



# Town of Oak Island

## Brunswick County, NC

*The Town of Oak Island will preserve, protect, and enhance the quality of the natural and cultural environment of the community. In order to achieve this goal, the Town will improve the quality of its waterways, natural environment, beaches, dunes, water access and residential areas. The Town will maintain a unique scale and character that fosters a sense of community to make the Town a desirable place to live, work and call home, and a family vacation destination. The Town will also develop efficient sidewalks, bikeways, and roadway systems to protect its attractiveness in the future. The Town will also expand its recreational opportunities for residents of all ages and abilities. The Town will balance social and commercial needs and objectives for economic vitality.*

## Planning Board Meeting Agenda March 15, 2018 • 10:30 AM Town Hall • Council Chambers

### I. START-UP

1. **Call to Order:**
2. **Additions or corrections to the agenda**
3. **Approval of the Minutes:** (1-18-2018)
4. **Public Comment:** Please state your name and address for the record.

### II. OLD BUSINESS

### III. NEW BUSINESS

1. NC Wildlife Presentation – Kacy Cook
2. Pine Forest – Preliminary Plat (Mark Brambell)
3. FEMA flood map – Steve Edwards

### IV. REPORTS/UPDATES

1. Board Member Reports
2. Staff Reports –

### V. OTHER

**Future Meetings:** April 19, 2018  
**Adjournment**



MINUTES  
OAK ISLAND PLANNING BOARD  
JANUARY 18, 2018 – 10:30 A.M.  
COUNCIL CHAMBERS – OAK ISLAND TOWN HALL

PRESENT: Chairman Denise Pacula, Vice-chairman Bob Carpenter, members Cathy Bowes, Mike Defeo, Clay Jenkins and Willie Williams, Planning and Zoning Administrator Jake Vares and Assistant Manager/Town Clerk Lisa P. Stites, CMC. Member Bob Germaine was unable to attend the meeting.

**Mr. Williams made a motion to approve the agenda. Mr. Carpenter seconded and the motion passed unanimously.**

Regarding the December 14, 2017 Minutes, Chairman Pacula noted a typo on page 1 and a sentence that needed to be corrected in #2 on page 2. Ms. Stites said she would correct both. **Mr. Carpenter made a motion to approve the Minutes as amended, Mr. Williams seconded and the motion passed unanimously.**

Public Comments: There were none.

Old Business: There was none, but Chairman Pacula said she wanted to make a statement about the last meeting. Chairman Pacula said that she understood that someone may have been offended by not being allowed to speak during an agenda item at the last meeting. She said that the applicant did not have all the information; she later realized that some people wanted to continue the conversation at that point. She apologized if anyone was offended. She also said that she felt it was not the Board's place to tell an applicant how to prepare an application.

New Business:

1. Electronic Digital Signs: Mr. Vares reviewed his memo on the item. Chairman Pacula asked if the Town's jurisdiction on N.C. 211 had been considered when drafting the Unified Development Ordinance; Mr. Vares said he thought it had been. The Board discussed the timing of movement on electronic signs. Chairman Pacula asked if "Open" signs that flashed would be covered under these regulations; Mr. Vares said that they would be. Mr. Jenkins asked about the language in Sec. 10-40.1 of the draft UDO, specifically why the fixtures were required to be at the top. He said that it seemed it would be less intrusive to adjacent landowners and drivers to have them at the bottom. He said that it was just something to consider moving forward. Under 10.25, Prohibited Signs, Mr. Jenkins asked if 60 seconds was correct; other members said that was. The Board discussed whether the 60-second requirement was too restrictive. Mr. Defeo asked how "substantially interferes" would be measured. Mr. Vares said that was a good question. He said that sometimes it would be obvious, or that there might be data of increased traffic problems, etc. Mr. Defeo said that there were a lot of issues with businesses and signs. He asked if anyone had reached out to business owners when the sign regulations in the draft UDO were being written. Chairman Pacula said that the UDO meetings were advertised and were open to the public. Mr. Defeo said that businesses need the ability to advertise, and that the sign regulations should be less restrictive. Mr. Carpenter asked Mr. Vares what his recommendations would be at this point. Mr. Vares said that he would prefer to wait until the UDO is adopted, begin enforcing those rules, and see how it goes. Mr. Defeo described his experiences with using signage to advertise a business in town; he said that the Town should lean more toward supporting businesses. Chairman Pacula said that during the Comprehensive Land Use Plan process, one of the issues raised was the need to clean up the business district and the signs. Ms. Bowes said that it was also related to the density issue, as many signs can be distracting for drivers; because there are so many businesses, they tried to find a happy medium. Mr.

Williams said that he would ask that during its review of the draft UDO, particular attention be paid to 10.25.1, 10.25.2 and 10.41 (the word “substantial, the time limit of 60 seconds, and the top-mounted fixtures). No action was taken.

2. February meeting: **Mr. Williams made a motion to combine the February and March meetings into the March meeting. Ms. Bowes seconded the motion and it passed unanimously.**

Staff Report: Mr. Vares said that The Palms developer plans to return before the board at the March meeting. There will likely be a Conditional Use Permit application from Maters and Taters forthcoming for an open air market. There will be a workshop on the draft UDO on May 11 at 10 a.m. The preliminary plat for the Pine Forest development will likely come to the Planning Board at the March meeting. Mr. Vares said that there was renewed interest in revisiting the tree ordinance; Ms. Stites noted that there is a tree workshop on March 15 at 6 p.m.

**Ms. Bowes made a motion to adjourn at 11:11 a.m. Mr. Williams seconded and the motion passed unanimously.**

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Denise Pacula, Chairman

Attested: \_\_\_\_\_  
Lisa P. Stites, CMC  
Assistant Manager/Town Clerk





## GREEN GROWTH TOOLBOX

Wildlife and Natural Resource Stewardship in Planning





Coordinated by the N.C. Wildlife Resources Commission

Presenter:  
Kacy Cook, Land Conservation Biologist  
GGT Coordinator



3/8/2018 Kentucky warbler

## Bridging the Gap Between Wildlife Biologists & Land Use Decision Makers



Photo: Brady Beck

Elected Officials

Wildlife conservation measures are a missing piece

Biologists

Planners & Developers



Tri-colored heron

Andrea Westerman-Rand

## A non-regulatory guide and technical assistance program



Wildlife & Natural Resource Stewardship in Planning

## for integrating priority wildlife habitat conservation in

## local government land use & transportation planning.

## The Status of Wildlife in North Carolina



- 457 Species of Greatest Conservation Need
- 8 of the 21 most endangered US ecosystems
- Development **patterns** are a top threat

Spread-out development patterns are a top threat to wildlife and natural resources in our state.



The Toolbox can be used to plan for landscapes where wildlife & natural resources are secure.



## What is Green Growth? Minimizing Impacts

Missed opportunity



## What is Green Growth? Maintaining Habitat Connectivity





## NC communities have implemented conservation planning: Randolph Co. since 1990s



- 50% of developers have chosen conservation subdivisions
- 50% required conservation area
- 1 extra lot for each 5% above 50% conserved
- 3 acre min. lot size base density



## What is in the Green Growth Toolbox?



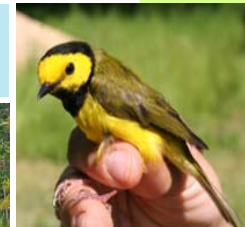
- Handbook
- Conservation Data
- [www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth)
- Training workshops
- Technical assistance

## Partners for Green Growth



Modest funding to assist local governments with conservation-based comprehensive plans & ordinance review.

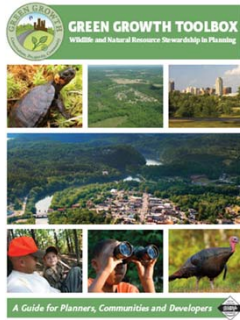
## NC Model Natural Resources Conservation Incentive Ordinance



- Wildlife habitat conservation overlay for the MOST SENSITIVE areas.
- If chosen - requires a site survey, contiguous connected habitat % set-aside based on survey findings.
- Density bonus incentive



## GGT handbook & the components of Green Growth



1. Justification & Benefits
2. Interpreting Conservation Data
3. Habitat Conservation Recommendations
4. Green Planning
5. Greening Land Use Ordinances
6. Greening Development Review & Site Design

## Economic & Societal Benefits



## GREEN GROWTH TOOLBOX HANDBOOK: SECTION 1

Summary of over 60 peer reviewed articles

## 6. Increase Prosperity

### Conservation Development Cost Savings & Profits



- In SC **conventional** development **cost \$10,000 more per lot** than the cost of a conservation subdivision.
- Overall **savings of 36% versus conventional** subdivisions.
- On average in the western US, **homes sell for 22 to 26% more** in a conservation subdivisions.
  - Premiums were double when 2/3 of land was conserved.

### Using Stream Buffers & Low Impact Development Reduces Storm Water Run-Off & Pollution of Drinking Water



A mess

VS.



clean

- ~%69 less fecal coliform, 71% less E.Coli bacteria
- ~%60 less total suspended solids
- ~%40 less Nitrogen
- ~%81 less Lead
- It also costs less for developers & tax payers.

## 8. Reduce Costs

- Concentrating growth in city and town centers would save the following annually.

- \$110 billion - road construction
- \$12 billion - water and sewer infrastructure
- \$4 billion - other public services



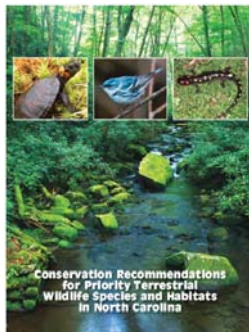
Benefits of Green Growth

## Toolbox Handbook Section 2: Conservation Data



## Toolbox Handbook Section 3: HABITAT CONSERVATION RECOMMENDATIONS

### Green Growth Toolbox Science Delivery



Scientific literature



Official NCWRC Habitat  
Conservation  
Recommendations

## OUTCOMES: USE OF THE GREEN GROWTH TOOLBOX BY COMMUNITIES



Wildlife & Natural Resource  
Stewardship in Planning

3/8/2018





## Green Growth Toolbox Implementation

- Since late 2009
- Over 550 planners & local government staff trained.
- From:
  - Over 125 local governments
  - 13 Regional Councils of Government
  - 37 Consulting Firms
  - 34 Conservation Organizations
- 35 communities received technical assistance.
- Toolbox used in 51 local plans & ordinances

## Chatham County Watershed Ordinance



Waterways & wetland delineation & buffers = those recommended by Wildlife Commission

All development

Full environmental review for >50 lots

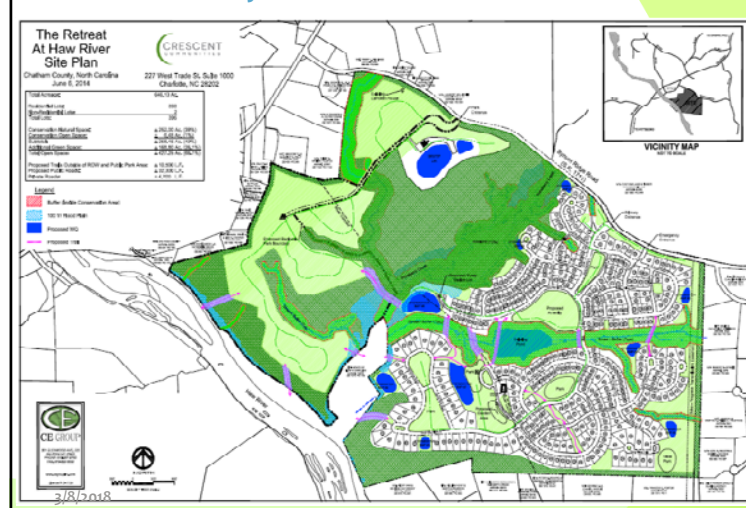
Results experienced by the county:

Development approval was 2 months and is now in 21 days.

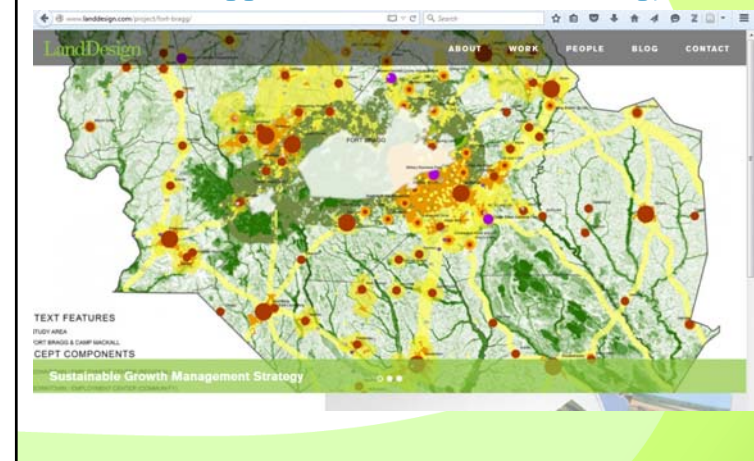
Much reduced staff time.


No complaints from developers.

## Chatham County Conservation Subdivision Standards



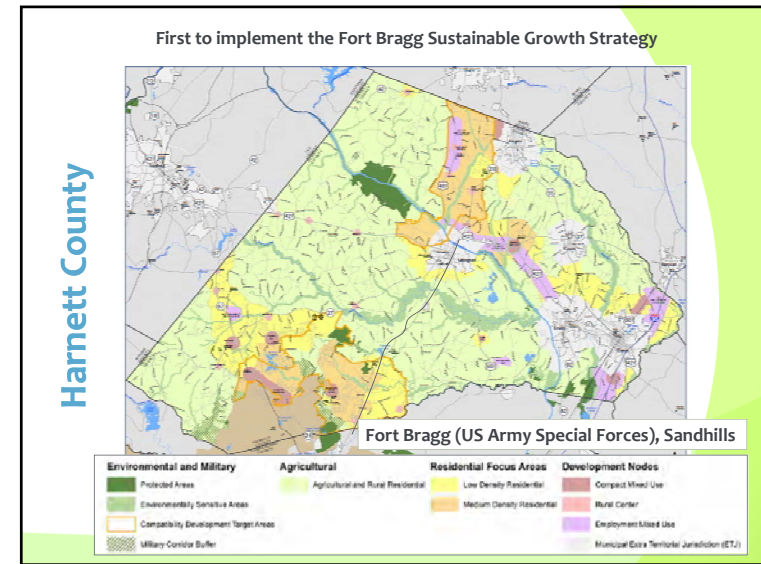
## Green Growth Supports our Military: Fort Bragg Sustainable Growth Strategy







**Moore County:** GGT used in Land Use Plan update, 37% of Green Growth recommendations incorporated in the Unified Development Ordinance. Future updates expected to include more.

**Town of Aberdeen:** Use Conservation Data in development review and design, land use plan update, UDO update

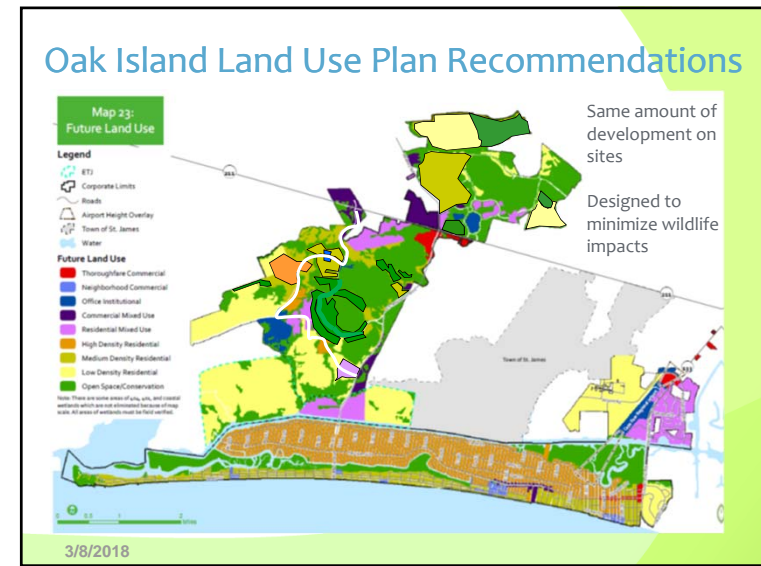


**Brunswick County**

- Implementing the Toolbox since 2015
- Planning department and board very supportive
- County Conservation Data for Green Growth explorer online GIS created by the county & Exceptional Development Option following GGT principles.

Longleaf pine forest, yellow-pitcher plants, venus flytrap, wood stork, ornate chorus frogs





Wildlife & Natural Resource  
Stewardship in Planning

## April 24<sup>th</sup> Green Growth Workshop

- Hosted by Brunswick County Planning & Community College
- Leland Center: 9am – 4pm

Wildlife  
RESOURCES  
COMMISSION

[www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth)

**THANK YOU! Questions?**

**Funding provided by:**

State Wildlife Grants &  
NC Tax Check-off

Donate on line #31  
to conserve wildlife.

Kacy Cook, Land Conservation Biologist  
NC Wildlife Resources Commission  
[kacy.cook@ncwildlife.org](mailto:kacy.cook@ncwildlife.org), 910-638-4887



# Benefits of Green Growth

[www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth)



**What is Green Growth?** Conserving wildlife, habitat and other valuable natural resources as communities continue to grow and develop. It also means encouraging growth in towns and cities.

**Why Green Growth?** Over one third of our 1,000 wildlife species in North Carolina are declining, largely due to habitat fragmentation and loss. To 'keep common species common' and off of endangered species lists, the N.C. Wildlife Resources Commission developed the Green Growth Toolbox.

- ✓ The University of Colorado studied 205 residential developments in five Colorado counties. They found that on average homes in conservation developments sold for 25 percent more. Conserving 2/3 of the land doubled the premium on sale price.<sup>i</sup>
- ✓ Homes in conservation subdivisions can sell up to 5 months faster than homes in conventional developments.<sup>ii</sup>
- ✓ Developers save from \$7,500 to \$10,000 per lot in conservation subdivisions.<sup>iii,iv</sup>
- ✓ Ten conservation subdivision case studies in South Carolina showed average costs savings of 36% over conventional development.<sup>v</sup>
- ✓ Homes within walking distance of natural park land can sell for 20 to 33 percent more. Larger parks increase premiums on sale price.<sup>vi, vii</sup>

Up to \$10,000  
cheaper per lot to  
build

More than a 25%  
premium on home  
values

36% cheaper to  
build than conventional  
development

*“An environmental assessment at the beginning of the development review process has reduced time to development approval from two months to 21 days.”* Jason Sullivan, Chatham

<sup>i</sup> Hannum et al. 2012. Comparative Analysis of Housing in Conservation Developments: Colorado Case Studies. *Journal of Sustainable Real Estate*. Vol. 4, No. 1, pp. 149-176.

<sup>ii</sup> Ibid.

<sup>iii</sup> Mohamed, R. 2006. The economics of conservation

subdivisions: Price premiums, improvement costs and absorption rates. *Urban Affairs Review*. Vol. 41, No. 3, pp. 376 – 399.

<sup>iv</sup> Conservation Research Institute (CRI), 2005. Changing cost perceptions: an analysis of conservation development. Report for Illinois Conservation Foundation and Chicago Wilderness.

<sup>v</sup> Ibid.

<sup>vi</sup> John L. Crompton & Sarah Nicholls (2006). An Assessment of Tax Revenues Generated by Homes Proximate to a Greenway. *Journal of Park and Recreation Administration* 24(3), 103-108.

<sup>vii</sup> Economic Research Associates. 2005. Real Estate Impact Review of Parks and Recreation [Internet]. Report to Illinois Association of Park Districts.



The Planning Department of Brunswick County  
and Brunswick Community College would like to  
invite you to a N.C. Wildlife Resources Commission

## Green Growth Toolbox Workshop



**Date:** Friday, April 27, 2018

**Time:** 9 am to 4 pm

**Place:** The Brunswick Community College Leland  
Center, 2045 Enterprise Dr. NE, Leland, NC 28451,  
(910) 755-7300



**BRUNSWICK**  
COMMUNITY COLLEGE

### Contacts

Kirstie Dixon, Director of Planning, Brunswick County, (910) 253-2027,  
[kirstie.dixon@brunswickcountync.gov](mailto:kirstie.dixon@brunswickcountync.gov)

Marilyn Graham, Director of Business Innovation and Sustainability,  
Brunswick Community College, [grahamm@brunswickcc.edu](mailto:grahamm@brunswickcc.edu), 755-7300

Please register with Kacy Cook, N.C. Wildlife Commission, online at  
[www.ncwildlife.org/Conserving/Programs/GreenGrowthToolbox/TrainingWorkshops.aspx](http://www.ncwildlife.org/Conserving/Programs/GreenGrowthToolbox/TrainingWorkshops.aspx)

(910) 638-4887 or [kacy.cook@ncwildlife.org](mailto:kacy.cook@ncwildlife.org)





**The Green Growth Toolbox** ([www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth)) was developed by the N.C. Wildlife Resources Commission and is a non-regulatory tool that communicates recommendations about conserving priority wildlife habitats that are declining in our region through land use planning methods. The goal of the Green Growth Toolbox is to keep species from becoming endangered. The Toolbox provides information on conservation development incentives and how to remove regulatory barriers to better resource conservation. This type of proactive planning secures benefits for our communities, the future of our wildlife and economy, helps to protect working farms and forests, and helps to ensure that development permit requirements are met ahead of time.

The workshop consists of a morning session of interactive presentations and hands-on exercises followed by a field trip to a nearby wildlife habitat. Those participating in the full day event will be eligible for American Planning Association continuing education credits. All participants will receive a free Green Growth Handbook that details priority wildlife habitats, and access to GIS map layers.

Dress for the weather & outdoors if you plan to attend the field trip! Please register by 4/25/18.

We hope you can attend!

Kirstie Dixon, Director of Planning and Community Development, Brunswick County, 910-253-2027, [kirstie.dixon@brunswickcountync.gov](mailto:kirstie.dixon@brunswickcountync.gov)

Marilyn Graham, Director of Business Innovation and Sustainability, Brunswick Community College, 755-7300, [grahamm@brunswickcc.edu](mailto:grahamm@brunswickcc.edu)

### Green Growth Toolbox Workshop Agenda

8:30 am	<b>Registration &amp; refreshments</b>	10:45	<b>Break</b>
9:00	<b>Introductions and pre-workshop evaluation</b>	11:00	<b>Conservation Data for Green Growth &amp; the NC Natural Heritage Data Explorer</b>
9:15	<b>Introduction to the Green Growth Toolbox</b>		<ul style="list-style-type: none"> <li>• Maps of wildlife habitat and what they mean</li> </ul>
	<ul style="list-style-type: none"> <li>• What is the Green Growth Toolbox?</li> <li>• What are the benefits of Green Growth?</li> <li>• Priority wildlife and habitats</li> </ul>	12:00	<b>Lunch</b> - Catered by a local business, courtesy of the NC Wildlife Commission
9:45	<b>Achieving Green Growth</b>	12:30	<b>Using Conservation Data in Planning</b>
	<ul style="list-style-type: none"> <li>• NCWRC habitat conservation recommendations</li> <li>• How to conserve wildlife and natural resources through plans, ordinances and development review &amp; design.</li> <li>• Questions &amp; discussion</li> </ul>	1:00 – 2:15	<b>Hands-on Exercise</b>
			<ul style="list-style-type: none"> <li>• Design a wildlife-friendly future growth map or development</li> <li>• Discussion of the hands-on exercise</li> </ul>

2:30 - 4:00 pm **Field trip to a local natural area to understand wildlife habitat & post-workshop evaluations**

**5 AICP credits are offered to those that stay for the field trip.**



Wildlife & Natural Resource  
Stewardship in Planning

# PREFERRED DEVELOPMENT DESIGN GUIDE

A product of the NC Wildlife Resources Commission Green Growth Toolbox ([www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth))

## OVERVIEW



North Carolina Communities have expressed interest in providing developers with preferred development design standards. These voluntary standards can improve development and wildlife habitat conservation. The principles and steps of conservation design are provided here. For detailed information about conservation of priority wildlife habitats and maps of priority habitats, including the map layers mentioned here see the NCWRC Green Growth Toolbox and Handbook.

## DEVELOPMENT LOCATION

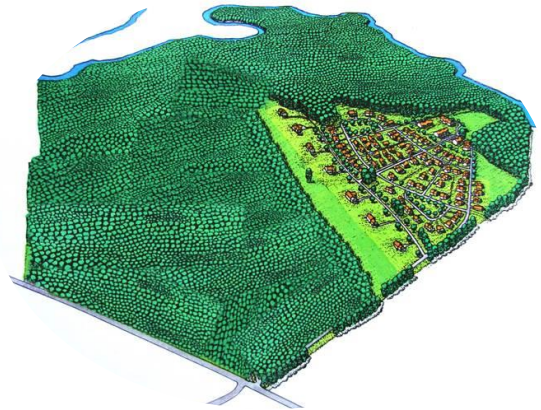
### 1. Select an appropriate site for the type of development. Appropriate, green sites for major development are:

- Centered around towns and cities such that urban or suburban areas will not spread extensively into rural areas.
- Not adjacent to Managed Areas (conserved lands) or taking up more than 50% of the area of 'priority wildlife habitats' on site.
- On land that has already been disturbed recently.
- And those that do not cut through wildlife habitat corridors.

## MAP AND SET-ASIDE NATURAL OPEN SPACE

### 2. Minimize wildlife habitat fragmentation

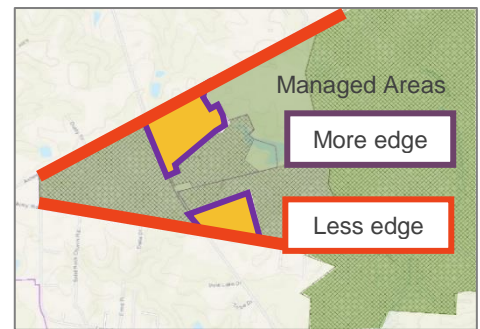
When mapping upland and wetland habitats to set-aside as natural open space it is important that these areas are as large and as wide on all sides as possible. If narrow habitat corridors are unavoidable, they should be at least 150 feet wide and ideally more than 330 feet wide. Natural open space on-site should connect to natural open space on adjacent sites.



Conservation development design. (Randal Arendt)

### 3. Set development back from the borders of protected lands (Managed Areas map layer)

It is important to set development back as far away as possible from protected lands to maintain habitat quality and the ability to manage habitats using tools such as prescribed burning. Inhabited structures adjacent to protected lands make it difficult to manage habitats.



### 4. Design natural open space to provide wildlife core habitat and travel corridors to conserve the following:

- Habitat for federally protected species, such as bald eagles
- Natural Heritage Natural Areas
- Priority wildlife habitats identified in the N.C. Wildlife Action Plan
- Forests bordering wetlands, streams or rivers
- Natural open spaces that connect or buffer existing protected natural areas

See [Section 3 of the Green Growth Toolbox Handbook](#) for recommendations on how habitat to set aside.



### What are Edge Effects?

Unnatural predators are among the multitude of threats to priority wildlife. Domestic cats do not typically venture deep into natural habitat areas, but patrol the edge looking for the next bird to lay on your doorstep.

### 5. Create a map of important upland and wetland habitats on and adjacent to the site.

- Include Conservation Data for Green Growth on the development sketch, preliminary and final plans. Include areas adjacent to the site. These data are available at [www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth),
- The following map layers are the most important to include: floodplains, streams, wetlands, Natural Heritage Natural Areas, and Natural Heritage Element Occurrences.
- Delineate the boundaries of natural open space that will be conserved on site. The boundaries can be partially mapped through analyzing aerial photos, but field surveys are best to fully delineate boundaries.
- Development should not surround natural open space. Ideally natural open space will comprise an entire undeveloped portion of the site whereby development does not penetrate into natural open spaces.
- Include an aerial photo
- In suburban and urban areas it is essential to conserve wetland and stream buffers, but it is usually better for wildlife to put as much development on one site as possible by developing the uplands. Remember to use Low Impact Development practices.

## OWNERSHIP AND HABITAT MANAGEMENT

- The homeowner's association can become the owner of the common natural open space. Homeowners association fees can cover property taxes and habitat management.
- It is important to permanently protect natural open space, ideally by donating the development rights in a conservation easement. Such a donation also provides the landowner with significant income tax relief. If an easement is not possible, deed restrictions can be documented.
- It is important to manage habitats so they are not polluted and are kept in their natural state. See Section 3 of the green growth toolbox for management recommendations.

## CONSTRUCTION AND POST CONSTRUCTION

### Tree Protection

- In developed areas maintain as close to a contiguous tree canopy as possible.
- Retain native, mature trees. Consult the Audubon Bird -Friendly Communities program website below for lists of native plants and trees. Some tree species at maturity, such as long-leaf pine, have very small diameters. Make sure to specify the correct diameter of trees to retain, so you don't lose mature trees.
- Retain as much shrub understory as possible and remove non-native plants.

### Treat Stormwater on-site with Low Impact Development

- Create a plan to minimize grading, especially next to wetlands, waterways, and steep slopes and maintain as many trees and as much natural vegetation as possible. Clearly mark areas that should not be graded.
- Perform clearing and grading that follows a stream protection strategy.
- Low Impact Development (LID) techniques use natural vegetation and topography to treat stormwater on site. Reducing the need for large stormwater ponds provides space for additional lots.
- Remember not to direct polluted stormwater into natural habitats.
- For detailed LID techniques see:
  - N.C. State University *Low Impact Development Guidebook* and training [www.onsiteconsortium.org/npsdeal/NC\\_LID\\_Guidebook.pdf](http://www.onsiteconsortium.org/npsdeal/NC_LID_Guidebook.pdf)
  - Coastal LID [www.nccoast.org/uploads/documents/guides/LIDNC.pdf](http://www.nccoast.org/uploads/documents/guides/LIDNC.pdf)
  - Brunswick County: [www.brunswickcountync.gov/engineering/stormwater/](http://www.brunswickcountync.gov/engineering/stormwater/)
  - Brunswick County Extension: <https://brunswick.ces.ncsu.edu/site-brunswick-the-responsible-homeowner/>
  - Cost benefit information
    - [www.epa.gov/owow/NPS/lid/](http://www.epa.gov/owow/NPS/lid/)
    - [www.unh.edu/unhsc/forgingthelink](http://www.unh.edu/unhsc/forgingthelink)
  - Stormwater Manager's Resource Center - [www.stormwatercenter.net](http://www.stormwatercenter.net)

- Smart Yards, NC Coastal Federation:  
[http://www.nccoast.org/uploads/documents/Media%20Room/Special%20publications/SmartYardsGuide\\_8-14\\_issue.pdf](http://www.nccoast.org/uploads/documents/Media%20Room/Special%20publications/SmartYardsGuide_8-14_issue.pdf)
- Phase construction to reduce the area and time over which soils are disturbed.
- Stabilize soils as quickly as possible (< 2 weeks) by establishing a native grass or mulch cover.
- Establish appropriate perimeter controls at the edge of construction sites to retain or filter concentrated runoff from relatively short distances before it leaves the site.

## LANDSCAPE WITH NATIVE PLANTS

### Resources for available native plants

- Native plant landscaping and maintaining natural vegetation is much less expensive to maintain than lawns and exotic plants. Native plants are better adapted to our climate and drought.
- NC Audubon Bird Friendly Communities has excellent native plant lists and works with local landscaping companies to make 'native plants of the year' available for larger scale landscaping. <http://nc.audubon.org/conservation/bird-friendly-communities/bird-friendly-native-plants>

**TOWN OF OAK ISLAND  
PLANNING BOARD  
AGENDA ITEM MEMO**

Agenda Item: New Business Item No. 2

Date: February 5, 2018



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**Issue:** Preliminary Plat – Pine Forest

**Department:** Planning & Zoning Administrator

**Presented by:** Jake Vares

**Presentation:** None

**Estimated Time for Discussion:** 45 Minutes

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**Subject Summary:**

The applicant is submitting a preliminary plat for Pine Forest. This is within Oak Islands jurisdiction by Highway 211 and Midway Road. This is phase I of the much larger Pine Forest project. 108 new properties that will be created with this proposed subdivision. Preliminary plats are typically valid for 24 months and if nothing is done by the developer at that ending time it expires. If the standards are all administrative (objective) then the board is merely reviewing the application for compliance. If the applicant meets the standards, they obtain the approval and if the preliminary plat is in violation with the town's ordinance then it should be denied.

The applicant obtained a Conditional Use Permit for a Phased Development Plan on April 11, 2017. A PUD (Planned Unit Development) is similar to a zoning district where design standards & infrastructure requirements can be proposed by the developer. A benefit is that the landowners, developers, and the public know what is required for that particular PUD development. The provision of an overall plan and designs for the development within a PUD allows greater flexibility for the developer, balanced with detailed review and approval of the proposed development. The PUD zoning is to and will provide areas for the creation and preservation and development of quiet residential neighborhoods and for higher-density residential development and well as a variety of mixed-use and commercial land uses. The principal uses in this phase 1 of the PUD project in Pine Forest is for 108 single-family residential units.

On 1/8/18 the applicant supplied staff with a sketch plan for a major subdivision and on 1/25/2018 the applicant turned in the 15 copies of the preliminary plat. The site-plan survey is located in a tract of land that is presently vacant/undeveloped. The property is in the C-LD (Commercial Low Density) zoning district and received a CUP (Conditional Use Permit) for a PUD-C (Planned Unit Development). Single-Family Residential is one of the many land uses approved in the PUD and is permissible. The land use proposed is permissible within the zoning district in which it is located in.



Setbacks are flexible and were created at the time of the CUP approval of the PUD. The setbacks for this phase is shown as 15ft in the front, 10ft rear-yard setback back, and a 5 foot side-yard setback and are compliant. The 110ft minimum lot depth standards within the subdivision ordinance is also met. The minimum lot size is 5,000 square feet. This would be a moderate density development, there are 2.04 lots per acre. This density ratio does not exceed the allowable density permitted under the previously approved PUD. The greater the density the more space can be created for conservation. The required ACOE, DCM, CAMA, etc.... permits will need to be obtained by the applicant before he/she can begin construction.

All streets shall be built to the standards of the state Department of Transportation. Sidewalks are shown on the preliminary plat and the pedestrian trails and greenway nodes are on the Phased Development Plan. An access easement will need to be provided to various agencies for infrastructure maintenance.

The developer has worked out water and sewer service with Brunswick County as they will be providing that service. Utilities will be responsibility of Brunswick County and the developer to maintain. The developer has obtained documentation that both shall be provided and the capacity is available. The applicant has been in contact with Brunswick County to establish water and sewer as it will be the county that provides that service. Water system improvements shall be constructed to Brunswick County specifications and dedicated as public. Construction costs shall be borne by the developer. Line maintenance shall be performed by Brunswick County. Brunswick County shall be provided deed access to and along public water mains within the property.

A TRC (Technical Review Committee) meeting was done by staff on February 7<sup>th</sup>, 2018. All the necessary required parties and then some have been invited to attend the TRC meeting. Revisions were made after the meeting to ensure full compliance will all the applicable federal, state, county, and local rules and regulations. Rather than regurgitating the results of the TRC meeting in the agenda item memo here, the TRC report is attached for your review. The next section of the zoning ordinance after the preliminary plat covers the construction plat process and the required improvement guarantees.

Council will have to vote on the preliminary plat after the Planning Board. The applicant is not permitted to officially subdivide and being selling lots until the final plat is approved by the Town and then recorded at the Register of Deeds (160A-375).

If the preliminary plat is not approved, the subdivider may make the recommended changes and submit a revised preliminary plat, or continue the decision to the Town Council. The proposed and attached preliminary plat does meet all the land development codes within Oak

Island Zoning Ordinance. Unless a development agreement is adopted, more additional preliminary plats will be submitted to the town for approval for subsequent phases of the PUD as market forces dictate. The ordinance does not have any ambiguous standards that apply to this subdivision that would require discretion, thus the decision is administrative, even though it goes before town boards.

A simple majority vote is all that is need for this to pass Planning Board and Council. The Planning Board vote is for an advisory recommendation only. Approval of the preliminary plat shall be valid for a period of 24 months and will not be invalidated by subsequent amendments of the development ordinances of the town. The planning board shall recommend approval, denial, or conditionally approve with recommended changes to bring the plat into compliance.

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**Attachments:** Preliminary Plat, TRC report

**Recommendation/Action Needed:** Discussion and motion

**Suggested Motion:** Motion to recommend approval, or denial or approval with conditions to the proposed Pine Forest preliminary plat

**Funds Needed:** \$0.00

**Follow Up Action Needed:** Forward recommendation to Town Council for approval or denial.

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## **Attachments**

## CASE SUMMARY

# TECHNICAL REVIEW COMMITTEE STAFF REPORT

Date: February 7, 2018

## General Information

APPLICANT:  
SITE LOCATION:  
OWNER:  
AGENT:  
PRESENT ZONING:  
PROPERTY SIZE:  
EXISTING LAND USE:  
SURROUNDING LAND USE & ZONING

Pine Forest  
off HWY 211 and Midway Rd  
Equity Investments Associates LLC  
Mark Brambell  
CLD - PUD  
53 Acres  
Mostly Undeveloped

## PINE FOREST PHASE I

### SUMMARY

The site-plan survey is located in a tract of land that is presently vacant/undeveloped. The site contains a plethora of wetlands, freshwater marsh, swamp forest, managed pineland, open space, and environmentally sensitive areas. The majority of the site, particularly the uplands is wooded and vegetated. The topography of the site is generally flat with minimal slopes. The adjoining properties have similar conditions on their site and are either zoned CLD, R-7500 or have County zoning. The portion of the project in the phased development plan (attached) is highlighted in red in the adjacent image.

The applicant obtained a Conditional Use Permit for a Phased Development Plan on April 11, 2017. Sheet SV-1 is to show the current site subdivision layout of the property. The Oak Island ordinance stipulates that PUD's (Planned Unit Developments), once approved, shall be processed and permitted in the same manner a major subdivision would be; thus those regulations within the subdivision section of the town's zoning ordinance will apply. Additionally, the number of proposed lots is another reason this would fall under the major subdivision classification.



On 1/8/18 the applicant supplied staff with a sketch plan for a major subdivision and on 1/25/2018 the applicant turned in the 15 copies of the preliminary plat. The required ACOE, DCM, CAMA, etc... permits will need to be obtained by the applicant before he/she can begin construction.

A PUD (Planned Unit Development) is similar to a zoning district where design standards & infrastructure requirements can be proposed by the developer. A benefit is that the landowners, developers, and the public know what is required for that particular PUD development. The provision of an overall plan and designs for the development within a PUD allows greater flexibility for the developer, balanced with

## CASE SUMMARY

detailed review and approval of the proposed development. The PUD zoning is to and will provide areas for the creation and preservation and development of quiet residential neighborhoods and for higher-density residential development and well as a variety of mixed-use and commercial land uses. The principal uses in this phase 1 of the PUD project in Pine Forest is for 108 single-family residential units.

The preliminary plat does meet all the requirements of Section 18-473, which is essentially a laundry list of requirements for the map, i.e. title, utilities, measurements, scale bar etc.. The staff report here represents comments from various department heads as well as the Zoning & Planning Administrator.

## PLANNING & ZONING:

### Zoning District and Table of Uses

Property is in the CLD zoning district and received a CUP for a PUD-C. Single Family Residential was one of the many land uses approved and is permissible. The land use proposed is permissible within the zoning district in which it is located in. The table of uses (Sec.18-116) codifies a "PUD" as permissible with a Conditional Use Permit from the town if it is located within the C-LD (Commercial-Low Density) zoning district; which it is located within.

Uses	R-20	R-9	R-7.5	R-7	R-6A	R-6B	R-6MF	R-6MH	O & I	CB	CR	C-LD	OS	AD	Club Overlay Dist.	CUCB
PUD	C	C	C									<u>C</u>		C		

### Setbacks, and Lot Type

#### Lot Dimensions

Setbacks are flexible and were created at the time of the CUP-PUD approval. The dimensional standard requirements in Sec. 18-117 & 118 are not applicable. The setbacks for this phase is shown as 15ft in the front, 10ft rear-yard setback back, and a 5 foot side-yard setback. The setbacks shown in the plat are compliant with the previously approved CUP/Phased Development Plan and the 110ft minimum lot depth standards within the subdivision ordinance is also met. The minimum lot size is 5,000 square feet. This would be a moderate density development, there are 2.04 lots per acre. This density ratio does not exceed the allowable density permitted under a PUD-C. The greater the density the more space can be created for conservation.

#### (A) **PUD SFR Districts (Single Family Residential) 275 acres**

1. Combination of detached and attached residential (duplex, zero lot line, triplex, condominium, assisted living and independent living facilities)
2. Lot typology consist of front load, side load and rear load product type.
3. Minimum lot size 5000 sf
4. Wide variety of product type and price point
5. Moderate density with communities integrated within communities
6. Building setbacks - front load and side yard
  - a. 5 ft. side yard,
  - b. 15 ft. front yard
  - c. 10 ft. rear yard



## Roads/Streets – Traffic and Transportation

The total right-of-way (ROW) width is shown to be 50 feet. The pavement width is 20ft, which leaves 15ft additional on either side of the road starting at the edge of the pavement. Sec. 18-446. – Streets, of the subdivision ordinance states that “All streets shall be built to the standards of the state department of transportation.”

Additionally the Planning Board (PB) is to look at bike paths, bike paths, etc..... Sidewalks are shown on the preliminary plat and the pedestrian trails and greenway nodes are on the phased development plan. “The planning board shall consider possible connections to the town's existing sidewalk and bikeway systems” Sec. 18-446. No existing bike or sidewalks paths exist in this area yet because it is all undeveloped. Street access to the adjoining properties is scheduled as one can see from the attached phased development plan. The project as a whole is a complete community with interconnectivity.

Sidewalks a minimum of 4 feet wide are required on one side of the road because it is classified as a residential collector street. This is represented on the preliminary plat and is in compliance. Sidewalks would be required for either commercial or residential projects and are for pedestrian safety. The sidewalk has to “consist of a minimum depth of four inches of concrete.” And a “minimum of six inches of concrete at driveway crossings or shall be adequately reinforced otherwise” Sec. 18-446.

Access to the site will be provided off of HWY 211 via a road leading to two round-a-bouts. No private driveways are permitted off of 211 and the site is located too far back for that to be a possibility. No cul-de-sacs or alleys are shown on the preliminary plat so those regulations would not apply. The overall design discourages through traffic which is what is required In Sec.18-446(h). The required TIA (Transportation Impact Analysis) and access permits have been obtained from NC-DOT. In this area the speed limit is planned to be set for 25 mph. A DOT access permit has been granted and is in file.

The proposed streets are to be private and not Town roads. The general statutes {136-102.6 (f)} as well as the town ordinance allow for private roads but they have to be built to DOT standards regardless. \_\_\_ Sec. 18-374 of the town ordinances define private streets as “*an undedicated private right-of-way which affords access to abutting properties and requires a subdivision streets disclosure statement in accordance with G.S. 136-102.6.*” The town ordinance in Section 18-446(a) also states “*All proposed public streets within the corporate limits of the town shall be dedicated to the town; all proposed public streets in the town's extraterritorial jurisdiction shall be dedicated to the state. All streets shall be built to the standards of the state department of transportation. Streets not dedicated to the town which are not eligible for acceptance into the state highway system because there are too few lots or residences shall, nevertheless, be built in accordance with the standards necessary to be put on the state highway system. A written maintenance agreement with the provisions for the future maintenance of the street shall be included with the final plat. The planning board shall consider required installation of either bikepaths, bike lanes, or shared roadway facilities for bikes in the subdivision where there are transportation and/or recreational benefits from such installation. In its review of sidewalks and bikeways, the planning board shall consider possible connections to the town's existing sidewalk and bikeway systems.*” General Statutes 136-102.6 (f) says “*If the street is designated by the developer and seller as a private street, the developer and seller shall include in the disclosure statement an explanation of the consequences and responsibility as to maintenance of a private street, and shall fully and accurately disclose the party or parties upon whom responsibility for construction and maintenance of such street or streets shall rest, and shall further disclose that the street or streets will not be constructed to minimum standards, sufficient to allow their inclusion on the State highway system for maintenance. The disclosure statement shall contain a duplicate original which shall be given to the buyer. Written acknowledgment of receipt of the disclosure statement by the buyer shall be*

## CASE SUMMARY

*conclusive proof of the delivery thereof.”* So a disclosure statement notifying that road maintenance shall be the responsibility of the HOA or POA is mandatory. The portion of the ordinance mandating that all newly constructed roads be built \_\_\_?to DOT standards\_\_\_\_\_ The POA dues would cover all repairs to the roads and storm water infrastructure as well as all common area landscaping and lighting. An access easement will need to be provided to various agencies for infrastructure maintenance.

The new street names cannot be duplicated or phonetically similar to other roads elsewhere in Brunswick County. The streets are not yet currently named but will have to be before the final plat can be adopted by Town Council. Before the final plat is adopted the “subdivider shall be required to provide and erect street name signs and stop signs to town and state standards at all intersections within the subdivision.” Sec.18-446.

The total width of the ROW is not the issue here. The developer will need to deed of dedication for private roads from the developer to the association.

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## PUD-CUP STANDARDS

Conditions are imposed, standards are an already existing part of the ordinance that is enforced and mandated. Additional standards specific to this land use are listed in Sec.18-226(31) of the zoning ordinance. That ordinance section describes allowable land uses, buffering, dictates that the town subdivision regulations have to be met. Staff has reviewed the ordinance in comparison with what was submitted and verified that the applicant is in compliance.

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## CONDITIONS

No conditions were made with the original approval of the PUD-C Phased Development Plan that was approved via a Conditional Use Permit in early 2017, therefore reviewing conditions is not applicable. The way the Oak Island zoning ordinances sets up preliminary plat review and votes, it is designed to be a vote as to whether or not the codes are compliant or not. No discretionary decisions or interpretations are being performed so the boards’ preliminary plats adoption or denial votes are not quasi-judicial.

It is the role and responsibility of the Town Council in regards to voting on preliminary plats to determine if the proposed project conforms to all the development codes in the zoning ordinance. If the preliminary plat does, then the plat must be approved and if all the development codes are not met, then the Council is obliged to deny.

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## Building Height

Not applicable at this time since this is for a preliminary plat not a building permit. However, that information is shown in the plat as. The single-family residential structures are to be 35’ outside a flood plain and 40’ within it.

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## Parking & Driveway/Access

The driveway width is not shown but will need to be compliant with Oak Island’s zoning ordinance driveway requirements in Sec.18-176. This will be verified for compliance when the construction plans associated the development permit is submitted.

## CASE SUMMARY

A minimum of two minimum off-street parking spaces is required for up to three habitable rooms and an additional parking space for each additional habitable room.(Sec.18-148) A floor plan showing the number of habitable rooms is needed to determine the minimum amount of 9x18 parking spaces is provided. This will be verified for compliance when the construction plans associated the development permit is submitted. The Phased Development Plan does not specify specific parking standards, so it is the current zoning ordinance parking regulations that will apply. If a development agreement were to executed, this may change the parking or other current ordinance requirements that are currently in-place.

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### Trees

The total square footage for each lot will be divided by 1450 with the resulting number being the number of trees that have to be saved. It is estimated that 3 trees per property will be required to be on each site.

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### Accessory Structures (if applicable)

Not Applicable here. Application is just for one home with no accessory structure.

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### CAMA

No CAMA issues or permits are required. Flood compliance is required as well as 404 wetland fill compliance. The and in this area is environmentally sensitive. Permits will be needed from other state and federal agencies.

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### Buffers

When a commercial structure is to be built adjacent to a residential area then a buffer in the form of a fence, vegetation, berm, or other means will have to be installed at that point. Sec.18-226(31) states "In all cases, adequate external buffering shall be provided by much larger setbacks of structures and uses such as active recreational areas, swimming pools, ancillary structures, trafficways, parking, and all other use of the land than green open space." At this stage for phase one given that nothing is directly adjacent as of yet, the buffer regulations are not applicable.

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### Conclusions

The Technical Review Committee reviewed the site-plan at their February 7, 2018 meeting. The Planning Board will review this preliminary plat at their regular meeting on 3-15-18. A simple majority vote is all that is need for this to pass Planning Board and Council. The subsequent phases of the PUD will be submitted at a later date as market forces dictate. The ordinance does not have any ambiguous standards that apply to this subdivision that would require discretion, thus the decision is administrative, even though it goes before town boards. All the necessary required parties and then some have been invited to attend the TRC meeting.

The applicant has vested rights for this development because of the PUD-C, Conditional Use Permit, they obtained from the Town for their phased development plan. The area is largely undeveloped and has a mixture of future land use classifications. The recently adopted Land Use Plan Future Land Use Map shows



## CASE SUMMARY

this area as residential mixed use with open space and conservation. The 20 foot site triangle ordinance standard is not applicable in the preliminary plat. Just as a recommendation the applicant should check with Brunswick County, and town adopted, Blue-way/Greenway Plan to see how their paths intersect with the proposed paths in those maps.

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## FIRE:

In a nutshell, what this all means is that any structure built beyond 5 road miles from the nearest Oak Island Fire Station will have a class 10 rating. A Class 10 rating is the highest (most expensive) fire insurance premiums because it is considered as having no fire protection. That is the definition by the Office of the State Fire Marshal (OSFM), The North Carolina Rating Response System (NCRRS), ISO and the NCGS.

As defined, there are 2 types of districts:

- 6 mile district – a 6 mile district is allowed for fire departments that have a rural fire district. In this situation, any structures built beyond 5 road miles, but within 6 road miles are allowed with an automatic mutual aid contract between the primary responding fire department and a neighboring fire department as long as the neighboring fire department responds with at least one piece of fire apparatus capable of carrying no less than 1000 gallons of water.
- 5 mile district – a 5 mile district is a municipal fire department who's class rating is only applicable to structures within 5 road miles. Anything beyond 5 road miles is considered a class 10

Oak Island Fire Department is a municipal fire district meaning, our entire fire district is within the corporate limits of the town. Since our fire district does not extend beyond our town limits, we are not a rural fire district and therefore the 5 road mile rule applies.

As Chief Davie Summey from NCDOT states in his email below, Oak island Fire Department would have a split ISO rating of a 5/10. That means everything within 5 road miles is a Class 5 insurance rating, everything beyond 5 road miles is a Class 10 insurance rating.

I hope this helps, please call if you have questions.

Chris Anselmo  
Fire Chief  
Oak Island Fire Department

There are a total of 8 hydrants and the number proposed is adequate.

Also see fire code Chapter 5 – Fire Service Features Section 501 to 505



## CASE SUMMARY

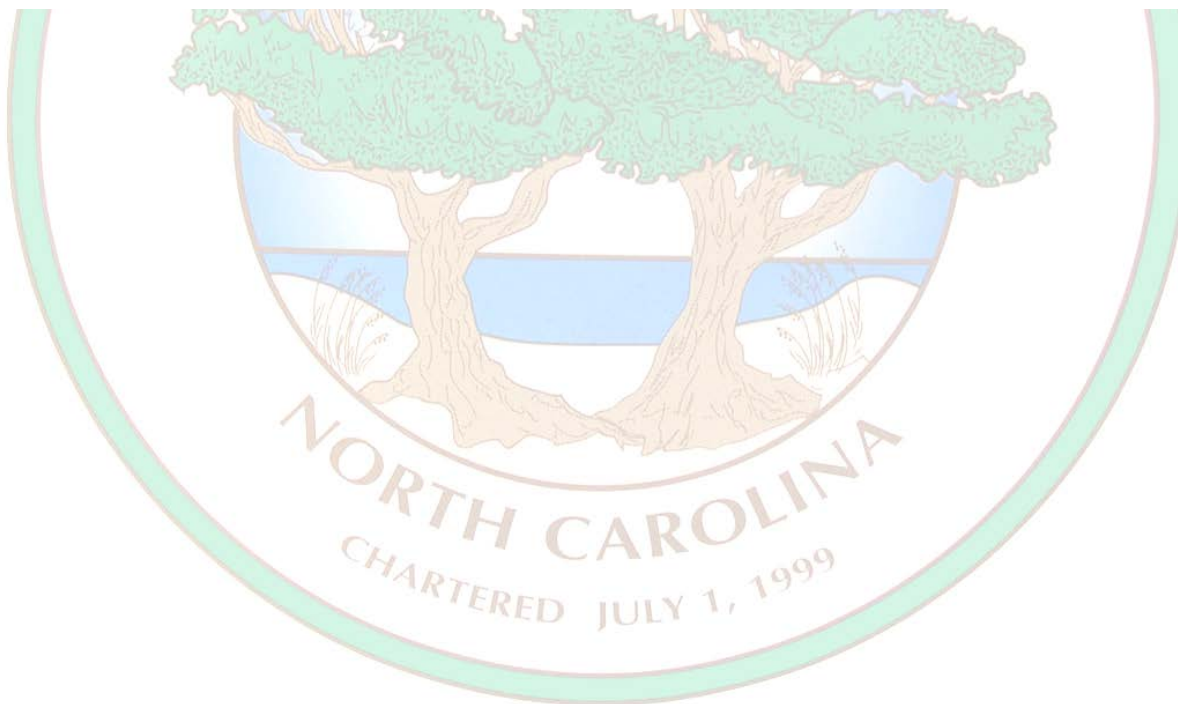
### **11 NCAC 05A .0903 RATING OF FIRE DISTRICTS**

(a) To receive a PPC rating, a fire department shall submit a written request to OSFM containing the following information:

- (1) The name of the fire district;
- (2) The name of the entity that operates the fire district (e.g., city, town, county, non-profit corporation);
- (3) The name of the person in charge of the entity that operates the fire district;
- (4) The name and title of the Fire Chief or his or her designee;
- (5) The physical address of the location of every fire station utilized by the fire department;
- (6) The mailing address of the fire department;
- (7) The Federal (FEIN) Tax ID number of the fire department;
- (8) Copies of any contracts with a local government body to provide fire protection; and
- (9) A Geographic Information System ("GIS") computer-generated map of the fire district, and documentation of the approval of the map by the local governing body if applicable.

(b) A fire department may contract with more than one unit of government to provide fire protection. In addition, a local unit of government may contract with more than one fire department to provide fire protection.

(c) 9S Re-Inspections. Fire departments shall be re-inspected by OSFM, at least every 10 years and shall be notified by OSFM of such 9S re-inspection in writing at least 30 days in advance. In addition, upon receipt of information alleging noncompliance with this Section that is reviewed and verified by OSFM, OSFM shall perform unannounced re-inspections of fire departments.



## CASE SUMMARY

### POLICE:

No Comment

### TOWN STORMWATER:

Stormwater system construction costs shall be borne by the developer and maintenance shall be performed by the property owners' association. NCDEQ shall be provided deeded access to and along stormwater facilities within the property. When the construction phase begins, the stormwater application permit form will be applied for to the town. One permit will cover all of the proposed lots and the developer will need to show that they are at or below their required built-upon-area.

### PARKS & REC/OPEN-SPACE:

The higher density and allows more room to designate as open-space. Sec. 18-451. Requires a minimum of 15% of passive/active open space. The total of open space codified in the phased development plan, so that requirement is compliant and exceeded. The preliminary plat shows the amount of open-space set aside for this particular phase. The uplands area in the plan count toward the 15% open space requirement because it is walkable and therefore usable passive recreation.

### PUBLIC SERVICES:

Utilities will be responsibility of Brunswick County or the developer to maintain. This level of detail is provided by engineers at the construction plat phase, not the preliminary plat phase. Sec.18-446(h) states "On streets with curb and gutter, utility access should be set back a minimum distance of six feet from the face of the curb."

Additional Sec. 18-446 (6) states "Access for utilities should be located clear of roadway shoulders, preferably a minimum of at least 30 feet from the edge of pavement on arterial streets or major thoroughfares. On streets with curb and gutter, utility access should be set back a minimum distance of six feet from the face of the curb." This phase is not along an arterial street or major thoroughfare so the 30 foot distance buffer is not required.

### BEMC:

No Comments

### NC-DOT:

No Comments

### AT&T:

No Comments

### ATMC:



## CASE SUMMARY

No Comments

## SUNNY POINT MILITARY BASE:

No Comments

## DUKE PROGRESS ENERGY:

No Comments

## BRUNSWICK COUNTY ENGINEERING:

Attached are the county comments for water and sewer for the Pine Forest Preliminary Plat.

I will not be able to attend the TRC meeting tomorrow. You can call me if you have any additional questions.

Best regards,

Bill

William L. Pinnix, P.E.  
Director of Engineering  
Brunswick County

### TECHNICAL REVIEW COMMITTEE COMMENT SHEET

For

\_\_\_\_\_ Pine Forest Plantation Phase 1 Section 1 \_\_\_\_\_

Department: \_\_\_\_\_ Brunswick County Engineering \_\_\_\_\_

#### Comments

- 1) Per letter of 12/14/2016 from David Kelly to Ann Hardy the county is to provide water and sewer service to the entire Pine Forest development
- 2) On the proposed preliminary plat, Sheet PP-1, at the note "END OF EXISTING PAVING" is where existing county 12-inch water main and 2-inch sewer force main end. The 2-inch force main is dedicated solely for the use of the existing Novant MOB duplex grinder pump station
- 3) In November of 2017 the county entered into an Agreement with Equity Investments Associates, LLC, for the design, permitting, and construction of a new force main connection from NC 211 to be installed on the west side of Pine Forest Blvd. This new forcemain is shown on Sheet PP-1 as "EXISTING FORCE MAIN" (note: has not been built yet). The engineer recently submitted engineering plans and modeling for this temporary connection in accordance with the Agreement along with a request to execute the Sewer Main Extension Permit Application. This application is under review now. This force main will be a temporary connection to be in use only until the gravity collection system and new pump station (the Permanent System) shown on Sheet PP-1 is constructed and will serve up to a maximum allowed of six commercial buildings
- 4) The water main shown as EXISTING WATER MAIN on Sheet PP-1 will be an extension of the existing 12-inch county water main at the Novant MOB as shown on PP-1 (note: has not been constructed yet). The engineer recently submitted engineering plans and modeling for this new 12-inch water main along with a request to execute the Water Main Extension Permit Application. This application is under review now
- 5) The proposed sewer pump station and gravity collection system shown on Sheet PP-1 are referenced as the Permanent System in the executed Agreement between the county and Equity Investments Associates, LLC. This proposed sewer system will serve the proposed (108 platted lots as well as eliminate the need for the Temporary Force Main. Once this Permanent System is in place the flow from the six commercial buildings will be redirected to the gravity collection system
- 6) The county would like to see a 10' non-exclusive utility easement along all lot frontages
- 7) Public utility easement will be required over all streets and rights-of-way
- 8) Fire hydrant spacing to be maximum of 800 LF in residential areas per county design manual
- 9) Minimum pump station site to be a 50' x 50' (2,500 SF) public utility easement – not fee simple
- 10) All proposed water distribution and sewer collection system must be built to county specifications
- 11) Discharge of new pump station will be to the Midway Commons 211 sewer pump station as proposed
- 12) Sheet PP-1 shows significant wetlands...per 15A NCAC 02T .0305 special rules apply for separation of sanitary sewers and wetlands.... engineer shall consider during design

## CASE SUMMARY

**William L.  
Pinnix, P.E.**  
Signature: \_\_\_\_\_  
Brunswick County Director of Engineering

Digitally signed by William L. Pinnix, P.E.  
DN: cn=William L. Pinnix, P.E.,  
o=Brunswick County, ou=Engineering  
Department, email=william.  
pinnix@brunswickcountync.gov, c=US  
Date: 2018.02.06 10:23:07 -05'00'

Date: \_\_\_\_\_ February 5, 2018 \_\_\_\_\_

## BRUNSWICK COUNTY GIS:

No Comments

## ACOE:

ACOE permit applies if involve activities of placement of dredged or fill material within jurisdictional waters or wetlands or work or placement of structures in navigable waters. Also the placement of buildings pads, road crossings, utility lines or intake and outfall structures requires ACOE permits. The applicant shall be responsible for providing such necessary permits and complying with federal regulations. The permits will be provided at the construction phase.

No Comments

## WATER & SEWER:

All water and sewer are to be provided by Brunswick County. The developer has obtained documentation that both shall be provided and the capacity is available. The applicant has been in contact with Brunswick County to establish water and sewer as it will be the county that provides that service. Brunswick County water & sewer lines lay adjacent to the site, including off HWY 211.

Water system improvements shall be constructed to Brunswick County specifications and dedicated as public. Construction costs shall be borne by the developer. Line maintenance shall be performed by Brunswick County. Brunswick County shall be provided deed access to and along public water mains within the property.

See Brunswick County Engineering section

## NC - WILDLIFE:

Thank you for the opportunity to review this proposal. These comments are non-regulatory and for information purposes. However, following these recommendations will help reduce the length and complexity of environmental permitting processes. Other benefits of conservation design are up to 36% cost savings on development, up to 26% premium on houses close to natural areas, and a reduction in nuisance complaints on Canada geese and alligators. For



## CASE SUMMARY

official documentation on the conservation recommendations below see Section 3 of the NCWRC Green Growth Toolbox Handbook at [www.ncwildlife.org/greengrowth](http://www.ncwildlife.org/greengrowth).

These recommendations are intended to communicate scientific information on how to reduce impacts to wildlife, some of which may not be practical to this development. However, we provide them for information. Over one third of the 1,000 wildlife species in our state are of conservation concern due to habitat loss. Our coast has over 40 species of animals and plants found nowhere else in the world.

This development would occur within the Boiling Springs Wetlands Complex Natural Heritage Natural Area. This designation is not regulatory. The Natural Area has the highest rating level of habitat quality and rarity of Exceptional and is equivalent to one of the top five examples of this type of wetland complex in the country. The area of this development site is a pond pine woodland with at least one isolated wetland. Amphibians and reptiles that depend on these types of habitats are becoming threatened due to a high rate of habitat loss.

We recommend the following to minimize impacts:

- 1) Reduce the size and number of stormwater ponds by using Low Impact Development Techniques. This may also allow for the development of more lots because of the reduced land needed for stormwater ponds. Additional cost savings can be realized from a reduction in engineered structures such as pipes.
  - a. Use permeable pavement for sidewalks, driveways and parking areas.
  - b. Reduce the width of sidewalks and employ bioswales along roadsides. The bioswales will soak up stormwater runoff into the ground without the need to direct as much stormwater to ponds.
  - c. Use rain gardens and other LID techniques such as rain barrels, especially in common areas.
  - d. Minimize grading and impervious surfaces as much as possible by minimizing road and driveway length and width, and leaving standing trees and vegetation outside of building envelopes.

### LID Resources

- N.C. State University *Low Impact Development Guidebook*  
[www.onsiteconsortium.org/npsdeal/NC\\_LID\\_Guidebook.pdf](http://www.onsiteconsortium.org/npsdeal/NC_LID_Guidebook.pdf)
- Coastal LID
  - [www.nccoast.org/protect-the-coast/restore/low-impact-development/](http://www.nccoast.org/protect-the-coast/restore/low-impact-development/)
  - [www.nccoast.org/uploads/documents/guides/LIDNC.pdf](http://www.nccoast.org/uploads/documents/guides/LIDNC.pdf)
  - Brunswick County: [www.brunswickcountync.gov/engineering/stormwater/](http://www.brunswickcountync.gov/engineering/stormwater/)
- Cost benefit information
  - [www.epa.gov/owow/NPS/lid/](http://www.epa.gov/owow/NPS/lid/)
  - [www.unh.edu/unhsc/forgingthelink](http://www.unh.edu/unhsc/forgingthelink)

## CASE SUMMARY

- [www.nccoast.org/protect-the-coast/restore/low-impact-development/](http://www.nccoast.org/protect-the-coast/restore/low-impact-development/)
- Stormwater Manager's Resource Center - [www.stormwatercenter.net](http://www.stormwatercenter.net)

The following link provides details on a local case study that retrofitted a commercial development to a LID design. No stormwater ponds were needed, allowing for more developable acres. All stormwater was treated with constructed wetlands and bioswales. The cost savings were estimated to be \$200,000.

[www.nccoast.org/uploads/documents/Advocacy/LF\\_Report.2.CoastalFed.08oct07.pdf](http://www.nccoast.org/uploads/documents/Advocacy/LF_Report.2.CoastalFed.08oct07.pdf)

- 2) The highest elevations on the site are proposed to be stormwater ponds. If stormwater pond size and number can be reduced by employing LID, lots can be brought more toward the center of the tract in these area of highest elevation. Adjusting the design this way will move lots outside of the 100 year flood zone.
- 3) We recommend a 100 foot buffer from the water's edge on each bank of perennial streams and a 50 foot buffer on intermittent streams. This allows for sufficient water quality to maintain aquatic life.
- 4) Leave the wetlands to the south of the tract undeveloped and maintain forest connectivity by leaving the forest adjacent to the wetland connected to streams and other wetlands. The isolated wetland is in this area. We recommend not building the road proposed that runs east to west south of lot 50, in order to maintain this wetland and habitat connectivity.
- 5) The proposed lots are outside of the 404 delineated wetlands. This is a best management practice for wildlife conservation.
- 6) It is very important for water quality, sport fishing and to conserve aquatic life to reduce the number of wetland or stream road crossings. Cross wetlands and streams in a perpendicular direction. This reduces the amount of disturbed soil and runoff next to streams and wetlands. Design stream crossings such that they minimize sedimentation from the road and so that the stream is not culverted in a way that impacts or covers the stream bed.
  - a. Culverts should be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe should be buried at least 1 foot or 20% below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream and downstream ends to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel(s) during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet,

## CASE SUMMARY

alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

- b. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
  - c. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.
- 7) We recommend using native plants in landscaping, revegetation, and in Low Impact Development practices. Please see the following resource for lists of native plants available in bulk for landscaping (refer to the plants native to the Coastal Plain):  
<http://nc.audubon.org/conservation/bird-friendly-communities/bird-friendly-native-plants>.
- 8) Federal permits: US Army Corps of Engineers Section 404 permits and N.C. Division of Water Resources Section 401 Certifications are required for any impacts to jurisdictional streams or wetlands. Temporarily disturbed wetland areas should be returned to original soils and contours, and reseeded with annual small grains appropriate for the season (e.g. oats, millet, rye, wheat, or rye grass) and should be allowed to revert to natural wetland vegetation. The applicant may be required to consult with the U.S. Fish & Wildlife Service to document any federally listed red-cockaded woodpecker foraging or nesting areas on the tract. This species is known to inhabit this area. They depend on the longleaf pine forest ecosystem, which has been reduced to 5% of its historic range, giving rise the federal conservation status of many animal and plant species associated with this habitat.

In future phases if this development, we recommend leaving as much land undeveloped as possible that is adjacent to the publicly owned nature reserve to the north east. This 'Managed Area' is owned by the NC Plant Conservation Program and is managed to conserve the Boiling Springs Lakes Wetland Complex. It is managed as many protected natural areas are, with controlled burning. Controlled burning allows for the natural and essential process of fire to occur, while protecting communities from wildfire. Building adjacent to Managed Areas makes controlled burning almost impossible in adjacent forest.

I am happy to work directly with the applicant to assist them to implement these non-regulatory recommendations. Our goal is to proactively prevent the federal listing of more species and to reduce unnecessary impacts.



CASE SUMMARY

Signature: *Langloek*

Date: 2.7.18

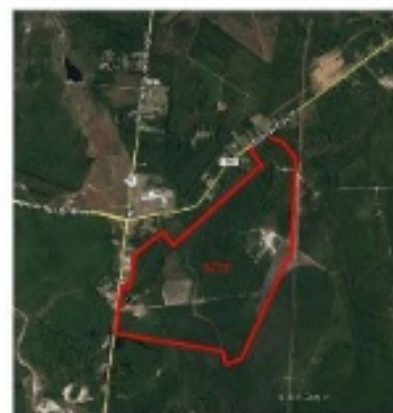
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**Attachments:**  
Phased Development Plan





## CASE SUMMARY



VICINITY MAP

#### Parent Involvement

- [illegible]

This site plan is a graphic representation and should be utilized for discussion purposes only. The site plan approximates existing conditions including structures, wetlands areas, parking, vegetation, and property boundaries. When components may change based upon regulatory and municipal regulations and requirements at the time of approval and/or development activity.

ASSET MANAGEMENT OWNERS					
NO.	NAME	ADDRESS	CITY	STATE	ZIP
1	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
2	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
3	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
4	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
5	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
6	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
7	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
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11	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
12	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
13	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
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23	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
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31	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
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41	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
42	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
43	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
44	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
45	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
46	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
47	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
48	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
49	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6
50	ALBERTA	10000 104th Ave.	Edmonton	AB	T5N 1C6

**Ownership:** Twp/Plat E6 175607-11  
County: Washington, Arkansas, LLC  
3551 Square Park Road  
Duke, NC 28517

**Development:** Richard B. Stroh

**Project Co-ordinators:** Jayalal Jayasinghe, LIAISON  
Murali Rao  
Rajeev Chandra

At this point in the development of this project, proposed functions and features may vary. We intend to market a collection of all elements proposed, construction and operation. The Tower of God is not all its content, but a collection of the best of the best of the best.

### Prüfungsausschuss

- |                               |   |
|-------------------------------|---|
| (A) Monitor Progress:         | Tanya Roloff, Equity Investments          |
| (B) Project Manager:          | Van Hornes, U.S. Life Group, LLC          |
| (C) Project Engineer:         | Timothy, M. Fairbanks, Equity Investments |
| (D) Environmental Consultant: | Cody Turner, Land Management              |
| (E) Traffic Consultant:       | Gregory S. Hays, R. Hays & Co., Inc.      |





# PINE FOREST PLANTATION

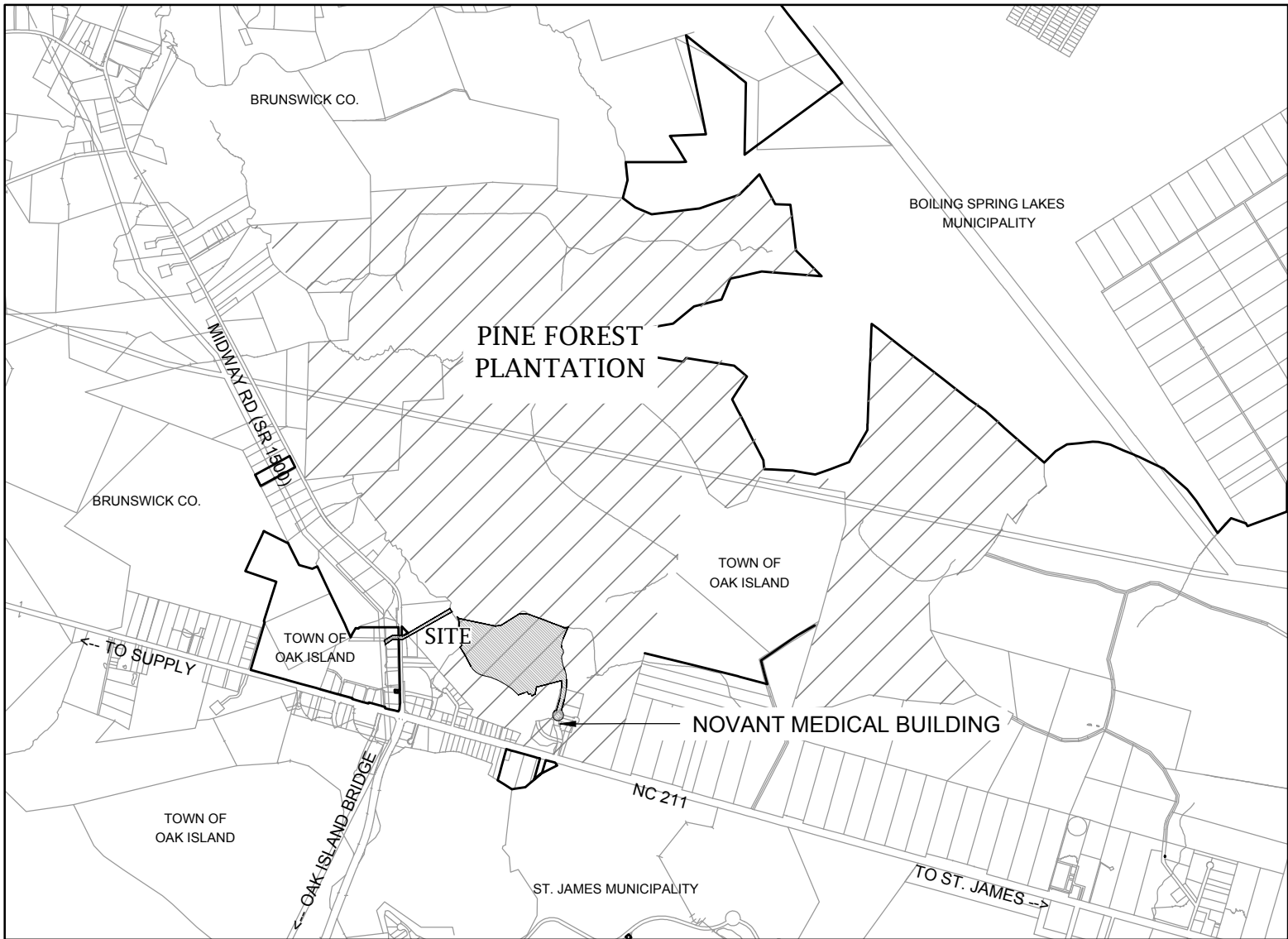
NC HWY 211 AND MIDWAY ROAD  
OAK ISLAND, NORTH CAROLINA

## PHASE 1 SECTION 1 PRELIMINARY PLAT

FEBRUARY 2018

FOR

PINE FOREST DEVELOPMENT COMPANY, LLC  
P.O. Box 455  
Boone, NC 28607



VICINITY MAP

SCALE: 1" = 3000'



Know what's below.  
Call before you dig.

**NOTICE REQUIRED**

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.

CONTRACTORS SHALL CONTACT OVERHEAD ELECTRIC PROVIDER TO COMPLY WITH FEDERAL OSHA 1910.333 MINIMUM APPROACH DISTANCE TO ENERGIZED POWERLINES AND OSH 29 CFR 1926.1407-1411 MUST BE FOLLOWED.

CONTRACTOR SHALL CONTACT AT&T PRIOR TO ANY DEMOLITION TO ALLOW FOR AT&T TO DISCONNECT COMMUNICATIONS CABLES COMING INTO THE SITE.

CONTACT "CAROLINA ONE CALL" AT  
1-800-632-4949

**CONTACT THESE UTILITIES**

TOWN OF OAK ISLAND PLANNING  
ATTN: STEVE EDWARDS, DIRECTOR  
PH: 910-259-1274

PIEDMONT NATURAL GAS  
ATTN: CATHY PLEASANT  
PH: 910-251-2827

EMERGENCY DIAL 911  
POLICE - FIRE - RESCUE

TOWN OF OAK ISLAND PUBLIC UTILITY (WATER & SEWER)  
ENGINEERING / INSPECTIONS  
PH: 910-201-9007

BRUNSWICK ELECTRIC MEMBERSHIP CORP.  
SERVICE  
PH: 888-368-7289

AT&T  
ATTN: JAMES BATSON, ENGINEERING  
PH: 910-341-0741

### PINE FOREST PLANTATION PHASE 1, SECTION 1 PRELIMINARY PLAT

PROJECT # 16313.PE

FEBRUARY 16, 2017

**SHEET INDEX**

SHEET NUMBER	SHEET TITLE
	COVER SHEET
SV-1	SUBDIVISION PLAT
PP-1	PRELIMINARY PLAT SITE PLAN
C-5.0	PLAN & PROFILES INDEX SHEET
C-5.2-5	PLAN & PROFILES
C-5.7	PLAN VIEW - PUMP STATION

**PROJECT CONSULTANTS**

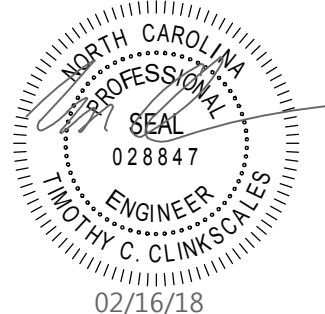
**APPLICANT**  
PINE FOREST DEVELOPMENT CO., LLC  
P.O. BOX 455  
BOONE, NC 28607  
MARK BRAMBELL (910-338-9011)

**ENGINEER/ LAND PLANNER/ LANDSCAPE ARCHITECT**  
PARAMOUNTE ENGINEERING, INC.  
122 CINEMA DRIVE, WILMINGTON, NC 28403  
CIVIL: TIM CLINKSCALES, PE (910-791-6707)  
LAND PLANNER: JIM CIRELLO, RLA (910-791-6707)

**SURVEYOR**  
PARAMOUNTE ENGINEERING, INC.  
122 CINEMA DRIVE  
WILMINGTON, NC 28403  
CHRIS GAGNE, PLS (910-791-6707)

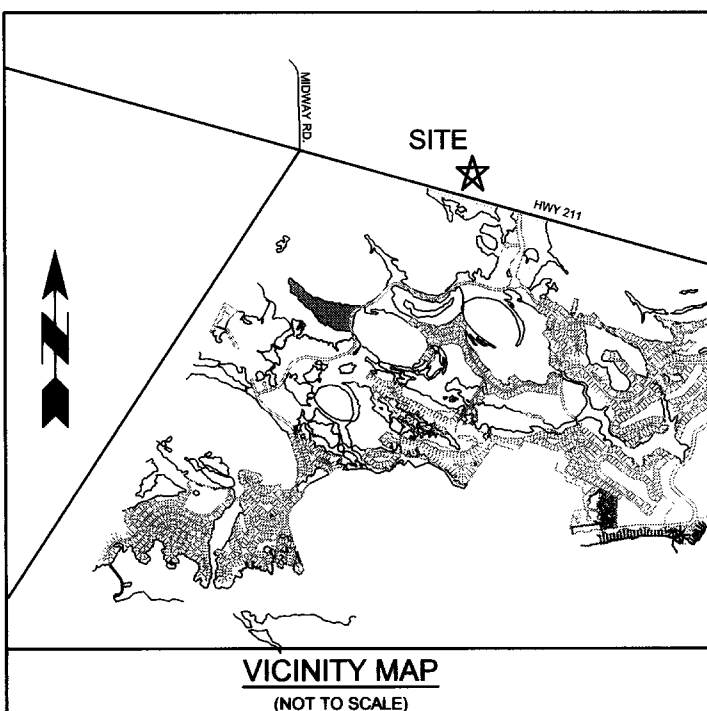
PREPARED BY:

**PARAMOUNTE**  
ENGINEERING, INC.  
122 Cinema Drive Wilmington, North Carolina 28403  
(910) 791-6707 (O) (910) 791-6760 (F)  
NC License #: C-2846



PRELIMINARY DESIGN - NOT RELEASED FOR CONSTRUCTION

Map Cabinet-104 Aug 51  
12/19/17  
104/50



#### CERTIFICATE OF REGISTRATION BY REGISTER OF DEEDS

BRUNSWICK COUNTY  
NORTH CAROLINA

FILED FOR REGISTRATION ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_  
AT \_\_\_\_\_ (A.M./P.M.) AND DULY RECORDED IN MAP BOOK \_\_\_\_\_  
AT PAGE \_\_\_\_\_

REGISTER OF DEEDS

#### CERTIFICATE OF OWNERSHIP

The undersigned hereby certifies that the land shown hereon is owned by EQUITY INVESTMENTS ASSOCIATES LLC (the "Owner").

R Thomas Sofield  
SPG Property LLC

#### CERTIFICATE OF BRUNSWICK COUNTY REVIEW OFFICER

I, M. Paces, Review Officer of Brunswick County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

M. Paces 12/19/17  
Review Officer Date

LINE	BEARING	DISTANCE
L1	N 15°32'29" E	95.74'
L2	N 76°39'15" E	42.26'
L3	S 74°27'31" E	152.64'
L4	N 15°32'29" E	198.88'
L5	N 14°52'01" E	175.12'
L6	N 14°52'01" E	275.34'
L7	N 01°35'44" E	158.92'
L8	N 22°47'41" W	40.45'
L9	N 00°00'00" W	12.60'
L10	N 90°00'00" W	100.00'
L11	S 00°00'00" E	12.60'
L12	S 22°47'41" E	40.45'
L13	S 01°35'44" W	158.92'
L14	S 15°32'29" W	227.03'
L15	N 74°27'31" W	95.51'
L16	S 15°32'29" W	60.00'
L17	S 74°27'31" E	95.51'
L18	S 15°32'29" W	95.81'
L19	N 30°09'55" E	216.20'
L20	N 25°37'11" E	129.60'
L21	N 30°37'46" E	56.00'
L22	N 01°20'26" E	37.87'
L23	N 41°34'43" E	95.62'
L24	S 79°50'59" E	15.83'
L25	N 61°45'41" E	38.51'
L26	N 34°16'23" E	14.23'
L27	N 22°20'20" W	20.46'
L28	N 42°48'38" E	59.29'
L29	N 29°49'26" E	39.08'
L30	N 58°16'32" E	19.60'
L31	N 67°55'57" E	32.21'
L32	N 89°19'16" E	26.45'
L33	N 55°12'31" E	50.05'
L34	N 43°50'58" E	46.31'
L35	N 14°06'41" E	51.71'
L36	N 45°44'43" E	87.84'
L37	N 10°42'27" W	151.12'
L38	S 44°17'51" E	46.66'
L39	N 82°56'13" E	117.83'
L40	N 86°32'33" E	92.62'
L41	S 80°18'17" E	93.86'
L42	N 83°42'33" E	20.85'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA
C1	750.00'	378.13'	374.14'	N 01°05'52" E	28°53'14"
C2	60.00'	157.82'	116.10'	N 57°30'29" E	150°42'21"
C3	950.00'	34.76'	34.75'	N 02°38'37" E	2°05'46"
C8	850.00'	206.89'	206.38'	S 08°34'07" W	13°56'45"
C10	100.00'	75.58'	73.78'	S 23°33'50" E	43°17'43"
C11	360.00'	189.93'	187.73'	S 04°08'15" E	30°13'40"
C12	650.00'	394.72'	388.68'	S 01°51'12" E	34°47'35"
C13	100.00'	210.75'	173.86'	N 15°09'54" E	120°45'10"

#### OWNERS:

- PIN: 206814425540 HORNE WILLIAM PEARCE JR, PB H, PG 281
- PIN: 206818426411 HORNE WILLIAM PEARCE JR, PB H, PG 281
- PIN: 206818426382 HORNE MARTHA PRISCILLA, PB H, PG 281
- PIN: 206819512705 T & G REAL ESTATE SERVICES INC, PB H, PG 281
- PIN: 206819512782 T & G REAL ESTATE SERVICES INC, DB 3680, PG 1205
- PIN: 206819514618 QUAINANCE INC, PB 78, PG 73
- PIN: 206819515663 QUAINANCE INC, PB 78, PG 73
- PIN: 206819516672 HICKS SHARON A, PB H, PG 281
- PIN: 206819517589 HAWLEY CHARLES B, PB H, PG 281
- PIN: 206820924151 COASTAL REALTY & DEVELOPMENT LLC, DB 2290, PG 435
- PIN: 206820924380 COASTAL REALTY & DEVELOPMENT LLC, DB 2290, PG 437
- PIN: 206816924571 COASTAL REALTY & DEVELOPMENT LLC, DB 2290, PG 439
- PIN: 206816925712 COASTAL REALTY & DEVELOPMENT LLC, DB 2290, PG 439

#### LEGEND

- IRF NO. 5 IRON ROD FOUND
- IRS NO. 5 IRON ROD SET
- NC DISK NC DOT DISK FOUND

#### NOTES:

- Areas calculated by coordinates.
- No NCGS monument located within 2000'.
- Zoning of parcel is Oak Island CLD
- Portions of this property are in zone AE (BE calculated) and in Flood Zone X (outside of 100-year flood zone) as shown on FEMA Flood Insurance Rate Map Community Panel Number 372026800J.

#### CERTIFICATE OF APPROVAL

I HEREBY CERTIFY THAT THE SUBDIVISION SHOWN ON THIS PLAT DOES NOT INVOLVE THE CREATION OF NEW PUBLIC STREETS OR IMPROVEMENTS TO EXISTING PUBLIC STREETS, OR THE EXTENSION OF PUBLIC WATER OR SEWER FACILITIES, AND THAT THE SUBDIVISION SHOWN IS IN ALL RESPECTS IN COMPLIANCE WITH THE SUBDIVISION REGULATIONS OF THE TOWN OF OAK ISLAND.

Jacob Varco 12-19-2017  
SUBDIVISION ADMINISTRATOR DATE

BRUNSWICK COUNTY, NC REGISTER OF DEEDS  
Brenda H. Clemmons PLAT  
page 1 of 1

#### PHASE 1

PIN: 206811652209  
EQUITY INVESTMENTS  
ASSOCIATES LLC  
PB 2 PG 141

AREA= 7,980,166 SF ±  
183.20 AC ±

AS PER RECORDATION OF  
PROPOSED PLAT

#### CERTIFICATE OF ACCURACY AND MAPPING

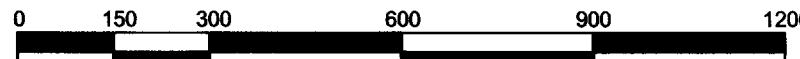
I, CHRIS GAGNE, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTIONS RECORDED IN THE REFERENCES NOTED ON THIS DRAWING). THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN AS DASHED LINES AS DRAWN FROM INFORMATION NOTED; THAT THE RATIO OF PRECISION IS 1:15,000; AND THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED, WITNESS MY ORIGINAL SIGNATURE, REGISTRATION AND SEAL THIS 13 DAY OF DECEMBER, A.D., 2017

Chris Gagne PLS  
CHRIS GAGNE, PLS LICENSE NO. L-4700

I, CHRIS GAGNE, CERTIFY THAT THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION.

Chris Gagne PLS  
CHRIS GAGNE, PLS LICENSE NO. L-4700

SCALE: 1"=300'



DATE	12/19/17
REVISIONS	
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EQUITY INVESTMENTS  
ASSOCIATES, LLC

PARAMOUNT ENGINEERING  
WILMINGTON, NC  
122 CINEMA DRIVE  
Wilmington, North Carolina 28403  
(910) 791-6707 (O) (910) 791-6760 (F)  
NC License #: C-2846

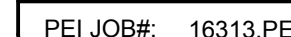
SUBDIVISION PLAT  
PHASE 1, PINE FOREST PLANTATION  
PORTION OF LANDS IN DB 1645 PG 937  
LOCKWOOD FOLLY TOWNSHIP  
BRUNSWICK COUNTY, NC

SEAL  
CHRIS GAGNE  
PLS  
L-4700  
12/13/17

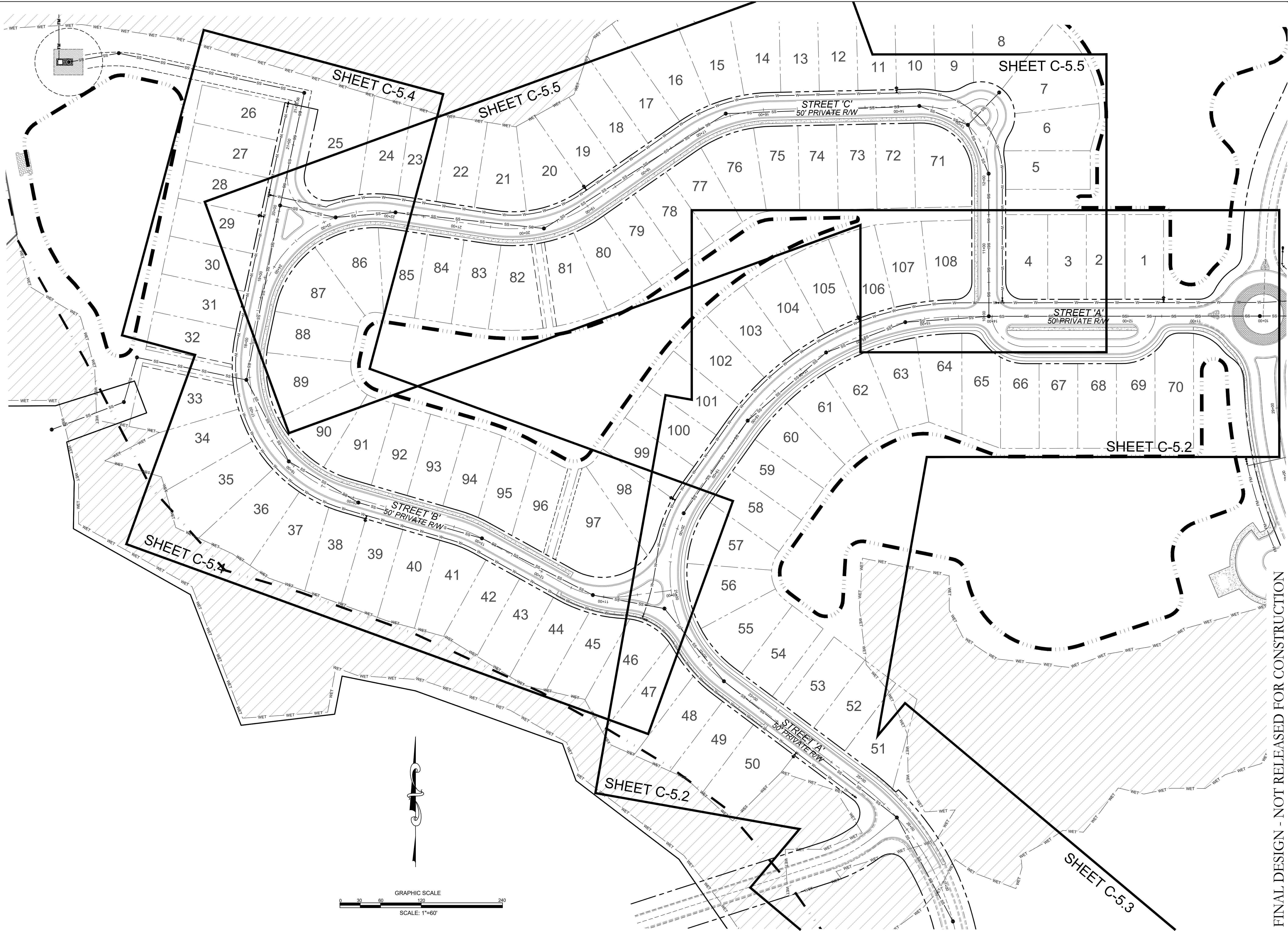
SV-1

PEI JOB#: 18313.PE DECEMBER 4 2017





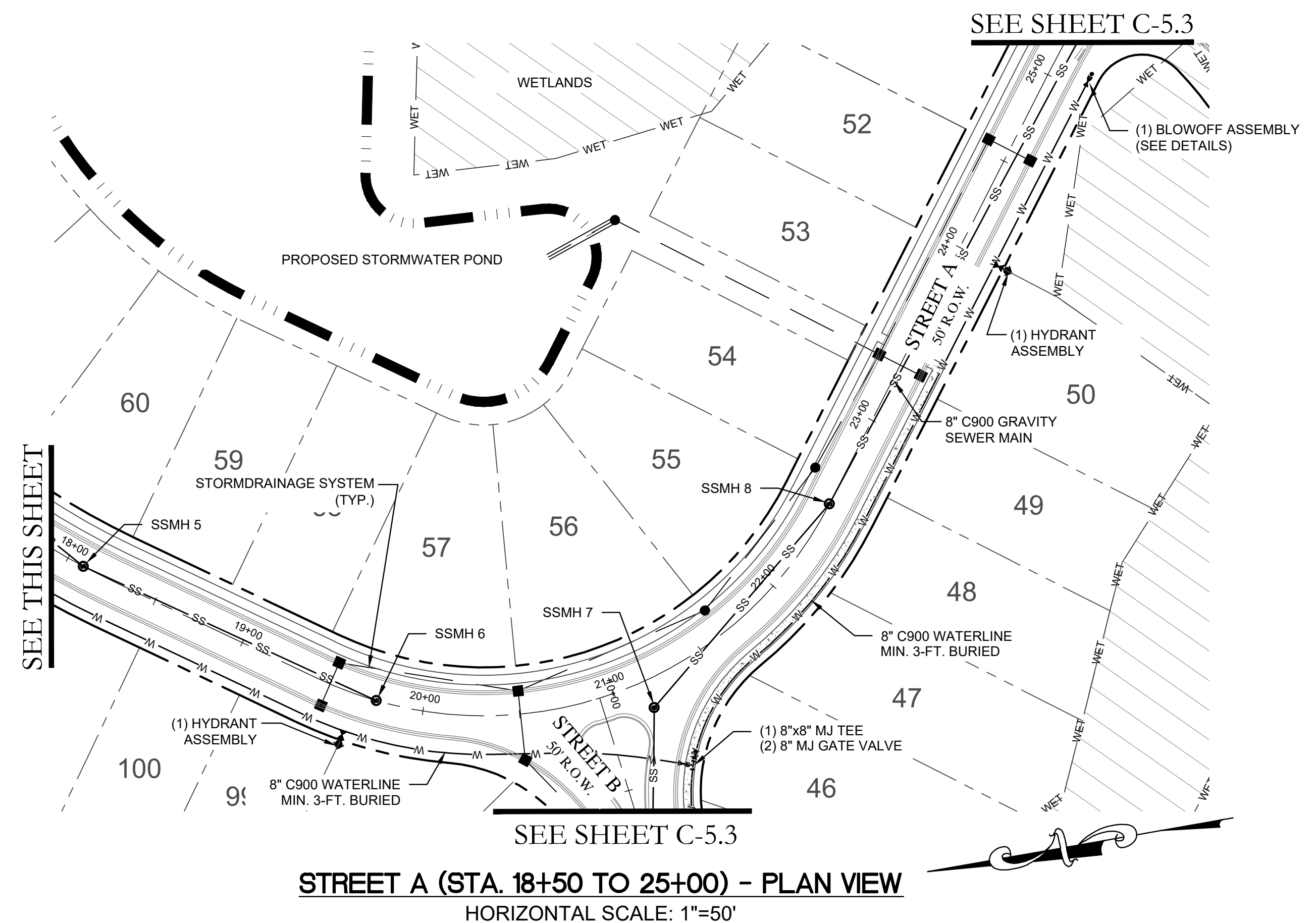




FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

<b>PROJECT STATUS</b> DESIGNED BY: [Signature] PRELIMINARY LAYOUT: [Signature] FINAL DESIGN: [Signature] RELEASED FOR CONSTRUCTION: [Signature]		<b>DRAWING INFORMATION</b> DATE: 02/14/18 SCALE: 1"=60' DRAWN: [Signature] CHECKED: [Signature]	
<b>SEAL</b> NORTH CAROLINA PROFESSIONAL ENGINEER 028847 JIMMY S. CLARK 02/15/18		<b>C-5.0</b> PEI JOB#: 16313.PE	
<b>PLAN &amp; PROFILES INDEX SHEET</b> PINE FOREST PLANTATION TOWN OF OAK ISLAND BRUNSWICK CO., NORTH CAROLINA		<b>CLIENT INFORMATION:</b> PINE FOREST DEVELOPMENT CO, LLC P.O. BOX 455 BOONE, NC 28607-0455	
<b>PARAMOUNT ENGINEERING</b> 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License #: C-2846		<b>REVISIONS:</b>	





**STREET A (STA. 10+00 TO 18+50) - PLAN VIEW**  
HORIZONTAL SCALE: 1"=50'

2" FM FITTING NOTE ("RJ"):

- PER BRUNS. CO. SPECIFICATIONS (TS 021.01): FITTINGS FOR PVC PIPE THREE (3) INCH AND SMALLER: DEEP BELL, DUCTILE IRON, WITH KNUCKLE RESTRAINT, AS MANUFACTURED BY SIGMA, HARCO, OR APPROVED EQUAL. GLUE JOINT FITTINGS ARE ALSO ACCEPTABLE FOR PVC PIPE THREE (3) INCHES AND SMALLER.



FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

# PLAN & PROFILES STREET A

**PROJECT STATUS**  
CONCEPTUAL LAYOUT:  
PRELIMINARY LAYOUT:  
FINAL DESIGN:  
RELEASED FOR CONST:

C-5.2

PEI JOB#: 16313.PE

**CLIENT INFORMATION:**

# PARAMOUNT

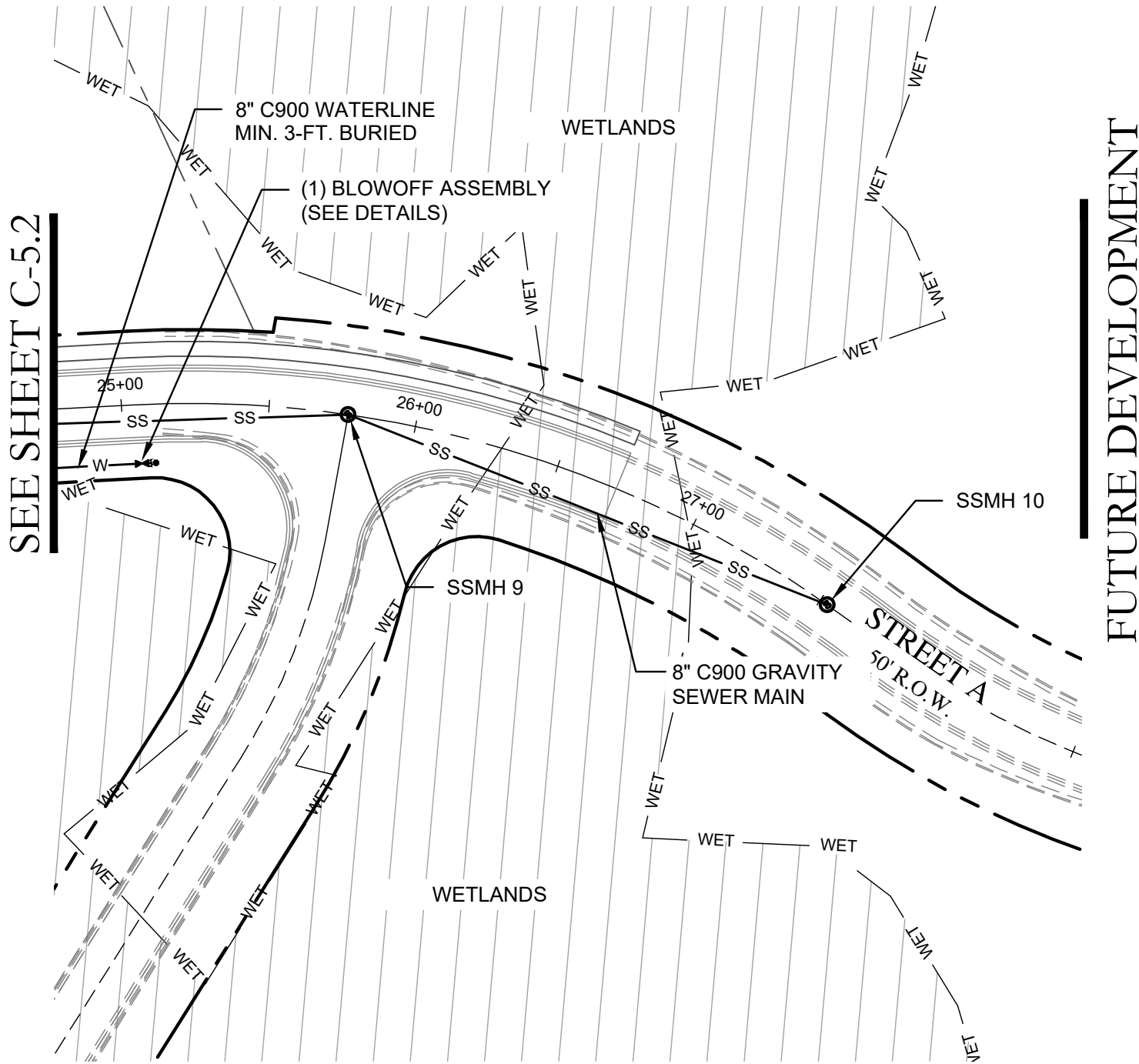
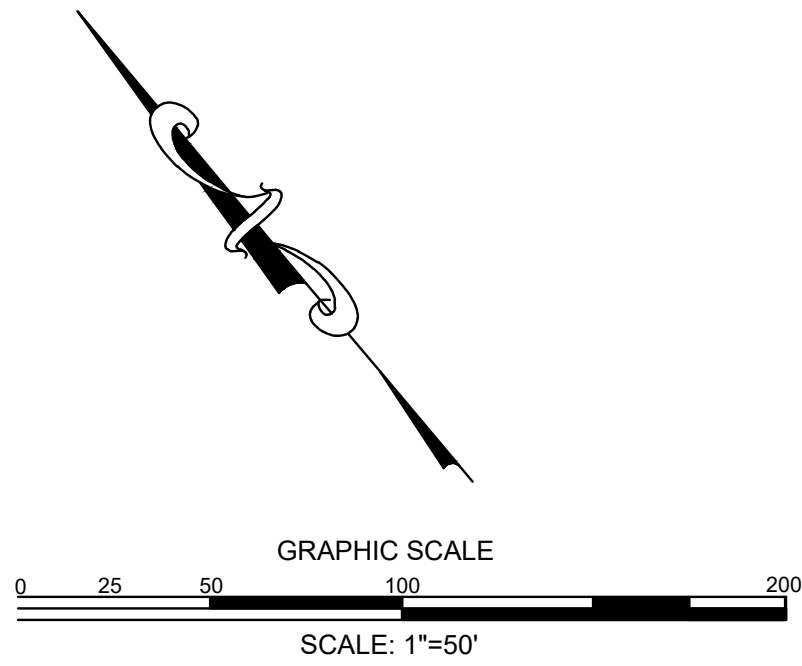
122 Cinema Drive  
Wilmington, North Carolina 28403  
(910) 791-6707 (O) (910) 791-6760 (F)

REVIEWS

PINE FOREST DEVELOPMENT CO, LLC  
P.O. BOX 455  
BOONE, NC 28607-0455

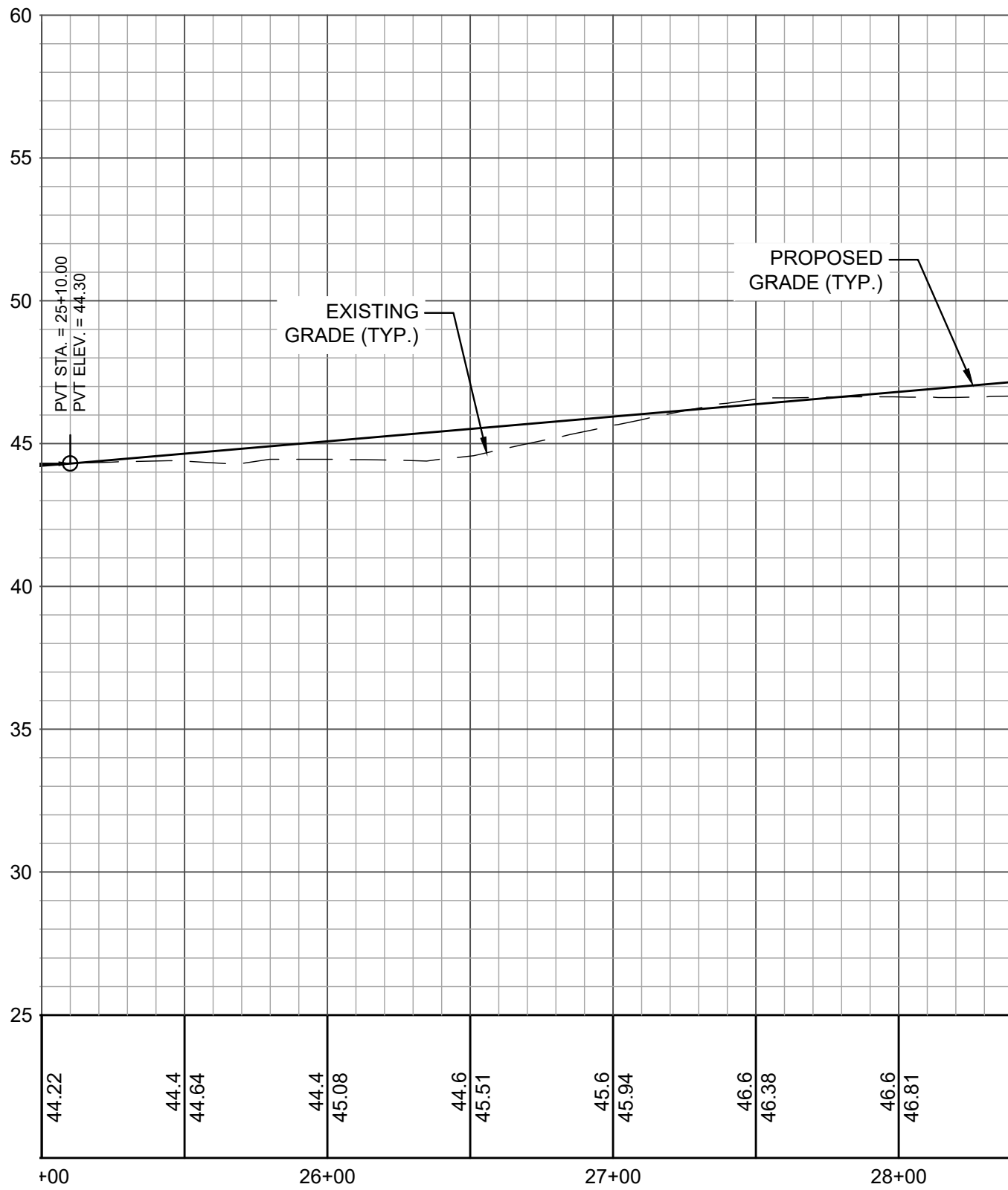


- UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)
1. WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
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STREET A (STA. 25+00 TO END) - PLAN VIEW  
HORIZONTAL SCALE: 1"=50'

- 2" FM FITTING NOTE ("RJ"):
- PER BRUNS, CO. SPECIFICATIONS (TS 021.01):  
FITTINGS FOR PVC PIPE THREE (3) INCH AND SMALLER: DEEP BELL, DUCTILE IRON, WITH KNUCKLE RESTRAINT, AS MANUFACTURED BY SIGMA, HARCO, OR APPROVED EQUAL. GLUE JOINT FITTINGS ARE ALSO ACCEPTABLE FOR PVC PIPE THREE (3) INCHES AND SMALLER.



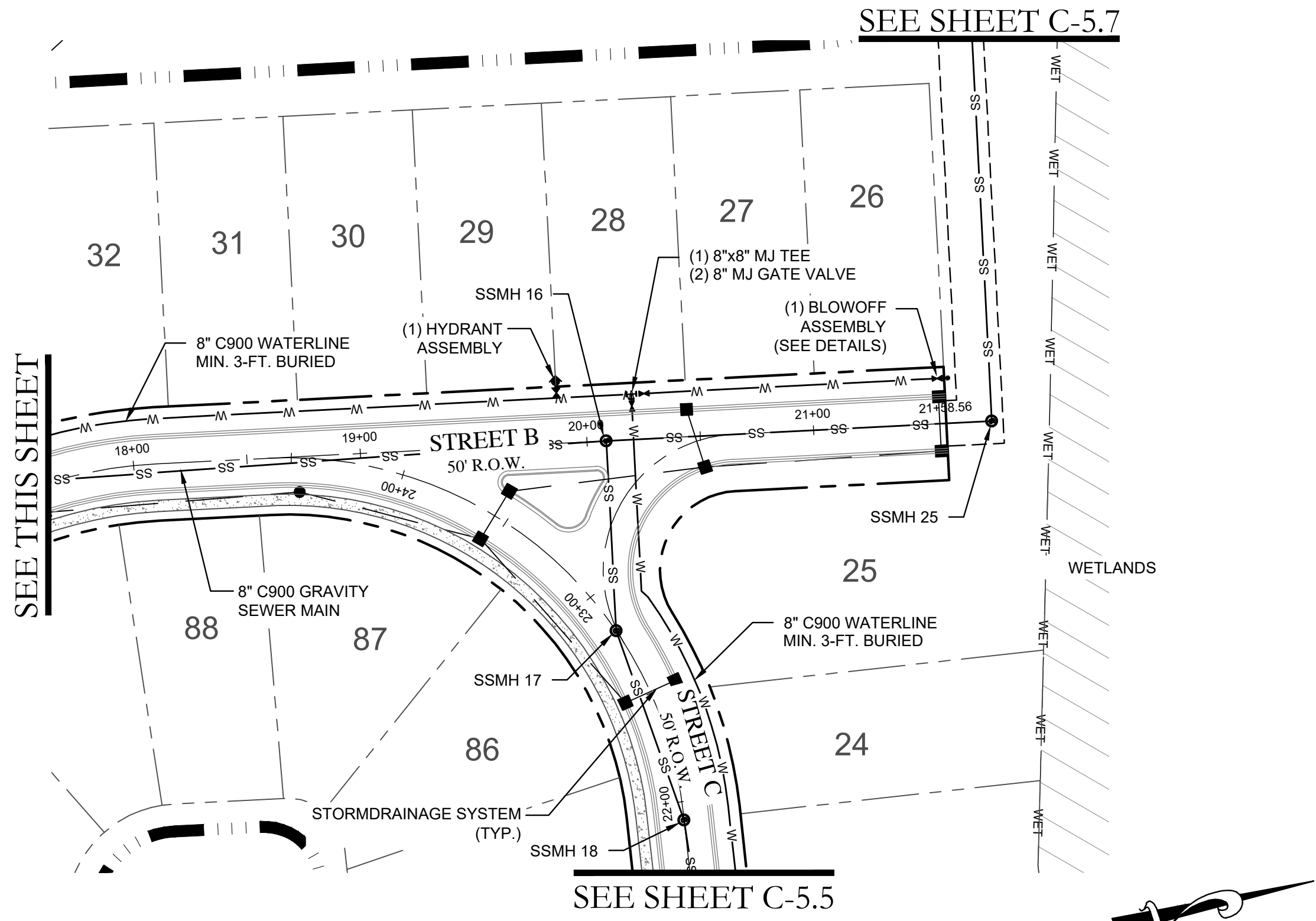
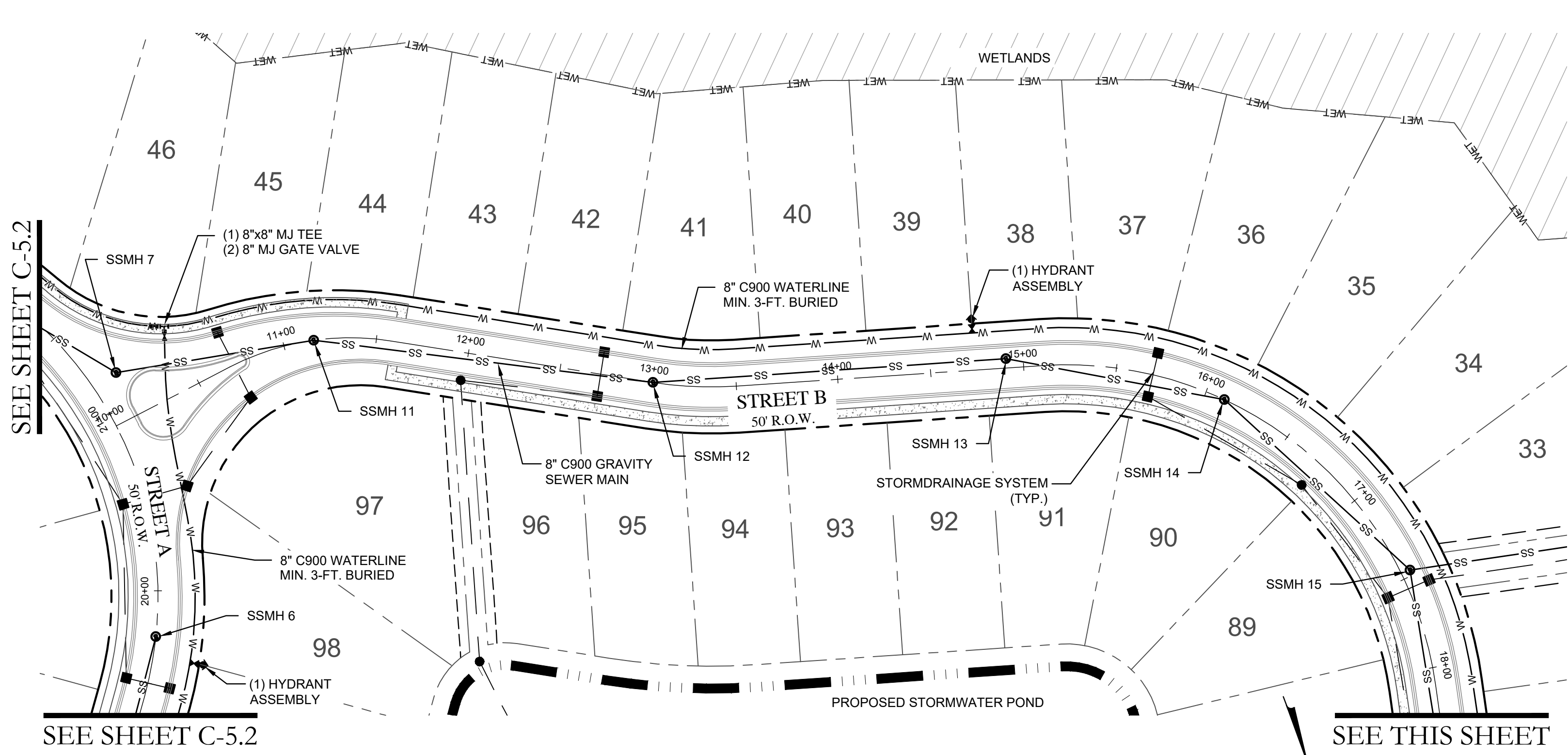
STREET A (STA. 25+00 TO END) - PROFILE VIEW  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

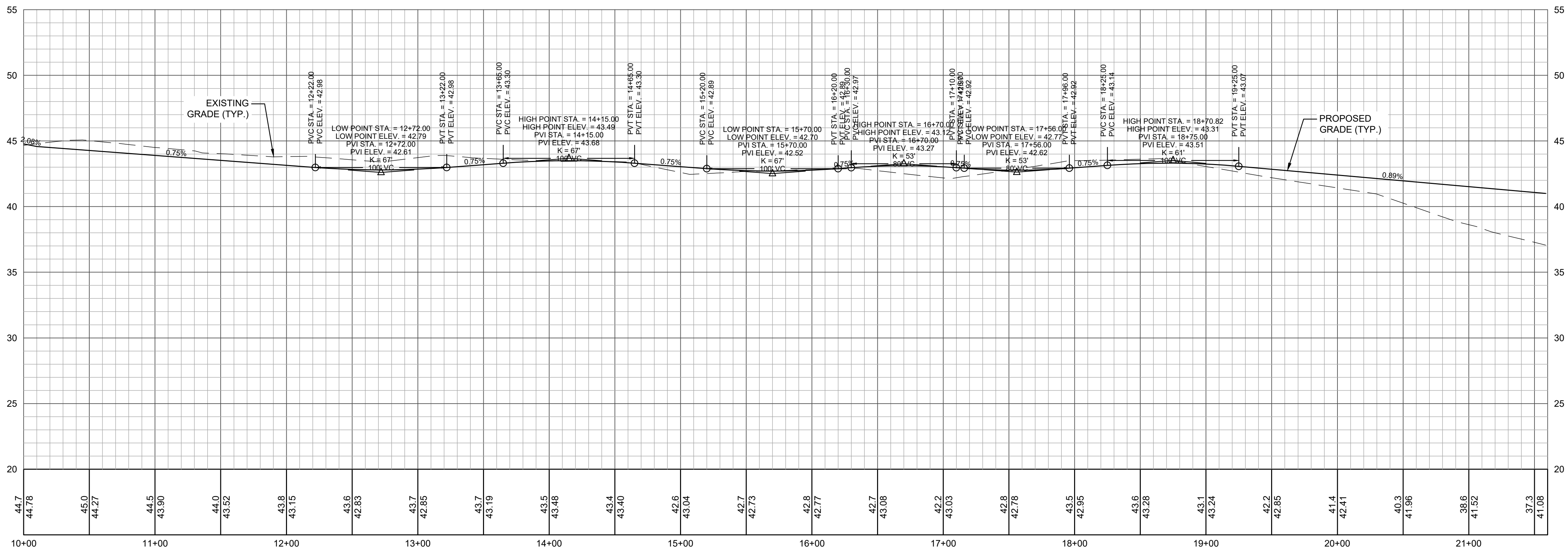
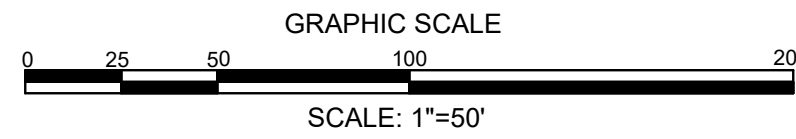
PROJECT STATUS DESIGNED BY: [Signature] PRELIMINARY LAYOUT: [Signature] FINAL DESIGN: [Signature] RELEASED FOR CONSTRUCTION: [Signature]		SEAL NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER 028847 02/15/18	C-5.3
DRAWING INFORMATION DATE: 02/14/18 SCALE: 1"=50' DRAWN: [Signature] CHECKED: [Signature]			
CLIENT INFORMATION:  PINE FOREST DEVELOPMENT CO., LLC P.O. BOX 455 BOONE, NC 28607-0455		PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License #: C-2846	
PLAN & PROFILES STREET A PINE FOREST PLANTATION TOWN OF OAK ISLAND BRUNSWICK CO., NORTH CAROLINA		PEI JOB#: 16313.PE	





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STREET B (STA. 10+00 TO END) - PROFILE VIEW  
HORIZONTAL SCALE: 1"=50'  
VERTICAL SCALE: 1"=5'



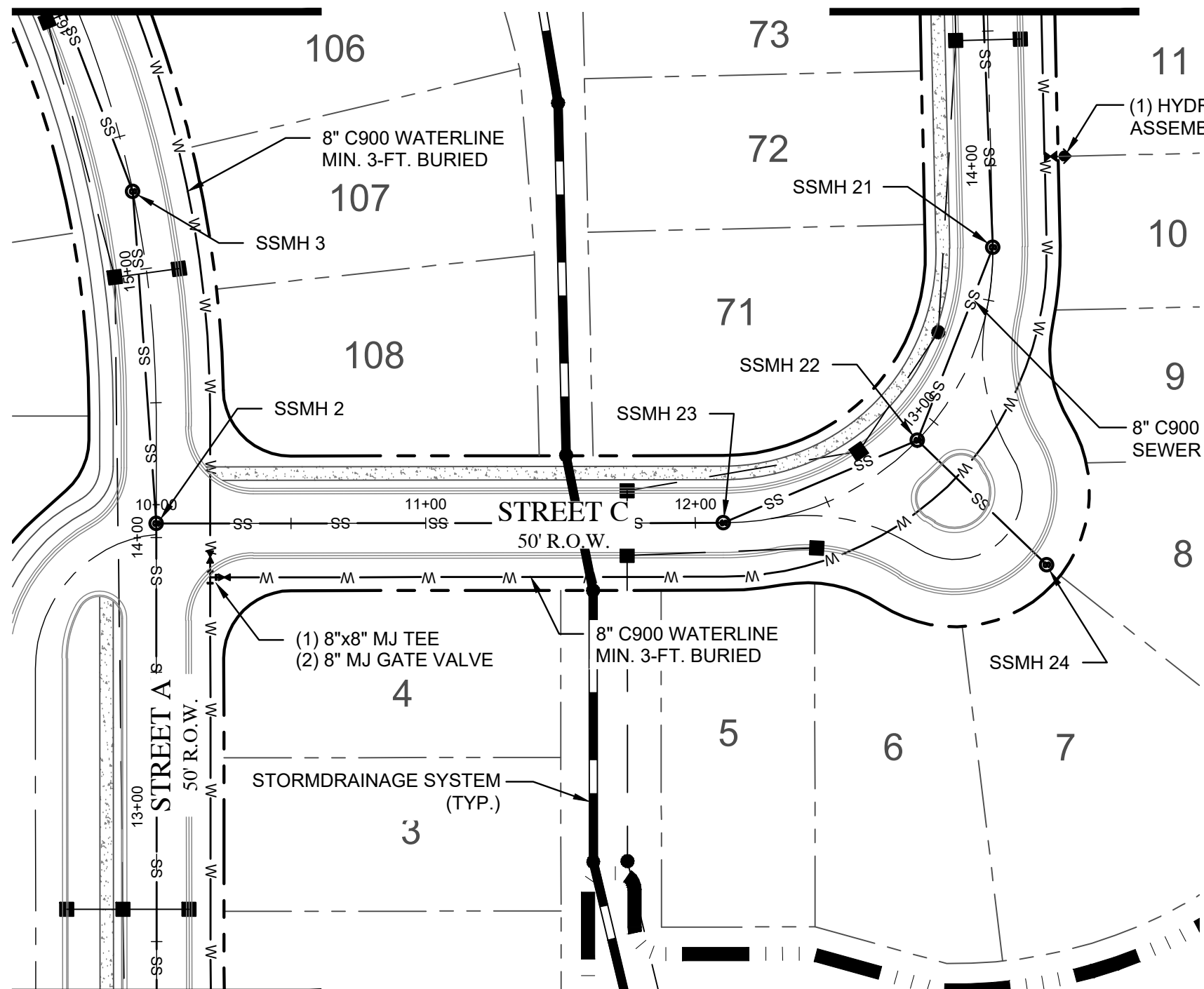
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C-5.4	
PEI JOB#: 16313.PE	



SEE SHEET C-5.2

SEE THIS SHEET



SEE SHEET C-5.2

**STREET B (STA. 10+00 TO 14+50) - PLAN VIEW**  
HORIZONTAL SCALE: 1"=50'

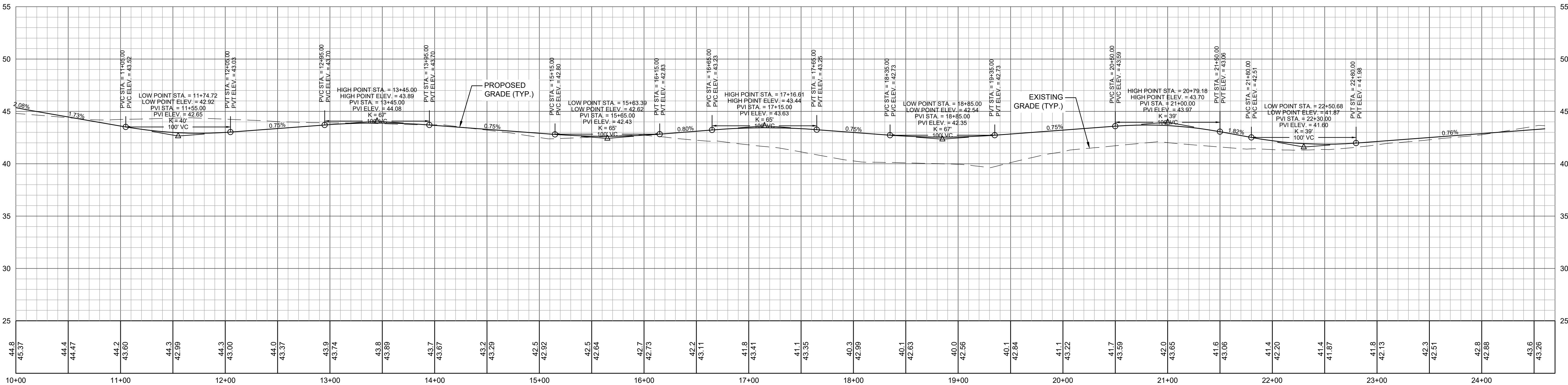
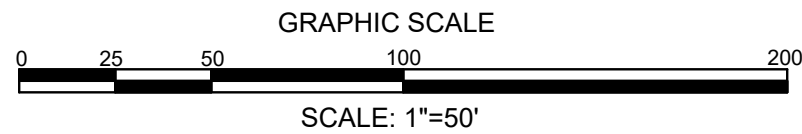
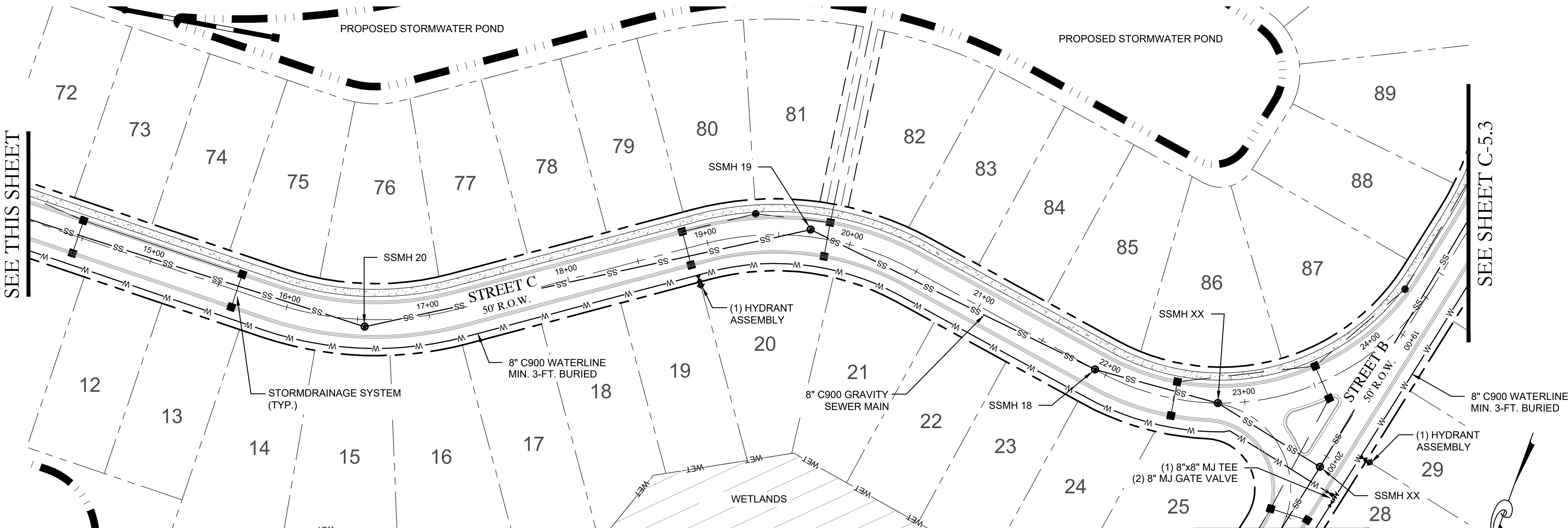
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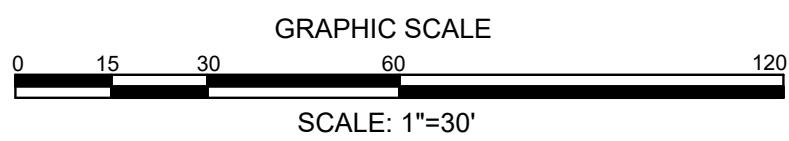
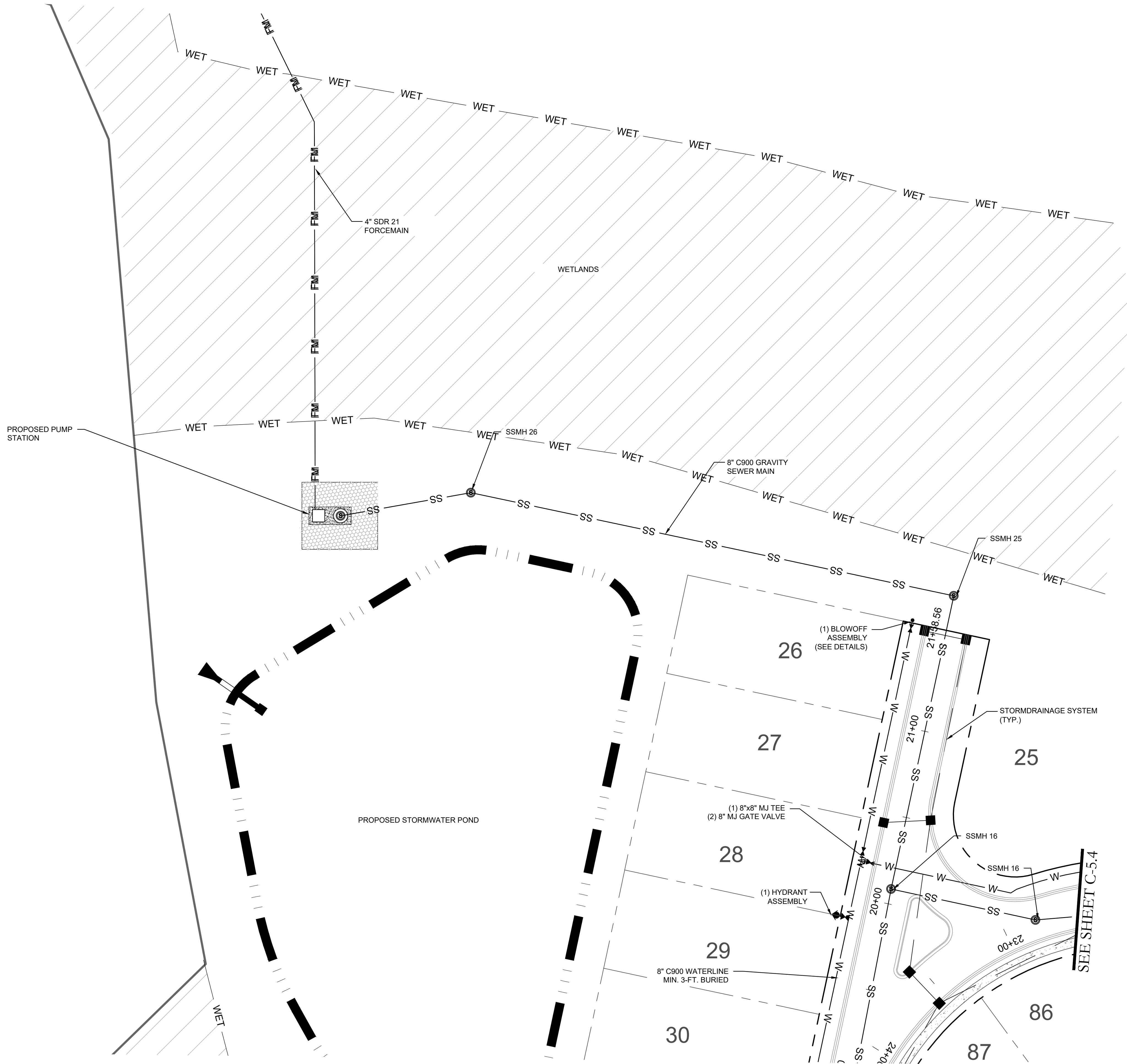
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PEI JOB#: 16313.PE	





FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PROJECT STATUS DESIGNED BY: [Signature] DRAWN BY: [Signature] CHECKED BY: [Signature] DATE: 01/22/18 SCALE: 1"=30'	SEAL NORTH CAROLINA ENGINEER 028847 01/22/18	PLAN VIEW PUMP STATION PINE FOREST PLANTATION TOWN OF OAK ISLAND BRUNSWICK CO., NORTH CAROLINA	CLIENT INFORMATION:  PINE FOREST DEVELOPMENT CO, LLC P.O. BOX 455 BOONE, NC 28607-0455	REVISIONS:

PEI JOB#: 16313.PE



**TOWN OF OAK ISLAND  
PLANNING BOARD  
AGENDA ITEM MEMO**

Agenda Item:

Date: 3-15-18

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**Issue:** Preliminary Flood Maps Adoption and text amendments to Flood Damage Prevention Ordinance

**Department:** Planning & Zoning Administrator

**Presented by:** Steve Edwards

**Estimated Time for Discussion:** 15 Minutes

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**Subject Summary:**

On February 28, 2018, the attached letter of final determination was released by the Federal Emergency Management Agency notifying the Town of Oak Island that the preliminary flood maps released on August 29, 2014 are considered final and will become effective on August 28, 2018. With this notice, the Town of Oak Island can move forward with the adoption of the maps as to its effective date. The Town's adoptions of these maps will allow the Town to issue building permits as to the adoption date, but insurance policy will not be adjusted until the August 28, 2018 effective date.

Proposed text amendments to Flood Damage Prevention Ordinance are changes made by the NC Department of Public Safety/Emergency Management Risk Management.

---

**Attachments:** Flood Damage Prevention Ordinance with amendments and Land Use Plan consistency statement

**Recommendation/Action Needed:**

**Motion:** I make a Motion to adopt the preliminary flood maps released on August 29<sup>th</sup>, 2014 with the effective date to be August 28, 2018.

**Motion:** I make a motion to adopt the proposed text amendments to the Flood Damage Prevention Ordinance as written.

**Funds Needed:** \$0.00

**Follow-up Action Needed:** Update into the Code of Ordinances

---

**Attachment:** Letter of Final Determination

Proposed text amendments to Flood Damage Prevention Ordinance

## ARTICLE IV. - FLOOD DAMAGE PREVENTION<sup>91</sup>

### DIVISION 1. - GENERALLY

#### Sec. 18-541. Statutory authorization.

~~County. The legislature of the State of North Carolina has in part 6, article 21 of chapter 143; parts 3 and 4 of article 18 of chapter 153A; and part 121, article 6 of chapter 153A of the North Carolina General Statutes, delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare.~~

Therefore, the Town Council of Oak Island, North Carolina, does ordain as follows:

(Amend. of 10-10-2017, Art. 1, § A)

#### Sec. 18-546. - Basis for establishing the special flood hazard areas.

The special flood hazard areas are those identified under the cooperating technical state (CTS) agreement between the State of North Carolina and FEMA in its FIS dated ~~June 2, 2006~~ August 28, 2018 for Brunswick County and associated DFIRM panels, including any digital data developed as part of the FIS, which are adopted by reference and declared a part of this article. Future revisions to the FIS and DFIRM panels that do not change flood hazard data within the jurisdictional authority of Oak Island are also adopted by reference and declared a part of this article. Subsequent letter of map revisions (LOMRs) and/or physical map revisions (PMRs) shall be adopted within three months.

(Amend. of 10-10-2017, Art. 3, § H)

#### Sec. 18-553. Definitions.

*Area of shallow flooding* means a designated zone AO or AH on a community's flood insurance rate map (FIRM) with base flood depths determined to be from one to three feet. These areas are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

~~*Mean sea level* means, for purposes of this article, the North American Vertical Datum (NAVD) as corrected in 1988, to which base flood elevations (BFEs) shown on a DFIRM are referenced. North Carolina uses NAVD 1988.~~

*Water surface elevation (WSE)* means the height, in relation to ~~mean sea level~~ NAVD 1988, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

(Amend. of 10-10-2017, Art. 2)

### DIVISION 2. - ADMINISTRATION

#### Sec. 18-581. - Designation of floodplain administrator.

The development services director or designee, hereinafter referred to as the "floodplain administrator", is hereby appointed to administer and implement the provisions of this article. ~~The floodplain administrator may delegate performance of certain duties to other employees. In instances where the Floodplain Administrator receives assistance from other to complete tasks to administer and implement this ordinance, the Floodplain Administrator shall be responsible for the coordination and community's overall compliance with the National Flood Insurance Program and the provisions of this ordinance.~~

(Amend. of 10-10-2017, Art. 4, § A)

Sec. 18-582. - Floodplain development application, permit and certification requirements.

- (a) (4) c. The following, in coastal high hazard areas, in accordance with the provisions of subsection ~~18-612(4)d~~ 18-612(4)e. and section 18-617 and (section 18-618 if applicable):

(c) (1) Elevation certificates.

- a. An elevation certificate (FEMA Form 086-0-33) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to ~~mean-sea level~~ NAVD 1988. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.
- b. An elevation certificate (FEMA Form 086-0-33) is required after the reference level is established. Within seven calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to ~~mean-sea level~~ NAVD 1988. Any work done within the seven-day calendar period and prior to submission of the certification shall be at the permit holder's risk. The floodplain administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being permitted to proceed. Failure to submit the certification or failure to make required corrections shall be cause to issue a stop work order for the project.

(2) Floodproofing certificate.

- a. If nonresidential floodproofing is used to meet the regulatory flood protection elevation requirements, a floodproofing certificate (FEMA form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to ~~mean-sea level~~ NAVD 1988. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The floodplain administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a certificate of compliance/occupancy.

Sec. 18-583 Duties and responsibilities of the floodplain administrator.

- (6) Obtain actual elevation (in relation to ~~mean-sea level~~ NAVD 1988) of the reference level (including basement) and all attendant utilities of all new and substantially improved structures, in accordance with the provisions of subsection 18-582(c).
- (7) Obtain actual elevation (in relation to ~~mean-sea level~~ NAVD 1988) to which all new and substantially improved structures and utilities have been floodproofed, in accordance with the provisions of subsection 18-582(c).
- (8) Obtain actual elevation (in relation to ~~mean-sea level~~ NAVD 1988) of all public utilities in accordance with the provisions of subsection 18-582(c).

(Amend. of 10-10-2017, Art. 4, § C)



Sec. 18-584. - Corrective procedures.

- (d) *Appeal.* Any owner who has received an order to take corrective action may appeal the order to the ~~local elected governing body~~ Board of adjustment by giving notice of appeal in writing to the floodplain administrator and the clerk within ten days following issuance of the final order. In the absence of an appeal, the order of the floodplain administrator shall be final. The ~~local governing body~~ Board of Adjustment shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.

(Amend. of 10-10-2017, Art. 5, § G)

Sec. 18-618. - Standards for coastal A zones (zone CAZ) LiMWA.

- (7) Fill/grading must meet the provisions of subsection ~~18-616(11)~~ 18-616(8).
- (8) Decks and patios must meet the provisions of subsections ~~18-616(15)~~ 18-616(12) and ~~(16)~~ (13).
- (9) In coastal high hazard areas, development activities other than buildings and structures must meet the provisions of subsection ~~18-616(17)~~ 18-616(14).

(Amend. of 10-10-2017, Art. 5, § H)



# Federal Emergency Management Agency

Washington, D.C. 20472

February 28, 2018

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:  
115I

The Honorable Cynthia Brochure  
Mayor, Town of Oak Island  
4601 East Oak Island Drive  
Oak Island, North Carolina 28465

Community No.: 370523  
Community: Town of Oak Island,  
Brunswick County,  
North Carolina  
Map Panels Affected: See enclosed  
Summary of Map Actions (SOMA)

Dear Mayor Brochure:

On August 29, 2014, you were provided copies of the preliminary Flood Insurance Study (FIS) report for Brunswick County, North Carolina and Incorporated Areas and Flood Insurance Rate Map (FIRM) panels for your community. You were also notified of the proposed flood hazard information reflected in the FIS report and FIRM panels and of the dates the proposed flood hazard determinations would be published in your local newspaper. The flood hazard determinations for your community may include addition or modification to Base Flood Elevations, base flood depths, Special Flood Hazard Areas (SFHAs), zone designations, and regulatory floodways. SFHAs are the areas subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). The 90-day appeal period that was initiated on October 29, 2015, when the Federal Emergency Management Agency (FEMA) published a notice of proposed flood hazard determinations for your community in *The State Port Pilot*, *The Brunswick Beacon* and *The Star-News*, has elapsed.

FEMA received no requests for changes in the flood hazard determinations. Therefore, the determination (copy enclosed) of the Agency as to the flood hazard information for your community is considered final. The notice of final flood hazard determinations will be published in the *Federal Register* as soon as possible. The modified flood hazard information and revised map panels, as referenced on the enclosed SOMA, are effective as of August 28, 2018, and revise the FIS report and FIRM which were in effect prior to that date. For insurance rating purposes, the community number and new suffix code for the panels being revised are indicated on the maps and must be used for all new policies and renewals. Final printed copies of the report and maps will be mailed to you in the near future.

To assist your community in maintaining the FIRM, we have enclosed a SOMA to document how previous Letters of Map Change (LOMCs) (i.e., Letters of Map Amendment [LOMAs], Letters of Map Revision [LOMRs]) will be affected when the revised FIRM panels become effective. Information on LOMCs is presented in four categories: (1) LOMCs that have been included on the revised FIRM panels; (2) LOMCs that have not been shown on the revised FIRM panels because of scale limitations or because the LOMC that was issued had determined that the lots or structures involved were outside the SFHA shown on the FIRM; (3) LOMCs that have not been included on the revised FIRM panels because they are being

superseded by new detailed flood hazard data; and (4) LOMCs that will be re-determined. The LOMCs in Category 2 of this form are revalidated through a single letter that reaffirms the validity of a previously issued LOMC. LOMCs issued for multiple lots or structures where the determination for one or more of the lots or structures have changed (Category 4) cannot be revalidated through this administrative process. However, we will review the data which were previously submitted as part of the original LOMA or LOMR request and issue a new determination for the subject properties after the FIRM effective date.

By the effective date of the FIRM, your community is required, as a condition of continued eligibility in the National Flood Insurance Program (NFIP), to adopt or show evidence of adoption of floodplain management regulations that meet the standards of Section 60.3(e) of the NFIP regulations. These standards are the minimum requirements and do not supersede any State or local requirements of a more stringent nature.

It must be emphasized that all of the standards specified in Section 60.3(e) of the NFIP regulations must be enacted in a legally enforceable document. This includes the adoption of the effective FIS report and FIRM to which the regulations apply and the modifications made by this map revision. Some of the standards should already have been enacted by your community. Any additional requirements can be met by taking one of the following actions:

1. Amend existing regulations to incorporate any additional requirements of Section 60.3(e);
2. Adopt all of the standards of Section 60.3(e) into one new, comprehensive set of regulations; or,
3. Show evidence that regulations have previously been adopted that meet or exceed the minimum requirements of Section 60.3(e).

Communities that fail to enact the necessary floodplain management regulations will be suspended from participation in the NFIP and subject to the prohibitions contained in Section 202(a) of the Flood Disaster Protection Act of 1973 as amended.

The North Carolina Division of Emergency Management is available to assist your community with any difficulties you may be encountering in enacting the floodplain management regulations. Any questions may be directed to the following address:

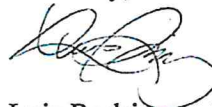
Mr. John D. Brubaker, P.E., CFM  
NFIP State Coordinator  
North Carolina Department of Public Safety  
Risk Management Section  
4218 Mail Service Center  
Raleigh, North Carolina 27699-4218  
(919) 825-2300  
dan.brubaker@ncdps.gov



In addition, a FEMA Region IV Compliance Specialist has been designated to assist your community. You may contact your FEMA Region IV Compliance Specialist at FEMA, Mitigation Division, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341, or at (770) 220-5400, or the FEMA Map eXchange (FMIX), toll free, at (877) 336-2627 (877-FEMA MAP).

Additional information and resources your community may find helpful regarding the NFIP and floodplain management, such as *Use of Flood Insurance Study (FIS) Data as Available Data*, *The National Flood Insurance Program Code of Federal Regulations*, *Answers to Questions About the National Flood Insurance Program*, *Frequently Asked Questions Regarding the Effect that Revised Flood Hazards have on Existing Structures*, and *National Flood Insurance Program Elevation Certificate and Instructions*, can be found on our website at <http://www.floodmaps.fema.gov/lfd>. Paper copies of these documents may also be obtained by calling our FMIX.

Sincerely,



Luis Rodriguez, P.E., Director  
Engineering and Modeling Division  
Federal Insurance and Mitigation Administration

Enclosures:

Final SOMA  
Notice of Final Flood Hazard Determinations  
FEMA 495 brochure: Adoption of FIRMs  
by Participating Communities

cc: Ms. Donna Coleman, Code Enforcement Officer, Town of Oak Island  
Ms. Tonda Shelton, North Carolina Floodplain Mapping Program (NCFMP), Program Manager  
Mr. Dan Brubaker, P.E., CFM, NFIP State Coordinator, North Carolina Department of Public Safety, Risk Management Section  
Mr. Randy Mundt, AICP, CFM, NCFMP Outreach and Planning Manager  
FEMA, Region IV