CITY OF SOUTHPORT
PLANNING BOARD
REGULAR MEETING AGENDA

February 15, 2024
6:00 PM

Agenda

Please turn off all cell phones

Meetings are open to the public. Face masks and social distancing may be used at the discretion of each individual. Changes to this policy may occur, as needed to help prevent the spread of the Coronavirus.

The regular monthly meeting of the Planning Board will be held at 6:00 p.m. on the third Thursday of each month. All members are asked to attend.

A. Call to Order

B. Invocation

C. Pledge of Allegiance

D. Approval of Minutes

1. January 18, 2024

E. Approval of Agenda

F. Public Comment

G. Old Business

1. Southport Local Historic District Design Standards - Discussion with the Historic Preservation Commission
2. Southport Local Historic District Design Standards- Recommendation
3. Text Amendment- Section 3.9.B.5 Setback Exceptions and Encroachments

H. New Business

1. Planned Unit Development Rezoning and Master Development Plan- Turtle Bay

I. Other Business

J. Announcements

K. Member's Information

1. Member's Roster & Attendance Record

L. Adjourn

Planning Board Minutes
Community Building 223 E. Bay Street
January 18, 2023
6:00 P.M.

Members Present:	Sue Hodgin, Will Hewett, Fred Fiss, Roy Pender, Kevin Locklin, Scott Jones, Dick Sloan, and Donnie Joyner (remote).
Members Absent:	Chris Jones
Staff Present:	Mo Meehan, City Planner Tanya Shannon, Deputy Clerk ChyAnn Ketchum, Director of Communications/PIO
Board of Aldermen Liaisons:	Rebecca Kelley and Frank Lai

A. Chair Sue Hodgin called the meeting to order at 6:01 p.m.

B. Mr. Scott Jones gave the Invocation.

C. Chair Hodgin led the Pledge of Allegiance.

Chair Hodgin welcomed Mr. Jake Petrosky with Stewart Inc., the consulting firm contracted by the City to revise/update our Comprehensive Land Use Plan. Mr. Petrosky introduced himself and the firm: he is Associate Vice President and Practice Leader of Stewart's Planning Practice, responsible for many of the long-range planning efforts at Stewart. He explained that it includes project management, analysis, conceptual design, and public engagement activities. Mr. Petrosky has more than 20 years of experience in land use planning, comprehensive plans, small area plans, GIS, parks, greenways, multi-modal transportation, and environmental planning. He believes in data-driven, design-oriented planning and has a professional and personal interest in well-designed, connected places and open spaces and how they can improve mobility and quality of life.

The Chair thanked him for his attendance and spoke for the Board in expressing its enthusiasm for the City's update to its Comprehensive Plan.

D. Motion to approve the December 21, 2023, Meeting Minutes by Vice-Chair Will Hewett and second by Mr. Joyner. ***Unanimous vote; Motion carried***.

E. **Approval of the Agenda**: Chair Hodgin requested a Motion to approve the agenda with an amendment to add an Update on the Comprehensive Land Use Plan to Item I. 2 Other Business. Mr. Sloan made a Motion to approve as amended and seconded by Vice-Chair Hewett. ***Unanimous Vote; Motion Carried.***

F. **Public Comment**: Vice-Chair Hewett made a Motion to open Public Comment, seconded by Mr. Sloan. ***Unanimous Vote; Motion Carried***.

1. Ms. Shirley Sullivan, a resident of 5002 Seaward Court, expressed her concerns about the new revisions for Text Amendment on Conditional Zoning. She found the language blurred altogether and lacked some of the necessary guidelines. Ms. Sullivan said she does not support CZ in the Residential District and suggests it should be denied, especially considering the

ongoing revision of the Comprehensive Land Use Plan. Additionally, she requested more information on the Development Agreement process.

2. A comment was submitted by Mr. Rick Jones of 828 Cade Cove, read by the Deputy Clerk, expressing concerns about the proposed Zoning Map Amendment for Robert Ruark Dr. The Amendment is to change the zoning from R-20 to R-10. Mr. Jones is worried about approving the zoning request before a site plan has been prepared. He believes this would directly affect five lots adjacent to the Ruark property. Mr. Jones stated that if a site plan or stormwater plan is provided, he may support this Amendment. He encouraged the Board to table the request until more concrete information is provided.

3. David and Tracy Loving, 402 Cades Trail, submitted a comment read by the Deputy Clerk. They expressed concerns regarding the proposed Zoning Amendment for Robert Ruark Drive. They are requesting a site plan depicting the difference between R-10 and R-20 zoning, highlighting water run-off and a retention pond. They also mentioned that the homeowners on both sides of Robert Ruark should be considered and urged to slow down the process to provide more information and transparency before deciding.

4. Ray Martino, 6065 Sullivan Ridge Rd., came to the podium and stated that as he understands the Conditional Zoning process, a developer must request to apply for it and can make adjustments that do not have to follow the existing Ordinance. He would like an explanation of why this type of zoning is needed or offered.

Since there were no further comments, Chair Hodgin requested a Motion to close Public Comment. Vice-Chair Hewett so moved, and Mr. Fiss seconded. ***Unanimous Vote; Motion Carried.***

G. Old Business:

1. Text Amendment- Conditional Zoning (ZTA-22-01)

Chair Hodgin reminded everyone that the Board had been working on this Text Amendment for precisely one year. She explained that there had been several educational sessions with the Development Services Staff, Council of Government resources, and Public Meetings. The Amendment is intended to allow developers to work through Staff guidance and public participation regarding a proposed project. It simply presents an option for working with the City and does not open the floodgates for development. It does not disregard the care and stringency of both the Board and City Staff. Chair Hodgin also emphasized that there is no way for a developer to go off the rails and do unchecked development.

City Planner Meehan gave an overview of the recent revisions and updates. She explained that Staff was asked to bring back language that allows a request for a second public input meeting, if necessary. Staff researched other jurisdictions and consulted with the City Attorney. Upon consultation with Counsel, the Staff submits the following language for consideration:

<u>6. After the required public input meeting, the UDO Administrator or their designee may request a second public input meeting if substantial changes to the original proposal are submitted.</u>

This option provides an additional opportunity for public engagement if the project changes substantially in scope. The changes should be directly related to the original input from the public. Substantial changes could include change of uses, increased density, reduced open space, or change of site dimensions over 10%. Ms. Meehan said that It is important to remember that this public engagement is prior to submittal to the Planning Board. There will be a public

hearing before a recommendation to the Board of Aldermen, which may recommend conditional approval of the petition.

Chair Hodgin noted that during the January 11th meeting of the Board of Aldermen, Mayor Alt asked if the City could incorporate a Development Agreement for an application that was being discussed by the Board on that date. Staff confirmed for him and the Board that such an Agreement was not allowed for that application, even though adjacent neighbors agreed with the proposed use without Conditional Zoning. The Aldermen did not have enough information to aid the Board's decision, as the proposal lacked conceptual drawings specific to the proposal and public feedback. As a result, and by necessity, the Aldermen denied the Zoning request. However, if the proposal had gone through Conditional Zoning, the outcome could have differed for the applicant. Further, she noted to Members that 'smart development' and 'smart growth' are addressed in the statements and principles contained in the City's CAMA Core Land Use Plan; indeed, she said, some of our newly elected officials are now acknowledging and speaking to the need for 'smart growth' practices in Southport.

Chair Hodgin said that the Planning Board had completed the assignment from the Boad of Aldermen: to refine requirements about public input meetings to assure thorough citizenry involvement.

Mr. Scott Jones raised concerns about adding the existing zoning used for the density in Residential Commercial Zoning. In response, Ms. Meehan clarified that the proposal must align with the Future Land Use Map and the corresponding densities. She explained that the proposal must meet specific ranges of densities outlined in the Future Land Use Plan, which are different from the zoning itself.

Chair Hodgin asked Mr. Jones if he had any particular revisions he would suggest to address his concerns. Mr. Jones expressed uncertainty about how much the Land Use Plan could restrict the Indigo Phase 2 project. He questioned whether CZ could have been used instead and if it would have worked with the Land Use Plan or if the density would have been too high for that. Ms. Meehan confirmed that the density would have been too high and, therefore, inconsistent with the Plan as proposed. Mr. Jones asked if the Board of Aldermen had the authority to supersede the Land Use Plan. Ms. Meehan said they could not because they would have to sign a statement about the proposal's inconsistency with the Land Use Plan. Mr. Locklin stated they could amend the Land Use Plan at any time.

Mr. Fiss asked Ms. Meehan to summarize the proposed changes. Ms. Meehan explained that at the August Board of Aldermen meeting, the Planning Board was asked to review Conditional Zoning to ensure that the City complied with the UNC School of Government process. This is the method that was used to research and create this Ordinance. The proposed changes also require the applicant to have a pre-application meeting with the Staff and hold a public meeting before submitting their application.

Mr. Locklin stated that before them are specific amendments that are to the benefit of the public. He said the minor revisions before the Planning Board tonight were the *only* items needed to be addressed at the request of the Aldermen. He explained that the Planning Board has already researched and obtained Staff education and guidance on the matter, voted that it (the Board) is in favor, and has now made additional revisions requested by the Board of Aldermen. Mr. Locklin feels that it should move back to the Board of Aldermen. He stated that much of the CZ process must be the reliance and belief in the Board of Aldermen that are in office at the time, because they are the ones who must interpret the public input and negotiate. He stated implicitly that it would come down to how much faith the public had in the Board of Aldermen at the time of any particular proposal submitted.

Mr. Locklin made a Motion to reapprove the resubmitted Text Amendment (ZTA-22-01) for UDO Article 2.11 Conditional Rezoning and returning it to the Board of Aldermen and adopting

the Consistency Statement that recommends approval and seconded by Mr. Pender. ***Unanimous Vote; Motion Carried. Chair Hodgin read the Consistency Statement.***

2. Text Amendment-Mixed Use in Highway Commercial Zoning Districts (ZTA-23-05)

Ms. Meehan gave an overview of the Text Amendment. The Amendment requests to add Mixed Use as a permitted use in the Highway Commercial (HC) zoning district. All Mixed Use proposals will apply for a minor or major site plan review and must meet all development standards found in the UDO, including Section 3.7.F and Sections 3.9-3.19 of the UDO.

There are approximately 210 acres of HC-zoned land. Per the 2023 Buildout Analysis conducted by the Cape Fear Council of Governments, there are about 92 acres of vacant land zoned HC. The assumptions for residential development with future rezoning/allowed uses are three units/acre (275 units). This number of units assumes both Mixed Use development and stand-alone residential uses, so it may be higher than what is possible. All the properties have existing infrastructure or will connect to Brunswick County sewer and water.

Chair Hodgin reminded Members that the Highway Commercial (HC) Zoning starts from Highway 87 at Famous Subs. She emphasized the importance of understanding that development efforts will eventually move outwards into the ETJ, and we should be mindful of how this will look in years to come. The City and the Planning Board should establish guidelines, set priorities for the size and appearance of these areas, the goal being to involve the City and the Board in determining its appearance. HC has a diverse mix of businesses and housing; the need for workforce housing has been discussed in the past. Considering the City's longstanding desire for open space is also essential. The application's stated purpose is offices and condos, but allowing dwellings in HC as a by-right permitted use within current Mixed-Use standards does not foster the necessary dialogue and community involvement that could result in projects beneficial to our City. According to the build-out study, a sweeping change would affect almost half of the HC-zoned acreage.

Mr. Locklin made a Motion to deny the Text Amendment Mixed Use in the Highway Commercial Zoning District, sending the recommendation for denial to the Board of Aldermen and have staff work with the Planning Board to devise an alternative text to begin proactivity on the persona of the HC, seconded by Mr. Joyner. ***Unanimous Vote; Motion Carried. Vice-Chair Hewett read the Consistency Statement recommending denial to the Board of Aldermen.***

H. New Business:

Zoning Map Amendment-Robert Ruark Dr. from R-20 to R-10 (ZMA 23-03)

Ms. Meehan gave an overview of the proposed Amendment. Blue Ocean Construction for Rich Moore Real Estate Investments, LLC, is requesting a zoning map amendment from R-20 to R-10 on a parcel of land located on Robert Ruark Drive across from the intersection of Maple Leaf Drive. The property is located on Robert Ruark Drive, adjacent to Cades Cove and Smithville Crossing shopping center, and across the street from Southport Way. The property is located within the ETJ. Most of the property falls within the high suitability land classification on the Land Suitability Analysis Map of the CAMA Land Use Plan. A portion is classified as High Suitability and a portion as Least Suitable. The Future Land Use Map designation is low-density residential, which defines single-family residences as appropriate uses with a density of 2-3 units per acre. The R-20 zoning dimensional requirements have a minimum lot size of 20,000 sf and a minimum lot width of 100'. R-10 zoning district dimensional requirements have a minimum 10,000 sf lot size with a minimum lot width of 75'.

Mr. Tommy Sheets from Headwaters Engineering came to the podium to represent the applicant, Blue Ocean Construction. He stated that the applicant had compiled a due diligence report and sought input from various local agencies such as DOT, Southport Planning Department,

Brunswick County Engineering, Flood Zone, and Stormwater. Mr. Sheets confirmed that he had received no negative feedback on the project. He also mentioned that the property has good access to Robert Ruark Dr. and is not in a flood zone. Additionally, public water and sewer are available. The applicant intends to use the property for single-family residences. Mr. Sheets requested that the minimum lot requirement be reduced from 20,000 sf to 10,000 sf, which he believes would be a better fit for the area adjacent to Cades Cove.

Mr. Fiss asked about the price range for the homes to be built. In response, Mr. Sheets stated that he did not know yet. Mr. Locklin also asked how many homes were planned to be built if the project was approved. Mr. Sheets replied that he had not done a preliminary site plan yet but did some preliminary calculations. He mentioned that if the project was built at R-20, it could fit around ten lots, and if it was built at R-10, it could fit around 20. Vice-Chair Hewett confirmed that the entrance and exit would be on Robert Ruark Drive.

Additionally, Mr. Hewett asked who owned the property behind the Senior Center, as the property abuts the property being discussed. Mr. Sheets did not know the owner of that property, but he mentioned that the only access to the proposed project would be through Robert Ruark. Mr. Sheets agreed to consider alternative access for safety needs as Mr. Hewett requested.

A motion to approve the Zoning Map Amendment for Robert Ruark Drive from R-20 to R-10 (ZMA 23-03) was made by Mr. Pender and seconded by Mr. Locklin***. Unanimous Vote; Motion Carried. Vice-Chair Hewett read the Consistency that recommended approval to the Board of Aldermen.***

I. Other Business: Presentation- Southport Local Historic District Design Standards.

1. Chairman of the Historic Preservation Commission Charles Drew provided an overview of the Commission and its efforts to-date. He presented the Draft Standards and emphasized the importance of involving the Planning Board, the Board of Aldermen, and the citizens in preserving, protecting, and preventing destruction to the beautiful Historic District of Southport. The goal is to maintain the historical value and beauty of this area.

Chair Hodgin said that the Board looks forward to working with the Commission to help review the guidelines and standards to ensure that the City remains protected and preserved. Ms. Meehan will coordinate dates and times for a Joint Meeting between the Planning Board and the Commission for additional discussion and work on the HPC Guidelines.

2. Update on the Comprehensive Land Use Plan

Ms. Meehan gave an update on the schedule for revision of the Comprehensive Plan. Staff and Stewart Inc. group went on a walking and driving tour around the City. There will be a meet-and-greet on Friday, January 19th with Staff and the appointed Steering Committee Members for Stewart's initial remarks, to set the project's goals, review the timeline, and schedule meetings. She said the first full meeting of the Committee should be near the end of February or the beginning of March.

J. Announcements

Mr. Joyner announced that the 12th Annual Black Symposium will be held on Feb. 9-11th.

K. Members' Information is in the Agenda Packet.

L. There were no further questions or comments. Vice-Chair Hewett made a Motion to Adjourn, seconded by Mr. Joyner. ***Unanimous Vote; Motion Carried***.

Adjourn 7:22 p.m.

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Chair, Sue Hodgin	**Deputy Clerk, Tanya Shannon**

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MEMORANDUM
To: Sue Hodgin, Chair and Members of the Planning Board
From: Maureen Meehan, City Planner
Re: Southport Local Historic District Design Standards
Date: February 15, 2024

Background

The Southport Historic Preservation Commission (HPC) was established on September 8, 2023, and commission members were appointed in October. Since that time, the members have met monthly (and several months bi-weekly) to establish the Southport Local Historic District Goals, Policy and Procedures, and Design Standards. All development within the local historic district must meet the standards established by the Commission and adopted by the Board of Aldermen. The standards provide a framework for the review of projects and ensure that all applications are treated equally.

Adoption of design standards is one of the first tasks of the HPC. The Commission must adopt design standards before a landmark or district can be designated, and changes to the exterior appearance of landmarks and properties in local historic districts can be regulated. A flow chart for the process is included in this memo.

The Southport Design Standards will assist property owners in the locally designated historic district and owners of historic landmarks when planning changes to their properties' exteriors. The guidelines also assist the Southport Historic Preservation Commission and its staff in determining the appropriateness of proposed changes.

A historic district is created because, taken as a whole, it embodies essential elements of the city's cultural and architectural heritage. Therefore, when considering projects within a historic district, the Commission is charged with reviewing exterior alterations to an individual building and their impact on the district. Originally designated in 1980, the City of Southport National Register Historic District comprises residential, commercial, and institutional buildings.

Design standards do not apply to National Register historic districts. The National Register of Historic Places is the official list of the nation's historic places worthy of preservation. Listing in the National Register is an honorary designation and places no restrictions on what an owner may do with a listed property. Locally designated historic districts protect historic properties from insensitive alteration. Therefore, standards help property owners determine appropriate maintenance and rehabilitation measures for their historic buildings. Where the boundaries of a local historic district and a National Register historic district coincide or overlap, design standards are strictly applied due to the local designation.

Through the establishment of the Southport Local Historic District (historic district), the City of Southport and the Historic Preservation Commission hope to retain the remaining historic building stock, encourage the efforts of area residents to conserve the historic neighborhoods, and protect Southport's character and charm. Local designation provides a review of proposed changes to exteriors, landscaping, site features, and archaeological resources.

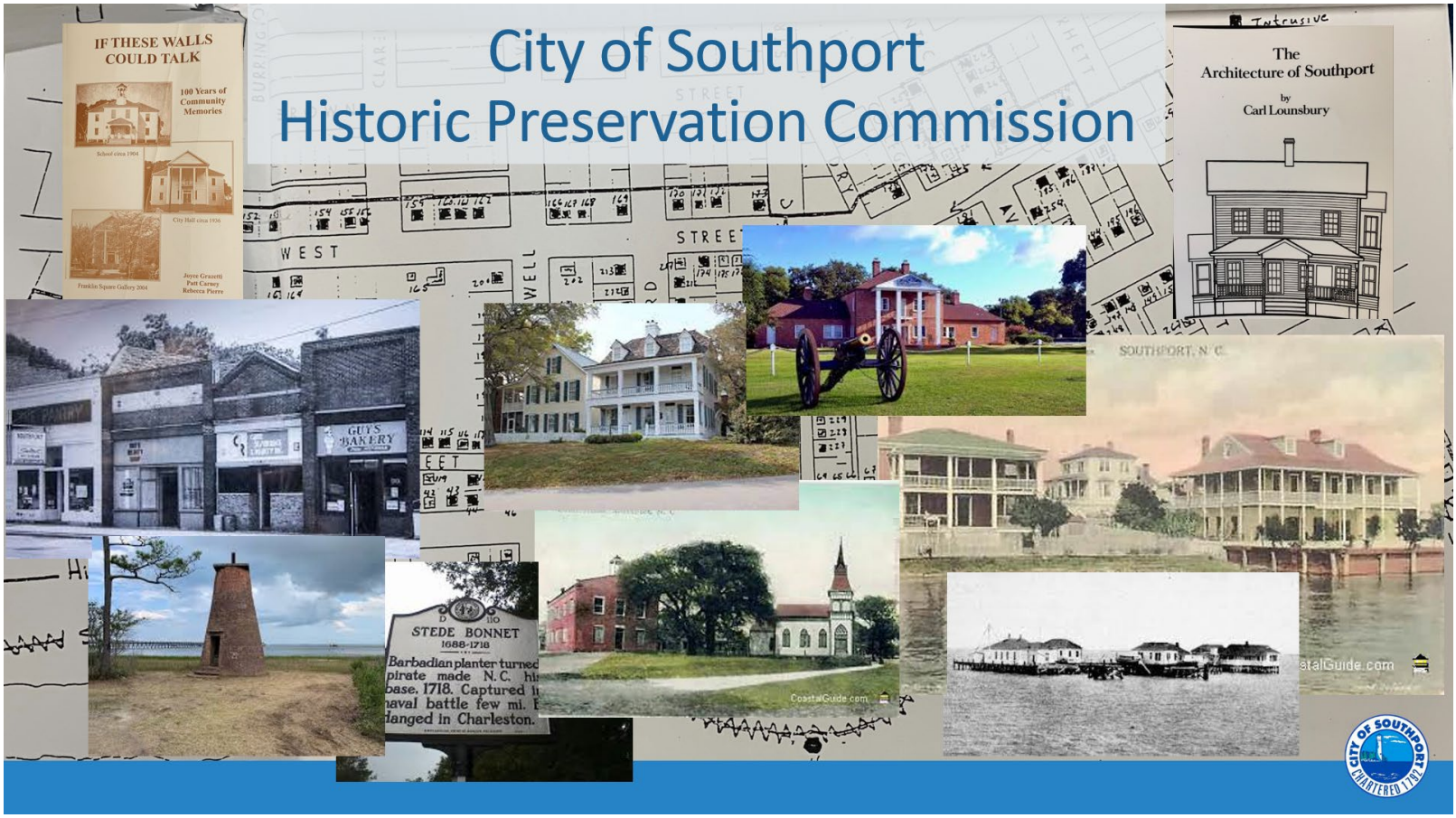
Review and Discussion

The Board of Aldermen must formally adopt the design guidelines. Before adoption, the standards are distributed and available to any boards dealing with historic landmarks or districts and to the public so that property owners will know what changes are being considered.

Two (2) public meetings last fall provided valuable input in shaping the latest draft of the guidelines. The HPC requests a review and open dialogue with the Planning Board before a formal recommendation to the Board of Aldermen for adoption. This discussion can lead to further revisions by the HPC, or changes can be made at the meeting with agreement from both the HPC and PB and sent to the Board of Aldermen with a recommendation for approval.

Attachments

- **Southport Local Historic District Design Standards - DRAFT**



Southport Local Historic District Design Standards 2024

ACKNOWLEDGMENTS

The Southport Historic Design Standards manual was prepared by the Southport Historic Preservation Commission with assistance from City Development Services Staff. We also thank the many Southport citizens who participated in the public meetings and provided input for project completion.

Mayor
Richard Alt

Board of Aldermen
Rebecca Kelley, Mayor Pro Tem
Robert Carroll
Lowe Davis
Frank Lai
Karen Mosteller
Marc Spencer

Historic Preservation Commission
Charles Drew, Chair
Rick Pukenas, Vice-Chair
Alexis Gore Graves
Bonner Herring
Josh Cline McGee
Jim McKee
Joanne Wesson
Bonnie Bray
Tal West

The Southport Design Standards are intended to assist property owners in the locally designated historic district and owners of historic landmarks when they are planning changes to the exteriors of their properties. The guidelines also assist the Southport Historic Preservation Commission and its staff in determining the appropriateness of proposed changes.

A historic district is created because, taken as a whole, it embodies important elements of the city's cultural and architectural heritage. Therefore, when considering projects within a historic district, the Commission is charged with reviewing exterior alterations to an individual building, as well as their impact on the district as a whole. Originally designated in 1980, the City of Southport National Register Historic District consists of a combination of residential, commercial and institutional buildings.

Design standards do not apply to National Register historic districts. The National Register of Historic Places is the official list of the nation's historic places worthy of preservation. Listing in the National Register is an honorary designation and places no restrictions on what an owner may do with a listed property. Locally designated historic districts are created to protect historic properties from insensitive alteration. Therefore, standards help property owners determine appropriate maintenance and rehabilitation measures for their historic buildings. Where the boundaries of a local historic district and a National Register historic district coincide or overlap, the application of design guidelines is in effect strictly due to the local designation.

Through the establishment of the Southport Local Historic District (historic district), the City of Southport and the Historic Preservation Commission hope to retain the remaining historic building stock, to encourage the efforts of area residents to conserve the historic neighborhoods, and to protect Southport's character and charm. Local designation provides review of proposed changes to exteriors, landscaping, site features, and archaeological resources.

1) Secretary of Interior's Standards for Rehabilitation

The Secretary of Interior's Standards for Rehabilitation are the broad preservation principles on which these Design Standards are based. These ten national standards outline a hierarchy of preservation practices that focus on the maintenance and protection of historic properties, valuing preservation over the repair or replacement of historic features. The standards also address landscape features, site, and setting as well as additions and new construction.

The Secretary of Interior's Standards for Rehabilitation, developed in 1992, were codified as 36 CFR Part 68 in the July 12, 1995, Federal Register (Vol. 60, No. 133). They replaced the 1978 and 1983 versions of 36 CFR Part 68, entitled The Secretary of the Interior's Standards for Historic Preservation Projects. The ten Standards are listed below with additional information and guidance available on the National Park Service website: http://www.cr.nps.gov/hps/tps/tax/rehabstandards.htm.

In the rare instance that a particular application includes an element that is not specifically addressed in these Design Standards, the Secretary's Standards for Rehabilitation will be applied to that part of the application. It should be noted that, although the first standard addresses use, the Commission does not review proposed uses of historic buildings.

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to project the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

2) Administration of the Southport Local Historic District

Historic Preservation Legislation—Federal, State, and Local

Historic preservation activities in Southport are guided by several important pieces of legislation on the federal, state, and local levels. Foremost of these is the National Historic Preservation Act (NHPA) of 1966. Among other things, this landmark federal act and its amendments established the National Register of Historic Places, the system of State Historic Preservation Offices, and the Certified Local Government program. It also mandated consideration by the federal government of the effects to historic resources from federal undertakings. Through additional historic preservation-related legislation enacted in 1976 and 1986, the federal government has created tax credits for the certified rehabilitation and preservation of income-producing historic properties.

In North Carolina, localities can establish historic districts and Historic Preservation Commissions to administer them pursuant to the provisions of North Carolina G.S. 160D-940-951. This statute defines the criteria for historic district and landmark designation, details the potential powers and duties of a local Historic Preservation Commission, and mandates that a Certificate of Appropriateness (COA) be obtained for changes to the exterior of individual landmarks and buildings within a historic district or to their setting.

The state statutes provide the legal underpinning for the City of Southport's Local Historic District Ordinance, first adopted by the Southport Board of Aldermen on September 8, 2022. The Southport Local Historic District Ordinance, much of which is based on the State Statute above, is found in Chapter 2, Division 3 of the City Code of Ordinances.

Makeup of the Southport Historic Preservation Commission (HPC)

The City of Southport's Historic Preservation Commission (HPC) consists of seven (7) regular members and two (2) alternate positions, who are voted in as voting members when a regular member is absent. The HPC elects its own chairperson and vice-chairperson to one-year terms. All members must be residents of the City of Southport, though not necessarily a resident of the historic district, and shall have demonstrated special interest, experience, or education in preservation, history, or architecture. The HPC is assisted in its duties by City Staff, including the Development Services Director, City Planners, Building Inspectors, and the City Clerk.

The Southport Historic Preservation Commission holds regularly scheduled meetings on the first

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Wednesday of every month at 4:00 PM. Meetings are generally held at the Indian Trail Meeting Hall (113 W. Moore Street). All cases are advertised in accordance with City ordinance. The HPC may also hold special meetings to discuss particular topics and are advertised as such, and all meetings of the HPC are open to the public.

3) Duties and Responsibilities of the HPC

Among the most important powers and duties of the HPC detailed in Section 2.195 of the Southport historic district regulations are the following:

- Maintain an inventory of historic properties;
- Recommend to the Board of Aldermen the designation of historic districts and landmarks in Southport, as well as recommend the removal of a building or landmark's historic designation;
- Review and act upon proposals for alterations, demolitions and relocations, or new construction within historic districts in Southport; the HPC also reviews changes to individual landmarks.

This last duty is the one most frequently encountered by the public in Southport. To fulfill this responsibility, the HPC is empowered to *"review and pass upon the appropriateness of the construction, reconstruction, alteration, restoration, moving or demolition of any buildings, structures, outdoor advertising signs or other exterior features in the historic district."*

The purpose of the review is to assist the HPC perform its duty as provided by N.C. General Statute 160D-947 to prevent the construction, reconstruction, alteration, restoration, moving, or demolition of buildings or structures, appurtenant fixtures, outdoor advertising signs, or other significant features in the district which would be incongruous with the special character of the landmark or district.

Quasi-Judicial Decision

Local historic designation requires a certificate of appropriateness (COA) from the HPC to make any changes to their property. The commission reviews all COAs and makes its decision based on evidence and the design standards in this document. The Commission must use its judgement to come to a conclusion of law.

Due to the judgement required to make the COA decision, the standard procedural requirements for quasi-judicial decisions shall be followed. The standard that applies to historic preservation decisions asks "is the project incongruous with the special character of the district or landmark?" (as identified in these design standards).

Procedural elements that must be followed as outlined in the general statutes include:

The preservation commission

- "Shall take such steps as may be reasonably required in the ordinance and/or rules of procedure to inform the owners of any property likely to be materially affected by the application";
- "shall give the applicant and such owners an opportunity to be heard"

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- "may hold a public hearing concerning the application";
- Shall review and act upon all applications "within reasonable time, not to exceed 180 days from the date the application for a certificate of appropriateness is filed."

Certificate of Appropriateness
Probably the most frequently asked question of the HPC is "When do I need a Certificate of Appropriateness (COA)?" The COA is a permit that a property owner receives indicating that a proposed change or action has been reviewed and approved by the HPC for congruity with the special character of the historic district or landmark and for consistency with the historic district regulations. As a part of the COA review process, the HPC shall consider the preservation of the character and integrity of the City and its historic districts and individual landmarks. To verify that the proposed action requires a COA, call City Hall at 910-457-7900.

According to Section 2.198 of the City historic district regulations "ordinary maintenance or repair of any exterior architectural feature in the Southport Historic District which does not involve a change in design, material, or outer appearance" does not require a COA. As a general rule, however, all other external changes or modifications to a building/structure or its setting in the historic district, demolitions and relocations in the historic district, new construction in the historic district, and the installation or alteration of any sign in the historic district can only be undertaken after the granting of a COA. The COA must be obtained before any proposed work can be performed. A COA is generally required regardless of whether any other building or zoning permit is required. Note that the interior of a publicly owned building or an individual landmark for which consent for interior review has been given by the owner also falls under HPC review.

Routine Maintenance Actions (COA Not Required)
Property owners should be aware of certain actions that are considered "routine maintenance" or are otherwise not subject to HPC review and thus do not require a COA. These items include:

- Repair of painted surfaces;
- Seasonal decorations;
- Moveable playground equipment;
- Temporary real estate "open-house" or "yard sale" signs placed and removed on that day;
- Replacing gutters or downspouts;
- Minor landscaping, including planting of flowers and vegetable gardens.

Minor Work Items (COA Required with City Staff Approval)
In an effort to expedite the review of COA applications, the HPC has defined certain minor proposed building and/or site changes that will have no discernible impact on the special character of the building, site, and historic district. These "Minor Work Items" do require completion and submittal of a COA application, but they do not require review by the HPC. Instead, they are reviewed by City Zoning and Planning staff for consistency with the historic design guidelines. City staff may, at their discretion or at the request of the applicant, forward the COA for a hearing and approval by the HPC.

Minor Work Item	Comments
Cleaning: Ordinary maintenance of a property and/or replacement of architectural features using the same materials, design, etc. that do not alter the exterior appearance of the property.	
Roof: Replacement of existing roof using same materials, colors, design, etc.	See "Roofs" section for standards on new roofs.
Fences: Side and rear yard fences and walls of all styles and materials.	See "Fences" section for standards for fences in front yards and for corner lots.
Landscaping: Planting or removal of trees, in rear and non-visible side yards. Removal of any diseased or damaged trees in any location. Utilitarian wood garden sheds, painted to match primary structure, in rear or non-visible side yard not to exceed 150 square feet. Trellises, arbors, and above-ground swimming pools in rear or non-visible side yards.	Minor landscaping does not require approval of a COA. City Tree Protection and Landscape Preservation permit process still applies. Major "hard" landscaping in public view, such as the removal or installation of stone or brick terraces, water features, berms, and ground moving activities require HPC review. Removal of major landscaping features that contribute to the character of the historic district, such as all mature trees and landscape features such as berms, terraces, and walkways require a COA.
Mechanical Equipment: Installation of mechanical equipment including roof vents, exterior air conditioners, furnaces, generators, and satellite dishes on rear or non-visible side elevations.	Installation of all features mentioned at left on a front or visible side elevation requires HPC review.

Installation of window air conditioning units, window fans, and TV antennas on rear or non-visible side elevations. Central air conditioning units on the rear or side of the building not seen from the street.	Central air conditioning units on a visible side can be approved by the HPC but must be screened with shrubbery or appropriate fencing.
Shutters: Shutters or blinds on rear or non-visible side elevations, subject to design guidelines.	See "Windows" section of guidelines for discussion of common shutter and blind types.

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Storm Windows/Doors: Installation of metal or wooden storm doors and windows which have a painted color that matches window trim or is appropriate for the house. Storm windows for double hung sashes shall have horizontal dividers that are in alignment with the horizontal meeting rails of the original upper and lower sashes. Installation of wooden storm doors or windows painted to match trim or house. Installation of painted wooden window screens and screen doors on all elevations.	See "Windows and Doors' section of guidelines for more detail.
Siding: Removal of artificial siding and other non-original material where original siding is known to exist.	
Accessibility: Erection, alteration, or removal of temporary features that are necessary for medical conditions, but which do not permanently alter exterior features.	Installation of permanent ramps and features structurally attached to the building requires HPC review.
Collapsible Porch Gates: Gates should be truly temporary and removable, with purpose to restrain young children and pets.	Reviewed by HPC on a case by case basis.
COA: Six-month renewal of Certificate of Appropriateness previously granted, ONLY if work has been started but not completed within the one-year validation period.	

Pre-Application Process

For all but the smallest project, a property owner is strongly urged to take advantage of the HPC's pre-application process. This process, involving informal consultation with City staff can save untold time, money, and headaches during the rest of the COA application process. It allows owners/applicants to present conceptual ideas, to discuss different alternatives, and to receive helpful guidance and comments. An applicant may request an informal meeting with Staff to become familiar with the Southport Historic Design Guidelines.

It is important to realize that completion of the pre-application process does not guarantee approval of the COA application by the full HPC, or that the COA application will not be modified. The HPC renders its decision on an application after careful consideration, hearing of evidence from

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other Southport residents or expert witnesses, and discussion among its members, all accomplished at the regularly scheduled HPC hearings.

Certificate of Appropriateness (COA) Application Process

1. Early consultation with applicable permitting agencies and the City Building Inspector and City Planning Staff is strongly encouraged so that the impact of requirements on the COA application may be assessed and the permitting process can be facilitated for the applicant.
2. Having determined that a COA is required, having reviewed the sections of the historic district standards relevant to the project and having completed the pre-application process (if needed), the property owner then completes the COA application. This application can be obtained in person from the City Hall or it can be downloaded from the City of Southport website at www.cityofsouthport.com.
3. The completed COA application must be signed and dated. The COA must be filed with the Development Services Department in accordance with the Department's established deadline calendar in order to be considered on a respective agenda of the HPC. For the schedule of HPC meetings and meeting agendas, check the City's website at www.cityofsouthport.com.
    a. Pursuant to the above, Staff reserve the right to withhold a proposal from an agenda if additional information was requested and not received in time to allow proper public notice of the hearing.
4. In order for a thorough review of the COA to be undertaken by City Staff and the HPC, the application must include sufficient supporting documentation. The level of documentation depends on the complexity of the proposed project, but it is rare that too much documentation is ever submitted. The checklist of required documents for the COA application is found attached to the application and is listed on the next page.
5. Development Services Staff screen the completed COA application in an effort to determine compliance with all applicable City zoning ordinances and codes. If Staff determine that an application is not in compliance with zoning or other land use provisions the applicant will be notified. If the applicant does not withdraw his application or amend the same to bring it into compliance with zoning or other land use provisions, the HPC will not have jurisdiction of the application, and will deny a COA on that basis.
6. Applicants should note that in addition to a COA, additional permits may be required for projects within the Historic District, particularly along the waterfront. These include, but are not limited to CAMA permits, wetlands impact permits, stormwater permits, driveway permits, and numerous other permits issued by federal, state, and local agencies. City building permits will be issued only after a project has received all required permits, including a COA.
7. Early consultation with applicable permitting agencies and the City Building Inspector is advisable so that the impact of requirements on the COA application may be assessed and the permitting process can be facilitated for the applicant. The HPC may choose to delay consideration of a COA application to consult with federal, state, or local agencies. This is particularly important when the North Carolina HPO is asked to review and comment on the project as part of a required environmental review process. Any comments from North

Carolina HPO must be documented in writing.

8. Upon completion of local zoning and land use screening, the case liaison will forward the COA application to the HPC for its review and action. Notification of the meeting date, time, and place will be sent to the applicant and adjoining property owners by mail no less than ten (10) days prior to the HPC meeting. Attendance at the meeting by the applicant (or a designated proxy) is required, should any questions or concerns regarding the project arise. Failure of the applicant to attend a meeting may result in unnecessary delay if the HPC fails to obtain information deemed necessary to make an informed decision. Any interested party is welcome to attend the meeting or to review the application at City Hall prior to the HPC hearing.
9. Most COA applications are reviewed and decided upon the day of the meeting. The HPC must issue or deny a COA within one hundred and eighty (180) days after a completed application has been filed, except when the time limit has been extended by mutual agreement between the applicant and the HPC or when more time is needed to obtain comments from other federal, state or local agencies involved in the permitting, funding, or approval of the proposed project. The time limit extension applies to Staff request for technical advice from HPO.
10. In determining whether the work proposed in the application would be congruous with the special character of the district, or in certain cases, designated landmarks outside the district, the HPC commission will consider the items generally and specifically set forth in these guidelines including the following principles:
    a. The special character of the district is primarily defined by the following elements:
        i. Architectural styles, sizes, scales, height and proportions of historical Southport buildings and other structures.
        ii. Vistas of the Historic District should be maintained. These include seascapes, landscapes, and streetscapes.
11. All decisions of the HPC, in which a COA was awarded or denied, are furnished in writing and mailed to applicants within fourteen (14) working days of the meeting. The COA must be visibly displayed at the project site during the entire duration of the project.

12. Once issued, a COA is valid for twelve (12) months and may be renewed for an additional six months at the written request of the applicant. The COA clock starts at the time of approval or when a building permit is issued, if necessary. If work has not begun after 12 months, the applicant must re-apply for a new COA. An approved COA may also be transferred to a new property owner if that owner certifies in writing that he has reviewed the approved application and agrees to comply with all the terms and conditions of the COA.

13. An approved or pending COA application may be modified by a written request from the applicant to the HPC. The request should include a description of the proposed changes, as well as drawings, a site plan, and other appropriate documentation if necessary. If the HPC finds that the modifications constitute a substantial change from the previous application, a new COA application submission will be required and all notification procedures will be followed.

14. An appeal may be taken to the Southport Board of Adjustment from the HPC's action in granting or denying any certificate. An appeal may be filed by any aggrieved party within 30 days following formal action by the HPC with regard to the granting or denying any certificate in accordance with City ordinance and state statute. Any appeal from the Southport Board of Adjustment's decision in any such case shall be heard in Superior Court.
15. If work is performed without a COA when a COA is required, the persons responsible for such work will be in violation of City ordinance and subject to enforcement action under the ordinances of the City of Southport.

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4) Goals of the Historic Preservation Commission

Goal 1: The City of Southport Historic Preservation Commission endeavors to preserve the heritage of Southport by enacting regulations and architectural design standards within the locally designated historic district(s), by extending protection of landmark status to especially significant structures, buildings, sites, areas, or objects, and by utilizing Certificates of Appropriateness to ensure that projects within those districts or involving those landmarks are consistent with the historic character of the City.

Goal 2: The City of Southport Historic Preservation Commission shall establish policies and procedures to prevent the loss of historically significant structures within locally designated historic districts.

Goal 3: The City of Southport Historic Preservation Commission will lead efforts to provide education on the benefits of historic preservation to property owners and residents of the City at large.

Goal 4: The City of Southport Historic Preservation Commission shall support public participation in the historic preservation process, including but not limited to publicly-initiated nominations of local landmarks and through transparency in Commission actions in accordance with all applicable state statutes.

5) Protecting Southport's Historic Vistas

- **Battery Island and Quarantine Platform**
- **Tree-lined streets**
- **Water views at street ends**
- **Franklin Square Park**
- **Old Burying Ground**
- **Howe/Moore corridors**
- **Yacht Basin**
- **Brunswick Street Marsh**
- **Garrison Lawn**
- **Indian Trail Tree and Keziah Memorial Park**

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How to Use the Design Guidelines

Users of these guidelines are encouraged to read them in their entirety. They can also reference selected sections to answer specific questions about the repair, alteration, and rehabilitation of Southport's historic architecture, and new construction within the historic district.

- Section 6 – Standards for Rehabilitation of Individual Landmarks and Buildings in the Southport Historic District provides guidelines for proposed changes to individual landmarks and buildings in the Southport Historic District.
- Section 7 – New Construction and Additions in the Southport Historic District provides guidance for new construction and its integration within the historic district.
- Section 8 – Setting in the Southport Historic District discusses the setting of the historic district related to landscaping, fencing, utilities, lighting, and signage.
- Section 9 – Relocation of Building Standards discusses best management for relocation of buildings.
- Section 10 – Demolition of Landmarks and Buildings in the Southport Historic District discuss the topics of appropriate demolition in the district.
- Section 11 – Disaster Preparedness and Prevention provides guidelines for historic properties within flood prone areas and best practices of preparation for and rehabilitation after natural disasters.

6) Standards for Rehabilitation of Individual Landmarks and Buildings in the Southport Historic District

Roof Standards

6.1.1. Retain historic roof-top features such as ornamental eaves, cornices, rake-boards, dormers, gables, chimneys, finials, cresting, steeples, belfries, cupolas, and railings that add to the overall architectural character of a structure. All original and significant later features should be preserved and restored, rather than removed. The design of any new roof features should be based on documentary evidence and are compatible with both the building and surrounding buildings. It is not appropriate to make alterations to the front or other primary portions of the roof of a contributing structure if that roof slope can be seen from public view.

6.1.2. Preserve, maintain, and repair historic roofing details and materials such as slate, standing seam metal, and tile. Replace in-kind only if necessary due to deterioration or damage. Replace only the damaged or deteriorated portion using materials identical to the original if possible.

6.1.3. New roofing materials should be compatible with either the existing or original roofing material. Match the historic material as closely as possible in color, shape, size, and texture. Asphalt, fiberglass-asphalt shingles, and metal roofs are acceptable. Any distinctive patterns of shingles or slates shall be retained and/ or replicated exactly.

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6.1.4. Contemporary or non-historic roof features may be installed on areas of the roof not seen from the public view or on other non-character defining secondary roofs. Included are skylights, roof-mounted vents, dormers, chimneys, antennas, and solar collectors. These are not permitted when their installation or later removal would damage or destroy a significant roof feature. In certain instances, new dormers may be permitted on side or rear elevations if their design is compatible with the building and the roofline.

6.1.5. Install new gutters without damaging or obscuring architectural features. It is inappropriate to replace concealed, built-in gutter systems with modern exposed gutters. Gutters of all materials except copper shall have a painted finish. Half-round gutters are appropriate for most contributing properties. Wood gutters may be appropriate for certain period restoration projects. Replacement of gutters is usually reviewed as a Minor Works item.

6.1.6. Ridge vents, where needed, shall be of the low-profile type and shall not diminish the original design of the roof or destroy any character-defining architectural details. Other vents, such as gable vents and roof-mounted vents, should be installed so as not to be visible from the public view where possible. If they must be visible, they should be installed to respect the architectural details and character of the subject building.

6.1.7. It is not appropriate to create a false sense of historical development by making changes to roofs, such as adding conjectural features lacking insufficient historical, pictorial, or physical documentation.

6.1.8. Avoid altering the existing roof pitch or introducing a new roof pitch.

6.1.9 Avoid using a substitute material for the replacement of a deteriorated historic element that does not convey the visual appearance of the surviving parts of the roof or that is physically or chemically incompatible.

6.1.10 Avoid constructing additional stories resulting in an altered appearance.

Wood Siding, Trim, and Ornament Standards

6.2.1. Preserve and maintain existing original wood siding, trim, ornamentation, and other wood decorative elements.

6.2.2. Preserve and repair existing wood elements wherever possible. Use preservation techniques which encourage repair (such as epoxies, splicing, and patching where applicable) rather than wholesale replacement.

6.2.3. Replace historic wood elements only where the original is too deteriorated to repair. If replacement is necessary, use new replacement wood that matches the original as closely as possible in all properties: shape, profile, texture, and detailing. The deteriorated or damaged condition should be documented. Replacement of these features in kind and according to the guidelines does not normally require a COA.

6.2.4. If a portion of a historic wall is deteriorated beyond repair, replace only the damaged portion. In other words, a damaged portion of a wall does not provide an excuse for

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wholesale replacement.

6.2.5. Prepare surfaces for painting using the gentlest means possible. Low-pressure power-washing should be used only after a test panel of washing has been performed by the contractor and reviewed by the owner for excessive damage. Sandblasting and high-pressure water blasting are not appropriate treatments.

6.2.6. Avoid stripping paint with the object of staining it or leaving it unfinished for a supposedly "natural" appearance when such an appearance cannot be historically documented.

6.2.7. Avoid replacing clapboard siding with shingle siding (or vice versa) or replacing clapboard siding with siding of a different width or profile, particularly if the later siding has gained historic significance in its own right.

6.2.8. It is not appropriate to compromise the architectural integrity of a building by introducing or removing siding, trim or other decorative features, or by concealing or removing decorative details such as cornices, corner boards, brackets, pilasters, door and window moldings, pediments, medallions, dentil and modillion molding, corner boards, and other character-defining architectural trim.

6.2.9. The use of vinyl or aluminum siding is not permitted. Where vinyl or aluminum siding exists, it can be maintained and replaced.

6.2.10. The HPC may allow the replacement of siding with new substitute siding if the proposed replacement will be more in keeping with the original appearance of the structure and can match the profile and texture of the original siding. Substitute siding with a simulated wood grain will not be permitted.

6.2.11. The use of fiber cement siding may be approved for new structures, non-historic structures, and additions to historic structures not visible from public streets or waterways.

6.2.12. To avoid creating a false historical appearance, do not use trim salvaged from another building or buildings or stock trim. Likewise, avoid moving or rearranging existing trim to another part of a building without historical evidence to back this up. Do not use stock trim when original trim can be replicated.

6.2.13. Blown in insulation should be placed in the house so as not to disturb siding.

Brickwork and Masonry Standards

6.3.1. Retain and preserve historic brick and masonry elements, including walls, chimneys, foundations, and retaining walls. Preserve masonry elements that are character-defining features of the building or property.

6.3.2. Repair and restore historic masonry elements, rather than replace. Remove vegetation and vines from masonry to prevent structural or moisture damage.

6.3.3. Clean historic masonry only with low-pressure water washing and mild detergents formulated for the specific application. Use chemical cleaners formulated for historic

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masonry only if water and detergent cleaners are not effective.

6.3.4. Sandblasting, high-pressure water blasting, and other abrasive cleaning methods which may damage historic masonry are not appropriate in the historic district.

6.3.5. Water-repellant sealers are generally not appropriate because they may trap moisture, causing deterioration or discoloration.

6.3.6. For repointing, use only mortars that are compatible with historic mortars in composition, color, strength, and joint finish or surface tooling. Maintain the historic joint width, joint profile, and bond patterns when making repairs. Modern mortars may cause damage to older, softer bricks.

6.3.7. Use only hand tools to remove deteriorated mortar joints, under the direction of a skilled mason. Do not use power tools or saws to remove mortar joints.

6.3.8. When replacing damaged brick or stone, use replacements that match the original units as closely as possible.

6.3.9. Avoid painting masonry surfaces that were not painted historically. When painting masonry that has been previously painted, use acrylic latex paints for best durability.

Window and Door Standards

6.4.1. Retain and preserve historic windows and doors, including all significant related elements such as frames, sashes, shutters, hardware, old glass, sills, trim, and moldings. Documented restoration is allowable.

6.4.2. Repair existing historic windows and doors where possible, rather than replacing entire window or door units. Use techniques such as wood epoxies and wood patches to repair and strengthen deteriorated wood elements. Replace only those elements that cannot be repaired. Reproduction glass is desirable but not required.

6.4.3. Use replacement windows and doors that match the existing historic elements as closely as possible. Wood windows are encouraged to be replaced with wood windows. If replacement windows or doors are required, consider first replacing only the deteriorated element, such as a single sash or door, rather than the entire frame or unit. Any new replacements shall match the original in all dimensions, materials, and detailing as closely as possible. Replacement or new windows or doors outside of public view can be of other materials than original.

6.4.4. Use storm windows to improve energy efficiency where needed. New storm units should have a finish compatible with the color of the house. Unpainted aluminum is not appropriate. Storm windows for double hung sash shall have horizontal dividers that are in alignment with the horizontal meeting rails of the original upper and lower sashes. Storm windows are usually a Minor Work item.

6.4.5. Replacement of historic windows and doors for the sole purpose of improved thermal performance is not appropriate. Wood or appropriately painted metal storm windows and

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doors should be used.

6.4.6. Tinted glass is not appropriate in the historic district in any area visible from public view. Energy-saving or "low-E" glass may be used only if it is not tinted.

6.4.7. New windows must match the original overall size, opening area, muntins, and grilles. Snap-in grilles or grilles between glass are not appropriate for windows visible from public view.

6.4.8. Use storm doors to improve energy efficiency where needed. New storm doors should be compatible with the original exterior doors and with the style and period of the structure. Storm doors should be the wood full view type and have a paint finish in a color that is compatible with the colors of the structure. Louvered wood doors are also appropriate. The standard "colonial" type storm door with scalloped trim and cross-buck bottom half is not permitted. Metal storm doors that match the period of the house with a full view opening and painted to match the door trim may be appropriate.

6.4.9. Preserve and repair original or historic shutters. It is appropriate to add louvered shutters to a historic structure if there is evidence that it once had blinds. All shutters shall be installed so that they will fit the window frame opening if closed and shall be of correct proportions for each window. Blinds shall be provided with operable hardware, consisting of hinges, pintles and holdbacks located in the appropriate positions. Shutters may be operable or fixed. Shutters made of synthetic or substitute materials, that duplicate the look, appearance and patina of wood may be allowed. They should not be nailed or screwed onto the building surface.

6.4.10. New window and door openings shall not alter the historic character of the building or cause damage to historic materials or other significant architectural features. They must be detailed and sized to be compatible with the existing structure.

6.4.11. Avoid the placement of metal awnings over windows and doors. Fabric awnings may be used if the house originally or historically had them. Install awnings in such a manner that they do not conceal architectural features or damage historic building fabric. Choose colors and patterns that harmonize with the building and do not compete with it.

Porches and Entrances Standards

6.5.1. Retain and preserve historic porches, entrances and doorways including related features such as railings, posts or columns, ceilings, steps, lattice, flooring, piers, ornamental trim, and other character defining elements.

6.5.2. Repair, rather than replace, historic porch and entrance elements, wherever feasible. Use repair techniques which preserve historic material, including patching, epoxy repair, reinforcing, or splicing-in of new wood in place of deteriorated sections. Replacement elements should match the original in size, shape, pattern, color, and texture.

6.5.3. Use appropriate materials in the repair and restoration of historic porches. Woods that are naturally rot-resistant or treated will provide the greatest durability for exposed elements

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such as railings, steps, flooring, and floor framing. The use of pressure-treated wood is appropriate when painted within six months. The use of substitute material that duplicates the look and patina, and architectural detail is allowed.

6.5.4. The enclosure or other alteration of original or historic front porches is not appropriate in the historic district. The enclosure of porches at the rear, or other areas not seen from the public view, is appropriate if the enclosure is designed and constructed in a manner that preserves the historic character and features of the porch.

6.5.5. Covering a porch with non-historic material such as vinyl or metal siding, or "winterizing" a screened porch by permanently attaching plastic sheeting is not permitted.

6.5.6. Using indoor-outdoor carpeting to weather-proof a porch floor is not permitted.

6.5.7. Use architectural details and ornamentation that are compatible with the style, period, and detailing of the porch and structure. Such features as new metal columns or wrought iron posts, over-scaled columns with elaborate capitals, metal or plastic balustrades are not allowed. The creation of a false historical appearance, such as adding Victorian ornament to a plain early 20th century porch, is not appropriate.

6.5.8. Removing a porch that is not repairable and not replacing it or replacing it with a new porch that does not convey the same visual appearance on contributing historical properties is not permitted.

6.5.9. Reconstruct missing porches or porch details based on accurate documentation of such features. Such documentation may include: evidence found on the subject building; historic photographs; or compatible details found on another porch in the district of the same period and general style. The owner shall provide the commission with such documentation in the application for a Certificate of Appropriateness.

6.5.10. It is not appropriate to add new porches, entrances, or balconies to primary elevations or other areas of a building that are seen from the public view if none existed historically.

6.5.11. Collapsible gates on porches to restrain pets or young children are reviewed by the HPC on a case-by-case basis and should be truly temporary and removal. Permanent gates are reviewed by the HPC. Gates of any kind at the foot of porch steps create an unnecessary visual barrier and are not appropriate.

6.5.12. New handicapped access ramps and other modifications to improve access shall be designed so that the modifications are reversible and do not damage or obscure the buildings' architectural features or diminish its historic character. (SEE GUIDELINES FOR ACCESSIBILITY AND LIFE SAFETY).

Foundation Standards

6.6.1. Retain and preserve original and historic foundations and related elements wherever possible, including: pier size, vents, grilles, lattice, materials, and other significant details.

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6.6.2. Retain and preserve existing historic materials wherever possible, rather than replace. For repairs or rebuilding, select new brick, mortar, ballast stones, and other materials to match the historic materials as closely as possible in all respects.

6.6.3. If a portion of a historic foundation is deteriorated beyond repair, replace only the damaged portion using materials and finishes that match the original. Do not use replacement of a damaged portion as an excuse for wholesale replacement without thorough documentation of the reasons for this change.

6.6.4. New vents or access doors should be centered between piers. Use inconspicuous vents, such as black iron or dark plastic, rather than unpainted aluminum. Locate access doors and other new openings in areas not visible from public view.

6.6.5. For infilling between existing brick piers, construct a curtain wall that is recessed approximately 1" to 2" back from the outer face of the piers so the original piers stand out; use this treatment for both old and new foundations. Flush foundations and infill are not appropriate. Concrete block may be used only if covered with a veneer of brick or sand-finished stucco. Leave foundations under porches open wherever possible to promote air circulation to prevent rot and deterioration; use wood lattice or grilles to enclose.

6.6.6. Wood grilles or lattice are appropriate for infill if compatible with the period or style of the structure. Stock lightweight lattice is not appropriate in areas in the public view.

6.6.7. Existing, unpainted historic foundations should not be painted. Previously painted foundations should be repainted an appropriate color. Avoid removing paint from a previously painted foundation (see BRICKWORK AND MASONRY standards).

6.6.8. Covering an existing foundation with later siding (artificial or wood) or covering with stucco, cement, or pressed metal siding strips that replicate rusticated concrete block is not permitted.

6.6.9. The raising of a building's foundation should be undertaken for sound structural and/or flood control reasons ONLY, and these reasons should be well-documented by flood maps, an architect or engineer's report accompanying an owner's COA application.

6.6.10. Locate new utilities and mechanical equipment such as package unit furnaces, heat pumps, and air conditioning coils at the rear or other areas not seen from public view. Utilities should never be located at the front of a structure or site. Provide screening with plantings, fences, or plant treatments.

Accessibility and Life Safety Standards

6.7.1 Locate fire exits, stairs, landings, and ramps so that they are compatible with the character of the building or site. For example, wheelchair ramps may replicate a railing detail on a building or be of a simple design that allows it to blend discreetly with its surroundings. Such elements should be painted to tie in with the structure.

6.7.2 Introduce new or alternate means of access to the historic building, in ways that do not compromise the appearance of an historic entrance or front porch.

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6.7.3 Construct wheelchair ramps and chair lifts that are portable or temporary and do not permanently damage, obscure, or require the removal of character defining architectural features. Such alterations should be reversible in nature to maintain the integrity of the historic resource. (SEE MINOR WORKS).

Historic Storefront Standards

6.8.1 Retain and preserve historic commercial storefronts and building façades, including display windows, entrance configurations, doors, transoms, bulkheads, windows, cornices, parapets, and brickwork.

6.8.2 Replace historic storefront features only when original elements are too deteriorated to repair. Replacement materials should match the originals in design, dimension, texture and color. Identical replacement materials are preferred but substitute materials may be approved on a case-by-case basis.

6.8.3 To reconstruct missing or altered storefront features, design new façade details to be compatible with the subject building and the surrounding historic buildings of the same period and style. Consider returning altered facades to original window sizes and configuration. Materials used must conform to the above guidelines (2) for replacement storefront features. Base the rehabilitation on sound historical evidence. Avoid historically false "colonial" features such as carriage lamps, eagles, bay windows, broken-arched pediments, and other popular artifices.

6.8.4 Preserve and rehabilitate rear facades where possible, particularly where access is provided from rear parking areas. Eliminate or consolidate utility lines, pipes, meters, mechanical units, etc. to improve the appearance of rear facades. Locate trash cans and dumpsters away from public rear access doors and screen them from public view.

6.8.5 Retain original roof forms and features. Do not add additional stories, penthouse, roof decks, skylights, mechanical equipment or any other features that can be seen from the sidewalk, right-of-way or any public rear access walkway. Exceptions may be made on a case-by-case basis if there is a clear historic precedent.

6.8.6 Always try to repair or replace on a limited basis, rather than embark on whole-sale replacement. Do not introduce a new design that is incompatible in size, scale, material, and/or color with its surrounds.

6.8.7 When possible, remove late-twentieth century and early-twenty-first century replacement storefronts and restore storefronts to their historic configurations. Reconstruct storefronts based on historic photos or physical evidence. Storefronts must be compatible with the historic character of the building with design, proportion, profiles, and finish consistent with those of typical storefronts from the same era.

6.8.8 If an entire storefront or building surface, detail, or element must be replaced due to deterioration, replace only with materials that match the original in size, shape, design, profile, scale, color, and texture.

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6.8.9 Install fabric or canvas awnings, where historically appropriate, so that they do not obscure windows, doors, or other character defining features. Select an awning design based on historical profiles, styles, and shapes. It is not appropriate to install pent roofs or plastic or metal awnings over commercial storefronts. Flat-roofed metal awnings may be appropriate on buildings/ storefronts constructed in the 1960s and later.

7) New Construction and Additions in the Southport Historic District

Building Placement

7.1.1 Maintain a similar front, side, and rear yard setback to other contributing historic buildings on the block and/or side of the street.

7.1.2 Maintain the pattern of building separation and lot coverage that is found on the block and/ or side of the street.

7.1.3 Place outbuildings and accessory structures in side and rear yards. Avoid locations that obscure the principal building's prominent architectural features or significant site features.

7.1.4 Minimize ground disturbance during new construction to avoid unnecessary damage to unknown archaeological resources.

7.1.5 For new construction on Southport's waterfront, minimize any negative impact on historic vistas.

Building Height/Scale

7.2.1 New construction shall not exceed the maximum height limits outlined in Section 3.9 of the Unified Development Ordinance.

7.2.2 Make the scale of the proposed building compatible with the scale of contributing structures on the block or side of street.

7.2.3 Design the proportion (the ratio of height to width) of the proposed new building and its architectural elements to be consistent with the proportion of contributing buildings and their associated architectural elements on the block or side of street.

7.2.4 Use windows and doors in new construction that are compatible in proportion, shape, location, pattern, and size with windows and doors of contributing buildings on the block or side of street.

7.2.5 If a contributing building was demolished or moved from the site, design the replacement building to be of similar height, scale, massing, and location as the previously existing building. Applicants will have a heavy burden to demonstrate to the HPC that a replacement structure with different height, scale, and massing as the previously existing building is congruous with the Historic District.

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Materials

7.3.1 Keep the siding and trim material of the proposed building consistent with the materials traditionally used on the immediate block and in the historic district. Wood siding, wood shingles (as typically found in gables of Victorian period residential architecture), and brick, were common sheathing materials and should be used.

7.3.2 The use of substitute products such as vinyl, aluminum and pressed board siding and other modern-day products marketed to imitate traditional building materials are not allowed. Smooth fiber cement siding may be used on a case-by-case basis. Use of fiber-cement lap siding may be approved for use on new structures. In all circumstances every effort shall be made to ensure that new structures and the application of modern-day products achieve compatibility with existing historic buildings that define the character of the Southport Historic District.

7.3.3 Use materials in traditional ways. New materials should appear as if they were applied in a traditional manner to convey the same visual appearance as historically used and applied building materials.

Details

7.4.1 Use architectural details on the building that complement the architectural details of contributing structures on the block and/or side of the street.

7.4.2 Provide a date brick or other exterior date identification marker on all new construction to assist future generations in the dating of buildings.

Texture and Color

7.5.1 Create in new construction a similar degree of texture that is found in contributing buildings in the historic district. Texture is the relief on a building surface that is achieved through use and interaction of a variety of building materials and shapes. Materials such as weatherboard siding, decorative fish-scale shingles, and beaded-board porch ceilings are examples of wooden architectural elements that have different physical and visual qualities and contribute to the "texture" of a building surface.

Form and Rhythm

7.6.1 Design new construction that reflects the basic shapes and forms on the block and in the historic district.

7.6.2 Maintain consistency with style of buildings and contributing structures found on the block and/or side of the street. Roof forms commonly found in the historic district include gable varieties with an average pitch of 4/12 or greater and hipped roofs in the residential areas and flat roofed buildings in the late 19th and early 20th century commercial downtown.

7.6.3 Maintain similar percentages and patterns of window and door openings consistent with the style of buildings. Openings which vary considerably from the established patterns found on the block in which the new construction is placed will tend to have a disruptive

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effect on the desired harmony of the streetscape.

Landscaping

7.7.1 Retain and protect mature trees during construction in accordance with Section 3.17 & 3.18 of the UDO.

Additions to Historic Buildings Standards

7.8.1 Where possible, locate new additions at the side or rear so that they have a minimal impact on the façade and other primary elevation of the affected building or adjacent properties.

7.8.2 The overall proportions of a new addition should be compatible with the existing building in height, scale, size and massing so as not to overpower it visually. A new addition should never be taller or wider than the original structure unless required by code or a non-aesthetic functional requirement. Observe the principle of "additive massing" where the original structure remains dominant, and the additions are adjoining and smaller masses.

7.8.3 The design elements of a new addition should be compatible with the existing building in terms of materials, style, color, roof forms, massing proportion and spacing of doors and windows, details, surface texture, and location. Contemporary adaptations of the original which clearly look like an addition and reflect the period of construction are encouraged.

7.8.4 Additions should be constructed so that they can be removed from the original building in the future without irreversible damage to significant features.

7.8.5 Vinyl or aluminum are not appropriate on additions to historic buildings. Other substitute siding may be allowed. (SEE SIDING GUIDELINES)

7.8.6 Wood windows are most appropriate for new additions within the historic district; however, substitute window materials are acceptable for new additions provided the proposed windows meet the requirements set forth in the WINDOWS AND DOORS guidelines.

7.8.7 Rooflines of new additions should be similar in form, pitch, and eave height to the roofline of the original building.

7.8.8 Foundations should be similar to or compatible with the existing foundations in material, color, detailing, and height. SEE FOUNDATIONS GUIDELINES.

7.8.9 Consider in your plan older additions or other alterations to existing buildings that have acquired significance over time when planning and building a new addition.

7.8.10 For additions to Southport's waterfront that will impact historic vistas, the design should be consistent with policy statements found in this document.

Decks on Historic Buildings Standards

7.9.1 Locate decks only on the rear ground level of historic buildings or other ground-floor level

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where the deck is not visible from public view.

7.9.2 Design decks to eliminate physical or visual damage to significant historic architectural features.

7.9.3 Decks should be attached to the historic building so that they may be removed without significant damage.

7.9.4 Provide proper flashing and other details to reduce or eliminate moisture damage to the historic structure.

7.9.5 Decks may not be constructed on the roof of any historic structure in the historic district.

8) Setting in the Southport Historic District

Landscaping Standards

8.1.1 Preserve and maintain historic public and private landscapes that contribute to the character of the historic district, including open spaces, streetscapes, and yards.

8.1.2 Preserve and maintain the individual components and historic features that contribute to Southport's historic character, including: mature trees, ornamental trees, and hedge rows.

8.1.3 Preserve and maintain mature canopy trees. Planting of non-native trees not historically associated with Southport, such as banana trees, is discouraged. Planting of native palm trees listed in the Unified Development Ordinance, including sabal palmetto, sabal minor, and needle palm, is permitted. Any use of non-native plant materials not historically associated with Southport that can be viewed from public property should be limited to a minor complementary presence. Replanting of any native tree damaged by storm activity or other natural factors is encouraged. As property size permits, planting of a variety of native trees and shrubs is encouraged. As property size permits, planting of native understory trees should be undertaken in concert with planting of native overstory trees, such as live oak trees.

8.1.4 Maintain the relationship between the mass/proportion of the building and open space within the context of the streetscape for new construction, additions and landscape.

8.1.5 New construction and additions should be sited in locations that will not require the removal of mature plantings, if possible.

8.1.6 New walkways shall not exceed a width of four (4) feet and shall not be built past public sidewalks where they exist. No hardened structures are allowed within the public right of way. (BOA ROW policy/direction/ordinance update to be included here)

8.1.7 Contemporary edging or border materials, such as exposed landscape timbers, railroad ties, pre-cast concrete, plastic, or other substitute material borders are not appropriate in areas

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seen from the public view.

8.1.8 Historic sidewalks and other paving materials should be preserved and maintained. New sidewalks shall be compatible in material, detailing, color and finish to existing historic sidewalks.

8.1.9 Utility wires, including power, telephone and cable should be placed underground whenever substantial utility construction takes place. Above ground utility boxes, fixtures, and equipment should be in inconspicuous locations and should be screened from view.

8.1.10 New tool sheds, swimming pools and other modern yard features should be located in areas screened from public view.

8.1.11 Use a combination of fences and plantings to screen parking lots. To provide adequate visibility for drivers entering and leaving, screening should not exceed height of four (4) feet at the street/sidewalk edge. (SEE OFF STREET PARKING GUIDELINES for more details)

Fences and Walls Standards

8.2.1 Retain and preserve historic fence and wall material wherever possible. If replacement is necessary, use new material that matches the historic material in composition, size, shape, color, pattern and texture.

8.2.2 Design new fences that are compatible with the associated building, site and streetscape in height, proportion, scale, color, texture, material and design. Substitute fence materials are not allowed along front or visible side property lines in the historic district. Fence types such as wire, hurricane, chain-link, vinyl, corrugated metal, stockade, and wooden post and rail are not allowed in public view.

8.2.3 Fences shall not exceed a height of four (4) feet in front yards and other areas of primary visual concern. Fences at rear yards and other areas not readily seen from the public view may be up to eight (8) feet high. The transition between low front fences and higher rear fences should be made as far to the rear of the enclosed structure or yard as possible, and no more than half the depth of the yard forward of the principal structure. Avoid attaching a portion of the fence to a building because of possible termite damage.

8.2.4 Historic retaining walls should be preserved. New low walls are appropriate only where a sharp change in grade exists and shall not exceed a height of two (2) feet. Such walls should be constructed of brick or concrete block covered with a true sand-finish stucco.

8.2.5 The use of false historical details or other non-original architectural embellishments on existing fences is not appropriate.

8.2.6 Use a combination of fences and plantings to screen parking lots. To provide adequate visibility for drivers entering and leaving, the fence should not exceed a height of four (4) feet at the street/sidewalk edge. (SEE OFF-STREET PARKING GUIDELINES for more

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details)

8.2.7 Contemporary or utilitarian fence materials are not appropriate for fences in the public view. Inappropriate materials include: plastic, vinyl, chain link, wire, and all other modern materials. The use of modern fencing is permitted for rear yards only, in areas not seen from the public view, using vinyl-coated chain link (dark green or black), standard chain link or heavy wire ("hog wire"). Use plantings such as ivy, climbing roses, jasmines, or other vines to hide wire fences.

Outside Utilities Standards

8.3.1 Locate utilities, vents and meter boxes and other utility connections in side or rear yards and screen from public view with plantings, fencing, or other means.

8.3.2 Locate roof ventilators, antennas, solar panels, and satellite dishes in areas not visible from public view. Satellite dishes exceeding 24" in diameter shall not be installed in the historic district.

8.3.3 Paint meter boxes, vents, and other utility fixtures visible from the street in colors that will allow them to blend in with the historic/existing building.

8.3.4 Avoid placing window air-conditioning units on the front façade of the building.

8.3.5 When installing utility fixtures—such as streetlights, signal boxes, or utility poles—in the public right-of-way, take into account the impact of the fixtures on the character of the streetscape and the historic district as a whole. Utility fixtures will be evaluated in terms of location, design, color, scale, and compatibility with surrounding streetscape features, and the overall visual impact on the district.

8.3.6 Install utilities underground whenever possible.

8.3.7 Avoid radically pruning street trees located under utility wires. Such pruning practices permanently damage the form and long-term health of the tree. Refer to LANDSCAPING guidelines for proper tree planting practices.

Exterior Lighting Standards

8.4.1 Unless original fixtures already exist, choose fixtures that are simple and unobtrusive and complement the building or site.

8.4.2 Choose lighting sources that generate a soft white light instead of a more intensive yellow or orange light. Metal halide bulbs will achieve the desired effect instead of sodium vapor or fluorescent light sources.

8.4.3 Avoid placing fixtures in areas that will obscure or damage character-defining architectural elements or site features.

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8.4.4 Use ground-mounted spots or ornamental light fixtures to illuminate signs instead of internal lighting. Screen spots and accent lighting from view.

8.4.5 All lighting should be directed toward the property for which it was intended and should not spill over onto adjacent properties.

Off-street Parking Standards

8.5.1 Locate new parking lots and driveways in the historic district as unobtrusively as possible. Parking lots consisting of large expanses of concrete or asphalt with little planting or other screening are not appropriate.

8.5.2 Proposals for new parking lots or off-street parking areas should be accompanied by scaled site plans, including all proposed landscape and ground cover changes and information on proposed lighting types, placement, and intensity.

8.5.3 Site new parking areas in interior or rear lot locations where possible.

8.5.4 Avoid removing trees and other landscape elements that contribute to the historic character of a site.

8.5.5 Integrate pedestrian scale lighting into parking areas to avoid excessive glare and Illumination to adjoining properties. See EXTERIOR LIGHTING guidelines and the Southport Zoning Ordinance for further details on lighting standards.

8.5.6 Incorporate existing mature trees into new parking areas. Avoid the placement of impervious surface materials such as asphalt and concrete in areas below the canopy crown of the tree. Use turf stone, gravel, marl, or other pervious materials in these areas.

8.5.7 Use paving materials that were traditionally used on surface parking areas and driveways on the surrounding block or street. Gravel, marl, crushed shells, asphalt, and concrete are typical parking lot treatments, while grass, gravel or concrete runners with a grassy median, brick, and marl are typical driveway treatments. Use bricks, stone, or metal to contain loose paving materials. Landscaping timbers, railroad ties, and concrete or plastic edging are not allowed.

Signage Standards

8.6.1 Use traditional materials found in the district, such as wood and metal for new signage. substitute materials that have the appearance of wood are allowed. Plastic signs, flashing signs, or portable mobile signs, except those listed in item 9, are not allowed in the historic district. Interior neon signs larger than 10” by 18” that are located within five (5) feet of a window or glass door on an exterior wall and are so placed as to be seen from the outside are not allowed. INTERNAL GLASS MOUNTED SIGNS ARE NOT SUBJECT TO HPC REVIEW.

8.6.2 Place signs so that they do not visually overwhelm the building or streetscape or damage

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or obscure character defining architectural details. Recognize that maximum signage allowances granted by the Southport Unified Development Ordinance may be inappropriate in the context of the building or site under review.

8.6.3 Signs on commercial buildings are preferred to be located in a signboard frieze located above the display windows. In this location the sign serves as a boundary between the upper and lower façade.

8.6.4 Neon colors or fluorescent colors on signs is not allowed.

8.6.5 Use simple, clear graphics and lettering styles in sign design.

8.6.6 Use of flashing signs (including illumination of vending machines) is prohibited. Use ground-mounted spotlights concealed by landscaping or wall- mounted lights to light signs at night.

8.6.7 Freestanding signs must be low-mounted and must not obscure pedestrian views. No more than one (1) freestanding sign shall be allowed per street frontage. Freestanding pole supports should be simple and unobtrusive in design. Freestanding signs in the CBD may be inappropriate.

8.6.8 Consolidate public signage on uniform poles to reduce visual clutter.

8.6.9 The use of an A-frame sign is allowed in the historic district and must not contribute to visual clutter of the streetscape nor impede the flow of pedestrian traffic. No more than one (1) A-frame sign per business is allowed. The sign~~s~~ must conform to the basic guidelines for signage including color, material, style, graphics and placement. A-frame signs may not exceed eight (8) square feet on either side (which includes legs/stand/bracing) The sign may not exceed four (4) feet in height. Signs of this type must be removed from outside the location at the close of the business day.

Docks, Piers, and Boardwalks Standards

8.7.1 Use a design that is simple, functional, and utilitarian. Avoid lighting fixtures that are too prominent or that are not utilitarian and functional in appearance.

8.7.2 Built in features such as pavilions, gazebos, screened rooms, or other types of roofed structures such as boat sheds are not appropriate.

Archaeology Standards

8.8.1 Retain and preserve archaeological resources that are important to the history of the site or district.

8.8.2 Minimize ground-disturbing activities in the historic district to avoid possible damage or destruction to known or unknown archaeological resources.

8.8.3 Recognize that archaeological resources exist both below ground and below water.

8.8.4 Preserve archaeological resources intact in their original state and location wherever possible.

8.8.5 When disturbance of archaeological resources is unavoidable, use qualified archaeologists to employ contemporary methods of investigation and evaluation.

9) Relocation of Buildings Standards

9.1.1 Choose relocation only as a last resort to demolition. Property owners that want to relocate a contributing building should design the replacement building to reflect the relocated building's height, scale, massing, and location. Applicants will have a heavy burden to demonstrate to the HPC that a replacement building with different height, scale, massing, and location as the previously existing building is congruous with the historic district.

9.1.2 Document the original site thoroughly with drawings and photographs prior to relocation.

9.1.3 Hire reputable movers who have experience with historic properties.

9.1.4 Move the building as a single unit in lieu of partial or complete disassembly, if possible.

9.1.5 Choose a site in the historic district, if possible.

9.1.6 If moved within the historic district position the building on the new site so it relates to adjacent buildings and the overall streetscape. Place the building so that orientation of its principal façade and front and side setbacks are compatible with the surrounding buildings. Refer to NEW CONSTRUCTION GUIDELINES for further information on placement.

9.1.7 Provide a new foundation whose height, design, and facing materials match those of the original, if possible.

9.1.8 Maintain any existing mature trees on the new site, if possible. This will help create an established building site context for the new structure.

10) Demolition of Historic Landmarks and Buildings in the Southport Historic District

10.1.1. Choose demolition only as a last resort. Property owners of contributing buildings should design the replacement building to reflect the demolished building's height, scale, massing, and location. Applicants will have a heavy burden to demonstrate to the HPC that a replacement building with different height, scale, massing as the previously existing building is congruous with the Historic District.

10.1.2. Document the historic resource prior to demolition. Documentation shall take the form of black and white photographs, and color digital photographs of the building, structure, or site's principal elevations, architectural elements (both in exterior and interior), and special features. Measured drawings of the resource may also be required. The HPC shall determine on a case-by-case basis the extent of documentation required and the parties

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responsible for producing such documentation. The documentation shall be submitted to the HPC and become a permanent record of the City of Southport.

10.1.3. Salvage architectural features and building materials for reuse or study. Contact antique dealers and used building supply establishments to arrange for removal. Consider donations of items to interested non-profit organizations or museums or the NC-SHPO.

10.1.4. Minimize ground-disturbing activities during demolition to avoid damage to potential unknown archaeological resources and neighboring historical properties.

10.1.5. Retain mature trees on site, if possible.

10.1.6. Clean the site thoroughly of all building debris and leave the lot in safe/similar condition.

11) Disaster Preparedness and Prevention

11.1.1. Identify, retain, and preserve the historic materials, features, and spaces of the building, site, and setting that are important in defining the historic character of the property and landscape.

11.1.2. Protect and maintain historic materials, features, and spaces—including wood, masonry, metal, paint and color, foundations and walls, roofs, doors and windows, porches and entrances, storefronts, walkways and driveways, fences and walls, lighting and signage, and outbuildings—according to the Standards for Rehabilitation of Individual Landmarks and Buildings in the Southport Historic District.

11.1.3. Repair historic materials and features—including wood, masonry, metal, paint and color, foundations and walls, roofs, doors and windows, porches and entrances, storefronts, walkways and driveways, fences and walls, lighting and signage, and outbuildings according to these standards. It is inappropriate to remove significant materials and features rather than repair them.

11.1.4. If historic materials and features are deteriorated beyond repair, replace in-kind only the damaged portion, matching the original in material, size, shape, design, profile, scale, color, and texture. If the traditional material is located below the Base Flood Elevation (BFE) and is not inherently resilient to flood damage, consider a proven damage-resistant substitute material that matches the original in size, shape, design, profile, scale, color, and texture and meets Standards for Rehabilitation of Individual Landmarks and Buildings in the Southport Historic District.

11.1.5. Utilize existing historic and non-historic building and site features—including window shutters, gutters and downspouts, foundation vents, and site topography—that can minimize and/or mitigate damage from wind and water.

11.1.6. Retain historic materials, features, and spaces when planning and undertaking any temporary or permanent flooding adaptation treatment. Consult a structural engineer, contractor, or architect to ensure that the intervention is appropriately calculated and that

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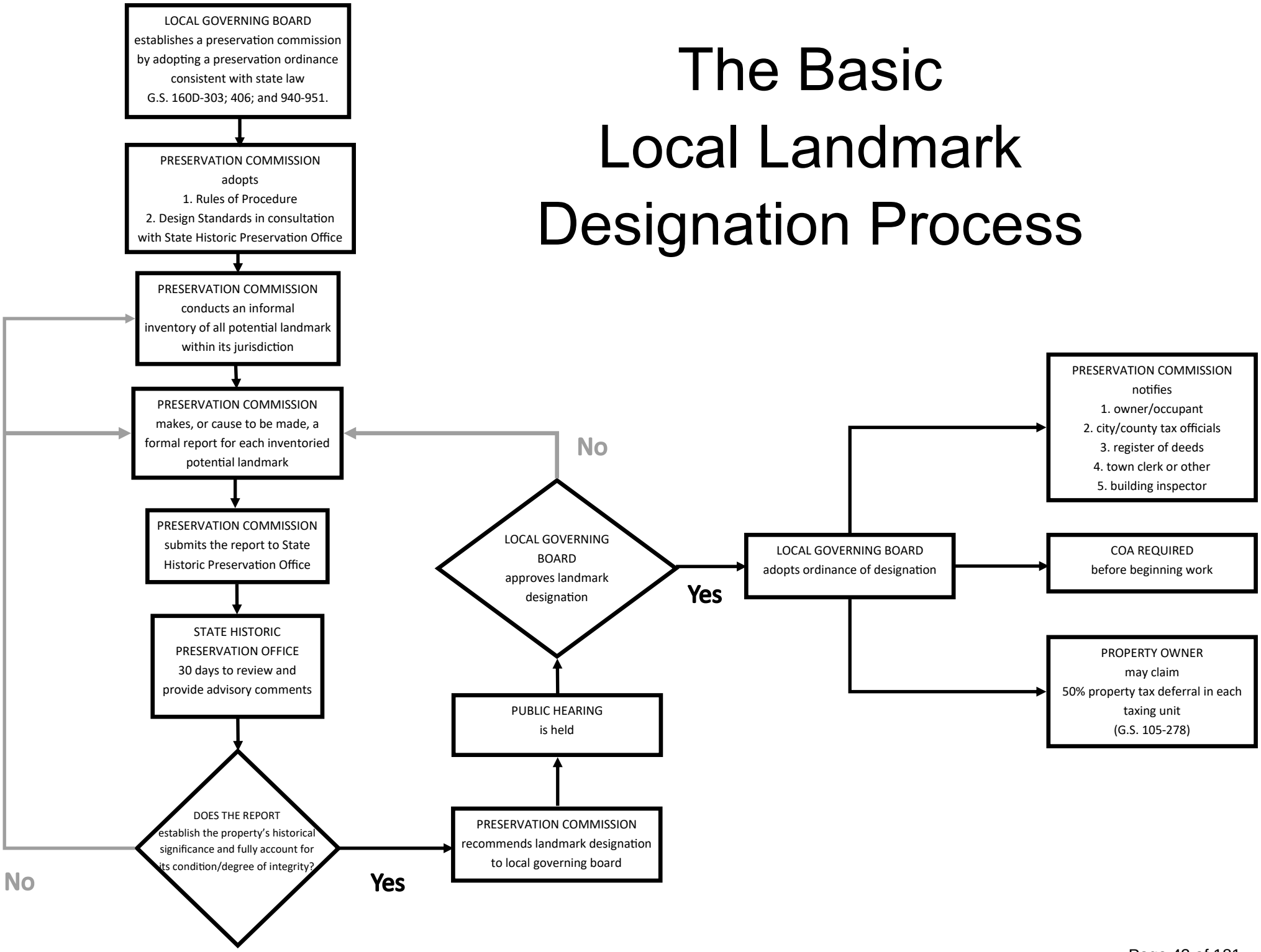
the building or site feature is structurally able to withstand both the intervention and any displaced loads from wind or water.

11.1.7. Install or employ temporary and permanent protective measures in a manner that does not damage or destroy historic materials, details, and other character defining features of the historic building or site.

The Basic Local Landmark Designation Process



MEMORANDUM
To: Chair Sue Hodgin, Members of the Planning Board
From: Maureen Meehan, City Planner
Re: Text Amendment – Section 3.9.B Setback Exceptions and Encroachments
Date: February 15, 2024

A request by Cameron Smith, to amend the Unified Development Ordinance Section 3.9.B. was submitted and presented to the Planning Board at the September 21, 2023, regular meeting.

At your November 16, 2023 meeting, there was a vote to send the Board of Aldermen a recommendation of denial for a Unified Development Ordinance Amendment to Section 3.9.B Setback Exceptions and Encroachments to allow HVAC, generators, and other similar equipment to encroach up to 48" into a required setback. Staff presented another option that you considered which allows a 42" encroachment but not more than 24" from the property line. The Board of Aldermen held a duly advertised public hearing at the regularly scheduled January 11, 2024, meeting and voted to remand the text amendment back to the Planning Board at their February 8, 2024 regular meeting.

Staff will provide an updated presentation for discussion of options prior to a recommendation to the Board of Aldermen.

Attachments
Consistency Statement
Previous Staff Report with Attachments

City of Southport Planning Board
Statement of Plan Consistency and Zoning Recommendation
(As per NC General Statute 160D-604)

When conducting a review of proposed zoning text or map amendments pursuant to this section, the planning board shall advise and comment on whether the proposed action is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

AMENDMENT: **ZTA-23-03**

STATEMENT OF CONSISTENCY AND RECOMMENDATION:

The City of Southport Planning Board hereby recommends adoption of the proposed Zoning Text Amendment to the Board of Aldermen and finds that it is consistent with the City's 2015 CAMA Core Land Use Plan originally adopted Nov. 13, 2014 and subsequently amended by the Southport Board of Aldermen. More specifically, the proposed amendment is consistent with **Policy 2.4:** Southport will permit residential development to occur in response to market needs provided the following criteria are met: 1) Due respect is offered to all aspects of the environment. and 2) Concurrent planning for improvements to community facilities, infrastructure, and services provided.

The statement and motion was seconded and passed _____.

_____ _____

Tanya Shannon, Deputy City Clerk Sue Hodgin, Chairman

City of Southport Planning Board
Statement of Plan Consistency and Zoning Recommendation
(As per NC General Statute 160D-604)

When conducting a review of proposed zoning text or map amendments pursuant to this section, the planning board shall advise and comment on whether the proposed action is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

AMENDMENT: **ZTA-23-03**

STATEMENT OF CONSISTENCY AND RECOMMENDATION:

The City of Southport Planning Board hereby recommends DENIAL of the proposed Zoning Text Amendment to the Board of Aldermen and finds that it is inconsistent with the City's 2014 CAMA Core Land Use Plan originally adopted Nov. 13, 2014 and subsequently amended by the Southport Board of Aldermen. Specifically, the proposed zoning text amendment is inconsistent with the CAMA Land Use Plan considerations for zoning petitions, "The regulations shall be made in accordance with the Southport Land Use Plan and designed to lessen congestion in streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; tor provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements". Further, the request is not in the public interest since there are reasonable alternatives to locate HVAC units, generators, pool equipment and other similar items.

The statement and motion was seconded and passed _____.

_____ _____

Tanya Shannon, Deputy City Clerk Sue Hodgin, Chairman

MEMORANDUM
To: Chair Sue Hodgin, Members of the Planning Board
From: Maureen Meehan, City Planner
Re: Text Amendment – Section 3.9.B Setback Exceptions and Encroachments
Date: November 16, 2023

A request to amend the Unified Development Ordinance Section 3.9.B. was submitted and presented to the Planning Board at the September 21, 2023, regular meeting. Please be advised, per Section 2.10.B.3, the Planning Board shall provide an advisory recommendation on any properly filed petition within 90 days after the introduction of such petition at a regularly scheduled meeting and shall transmit its recommendation and report, including the reasons for its determinations, to the Board of Aldermen.

Background and Context
Applicant Cameron Smith requested that Staff bring a text amendment to the Planning Board to increase the encroachment allowed for specific mechanical equipment, including heating and air conditioning units, generators, pool equipment, and similar items, from 30 to 48 inches.

After discussion at the September 21, 2023, and October 19, 2023 meetings, Staff was asked to bring two options in addition to the original proposal to the November meeting. Further, site plans depicting the different scenarios were requested to be included. Below, you will find the existing text in the UDO, the original language as proposed by the applicant, and the two (2) options you requested in October. Site plans for each scenario are attached to this memo.

Existing Text Section 3.9.B
5. Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units, and similar items may project into a required setback of not more than 30 inches.

Applicant Proposed Text Amendment to Section 3.9.B
5. Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units, and similar items may project into a required setback of not more than 30 inches. <u>Heating and air conditioning units, generators, pool equipment, and similar items may project not exceeding 48 inches into a required setback.</u>

Text with 42" Encroachment Option
5. Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units, and similar items may project into a required setback of not more than 30 inches. <u>Heating and air conditioning units, generators, pool equipment, and similar items may project 42 inches into a required setback but not closer than 24 inches from the lot line.</u>

Text with 36" from Property Line Option

5. Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units, and similar items may project into a required setback not more than 30 inches <u>and not closer than 36" from the property line</u>.

Staff Recommendation

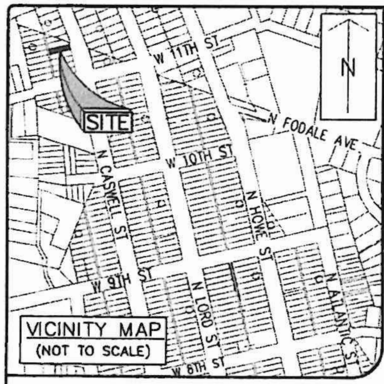
Staff find that the proposed language options appear consistent with the 2014 CAMA Land Use Plan and the Unified Development Order and respectfully request that a recommendation for approval of one of the options listed above and a statement of consistency be sent to the Board of Aldermen.

Attachments

Site Plan for Text Amendment Scenarios
Consistency Statement
Previous Staff Report with Attachments

Attachment A

These site plans show both the existing 30” encroachment and the proposed 48” encroachment. There are examples for a 4’ setback, 2 - 6’ setbacks, an 8’ setback, and a 10’ setback.



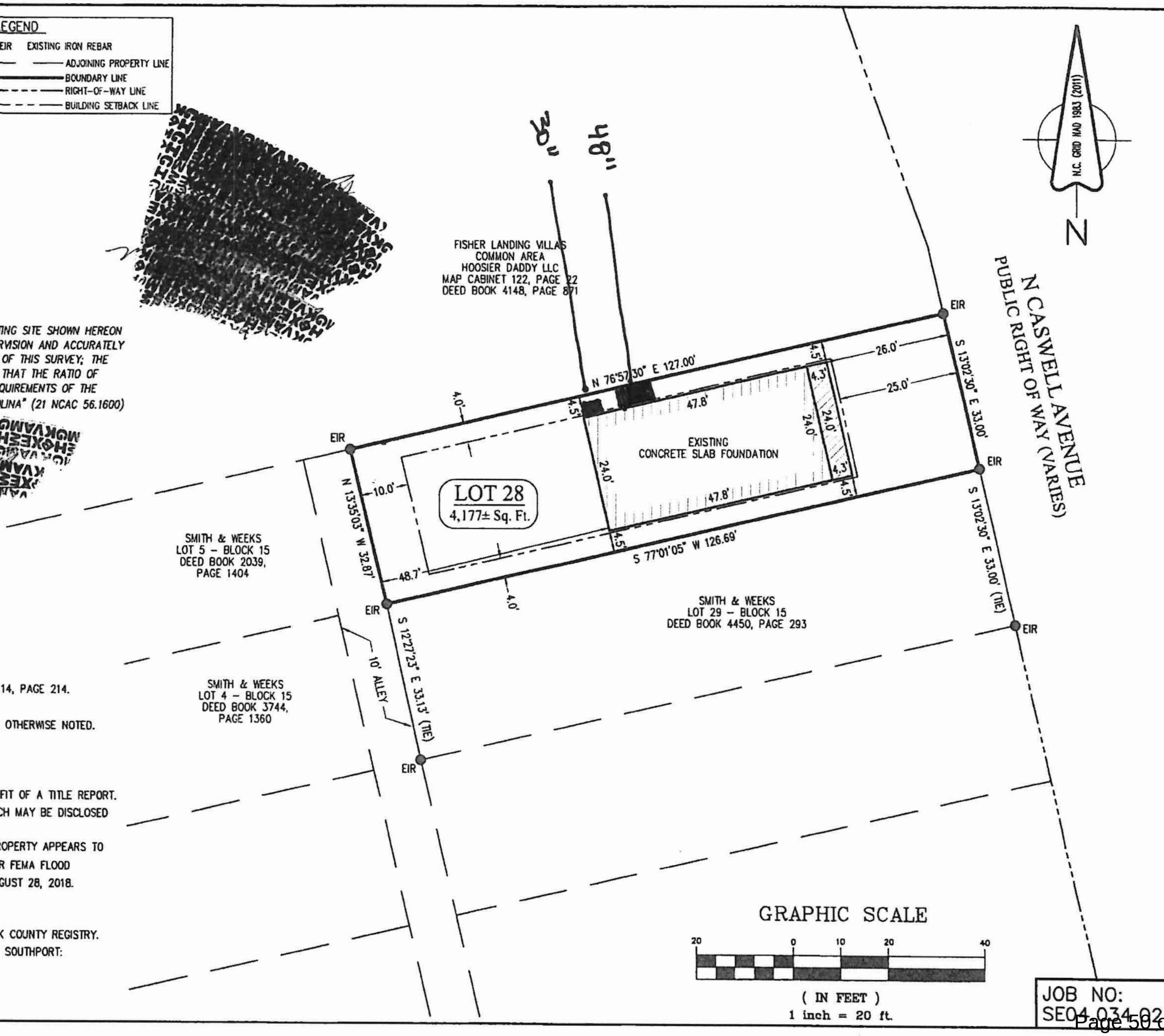
LEGEND

● EIR	EXISTING IRON REBAR
	ADJOINING PROPERTY LINE
	BOUNDARY LINE
	RIGHT-OF-WAY LINE
	BUILDING SETBACK LINE

FOUNDATION CERTIFICATION

I HEREBY CERTIFY THAT THE FOUNDATION SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; THE PROPERTY IS AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT THE RATIO OF PRECISION IS 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" (21 NCAC 56.1600)

[redacted]



GENERAL NOTES

1. THIS IS A FOUNDATION SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
4. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
6. AREA BY COORDINATE GEOMETRY.
7. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
8. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
9. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY APPEARS TO BE LOCATED IN FLOOD ZONE "X" (MINIMAL FLOOD RISK); PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
10. COUNTY PARCEL ID: 221MA044.
11. TOTAL SITE AREA: 0.14± ACRES
12. MAP AND DEED REFERENCES SHOWN ARE PER THE BRUNSWICK COUNTY REGISTRY.
13. SETBACKS SHOWN ARE AS FOLLOWS PER CLIENT PER CITY OF SOUTHPORT: FRONT: 25' SIDE: 4' REAR: 10'
14. SITE ADDRESS: 1163 N. CASWELL AVE. SOUTHPORT, NC 28461.

JOB NO: SE04.034.02

SHEET NO 1/1

DESIGNER	SCALE:
N/A	1" = 20'
DRAWN BY	DATE:
MPB	09.14.2022
CHECKED BY:	JOB NO:
SEPI	SE04.034.02

NO.	REVISION	DATE	BY

PREPARED FOR:
ROLINA HOMES
501 BRANSON CT. #400
MT. PLEASANT, SC 29461
PHONE: (804) 516-6290

FOUNDATION SURVEY

SMITH & WEEKS
LOT 28 - BLOCK 15
CITY OF SOUTHPORT, SMITHVILLE TOWNSHIP, BRUNSWICK COUNTY, NORTH CAROLINA

SEPI ENGINEERING & CONSTRUCTION, INC.

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, [illegible] SUPERVISION FROM AN ACTUAL [illegible] DESCRIPTION AS SHOWN ON THIS [illegible] CALCULATED BY COMPUTER [illegible] SURVEYED [illegible]

© 2023 [illegible] ASSOCIATES, PA

NOTES:

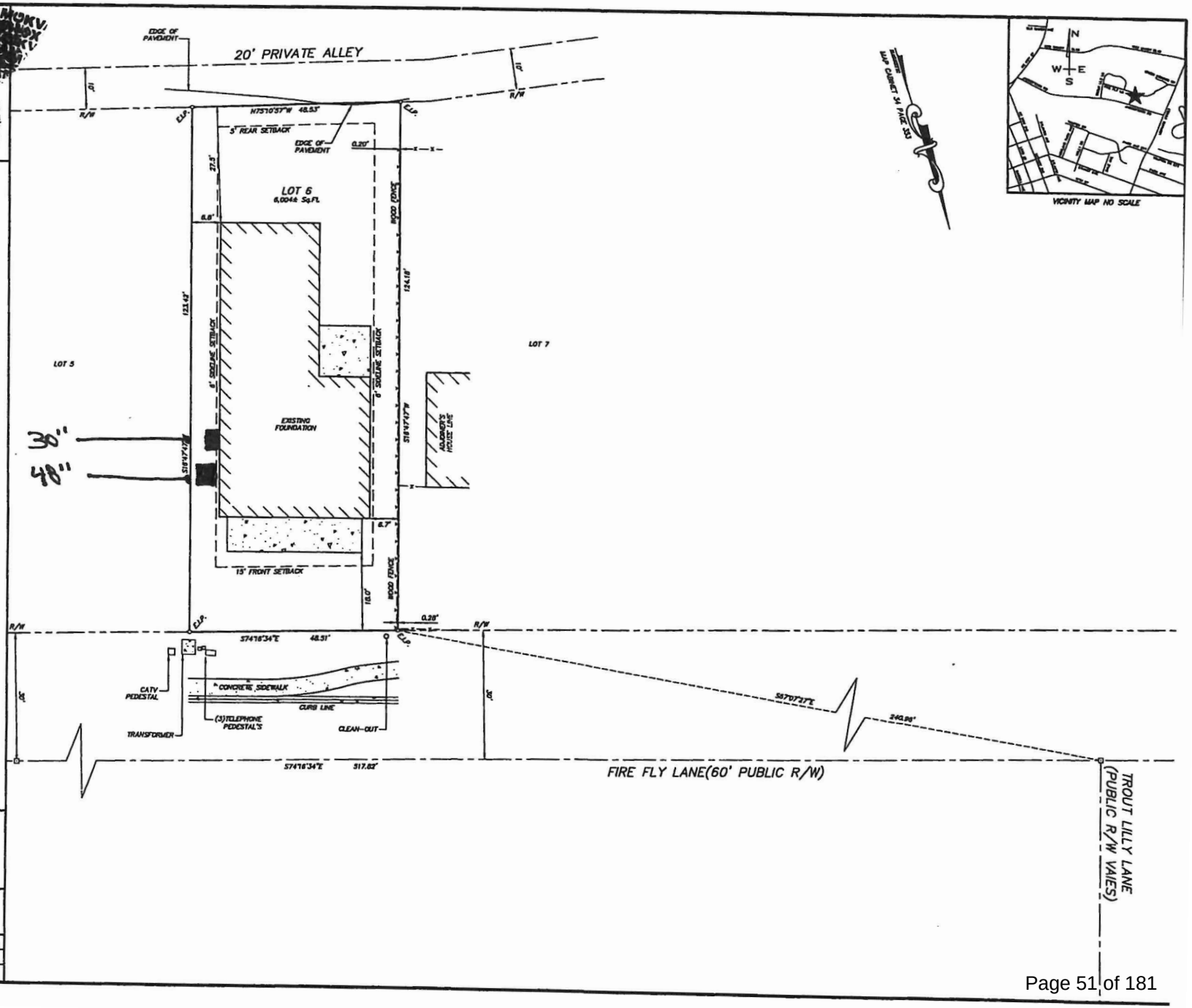
1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS OF FLOOD HAZARD) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2087, FLOOD INSURANCE RATE MAP NO. 3720208700 K WITH A MAP REVISED DATE OF 06/06/06 FOR COMMUNITY NO. 370028, IN CITY OF SOUTHPORT OF BRUNSWICK COUNTY, STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) PROPERTY ADDRESS: 311 FIRE FLY LANE
6.) PARCEL ID: 222P0004
7.) AREA CALCULATED BY COORDINATE METHOD.

SURVEY REFERENCE
BOOK 3780 PAGE 889
MAP BOOK 34 PAGE 353

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
±	APPROXIMATE
R/W	RIGHT-OF-WAY

SETBACKS: SEE MAP CABINET 34 PAGE 353
FRONT = 15'
SIDELINE = 6'
REAR = 5'



GRAPHIC SCALE: 1"=10'
10 0 10 20 30

FOUNDATION SURVEY FOR:

DEAN EDWARD WARNECKE and RACHELLE LYN WARNECKE
LOT 6
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

Buyer: Dean Edward Warnecke and Rachelle Lyn Warnecke
118 W 14th Street Unit A, Southport, NC. 28461
Cell: 614-214-7383
Email: deanwarnecke@yahoo.com
Email: rachellewarnecke@yahoo.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PH.: (910)815-0850
Firm License No.: C-0815
email: mua-office@mua-pa.com

SURVEYED: S.G.	APPROVED: M.N.U.
DRAWN BY: W.G.	DATE: MAY 2023
CHECKED BY: M.N.U.	SCALE: 1" = 10'

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PL[illegible] SUPERVISION FROM AN ACTUAL SURVEY MAD[illegible] DESCRIPTION AS SHOWN ON THE FACE O[illegible] CALCULATED BY COMPUTER IS 1/10,00[illegible] SURVEYED ARE SHOWN BY BROKEN LINES [illegible] REFERENCED THAT THIS PLAT WAS PREPAR[illegible] STANDARDS OF PRACTICE FOR LAND SURVE[illegible] MY ORIGINAL SIGNATURE, LICENSE NUMBER [illegible]

[illegible] UNDERWOOD AND ASSOCIATES, PA

NOTES:

1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2022, FLOOD INSURANCE RATE MAP NO. 3720209700 K, WITH A MAP REVISED DATE OF 08/28/18, FOR COMMUNITY NO. 370028, IN CITY OF SOUTHPORT, OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.

2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.

3.) ALL DISTANCES ARE GROUND HORIZONTAL.

4.) NO N.C.G.S. FOUND WITHIN 2000'.

5.) PROPERTY ADDRESS: 415 FIRE FLY LANE

6.) PARCEL ID: 222PC019

SURVEY REFERENCE
BOOK 4748 PAGE 632
MAP BOOK 34 PAGE 353

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
x 18.54	EXISTING GRADE ELEVATION
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	CENTER LINE
⅊	PROPERTY LINE

SETBACKS: SEE MAP CABINET 34 PAGE 353
FRONT = 15'
SIDELINE = 8'
REAR = 5'

GRAPHIC SCALE: 1"=10'
10 0 10 20 30

REVISION	DATE

FOUNDATION SURVEY FOR:

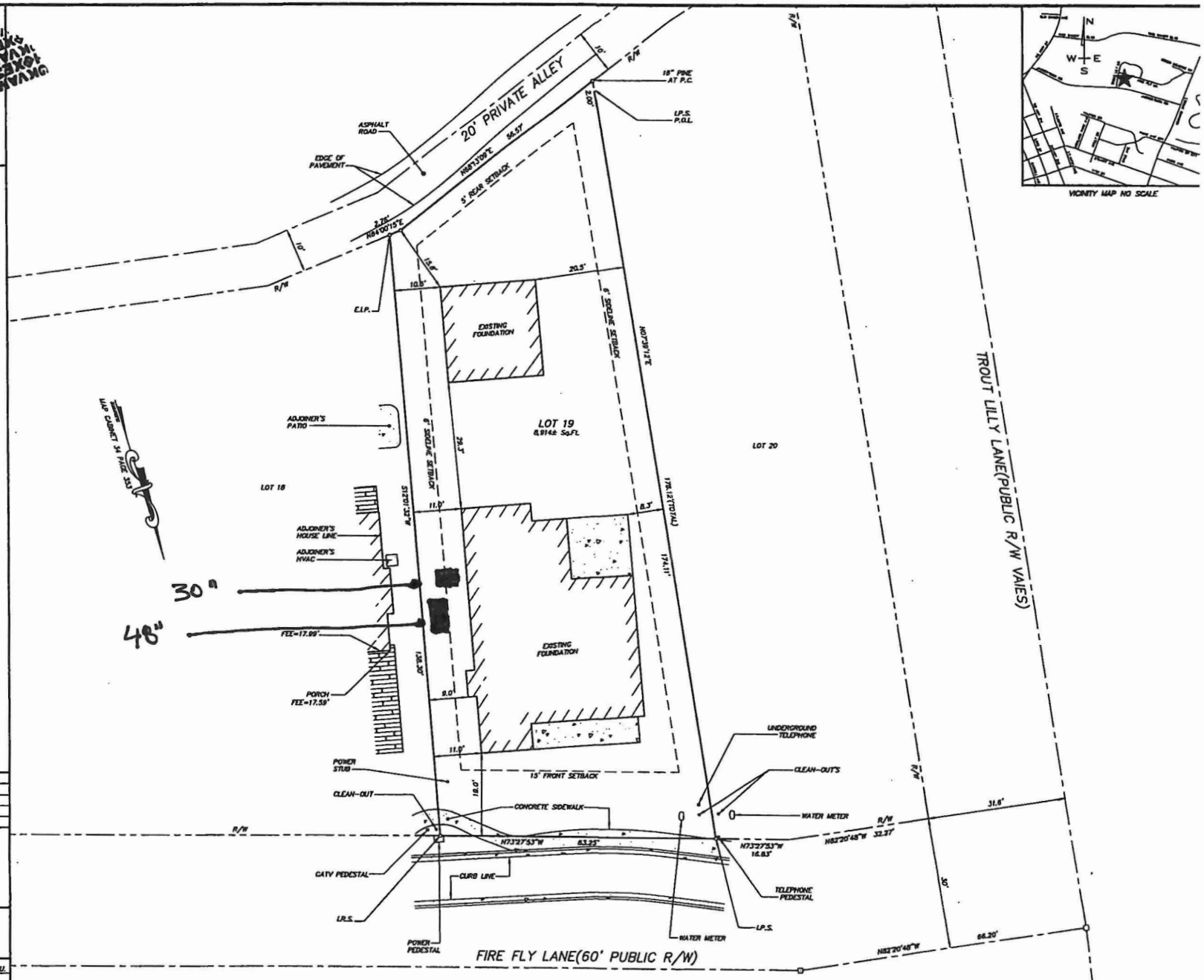
LINDSAY P. McGILL
LOT 19
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

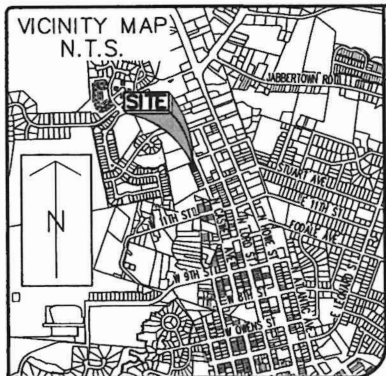
SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

c/o: Cameron Smith
C.L. Smith Construction, Inc.
3391 Southport Supply Road, Bolivia, NC 28422
Cell: 910-443-5080
Office: 910-253-0066
email: clsmithgc@aol.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0550
FAX: 910-815-0353
FIRM LICENSE NO.: C-0815

SURVEYED: M.R.	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: OCT. 2022
CHECKED BY: M.N.U.	SCALE: 1" = 10'



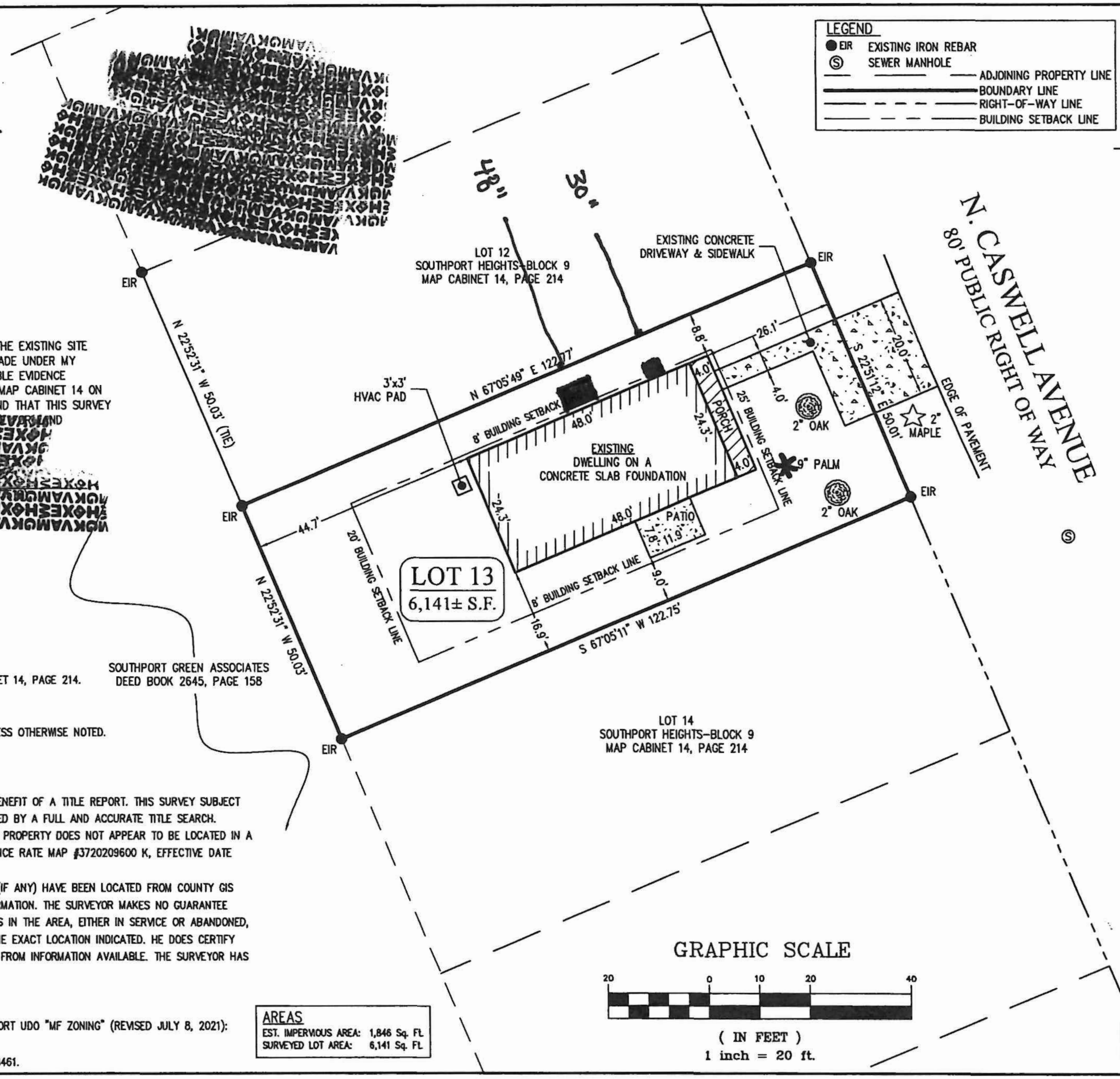


[redacted]

CERTIFICATE OF ACCURACY & MAPPING

I HEREBY CERTIFY THAT THE FINAL AS-BUILT SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT [redacted] 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUI[redacted]ND SURVEYING IN NOR[redacted]

MILES [redacted]
THIS 16th DAY OF [redacted]



LEGEND

- ● EIR — EXISTING IRON REBAR
- Ⓢ — SEWER MANHOLE
- ADJOINING PROPERTY LINE
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- BUILDING SETBACK LINE

GENERAL NOTES

1. THIS IS A FINAL AS-BUILT SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. ELEVATIONS ARE REFERENCED TO NAVD 88.
4. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
6. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
7. AREA BY COORDINATE GEOMETRY.
8. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
9. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
10. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
11. UTILITY STATEMENT; THE UNDERGROUND UTILITIES SHOWN (IF ANY) HAVE BEEN LOCATED FROM COUNTY GIS INFORMATION, EXISTING DRAWINGS & FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
12. COUNTY PARCEL ID: 221MA043.
13. TOTAL SITE AREA: 0.14± ACRES
14. SETBACKS SHOWN ARE AS FOLLOWS PER CITY OF SOUTHPORT UDO "MF ZONING" (REVISED JULY 8, 2021):
    FRONT: 25' SIDE: 8' REAR: 20'
15. SITE ADDRESS: 1167 N. CASWELL AVE. SOUTHPORT, NC 28461.

AREAS

EST. IMPERVIOUS AREA:	1,846 Sq. Ft.
SURVEYED LOT AREA:	6,141 Sq. Ft.

JOB NO:
P303229058

SHEET NO.	1/1
DESIGNER: N/A	SCALE: 1" = 20'
DRAWN BY: MPB	DATE: 5.12.2023
CHECKED BY: SEPI	JOB NO. P303229058

NO.	REVISION	DATE	BY

PREPARED FOR:
ROLINA HOMES
501 BRAMSON CT #400
MT. PLEASANT, SC 29464
PH: (843) 300-1764

FINAL AS-BUILT SURVEY

SOUTHPORT HEIGHTS
LOT 113 - BLOCK 9
SMITHVILLE TOWNSHIP CITY OF SOUTHPORT BRUNSWICK COUNTY NORTH CAROLINA

TranSystems
(Formerly SEPI)

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, [illegible] SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (NOT A RECORDED MAP) AND THAT THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS 1:10000 (TEN THOUSAND) AS SHOWN ON THE PLAT OR MAP HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS [illegible] DAY OF [illegible] A.D., 20[illegible]

NORTH CAROLINA PROFESSIONAL LICENSE NUMBER L-2962

SEAL OR STAMP

© 2023 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:

1.) SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) ON PANEL No. 3008 FLOOD INSURANCE RATE MAP NO. 3720360600 K WITH A MAP REVISED DATE OF 02/20/16 FOR COMMUNITY NO. 370026, IN CITY OF SOUTHPORT OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.

2.) ~~SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.~~

3.) ALL DISTANCES ARE GROUND HORIZONTAL.

4.) NO N.C.G.S. FOUND WITHIN 2000'.

5.) OWNERSHIP OF FENCE ALONG ℄ IS UNKNOWN TO SURVEYOR.

6.) PROPERTY ADDRESS: 6157 RIVER SOUND CIRCLE

7.) PARCEL ID: 23000012

8.) AREA CALCULATED BY COORDINATE METHOD.

SURVEY REFERENCE
BOOK 4770 PAGE 1138
MAP BOOK 20 PAGE 165

LEGEND:

E.I.R.	EXISTING IRON REBAR
P.C.	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
P.O.L.	POINT ON LINE
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	PROPERTY LINE

SETBACKS: SEE MAP CABINET 20 PAGE 165

FRONT	20'
SIDE	10'
REAR	25'

GRAPHIC SCALE: 1"=10'

10 0 10 20 30

FOUNDATION SURVEY FOR:

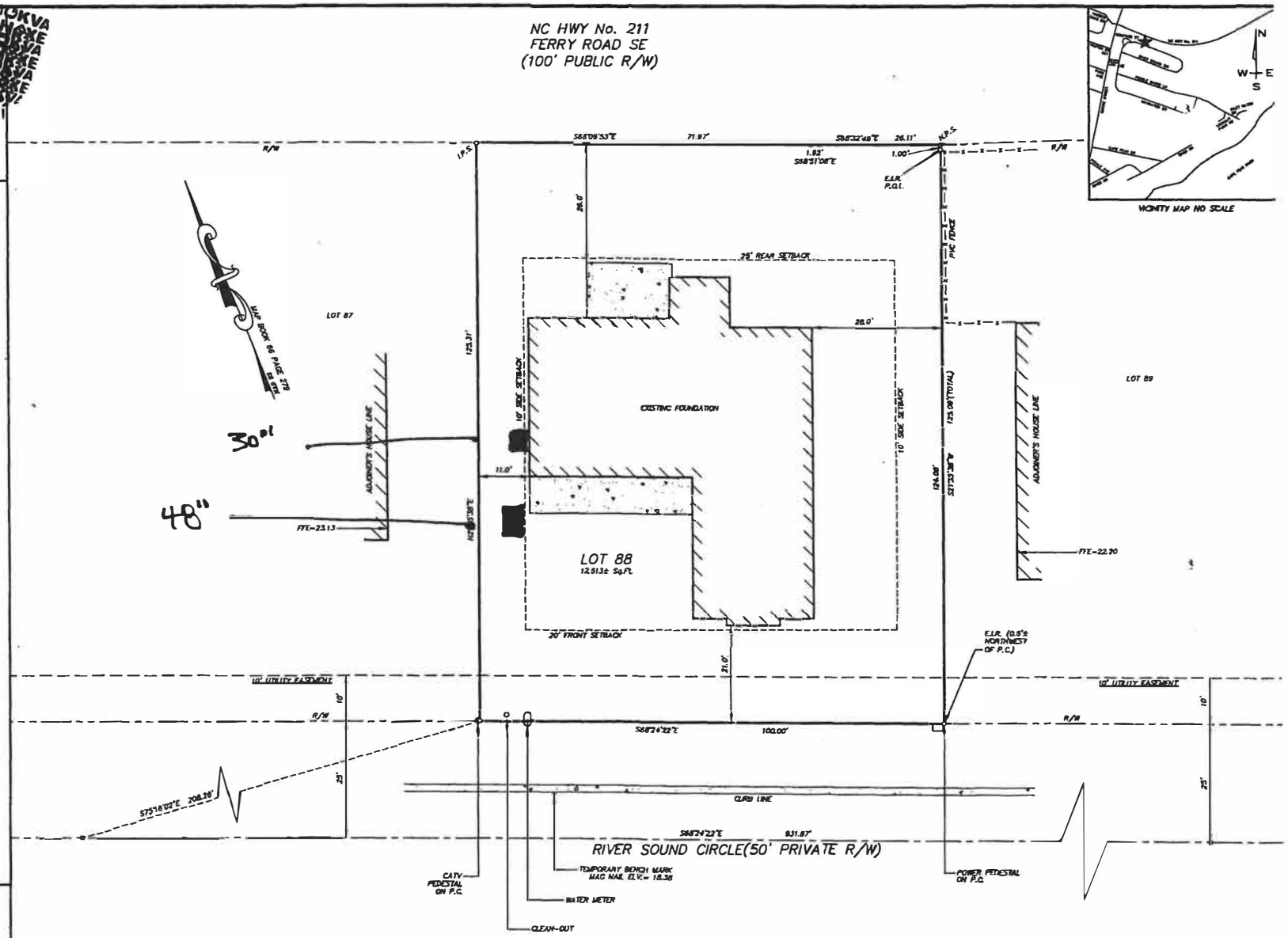
JOHN BLAZEK and wife, KATHLEEN BLAZEK
LOT 88
THE LANDING
PHASE TWO

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

CLIENT: Cameron Smith
C.L. Smith Construction, Inc.
3391 Southport Supply Road, Bolivia, NC 28422
(Cell) 910-443-5080; (Office) 910-253-0088
www.CLSmithConstruction.com
www.SouthportOnlineTimes.com

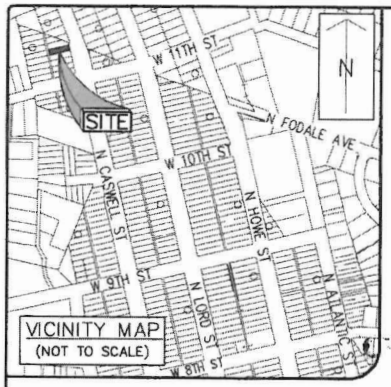
MICHAEL UNDERWOOD AND ASSOCIATES, PA
103 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0830
email: mua-pa@ilm.rr.com
FIRM LICENSE NO.: C-0813

SURVEYED BY: S.G.	APPROVED BY: M.N.U.
DRAWN BY: W.C.	DATE: JUNE 2023
CHECKED BY: M.N.U.	SCALE: 1" = 10'



Attachment B

These site plans depict examples for the proposed text that allows a 42” encroachment but not closer than 24” from the lot line. There are examples for a 4’ setback, 2 - 6’ setbacks, an 8’ setback, and a 10’ setback.



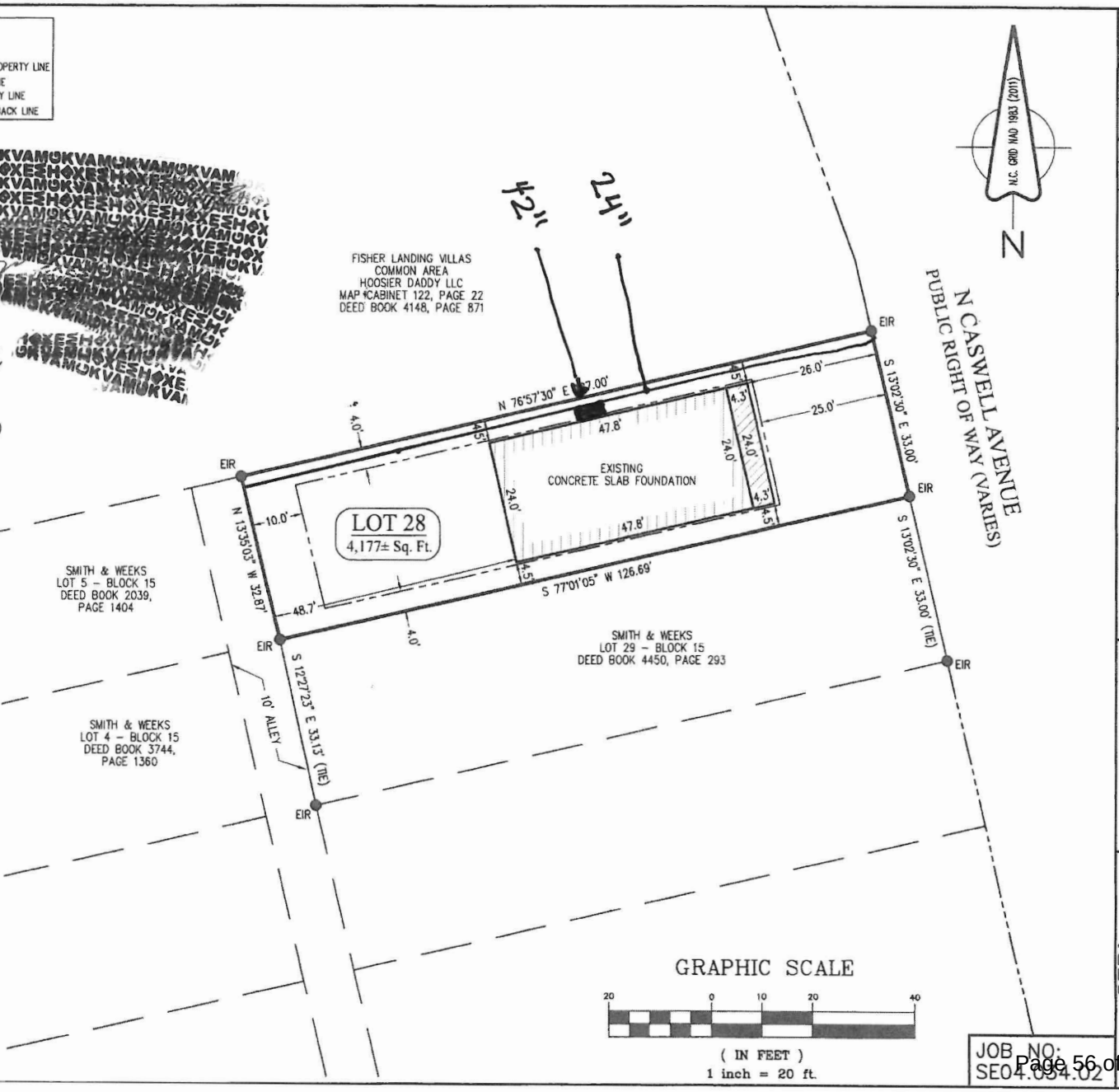
VICINITY MAP
(NOT TO SCALE)

LEGEND

- EIR EXISTING IRON REBAR
- ADJOINING PROPERTY LINE
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- BUILDING SETBACK LINE

FOUNDATION CERTIFICATION

I HEREBY CERTIFY THAT THE FOUNDATION SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; THE PROPERTY IS AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT THE RATIO OF PRECISION IS 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" (21 NCAC 56.1600) THIS 16TH DAY OF SEPTEMBER, 2022.



GENERAL NOTES

1. THIS IS A FOUNDATION SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
4. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
6. AREA BY COORDINATE GEOMETRY.
7. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
8. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
9. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY APPEARS TO BE LOCATED IN FLOOD ZONE "X" (MINIMAL FLOOD RISK); PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
10. COUNTY PARCEL ID: 221MA044.
11. TOTAL SITE AREA: 0.14± ACRES
12. MAP AND DEED REFERENCES SHOWN ARE PER THE BRUNSWICK COUNTY REGISTRY.
13. SETBACKS SHOWN ARE AS FOLLOWS PER CLIENT PER CITY OF SOUTHPORT:
    FRONT: 25' SIDE: 4' REAR: 10'
14. SITE ADDRESS: 1163 N. CASWELL AVE.
    SOUTHPORT, NC 28461.

JOB NO:
SE04.084.02

NO.	REVISION	DATE	BY

DESIGNER: N/A
DRAWN BY: MPB
CHECKED BY: N/A
DATE: 09.14.2022
SCALE: 1" = 20'
FIELD BOOK NO: SF04.034.02
SHEET NO: 1/1

PREPARED FOR:
ROLINA HOMES
501 BRANSON CT. #400
MT. PLEASANT, SC 29461
PHONE: (843) 316-4285

FOUNDATION SURVEY

SMITH & WEEKS
LOT 28 – BLOCK 15
CITY OF SOUTHPORT
BRUNSWICK COUNTY, NORTH CAROLINA

SEPI ENGINEERING & CONSTRUCTION, INC.
CIVIL ENGINEERS • LAND SURVEYORS • ENVIRONMENTAL SCIENTISTS
2900 MEAD DRIVE SUITE 100 WILMINGTON, NORTH CAROLINA • 910 523 5113
WWW.SEPI-ENGINEERING.COM

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, [illegible] SUPERVISION FROM AN ACTUAL [illegible] DESCRIPTION AS SHOWN ON THIS [illegible] CALCULATED BY COMPUTER [illegible] SURVEYED ARE [illegible]

© 2023 MICHAEL UNDERWOOD ASSOCIATES, PA

NOTES:

1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS OF FLOOD HAZARD)" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2087, FLOOD INSURANCE RATE MAP NO. 3720208700 K, WITH A MAP REVISED DATE OF 08/28/08, FOR COMMUNITY NO. 370018, IN CITY OF SOUTHPORT, OF BRUNSWICK COUNTY, STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) PROPERTY ADDRESS: 311 FIRE FLY LANE
6.) PARCEL ID: 222PC006
7.) AREA CALCULATED BY COORDINATE METHOD.

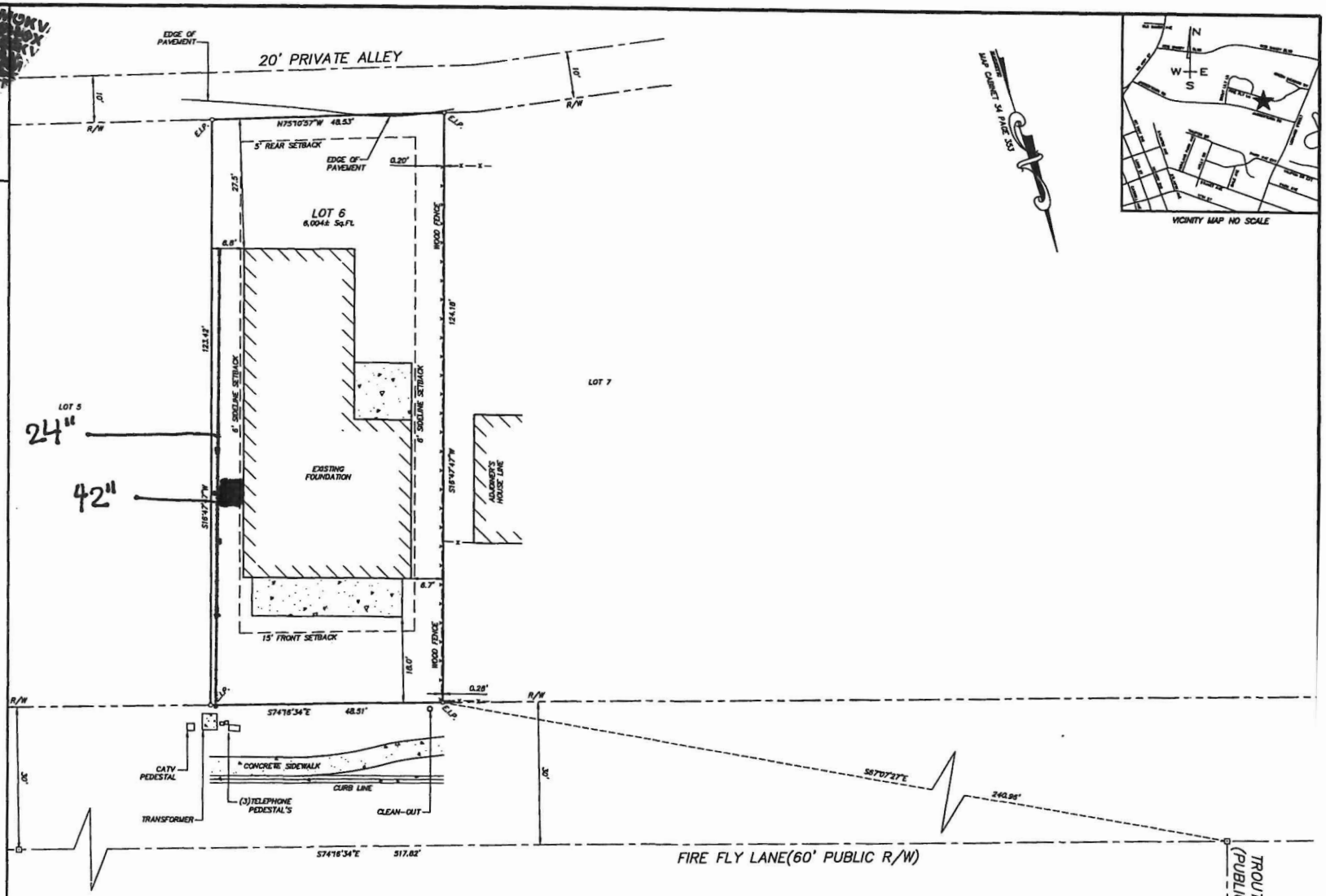
SURVEY REFERENCE
BOOK 3780 PAGE 689
MAP BOOK 34 PAGE 353

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
±	APPROXIMATE
R/W	RIGHT-OF-WAY

SETBACKS: SEE MAP CABINET 34 PAGE 353

FRONT =	15'
SIDELINE =	6'
REAR =	5'



VICINITY MAP NO SCALE

GRAPHIC SCALE: 1"=10'

10 0 10 20 30

FOUNDATION SURVEY FOR:

DEAN EDWARD WARNECKE and RACHELLE LYN WARNECKE
LOT 6
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

Buyer: Dean Edward Warnecke and Rachelle Lyn Warnecke
118 W 14th Street Unit A, Southport, NC 28461
Cell: 614-214-7363
Email: deanwarnecke@ohio.com
Email: rachellewarnecke@gmail.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PH.: (910)815-0550
Firm License No.: C-0815
email: muo-office@muo-aa.com

SURVEYED: S.C.	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: MAY 2023
CHECKED BY: M.N.U.	SCALE: 1" = 10'

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, CERTIFY [illegible] SUPERVISION FROM AN ACTUAL SURVEY [illegible] DESCRIPTION AS SHOWN ON THE FACE OF [illegible] CALCULATED BY COMPUTER IS 1/10,000 + THAT [illegible] SURVEY [illegible] BROKEN LINES PLOTTED FROM [illegible] THAT WAS PREPARED IN ACCORDANCE [illegible] FOR LAND SURVEYING IN NORTH CAROLINA. WITNESS [illegible] AND SEAL THIS 6TH DAY OF [illegible]

[illegible]

© 2022 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:
1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2087, FLOOD INSURANCE RATE MAP NO. 3720209700 K, WITH A MAP REVISED DATE OF 06/28/18, FOR COMMUNITY NO. 370028, IN CITY OF SOUTHPORT, OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) PROPERTY ADDRESS: 415 FIRE FLY LANE
6.) PARCEL ID: 222PC019

SURVEY REFERENCE:
BOOK 4748 PAGE 632
MAP BOOK 34 PAGE 353

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
X 18.54	EXISTING GRADE ELEVATION
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	CENTER LINE
℄	PROPERTY LINE

SETBACKS: SEE MAP CABINET 34 PAGE 353

FRONT =	15'
SIDELINE =	6'
REAR =	5'

GRAPHIC SCALE: 1"=10'
10 0 10 20 30

REVISION	DATE

FOUNDATION SURVEY FOR:

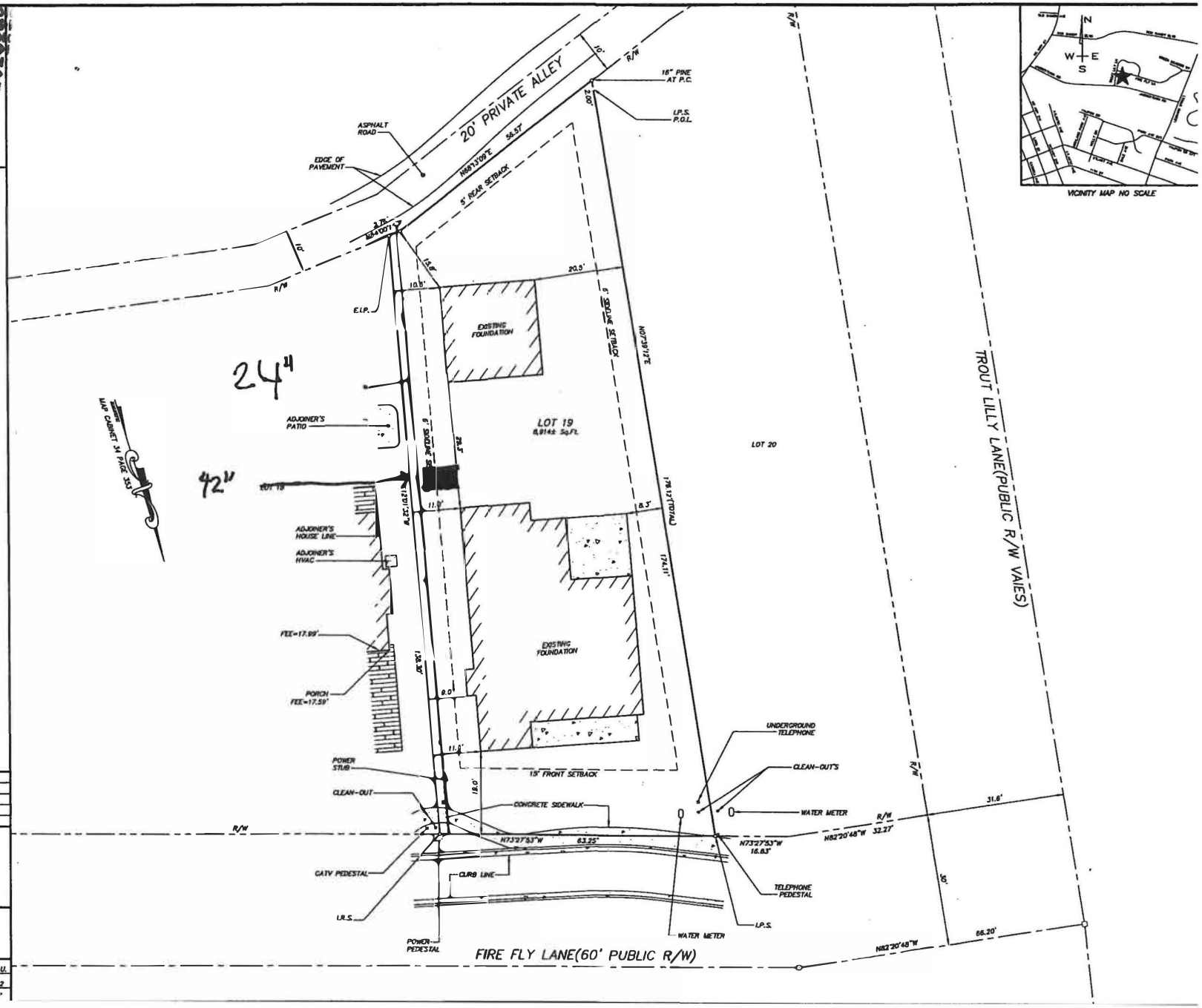
LINDSAY P. McGILL
LOT 19
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

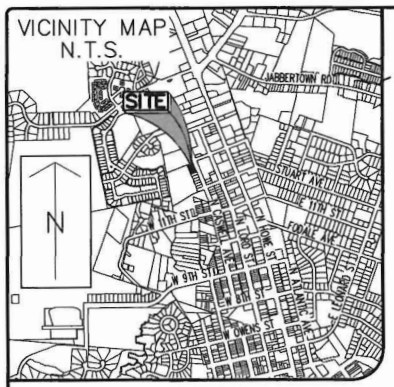
c/o: Cameron Smith
C.L. Smith Construction, Inc.
3391 Southport Supply Road, Bolivia, NC. 28422
Cell: 910-443-5080
Office: 910-253-0066
email: clsmithgc@aol.com

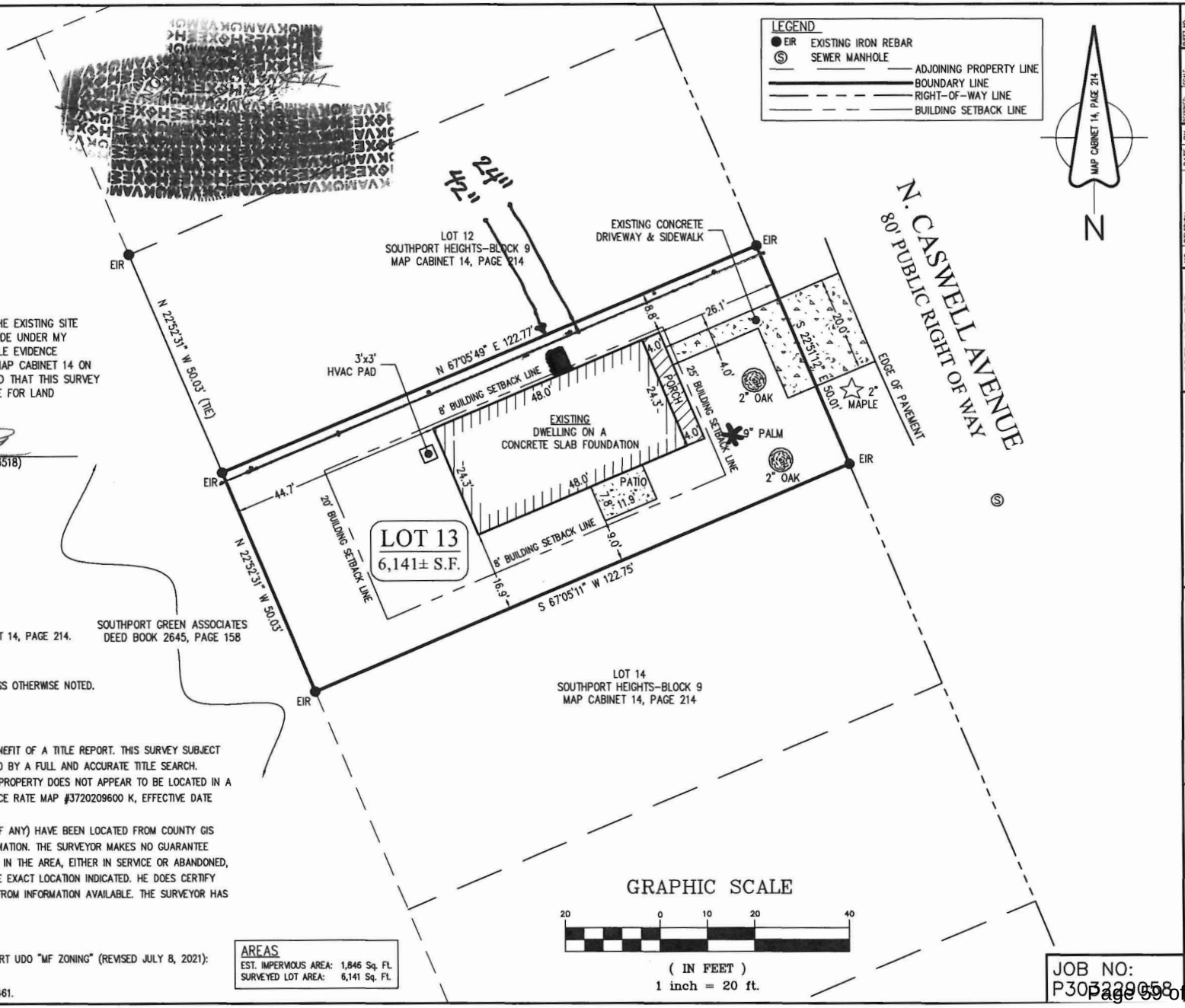
MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0650
FAX: 910-815-0393
FIRM LICENSE NO.: C-0815

SURVEYED: M.R.	APPROVED: M.N.U.
DRAWN BY: W.G.	DATE: OCT. 2022
CHECKED BY: M.N.U.	SCALE: 1" = 10'



VICINITY MAP
N.T.S.





CERTIFICATE OF ACCURACY & MAPPING

I HEREBY CERTIFY THAT THE FINAL AS-BUILT SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT THE RATIO OF PRECISION IS 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" (21 NCAC 56.1600)

MILES O. MCCALL III – PROFESSIONAL LAND SURVEYOR (L-3518)
THIS 16th DAY OF MAY, 2023

GENERAL NOTES

1. THIS IS A FINAL AS-BUILT SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. ELEVATIONS ARE REFERENCED TO NAVD 88.
4. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
6. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
7. AREA BY COORDINATE GEOMETRY.
8. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
9. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
10. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
11. UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN (IF ANY) HAVE BEEN LOCATED FROM COUNTY GIS INFORMATION, EXISTING DRAWINGS & FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
12. COUNTY PARCEL ID: 221MA043.
13. TOTAL SITE AREA: 0.14± ACRES
14. SETBACKS SHOWN ARE AS FOLLOWS PER CITY OF SOUTHPORT UDO "MF ZONING" (REVISED JULY 8, 2021): FRONT: 25' SIDE: 8' REAR: 20'
15. SITE ADDRESS: 1167 N. CASWELL AVE. SOUTHPORT, NC 28461.

AREAS

EST. IMPERVIOUS AREA:	1,846 Sq. Ft.
SURVEYED LOT AREA:	6,141 Sq. Ft.

JOB NO: P30329058

NO.	REVISION	DATE	BY

PREPARED FOR:
ROLINA HOMES
501 BRAMSON CT #400
MT. PLEASANT, SC 28464
PH: (843) 300-1764

FINAL AS-BUILT SURVEY

SOUTHPORT HEIGHTS
LOT 113 – BLOCK 9
SMITHVILLE TOWNSHIP
CITY OF SOUTHPORT BRUNSWICK COUNTY NORTH CAROLINA

TranSystems
(Formerly SEPI)
3020 HALIFAX DRIVE, SUITE 210 WILMINGTON, NORTH CAROLINA 28405 P 910.523.3713
COPYRIGHT © 2023 TRANSYSTEMS CORPORATION

DESIGNER:	
DRAWN BY: MPB	
CHECKED BY:	
REVIEW:	
SCALE: 1" = 20'	
DATE: 5.12.2023	
JOB NO: P30329058	
SHEET NO: 1/1	

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL K. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION AS SHOWN ON THE FACE HEREOF); THAT THE RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1/10,000; THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES; THAT THE SOURCE OF PROPERTY REFERENCED THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS DAY OF JUNE A.D., 2023.

MICHAEL K. UNDERWOOD
PROFESSIONAL LAND SURVEYOR NUMBER L-2982
SEAL OR STAMP

© 2023 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:
1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) ON PANEL No. 3020 FLOOD INSURANCE RATE MAP NO. 3720320015 B, WITH A MAP REVISED DATE OF 09/28/18, FOR COMMUNITY NO. 370328, IN CITY OF SOUTHPORT OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) OWNERSHIP OF FENCE ALONG ℄ IS UNKNOWN TO SURVEYOR.
6.) PROPERTY ADDRESS: 8187 RIVER SOUND CIRCLE
7.) PARCEL ID: 23686012
8.) AREA CALCULATED BY COORDINATE METHOD.

SURVEY REFERENCE:
BOOK 4778 PAGE 1138
MAP BOOK 20 PAGE 185

LEGEND:

E.I.R.	EXISTING IRON REBAR
P.C.	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NAIL POINT SET
P.O.L.	POINT ON LINE
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	PROPERTY LINE

SETBACKS: SEE MAP CABINET 20 PAGE 185

FRONT	20'
SIDE	10'
REAR	25'

GRAPHIC SCALE: 1"=10'

10 0 10 20 30

FOUNDATION SURVEY FOR:

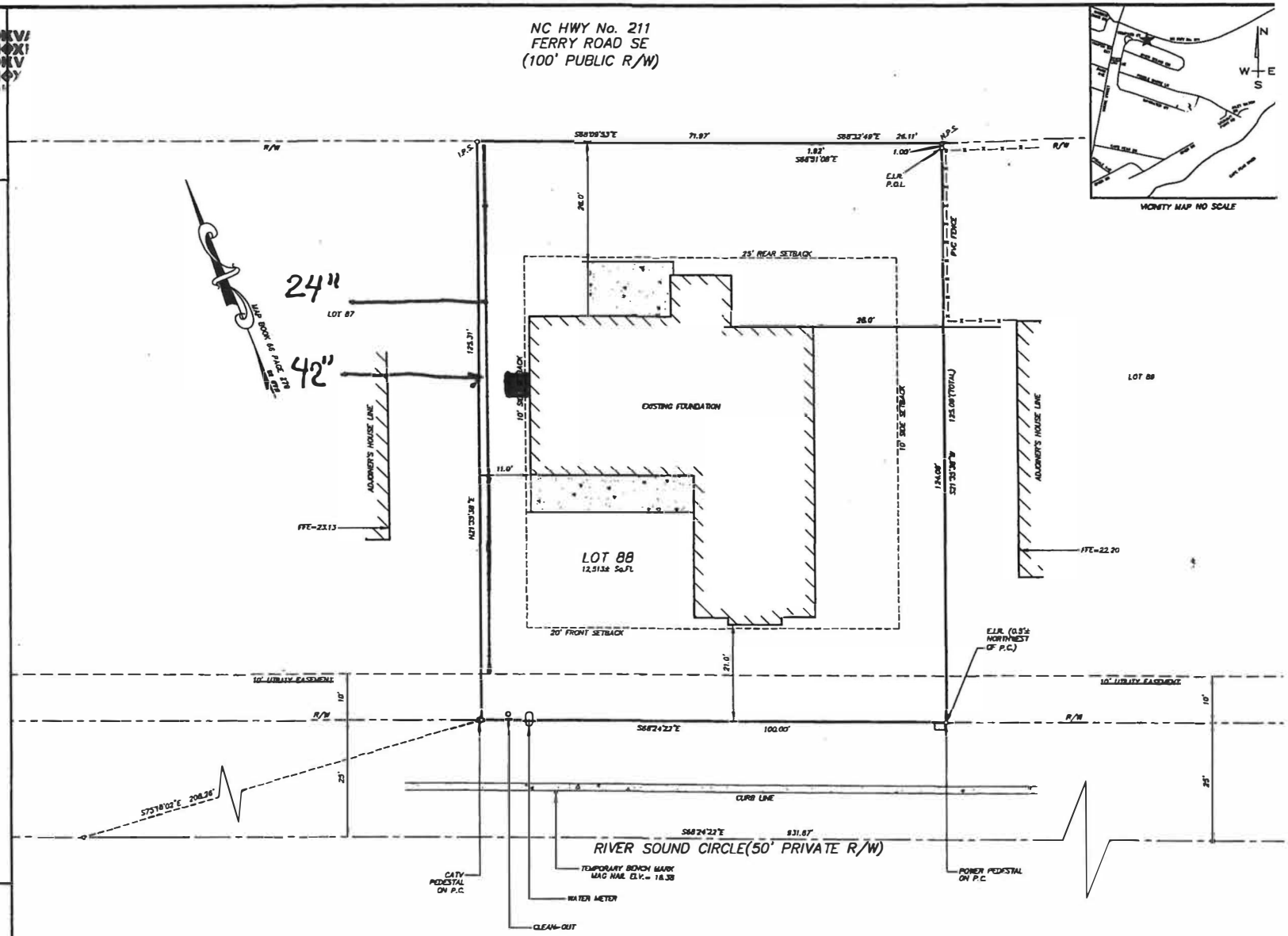
JOHN BLAZEK and wife, KATHLEEN BLAZEK
LOT 88
THE LANDING
PHASE TWO

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

CLIENT: Cameron Smith
C.L. Smith Construction, Inc.
3361 Southport Supply Road, Bolivia, NC 28422
(Cell) 910-443-2082; (Office) 910-253-0068
www.CLSmithConstruction.com
www.SouthportOnlineMap.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0830
FIRM LICENSE NO.: C-0815

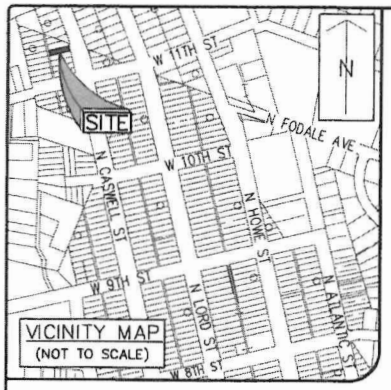
SURVEYED BY: K.G.	APPROVED BY: M.K.U.
DRAWN BY: W.C.	DATE: JUNE 2023
CHECKED BY: M.K.U.	SCALE: 1" = 10'



VICINITY MAP NO SCALE

Attachment C

These site plans depict examples for the proposed text that allows a 30” encroachment but not closer than 36” from the lot line. There are examples for a 4’ setback, 2 - 6’ setbacks, an 8’ setback, and a 10’ setback.



VICINITY MAP
(NOT TO SCALE)

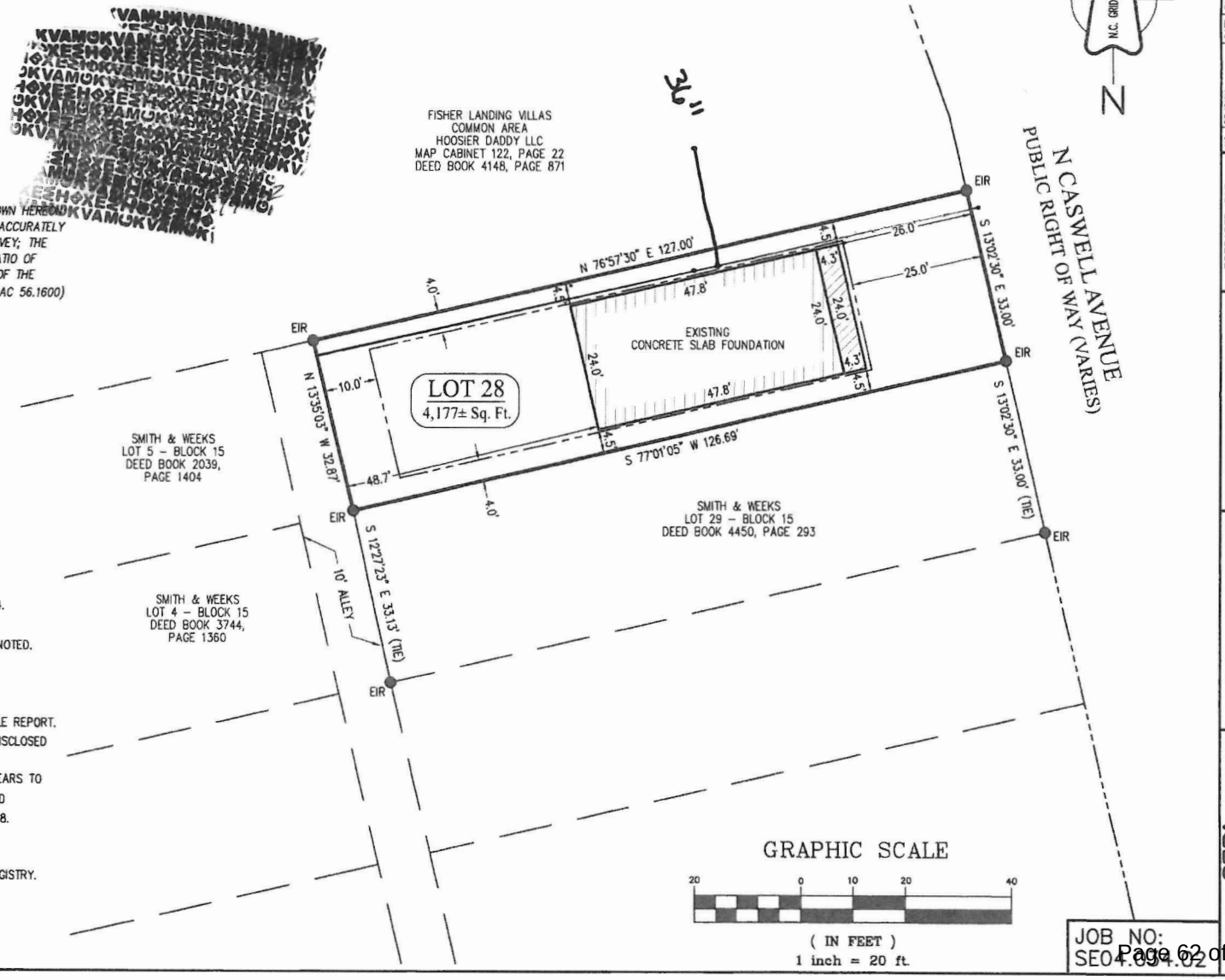
LEGEND

- EIR EXISTING IRON REBAR
- ADJOINING PROPERTY LINE
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- BUILDING SETBACK LINE

FOUNDATION CERTIFICATION

I HEREBY CERTIFY THAT THE FOUNDATION SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; THE PROPERTY IS AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT THE RATIO OF PRECISION IS 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" (21 NCAC 56.1600) THIS 16TH DAY OF SEPTEMBER, 2022.

[illegible] PROFESSIONAL LAND SURVEYOR (L-3518)



GENERAL NOTES

1. THIS IS A FOUNDATION SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
4. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
5. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
6. AREA BY COORDINATE GEOMETRY.
7. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
8. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
9. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY APPEARS TO BE LOCATED IN FLOOD ZONE "X" (MINIMAL FLOOD RISK); PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
10. COUNTY PARCEL ID: 221MA044.
11. TOTAL SITE AREA: 0.14± ACRES
12. MAP AND DEED REFERENCES SHOWN ARE PER THE BRUNSWICK COUNTY REGISTRY.
13. SETBACKS SHOWN ARE AS FOLLOWS PER CLIENT PER CITY OF SOUTHPORT:
    FRONT: 25' SIDE: 4' REAR: 10'
14. SITE ADDRESS: 1163 N. CASWELL AVE.
    SOUTHPORT, NC 28461.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

JOB NO:
SE04.034.02

NO.	REVISION	DATE	BY

DESIGNED: N/A
DRAWN BY: MPB
CHECKED BY: MPB
DATE: 09.14.2022
SCALE: 1" = 20'
JOB NO: SE04.034.02
SHEET NO: 1/1

PREPARED FOR:
ROLINA HOMES
501 BRANSON CT. #400
MT. PLEASANT, SC 29461
PHONE: (843) 316-6250

FOUNDATION SURVEY

SMITH & WEEKS
LOT 28 – BLOCK 15
CITY OF SOUTHPORT
SOUTHPORT TOWNSHIP BRUNSWICK COUNTY NORTH CAROLINA

SEPI ENGINEERING & CONSTRUCTION, INC.
SEPI ENGINEERING & CONSTRUCTION, INC.
NORTH CHARLESTON | WILMINGTON | MOUNT CHARLESTON
CORPORATE OFFICE: 5500 SOUTHCENTER BLVD. SUITE 200 NORTH CHARLESTON, SC 29418 (843) 553-9310
LICENSED IN NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, AND VIRGINIA
SOUTH CAROLINA ENGINEERING & CONSTRUCTION, INC.

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, C[illegible] SUPERVISION FROM AN ACTUA[illegible] DESCRIPTION AS SHOWN ON T[illegible] CALCULATED BY COMPUTER IS [illegible] SURVEYED. ARE S[illegible] WITNESS [illegible] DAY OF MAY [illegible]

MICHAEL N. UNDERWOOD, P.L.S.
LICENSE NUMBER L-2962
SEAL OR STAMP

© 2023 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:

1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X"(OTHER AREAS OF FLOOD HAZARD) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2092 FLOOD INSURANCE RATE MAP NO. 3720208700 K, WITH A MAP REVISED DATE OF 08/28/18, FOR COMMUNITY NO. 370028, IN CITY OF SOUTHPORT OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS STUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) PROPERTY ADDRESS: 311 FIRE FLY LANE
6.) PARCEL ID: 222PC008
7.) AREA CALCULATED BY COORDINATE METHOD.

SURVEY REFERENCE
BOOK 3780 PAGE 889
MAP BOOK 34 PAGE 353

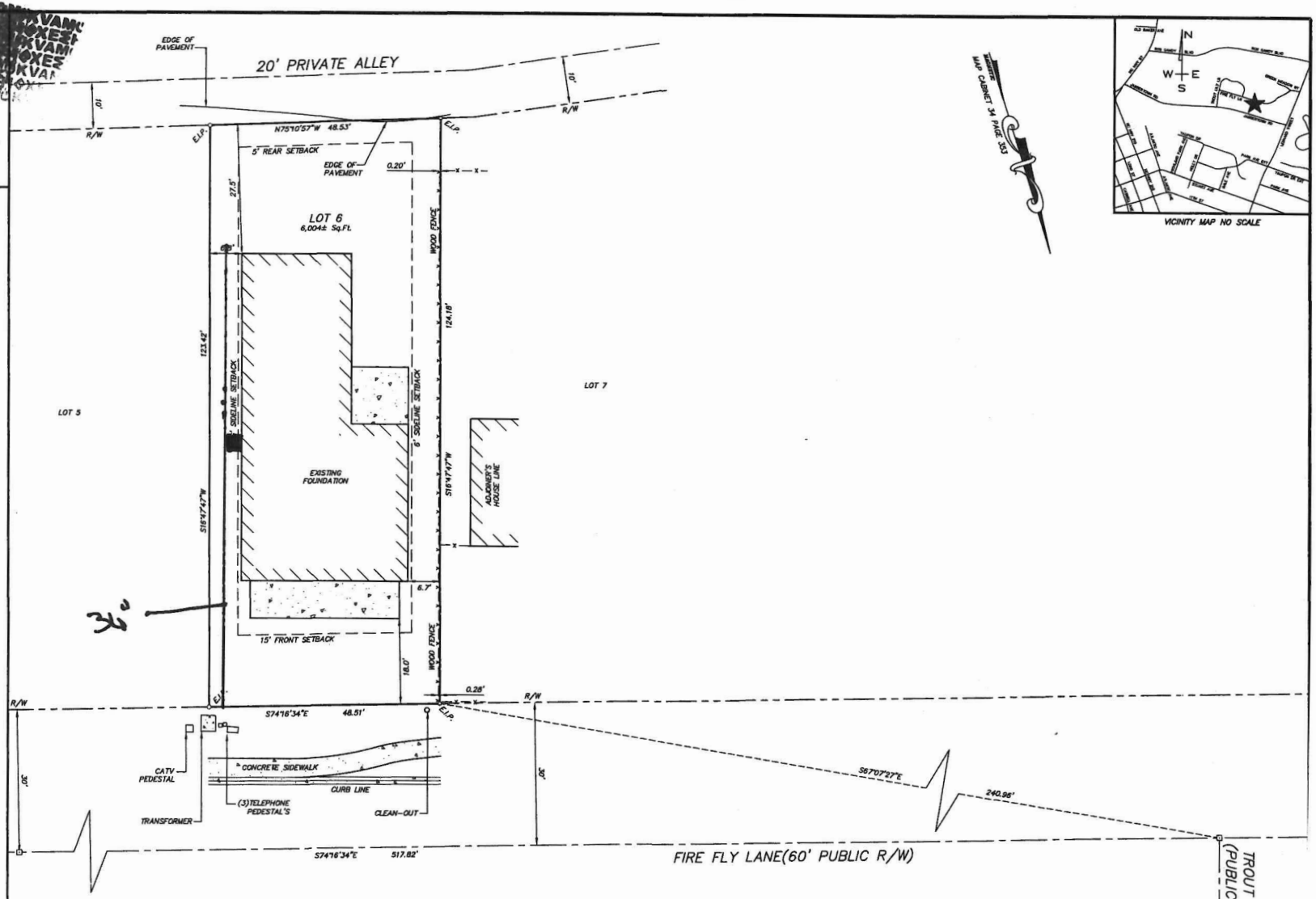
LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
±	APPROXIMATE
R/W	RIGHT-OF-WAY

SETBACKS: SEE MAP CABINET 34 PAGE 353

FRONT =	15'
SIDELINE =	6'
REAR =	5'

GRAPHIC SCALE: 1"=10'
10 0 10 20 30



FOUNDATION SURVEY FOR:

DEAN EDWARD WARNECKE and RACHELLE LYN WARNECKE
LOT 6
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

Buyer: Dean Edward Warnecke and Rachelle Lyn Warnecke
118 W 14th Street Unit A, Southport, NC. 28461
Cell: 614-214-7383
Email: dewarnecke@yahoo.com
Email: rachellewarnecke@yahoo.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PH.: (910)815-0650
Firm License No.: C-0615

SURVEYED: S.G.	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: MAY 2023

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION AS SHOWN ON THE FACE OF THIS PLAT); THAT THE RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1/10,000 +; THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN BY BROKEN LINES PLOTTED FROM INFORMATION FOUND IN BOOK [illegible] AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL FOR LAND SURVEYING IN NORTH CAROLINA THIS 6TH DAY OF OCTOBER, 2022.

MICHAEL N. UNDERWOOD, PLS

© 2022 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:

1.) SUBJECT PROPERTY "DOES NOT" LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON PANEL No. 2082, FLOOD INSURANCE RATE MAP NO. 3720207200 K, WITH A MAP REVISED DATE OF 06/18/18 FOR COMMUNITY NO. 370078 IN CITY OF SOUTHPORT, OF BRUNSWICK COUNTY, STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) PROPERTY ADDRESS: 415 FIRE FLY LANE
6.) PARCEL ID: 222PC019

SURVEY REFERENCE:
BOOK 4748 PAGE 632
MAP BOOK 34 PAGE 353

LEGEND:

E.I.P.	EXISTING IRON PIPE
E.C.M.	EXISTING CONCRETE MONUMENT
E.I.R.	EXISTING IRON REBAR
O	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
SSMH	SANITARY SEWER MANHOLE
X 18.54	EXISTING GRADE ELEVATION
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	CENTER LINE
℘	PROPERTY LINE

SETBACKS: SEE MAP CABINET 34 PAGE 353

FRONT =	15'
SIDELINE =	6'
REAR =	5'

GRAPHIC SCALE: 1"=10'

10 0 10 20 30

REVISION	DATE

FOUNDATION SURVEY FOR:

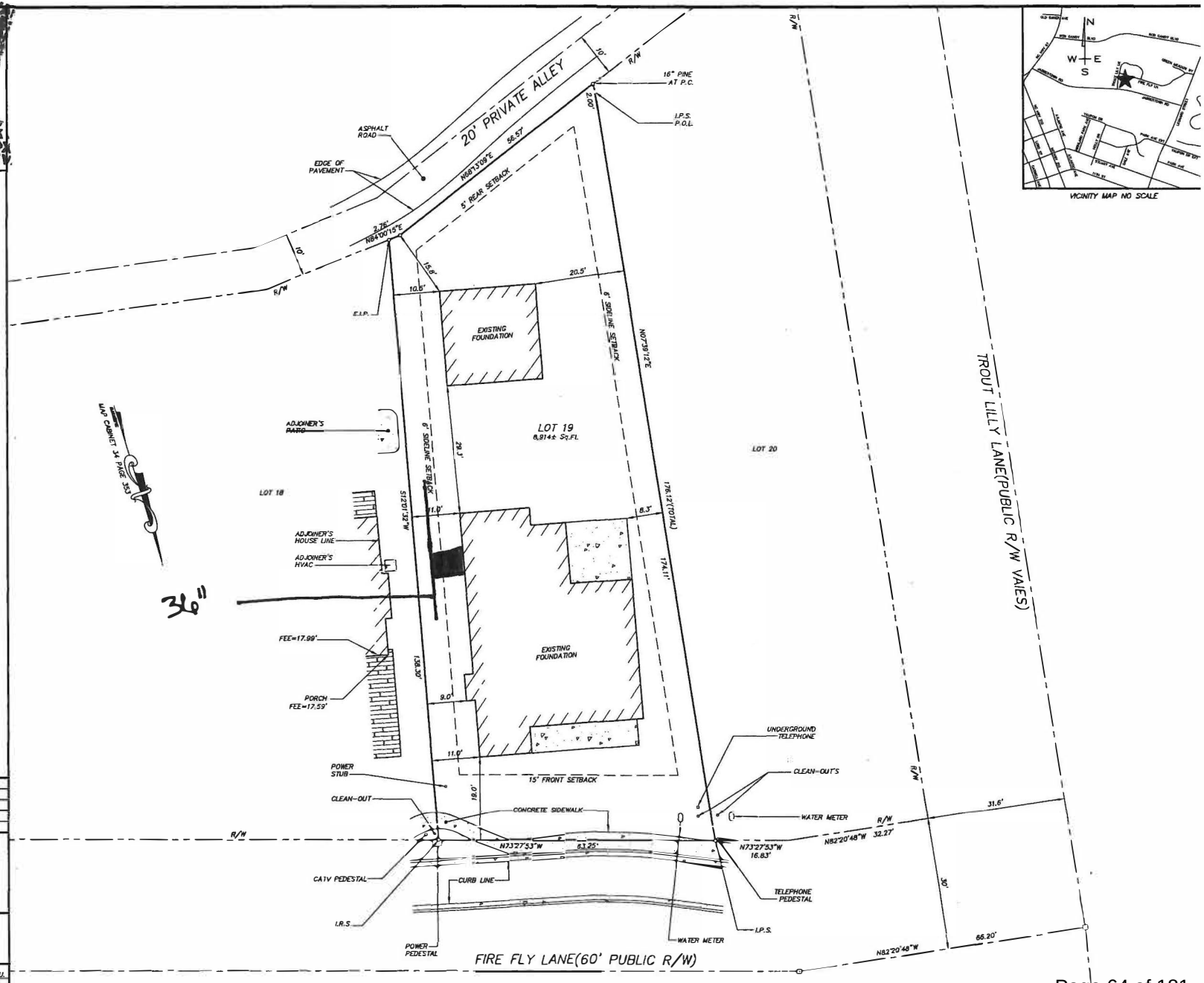
LINDSAY P. McGILL
LOT 19
THE COTTAGES OF PRICE'S CREEK
A CLUSTER HOME DEVELOPMENT

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

c/o: Cameron Smith
C.L. Smith Construction, Inc.
3391 Southport Supply Road, Bolivia, NC 28422
Cell: 910-443-5080
Office: 910-253-0066
email: clsmithjr@aol.com

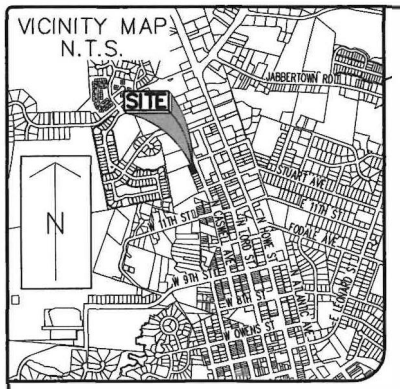
MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0650
FAX: 910-815-0393
FIRM LICENSE NO: C-0819

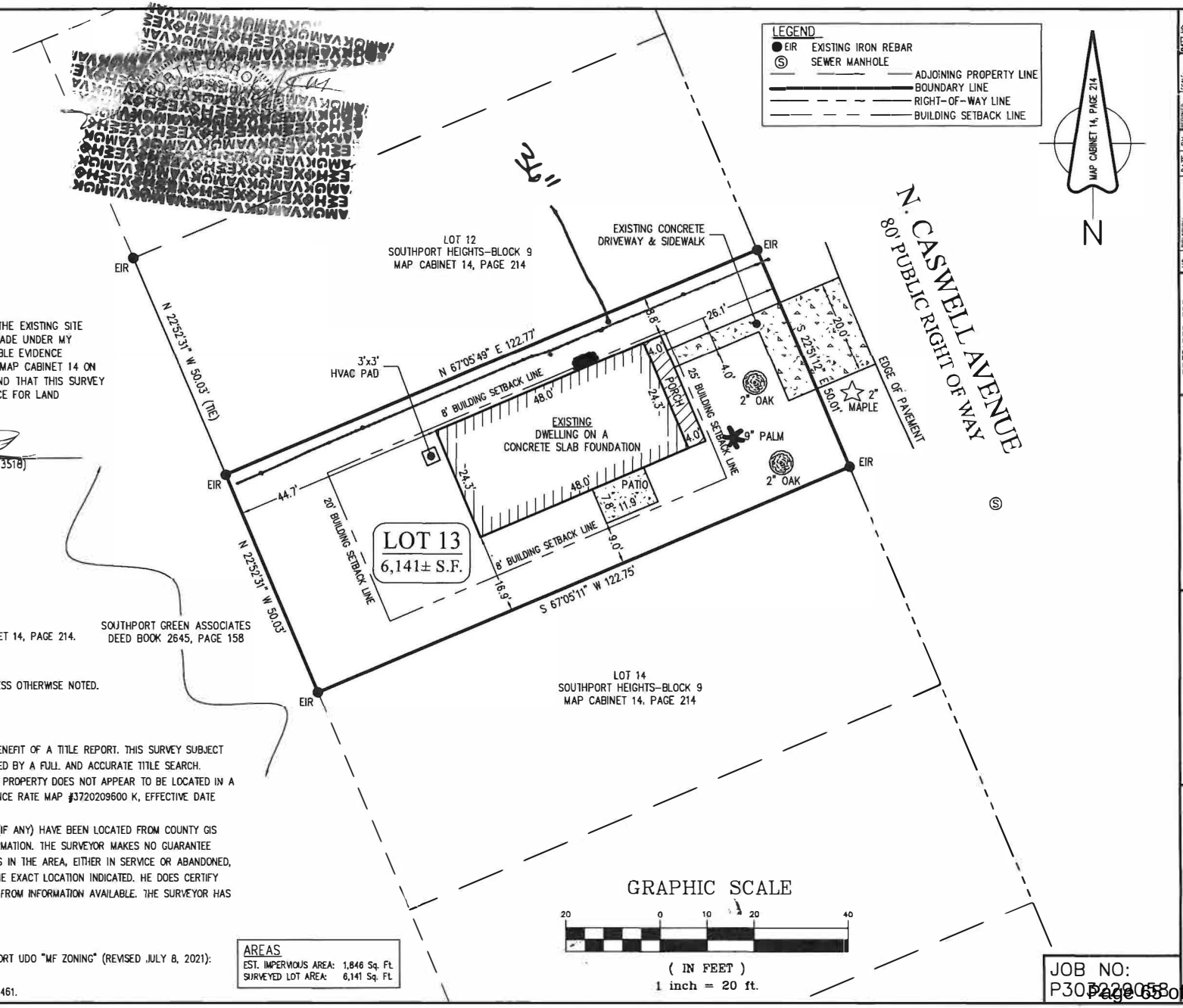
SURVEYED: M.R.	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: OCT. 2022
CHECKED BY: M.N.U.	SCALE: 1" = 10'



VICINITY MAP NO SCALE

VICINITY MAP
N.T.S.





CERTIFICATE OF ACCURACY & MAPPING

I HEREBY CERTIFY THAT THE FINAL AS-BUILT SURVEY OF THE EXISTING SITE SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY MADE UNDER MY SUPERVISION AND ACCURATELY REPRESENTS THE OBSERVABLE EVIDENCE THEREOF AT THE TIME OF THIS SURVEY; AS RECORDED IN MAP CABINET 14 ON PAGE 214; THAT THE RATIO OF PRECISION IS 1:10,000+ AND THAT THIS SURVEY MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA" (21 NCAC 56.1600)

MILES O. MCCALL III – PROFESSIONAL LAND SURVEYOR (L-3518)
THIS 16th DAY OF MAY, 2023

GENERAL NOTES

1. THIS IS A FINAL AS-BUILT SURVEY.
2. BEARINGS FOR THIS MAP ARE REFERENCED TO MAP CABINET 14, PAGE 214.
3. ELEVATIONS ARE REFERENCED TO NAVD 88.
4. PROPERTY IS ZONED: SP-MF (MULTI-FAMILY DISTRICT).
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES UNLESS OTHERWISE NOTED.
6. UNITS ARE U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
7. AREA BY COORDINATE GEOMETRY.
8. NO GRID MONUMENTS FOUND WITHIN 2000' OF SITE.
9. THIS SURVEY PERFORMED AND MAP PREPARED WITHOUT BENEFIT OF A TITLE REPORT. THIS SURVEY SUBJECT TO ANY FACTS AND EASEMENTS WHICH MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
10. FLOOD NOTE: AS DETERMINED BY GRAPHIC PLOTTING, THIS PROPERTY DOES NOT APPEAR TO BE LOCATED IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP #3720209600 K, EFFECTIVE DATE AUGUST 28, 2018.
11. UTILITY STATEMENT: THE UNDERGROUND UTILITIES SHOWN (IF ANY) HAVE BEEN LOCATED FROM COUNTY GIS INFORMATION, EXISTING DRAWINGS & FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
12. COUNTY PARCEL ID: 221MA043.
13. TOTAL SITE AREA: 0.14± ACRES
14. SETBACKS SHOWN ARE AS FOLLOWS PER CITY OF SOUTHPORT UDO "MF ZONING" (REVISED JULY 8, 2021):
    FRONT: 25' SIDE: 8' REAR: 20'
15. SITE ADDRESS: 1167 N. CASWELL AVE. SOUTHPORT, NC 28461.

AREAS

EST. IMPERVIOUS AREA:	1,846 Sq. Ft.
SURVEYED LOT AREA:	6,141 Sq. Ft.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.

JOB NO: P30522005

NO.	REVISION	DATE	BY

DESIGNED BY	
DRAWN BY	
REVIEWED BY	
CHECKED BY	
SCALE:	1" = 20'
DATE:	5.12.2023
JOB NO:	P30522005
SHEET NO:	1/1

PREPARED FOR:
ROLINA HOMES
501 BRAWSON CT #400
MT. PLEASANT, SC 29464
PH: (843) 300-1764

FINAL AS-BUILT SURVEY

SOUTHPORT HEIGHTS
LOT 113 – BLOCK 9
SMITHVILLE TOWNSHIP
CITY OF SOUTHPORT BRUNSWICK COUNTY NORTH CAROLINA

TranSystems
(Formerly SEPI)
DRAWING DATE: ELEV. 29, WILMINGTON, NORTH CAROLINA - FIELD: 823-3714
COPYRIGHT © 2023 TRANSYSTEMS CORPORATION

JOB NO: P30522005

NORTH CAROLINA

NEW HANOVER COUNTY

I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (NOT RECORDED REFERENCE) THAT THE BOUNDARIES NOT DISTURBED ARE SHOWN AS BROKEN LINES PLOTTED FROM INFORMATION FOUND IN BOOK AS NOTED. THAT THE RATIO OF PRECISION AS CALCULATED BY COMPUTER IS 1:10,000+; THAT THE BOUNDARIES NOT DISTURBED BY THIS SURVEY ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK AS NOTED. THAT THE PROPERTY HEREON PRESENTED WAS NOT DIVIDED OR CONVEYED IN ACCORDANCE WITH CHAPTER 47-30 AS AMENDED. WITNESS MY original signature, REGISTRATION NUMBER, AND SEAL THIS DAY OF JUNE, A.D. 2023.

MICHAEL N. UNDERWOOD, P.L.S.
LICENSE NUMBER L-2942
SEAL OR STAMP

© 2023 MICHAEL UNDERWOOD AND ASSOCIATES, PA

NOTES:
1.) SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "X"(OTHER AREAS) BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) ON PANEL No. 3005 FLOOD INSURANCE RATE MAP NO. 3720347600L, WITH A MAP REVISED DATE OF 02/20/18 FOR COMMUNITY NO. 370328, IN CITY OF SOUTHPORT OF BRUNSWICK COUNTY; STATE OF NORTH CAROLINA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
2.) SETBACKS SUBJECT TO REVIEW BY RELEVANT PARTIES.
3.) ALL DISTANCES ARE GROUND HORIZONTAL.
4.) NO N.C.G.S. FOUND WITHIN 2000'.
5.) OWNERSHIP OF FENCE ALONG ℄ IS UNKNOWN TO SURVEYOR.
6.) PROPERTY ADDRESS: 6187 RIVER SOUND CIRCLE
7.) PARCEL ID: 23089012
8.) AREA CALCULATED BY COORDINATE METHOD.

SURVEY REFERENCE
BOOK 4796 PAGE 1138
MAP BOOK 30 PAGE 185

LEGEND:

E.I.R.	EXISTING IRON REBAR
P.C.	PROPERTY CORNER
I.P.S.	IRON PIPE SET
N.P.S.	NO POINT SET
P.O.L.	POINT ON LINE
±	APPROXIMATE
R/W	RIGHT-OF-WAY
℄	PROPERTY LINE

SETBACKS: SEE MAP CABINET 20 PAGE 185

FRONT	20'
SIDE	10'
REAR	25'

GRAPHIC SCALE: 1"=10'

10 0 10 20 30

FOUNDATION SURVEY FOR:

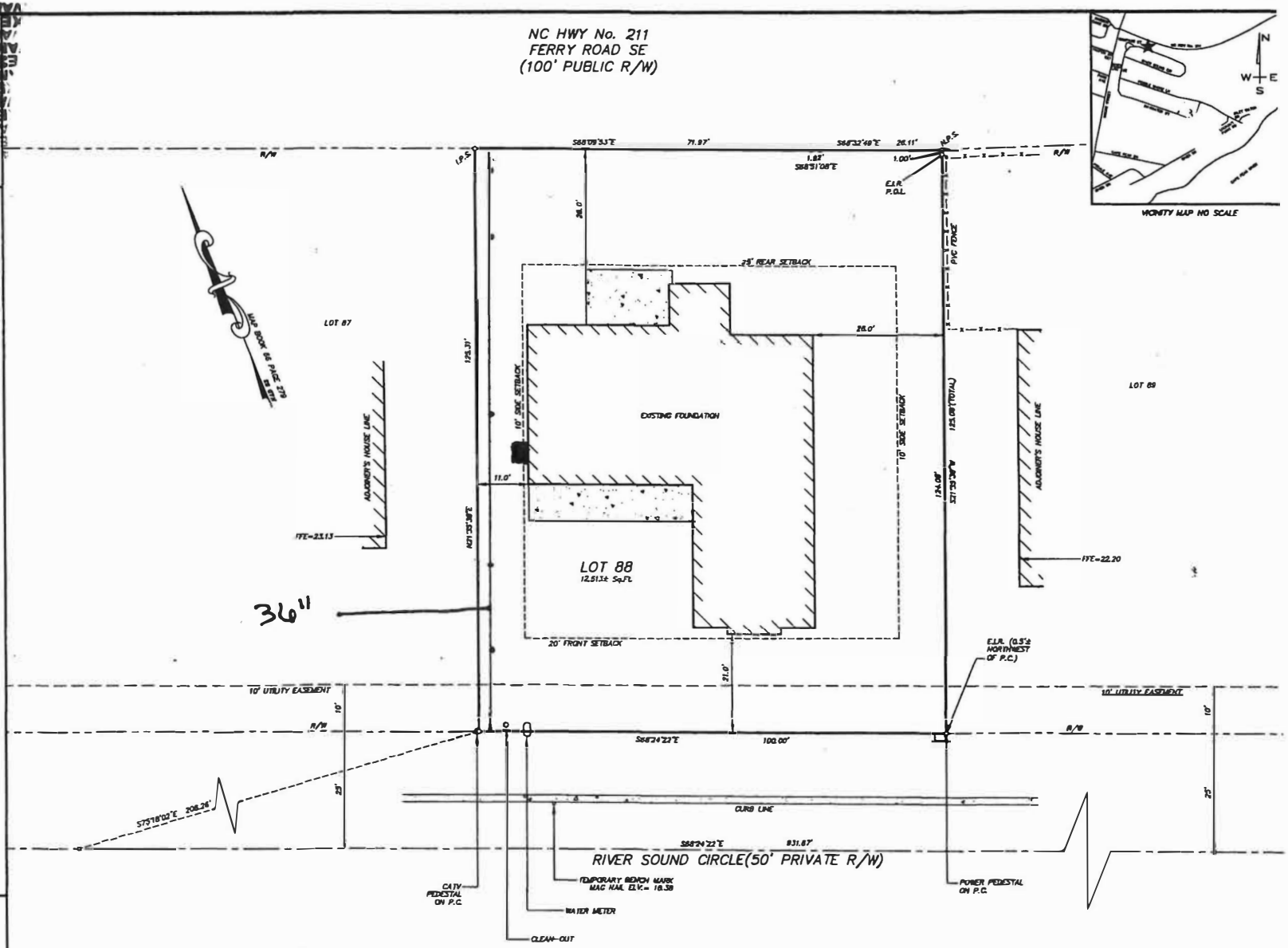
JOHN BLAZEK and wife, KATHLEEN BLAZEK
LOT 88
THE LANDING
PHASE TWO

SMITHVILLE TOWNSHIP BRUNSWICK COUNTY
CITY of SOUTHPORT, NORTH CAROLINA

CLIENT: Cameron Smith
C.L. Smith Construction, Inc.
3301 Southport Supply Road, Bolivia, NC 28422
(Cell) 910-443-3082; (Office) 910-253-0068
www.CLSmithConstruction.com
www.SouthportCollegeGroup.com

MICHAEL UNDERWOOD and ASSOCIATES, PA
102 CINEMA DRIVE, SUITE A
WILMINGTON, NC 28403
PHONE: 910-815-0650
email: mua-office@mua-pa.com
FIRM LICENSE NO.: C-0615

SURVEYED: S.G.	APPROVED: M.N.U.
DRAWN BY: W.C.	DATE: JUNE 2023
CHECKED BY: M.N.U.	SCALE: 1" = 10'



City of Southport Planning Board
Statement of Plan Consistency and Zoning Recommendation
(As per NC General Statute 160D-604)

When conducting a review of proposed zoning text or map amendments pursuant to this section, the planning board shall advise and comment on whether the proposed action is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

AMENDMENT: **ZTA-23-03**

STATEMENT OF CONSISTENCY AND RECOMMENDATION:

The City of Southport Planning Board hereby recommends adoption of the proposed Zoning Text Amendment to the Board of Aldermen and finds that it is consistent with the City's 2015 CAMA Core Land Use Plan originally adopted Nov. 13, 2014 and subsequently amended by the Southport Board of Aldermen. More specifically, the proposed amendment is consistent with **Policy 2.4:** Southport will permit residential development to occur in response to market needs provided the following criteria are met: 1) Due respect is offered to all aspects of the environment. and 2) Concurrent planning for improvements to community facilities, infrastructure, and services provided.

The statement and motion was seconded and passed _____.

_____ _____

Tanya Shannon, Deputy City Clerk Sue Hodgin, Chairman

STAFF REPORT
ZONING TEXT AMENDMENT APPLICATION
SECTION 3.9 DIMENSIONAL REQUIREMENTS

APPLICATION SUMMARY	
Presentation Date	October 19, 2023 Planning and Zoning Board
Applicant	Cameron Smith
Relevant Ordinance Sections	Section 3.9.B.5 Setback Exceptions and Encroachments

ZONING TEXT AMENDMENT PROPOSAL

Cameron Smith, applicant, respectfully submits a Zoning Text Amendment to the City of Southport Unified Development Ordinance. Specifically, the request is to amend Section 3.9.B.5 Setback Exceptions and Encroachments to modify the maximum setback encroachment for heating and air conditioning units, generators, pool equipment, and other similar items. All proposed changes, including additions and deletions, can be found as an attachment to this report and may also be viewed in the City of Southport Development Services Department offices.

REVIEW PROCESS

A Zoning Text Amendment proposal is considered a legislative process. As laid out by North Carolina General Statutes, a legislative process is a policy-level decision with broad discretion by the decision-making authority, in Southport's case the Board of Aldermen. In a decision to approve or deny a legislative proposal, the Board of Aldermen shall include a statement referencing the decisions consistency with the adopted land use plan for the City of Southport. Per the City of Southport Unified Development Ordinance, the Planning and Zoning Board shall also provide a recommendation on any proposed Zoning Text Amendment to the Board of Aldermen. The Board of Aldermen shall hold a public hearing prior to voting on any Zoning Text Amendment.

AMENDMENT DESCRIPTION AND APPLICANT PETITION

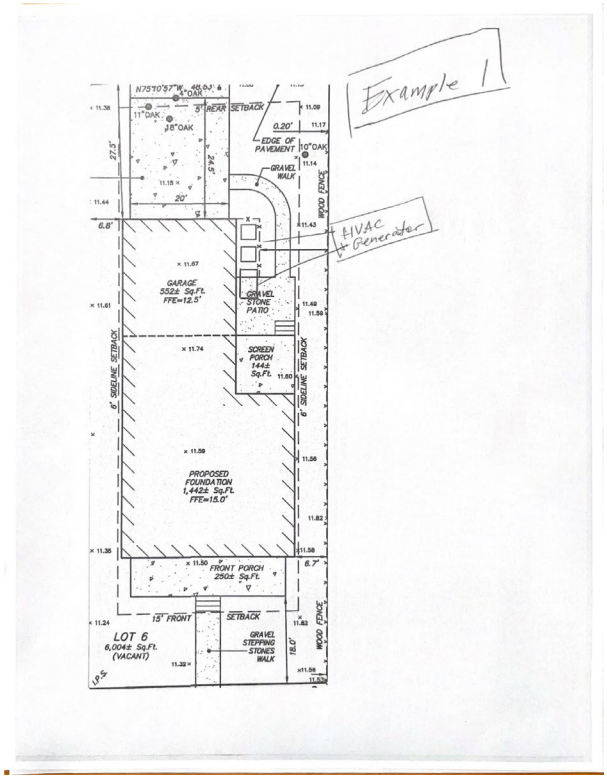
The amendment to this section would allow heating and air conditioning (HVAC) units and similar equipment to encroach into a side or rear setback no more than forty-eight (48) inches or four (4) feet.

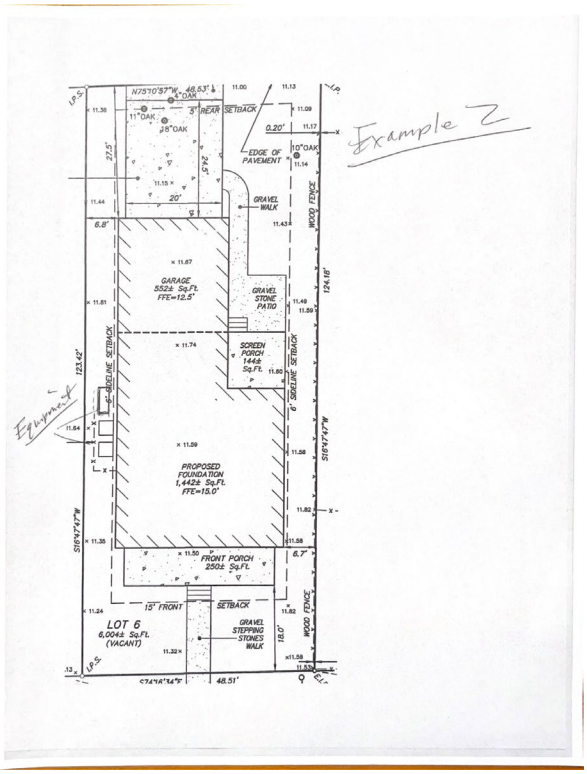
Currently, Section 3.9.B.5 of the UDO states, “Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units and similar items may project into a required setback not more than 30 inches.”

The applicant, Cameron Smith, applied for this amendment to accommodate narrow lots approved for PUD subdivisions and nonconforming R-10 lots throughout Southport. Mr. Smith is a builder in the city and has stated that most HVAC and whole house generators need to be 48” off the main structure to meet code requirements. As homes are being built on smaller lots, using most of if not all the buildable width for desired home designs is becoming a necessity. He further states that this causes an undue hardship on homeowners since the units cannot go in the front of homes and many times the rear of the home does not work either, an example of this would be for properties that include a rear loading garage.

Specifically, the applicant has requested the following text amendment:
Sills, cornices, buttresses, ornamental features, gutters, <u>and</u> eaves~~, heating and air conditioning units and similar items~~ may project into a required setback not more than 30 inches. <u>Heating and air conditioning units, generators, pool equipment, and similar items may project not more than 48 inches into a required setback.</u>

Examples from the applicant are shown below. <u>Example 1</u> is a site plan that cannot meet the 30” encroachment standards so the equipment is located near the outdoor living area. <u>Example 2</u> is a site plan showing where equipment has historically been allowed and away from living areas.





BACKGROUND AND EVALUATION

Previous editions of the UDO did not include heating and air conditioning units in the encroachment provisions. The current UDO, adopted on September 23, 2020, added these types of mechanical units. Since October 2022, this section of the UDO has been enforced. Staff encounter equipment encroachments beyond the 30" standard regularly in site plan and final as built survey review. The instances have been reduced since the standard has been enforced, although staff do have to address the issue often. Historical plan review and approvals enforcing this standard cannot be confirmed.

Justification for this text amendment is to be able to accommodate smaller lot widths within cluster subdivisions and nonconforming R-10 lots throughout the city. Nonconforming lots not located in subdivisions many times have a 4' side setback, therefore the units would be allowed to have no setbacks.

Staff consulted the Cape Fear Council of Governments (CFCOG), the Building Inspector, and the Fire Marshall during review of this proposed amendment. Each entity was able to give insight on setback requirements found throughout the region and codes that must be met.

Mr. Wes MacLeod, with the CFCOG confirmed that 30 inches is a standard encroachment throughout the region for these types of units. Further, independent research found examples that allow HVAC and other units 30 inches or a 50% encroachment of the setback, whichever is greater, that allow the encroachment of stoops for air conditioning, but the stoop can only be large enough to accommodate the unit, and there are some examples of 48" in other coastal areas.

Southport's Building Inspector stated that HVAC units must meet manufacturer listed setbacks to allow air circulation. The average is approximately 24" and some can be a close as 12" to meet the National Fire Protection Act (NFPA). Generators must have a minimum clearance of 18" per the manufacturer's installation guidelines and NFPA. The Fire Marshall did not have any issues with these types of equipment being installed in side yard setbacks.

Unified Development Ordinance Compliance

Zoning Text Amendments, like General Use Zoning Map Amendments (Rezonings), follow the process laid out in Section 2.10 of the City of Southport Unified Development Ordinance. Pursuant to this section, the Planning Board shall advise and comment on whether the proposed text or zoning map amendment is consistent with the comprehensive plan or any other official adopted plans that are applicable and make a recommendation to the Board of Aldermen. The Board of Aldermen shall, in their final decision-making capacity, base their decision upon the same.

2014 CAMA Core Land Use Plan Compliance

Explicit references to specific lot layout, setbacks, and designs for single family lots are not included in the land use plan. The plan references updating the UDO and other documents to meet the needs of the residents of the city. Further, the following Policy supports consistency with the proposed text amendment and the land use plan.

Policy 2.4: Southport will permit residential development to occur in response to market needs provided that the following criteria are met: (1) Due respect is offered to all aspects of the environment. (2) Concurrent planning for improvements to community facilities, infrastructure, and services is provided.

STAFF'S RECOMMENDATION

City Planning Staff respectfully submit the proposed Zoning Text Amendment as outlined in this report to the Planning Board for their consideration of a recommendation to the Board of Aldermen. The proposal is consistent with the 2014 CAMA Core Land Use Plan, specifically regarding residential development occurring in response to market needs and is consistent with the Unified Development Ordinance.

Attachments

Consistency Statement
Proposed Text Amendment Language
Text Amendment Application

Proposed Text Amendment to Section 3.9.B

5. Sills, cornices, buttresses, ornamental features, gutters, and eaves~~, heating and air conditioning units and similar items~~ may project into a required setback not more than 30 inches. Heating and air conditioning units, generators, pool equipment, and similar items may project not more than 48 inches into a required setback.

Text Amendment

City of Southport, North Carolina

1029 N. Howe St, Southport NC 28461
www.southportnc.org

Planning & Inspections
Phone 910-457-7961 Fax 910-457-7957

For Staff Use Only

PERMIT No. ZTA-23-03 FEE: $ 250 Date Received: 8/8/23

Applicant's Name: Cameron Smith

Mailing Address: 107 Bennetts Creek Lane City: Southport

State: NC Zip Code: 28461 Phone: 910-443-5080

Email:

Current Section Impacted by Proposed Text Amendment: 3.9.B.5

Please describe the conditions that makes the proposed text amendment necessary for the promotion of public health, safety, and general welfare; or that identifies an obvious error in the UDO. Also explain why the proposal is or is not consistent with the Land Use Plan and other adopted plans (Attach separate sheet if necessary).

see attached

In filing this Text Amendment Petition, I hereby certify that all of the information presented in this application is accurate to the best of my knowledge, information, and belief.

Signature (Applicant) 8/2/23 Date

APPROVED BY:

Maureen Meehan 8/8/23

This is how the ordinance currently reads. 3.9 B.5 Sills, cornices, buttresses, ornamental features, gutters, eaves, heating and air conditioning units and similar items may project into a required setback not more than 30 inches.

Proposed text amendment : 3.9 B.5 Sills, cornices, buttresses, ornamental features, gutters, eaves, ~~heating and air conditioning units~~ and similar items may project into a required setback not more than 30 inches. HVAC units, generators, pool equipment, and similar items may project not more than 48 inches into a required setback.

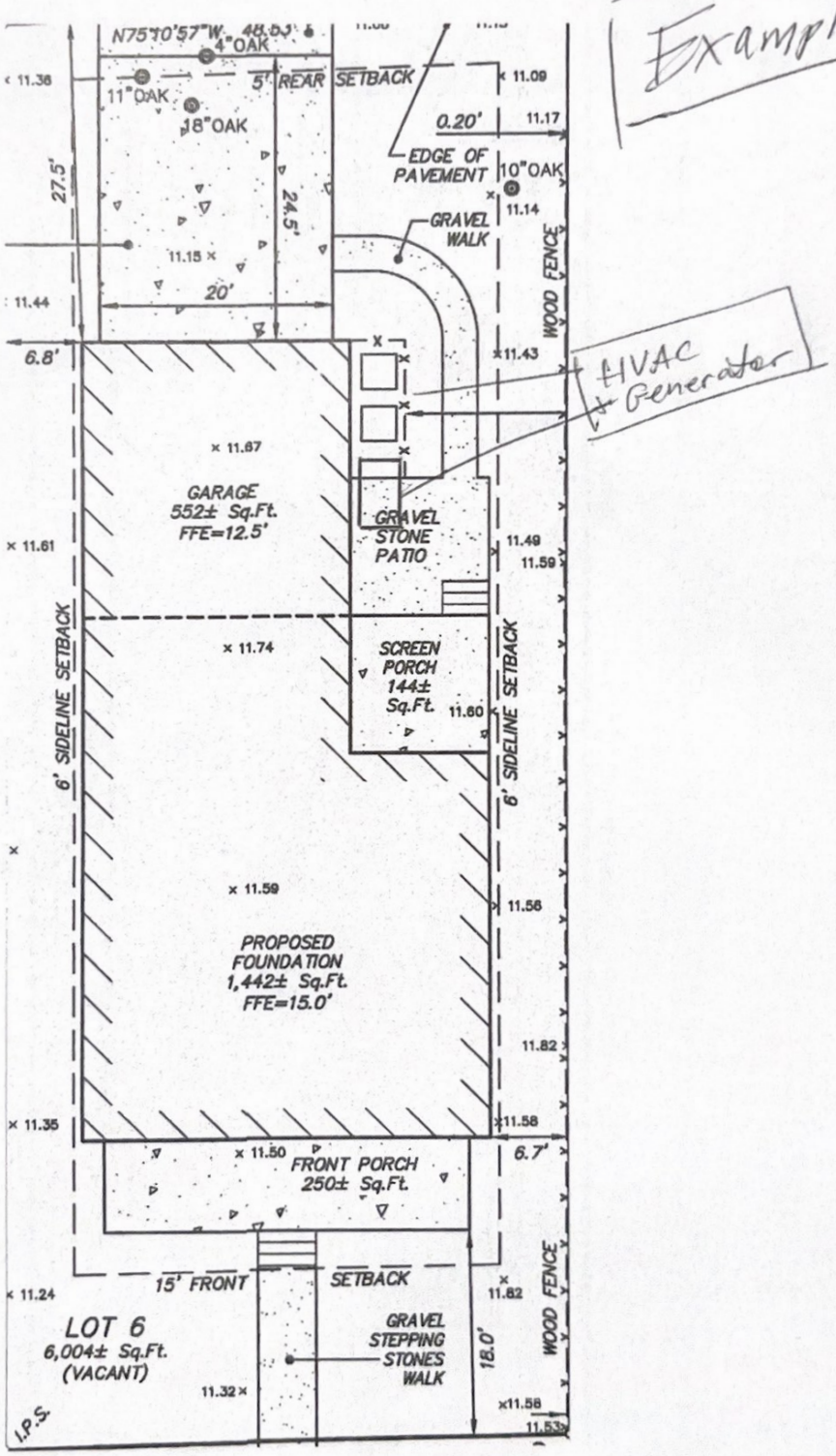
Rationale behind revision: In the previous 24 years I have built homes in Southport this ordinance was either not in the UDO or not enforced. Items that are fixed to the structure such as cantilevers, etc were enforced with the 30" rule but never the equipment (HVAC, generators, etc). Many of the homes I have built in communities with narrower lots have equipment on the sides of the homes that would not have met this ordinance. Most air condensing units and generators need 48" off the structure to meet codes for clearances. In my opinion, this 30" guideline creates an unnecessary hardship. Many homeowners, especially in communities with narrow lots (PUDs or some of our city lots) need to use the majority of their buildable width for their home design. The equipment cannot go in the front of the home and in many cases the rear of the home doesn't work well either. A prime example of this would be homes with rear load garages on narrow lots and I have included an example site plan.

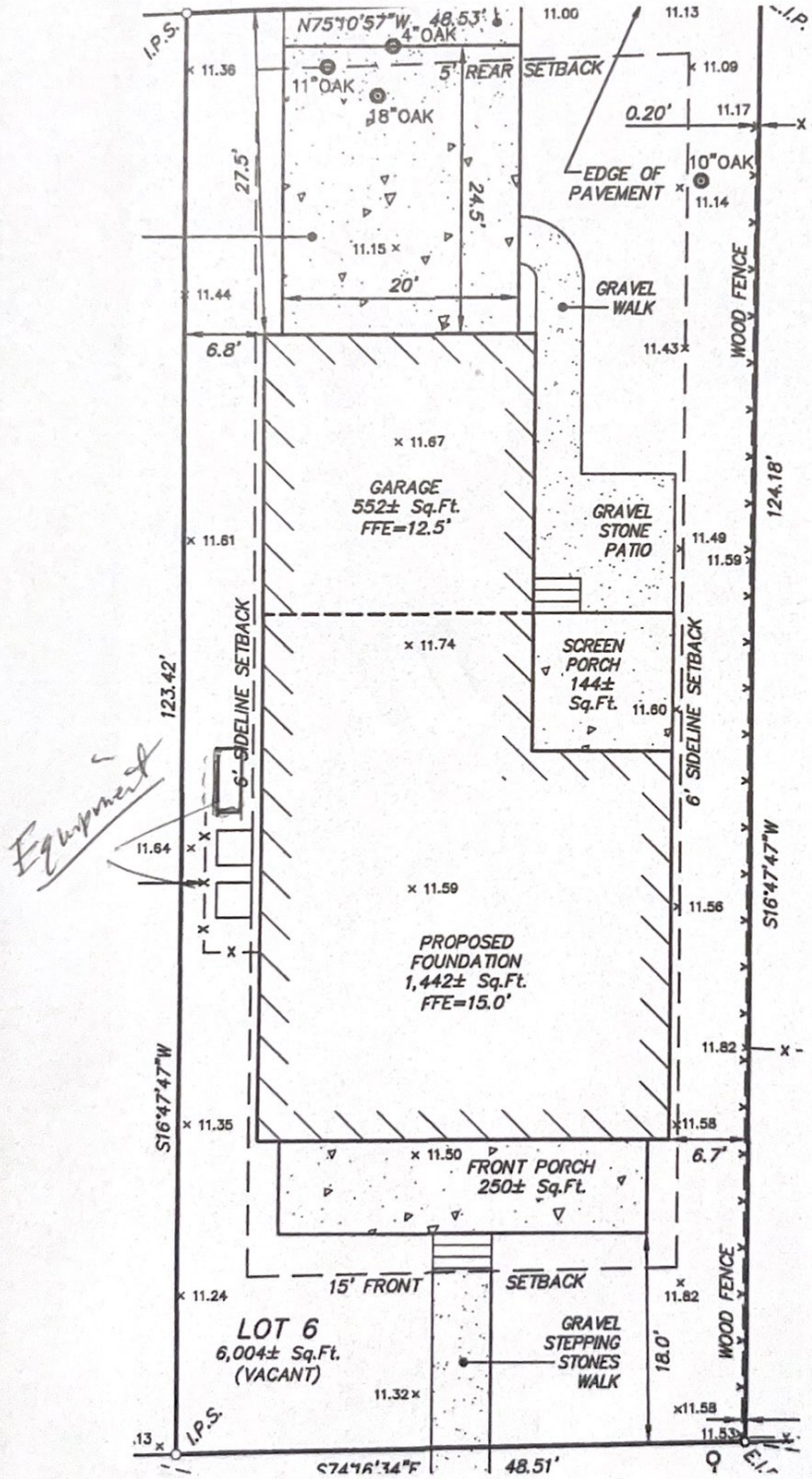
Example 1 shows what happens when the equipment is not allowed to go on the side of the home as it typically does due to the 30" guideline. The small rear outdoor space is adversely affected. In addition, having the equipment alongside the garage instead of the house foundation doesn't work in the construction world for a variety of reasons.

Example 2 shows where the equipment should be placed and where it has been allowed historically speaking. Changing this 30" guideline to 48" will allow this to work.

Another point I would like to make in regards to existing homes is many people are now wanting to install whole house generators and may not be able to with the enforcement of this 30" guideline. There is really no downside to this revision that I can see and it will be permitting this equipment placement to continue as it has been allowed in the past.

Example 1


N75°10'57"W. 48.03'
4" OAK
11" OAK
18" OAK
5' REAR SETBACK
0.20'
EDGE OF PAVEMENT
10" OAK
GRAVEL WALK
WOOD FENCE
27.5'
24.5'
20'
6.8'
HVAC + Generator
GARAGE
552± Sq.Ft.
FFE=12.5'
GRAVEL STONE PATIO
SCREEN PORCH
144± Sq.Ft.
6' SIDELINE SETBACK
PROPOSED FOUNDATION
1,442± Sq.Ft.
FFE=15.0'
FRONT PORCH
250± Sq.Ft.
6.7'
15' FRONT SETBACK
LOT 6
6,004± Sq.Ft.
(VACANT)
GRAVEL STEPPING STONES WALK
18.0'
I.P.S.


N75°10'57"W 48.53'
4" OAK
11" OAK
18" OAK
5' REAR SETBACK
0.20'
EDGE OF PAVEMENT
10" OAK
27.5'
24.5'
20'
GRAVEL WALK
WOOD FENCE
6.8'
GARAGE
552± Sq.Ft.
FFE=12.5'
GRAVEL STONE PATIO
124.18'
SCREEN PORCH
144± Sq.Ft.
6' SIDELINE SETBACK
123.42'
Equipment
PROPOSED FOUNDATION
1,442± Sq.Ft.
FFE=15.0'
S16°47'47"W
FRONT PORCH
250± Sq.Ft.
6.7'
15' FRONT SETBACK
LOT 6
6,004± Sq.Ft.
(VACANT)
GRAVEL STEPPING STONES WALK
18.0'
I.P.S.
S74°16'34"E 48.51'

Example 2

STAFF REPORT FOR TURTLE BAY
PLANNED UNIT DEVELOPMENT APPLICATION
REZONING AND MASTER DEVELOPMENT PLAN REVIEW

APPLICATION SUMMARY	
Presentation Date	February 15, 2024 Planning and Zoning Board
Applicant	East Coast Engineering, P.C. Jackson Starling, PE
Property Owner	Turtle Bay at Southport, LLC Bob Weinbach and Terrance Ando
Parcel ID:	22100017
Project Acreage	54.09 acres
Parcel Acreage	54.09 acres
Zoning District	R-20/HC
Proposed Zoning	Planned Unit Development
Proposed Future Land Use Map	Low Density Residential

PROJECT OVERVIEW

Jackson Starling, applicant, on behalf of Turtle Bay at Southport, is requesting approval of a Master Development Plan and Rezoning from R-20/HC to Planned Unit Development (PUD). The Master Development plan proposes 100 single-family dwelling units on an approximately 54-acre parcel of land located on NC 87.

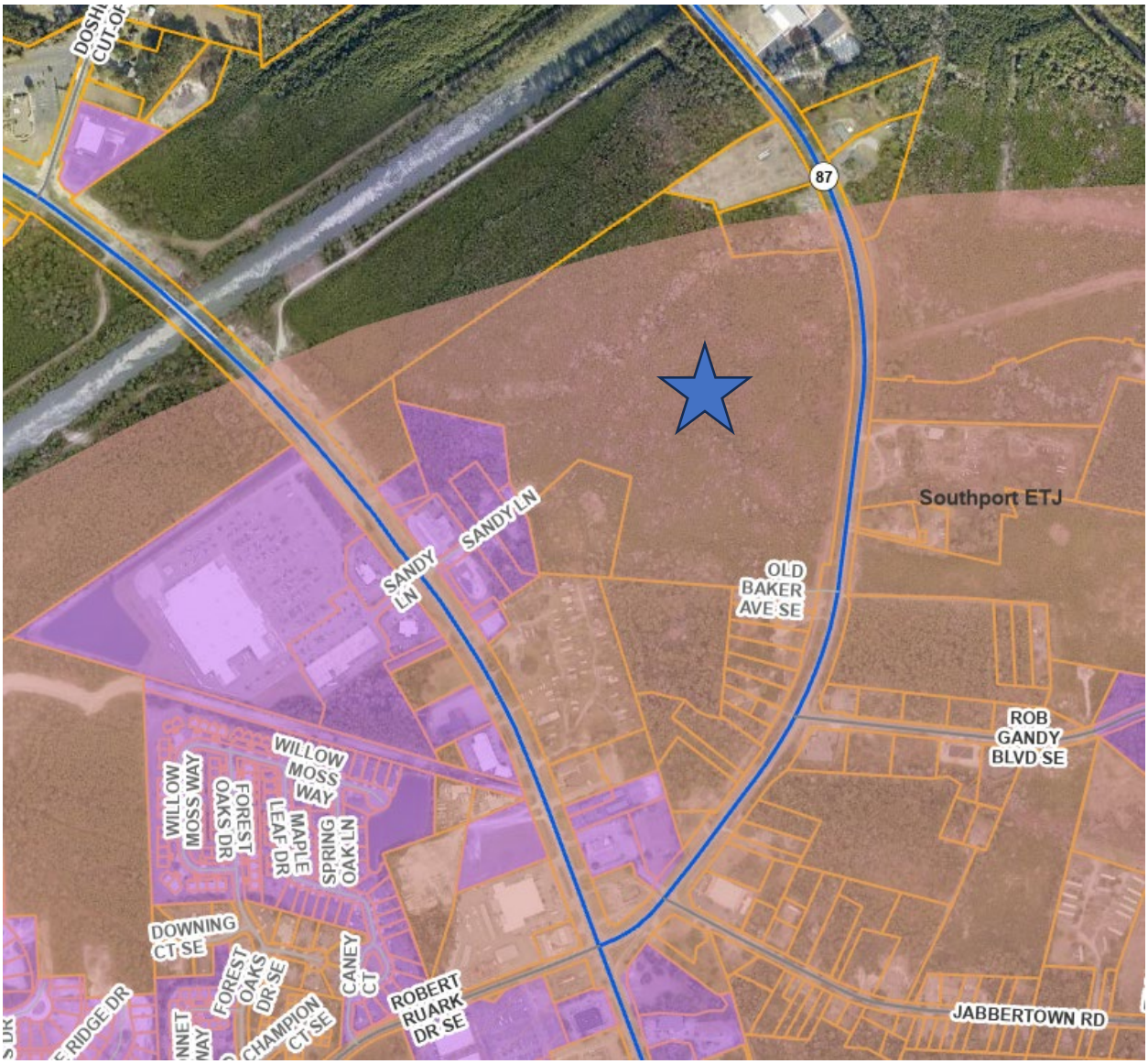
Most of the property falls within the medium suitability land classification on the Land Suitability Analysis Map of the CAMA Land Use Plan. A portion is classified as low suitability due to the proximity of wetlands on site. The future land use map designation is low-density residential and heavy commercial. Low-density residential designation allows a variety of single-family uses with a density of 2/3 units per acre.

Staff are also requesting an amendment to the future land use map to designate the entire property as low-density residential.

LOCATION

Subject property is located on NC 87 (River Road) to the north of Rob Gandy Boulevard, south of Duke Energy, and east of Hwy 211 (N Howe Street). This property is located within the extraterritorial jurisdiction of the City and can be further identified by Brunswick County Parcel ID 22100017.

A portion of the northern boundary is within Brunswick County Jurisdiction. A petition for annexation has been submitted and will follow the affirmative recommendation to the Board of Aldermen.



REVIEW PROCESS

Proposed amendments to the zoning map may be initiated by the Board of Aldermen, Planning Board, city administration, or by the owner, or his or her agent, of property within the area proposed to be changed. Every amendment, supplement, change, modification, or repeal of the zoning map/ordinance shall be referred to the Planning Board for its recommendation and report to the Board of Aldermen.

A Planned Unit Development (PUD) is planned and developed as an integral unit in a single development operation or a defined series of development according to an approved master plan. Per Section 2.9 C of the City of Southport Unified Development Ordinance, the Planning Board shall review the proposal and transmit a formal recommendation to the Board of Aldermen. The Board of Aldermen is the final decision maker on all Master Development Plans within the City of Southport.

A PUD requires an amendment to the City's zoning map in conjunction with the approval of the master development plan. Applications for both the master development plan and rezoning are submitted concurrently. The master plan outlines the framework for development within the PUD, including intended uses, dimensional standards for parking, landscaping, design guidelines, and buffers. The proposal must comply with the design guidelines provided in Section 4.15 of the Unified Development Ordinance.

When evaluating the application for a PUD zoning district, the Planning Board and the Board of Aldermen shall consider the following:

a) The application's consistency to the general policies and objectives of the City's Comprehensive Plan, any other officially adopted plan that is applicable, and the Unified Development Ordinance.
b) The potential impacts and/or benefits on the surrounding area and adjoining properties.

The Planning Board will provide a recommendation to the Board of Aldermen.

Prior to the Board of Aldermen's consideration of a change, a public hearing must occur on a set day and time. The hearing is notified to adjacent property owners by mail, published in a local newspaper of general circulation, and posted on the property for two (2) consecutive weeks, not less than 10 days and not more than 25 days before the hearing.

The Board of Aldermen may adopt the approval, conditional approval, or denial of the rezoning after the duly advertised public hearing and upon the approval of a plan consistency statement and a statement of reasonableness.

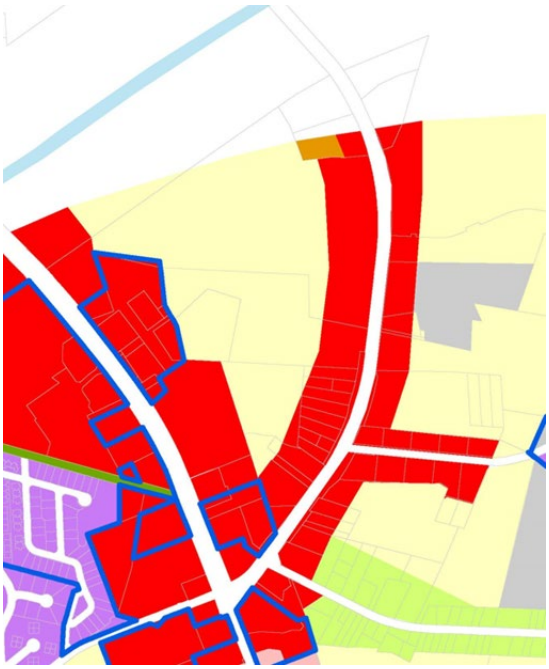
Following an affirmative decision by the Board of Aldermen, the official zoning map will be updated to PUD, and all development shall follow the approved master development

plan. The major subdivision preliminary plat process will follow the approval of the PUD prior to any development onsite.

TECHNICAL REVIEW COMMITTEE

City of Southport Planning Staff and the applicant presented this proposal to the Technical Review Committee at their December 19, 2023, meeting. The Fire Chief and City Engineer requested updated ROW information with a paved street width of 24' for a 50' ROW. The applicant provided updated site plans that were approved in January. For clarity and transparency, many of the comments received from other Departments or outside agencies are of a nature that they are to be addressed during the preliminary plat review and/or following the issuance of zoning approval through the course of the building plan and permit review and issuance.

CURRENT ZONING



Zoning Map
Grey – Light Industrial
Red – Heavy Commercial
Light Green – Mobile Home
Light Yellow – R-20
Purple – PUD

Future Land Use Map
Red – Heavy Commercial
Yellow – Low Density Residential

MASTER DEVELOPMENT PLAN REVIEW

Master development plans must be prepared by and sealed by a licensed land surveyor, landscape architect, or engineer registered in North Carolina. They shall meet all the requirements listed in Appendix A of the UDO. Further, all PUD development and subsequent major subdivisions must include the required improvements found in Section 4.7.

Dimensional Requirements
The parcel of land has a total of 54.09 acres. The density of the proposed subdivision is 1.85 dwelling units/acre, which meets the maximum density of 6 du/acre as laid out within the Unified Development Ordinance. Further, there are 10.88 acres of open space, which meets the existing 20% requirement for all PUDS.

<u>The following lot dimensions are proposed:</u>
Minimum Lot Size: 12,000 SF (60% of the minimum lot area for R-20)
Minimum Lot Width: 75' (exceeds the minimum 40' width requirement)
Setbacks: Front – 10', rear – 15', side – 8' (minimum setbacks allowed)
Utility Easement: 10' along all side lot lines (provides 10' building setback for primary and accessory structures)
Periphery Boundary Setback: 25'

Section 4.7.D lists the Required Improvements for Subdivisions. The following discussions will outline how the applicant has met the eight (8) requirements, including other provisions necessary for approval found in the UDO.

Transportation and Streets
Access to the site is provided from a main gated entrance from NC 87. There is a siren-activated fire apparatus entrance located at the southern edge of the property. There are 50' Right of Ways with 24' paved roadways. The proposed right-of-way widths are less than is required by the Unified Development Ordinance. However, the reduced widths were reviewed and approved by the fire chief at the Technical Review Committee meeting on December 19, 2023. All streets will be private rights-of-way and constructed to meet the requirements of Section 4.8.

Block lengths do not exceed 1500 linear feet with intersections at nearly right angles. Proposed cul-de-sacs do not exceed 750 feet in length and meet the turn-around radius requirements. Further, a turn-around is part of the street that exceeds 150 feet in length.

A traffic impact analysis is required for any development that will generate more than 500 trips per day. The proposed subdivision will generate approximately 1000 trips per day. A traffic impact analysis was completed to show the impact of the proposal and provide recommended improvements for access to the site. The recommendations include the construction of a southbound right-hand turn lane on NC 87, the construction of a northbound left turn land on NC 87, and the construction of the driveway to applicable NCDOT standards with adequate site distance. These recommended improvements are included in the master development plan.

Lighting
The applicant is required to install street lighting with underground distribution along all proposed streets. Per statements made by the applicant on the site plan, a lighting plan is being prepared by Brunswick Electric Member Cooperation. A lighting plan meeting the standards of Section 3.16 of the City of Southport Unified Development Ordinance and Chapter 4 Article 5 of the City Code of Ordinances shall be required prior to final approval of the Preliminary Plat, and any installations shall be inspected for conformance to the approved lighting plan prior to final plat approval.

Street Name Signs and Cluster Mailboxes
The applicant will install street signs, both traffic control and name signs, and shall meet all applicable regulations.

A cluster mailbox kiosk has been identified on the site plan at the rear of the property adjacent to the open space park space. There are nine (9) parking spaces provided for the mail kiosk and open space facilities.

Pedestrian Facilities
Per Section 4.11, sidewalks are required on both sides of the street for subdivisions with more than 20 lots. In lieu of placing sidewalks on both sides of the street, the subdivider may install a connected multi-use path network with a minimum width of eight (8) feet along one side of the street connecting to recreation and open space area. The applicant has provided an 8' multi-path network with a delineated ten (10) foot connection at street crossings.

Water Supply and Sewage Disposal Systems
The county will provide both water and sewer to this subdivision. There were no comments or concerns from the county representative who had the opportunity to review the proposal prior to the December TRC meeting.

Erosion and Sedimentation, Drainage Control Facilities, and Stormwater
The applicant shall comply with all requirements of Article 6 of the City of Southport Unified Development Ordinance and all requirements of the North Carolina Sedimentation Pollution Control Act. The design of the system will be reviewed and approved by the City Engineer and Public Services Department. Detailed plans may be submitted after the site plan or preliminary plat approvals that will be approved prior to any ground-disturbing activities.

All permits from the N.C. Department of Environmental Quality shall be obtained prior to commencing construction.

Recreation and Open Space
As stated previously, the applicant has provided 10.88 acres of open space, excluding wetlands. This meets the 20% requirement for PUDs. The open space forms a single parcel, except where a connecting corridor of open space is not less than 30 feet wide. The noncontiguous areas account for less than 50% of the required open space allocation.

All open space areas will be owned and maintained by the homeowner's association.

Landscaping and Buffers
Per Section 3.17 of the Unified Development Ordinance, street yards are required for the proposed change in use of the property. The street yard buffer has been identified in the master development plan. The applicant has provided a preliminary landscape plan. A specific landscape plan will be included as part of the preliminary plat application.

Tree Protection and Landscape Preservation
A formal tree protection and mitigation plan is not required for master development plan approval. The applicant has provided a preliminary landscape plan. This information shall be required prior to approval of the Preliminary Plat.

Signage
Approval of a master development plan does not include sign permit approval. All future signs associated with the project shall require separate review and approval by the Planning Staff based on conformance with Section 3.19 of the City of Southport Unified Development Ordinance.

LAND USE PLAN CONSISTENCY

The 2014 CAMA Land Use Plan (LUP), along with subsequent updates, is the plan that is used for policy decisions in the City. The Planning Board and Board of Aldermen shall consult the plan's policies when considering a zoning change. Further, each rezoning must be recommended and ultimately adopted with a statement describing if the action is consistent or inconsistent with the adopted land use plan.

Increasing housing demand is one of the overarching themes found in the Future Demands section of the LUP. The goals, objectives, and policies found within the plan focus on balancing the need for housing and infrastructure with the protection of the historic character and environmental resources of the City.

Policy 2.1 "….rezonings and amendments in classifications to the future land use map should be carefully balanced with a demonstrated need for such proposed development

The proposed rezoning is partially inconsistent with the future land use map, which is proposed to be amended. The master development plan proposes a gated single-family development with high-end homes.

The following policies and implementing actions support the proposed rezoning request.

Recommended Action 2.1.A: Consider requiring all rezoning approvals to be compared to the land suitability map and analysis included in this plan for consistency. This consistency review will be presented to the Planning Board and Board of Aldermen…

The subject property is in an area of medium suitability on the Land Suitability Analysis (LSA) Map. The LSA takes many different environmental and built features into account including adjacent uses and infrastructure. The future land use map designation supports residential development.

Policy 2.3: Southport supports quality development reflecting a spectrum of housing needs, from low-end (affordable) residences to high-end (luxury) residences.

Policy 2.4: Southport will permit residential development to occur in response to market needs provided the following criteria are met:

1) Due respect is offered to all aspects of the environment.
2) Concurrent planning for improvements to community facilities, infrastructure, and services provided.

These policies are appropriate for the site due to the unique characteristics of the tract of land. Wetland areas are adjacent to dedicated open space where possible. Infrastructure improvements and extensions will be made to the property.

STAFF'S RECOMMENDATION

City Planning Staff submit the proposed Zoning Map Amendment and Future Land Use Map Amendment to the Planning Board to consider a recommendation to the Board of Aldermen in accordance with the standards and processes laid out within the City of

Southport Unified Development Ordinance. The application has been deemed complete and is eligible to be approved.

The proposal appears to be consistent with the 2014 CAMA Core Land Use Plan and is reasonable due to the size, physical conditions, and other attributes of the area.

Attachments:

1) Applications – Zoning and Planned Unit Development
2) Master Development Plan
3) Consistency Statements

Planned Unit Development Permit

City of Southport, North Carolina

1029 N. Howe St, Southport NC 28461
www.southportnc.org

Planning & Inspections
Phone 910-457-7961 Fax 910-457-7957

For Staff Use Only

RECEIVED

PERMIT No. _____ **FEE: $** $1000 **Date Received:** NOV 09 2023

Applicant's Name: Turtle Bay At Southport, LLC.

Mailing Address: PO Box 4232 **City:** Wilmington

State: NC **Zip Code:** 28406 **Phone:** 910-443-6739

Email: keymarcoconsult@aol.com

Property Owner's Name: Turtle Bay at Southport, LLC.

Address of Owner: PO Box 4232 **City:** Wilmington

State: NC **Zip Code:** 28406 **Phone:** 910-443-6739

Email: keymarcoconsult@aol.com

Property Address: Tax Parcel # 22100017 **City:** Southport

Parcel Size (acres): 54.09 **Number of Dwellings:** 100

Open Space Area: 10.88 acres **Right-of-way Area:** 7.63 acres

Surveyor: Port City Land Surveying, PLLC. **License #:** P-1493

Mailing Address: 1144 Shipyard Blvd. **City:** Wilmington

State: NC **Zip Code:** 28412 **Phone:** 910-791-0080

Email: portcitylandsurveying@gmail.com

Per Section 2.9 of the UDO, the purpose of A Planned Unit Development (PUD), is planned and developed as an integral unit, in a single development operation or a definitely programmed series of development

operations and according to an approved master development plan. All PUDs require an amendment to the city's zoning map and master development plan approval, followed by the major subdivision approval process as specified in this ordinance.

The minimum amount of land (unified control to be planned and developed as a whole) required for a PUD district shall be eight (8) acres of net buildable area within the city corporate limits, on one or more contiguous parcels or 25 acres of net buildable area in the ETJ, on one (1) or more parcels (this may include parcels on both sides of a street).

Application and Planned Unit Development Review Procedure is found in Section 2.9.C

Minimum Dimensional Standards:

1. Lot area. Not less than 60 percent of the minimum lot area which would normally be required under the single-family standards of the prevailing zoning district.
2. Lot width. 40 feet.
3. Lot frontage. 40 feet, except on the radius of a cul-de-sac where such distance may be reduced to 20 feet.
4. Public or private street setback. No principal or accessory structure shall be closer than 10 feet to a public street right-of-way or private street easement.
5. Side yard setback. Not less than 8 feet. Dwellings which do not utilize zero lot line provisions shall maintain a minimum side setback of not less than six (6) feet.
6. Rear yard setback. Not less than 15 feet.
7. Building separations. No portion of any principal structure shall be located less than 10 feet from any accessory structure as measured to the closest point.
8. Periphery boundary setback. No principal or accessory structure shall be located less than 25 feet from the peripheral boundaries of the development.
9. Maximum height. 40 feet.
10. Detached accessory structure requirements.
    a) Shall not be located within any front yard setback;
    b) Shall not be located within five (5) feet of any other accessory structure;
    c) Shall not cover more than twenty (20) percent of any side or rear yard; and
    d) The side or rear yard requirement for detached accessory structures shall not be less than five (5) feet.
    e) Shall not be greater than 30 feet in height.

Signature (Owner or Authorized Applicant) _____ Date 11-6-2023

APPROVED BY:

Maureen Meehan
UDO Administrator _____ Date 12/5/2023

Rezoning Application

City of Southport, North Carolina

RECEIVED
NOV 09 2023

1029 N. Howe St, Southport NC 28461
www.southportnc.org

Planning & Inspections
Phone 910-457-7961 Fax 910-457-7957

Date: 11/9/2023

FEE: $ 6,409.00

Permit #: ZMA-24-01

Project Name (If Applicable): Turtle Bay Subdivision

A complete application for any amendment shall contain a description of the proposed zoning regulation or zoning map amendment. The application shall state in detail whether the proposed amendment is consistent with CAMA Core Land Use Plan and any other officially adopted plan that is applicable. The application shall also give detailed evidence that the proposed amendment is in the interest and will benefit the general public and not solely be of benefit to the applicant; that the uses within the proposed zoning district are similar or comparable to the uses in the district as currently zoned, or that none of the uses permitted in the proposed zoning district may potentially adversely affect property values or the health, safety, morals, or general welfare of the residents of the surrounding area. Such application shall be filed with the Administrator to be processed in accordance with Section 12-5 of the UDO.

The Planning Board and Board of Aldermen may consider the following when deciding: Impact on neighbors and neighborhood, traffic, environment, utilities, suitability of land, harmony with area, schools, economic impact, tax base increase, spot zoning created, road capacity, adequate infrastructure, community opinion, property values, consistency with the Land Use Plan, future land use map, jobs, public services, buffering requirements, environmental impact, site limitations, and consistency with plans and prior decisions. The Boards cannot consider ethnicity, income, affordable housing, owner vs. renter housing, or who the owner is when deciding.

Petitioner Name: Turtle Bay at Southport, LLC.

Mailing Address: 5106 Lancome Ct. City: Wilmington

State: NC Zip Code: 28409

Phone: 910-443-6739 Email: terrysando@gmail.com keymarcoconsult@aol.com

Street Address and/or Description of Location: 1/2 mile North of the intersection of North Howe Street (NC-211) & River Road SE (NC-87), towards Rob Gandy Blvd SE (SR-1620).

Parcel ID #: 22100017

Site Acreage: 54.09 Acres Number of Lots: 100

Current Zoning District: R-20 & HC Proposed Zoning District: PUD

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If the proposed change would require a change in the zoning map, attach an accurate diagram of the property proposed for rezoning showing:

1. **All property lines with dimensions and north arrow.**
2. **Adjoining streets with rights-of-way and paving widths.**
3. **The location of all existing structures on the property.**
4. **The existing land uses associated with the property.**
5. **The zoning classification of all abutting zoning districts.**
6. **A list of all abutting property owners.**

Future Land Use Map Designation: Low Density Residential & a small area of Heavy Commercial

Is the proposed zoning consistent with the Land Use Plan? (Describe how it is consistent below if so)
(Please Circle One): Yes No

Please describe the changing conditions in the area or in the City of Southport that makes the proposed amendment necessary to the promotion of the public health, safety and general welfare, or that identifies an obvious error in the zoning map based upon the zoning classification or current land use of surrounding properties. Also include an explanation on why the proposed zoning is or is not consistent with the Land Use Plan and other adopted plans (Attach separate sheet if necessary)

SEE ATTACHED

Project Narrative.

Rezoning Fees as of July 1, 2018	
Rezoning: Less than 3 Acres	$500.00
Rezoning:3.01-6.00 Acres	$1,000.00
Rezoning: 6.01 + Acres	$1,000.00 + $100/acre

In filing this Rezoning Petition, I hereby certify that I am authorized to submit this application and that all of the information presented in this application is accurate to the best of my knowledge, information, and belief.

Signature (Owner or Authorized Applicant)

11-6-2023

Date

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East Coast Engineering, P.C.
ENGINEERS•PLANNERS•CONSULTANTS

November 9, 2023

Turtle Bay Subdivision
(Turtle Bay at Southport, LLC.)

The subject 54.09 acre site is currently a forested, vacant tract of land which has some history of forest management, or thinning of trees. Both R-20 and HC zoning districts exist on the site with surrounding zoning districts of Industrial General (County) to the North, R-20 (Southport) to the south, and Highway Commercial (Southport) to the East, West, and part of the southern border along the portion of road frontage. The future land use designation for this area is low density residential and heavy commercial. Low density residential allows single family residences with a prescribed unit density of 2-3 units per acre. The low density residential land use designation makes up approximately 80% of the site. The area on the future land use map that is designated as heavy commercial is located along the frontage of Highway 87 (River Road SE). While the heavy commercial future land use designation of the strip of property sharing frontage with Highway 87 does not necessarily lend itself to promoting single family development, the CAMA core land use plan does indicate that areas currently zoned for commercial land use are not intended to be static as the land surrounding is developed. Additionally, the Town's current ETJ zoning line splits off a small portion of the northern portion of the site as shown on the master development plan. Concurrent with the request for approval of the PUD, we are requesting voluntary annexation to transfer the portion of land in Brunswick County's zoning jurisdiction into Southport's ETJ.

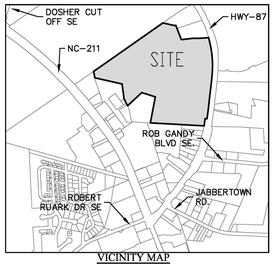
By using the PUD design guidelines we were able to be a little bit more flexible on the layout and impact of the proposed subdivision. Developing per the underlying zoning district, R-20, would have restricted lots to a larger size and would eliminated much of the open space, heritage trees, and natural drainage patterns of the site. Claiming the lot size reduction (maximum of 60% of the underlying zoning district), we were able to meet both our clients desired number of units as well as shape the subdivision in a manner such that it meets the open space, and preservation of natural areas (natural drainage ways, heritage trees, and minimize impacts to wetlands). At 100 proposed single family lots, this PUD proposal would be requesting a unit density of 1.85 units per acre, which is actually lower than the 2-3 units per acre prescribed by the future land use designation of low density residential. However, the future land use designation of heavy commercial would need to be amended in order to support this request. Southport is growing and availability of single family homes will continue to be in high demand. The proposed site location, on outer limits of town would provide proximity to nearby shopping needs, while being located away from the heart of Town.

4918 Main Street * Post Office Box 2469 * Shallotte, North Carolina 28459 * Tel.: 910-754-8029
Firm License Number: C-4785

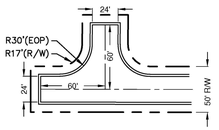
Appropriate buffering between the proposed PUD and surrounding properties should alleviate concerns with the transition in land use designation as well as the shift from R-20 & HC zoning to a PUD overlay. The majority of the roadway frontage (lots 93-100) would have an 80-ft plus buffer from the R/W of Highway 87 up to the rear of the lots. Lots 5-10 abutting the R-20 zoned tracts to the south are provided with a 38-ft minimum buffer offset from the southern property line. Lots 1-4 are provided the same buffer and are proposed adjacent to an area zoned highway commercial, but is currently a single family home site (tax parcel 221LA011). The southwest portion of the site adjacent to HC zoned area is buffered to proposed lots by natural open space (Lots 29-38). The preservation of heritage trees in conjunction with the 25-ft periphery boundary setback in this area will ensure a smooth transition and buffering between zoning districts. It should also be noted that tax parcel 2210002601 is zoned HC, but is currently a single family home site. Proposed lots abutting the northern property line (lots 38-51) zoned Brunswick County industrial general are provided a 25-ft periphery boundary setback for principle structures. There is no proposed buffer for these lots, but the land to the North is currently owned by Duke Energy Progress, Inc. for the operation of the power plant outfall canal (approx. 650-ft from northern property line to outfall canal). If Duke Energy Progress, Inc. were to ever develop this area of land, they would be required by Brunswick County planning to provide a buffer opacity of 1.0 (highest standard of buffering) which would equate to a minimum buffer width of 80-ft. Lots 53/53 are adjacent to tracts zoned commercial low density (Brunswick County) and highway commercial (Southport). These lots are provided a 25-ft rear setback as well as a 25-ft buffer where existing vegetation is to remain. Lastly, lots 85-92 are buffered from the adjacent tract to the north by the proposed stormwater pond and open space areas. Many heritage trees will remain along this northeast property line.

Extensive coordination with NCDOT and draft traffic impact studies have indicated a need for a symmetrical widening of Highway 87 at the proposed entrance to the subdivision. While the final design will have to be approved by NCDOT, we are currently proposing a northbound center left turn lane, as well as a southbound right turn lane. NCDOT has indicated that this roadway improvement would alleviate any concerns with traffic congestion/safety. Additionally, we have coordinated with the local fire marshal to add a secondary emergency entrance/exit for emergency vehicle access. This gated secondary drive will not be accessible to residents, will be properly noted with signage, and will operate by emergency siren activation. Additionally, NCDOT is continuing to work on the widening of NC-211 and plans to improve the intersection of NC-211 and NC-87 to improve circulation & flow (DOT TIP #R-5021 – Map included in this submittal).

Grading of the roadways will promote runoff from lots to be directed to the street where it will be collected via valley curb and gutter. All runoff is conveyed to one large stormwater pond which has been sized to meet the pre-post runoff condition based on the 25 year peak runoff condition. Additionally, the stormwater pond has been routed to ensure that it will not overtop the banks in the 100-year peak runoff event which further protects downstream natural resources. Permits from the Town of Southport and NCDEMLR will be required prior to any final approval/final platting. The natural drainage course leading down to Clay bottom branch was maintained and runoff from offsite will be bypass the stormwater pond via existing drainage swales as shown on the grading & tree impact plans. All runoff from the natural drainage bypass as well as the stormwater pond outfall are ultimately routed to two 30-inch culverts crossing under highway 87.



VICINITY MAP
NOT TO SCALE



TYPICAL DEAD END STREET TURNAROUND
NOT TO SCALE

TYPICAL CUL-DE-SAC DETAIL
NOT TO SCALE

TYPICAL LOT DIMENSION & SETBACKS
(LOT DIMENSIONS NOT TYPICAL TO IRREGULAR SHAPED LOTS)
NOT TO SCALE

OPEN SPACE

4.67 AC. PASSIVE OPEN SPACE

6.21 AC. ACTIVE OPEN SPACE

ACTIVE OPEN SPACE NOTE

ACTIVE OPEN SPACE ACTIVITIES MAY INCLUDE: GRASSED ACTIVITY AREA, PEDESTRIAN WALKWAYS, PEDESTRIAN BRIDGES, GAZEBOS, & PARK BENCHES.

ALL OPEN SPACE AREA TO BE OWNED & MAINTAINED BY HOME OWNERS ASSOCIATION.

PROJECT INFORMATION

OWNER NAME & ADDRESS:	TURTLE BAY AT SOUTHPORT, LLC 5106 LANCOME CT WILMINGTON, NC 28409 910-443-6739

PROPERTY INFORMATION

TAX PARCEL NUMBER:	22100017
DEED REFERENCE:	BOOK 5043, PAGE 1074
MAP BOOK:	BOOK 143, PAGE 47
TOTAL SITE AREA:	2,356,011 SF OR 54.09 AC

ZONING

PLANNED UNIT DEVELOPMENT (PUD)

MINIMUM LOT SIZE:	12,000 SF
MINIMUM LOT WIDTH:	75 FEET
BUILDING SETBACKS:	FRONT YARD=10 FEET REAR YARD=15 FEET SIDE YARD=8 FEET

LOT LAYOUT INFORMATION:

TOTAL TRACT AREA= 2,356,011 SF (54.09 ACRES)

TOTAL RIGHT OF WAY AREA= 336,343 SF (7.72 ACRES)

TOTAL WETLANDS= 66,504 SF (1.53 ACRES)

TOTAL PROPOSED STORMWATER POND AREA= 173,955 SF (3.99ACRES)

TOTAL NEW LOTS CREATED =	100
MINIMUM LOT SIZE =	12,000 SF
UNIT DENSITY=	1.85 UNITS/ACRE

TOTAL NET AREA CALCULATION

TOTAL TRACT AREA EXCLUDING STREET RIGHT OF WAYS & STORMWATER PONDS = 1,845,713 SF (42.37 ACRES)

OPEN SPACE CALCULATION

OPEN SPACE REQUIRED: 20% OF TRACT AREA EXCLUDING WETLANDS 2,356,011 SF X 20% = 471,202 SF (10.82ACRES)

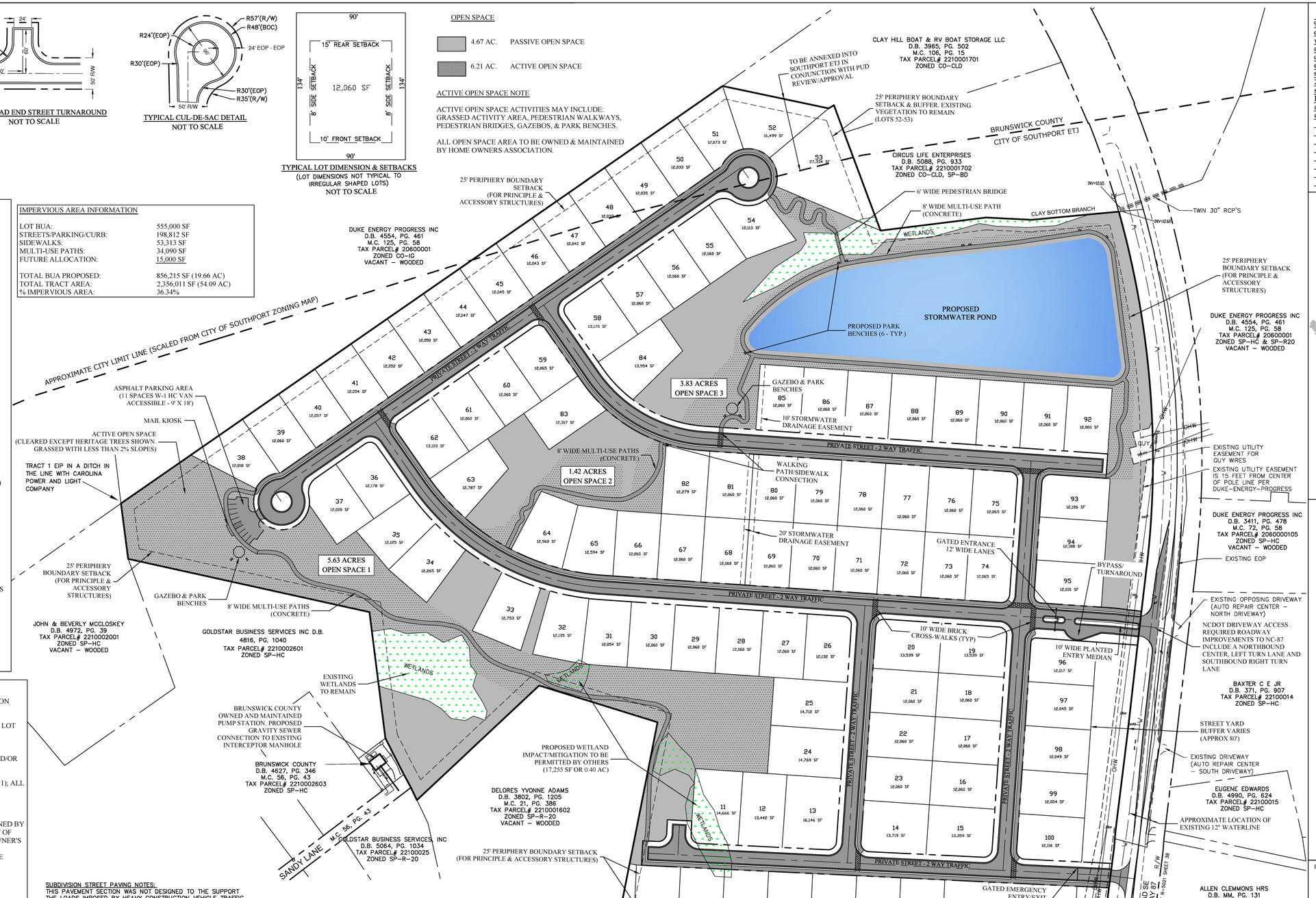
OPEN SPACE #1=	5.63 AC (245,214 SF)	51.72%
OPEN SPACE #2=	1.42 AC (62,033 SF)	13.08 %
OPEN SPACE #3=	3.83 AC (166,855 SF)	35.20 %
TOTAL PROVIDED:	10.88 AC (474,102 SF)	100.00%
CONTIGUOUS OPEN SPACE:	5.63 AC (245,214 SF)	51.72%
NON-CONTIGUOUS OPEN SPACE:	5.25 AC (228,888 SF)	48.28 %

IMPERVIOUS AREA INFORMATION

LOT BUA:	555,000 SF
STREETS/PARKING/CURB:	198,812 SF
SIDEWALKS:	53,313 SF
MULTI-USE PATHS:	34,090 SF
FUTURE ALLOCATION:	15,000 SF
TOTAL BUA PROPOSED:	856,215 SF (19.66 AC)
TOTAL TRACT AREA:	2,356,011 SF (54.09 AC)
% IMPERVIOUS AREA:	36.34%

DEVELOPMENT NOTES:

1. ADJOINING DEED REFERENCES BASED ON CURRENT INFORMATION FOUND IN THE BRUNSWICK COUNTY TAX OFFICE.
2. ACCORDING TO CURRENT FEMA FLOOD MAP # 3720209700K, THIS LOT APPEARS TO BE LOCATED IN THE FOLLOWING ZONE: X
3. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHT-OF-WAYS OF RECORD, GOVERNMENTAL ORDINANCES AND/OR REQUIREMENTS WHICH MAY LIMIT THE USE OF THIS PROPERTY.
4. ALL BEARINGS ARE BASED ON NC GRID NORTH (NAD83-NSRS 2011); ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. IRON REBAR TO BE SET AT ALL LOT CORNERS.
6. ALL STREET IN ARE PRIVATE STREETS AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. SIDEWALKS WITH THESE RIGHT OF WAYS ARE PRIVATE AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. ROADWAYS WILL BE CONSTRUCTED TO TOWN STANDARDS AND MAY BE REQUESTED TO BE DEDICATED TO THE TOWN AT A FUTURE DATE.
7. SETBACKS FOR THESE LOTS ARE BASED ON CURRENT TOWN OF SOUTHPORT ZONING.
8. ALL OPEN SPACE SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION.
9. ALL STREETS SHALL BE CONSTRUCTED TO TOWN OF SOUTHPORT STANDARDS PER TOWN ORDINANCE.
10. ALL LOTS TO BE SERVED WITH PUBLIC WATER AND SEWER.
11. A 10' DRAINAGE AND UTILITY EASEMENT IS RESERVED ALONG ALL SIDE LOT LINES (5' EITHER SIDE OF LINE).
12. ALL NEW UTILITIES SHALL BE SUB-SURFACE.
13. THESE LOTS ARE LOCATED WITHIN THE TOWN OF SOUTHPORT CORPORATE LIMITS.
14. A STREET LIGHTING PLAN SHALL BE DEVELOPED BY BRUNSWICK ELECTRIC MEMBERSHIP CORPORATION (BEMC).
15. AREA BY COORDINATE METHOD.
16. SOUTHPORT AND NORTH CAROLINA STATE STORMWATER PERMITS MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION. NO NATURAL DRAINAGE AREAS WILL BE CUT OFF OR DISTURBED BEFORE OBTAINING THE PERMITS.



SUBDIVISION STREET PAVING NOTES:
THIS PAVEMENT SECTION WAS NOT DESIGNED TO THE SUPPORT THE LOADS IMPOSED BY HEAVY CONSTRUCTION VEHICLE TRAFFIC. ADDITIONAL ASPHALT IS REQUIRED IF THE CONSTRUCTION IS TO BE PHASED. CONSULT GEOTECHNICAL ENGINEER FOR GUIDANCE.

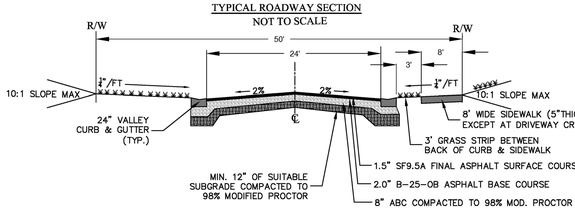
UNDERCUT ANY UNSUITABLE MATERIAL UP TO 24" AND REPLACE WITH SELECT MATERIAL AS REQUIRED

THE PAVEMENT DESIGN SHOWN REPRESENTS THE MINIMUM THICKNESS OF SURFACE AND BASE COURSE TO BE USED. SUBGRADE SOILS TEST MAY DETERMINE A HEAVIER PAVEMENT DESIGN BE REQUIRED.

ALL MATERIALS SHALL MEET THE REQUIREMENTS SET FORTH IN THE LATEST EDITION OF NCDOT SUBDIVISION ROADS – MINIMUM CONSTRUCTION STANDARDS.

CONTRACTOR SHALL NOTIFY ENGINEER IF SATURATED SUBGRADE IS ENCOUNTERED DURING CONSTRUCTION AS ADDITIONAL DRAINAGE MEASURES MAY BE REQUIRED, SUCH AS CURB UNDER DRAIN SYSTEM.

TYPICAL ROADWAY SECTION
NOT TO SCALE



STORMWATER NOTE:

ALL STORMWATER RUNOFF FROM LOTS TO BE DIRECTED TO STREET CURB INLET COLLECTION SYSTEM (DOWNSPOUT PIPING, SWALE, OR SHEET FLOW). RUNOFF SHALL BE CONVEYED VIA THE STORMWATER DRAINAGE SYSTEM TO THE PROPOSED STORMWATER POND. STORMWATER POND HAS BEEN SIZED TO CONTROL AND RELEASE THE 25-YR, 24-HR STORM TO MATCH PRE-EXISTING RUNOFF CONDITIONS. STORMWATER PERMITS FROM SOUTHPORT AND NCDEMLR WILL BE SUBMITTED UPON APPROVAL OF PUD.

RIGHT OF WAY/STREET SPECIAL NOTE:

1. ALL R/W'S WITHIN PROJECT ARE PROPOSED AT 50'. EXCEPTION OF R/W WIDTH AT ENTRANCE (72') AND AROUND CUL-DE-SACS (114').
2. STREETS ARE PROPOSED 24' WIDE WITH 2' VALLEY CURBING
3. ALL SIDEWALKS TO BE 8' WIDE WITH 3' LANDSCAPING STRIP BETWEEN BACK OF CURB AND SIDEWALK. A 10' WIDE BRICK CROSS WALK WILL BE PROVIDED WHERE SIDEWALKS CONNECT ACROSS THE STREET.
4. ALL MULTI-USE PATHS SHALL BE 8' WIDE AND PAVED WITH CONCRETE

UTILITY NOTE:

1. GRAVITY SEWER SEWER WILL SERVE THE PROPOSED SUBDIVISION. CONNECTION TO BE PERMITTED & MADE TO THE LIFT STATION ON SANDY LANE.
2. WATER DISTRIBUTION NETWORK TO BE PERMITTED AND CONNECTED TO EXISTING 12" WATER MAIN ALONG HWY 87
3. ALL UTILITIES OWNED AND MAINTAINED BY BRUNSWICK COUNTY

Revisions

9-26-2023 Revision to driveway entrance to align with opposing driveway accross NC-87 per DOT comments. Stormwater pond enlarged to accomodate 25-yr storm event.
2-1-2024 Revision to widen sidewalks to 8-ft throughout. Revision to open space areas and multi-use paths changed to concrete surface.

East Coast Engineering, P.C.
ENGINEERS•PLANNERS•CONSULTANTS
4918 Main Street
Post Office Box 2469
Shallotte, North Carolina 28459
Phone: 910.754.8029
Fax: 910.754.8049
Firm License Number C-3014

MASTER DEVELOPMENT PLAN (PUD)
FOR
TURTLE BAY
SOUTHPORT, NORTH CAROLINA

Date: 08-23-2023
Scale: AS SHOWN
Drawn By: MGB
Checked By: JDS

FINAL DESIGN
ISSUED FOR REVIEW

THIS PLAN IS NOT ISSUED FOR CONSTRUCTION WITHOUT AFFIXED CORPORATE SEAL.

NORTH CAROLINA PROFESSIONAL SEAL 053626 ENGINEER JACKSON D STARLING
2-1-2024

C3.0

© 2024 This drawing shall not be reproduced in whole or in part without written permission of East Coast Engineering, P.C.

Digitally signed by Jackson D Starling
Date: 2024.02.02 10:29:20 -05'00'

ECE PROJECT NO. 2235

City of Southport Planning Board
Statement of Plan Consistency and Zoning Recommendation
(As per NC General Statute 160D-604)

When conducting a review of proposed zoning text or map amendments pursuant to this section, the planning board shall advise and comment on whether the proposed action is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

AMENDMENT: **ZMA 24-01**

STATEMENT OF CONSISTENCY AND RECOMMENDATION:

The City of Southport Planning Board hereby recommends **approval** of the proposed Zoning Map Amendment to the Board of Aldermen and finds that it is consistent with the City's 2014 CAMA Core Land Use Plan originally adopted Nov. 13, 2014 and subsequently amended by the Southport Board of Aldermen. More specifically, the proposed amendment is consistent with **Policy 2.3:** Southport supports quality development reflecting a spectrum of housing needs, from low-end (affordable) residences to high-end (luxury) residences. Further, the Planning Board finds that the proposed text amendment is reasonable due to the size, physical conditions, and other attributes of the area.

The statement and motion was seconded and passed _____.

_____ _____

Tanya Shannon, Deputy City Clerk Sue Hodgin, Chairman

City of Southport Planning Board
Statement of Plan Consistency and Zoning Recommendation
(As per NC General Statute 160D-604)

When conducting a review of proposed zoning text or map amendments pursuant to this section, the planning board shall advise and comment on whether the proposed action is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The planning board shall provide a written recommendation to the governing board that addresses plan consistency and other matters as deemed appropriate by the planning board, but a comment by the planning board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

AMENDMENT: **ZMA 24-01**

STATEMENT OF CONSISTENCY AND RECOMMENDATION:

The City of Southport Planning Board hereby recommends **denial** of the proposed Zoning Map Amendment to the Board of Aldermen and finds that it is inconsistent with the City's 2014 CAMA Core Land Use Plan originally adopted Nov. 13, 2014 and subsequently amended by the Southport Board of Aldermen and not reasonable due to the size, physical conditions, and other attributes of the area.

The statement and motion was seconded and passed _____.

_____ _____

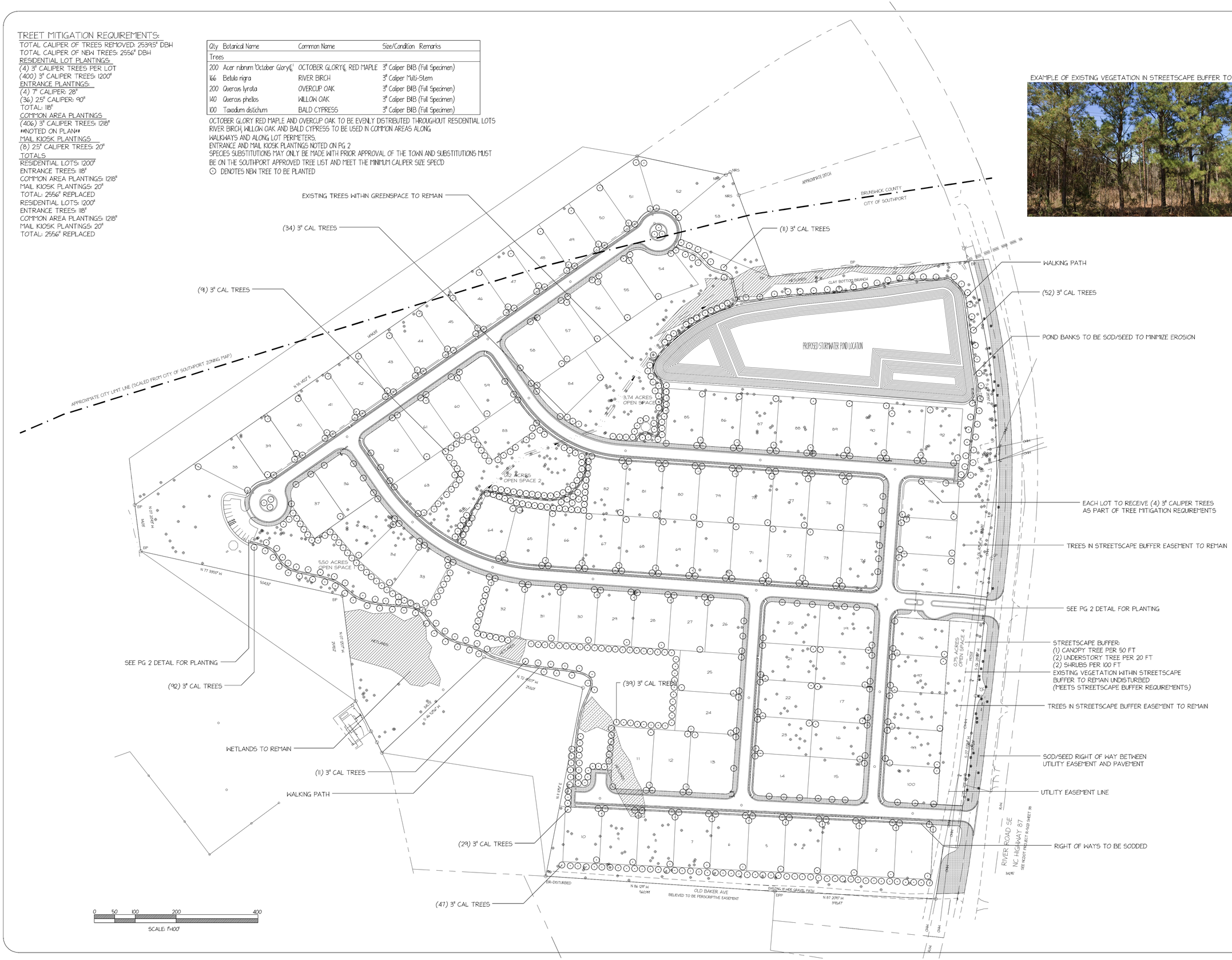
Tanya Shannon, Deputy City Clerk Sue Hodgin, Chairman

TREET MITIGATION REQUIREMENTS:
TOTAL CALIPER OF TREES REMOVED: 2539.5" DBH
TOTAL CALIPER OF NEW TREES: 2556" DBH
RESIDENTIAL LOT PLANTINGS:
(4) 3" CALIPER TREES PER LOT
(400) 3" CALIPER TREES: 1200"
ENTRANCE PLANTINGS:
(4) 7" CALIPER: 28"
(36) 2.5" CALIPER: 90"
TOTAL: 118"
COMMON AREA PLANTINGS
(406) 3" CALIPER TREES: 1218"
NOTED ON PLAN
MAIL KIOSK PLANTINGS
(8) 2.5" CALIPER TREES: 20"
TOTALS
RESIDENTIAL LOTS: 1200"
ENTRANCE TREES: 118"
COMMON AREA PLANTINGS: 1218"
MAIL KIOSK PLANTINGS: 20"
TOTAL: 2556" REPLACED
RESIDENTIAL LOTS: 1200"
ENTRANCE TREES: 118"
COMMON AREA PLANTINGS: 1218"
MAIL KIOSK PLANTINGS: 20"
TOTAL: 2556" REPLACED

Qty	Botanical Name	Common Name	Size/Condition	Remarks
Trees				
200	Acer rubrum 'October Glory©'	OCTOBER GLORY© RED MAPLE	3" Caliper B&B (Full Specimen)	
166	Betula nigra	RIVER BIRCH	3" Caliper Multi-Stem	
200	Quercus lyrata	OVERCUP OAK	3" Caliper B&B (Full Specimen)	
140	Quercus phellos	WILLOW OAK	3" Caliper B&B (Full Specimen)	
100	Taxodium distichum	BALD CYPRESS	3" Caliper B&B (Full Specimen)	

OCTOBER GLORY RED MAPLE AND OVERCUP OAK TO BE EVENLY DISTRIBUTED THROUGHOUT RESIDENTIAL LOTS
RIVER BIRCH, WILLOW OAK AND BALD CYPRESS TO BE USED IN COMMON AREAS ALONG
WALKWAYS AND ALONG LOT PERIMETERS.
ENTRANCE AND MAIL KIOSK PLANTINGS NOTED ON PG 2
SPECIES SUBSTITUTIONS MAY ONLY BE MADE WITH PRIOR APPROVAL OF THE TOWN AND SUBSTITUTIONS MUST
BE ON THE SOUTHPORT APPROVED TREE LIST AND MEET THE MINIMUM CALIPER SIZE SPECD
⊙ DENOTES NEW TREE TO BE PLANTED

EXAMPLE OF EXISTING VEGETATION IN STREETSCAPE BUFFER TO REMAIN



BLD LANDSCAPE ARCHITECTURE

N
NORTH

TREE PLANTING MASTER PLAN FOR:
TURTLE BAY NEIGHBORHOOD
SOUTHPORT
NORTH CAROLINA

1	DRAWING #
11/3/23	DATE
1"=100'	SCALE

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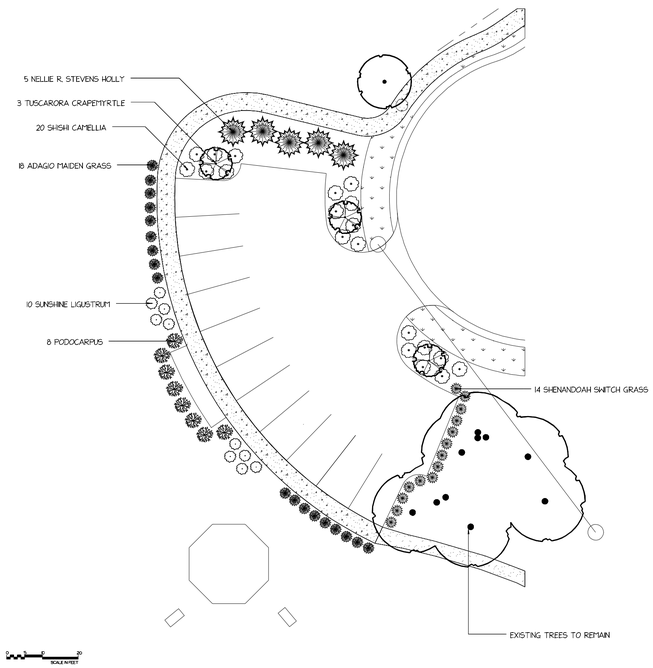
MAILBOX KIOSK PLANTING AREA



MAILBOX AREA PLANTING KEY

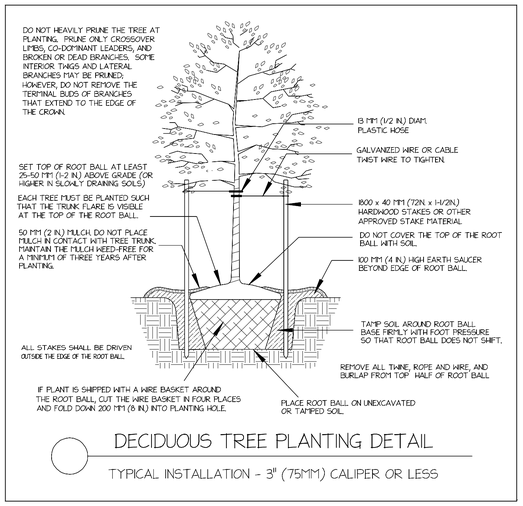
Qty	Botanical Name	Common Name	Size/Condition Remarks
Trees			
3	Lagerstroemia x 'Tuscarora'	TUSCARORA CRAPEMYRTLE	2.5" Caliper Single Stem
Shrubs			
20	Camellia sasanqua 'Shi Shi'	SHISHI CAMELLIA	3 Gallon 16" Height
5	Ilex 'Nellie R. Stevens'	NELLIE R. STEVENS HOLLY	2.5" Caliper
10	Ligustrum sinense 'Sunshine'	SUNSHINE LIGUSTRUM	3 Gallon 16" Height
8	Podocarpus macrophyllus	PODOCARPUS	7 Gallon 36" Height
Ornamental Grasses			
18	Miscanthus sinensis 'Adagio'	ADAGIO MAIDEN GRASS	3 Gallon 12" Height
14	Panicum virgatum 'Shenandoah'	SHENANDOAH SWITCH GRASS	3 Gallon 12" Height

FRONT ENTRANCE PLANTING KEY

Qty	Botanical Name	Common Name	Size/Condition Remarks
Trees			
4	Quercus virginiana	SOUTHERN LIVE OAK	7" Caliper 22' Height
6	Lagerstroemia x 'Natchez'	NATCHEZ CRAPEMYRTLE	2.5" Caliper Single Stem
Palms			
16	Sabal minor	DWARF PALMETTO	7 Gallon 36" Height
Shrubs			
46	Abelia x grandiflora 'Kaleidoscope'	KALEIDOSCOPE ABELIA	3 Gallon 16" Height
30	Ilex 'Nellie R. Stevens'	NELLIE R. STEVENS HOLLY	2.5" Caliper
100	Ilex vomitoria 'Nana'	NANA YAUPON HOLLY	3 Gallon 12" Height
12	Ligustrum japonicum	WAXLEAF LIGUSTRUM	15 Gallon 48" Height
11	Ligustrum sinense 'Sunshine'	SUNSHINE LIGUSTRUM	3 Gallon 16" Height
17	Loropetalum var. 'Crimson Fire'	CRIMSON FIRE LOROPETALUM	3 Gallon 12" Height
18	Rosa 'Radrazz Knock Out'	RED KNOCK OUT ROSE	3 Gallon 16" Height
Ornamental Grasses			
14	Cortaderia selloana	PAMPAS GRASS	3 Gallon 12" Height
44	Liriope muscari 'Big Blue'	BIG BLUE LILYTURF	3 Gallon 12" Height
30	Muhlenbergia capillaris	PINK MUHLY GRASS	3 Gallon 12" Height

GENERAL LANDSCAPE NOTES

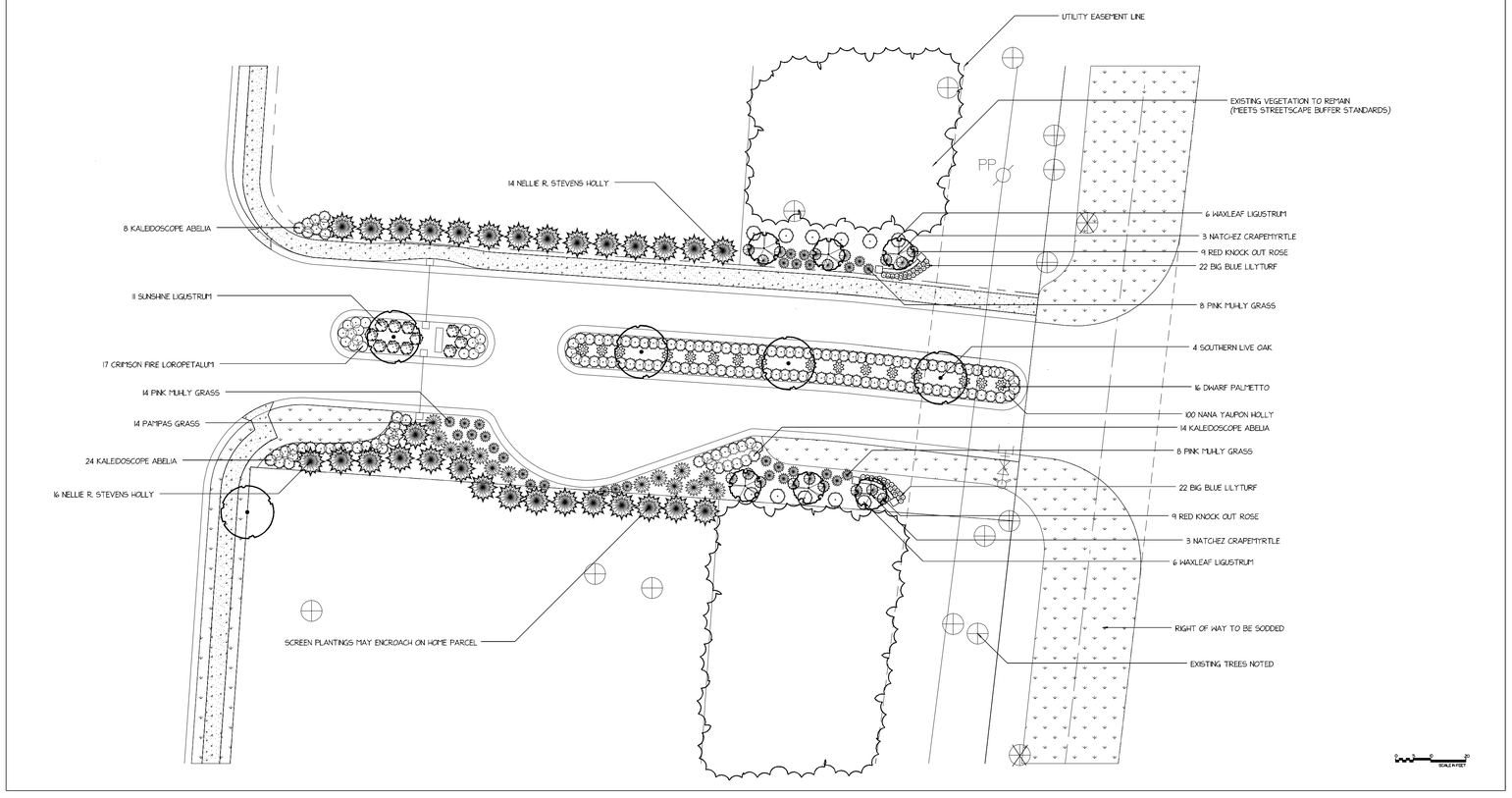
TIFWAY 419 BERMUDA SOD TO BE USED IN ALL TURF AREAS
PLANT MATERIAL SHALL MEET OR EXCEED STANDARD NURSERYMANS SPECIFICATIONS
DOWNSIZING-OR SUBSTITUTIONS ARE NOT ALLOWED WITHOUT PRIOR APPROVAL
DAMAGED, ROOT BOUND, OR UNHEALTHY APPEARING, NON-SPECIMEN MATERIAL SHALL NOT BE ACCEPTED.
THIS PROJECT INCLUDES BUT IS NOT LIMITED TO SITE PREPARATION, FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, SOIL AMENDMENTS, ETC REQUIRED FOR COMPLETE LANDSCAPE INSTALLATION.
ALL UTILITIES SHALL BE LOCATED BY CONTRACTOR PRIOR TO CONSTRUCTION
IRRIGATION PROPOSAL SHALL BE PROVIDED BY THE CONTRACTOR AND DESIGNEDBY A CERTIFIED IRRIGATION DESIGNER. ALL PLANT MATERIAL SHALL BE DRIP IRRIGATION AND SOD AREAS SPRAY IRRIGATED.
PLANTED AREAS AND DISTURBED NATURAL AREAS SHALL RECEIVE A 3" MINIMUM LAYER OF BROWN HARDWOOD MULCH
DEBRIS SHALL BE REMOVED FROM ALL NATURAL AREAS, WEEDS SHALL BE ERADICATED AND REMOVED FROM
ALL NATURAL AREAS. DAMAGED AND DEAD TREE LIMBS SHALL BE REMOVED FROM ALL EXISTING TREES
EQUIPMENT ACTIVITY, FILL OR ANY DISTURBANCE IN EXISTING TREE ROOTZONE AREAS SHALL BE AVOIDED WHENEVER POSSIBLE
THIS PLANTING PLAN ILLUSTRATES THE OVERALL DESIGN INTENT BUT MAY REQUIRE PLACEMENT ADJUSTMENTS.
PLANTING PROCEDURES SHALL MEET OR EXCEED THE HIGHEST HORTICUTURAL PRACTICES IN THE LANDSCAPE INDUSTRY.
CONTRACTOR IS RESPONSIBLE FOR ASSURING ALL REQUIRED PERMITS, IF ANY ARE IN PLACE PRIOR TO COMMENCING WORK
THIS PLAN WAS DESIGNED WITH UTMOST CONSIDERATION TO MINIMIZE MAINTENANCE BUT REGULAR MAINTENANCE WILL BE REQUIRED TO PRESERVE THE APPEARANCE AND TO PROMOTE THE PROPER GROWTH OF THE PLANT MATERIAL.
THE SCHEDULED MAINTENANCE SHOULD BE PERFORMED BY EXPERIENCED AND KNOWLEDGEABLE LANDSCAPE GARDENERS.



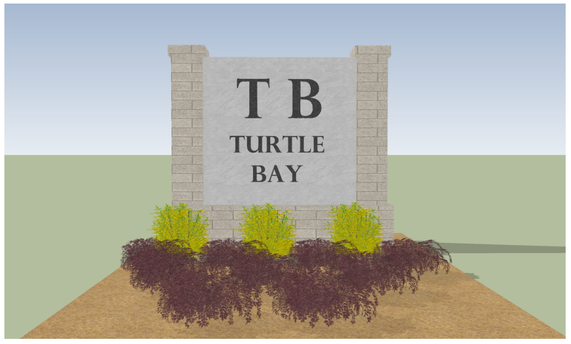
DECIDUOUS TREE PLANTING DETAIL

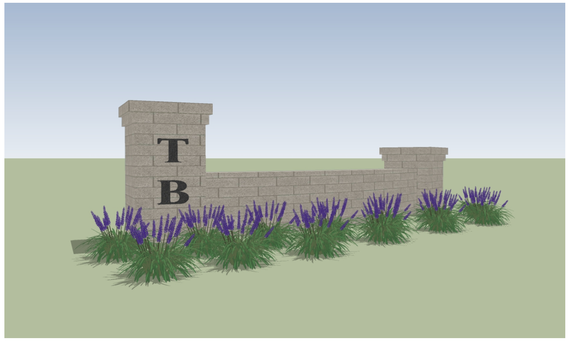
TYPICAL INSTALLATION - 3" (75MM) CALIPER OR LESS

FRONT ENTRANCE MONUMENT/PLANTING



ENTRANCE MONUMENT CONCEPTS
(FINAL MATERIAL/DESIGN TO BE APPROVED BY TOWN OF SOUTHPORT)





BID LANDSCAPE ARCHITECTURE

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NORTH

PLANTING DETAILS FOR:
TURTLE BAY NEIGHBORHOOD
SOUTHPORT
NORTH CAROLINA

1	DRAWING #
11/3/23	DATE
1"=100'	SCALE

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2358 BRIAN SPENCER INIONS

L-2

Turtle Bay at Southport

Southport, NC

PREPARED FOR: Turtle Bay at Southport, LLC

January 2, 2024

PROJECT # 220222

TRANSPORTATION
IMPACT ANALYSIS

Celebrating 20 YEARS DAVENPORT

Transportation Impact Analysis

Turtle Bay at Southport
Southport, NC

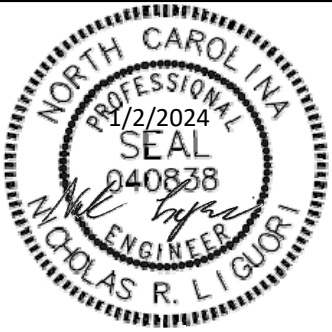
Prepared for
Turtle Bay at Southport, LLC

January 2, 2024

Analysis and Graphics by: Sheheryar Shafique

Reviewed and Sealed by: Nick Liguori, PE

SEAL



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Wilmington, NC 28409
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EXECUTIVE SUMMARY

The Turtle Bay at Southport proposed development is located on the west side of NC 87 to the north of Rob Gandy Blvd in Southport, NC. It is planned to consist of 100 single family homes. One (1) full movement access point on NC 87 (River Road) is proposed for this development. The Site Access is located approximately 1,300 feet north of Rob Gandy Boulevard. The expected build-out year for the development is 2026. Information regarding the property was provided by Turtle Bay at Southport, LLC.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of the new development traffic.

The Transportation Impact Analysis (TIA) was performed based on the scope agreed upon with the City of Southport and North Carolina Department of Transportation (NCDOT). This site has a trip generation potential of 1,009 daily trips, 74 trips in the AM peak hour, and 99 trips in the PM peak hour.

In conclusion, this study has determined the potential traffic impacts of this development. At the site access, a northbound left turn lane with 100 feet of storage and appropriate deceleration/taper and a southbound right turn lane with 100 feet of storage and appropriate deceleration/taper is recommended. With the recommended improvements in place, the anticipated transportation impacts of the proposed development can be accommodated. The recommendations summarized in Figure A and in Table A should be constructed to comply with applicable NCDOT *Policy on Street and Driveway Access to North Carolina Highways* and local standards.

Table A – Summary of Recommended Improvements

INTERSECTION	RECOMMENDATIONS
NC 87 (River Road) at Site Access	• Construct a southbound right turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper. • Construct a northbound left turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper. • Construct the driveway according to applicable NCDOT standards and with adequate sight distance.

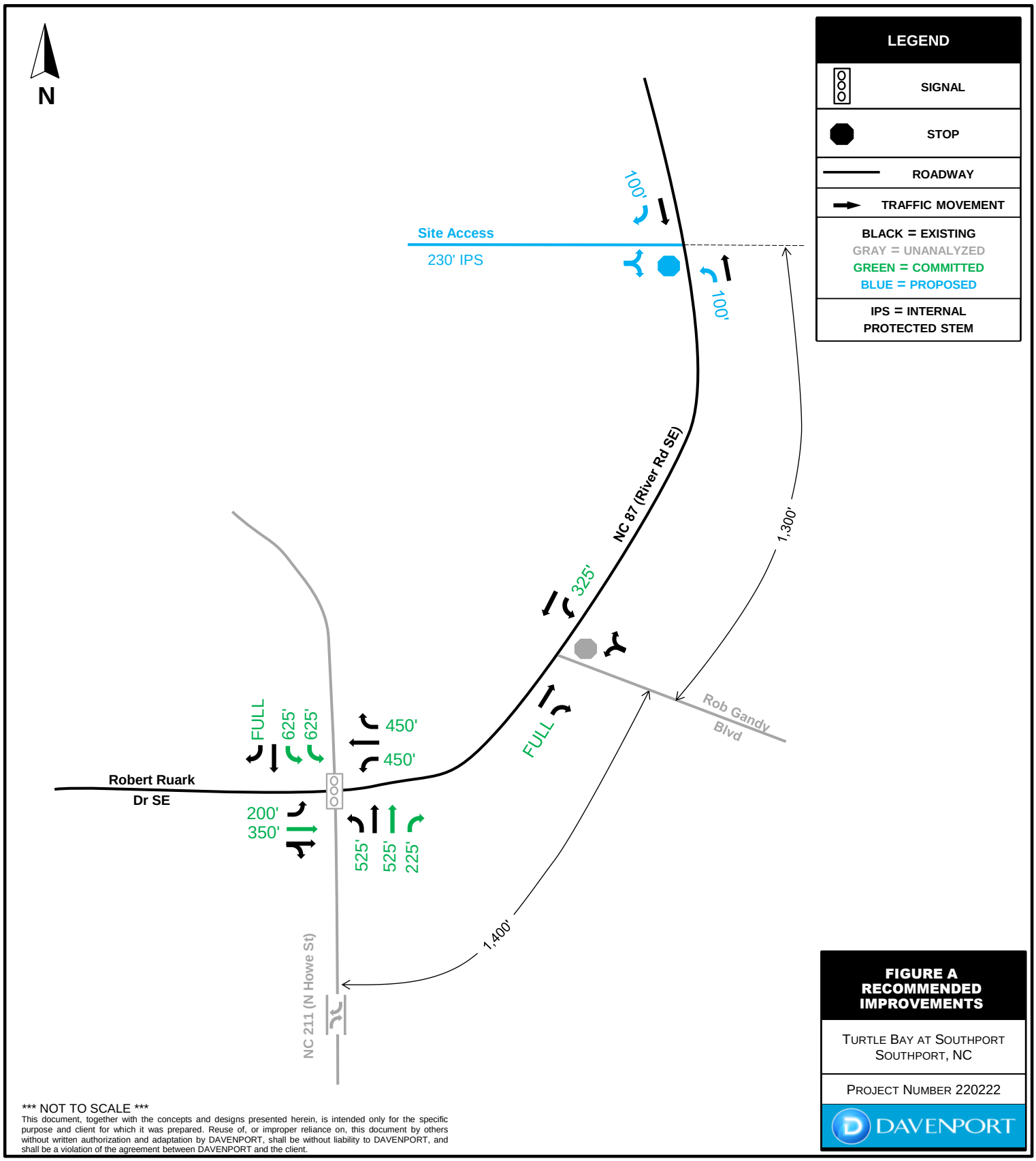

FIGURE A
RECOMMENDED IMPROVEMENTS

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

DAVENPORT

*** NOT TO SCALE ***

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1.0 Introduction

The Turtle Bay at Southport proposed development is located on the west side of NC 87 to the north of Rob Gandy Blvd in Southport, NC. It is planned to consist of 100 single family homes. One (1) full movement access point on NC 87 (River Road) is proposed for this development. The site access is located approximately 1,300 feet north of Rob Gandy Boulevard. The expected build-out year for the development is 2026. Information regarding the property was provided by Turtle Bay at Southport, LLC.

A conceptual site plan is shown in Figure 1, and a site location map and a vicinity map are provided in Figures 2A and 2B, respectively.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of the new development traffic. The following intersections are included in the study:

1. NC 87 (River Road) and Site Access (unsignalized)

The signalized intersection of US 211 (North Howe Street) at NC 87 (River Road Southeast) and the unsignalized intersection of NC 87 (River Road) at Rob Gandy Boulevard were included in synchro models to account for signal platooning effects and volume balancing purposes. The study intersections were analyzed during the AM and PM peaks for the following conditions:

- 2026 Future Build Conditions
- 2026 Future Build Conditions + Improvements

The Transportation Impact Analysis (TIA) was performed based on the scope agreed upon with the City of Southport and North Carolina Department of Transportation (NCDOT). It was conducted according to the standards and best practices of the transportation engineering profession.

PROJECT INFORMATION

OWNER NAME & ADDRESS: TURTLE BAY AT SOUTHPORT, LLC
5106 LANCOME CT
WILMINGTON, NC 28409

PROPERTY INFORMATION

TAX PARCEL NUMBER: 22100017
DEED REFERENCE: BOOK 4598, PAGE 224
TAX PARCEL NUMBER: 22100016
DEED REFERENCE: BOOK 4950, PAGE 377
PARCELS TO BE COMBINED
TOTAL SITE AREA: 2,356,011 SF OR 54.09 AC

ZONING

PLANNED UNIT DEVELOPMENT (PUD)

MINIMUM LOT SIZE: 12,000 SF

MINIMUM LOT WIDTH: 75 FEET

BUILDING SETBACKS: FRONT YARD–25 FEET
REAR YARD–20 FEET
SIDE YARD–8 FEET

LOT LAYOUT INFORMATION:

TOTAL TRACT AREA– 2,356,011.2 SF (54.09 ACRES)

TOTAL RIGHT OF WAY AREA– 358,408.4 SF (8.23 ACRES)

TOTAL WETLANDS– 66,504 SF (1.53 ACRES)

TOTAL PROPOSED STORMWATER POND AREA– 166,103 SF (3.81 ACRES)

TOTAL NEW LOTS CREATED – 100
MINIMUM LOT SIZE = 12,000 SF

TOTAL NET AREA CALCULATION

TOTAL TRACT AREA EXCLUDING STREET RIGHT OF WAYS & STORMWATER PONDS = ------ SF (----- ACRES)

OPEN SPACE CALCULATION

OPEN SPACE REQUIRED: 20% OF TRACT AREA EXCLUDING WETLANDS
2,356,011 SF X 20% = 471,202 SF (10.82 ACRES)

TOTAL OPEN SPACE PROVIDED: 497,216 SF (11.41 ACRES)

OPEN SPACE #1= 5.50 AC
OPEN SPACE #2= 1.42 AC
OPEN SPACE #3= 3.74 AC
OPEN SPACE #4= 0.75 AC

TOTAL OPEN SPACE= 497,216 SF (11.41 ACRES)

OPEN SPACE

6.57 AC. PASSIVE OPEN SPACE

4.84 AC. ACTIVE OPEN SPACE

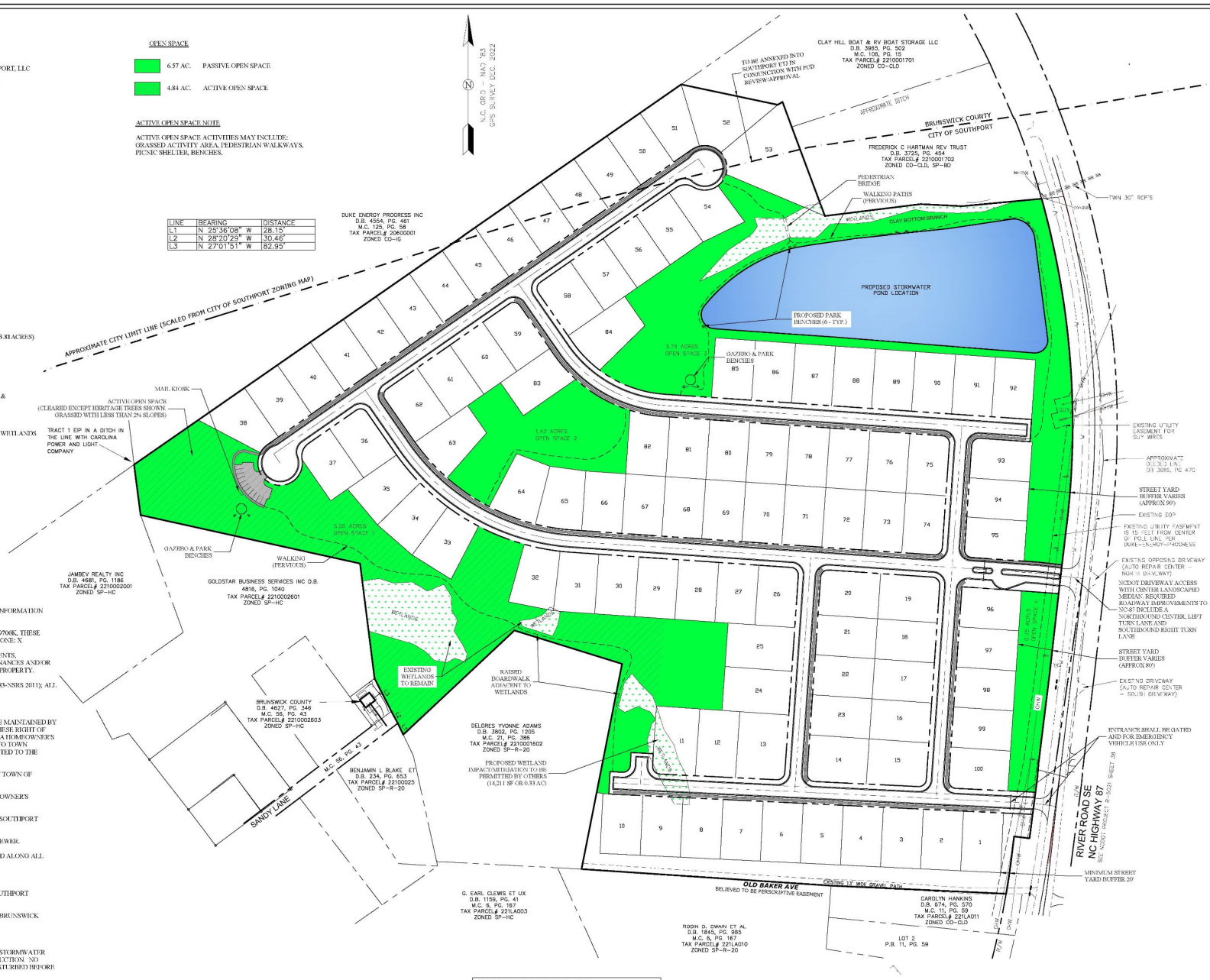
ACTIVE OPEN SPACE NOTE

ACTIVE OPEN SPACE ACTIVITIES MAY INCLUDE: GRASSED ACTIVITY AREA, PEDESTRIAN WALKWAYS, PICNIC SHELTER, BENCHES,

LINE	BEARING	DISTANCE
L1	N 25°36'08" W	28.15'
L2	N 28°20'29" W	30.46'
L3	N 27°01'51" W	82.95'

DEVELOPMENT NOTES:

1. ADJOINING DEED REFERENCES BASED ON CURRENT INFORMATION FOUND IN THE BRUNSWICK COUNTY TAX OFFICE.
2. ACCORDING TO CURRENT FEMA FLOOD MAP # 3720209700K, THESE LOTS APPEARS TO BE LOCATED IN THE FOLLOWING ZONE: X
3. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHT-OF-WAYS OF RECORD, GOVERNMENTAL ORDINANCES AND/OR REQUIREMENTS WHICH MAY LIMIT THE USE OF THIS PROPERTY.
4. ALL BEARINGS ARE BASED ON NC GRID NORTH (NAD83-NSRS 2011); ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. IRON REBAR TO BE SET AT ALL LOT CORNERS.
6. ALL STREET IN ARE PRIVATE STREETS AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. SIDEWALKS WITH THESE RIGHT OF WAYS ARE PRIVATE AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. ROADWAYS WILL BE CONSTRUCTED TO TOWN STANDARDS AND MAY BE REQUESTED TO BE DEDICATED TO THE TOWN AT A FUTURE DATE.
7. SETBACKS FOR THESE LOTS ARE BASED ON CURRENT TOWN OF SOUTHPORT ZONING.
8. ALL OPEN SPACE SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION.
9. ALL STREETS SHALL BE CONSTRUCTED TO TOWN OF SOUTHPORT STANDARDS PER TOWN ORDINANCE.
10. ALL LOTS TO BE SERVED WITH PUBLIC WATER AND SEWER.
11. A 10' DRAINAGE AND UTILITY EASEMENT IS RESERVED ALONG ALL SIDE LOT LINES (5' EITHER SIDE OF LINE).
12. ALL NEW UTILITIES SHALL BE SUB-SURFACE.
13. THESE LOTS ARE LOCATED WITHIN THE TOWN OF SOUTHPORT CORPORATE LIMITS.
14. A STREET LIGHTING PLAN SHALL BE DEVELOPED BY BRUNSWICK ELECTRIC MEMBERSHIP CORPORATION (BEMC).
15. AREA BY COORDINATE METHOD.
16. BRUNSWICK COUNTY AND NORTH CAROLINA STATE STORMWATER PERMITS MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION. NO NATURAL DRAINAGE AREAS WILL BE CUT OFF OR DISTURBED BEFORE OBTAINING THE PERMITS.



RIGHT OF WAY/STREET SPECIAL NOTE:

1. ALL R/W'S WITHIN PROJECT ARE PROPOSED AT 50'.
2. STREETS ARE PROPOSED 24' WIDE WITH 2' VALLEY CURBING.
3. ALL SIDEWALKS TO BE 5' WIDE

Revisions

9-26-2023 Revision to driveway entrance to align with opposing driveway accross NC-87 per DOT comments. Stormwater pond enlarged to accomodate 25-yr storm event.

East Coast Engineering, P.C.
ENGINEERS • PLANNERS • CONSULTANTS
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Fax: 910-754-8049
Post Office Box 2469
Shallotte, North Carolina 28459
Firm License Number C-3014

PRELIMINARY SUBDIVISION PLAN
FOR
TURTLE BAY
SOUTHPORT, NORTH CAROLINA

Date: 08-23-2023
Scale: AS SHOWN
Drawn By: MGR
Checked By: JDS

PRELIMINARY
NOT ISSUED FOR PERMITTING

THIS PLAN IS NOT ISSUED FOR CONSTRUCTION WITHOUT AFFIXED CORPORATE SEAL.

C3.0

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ECE PROJECT NO. 2795

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FIGURE 1
SITE PLAN

Turtle Bay at Southport
Project Number 220222

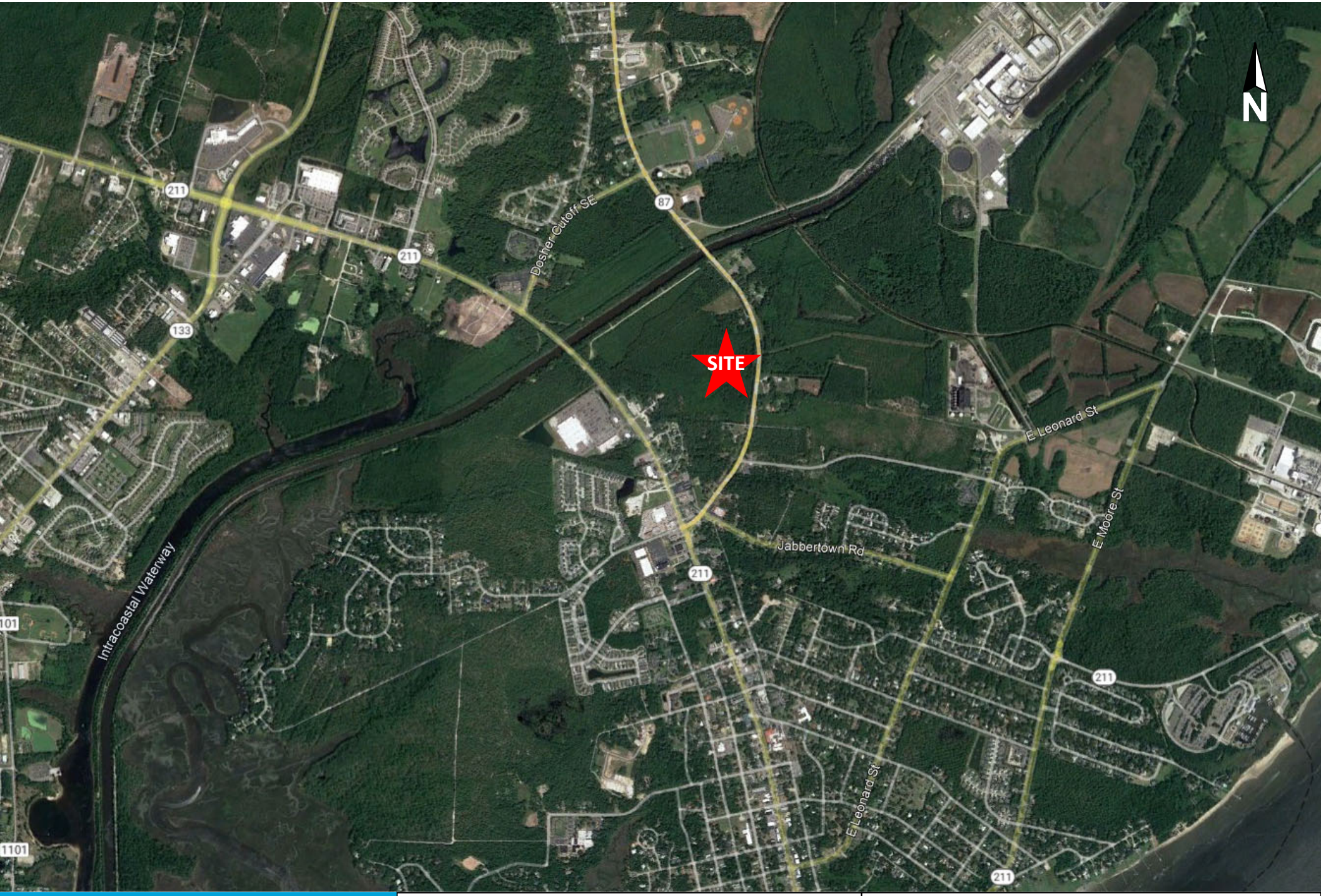

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FIGURE 2A
SITE LOCATION MAP

SITE INDICATOR

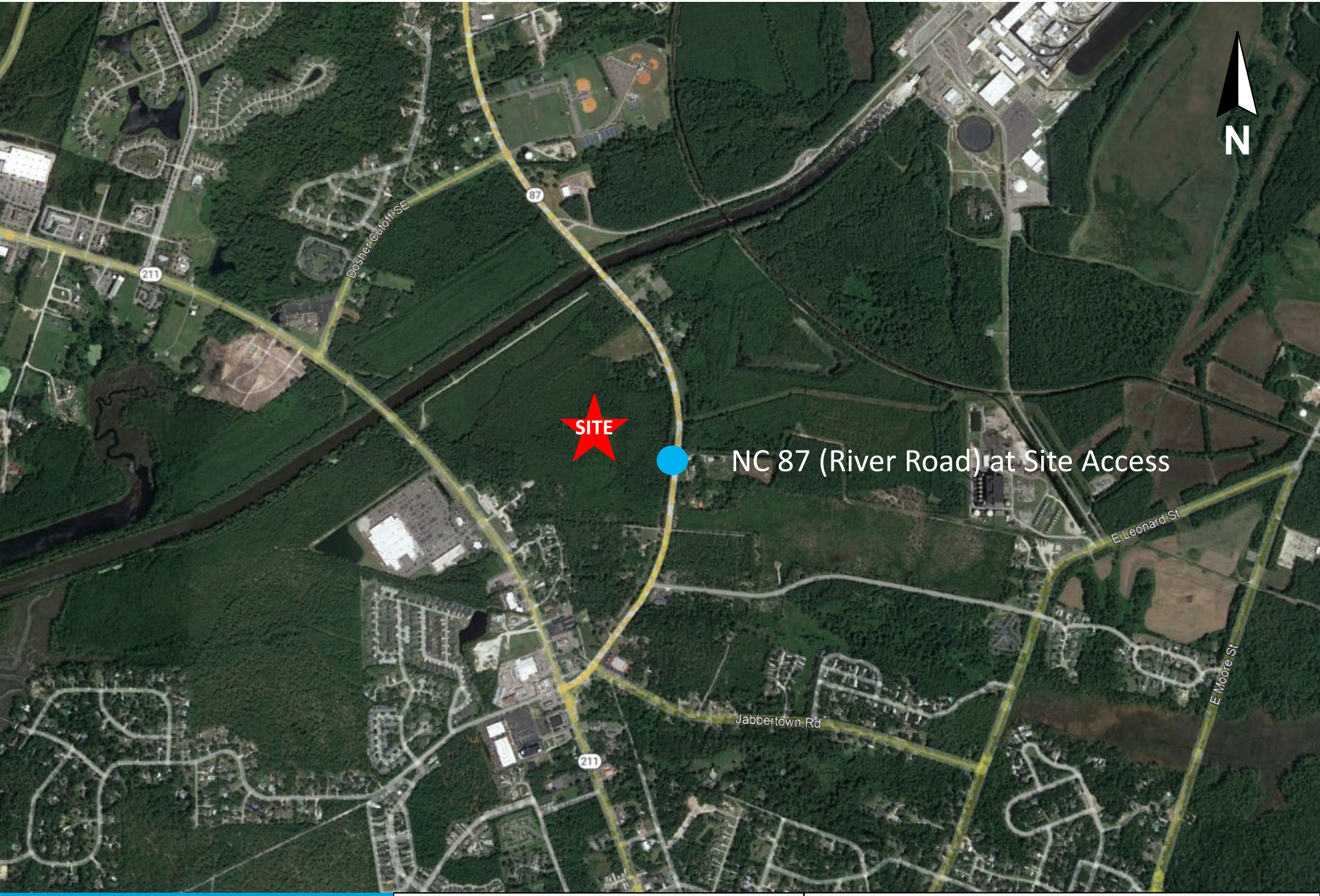

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FIGURE 2B
VICINITY MAP

SITE INDICATOR
STUDY INTERSECTION

2.0 Existing Conditions

2.1 Inventory

Table 2.1 presents a summary of the study area roadway conditions. Figure 3 shows the existing lane geometry.

Table 2.1 - Street Inventory

Facility Name	Route #	AADT (vpd)	Typical Cross Section	Pavement Width	Speed Limit (MPH)	Maintained By
River Road	NC 87	6,800*	2-lane undivided	12-foot lanes	45	NCDOT

**Based on NCDOT 2021 Data*

2.2 Existing Traffic Volumes

Turning movement counts for this project were collected by Burns Services, Incorporated when schools were in session. Table 2.2 contains the location, dates, and times these counts were conducted. As noted previously, Rob Gandy Boulevard was not included in the analysis, but counts were collected at this location to establish through volumes on NC 87 (River Road) in front of the site access. An annual growth rate of one percent (1%) was applied to the 2022 counts to grow the turning movement counts to 2023 conditions. The 2023 existing AM and PM peak hour volumes are shown in Figure 4. Traffic count data are provided in the Appendix.

Table 2.2 - Traffic Volume Data

Count Location	Date Taken	Hours
NC 87 (River Road) at Rob Gandy Boulevard (unsignalized)	Tuesday, May 10, 2022	7-9 AM, 4-6 PM
NC 211 (North Howe Street) at NC 87 (River Road) (signalized)	Thursday, January 13, 2022	7-9 AM, 4-6 PM

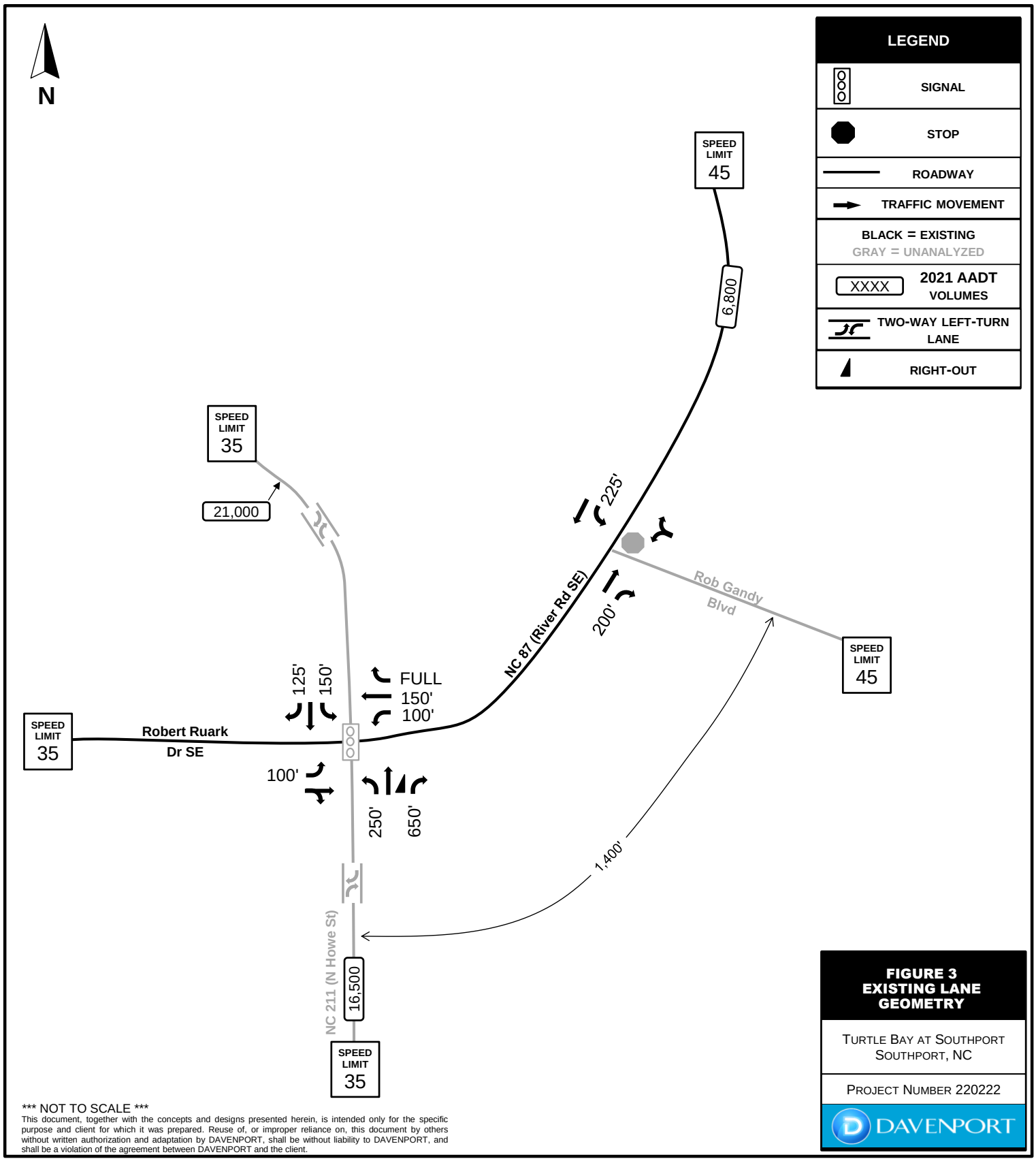

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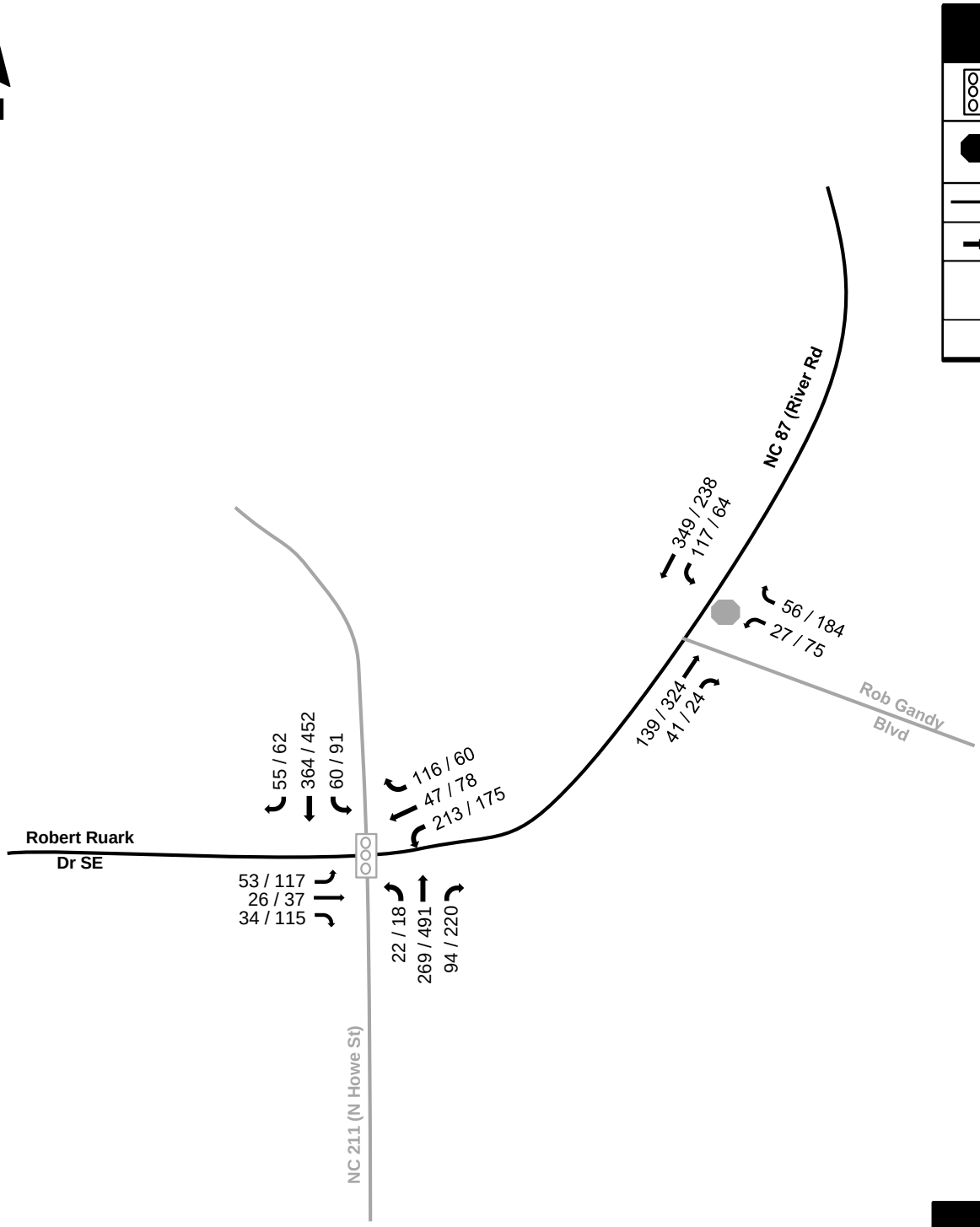
FIGURE 3
EXISTING LANE GEOMETRY

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

DAVENPORT



LEGEND

	SIGNAL
	STOP
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING GRAY = UNANALYZED
	AM / PM PEAKS

FIGURE 4
2023 EXISTING TRAFFIC VOLUMES

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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3.0 Approved Development and Committed Improvements

3.1 Approved Developments

Approved developments are developments that have been recently approved in the area but are not yet constructed. Per the approved scoping document, there are two (2) approved developments to consider for this study site.

- **Southport Mixed-Use:** To be located in the southwest quadrant of the intersection of NC 87 (River Road) and SR 1621 (Dosher Cutoff) in Brunswick County. The proposed development is expected to consist of an approximately 50,000 sq. ft. self-storage warehouse, 264 apartments, a 4,000 sq. ft. fast-food restaurant with drive-thru, and a 5,000 sq. ft. super convenience market with gas station. A TIA was completed for this project in October 2022. Future traffic associated with the site was incorporated into the future condition analysis based on the TIA since the site is not yet built out.
- **48 Townhomes at Rob Gandy Boulevard:** To be located on Rob Gandy Boulevard east of the intersection of NC 87 (River Road) and Rob Gandy Boulevard. The site is planned to consist of 48 townhomes. No TIA was performed for this site. ITE Trip Generation Manual 11th Edition was used to determine the future traffic generated by the site and trips were routed based on existing patterns and engineering judgment. Future traffic associated with the site was incorporated into the future condition analysis.

Relevant information pertaining to approved developments is provided in the Appendix.

3.2 Committed Improvements

Committed improvements are improvements that are planned by NCDOT, City of Southport or that are associated with a prior approved development in the area but are not yet constructed. Per the approved scoping document, there is one (1) committed improvement that is included in the study.

- **STIP Project R-5021: NC 211(North Howe Street) Widening from west of NC 906 (Midway Road) to East of NC 87 (River Road):**

  This improvement is a North Carolina Department of Transportation (NCDOT) project. It is to be done on NC 211(North Howe Street) between SR 1500 (Midway Road) and NC 87 (River Road). The improvement project is planned to widen NC 211 from a two (2) lane undivided to a four (4) lane divided facility to improve traffic flow, driver safety and traffic capacity. This improvement is also planned to add a northbound thru traffic lane on NC 87 (River Road) between SR 1526 (Jabbertown Road) and SR 1620 (Rob Gandy Boulevard) along with a dedicated right turn lane for southbound traffic at the intersection of NC 211 (North Howe Street) and NC 87 (River Road). The improvement project has been incorporated into the analysis for future conditions.

Figure 5 represents the future lane geometry. Relevant information regarding the improvement project is provided in the Appendix.

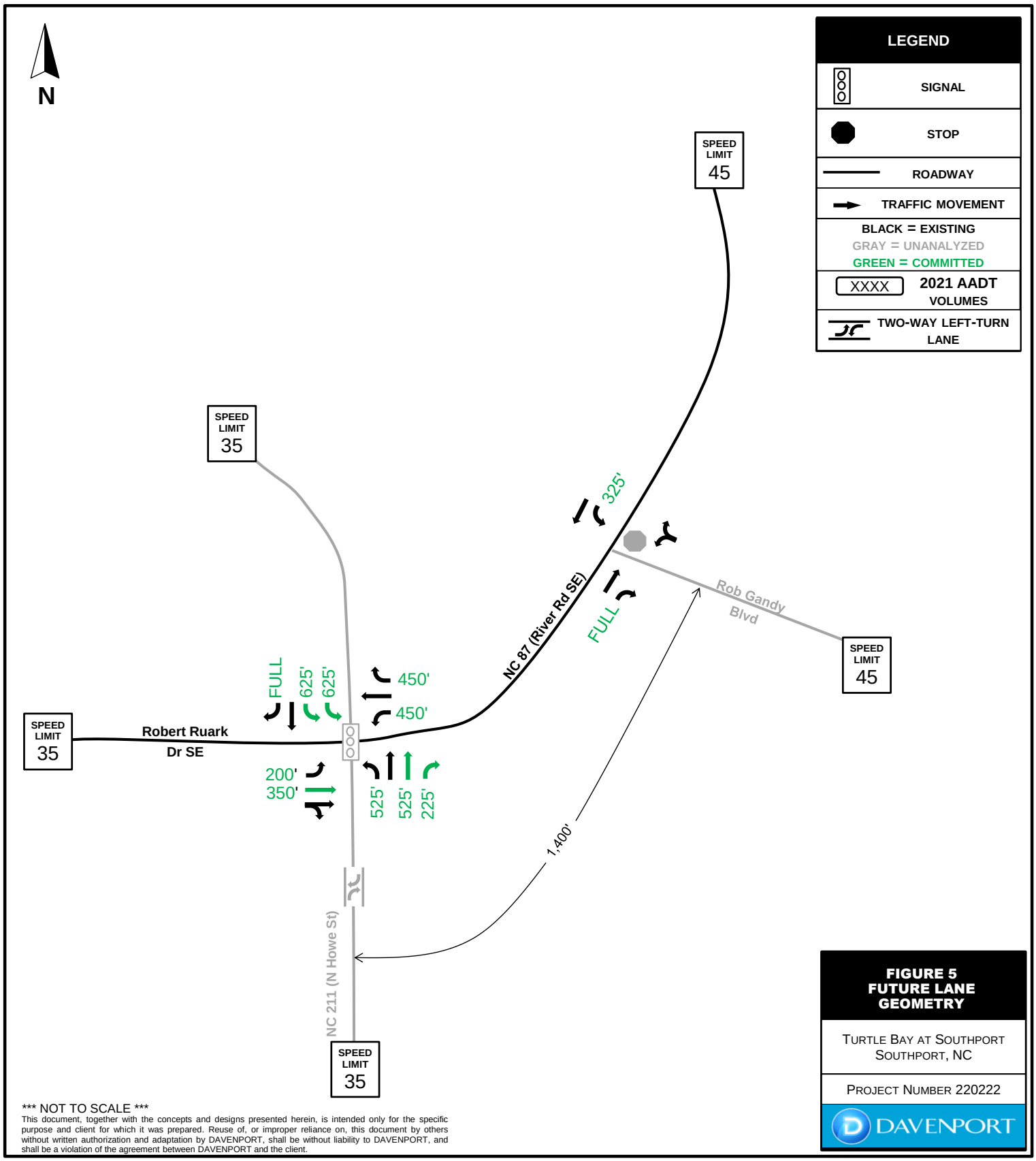

FIGURE 5
FUTURE LANE GEOMETRY

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

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4.0 Methodology

4.1 Base Assumptions and Standards

In general, the analysis for this project was conducted utilizing commonly accepted NCDOT standards. Table 4.1 contains a summary of the base assumptions.

Table 4.1 - Assumptions	
Annual Growth Rate	1%, based on approved scope
Analysis Software	Synchro/SimTraffic Version 11.0
Lane Widths	12 feet
Peak Hour Factor	0.90
Truck Percentage	2%

4.2 Future No Build Volumes

The 2026 future no build traffic volumes were computed by applying a one percent (1%) compounded annual growth rate to the 2023 existing traffic volumes and adding approved development trips. Figure 6 shows approved development trips and Figure 7 shows 2026 future no build traffic volumes for AM and PM peaks.

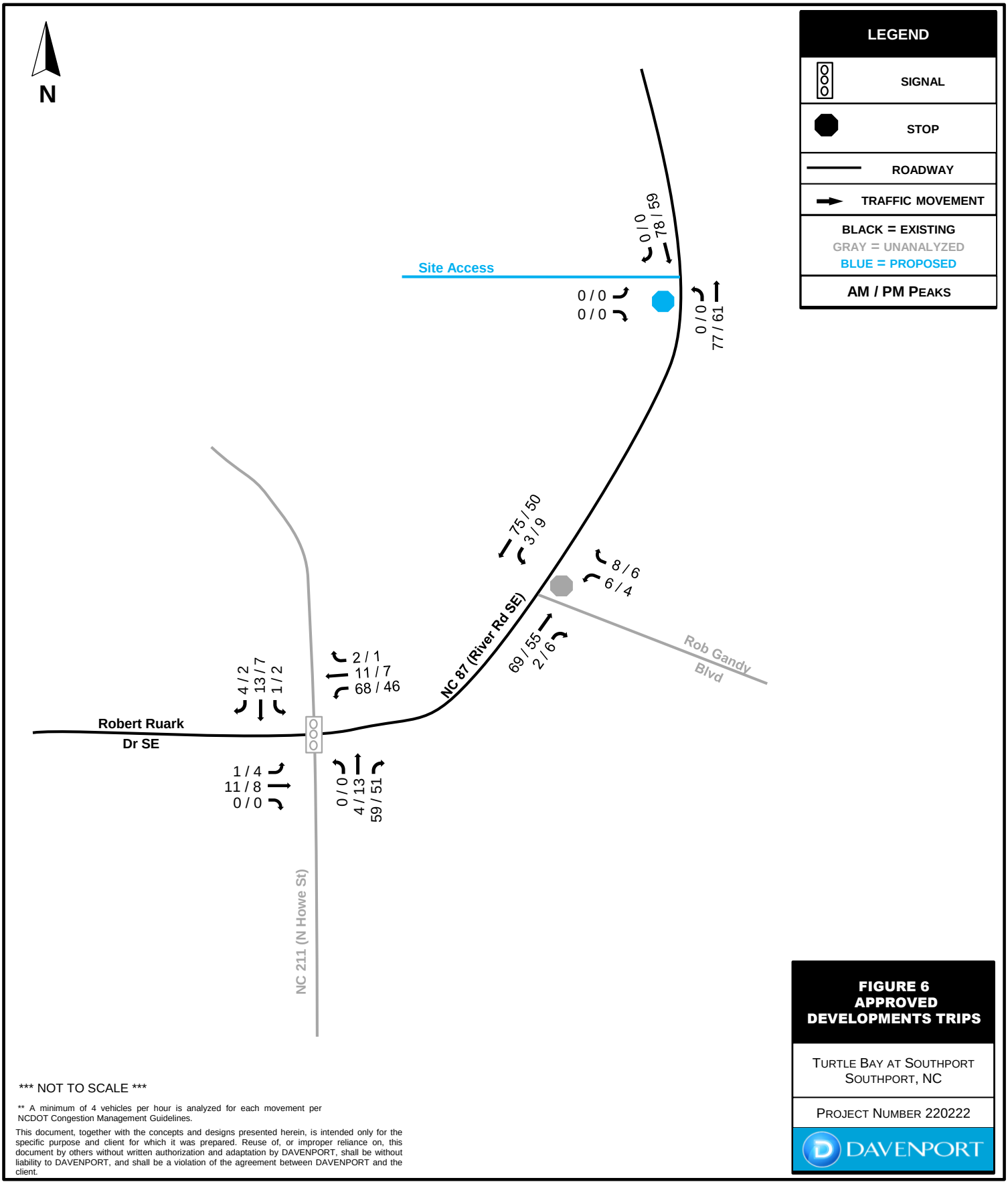

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FIGURE 6
APPROVED DEVELOPMENTS TRIPS

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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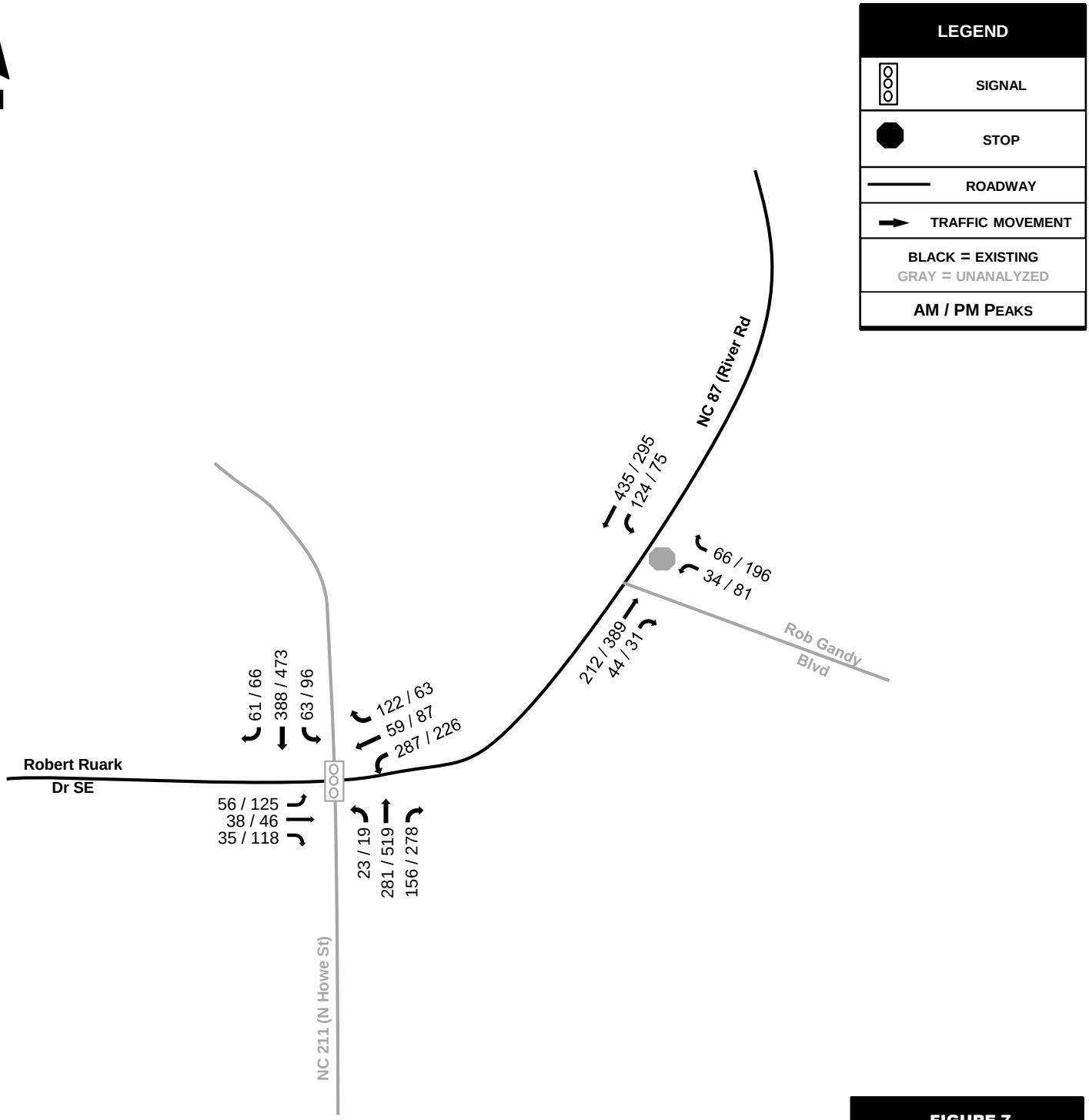

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FIGURE 7
2026 FUTURE NO BUILD VOLUMES

TRUTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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4.3 Trip Generation

The proposed development is planned to include 100 single family homes. The trip generation potential of this site was projected based on the 11th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* and guidance from NCDOT Congestion Management on the selection of appropriate variables. Table 4.2 presents the results.

Table 4.2 - ITE 11th Edition Trip Generation

Average Weekday Driveway Volumes					24-Hour Two-Way	AM Peak Hour			PM Peak Hour		
Land Use	ITE Land Use Code	Size		Data Source	Volume	Enter	Exit	Total	Enter	Exit	Total
Single-Family Detached Housing	210	100	Dwelling Units	Adjacent-Equation	1,009	19	55	74	63	36	99
Total Site Trips					**1,009**	**19**	**55**	**74**	**63**	**36**	**99**

4.4 Trip Distribution and Assignment

Site trips for this proposed development were distributed based on the existing traffic patterns and engineering judgment. The trip distribution model is shown in Figure 8. The directional distribution for new site trips is:

- 60% to/from the north on NC 87 (River Road)
- 25% to/from the south on NC 211 (North Howe Street)
- 12% to/from the west on NC 211 (North Howe Street)
- 3% to/from the west on Robert Ruark Drive

4.5 Future Build Volumes

Site trip volumes were added to the future no build volumes to compute the 2026 Future Build volumes. Site trips are shown in Figure 9 and Future Build volumes are shown in Figure 10.

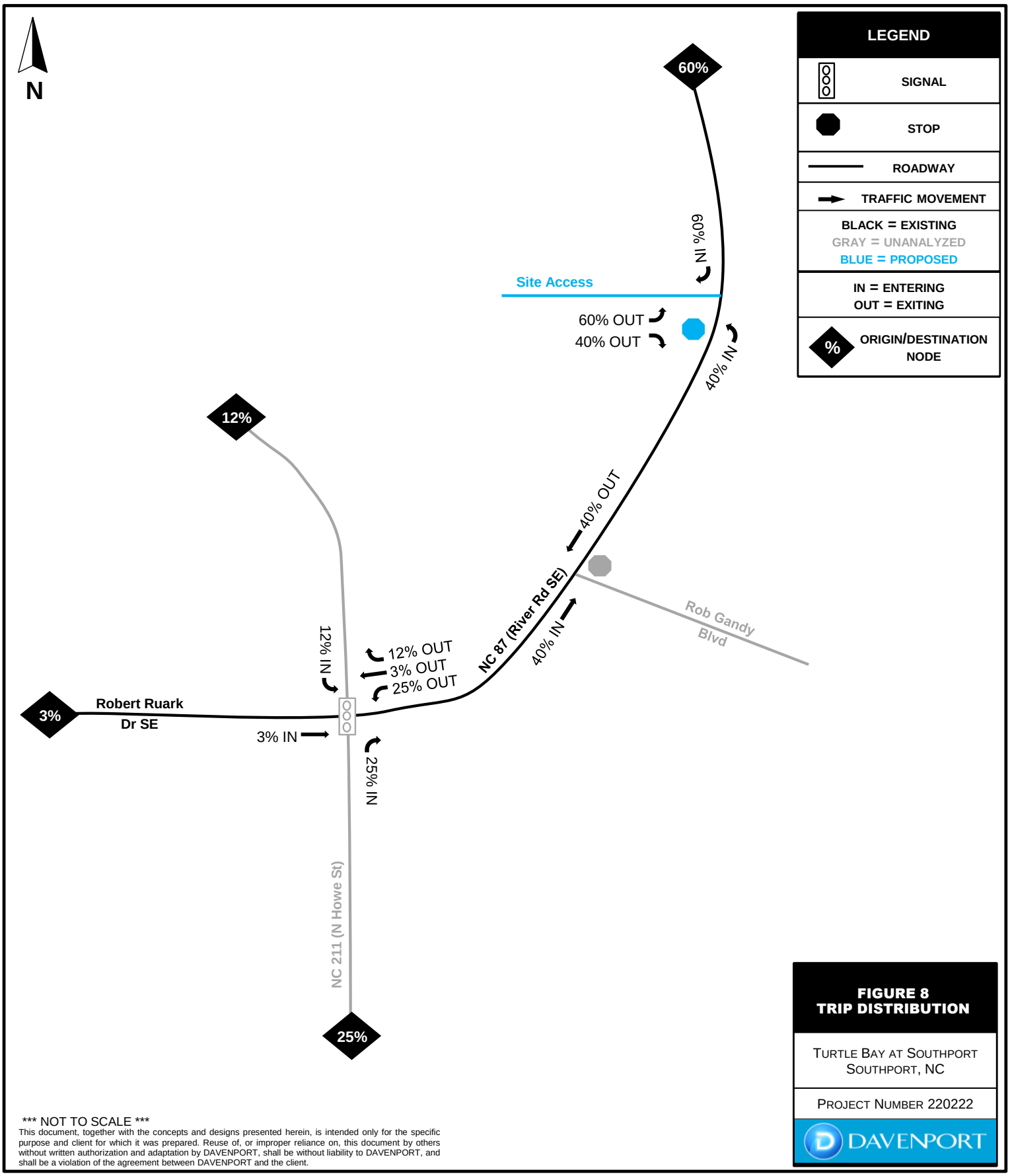

FIGURE 8
TRIP DISTRIBUTION

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

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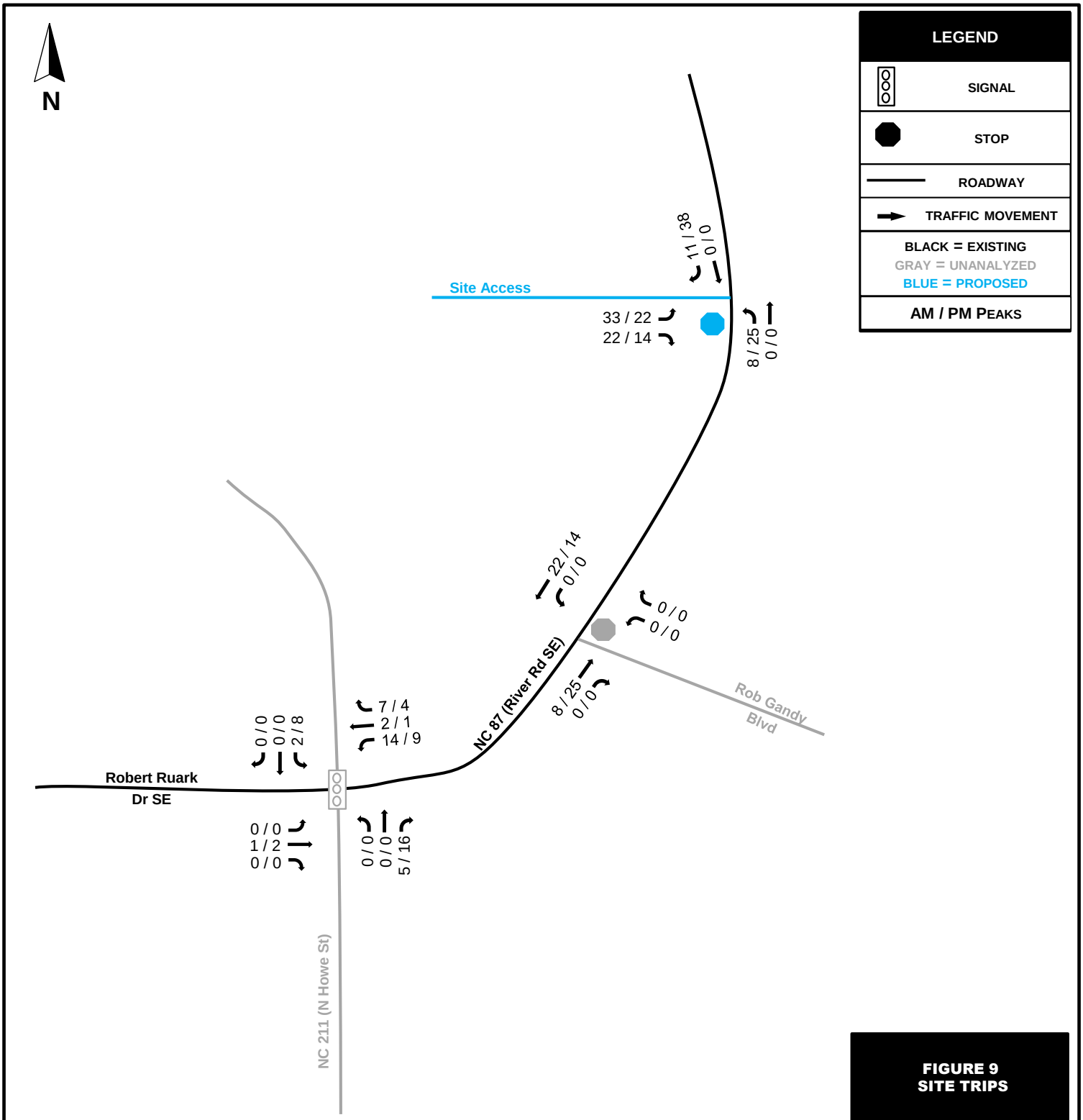

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FIGURE 9
SITE TRIPS

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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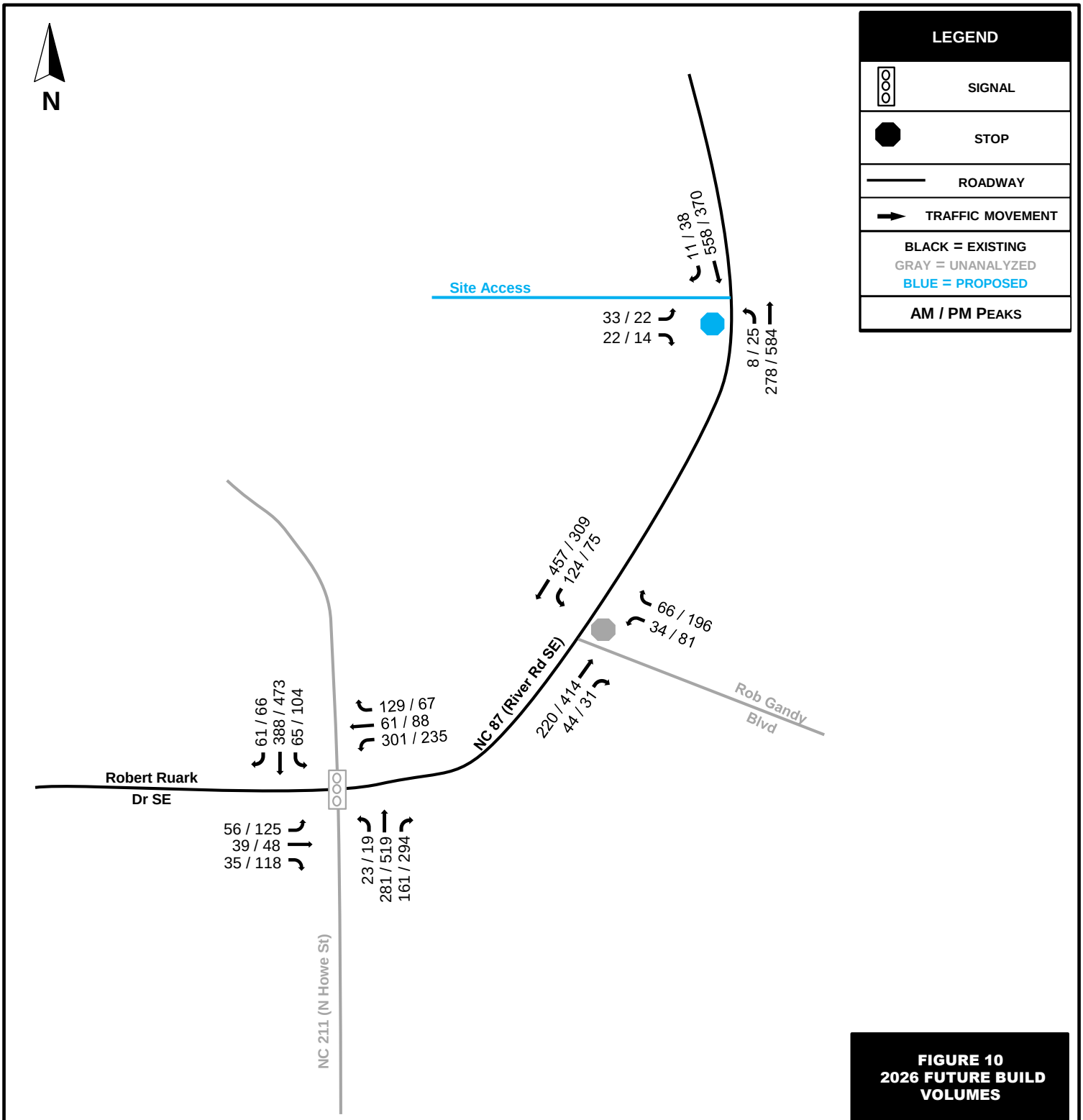

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FIGURE 10
2026 FUTURE BUILD VOLUMES

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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5.0 Capacity Analysis

5.1 Level of Service Evaluation Criteria

The Transportation Research Board's *Highway Capacity Manual* (HCM) utilizes a term "level of service" (LOS) to measure how traffic operates in intersections and on roadway segments. There are six levels of service ranging from A to F as shown in Table 5.1. Level of service "A" represents low-volume traffic operations and level of service "F" represents high-volume, oversaturated traffic operations. Synchro traffic modeling software is used to determine the LOS and delay for study intersections. Synchro analysis worksheet reports are provided in the Appendix.

Table 5.1 – Highway Capacity Manual			
Levels of Service and Control Delay Criteria			
Signalized Intersection		**Unsignalized Intersection**	
Level of Service	Control Delay Per vehicle (seconds)	Level of Service	Delay Range (seconds)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

5.2 Queueing Evaluation

A queueing analysis was performed using Synchro and SimTraffic simulation, based on a minimum 10-minute seeding, a 60-minute recording period, and 10 runs. The maximum SimTraffic queues and 95th-percentile Synchro queues are provided, along with the turn lane lengths. Synchro and SimTraffic queue reports are provided in the Appendix.

5.3 Level of Service and Queueing Results

The results of the capacity and queue analyses are discussed by intersection in the following paragraphs. The LOS, delay, and queue results are summarized in Tables 5.2 and 5.3.

NC 87 (River Road) at Site Access (unsignalized)

Under the future build condition, the intersection is expected to operate at an LOS C during the AM peak hours and PM peak hours. The need for left and right turn lanes was reviewed based on the turn lane warrant nomograph from page 80 of the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. The turn lane warrant nomograph is provided in the Appendix. The results are marginally below the thresholds for turn lanes being warranted. However, the posted speed limit on NC 87 (River Road) is 45 mph and actual travel speeds are expected to be higher than 45 mph due to the rural location of the roadway. Therefore, to ensure safety of the vehicles turning onto the site access and to provide for long-term transportation needs, the following improvements are recommended:

- Provide a southbound right turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper.
- Provide a northbound left turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper.
- Design site access according to applicable NCDOT standards and with adequate sight distance.

Sight distance requirements are taken from page 29 of the *Policy on Street and Driveway Access to North Carolina Highways*. Based on a design speed of 50 mph (posted speed plus 5), the required sight distance is 500 feet looking left and 550 feet looking right from the site access. The site access should be designed to provide required sight distance, free from obstructions along the lines of sight.

Table 5.2 - LOS and Queueing NC 87 (River Road) at Site Access (unsignalized)

Scenario	*LOS of Worst Approach	Eastbound	Northbound		Southbound	
AM Peak Hour						
2026 Future Build	C (17.9) EB Approach	**LR**	**L**	**T**	**T**	**R**
		C (17.9)	A (8.8)	A (0.0)	A (0.0)	A (0.0)
		C (17.9)	A (0.2)		A (0.0)	
	Available Storage (ft)	FULL	FULL		FULL	
	95th% Queue (ft)	15	0		0	
	Max Queue (ft)	60	37		0	
2026 Future Build with improvement	C (17.7) EB Approach	**LR**	**L**	**T**	**T**	**R**
		C (17.7)	A (8.8)	A (0.0)	A (0.0)	A (0.0)
		C (17.7)	A (0.2)		A (0.0)	
	Available Storage (ft)	FULL	100	FULL	FULL	100
	95th% Queue (ft)	15	0	0	0	0
	Max Queue (ft)	60	28	0	0	0

Table 5.2 *(Continued)* - LOS and Queueing NC 87 (River Road) at Site Access (unsignalized)						
Scenario	***LOS of Worst Approach**	**Eastbound**	**Northbound**		**Southbound**	
PM Peak Hour						
2026 Future Build	C (19.6) EB Approach	**LR**	**L**	**T**	**T**	**R**
		C (19.6)	A (8.3)	A (0.0)	A (0.0)	A (0.0)
		C (19.6)	A (0.2)		A (0.0)	
	Available Storage (ft)	FULL	FULL		FULL	
	95th% Queue (ft)	13	3		0	
	Max Queue (ft)	44	92		0	
2026 Future Build with improvement	C (18.8) EB Approach	**LR**	**L**	**T**	**T**	**R**
		C (18.8)	A (8.3)	A (0.0)	A (0.0)	A (0.0)
		C (18.8)	A (0.3)		A (0.0)	
	Available Storage (ft)	FULL	100	FULL	FULL	100
	95th% Queue (ft)	13	3	0	0	0
	Max Queue (ft)	44	39	0	0	0

**Represents the LOS and delay for the worst unsignalized approach or the overall signalized intersection.*
HCM 95th-percentile queue converted from vehicles to feet; assumes 1 vehicle = 25 feet.

6.0 Internal Protected Stem

The NCDOT *Policy on Street and Driveway Access to North Carolina Highways,* or the Driveway Manual, states that the length of the internal protected stem (IPS) will be determined from the maximum vehicle storage required as measured from the right-of-way line to the nearest conflict point with a minimum recommendation of 100 feet.

Table 6 summarizes the maximum storage recorded in the analysis as compared to the estimated IPS based on the site plan. Internal protected stem for the site access exceeds 100 feet.

Table 6 – Queue Lengths on Site Driveways

Site Drive	Estimated IPS (feet)	95th-%ile Queue (feet)		Maximum Queue (feet)	
		AM	PM	AM	PM
EB Site Access Approach	230	15	13	60	44

7.0 Summary and Conclusion

The Turtle Bay at Southport proposed development is located on the west side of NC 87 to the north of Rob Gandy Blvd in Southport, NC. It is planned to consist of 100 single family homes. One (1) full movement access point on NC 87 (River Road) is proposed for this development. The Site Access is located approximately 1,300 feet north of Rob Gandy Boulevard. The expected build-out year for the development is 2026. Information regarding the property was provided by Turtle Bay at Southport, LLC.

The Transportation Impact Analysis (TIA) was performed based on the scope agreed upon with the City of Southport and North Carolina Department of Transportation (NCDOT). This site has a trip generation potential of 1,009 daily trips, 74 trips in the AM peak hour, and 99 trips in the PM peak hour.

In conclusion, this study has determined the potential traffic impacts of this development. At the site access, a northbound left turn lane with 100 feet of storage and appropriate deceleration/taper and southbound right turn lane with 100 feet of storage and appropriate deceleration/taper is recommended. Table 7 summarizes the recommended improvements, which are also reflected in Figure 11. With the recommended improvements in place, the anticipated transportation impacts of the proposed development can be accommodated.

Table 7 – Summary of Recommended Improvements

INTERSECTION	RECOMMENDATIONS
NC 87 (River Road) at Site Access	• Construct a southbound right turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper. • Construct a northbound left turn lane on NC 87 (River Road) with 100 feet of storage and appropriate deceleration and taper. • Construct the driveway according to applicable NCDOT standards and with adequate sight distance.

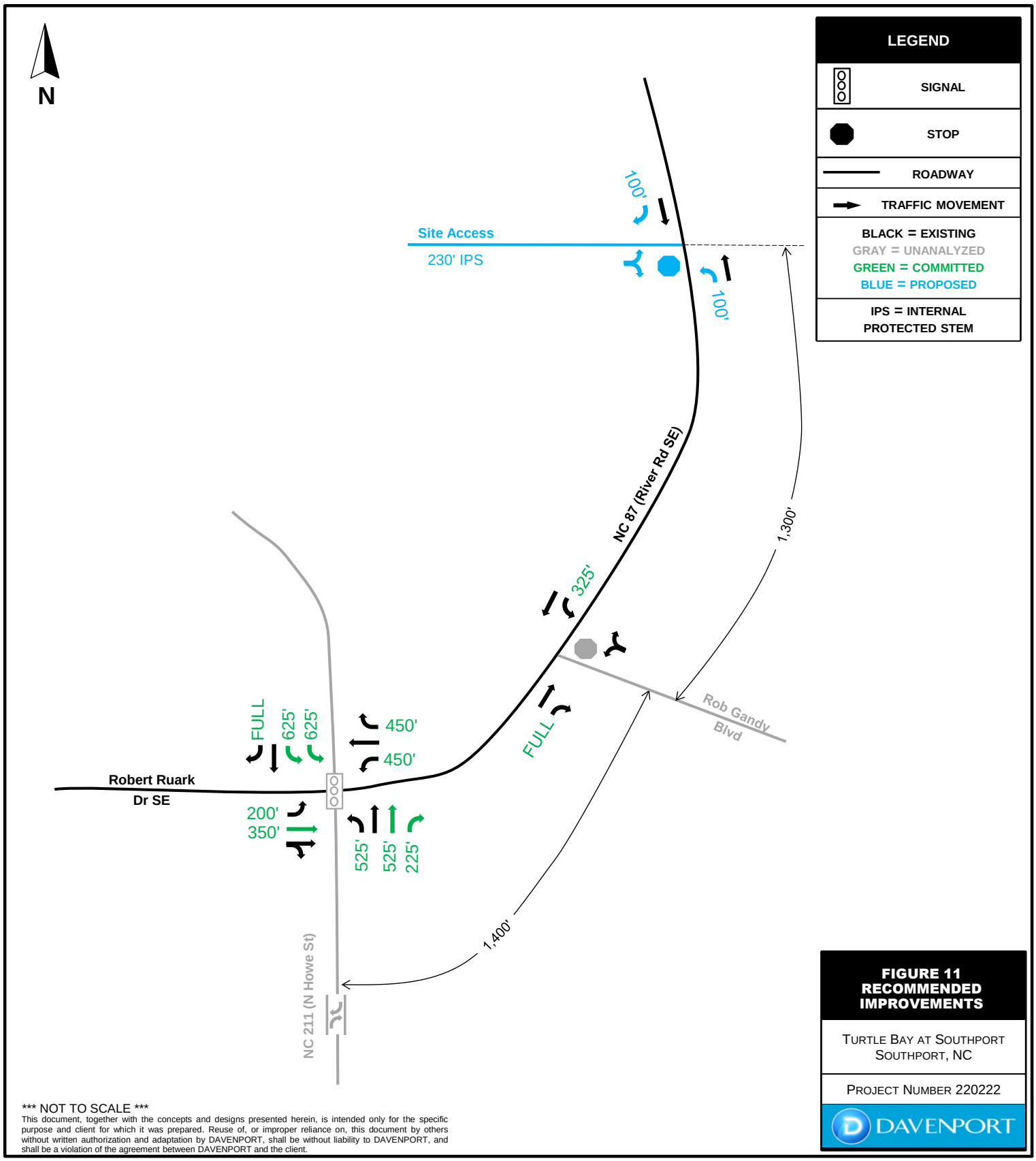

FIGURE 11
RECOMMENDED IMPROVEMENTS

TURTLE BAY AT SOUTHPORT
SOUTHPORT, NC

PROJECT NUMBER 220222

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Appendix

Approved Scoping Documents

October 18, 2023

Transportation Impact Analysis (TIA) Scoping
Turtle Bay at Southport, Southport, NC
DAVENPORT Project Number 220222

Proposed Land Uses: 100 single family homes

Analysis Periods – Weekday AM peak (7:00-9:00 am) and PM peak (4:00-6:00 pm)

Study Intersections:
- NC 87 (River Road) at Site Access

Access Configuration: One (1) full movement access

TIA Analysis Scenarios:
- Future Build Conditions
- Future Build with Improvements (as required)

Build-out Year / Analysis Year: Estimated at 2026

Proposed annual growth rate – 1% (plus approved developments)

Trip Generation – Based on ITE Trip Generation Manual 11th Edition. See attached.

Proposed site trip directional distribution – See attached.

Existing Traffic Counts – Adjust 2022 counts to current year using 1% growth rate.
- NC 87 (River Road) at Rob Gandy Blvd: Collected on 05/10/2022 (unanalyzed intersection)
- NC 211 (North Howe Street) at NC 87 (River Road). Collected on 01/13/2023 (unanalyzed intersection)

Measures of effectiveness for capacity analysis:
- Level of service (LOS) / delay by movement
- Queue lengths (95th % Synchro and max SimTraffic queues)

Additional Scope:
- Turn lane warrant analysis to be performed at site access.

Approved and planned developments:
- 48 Townhomes at Rob Gandy Blvd
- Southport Mixed-Use at Southwest quadrant of NC 87(River Road) and SR 1621 (Dosher Cutoff) consisting of 50,000 sq ft self-storage warehouse, 264 apartments, 4,000 sq. ft. fast-food restaurant with drive-thru and 5,000 sq. ft. super convenience market with gas station.

Committed Improvements:
- R-5021: Widening of NC 211 from SR 1500 to NC 87

Capacity Analysis

Synchro Worksheets

Future Build Conditions

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	22	8	278	558	11
Future Volume (vph)	33	22	8	278	558	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.997	
Flt Protected	0.971			0.999		
Satd. Flow (prot)	1713	0	0	1861	1857	0
Flt Permitted	0.971			0.999		
Satd. Flow (perm)	1713	0	0	1861	1857	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1120			1790	1211	
Travel Time (s)	30.5			27.1	18.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	24	9	309	620	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	318	632	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	22	8	278	558	11
Future Vol, veh/h	33	22	8	278	558	11
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	37	24	9	309	620	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	953	626	632	0	-	0
Stage 1	626	-	-	-	-	-
Stage 2	327	-	-	-	-	-
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	287	484	951	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	484	951	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	951	-	340	-	-
HCM Lane V/C Ratio	0.009	-	0.18	-	-
HCM Control Delay (s)	8.8	0	17.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	34	66	220	44	124	457
Future Volume (vph)	34	66	220	44	124	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	325	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.911			0.850		
Flt Protected	0.983				0.950	
Satd. Flow (prot)	1668	0	1863	1583	1770	1863
Flt Permitted	0.983				0.950	
Satd. Flow (perm)	1668	0	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1122		1404			1790
Travel Time (s)	17.0		21.3			27.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	73	244	49	138	508
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	244	49	138	508
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	66	220	44	124	457
Future Vol, veh/h	34	66	220	44	124	457
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	325	-
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	38	73	244	49	138	508

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1028	244	0	0	293	0
Stage 1	244	-	-	-	-	-
Stage 2	784	-	-	-	-	-
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	259	795	-	-	1269	-
Stage 1	797	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	231	795	-	-	1269	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

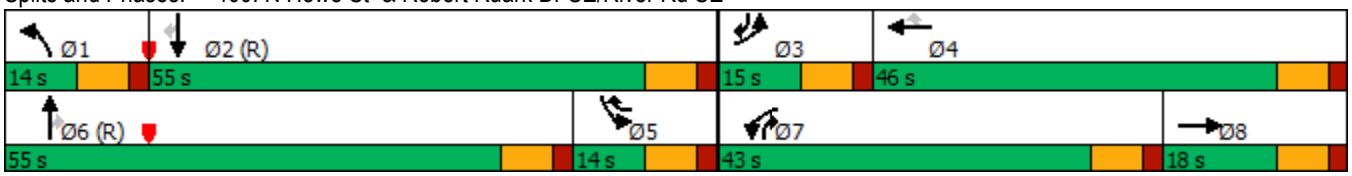
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	1269	-
HCM Lane V/C Ratio	-	-	0.256	0.109	-
HCM Control Delay (s)	-	-	16.1	8.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1	0.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	39	35	301	61	129	23	281	161	65	388	61
Future Volume (vph)	56	39	35	301	61	129	23	281	161	65	388	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	450		450	525		375	625		0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (ft)	100			100			0			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt		0.929				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1730	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1730	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		868			1404			1137			1047	
Travel Time (s)		16.9			21.3			22.1			20.4	
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)	62	43	39	334	68	143	26	312	179	72	431	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	82	0	334	68	143	26	312	179	72	431	68
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6	7	5	2	3
Permitted Phases						4			6			2
Detector Phase	3	8		7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	30.4	14.0	14.0	40.0	14.0	14.0	24.0	14.0
Total Split (s)	15.0	18.0		43.0	46.0	14.0	14.0	55.0	43.0	14.0	55.0	15.0
Total Split (%)	11.5%	13.8%		33.1%	35.4%	10.8%	10.8%	42.3%	33.1%	10.8%	42.3%	11.5%
Maximum Green (s)	8.0	11.0		36.0	39.0	7.0	7.0	48.0	36.0	7.0	48.0	8.0
Yellow Time (s)	5.0	5.0		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	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	-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	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					7.0			7.0			7.0	
Flash Dont Walk (s)					16.4			26.0			10.0	
Pedestrian Calls (#/hr)					0			0			0	
Act Effct Green (s)	9.7	11.9		30.6	35.6	45.6	9.1	58.5	89.1	9.0	64.0	78.7
Actuated g/C Ratio	0.07	0.09		0.24	0.27	0.35	0.07	0.45	0.69	0.07	0.49	0.61
v/c Ratio	0.47	0.52		0.80	0.13	0.26	0.21	0.20	0.17	0.30	0.47	0.07

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	69.9	67.9		61.3	35.4	21.6	61.5	23.4	4.2	61.1	27.3	14.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	67.9		61.3	35.4	21.6	61.5	23.4	4.2	61.1	27.3	14.5
LOS	E	E		E	D	C	E	C	A	E	C	B
Approach Delay		68.7			47.6			18.7			30.0	
Approach LOS		E			D			B			C	
Queue Length 50th (ft)	51	67		266	44	67	21	83	23	30	259	25
Queue Length 95th (ft)	99	121		353	77	97	52	128	38	56	401	56
Internal Link Dist (ft)		788			1324			1057			967	
Turn Bay Length (ft)	200			450		450	525		375	625		
Base Capacity (vph)	136	177		517	587	555	123	1592	1175	237	917	962
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.46		0.65	0.12	0.26	0.21	0.20	0.15	0.30	0.47	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 35.3	Intersection LOS: D
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 400: N Howe St & Robert Ruark Dr SE/River Rd SE



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	14	25	584	370	38
Future Volume (vph)	22	14	25	584	370	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946				0.987	
Flt Protected	0.971			0.998		
Satd. Flow (prot)	1711	0	0	1859	1839	0
Flt Permitted	0.971			0.998		
Satd. Flow (perm)	1711	0	0	1859	1839	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1120			1786	1211	
Travel Time (s)	30.5			27.1	18.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	16	28	649	411	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	0	677	453	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.0%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	14	25	584	370	38
Future Vol, veh/h	22	14	25	584	370	38
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	24	16	28	649	411	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1137	432	453	0	-	0
Stage 1	432	-	-	-	-	-
Stage 2	705	-	-	-	-	-
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	223	624	1108	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	624	1108	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1108	-	287	-	-
HCM Lane V/C Ratio	0.025	-	0.139	-	-
HCM Control Delay (s)	8.3	0	19.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	81	196	414	31	75	309
Future Volume (vph)	81	196	414	31	75	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	325	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904			0.850		
Flt Protected	0.986				0.950	
Satd. Flow (prot)	1660	0	1863	1583	1770	1863
Flt Permitted	0.986				0.950	
Satd. Flow (perm)	1660	0	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1122		1404			1786
Travel Time (s)	17.0		21.3			27.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	90	218	460	34	83	343
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	0	460	34	83	343
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	81	196	414	31	75	309
Future Vol, veh/h	81	196	414	31	75	309
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	325	-
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	90	218	460	34	83	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	969	460	0	0	494	0
Stage 1	460	-	-	-	-	-
Stage 2	509	-	-	-	-	-
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	281	601	-	-	1070	-
Stage 1	636	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	601	-	-	1070	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.1	0	1.7
HCM LOS	D		

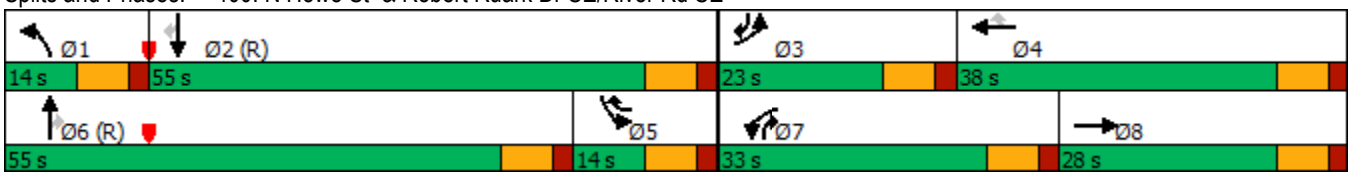
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	1070	-
HCM Lane V/C Ratio	-	-	0.709	0.078	-
HCM Control Delay (s)	-	-	31.1	8.6	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	5.4	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	48	118	235	88	67	19	519	294	104	473	66
Future Volume (vph)	125	48	118	235	88	67	19	519	294	104	473	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	450		450	525		375	625		0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (ft)	100			100			0			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt		0.893				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1663	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1663	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		868			1404			1137			1047	
Travel Time (s)		16.9			21.3			22.1			20.4	
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)	139	53	131	261	98	74	21	577	327	116	526	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	184	0	261	98	74	21	577	327	116	526	73
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6	7	5	2	3
Permitted Phases						4			6			2
Detector Phase	3	8		7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	30.4	14.0	14.0	40.0	14.0	14.0	24.0	14.0
Total Split (s)	23.0	28.0		33.0	38.0	14.0	14.0	55.0	33.0	14.0	55.0	23.0
Total Split (%)	17.7%	21.5%		25.4%	29.2%	10.8%	10.8%	42.3%	25.4%	10.8%	42.3%	17.7%
Maximum Green (s)	16.0	21.0		26.0	31.0	7.0	7.0	48.0	26.0	7.0	48.0	16.0
Yellow Time (s)	5.0	5.0		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	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	-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	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					7.0			7.0			7.0	
Flash Dont Walk (s)					16.4			26.0			10.0	
Pedestrian Calls (#/hr)					0			0			0	
Act Effct Green (s)	15.5	19.6		24.2	28.4	37.4	9.0	57.2	81.4	9.0	62.8	83.2
Actuated g/C Ratio	0.12	0.15		0.19	0.22	0.29	0.07	0.44	0.63	0.07	0.48	0.64
v/c Ratio	0.66	0.74		0.79	0.24	0.16	0.17	0.37	0.33	0.49	0.59	0.07

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	69.8	69.7		67.7	42.1	20.2	60.6	26.6	7.4	65.7	31.1	11.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	69.7		67.7	42.1	20.2	60.6	26.6	7.4	65.7	31.1	11.7
LOS	E	E		E	D	C	E	C	A	E	C	B
Approach Delay		69.7			53.8			20.6			34.7	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	113	148		210	68	32	17	174	71	49	352	25
Queue Length 95th (ft)	182	227		303	115	55	45	238	113	81	517	51
Internal Link Dist (ft)		788			1324			1057			967	
Turn Bay Length (ft)	200			450		450	525		375	625		
Base Capacity (vph)	245	294		381	472	455	122	1556	1036	237	899	1044
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.63		0.69	0.21	0.16	0.17	0.37	0.32	0.49	0.59	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 400: N Howe St & Robert Ruark Dr SE/River Rd SE



Future Build Conditions with Improvements

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	22	8	278	558	11
Future Volume (vph)	33	22	8	278	558	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			100
Storage Lanes	1	0	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947					0.850
Flt Protected	0.971		0.950			
Satd. Flow (prot)	1713	0	1770	1863	1863	1583
Flt Permitted	0.971		0.950			
Satd. Flow (perm)	1713	0	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	1120			1783	1211	
Travel Time (s)	30.5			27.0	18.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	24	9	309	620	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	9	309	620	12
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 39.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	22	8	278	558	11
Future Vol, veh/h	33	22	8	278	558	11
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	-	100	-	-	100
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	37	24	9	309	620	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	947	620	632	0	-	0
Stage 1	620	-	-	-	-	-
Stage 2	327	-	-	-	-	-
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	290	488	951	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	287	488	951	-	-	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	951	-	344	-	-
HCM Lane V/C Ratio	0.009	-	0.178	-	-
HCM Control Delay (s)	8.8	-	17.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	34	66	220	44	124	457
Future Volume (vph)	34	66	220	44	124	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	325	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.911			0.850		
Flt Protected	0.983				0.950	
Satd. Flow (prot)	1668	0	1863	1583	1770	1863
Flt Permitted	0.983				0.950	
Satd. Flow (perm)	1668	0	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1122		1404			1783
Travel Time (s)	17.0		21.3			27.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	73	244	49	138	508
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	244	49	138	508
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	66	220	44	124	457
Future Vol, veh/h	34	66	220	44	124	457
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	325	-
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	38	73	244	49	138	508

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1028	244	0	0	293	0
Stage 1	244	-	-	-	-	-
Stage 2	784	-	-	-	-	-
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	259	795	-	-	1269	-
Stage 1	797	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	231	795	-	-	1269	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.7
HCM LOS	C		

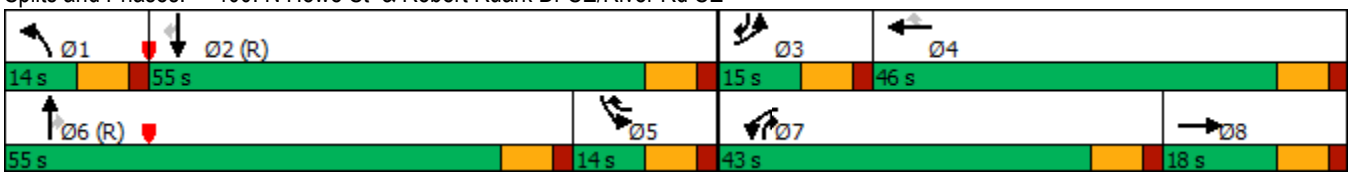
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	1269	-
HCM Lane V/C Ratio	-	-	0.256	0.109	-
HCM Control Delay (s)	-	-	16.1	8.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1	0.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	39	35	301	61	129	23	281	161	65	388	61
Future Volume (vph)	56	39	35	301	61	129	23	281	161	65	388	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	450		450	525		375	625		0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (ft)	100			100			0			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt		0.929				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1730	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1730	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		868			1404			1137			1047	
Travel Time (s)		16.9			21.3			22.1			20.4	
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)	62	43	39	334	68	143	26	312	179	72	431	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	82	0	334	68	143	26	312	179	72	431	68
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6	7	5	2	3
Permitted Phases						4			6			2
Detector Phase	3	8		7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	30.4	14.0	14.0	40.0	14.0	14.0	24.0	14.0
Total Split (s)	15.0	18.0		43.0	46.0	14.0	14.0	55.0	43.0	14.0	55.0	15.0
Total Split (%)	11.5%	13.8%		33.1%	35.4%	10.8%	10.8%	42.3%	33.1%	10.8%	42.3%	11.5%
Maximum Green (s)	8.0	11.0		36.0	39.0	7.0	7.0	48.0	36.0	7.0	48.0	8.0
Yellow Time (s)	5.0	5.0		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	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	-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	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					7.0			7.0			7.0	
Flash Dont Walk (s)					16.4			26.0			10.0	
Pedestrian Calls (#/hr)					0			0			0	
Act Effct Green (s)	9.7	11.9		30.6	35.6	45.6	9.1	58.5	89.1	9.0	64.0	78.7
Actuated g/C Ratio	0.07	0.09		0.24	0.27	0.35	0.07	0.45	0.69	0.07	0.49	0.61
v/c Ratio	0.47	0.52		0.80	0.13	0.26	0.21	0.20	0.17	0.30	0.47	0.07

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	69.9	67.9		61.3	35.4	21.6	61.5	23.4	4.2	61.1	27.3	14.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	67.9		61.3	35.4	21.6	61.5	23.4	4.2	61.1	27.3	14.5
LOS	E	E		E	D	C	E	C	A	E	C	B
Approach Delay		68.7			47.6			18.7			30.0	
Approach LOS		E			D			B			C	
Queue Length 50th (ft)	51	67		266	44	67	21	83	23	30	259	25
Queue Length 95th (ft)	99	121		353	77	97	52	128	38	56	401	56
Internal Link Dist (ft)		788			1324			1057			967	
Turn Bay Length (ft)	200			450		450	525		375	625		
Base Capacity (vph)	136	177		517	587	555	123	1592	1175	237	917	962
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.46		0.65	0.12	0.26	0.21	0.20	0.15	0.30	0.47	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 35.3	Intersection LOS: D
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 400: N Howe St & Robert Ruark Dr SE/River Rd SE



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	14	25	584	370	38
Future Volume (vph)	22	14	25	584	370	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	100			100
Storage Lanes	1	0	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946					0.850
Flt Protected	0.971		0.950			
Satd. Flow (prot)	1711	0	1770	1863	1863	1583
Flt Permitted	0.971		0.950			
Satd. Flow (perm)	1711	0	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	1120			1777	1211	
Travel Time (s)	30.5			26.9	18.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	16	28	649	411	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	28	649	411	42
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 40.7%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	14	25	584	370	38
Future Vol, veh/h	22	14	25	584	370	38
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	-	100	-	-	100
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	24	16	28	649	411	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1116	411	453	0	-	0
Stage 1	411	-	-	-	-	-
Stage 2	705	-	-	-	-	-
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	230	641	1108	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	224	641	1108	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1108	-	300	-	-
HCM Lane V/C Ratio	0.025	-	0.133	-	-
HCM Control Delay (s)	8.3	-	18.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	81	196	414	31	75	309
Future Volume (vph)	81	196	414	31	75	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	325	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904			0.850		
Flt Protected	0.986				0.950	
Satd. Flow (prot)	1660	0	1863	1583	1770	1863
Flt Permitted	0.986				0.950	
Satd. Flow (perm)	1660	0	1863	1583	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	1122		1404			1777
Travel Time (s)	17.0		21.3			26.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	90	218	460	34	83	343
Shared Lane Traffic (%)						
Lane Group Flow (vph)	308	0	460	34	83	343
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	81	196	414	31	75	309
Future Vol, veh/h	81	196	414	31	75	309
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	325	-
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	90	218	460	34	83	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	969	460	0	0	494	0
Stage 1	460	-	-	-	-	-
Stage 2	509	-	-	-	-	-
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	281	601	-	-	1070	-
Stage 1	636	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	601	-	-	1070	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.1	0	1.7
HCM LOS	D		

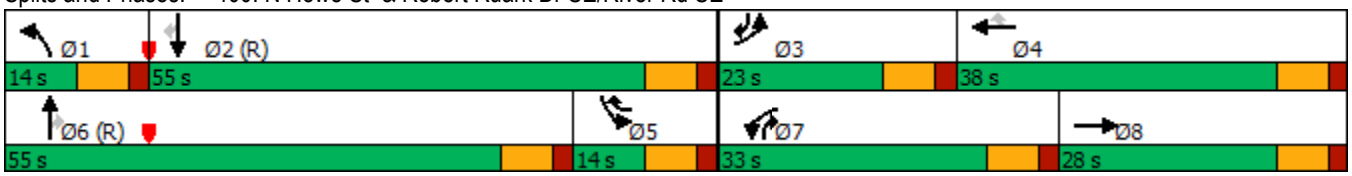
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	1070	-
HCM Lane V/C Ratio	-	-	0.709	0.078	-
HCM Control Delay (s)	-	-	31.1	8.6	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	5.4	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	48	118	235	88	67	19	519	294	104	473	66
Future Volume (vph)	125	48	118	235	88	67	19	519	294	104	473	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	450		450	525		375	625		0
Storage Lanes	1		0	1		1	1		2	2		1
Taper Length (ft)	100			100			0			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frt		0.893				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1663	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1663	0	1770	1863	1583	1770	3539	1583	3433	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		868			1404			1137			1047	
Travel Time (s)		16.9			21.3			22.1			20.4	
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)	139	53	131	261	98	74	21	577	327	116	526	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	184	0	261	98	74	21	577	327	116	526	73
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8		7	4	5	1	6	7	5	2	3
Permitted Phases						4			6			2
Detector Phase	3	8		7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	10.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	30.4	14.0	14.0	40.0	14.0	14.0	24.0	14.0
Total Split (s)	23.0	28.0		33.0	38.0	14.0	14.0	55.0	33.0	14.0	55.0	23.0
Total Split (%)	17.7%	21.5%		25.4%	29.2%	10.8%	10.8%	42.3%	25.4%	10.8%	42.3%	17.7%
Maximum Green (s)	16.0	21.0		26.0	31.0	7.0	7.0	48.0	26.0	7.0	48.0	16.0
Yellow Time (s)	5.0	5.0		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	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	-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	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	6.0	2.0
Minimum Gap (s)	2.0	2.0		2.0	2.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)					7.0			7.0			7.0	
Flash Dont Walk (s)					16.4			26.0			10.0	
Pedestrian Calls (#/hr)					0			0			0	
Act Effct Green (s)	15.5	19.6		24.2	28.4	37.4	9.0	57.2	81.4	9.0	62.8	83.2
Actuated g/C Ratio	0.12	0.15		0.19	0.22	0.29	0.07	0.44	0.63	0.07	0.48	0.64
v/c Ratio	0.66	0.74		0.79	0.24	0.16	0.17	0.37	0.33	0.49	0.59	0.07

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	69.8	69.7		67.7	42.1	20.2	60.6	26.6	7.4	65.7	31.1	11.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	69.7		67.7	42.1	20.2	60.6	26.6	7.4	65.7	31.1	11.7
LOS	E	E		E	D	C	E	C	A	E	C	B
Approach Delay		69.7			53.8			20.6			34.7	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	113	148		210	68	32	17	174	71	49	352	25
Queue Length 95th (ft)	182	227		303	115	55	45	238	113	81	517	51
Internal Link Dist (ft)		788			1324			1057			967	
Turn Bay Length (ft)	200			450		450	525		375	625		
Base Capacity (vph)	245	294		381	472	455	122	1556	1036	237	899	1044
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.63		0.69	0.21	0.16	0.17	0.37	0.32	0.49	0.59	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 400: N Howe St & Robert Ruark Dr SE/River Rd SE



Queueing Analysis

SimTraffic Worksheets

Intersection: 100: River Rd SE & Site Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	60	37
Average Queue (ft)	25	5
95th Queue (ft)	50	25
Link Distance (ft)	1080	1733
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: River Rd SE & Rob Gandy Blvd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	81	64
Average Queue (ft)	34	19
95th Queue (ft)	61	50
Link Distance (ft)	1079	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	119	134	354	104	194	67	183	165	100	97	60	306
Average Queue (ft)	43	51	217	43	78	23	96	40	33	37	16	151
95th Queue (ft)	92	107	331	90	149	58	164	120	76	78	45	264
Link Distance (ft)		814		1327			1096					994
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200		450		450	525		375	375	625	625	
Storage Blk Time (%)	0											
Queuing Penalty (veh)	0											

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	SB
Directions Served	R
Maximum Queue (ft)	89
Average Queue (ft)	17
95th Queue (ft)	54
Link Distance (ft)	994
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 100: River Rd SE & Site Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	44	92
Average Queue (ft)	20	12
95th Queue (ft)	45	51
Link Distance (ft)	1080	1726
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: River Rd SE & Rob Gandy Blvd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	188	56
Average Queue (ft)	79	20
95th Queue (ft)	147	46
Link Distance (ft)	1077	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	189	247	331	152	114	71	251	234	178	140	104	403
Average Queue (ft)	91	126	187	62	41	19	159	117	75	68	21	198
95th Queue (ft)	162	214	295	120	87	53	234	217	142	121	62	337
Link Distance (ft)		814		1327			1096					994
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200		450		450	525		375	375	625	625	
Storage Blk Time (%)	0	1										0
Queuing Penalty (veh)	1	2										0

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	SB
Directions Served	R
Maximum Queue (ft)	76
Average Queue (ft)	15
95th Queue (ft)	48
Link Distance (ft)	994
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2

Intersection: 100: River Rd SE & Site Access 1

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	60	28
Average Queue (ft)	25	4
95th Queue (ft)	50	20
Link Distance (ft)	1068	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: River Rd SE & Rob Gandy Blvd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	81	64
Average Queue (ft)	34	20
95th Queue (ft)	59	50
Link Distance (ft)	1077	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	119	136	359	104	187	67	185	165	102	97	60	299
Average Queue (ft)	43	51	218	43	78	24	95	40	33	37	16	149
95th Queue (ft)	92	108	332	89	149	58	164	120	76	78	46	262
Link Distance (ft)		814		1327			1096					994
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200		450		450	525		375	375	625	625	
Storage Blk Time (%)	0											
Queuing Penalty (veh)	0											

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	SB
Directions Served	R
Maximum Queue (ft)	91
Average Queue (ft)	17
95th Queue (ft)	55
Link Distance (ft)	994
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 100: River Rd SE & Site Access 1

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	44	39
Average Queue (ft)	19	8
95th Queue (ft)	43	30
Link Distance (ft)	1068	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: River Rd SE & Rob Gandy Blvd

Movement	WB	NB	SB
Directions Served	LR	T	L
Maximum Queue (ft)	178	2	59
Average Queue (ft)	76	0	20
95th Queue (ft)	139	2	48
Link Distance (ft)	1078	1327	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	191	244	324	152	114	71	252	230	172	147	104	398
Average Queue (ft)	92	123	186	61	41	18	161	118	74	70	23	198
95th Queue (ft)	166	212	288	119	88	51	235	217	139	127	69	338
Link Distance (ft)		814		1327			1096					994
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200		450		450	525		375	375	625	625	
Storage Blk Time (%)	1	2										0
Queuing Penalty (veh)	1	2										0

Intersection: 400: N Howe St & Robert Ruark Dr SE/River Rd SE

Movement	SB
Directions Served	R
Maximum Queue (ft)	70
Average Queue (ft)	15
95th Queue (ft)	47
Link Distance (ft)	994
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 3

Turning Movement Counts

TRAFFIC DATA COLLECTION

File Name : South Port-South Port(NC 87 and Rob Gandy)
Site Code :
Start Date : 5/10/2022
Page No : 1

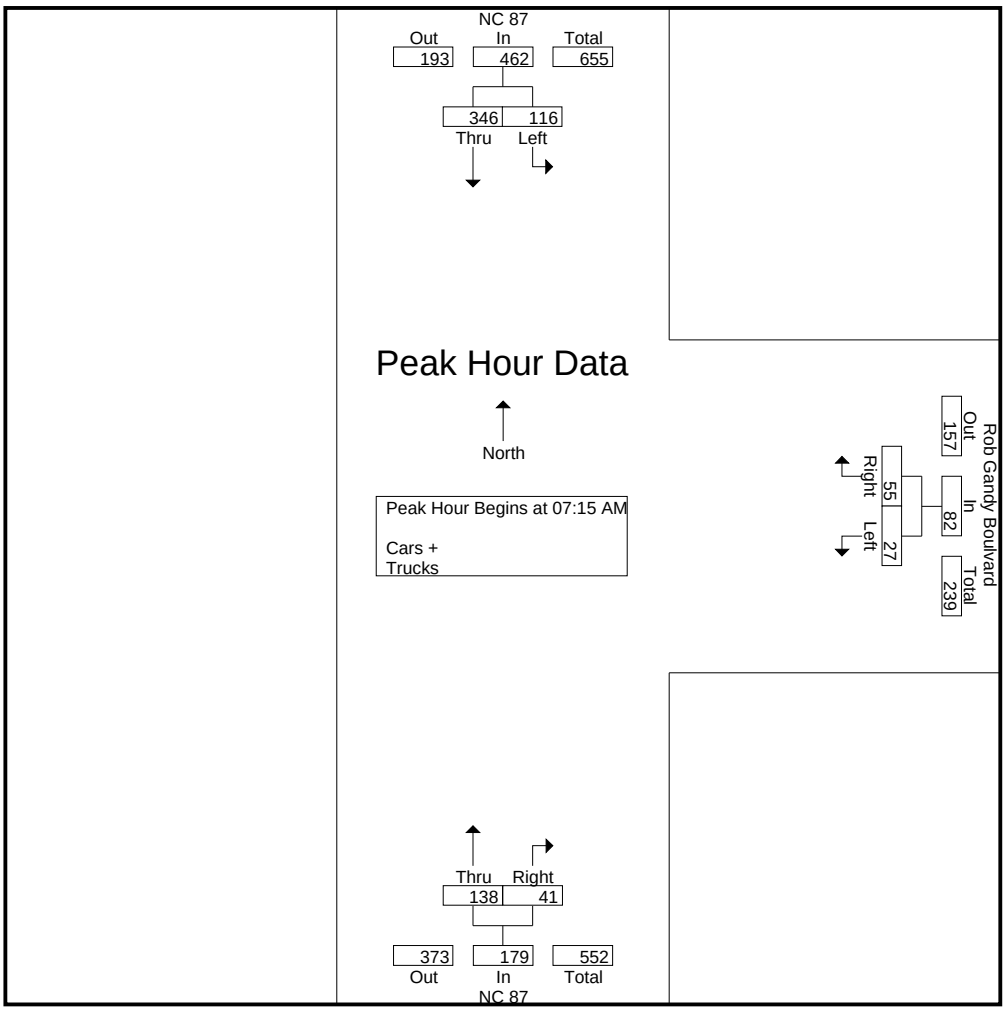
Groups Printed- Cars + - Trucks

	NC 87 Southbound			Rob Gandy Boulvard Westbound			NC 87 Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
07:00 AM	54	29	83	12	1	13	11	45	56	152
07:15 AM	78	32	110	17	7	24	15	43	58	192
07:30 AM	91	34	125	15	5	20	11	28	39	184
07:45 AM	101	29	130	13	4	17	10	37	47	194
Total	324	124	448	57	17	74	47	153	200	722
08:00 AM	76	21	97	10	11	21	5	30	35	153
08:15 AM	75	32	107	14	7	21	9	49	58	186
08:30 AM	55	34	89	10	6	16	10	39	49	154
08:45 AM	77	27	104	14	9	23	11	41	52	179
Total	283	114	397	48	33	81	35	159	194	672
Grand Total	607	238	845	105	50	155	82	312	394	1394
Apprch %	71.8	28.2		67.7	32.3		20.8	79.2		
Total %	43.5	17.1	60.6	7.5	3.6	11.1	5.9	22.4	28.3	
Cars +	583	219	802	93	43	136	72	294	366	1304
% Cars +	96	92	94.9	88.6	86	87.7	87.8	94.2	92.9	93.5
Trucks	24	19	43	12	7	19	10	18	28	90
% Trucks	4	8	5.1	11.4	14	12.3	12.2	5.8	7.1	6.5

TRAFFIC DATA COLLECTION

File Name : South Port-South Port(NC 87 and Rob Gandy)
Site Code :
Start Date : 5/10/2022
Page No : 2

	NC 87 Southbound			Rob Gandy Boulvard Westbound			NC 87 Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	78	32	110	**17**	7	**24**	**15**	**43**	**58**	192
07:30 AM	91	**34**	125	15	5	20	11	28	39	184
07:45 AM	**101**	29	**130**	13	4	17	10	37	47	**194**
08:00 AM	76	21	97	10	**11**	21	5	30	35	153
Total Volume	346	116	462	55	27	82	41	138	179	723
% App. Total	74.9	25.1		67.1	32.9		22.9	77.1		
PHF	.856	.853	.888	.809	.614	.854	.683	.802	.772	.932



TRAFFIC DATA COLLECTION

File Name : South Port-South Port(NC 87 and Rob Gandy)
Site Code :
Start Date : 5/10/2022
Page No : 1

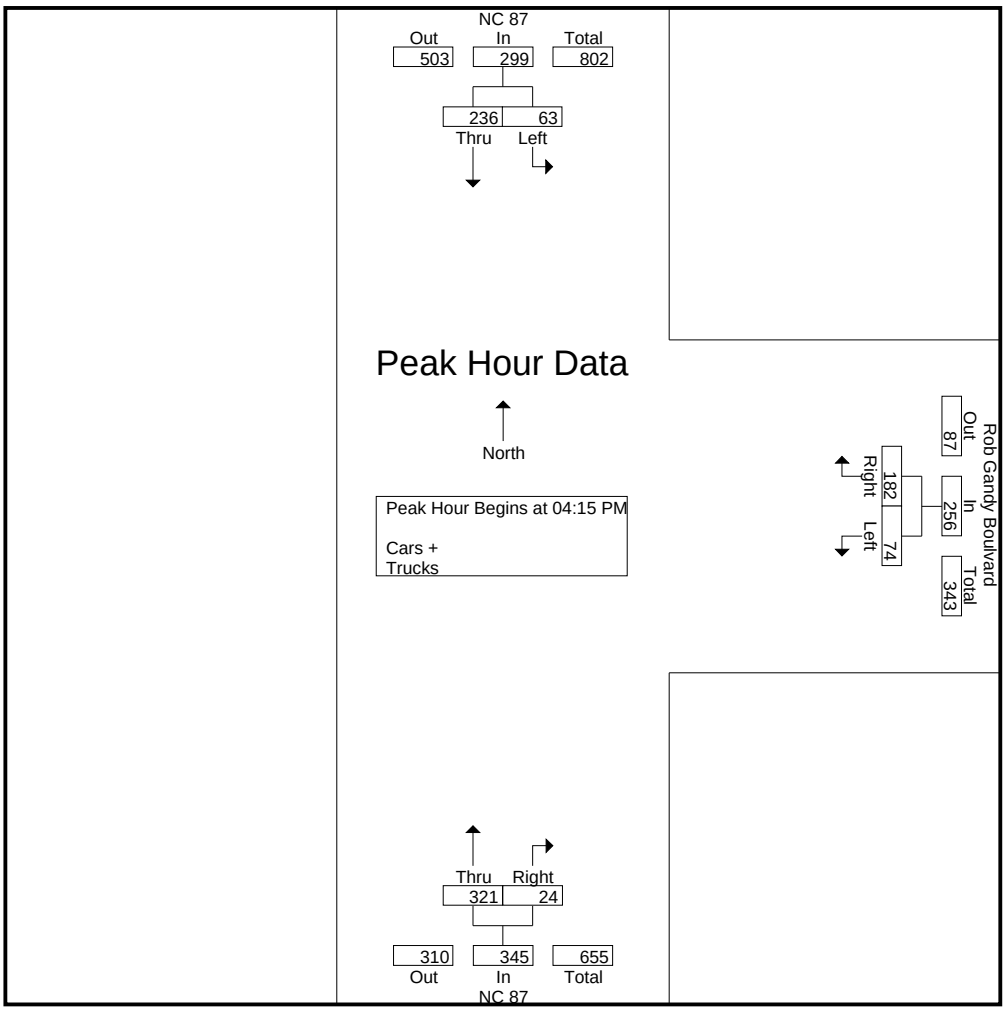
Groups Printed- Cars + - Trucks

	NC 87 Southbound			Rob Gandy Boulvard Westbound			NC 87 Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
04:00 PM	53	10	63	51	11	62	10	90	100	225
04:15 PM	54	17	71	19	11	30	14	86	100	201
04:30 PM	61	9	70	76	25	101	3	70	73	244
04:45 PM	65	19	84	31	9	40	3	76	79	203
Total	233	55	288	177	56	233	30	322	352	873
05:00 PM	56	18	74	56	29	85	4	89	93	252
05:15 PM	52	7	59	31	12	43	3	89	92	194
05:30 PM	53	12	65	44	14	58	4	73	77	200
05:45 PM	52	9	61	27	14	41	4	55	59	161
Total	213	46	259	158	69	227	15	306	321	807
Grand Total	446	101	547	335	125	460	45	628	673	1680
Apprch %	81.5	18.5		72.8	27.2		6.7	93.3		
Total %	26.5	6	32.6	19.9	7.4	27.4	2.7	37.4	40.1	
Cars +	442	97	539	327	121	448	42	608	650	1637
% Cars +	99.1	96	98.5	97.6	96.8	97.4	93.3	96.8	96.6	97.4
Trucks	4	4	8	8	4	12	3	20	23	43
% Trucks	0.9	4	1.5	2.4	3.2	2.6	6.7	3.2	3.4	2.6

TRAFFIC DATA COLLECTION

File Name : South Port-South Port(NC 87 and Rob Gandy)
Site Code :
Start Date : 5/10/2022
Page No : 2

	NC 87 Southbound			Rob Gandy Boulvard Westbound			NC 87 Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	54	17	71	19	11	30	**14**	86	**100**	201
04:30 PM	61	9	70	**76**	25	**101**	3	70	73	244
04:45 PM	**65**	**19**	**84**	31	9	40	3	76	79	203
05:00 PM	56	18	74	56	**29**	85	4	**89**	93	**252**
Total Volume	236	63	299	182	74	256	24	321	345	900
% App. Total	78.9	21.1		71.1	28.9		7	93		
PHF	.908	.829	.890	.599	.638	.634	.429	.902	.863	.893



TRAFFIC DATA COLLECTION

File Name : Southport(NC 211 and NC 87
Site Code :
Start Date : 1/13/2022
Page No : 1

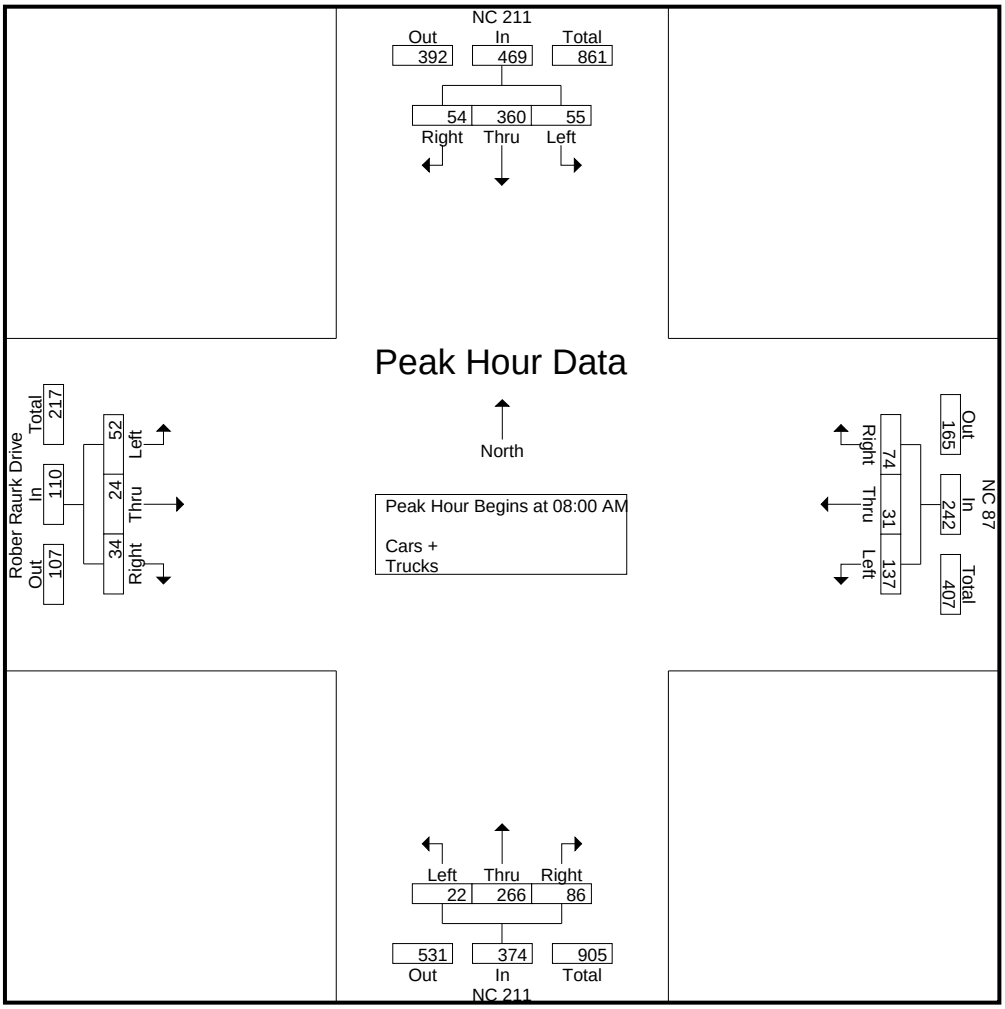
Groups Printed- Cars + - Trucks

	NC 211 Southbound				NC 87 Westbound				NC 211 Northbound				Rober Raurk Drive Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00 AM	5	43	22	70	15	2	23	40	11	35	1	47	6	3	11	20	177
07:15 AM	5	63	16	84	18	4	23	45	20	37	4	61	5	6	6	17	207
07:30 AM	5	75	16	96	13	5	31	49	14	49	3	66	3	5	18	26	237
07:45 AM	15	86	16	117	18	6	42	66	16	49	1	66	8	7	11	26	275
Total	30	267	70	367	64	17	119	200	61	170	9	240	22	21	46	89	896
08:00 AM	11	77	13	101	17	5	42	64	16	63	11	90	7	4	15	26	281
08:15 AM	15	95	15	125	17	6	26	49	21	58	4	83	9	8	12	29	286
08:30 AM	15	80	16	111	24	11	27	62	21	74	4	99	11	6	9	26	298
08:45 AM	13	108	11	132	16	9	42	67	28	71	3	102	7	6	16	29	330
Total	54	360	55	469	74	31	137	242	86	266	22	374	34	24	52	110	1195
Grand Total	84	627	125	836	138	48	256	442	147	436	31	614	56	45	98	199	2091
Apprch %	10	75	15		31.2	10.9	57.9		23.9	71	5		28.1	22.6	49.2		
Total %	4	30	6	40	6.6	2.3	12.2	21.1	7	20.9	1.5	29.4	2.7	2.2	4.7	9.5	
Cars +	84	623	118	825	132	48	249	429	147	428	30	605	56	45	97	198	2057
% Cars +	100	99.4	94.4	98.7	95.7	100	97.3	97.1	100	98.2	96.8	98.5	100	100	99	99.5	98.4
Trucks	0	4	7	11	6	0	7	13	0	8	1	9	0	0	1	1	34
% Trucks	0	0.6	5.6	1.3	4.3	0	2.7	2.9	0	1.8	3.2	1.5	0	0	1	0.5	1.6

TRAFFIC DATA COLLECTION

File Name : Southport(NC 211 and NC 87
Site Code :
Start Date : 1/13/2022
Page No : 2

	NC 211 Southbound				NC 87 Westbound				NC 211 Northbound				Rober Raurk Drive Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	11	77	13	101	17	5	**42**	64	16	63	**11**	90	7	4	15	26	281
08:15 AM	**15**	95	15	125	17	6	26	49	21	58	4	83	9	**8**	12	**29**	286
08:30 AM	15	80	**16**	111	**24**	**11**	27	62	21	**74**	4	99	**11**	6	9	26	298
08:45 AM	13	**108**	11	**132**	16	9	42	**67**	**28**	71	3	**102**	7	6	**16**	29	**330**
Total Volume	54	360	55	469	74	31	137	242	86	266	22	374	34	24	52	110	1195
% App. Total	11.5	76.8	11.7		30.6	12.8	56.6		23	71.1	5.9		30.9	21.8	47.3		
PHF	.900	.833	.859	.888	.771	.705	.815	.903	.768	.899	.500	.917	.773	.750	.813	.948	.905



TRAFFIC DATA COLLECTION

File Name : Southport(NC 211 and NC 87
Site Code :
Start Date : 1/13/2022
Page No : 1

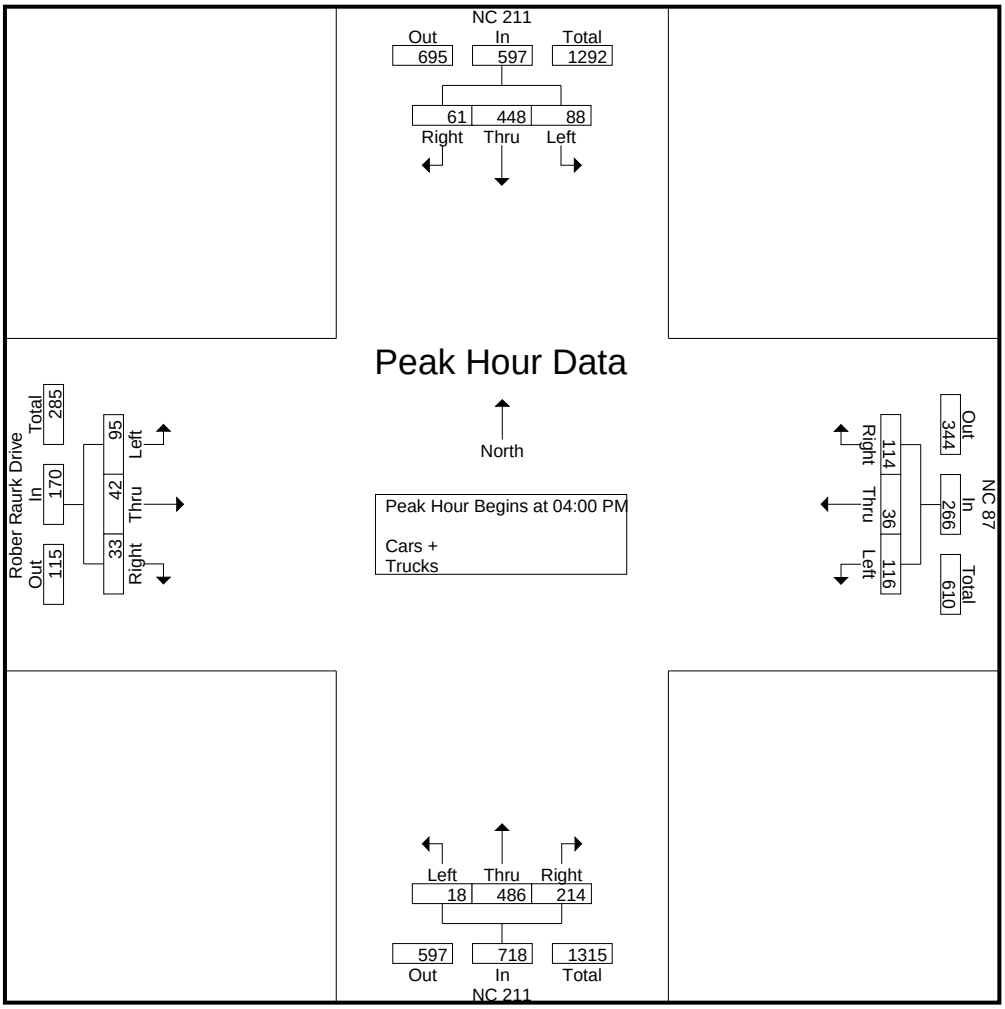
Groups Printed- Cars + - Trucks

	NC 211 Southbound				NC 87 Westbound				NC 211 Northbound				Rober Raurk Drive Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
04:00 PM	20	110	22	152	36	11	33	80	64	126	3	193	8	14	26	48	473
04:15 PM	7	104	21	132	24	11	39	74	56	133	5	194	8	8	24	40	440
04:30 PM	17	112	21	150	32	10	22	64	61	118	2	181	7	8	26	41	436
04:45 PM	17	122	24	163	22	4	22	48	33	109	8	150	10	12	19	41	402
Total	61	448	88	597	114	36	116	266	214	486	18	718	33	42	95	170	1751
05:00 PM	15	102	20	137	27	16	35	78	52	99	10	161	14	10	31	55	431
05:15 PM	14	139	22	175	25	5	31	61	32	139	12	183	15	12	26	53	472
05:30 PM	17	87	12	116	30	5	19	54	54	120	5	179	11	9	24	44	393
05:45 PM	18	111	27	156	24	1	18	43	24	73	8	105	2	10	23	35	339
Total	64	439	81	584	106	27	103	236	162	431	35	628	42	41	104	187	1635
Grand Total	125	887	169	1181	220	63	219	502	376	917	53	1346	75	83	199	357	3386
Apprch %	10.6	75.1	14.3		43.8	12.5	43.6		27.9	68.1	3.9		21	23.2	55.7		
Total %	3.7	26.2	5	34.9	6.5	1.9	6.5	14.8	11.1	27.1	1.6	39.8	2.2	2.5	5.9	10.5	
Cars +	125	886	167	1178	219	63	219	501	376	917	53	1346	75	83	198	356	3381
% Cars +	100	99.9	98.8	99.7	99.5	100	100	99.8	100	100	100	100	100	100	99.5	99.7	99.9
Trucks	0	1	2	3	1	0	0	1	0	0	0	0	0	0	1	1	5
% Trucks	0	0.1	1.2	0.3	0.5	0	0	0.2	0	0	0	0	0	0	0.5	0.3	0.1

TRAFFIC DATA COLLECTION

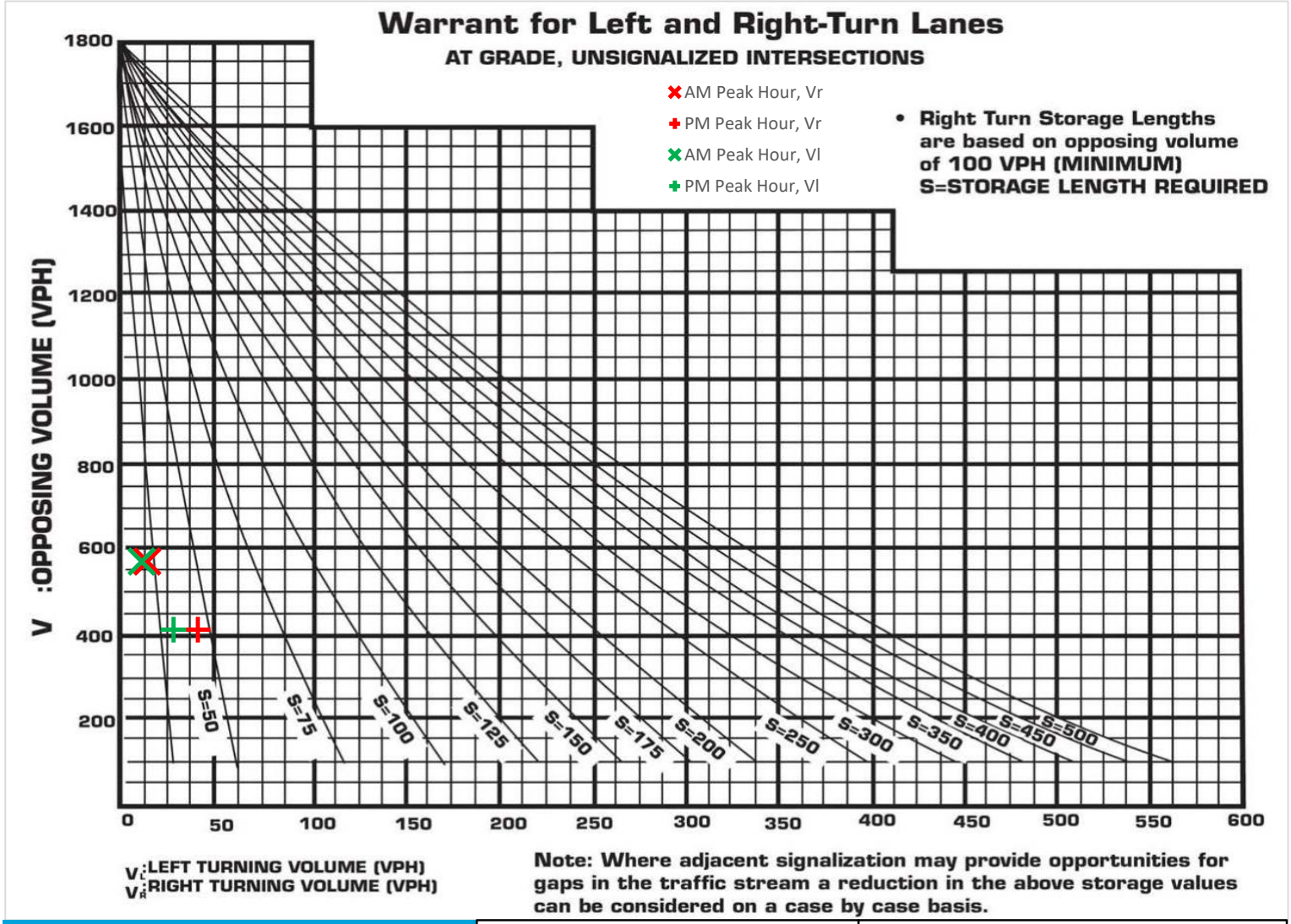
File Name : Southport(NC 211 and NC 87
Site Code :
Start Date : 1/13/2022
Page No : 2

	NC 211 Southbound				NC 87 Westbound				NC 211 Northbound				Rober Raurk Drive Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**20**	110	22	152	**36**	**11**	33	**80**	**64**	126	3	193	8	**14**	**26**	**48**	**473**
04:15 PM	7	104	21	132	24	11	**39**	74	56	**133**	5	**194**	8	8	24	40	440
04:30 PM	17	112	21	150	32	10	22	64	61	118	2	181	7	8	26	41	436
04:45 PM	17	**122**	**24**	**163**	22	4	22	48	33	109	**8**	150	**10**	12	19	41	402
Total Volume	61	448	88	597	114	36	116	266	214	486	18	718	33	42	95	170	1751
% App. Total	10.2	75	14.7		42.9	13.5	43.6		29.8	67.7	2.5		19.4	24.7	55.9		
PHF	.763	.918	.917	.916	.792	.818	.744	.831	.836	.914	.563	.925	.825	.750	.913	.885	.925



Supporting Documentation

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	569	8	AM	569	11
PM	408	25	PM	408	38



DAVENPORT	TURN LANE WARRANT SUMMARY	SITE ACCESS AT NC 87

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

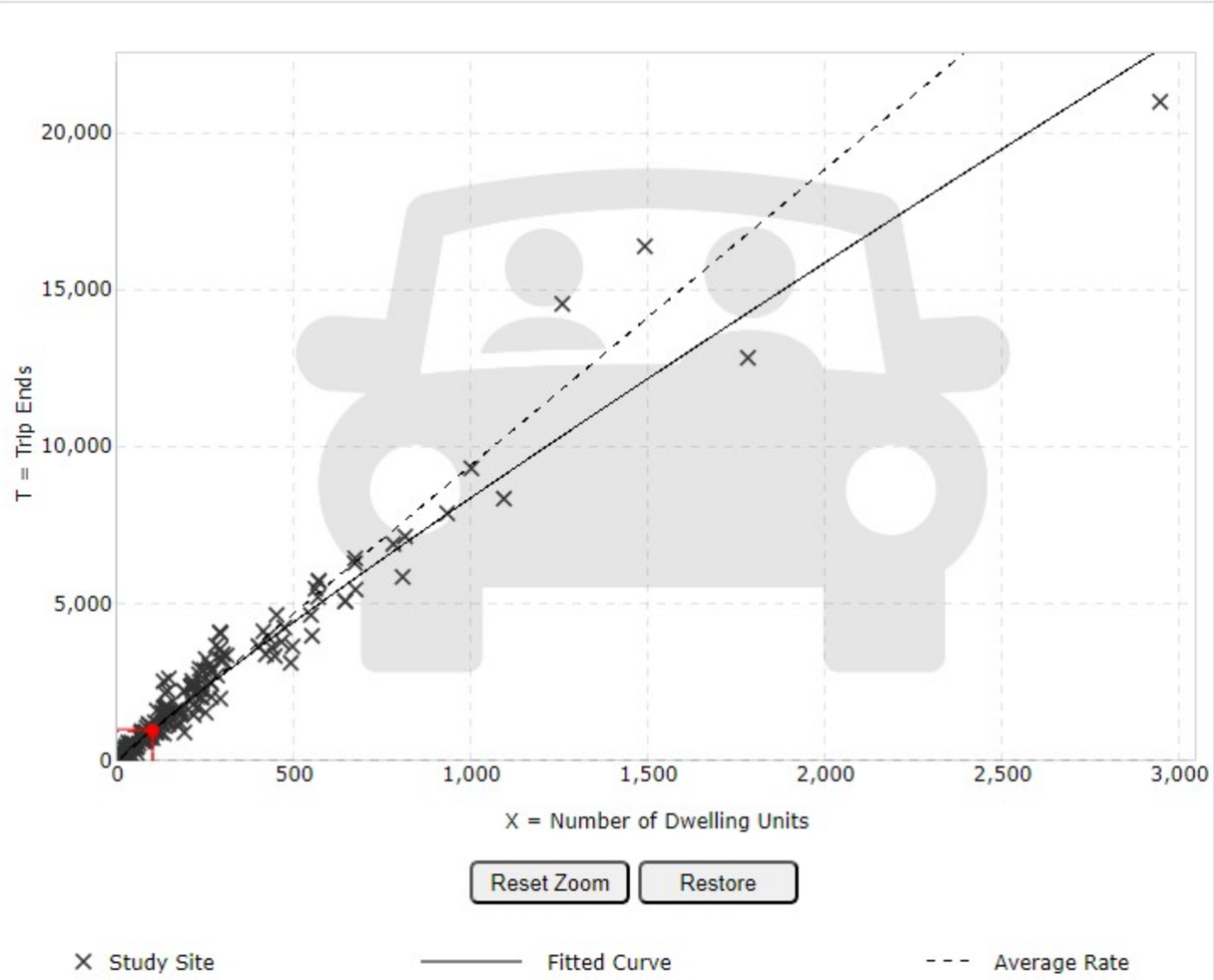
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
100 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
174

Avg. Num. of Dwelling Units:
246

Average Rate:
9.43

Range of Rates:
4.45 - 22.61

Standard Deviation:
2.13

Fitted Curve Equation:
Ln(T) = 0.92 Ln(X) + 2.68

R^2:
0.95

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 943 (Total), 472 (Entry), 471 (Exit)
Fitted Curve: 1009 (Total), 505 (Entry), 504 (Exit)

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

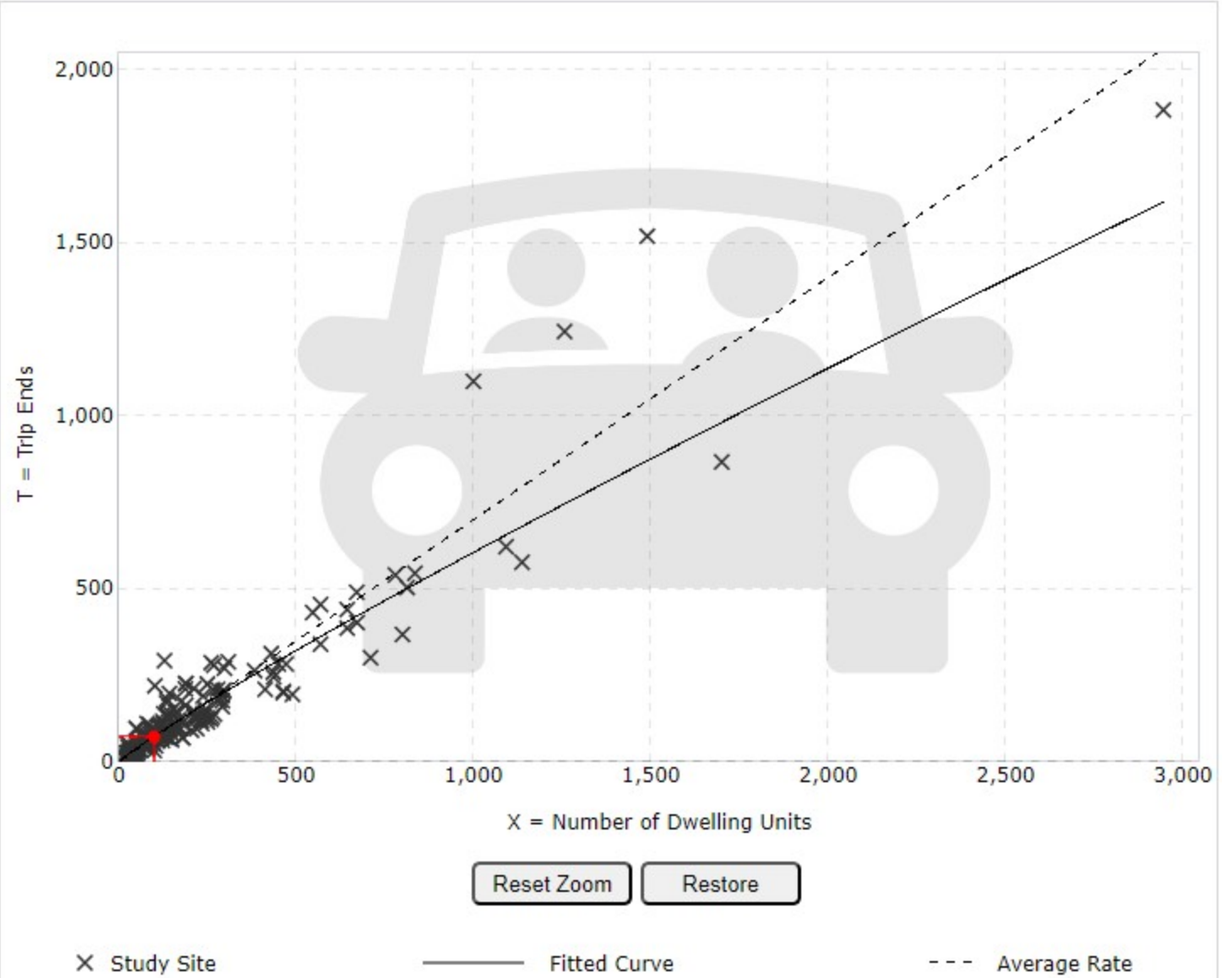
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
100 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
192

Avg. Num. of Dwelling Units:
226

Average Rate:
0.70

Range of Rates:
0.27 - 2.27

Standard Deviation:
0.24

Fitted Curve Equation:
$Ln(T) = 0.91\ Ln(X) + 0.12$

R^2:
0.90

Directional Distribution:
25% entering, 75% exiting

Calculated Trip Ends:
Average Rate: 70 (Total), 18 (Entry), 52 (Exit)
Fitted Curve: 74 (Total), 19 (Entry), 55 (Exit)

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

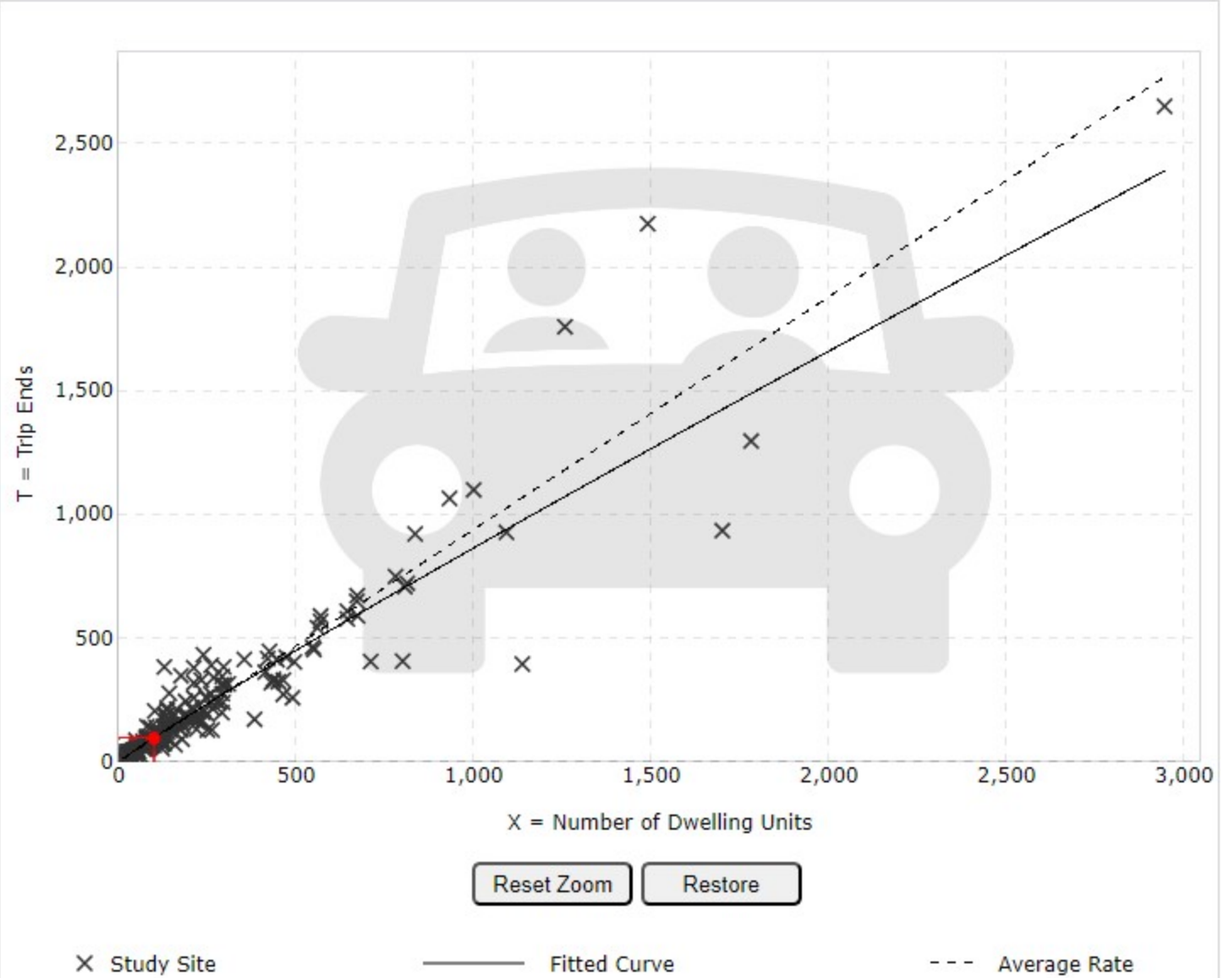
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
100 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 94 (Total), 59 (Entry), 35 (Exit)
Fitted Curve: 99 (Total), 63 (Entry), 36 (Exit)

DESIGN PUBLIC MEETING MAP

PROJECT 41582.1.1

TIP PROJECT: R–5021

BRUNSWICK COUNTY

NC 211 WIDENING FROM WEST OF NC 906 (MIDWAY ROAD) TO EAST OF NC 87

SHEET 4 OF 4

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LEGEND

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- EXISTING EASEMENTS (DRAINAGE AND SIGNAGE)
- PROPOSED EASEMENTS (DRAINAGE, CONSTRUCTION AND UTILITY)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, RETAINING WALLS, ISLANDS, CURB AND GUTTER
- EXISTING STRUCTURES, ISLANDS, CURB AND GUTTER TO BE RETAINED
- EXISTING STRUCTURES, ISLANDS, CURB AND GUTTER TO BE REMOVED
- LAKES, RIVER, STREAMS AND PONDS
- EXISTING UTILITY EASEMENT
- EXISTING CEMETERY
- PROPERTY LINES
- 2018 / 2038 PRESENT ADT / FUTURE ADT
- PROPOSED CONTROL OF ACCESS
- PROPOSED PARTIAL CONTROL OF ACCESS
- EXISTING CONTROL OF ACCESS
- EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- WETLAND
- WETLAND LIMITS BOUNDARY
- JURISDICTIONAL STREAM LINES
- CITY LIMITS

DESIGN DATA

Functional Class. = MAJOR COLLECTOR
Design Speed = 60/50/40 MPH
Max Superelev. = 0.06

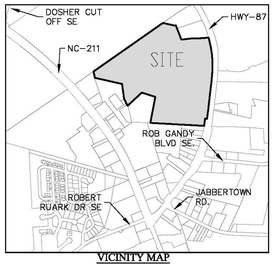
100′ 50′ 0′ 100′ 200′ (ENGLISH)

NOTE:
Partial Control of Access is defined as one access point per parcel. For properties with large road frontages (for example, 2000 feet or more), an additional access point may be considered. For properties that have access, such as via a side road, access to Southport Supply Rd, NC 211 may be eliminated.

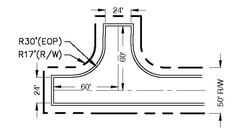
NOTE:
Special Control of Access Designation: No revision shall be made to the Control of Access without the approval of NCDOT, FHWA and NCDENR per agreement and USACE per permit condition.

PARCEL OWNER	PARCEL #
AL–CLAYESE P. FRINK	35
ARC BJSPTNCOOI, LLC.	29
BROWNS CHURCH	37
BRUNSWICK COUNTY	30
CARDINAL BUILDERS COMPANY	39
CAROLINA PROPERTIES OF SOUTHPORT, INC. NC	42
CATHERINE LEWIS	48
COASTAL REAL ESTATE SERVICES, LLC.	46
ERNEST W. DARBY, ET UX	40
JANICE JACKSON	34
JOHN R. CORBETT, TRUSTEE	45
KENNETH R. STEWART, ET UX	36
LAWRENCE R. WILLING, SR.	47
PAZZO HOLDINGS, LLC.	33
PELICAN COAST, INC.	44
QUALITY OIL CO., LLC.	38
THOMA A. WILSON, ET UX	41
TONY WEHBE	32
WILLIAM C. BLAKE TRUSTEE	43
1658 NORTH HOWE STREET, INC.	31

DESIGN PUBLIC MEETING MAP
PROJECT 41582.1.1
TIP PROJECT: R-5021
BRUNSWICK COUNTY
NC 211 WIDENING FROM WEST OF NC 906 (MIDWAY ROAD) TO EAST OF NC 87
SHEET 4 OF 4



VICINITY MAP
NOT TO SCALE



TYPICAL DEAD END STREET TURNAROUND
NOT TO SCALE

TYPICAL CUL-DE-SAC DETAIL
NOT TO SCALE

TYPICAL LOT DIMENSION & SETBACKS
(LOT DIMENSIONS NOT TYPICAL TO IRREGULAR SHAPED LOTS)
NOT TO SCALE

OPEN SPACE

	4.67 AC.	PASSIVE OPEN SPACE
	6.21 AC.	ACTIVE OPEN SPACE

ACTIVE OPEN SPACE NOTE

ACTIVE OPEN SPACE ACTIVITIES MAY INCLUDE: GRASSED ACTIVITY AREA, PEDESTRIAN WALKWAYS, PEDESTRIAN BRIDGES, GAZEBOS, & PARK BENCHES.

ALL OPEN SPACE AREA TO BE OWNED & MAINTAINED BY HOME OWNERS ASSOCIATION.

PROJECT INFORMATION

OWNER NAME & ADDRESS:	TURTLE BAY AT SOUTHPORT, LLC 5106 LANCOME CT WILMINGTON, NC 28409 910-443-6739

PROPERTY INFORMATION

TAX PARCEL NUMBER:	22100017
DEED REFERENCE:	BOOK 5043, PAGE 1074
MAP BOOK:	BOOK 143, PAGE 47
TOTAL SITE AREA:	2,356,011 SF OR 54.09 AC

ZONING

PLANNED UNIT DEVELOPMENT (PUD)

MINIMUM LOT SIZE:	12,000 SF
MINIMUM LOT WIDTH:	75 FEET
BUILDING SETBACKS:	FRONT YARD=10 FEET REAR YARD=15 FEET SIDE YARD=8 FEET

LOT LAYOUT INFORMATION:

TOTAL TRACT AREA= 2,356,011 SF (54.09 ACRES)

TOTAL RIGHT OF WAY AREA= 336,343 SF (7.72 ACRES)

TOTAL WETLANDS= 66,504 SF (1.53 ACRES)

TOTAL PROPOSED STORMWATER POND AREA= 155,242 SF (3.56 ACRES)

TOTAL NEW LOTS CREATED =	100
MINIMUM LOT SIZE =	12,000 SF
UNIT DENSITY=	1.85 UNITS/ACRE

TOTAL NET AREA CALCULATION

TOTAL TRACT AREA EXCLUDING STREET RIGHT OF WAYS & STORMWATER PONDS = 1,864,426 SF (42.80 ACRES)

OPEN SPACE CALCULATION

OPEN SPACE REQUIRED: 20% OF TRACT AREA EXCLUDING WETLANDS 2,356,011 SF X 20% = 471,202 SF (10.82ACRES)

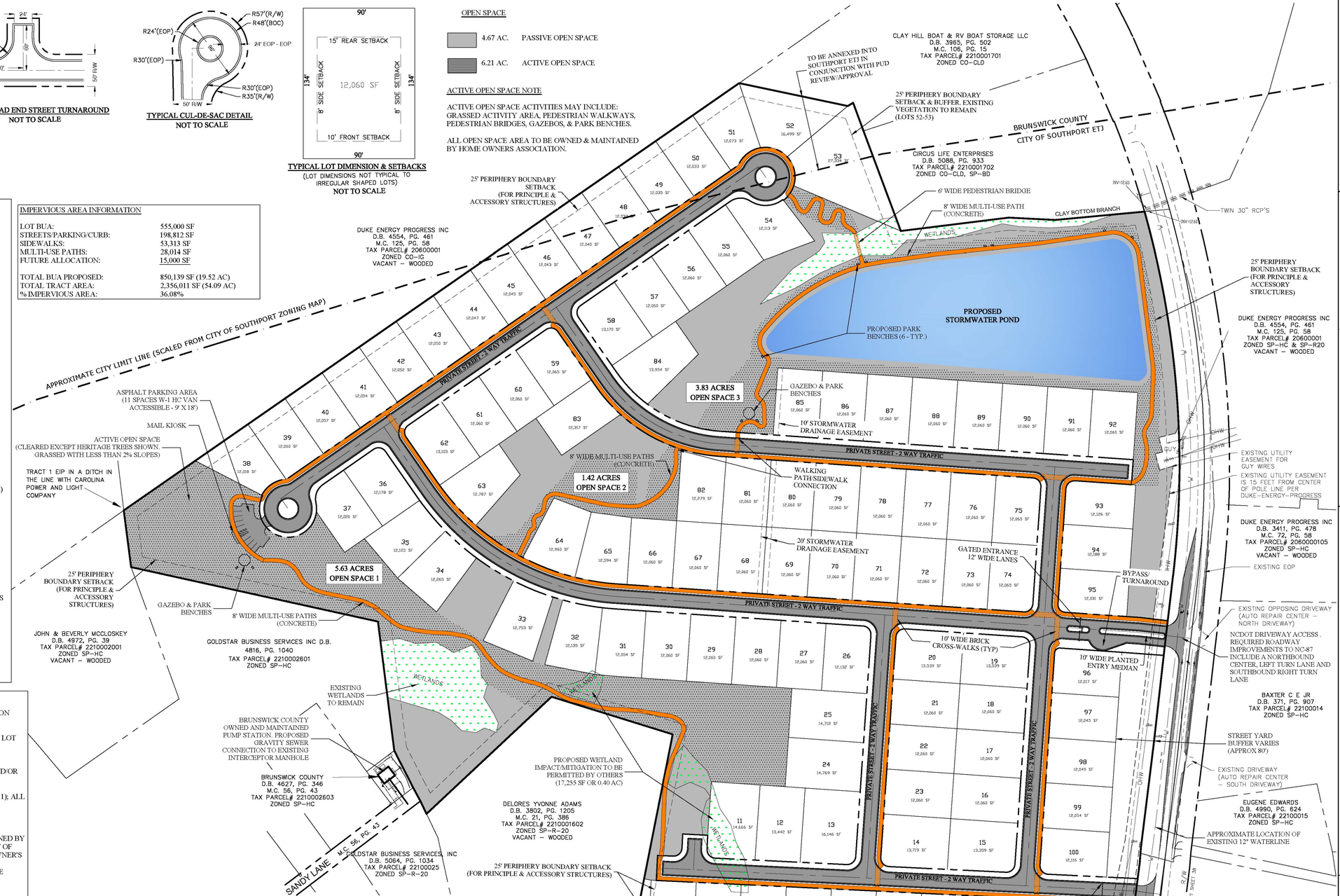
OPEN SPACE #1=	5.63 AC (245,214 SF)	51.72%
OPEN SPACE #2=	1.42 AC (62,033 SF)	13.08 %
OPEN SPACE #3=	3.83 AC (166,855 SF)	35.20 %
TOTAL PROVIDED:	10.88 AC (474,102 SF)	100.00%
CONTIGUOUS OPEN SPACE:	5.63 AC (245,214 SF)	51.72%
NON-CONTIGUOUS OPEN SPACE:	5.25 AC (228,888 SF)	48.28 %

IMPERVIOUS AREA INFORMATION

LOT BUA:	555,000 SF
STREETS/PARKING/CURB:	198,812 SF
SIDEWALKS:	53,313 SF
MULTI-USE PATHS:	28,014 SF
FUTURE ALLOCATION:	15,000 SF
TOTAL BUA PROPOSED:	850,139 SF (19.52 AC)
TOTAL TRACT AREA:	2,356,011 SF (54.09 AC)
% IMPERVIOUS AREA:	36.08%

DEVELOPMENT NOTES:

1. ADJOINING DEED REFERENCES BASED ON CURRENT INFORMATION FOUND IN THE BRUNSWICK COUNTY TAX OFFICE.
2. ACCORDING TO CURRENT FEMA FLOOD MAP # 3720209700K, THIS LOT APPEARS TO BE LOCATED IN THE FOLLOWING ZONE: X
3. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHT-OF-WAYS OF RECORD, GOVERNMENTAL ORDINANCES AND/OR REQUIREMENTS WHICH MAY LIMIT THE USE OF THIS PROPERTY.
4. ALL BEARINGS ARE BASED ON NC GRID NORTH (NAD83-NSRS 2011); ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
5. IRON REBAR TO BE SET AT ALL LOT CORNERS.
6. ALL STREET IN ARE PRIVATE STREETS AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. SIDEWALKS WITH THESE RIGHT OF WAYS ARE PRIVATE AND SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION. ROADWAYS WILL BE CONSTRUCTED TO TOWN STANDARDS AND MAY BE REQUESTED TO BE DEDICATED TO THE TOWN AT A FUTURE DATE.
7. SETBACKS FOR THESE LOTS ARE BASED ON CURRENT TOWN OF SOUTHPORT ZONING.
8. ALL OPEN SPACE SHALL BE MAINTAINED BY A HOMEOWNER'S ASSOCIATION.
9. ALL STREETS SHALL BE CONSTRUCTED TO TOWN OF SOUTHPORT STANDARDS PER TOWN ORDINANCE.
10. ALL LOTS TO BE SERVED WITH PUBLIC WATER AND SEWER.
11. A 10' DRAINAGE AND UTILITY EASEMENT IS RESERVED ALONG ALL SIDE LOT LINES (5' EITHER SIDE OF LINE).
12. ALL NEW UTILITIES SHALL BE SUB-SURFACE.
13. THESE LOTS ARE LOCATED WITHIN THE TOWN OF SOUTHPORT CORPORATE LIMITS.
14. A STREET LIGHTING PLAN SHALL BE DEVELOPED BY BRUNSWICK ELECTRIC MEMBERSHIP CORPORATION (BEMC).
15. AREA BY COORDINATE METHOD.
16. SOUTHPORT AND NORTH CAROLINA STATE STORMWATER PERMITS MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION. NO NATURAL DRAINAGE AREAS WILL BE CUT OFF OR DISTURBED BEFORE OBTAINING THE PERMITS.



SUBDIVISION STREET PAVING NOTES:
THIS PAVEMENT SECTION WAS NOT DESIGNED TO THE SUPPORT THE LOADS IMPOSED BY HEAVY CONSTRUCTION VEHICLE TRAFFIC. ADDITIONAL ASPHALT IS REQUIRED IF THE CONSTRUCTION IS TO BE PHASED. CONSULT GEOTECHNICAL ENGINEER FOR GUIDANCE.

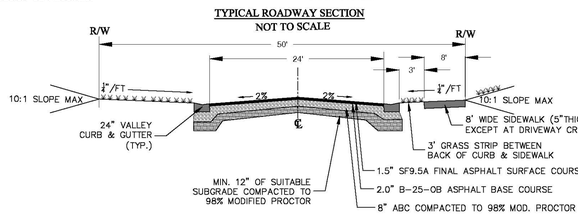
UNDERCUT ANY UNSUITABLE MATERIAL UP TO 24" AND REPLACE WITH SELECT MATERIAL AS REQUIRED

THE PAVEMENT DESIGN SHOWN REPRESENTS THE MINIMUM THICKNESS OF SURFACE AND BASE COURSE TO BE USED. SUBGRADE SOILS TEST MAY DETERMINE A HEAVIER PAVEMENT DESIGN BE REQUIRED.

ALL MATERIALS SHALL MEET THE REQUIREMENTS SET FORTH IN THE LATEST EDITION OF NCDOT SUBDIVISION ROADS – MINIMUM CONSTRUCTION STANDARDS.

CONTRACTOR SHALL NOTIFY ENGINEER IF SATURATED SUBGRADE IS ENCOUNTERED DURING CONSTRUCTION AS ADDITIONAL DRAINAGE MEASURES MAY BE REQUIRED, SUCH AS CURB UNDER DRAIN SYSTEM.

TYPICAL ROADWAY SECTION
NOT TO SCALE



STORMWATER NOTE:

ALL STORMWATER RUNOFF FROM LOTS TO BE DIRECTED TO STREET CURB INLET COLLECTION SYSTEM (DOWNSPOUT PIPING, SWALE, OR SHEET FLOW). RUNOFF SHALL BE CONVEYED VIA THE STORMWATER DRAINAGE SYSTEM TO THE PROPOSED STORMWATER POND. STORMWATER POND HAS BEEN SIZED TO CONTROL AND RELEASE THE 25-YR, 24-HR STORM TO MATCH PRE-EXISTING RUNOFF CONDITIONS. STORMWATER PERMITS FROM SOUTHPORT AND NCDEMLR WILL BE SUBMITTED UPON APPROVAL OF PUD.

RIGHT OF WAY/STREET SPECIAL NOTE:

1. ALL R/W'S WITHIN PROJECT ARE PROPOSED AT 50'. EXCEPTION OF R/W WIDTH AT ENTRANCE (72') AND AROUND CUL-DE-SACS (114').
2. STREETS ARE PROPOSED 24' WIDE WITH 2' VALLEY CURBING
3. ALL SIDEWALKS TO BE 8' WIDE WITH 3' LANDSCAPING STRIP BETWEEN BACK OF CURB AND SIDEWALK. A 10' WIDE BRICK CROSS WALK WILL BE PROVIDED WHERE SIDEWALKS CONNECT ACROSS THE STREET.
4. ALL MULTI-USE PATHS SHALL BE 8' WIDE AND PAVED WITH CONCRETE

UTILITY NOTE:

1. GRAVITY SEWER SEWER WILL SERVE THE PROPOSED SUBDIVISION. CONNECTION TO BE PERMITTED & MADE TO THE LIFT STATION ON SANDY LANE.
2. WATER DISTRIBUTION NETWORK TO BE PERMITTED AND CONNECTED TO EXISTING 12" WATER MAIN ALONG HWY 87
3. ALL UTILITIES OWNED AND MAINTAINED BY BRUNSWICK COUNTY

Digitally signed by Jackson D Starling
Date: 2024.02.05 11:06:42 -05'00'

0 100 200
SCALE: 1" = 100'

Revisions

9-26-2023 Revision to driveway entrance to align with opposing driveway accross NC-87 per DOT comments. Stormwater pond enlarged to accomodate 25-yr storm event.
2-5-2024 Revision to widen sidewalks to 8-ft throughout. Revision to open space areas and multi-use paths changed to concrete surface.

East Coast Engineering, P.C.
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Shallotte, North Carolina 28459
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Fax: 910.754.8049
Firm License Number C-3014

MASTER DEVELOPMENT PLAN (PUD)
FOR
TURTLE BAY
SOUTHPORT, NORTH CAROLINA

Date: 08-23-2023
Scale: AS SHOWN
Drawn By: MGB
Checked By: JDS

FINAL DESIGN
ISSUED FOR REVIEW

THIS PLAN IS NOT ISSUED FOR CONSTRUCTION WITHOUT AFFIXED CORPORATE SEAL.

NORTH CAROLINA PROFESSIONAL SEAL 053626 ENGINEER JACKSON D STARLING
2-5-2024

C3.0

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ECE PROJECT NO. 2298

PLANNING BOARD MEMBER LIST SPRING 2023

MEMBER	ADDRESS	PHONE NUMBERS	APPOINTED	EXPIRATION	
Sue Hodgin, Chair sue.hodgin@southportnc.org	608 Cottage Point Way	(910) 477-1808	February 10, 2022	June 2025	IN
Will Hewett, Vice-Chair will.hewett@southportnc.org	129 Cape Fear Dr	(910) 520-3291	August 11, 2022	June 2025	IN
Fred Fiss fred.fiss@southportnc.org	216 N. Atlantic Ave	(910) 269-6901	February 10, 2022	June 2024 (completing the term)	IN
Christopher W. Jones chris.jones@southport.nc.org	1008 Dutchman Cove SE	(910) 549-1407	March 12, 2020	June 2026	ETJ ALT
Scott Jones scott.jones@southportnc.org	1001 Pete's Camp Rd	(910) 471-0802	August 14, 2020	June 2024	ETJ
Donnie Joyner donnie.joyner@southportnc.org	635 Jabbertown Rd	(910) 368-7501	August 14, 2020	June 2024	ETJ
Richard Sloan dick.sloan@southport.nc.org	509 E. Moore St	(910) 946-1771	February 10, 2022	June 2025	IN
Roy Pender roy.pender@southpornc.org	102 S. Fodale	(910) 477-6057	April 13, 2023	June 2026	IN
Kevin Locklin kevin.locklin@southportnc.org	209 N. Lord St.	(540) 272-0808	April 13, 2023	June 2025 (Completing the term)	IN ALT
Mo Meehan mmeehan@cityofsouthport.com	1029 N. Howe St	(910) 457-7900 X 1043	Staff Planner		
Tanya Shannon tshannon@cityofsouthport.com	1029 N. Howe St	(910) 457-7929	Staff Deputy Clerk		
Rebecca Kelley rkelley@cityofsouthport.com		(910) 269-9940	Board of Aldermen Liaison		
Frank Lai flai@cityofsouthport.com		(910) 263-9935	Board of Aldermen Liaison		

2024 PLANNING BOARD ATTENDANCE

NAME	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.			Total Absences
Sue Hodgin Chair	**P**														
Will Hewett Vice-Chair	**P**														
Fred Fiss	**P**														
Christopher Jones	**A**														
Scott Jones	**P**														
Donnie Joyner	**P**														
Dick Sloan	**P**														
Roy Pender	**P**														
Kevin Locklin	**P**														

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