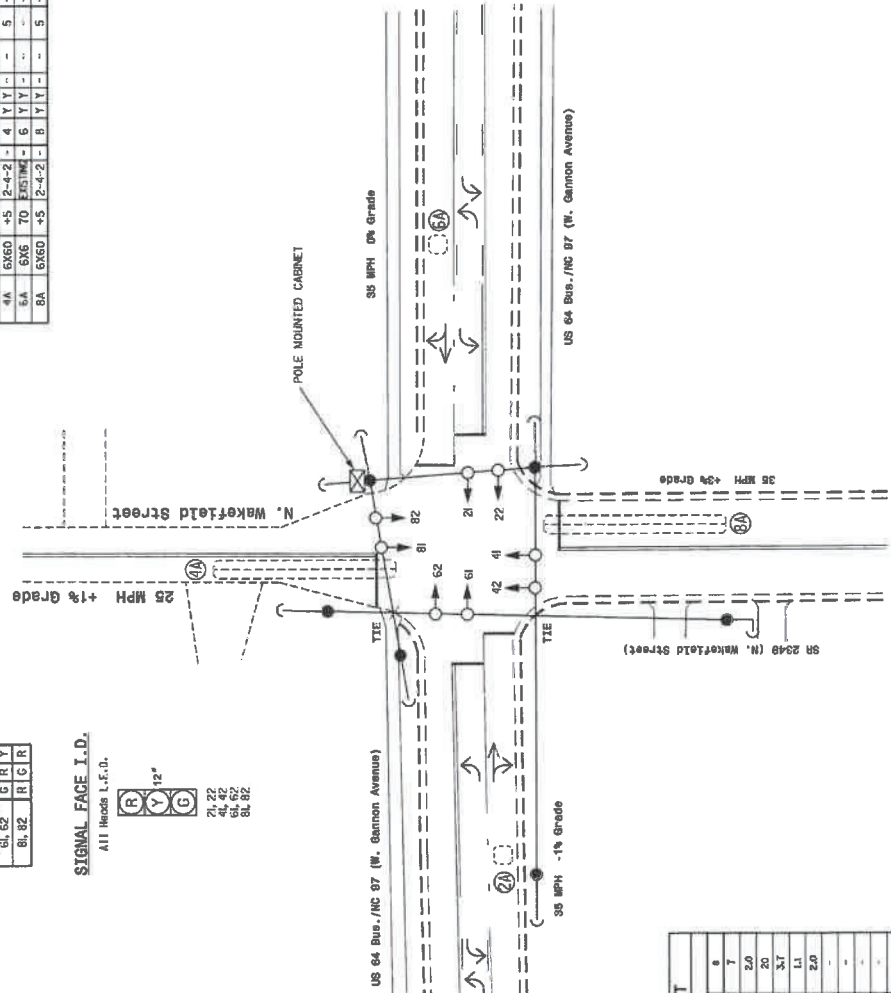
**PHASING DIAGRAM DETECTION LEGEND**

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNDETECTED MOVEMENT
- PEDESTRIAN MOVEMENT

**OASIS 2070L TIMING CHART**

FEATURE	PHASE			
	2	4	6	8
Min Green 1 *	10	1	10	7
Extension 1 *	3.0	2.0	3.0	2.0
Min Green 1 *	45	20	45	20
Yellow Clearance	3.5	3.1	3.8	3.7
Red Clearance	1.0	1.8	1.0	1.1
Red Start	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Dark Walk 3	-	-	-	-
Seconds Per Interval *	-	-	-	-
Min Variable Field *	-	-	-	-
Time To Pedest *	-	-	-	-
Time To Pedest *	-	-	-	-
Walkway Step	-	-	-	-
Min Recall	-	-	-	-
Yellow Recall	-	-	-	-
Vehicle Call Memory	-	-	-	-
Min Recall	ON	ON	ON	ON
Yellow Recall	ON	ON	ON	ON

\* Minimum 3 second interval between call detection and release. For feature 3 and 4, minimum 4 second interval between call detection and release. For feature 4, minimum 4 second interval between call detection and release.



**LEGEND**

- PROCESSED**
- Traffic Signal Head
  - Modified Signal Head
  - Sign
  - Pedestrian Signal Head with Push Button & Sign
  - Signal Pole with Street Light
  - Inductive Loop Detector
  - Control Cabinet
  - 2-in Underdrain Conduit
  - Right of Way
  - Directional Arrow
- EXISTING**
- N/A

**Signal Upgrade**

US 64 Bus./INC 97 (W. Gannon Avenue) at SR 2349 (N. Wakefield Street)

Division 5 - Wake County

DATE: JANUARY 2010

DESIGNED BY: C.E. CARTER

CHECKED BY: [Signature]

SCALE: 1"=20'

PROJECT NO.: 05-1318

## **2022 Existing Traffic Volumes**

Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/04/2023

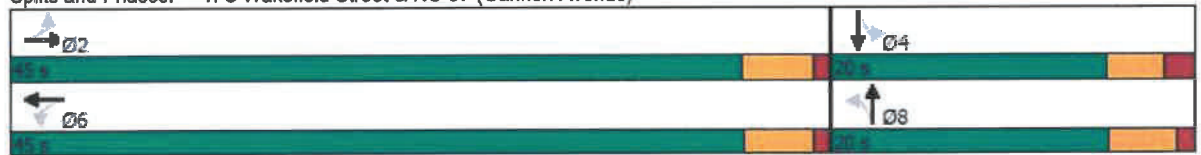
	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	6.6	11.6		7.9	11.5			18.1			11.0	
LOS	A	B		A	B			B			B	
Approach Delay		11.6			11.2			18.1			11.0	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	1	65		4	65			31			3	
Queue Length 95th (ft)	5	170		21	168			94			18	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	706	1775		699	1786			591			645	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.29		0.07	0.29			0.36			0.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 37.9  
 Natural Cycle: 40  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.60  
 Intersection Signal Delay: 12.5  
 Intersection Capacity Utilization 60.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 (CU Level of Service B)

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA

2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

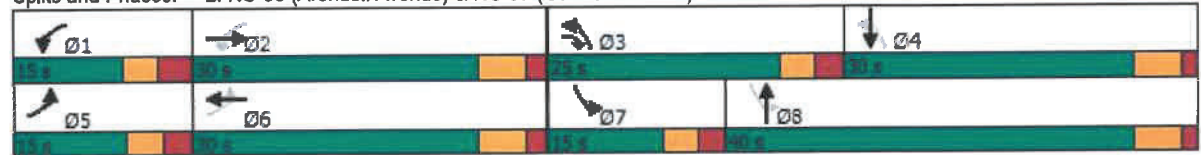
12/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.48	0.31	0.49	0.45	0.42		0.30	0.29		0.32	0.22	
v/c Ratio	0.10	0.76	0.09	0.56	0.46		0.23	0.61		0.07	0.56	
Control Delay	12.7	36.0	13.3	19.2	22.7		17.6	29.9		15.7	33.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.7	36.0	13.3	19.2	22.7		17.6	29.9		15.7	33.6	
LOS	B	D	B	B	C		B	C		B	C	
Approach Delay		31.2			21.4			27.3			31.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	10	182	17	52	134		27	115		7	98	
Queue Length 95th (ft)	34	#399	47	125	271		54	233		22	170	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	518	636	1032	409	792		592	849		380	622	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.69	0.07	0.54	0.46		0.14	0.37		0.06	0.35	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 75.1  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 27.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)



Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	12	62	205	4	24	106
Future Vol, veh/h	12	62	205	4	24	106
Conflicting Peds. #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	69	228	4	27	118
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	402	230	0	0	232	0
Stage 1	230	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	604	809	-	-	1336	-
Stage 1	808	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	591	809	-	-	1336	-
Mov Cap-2 Maneuver	591	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.3	0	1.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	763	1336		
HCM Lane V/C Ratio	-	-	0.108	0.02		
HCM Control Delay (s)	-	-	10.3	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0.1		

Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/04/2023

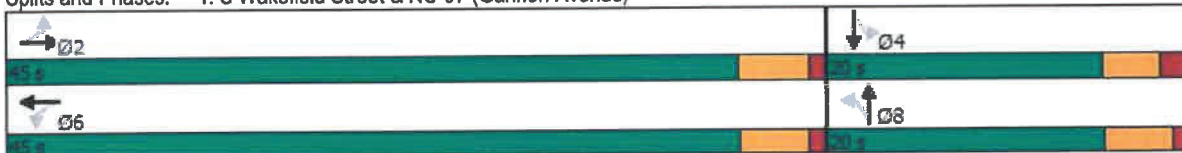


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	5.0	10.8		7.1	7.7			24.6			17.9	
LOS	A	B		A	A			C			B	
Approach Delay		10.8			7.7			24.6			17.9	
Approach LOS		B			A			C			B	
Queue Length 50th (ft)	1	122		6	73			33			10	
Queue Length 95th (ft)	6	291		24	170			113			44	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	664	1605		418	1631			509			596	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.02	0.48		0.13	0.34			0.33			0.09	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 44.3  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 11.3  
 Intersection LOS: B  
 Intersection Capacity Utilization: 64.3%  
 (CU Level of Service C)  
 Analysis Period (min): 15

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)



Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/04/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.41	0.27	0.44	0.39	0.34		0.36	0.33		0.37	0.29	
v/c Ratio	0.25	0.71	0.10	0.62	0.87		0.18	0.78		0.17	0.48	
Control Delay	18.4	38.4	17.4	26.0	46.7		15.2	36.2		15.3	28.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.4	38.4	17.4	26.0	46.7		15.2	36.2		15.3	28.2	
LOS	B	D	B	C	D		B	D		B	C	
Approach Delay		32.6			40.3			33.1			26.0	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	21	173	24	84	~306		23	227		15	107	
Queue Length 95th (ft)	52	#321	56	#175	#599		50	357		35	184	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	316	616	939	401	629		633	836		340	659	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.56	0.08	0.60	0.87		0.12	0.54		0.15	0.37	

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 79.9

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 34.7

Intersection LOS: C

Intersection Capacity Utilization 77.2%

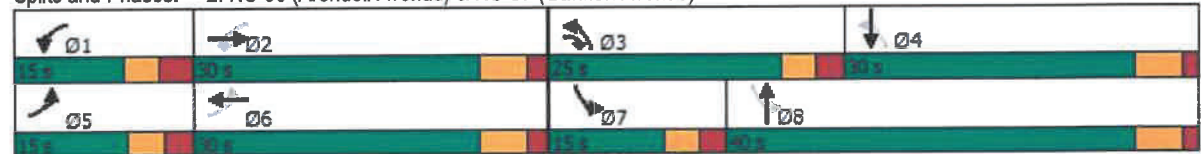
ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)






















Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	5	42	149	6	96	250
Future Vol, veh/h	5	42	149	6	96	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	47	166	7	107	278
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	662	170	0	0	173	0
Stage 1	170	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	427	874	-	-	1404	-
Stage 1	860	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	389	874	-	-	1404	-
Mov Cap-2 Maneuver	389	-	-	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10	0	2.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	772	1404	-	
HCM Lane V/C Ratio	-	-	0.068	0.076	-	
HCM Control Delay (s)	-	-	10	7.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	



Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/01/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	482	41	46	517	4	91	10	113	4	5	19
Future Volume (vph)	6	482	41	46	517	4	91	10	113	4	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%				1%
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.988			0.999			0.929			0.909	
Fl <sub>t</sub> Protected	0.950			0.950				0.979			0.994	
Satd. Flow (prot)	1778	1850	0	1770	1861	0	0	1669	0	0	1675	0
Fl <sub>t</sub> Permitted	0.447			0.950				0.848			0.951	
Satd. Flow (perm)	837	1850	0	1770	1861	0	0	1445	0	0	1602	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	536	46	51	574	4	101	11	126	4	6	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	582	0	51	578	0	0	238	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	47.0	47.0		14.0	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	52.2%	52.2%		15.6%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	40.0	40.0		7.0	54.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	28.1	28.1		10.3	34.8			17.6			17.6	
Actuated g/C Ratio	0.44	0.44		0.16	0.55			0.28			0.28	
v/c Ratio	0.02	0.72		0.18	0.57			0.60			0.07	
Control Delay	13.3	22.4		34.7	11.5			31.3			23.3	

2026 Background AM Peak Hour  
Timmons Group

Synchro 11 Report

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/01/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	446	70	221	349	19	86	176	138	25	190	33
Future Volume (vph)	46	446	70	221	349	19	86	176	138	25	190	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.934			0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1866	0	1787	1757	0	1752	1804	0
Flt Permitted	0.522			0.950			0.481			0.314		
Satd. Flow (perm)	963	1844	1567	1787	1866	0	905	1757	0	579	1804	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	496	78	246	388	21	96	196	153	28	211	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	496	78	246	409	0	96	349	0	28	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	38.0	38.0	38.0	23.0	61.0		29.0	29.0		29.0	29.0	
Total Split (%)	42.2%	42.2%	42.2%	25.6%	67.8%		32.2%	32.2%		32.2%	32.2%	
Maximum Green (s)	31.0	31.0	31.0	16.0	54.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effect Green (s)	26.8	26.8	26.8	15.8	47.8		20.7	20.7		20.7	20.7	

2026 Background AM Peak Hour  
 Timmons Group

Synchro 11 Report

Zebulon South TIA  
3: NC-96 (Arendell Avenue) & Barbee Street

12/01/2023

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	34	4	18	4	4	4	48	270	4	4	145	20
Future Vol, veh/h	34	4	18	4	4	4	48	270	4	4	145	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	4	20	4	4	4	53	300	4	4	161	22
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	592	590	172	600	599	302	183	0	0	304	0	0
Stage 1	180	180	-	408	408	-	-	-	-	-	-	-
Stage 2	412	410	-	192	191	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	418	420	872	413	415	738	1392	-	-	1257	-	-
Stage 1	822	750	-	620	597	-	-	-	-	-	-	-
Stage 2	617	595	-	810	742	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	396	399	872	385	394	738	1392	-	-	1257	-	-
Mov Cap-2 Maneuver	396	399	-	385	394	-	-	-	-	-	-	-
Stage 1	784	747	-	591	570	-	-	-	-	-	-	-
Stage 2	581	568	-	784	739	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13.6		13			1.1			0.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1392	-	-	481	462	1257	-					
HCM Lane V/C Ratio	0.038	-	-	0.129	0.029	0.004	-					
HCM Control Delay (s)	7.7	0	-	13.6	13	7.9	0					
HCM Lane LOS	A	A	-	B	B	A	A					
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-					























Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/01/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	669	113	55	558	4	90	10	68	7	19	29
Future Volume (vph)	10	669	113	55	558	4	90	10	68	7	19	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.999			0.945			0.929	
Flt Protected	0.950			0.950				0.974			0.993	
Satd. Flow (prot)	1778	1831	0	1770	1861	0	0	1689	0	0	1710	0
Flt Permitted	0.428			0.950				0.813			0.952	
Satd. Flow (perm)	801	1831	0	1770	1861	0	0	1410	0	0	1639	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	743	126	61	620	4	100	11	76	8	21	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	869	0	61	624	0	0	187	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	56.0	56.0		14.0	70.0		20.0	20.0		20.0	20.0	
Total Split (%)	62.2%	62.2%		15.6%	77.8%		22.2%	22.2%		22.2%	22.2%	
Maximum Green (s)	49.0	49.0		7.0	63.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	45.2	45.2		9.3	55.7		14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.56	0.56		0.12	0.69		0.18	0.18		0.18	0.18	
v/c Ratio	0.02	0.84		0.30	0.48		0.75	0.75		0.21	0.21	
Control Delay	8.9	25.3		41.2	6.9		54.1	54.1		33.8	33.8	

Zebulon South TIA  
2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/01/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	352	72	245	494	57	79	306	154	51	199	50
Future Volume (vph)	66	352	72	245	494	57	79	306	154	51	199	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.985			0.950			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1853	0	1787	1787	0	1752	1789	0
Flt Permitted	0.433			0.950			0.489			0.199		
Satd. Flow (perm)	799	1844	1567	1787	1853	0	920	1787	0	367	1789	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	391	80	272	549	63	88	340	171	57	221	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	391	80	272	612	0	88	511	0	57	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	31.0	31.0	31.0	22.0	53.0		37.0	37.0		37.0	37.0	
Total Split (%)	34.4%	34.4%	34.4%	24.4%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	24.0	24.0	24.0	15.0	46.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effect Green (s)	22.5	22.5	22.5	16.2	43.8		28.0	28.0		28.0	28.0	

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	51	5	73	4	4	7	36	225	4	9	371	47
Future Vol, veh/h	51	5	73	4	4	7	36	225	4	9	371	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	6	81	4	4	8	40	250	4	10	412	52

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	796	792	438	834	816	252	464	0	0	254	0	0
Stage 1	458	458	-	332	332	-	-	-	-	-	-	-
Stage 2	338	334	-	502	484	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	305	322	619	288	311	787	1097	-	-	1311	-	-
Stage 1	583	567	-	681	644	-	-	-	-	-	-	-
Stage 2	676	643	-	552	552	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	287	305	619	237	295	787	1097	-	-	1311	-	-
Mov Cap-2 Maneuver	287	305	-	237	295	-	-	-	-	-	-	-
Stage 1	559	561	-	652	617	-	-	-	-	-	-	-
Stage 2	637	616	-	470	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	14.9	1.1	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	413	381	1311	-	-
HCM Lane V/C Ratio	0.036	-	-	0.347	0.044	0.008	-	-
HCM Control Delay (s)	8.4	0	-	18.3	14.9	7.8	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.1	0	-	-

## **2026 Build Traffic Volumes**

Zebulon South TIA  
 1: S Wakefield Street & NC-97 (Gannon Avenue)

12/01/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	14.5	25.5		37.2	13.6			33.9			22.5	
LOS	B	C		D	B			C			C	
Approach Delay		25.4			15.7			33.9			22.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	2	252		26	164			129			11	
Queue Length 95th (ft)	10	403		68	272			#264			34	
Internal Link Dist (ft)		694			1373			1751			382	
Turn Bay Length (ft)	125			125								
Base Capacity (vph)	519	1164		261	1452			609			684	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.01	0.51		0.22	0.41			0.48			0.05	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 69.1  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 22.9  
 Intersection Capacity Utilization 71.3%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: S Wakefield Street & NC-97 (Gannon Avenue)





Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/01/2023

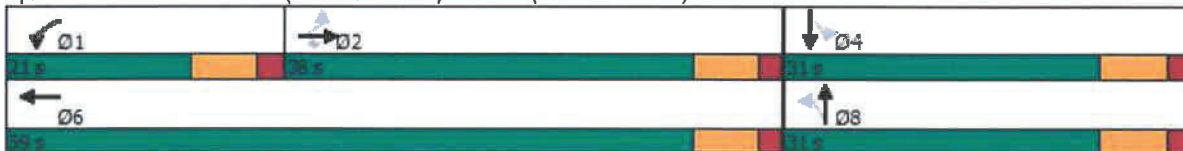


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.34	0.34	0.34	0.19	0.59		0.29	0.29		0.29	0.29	
v/c Ratio	0.16	0.82	0.16	0.77	0.38		0.44	0.83		0.22	0.50	
Control Delay	20.8	37.0	20.2	51.0	10.2		32.1	44.3		29.4	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.8	37.0	20.2	51.0	10.2		32.1	44.3		29.4	29.4	
LOS	C	D	C	D	B		C	D		C	C	
Approach Delay		33.6			25.9			41.6			29.4	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	19	253	31	138	111		51	211		12	116	
Queue Length 95th (ft)	45	378	63	#268	168		106	#370		36	195	
Internal Link Dist (ft)		1373			597			1742			398	
Turn Bay Length (ft)	200		100	350			125			250		
Base Capacity (vph)	393	756	642	355	1252		291	566		144	583	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.68	0.13	0.73	0.33		0.39	0.73		0.19	0.44	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 82  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 32.6  
 Intersection LOS: C  
 Intersection Capacity Utilization 80.8%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)



Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	42	8	4	343	160	13
Future Vol, veh/h	42	8	4	343	160	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	9	4	381	178	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	574	185	192	0	-	0
Stage 1	185	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	480	857	1381	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	478	857	1381	-	-	-
Mov Cap-2 Maneuver	478	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1381	-	514	-
HCM Lane V/C Ratio	0.003	-	0.108	-
HCM Control Delay (s)	7.6	0	12.9	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.4	-

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	FF		FB			FB
Traffic Vol, veh/h	14	73	237	4	35	136
Future Vol, veh/h	14	73	237	4	35	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	81	263	4	39	151

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	494	265	0	0	267
Stage 1	265	-	-	-	-
Stage 2	229	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	535	774	-	-	1297
Stage 1	779	-	-	-	-
Stage 2	809	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	517	774	-	-	1297
Mov Cap-2 Maneuver	517	-	-	-	-
Stage 1	779	-	-	-	-
Stage 2	782	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	717	1297
HCM Lane V/C Ratio	-	-	0.135	0.03
HCM Control Delay (s)	-	-	10.8	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Zebulon South TIA  
1: S Wakefield Street & NC-97 (Gannon Avenue)

12/05/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	688	150	73	569	4	113	10	79	7	19	29
Future Volume (vph)	10	688	150	73	569	4	113	10	79	7	19	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-1%			0%			3%			1%	
Storage Length (ft)	125		0	125		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.973			0.999			0.947			0.929	
Fl <sub>t</sub> Protected	0.950			0.950				0.973			0.993	
Satd. Flow (prot)	1778	1822	0	1770	1861	0	0	1691	0	0	1710	0
Fl <sub>t</sub> Permitted	0.423			0.950				0.804			0.954	
Satd. Flow (perm)	792	1822	0	1770	1861	0	0	1397	0	0	1643	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		774			1453			1831			462	
Travel Time (s)		15.1			28.3			49.9			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	764	167	81	632	4	126	11	88	8	21	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	931	0	81	636	0	0	225	0	0	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	0.99	0.99	0.99	1.00	1.00	1.00	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	52.0	52.0		14.0	66.0		24.0	24.0		24.0	24.0	
Total Split (%)	57.8%	57.8%		15.6%	73.3%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	45.0	45.0		7.0	59.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Act Effct Green (s)	46.2	46.2		9.2	56.7		17.5	17.5		17.5	17.5	
Actuated g/C Ratio	0.55	0.55		0.11	0.67		0.21	0.21		0.21	0.21	
v/c Ratio	0.03	0.93		0.42	0.51		0.78	0.78		0.18	0.18	
Control Delay	10.8	37.8		45.6	8.7		53.0	53.0		30.8	30.8	

Zebulon South TIA  
 2: NC-96 (Arendell Avenue) & NC-97 (Gannon Avenue)

12/05/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	363	91	282	512	57	90	322	176	51	227	50
Future Volume (vph)	66	363	91	282	512	57	90	322	176	51	227	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			-2%			2%	
Storage Length (ft)	200		100	350		0	125		0	250		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.850		0.985			0.947			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1853	0	1787	1782	0	1752	1794	0
Flt Permitted	0.425			0.950			0.450			0.157		
Satd. Flow (perm)	784	1844	1567	1787	1853	0	847	1782	0	290	1794	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			20			35	
Link Distance (ft)		1453			677			1822			478	
Travel Time (s)		28.3			13.2			62.1			9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	403	101	313	569	63	100	358	196	57	252	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	403	101	313	632	0	100	554	0	57	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2				8			4		
Detector Phase	2	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	24.0	24.0	24.0	14.0	17.0		24.0	24.0		14.0	14.0	
Total Split (s)	29.0	29.0	29.0	24.0	53.0		37.0	37.0		37.0	37.0	
Total Split (%)	32.2%	32.2%	32.2%	26.7%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	22.0	22.0	22.0	17.0	46.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	Min	None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0	7.0				7.0	7.0				
Flash Dont Walk (s)	10.0	10.0	10.0				10.0	10.0				
Pedestrian Calls (#/hr)	0	0	0				0	0				
Act Effect Green (s)	22.4	22.4	22.4	18.1	45.6		30.0	30.0		30.0	30.0	

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	51	5	82	4	4	7	41	274	4	9	455	47
Future Vol, veh/h	51	5	82	4	4	7	41	274	4	9	455	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	6	81	4	4	8	46	304	4	10	506	52

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	956	952	532	999	976	306	558	0	0	308	0	0
Stage 1	552	552	-	398	398	-	-	-	-	-	-	-
Stage 2	404	400	-	601	578	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3,518	4,018	3,318	3,518	4,018	3,318	2,218	-	-	2,218	-	-
Pot Cap-1 Maneuver	238	259	547	222	251	734	1013	-	-	1253	-	-
Stage 1	518	515	-	628	603	-	-	-	-	-	-	-
Stage 2	623	602	-	487	501	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	220	242	547	172	234	734	1013	-	-	1253	-	-
Mov Cap-2 Maneuver	220	242	-	172	234	-	-	-	-	-	-	-
Stage 1	490	509	-	593	570	-	-	-	-	-	-	-
Stage 2	578	569	-	397	495	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.7	17.7	1.1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1013	-	-	343	301	1253	-	-
HCM Lane V/C Ratio	0.045	-	-	0.447	0.055	0.008	-	-
HCM Control Delay (s)	8.7	0	-	23.7	17.7	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2	0.2	0	-	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	FF			↑	↑	
Traffic Vol, veh/h	27	11	18	224	394	47
Future Vol, veh/h	27	11	18	224	394	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	12	20	249	438	52

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	753	464	490	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	377	598	1073	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	369	598	1073	-	-	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1073	-	415	-
HCM Lane V/C Ratio	0.019	-	0.102	-
HCM Control Delay (s)	8.4	0	14.7	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-

Zebulon South TIA  
7: S Wakefield Street & Site Access 3

12/05/2023

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	S	S
Traffic Vol, veh/h	5	34	168	9	55	187
Future Vol, veh/h	5	34	168	9	55	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	38	187	10	61	208

Major/Minor	Minor1	Major1	Major2	Major2	Major2
Conflicting Flow All	522	192	0	0	197
Stage 1	192	-	-	-	-
Stage 2	330	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	515	850	-	-	1376
Stage 1	841	-	-	-	-
Stage 2	728	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	489	850	-	-	1376
Mov Cap-2 Maneuver	489	-	-	-	-
Stage 1	841	-	-	-	-
Stage 2	692	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	777	1376
HCM Lane V/C Ratio	-	-	0.056	0.044
HCM Control Delay (s)	-	-	9.9	7.7
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1



Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↗	↑	↗
Traffic Vol, veh/h	42	8	4	343	160	13
Future Vol, veh/h	42	8	4	343	160	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	9	4	381	178	14

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	567	178	192	0	0
Stage 1	178	-	-	-	-
Stage 2	389	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	485	865	1381	-	-
Stage 1	853	-	-	-	-
Stage 2	685	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	483	865	1381	-	-
Mov Cap-2 Maneuver	483	-	-	-	-
Stage 1	850	-	-	-	-
Stage 2	685	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1381	-	520	-
HCM Lane V/C Ratio	0.003	-	0.107	-
HCM Control Delay (s)	7.6	0	12.7	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.4	-

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y		Y	Y
Traffic Vol, veh/h	8	52	214	4	16	92
Future Vol, veh/h	8	52	214	4	16	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	58	238	4	18	102

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	378	240	0
Stage 1	240	-	-
Stage 2	138	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	624	799	-
Stage 1	800	-	-
Stage 2	889	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	615	799	-
Mov Cap-2 Maneuver	615	-	-
Stage 1	800	-	-
Stage 2	877	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	768	1324
HCM Lane V/C Ratio	-	-	0.087	0.013
HCM Control Delay (s)	-	-	10.1	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	W
Traffic Vol, veh/h	27	11	18	224	394	47
Future Vol, veh/h	27	11	18	224	394	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	12	20	249	438	52

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	727	438	490	0	0
Stage 1	438	-	-	-	-
Stage 2	289	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	391	619	1073	-	-
Stage 1	651	-	-	-	-
Stage 2	760	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	382	619	1073	-	-
Mov Cap-2 Maneuver	382	-	-	-	-
Stage 1	637	-	-	-	-
Stage 2	760	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1073	-	430	-
HCM Lane V/C Ratio	0.019	-	0.098	-
HCM Control Delay (s)	8.4	0	14.3	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-

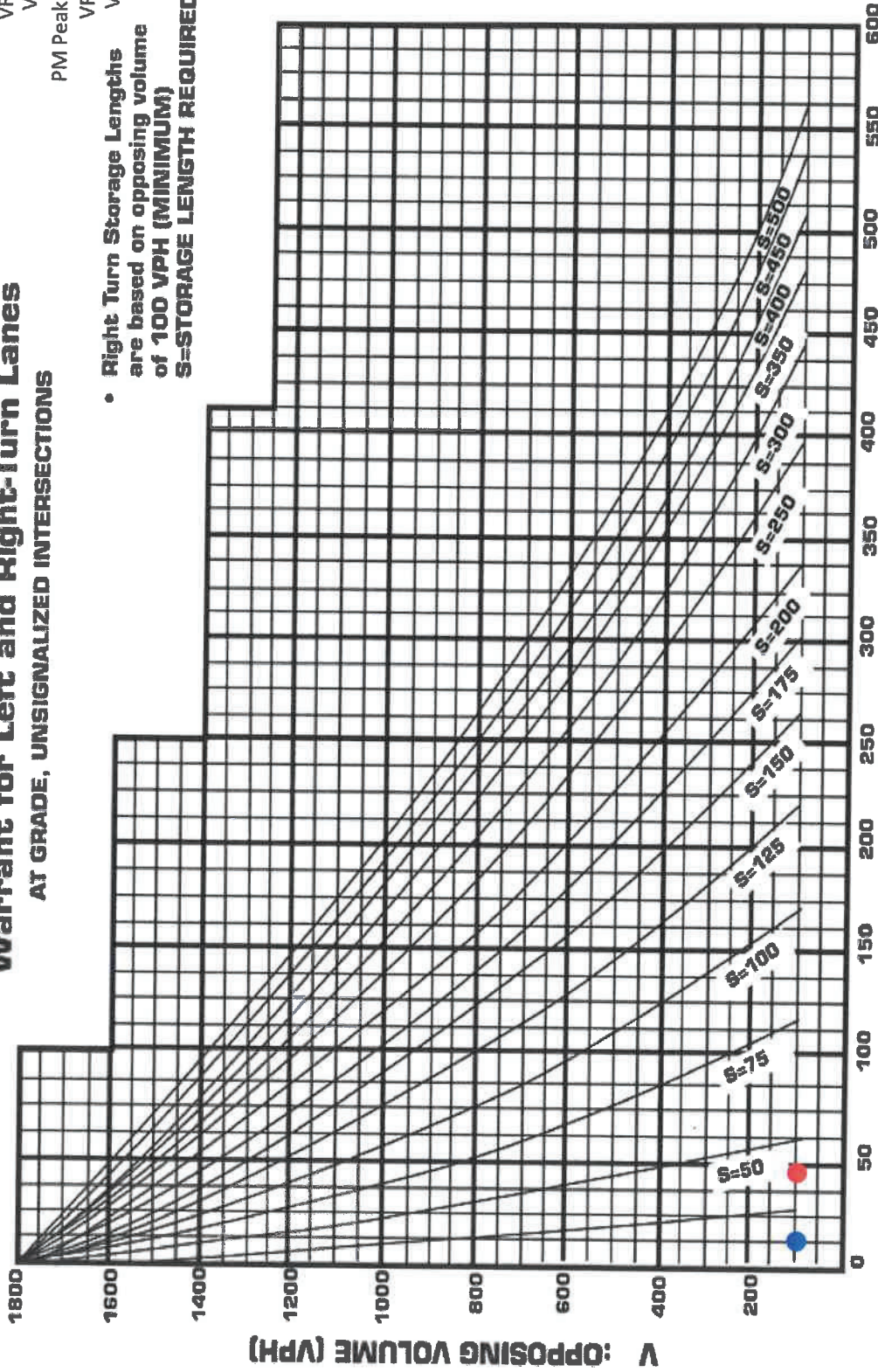
## **Appendix E – NCDOT Nomographs**

# Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

AM Peak Hour  
VR = 13  
V = 100  
PM Peak Hour  
VR = 46  
V = 100

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)  
S=STORAGE LENGTH REQUIRED

## Policy On Street And Driveway Access to North Carolina Highways



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

**LEGEND**  
● = AM Peak  
● = PM Peak

NC-96 (Arendell Ave) / Site Access 1  
 Southbound Right Turn  
 2026 Build AM and PM Peak Hours

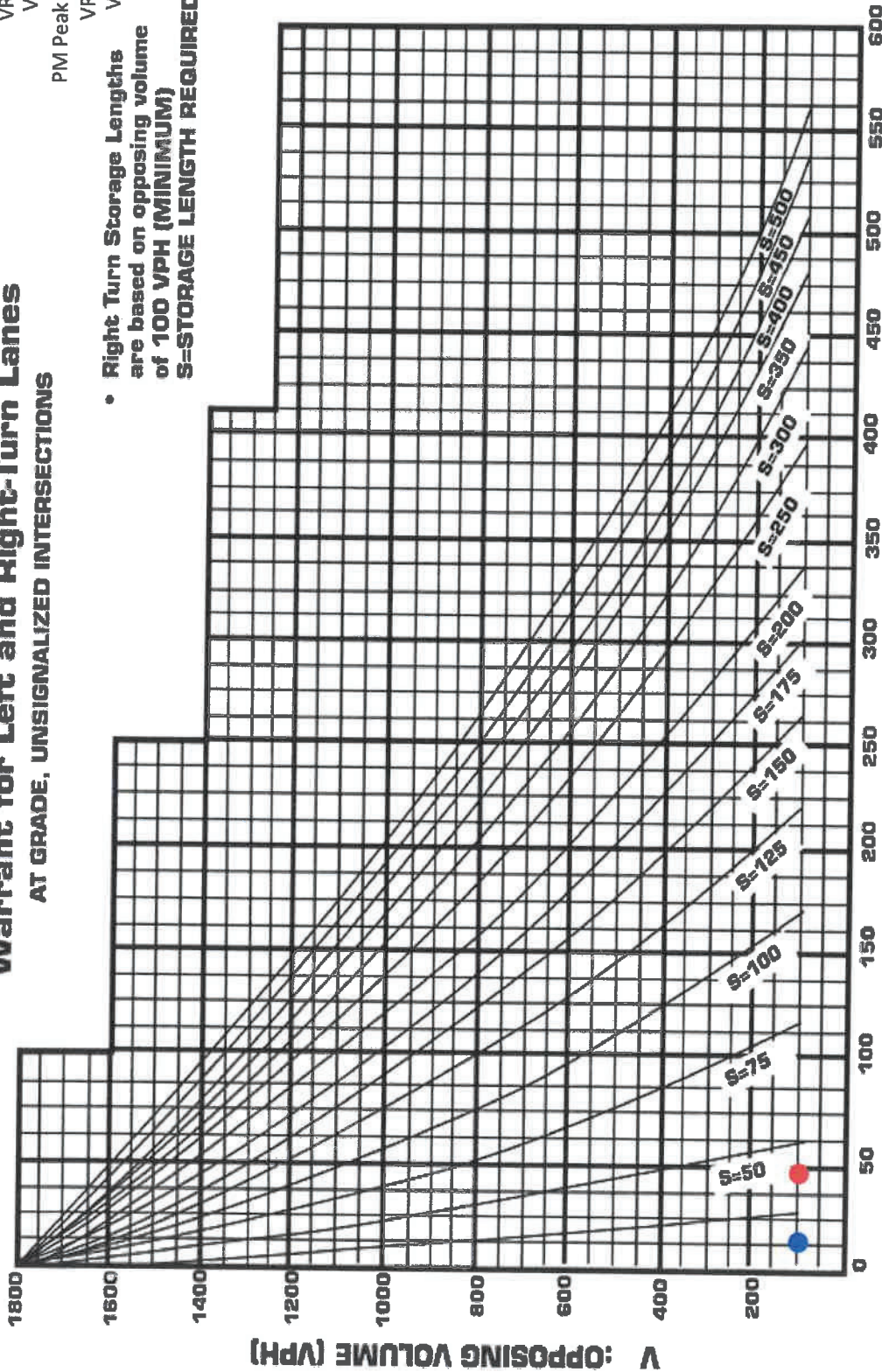
# Warrant for Left and Right-Turn Lanes

## AT GRADE, UNSIGNALIZED INTERSECTIONS

AM Peak Hour  
 VR = 14  
 V = 100  
 PM Peak Hour  
 VR = 47  
 V = 100

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)  
**S=STORAGE LENGTH REQUIRED**

Policy On Street And Driveway Access to North Carolina Highways



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V<sub>t</sub>: LEFT TURNING VOLUME (VPH)  
 V<sub>r</sub>: RIGHT TURNING VOLUME (VPH)

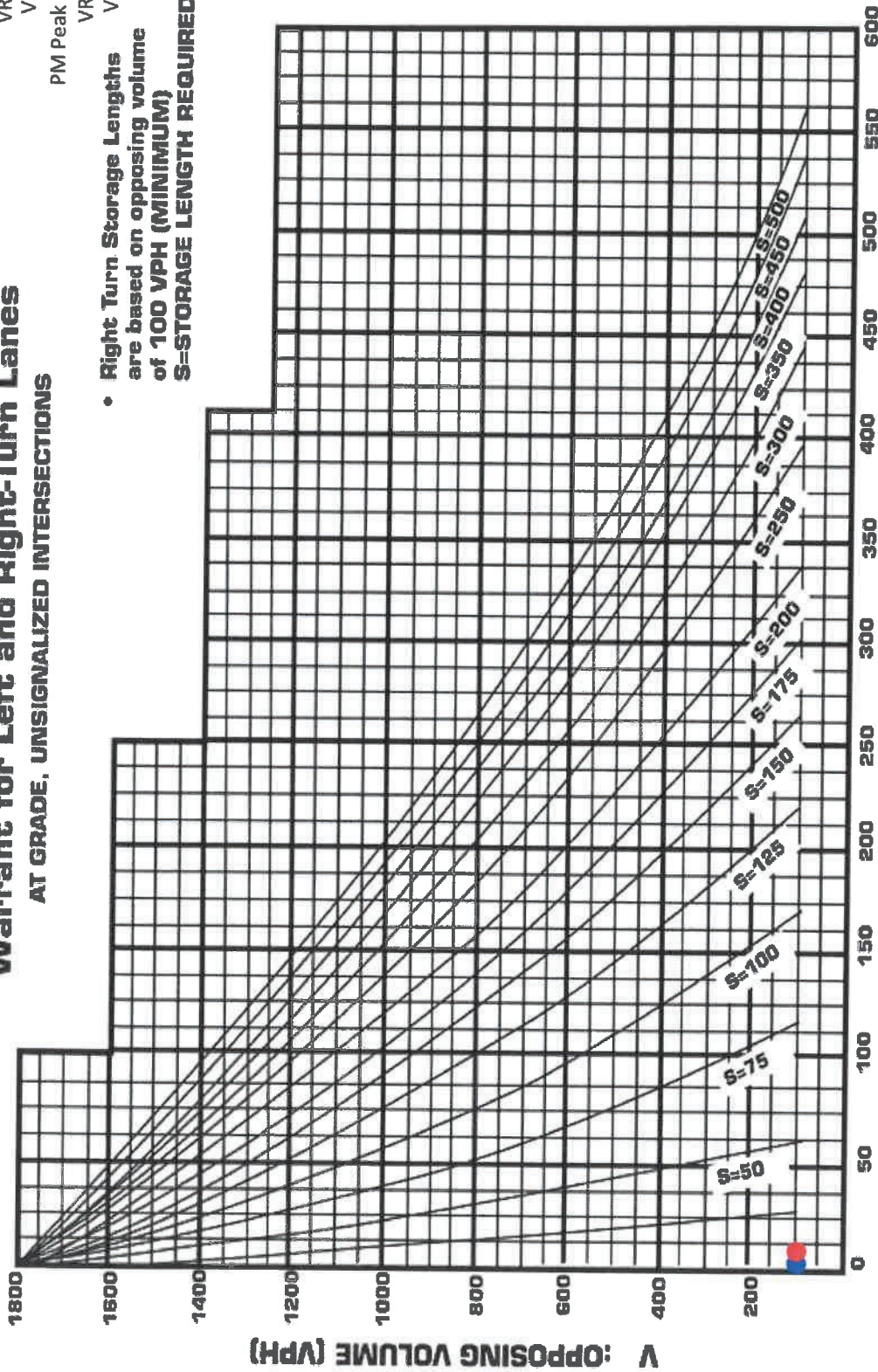
**LEGEND**  
● = AM Peak  
● = PM Peak

NC-96 (Arendell Ave) / Site Access 2  
 Southbound Right Turn  
 2026 Build AM and PM Peak Hours

# Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

AM Peak Hour  
VR = 3  
V = 100  
PM Peak Hour  
VR = 9  
V = 100

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)  
S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V<sub>L</sub>: LEFT TURNING VOLUME (VPH)  
V<sub>R</sub>: RIGHT TURNING VOLUME (VPH)

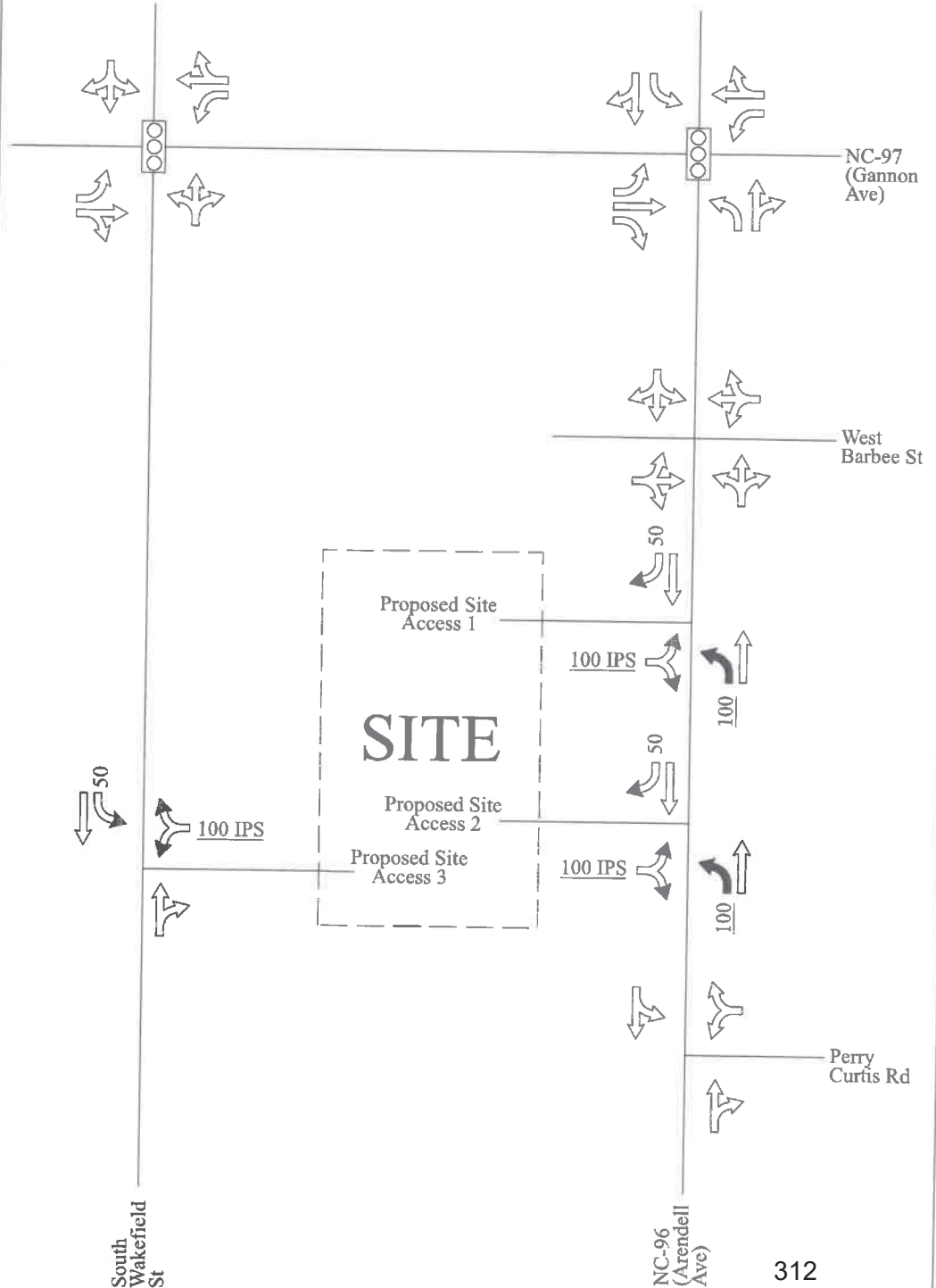
**LEGEND**  
● = AM Peak  
● = PM Peak

S Wakefield Street / Site Access 3  
 Northbound Right Turn  
 2026 Build AM and PM Peak Hours

**Zebulon South Residential**  
**Zebulon, Wake County**  
**SC-2022-226**

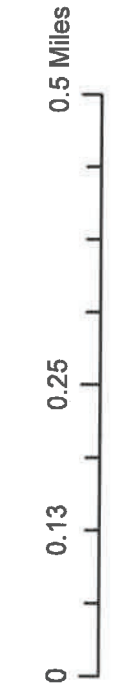
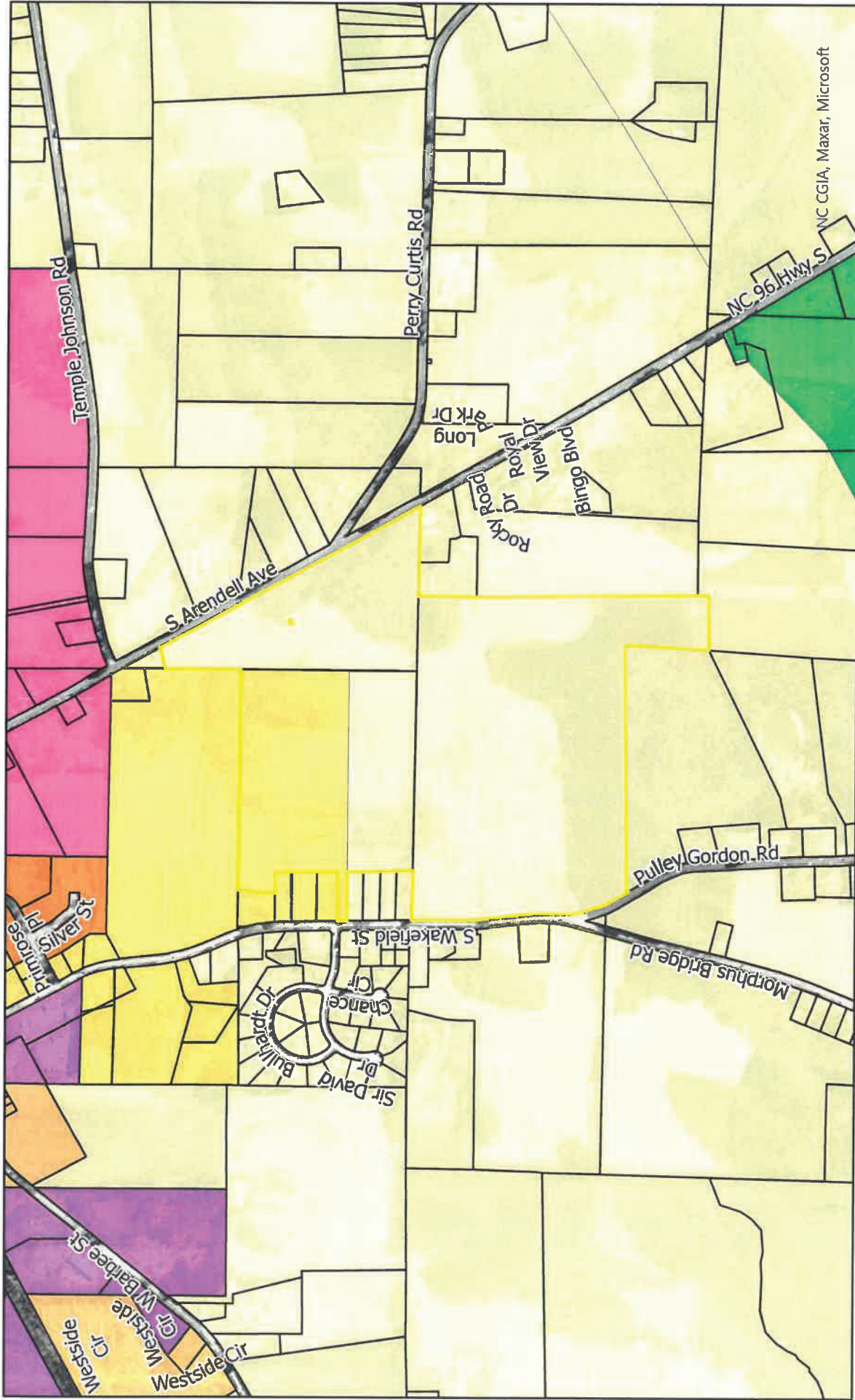


- Existing Laneage
- Recommended Laneage
- Laneage Built By Others
- NCDOT Recommendation
- Existing Signal
- Signal Proposed By Others
- Developer Proposed Signal
- Monitor for Signal
- XXX Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale





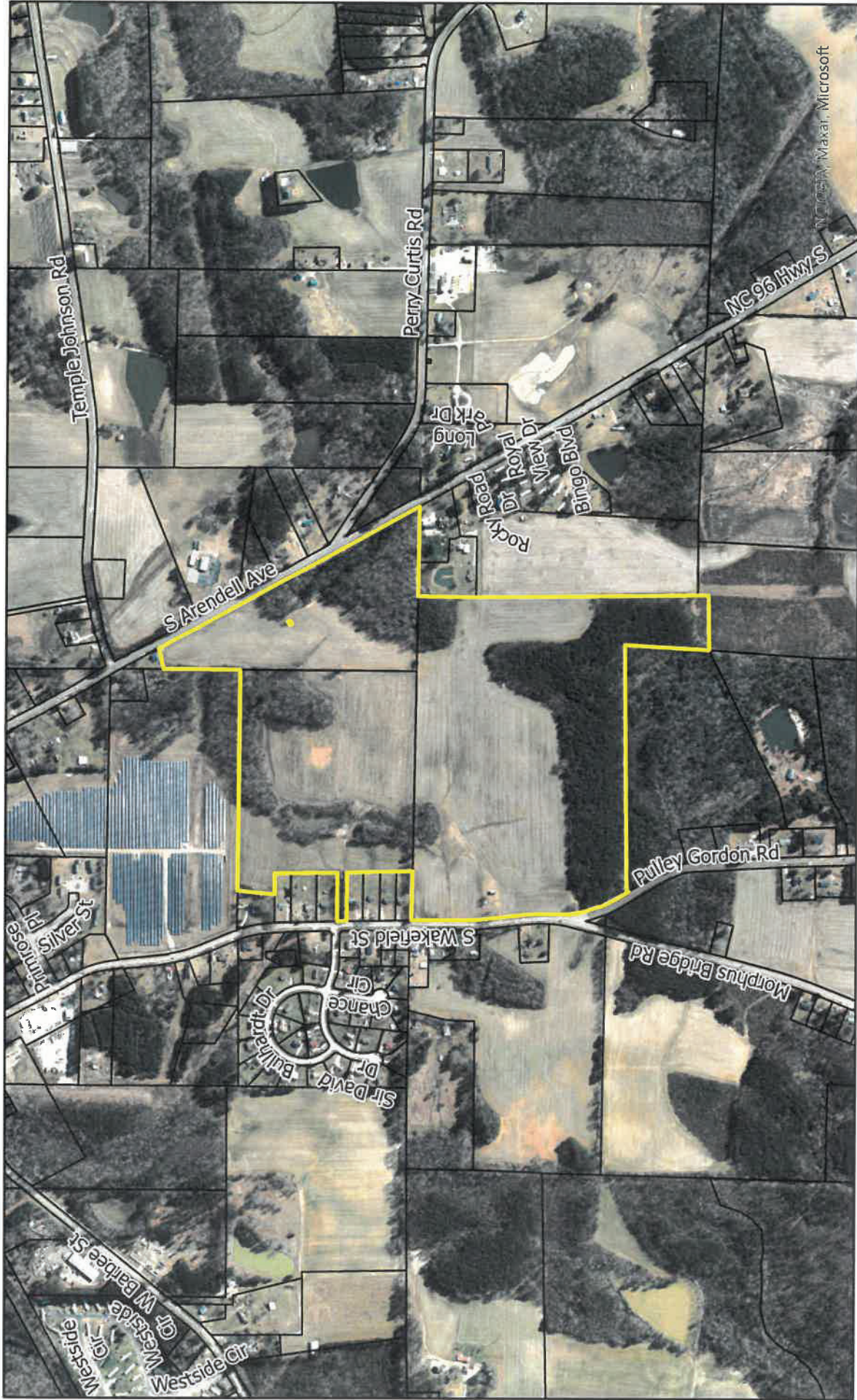
# Future Land Use and Character Map



Zebulon South  
 Parcels  
**Zebulon\_FutureLandUse**  
**Land Use/Character**

- Zebulon South
- Parcels
- Suburban Residential (SR)
- General Residential (GR)
- Urban Residential (UR)
- Residential Mix (RM)
- Industrial Heavy (IH)
- Urban Downtown Mixed Use (UDMU)
- Rural Residential (RR)

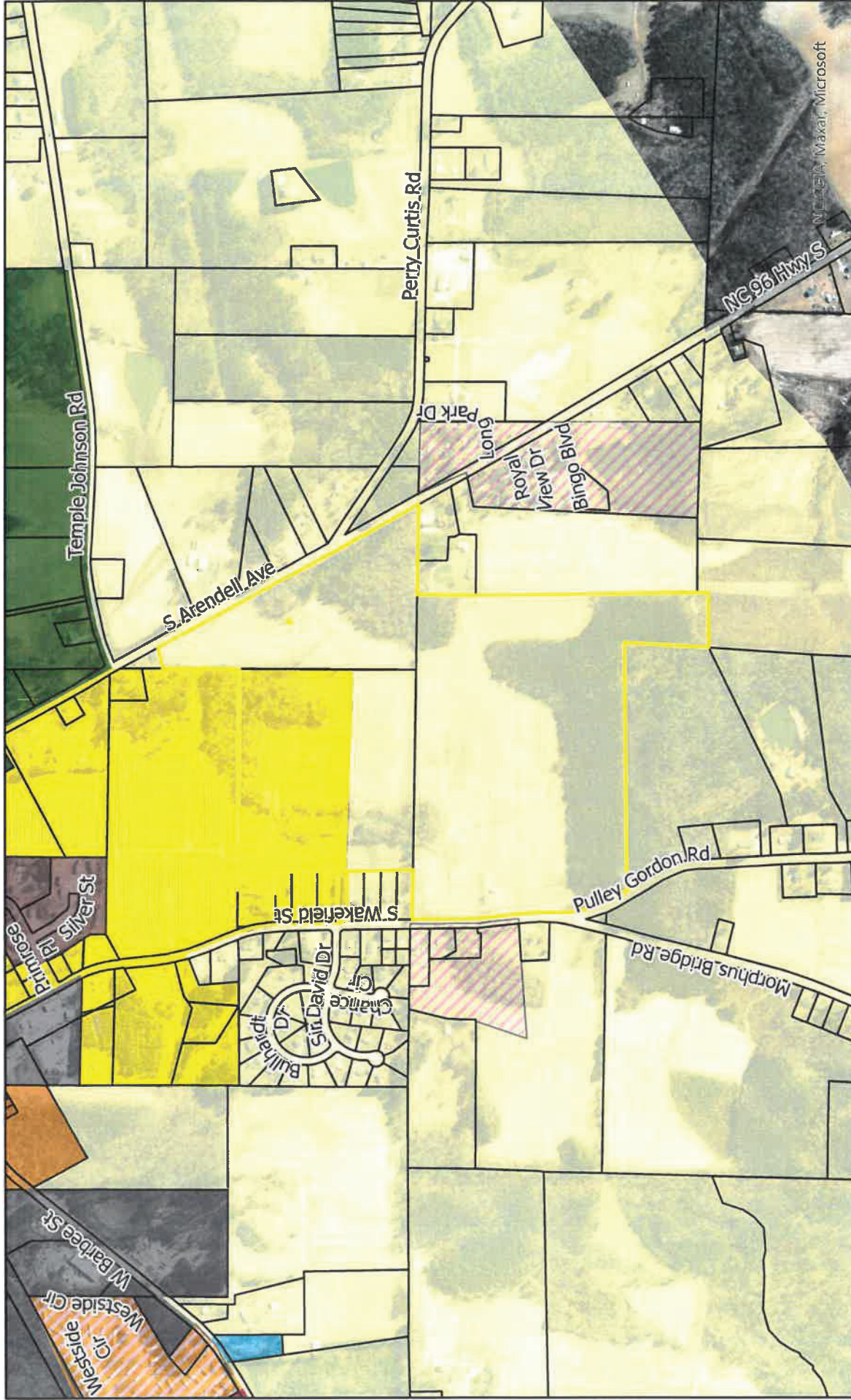
# Aerial Map



- Parcels
- Zebulon South

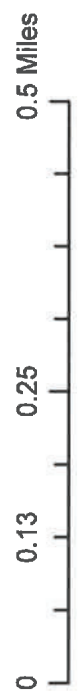


# Zoning Map



- RMF, Residential Multi-Family
- HC, Heavy Commercial
- HI, Heavy Industrial
- OI, Office and Institutional
- DTP, Downtown Periphery
- MHO, Manufactured Home Overlay

- Zebulon South
  - Parcels
- Zoning Districts**
- R2, Residential Suburban
  - R4, Residential Neighborhood
  - R6, Residential Urban





Site photo taken from side closest to Hwy 96



Site photo taken from the S. Wakefield side of the site.



Some existing structures from the prior agricultural use on site

**ZEBULON**  
NORTH CAROLINA

CASE # PD 2024-01 IDT# 886895- Zebulon South  
PROJECT ADDRESS 751 S Wakefield St  
PIN NUMBER: 2704492511/ 2705512202/ 2705413075  
HEARING DATE: February 12, 2024

State of North Carolina  
County of Wake

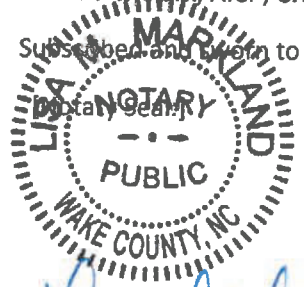
BEFORE ME, the undersigned Notary, Lisa M. Markland on this 30<sup>th</sup> day of January 2024, personally appeared Michael J. Clark, known to me to be a credible person and of lawful age, who being by me first duly sworn, on his oath, deposes and says:

I Michael J. Clark, acting as the Planning Director for the Town of Zebulon, affirm that the following Public Notice Procedures have been completed in accordance with applicable North Carolina General Statute and Town of Zebulon Unified Development Ordinance Section 2.3.6 have been satisfied for the above referenced hearing.

- First Class Mailing Sent on **1/29/2024** (see attached mailing list and copy of mailing)
- Advertisement in a Paper of General Circulation sent on **1/29/2024** (Wake weekly, publication dates **2/2 & 2/9/2024**)
- Posting Public Hearing Signage on Property on **1/29/2024** (pictures attached)
- Posted to Planning Department Website **1/29/2024**
- Sent to E-Mail Distribution List on **1/29/2024**

Michael J. Clark 1/30/2024  
Michael J. Clark, AICP, CNU-A Date

Subscribed and sworn to before me, this 30<sup>th</sup> day of January 2024.



Lisa M. Markland Lisa M. Markland  
[signature of Notary] [printed name of Notary]

NOTARY PUBLIC

My commission expires: 3/29, 2025.









## **Notice of Public Hearing**

Notice is hereby given pursuant to the provisions of Article 2.2.6 of the Town of Zebulon Unified Development Ordinance that a public hearing will be held on **February 12, 2024 at 6:00 PM** at the **Zebulon Municipal Complex, 1003 N. Arendell Avenue**, and will be conducted by the Board of Commissioners and Planning Board of the Town of Zebulon for the purpose of considering the following items:

***IDT Project Number 886895 - PD 2024-01 – Zebulon South (751 S Wakefield St)***

*PIN # 2704492511, 2705512202, 2705413075* . A request by Andrew Suriano of Deacon Development on behalf of property owners Harold Narron and Fred Corbett, Joseph Temple Sr and Alexander Harrison, Watson Family II LLC, for a rezoning to the Planned Development (PD) zoning district for the development of a 320 unit Planned Development.

***IDT Project Number 1195805 - RZ 2024-01 – 321 Hospital Rd***

*PIN # 2705191832*. A request by Germano Architecture and Interiors, PLLC on behalf of the property owners MiCy LLC., for a Zoning Map Amendment to the General Commercial (GC) zoning district.

Public comments may be submitted to Deputy Town Clerk Stacie Paratore at [SParatore@TownofZebulon.org](mailto:SParatore@TownofZebulon.org) no later than 12:00 Noon on the day of the hearing to be read into the record. Links will be provided along with the full application packet and documentation on the Planning Department web page at <https://www.townofzebulon.org/departments/planning/public-hearing-information> For questions or additional information, please contact us at (919) 823-1816.

Wake Weekly February 2<sup>nd</sup> & 9<sup>th</sup>

## ARTICLE 3: DISTRICTS

### 3.5.5. PLANNED DEVELOPMENT (PD) DISTRICT

#### A. PURPOSE AND INTENT

The Planned Development (PD) districts are established and intended to encourage innovative land planning and site design concepts that support a high quality of life and achieve a high quality of development, environmental sensitivity, energy efficiency, and other Town goals and objectives by:

- a. Reducing or diminishing the inflexibility or uniform design that sometimes results from strict application of zoning and development standards designed primarily for individual lots;
- b. Allowing greater freedom in selecting the means of providing access, open space, and design amenities;
- c. Allowing greater freedom in providing a well-integrated mix of residential and nonresidential land uses in the same development, including a mix of housing types, lot sizes, and densities;
- d. Creating a system of incentives for redevelopment and infill in order to revitalize established areas;
- e. Promoting a vibrant public realm by placing increased emphasis on active ground floor uses, pedestrian-oriented building façade design, intensive use of sidewalks, and establishment of public gathering areas;
- f. Providing for efficient use of land resulting in smaller networks of utilities and streets and thereby lowering development and housing costs; and
- g. Promoting quality design and environmentally sensitive development that respects surrounding established land use character and respects and takes advantage of a site's natural and man-made features, such as trees, estuaries, shorelines, special flood hazard area, and historic features.

#### B. GENERAL STANDARDS FOR ALL PLANNED DEVELOPMENTS

##### 1. HOW ESTABLISHED

A planned development is established in a manner similar to the establishment of a conditional zoning district in accordance with the procedures and requirements in Section 2.2.13, Planned Development.

##### 2. MASTER PLAN REQUIRED

All development configured as a PD shall be subject to a master plan submitted and approved as part of the application to establish the district. The master plan shall:

- a. Include a statement of planning objectives for the district;
- b. Describe the specific ways in which any modifications to the generally applicable standards in this Ordinance will result in a development of higher quality than would have otherwise resulted if the development was established without any proposed modifications to the standards in this Ordinance.
- c. Identify the general location of individual development areas, identified by land use(s) and/or development density or intensity;
- d. Depict the general configuration and relationship of the principal elements of the proposed development, including general building types;
- e. Identify for the entire district and each development area the acreage, types and mix of land uses, number of residential units (by use type), nonresidential floor area (by use type), residential density, and nonresidential intensity;
- f. Identify the general location, amount, and type (whether designated for active, passive, or urban) of open space;
- g. Identify the location of environmentally sensitive lands, wildlife habitat, and resource protection lands;
- h. Identify the on-site transportation circulation system, including the general location of all public and private streets, existing or projected transit service, pedestrian and vehicular circulation features, and how they will connect with existing and planned systems;
- i. Identify the general location of on-site potable water and wastewater facilities, and how they will connect to existing systems;
- j. Identify the general location of on-site stormwater management facilities, and how they will connect to existing public systems; and



## ARTICLE 3: DISTRICTS

### 3.5. General Mixed Use Zoning Districts

### 3.5.5 Planned Development (PD) District

compliance, but shall not increase the degree to which the development fails to comply with the standards in subsection (b) above.

#### **8. CONSISTENCY WITH ADOPTED POLICY GUIDANCE**

The PD zoning district designation, the master plan, and the terms and conditions document should be consistent with the Comprehensive Plan, and any applicable functional plans and small area plans adopted by the Town.

#### **9. COMPATIBILITY WITH SURROUNDING AREAS**

Development along the perimeter of a PD district shall be compatible with adjacent existing or proposed development. Where there are issues of compatibility, the master plan shall provide for transition areas at the edges of the PD district that provide for appropriate buffering and/or ensure a complementary character of uses. Determination of complementary character shall be based on densities/intensities, lot size and dimensions, building height, building mass and scale, hours of operation, exterior lighting, siting of service areas, or other aspects identified by the Board of Commissioners.

#### **10. DEVELOPMENT PHASING PLAN**

If development in the PD district is proposed to be phased, the master plan shall include a development phasing plan that identifies the general sequence or phases in which the district is proposed to be developed, including how residential and nonresidential development will be timed, how infrastructure (public and private) and open space will be provided and timed, and how development will be coordinated with the Town's capital improvements program.

#### **11. CONVERSION SCHEDULE**

- a. The planned development application may include a conversion schedule that identifies the extent to which one type of residential use may be converted to another type of residential use or one type of nonresidential use may be converted to another type of nonresidential use (i.e., residential to residential, or nonresidential to nonresidential). These conversions may occur within development areas and between development areas, as long as they occur within the same development phase, as identified by the approved development phasing plan, and are consistent with established extents of conversion set down in the conversion schedule.
- b. In the event an applicant seeks to revise the development in accordance with an approved conversion schedule, the applicant shall provide a revised site plan depicting the proposed conversions to the TRC for review and approval prior to commencing any conversions.

#### **12. ON-SITE PUBLIC FACILITIES**

##### **a. DESIGN AND CONSTRUCTION**

The master plan shall establish the responsibility of the developer/landowner to design and construct or install required and proposed on-site public facilities in compliance with applicable Town, state, and federal regulations.

##### **b. DEDICATION**

The master plan shall establish the responsibility of the developer/landowner to dedicate to the public the right-of-way and easements necessary for the construction or installation of required and proposed on-site public facilities in compliance with applicable Town, state, and federal regulations.

##### **c. MODIFICATIONS TO STREET STANDARDS**

In approving a master plan, the Board of Commissioners may approve modifications or reductions of street design standards—including those for right-of-way widths, pavement widths, required materials, provision of public transit amenities, and turning radii, with NCDOT approval, on finding that:

- i. The master plan provides for adequate separation/integration of vehicular, pedestrian, and bicycle traffic;
- ii. Access for emergency service vehicles is not substantially impaired;
- iii. Adequate parking is provided for the uses proposed; and

## ARTICLE 3: DISTRICTS

iv. Adequate space for public utilities is provided within the street right-of-way.

### 13. USES

The uses allowed in a PD district are identified in Table 4.2.3, Principal Use Table, as allowed subject to a master plan. Allowed uses shall be established in the master plan. Allowed uses shall be consistent with adopted policy guidance, the purpose of the particular PD district, and subject to any additional limitations or requirements set forth in Section 4.3, Use-Specific Standards, for the PD district. Nothing shall limit an applicant from seeking to modify an otherwise applicable use-specific standard in accordance with the standards in Section 3.5.5.B.2, Master Plan Required.

### C. PLANNED DEVELOPMENT TERMS AND CONDITIONS

The terms and conditions document shall incorporate by reference or include, but not be limited to:

1. Conditions related to approval of the application for the PD zoning district classification;
2. The master plan, including any density/intensity standards, dimensional standards, and development standards established in the master plan;
3. Conditions related to the approval of the master plan, including any conditions related to the form and design of development shown in the master plan;
4. Provisions addressing how transportation, potable water, wastewater, stormwater management, and other infrastructure will be provided to accommodate the proposed development;
5. Provisions related to environmental protection and monitoring; and
6. Any other provisions the Board of Commissioners determines are relevant and necessary to the development of the PD in accordance with applicable standards and regulations.

### D. AMENDMENTS TO APPROVED MASTER PLAN

Amendments or modifications to a master plan shall be considered in accordance with the standards in Section 2.2.13, Planned Development.

## Suburban Residential

This designation is for residential areas where suburban character is established and preserved by achieving a balance between buildings and other site improvements relative to the degree of open space maintained within the neighborhood. The openness may be found in relatively large yard areas on individual lots and between homes and/or in common green spaces or water features. This distinguishes suburban character areas from more auto-oriented areas where site coverage in the form of dwellings, driveways and other paved surfaces predominates over open space.

### Primary Land Use Types

- Detached residential dwellings.
- Planned developments that integrate other housing types (e.g., attached residential such as patio homes or townhomes), with increased open space to preserve an overall suburban character.
- Golf course subdivisions.



Subdivisions around Pippin Road in north Zebulon.

### Characteristics

- Less noticeable accommodation of the automobile compared to more intensive auto-oriented areas, especially where driveways are on the side of homes rather than occupying a portion of the front yard and where garages are situated to the side or rear of the dwelling.
- A larger baseline minimum lot size in a Suburban Residential zoning district allows for deeper front yards and building setbacks and greater side separation between homes.
- Character-based zoning and development standards can also discourage overly standardized subdivision designs and promote conservation design by allowing for smaller lot sizes than the baseline in exchange for greater open space set-aside. This approach enables some viable use of sites partially constrained by topography or other factors. It also provides flexibility for additional housing forms that blend with the area's suburban residential character through additional on-site open space and perimeter buffering where differing housing types and densities are adjacent.
- More opportunity for natural and/or swale drainage (and storm water retention/absorption) relative to concentrated storm water conveyance in auto-oriented areas.

### Where on the Map

Extensive coverage on the map, surrounding much of the core area of Zebulon in most directions, and all the way to the edge of the larger planning area in some locations.





## General Residential

This designation covers areas of primarily single-family detached residential use where accommodation of the automobile is more visually dominant relative to more prominent green space in Suburban Residential character areas. This is typically due to relatively smaller and narrower lots, and often with limited open space set-asides or amenities for residents.

### Primary Land Use Types

- Detached residential dwellings.
- Other attached residential forms (e.g., duplexes and multiplexes, patio homes, townhomes, multi-family, etc.) as permitted by zoning.
- Planned developments, potentially with a mix of housing types and varying densities, subject to compatibility and open space standards.



Shepard's Point subdivision along Old Bunn Road, adjacent to the Hamilton Acres subdivision to the east.

### Characteristics

- Residential neighborhoods with less openness and separation between dwellings compared to Suburban Residential areas.
- Auto Urban character, especially where driveways and front-loading garages dominate the front yards and front facades of homes. This can be offset by landscaping, "anti-monotony" architectural standards, and limitations on "cookie cutter" subdivision layouts characterized by straight streets and uniform lot sizes and arrangement.
- Neighborhood-oriented commercial uses may emerge over time and should be encouraged on corner sites or other locations at the edge of predominantly residential areas, at a scale and with a site design that is compatible with nearby residential uses.

### Where on the Map

In some central areas of Zebulon, such as west of N.C. 96 and north of West Gannon Avenue. Also provides a transition to Suburban Residential areas in other locations, such as north of U.S. 64/264 and southwest of town.





**TOWN OF ZEBULON  
2045 COMPREHENSIVE  
TRANSPORTATION PLAN**

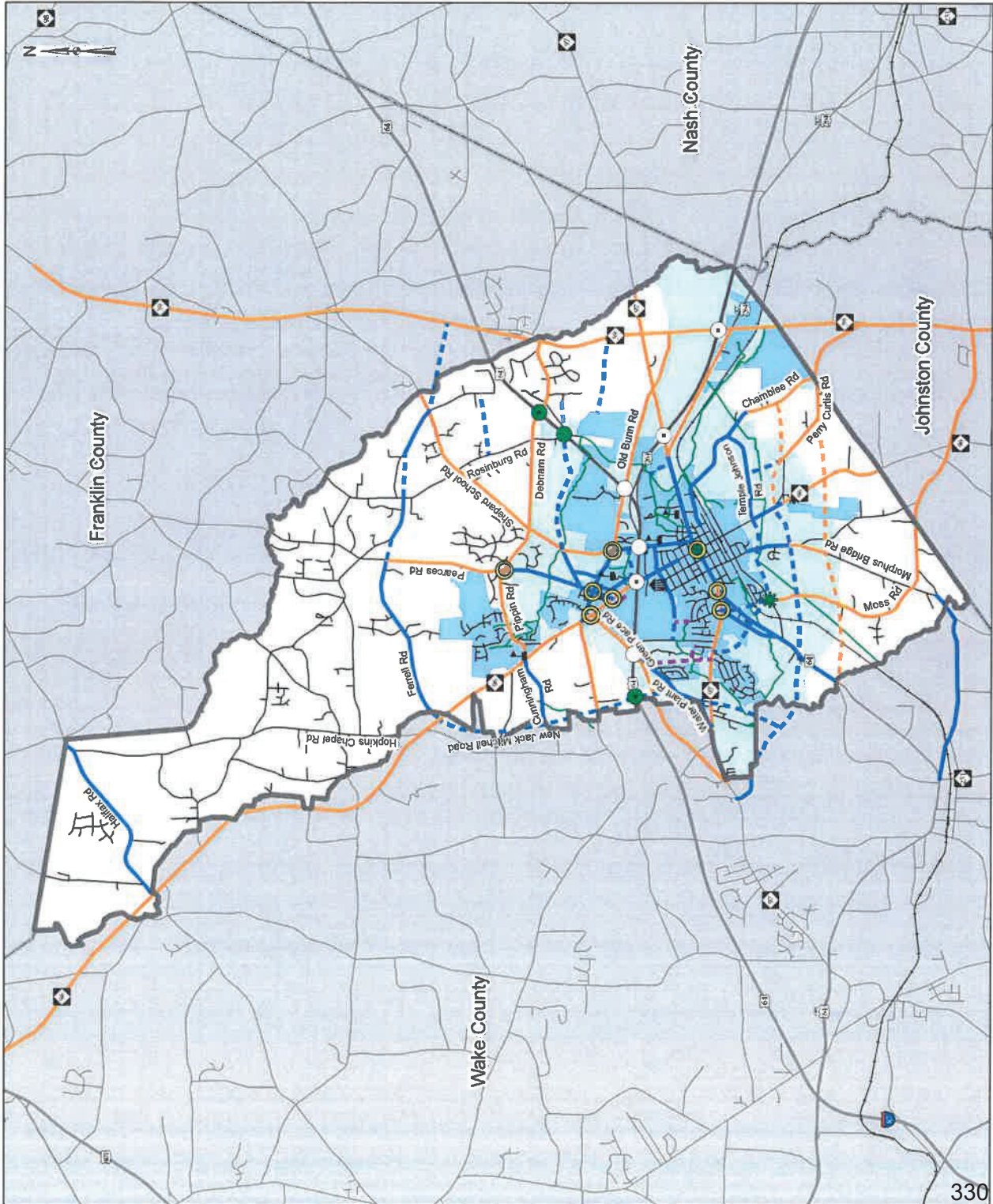
**CTP MAP**

**LEGEND**

- Town Hall
- School
- New Grade Separation
- New Interchange
- New Roundabout
- Intersection Improvements
- Existing Interchange
- Existing Grade Separation
- Priority Intersection
- Zebulon Town Limits
- Extrateritorial Jurisdiction
- 4-Lane Divided Widening / Altering
- 4-Lane Divided New Roadway
- 2-Lane Divided Widening / Altering
- 2-Lane Divided New Roadway
- 2-Lane Undivided New Roadway
- Greenway
- Roads
- Railroad
- County Outline
- CTP Study Area



Base Map: November 2020



**ORDINANCE 2024-39**  
**AMENDMENT TO CONDITIONAL ZONING MAP FOR**  
**751 S. WAKEFIELD STREET (PIN# 2704492511),**  
**700 S. ARENDELL AVENUE (PIN# 2705512202)**  
**AND 0 S. WAKEFIELD STREET (PIN# 2705413075)**  
**FROM R-2 AND R-4 TO PLANNED DEVELOPMENT (PD)**

# **ZEBULON SOUTH**

## **Comprehensive Planned Development Document**

715 S. Wakefield Street and S. Arendell Avenue  
Zebulon, North Carolina



5410 Trinity Road  
Suite 102  
Raleigh, NC 27607

P 919.866.4951  
F 919.859.5663  
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# Zebulon South

## Prepared For:

TOWN OF ZEBULON

November 2022

August 2023

November 2023

January 2024

February 2024

March 2024

April 2024

## Prepared By:

**TIMMONS GROUP**  
5410 Trinity Road, Suite 102  
Raleigh, NC 27607

**PARKER POE**  
301 Fayetteville Street, Suite 1400  
Raleigh, NC 27601

## Developer:

**DEACON DEVELOPMENT GROUP**

PO Box 1080

Wake Forest, NC 27588

*Timmons Group Project No. 49084*

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5410 Trinity Road  
Suite 102  
Raleigh, NC 27607

P 919.866.4951  
F 919.859.5663  
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## 1.0 Introduction

Zebulon South is a proposed residential community utilizing the Town of Zebulon Planned Development Zoning as outlined in the Unified Development Ordinance (UDO). The assemblage is made up of three parcels with frontage on both S. Wakefield Street and S. Arendell Avenue. The total existing tract area is about 118.6 acres.

The development is bordered to the north by an existing solar farm. To the east across S. Arendell Avenue are existing single-family homes and a church. South and southeast of the property are existing single-family homes and agricultural fields as well as wooded properties. Existing single-family homes and agricultural fields are located west of the property.

Zebulon South PD will be a phased development of a high-quality master planned community that will provide a variety of housing types and amenities. By utilizing the PD zoning, the master plan containing site specific regulations will guide the development resulting in a well-integrated mix of housing types, lot sizes and densities with open space and preservation of environmentally sensitive areas. The flexibility offered by a PD zoning will result in a more efficient use of the land and network of utilities and streets.

The proposed community will consist of single family detached and attached residential development. The current zoning is R-2 and R-4. The Grow Zebulon Comprehensive Land Use Plan (LUP) designations are General Residential (GR) and Suburban Residential (SR) for the property. The LUP specifically identifies a PD as being a primary land use type in the SR and GR LUP classifications. The development will have an integrated mix of housing types, consistent with the LUP's recommendations for providing a diverse stock of residential choices. The diverse housing choices will promote varied price points, consistent with the LUP. The proposed zoning is Planned Development (PD) which is consistent with the LUP designations.

With over 50% open space (five times the minimum requirement) and at least 15% tree save (three times the minimum requirement), Zebulon South preserves a significant amount of environmentally sensitive areas in the design of the Master Plan, consistent with Land Use and Development Policy E, General Policies G1 and G6, Residential Policy R4, and Parks and Open Space Policy P5. The preserved areas, to a large degree, are located on the perimeter of the development, allowing for concentration of infrastructure improvements in the central area of the development. The Master Plan utilizes existing wetlands, open space and larger lots as buffer for the development, mitigating effects of the development on the surrounding community. Open space, common amenities and an integrated system of walking trails, including a publicly accessible greenway, support a high quality of life for the residents in and around the development. Open space shall exceed the Town of Zebulon minimum requirement for PD zoning.

The development includes the construction of a collector street connecting S. Wakefield Street and S. Arendell Street as shown on the Grow Zebulon Comprehensive Transportation Plan, at a location where it will clearly be a safe distance from the Perry Curtis/S. Arendell intersection, improving connectivity for the community. This is consistent with Land Use and Development Goal 3, Land Use and Development Policy G, General Policy G3, and Residential Policy R3. The internal street network includes three access points to existing public roads promoting access options for residents of the development.



### 3.0 Permitted Uses

Zebulon South PD proposes to allow the development of residential uses including Single Family Detached and Single Family Attached along with accessory uses as permitted in the R6 zoning district. Figure 2 below provides a listing of the proposed permitted uses. The uses are subject to the regulations of the Town of Zebulon UDO.

Use Category	Specific Use	PD
Residential Uses	Single Family Detached and permitted accessory uses	P
	Single Family Attached and permitted accessory uses	P

FIGURE 2

In addition, on the portion of the Master Plan designated as the “Dedication of Land for Fire Station,” all permitted and special uses in R6 shall be permitted, including the “Fire/EMS/Police Station” use.

### 4.0 Design Controls

#### 1. Residential Development Area – 116.1 acres

**Density:**

- Maximum Density: 2.75 dwelling units per acre
- Units: 320 dwelling units  
(maximum 186 SF detached & 134 SF attached)

**Building Height:**

- Maximum Building Height / # of stories: 50 feet / 3 stories

**Building Setbacks:**

**Single Family Detached Front Loaded:**



Front: 20'  
Side: 5'  
Corner Side: 10'  
Rear: 15'

**Single Family Detached Rear Loaded:**

Front: 10' max  
Side: 5'  
Corner Side: 10'  
Rear: 20'

**Single Family Attached Rear Loaded:**

Front: 10' max  
Building Separation: 10'  
Rear: 20'

**Buffers:**

Streetscape Buffers: 15' Type C Streetscape Buffer (Wakefield St)  
15' Modified Type D\* Streetscape Buffer (Arendell Ave)  
\*For additional opacity, this buffer shall be comprised of 100% evergreen shrubs and 75% evergreen understory trees

Perimeter Buffers: 20' Type B Perimeter Buffer

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is only allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved master subdivision plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within

buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.

## 2. Land Dedication Parcel Development Area - 2.48 Acres

### Building Setbacks

Front:	20'
Side:	20'
Corner Side:	5'
Rear:	5'

**Maximum Lot Coverage:** 85%

### Building Height:

Maximum Building Height / # of stories: 50 feet / 3 stories

### Buffers

Streetscape Buffers: 15' Type C Streetscape Buffer

Perimeter Buffers: 20' Type B Perimeter Buffer adjacent to parcels with residential or recreational uses; no perimeter buffer required adjacent to PIN 2705410911

Existing vegetation shall be utilized to the extent possible. All streetscape and perimeter buffers shall be provided in accordance with the Town of Zebulon UDO. Landscaped perimeter and street buffers shall include native and adaptive species only.

Disturbance within the buffer is allowed as follows:

- a. Construction of driveways, public streets and walkways perpendicular to the buffer strip shall be allowed where such construction is necessary for safe ingress and egress to the site. The nature and limits of such construction must be designated on the approved site plan.
- b. Notwithstanding any other provision pertaining to buffers, City of Raleigh public utilities and easements shall be allowed, parallel and otherwise, within

buffers, and the area within such easements shall still count towards buffer and undisturbed buffer calculations.

- c. Any other necessary disturbances shall be permitted, as approved by the Technical Review Committee.

## 5.0 Architectural Standards

To encourage multiple architectural styles, buildings will be any variety of Craftsman, Traditional, Colonial, etc. While each of the architectural offerings proposed will have its own identity, a number of common threads will link the homes in the development, including color palettes, materials, roofing, and decorative garage doors. Elevations have been included in an effort to represent the bulk, massing, scale and architectural style of the development.

These standards do not apply to the Land Dedication Parcel.

### Requirements for All Homes:

#### Roofs:

Roof lines shall vary to reduce the scale of the structure and add visual interest. Roof shapes (flat, hip, mansard, gable, or shed for example) and material shall be architecturally compatible with façade elements and the rest of the structure. Shed roofs may be used on porches and dormers.

3-tab/235 shingles are not permitted.

#### Façades:

The principal structure's front façade must incorporate recesses and projections along at least 50% of the length of the façade. Windows, awnings, and porch area shall total at least 50% of the façade length abutting a public street.

Façades shall incorporate a repeating pattern of change in color, texture, and material modules.

No venting will be provided on any front facades except that when a bathroom is located on the front of the unit, a vent of a similar color to either the siding or the trim may be provided on the front of the unit.

#### Entryways:

Doors shall have built-in windows; alternatively, a solid door is allowed provided side lights (side windows) are installed immediately adjacent to the solid door. Double front doors are allowed as an option.

Front doors shall be illuminated.

Variations in color schemes and textures are encouraged in order to articulate entryways so as to give greater recognition to these features.

An option to include an overhang on rear exterior doors shall be provided. When this option is chosen by homeowner, the overhang shall extend at least 24 inches.

**Windows:**

All street-facing exterior windows shall have trim and screens. Trim shall be a minimum of 3 inches wide.

**Materials and Color Palette:**

Predominant exterior building materials shall be high quality materials including brick, wood, stone, fiber cement, and/or wood composite.

Vinyl siding is not permitted; however, vinyl windows, decorative elements and trim are permitted.

Trim color shall be distinct from façade color.

Front and side porches with open foundations shall have brick or stone piers and openings shall be fully screened with evergreen plantings.

A varied color palette shall be utilized on homes throughout the subdivision and shall include siding, trim, shutter, and accent colors complementing the siding colors.

Porch railings, if included on homes, shall be a complimentary color of the house and shall be made of either aluminum, or composite material.

Accessory buildings, if constructed, shall be of similar materials and colors as the primary single-family home.

All homes will have two or more of the following design features on the front façade (not including foundation):

- a. stone
- b. brick
- c. lap siding
- d. shakes
- e. board and batten
- f. window pediments
- g. recessed windows
- h. side and/or front window box bays
- i. roof gables
- j. roof dormers
- k. roofline cornices

l. metal roofing as accent

m. columns

n. shutters

o. other decorative features approved by the Planning Director

### **Screening:**

All residential structures shall have screening by vinyl privacy fence installed on the sides or rear of the structure to prevent visibility of roll out refuse carts from the public right-of-way or adjacent properties.

Vegetative screening for HVAC units shall be provided.

### **Requirements for Single-family Detached Front Loaded Homes:**

1. Each home shall have a minimum of one story and a maximum of three stories.
2. Each home may have a raised slab foundation. Raised slab foundation shall contain stone or brick.
3. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.
4. UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
5. Front porches shall extend beyond the front plane of the garage by a minimum of 12" on 25% of the homes constructed. Front Porches shall be allowed to extend beyond the minimum front setback a maximum of 10".
6. Garage doors must have windows, decorative details or carriage-style hardware.
7. Each garage will either have one light on each side or two lights above the garage door.
8. Eaves shall project at least 8 inches from the wall of the structure.
9. All gutter downspouts shall discharge to the side or rear of the structure.
10. The front elevation and all sides that abut a public street shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
11. A minimum 18-inch masonry (brick or stone) water table on the front façade shall be provided.
12. On at least 30% of units, masonry (brick or stone) shall extend the full height of the ground floor.
13. Each front porch shall contain a covered stoop.
14. No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

### **Requirements for Single-family Detached Rear Loaded Homes:**

15. Each home shall have a minimum of one story and a maximum of three stories.
16. Each home may have a raised slab foundation or crawl space. Raised slab foundation shall contain stone or brick.
17. Finished floor elevations shall comply with UDO Section 4.3.3.P.1.

- 18.UDO 4.3.3.P.2 - Single-family detached dwellings shall be configured so that each side of the dwelling includes some form of ingress or egress capable of allowing emergency exit from or entrance into the dwelling. Windows, doors, or other wall penetrations shall be credited towards these standards. Skylights shall also be credited towards these standards in cases where there is sufficient access to the ground from the room.
- 19.Eaves shall project at least 8 inches from the wall of the structure.
- 20.All gutter downspouts shall discharge to the side or rear of the structure.
- 21.The front elevation of each unit shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
- 22.A minimum 24-inch masonry (brick or stone) water table on the front façade shall be provided.
- 23.All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above.
- 24.No single family detached home shall be constructed with a front elevation or color palette that is identical to the home on either side of it.

### **Requirements for Single-family Attached Rear Loaded Homes:**

- 25.Each home shall have a minimum of two stories and a maximum of three stories.
- 26.Each home may have a raised slab foundation.
- 27.The front elevation and all sides that abut a public street shall contain a minimum of 10% masonry (brick or stone) and shall contain a minimum of two siding materials (i.e. stone and hardiplank or brick and shake).
- 28.No two consecutive units within a single building shall contain the exact same front elevation regarding materials or color palette.
- 29.All sides of a principal structure that face an abutting public street shall have architectural and decorative features as described above.
- 30.The building façade cannot be a single mass; it must be broken up by home articulations of at least 12 inches, at minimum, between every two homes.
- 31.The roofline of each attached building cannot be a single mass; it must be broken up either horizontally and/or vertically between, at a minimum every two homes.

### **Requirements for Amenities:**

A mail kiosk shall be located adjacent to the clubhouse and pool. The kiosk shelter shall be designed with similar architectural style, materials and color palette as the homes in the neighborhood. Cluster mailboxes shall meet the requirements of Section 6.12.7 of the Town of Zebulon UDO.

The clubhouse shall match residential buildings with regard to style, materials and color palette.

### **Architectural Guidelines:**

We commit to the architectural requirements in Section 5.2.4 of the UDO. We will work with Town Planning and Building staff to provide additional architectural features with the exception of Section 5.2.4.E.3.e. Garage doors will not be required to be located at least two or more feet behind the front porch or the primary entrance to the dwelling.

## 6.0 Parking and Loading

All Residential Development Area parking and loading areas shall comply with applicable requirements of the Town of Zebulon UDO Section 5.8. Guest parking shall be constructed for each phase to meet the requirements of that phase, and the total number of guest parking spaces shall exceed the minimum requirement by 76 spaces, which is almost double the requirement.

Recognizing the unique parking needs of fire stations and other public-serving uses, and in order to give additional site design flexibility for public-serving development, the Land Dedication Parcel shall not be subject to the requirements of Zebulon UDO Section 5.8. Parking configuration for this parcel shall be approved by the Technical Review Committee upon a showing that the provided parking will adequately serve the fire station or other public-serving development.

## 7.0 Signs

All signage shall comply with applicable standards and requirements of the Town of Zebulon UDO Section 5.11.

## 8.0 Infrastructure

### 8.1 Public Water

Public water will be provided via extensions of the existing City of Raleigh water system. Existing water is located in S. Arendell Avenue closer to the Town of Zebulon near Temple Johnson Road. Water infrastructure will be extended from the current terminus and along the site frontage of S. Arendell Avenue and S. Wakefield Street. Infrastructure shall be extended throughout the site as required for development to provide public water to all lots.

### 8.2 Sanitary Sewer

Public sanitary sewer will be provided via extensions of the existing City of Raleigh sanitary system. A pump station will be constructed on site. Existing gravity sanitary sewer is located north of the site closer to the Town of Zebulon near Temple Johnson Road. The forcemain connection will be made to this existing gravity sewer. The gravity sanitary sewer infrastructure will be extended throughout the site as required.

### 8.3 Streets and Alleys

All streets shall be in conformance with the Town of Zebulon Transportation Plan and shall be constructed to Town of Zebulon standards and specifications. The project proposes an 70' right-of-way two-lane collector street with on-street parking protected by bump-outs and 10' multiuse paths on either side for additional pedestrian and cyclist safety, and has been shown on the Master Plan connecting S. Wakefield Street and S. Arendell Avenue. This section will create the connectivity envisioned in the CTP, with a cross section that will fit in the proposed neighborhood. The collector street construction shall follow the phasing of the project. Each section shall be constructed within the phase which it is located.

The ultimate cross section of S. Arendell Avenue is an 80' right-of-way 2-lane median divided roadway. The ultimate cross section of S. Wakefield Street starts as an 80' right-of-way 2-lane median divided roadway that transitions on the south side of the proposed collector street to a 100' right-of way 4-lane median divided roadway. This project shall construct half of the cross-section along the property frontage. The Parks and Recreation Master Plan proposes a greenway along each of these roads. These greenways shall be incorporated as a 10' mixed use path along the roadway in place of a traditional 5' sidewalk.

Alleys shall be located within a 20' right-of-way with 10' of asphalt pavement width.

## 8.4 Pedestrian Connectivity

Zebulon South has over 6 miles of greenways, multiuse paths, trails, and sidewalks. Sidewalks shall be provided on both sides of all streets throughout Zebulon South PD. Alleys shall not have sidewalks. Multiuse paths will also be provided on Wakefield St and S Arendell Ave, and will connect the greenway to Wakefield St. Multiuse paths are provided on both sides of Road A. The neighborhood sections shall also be connected for pedestrians by several 6' paved private trails, which will include at least three (3) exercise stations along the trails.

The public greenway shown on the Town's Comprehensive Transportation Plan shall be constructed through the site along the north side of the development. A private trail shall connect the sidewalk system to the public greenway approximately as shown on the Master Plan.

## 9.0 Stormwater Management

The proposed development will meet all applicable requirements and standards as outlined in the Town of Zebulon Street and Storm Drainage Standard and Specifications Manual. Zebulon South PD will meet all stormwater quantity and quality reduction requirements. Proposed stormwater control measures (SCMs) will typically consist of wet ponds and other approved measures. SCMs will be located within open space areas and be maintained by the HOA. At least one stormwater control pond shall contain a fountain. At least seventy-five percent (75%) of any required plants in the Stormwater Control Measure ponds, excluding grasses, shall be pollinator plants such as native milkweeds and other nectar-rich flowers.

## 10.0 Natural Resources and Environmental Data

The development site consists mostly of agricultural fields along with wooded areas surrounding the streams, wetlands and existing pond.

Existing streams and wetlands have been delineated and buffered as required by Town, State and Federal agencies. The site is located within the Neuse River Basin. Any impacts requiring permits shall be obtained and permitted through the Town of Zebulon, NC Division of Water Resources and US Army Corps of Engineers as applicable.

No special flood hazard areas are located onsite per FEMA FIRM Map 3720270500k & 3720270400L dated 7/19/2022.



## 11.0 Pocket Parks and Open Space

Active and passive open spaces and recreational features will provide the residents with excellent on-site amenities. An integrated system of walking trails traverses open space and environmentally sensitive areas providing a unique amenity for the development. The development provides over eleven acres of open space, including over five acres of active open space. An on-site swimming pool and clubhouse provide pedestrian accessible amenities for the residents of the development.

### **Pool:**

- Minimum 1,000 square foot water surface area

### **Clubhouse:**

- No meeting space, bathrooms and changing rooms only

### **Tot Lot:**

- Minimum 600 square feet including ASTM fall zones
- IPEMA Certified Playground Equipment
- Target age: 2-12 years

### **Yard Games:**

- At least one amenity area shall provide a yard game, such as cornhole or outdoor ping pong
- Target age: 12+

### **Dog Park:**

- Minimum 6,000 square feet of fenced area
- Fence shall be a minimum of 4' tall galvanized or vinyl-coated chain link fence
- Shall include a minimum of two benches, one trash can and one dog waste station

### **Pocket Park:**

- Minimum of 8,000 square feet of area for multi-purpose play
- May include benches, paths, trashcans and enhanced landscaping
- Located adjacent to the greenway, along the Arendell/Wakefield St connector
- Pollinator Garden

### **Private Trails:**

- Minimum 6' wide paved trail connecting from sidewalk system to Public Greenway as illustrated on Master Plan. At least two (2) dog waste stations and three (3) exercise stations will be provided along trails.

## 12.0 Homeowner's Association

Prior to the issuance of the first certificate of occupancy for the development, a Homeowner's Association (HOA) shall be formed to govern the affairs of the development. The HOA shall be responsible for maintaining the common areas of the development including any shared stormwater facilities, landscaping, hardscape structures (such as signage, irrigation, lighting, and fountains) and recreation amenities. The Homeowners Association shall appoint two residents to the advisory board at 25% resident occupied, two residents at 50% occupied and two residents at 75% occupied.

## 13.0 Residential Lot Landscaping

Individual residential lots shall be landscaped per Town of Zebulon UDO for foundation plantings and site landscaping.

Foundation plantings consisting of evergreen shrubs or decorative grasses with a minimum height of 18 inches shall be located within 10 feet of any foundation wall visible from a public street excluding alleys. Shrubs shall maintain a maximum on-center placement of three feet.

Site landscaping consisting of one canopy tree for every 2,000 square feet of lot area is required. Canopy trees may be located anywhere within the residential lot except where limited by easements, sight distance triangles or buffer areas.

HVACs and ground-based mechanical equipment shall be screened utilizing evergreen shrubs on sides visible from a public street.

## 14.0 Consistency with Comprehensive Plan and Land Use Map

Zebulon South PD is consistent with the Town of Zebulon Comprehensive Plan and Land Use Map goals and objectives. The development is located in SR and GR land use categories where PD zoning is a recommended land use type particularly where a mix of housing types and varying densities is proposed.

Proposing both single-family detached and attached product supports the Town's desire for a variety of housing types and price points. This draws new residents and provides additional housing choices for existing residents.

The site design incorporates in a variety of lot sizes supporting the goal of increasing a diverse housing stock for the Town. The variety ensures additional housing choices as well as a variety of price points.

Providing more concentrated development while preserving environmentally sensitive areas and perimeter buffers provides a transition to the existing single-family homes and agricultural properties adjacent to the development.

The integrated system of streets, sidewalks, trails and greenways provide a cohesive pedestrian and vehicular network adhering to the Town's Comprehensive Transportation Plan and provided a thoughtfully planned neighborhood.

## 15.0 Compliance with the UDO

This Master Plan shall be the primary governing document for the development of Zebulon South PD. All standards and regulations in this Master Plan shall control over general standards of the UDO. Provided, however, that if a specific regulation is not addressed in this Master Plan, UDO regulations shall control. Zebulon South PD will comply with all other relevant portions of the Town of Zebulon Unified Development Ordinance.

## 16.0 Preliminary Residential Plan Review

Pursuant to UDO Section 3.5.5.B.4, the applicant requests an exemption from subsequent residential preliminary plan review. This PD includes a master plan that is detailed and meets the requirements for a residential preliminary plan. Therefore, upon approval of this PD, the applicant shall be exempt from subsequent residential preliminary plan review.

## 17.0 Additional Zoning Conditions (not applicable to Land Dedication Parcel)

In addition to conditions contained throughout the visual and written document, additional written voluntary conditions have been offered to ensure a quality development.

1. Single family detached rear load lots shall have a minimum lot size of 4,800 sf.
2. Single family detached front load lots shall have a minimum lot size of 6,000 sf.
3. Single family attached lots shall have a minimum lot size of 1,260 sf.
4. The minimum lot width for front loaded lots shall be 50' reduced from 70'.
5. All single family detached rear loaded homes shall have a sidewalk connection from the front door or porch to the public sidewalk.
6. The clubhouse and pool shall be completed before the 150<sup>th</sup> Certificate of Occupancy for any dwelling is issued.
- 8.. Zebulon South will apply a maximum 35% impervious requirement for the development as a whole (based on total acreage).
9. The applicant commits to provide a minimum 15% Tree Save, three times the minimum requirement.
10. All planned improvements to roadways and right-of-way owned and maintained by the NC Department of Transportation (NCDOT), including improvements that require off-site property acquisition and/or easements, are subject to NCDOT approval during subsequent phases of development. If any improvements are not approved by NCDOT, alternative designs may be administratively approved by Town staff.

11. If a bus pickup location is approved by Wake County Public Schools in the neighborhood, one bust stop area, including a shelter, a bench, a trash can, and at least 5 bicycle spaces shall be provided with the second phase of development.
12. To support community gatherings and active neighborhoods, the applicant commits to providing one neighborhood congregation area, to include:
  - a. a minimum of two (2) larger parking spaces designed for food trucks or delivery vehicles (mobile vendors), with an electrical outlet available;
  - b. one (1) covered seating area with at least 10 designated public seating spaces will be provided adjacent to the Mobile Vendor spaces.
  - c. at least one (1) outdoor grill will be provided adjacent to the covered seating area,

This area may be classified as active open space under UDO § 5.7.

13. The development shall include a minimum of five (5) affordable single-family detached ownership units (the "Affordable Units"), which shall be located on different streets in the neighborhood. The Developer shall vet qualified buyers for the Affordable Units and shall ensure, in the first sale of the Affordable Units, that they are affordable households earning no more than eighty percent (80%) of the Area Median Income (AMI). Prior to Subdivision closeout, the Developer shall submit documentation and an affidavit of compliance with this zoning condition. Following the first sale of each of the Affordable Units, Developer shall have no further obligations under this condition.
14. Final alignment of the greenway will be reviewed and approved by TRC during construction drawings.
15. Unless not approved by Wake County, the grave site(s) located at 0 N Arendell Ave (PIN 2705513114) shall be relocated prior to approval of construction drawings.

## 18.0 Land Dedication Parcel

The owner shall designate, for the benefit of the Town, a minimum of 2 acres of land (excluding right-of-way dedication and easements required for frontage improvements) located on Hwy 96/Arendell Ave abutting the property lines of Wake County PINs 2705410911 (Deed book 16651/page 25) and 2705520074 (Deed book 9289/page 1838) for the future development of a Town of Zebulon Fire Station or other public-serving use, as determined by the Town (the "Land Dedication Parcel"). The location of the Land Dedication Parcel is identified on the Master Plan, and the surveyed boundary line will be identified and approved by the Town prior to Final Plat approval for the phase of development adjacent to the Land Dedication Parcel. After approval of the boundary line, but no later than the approval of the Final Plat for the phase of development adjacent to the Land Dedication Parcel, the developer shall dedicate to the Town an easement (or superior title) by deed or other instrument, approved by the Town Attorney as to form, for the Land Dedication Parcel. The Residential Development Area developer shall construct all curb, gutter, road widening and pedestrian improvements on Arendell Ave for the Land Dedication Parcel and stub potable water and sanitary sewer to the Land Dedication Parcel prior to plat recordation, or provide a surety for completion thereof. The actual design,

construction, and installation of the fire station and associated amenities, or other permitted public use as determined by the Town, shall be done by the Town, or another public entity and are not commitments of this zoning case. This zoning condition may also be satisfied by the Town Manager, or his/her designee, stating, in writing, that the Town does not wish to accept the land for the development of a fire station or other public use.

## 19.0 Transportation Impact Analysis Summary

A Traffic Impact Analysis (TIA) was conducted by the Timmons Group in accordance with the Zebulon (Town) Unified Development Ordinance (UDO) and the North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. A full copy of the TIA was submitted for review and approval with the PD submittal, and a voluntary additional analysis incorporating anticipated traffic from the nearby recently-approved Chamblee Lake PD was submitted for review and approval with the applicant's final master plan submittal. The listed recommended improvements are subject to further review and final approval by NCDOT.

### Study Area

The study area for the TIA was determined through coordination with the Town and NCDOT and consists of the following existing intersections:

- NC 96 and Site Access #1
- NC 96 and Site Access #2
- S Wakefield St and Site Access # 3
- NC 97 and S Wakefield St
- NC 97 and NC 96
- NC 96 and W Barbee St
- NC 96 and Perry Curtis Rd

### Recommended Improvements

Based on the analysis of the TIA (including improvements to be installed by the Chamblee Lake development), the following improvements have been recommended to be constructed by the developer to both mitigate traffic impacts by the proposed development.

#### NC 96 and Site Access #1

- Site Access 1 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.
- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

#### NC 96 and Site Access #2

- Site Access 2 to include a two-lane cross-section with one eastbound egress lane and one westbound ingress lane.

- Provide stop control on the eastbound approach of the site drive.
- Construct a southbound right-turn lane on NC 96 with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.
- Construct a northbound left-turn lane on NC 96 with a minimum of 100 feet of full-width storage and appropriate deceleration and taper.

### Wakefield St and Site Access #3

- Site Access 3 to include a two-lane cross-section with one westbound egress lane and one eastbound ingress lane.
- Provide stop control on the westbound approach of the site drive.
- Construct a southbound left-turn lane on Wakefield Street with a minimum of 50 feet of full-width storage and appropriate deceleration and taper.

## 19.1 Additional Transportation & Pedestrian Safety Enhancements


### Safety Enhancements at Pulley Gordon Road/Morphus Bridge Road Intersection

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the Pulley Gordon Road/Morphus Bridge Road intersection in the existing right-of-way and pavement and right-of-way and frontage improvements required to be dedicated by the developer at this intersection. These safety enhancements are subject to approval by the Technical Review Committee and NCDOT.

### Safety Enhancements on NC 96 between Zebulon Community Park and Zebulon Community Center

During construction drawing review, Residential Development Area developer shall work with NCDOT, Town staff, and Town transportation engineering reviewers to provide safety enhancements to the section of NC 96 between the entrance to the Zebulon Community Park and entrance to the Zebulon Community Center, in the existing right-of-way and pavement. These enhancements will include a crosswalk and/or appropriate warning signage. These safety enhancements is subject to approval by the Technical Review Committee and NCDOT.

STAFF REPORT  
PARTICIPATION IN WAKE COUNTY FIRE ACADEMY  
FUNDING AGREEMENT  
MAY 6, 2024

**Topic:** Participation in Wake County Fire Academy – Funding Agreement  
**Speaker:** Chris Perry, Fire Chief  
**From:** Chris Perry, Fire Chief  
**Prepared by:** Chris Perry, Fire Chief  
**Approved by:**  Joseph M. Moore, II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider executing an agreement with Wake County to utilize American Rescue Plan Act (ARPA) funds to recruit and train three career firefighters in their next academy.

**Background:**

In 2022, Wake County initiated a program to recruit and train career firefighters using ARPA funds. The recruitment plan was aimed at improving the diversity of career firefighters in Wake County and utilized ARPA funds to cover all related expenses, including salaries and benefits, personal protective clothing/uniforms, and educational expenses such as textbooks and study materials. A similar ARPA-funded recruitment and academy was held in 2023.

The Town has an opportunity to participate in the 2024 recruitment and academy by hiring three firefighters to participate. Costs associated with these employees during the training period will be reimbursed by Wake County using the ARPA funds. Beginning in Fiscal Year 2026 (July 1, 2025), the positions and related costs will be cost-shared based upon the existing Wake County funding model.

**Discussion:**

Board approval of the Funding Agreement for Fire Academy 15 (attached) funds the training of three firefighters by Wake County in FY25.

**Fiscal Analysis:**

The funding agreement stipulates Wake County will reimburse the Town for personnel expenses using ARPA funding for the firefighters in FY25 (estimated at \$154,000). On July 1, 2025, the Town and Wake County will share costs of the three positions in accordance with the established cost share agreement.

**Policy Analysis:**

The Code of Ordinances (33.02) defines the Town's responsibility for providing firefighting, medical responder, and vehicle extrication services. These additional firefighter positions go towards providing those services.

N.C.G.S. 160A-461 authorizes units of local government to enter into contracts or agreements with each other in order to execute any undertaking.

**Staff Recommendation:**

Staff recommends approving the Funding Agreement for Fire Academy 15.

**Attachments:**

1. Funding Agreement for Fire Academy 15

**STATE OF NORTH CAROLINA  
COUNTY OF WAKE**

**AMERICAN RESCUE PLAN ACT SUBRECIPIENT FUNDING AGREEMENT  
FOR FIRE ACADEMY 15**

THIS AMERICAN RESCUE PLAN ACT SUBRECIPIENT FUNDING AGREEMENT FOR FIRE ACADEMY 15 (“Agreement”), made and entered into this \_\_\_\_\_ day of \_\_\_\_\_ 2024 by and between the County of Wake, a body politic and corporate of the State of North Carolina, hereinafter referred to as “COUNTY” and \_\_\_\_\_ hereinafter referred to as “TOWN”; and collectively referred to as the “Parties.”

**RECITALS**

**WHEREAS**, the COUNTY is a recipient of funds from the Coronavirus State and Local Fiscal Recovery Funds (SLFRF) funds awarded in the American Rescue Plan Act of 2021 (ARPA) in order to respond to the COVID-19 public health emergency; and

**WHEREAS**, the U.S. Treasury guidance allows the COUNTY to expend ARPA funds for eligible uses to meet the needs of the community and ARPA funds may be used for investments in diversity, equity & inclusion initiatives; and

**WHEREAS**, the training and hiring of fire services employees and the implementation of diversity, equity, and inclusion initiatives in such activities are both needed responses to the COVID-19 public health emergency and will benefit the residents of Wake County; and

**WHEREAS**, the COUNTY, through focus groups, internal assessment of culture, pay, policy, and promotion developed an extensive Diversity Recruitment Plan including paid training, a physical agility prep course, replacing the Basic Aptitude Test with Success Methods; and attracted interested applicants through career expos, television, print, radio, social media advertising, and Veterans Career Fair; and

**WHEREAS**, the COUNTY has approved the use of ARPA funding for training of fire service employees hired under the Diversity Recruitment Plan; and

**WHEREAS**, the COUNTY has offered all Departments and Municipalities providing contract fire services to the COUNTY the opportunity to participate in the Diversity Recruitment Plan through the ARPA/DEI reimbursement program outlined herein.

**NOW, THEREFORE**, in consideration of the mutual promises contained herein and other good and valuable considerations, the parties hereto contract and agree as follows:

**SECTION 1. TERM OF AGREEMENT.**



Expenditures eligible for reimbursement under this Agreement must be incurred during the period beginning July 1, 2022, and ending December 31, 2025. Notwithstanding the above, any provision related to reporting requirements or the duty to provide requested financial documentation or supporting documentation shall extend beyond the Term.

## **SECTION 2. GENERAL FUNDING PROVISIONS**

2.1 COUNTY will provide reimbursement funding to TOWN, subject to the following conditions:

- a. Funding provided under this Agreement may only be used to reimburse TOWN for actual expenses incurred during the term of this Agreement for the Diversity Recruitment Plan, provided the expenditure is authorized under the ARPA Guidance.
- b. Funding may not be used to cover expenses that have been or will be reimbursed under any other state or federal program.
- c. Funding may not be used for any unauthorized expenditure detailed in the Uniform Guidance, the Interim Final Rule effective May 17, 2021 or the Final Rule issued by the U.S. Treasury <https://home.treasury.gov/system/files/136/SLFRF-Final-Rule.pdf>
- d. Use of funds must be permissible under North Carolina law and cannot be used to cover otherwise ineligible expenditures of the County.

2.2 COUNTY shall reimburse TOWN for actual expenses incurred for:

- a. NFPA Physicals (\*Town- Cost share amount for physicals)
- b. SBI Background Checks
- c. salary and benefits during program duration
- d. approved employees expenses incurred per Attachment "A" (cost share if applicable)
- e. other County approved eligible expenses

2.3 Invoices shall be directed to COUNTY. Payment shall be made to TOWN on a reimbursement basis no more frequently than monthly. TOWN shall provide an invoice for reimbursement and include documentation of paid expenses by category, and receipts or other payment confirmation, employee names, and payroll register.

2.4 COUNTY is under no obligation to reimburse an expense it deems ineligible under ARPA.

2.5 All expenses submitted for reimbursement must be for eligible expenses and services incurred during the period beginning July 1, 2022 and ending December 31, 2025.

2.6 COUNTY is under no obligation to provide any reimbursements pursuant to this Agreement after training academy is completed. It is the expectation of the parties that after matriculation as an employee of the Department, expenses shall be paid through TOWN budget.

## **SECTION 3. COVENANTS AND WARRANTIES OF TOWN**

In consideration for the funding and as conditions for their receipt, TOWN acknowledges and agrees:

a. Right to Terminate:

The COUNTY, in addition to the remedies set forth in 2 CFR 200.330, can terminate this Agreement in the event of non-compliance and suspend or withhold any further payment upon written Notice as provided in this Agreement. Failure to comply with this Agreement, its terms and conditions, and/or all relevant provisions and requirements of the ARPA or any other applicable federal, state, or local law. COUNTY will reimburse all eligible expenses incurred up until the effective date of termination.

b. Reporting & Records Retention:

The COUNTY, as the recipient of federal funds, shall be responsible for the submission of all quarterly and close out reporting to the federal government in accordance with all compliance and reporting guidelines. TOWN shall provide the COUNTY with any data about reimbursements if necessary to comply with any reporting. The ending dates for each quarter of the program year are September 30, December 31, March 31, and June 30. Pursuant to 2 CFR 200.334, TOWN shall have a duty to retain all records associated with the funding and make records related to this Agreement and the reimbursements hereunder retained for a period of three years from the date of submission of the final reimbursement payment. TOWN shall promptly comply with all documentation and reporting requirements of the COUNTY and within thirty (30) days from any request of the COUNTY shall allow any examination of records or expense ledgers explaining in detail all specific expenditures and decisions related thereto.

c. Licenses, Certifications, Permits, Accreditation:

The TOWN must obtain and keep current any license, certification, permit, or accreditation required by federal, state, or local law and shall submit to the COUNTY proof of any licensure, certification, permit or accreditation upon request.

d. Recapture:

If any expenditures made under this Agreement are later determined by the COUNTY or the federal government as ineligible under ARPA, TOWN will return and reimburse the COUNTY for all said funds. This provision shall survive termination of this Agreement.

**SECTION 4. RELATIONSHIP OF PARTIES**

The Parties are independent contractors, and none shall not be responsible for any of the other Parties acts or omissions. Neither Parties nor any employee of Parties shall be deemed an officer, employee, or agent of any Partner. Nothing herein shall be construed to create a partnership or joint venture between the Parties.

**SECTION 5. NON-ASSIGNMENT or SUBCONTRACT**

The Parties shall not assign this Agreement, including right hereunder, to any other party.

**SECTION 6. NO THIRD-PARTY BENEFICIARIES**

This Agreement is not intended for the benefit of any third party. The rights and obligations contained herein belong exclusively to the parties hereto and shall not confer any rights or remedies upon any person or entity other than the parties hereto.

**SECTION 7. NON-APPROPRIATION**

The Parties recognize that COUNTY is a governmental entity, and the agreement validity is based upon the availability of public funding under the authority of its statutory mandate. In the event that public funds are not available and not appropriated to for items specified in this Agreement, then this Agreement shall automatically expire without penalty to County. In the event of a legal change in County’s statutory authority, mandate, and mandated functions which adversely affects County’s authority to continue its obligations under this Agreement, then this Agreement shall automatically expire without penalty to any Party.

**SECTION 8. NOTICES:** Any notices required to be given or which shall be given under this AGREEMENT shall be in writing, delivered by first-class mail addressed to the parties as follows:

for COUNTY:

Mr. Darrell Alford, Director  
Fire Services & Emergency Management  
331 S. McDowell St  
P.O. Box 550  
Raleigh N.C. 27602

With a copy to  
darrell.alford@wakegov.com

For TOWN:

**SECTION 9. ISRAEL BOYCOTT & IRAN DIVESTMENT**

By signing this agreement, UNC certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81 and

it will not utilize any subcontractor that appears on the list in the performance of duties under this Agreement.

By signing this agreement, UNC certifies that as of the date of execution of this Agreement 1) it does not appear on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. Chapter 147 Article 6E (G.S. 147-86.55 to G.S. 147-86.63) and published on the State Treasurer's website at [www.nctreasurer.com/Iran](http://www.nctreasurer.com/Iran) and 2) it will not utilize any subcontractor that appears on the Final Divestment List in the performance of duties under this Agreement.

#### **SECTION 10. ANTI-DISCRIMINATION**

In consideration of signing this Agreement, the Parties hereby agree not to discriminate in any manner on the basis of race, natural hair or hairstyles, ethnicity, creed, color, sex, pregnancy, marital or familial status, sexual orientation, gender identity or expression, national origin or ancestry, marital or familial status, pregnancy, National Guard or veteran status, religious belief or non-belief, age, or disability with reference to the subject matter of this Contract. The Parties agree to comply with the provisions and intent of Wake County Ordinance SL 2017-4. This anti-discrimination provision shall be binding on the successors and assigns of the Parties with reference to the subject matter of this Contract.

#### **SECTION 11. COMPLIANCE WITH FEDERAL LAW, REGULATIONS, AND EXECUTIVE ORDERS AND ACKNOWLEDGEMENT OF FEDERAL FUNDING**

This is an acknowledgement that federal financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable federal law, regulations, executive orders, policies, procedures, and directives.

#### **SECTION 12. NO OBLIGATION BY FEDERAL GOVERNMENT OR WAKE COUNTY**

Neither the Federal Government, nor Wake County, are subject to any obligations or liabilities of TOWN to third parties resulting from the contract.

#### **SECTION 13. ENTIRE AGREEMENT**

The terms and provisions herein contained constitute the entire agreement by and between the Parties and shall supersede all previous communications, representation or agreement, either oral or written between the parties hereto with respect to the subject matter hereof.

**IN TESTIMONY WHEREOF, WAKE COUNTY and TOWN** through their authorized officers and by their own hands have hereunto set forth their hands and seals of the day and year first above written.

WAKE COUNTY

By: \_\_\_\_\_ Date: \_\_\_\_\_

Title: Director, Fire Services and Emergency Management

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act. (Wake County)

\_\_\_\_\_  
FINANCE DIRECTOR

The person responsible for monitoring the contract performance requirements is \_\_\_\_\_.  
\_\_\_\_\_ Department Head initials

TOWN

By: \_\_\_\_\_ Date: \_\_\_\_\_

Title: Town Manager, Town of Zebulon

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act. (Town)

\_\_\_\_\_  
FINANCE DIRECTOR

ATTACHMENT "A"

Uniform Items	Cost Per Unit	Quantity	Total
RED T-Shirts	\$10.00	8	\$80.00
Sweatshirts	\$20.00	3	\$60.00
Ballcap	\$15.00	2	\$30.00
Toboggan	\$10.00	2	\$20.00
Shorts	\$20.00	2	\$40.00
Sweatpants	\$20.00	2	\$40.00
Navy Pants	\$45.00	6	\$270.00
Black Belt	\$35.00	1	\$35.00
Grey Polo Shirts w/logo	\$30.00	1	\$30.00
Black Duty Boots	\$175.00	1	\$175.00
		<b>TOTAL</b>	<b>\$780.00</b>

- Wake County will Pay 100%
- Department will pay for with No Reimbursement
- Department will purchase and Wake County will reimburse @ Cost Share

**Topic:** Bond Referendum – Notice of Intent

**Speaker:** Joe Moore, Town Manager

**Prepared by:** Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider a Bond Referendum Notice of Intent.

**Background:**

North Carolina's local governments, when proposing to issue bonds requiring a vote by their residents, are required to publish a Notice of Intent to file an application with the Local Government Commission. At their Work Session on May 9, 2023, the Board agreed to forego passing a Notice of Intent to place a Transportation Bond Referendum on the ballot for Election Day on November 6, 2023, due to uncertainty with the following projects:

1. The amount of additional financial support from the Capital Area Metropolitan Planning Organization (CAMPO) for the improvements to N. Arendell Ave.
2. The percentage of financial support contributed by the Wakelon Mills development to construct the Judd @ Arendell signal.
3. The Town's financial obligations to partner with Wake County on the Fire Station/EMS construction facility and pending Congressional ear-mark funds.

In the intervening year, CAMPO clarified the limits of their financial responsibility, Wakelon Mills has not proceeded with their submittal, and the Town has accepted conditions to receive the Congressional ear-mark funds and partner with Wake County.

**Discussion:**

The Board of Commissioners will decide on whether to pursue a Transportation Bond Referendum Notice of Intent through two actions. First, adoption of the attached Resolution to initiate the action of intent. Second, adopt the attached Ordinance to fund the Bond counsel and education campaign to respectively administer and explain the Bond Referendum.

**Policy Analysis:**

Funding transportation projects to address growth and provide appropriate service levels is clearly a Growing Smart goal of the Town's Strategic Plan. The following projects identified in the Board's October '22 Mini-Retreat and anticipated as needs over the bond's seven-year disbursement period, provide the financial basis for a \$50M Transportation Bond Referendum.

- N. Arendell Widening ~ \$4M
- Jones Street Connector and Procter / Pearces Roundabout ~ \$8M
- Arendell / Gannon Roundabouts w/ Stormwater Improvements ~ \$9M
- East Gannon Ave.: Shepard School to Walmart ~ \$11M

BOND REFERENDUM – NOTICE OF INTENT AND BUDGET AMENDMENT  
MAY 6, 2024

- Proctor/Old Bunn Widening: Pearces to Karial ~ \$11M
- Judd @ Arendell signal ~ \$5M
- Sidewalks ~ \$2M

The Board has not prioritized the park and facility projects identified in the Town’s Parks and Recreation Master Plan, *Play Zebulon*, to provide the financial basis of a Park Bond Referendum.

**Financial Analysis:**

The funds to support financing the above referenced transportation projects is estimated to require the following property tax increases in the respective fiscal years.

Fiscal Year	'26	'27	'28	'29	'30	'31	'32	'33
Tax Rate increase	2.59¢	0.1¢	2.94¢	2.97¢	3.16¢	3.14¢	0.86¢	-

Staff estimates an additional 0.9¢ and 0.19¢ to the respective tax rates in FY '26 and FY '27 to support the design and construction of the Fire/EMS building, and an additional 3.94¢ in FY '29 to construct FS #2.

Staff cannot estimate the tax rate needed to support a Park Bond Referendum until the Board prioritizes the park and facility projects identified in the Town’s Parks and Recreation Master Plan, *Play Zebulon*.

**Staff Recommendation:**

To allow the Board an opportunity to prioritize the park and facility projects identified in the Town’s Parks and Recreation Master Plan, *Play Zebulon*, Staff recommends a phased approach to a Transportation Bond Referendum.

Issue a Notice of Intent for a Transportation Bond Referendum valued at \$20M to address the most pressing needs with the N. Arendell Improvements and Jones Street Connector, while also allowing funds to address pedestrian needs, such as sidewalks and downtown crosswalk/bulb-out improvements. The Board may revisit another Transportation Bond Referendum in the future after they have assessed the tax impact of a Park Bond Referendum.

Staff recommends adopting Resolution 2024-22 declaring the intent to issue a \$20M Bond, and Ordinance 2024-46 funding the Bond Counsel and Education Campaign respectively administering and explaining the Bond.

**Attachments:**

1. Resolution 2024-22 (Notice of Intent)
2. Ordinance 2024-46 (Fund Bond Counsel and Education Campaign)



**RESOLUTION 2024-22**

**NOTICE OF INTENT TO  
APPLY TO THE LOCAL GOVERNMENT COMMISSION  
FOR APPROVAL OF BONDS**

NOTICE is hereby given of the intention of the undersigned to file an application with the Local Government Commission, Raleigh, North Carolina, for its approval of the issuance of the following proposed bonds of the Town of Zebulon, North Carolina, which bonds shall be subject to the approval of the voters of said Town at a referendum:

\$20,000,000      **TRANSPORTATION IMPROVEMENT BONDS** for the purpose of providing funds, together with any other available funds, for the land acquisition, design and construction of various transportation improvement projects in Town.

Any citizen or taxpayer of the Town of Zebulon, North Carolina who objects to said bonds in whole or in part may file with the Local Government Commission a statement setting forth his or her objections and containing his or her name and address as provided in Section 159-50 of the General Statutes of North Carolina, in which event such person shall also file a copy of said statement with the undersigned, at any time within seven days from the date of publication of this notice. Objections set forth in said statement will be considered by said Commission, along with said application, in determining whether to approve or disapprove said application.

Adopted this 6<sup>th</sup> day of May, 2024.

BOARD OF COMMISSIONERS FOR THE  
TOWN OF ZEBULON, NORTH CAROLINA

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Glenn. L. York- Mayor

Attest:

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By: Lisa M. Markland, CMC – Town Clerk

ORDINANCE 2024-46

BE IT ORDAINED by the Board of Commissioners of the Town of Zebulon, that pursuant to North Carolina General Statutes 159-15, the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Section 1. To amend the General Fund budget as follows:

	INCREASE	DECREASE
REVENUES		
Fund Balance Appropriated	\$130,000.00	
EXPENDITURES		
Governing Body—Prof. Services (Bond Counsel)	70,000.00	
Governing Body—Prof. Services (Educ. Campaign)	60,000.00	

Section 2. Copies of this amendment shall be furnished to the Town Clerk, and to the Budget Officer, and to the Finance Officer for their direction.

Adopted: May 6, 2024

Effective: May 6, 2024


\_\_\_\_\_  
Glenn L. York - Mayor

ATTEST:

\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk

STAFF REPORT  
RESOLUTION 2024-23  
ANGEL PRINTS CORPORATION  
SPECIAL EVENT APPLICATION  
MAY 6, 2024

**Topic: Angel Prints Corporation: Special Event Application**

Speaker: Sheila Long, Parks & Recreation Director  
Prepared by: Sheila Long, Parks & Recreation Director  
Approved by:  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider Angel Prints Corporation's application to use the facilities at Zebulon Municipal Complex on October 12, 2024.

**Background:**

Angel Prints Corporation is a non-profit led by Zebulon residents, Brandon & Toshina Wiggins. Their goal is to bring awareness to pregnancy loss, stillbirth, and infant loss as well as share compassion and hope to those mothers, couples, and families who have experienced this type of tragedy. Last year, the Board approved Angel Prints Corporation to host their first annual "Remembering Our Little Angels" 3k awareness walk at Zebulon Town Hall.

Staff has reviewed an event application from Angel Prints Corporation to utilize the Municipal Complex to host their second annual awareness walk. The applicant will provide Staff with a Certificate of Insurance and name the Town of Zebulon as additionally insured. Based on event description, the Police Department states additional security is not necessary.

Staff has reviewed the event request and identified the expectations of the applicant. The applicant will sign a Special Event Agreement and work closely with Staff to close the front circle drive and oversee the event.

The applicant also requests a fee waiver to use the Municipal Complex grounds for the event, inclusive of an awareness walk, ceremony, and windmill garden (the garden to remain in place for 7 days). Funds raised will be used towards bringing awareness and providing support to families in need.

Event Date	Event Set Up	Event Time	Breakdown
Sat, Oct. 12th, 2024	7 AM - 10 AM	10 AM - Noon	Noon - 1:30 PM

**Discussion:**

The discussion before the Board is whether to allow Angel Prints Corporation use of the Municipal Complex facilities to conduct an awareness walk, ceremony, and install a windmill garden for 7 days. The Board will also consider reducing or waiving fees through adoption of Resolution 2024-23.

**Staff Recommendation:**

Staff recommends approval of facility use. Fee reduction or waiver is the Board's discretion.

STAFF REPORT  
RESOLUTION 2024-23  
ANGEL PRINTS CORPORATION  
SPECIAL EVENT APPLICATION  
MAY 6, 2024

**Policy and Program Guidance:**

This event falls under the purview of the Special Event Standard and meets the standards to use the Municipal Complex and fee reduction or waiver. Staff has the capacity to facilitate the event.

Board Criteria for Fee Waiver or Reduction	Meets	Does Not Meet
Non-profit organization (as defined by state or federal tax law).	✓	
Zebulon based group, chapter, organization.	✓	
Community focused event.	✓	
Recreational event in nature.	✓	
Event is open to the general public.	✓, walk is fee based	
Purpose to facilitate a positive impact to the community.	✓	
Meets the Strategic Plan:		
Vibrant Downtown		
Small Town Life	✓	
Growing Smart		

**Fiscal Analysis:**

Per the FY '23 Fee Schedule, up to \$1443.75 could be charged for this type of event. Analysis of the details of this specific event reveals direct personnel and equipment expenses to the Town are estimated at \$243.75. The applicant requests fees be waived in support of the fundraiser for the Angel Prints Corporation. With guidelines noted in the Board Adopted Special Event Standard, the Board may reduce or waive the FY '24 Fees associated with this type of event. If waived, Staff may request a Budget Adjustment to cover these expenses before the end of the fiscal year.

**Staff Recommendation:**

Staff recommends use of the Municipal Complex through adoption of Resolution 2024-23. Board clarification on the amount of fees to charge is required when adopting the resolution.

**Attachments:**

1. Resolution 2024-23
2. Board of Commissioners Consideration for Event Authorization
3. Staff Review
4. Application
5. Letter Requesting Fee Waiver
6. Map

**RESOLUTION 2024-23  
TO AUTHORIZE USE OF TOWN HALL  
FOR THE ANGEL PRINT AWARENESS WALK**

**WHEREAS**, the Board of Commissioner adopted Special Event standards on November 17, 2022 to provide guidance for Staff and the Board to consider when private groups seek to host events on public property such as streets; and

**WHEREAS**, the 2030 Strategic Plan identifies Small Town Life as a Focus Area and strives to developing more activities and locations to gather with family and neighbors; and

**WHEREAS**, the Town encourages the private sector to participate and contribute to preserve and enhance Zebulon’s Small Town Life; and

**WHEREAS**, the Town has received a request from the Angel Print Corporation to host an awareness walk for pregnancy loss, stillbirth, and infant loss at Zebulon Municipal Complex; and

**WHEREAS**, the Angel Print Corporation successfully planned and implemented this event in Zebulon in last year; and

**WHEREAS**, the Board has considered a request by the Angel Prints Corporation for the Town to waive fees associated with the event as permitted by the Special Event Standard; and

**NOW, THEREFORE, BE IT RESOLVED**, the Town of Zebulon does hereby approve the request to use Zebulon Municipal Complex to host an awareness walk on October 12, 2024, as described in the submitted special event application. The Town [*does not waive, partially waives, completely waives*] fees as permitted by the Special Event Standard for the requested event. The Town reserves the right to cancel or cause the interruption of the event when, in the sole discretion of the Town, such act is necessary in the interest of public safety or protection of public property. The Town Manager or designee will execute an event agreement with event organizers and may authorize an alternate date due to extenuating circumstances within 6 months of the approved date.

Adopted the 6<sup>th</sup> day of May, 2024

\_\_\_\_\_  
Glenn L. York - Mayor

SEAL

\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk

## **Board of Commissioners Considerations for Event Authorization**

The Board of Commissioners will consider each application on a case-by-case basis on the quarterly application consideration schedule set forth herein. Event application approval or denial rests solely with the Board of Commissioners. In order to assist the Board of Commissioners in deciding whether to permit private use of public property for an event, the Board of Commissioners will consider the following:

1. Nonprofit status or public purpose of the applicant and/or event.
2. The applicant's substantial presence in the community, including but not necessarily a permanent physical presence.
3. The applicant's history of positive contributions to the Town of Zebulon, its institutions and citizens.
4. Whether the event stimulates or encourages community participation in nonprofit/civic activities.
5. The event's consistency with the plans, goals and policies of the Town.
6. Potential for damage to property or harm to people arising from the nature and size of the proposed activity.
7. Ability of the Town to support the proposed activity.
8. Ability of the Organization to implement the event.

## **Criteria for Reduced Fee Consideration**

The Board of Commissioners will review fee reduction requests on a case-by-case basis. Reduction and/or waiver of fees is not guaranteed and is at the discretion of the Board.

Application, permit, and late fees cannot be waived. Fee reduction and/or waiver may only be authorized by the Board of Commissioners by action taken at a regular Board of Commissioners meeting at the time of the application. The following criteria will be used when determining consideration of reduced or waived fees for special event implementation.

1. The requesting applicant must represent a non-profit organization as defined by state or federal tax law.
2. Priority will be given to Zebulon based groups / chapters / organizations.
3. The proposed event is community focused and / or recreational in nature.
4. The proposed event is open to the general public.
5. The proposed event has been planned to facilitate a positive impact to the community.
6. The proposed event meets the town's strategic plan.

## Special Event Standard Staff Review

1. The nature of the event and how it can serve the Town of Zebulon and its residents.

Angel Prints Corporation seeks to host the second annual "Remembering Our Little Angles" 3k awareness walk at Zebulon Town Hall. The event will include an awareness walk and ceremony that will include a windmill garden that will stay in play for 7 days in lieu of the balloon release as completed last year.



2. The dates and times during which the proposed event will occur including setup and breakdown time.

Event Date: Saturday, October 12<sup>th</sup>, 2024 (ALT: October 26<sup>th</sup>)  
Event Set Up: 7 AM-10 AM  
Event Time: 10AM-Noon  
Breakdown: Noon-1:30 PM

3. The location(s) of the Special Event and whether the location(s) inhibit the safe flow of vehicular and pedestrian traffic in the Town.

The applicant does not request to close any roads. The event will utilize the front lawn of Town Hall and will seek closure of the front circle at town hall to keep event participants safe. The walking route will utilize the sidewalk on Arendell Ave in front of Town hall. Vendors, activities and a ceremony will be located on the front lawn.

- Whether the activities are in compliance with other applicable laws and Town ordinances.

The temporary waiver of Town sound ordinances for an event is handled by the Zebulon Police Department if required. If granted, a sound ordinance waiver gives the event planner permission to use amplified noise within the areas designated by the Special Event Permit. Event planners should be mindful of the impacts of the sound on the surrounding neighborhoods.

- Whether the event serves a public purpose or is to benefit non-profit community service organizations.

Angel Prints Corporation is a non-profit led by Zebulon residents, Brandon & Toshina Wiggins. Their goal is to bring awareness to pregnancy loss, stillbirth, and infant loss as well as share compassion and hope to those mothers, couples, and families who have experienced this type of tragedy.

- The general health, safety, and welfare of the participants in/or attending the event and the citizens of Zebulon.

The Fire Department has reviewed the request. The impacts to their operation are minimal. Access within the event grounds for emergency personnel is manageable as proposed.

The Police Department has reviewed the request. The scope and size of the event appear to provide a minimal impact on department operations. The police department does not see a need to require law enforcement presence.

A Certificate of Insurance naming the Town of Zebulon will be required as noted in the Special Event Standard.

Bathrooms will be accessible in Town Hall.

- The impact and/or cost of the event on Town support services.

<b>Event Fees</b>	
Half Day Complex Rental Fee	\$600
Security Deposit	\$600
<b>Parks &amp; Recreation</b>	
Standard Staff- 6.5 hours @ \$37.5 (\$25 * 150% night & weekend)	\$243.75



Adm. Oversight – 2 hours @ \$45 (not charged)	\$NA
<b>Public Works</b>	
Barricades (3) locations – included in rental fee	\$NA
Manpower – 2-man crew – 6 hrs.@ \$30.25- included in rental fee	\$NA
Adm. Oversight – 2 hours @ \$49.50- included in rental fee	\$NA

Fire: No impact or additional cost to the Town.

Police: No impact or additional cost to the Town.

8. The frequency of the event or similar event(s).

The Board authorized this event last year for the same purpose and general time frame. This event stays confined within the Municipal Complex grounds and adjacent sidewalk.

9. If alcohol will be served

The applicant does not indicate alcohol will be served or consumed.



# Zebulon Events Committee Public Event Application

The events committee reviews public event requests that may impact town operations such as facility or street use, public safety and closing down a street in order to determine next steps to support safe and successful community events. For more information about the public event application process contact the Zebulon Parks and Recreation Department at (919) 823-1814 or slong@townofzebulon.org.

### Applicant Information

Company/Organization Name : Angel Prints Corporation  
Address 3201 Lacewing Drive City Zebulon State NC Zip Code 27597  
Event Contact Person: Brandon Wiggins E-mail angelprintsorg@gmail.com  
Daytime Phone Number 919-518-4289 Cell Phone Number 919-518-4289

Event Name: "Remembering Our Little Angels" 3k Awareness Walk - 2024  
Event Location: Zebulon Town Hall  
Event Date: 10-12-24 Alternate Date: 10-26-24  
Set Up Time: 7:00AM Event Time: 10:00AM  
Break Down Time: 1:30PM  
Number of Attendees: 100

Event Description and anticipated activities: A brief ceremony and 3k walk centered around raising awareness for pregnancy loss and infant loss with potential remembrance activities including a windmill garden (with a request for windmills to remain in place until October 16, 2024), bubble, and/or a remembrance wall.

Please list any event partners or anticipated sponsors: Anticipated sponsors to include last year's sponsors (McDonalds, Carlie C's IGA, Lowes Foods, Germano Architecture + Interiors, Glenn Lewis Insurance, Panera Bread, DYSA Mentoring & Athletics, Radah Ink, Sortek LLC, Soarbae Candles, LLC) and others.

Requested support from the town (if any) : Mayoral proclamation of October 15 being the official Pregnancy Loss & Infant Loss Remembrance Day and the month of October being recognized as Pregnancy Loss & Infant Loss Awareness month for the Town of Zebulon.

Be aware of the below requirements which may impact your event. The events committee will respond with information concerning items on this list as it pertains to your events.

- Certificate of Insurance
- Noise Ordinances
- Permits & Fire Code: Tents
- Alcohol Permits
- Street Closure notifications
- Impacted Neighbor Notification
- NCDOT Notification of street closure
- Sidewalk Encroachment Permit
- Off-Duty Law Enforcement
- Health Department Regulations
- Sign Permits
- Crowd Manager

**If your event is scheduled to take place at a town facility or park. Please note that all rental rates, applications, and guidelines still apply to your event.**

**Please submit a site map with your application.**

Mark any of the following that apply to your proposed event:

- |  |  |
|--|--|
| <input type="checkbox"/> Alcohol sale/distribution               | <input checked="" type="checkbox"/> Stage          |
| <input type="checkbox"/> Street closure                          | <input type="checkbox"/> Food Trucks               |
| <input checked="" type="checkbox"/> Sidewalk closure             | <input type="checkbox"/> Bounce Houses             |
| <input checked="" type="checkbox"/> Use of Tents                 | <input checked="" type="checkbox"/> Requires Power |
| <input checked="" type="checkbox"/> Band, DJ, or Amplified Sound | <input checked="" type="checkbox"/> Vendors        |

Anticipated Safety Measures: First aid kits will be on site with CPR trained volunteers.

Anticipated Sanitary Measures (Restroom, trash cans, litter pick up):

Trash cans to be positioned along walking route. Event volunteers will be responsible for trash pick up both during and after the event.

### SUBMITTING THE APPLICATION:

Town of Zebulon  
Attn: Sheila Long  
1003 N. Arendell Ave.  
Zebulon, NC 27597  
or  
Slong@townofzebulon.org

Signature: Brandon Wiggins

Date: 4-2-2024



Angel Prints Corporation (EIN: 85-0839183) (SOSID: 2386096)  
PO Box 397, Zebulon, NC 27597 | [angelprintsorg@gmail.com](mailto:angelprintsorg@gmail.com) | 919-518-4289

April 2, 2024

To Whom It May Concern:

We would like to first express a sincere and heartfelt thanks to Mayor Glenn York, the Board of Commissioners, Zebulon Parks & Recreation, and the Town of Zebulon for your consideration in allowing us to host our third annual Remembering Our Little Angels 3k Awareness Walk at Zebulon Town Hall. The overwhelming support from this town and our community has been nothing short of amazing and we could not be more grateful. Since our last awareness walk last October, we have continued our tireless efforts of establishing critical partnerships and community relationships that have allowed our outreach program to expand even more.

We have never been more committed to our mission of bringing awareness to and providing support for pregnancy loss, infant loss, and stillbirth and we sincerely hope that this year's awareness walk will allow us the opportunity to continue this work in an increased capacity and on a larger scale. To assist us in these efforts, we would like to request that all fees associated with hosting our awareness walk be waived. This gesture would aid us in our efforts of continuing our mission and also help make this event an even greater success than the last one!

In addition, we would also like to ask if the Town of Zebulon could provide folding chairs for our event if they are available. This would help us ensure seating availability for our guests and event volunteers.

Thank you for your time and consideration.

With Much Gratitude & Appreciation,

*Brandon & Toshina Wiggins*

Brandon & Toshina Wiggins  
Founders, Angel Prints Corporation

Angel Prints Corporation is a fiscal sponsee of Fiscal Sponsorship Allies Inc. (EIN: 85-0839183), a charitable subsidiary of Charitable Allies Inc., an Indiana nonprofit public benefit corporation located at 9100 Purdue Road, Suite 115, Indianapolis, IN 46268 qualified as exempt from federal income tax under §501(c)(3) of the Internal Revenue Code ("Code") and classified as a public charity under Code §509(a)(3).



# angel prints

FOREVER PRINTED IN OUR HEARTS

REMEMBERING OUR LITTLE ANGELS 3K AWARENESS WALK 2024

**SITE MAP & DIAGRAM**

## 3K Walk - Walking Route



- Utilizing front driveway and sidewalk in front of Town Hall property. This route worked out well for our previous walks.

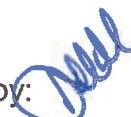


# 3K Walk - Ceremony Space

- Ceremony to be held on Town Hall front lawn.



STAFF REPORT  
RESOLUTION 2024-24  
NORSE BREWING MARKET EVENTS  
PUBLIC EVENT APPLICATIONS  
MAY 6, 2024

**Topic:** Resolution 2024-24 - Norse Brewing Market Events  
**Speaker:** Sheila Long, Parks & Recreation Director  
**From:** Sheila Long, Parks & Recreation Director  
**Approved by:**  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

The Board of Commissioners will consider a request to close public right-of-way on August 31, 2024 and November 30, 2024 from 9:30 AM to 5 PM.

**Background:**

Norse Brewing Longhouse intends to offer a series of market events featuring live music and vendors within the network of alleys located in the eastern block of 100 N. Arendell Ave. The layout is similar to markets held in 2021, and the applicant plans for the sale and/or consumption of alcohol.

The proposed events on Saturday, August 31, and November 30, will not benefit a non-profit community service organization but are free to the community:

Event Set Up	Event Time	Breakdown
9:30 AM-11 AM	11-4 PM	4-5 PM

Staff has reviewed the event request and identified the expectations of the applicant. The applicant will sign a Road Closure for Events Agreement and work closely with Zebulon Public Works and Police to close the public right of way and oversee the event.

**Discussion:**

Approval of Resolution 2024-24 closes the noted alleyways on the dates proposed, allows consumption of alcohol within the event grounds, and authorizes the Town Manager as signatory to the Road Closure for Events Agreement.

**Policy and Program Analysis:**

This event meets the Special Event Standard and satisfies the 2030 Strategic Plan's Vibrant Downtown and Small-Town Life goals by developing community events to draw people downtown. Staff have the capacity to close right of way and oversee the event.

**Fiscal Analysis:**

The applicant is responsible for FY '24 Fee Schedule charges (approximately \$200 per event) and off-duty officers required by the Zebulon Police Chief. The for-profit organization does not meet the standards for fee reduction or waiver.

**Staff Recommendation:**

Staff recommends adoption of Resolution 2024-24.

**Attachments:**

1. Resolution 2024-24
2. Event Standard Board Considerations
3. Staff Review
4. Applications & Layouts

**RESOLUTION 2024-24**  
**TO CLOSE EASTERN 100 BLOCK ALLEYWAYS OF ARENDELL AVE**  
**ON AUGUST 31, 2024 & NOVEMBER 30, 2024**

**WHEREAS**, the Board of Commissioners adopted Special Event standards on November 17, 2022 to provide guidance for Staff and the Board to consider when private groups seek to host events on public property such as streets and alleys; and

**WHEREAS**, the 2030 Strategic Plan identifies Downtown as a Focus Area and strives to create a Vibrant Downtown with a variety of special events and entertainment; and

**WHEREAS**, the 2030 Plan's goal is to revitalize Downtown, develop events, entertainment, and cultural attractions to draw people Downtown; and

**WHEREAS**, the Town encourages the private sector to participate and contribute to the vibrancy of Downtown; and

**WHEREAS**, the Town has received a request from Norse Brewing Longhouse to host market events on August 31<sup>st</sup>, 2024 and November 30<sup>th</sup>, 2024 from 11 AM-4 PM; and

**WHEREAS**, the proposed events will be free to the public and will offer live performances and craft vendors; and

**WHEREAS**, such an event will require public safety mitigation and staff to execute the set-up and breakdown of a road closure, and coordinating with downtown businesses to manage trash disposal before, during, and after the market events; and

**NOW, THEREFORE, BE IT RESOLVED**, the Town of Zebulon does hereby approve the request to close the alleys within the eastern 100 Block of Arendell Ave on August 31<sup>st</sup> and November 30<sup>th</sup>, 2024 from 9:30 AM to 5 PM as noted in the application. The Town hereby approves distribution and consumption of alcohol within the event grounds during event operating hours. Event organizers must hire off duty officers as required by the Zebulon Police Chief and will be subject to fees required to close the alleyways and allow distribution and consumption of alcohol. The Town reserves the right to cancel or cause the interruption of the event when, in the sole discretion of the Town, such act is necessary in the interest of public safety or protection of public property. The Town Manager or designee will execute an event agreement with event organizers.

Adopted the 6<sup>th</sup> day of May, 2024.

\_\_\_\_\_  
Glenn L. York - Mayor

Attest:

\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk



## **Board of Commissioners Considerations for Event Authorization**

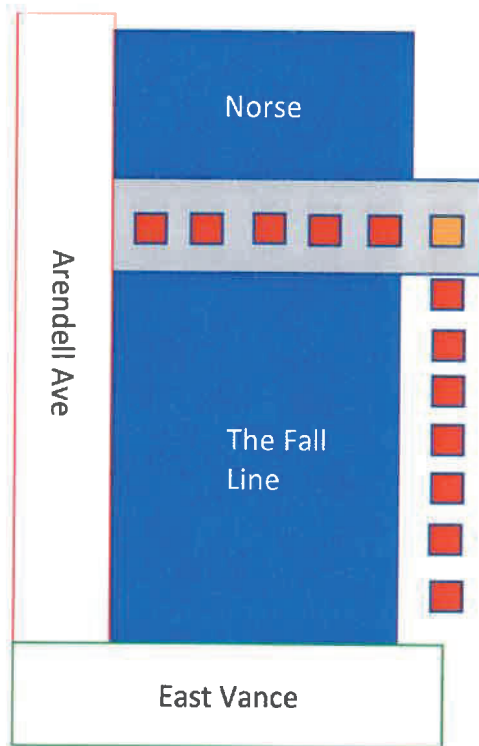
The Board of Commissioners will consider each application on a case-by-case basis on the quarterly application consideration schedule set forth herein. Event application approval or denial rests solely with the Board of Commissioners. In order to assist the Board of Commissioners in deciding whether to permit private use of public property for an event, the Board of Commissioners will consider the following:

1. Nonprofit status or public purpose of the applicant and/or event.
2. The applicant's substantial presence in the community, including but not necessarily a permanent physical presence.
3. The applicant's history of positive contributions to the Town of Zebulon, its institutions and citizens.
4. Whether the event stimulates or encourages community participation in nonprofit/civic activities.
5. The event's consistency with the plans, goals and policies of the Town.
6. Potential for damage to property or harm to people arising from the nature and size of the proposed activity.
7. Ability of the Town to support the proposed activity.
8. Ability of the Organization to implement the event.

## Special Event Standard Staff Review

1. The nature of the event and how it can serve the Town of Zebulon and its residents.

Norse Brewing Longhouse intends to offer market events featuring live music and vendors in the network of alleys located on the eastern 100 block of N. Arendell. The event will be free to the community.



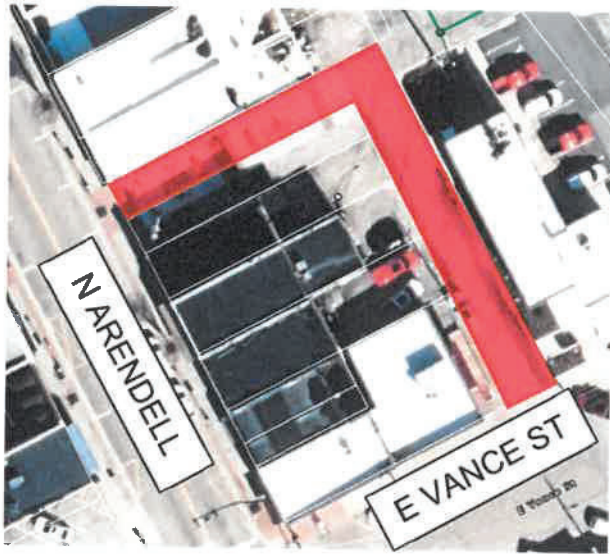
2. The dates and times during which the proposed event will occur including setup and breakdown time.

Event Date: Saturday, August 31, 2024 & Saturday, November 30, 2024  
Event Set Up: 9:30 AM-11 AM  
Event Time: 11-4 PM  
Breakdown: 4-5 PM

3. The location(s) of the Special Event and whether the location(s) inhibit the safe flow of vehicular and pedestrian traffic in the Town.

The applicant requests closing a portion of the alleyways on the eastern 100 block of Arendell Ave. This closure will have minimal impact on traffic throughout Downtown

and will not cause closure of any NCDOT streets. This closure will impact rear access of 114-102 N Arendell Ave.



4. Whether the activities are in compliance with other applicable laws and Town ordinances.

The temporary waiver of Town sound ordinances for an event is handled by the Zebulon Police Department if required. If granted, a sound ordinance waiver gives the event planner permission to use amplified noise within the areas designated by the Special Event Permit. Event planners should be mindful of the impacts of the sound on the surrounding neighborhoods.

5. Whether the event serves a public purpose or is to benefit non-profit community service organizations.

This event is not planned to benefit a non-profit community service organization; however, the event will be free to community members and will provide opportunities for the public to enjoy live performances and support local artisans.

6. The general health, safety, and welfare of the participants in/or attending the event and the citizens of Zebulon.

The Fire Department has reviewed the request. The impacts to their operation are minimal. Access to the front, rear, and both sides of the Zebulon Fire Department will remain open during the event. Access within the event grounds for emergency personnel is manageable as proposed.

The Police Department has reviewed the request. The scope and size of the events appear to provide a minimal impact on department operations. One off-duty officer will be required for the street closure. Additional officers may be required due to the

consumption and distribution of alcohol on town property. The applicant will need to coordinate with the Police Department to secure off duty officers.

Food trucks must meet any requirements established by Wake County and the State of North Carolina.

Norse Brewing Longhouse must provide trash cans and trash collection for their event.

2 Portable toilets with at least one being ADA compliant will be required. Placement will need to be agreed upon with the Town prior to delivery and may not be left in the alleyway at the conclusion of the closure. Norse may provide alternative options for restrooms that are available to the public.

7. The impact and/or cost of the event on Town support services per event.

<b>Event Fees</b>	
Permit Fee	\$100
<b>Parks &amp; Recreation</b>	
Adm. Oversight – 2 hours @ \$45 (not charged)	\$NA
<b>Public Works</b>	
Barricades (2) locations @ \$33 each	\$66
3' cones with reflective collars 8 @ \$1.25	\$10
<b>Police</b>	
Off-duty officers: At least 1 officer @ \$48 per hour	\$TBD

Fire: No impact or additional cost to the town.

DAC: 3 hours in downtown business collaboration.

Public Works will drop barricades and cones during work hours on Friday. PD off duty officers will place and remove the barricades as directed by Public Works. Public Works will pick up the barricades and cones on Monday.

Use of the alley between Norse and the Fall line will be tight if Norse issues 10 by 10 vendor spots unless they coordinate with the Fall Line. Without coordination with the Fall Line, the applicant should limit their vendor spots not to not exceed 5-6 from their building in order to allow for pedestrians to freely move in that area.

8. The frequency of the event or similar event(s).

The Board has authorized similar events for Norse Brewing in the last year; however, due to construction delays, their events did not proceed. No other events have been held in this location in the past year.

9. If alcohol will be served

The applicant has indicated that there may be sale and/or consumption of alcohol within the festival ground. The Board will need to authorize sale and consumption of alcohol on Town property through resolution. The applicant will be required to ensure proper NC ABC permits are secured, off duty officers are coordinated with the Police Department and a Certificate of Insurance naming the Town as additionally insured is provided.



# Zebulon Events Committee Public Event Application

The events committee reviews public event requests that may impact town operations such as facility or street use, public safety and closing down a street in order to determine next steps to support safe and successful community events. For more information about the public event application process contact the Zebulon Parks and Recreation Department at (919) 823-1814 or slong@townofzebulon.org.

### Applicant Information

Company/Organization Name: NORSE BREWING LONGHOUSE  
Address: 1200 ARENDELL AVE City: ZEBULON State: NC Zip Code: 27597  
Event Contact Person: JEANNIE JONES E-mail: jeannie@norsebrewingco.com  
Daytime Phone Number: 919.375.4209 Cell Phone Number: 919.720.1055

Event Name: Jul Market  
Event Location: \_\_\_\_\_  
Event Date: 11/30/24 Alternate Date: \_\_\_\_\_  
Set Up Time: 9:00 am Event Time: 11  
Break Down Time: 4  
Number of Attendees: 13 vendors max

Please list any event partners or anticipated sponsors: \_\_\_\_\_  
BE LIKE MISSY  
Requested support from the town (if any): ✓

Event Description and anticipated activities:  
Local artisan vendors

Be aware of the below requirements which may impact your event. The events committee will respond with information concerning items on this list as it pertains to your events.

- Certificate of Insurance
- Noise Ordinances
- Permits & Fire Code: Tents
- Alcohol Permits
- Street Closure notifications
- Impacted Neighbor Notification
- NCDOT Notification of street closure
- Sidewalk Encroachment Permit
- Off-Duty Law Enforcement
- Health Department Regulations
- Sign Permits
- Crowd Manager

Mark any of the following that apply to your proposed event:

- Alcohol sale/distribution
- Street closure
- Sidewalk closure
- Use of Tents
- Band, DJ, or Amplified Sound
- Stage
- Food Trucks
- Bounce Houses
- Requires Power
- Vendors

Anticipated Safety Measures: we will make sure there are no tripping hazards - a clear walking path

Anticipated Sanitary Measures (Restroom, trash cans, litter pick up):  
longhouse will provide restrooms 10 empty trash cans & clean litter by town

**If your event is scheduled to take place at a town facility or park. Please note that all rental rates, applications, and guidelines still apply to your event.**

Please submit a site map with your application.

**SUBMITTING THE APPLICATION:**  
Town of Zebulon  
Attn: Sheila Long  
1003 N. Arendell Ave.  
Zebulon, NC 27597  
or  
slong@townofzebulon.org

Signature: Jeannie Jones

Date: 4/4/24

Norse



Arendell Ave

The  
Fall  
Line



East Vance

This map is to show where we'd like to place vendors for markets we are applying for. Our hope is that these events will benefit the community as a whole.



# Zebulon Events Committee Public Event Application

The events committee reviews public event requests that may impact town operations such as facility or street use, public safety and closing down a street in order to determine next steps to support safe and successful community events. For more information about the public event application process contact the Zebulon Parks and Recreation Department at (919) 823-1814 or slong@townofzebulon.org.

### Applicant Information

Company/Organization Name: NORSE BREWING LONGHOUSE  
Address: 120 N. ARENDELL AVE City ZEBULON State NC Zip Code 27597  
Event Contact Person: JEANNIE JONES E-mail jeannie@norsebrewingco.com  
Daytime Phone Number 919.375.4209 Cell Phone Number 919.720.1055

Event Name: FALL MARKET  
Event Location: Ally between & behind fall line  
Event Date: 8/31/24 Alternate Date: \_\_\_\_\_  
Set Up Time: 9am Event Time: 11am  
Break Down Time: 4pm  
Number of Attendees: 13 vendors max

Event Description and anticipated activities:  
local artisan vendors

Please list any event partners or anticipated sponsors:  
BE LIKE MISSY

Requested support from the town (if any): \

Be aware of the below requirements which may impact your event. The events committee will respond with information concerning items on this list as it pertains to your events.

- Certificate of Insurance
- Noise Ordinances
- Permits & Fire Code: Tents
- Alcohol Permits
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- Street closure
- Sidewalk closure
- Use of Tents
- Band, DJ, or Amplified Sound
- Stage
- Food Trucks
- Bounce Houses
- Requires Power
- Vendors

Anticipated Safety Measures: we will make sure there are no tripping hazards & a clear walking path

Anticipated Sanitary Measures (Restroom, trash cans, litter pick up):

longhouse will provide restrooms, empty trash cans, clean litter from alley, behind key town

**SUBMITTING THE APPLICATION:**  
Town of Zebulon  
Attn: Sheila Long  
1003 N. Arendell Ave.  
Zebulon, NC 27597  
or  
slong@townofzebulon.org

Signature: Jeannie M Jones

Date: 4/4/24





- 1
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- 6



Arendell Ave

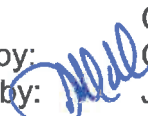
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East Vance

This map is to show where we'd like to place vendors for markets we are applying for. Our hope is that these events will benefit the community as a whole.

STAFF REPORT  
PAINT THE PAVEMENT – PILOT PROJECT  
WEST HORTON STREET  
MAY 6, 2024

**Topic: Paint the Pavement – Pilot Project**

Speaker: Chris Ray, Director of Public Works  
From: Chris Ray, Director of Public Works  
Prepared by: Chris Ray, Director of Public Works  
Approved by:  Joseph M. Moore II, PE, Town Manager

**Executive Summary:**

A local nonprofit organization has expressed interest in decorating town-owned streets to celebrate art and placemaking in Zebulon.

**Background:**

The Zebulon Downtown Arts Council (ZDAC) is interested in partnering with the Town of Zebulon to accomplish policy goals of citizen engagement and walkability. ZDAC requests access to Horton Street, a Town maintained road, to paint an artistic crosswalk (example enclosed).



**Discussion:**

The discussion before the board is whether to grant ZDAC access to Horton Street to install the above referenced artistic crosswalk.

**Policy Guidance:** The pilot project is consistent with Small-Town Life and Vibrant Downtown goals of the Town’s 2030 Strategic Plan. The project provides an opportunity for community members to participate in a public project, and supports the development of arts and attractions to draw people downtown.

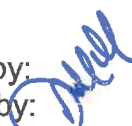
The use of West Horton Street is a good first choice for a pilot project, as it was recently paved (Asphalt condition is excellent and offers a good “canvas”), can garner immediate feedback (e.g., Rock the Block Concert Series attendees), and carries low traffic volumes (to evaluate paint resilience).

**Fiscal Analysis:** The applicant is responsible for 100% of the cost to install and maintain. The Public Works Department will aid with barricades to assist with the installation.

**Staff Recommendation:**

Staff recommends approving access to ZDAC to install the referenced street art.

STAFF REPORT  
ORDINANCE 2024-44  
PW MAINTENANCE YARD EXPANSION  
BUDGET AMENDMENT  
May 6, 2024

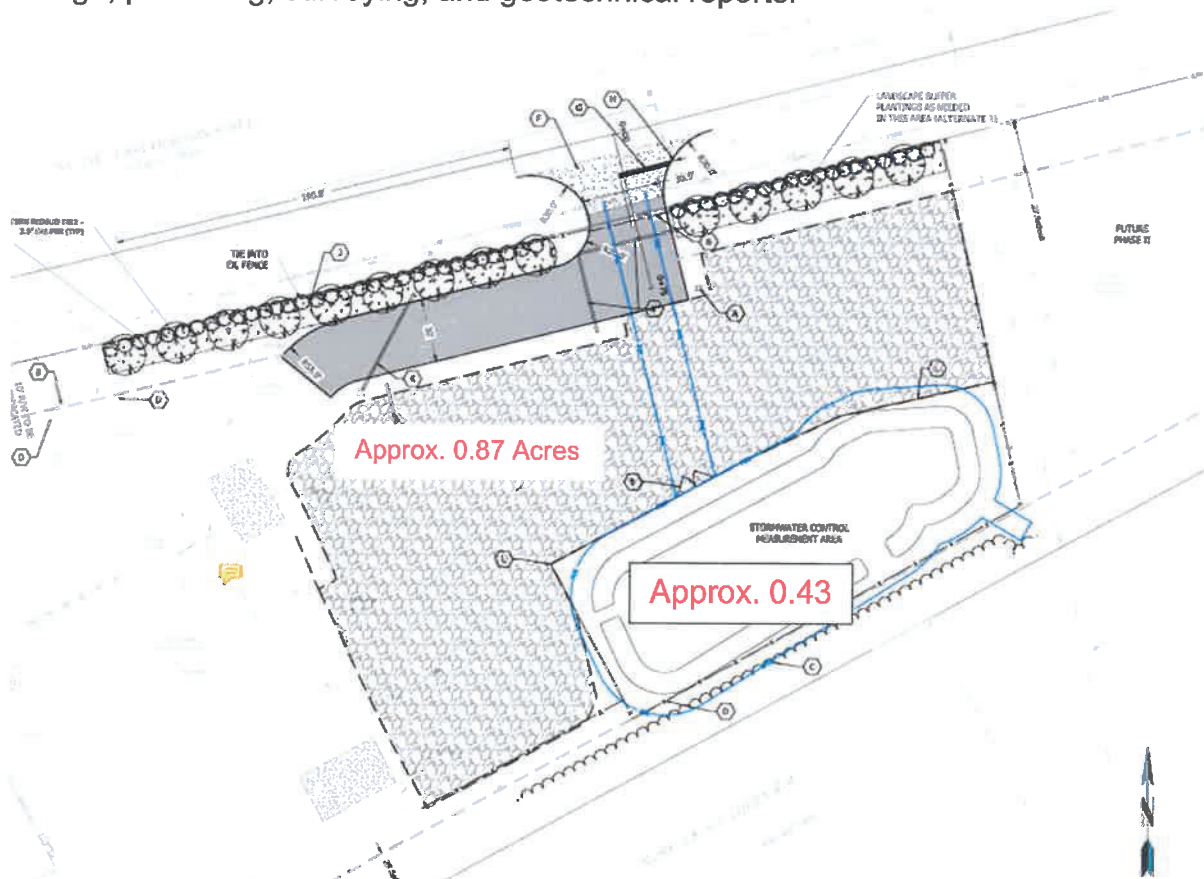
**Topic:** PW Maintenance Yard Expansion– Ordinance 2024-44  
**Speaker:** Chris D. Ray, Public Works Director  
**From:** Chris D. Ray, Public Works Director  
**Prepared by:** Chris D. Ray, Public Works Director  
**Approved by:**  Joseph M. Moore, II, PE, Town Manager

**Executive Summary:**

Budget amendment to provide transfer additional existing project funding to the Public Works Maintenance Yard Expansion Project at the Public Works Facility.

**Background:**

The FY '24 Budget appropriated \$400,000 to expand the 37-year-old site at the Public Works facility by clearing trees and grading property to the immediate east and then installing a stoned maintenance yard, Stormwater Control Measure (SCM), fencing and new fueling station/ maintenance yard entrance. To date, \$57,973 has been spent on design, permitting, surveying, and geotechnical reports.



The lowest responsible, responsive bid received by Turner Asphalt on April 16, 2024, was \$560,238.82. Construction oversight/administration and contingency requires an additional \$100,788.18. In total, the project requires an additional \$319,000 to proceed to construction.

STAFF REPORT  
ORDINANCE 2024-44  
PW MAINTENANCE YARD EXPANSION  
BUDGET AMENDMENT  
May 6, 2024

**Discussion:**

The Board has two options:

1. Reject bids: Board rejects bids and Staff re-advertises to solicit new bids.
2. Accept bid: Board transfer existing funds for contractors to complete construction.

**Fiscal Analysis:**

Reject Bids

Rejecting bids will add 60-75 days to the construction. Typically, re-bid projects drive up the bid price by ten or more percent for the following reasons: 1) the added time increases the cost of materials and labor especially in a tight market such as the Triangle region, 2) bidders tend to be less aggressive in cost-cutting on second bids because the margins of competing contractors were revealed in reading their first bids, and 3) the number of contractors decreases, further reducing the competitiveness of the bids.

Accept Bid

- 1) Transfer \$205,000 from savings realized in the Public Works Equipment Shed Project (10-500-7418).
- 2) Transfer \$21,450 from savings realized from the Demolition of the Pool Project. (10-500-7423)
- 3) Transfer \$29,575 from savings realized from the Downtown sidewalk cleaning project. (10-500-1507)
- 4) Transfer \$62,975 from General Fund, Fund Balance.

**Program Analysis:**

The current maintenance yard is undersized and extremely tight due to the multiple buildings, equipment, vehicles, and other bulk materials stored on site. The increased density leads to the increased of a potential accident. In addition, some equipment and materials are stored offsite leading to a lack of efficiency of operations and some safety concerns.

**Staff Recommendation:**

Staff recommends approval of the attached ordinance.

**Attachments:**

1. Bid Tabulation
2. Ordinance 2024-44

**BID TABULATION  
ZEBULON MAINTENANCE YARD EXPANSION PROJECT  
ZEBULON, NORTH CAROLINA**

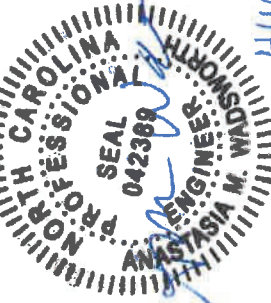
**BID DATE:** Tuesday, April 16, 2024 @ 2:00 PM

TWC No. 2922-S

CONTRACTORS	LICENSE NO.	MBE/WBE	ADD. NO. 1	ADD. NO. 2	BASE BID	ALT 1	REMARKS
Hollins Construction Services, Inc.	69738	✓	✓	✓	\$998,257.00	\$40,050.00	
Lanier Construction Company	18152		✓	✓	\$613,458.25	\$10,675.00	
Narron Contracting, Inc.	62426	✓	✓	✓	\$624,754.20	\$13,262.50	
Turner Asphalt GC, LLC	73137		✓	✓	\$560,238.82	\$20,452.60	Apparent Low Bidder
Muter Construction, LLC		✓					No Bid Submitted

This is to certify that the bids tabulated herein were publicly opened and read aloud at 2:00 p.m. on the 16th day of April 2024, at Town of Zebulon Public Works Facility, located at 450 East Horton Street, Zebulon, NC 27597.

THE WOOTEN COMPANY  
120 N. Boylan Avenue  
Raleigh, NC 27603  
License # 00115



Ana Wadsworth, P.E.

4/19/24

**BID SUMMARY**  
**ZEBULON MAINTENANCE YARD EXPANSION PROJECT**  
**TOWN OF ZEBULON**

The Wooden Company  
 April 16, 2024 @ 2:00 pm

Item No.	Description	Unit	Estimated Quantity	Turner Asphalt		Hollins Construction		Narrom Contracting		Lanier Construction	
				Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	Mobilization	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 50,000.00	\$ 50,000.00	\$ 29,750.20	\$ 29,750.20	\$ 29,000.00	\$ 29,000.00
2	As-Built Survey	LS	1	\$ 6,500.00	\$ 6,500.00	\$ 27,500.00	\$ 27,500.00	\$ 17,000.00	\$ 17,000.00	\$ 12,000.00	\$ 12,000.00
3	Traffic Control	LS	1	\$ 16,000.00	\$ 16,000.00	\$ 20,000.00	\$ 20,000.00	\$ 10,000.00	\$ 10,000.00	\$ 20,000.00	\$ 20,000.00
4	Erosion Control	LS	1	\$ 4,275.00	\$ 4,275.00	\$ 10,000.00	\$ 10,000.00	\$ 22,000.00	\$ 22,000.00	\$ 30,000.00	\$ 30,000.00
5	Clearing and Grubbing	AC	1.08	\$ 43,500.00	\$ 46,980.00	\$ 56,000.00	\$ 60,480.00	\$ 28,000.00	\$ 30,240.00	\$ 30,000.00	\$ 32,400.00
6	Removal of Existing Fence	LF	278	\$ 6.75	\$ 1,876.50	\$ 25.00	\$ 6,950.00	\$ 15.00	\$ 4,170.00	\$ 12.00	\$ 3,336.00
7	Removal of Double Swing Gate	EA	1	\$ 75.00	\$ 75.00	\$ 1,000.00	\$ 1,000.00	\$ 3,000.00	\$ 3,000.00	\$ 500.00	\$ 500.00
8	Removal of Asphalt Pavement (Driveway)	SY	290	\$ 20.35	\$ 5,901.50	\$ 40.00	\$ 11,600.00	\$ 15.00	\$ 4,350.00	\$ 22.00	\$ 6,380.00
9	Removal of Storm Drainage Pipe (6" & 15")	LF	95	\$ 34.00	\$ 3,230.00	\$ 30.00	\$ 2,850.00	\$ 30.00	\$ 2,850.00	\$ 18.00	\$ 1,710.00
10	Earthwork/Grading	LS	1	\$ 88,000.00	\$ 88,000.00	\$ 272,000.00	\$ 272,000.00	\$ 80,000.00	\$ 80,000.00	\$ 106,875.00	\$ 106,875.00
11	Undercut Unsuitable Soils	CY	500	\$ 79.50	\$ 39,750.00	\$ 200.00	\$ 100,000.00	\$ 55.00	\$ 27,500.00	\$ 60.00	\$ 30,000.00
12	8" Concrete Driveway Apron	SY	141	\$ 40.28	\$ 5,679.48	\$ 150.00	\$ 21,150.00	\$ 150.00	\$ 21,150.00	\$ 95.00	\$ 13,395.00
13	3" Asphalt Concrete Surface Course Type S9.5B	SY	715	\$ 39.72	\$ 28,399.80	\$ 52.00	\$ 37,180.00	\$ 46.00	\$ 32,890.00	\$ 35.00	\$ 25,025.00
14	3" Compacted Aggregate Base Course	SY	141	\$ 12.88	\$ 1,816.08	\$ 20.00	\$ 2,820.00	\$ 15.00	\$ 2,115.00	\$ 10.00	\$ 1,410.00
15	8" Compacted Aggregate Base Course	SY	5115	\$ 24.64	\$ 126,033.60	\$ 20.00	\$ 102,300.00	\$ 19.80	\$ 101,277.00	\$ 25.00	\$ 127,875.00
16	Woven Geotextile Fabric	SY	4336	\$ 4.50	\$ 19,512.00	\$ 7.00	\$ 30,352.00	\$ 8.00	\$ 34,688.00	\$ 5.00	\$ 21,680.00
17	Pavement Marking (24" Stop Bar)	LF	20	\$ 15.00	\$ 300.00	\$ 100.00	\$ 2,000.00	\$ 40.00	\$ 800.00	\$ 150.00	\$ 3,000.00
18	Signage	EA	1	\$ 750.00	\$ 750.00	\$ 800.00	\$ 800.00	\$ 1,000.00	\$ 1,000.00	\$ 550.00	\$ 550.00
19	12" DIP Casing with Blocking	LF	185	\$ 84.62	\$ 15,654.70	\$ 200.00	\$ 37,000.00	\$ 350.00	\$ 64,750.00	\$ 85.00	\$ 15,725.00
20	Aluminum Automated Sliding Gate Assembly (33')	LS	1	\$ 29,375.00	\$ 29,375.00	\$ 25,000.00	\$ 25,000.00	\$ 38,000.00	\$ 38,000.00	\$ 12,750.00	\$ 12,750.00
21	6' Chain Link Fence with Barbed Wire	LF	843	\$ 33.37	\$ 28,130.91	\$ 50.00	\$ 42,150.00	\$ 28.00	\$ 23,604.00	\$ 42.25	\$ 35,616.75
22	4' Chain Link Fence	LF	305	\$ 32.60	\$ 9,943.00	\$ 40.00	\$ 12,200.00	\$ 22.00	\$ 6,710.00	\$ 22.10	\$ 6,740.50
23	20' Wide Chain Link Double Swing Gate (4')	EA	1	\$ 1,875.00	\$ 1,875.00	\$ 10,000.00	\$ 10,000.00	\$ 3,200.00	\$ 3,200.00	\$ 850.00	\$ 850.00
24	15" RCP Pipe, Class IV	LF	85	\$ 49.85	\$ 4,237.25	\$ 125.00	\$ 10,625.00	\$ 155.00	\$ 13,175.00	\$ 95.00	\$ 8,075.00
25	18" HDPE Pipe	LF	46	\$ 53.25	\$ 2,449.50	\$ 100.00	\$ 4,600.00	\$ 140.00	\$ 6,440.00	\$ 115.00	\$ 5,290.00
26	Pre-Cast Storm Drainage Box (4'x4') with Trash Rack	EA	1	\$ 7,785.00	\$ 7,785.00	\$ 9,000.00	\$ 9,000.00	\$ 10,000.00	\$ 10,000.00	\$ 8,500.00	\$ 8,500.00
27	Weiland Plantings (1 qt)	EA	550	\$ 31.95	\$ 17,572.50	\$ 25.00	\$ 13,750.00	\$ 6.80	\$ 3,740.00	\$ 20.00	\$ 11,000.00
28	Weiland Plantings (3 gal)	EA	88	\$ 46.25	\$ 4,070.00	\$ 125.00	\$ 11,000.00	\$ 37.50	\$ 3,300.00	\$ 100.00	\$ 8,800.00
29	Soil	SF	15,700	\$ 2.31	\$ 36,267.00	\$ 3.50	\$ 54,950.00	\$ 1.15	\$ 18,055.00	\$ 1.75	\$ 27,475.00
30	Seeding	LS	1	\$ 1,800.00	\$ 1,800.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 6,500.00	\$ 6,500.00
31	NC/DOT Bond Allowance	LS	1	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00	\$ 1,000.00
<b>Base Bid Total</b>					<b>\$ 560,238.82</b>		<b>\$ 998,257.00</b>		<b>\$ 624,754.20</b>		<b>\$ 613,458.25</b>

Item No.	Description	Unit	Estimated Quantity	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
30	2.5" cal Canopy Tree (Eastern Redbud)	EA	10	\$ 657.00	\$ 6,570.00	\$ 2,000.00	\$ 20,000.00	\$ 437.50	\$ 4,375.00	\$ 500.00	\$ 5,000.00
31	7 gal Understory Tree (Forest Green Anise or Florida Avise Tree)	EA	17	\$ 657.00	\$ 11,169.00	\$ 400.00	\$ 6,800.00	\$ 250.00	\$ 4,250.00	\$ 100.00	\$ 1,700.00
32	5 gal Shrub (Snow White Indian Hawthorn)	EA	53	\$ 51.20	\$ 2,713.60	\$ 250.00	\$ 13,250.00	\$ 87.50	\$ 4,637.50	\$ 75.00	\$ 3,975.00
<b>Alt No. 1 Bid Total</b>					<b>\$ 20,452.60</b>		<b>\$ 40,050.00</b>		<b>\$ 13,262.50</b>		<b>\$ 10,675.00</b>

2922-5

ORDINANCE 2024-44

BE IT ORDAINED by the Board of Commissioners of the Town of Zebulon, that pursuant to North Carolina General Statutes 159-15, the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Section 1. To amend the General Fund budget as follows:

	INCREASE	DECREASE
REVENUES		
Fund Balance Appropriated	\$62,975.00	
EXPENDITURES		
PW Property & Proj Mgmt – Public Works Yard Expansion	319,000.00	
PW Property & Proj Mgmt – Swimming Pool Demo		21,450.00
PW Property & Proj Mgmt – Equipment Shed		205,000.00
PW Property & Proj Mgmt – Downtown Sidewalk Cleaning		29,575.00

Section 2. Copies of this amendment shall be furnished to the Town Clerk, and to the Budget Officer, and to the Finance Officer for their direction.

Adopted: May 6, 2024

Effective: May 6, 2024

\_\_\_\_\_  
Glenn L. York - Mayor

ATTEST:

\_\_\_\_\_  
Lisa M. Markland, CMC - Town Clerk

**Topic: FY 2024 Monthly Financial Report Addendum**

**Executive Summary:**

A monthly report summarizing the status of the Town's revenues and expenditures.

**Background:**

Monthly Financial Reports are provided to inform the Board of revenue and expenditure trends throughout the year. The enclosed statements are through April 19, 2024.

**Information:**

Expenditures

Approximately 79.2% (9 ½ months) through Fiscal Year 2024, the Town has spent approximately 51.5% (~ \$15,255,480) of its General Fund budget of \$29,611,493.

Revenues

The status of the Town's noteworthy revenue streams for Fiscal Year 2024 follows:

- Property Tax (the Town's largest revenue stream)
  - + FY 2024 collections: \$10,025,074 collected to date (~ 93.9% of budget).
  - + Observations:
    - # 0.9% more than collected last fiscal year (\$9,939,606).
    - # Nine months of vehicle taxes have been collected for FY 2024.
- Sales Tax (second largest revenue stream)
  - + January's sales (reports lag 3-months):
    - # \$1,708 (0.9%) less collected than last January for all sales tax.
    - # \$1,379 (1.6%) less collected than last January for "local" sales tax.
    - # "Local" sales tax (Article 39) is generated within, and returns to, Wake County.
    - # For every \$100,000 in local sales, \$3.68 comes back to the Town of Zebulon.
- Utilities Tax (~ 5% of revenue stream): Third quarter distribution arrives June 15.
- Permits & Zoning (development growth indicator)
  - + \$232,820 collected total (93% of budgeted revenues (\$250,000))
  - + 24.3% more than what was collected this time last fiscal year (\$187,251).
- Parks & Recreation (service and programming growth indicator)
  - + \$167,429, collected total (137% of budgeted revenues (\$122,000))
  - + 10.2% more than what was collected through this month last fiscal year (\$151,932).
- Transportation Impact Fees (development growth indicator)
  - + \$362,375 collected to date in FY 2024
  - + 46.1% less than what was collected last fiscal year (\$671,879).
  - + Revenue placed in reserve for transportation projects to be spent within 10 years



- Recreation Impact Fees (development growth indicator)
  - + \$1,107,000 collected to date in FY 2024
  - + 46.7% less than what was collected last fiscal year (\$2,076,000).
  - + Collections since inception of fee (January 2022) ~ \$4,838,000
  - + Revenue is reserved for growth-related projects (e.g., new parks or expansions)

**Policy Analysis: N/A**

**Financial Analysis:**

Budgeted revenue in FY 2024 is \$29,611,493 while year to date revenue collected is \$19,795,913 (66.9% of budgeted). Budgeted revenue includes \$8.64M Fund Balance.

**Staff Recommendation: N/A**

No staff recommendation or Board action is necessary. Financial Report is information only.

**Attachments:**

1. General Fund Fiscal Year 2024 Expenditure Statement and Revenue Statement (as of April 19, 2023)
2. Sales Tax Collection Report – FY 2024

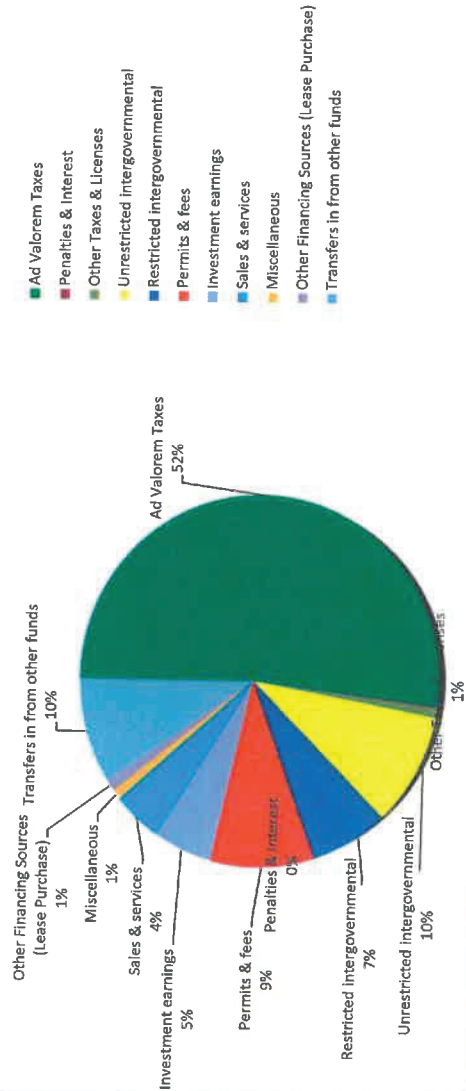


TOWN OF ZEBULON  
 Revenue Statement: 2023 - 2024  
 for Accounting Period 6/30/2024  
 GENERAL FUND

As of 4/19/2024

Revenue Categories	Estimated Revenue	Revenue YTD	% Collected	% of Total Revenue YTD
Ad Valorem Taxes	\$10,722,500	\$10,274,743	95.8%	51.9%
Penalties & Interest	\$15,000	\$25,750	171.7%	0.1%
Other Taxes & Licenses	\$185,500	\$161,819	87.2%	0.8%
Unrestricted intergovernmental	\$3,233,000	\$1,889,854	58.5%	9.5%
Restricted intergovernmental	\$2,512,000	\$1,357,383	54.0%	6.9%
Permits & fees	\$797,750	\$1,844,397	231.2%	9.3%
Investment earnings	\$300,000	\$1,081,574	360.5%	5.5%
Sales & services	\$992,000	\$884,995	89.2%	4.5%
Miscellaneous	\$95,089	\$174,665	183.7%	0.9%
Other Financing Sources (Lease Purchase)	\$232,000	\$215,000	92.7%	1.1%
Transfers in from other funds	\$1,885,733	\$1,885,733	100.0%	9.5%
Fund Balance Appropriated	\$8,635,921	\$0	0.0%	0.0%
<b>Total Revenues</b>	<b>\$29,606,493</b>	<b>\$19,795,913</b>	<b>66.9%</b>	<b>100%</b>

Town of Zebulon General Fund % of Total Revenue To Date - FY 2024





TOWN OF ZEBULON  
 Expenditure Statement: 2023 - 2024  
 for Accounting Period 6/30/2024  
 GENERAL FUND

As of 4/19/2024

<u>Dept #</u>	<u>Department</u>	<u>Approp Amount</u>	<u>Expenditure YTD</u>	<u>% Exp.</u>
410	GOVERNING BODY	\$646,116	\$333,479	51.6%
420	FINANCE	\$517,155	\$425,327	82.2%
430	ADMINISTRATION	\$1,600,725	\$841,269	52.6%
490	PLANNING AND ZONING	\$825,330	\$512,722	62.1%
500	PUBLIC WORKS-PROPERTY & PROJECT MGMT	\$2,805,855	\$1,367,355	48.7%
510	POLICE	\$3,955,695	\$2,884,973	72.9%
520	PUBLIC WORKS-OPERATIONS	\$11,225,660	\$4,196,492	37.4%
530	FIRE	\$3,955,574	\$2,561,566	64.8%
570	POWELL BILL	\$232,686	\$207,623	89.2%
590	ENGINEERING	\$165,000	\$87,902	53.3%
620	PARKS & RECREATION	\$2,064,097	\$1,270,294	61.5%
690	COMMUNITY & ECONOMIC DEVELOPMENT	\$1,617,600	\$566,478	35.0%
	<b>Total Expenditures</b>	<b>\$29,611,493</b>	<b>\$15,255,480</b>	<b>51.5%</b>

**Sales Tax**

**FY 2024**

Month	Article 39 (1) *	Article 40 (1/2)	Article 42 (1/2)	Article 44 (1/2)	City Hold Harmless	FY 24 Totals	Prior Year (FY 2023)	% Inc (Dec) from Prior Yr
July	\$ 89,122	\$ 38,656	\$ 44,762	(0)	\$ -	\$ 204,776	\$ 187,311	9.3%
August	\$ 93,423	\$ 40,589	\$ 46,952	0	\$ -	\$ 215,045	\$ 203,381	5.7%
September	\$ 89,799	\$ 37,462	\$ 45,030	0	\$ -	\$ 202,153	\$ 202,821	-0.3%
October	\$ 92,175	\$ 37,812	\$ 46,268	(3)	\$ -	\$ 206,484	\$ 197,664	4.5%
November	\$ 99,162	\$ 39,407	\$ 49,722	2	\$ -	\$ 218,921	\$ 188,169	16.3%
December	\$ 105,335	\$ 44,069	\$ 52,957	(1)	\$ -	\$ 237,799	\$ 225,394	5.5%
January	\$ 81,953	\$ 34,721	\$ 41,092	(2)	\$ -	\$ 186,226	\$ 187,935	-0.9%
February	-	-	-	-	\$ -	\$ -	\$ 144,614	-100.0%
March	-	-	-	-	\$ -	\$ -	\$ 212,514	-100.0%
April	-	-	-	-	\$ -	\$ -	\$ 177,123	-100.0%
May	-	-	-	-	\$ -	\$ -	\$ 207,702	-100.0%
June	-	-	-	-	\$ -	\$ -	\$ 216,208	-100.0%
<b>Total</b>	\$ <b>650,968</b>	\$ <b>272,716</b>	\$ <b>326,782</b>	<b>(4)</b>	\$ <b>(4)</b>	\$ <b>1,471,403</b>	\$ <b>1,392,675</b>	<b>5.7%</b>

**Sales Tax**

**FY 2023**

Month	Article 39 (1) *	Article 40 (1/2)	Article 42 (1/2)	Article 44 (1/2)	City Hold Harmless	FY 23 Totals	Prior Year (FY 2022)	% Inc (Dec) from Prior Yr
July	\$ 81,324	\$ 35,456	\$ 40,808	(1)	\$ -	\$ 187,311	\$ 125,560	49.2%
August	\$ 89,152	\$ 37,948	\$ 44,690	1	\$ -	\$ 203,381	\$ 162,100	25.5%
September	\$ 90,401	\$ 37,188	\$ 45,331	(9)	\$ -	\$ 202,821	\$ 167,034	21.4%
October	\$ 88,724	\$ 35,842	\$ 44,468	(2)	\$ -	\$ 197,664	\$ 167,586	17.9%
November	\$ 82,782	\$ 35,160	\$ 41,563	1	\$ -	\$ 188,169	\$ 169,657	10.9%
December	\$ 100,596	\$ 41,335	\$ 50,512	0	\$ -	\$ 225,394	\$ 201,425	11.9%
January	\$ 83,332	\$ 34,713	\$ 41,782	0	\$ -	\$ 187,935	\$ 140,273	34.0%
February	\$ 61,030	\$ 28,403	\$ 30,601	(6)	\$ -	\$ 144,614	\$ 148,707	-2.8%
March	\$ 94,803	\$ 38,927	\$ 47,461	9	\$ -	\$ 212,514	\$ 181,841	16.9%
April	\$ 75,803	\$ 34,229	\$ 38,068	(10)	\$ -	\$ 177,123	\$ 186,154	-4.9%
May	\$ 91,708	\$ 38,501	\$ 45,971	0	\$ -	\$ 207,702	\$ 180,133	15.3%
June	\$ 93,849	\$ 40,893	\$ 47,128	10	\$ -	\$ 216,208	\$ 195,892	10.4%
<b>Total</b>	\$ <b>1,033,506</b>	\$ <b>438,596</b>	\$ <b>518,383</b>	<b>(6)</b>	\$ <b>(6)</b>	\$ <b>2,350,837</b>	\$ <b>2,026,362</b>	<b>16.0%</b>

\* Net proceeds of the Article 39 tax are returned to the county of origin.

# Monthly Summary of Sales Tax Collected

