



MEMORANDUM

To: Mayor Hatem, Members of the Board of Aldermen
From: Thomas Lloyd, City Planner
Re: Planned Unit Development Land Use Plan Application, Osprey Landing, Submitted by Bill Clark Homes
Date: May 7, 2020

Project Overview

This application is for a Land Use Plan for a new 196 unit Planned Unit Development located off Robert Ruark Drive on 68 acres. The property was zoned for PUD back in December of 2018. As part of the PUD rezoning, the applicant is required to submit their land use plan application within 12 months of the rezoning. The applicant submitted their land use plan on December 2nd. The site is currently in the ETJ, although the property owners would need to annex into the City if the PUD Land Use Plan is approved and prior to the Board of Aldermen approving the preliminary plat in order to get sewer and water service from the City. Since they are in a PUD, the developer has the opportunity to modify setback requirements for additional flexibility. According to a provision in the table of area yard and density, the Board of Aldermen do have the final say on setbacks at plat approval. The developer is proposing 10' minimum front yard setbacks, 5' side yard setbacks, and 10' rear yard setbacks. The minimum width for the lots is 50'. According to the plan, there will be 3 different lot types of varying sizes. Type A lots will be 50' x 120', Type B lots will be 52' by 130', and Type C lots will be 65' x 140'. PUD's are allowed up to 6 dwelling units an acre. The project has a density of 2.88 dwelling units an acre. The project also shows an amenity center and a pool. The development will have community mailboxes as well.

The applicant is proposing 10.2 (2.79 acres being wetlands, under the 50% requirement) acres of open green space in the development. This is equal to 15% of the development and is compliant with the 15% ratio in the Unified Development Ordinance. In terms of the tree plan, the development will be providing 1,185,000 sf of tree canopy based on trees they are retaining and trees that are being planted. 807,400 of this sf is provided from existing trees. The Canopy upon tree maturity estimate is based on the canopy coverage sheet staff completed with the Forestry Committee. After development, there will be 320 oaks, 7 magnolias, 1 sweet gum, and 409 pines. The developers are attempting to keep some of these larger oaks in their site design in the medians of their streets. For more information on the tree plan, see L-1 through L-1.5.

The applicant was also required to do a Traffic Impact Analysis (approved by NCDOT) to NCDOT standards to see if Robert Ruark could and the intersection could handle the additional traffic as part of their approval. The TIA was approved by NCDOT on January 6, 2020. NCDOT did require the developer to improve part of their design and to modify the existing intersection signal. These improvements can be read in the attached TIA Approval. For more info on the TIA please request a digital file, it is over 100 pages. The applicants proposal shows a primary entrance off of Robert Ruark Dr. and a secondary emergency only access on Maple Leaf Dr to comply with the Fire Code. The Fire Code requires two separate and approved fire apparatus access roads for developments over 30 units. They are proposing that this access is only for emergency vehicles and are willing to install a gate.

During the Planning Board's review process, the Board of Aldermen dedicated funding for staff to get an engineering firm to review the Osprey Landing Traffic Impact Analysis. The review would include a traffic

to 10 feet in the front yard, 8 feet in the side yard, and fifteen feet in the rear yard. The recommendation was unanimous.

Staff Input

Planned Unit Developments are regulated in Article 14 of the Unified Development Ordinance. Section 14-1 requires a PUD to be 25 acres in the ETJ. This PUD is 68 acres. Section 14-2 states that the maximum density is 6 dwelling units per acre. This PUD is 2.88. Section 14-3 states that 15% of the total PUD area shall be maintained as open space. This proposal is proposing 10.2 acres and therefore complies with the requirement. Section 14-4 states that PUD's should have a high proportion of interconnected streets, sidewalks, and paths to ensure that non-vehicular travel is encouraged. This project provides multiple types of streets, landscaped medians, alleys, and sidewalks throughout the development. Section 14-5 mentions that the applicable area, yard, and height requirements contained in Article 11 shall be adhered to. Article 11 mentions that the Board of Aldermen have the final say on setback requirements, so it is up to you if the proposed setbacks (10 foot front, 5 foot side, and 10 foot rear) comply. Section 14-6 allows up to 10% of a PUD to consist of non-residential uses. This development has no non-residential uses. Section 14-7 prohibits industrial development in a PUD zoning district. This development has no industrial development. Section 14-8 goes into the procedure for evaluating PUD's. The first statement in Section 14-8 (B) (1) asks whether density & land use can exist in harmony with the surrounding area. The applicant argues that adjacent parcels to the east are existing PUD's with a higher density and is correct. The Board of Aldermen also approved density for a PUD when they approved the rezoning in December of 2018. The second consideration is whether adjacent areas can be developed in compatibility with the proposed planned unit development. Areas adjacent to the property are already developed, with Highway Commercial to the North, Single Family Residential to the East and South, and PUD to the West. The third statement is to consider whether the proposed PUD will adversely affect traffic or not. NCDOT did approve the Traffic Impact Analysis for the development and considered the effects to the intersection at Robert Ruark and 211. While traffic is affected anytime there is new development, the project met their standards. The fourth statement is that the proposed Land Use Plan is consistent with the City of Southport Comprehensive Plan. The Planning Board and Board of Aldermen found the zoning was consistent with the City of Southport Comprehensive Plan when it was first rezoned to PUD in December of 2018. The Board must decide whether they think the Land Use Plan adheres with PUD zoning and the City of Southport Comprehensive Plan. Section 14-9 indicates that the applicant must provide draft HOA documents to the City. Those have been provided. Now, the Board of Aldermen must decide whether the PUD Land Use Plan meets the standards of Article 14 of the Unified Development Ordinance. The decision to approve or deny approval is based upon whether they have complied with the objective criteria in the UDO and not based on subjective feelings on how the proposal could be better.

Attachments: PUD Land Use Plan Excerpts, Osprey Landing Typical Lot Exhibit, Bill Clark Homes Presentation To Planning Board, NCDOT Approved TIA Letter, Kittleson & Associates Traffic Diversion Analysis, Davenport Engineering Analysis of Kittleson Report

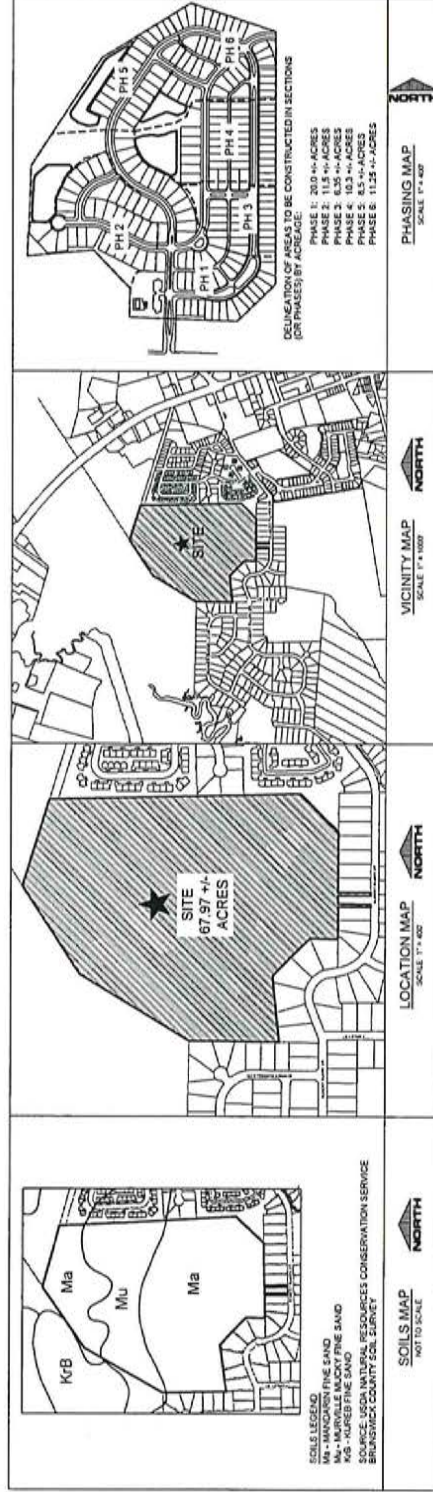
OSPREY LANDING RESIDENTIAL SUBDIVISION

SOUTHPORT, NORTH CAROLINA

PRELIMINARY PLAT / LAND USE PLAN

DECEMBER 2019
FOR

BILL CLARK HOMES
127 RACINE DR.
WILMINGTON, NC 28403



OSPREY LANDING SOUTHPORT, NORTH CAROLINA PROJECT # 18188-PE DECEMBER 2, 2019	
SHEET NUMBER C-03 B-01 C-03-C-01 C-03-C-02 C-03-C-03 C-03-C-04 C-03-C-05 C-03-C-06 C-03-C-07 C-03-C-08 C-03-C-09 C-03-C-10 C-03-C-11 C-03-C-12 C-03-C-13 C-03-C-14 C-03-C-15 C-03-C-16 C-03-C-17 C-03-C-18 C-03-C-19 C-03-C-20 C-03-C-21 C-03-C-22 C-03-C-23 C-03-C-24 C-03-C-25 C-03-C-26 C-03-C-27 C-03-C-28 C-03-C-29 C-03-C-30 C-03-C-31 C-03-C-32 C-03-C-33 C-03-C-34 C-03-C-35 C-03-C-36 C-03-C-37 C-03-C-38 C-03-C-39 C-03-C-40 C-03-C-41 C-03-C-42 C-03-C-43 C-03-C-44 C-03-C-45 C-03-C-46 C-03-C-47 C-03-C-48 C-03-C-49 C-03-C-50 C-03-C-51 C-03-C-52 C-03-C-53 C-03-C-54 C-03-C-55 C-03-C-56 C-03-C-57 C-03-C-58 C-03-C-59 C-03-C-60 C-03-C-61 C-03-C-62 C-03-C-63 C-03-C-64 C-03-C-65 C-03-C-66 C-03-C-67 C-03-C-68 C-03-C-69 C-03-C-70 C-03-C-71 C-03-C-72 C-03-C-73 C-03-C-74 C-03-C-75 C-03-C-76 C-03-C-77 C-03-C-78 C-03-C-79 C-03-C-80 C-03-C-81 C-03-C-82 C-03-C-83 C-03-C-84 C-03-C-85 C-03-C-86 C-03-C-87 C-03-C-88 C-03-C-89 C-03-C-90 C-03-C-91 C-03-C-92 C-03-C-93 C-03-C-94 C-03-C-95 C-03-C-96 C-03-C-97 C-03-C-98 C-03-C-99 C-03-C-100	SHEET TITLE COVER SHEET BOUNDARY SURVEY GENERAL NOTES SITE PLANS PHASE CONSTRUCTION PLAN GRADING, DRAINAGE & P&U E.C. PLAN UTILITY PLANS & PROFILES DETAILS TREE REMOVAL PLAN AND EX. VEGETATION
APPROVALS: CONSENTANTS: APPLICANT: BILL CLARK HOMES 127 RACINE DRIVE WILMINGTON, NC 28403 PHONE: (910) 755-1111 ENGINEER, SURVEYOR & LANDSCAPE ARCHITECT: PARAMOUNT ENGINEERING INC. 127 RACINE DRIVE WILMINGTON, NC 28403 PHONE: (910) 755-1111 CHENG CHANG, P.E., L.S., L.A.S. PHONE: (910) 755-1111 MADE: 08/13/2019	
PREPARED BY: PARAMOUNT ENGINEERING INC. 127 RACINE DRIVE WILMINGTON, NC 28403 PHONE: (910) 755-1111 FAX: (910) 755-1111 NC License # 1-2386	



C-2.4

PROJECT STATUS
PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

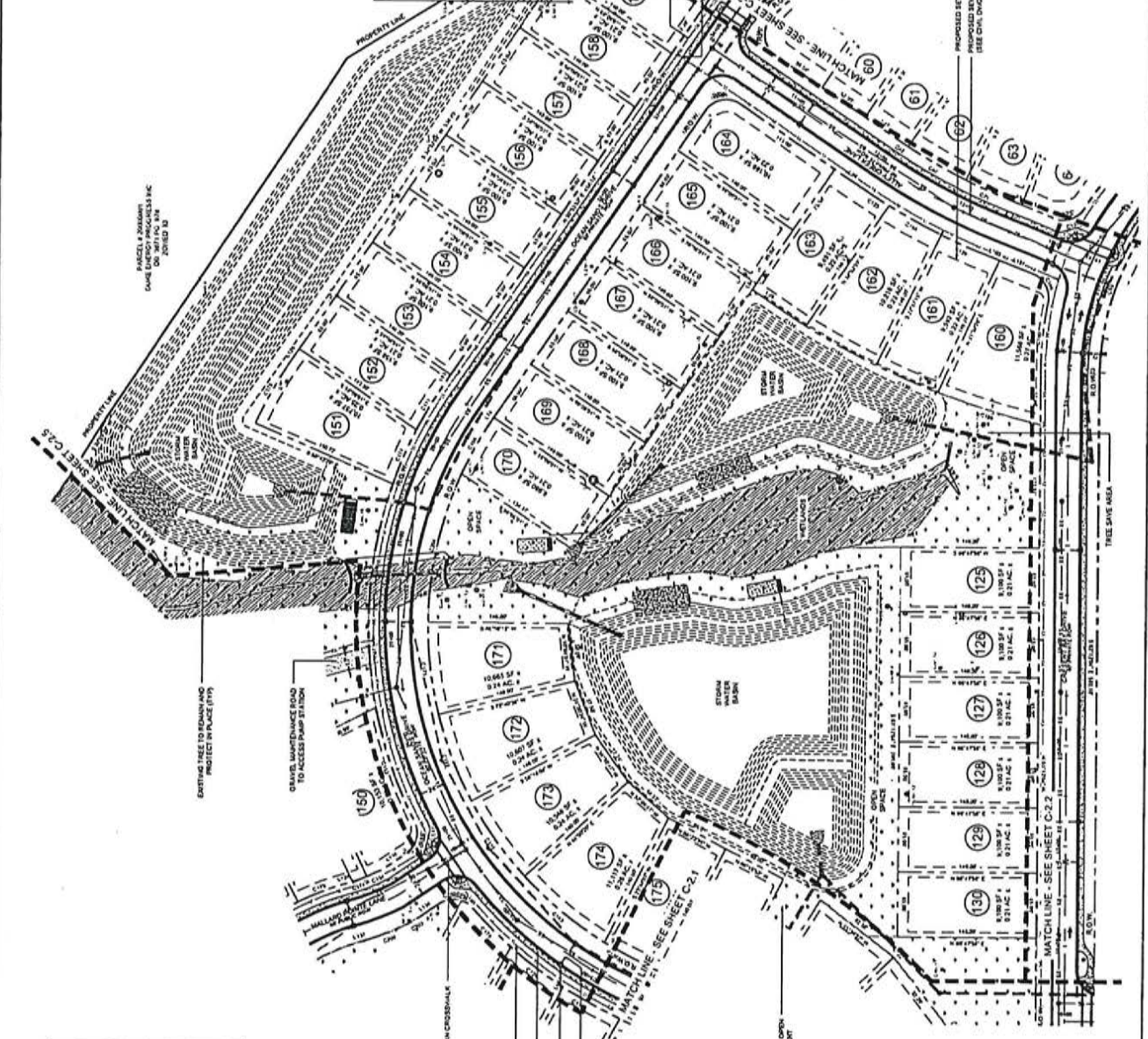
SITE PLAN
OSPREY LANDING
CITY OF SOUTHFOOT
BRUNSWICK COUNTY, NORTH CAROLINA

PARAMOUNTTE
123 Grand Drive
Raleigh, North Carolina 27603
(919) 214-0000 (919) 214-0000
NC License # C-2546

CLIENT AND OPERATOR
BILL CLARR HOMES
127 RACING DRIVE
WILMINGTON, NC 28405

Table with 2 columns: Description, Quantity. Includes items like 'PERMITS', 'AS-BUILT', 'CONTRACT', 'REVISIONS'.

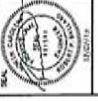
PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION



LEGEND

(Symbol)	OPEN SPACE
(Symbol)	WETLANDS LOCATED IN GREEN SPACE
(Symbol)	WETLANDS
(Symbol)	SEWER LINE
(Symbol)	WATER LINE
(Symbol)	R.O.W.
(Symbol)	PROPOSED LOT LINE
(Symbol)	EXISTING LOT LINE
(Symbol)	PROPOSED LOT NUMBER

DATE: 08/11/2011 10:14 AM
DRAWN BY: J. HESTER
CHECKED BY: J. HESTER



PROJECT STATUS
 DESIGN DEVELOPMENT
 PRELIMINARY DESIGN
 PRELIMINARY DESIGN

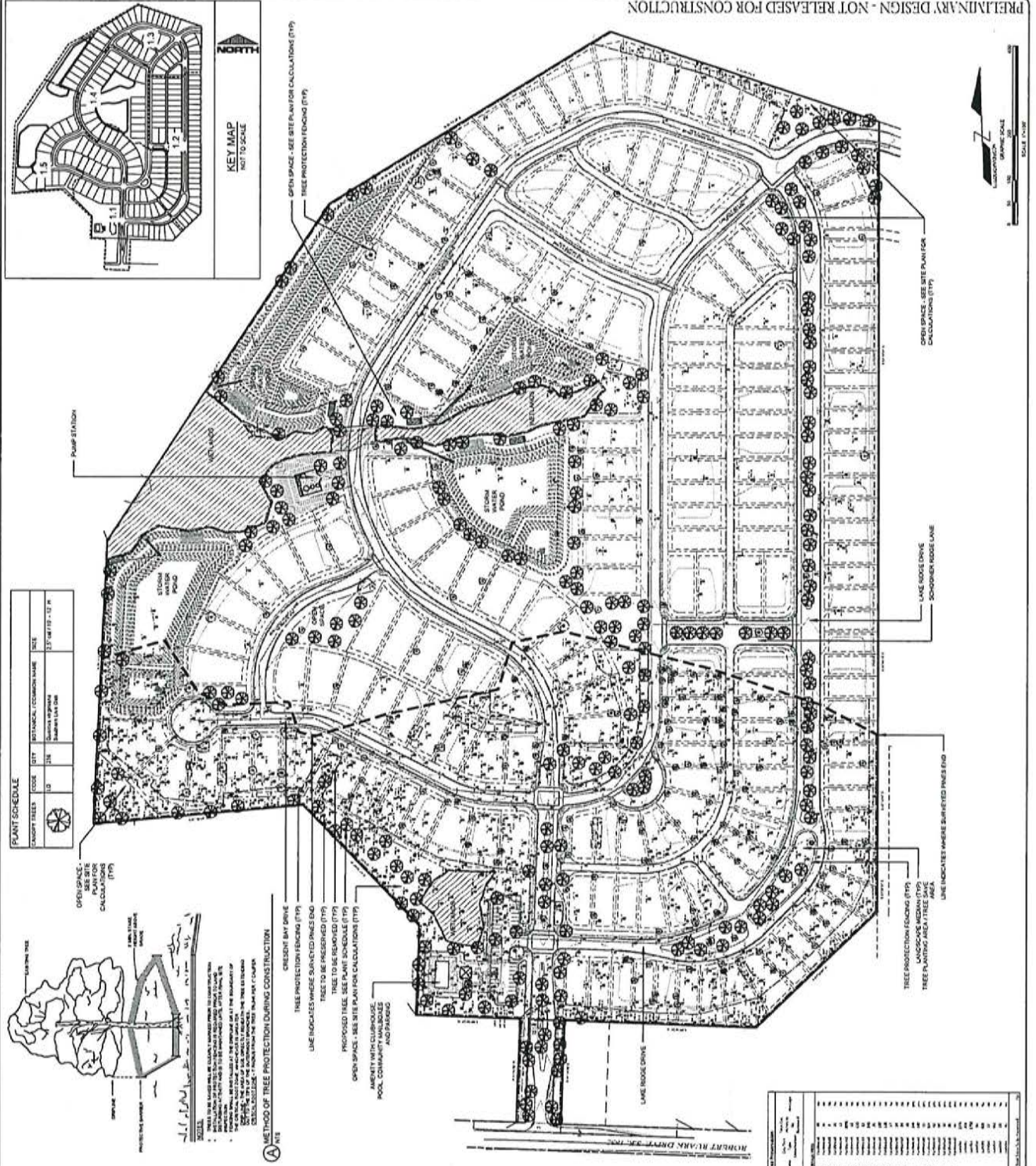
TREE REMOVAL PLAN
 & EXISTING VEGETATION
 OSPREY LANDING
 CITY OF SOUTHPORT
 BRUNSWICK COUNTY, NORTH CAROLINA

PARAMOUNT
 122 Central Drive
 Wilmington, North Carolina 28403
 (919) 791-6100 (F) (919) 791-6100 (P)
 NC License # 02386

CLIENT INFORMATION
 BILL CLARR HOMES
 127 RAINE DRIVE
 WILMINGTON, NC 28405

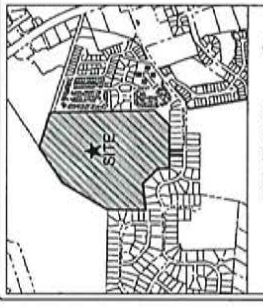
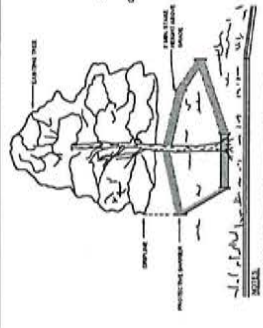
REVISIONS	DATE	DESCRIPTION

PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION



PLANT SCHEDULE

COMMON TREE	CODE	QTY	SYMBOLICAL COMMON NAME	SIZE



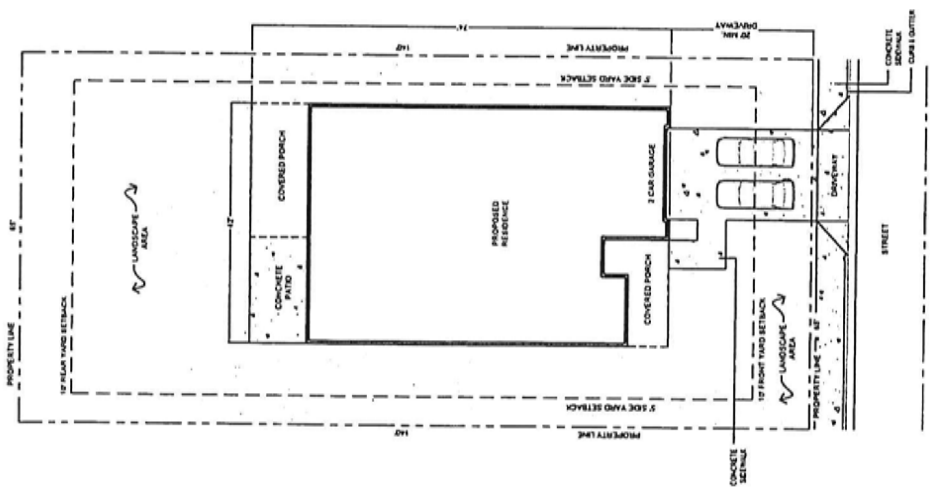
SITE INFORMATION
 PROJECT INFORMATION
 PROJECT NAME: OSPREY LANDING
 PROJECT ADDRESS: 127 RAINE DRIVE, SUITE 201, WILMINGTON, NC 28405
 CLIENT: BILL CLARR HOMES
 DESIGNER: PARAMOUNT
 DATE: 08/04/19
 TOWNSHIP: SOUTHPORT ETJ
 COUNTY: BRUNSWICK COUNTY, NC
 ZONING: PUD
 TOTAL SITE AREA: 4.8747 (GROSS 775 SF)
 TREE CALCULATIONS
 TOTAL TREES TO BE REMOVED: 1,360 (775 SF)
 TOTAL TREES TO BE PRESERVED: 1,360 (775 SF)
 TOTAL TREES TO BE PLANTED: 1,360 (775 SF)

Tree ID	Tree Name	Species	Size	Health	Action

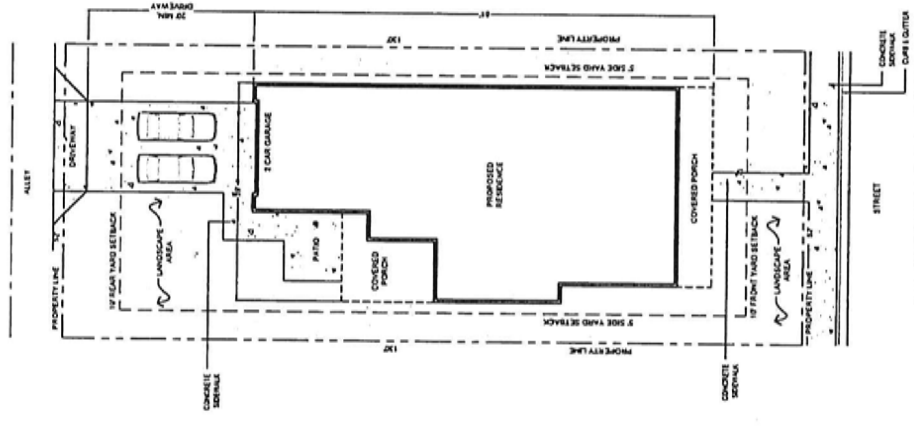
Tree ID	Tree Name	Species	Size	Health	Action

Tree ID	Tree Name	Species	Size	Health	Action

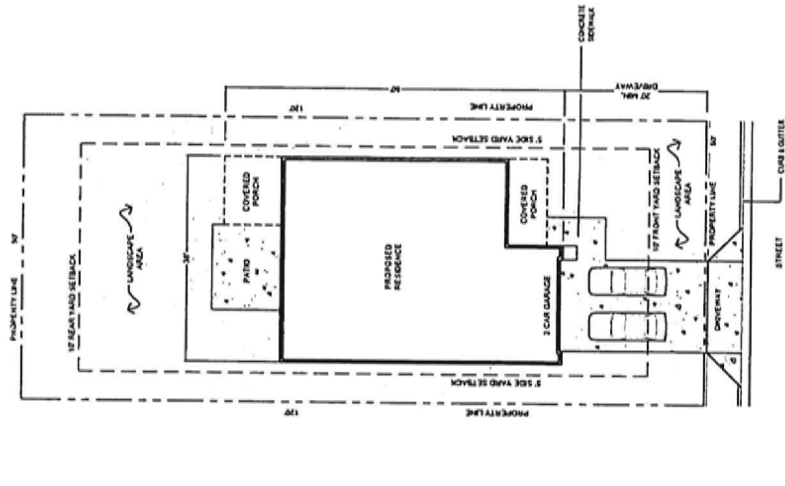
Tree ID	Tree Name	Species	Size	Health	Action



C Type C - "Estate" Typical Lot Example (76 Lots Total)
 SCALE: 1" = 10'
 ESTIMATED IMPROVEMENTS PER EXAMPLE ABOVE:
 FOOTPRINT: 3,841 SF
 DRIVEWAY: 1,000 SF
 TOTAL ESTIMATED IMPROVEMENTS: 4,841 SF



B Type B - "Alley Access" Typical Lot Example (62 Lots Total)
 SCALE: 1" = 10'
 ESTIMATED IMPROVEMENTS PER EXAMPLE ABOVE:
 DRIVEWAY: 1,000 SF
 TOTAL ESTIMATED IMPROVEMENTS: 3,841 SF



A Type A - "Cottage Lot" Typical Lot Example (58 Lots Total)
 SCALE: 1" = 10'
 ESTIMATED IMPROVEMENTS PER EXAMPLE ABOVE:
 FOOTPRINT: 2,241 SF
 DRIVEWAY: 1,000 SF
 TOTAL ESTIMATED IMPROVEMENTS: 3,241 SF

Typical Lot Layout Exhibit for:
Osprey Landing
 Southport, North Carolina

- REMARKS:
1. THIS PLAN IS PROVIDED FOR REFERENCE ONLY AND DOES NOT REPRESENT A CONTRACT.
 2. ALL DIMENSIONS AND LOCATIONS ARE BASED ON THE AS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED.
 3. THE LOCATION OF THE PROPOSED IMPROVEMENTS SHALL BE DETERMINED BY THE CONTRACTOR.
 4. THE LOCATION OF THE PROPOSED IMPROVEMENTS SHALL BE DETERMINED BY THE CONTRACTOR.

This site plan is a preliminary design and should be used for discussion purposes only. This site plan approximates building conditions relating to structures, setbacks, road, parking, vegetation and property boundaries. Plan components may change based upon topography and municipal regulations and requirements at the time of development and construction.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

January 6, 2020

Mr. Krupanidhi Koilada

Davenport
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403

RE: Approval of the Traffic Impact Analysis (TIA) associated with the proposed **Osprey Landing** in Southport, Brunswick County

The NCDOT staff has reviewed the Osprey Landing Development TIA dated November 25, 2019. This development consists of:

- 198 dwelling units: Single Family Housing (LUC 210)
- Full Build Out Year 2024

Based on review of the analysis provided in the TIA report, the following improvements are required by the developer:

NC 211 (N Howe Street) at NC 87 (River Road SE)/SR 1852 (Robert Ruark Drive) (signalized full movement intersection)

- Provide a new signal plan (AM and PM peak timings) to NCDOT for review and approval by the Division Traffic Engineer.
- A signal plan agreement is required for any signal modifications to existing signals to provide coordination. Contact the Division Traffic Engineer at (910) 341-2200, to initiate a Traffic Agreement.

SR 1852 (Robert Ruark Drive) at Site Access 1 (proposed stop-controlled T-intersection)

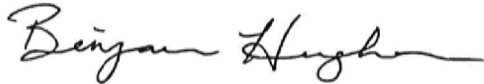
- We are in agreement with providing a westbound right turn lane with 75 feet of storage, 50 feet of full width deceleration, and 100 feet of taper.
- Construct the southbound approach with one ingress lane and one egress lane.
- Provide stop control for the southbound approach.
- Provide a 100-foot internal protected stem.

If changes are made to the proposed site driveways, land uses, land use intensity, or other study parameters, or if the build year studied in the report has passed, a revised Traffic Impact Analysis will be required for review by NCDOT. Any such changes will null and void this TIA approval.

The applicant is required to obtain all applicable Brunswick County and NCDOT permits for access to the road network. A copy of this TIA approval shall be included with any NCDOT driveway permit application. All applicable NCDOT and Brunswick County technical standards and policies shall apply.

Please contact me at 910-398-9100 with any questions regarding this approval.

Sincerely,



Benjamin T. Hughes, PE
District Engineer
Division 3, District 3

ec: Madi Lee, EI, Development Review Engineer, NCDOT
Aaron LeBeau, Assistant District Engineer, NCDOT
Jessi Leonard, PE, Division Traffic Engineer, NCDOT
Kirsten Spirakis, PE, Senior Assistant Division Traffic Engineer, NCDOT
Thomas Lloyd, City of Southport
Wayne Strickland, City of Southport

MEMORANDUM

Date: February 27, 2020

Project #:
24903

To: Thomas Lloyd
City of Southport, NC
1029 N Howe St
Southport, NC 28461

From: Zachary Bugg, PhD, PE, and Chris Tiesler, PE

Project: Osprey Landing

Subject: Traffic Study Review

This document provides a review of the Osprey Landing Traffic Impact Analysis (TIA), dated November 25, 2019 (Reference 1), as well as an assessment of cut-through traffic to adjacent neighborhood streets in Southport, NC. As described in the TIA, the Osprey Landing development will connect to the adjacent street network through the following two access points:

- Full-movement access (Road 'A') on Robert Ruark Road SE west of Forest Oak Drive (primary site access), and
- Full-movement access (Road 'B') as a northward extension of Maple Leaf Drive north of Willow Moss Way (secondary access intended for emergency vehicles).

STUDY SCOPE AND METHODOLOGY

At the request of the City of Southport, Kittelson & Associates, Inc. (Kittelson) estimated the potential traffic volume impact of this connection to the existing section of Maple Leaf Drive through the Southport Way community. We conducted this analysis as follows:

- Reviewed the 2019 TIA for project background information and assumptions;
- Estimated the background traffic on Maple Leaf Drive in Southport Way;
- Estimated the number of homes with a greater propensity to use the Maple Leaf Drive access over the primary Osprey Landing (Road 'A') access; and
- Documented the relative impact of the Osprey Landing trips on Maple Leaf Drive.

A summary of the analysis findings and a discussion of alternative access considerations for Osprey Landing is provided at the end of this document.

TRAFFIC IMPACT ANALYSIS REVIEW

The 2019 TIA was reviewed to confirm project site plan details and identify project methodology and assumptions. As the document has been formally approved by NCDOT, we did not review the 2019 TIA for errors or omissions. The 2019 TIA assumed the Maple Leaf Drive access will be used by emergency vehicle traffic only (using gates or some other method of enforcement) and did not assign any trips associated with Osprey Landing to the access. The 2019 TIA also assigned all site traffic to/from Robert Ruark Drive east of the site, toward the Robert Ruark Drive SE/N Howe Street (NC 211)/River Road SE (NC 87) intersection, and we agree with this assumption. At the City's request, the purpose of the remaining analysis in this document is to assess the relative impact of traffic from Osprey Landing on Maple Leaf Drive if the access is not restricted to emergency vehicles.

EXISTING MAPLE LEAF DRIVE TRAFFIC

While no traffic count data were collected on Maple Leaf Drive in the 2019 TIA, the existing weekday daily, AM, and PM peak hour traffic was estimated based on the number of homes within the Southport Way community near Maple Leaf Drive. There are two existing access points to Southport Way: Maple Leaf Drive and Forest Oak Drive (through the adjacent The Ridge and Forest Oaks communities). Assuming all Southport Way traffic is distributed to/from the east on Robert Ruark Drive (toward NC 211/NC 87), a total of 60 homes (predominantly single-family with a few multifamily dwellings) within Southport Way and The Ridge were identified as having a shorter travel distance to the Robert Ruark Road/NC 211 intersection using Maple Leaf Drive over Forest Oak Drive. Table 1 displays the estimated weekday daily, AM, and PM peak hour trips for these homes using trip generation rates in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition* (Reference 2).

Table 1. Estimated Existing Traffic Volume on Maple Leaf Drive

Land Use	ITE Code	Number of Units	Weekday Daily Trips	Weekday AM Peak Hour Trips	Weekday PM Peak Hour Trips
Single Family Home*	210	60	650	47	62

*Includes approximately 14 multifamily units. These were included as single-family for simplicity and for purposes of a conservative trip estimate.

As shown in Table 1, the estimated weekday daily volume on Maple Leaf Drive due to these homes is 650 vehicles per day. Note that traffic volumes on Maple Leaf Drive likely decrease moving farther from Robert Ruark Drive, as there are fewer homes to the north.

ESTIMATED TRAFFIC FROM OSPREY LANDING

Similarly, a total of 87 homes within the proposed Osprey Landing development were identified as having a shorter travel distance to the Robert Ruark Drive/NC 211 intersection using the Maple Leaf Drive extension, suggesting traffic generated by these homes would likely choose the Maple Leaf Drive extension over internal Osprey Landing site roadways and the primary site access at Road 'A'. Figure 1 identifies these 87 homes, and Table 2 displays the estimated weekday daily, AM, and PM peak hour trips for the homes using trip generation rates in ITE *Trip Generation, 10th Edition* (Reference 2).



Figure 1

Homes Potentially using Maple Leaf Access
Southport, NC

○ - Home Potentially using Maple Leaf Access



Table 2. Estimated Trip Generation from Osprey Landing using Maple Leaf Drive

Land Use	ITE Code	Number of Units	Weekday Daily Trips	Weekday AM Peak Hour Trips	Weekday PM Peak Hour Trips
Single Family Home	210	87	914	67	88

As shown in Table 2, the estimated weekday daily trips from these 87 homes is 914 vehicles per day.

RELATIVE TRAFFIC IMPACT

Table 3 documents the relative traffic impact of Osprey Landing on Maple Leaf Drive, assuming the 87 homes identified in Osprey Landing all use Maple Leaf Drive to access Robert Ruark Road.

Table 3. Relative Traffic Impact to Maple Leaf Drive

Scenario	Weekday Daily	Weekday AM Peak Hour	Weekday PM Peak Hour
Existing Traffic Volume	650	47	62
Trips from Osprey Landing	914	67	88
Total Traffic Volume	1,564	114	150

As shown, the weekday daily traffic volume on Maple Leaf Drive is forecast to increase from approximately 650 vehicles per day to approximately 1,564 vehicles per day. As previously stated, the existing traffic volumes on Maple Leaf Drive are likely less than 650 vehicles per day farther north because there are fewer homes north of Robert Ruark Drive, so the impact of the estimated potential cut-through traffic from Osprey Landing will be proportionally greater relative to existing traffic on these portions of Maple Leaf Drive. This amounts to a projected increase of 1-2 vehicles per minute during weekday peak hours. Maple Leaf Drive is expected to continue to operate well below capacity for a local residential street, even with potential additional traffic from Osprey Landing.

ALTERNATIVE ACCESS CONSIDERATIONS

The City's Unified Development Ordinance (Article 25, Section 25-11, B) provides requirements for street interconnectivity and emergency vehicle access (Reference 3). As documented herein, the proposed access at Maple Leaf Drive could lead to increased traffic throughout Southport Way and adjacent communities. If the City desires to modify the Road 'B' access to address the potential cut-through traffic volume, then the Applicant could modify the access in one of the following two ways:

- Provide gates or other enforcement at the Maple Leaf Drive extension to restrict access to emergency or other authorized vehicles; or
- Modify the secondary access to connect to NC 211 north of Robert Ruark Road/NC 87 instead of Maple Leaf Drive, pending NCDOT access permitting and spacing requirements can be met.

If you have any questions, please contact us at (910) 399-5699.

Sincerely,

KITTELSON & ASSOCIATES, INC.



Zachary Bugg, PhD, PE
Senior Engineer



Chris Tiesler, PE
Principal Engineer

REFERENCES

1. John Davenport Engineering, Inc. *Osprey Landing Traffic Impact Analysis*. City of Southport: Southport, NC, 2019.
2. Institute of Transportation Engineers. *Trip Generation, 10th Edition*. Institute of Transportation Engineers: Washington, DC, 2017.
3. City of Southport, NC. Unified Development Ordinance. 2004.



April 14, 2020

Thomas Lloyd
Planning Director
City of Southport
1029 N. Howe St
Southport, NC 28461
(P) 910-457-7961
E-mail: tlloyd@cityofsouthport.com

RE: Town of Southport – Osprey Landing - Analysis of Kittelson Report and cut-through traffic (DAVENPORT Project Number 190268)

Dear Mr. Lloyd:

DAVENPORT Engineering was contracted to review and provide any comments concerning the analysis of Osprey Landing concerning potential impacts on the adjacent neighborhood of Southport Way. Of concern is how much traffic, if any, would have potential to cut-through Southport Way to access Robert Ruark Drive. Based on our review of the report we have concluded the following:

Emergency access

If the Osprey Landing neighborhood and emergency access is constructed according to the original assumption, using gates to provide for emergency vehicular access only, there would be no potential cut-through traffic. The Kittelson report agrees with this statement. Further, it should be noted that except for the main entrance between Robert Ruark Drive and Road "C", which is approximately 425 feet, there are multiple means of access to all lots within Osprey Landing from Robert Ruark Drive. It should also be noted that there are no lots along this short segment of roadway further reducing the possibility that the roadway would become blocked. Based on this, it would be expected that there would be very limited need for emergency vehicles to access the Osprey Landing neighborhood through the Southport Way neighborhood, due to the blockage of a street in Osprey Landing. With that said, it is understood that emergency services have discretion to choose what they consider the best route during any emergency.

Potential cut-through traffic

If the connector road, which is provided for emergency vehicle access only, is not restricted using gates or other means, some drivers may choose to travel from Osprey Landing through Southport Way via Maple Leaf Drive to Robert Ruark Drive. We have reviewed the Kittelson report regarding their assumptions to determine which lots may have the propensity to cut-through Southport Way. There most significant assumption is that drivers will choose the shortest travel distance to determine which route to take. We disagree with this base assumption. Typically, drivers use travel time as the basis for their route choice decision, except for possibly walking or bicycling which is not addressed in this report. Because Robert Ruark Drive has a 35 MPH speed limit, the potential number of lots expected to use an alternate route is

reduced from what is projected in the Kittelson report. Based on travel time you would travel 534 feet further than was assumed using the distance only calculation. This means that based on travel time, fewer residents would have the potential to cut through Southport Way, not considering any other factors. Some of these other factors are discussed below.

One additional factor that needs to be considered is that some of the lots are located along alleys. These alleys will be posted as one-way. If those residents use the alleys to access their residence, there are further changes to trip patterns that need to be considered. In addition, there are medians proposed to be constructed on road "C" which also impacts traffic patterns. There would also be two additional stops which also increase delay traveling through Southport Way.

Using these assumptions and looking at traffic patterns affected by one-way streets as well as the median restricted access, we find that morning traffic leaving the neighborhood is expected to be reduced by 44 lots or 49% from the 87 lots predicted to use alternate access in the Kittelson report. The morning weekday traffic projected to cut through would be reduced from 67 trips to 33 trips. This is approximately 1 vehicle every two minutes in the morning peak period. This is a minimal traffic impact. For the PM peak hour, we see a reduction of 26 lots for trips entering the neighborhood with the potential to cut through Southport Way based on travel time. Only 63 percent of the PM peak hour trips are entering traffic or 38 trips. Since the cluster mailbox is located at the clubhouse near the entrance of Osprey Landing it can be expected that a significant number of residents would choose to pick up mail on their way home reducing the potential cut-through traffic trips. According to a study titled "Traffic and Operational Characteristics of Neighborhood Mailbox Units" BY STEVEN B, KING, ITE Jan 1992, The vast majority of trips to the cluster mailboxes are by motor vehicle as opposed to walking or cycling. Those most likely to walk would be located near the front of the neighborhood nearest Robert Ruark Drive. Being conservative and assuming only a third of residents stop to check their mail on the way home, this would reduce the cut-through traffic volume to 25 trips. Again, less than a vehicle every two minutes, and likely to be even lower.

The cut through traffic potential is in all likelihood going to be less than the numbers projected. The narrow roads, on-street parking and travel on circuitous neighborhood streets as opposed to a higher classification of roadway will further reduce cut-through traffic volumes, however the reduction is harder to quantify.



Conclusion

The best solution to reduce cut-through traffic is to install emergency vehicle gates. If the emergency access road is to remain open, there will be some cut-through traffic, however the impact is minimal.

Sincerely,

A handwritten signature in cursive script that reads "Robert K. Gey, P.E.".

Robert K. Gey, P.E.

cc: Accounting File 190268

Osprey Landing

Bill Clark Homes

City of Southport
Planning Commission
2/20/2020

Osprey Landing

Project Description

Single Family Detached Residential Development

3 Lot Sizes:	58	“Cottages” (5,000 + SF)
	62	“TND” Walk-Up /Alley (6,000 + SF)
	76	“Estate” (9,000 + SF)

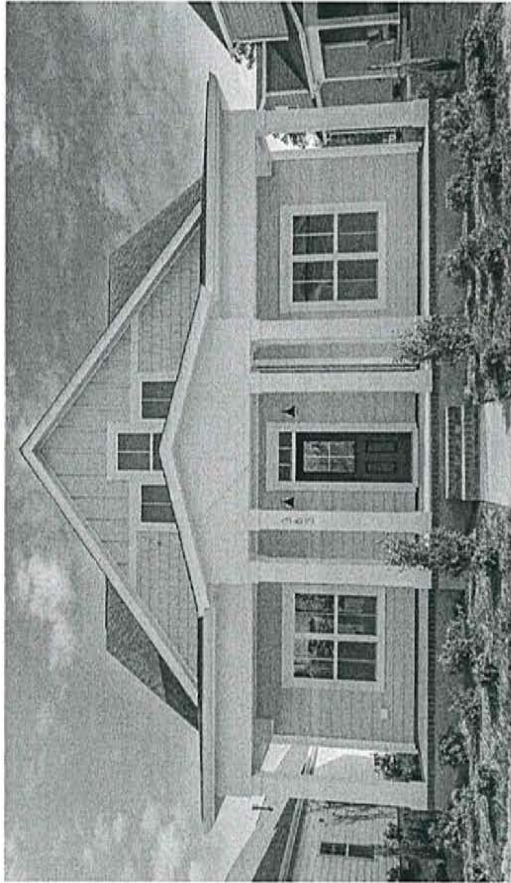
Total number of Lots = 196

Project Area = 68 Acres

Density = 2.88 DU/AC

Osprey Landing

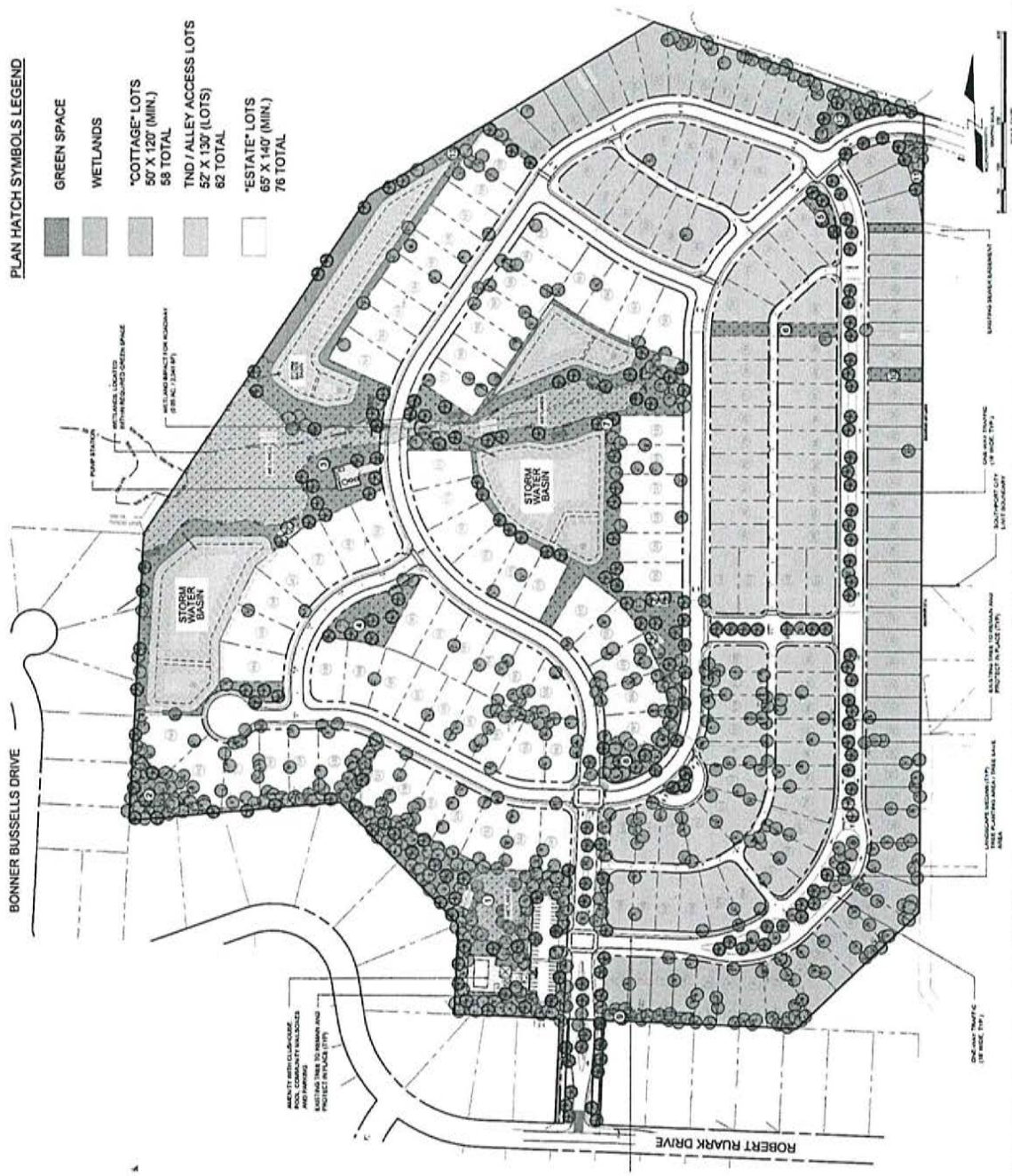
Single Family Housing Examples



Commentary: Images are for reference only to illustrate the type of architectural style and aesthetics to be expected within the proposed project but are not exact examples of proposed housing types.

Site Plan

- Transition of lot sizes
- Main Entry at Robert Ruark Drive & Community Amenity
- Road Layout w/ Medians
- Trees
- 4 Storm Water Basins
- Open Space & Wetlands



Osprey Landing

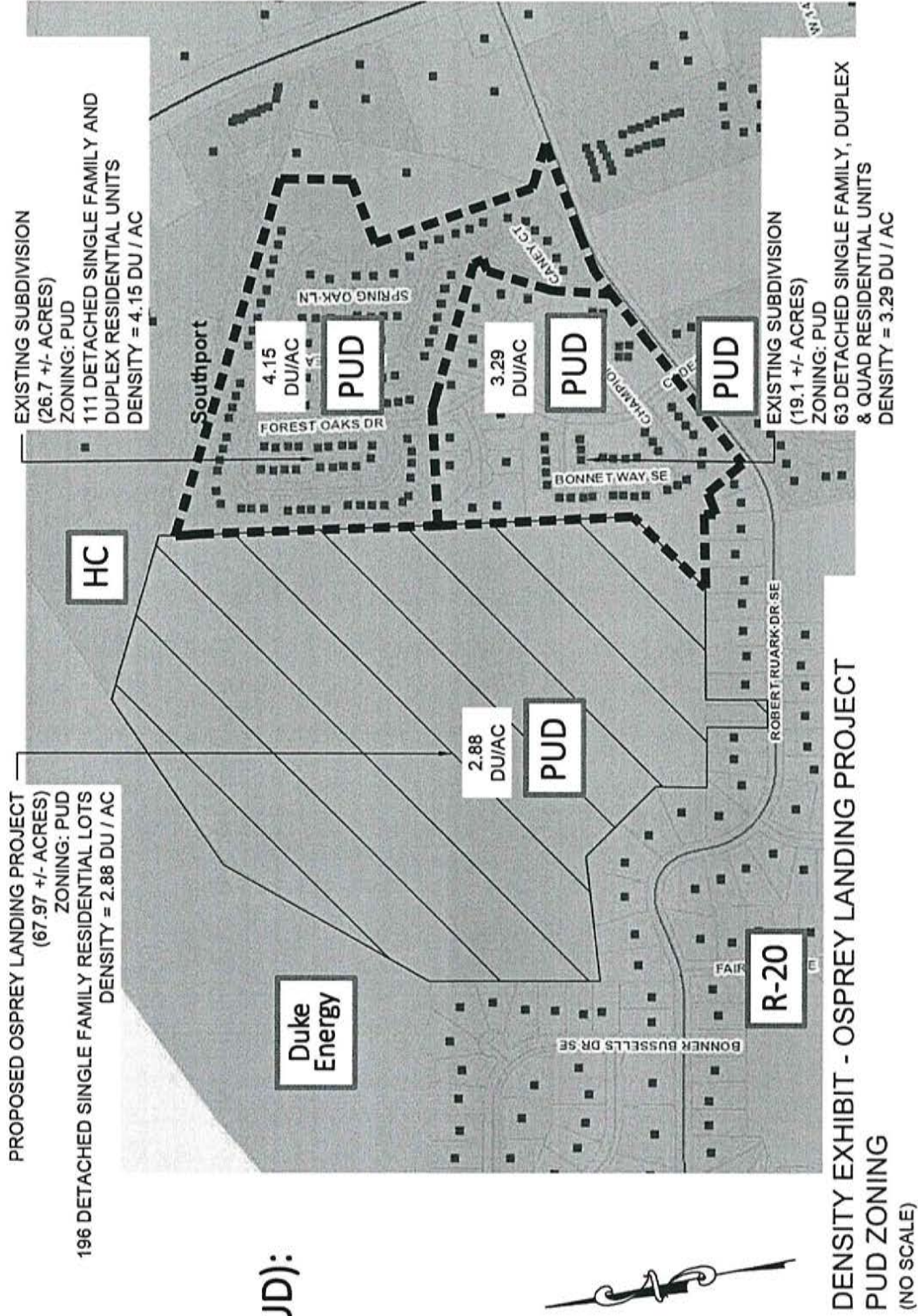
Subcommittee Meeting Summary & Requests for Information:

- Percentage Impervious for entire project: **44.9%**
- Typical allocation of impervious per lot type:
 - *“Estate Lots” (65 x 140): 5,000 SF per lot*
 - *“Traditional Lots” (52 x 130): 4,000 SF per lot*
 - *“Cottage Lots” (50 x 120): 4,000 SF per lot*
- Confirm Project Density:
2.88 Dwelling Units per Acre (196 Single Family Lots)
(Note: 6.0 Dwelling Units per Acre Allowed per Code; 67.97 Acres = 408 D/U’s)

Zoning & Density

Proposed Project (PUD):
2.88 DU/AC

Adjacent PUD's:
3.29 DU/AC
4.15 DU/AC



Commentary: Graphic representation for discussion purposes -- information obtained from Google Earth and Brunswick County GIS

Osprey Landing

Subcommittee Meeting Summary & Requests for Information:

- Stormwater Standards:
Storm water system is engineered to meet City Ordinance and State Storm Water Standards.
- Pool / Clubhouse Location:
Located at community entry, will contain the community mailboxes and serve as a community identity feature. We agreed to take a second look at the location of the proposed swimming pool and buffering (vegetative or earthen berms) to adjacent residential lots.
- Traffic Impact Analysis:
Provide copy of the Traffic Count Worksheet (included in original report), confirm service vehicles, deliveries, and similar special uses are included in the Traffic Counts – TRAFFIC ENGINEER can address tonight.

Osprey Landing

Unified Development Ordinance Requirements

The proposed project meets all the requirements of the City's Unified Development Ordinance:

- Article 14: Planned Unit Development (PUD)*
- Article 18: Buffer Strips and Landscaping*
- Article 21: Flood Damage Prevention Ordinance*
- Article 22: Traffic Impact Study*
- Article 24: Stormwater Discharge Control Ordinance*
- Article 25: Major and Minor Subdivisions*
- Article 27: Tree Preservation*





Osprey Landing

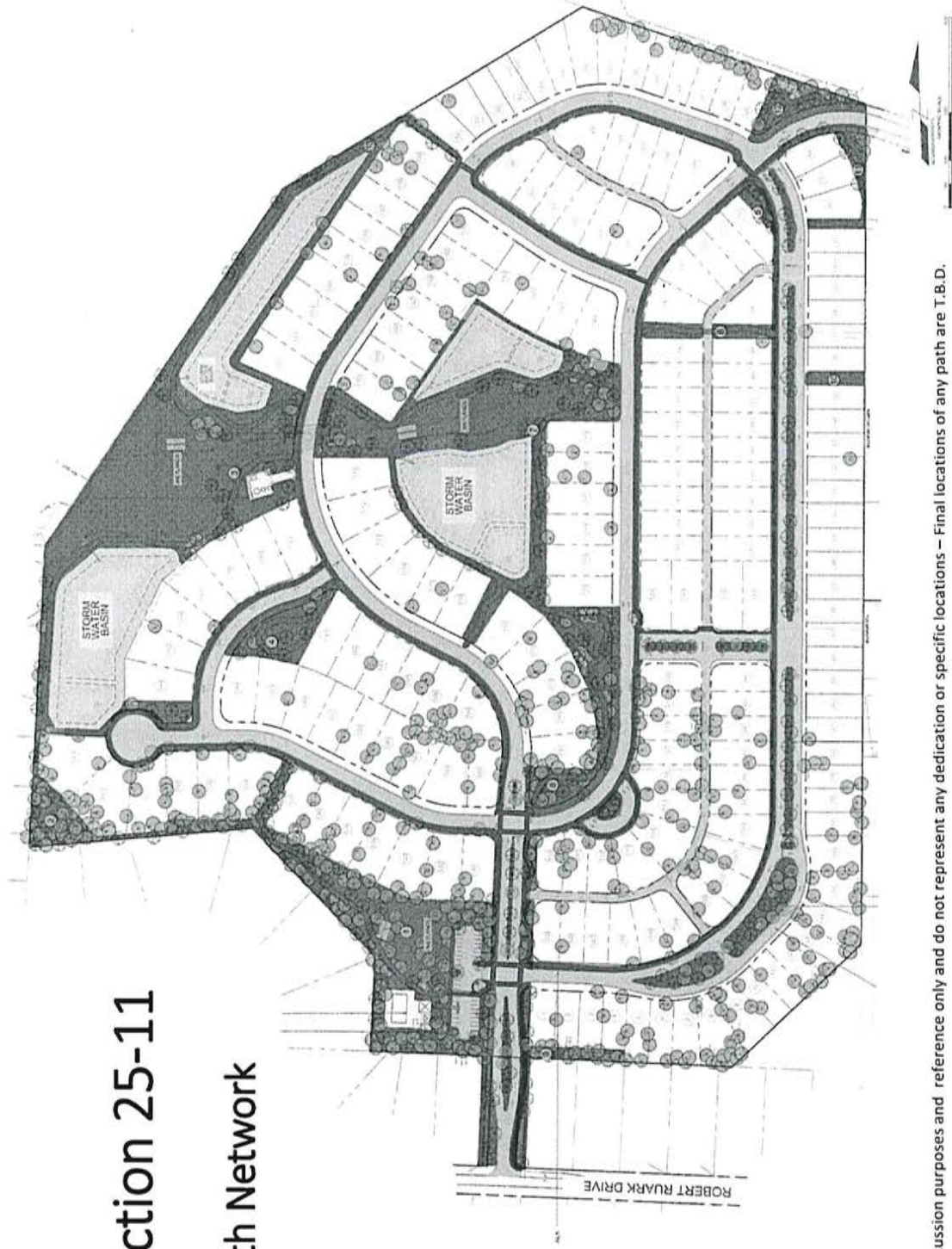
Article 14 – Planned Unit Development Requirements

- 14-1 Minimum Size: 8 Acres in City Limits or 25 Acres in ETJ
Proposed Project provides 67.97 Acres
- 14-2 Maximum Overall Density: 6 Dwelling Units per Acre
Proposed Project provides 2.88 Dwelling Units per Acre
- 14-3 Open Space: 15% of Total PUD Area shall be Open Space
Proposed Project provides 10.2 Acres (15%) Open Space
- 14-4 Streets: Provide a dense network of interconnected, narrow streets, sidewalk and paths.
Proposed Project complies, provides a variety of streets, including alleys, landscaped center medians, sidewalks & consideration for paths within open spaces

Streets Section 14-4 & Section 25-11

Street, Sidewalk and Path Network

-  Streets & Alleys
-  Sidewalks
-  Potential Paths
-  Green Space
(Medians, Wetlands, Open Space, Amenity, Etc.)



Commentary: Potential Path shown are the plan are for discussion purposes and reference only and do not represent any dedication or specific locations – Final locations of any path are T.B.D.

Osprey Landing

Article 14 – Planned Unit Development Requirements

- 14-5 Residential Development: Area, Yards & Heights as contained in Article 11.
Proposed Project is zoned PUD, per Article 11 the Yard Width, Setbacks and Maximum Building Heights shall be determined as proposed within the per the Land Use Plan.
- Front Yard Setback: 10'*
 - Side Yard Setback: 5'*
 - Rear Yard Setback: 10'*
 - Minimum Lot Width: 50'*
 - Maximum Building Height: 40' (Similar to all other Residential Zoning)*
- 14-6 Commercial Development: Up to 10% of the developed area may consist of non-residential uses.
Proposed Project does not propose any Commercial Development. All development is Single Family Residential.

Osprey Landing

Article 14 – Planned Unit Development Requirements

- 14-7 Industrial Development: Shall not be allowed within the PUD zone.
Proposed Project does not propose any Industrial Development. All development is Single Family Residential.
- 14-8 Procedure for Evaluation:
- (a) Density & Land Use can exist in harmony with adjacent areas.
Adjacent Parcels to east are existing PUD's, with higher densities than the proposed project.
 - (b) Adjacent areas can be developed in compatibility with the proposed PUD.
Adjacent Parcels are all developed, and include existing Highway Commercial, PUD and Single Family Residential. The proposed project is entirely Single Family Residential.

Osprey Landing

Article 14 – Planned Unit Development Requirements

14-8 Procedure:

(c) The proposed PUD will not adversely will not adversely affect traffic patterns or flow in adjacent areas.

1. *The proposed project has an NC DOT approved Traffic Impact Analysis, dated January 6, 2020, for 198 Single Family Homes.*
2. *The previous zoning map amendment in 2018, which established the PUD zone for this property, evaluated and approved a PUD for this property with consideration of existing infrastructure to support the anticipated densities. (Sec. 14-8.A.1.b)*

Osprey Landing

Article 14 – Planned Unit Development Requirements

14-8 Procedure:

- (d) The proposed Land Use Plan is consistent with the City’s Comprehensive Plan
1. *The proposed Plan complies with the City’s Comprehensive Plan; and*
 2. *Zoned appropriately for the proposed use (Single Family Residential); and*
 3. *Provides a transition between higher intensity uses to the east and the existing residential neighborhoods to the west; and*
 4. *Meets the needs for additional housing in the community.*

14-9 Homeowner’s Association Requirement:

Documents regarding the formation of a community HOA have been submitted to the City.

Osprey Landing Traffic Impact Analysis (TIA)

Approved TIA

Signal Coordination at N Howe Street
Right Turn Lane at Entry

Planning Commission Subcommittee
Questions about the Required Secondary
Access thru Maple Leaf Drive
Gated for Emergency Access Only?
Possible to Connect thru Walmart?



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
Governor

JAMES H. TRODDON, III
Secretary

January 6, 2019

Mr. Krupanidhi Kollada
Davenport
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403

RE: Approval of the Traffic Impact Analysis (TIA) associated with the proposed **Osprey Landing** in Southport, Brunswick County

The NCDOT staff has reviewed the Osprey Landing Development TIA dated November 25, 2019. This development consists of:

- 198 dwelling units: Single Family Housing (LUC 210)
- Full Build Out Year 2024

Based on review of the analysis provided in the TIA report, the following improvements are required by the developer:

NC 211 (N Howe Street) at NC 87 (River Road SE)/SR 1852 (Robert Ruark Drive) (signalized full movement intersection)

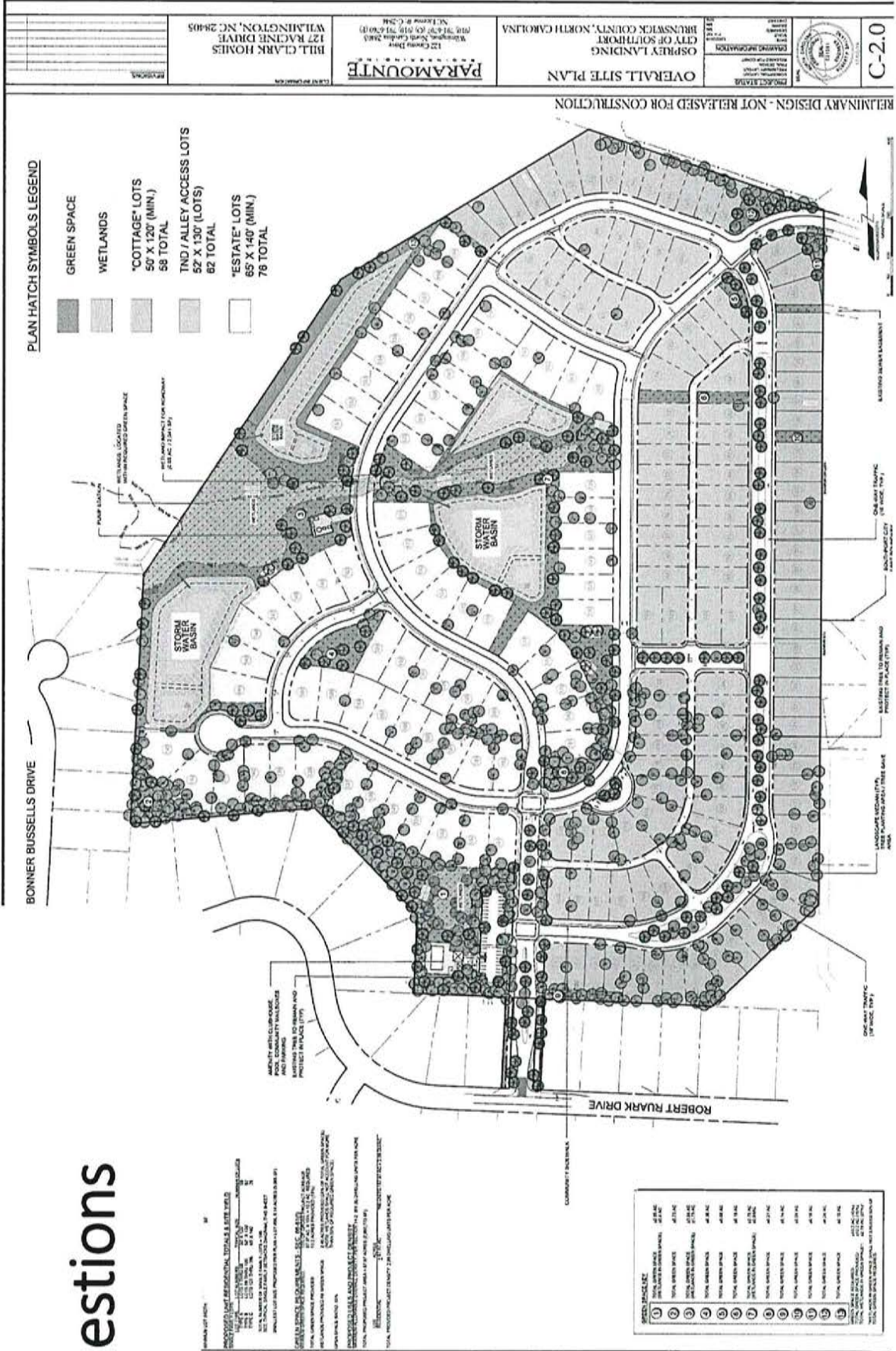
- Provide a new signal plan (AM and PM peak timings) to NCDOT for review and approval by the Division Traffic Engineer.
- A signal plan agreement is required for any signal modifications to existing signals to provide coordination. Contact the Division Traffic Engineer at (910) 341-2200, to initiate a Traffic Agreement.

SR 1852 (Robert Ruark Drive) at Site Access 1 (proposed stop-controlled T-intersection)

- We are in agreement with providing a westbound right turn lane with 75 feet of storage, 50 feet of full width deceleration, and 100 feet of taper.
- Construct the southbound approach with one ingress lane and one egress lane.
- Provide stop control for the southbound approach.
- Provide a 100-foot internal protected stem.

If changes are made to the proposed site driveways, land uses, land use intensity, or other study parameters, or if the build year studied in the report has passed, a revised Traffic Impact Analysis will be required for review by NCDOT. Any such changes will null and void this TIA approval.

Questions



Osprey Landing – Open Space & Trees

15% Open Space Provided per PUD Zoning:

27% of Provided Open Space in Wetlands;
(Zoning allows for up to 50%)

40% Tree Canopy Coverage Provided to meet City's Tree Preservation Ordinance:

737 Trees Saved

236 New Trees Planted (2" Live Oaks)

Removing 2,957 Trees