COUNTY COUNCIL OF BEAUFORT COUNTY
Community Development Department
Beaufort County Government Robert Smalls Complex
Administration Building, 100 Ribaut Road, Room 115
Mailing: Post Office Drawer 1228, Beaufort SC 29901-1228
Phone: (843) 255-2140 • FAX: (843) 255-9432

PLANNING COMMISSION
MONDAY, July 2, 2018
6:00 p.m.
Council Chambers, Administration Building
100 Ribaut Road, Beaufort, South Carolina

In accordance with South Carolina Code of Laws, 1976, Section 30-4-80(d), as amended, all local media was duly notified of the time, date, place and agenda of this meeting.

1. COMMISSIONER'S WORKSHOP – 5:30 P.M.
   Community Development Office, Room 115, Administration Building

2. REGULAR MEETING – 6:00 P.M.
   Council Chambers, Administration Building

3. CALL TO ORDER – 6:00 P.M.

4. PLEDGE OF ALLEGIANCE

5. REVIEW OF MEETING MINUTES FOR JUNE 4, 2018 (backup)

6. CHAIRMAN'S REPORT

7. PUBLIC COMMENT ON NON-AGENDA ITEMS

8. SOUTHERN BEAUFORT COUNTY STREET NAME CHANGE PETITION FROM SARAHBECCA DRIVE TO CRAMER AVENUE, PERPENDICULAR TO PALMETTO BLUFF ROAD, BLUFFTON; APPLICANT: DEANNA CRAMER (backup)

9. DISCUSSION OF PROPOSED PASSIVE PARK ORDINANCE / PASSIVE PARK COMPREHENSIVE PLAN FOR REVIEW AND COMMENT; STAFF: STEFANIE NAGID, PASSIVE PARK MANAGER (backup)

10. TEXT AMENDMENT TO THE BEAUFORT COUNTY COMMUNITY DEVELOPMENT CODE (CDC): APPENDIX B, DAUFUSKIE ISLAND CODE TO AMEND THE DAUFUSKIE ISLAND PLAN

11. ADMINISTRATIVE APPEAL OF THE STAFF REVIEW TEAM (SRT) APPROVAL OF THE UNDEVELOPED, UNSUBDIVIDED PORTION OF BEST BUY COMMERCIAL CENTER AT 1031, 1033, 1037, AND 1039 FORDING ISLAND ROAD R600-032-000-0455-0000; KNOWN AS OSPREY COVE APARTMENTS); APPELLANTS: THE CRESCENT PROPERTY OWNERS ASSOCIATION, INC, ET. AL. (backup)

The County Channel

12. NEW/OTHER BUSINESS:
    a. New Business
    b. Other Business: Next Scheduled Regular Planning Commission Meeting: Monday, August 6, 2018, at 6:00 p.m. in Council Chambers, County Administration Building, 100 Ribaut Road, Beaufort, South Carolina

13. ADJOURNMENT

ITEM 8

SOUTHERN BEAUFORT COUNTY STREET NAME CHANGE PETITION FROM SARAHBECCA DRIVE TO CRAMER AVENUE, PERPENDICULAR TO PALMETTO BLUFF ROAD, BLUFFTON; APPLICANT: DEANNA CRAMER

COUNTY COUNCIL OF BEAUFORT COUNTY
Beaufort County Community Development Department
Beaufort County Robert Smalls Complex
Administration Building, 100 Ribaut Road, Room 115
Post Office Drawer 1228, Beaufort SC 29901-1228
Phone: (843) 255-2140 • FAX: (843) 255-9432

June 13, 2018

Re: **Notice of Street Name Change Petition** to Change the Street Name **from Sarahbecca Drive to Cramer Avenue in** Bluffton, SC

To All Affected Property Owners:

The Beaufort County Community Development Department received a street name change petition to change the street name from Sarahbecca Drive to Cramer Avenue. The petition included signatures from over 51% of the affected property owners.

A **public meeting will be held on Monday, July 2, 2018**, at **6:00 p.m.** in the Beaufort County Council Chambers in the County Administration Building at 100 Ribaut Road, Beaufort, SC, at the regularly scheduled Beaufort County Planning Commission meeting.

You are cordially invited to attend the public meeting and provide comment on this street name change petition, if you so desire.

For further information or confirmation of the meeting, please call the Beaufort County Community Development Department at 843-255-2140.

Sincerely,

Eric T. Greenway, AICP.

Eric Greenway
Planning Director

Attachments:
1. Map of affected properties
2. Street Name Change Petition
3. List of Property Owners Notified

Beaufort County Sheriff's Office
E - 911 Addressing
Law Enforcement Center - P.O. Box 1758
Beaufort, SC 29901
Phone: (843) 255-4017 Fax: (843) 255-4008

Street Name Change Petition

Date 2018-05-14

We, the undersigned property owners, request that our street, presently named: Sarahbecca Dr

be changed to: Cramer Ave

The Road is located in Bluffton Island/Township, near the intersection of Plametto Bluff Rd

and Sarahbecca Dr in the County of Beaufort, in the State of South Carolina.

Name of Property Owner(s)	Parcel Tax ID Number	Legal Signature	Telephone Number
Arthur & Deanna Cramer	R600 037 000 028C 0000	Arthur Cramer	843-707-6413
Arthur & Deanna Cramer	R600 037 000 028B 0000	Arthur Cramer	843-707-6413
Ben Kennedy / New South Living	R600 037 000 0037 0000		843-837-1119

Contact:

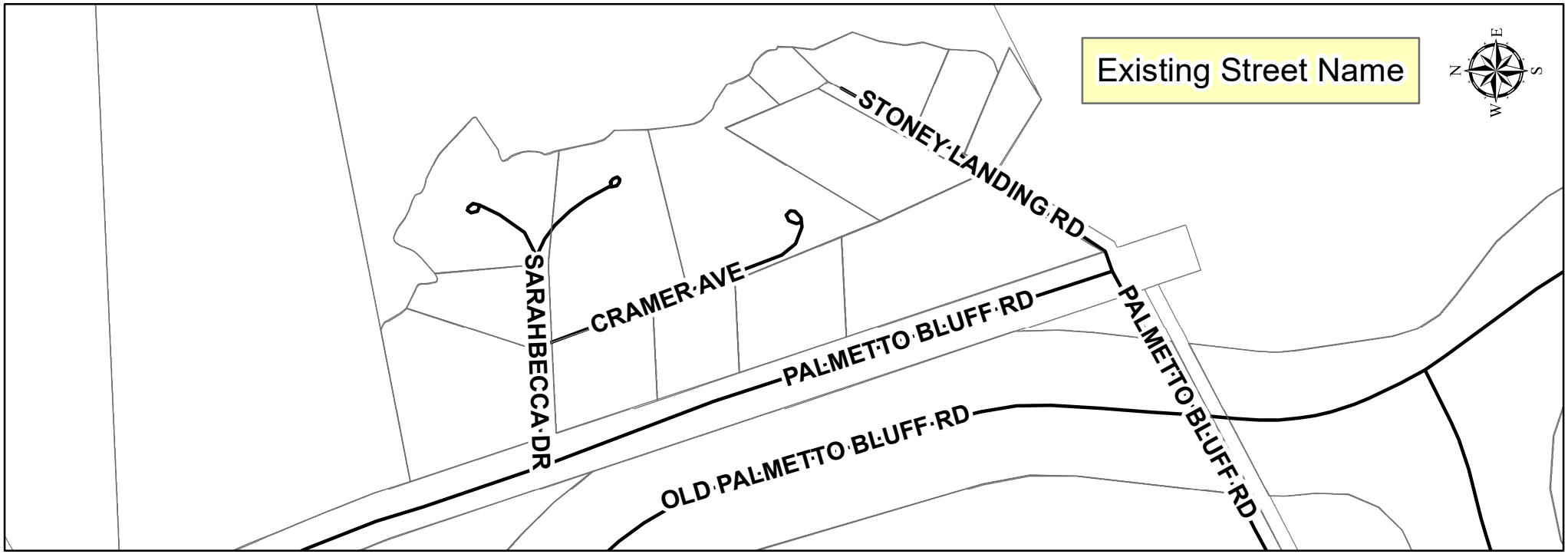
Deanna Cramer	9 Cramer Ave Bluffton SC 29910	8437076413
Name	Address	Telephone

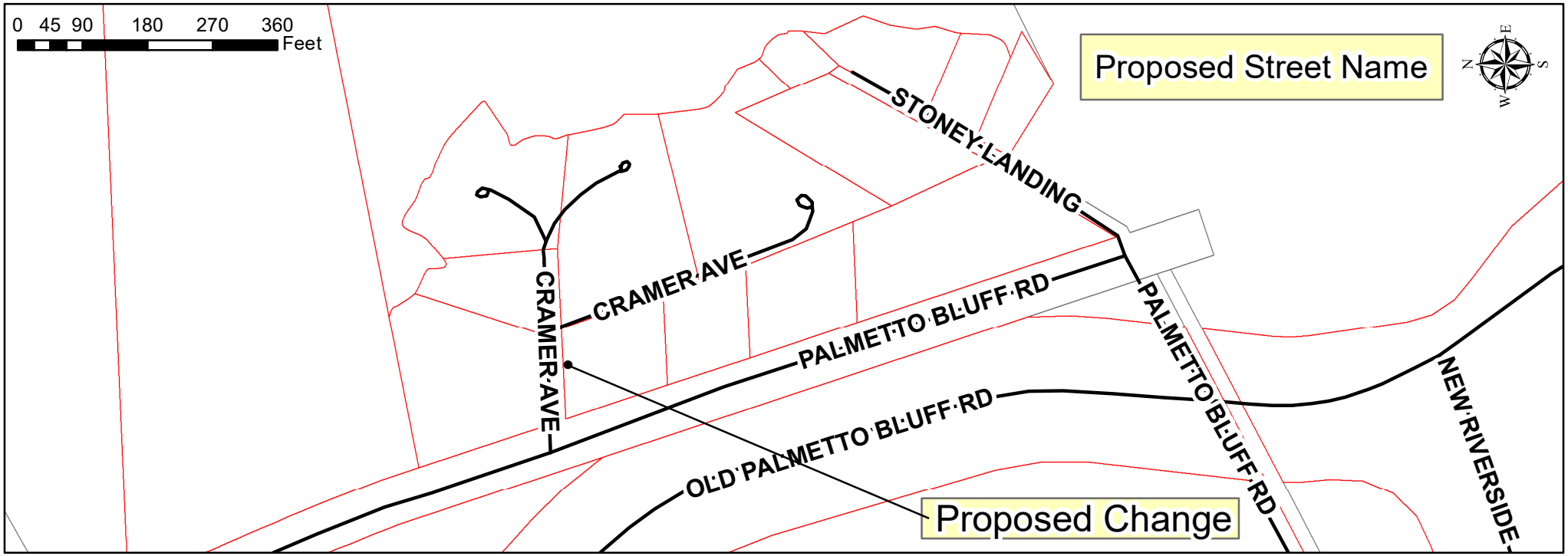
PLEASE NOTE:

1. **This petition requires the signatures of fifty-one percent (51%) of all property owners whose parcels touch the road being petitioned for naming.**
2. **If two or more persons own the same parcel, only one name will count towards the 51% calculation.**
3. **Only one signature is allowed per parcel owner. If one or more persons own two or more parcels touching the road, only one signature is counted.**
4. **Only the trustee may sign for parcels listed as heirs property.**

If you have any questions, please call the County E-911 Addressing Center before submittal of the petition.

Professionally we serve; Personally we care!


Existing Street Name
STONEY LANDING RD
SARAHBECCA DR
CRAMER AVE
PALMETTO BLUFF RD
PALMETTO BLUFF RD
OLD PALMETTO BLUFF RD


0 45 90 180 270 360
Feet
Proposed Street Name
STONEY LANDING
CRAMER AVE
CRAMER AVE
PALMETTO BLUFF RD
PALMETTO BLUFF RD
OLD PALMETTO BLUFF RD
NEW RIVERSIDE
Proposed Change

PIN	SitusAddre	ClassCode
R600 045 000 0010 0000	14 STONEY LANDING RD	ResImp SingleFamily
R600 045 000 0011 0000		ResImp SingleFamily
R600 045 000 007A 0000	6 STONEY LANDING RD	ResImp SingleFamily
R600 045 000 009A 0000	133 PALMETTO BLUFF RD	ResVac Platted&Unplatted
R600 045 000 0009 0000	139 PALMETTO BLUFF RD	ResVac Platted&Unplatted
R600 045 000 007C 0000	4 STONEY LANDING RD	ResImp SingleFamily
R600 045 000 0007 0000	8 STONEY LANDING RD	ResImp SingleFamily
R610 037 000 0760 0000	NEW RIVERSIDE RD	AgVac Forest
R610 044 000 0136 0000	OLD PALMETTO BLUFF RD UT	AgVac Forest
R614 045 000 0052 0000		TCUVac Highway&StreetROW
R600 037 000 0028 0000	3 CRAMER AVE	ResImp SingleFamily
R600 037 000 0037 0000	123 PALMETTO BLUFF RD	MHImp UnplattedSite
R600 037 000 0038 0000	127 PALMETTO BLUFF RD	ResVac Platted&Unplatted
R600 037 000 028A 0000	103 PALMETTO BLUFF RD	ResVac Platted&Unplatted
R600 037 000 028B 0000	5 SARAHBECCA DR	ResImp SingleFamily
R600 037 000 0766 0000	5 W CRAMER AVE	ResVac Platted&Unplatted
R600 037 000 028C 0000	1 SARAHBECCA DR	ResImp SingleFamily
R600 037 000 029A 0000	102 PALMETTO BLUFF RD	ResImp SingleFamily
R600 037 000 0767 0000	11 CRAMER AVE	ResImp SingleFamily

Owner1	Owner2
NORTON RICHARD R BRUCE E	
ANDREWS SCOTT	
MAULDIN SHANNA LEE	
MAY RIVER FOREST LLC	
MAY RIVER FOREST LLC	
PALMETTO BLUFF CAMP LLC	
MAULDIN SHANNA L	
PALMETTO BLUFF MAINLAND LLC N/K/A N	
PRITCHARD FARM LLC	
PALMETTO BLUFF PRESERVATION TRUST IN	
CRAMER ARTHUR M	
WISE WILLIAM N III	
WISE WILLIAM N III	
NANSEN MARK N	NANSEN JACQUELINE A
CRAMER ARTHUR M	CRAMER DEANNA
CRAMER ARTHUR M	
CRAMER ARTHUR M	CRAMER DEANNA
SAPP JOHN L	
STEVENSON DONNA LEE	

MailingAdd	City	State	ZIP
3803 ALLENBY DR	JACKSONVILLE	FL	32277
1809 SAVONA PKWY	CAPE CORAL	FL	33904-5050
PO BOX 1554	BLUFFTON	SC	29910
227 WEST TRADE STREET STE 1000	CHARLOTTE	NC	28202
227 WEST TRADE ST STE 1000	CHARLOTTE	NC	28202
4 STONEY LANDING RD	BLUFFTON	SC	29910-6812
PO BOX 1554	BLUFFTON	SC	29910
227 WEST TRADE STREET STE 1000	CHARLOTTE	NC	28202
PO BOX 3822	BLUFFTON	SC	29910
227 WEST TRADE ST STE 1000	CHARLOTTE	NC	28202
9 CRAMER AVE	BLUFFTON	SC	29910
123A PALMETTO BLUFF RD	BLUFFTON	SC	29910
123 A PALMETTO BLUFF RD.	BLUFFTON	SC	29910
7199 VIA MARIA	SAN JOSE	CA	95139
9 CRAMER AVE	BLUFFTON	SC	29910
9 CRAMER AVE	BLUFFTON	SC	29910
9 CRAMER AVE	BLUFFTON	SC	29910
102 PALMETTO BLUFF RD	BLUFFTON	SC	29910
11 CRAMER AVE	BLUFFTON	SC	29910

ITEM 9

DISCUSSION OF PROPOSED PASSIVE PARK ORDINANCE / PASSIVE PARK COMPREHENSIVE PLAN FOR REVIEW AND COMMENT; NO ACTION REQUIRED

STAFF: STEFANIE NAGID, PASSIVE PARK MANAGER

2018/__

AN ORDINANCE OF THE COUNTY OF BEAUFORT, SOUTH CAROLINA, WHICH SHALL BE REFERRED TO AS THE PASSIVE PARKS ORDINANCE

Chapter 90 – PARKS AND RECREATION

ARTICLE VI. – PASSIVE PARKS

SECTION 90-200: TITLE

This ordinance shall be known as the Passive Parks Ordinance.

SECTION 90-201: PURPOSE

It is the purpose of this ordinance to:

1. Provide a description of allowable uses, prohibited activities, and other guidelines that will apply to Rural and Critical Lands Preservation Program passive park properties.

2. Provide a means by which federal, state, and county laws and regulations will be enforced on passive park properties.

SECTION 90-202: DEFINITIONS

The following words and terms shall have the meaning respectively ascribed to them in this section:

1. *Archaeological or cultural resources* means any associated physical artifacts and features below the ground surface indicating the past use of a location by people which may yield information on the county's history or prehistory, including but not limited to artifacts, fossils, bones, shell mounds, middens, or primitive culture facilities or items.

2. *Concessions* means an approved lease or memorandum of understanding between the county and a private entity for the right to undertake a specific activity in return for services and/or financial gain.

3. *Daylight hours* means those hours between dawn and dusk.

4. *Motorized vehicles* means any self-propelled vehicle, commonly wheeled, that does not operate on rails, such as trains or trams and used for the transportation of passengers, or passengers and property, such as golf carts/cars, cars, trucks, all terrain or utility vehicles, motorcycles, and motorized bicycles.

5. *Passive Park* means any fee-simple county owned or co-owned property purchased with Rural and Critical Lands Preservation Program designated funding. A list of passive parks is available with the Passive Parks Manager upon request.

SECTION 90-203: IN GENERAL

1. The County Administrator or his/her designee shall have the authority to employ a Passive Parks Manager who shall be trained and properly qualified for the work and who shall conduct and supervise management and activities on any of the passive park properties and facilities owned or controlled by Beaufort County.

2. The County Administrator or his/her designee is authorized to promulgate rules and regulations for the purpose of regulating the use of passive parks, including structures and facilities on such, limiting the hours during which the same shall be open to the public, and providing standards of conduct for persons while using such properties, structures, and facilities.

3. The County Administrator or his/her designee may establish fees for the use of passive park properties, structures, and facilities.

4. The Passive Parks Manager shall make reports to the County Administrator or his/her designee as may be requested from time to time.

5. The County Council may designate property as a passive park, and may request and receive recommendations from the Rural and Critical Lands Preservation Board. When a property is designated by County Council as a passive park, this ordinance will apply to that property.

SECTION 90-204: PENALTIES

Any person violating any section of this article shall be guilty of a misdemeanor and upon conviction thereof shall pay such penalties as the court may decide, not to exceed $500.00 or not to exceed 30 days' imprisonment for each violation. Each day during which such conduct shall continue shall constitute a separate violation which shall subject the offender to liability prescribed in this section.

SECTION 90-205: PASSIVE PARK HOURS

1. Unless otherwise specifically provided or posted at a passive park property or facility, any designated passive park that is open to the public shall be open for public use during daylight hours only and shall be closed to public use from dusk until dawn.

2. Such closing hours shall not apply to activities being held pursuant to an approved agreement or contract for use signed by the County Administrator or his/her designee. In these cases, the fully executed agreement or contract for use shall state the waiver of operating hours.

3. It shall be unlawful for any person to remain in any of the passive parks and/or facilities during the hours the park and/or facility is closed to public use except with prior written approval from

the County Administrator or his/her designee. Unauthorized presence shall be grounds for immediate arrest.

SECTION 90-206: PROHIBITED ACTIVITIES

It shall be unlawful for any person to do any of the following in any passive park unless specifically permitted by the appropriate authorization received from the County Administrator or his/her designee and issued pursuant to this ordinance, except for activities of Beaufort County which are undertaken within the scope of its governmental authority:

1. Construct or erect any hut, shanty or other shelter.

2. Cook foodstuff on personal grills brought into the park area. Persons may utilize only grills provided or permitted by the county for cooking in the park area.

3. Set or stoke a fire, except for those fires set or stoked in designated county grills or fire rings where they are provided, and said fire shall not be allowed if it poses a hazard to public property or the general public. An exception is made in the instance of a federal, state, and/or county sanctioned and authorized prescribed burn for the purposes of land/debris management or restoration.

4. Cut down, remove, or otherwise damage live or dead standing plant material to set or stoke a fire. Gathering dead and downed debris is allowed in areas where camping is permitted and a county fire ring is provided.

5. Discharge or deposit human wastes, except in toilet facilities provided by the county.

6. Dump or deposit yard waste, cuttings, or clippings.

7. Disturb the natural surface of the ground in any manner unless authorized in writing by the County Administrator or his/her designee and/or done in accordance with a county-initiated land management activity.

8. Allow privately owned animals to discharge or deposit waste on park property without disposing said waste. All owners or others in charge of privately owned animals shall remove their waste from the park grounds, and may deposit animal waste in park trash receptacles.

9. Pick flowers, nuts, berries, or fruit, or to damage or remove plants, trees, or shrubs, from any part of the park grounds unless specifically authorized in writing by the County Administrator or his/her designee or done in accordance with a county-initiated land management activity.

10. Erect signs or affix signs to any tree, post, pole, fence or park facility or grounds except as provided by county ordinance, or through an approved park use agreement or contract with the County Administrator or his/her designee.

11. Drive, putt or otherwise hit a golf ball.

12. In any way disturb, molest, or remove any wildlife, animal, bird, or egg located above, upon or below the surface of the park grounds or to allow any privately owned animal to do so unless specifically authorized in writing by the County Administrator or his/her designee, or unless a park is posted for such an activity.

13. Write on, draw on, paint on or otherwise deface, damage, remove, or destroy any park facility or any part of the park grounds.

14. Carry any weapons, explosive, or destructive device either openly or concealed onto any park property, except as otherwise permitted by South Carolina state law and/or for law enforcement personnel.

15. Operate or park any motorized vehicle on park grounds except in areas designated by the county as public parking areas, driveways, or roadways. Motorists shall obey all posted speed limit and other directional signs posted within the park. Authorized county personnel or contract personnel shall be allowed to drive vehicles onto park areas during facility or grounds maintenance or other land management activities.

16. Purchase, sell, offer for sale, possess, or consume any alcoholic beverages, illegal drugs or intoxicating substances, unless specifically authorized in writing by the County Administrator or his/her designee.

17. Use public restrooms to shave and/or shower, unless shower facilities are specifically provided for public use at that park.

18. Bathe or otherwise be or remain in a water or drinking fountain and/or its reservoir or to allow any privately owned animal to do so.

19. Swim, canoe, kayak, or boat in any body of water within the designated park boundaries, unless otherwise posted as a public swimming and/or boating area.

20. Use roller skates, roller blades or skateboards, except on park facilities specifically designated for that purpose.

21. Engage in the sale of any item on park property for any non-county sponsored function(s), except as allowed by an agreement issued by the County Administrator or his/her designee.

22. Use of any park property for non-county sponsored fundraising activities, except as authorized by the County Administrator or his/her designee.

23. Engage in the destruction, removal or alteration of any county owned facility or equipment from any park property, unless authorized by the County Administrator or his/her designee.

24. Engage in the removal, alteration or destruction of archaeological or cultural resources from any park property and/or water body except as authorized by the County Administrator or his/her designee.

25. Install any gate providing access to any park, or build any trail except as authorized by an approved park development plan or the County Administrator or his/her designee.

26. Feed any wildlife.

27. Engage in the removal, destruction or harassment of animals and plants from or on parks, except for authorized research efforts as authorized by the County Administrator or his/her designee.

28. Engage in the introduction of plants or animals onto parks, unless authorized by the County Administrator or his/her designee or as part of a county sanctioned restoration activity.

29. Littering, including cigarette butts. Any park property that does not have trash disposal receptacles will be treated as "pack in, pack out" and any and all items brought onto the park property will be required to be removed from the park property.

30. Disposal of oil, gasoline or other hazardous substances.

31. The use of metal detectors.

SECTION 90-207: ADDITIONAL PROVISIONS

Unless otherwise specified herein and in addition to the restrictions stated in Section 90-206, the following additional provisions shall be applicable to all passive parks:

1. Allowable public use activities for each park shall be compatible with the protection of the natural and/or cultural resources for each individual park and shall be posted at each park.

2. Parks shall be closed to the public when, due to emergency conditions or activities undertaken by the federal, state, or county government for emergency response and recovery or maintenance of such areas, closure is necessary to protect such lands or to protect the health, safety and welfare of the public.

3. Hiking is permitted only on designated trails, established roads and firebreaks, and shall not occur in other areas.

4. Bicycling is permitted in parks that are specifically posted for that activity. Within a park permitted for bicycling, bicycling shall only be permitted on trails, established roads and firebreaks, and shall not occur in other areas.

5. Horseback riding is permitted in parks that are specifically posted for that activity. Within a park permitted for horseback riding, horseback riding shall only be permitted on trails, established roads and firebreaks, and shall not occur in other areas.

6. Hunting, trapping, or fishing is permitted in parks that are specifically posted for that activity. Within a park permitted for hunting, trapping or fishing, hunting, trapping and fishing activities will comply with South Carolina state law.

7. Dogs are permitted in parks, except where otherwise posted, provided that such animals are leashed and/or under control at all times. The owner or person responsible for the animal shall clean up and properly dispose of the animal's waste as stated in Section 90-206.

8. Concessions may be allowed in certain parks if they are determined to be appropriate to that property and are approved in writing by the County Administrator or his/her designee. Appropriateness is described as:
    a. The concession is necessary to fulfill a need in the interest of the public and will assist the county in providing public use of passive parks.
    b. The concession will be open to the public.
    c. The concession will be economically feasible for the county.
    d. The concession will be compatible with the protection of the natural and/or cultural resources and the management goals for that park.
    e. The concession will not result in an unfair advantage over existing businesses that provide similar services in the area.

9. Research may be permitted in parks if said research is compatible with the protection of the natural and/or cultural resources and the management goals for that park and when approved in writing by the County Administrator or his/her designee.

SECTION 90-208: ARCHAEOLOGICAL DISCOVERY

Archaeological excavating is prohibited on all properties. Any person discovering archaeological or cultural resources on any park shall immediately notify the Passive Parks Manager of such discovery.

SECTION 90-209: PASSIVE PARK USER FEES

Fees for admission to passive parks, for use of park land and/or facilities, and for participation in events may be established by the County Administrator or his/her designee.

Secs. 90-210 – 90-250. - Reserved.

Beaufort County

Rural and Critical Land Preservation Program

Passive Parks Public Use

Comprehensive Plan

2018

Prepared by:
Stefanie M. Nagid
Passive Parks Manager
Community Development Department
Beaufort County

Table of Contents

Executive Summary

Beaufort County has been a frontrunner among local governments in land preservation since 1999 with the creation of the Rural and Critical Land Preservation Program (RCLPP or Program), which is nationally known for preserving the landscape that makes the Lowcountry special.

In 2016, the Beaufort County Open Land Trust produced a report, *Stewardship and Public Use of Rural and Critical Lands*, which outlined how Beaufort County could allow public access and develop the passive parks while properly managing and maintaining all RCLPP lands. This report, *Passive Parks Public Use Comprehensive Plan*, presents a framework for how Beaufort County is going to prioritize and implement management, improvements, and public use on RCLPP fee-simple properties.

Improvements may vary dependent upon the nature of any given property, however basic elements may include parking and restrooms, nature trails, boardwalks, open-air pavilions, camping facilities, water access, land management practices, and revenue generating activities compatible with the RCLPP mission. Natural and cultural resources, development and improvements, operations and maintenance, and fiscal resource needs are all discussed in this report.

The opportunities on RCLPP properties are abundant and varied. Unique opportunities such as regional recreation area(s); private-public partnerships; partnerships with volunteer groups, local municipalities, and State and Federal agencies; eco-tourism concessionaires; and others exist.

In 2018, Beaufort County hired a Passive Parks Manager to oversee and initiate the evolution of the Program through well-informed stewardship goals and a continued focused on the Program's mission. During the implementation process for each property, the Passive Parks Manager will collaborate with Beaufort County stakeholders in order to provide lifetimes of public use and enjoyment of RCLPP properties.

The goals of this report are to:

- Define the roles and responsibilities for County staff, volunteers, and Boards to develop and manage the public use of the parks and management of RCLPP properties,
- Designate appropriate monitoring and security measures needed,
- Describe RCLPP branding and marketing standards needed,
- Outline natural resource management needs, public use opportunities, and revenue generation for RCLPP properties,
- Describe maintenance and operations resources and needs for RCLPP properties; and
- Provide a framework for long-term strategic goals for the Program.

Introduction

Community Profile

Beaufort County has some of the most scenic and ecologically sensitive land in the United States. The ecological treasure that is the Lowcountry features unique habitats, scenic views and recreational destinations, all of which contribute to the quality of life in Beaufort County. Since this lifestyle is a fundamental part of the attraction to Beaufort, protecting this environment is an economic imperative.

The scenic and sensitive resources are varied and numerous. Plant communities bring beauty and definition to the landscape. Lying in the coastal zone, Beaufort County forests include bottomland hardwoods, pine woodlands, oak-hickory forests, cypress-tupelo wetlands, and maritime forests. Beaufort County has eight plant and animal species federally or State listed as threatened or endangered, with an additional forty-seven identified as imperiled on a global or state scale. Loss of habitat is the primary cause of species imperilment.

The almost forty linear miles of beaches are an important mainstay of the tourism economy, with the dune systems forming the first line of defense against astronomical tides and sea level rise, and provide important wildlife habitat. Water, however, is the resource that truly defines Beaufort County. Rivers, estuaries, wetlands, and the Atlantic Ocean forms the scenic backdrop that makes Beaufort County such a special place. The County consists of 468,000 acres and 51 percent are tidally influenced rivers, creeks or marshes. The quality of these waters has been at the forefront of the Beaufort County conservation efforts, and the Rural and Critical Land Preservation Program (RCLPP or Program) has focused much of its efforts on buffering the May, Okatie, Broad and other rivers and their watersheds.

Beaufort County of the 1950's featured rural farming communities and fishing villages. The City of Beaufort was a commercial center, and Hilton Head had not yet become an incorporated town. Today, resort development is predominant on the Sea Islands, large swaths of land have residential development, and Beaufort and Port Royal have grown and attract creative, enviable clienteles. The communities south of the Broad River have experienced even more growth and change. Bluffton has grown into a major presence in the Lowcountry and much of its growth now occurs in and around its city limits. Hilton Head is well recognized for its attractions and its own efforts at resource conservation.

The 1980 census placed Beaufort County's population at 65,364. In 2008, the population had grown to 146,743. By 2015, the population had grown to 179,589. By 2030, the population of Beaufort County is expected to be 261,017. In 2015 the area comprising Beaufort and Jasper counties had the fourth-fastest growing population along the East Coast.

Program Profile

A sensitive environment coupled with rapid growth presented a delicate balance for the development of Beaufort County. Economic growth is critical to the economic quality of life of residents, but little tolerance exists for environmental degradation by county citizens. Maintaining this balance is a key reason for the establishment of the RCLPP and why it continues to be an essential element in managing Beaufort County's growth, now and into the future. The County was experiencing unprecedented and widespread growth in the 1990's, and the anticipated effect was a sharp decline in the quality of life for the citizens of

Beaufort County. The environmental impact of rapid growth was perceived as a major detriment to the quality of life.

With its genesis rising out of the first County Comprehensive Plan, the RCLPP became a partial answer to the growth pressure, and in 2000 the first bond referendum for $40 million to fund land purchases was put before the citizens of Beaufort County. It passed with 73% of voter approval. Three additional referenda followed in the next 14 years. These were the 2006 referendum for $50 million to fund land purchases (76% approval); the 2012 referendum for $25 million to fund land purchases and park improvements (62% approval); and the 2014 referendum for $20 million to fund land purchases and park improvements (73% approval). As a result, more than 23,500 acres of land either in fee simple purchase or conservation easements have been protected through the Program. Additionally, the 2016 Public Opinion Survey conducted by Clemson University's Strom Thurmond Institute for the Beaufort County Community Development Department confirmed the public's commitment and support of conservation areas (97%) and the desire for the ability to access those areas (86%).

The benefits of open space and parks are well documented. Research shows that parks overwhelmingly enhance the quality of life of citizens, contribute to community health and vibrancy, and promote economic development, tourism, and education. Property values are generally higher when they are next to or near open space and the typical return for every dollar invested in conservation is between $1 and $4. Many of the RCLPP properties have abundant potential for public passive recreation and use. Enhanced land management will continue the voters' environmental mandate to protect the natural resources and quality of life of Beaufort County, and increased improvements for public use furthers the taxpayers return on their investment in the Program.

RCLPP lands have been deemed special by the community and acquired properties have scenic views, water access, or historic significance. Proper stewardship of these natural resources is fundamental to land management and the protection of the conservation values of these properties. Providing more opportunities for the public to enjoy these lands, without harming the intrinsic conservation value, is the natural progressive evolution of the Program.

This report presents a framework for how Beaufort County is going to prioritize and implement improvements and public access opportunities on RCLPP properties. Individual park planning and design is not part of this report. Park specific management and improvement plans will be created inclusively with appropriate stakeholders, and as funding becomes available, in order to include community needs assessments and to better understand the population individual parks will be serving.

Roles and Responsibilities

Public ownership of real property is a detailed part of governance. According to Article XII of the South Carolina State Constitution, under Section 1of the Function of Government, the "health, welfare, and safety of the lives and property of the people of this State and the conservation of its natural resources are matters of public concern". Properly managed public lands are an asset to the community. Failure to manage them threatens resources, creates problems with the continuity of the landscape, and liabilities become costly issues for the taxpayer. This basic government function is even more important when RCLPP properties are involved. These lands have unique qualities and conservation values, which have been determined to be important to the livability of Beaufort County by its citizens through their votes for the four bond referendums. Taxpayer money has been used to preserve these lands and they require special management to ensure the resources are conserved while still being available for public access.

Beaufort County

Stewardship is a broader and more comprehensive type of property management than basic maintenance and involves managing property resources with three achievable goals: sustainability, multi-use, and revenue generation. The first stewardship goal is to promote sustainability and safeguard the conservation values and natural resources from being compromised. The second stewardship goal is to promote multi-use of RCLPP properties while protecting conservation values. Public lands develop constituencies across a broad spectrum of users. Each user group will have its own vision for use of the land. An important consideration is to ensure that users have adequate access and the County adequately meets user needs to the extent practicable. The recent opinion survey has been the first step to determine general user needs and vision for RCLPP properties. As funding is available to implement park improvements, additional stakeholder meetings will be conducted to determine the specific user needs for an individual property. The third goal is to generate revenue from the land in an ecologically sustainable manner to assist with the maintenance and operations of the RCLPP properties. As long as a revenue generating activity is consistent with the RCLPP mission, it warrants evaluation for revenue potential. Proceeds from these activities will be placed in a dedicated RCLPP fund for use in operations, maintenance, improvements, to build staff capacity, and/or match grants.

Upon the establishment of the Program, the County Council created the Rural and Critical Lands Preservation Board (RCLPB or Board). The Board is comprised of one member from each of the 11 County Districts, who are nominated by the council member in their district and approved by the full County Council. Each Board member serves a four year term and can seek reappointment. The RCLPB was assigned specific duties, which include:

1) Developing and recommending to County Council, for adoption by resolution, a set of Beaufort County Rural and Critical Land Preservation Program Policies and Guidelines to guide the identification, prioritization, and management of parcels to be acquired through the county rural and critical preservation program. The Board may make recommendations to County Council for amendments to the Policies and Guidelines as the need arises;
2) Identify, prioritize and recommend to County Council rural and critical lands to be acquired through purchase of development rights, the option to purchase development rights, the fee simple purchase of property, or the exchange and transfer of title to parcels, as provided for in the County Council's adopted Beaufort County Rural and Critical Land Preservation Program Policies and Guidelines;

3) Promote, educate and encourage landowners to participate in the County Rural and Critical Land Preservation Program; and
4) Perform such other duties as may be assigned by County Council.

Additionally, Resolution 2014/1 allows for the creation of a 5-member Passive Park Advisory Body, which should have specific expertise in park planning, land management, and conservation practices. This body may be established through ordinance and their specific duties and a set of by-laws may be created, which may include providing recommendations for use and management of RCLPP properties, review of park specific management and improvement plans, and promotion and support of the Program within the community.

At the time of this report, the Beaufort County Open Land Trust (BCOLT) is under contractual agreement with the County, and works on behalf of the County, to identify and investigate candidate properties for conservation, negotiate the purchase of the properties, and bring potential acquisitions to the RCLPB for consideration and approval. So long as a County-initiated conservation acquisition program remains in effect, the County will contract with an accredited Land Trust to continue these duties.

The Beaufort County Community Development Department has been the housing center for the Program. In 2018, a Passive Parks Manager was hired and will spear-head the Program as it evolves. County staff will continue to coordinate/collaborate with the Land Trust on acquisitions. The Passive Parks Manager will collaborate with partners and stakeholders in creating park specific management, use, and development plans. Other duties of the Passive Parks Manager may include ordinance and policy development, contracting, grant writing and submittal, coordination with local municipalities and other County departments, and relationship building with partners. Although the planning process for park development will require input and feedback from advisory boards, partners, and stakeholders, the County will maintain approval rights for any plans and expenditures related to RCLPP properties at the County Council's behest.

The Beaufort County Engineering, Infrastructure, Land Development, and Transportation Division, Facility Management Department has been identified as the best source for immediate and basic maintenance needs on RCLPP properties, such as bush-hogging, fine mowing, building maintenance and repairs, janitorial services, and trash pickup. Some maintenance functions have been assumed by Friends groups, non-profit partners, or local municipalities. This cost effective approach works well on certain properties, but would not be able to be applied County-wide. Maintenance needs for each RCLPP property will be discussed and determined on a case-by-case basis and as assigned by the County Administrator. Long-term goals may include hiring dedicated passive park maintenance staff and/or maintenance contractors. Duties may include janitorial services, trash pickup, parking area and trail cleaning, gate opening and closing (if applicable), and structural maintenance and repairs. Additionally, items of larger maintenance need, or special projects, also fall under the guidance of the Division's Engineering, Public Works, and Stormwater Departments, such as constructing or repairing a road, building stormwater ponds, and oversight of capital improvement projects.

Local Municipalities

Some of the most successful partnerships to maintain County lands have been through local partnerships between the County and a local municipality. Municipalities located in Beaufort County include the Town of Hilton Head, the Town of Bluffton, the City of Beaufort, the Town of Port Royal, and the Town of Yemassee. These partnerships have tremendous benefit to both the municipality and County and will be pursued where needed and appropriate. Through Memorandum of Understanding (MOU) agreements, the

County and a local municipality can agree on the terms of responsibility for maintenance and operations on a case-by-case basis.

Friends Groups/Volunteers

Several Friends groups have formed in recent years with a focus on a particular park. These groups "adopt" a property and collaborate with the County by bringing their aptitudes forward and providing input on the adjacent community's use needs and assisting the County with operations and maintenance, where feasible. Friends groups are particularly helpful with low-impact, but high maintenance, situations such as trail maintenance, litter pickup, and monitoring/reporting. The County and Friends mutually benefit by having more eyes on the park to ensure proper use as well as having a well-maintained and enjoyable park experience for the public. The County will continue to coordinate with citizens, volunteers, and Friends groups as need and opportunity arises during the on-boarding of individual parks. The County will enter into an MOU with each group, which will detail duties and responsibilities, as needed.

Public-Private Partnerships

A resolution was adopted in 2012 outlining Beaufort County's policy in regards to public-private ventures for use on RCLPP properties which allows for the use of private enterprise to fully utilize parkland. This resolution set the stage for alternative partnership opportunities that restricts uses on sensitive lands and brings awareness to the unique resources of the County. Public-private partnerships also benefit the County through operations and maintenance opportunities as well as revenue generation. Revenue may be generated through rent/lease agreements, ecotourism services, and other possibilities. The County will continue to pursue these partnerships, and establish formal agreements that detail duties and responsibilities of each party, where feasible and so long as the partnership is compatible with the RCLPP mission.

Monitoring and Security

At a minimum, RCLPP properties require proper monitoring and security measures to ensure properties are not a liability and there is no damage to the conservation values. Monitoring and security measures will be in the form of the following:

Passive Park Ordinance: The first step to ensure proper security and enforcement of unwanted and unlawful activities on RCLPP properties is the adoption of a Passive Parks Ordinance, which will detail hours of operation, allowable and unallowable activities, and more. This ordinance will be drafted by the Passive Parks Manager, with stakeholder review/input, and presented to County Council for codification.

Gates and Keys: The most basic security measure is fencing and/or gating property to control access. Regulating access allows the County a measure of control over inappropriate uses of property. Properties may have gates that restrict vehicular access but not necessarily pedestrian or equestrian access. Proper gating brings the need for a controlled and organized system of keying. The Passive Parks Manager will maintain a master key lockbox for all gates and facilities on RCLPP properties. Any requests for events or use that would require the use of a key will be provided in writing to the Manager for approval and scheduling.

Boundary Posting and Signage: Posting the boundaries and clearly identifying property as belonging to Beaufort County and part of the RCLPP is imperative. There are existing signs on some properties, but many of those signs are large and difficult to maintain. RCLPP property boundaries may be fenced or painted, depending on the nature of the property, and small boundary signs will be placed every 150 feet with painted trees or posts every 50 feet. Standard entrance signs will be installed at the designated public access points to ensure clear and proper ingress and egress for the public. Emergency access locations may be located on a case-by-case basis dependent upon 911 service needs. All signage will comply with County ordinances and RCLPP Marketing and Branding standards, as well as City or Town ordinances if applicable.

Inspections and Enforcement: Proper management requires regular inspection. Dumping, poaching, and trespassing harm conservation values and prevents safe public use. Currently, the Beaufort County Sheriff's office Environmental Crimes Unit inspects RCLPP properties and investigates environmental crimes on a routine basis. In the future, the Passive Park Manager would like to have at least 2 dedicated staff to assist in daily park inspections, trash pickup, basic maintenance, and reporting for all RCLPP properties. However, the Community Development Department will continue to closely coordinate with the Sheriff's office to ensure timely enforcement of rules and regulations, should problems occur. County staff will also coordinate with the state Department of Natural Resources on various properties where hunting or special resources are of State interest. Additionally, conservation easements require annual monitoring. The majority of conservation easements are currently held by BCOLT, which does annual inspections and monitoring on those properties. Some conservation easements are held by the County and staff will continue to inspect and monitor those properties, as listed in the Conservation Easement section of this report.

Record Keeping: When a RCLPP property is purchased, the contracted Land Trust maintains files for the property through the time of closing; and the Attorney-at-Large keeps copies of all the closing documents.

After a property closes, the Beaufort County Community Development Department maintains a master document of the property details and provides an update to the County GIS Department to ensure accurate representation on the RCLPP GIS layer. Additionally, the property will be evaluated by County staff for natural resource and public use components and this report will be a supporting implementation tool of the Natural Resources Element of the County Comprehensive Plan, which will be reviewed and updated on a 5-year basis. Each property will also have its own Management Plan drafted and vetted through the stakeholder process. The individual management plans may include items such as natural and cultural resource inventories; current property description; any known legal restrictions; land management goals, objectives, and schedule; maintenance and monitoring needs; a business plan (if appropriate); and identification of any resource threats and potential solutions.

Branding and Marketing

Marketing and branding of the RCLPP is a key part of the overall recognition of these properties. Recognizable branding with a compelling vision, and marketing of that vision, will be a concept that needs to be fully developed.

The RCLPP has done a notable job of branding and using recognizable themes. This includes common phrases like "Protecting Working Farms", "Keeping Jets in the Air", and "Maintaining Clean Water". These are relatable catch phrases and the public understands the message. Specific branding will be developed for the RCLPP properties as a whole, including standards in signage and building design, as well as the language used to discuss the Program.

Marketing promotes visibility and ultimately usability, thereby integrating economics into the Program. Land management and park development is an important part of increasing real estate values, promoting tourism, creating a healthier community, attracting businesses and creating a better labor pool, promoting and growing the aquaculture industry, and other types of economic development. It also is a critical way to address some of the needs of the community and leverage the monetary contribution of the taxpayers through the referendums beyond natural resource conservation.

The development of a branding and marketing strategy may be completed by County staff or through the contracting of a media firm. However, any strategy will maintain flexibility for compliance with County and local municipality ordinances, rules, and regulations. Additionally, a branding and marketing strategy will also incorporate standards on how co-owner, partner, and other contributing third-party logos may or may not be used on County property. For instance, parties that hold title to a piece of land may have their logos displayed on entrance signs and access points, however, in-kind partnerships may have their logos displayed in areas and on items that were contributed to the park or facility.

Management and Public Use

Public Opinion Survey

To obtain community input on the potential uses of RCLPP properties, in 2016 the Community Development Department contracted Clemson University's Department of Parks, Recreation, and Tourism Management and Strom Thurmond Institute to conduct a community survey of Beaufort County residents, non-resident property owners, and workers, regarding their views. Of the survey participants, 96.14% were residents, 3.40% were non-resident property owners, and 0.46% were non-resident workers.

Some of the most significant results were:

- 97% identified a positive impact on their overall quality of life from conserved lands, confirming the public's commitment to the preservation of important natural and conservation areas.
- 86% believe conservation lands should be more publically accessible and 93% believe continued protection of those lands is important if they are made accessible.
- 65% believe that conservation lands contribute a great deal to the County's economic prosperity.
- Top passive use activities include nature-based activities, with a focus on enjoying view sheds, wildlife, and hiking. Activities such as fishing, running, kayaking, and biking were also preferred.
- Over 83% of respondents are willing to travel over 3 miles to visit a passive park and over 57% would travel 6 miles or more to visit one of the County's passive parks.
- The survey showed the desire to emphasize the basic needs of users, including access to bathroom facilities, hiking trails, and trash cans.
- Over 50% of respondents said they would pay between $1 and $4 in user fees per passive park visit.

This survey provided key information about relationships between the community and preferred activities and amenities on the RCLPP lands. The survey also indicated a strong directive to uphold the natural and/or cultural values of conservation lands, while still leaving ample opportunity for complimentary activities that do not diminish the property's conservation values or the mission and purpose of the Program. This opinion survey is an important tool for outreach and engagement with County residents. Ongoing citizen engagement, education, and transparency as projects come on-line will be implemented through the planning, design, and construction phases of each passive park.

Development and Permitting

As RCLPP properties come on-line for providing public access opportunities, the County must work through the development and permitting process. Development, for the purposes of the passive park properties, is defined as any public access and use improvements which may include, but are not limited to, pedestrian or equestrian earthen trails, paved trails, boardwalks, pervious parking, paved parking, signage, gates, fencing, kiosks, kayak launches, piers, docks, playgrounds, restrooms, wildlife viewing blinds, observation decks, interpretive centers, event buildings, and other associated infrastructure to support such.

Once an initial vision has been formed, the first step in the development phase is to create a Conceptual Master Plan. This plan will bring the vision to life and will be able to be shared with stakeholders and partners for feedback and input. When a concept is finalized, the next step is to draft the detailed Architectural and Engineering Plans, which will be used throughout the permitting process. Due to the

expertise and time required to create these plans and work through the permitting process, but dependent upon funding and the type of improvements needed, a lead engineering firm may be hired to be the point contact for coordination with the Passive Parks Manager.

If an RCLPP property is solely within unincorporated County limits, the permitting and construction contracting steps that will need to be followed include:

1) Submit a conceptual plan application (and stormwater application if needed) to the Staff Review Team (SRT) for approval.
2) If a variance is needed, then submit a Zoning Board of Appeals application for approval.
3) Submit a Design Review Board application, if required, for approval.
4) Submit the final plan application (including stormwater, if needed) to SRT for approval.
5) Submit the building permit application to Building and Codes for approval.
6) Coordinate with the Purchasing Department on creating and advertising a Request for Proposals.
7) Review and select a successful bidder.
8) Submit the successful bidder to the Natural Resources Committee for approval and recommendation to the County Council for approval.
9) Coordinate with the Purchasing Department on the contracting phase and enter into a contract with the successful bidder.
10) Once a contract is signed, enter into the construction phase with the successful bidder.

If county owned property is located within a local municipality's jurisdiction, then the first five steps are done through the local municipality's permitting process instead of the County's. However, the County will apply either the County's or the local municipality's stormwater standards, whichever is the higher standard, to all projects.

RCLPP Property Classifications

Each RCLPP property the County owns has unique ecological, historical, and/or cultural values important to the County. By 2016, the Program protected more than 23,500 acres, with more than 11,000 acres protected through fee-simple purchase, and 12,400 acres protected via conservation easements. A resource inventory to gather information about the properties was also completed and provided a starting point for management decisions and opportunities for public use. The RCLPP properties were inspected on the ground and then evaluated using GIS data layers, existing baseline documentation, and surveys to better assess location, physical characteristics, existing restrictions, security issues, resources, and possible opportunities.

The RCLPP properties are highly variable in size and character and include vistas, islands, maritime forests, planted/naturally regenerated pine, freshwater wetlands, river buffers, agricultural fields, and hardwood forests. Most fee-simple properties are solely owned by the County, but several are jointly owned with another entity, such as a local municipality, BCOLT, or the South Carolina Department of Natural Resources (DNR). Joint ownership is an asset to the County, often bringing resources to bear to manage and maintain the property. In some cases, the partnership agreement or MOU dictates how and when the property can be utilized.

One of the first steps to any land management program is having a firm understanding of the property owned, its assets, and resource definitions. In 2011, County staff and the RCLP Board produced a land classification system for this purpose. The classification system listed below is a snapshot of the fee-simple

RCLPP properties, categorizing property into four types. This system is not intended to be a recommendation for a specific property use or intensity of use, but rather provides an initial indicator of what the property could accommodate as far as use.

Table 1. RCLPP Fee-Simple Property Classifications

Classification	Association	Intended Use	Extent of Development
Passive Park (E.g.: Crystal Lake)	Passive outdoor recreation, parkland	Conserve the natural resources while providing passive outdoor experiences. Conservation values shape the type and intensity of use.	Properties can accept a moderate level of park development for public use. These may not all be developed into parks, but the opportunity exists if conservation values are protected.
Recreational/Special Use (E.g.: Green Shell Park)	Active park	Opportunities for more frequent and varied use including daily public access to the water, group use, bike trails, agriculture, forestry, etc.	Property can withstand frequent use and more intense forms of infrastructure including boat docks and buildings.
Special Resource Site (E.g.: Altamaha)	Archaeological sites, rare habitats or species, forestry/agriculture	Resources of high significance. Low tolerance for development. Visitor traffic on these properties limited or available to be managed for a specific natural resource.	Natural and/or cultural resources are the primary focus of management activities with a high level of sustainability and sensitivity to the fragile environments.
Open Space (E.g.: The Green)	Green space, vista, islands, buffers, forestry agriculture	Protect scenic character. Most too small for infrastructure or not properly located to be developed into a park.	Low intensity or no management required on these sites. Many of these properties have limited or no access.

Additionally, the Beaufort County Community Development Code defines the following:

- Passive Recreation: Recreation requiring little or no physical exertion focusing on the enjoyment of one's natural surroundings. In determining appropriate recreational uses of passive parks, the promotion and development of resource-based activities such as fishing, camping, hunting, boating, gardening, bicycling, nature studies, horse-back riding, visiting historic sites, hiking, etc., shall be the predominate measure for passive park utilization.

- Regional Park: An open space of at least 75 acres available for structured and unstructured recreation.
- Pocket Park: A small open space available for informal activities in close proximity to neighborhood residences.

RCLPP Properties

The following property narratives will generally describe each fee-simple RCLPP property, its classification and code type, its natural and/or cultural significance, any known deed restrictions, land management needs, public use potential, and potential revenue generating activities. The properties are listed in alphabetical order, however a priorities table, as well as relative location maps, can be found at the end of this report.

Adams
Acreage: 57.17
Classifications: Special Resource Site, Passive Recreation
Status: Closed to the Public

The Adams property is upland forest with planted pines and is adjacent to several other protected conservation easement properties. Two wetland drains traverse the property. The planted pines are substantial in size and are currently harvestable. Access to the property is along an unimproved dirt road and there is no existing infrastructure on the property. Additionally, Beaufort County granted a restrictive easement to the Department of Defense on this property. These conditions make it an ideal property for managing timber to retain the ecological health of the property while also generating revenue for the Program to assist improvements on other RCLPP properties.

Land management activities will focus on long-term forestry operations. A silviculture plan will be created and implemented for the long-term management of the Adams property, which will be a consistent source of revenue to the County for maintenance of RCLPP properties.

Altamaha Town Heritage Preserve
Acreage: 100.07
Classifications: Special Resource Site, Passive Recreation
Status: Open to the Public

Altamaha is a site of significant archeological and historical Native American artifacts dating back to the early 16th Century. Listed on the National Register of Historic Places, this site was the home of the Yemassee tribe chief and contains two burial mounds and other artifacts, as well as a Civil War gravesite.

The property can be accessed from Old Bailey's Road and the current improvements include an interpretive sign, picnic tables, and a small dirt parking lot. A single road, open only to hikers on foot, traverses the property emerging from an oak hickory forest to a scenic vista overlooking the Okatie and Colleton Rivers. Along with Fort Fremont, this is probably the best representation of historic preservation by the Program and could be the highlight of a Native American Heritage Trail in Beaufort County.

Altamaha is jointly owned by the County and DNR. A document associated with the deed restricts the activities and uses of the property and a management plan has been completed by DNR. Due to the

importance of the artifacts, public access to the property will be restricted to passive use only and land management activities will be restricted to those that cause no soil disturbance, but may include prescribed burning, invasive exotic plant control, and mechanical and/or hand control of vegetation. Improvements to the existing boundary fence and parking area, an earthen trail, and picnic tables at the vista point are possibilities. Revenue generation is not anticipated at this site.

Amber Karr
Acreage: 12.55
Classifications: Open Space, Passive Recreation
Status: Closed to the Public

This property was acquired to preserve wildlife habitat and is located off of Broad River Drive in Shell Point. Access to the property is between two driveways, which makes this property unlikely for public access and recreation. There are currently some neighborhood owners with fence encroachments onto the County owned property. Due to the size, location, and nature of the property, land management activities will be minimal and limited to invasive exotic plant control. Immediate management needs include improved County staff access, signage, and enforcement of illegal activities. Revenue generation is not anticipated at this site.

Amgray
Acreage: 20.78
Classifications: Open Space, Passive Recreation
Status: Closed to the Public

This property was donated to Beaufort County and consists of a combination of timbered forest and wetlands, with an elevated rail bed transecting a portion of the property. Access is directly off of Highway 17. The property will need to be evaluated to determine the best land management practices, however there is a possibility for a timber thinning depending on the extent and configuration of wetlands on the site. Prescribed burning and invasive exotic plant control are also possibilities. Due to the size and location of this property, public use will be limited, but could consist of a small parking area, trail head with picnic tables, and pedestrian trail that may be able to connect to the existing rail trail. Revenue generation is not anticipated at this site.

Barrell Landing
Acreage: 49.08
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

Barrell Landing was purchased as part of a larger effort to prevent the Okatie River from further decline. There currently is no adequate access or parking and water access is limited. The property is primarily comprised of planted pine and wetlands; and a recently constructed stormwater pond is also located on the property.

Some potential public use opportunities for this property may include pedestrian trails and an open-air pavilion with picnic tables. Until such time as a conceptual park plan can be developed, land management will be needed in the form of timber thinning, mechanical/hand vegetation control, prescribed burning,

and invasive exotic plant control. Continued timber management on the property can be conducted to provide consistent revenue to the Program for future maintenance of RCLPP properties.

Battey-Wilson
Acreage: 63.46
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

The Battey-Wilson property is located on northern Lady's Island and contains mixed pine-hardwood, mostly naturally regenerated, that grades into maritime forest and eventually the marshes of Broomfield Creek. Access is from Eugene Drive, but currently there are no improved roads or trails onto the property. The property is in close proximity to Jack Island where bald eagle nests have been identified. Beaufort County granted a restrictive easement to the Department of Defense, but it does allow for management and some public access.

Due to the size, location, and accessibility of this property, there are a variety of public uses that could be provided, including a kayak launch near the road/bridge connection, equestrian and pedestrian trails, and an open-air pavilion with picnic tables. Until such time as a conceptual park plan can be developed, land management will be needed in the form of timber thinning and mechanical/hand vegetation control, so long as those activities coincide with the terms of the restrictive easement. Long-term timber management is a revenue generation possibility at this site.

Baxter
Acreage: 25.29
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

The Baxter parcel, located along John Baxter Lane off of Okatie Highway, was purchased as part of the larger effort to prevent the Okatie River from further decline. There is currently no adequate access or parking to this parcel. It is comprised of mostly wetlands with some mix pine/hardwoods, with salt marsh and creek breaking up the uplands and wetlands along the linear parcel.

Due to the inaccessibility and nature of this property, land management is limited to hand control of vegetation and invasive exotic plant control. The public use possibilities of this parcel are limited, however there may be potential for future land acquisitions of adjacent properties which could increase access and passive public use. Revenue generation is not anticipated at this site.

Beach City Road
Acreage: 7.29
Classifications: Recreational/Special Use, Passive Recreation
Status: Initial Planning

The Beach City Road parcels were purchased jointly by the County and the Town of Hilton Head to provide a buffer for and protect the Town park. The combined property is located within the historic footprint of Mitchelville, the first Freedman village in the post-Civil War South. Adjacent to this property is the Mitchelville Freedom Park, which is solely owned and maintained by the Town of Hilton Head.

In 2018, the Mitchelville Preservation Project, a non-profit organization dedicated to the preservation and education of the freedmen of Mitchelville, approached the County to partner with them and the Town of Hilton Head to complete a Master Plan for the park and adjacent County co-owned property. The County Council approved funding for the Master Plan, which would include, but not be limited to, the recreation of cabins, interpretive signage, and nature trails.

Beaufort County, the Town of Hilton Head, and the Mitchelville Preservation Project are currently collaborating on the timeline and deliverables for the Master Plan. Any land management activities, property maintenance needs, public use, and revenue opportunities will be discussed and included in the Master Plan. Eventually, an MOU between all parties will be executed that will outline specific duties and responsibilities as park improvements continue to be developed and implemented.

Bluffton Park
Acreage: 9.65
Classifications: Open Space, Passive Recreation
Status: Closed to the Public

Bluffton Park is co-owned by the County and the Town of Bluffton. The property is almost entirely composed of wetlands and was purchased to address drainage issues that would have been created through development. The Town of Bluffton inspects the property and maintains the drainage flowing through the property to the north.

The property is adjacent to Red Cedar Elementary School and the Town has expressed a strong desire for boardwalks through the property. However, due to the extensive wetlands and expense of boardwalk construction, no plans have yet to be conceived. Further discussions about public access and use for this property are needed. Due to the size and nature of this property, land management activities are not needed or will be limited to invasive exotic plant control and hand vegetation control as necessary. Revenue generation is not anticipated at this site.

Boundary Street
Acreage: 1.70
Classifications: Open Space, Pocket Park
Status: Closed to the Public

Three parcels contribute to the Boundary Street property, located along the south side of Boundary Street in the City of Beaufort. These parcels have beautiful scenic views of salt marsh along a narrow corridor, which also connects to a boardwalk and sidewalk system connecting to the Spanish Moss Trail. Although County owned, the County and City are working together on additional acquisitions for the creation of a pocket park. Continued coordination between the County and City is necessary to ensure adequate stakeholder involvement in any future public use and improvements. Due to the size and nature of this property, land management activities are not needed or will be limited to invasive exotic plant control as necessary. Revenue generation is not anticipated at this site.

Charlotte Island/Buzzard Island
Acreage: 34.69/120.00

Classifications: Open Space, Passive Recreation
Status: Closed to the Public

Charlotte Island is located in the middle of the City of Beaufort, near Mink Point Boulevard. It was purchased prior to the first RCLPP referendum. Buzzard Island, located in Bull River south of Williman Island, was one of the first properties purchased shortly after the passing of the first RCLPP referendum. These properties are accessible only by boat and are currently used by locals to hunt and camp, even though the County has not opened these up for official public use. The location and uniqueness of these properties provide the possibility for an ecotourism opportunity and revenue generator as fish camps, or a similar type of use.

Land management of these properties would be minimal and limited to vegetation and invasive exotic plant control. Immediate management needs include improved access for County staff, signage, and enforcement of any illegal activities. Any future public use opportunities will need to be fully vetted through stakeholder engagement and the creation of a conceptual master plan. Revenue generation at these properties may be possible depending on the type of public use.

Crystal Lake
Acreage: 24.79
Classifications: Passive Park, Passive Recreation
Status: Open to the Public/Late Stage Planning

Located on Lady's Island, Crystal Lake provides a natural retreat from its urban surroundings with forested trails, salt marsh, and scenic views of Crystal Lake. The property includes valuable wildlife habitat, especially bird foraging and roosting habitat in a highly urbanized area. Beaufort County is in partnership with the Friends of Crystal Lake (FoCL), many of whom are master gardeners and master naturalists. According to the existing lease agreement and by-laws of the FoCL, they are allowed to use the building facility for an office space and in return will assist the County with educational programs, charitable activities, and conservation efforts. The formation of an official MOU between the County and the FoCL is underway.

The initial phase of park improvements has been completed with the installation of a parking area, covered walkway, boardwalk, butterfly and rain garden, and the "green" renovation of the Butler marine building, which provides office space for local conservation groups including FoCL, the Soil and Water Conservation District, and BCOLT. As of early 2018, the second phase of park improvements is in the planning stages and upon completion will provide a boardwalked trail completely encircling the lake.

Due to the proximity to adjacent neighborhoods and roadways, land management activities will consist mainly of invasive exotic plant removal and mechanical and/or hand vegetation control, as needed. Office space rental agreements provide revenue to the County and will be used for continued maintenance of the park.

Duncan Farms
Acreage: 79.00
Classifications: Recreational/Special Use, Regional Park

Status: Closed to the Public

This property in northern Beaufort County has an agricultural history and is in an area of the County with abundant rural land, much of which is privately owned and is increasingly under the threat of sprawl. The property is mostly large open, fallow fields with a treed perimeter and low ditches traversing the grounds. Native ground cover is beginning to regrow.

Land management on this property is minimal and includes mowing and/or prescribed burning to maintain the open fields, at this time. There is a possibility for natural resource restoration efforts on the property, depending on the future use and access decisions, but those efforts would be at a great expense to the County and would provide little or no revenue.

Throughout the country, the local food movement has been increasing and Beaufort County has many active farms. Duncan Farms presents an opportunity to create an agricultural node in Beaufort County due to it long agricultural history. Development of this property into working farmland could be an excellent partnership with the USDA, NRCS, Clemson Extension, and local colleges; and provide a revenue generation that could be used elsewhere in the Program. In the recent past, Nemours Wildlife Foundation offered to be a partner is this effort and to form a local task force to explore opportunities. They have a keen interest in teaching local school children about the outdoors, forestry, and farming. The working farmland potential will be considered further with potential partners to maintain the open space of this property.

Factory Creek Park
Acreage: 1.00
Classifications: Open Space, Pocket Park
Status: Open to the Public

Factory Creek Park is a small pocket park located at the base of the Woods Memorial Bridge on Lady's Island adjacent to a County-owned boat ramp. The site offers a beautiful vista and green space in an urban area. Factory Creek Park contains a dock maintained by the County, a small parking area, and green space for dog walking, observing the water, and birdwatching.

Factory Creek Park is jointly owned by the County and BCOLT, who assumes responsibility for the maintenance of the property, with the exception of the fishing dock. A JOA is in place that defines the roles and responsibilities of each party.

Due to the size and location of this park, as well as the terms and conditions of the JOA, land management activities are not necessary. However, the park does exhibit shoreline erosion that will need to be addressed in the near future to prevent any further loss of land and to protect the adjacent roadway. The County will coordinate with BCOLT and the State Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management to discuss possible erosion abatement options. Revenue generation is not anticipated at this site.

Ford Shell Ring
Acreage: 6.89
Classifications: Special Resource Site, Pocket Park

Status: Closed to the Public

The Ford Shell Ring property is jointly owned by Beaufort County and the Town of Hilton Head. There is currently no parking and limited access to the property off of Squire Pope Road. The property consists of mostly upland forests with some frontage on Skull Creek. A shell midden occurs on the property and therefore makes this a unique and sensitive site for land management and public use.

Land management would be minimal at this site and would focus on hand control of invasive exotic vegetation as needed. The immediate need is for improved access for County staff, boundary posting, and signage. There is a possibility for cultural interpretation of the shell midden and a pedestrian trail through the property to a platform overlooking the creek, however any future public access plan would need to be vetted through the State archaeological process to ensure proper preservation of potential artifacts. Revenue generation is not anticipated at this site.

Fort Fremont
Acreage: 16.98
Classifications: Special Resource Site, Passive Recreation
Status: Open to the Public/Late Stage Planning

Located on Penn Center Road on the southwestern end of St. Helena Island, Fort Fremont is perhaps the best example of use for historic tourism. In a 2013 tourism study conducted by Regional Transactions Concepts LLC that estimated the impact of tourism spending in Beaufort County, it was determined there were 174,535 visitors to Beaufort, Port Royal, and St. Helena, which does not include visits to Hunting Island. Therefore, there is an incredible opportunity for Fort Fremont to attract visitors.

The Fort was built in 1898 to defend the Port Royal Sound, during the outbreak of the Spanish-American War. The property was acquired by the Program with plans to restore the overgrown and rapidly deteriorating property. The County works in partnership with the Friends of Fort Fremont (FFF) to maintain the site, and together, have developed plans for the park that include a historic interpretive center and pavilion. The FFF currently lead historic tours at the park and have built a diorama of the Fort as it looked in the early 1900's, which is currently located at the St. Helena Branch County Library. To facilitate the historic tours and visiting public, the FFF will be housed at the interpretive center upon its completion, and an MOU detailing duties and responsibilities will be executed. Additional improvements to complete the park renovations include an improved entrance and fencing, shoreline stabilization, and safety/security measures on the fort structure.

Due to the historic nature of the site, land management activities will consist mainly of invasive exotic plant removal and hand-control of vegetation, as needed. There is a possibility of generating revenue through a voluntary donation box within the interpretive center, user fees for large tour groups, or a general recreational user fee. These opportunities require continued discussion and coordination between the County and the FFF.

The Green
Acreage: 1.06
Classifications: Open Space, Pocket Park
Status: Open to the Public

A portion of this property was originally conserved in 2007 as open space and restricted from any improvements. In 2010, the property was jointly purchased by the County and BCOLT and a Tenancy in Common Agreement was executed, which outlines responsibilities and permitted uses. Additionally, the City of Beaufort helps to maintain the property.

Currently, the property is an open lawn with a mature oak canopy along the edges and is bordered on all four sides by residential roads and homes. Observed uses include canine activities, picnicking, Frisbee tossing, and other low-impact yard activities. There are a few benches scattered on the property. Other possible improvements that could be done and yet still retain the open space nature of the park include a couple of trash cans, dog waste stations, and picnic tables.

Due to the size and nature of the property, no land management activities are needed. Revenue generation through events coordinated by BCOLT is addressed in the Tenancy in Common Agreement and funds generated are used for the continued maintenance of the property.

Greens Shell Park
Acreage: 3.30
Classifications: Recreational/Special Use, Pocket Park
Status: Open to the Public

Located on Squire Pope Road, this property was jointly purchased by the Town of Hilton Head Island and Beaufort County. Amenities currently on the property include an observation deck, playground, picnic pavilion with grills, restrooms, and small basketball court. It is one of the more intensely developed sites in the RCLPP inventory and was purchased with funds prior to the first referendum. The park is currently maintained by the Town of Hilton Head.

Due to the size and nature of this park, no land management activities are necessary. Revenue generation is not anticipated at this site.

Ihly
Acreage: 63.07
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

The Ihly property is located in northern Beaufort County on deep water with 700 feet of frontage on McCalleys Creek. Maritime forest and salt marsh comprise the northern property boundary. The property also contains approximately 30 acres of open fields and a pecan grove centrally located within the interior of the tract. There are 8-acres of wetlands with two isolated freshwater wetland ponds. Forest types include both mesic and upland mixed hardwood-pine. Beaufort County granted a restrictive easement to the Department of Defense, but it does allow for management and some public access.

Land management and public use activities will need to be fully vetted through a stakeholder process to ensure appropriateness as it pertains to the restrictive easement. Possibilities to consider include mechanical and hand vegetation control, shoreline stabilization, boat/kayak dock, primitive camping, and pedestrian trails.

Jenkins Creek / Jenkins Islands
Acreage: 1.78 / 24.24
Classifications: Recreational/Special Use, Pocket Park / Special Resource Site, Passive Recreation
Status: Closed to the Public / Closed to the Public

Located on St. Helena Island, the Jenkins Creek property is adjacent to a widely used boat ramp, Eddings Point Boat Landing, along the Morgan River and Jenkins Creek. The property is a small linear strip of scrubby/sandy land under large pines and cedar trees. It is currently used by boaters as an overflow parking area, although it has not yet been improved for that purpose, nor is it officially open to the public. Due to the size and nature of the property, no land management activities are needed beyond mowing to maintain the open understory. Public use opportunities are very limited given the size and shape of the property. Overflow parking on this property would not be ideal, however a single modular restroom, a few picnic tables and grill, and signage would be well suited and likely highly used by the boat ramp visitors. Revenue generation is not anticipated at this site.

The Jenkins Islands consist of three islands (Palm, Murdaugh, and Legare) located directly across the road from the Jenkins Creek property and the Eddings Point Boat Landing. These islands remain as a natural undeveloped landscape and are inaccessible at this time. Land management of the larger island could include prescribed burning, invasive exotic plant control, and hand vegetation control as needed. There is potential to provide public access to the larger island by connecting it via a boardwalk/pedestrian crossing to the Jenkins Creek property and Eddings Point Boat Landing and providing a pedestrian loop trail around the island. The smaller islands are too far from the road to feasibly construct a boardwalk through the high marsh and will remain as naturally occurring green space. Revenue generation is not anticipated on these islands.

Keyserling/Fort Frederick
Acreage: 2.58
Classifications: Special Resource Site, Passive Recreation
Status: Closed to the Public

The Beaufort County owned parcels abut the DNR Heritage Preserve parcels at Fort Frederick on the Beaufort River in the Town of Port Royal. The Fort property is owned and managed by the DNR. The Fort is of historical importance and believed to be the oldest tabby structure in South Carolina and DNR arranges tours of the property upon request. The Program purchased land adjacent to Fort Frederick to help provide access to the heritage preserve.

Due to the size and historical significance of the County owned parcels, no land management activities are needed. Immediate management needs are to coordinate with DNR on public access and park development, as well as develop an MOU between DNR, the County, and the Town of Port Royal for maintenance needs. The Heritage Trust Act allows for a minimal user fee not to exceed $5 (Section 51-17-110), therefore revenue generation may be possible at the approval of the SC DNR Board.

Lucky
Acreage: 70.41
Classifications: Recreational/Special Use, Passive Recreation

Status: Closed to the Public

The Lucky property is adjacent to the Ihly property and contains open fields and grand live oak trees. A 1.5 acre pond is also found in the interior. Some of the property is comprised of mesic forest associated with a wetland drain. Several stands of loblolly pine exist, which have been planted or naturally regenerated.

A significant management concern is the tenant living on the property. There has been a history of dumping and trash piled up around the house that created a nuisance. The tenant is paying rent to the County and should be adhering to specific maintenance guidelines as outlined in the lease agreement. County staff will continue to collaborate with the Sherriff's Office on enforcement of the lease terms.

Beaufort County granted a restrictive easement to the Department of Defense on this property, but the easement allows for a passive park with some limitations. Land management and public use activities will need to be fully vetted through a stakeholder process to ensure appropriateness as it pertains to the restrictive easement and limitations of the property due to the on-site tenant. Possibilities to consider include mechanical and hand vegetation control, pedestrian trails and boardwalks, connectivity to the Ihly property, and U-Pick berry fields, which could generate some revenue for the continued maintenance of the property.

Manigault Neck Corridor
Acreage: 347.44
Classifications: Passive Park, Passive Recreation/Regional Park
Status: Closed to the Public

This assemblage of properties includes the Manigault Neck, Chechessee, Cool Heart Springs, and Jeter acquisitions located along Callawassie Drive and Chechessee Creek. All of the RCLPP properties from Widgeon Point to Okatie Regional Preserve form a significant rural greenbelt between northern and southern Beaufort County, creating connectivity and wildlife habitat corridors as well as enabling the big picture approach to ecotourism. The Manigault Neck Corridor is a forested assemblage of properties that offers numerous land management and recreational possibilities. There is also a small church located on the property, which is paying rent to the County.

Due to the size, location, and accessibility of these properties, there are a variety of public uses that could be provided, including trails, open-air pavilion with picnic tables, boardwalks and overlooks along the marsh front, and water access to Chechessee Creek. Until such time as a conceptual park plan can be developed, land management will be needed in the form of timber thinning, mechanical/hand vegetation control, invasive exotic plant control, and prescribed burning. Long-term timber management is a revenue generation possibility at this site.

McDowell Hummocks
Acreage: 3.96
Classifications: Open Space, Passive Recreation
Status: Closed to the Public

These very small hummocks are located off of Sea Island Parkway and Harbor Island Bridge. They are difficult to access, but are occasionally used as a fish camp, even though the County has not opened them for official public use. Due to the remoteness of these small islands, land management will be minimal and limited to invasive exotic plant control, as needed. At this time, public access and use will be minimal as well. In the future, these hummocks may be able to be incorporated into a future private-public ecotourism partnership opportunity. Immediate management needs include improved County staff access, signage, and enforcement of any illegal activities.

McLeod
Acreage: 98.12
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

The McLeod property in northern Beaufort County contains maritime forests and salt marsh associated with the Whale Branch River. Although the property is currently unmanaged, views of the waterfront are picturesque. There is also a large open pasture in the middle of the property and two underground natural gas pipelines running through portions of the property. A portion of the property also connects to the Spanish Moss Trail, which begins in the Town of Port Royal and parallels Highway 21 through the northern part of Beaufort County. Access is currently through a gate along Detour Road, which is controlled by Santee Cooper. Additionally, Beaufort County granted a restrictive easement to the Department of Defense on this property, but the easement allows for a passive park with some limitations.

Land management and public use activities will need to be fully vetted through a stakeholder process to ensure appropriateness as it pertains to the restrictive easement. Possibilities to consider include mechanical and hand vegetation control, prescribed burning, a parking area, restroom facilities, pedestrian trails and boardwalks, picnic pavilions, grills, scenic vista overlooks, and a kayak launch.

Mitchelville Beach
Acreage: 20.00
Classifications: Special Resource Site, Passive Recreation
Status: Closed to the Public

The Mitchelville Beach property is co-owned by the County and Town of Hilton Head. It consists of undeveloped beach front and unique habitat types ascending from the beach to the maritime forest uplands. It is also a refuge for wildlife species that have limited space in this highly urban environment. The property is subject to dumping and has had trash and litter scattered throughout. There is a small ungated pull-off along the road frontage and a bike path occurs throughout the adjacent neighborhood.

Land management of this property is minimal and would consist of hand control of invasive exotic plants. The immediate management need is security, signage, and monitoring to curb continued dumping and vehicular traffic. The adjacent bike path and nearby Fish Haul Beach and Mitchelville Freedom parks make this a unique opportunity to connect the parks through pedestrian/bicycle paths and increase visitor usage, which would allow more "eyes" on the property for reporting issues. Other improvements that could be done include boundary fencing and posting, a small parking area with trailhead and bike racks, providing beach access via a trail and boardwalk, and a small loop trail through the section of property opposite the beach front. Due to the size and nature of the property, revenue generation is not anticipated at this site.

Mobley/4P Hummock
Acreage: 99.75
Classifications: Passive Park/Open Space, Passive Recreation
Status: Closed to the Public

These properties consist of one large tract and several nearby hummocks. These lands are located along Hwy 170 on the south of the Chechessee River Bridge adjacent to a boat ramp and other conservation lands. The Mobley property is co-owned by the County and the Port Royal Sound Foundation (PRSF), who helps maintain the property and conducts environmental education programs as per a JOA. The PRSF also owns a 10-acre parcel within the Mobley property, which will be developed into an environmental education center. Various natural features include mixed pine uplands, freshwater wetlands, salt flats and marsh, and maritime forest. Land management activities could consist of longleaf pine restoration, prescribed burning, mechanical and/or hand vegetation control, and invasive exotic plant control. There are also a few small wooden structures built as Eagle Scout projects in coordination with the PRSF that allow the PRSF to implement their educational programs. Those structures include an outdoor classroom with a podium and seating, benches, and bird houses.

The PRSF has begun the master planning process, which the County is an active participant. Dumping and litter have been an ongoing problem on the Mobley property and will need to be addressed during the planning process. Although public access will be limited on the smaller hummocks, which will remain as open space, there is great potential for public environmental interpretation on the Mobley property. Park improvements may include pedestrian trails/boardwalks, picnic tables, benches, and wetland overlooks or wildlife viewing platforms. Revenue generation is not anticipated at this site.

New Riverside Regional Park
Acreage: 846.48
Classifications: Passive Park, Regional Park
Status: Initial Discussions

In 2017, the County initiated the conceptual master planning process to envision how to incorporate the County-owned New River and Garvey Hall properties with other adjacent conservation and public use lands. The County Community Development Department has engaged in preliminary conversations about the park and the neighboring Palmetto Bluff residents have offered to play an active role in park development.

Most of the New River property is wet and consists of impounded rice fields and scattered hummock islands, making terrestrial access difficult. The Garvey Hall property is close to the New River property and, although not directly connected, the properties are close enough that they will be planned together as one Regional Park and explore options for connectivity through additional acquisitions or access/trail easements. Garvey Hall is an easily accessible property and could be the better location for public access to both properties. Land management activities will be evaluated during the Master Plan process.

The properties offer a variety of prospective uses including an interpretive/visitor's center, trails, kayaking, rental cabins, and camping. A comparable property that could be used as a reference is the CawCaw

Interpretive Center in Ravenel, which is owned and operated by Charleston County PRC. The potential for revenue generation through an ecotourism-based recreational opportunity is great for these properties.

North Williman Island
Acreage: 8,000.00
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

North Williman Island is the largest property in the RCLPP inventory. Beaufort County is a ¼ co-owner with DNR. The sheer size of this island presents a wonderful opportunity to manage this property as a Wildlife Management Area. The Passive Parks Manager will coordinate with DNR staff to determine the process of providing this type of opportunity to the public.

Land management on this property will be determined in collaboration with DNR and be compatible with current activities being conducted on the south part of the island. Additionally, other public use and access to this property will be vetted through a stakeholder engagement process and a Management Plan will be created for this property. Close coordination with DNR will be necessary to ensure appropriate land management and resource sharing opportunities, and an MOU will be developed between the County and DNR to outline duties, responsibilities, and any revenue generation allocations towards the continued maintenance and operations of the property.

Okatie Marsh/Olsen
Acreage: 197.80
Classifications: Passive Park, Passive Recreation
Status: Closed to the Public

Okatie Marsh borders the Okatie River, contributing to the County's decade long efforts to protect the Okatie River from further degradation. The property is the northernmost tract of a series of three tracts that were designated to become Planned Unit Developments (PUD). The Program purchased this tract and its anticipated development on the property was stopped. A new animal control facility is being constructed between the acquired property and Highway 170. There is a PUD adjacent to the property, which owns a portion of the existing access road and is in initial stages of development. Several structures occur on the property, including a dilapidated house, an aluminum storage unit, a shed, and a modern house. There is also an out-parcel on the Olsen property.

The property includes maritime forest, which grades into planted loblolly pine as the property nears the river. An interesting and unusual feature is an eastern red cedar allée along Pritchard's Point Road and the large live oaks scattered throughout the property. Land management activities that could occur on the property would focus mainly around timber management and restoration, including prescribed burning and invasive exotic control. Restoration would benefit the ecological health of the property, improve aesthetics, reduce wildfire hazards, create an excellent environmental education opportunity, allow more efficient trail construction, and the timber could be a source of future revenue. Grant and cost-sharing opportunities exist for longleaf pine restoration and could be pursued prior to establishing public access.

Although a conceptual development idea for the property was considered upon its acquisition, there are numerous issues that need to be considered and planned for prior to opening the property to the public.

Immediate needs include constructing a permanent access road or obtaining an easement on the road owned by the PUD, securing the modern house on the Olsen property, removing the dilapidated structures, and conducting a timber harvest. Following those activities, next steps could include creating public access points, a trail network, picnic areas, and land management activities. Any future public use and access plans will be vetted through stakeholder engagement and the creation of a conceptual master plan. Additionally, there is the potential for long-term revenue generation with proper timber management and the rental of the modern house.

Okatie Regional Preserve
Acreage: 186.62
Classifications: Recreational/Special Use, Regional Park
Status: Late Stage Planning

The County has been actively developing an equestrian-themed park on the Okatie River within the Town of Bluffton, known as the Okatie Regional Preserve. The property consists of maritime forest, wetlands, salt marsh, and mixed hardwood pine forests. Once developed, this park will have the facilities to provide equine assisted therapeutic activities for individuals in the Lowcountry with physical, mental, or emotional disabilities; as well providing opportunity for public horseback trail riding. A private partner will be brought in to manage this program on behalf of the County, and an MOU will be executed outlining duties and responsibilities of the private-public partnership. Currently, the Heroes on Horseback organization has been the partner assisting with the park design elements. The development of this park is a prime example of leveraging resources, making the most of a public-private partnership, and maintaining the conservation values of the property. Trails will run throughout the property for both horses and people.

Two additional properties, Evergreen and New Leaf, are located off of Highway 170 and Davis Road to the southwest of the main Okatie Preserve property. These two properties were acquired jointly with County RCLPP and stormwater funding. Stormwater ponds will be constructed on each of these properties, however the potential to connect a system of trails north to south throughout the entire regional preserve of RCLPP properties is great, and dependent upon additional key acquisitions. County staff continue to coordinate with BCOLT on those acquisitions.

Due to the high-use potential of this property, land management activities will consist mainly of invasive exotic plant removal and mechanical or hand control of vegetation, as needed. There is a possibility of generating revenue through a recreational user fee. Any user fee system will be discussed with the selected private partner and outlined in the MOU agreement prior to opening the park to the public.

Okatie River Park
Acreage: 18.00
Classifications: Passive Park, Passive Recreation
Status: Initial Discussions

The Okatie River Park property is a linear buffer of open pasture and tree-lined swales along the Okatie River north of Hwy 278. There are also a house, barn, and small pavilion located on the southern end of the property.

In 2018, the adjacent property owner approached the County with a private-public partnership proposal in which the landowner would build and maintain a passive park in exchange for use of a portion of the property towards future development greenspace requirements. In March 2018, the County Council sent the proposal to a subcommittee for further discussions. If the proposal should move forward, an MOU will be executed between the County and the landowner that would outline duties and responsibilities of each party, land management and property maintenance needs, and public use opportunities, among others. Revenue generation is not anticipated at this site.

Oyster Factory Park
Acreage: 9.06
Classifications: Recreational/Special Use, Pocket Park
Status: Open to the Public

Because of its convenient location in the heart of Bluffton on the May River, Oyster Factory Park is well used by visitors and the local community to access the river and is a site for special events and functions. The park connects the community to Bluffton's historic oystering past and preserves a beautiful bluff providing a buffer from the residential and commercial development occurring in the surrounding community. The Town of Bluffton and Beaufort County have an agreement in place and the Town took over management of the park in 2004.

Existing improvements include a boat ramp, signage, wooden fences, a short nature trail through the wooded area, two designated parking lots, the Garvin House, an open air pavilion, restrooms, an oyster roast area with tables, and benches. BCOLT holds a conservation easement on two of the Oyster Factory Park parcels, which identifies the uses and permitted structures of those parts of the property. Due to the size and nature of this park, no land management activities are necessary. Revenue generation is not anticipated at this site.

Pinckney Colony Park
Acreage: 38.21
Classifications: Open Space, Passive Recreation
Status: Open to the Public

Pinckney Colony Park is at the corner of Pinckney Colony Road and Highway 278. Most of the property is freshwater wetlands and conserved for water quality purposes. The small upland area has a picnic space with tables and trash cans. A storm water pond has also been constructed on the property to accommodate stormwater runoff from Highway 278. The Beaufort County Parks and Leisure Services Department (PALS) is responsible for property maintenance.

Due to the wetland nature of the property, no land management activities are necessary. Additionally, any future trail development on this site would require extensive boardwalks. As of the production of this report, no additional public access on the property is being planned due to the extensive presence of wetlands and sensitivity of the habitat to development. Revenue generation is not anticipated at this site.

Pinckney Point
Acreage: 232.60
Classifications: Recreational/Special Use, Regional Park

Status: Closed to the Public

Two properties are included in this listing due to their proximity and connection to each other, Pinckney Point and the Gnann property, which are located between the Colleton and Okatie Rivers. The combined property consists of open, fallow fields with some naturally regenerating pine, a semi-connected island, and an open vista overlooking high marsh. A house, barn, and tabby ruins occurs on the bluffs of the main property, however the house has been recently vacant and is in need of repairs and/or renovations. The barn and tabby ruins need to be evaluated for potential historic significance and, if so, secured for posterity.

Land management activities that could occur on the property would focus mainly around forestry and longleaf pine restoration efforts, including prescribed burning and invasive exotic plant control. Restoration would benefit the ecological health of the property, create an excellent environmental education opportunity, and the timber could be a source of future revenue. Grant and cost-sharing opportunities exist for longleaf pine restoration and could be pursued prior to establishing public access.

A conceptual park plan was drafted several years ago and could be revisited as a starting point in the creation of any new development plan. Additionally, the concept of a native species arboretum was brought forward as a way to balance the natural and cultivated landscapes and create a potential tourist destination, which could also be a revenue generating activity. This property lends itself to many public use and revenue generating possibilities, including picnic pavilions, trails, historic/environmental education, silviculture, eco-tourism, and event rentals. Any future public use and access plans will be vetted through stakeholder engagement and the creation of a conceptual master plan.

Shell Point
Acreage: 11.92
Classification: Open Space, Passive Recreation
Status: Closed to the Public

Shell Point was purchased to stop additional residential development in a highly developed area. The property contains both jurisdictional and non-jurisdictional wetlands and preservation prevents the exacerbation of stormwater issues. At this time, this property will remain open space for stormwater retention. Due to the size, location, and nature of the property, land management will be minimal and limited to invasive exotic plant control. Public access and revenue generation are not anticipated at this site.

Station Creek
Acreage: 4.56
Classifications: Recreational/Special Use, Pocket Park
Status: Closed to the Public

Located on St. Helena Island, this property is adjacent to a widely used boat ramp, Buddy and Zoo Boat Landing, along Station Creek. The property has an open field under large mature live oaks, and also has a modern house, which has been used by the County Sheriff's Office as a satellite location. The property is currently used by boaters as an overflow parking area, although it has not yet been improved for that purpose, nor is it officially open to the public.

Due to the size and nature of the property, no land management activities are needed beyond mowing to maintain the open field. Public use opportunities need to be discussed further, but may include improvements such as a modular restroom, pervious parking, picnic tables, grills, and signage. Additionally, the fate of the existing house needs to be determined by the County. Revenue generation is not anticipated at this site.

Stoney Preserve
Acreage: 8.11
Classifications: Open Space, Pocket Park
Status: Closed to the Public

Stoney Preserve is jointly owned by Beaufort County and the Town of Hilton Head, who maintains the property. This property is located off of Spanish Wells Road just south of the bridge over Jarvis Creek. Spanish Wells Road has a bike lane as well as a parallel walking path, which is also maintained by the Town of Hilton Head. The property has a picturesque view of Jarvis Creek with an open area used occasionally for picnicking and fishing. There is a small trail, an existing driveway entrance, and some dumping/littering occurs on the property.

Land management of this property is minimal and will consist of mechanical and hand vegetation control and invasive exotic plant control. The immediate management need is security, signage, and monitoring to curb continued littering, as well as regular mowing of the open area to maintain the open space and view. The recent hurricanes have left large downed trees, which need to be cleared from the existing trail. Other improvements that could be done include a small open-air pavilion with picnic tables, a grill, and trash cans; a fishing/crabbing platform; a small earthen parking area; and split rail fencing. There may be a need to implement shoreline stabilization, however that will need to be further assessed and would be incorporated into the fishing/crabbing platform plans. Revenue generation is not anticipated at this site.

Widgeon Point Preserve
Acreage: 162.24
Classifications: Recreational/Special Use, Passive Recreation
Status: Late Stage Planning

Located on Lemon Island, Widgeon Point Preserve is ideally located, equidistant from southern and northern Beaufort County. The BCOLT are a $1/8^{th}$ owner and active partner, and through a Joint Ownership Agreement (JOA) with the County, takes the lead for maintenance and operations of the property.

The property was once a family horse farm. BCOLT worked with volunteers to remove debris and old barbed wire fencing and, with a group of master naturalists, designed and built rudimentary trails and conducted a prescribed fire in 2016. BCOLT works with community groups such as the Port Royal Sound Foundation, Master Naturalists, and The Center for Birds of Prey to conduct bird and nature walks on the property. BCOLT also renovated the existing barn on the property, which can be used for the rental of events and weddings to offset the cost of property maintenance.

The County has a draft conceptual park improvement plan, which includes the construction of a parking area, restrooms, and other amenities. Permits for the conceptual plan have been obtained and final engineered plans will be completed in preparation to begin construction. The County will coordinate with BCOLT to determine if they wish to continue event and property maintenance. If they chose not to, the County will conduct a Request for Proposals for an event concessionaire to manage events and property maintenance.

There is a possibility for generating revenue from the event rentals and reservations for use on this and other RCLPP properties. An agreement will be executed between the County, BCOLT, and any other private partner (if applicable) that will outline duties and responsibilities as well as the distribution of any funds generated from the property. Land management needs on this property are minimal and include prescribed burning and invasive exotic plant control as needed.

Conservation Easements

The RCLPP also protects land through the purchase of development rights via a conservation easement. Conservation easements are proactive tools used to protect rural land, thereby preserving natural resources and reducing incompatible development. The RCLPP goals are compatible with local, state, and federal partners and frequently those partners, including the Marine Corps Air Station, U.S. Department of Agriculture Natural Resource Conservation Service, and local municipalities participated in the purchase of conservation easements.

Many of these properties continue to be active farms or working lands contributing to the local economy and remain privately owned. Most of the conservation easements are held by BCOLT, which annually monitors these easements, however some easements are held by Beaufort County itself.

Annual monitoring is a very important part of an easement program. Landowners receive payment or accept tax benefits in exchange for the easement donation. The organization that holds the easement has a duty to ensure no abuses are occurring, and the landowners should be held to the agreements they have signed. Monitoring should be completed by a trained individual who understands the conservation easement document terms. The IRS guidelines for conservation easement compliance include:

- The organization must have the commitment to protect the conservation purposes of the donation and resources to enforce the restrictions of the conservation easement. Treas. Reg. § 1.170A-14(c)(1).
- Organizations that accept easement contributions and are committed to conservation will generally have an established monitoring program such as annual property inspections to ensure compliance with the conservation easement terms and to protect the easement in perpetuity.
- The organization must also have the resources to enforce the restrictions of the conservation easement. Resources do not necessarily mean cash. Resources may be in the form of volunteer services such as lawyers who provide legal services or people who inspect and prepare monitoring reports.

County staff currently monitor the properties listed below on an annual basis to ensure compliance with easement terms and conditions:

Property Name	Acreage	Grantee	Additional Grantee/Co-holder
Winn Tract	68.91	Beaufort County	USDOD
Penn Center (Tree Farm)	195.41	Beaufort County	USDA-NRCS
Rathbun	27.50	Beaufort County	USDOD
Seabrook Road Donation	14.88	Beaufort County	N/A

Maintenance and Operations

As with any land acquisition and passive park program, it is important to have designated responsibility for natural resource management and park amenity maintenance. At the time of this report, public use of RCLPP lands is infrequent to nonexistent, therefore maintenance needs are minimal. Once properties become improved for public access and use, maintenance needs are going to increase and coordination between the county departments will be crucial.

Various county departments were identified in the Roles and Responsibilities section. Those departments and the coordination between them for planning, development, and maintenance is shown in the figure below. Unless otherwise determined through agreements with Friends groups, volunteers, or other entities, the process illustrated below will be followed by county staff until such time as an integrated Parks and Recreation Division may be created.

Need to insert figure of coordination here

Strategic Goals

The following strategic goals closely align with the Beaufort County Comprehensive Plan Land Use and Natural Resources chapters and will be reviewed and updated, as needed, every five (5) years coinciding with the Beaufort County Comprehensive Plan review period.

Develop Management and Regulatory Standards

The foundation for any public use program requires regulations and standards upon which to build an appropriate management system for sustainable long-term public enjoyment.

- Review and assess existing code and ordinances and, where needed, develop such that will ensure perpetual protection of passive park properties and public use thereof.
- Collaborate with the Finance Department on revenue income from passive park properties and the appropriate distribution of such funds towards long-term management of those properties.
- Collaborate with various County Departments on planning and mapping updates, purchasing and construction processes and standards, and maintenance and security requirements.
- Develop marketing and branding standards for the Beaufort County system of passive parks.

Implement Planning and Infrastructure Development

Implementing the appropriate planning processes will ensure proper infrastructure development on the passive park properties while maintaining the conservation value of the acquired lands.

- Assess each passive park property for fencing, gating, access, and boundary posting needs.
- Develop a priority list of passive park improvement possibilities.
- Develop individual management plans, which will incorporate land management resource needs, public use opportunities, and revenue generation possibilities.

Collaborate with Stakeholders

Collaboration with various stakeholder groups is crucial in the successful planning of public use projects in order to optimize needs of the community and protection of the natural resources.

- Continue to coordinate with the Rural and Critical Lands Preservation Program Board on acquisition of properties that enhance the existing system of lands and are consistent with the Beaufort County Comprehensive Plan and Greenprint.
- Engage co-owners, funding partners, adjacent landowners, neighboring communities, and other stakeholders during the conceptual master planning process for passive park properties.

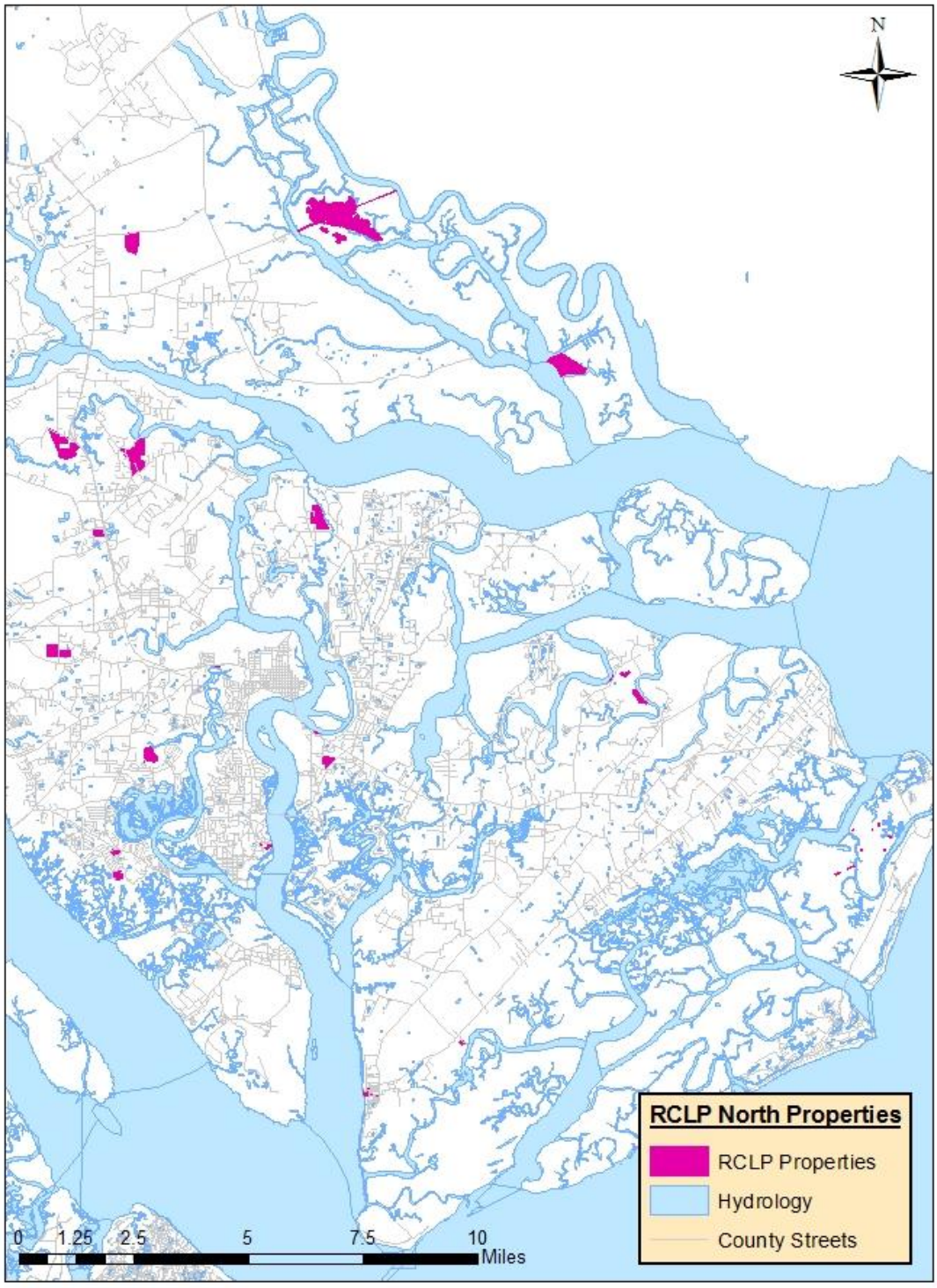
Create an integrated Parks and Recreation Division

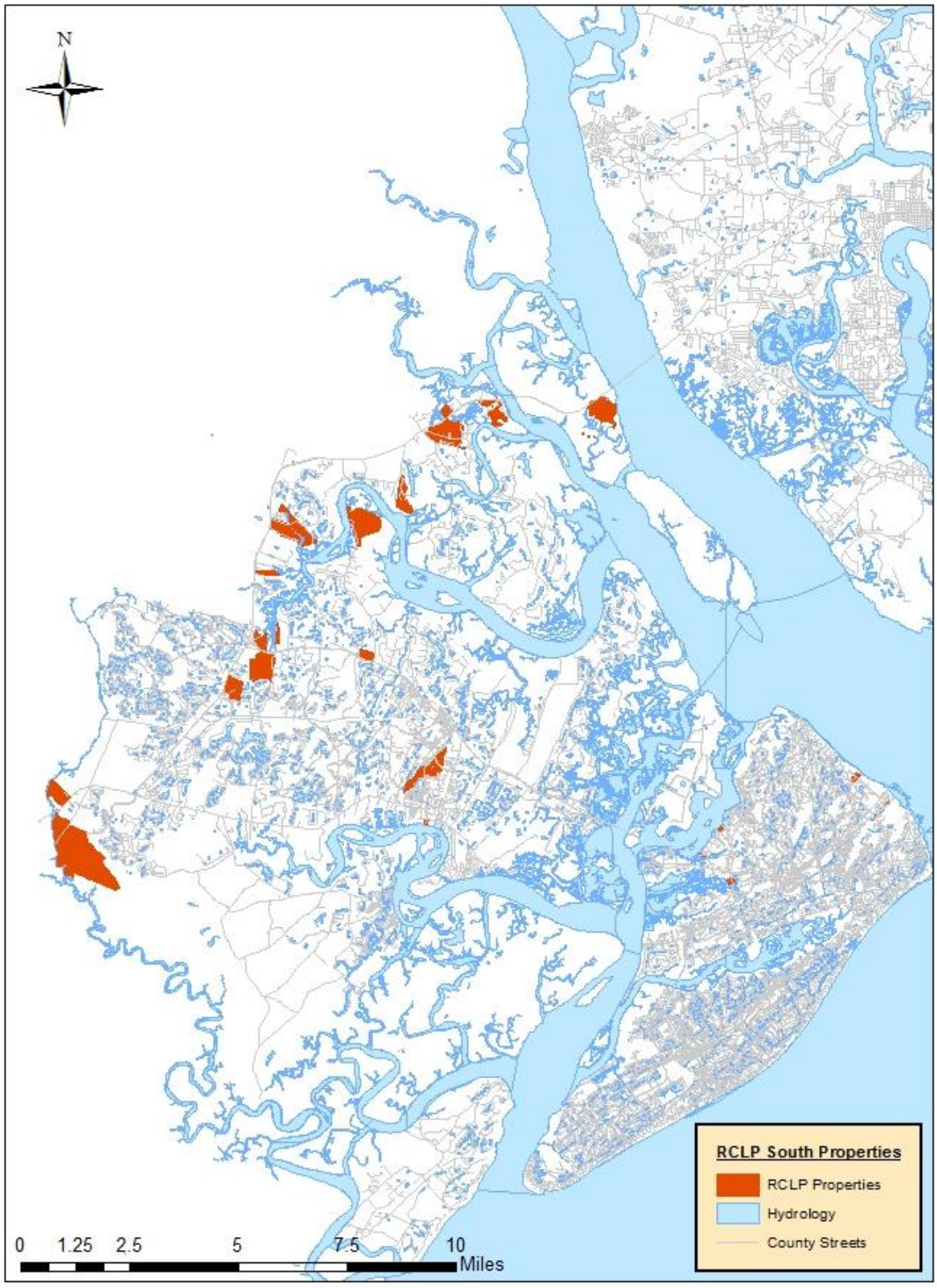
The long-term success of a Passive Park Program will depend on the eventual creation of a Division dedicated to the continued development, maintenance, and operations of the system of county parks.

- Create a need assessment for a Parks and Recreation Division, which will include an organizational structure, park maintenance needs and costs, staffing and/or contractual requirements, and funding possibilities.
- Collaborate with County administrators and County Council towards the creation of the Division.

Passive Park Location Maps

The following maps illustrate the locations of the identified Rural and Critical Land Preservation Program Passive Park properties in the north and south parts of Beaufort County.


N
RCLP North Properties
RCLP Properties
Hydrology
County Streets
0 1.25 2.5 5 7.5 10
Miles


N
0 1.25 2.5 5 7.5 10
Miles
RCLP South Properties
RCLP Properties
Hydrology
County Streets

Passive Park Priorities Table

The following table provides a list of passive park properties and their public use and revenue generation possibilities. Properties are prioritized by Tiers according to existing plans, contracts, and funding availability in Tier 1; partners and available funding in Tier 2; and future intent based on location, accessibility, and revenue possibilities in Tier 3. Properties listed in Tier 4 have access limitations to be addressed, or are already developed and fully accessible to the public.

Definitions of the public use and revenue generation potential categories is as follows:

- Parking/Restrooms means there is either a hard or softscaped parking area and/or a restroom facility.
- Paved Trails means trails or pathways that are either paved, sidewalked, or otherwise hardscaped.
- Unpaved Trails means trails or pathways that are earthen, boardwalked, or otherwise softscaped.
- Picnic Areas means picnic tables or open-air roofed structures with picnic tables, benches, or seating and may or may not include grills.
- Camping means primitive, platform, or other types of camping and may or may not include fire rings.
- Canoe/Kayak means the possibility of providing water access to or from a creek, river, sound, or marsh system for non-motorized boats.
- Special Resource means there may be a historical or culturally significant feature ("H/C") and/or some other specialty public use feature ("PUF") such as, but not limited to, a wildlife viewing platform, fishing dock/pier, or interpretive facility.
- Beach Access means the possibility of providing access to the beach, a sandbar, or other sandy landscape feature.
- Timber means the possibility of short or long-term silviculture management of the forested ecosystem.
- User Fees means the potential to charge a mandatory or voluntary fee to visitors of the site either individually or as a group.
- Events means the potential to charge a fee for private events such as, but not limited to, weddings, family reunions, or other social functions.
- Concessions means the potential for a private company to run a concession which the County will monetarily benefit from, this category also includes leases and other facility rentals that may occur.

Property Name	Location (N or S)	Public Use Potential								Revenue Generation Potential			
		Parking/ Restrooms	Paved Trails	Unpaved Trails	Picnic Areas	Camping	Canoe/ Kayak	Special Resource	Beach Access	Timber	User Fees	Events	Concessions
Tier 1 Priorities													
Fort Fremont	N	P/R	X	X	X			H/C	X		X	X	X
Crystal Lake	N	P/R	X	X				PUF				X	X
Widgeon Point	S	P/R	X	X	X			PUF				X	X
New Riverside Regional Park	S	P/R	X	X	X	X	X	PUF		X	X	X	X
Beach City Road	S	P/R		X	X			H/C	X				
Mobley/4P Hummock	S	P/R		X	X			PUF		X			
Okatie Regional Preserve	S	P/R		X	X			PUF		X	X	X	X
Tier 2 Priorities													
Duncan Farms	N	P											X
North Williman Island	N	P		X						X	X		
Keyserling/Fort Frederick	N	P		X	X		X	H/C	X		X		
Altamaha Town Heritage Preserve	S	P		X	X			H/C					
Okatie Marsh/Olsen	S	P/R		X	X	X		PUF		X			X
Stoney Preserve	S	P		X	X		X	PUF					
Okatie River Park	S	P/R	X	X	X		X	PUF	X			X	X
Tier 3 Priorities													
Pinckney Point	S	P/R	X	X	X	X		H/C/PUF		X		X	
Manigault Neck Corridor	S	P/R	X	X	X	X	X	PUF		X			X
Battey-Wilson	N	P/R		X	X		X	PUF		X			
McLeod	N	P/R	X	X	X	X	X	PUF		X			X
Barrell Landing	S	P		X	X					X			
Amgray	N	P		X	X					X			
Adams	N									X			
Ford Shell Ring	S	P		X	X		X	H/C	X				
Station Creek	N	P/R	X		X		X	PUF					
Mitchelville Beach	S	P		X	X				X				
Jenkins Creek/Jenkins Islands	N	P		X	X		X	PUF					
Lucky	N	P		X							X		X
Ihly	N			X	X	X	X	PUF			X		X
Tier 4 Priorities													
Charlotte Island/Buzzard Island	N			X	X	X	X				X		X
McDowell Hummocks	N			X	X	X	X				X		X
Bluffton Park	S			X									
Baxter*	S	P		X	X		X						
Amber Karr*	N	P		X	X								
Shell Point*	N	P		X	X								
Boundary Street*	N	P	X	X	X								
Factory Creek Park^	N	P	X	X	X		X	PUF				X	
The Green^	N				X							X	
Green's Shell Park^	S	P	X	X	X			PUF					
Oyster Factory Park^	S	P/R	X	X	X		X	H/C/PUF				X	
Pinckney Colony Park^	S	P		X	X								

*Site is unsuitable for public use until such time as future land acquisitions improve public access.

^Site is already developed, open to the public, and being maintained.

ITEM 10

TEXT AMENDMENT TO THE BEAUFORT COUNTY COMMUNITY DEVELOPMENT CODE (CDC): APPENDIX B, DAUFUSKIE ISLAND CODE TO AMEND THE DAUFUSKIE ISLAND PLAN

MEMORANDUM

TO: Beaufort County Planning Commission

FROM: Robert Merchant, AICP, Assistant Community Development Director

DATE: June 26, 2018

SUBJECT: Proposed Amendment to Appendix 4G of the Beaufort County Comprehensive Plan – The Daufuskie Island Plan

Proposed Amendment to Appendix B of the Beaufort County Community Development Code – Daufuskie Island Community Development Code

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Attached to this memo are the following documents:

- The Daufuskie Island Plan
- The Daufuskie Island Community Development Code
- The Daufuskie Island Zoning Map

Over the last year, the Daufuskie Island Council has worked with Ecological Planning Group out of Savannah and RS & H, to develop a new island wide comprehensive plan and zoning ordinance. The Daufuskie Island Council is an organization designated to serve as a liaison between the people of Daufuskie Island and local, state and federal governments and agencies to help address the needs and concerns of island residents. The Council and consultants took part in an extensive public process that involved surveys, public meetings and community workshops. The Daufuskie Island Council is now presenting these documents to the Planning Commission to start the formal adoption process.

Staff Recommendation: The Community Development Department commends the work of the Daufuskie Island Council and recommends the following steps to move these documents forward for adoption:

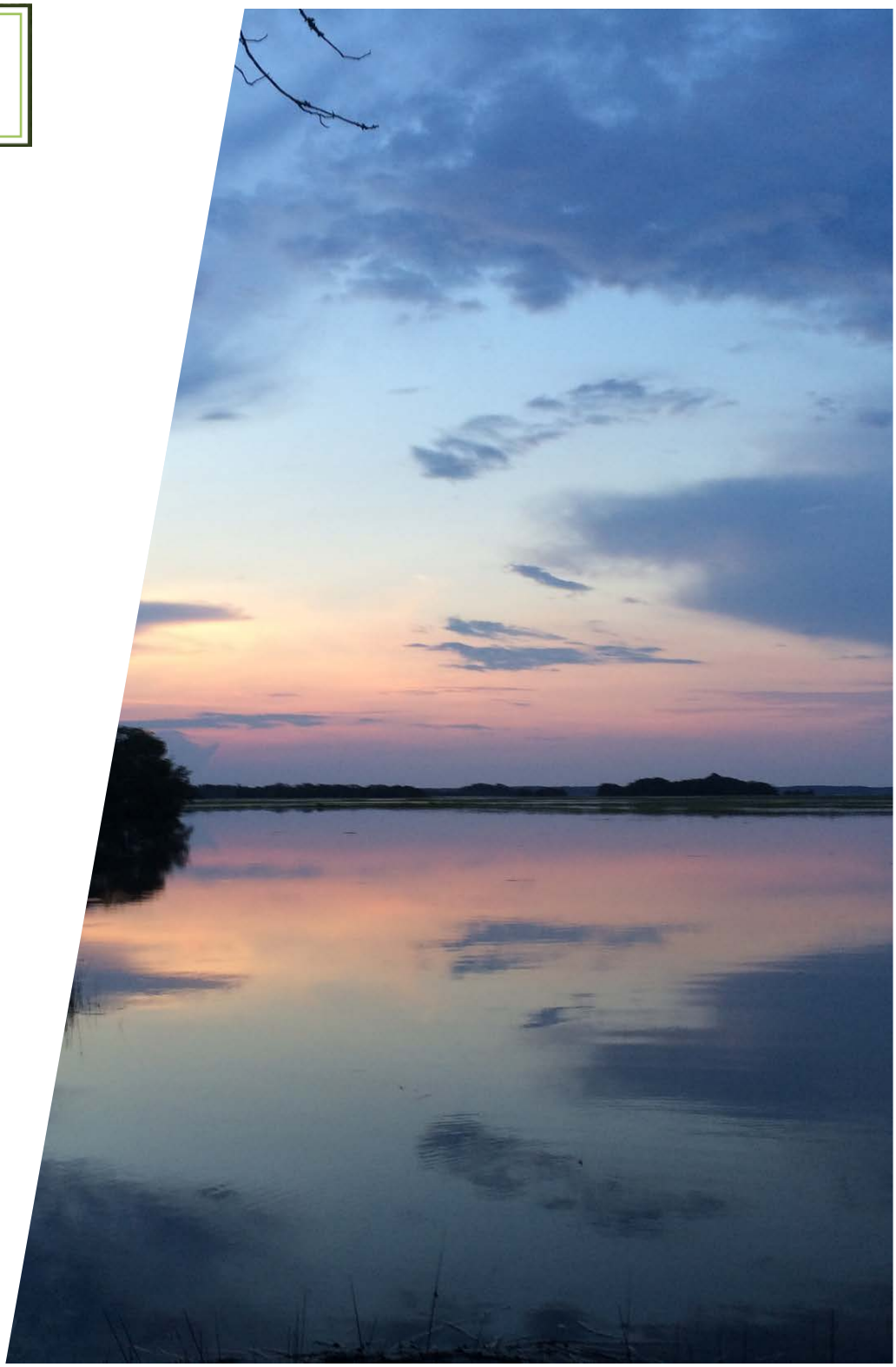
- The Daufuskie Island Plan: The existing plan for Daufuskie Island is in Appendix 4G of the Comprehensive Plan. If the new plan is adopted, it should replace this Appendix 4G. However, before this can take place, there must be a public hearing by the Planning Commission that requires a 30 day notice. Staff recommends that this public hearing take place at the August 6 Planning Commission meeting in order to provide proper notification.

- The Daufuskie Island Community Development Code and Map: Staff recommends that the Planning Commission defer action on this item until staff has a chance to meet with a Daufuskie Island Council representative to work through some questions about the document. Since the Daufuskie Island Code will be adopted as part of the County's Community Development Code and administered by staff, there needs to be a comfort level that the code is internally consistent, works seamlessly with the County Community Development Code and is enforceable.

Daufuskie Island Council

BEAUFORT COUNTY SOUTH CAROLINA 1769

THE DAUFUSKIE ISLAND PLAN



May, 2018

RS&H

COMPLETE Communities

EPG ECOLOGICAL PLANNING GROUP

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In compliance with the South Carolina planning legislation, South Carolina statute 6-29-510(A) for local governments, the Daufuskie Island Comprehensive Plan was prepared through a collaborative and coordinated community effort. The Project Advisory Committee and members of the community participated in workshops, public meetings, and surveys throughout the process and devoted countless hours of effort in the development of the plan. This intensive level of effort by members of the community ensures that the plan aligns with the community's vision for the future.

This plan was also developed in full coordination with Beaufort County planning staff and has been developed to be consistent with the County planning process and existing Comprehensive Plan.

DAUFUSKIE ISLAND COUNCIL
RESOLUTION

A RESOLUTION TO ACCEPT AND TRANSMIT THE DAUFUSKIE ISLAND MASTER PLAN UPDATE AND THE DAUFUSKIE ISLAND PLAN CODE UPDATE

WHEREAS, the Daufuskie Island Council and the Daufuskie Island Council's Committee on the Daufuskie Island Plan and Code have completed the update to the existing Daufuskie Island Plan and Code; and

WHEREAS, the documents were prepared according to the requirements found in the South Carolina Local Government Comprehensive Planning Enabling Act and consistent with the Beaufort County Comprehensive Plan and Community Development Code; BE IT THEREFORE

RESOLVED, that the Daufuskie Island Council does accept and hereby transmit the updated Daufuskie Island Master Plan and Daufuskie Island Code to Beaufort County for review and adoption.

BY: Deborah Smith

Deborah Smith, Chairperson

DATE: May 15, 2018

Chapter One:
INTRODUCTION

CHAPTER 1: INTRODUCTION

A comprehensive plan is the guide that outlines the vision for the future of a community and includes the policies and tools for achieving that vision. South Carolina legislation requires the existence and periodic update of the comprehensive plan under South Carolina statute 6-29-510(A) for local governments. Although Daufuskie Island is not incorporated and is governed by Beaufort County, it is a significant and unique area, separated from the rest of the County by water. As such, it faces challenges, as well as opportunities, that are specific to the Island.

According to legislation, the comprehensive plan is required to include the following elements:

- Inventory of existing conditions
- Statement of needs and goals, including a vision statement that establishes the future desires of the community
- Implementation strategies

In addition to the elements identified above, the state planning legislation also identifies specific and relative community elements, including the requirement that the plan should be developed with broad-based community input and participation. The following elements are required to be included in the plan by statute 6-29-510(D).

- Population
    - Includes historical demographic data and characteristics and trends, which provides an understanding of the existing conditions and future potential of the area
- Economic Development
    - Includes historic data and characteristics regarding workforce, available employment and other relevant factors affecting the economy, such as tourism
- Natural Resources
    - Includes information on the environment and any unique assets or resources within the community
- Cultural Resources
    - Includes information on historic structures and other community features that relate to the cultural aspects of the community
- Community Facilities
    - Includes data and information on community infrastructure, assets and services
- Housing
    - Includes data and information of existing housing stock and characteristics

- Land Use
    - Includes considerations of the development characteristics and land use categories
- Transportation
    - Includes information regarding existing and planned multimodal transportation facilities and infrastructure
- Priority Investment
    - Includes the action plan for implementation of recommendations

The state legislation also requires the periodic update of the comprehensive plan. These updates may occur as often as needed for specific elements to address changing conditions, however a full evaluation of the comprehensive plan should occur every five years.
With the South Carolina planning legislation having been in place for decades, there is a recognition and local planning is a critical element in meeting the interests of the State.

The foundation of the plan should be fact-based information that enables tracking of policy implementation within the community, as well as the creation of a stable environment for business and industry, property owners, and members of the community. The plan provides communities with the tools to implement focused economic development strategies and initiatives that ultimately support the local vision for the future as well as the state's role.

The minimum planning standards and procedures for comprehensive plans incorporate the existing conditions within the community, the identification of needs and goals, and implementation strategies that support communities in meeting their aspirational goals.
The development of the existing Daufuskie Island Plan and Code began as a citizen-driven process in 2005 focused on Beaufort County's Community Preservation initiative. The planning effort encompassed numerous committee and community meetings and a charrette in 2007. The planning process culminated in the completion of the Plan and Code in 2009 and final adoption by Beaufort County in 2010. In light of length of time since the adoption and the changing economic and development conditions, the Daufuskie Island Council initiated a plan review and update.

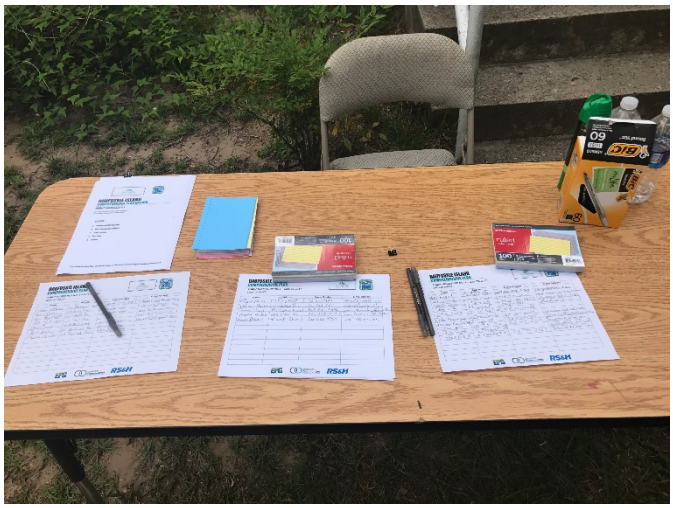
This plan update was completed within the framework of the state planning requirements and in full coordination with Beaufort County. This approach was designed to ensure that the updated Daufuskie Island Plan is better aligned with the Beaufort County planning efforts and provides a springboard for implementation of the recommendations and strategies.

The Daufuskie Island Council undertook this plan update in 2017. A Council Subcommittee was formed to lead the update of the existing plan and included both elected members of the council, as well as members of the community. This Council Subcommittee served as the

Project Advisory Committee, or Steering Committee, for the update throughout the process and provided guidance and direction during the planning process. During the plan development, Daufuskie Island Council elections were held, which resulted in some changes in the committee membership. Members of the Council subcommittee for the plan update are found in Table 1.

TABLE 1. DAUFUSKIE ISLAND COUNCIL SUBCOMMITTEE/PLAN PROJECT ADVISORY COMMITTEE MEMBERS

Deborah Smith, Committee Chair	Member, Daufuskie Island Council
Darnell Brawner / Erin Quinn	Member, Daufuskie Island Council
Sallie Ann Robinson	Member, Daufuskie Island Council
John Schartner	Member, Daufuskie Island Council
Leann Coulter	Community Member
Martha Hutton	Community Member
Andy Mason	Community Member
Geof Jenkins	Community Member



Chapter Two:
COMMUNITY PARTICIPATION

CHAPTER 2: COMMUNITY PARTICIPATION

Community engagement and participation is the foundation of the development of a community plan. The engagement process must be broad-based and inclusive, educational and informative, and provide numerous opportunities for citizen participation and feedback. This planning effort for the update of the Daufuskie plan included numerous opportunities for feedback, including community workshops, public meetings, community surveys, and individual input from citizens. The following describes the participation and input process for the plan development.

Government Coordination

Because Daufuskie Island is not incorporated and ultimately governed by Beaufort County, the coordination with County planning staff throughout the planning process was critical. In addition, status updates were provided to the pertinent Beaufort County committees and planning commission.

May 11, 2017: Beaufort County Coordination Meeting

The project team and PAC chairperson met with the Beaufort County Planning staff to provide an overview of the planning process and plan update. This meeting ensured the coordination from the beginning of the update process with the County staff and also provided the County with the opportunity to provide feedback and input on the proposed plan update.

June 5, 2017: Beaufort County Planning Commission

The project team provided a presentation to the Beaufort County Planning Commission at the regularly scheduled meeting in June, 2017. This presentation provided the Planning Commission members with an introduction to the project team, the plan update process and the schedule. The Planning Commission is one of the County committees that will be responsible for reviewing the plan update and making a recommendation to the County Council for adoption.

June 19, 2017: Beaufort County Natural Resources Committee

The project team provided a presentation to the Beaufort County Natural Resources Committee at the regularly scheduled meeting in June, 2017. This presentation provided the Committee members with an introduction to the project team, the plan update process and the schedule. The Natural Resources Committee is one of the County committees that will be responsible for reviewing the plan update and making a recommendation to the County Council for adoption.

February 5, 2018: Beaufort County Planning Commission

The project team provided a presentation on the status of the plan update to the Beaufort County Planning Commission. The presentation included an overview of the activities to date, and update on the project schedule and the remaining steps in the plan update. The meeting was originally scheduled for January, 2018, but the meeting was cancelled due to inclement weather.

Additional Presentations

Daufuskie Island Council

The Daufuskie Island Council is the elected body that provides input to the County regarding Island issues, needs, and concerns. With the plan update initiative coming from the Council, the coordination and ongoing provision of project status and updates was also a critical element.

The Council holds its regular meetings on the third Tuesday of each month. Project team members or the Chair of the PAC provided updates regarding the development of the plan at each of these monthly meetings and were available to answer questions regarding the plan update.

Project Advisory Committee

The Daufuskie Island Council Subcommittee served as the Project Advisory Committee (PAC). This committee met regularly throughout the process to review detailed information and technical data and provided direction and guidance for moving the plan forward. The PAC meetings were open to the public and were typically very well attended by community members.

April 18, 2017:

This PAC meeting was focused on a review of the approach for the update of the plan and the designation of the Daufuskie Island Council Subcommittee as the Project Advisory Committee.

July 18, 2017:

This PAC meeting reviewed the results of the first public meeting held June 29, 2017. A review and summary of previous/existing plans, including the Conceptual Master Plan Charrette Report developed by Clemson Institute for Economic and Community Development, was completed and presented, as well as the draft vision statement, which was developed based on the results of the community workshop.

August 19, 2017:

At this meeting, the PAC reviewed the preliminary survey results, provided data and information on the identification of existing conditions, and background information and examples of character areas and development strategies

November 27, 2017:

This PAC meeting agenda included the presentation of the results from the community workshop held on October 2, 2017. This information included the draft character areas compiled from the workshop break-out groups, as well as the identified draft development strategies for each character area and the overall development strategies for the island.

January 14, 2018:

This meeting, originally scheduled for December, was postponed until January due to scheduling conflicts. This meeting included a final review of the character areas and development strategies and the results of the second community survey. The PAC also reviewed the zoning densities in the existing code.

February 18, 2018:

At this meeting, the PAC had the opportunity to review the highlights of the draft plan update and draft code update. The project team provided an overview and the draft plan posted online to provide the opportunity for a more in-depth review. The PAC also scheduled a timeframe for the next community workshop.

March 18, 2018:

At this meeting, the PAC reviewed the updated plan document. The project team provided documentation of how comments received were addressed. The draft of the updated Island Code was also presented for review, comment and feedback.

May 7, 2018:

At this meeting, the PAC reviewed the final draft of the plan and code. The project team provided documentation of how comments received were addressed. The PAC accepted the final drafts and recommended submittal to the Daufuskie Island Council for acceptance.

Community Workshops

The community workshops provided an interactive, open forum for participation and input from community members. These workshops were tailored to obtain input on specific areas of the plan and included break-out sessions and work group activities for participants. These meetings, held at Mary Fields School, each had approximately 25-35 participants.

June 29, 2017: Community Workshop # 1

The first community workshop was held on June 29th. At this workshop, a presentation providing an overview of the comprehensive planning process and schedule and a more detailed overview of the Daufuskie Plan update was provided. The attendees were divided into breakout groups for a facilitated discussion on the issues facing the island, as well as community priorities. Attendees were provided with example vision statements from other bridgeless island communities and coastal communities. Results from the breakout groups were posted and attendees used "sticky dots" to identify their top priorities. The results of the workshop were tabulated and incorporated into the first community survey.

October 2, 2017: Community Workshop # 2

The second community workshop was held on October 2nd. Originally scheduled for August 28th, the meeting was postponed due to inclement weather and high winds. At this workshop, a review of the survey results was provided, along with an overview of the existing conditions on the island. The attendees were also provided with an overview of character areas. Participants were divided into work groups, each with a map and markers. Group members identified character areas on the island, along with the defining characteristics of each identified area, as well as development strategies.

April 16, 2018: Community Workshop # 3

The third community workshop was held April 16th at the Mary Fields School. At this workshop, the draft code was reviewed in detail, as well as the draft plan. Handouts were provided for participants as well as posters placed on the walls providing information. The posters remained up, as well as handouts available, at the Daufuskie Island Council meeting held the following evening. Comments were accepted on both the plan and the code and the comment period was held through April 27th.

Surveys

In order to be as inclusive as possible, two community surveys were developed and hosted both on-line and hard copy versions. These surveys included information and ideas generated from the workshops and provided community members who were unable to attend the meetings the opportunity to provide feedback, as well as those who did attend the opportunity to provide additional input.

Survey # 1

The first survey was developed based on the results from the community workshop held on June 29, 2017. This survey, using the online survey tool, SurveyMonkey@ was developed to obtain additional feedback from the community. The survey requested the following information from the respondent:

- demographic information
- island residential status
- ranking of the priorities identified for the island
- community characteristics
- top three favorite things about living on Daufuskie Island
- agreement/disagreement with the draft Island Vision

The survey was open from July 25, 2017 through August 24, 2017. Although the survey was not restricted to one response per device due to the potential for one computer serving a household with several users, the IP addresses were scanned at the completion of the survey. The scan showed there were no anomalies in the responses from each IP address. The largest multiple responses from one computer resulted from the hard copy surveys being incorporated by the project team into the online survey.

There were 368 total respondents which included both online and paper copy responses. The key findings of the survey were a focus on community character and the preservation of that character through compatibility of growth and a sustainable economy. The results also focused on the preservation of community assets, including environmental/natural resources. The top three things that respondents identified as their favorite things about Daufuskie were:

- geographic location/no bridge
- quietness
- slower pace of life.

The vast majority of respondents (89%) agreed with the draft vision statement, which is found in Chapter 3.

Survey # 2

The second survey was an online survey that resulted from the character areas, development strategies and zoning densities presented at the PAC meeting on November 27, 2017. This detailed material required a more in-depth review and the survey was designed to facilitate feedback on the character areas, development strategies and existing zoning and allowable densities,

The second survey was open for approximately two weeks, from December 1st through December 12th. There were 33 respondents to this survey; while a much lower response rate than the first survey, the response rate was approximately 10%. The survey results were presented to the PAC at their meeting on January 14, 2018. The survey results showed a significant majority of the respondents agreed with each of the character areas, development strategies and densities.

The results from both surveys are found in the Appendix.

Additional Input

In addition to the formal opportunities for input and feedback, the project team was provided community input on an individual basis, primarily by island property owners and residents who were unable to make the community meetings. A supplemental public meeting was held on the weekend of December 9- 10, 2017 to provide an additional opportunity for informing the members of the public, including those unable to attend either PAC meetings or the community workshops. The information provided at this meeting included the presentation provided at the PAC meeting on November 27th and at the Daufuskie Island Council meeting on December 28th. In addition, maps and materials were posted on the bulletin board at Mary Fields School, along with project team and PAC member contact information.

All meetings and input opportunities were advertised on the Daufuskie Island Council website, on NextDoor Daufuskie, and with flyers posted in strategic areas of the island. All related presentations and meeting materials have been posted on the Daufuskie Island Council website and are found in the Appendix.

Chapter Three:

VISION AND GOALS

CHAPTER 3: VISION AND GOALS

One of the most critical steps in the development of a plan is the identification of the community's vision for the future. This vision provides the framework for the plan and is based on community input obtained early in the planning process.

Plan Review

At the first community workshop held on June 29, 2017, a review of the visions contained in existing plans that are pertinent to Daufuskie Island was presented. This information was designed to help the community understand the focus These plans and visions included the following.

Beaufort County Comprehensive Plan

The overall vision for the Beaufort County Comprehensive Plan is:
"Promote safe and healthy communities that preserve and build on the County's unique sense of place; and promote sustainable economic opportunities that allow all County residents the thrive and prosper."
The Beaufort County Plan also included eight vision statements:

- *Preserve the natural beauty*
- *Create new industries and jobs for a strong economy*
- *Build better roads and encourage two-wheeled and two-footed travel*
- *Preserve the rich cultural heritage*
- *Permit development while maintaining sense of place*
- *Create parks and conserve open spaces*
- *Ensure affordable housing for all residents*
- *Provide public services without breaking the bank*

Tourism Product Development Concept for the Lowcountry Region Strategy and Plan

The Tourism Product Development Concept for the Lowcountry Region, developed by the South Carolina Parks, Recreation and Tourism Department included a specific focus on Daufuskie Island. The elements identified as important considerations include:

"Even by the extremely high standards of the Lowcountry, Daufuskie Island represents a unique asset. As an ecotourism destination, further large scale real estate development should be prohibited, and strict zoning controls placed on the development of new structures. Sustainable energy and transport options and recycling for the Island should be developed, and unsealed roadways left in their present condition. Consideration should be given to the designation of an historic area in order to identify and preserve a zone where examples of the Island's unique architecture may be relocated and preserved."

Daufuskie Island Plan

The current Daufuskie Island Plan does not contain an overarching vision statement. However, there are identified goals for specific elements summarized in Table 2.

TABLE 2. DAUFUSKIE ISLAND PLAN ELEMENTS

Development Patterns
• Preserve land • Promote traditional development patterns
Ferry Service
• Improve service • Establish intense development around ferry embarkation sites
Island Transportation
• Improve transportation in a contextual manner
Tourism and Wayfinding
• Improve wayfinding infrastructure • Cross-promote tourism interests
Housing
• Increase opportunities for obtainable housing
Historic Resources
• Heighten historic preservation • Heighten land conservation efforts
Civic Sites
• Create small gathering spaces • Create significant civic spaces
Economy
• Expand the economy • Promote additional means of economic control and oversight
Sustainability
• Establish sustainable benchmarks and targets

Daufuskie Island Conceptual Master Plan Charrette Report

This report, developed by the Clemson Institute for Economic and Community Development included the identification of focused development recommendations and a Daufuskie Island Covenant. These recommendations and covenant were developed in recognition of the uniqueness of Daufuskie Island.

Development Recommendations:

- Maintain Haig Point Road as currently configured, with parallel path for walking, bicycles and golf carts

- Protection of neighborhoods outside of the resort plantations and emphasizing Daufuskie style of land use/architecture
- Mixed use district at south end of the island at county dock area
- New public landing in the island center (Melrose/Freeport area) to become main portal
- Updated zoning categories allowing small retail/businesses particularly in the center portal and southern portal areas

Daufuskie Island Covenant:

We, the people of Daufuskie Island, promise

To preserve our traditional island way of life while preparing our community for a prosperous future by guiding responsible growth in a way that allows our community values to remain constant.

Furthermore, we dedicate ourselves

- To making decisions that respect and preserve our natural resources;
- To enhancing and protecting our cultural and historic resources;
- To lead in the practices of civic engagement, environmental conservation, economic diversity, and sustainable development;
- To giving all generations opportunities to improve their quality of life,
- To preserve our island values while welcoming newcomers and new opportunities with open arms.

Therefore, in order to cultivate a more livable community, we hereby pledge from this day forward to support these endeavors by:

Participating in creative dialogue, listening with open minds, and giving our time, talent, and resources as necessary.

Finally, as stewards of our own future, striving to be citizens in the truest since of the word, existing on an island with no bridges connecting us elsewhere, we dedicate ourselves

- *To being connected*
- *To each other,*
- *To our children,*
- *To our elders,*
- *To our collective memory,*
- *To our environment,*
- *To our economy,*
- *To our island,*

Now and forevermore.

In addition to the review of the existing plans relating to Daufuskie Island, the meeting participants were provided with example local government vision statements from coastal communities throughout the southeast, as well as from bridge-less island communities throughout the country. These vision statements provided background for the meeting participants as they worked to develop elements of the vision statement and priorities for the island.

The results of the workshop were compiled into a draft vision statement, which was included in the first survey. Eighty-nine percent of the 368 survey respondents agreed with the vision statement. Based on feedback and comments, the Project Advisory Committee finalized the vision statement.

Daufuskie Island Vision

"Daufuskie is a pristine sea island with extraordinary natural, cultural and historic resources. Our vision is to support balanced, mindful growth that provides a sustainable economy, while preserving our unique and diverse community character, rural sense of place, and secluded island lifestyle. While recognizing property owners' rights to reasonable use of their land, we will minimize the threat to our natural environment, cultural and historic resources, and ensure the preservation of Daufuskie Island's natural beauty."

Goals and Priorities

Workshop participants were also asked to identify and prioritize aspects of the community considered crucial to preserve, maintain and enhance for the future of the Island. The results from the workshop were incorporated into the first survey in order to obtain additional and more broad-based feedback on establishing the goals and priorities of the Island.
The primary priority and focus centered around the preservation of the existing character of the community and slower, more rural pace of life enjoyed by residents. The following were identified as overall goals and priorities, which together with the vision, form the framework for the development of the plan and the action steps needed to achieve the vision, goals and priorities.

- Preservation of community character
- Balance growth and development with the existing community character
- Promote a sustainable economy compatible with existing community character
- Preserve and enhance community assets, including the natural beauty of the island
- Promote environmental stewardship
- Preserve the island history and culture, including a focus on the native Gullah heritage

The major contributors to the island community character were identified as:

- Natural beauty and coastal environment
- Lack of large commercial/retail developments
- Quietness
- Slower pace of life
- Rustic/rural character
- Community involvement/sense of community
- Geographic location/lack of a bridge

Chapter Four:

EXISTING CONDITIONS

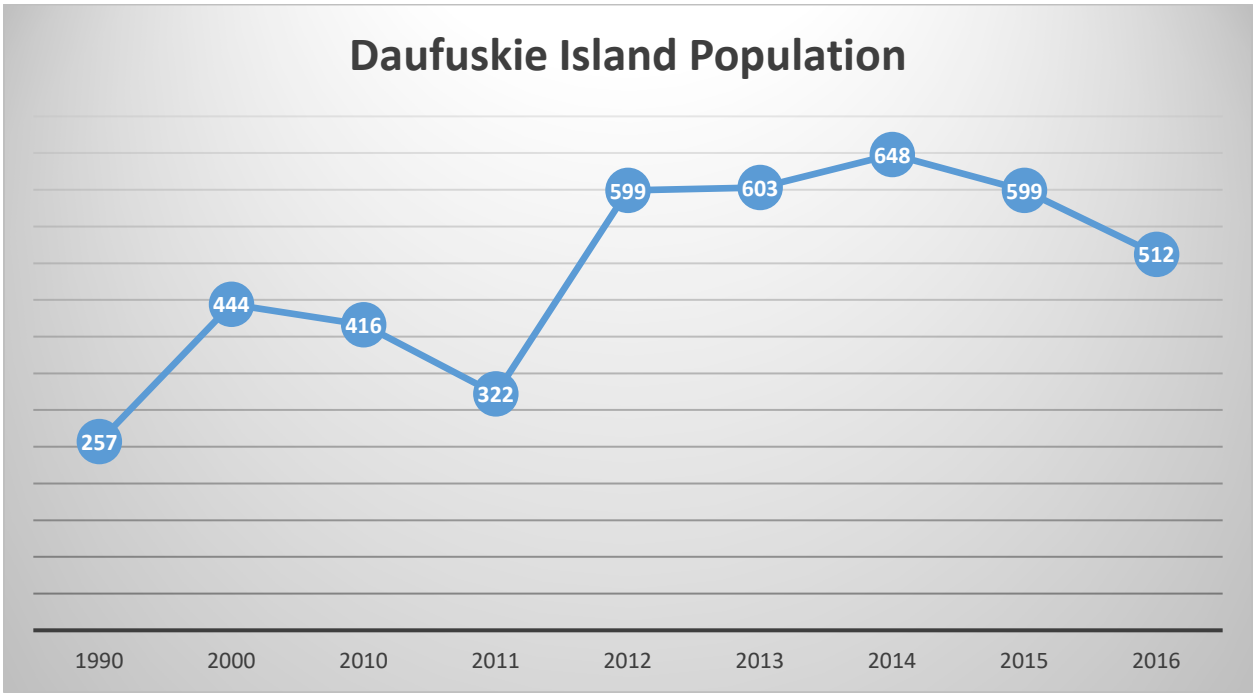
CHAPTER 4: EXISTING CONDITIONS

In order to appropriately plan for the future, there must be an understanding of the Island's existing conditions. Each of the required elements identified in the comprehensive planning legislation has been analyzed and the existing conditions developed.

Population

The full time residential population of Daufuskie Island has fluctuated over the last several decades. The population had dwindled to less than 100 residents before the advent of the resort developments in the late 1980s. The population began to grow, with 257 residents in 1990 based on the US Census decennial survey. Given the logistical requirements of living on a bridge-less island, the population has continued to fluctuate, reaching a peak high in 2014, with an estimated 648 residents according to the US Census American Community Survey. Since then, the estimated population on the island is an estimated 512 in 2016. The graph in Figure 1 depicts the population fluctuations since 1990. The data is also shown in Table 3, along with the percent change in the population.

FIGURE 1. DAUFUSKIE ISLAND POPULATION



Source: US Census and American Community Survey

TABLE 3. POPULATION PERCENT CHANGE (1990-2016)

Year	Population	% Change
1990	257	----
2000	444	72.76%
2010	416	-6.31%
2011*	322	-22.60%
2012*	599	86.02%
2013*	603	0.67%
2014*	648	7.46%
2015*	599	-7.56%
2016*	512	-14.52%

**US Census / American Community Survey Estimates*

In addition to the full time residential population, Daufuskie Island has a relatively significant part-time population of property owners who come to the island on weekends, or when it is possible for them to spend time on the Island. This population number also swells significantly during the high tourist season that typically extends from the end of May through September. The tourist season population includes both overnight guests, as well as a significant number of day-trippers coming the Island from the surrounding areas, such as Hilton Head, Bluffton and Savannah.

Demographics

The demographic breakdown of the population was identified for 2010 and the estimates for 2016. Table 4. shows the comparison of the population age and sex. The racial make-up of the population was identified as primarily Caucasian (93.5%), African American at 5.3% and Asian at 0.5%. Those identifying themselves as two or more races made up 1.3% of the population.

TABLE 4. DEMOGRAPHIC DATA - 2016

2016			
Age	Total %	% Male	% Female
Under 5 years	1.2%	0.0%	2.3%
5 to 9 years	5.1%	5.1%	5.1%
10 to 19 years	0.0%	0.0%	0.0%
20 to 29 years	4.1%	4.7%	3.5%
30 to 39 years	11.3%	12.1%	10.6%
40 to 49 years	0.0%	0.0%	0.0%
50 to 59 years	5.0%	4.6%	5.4%

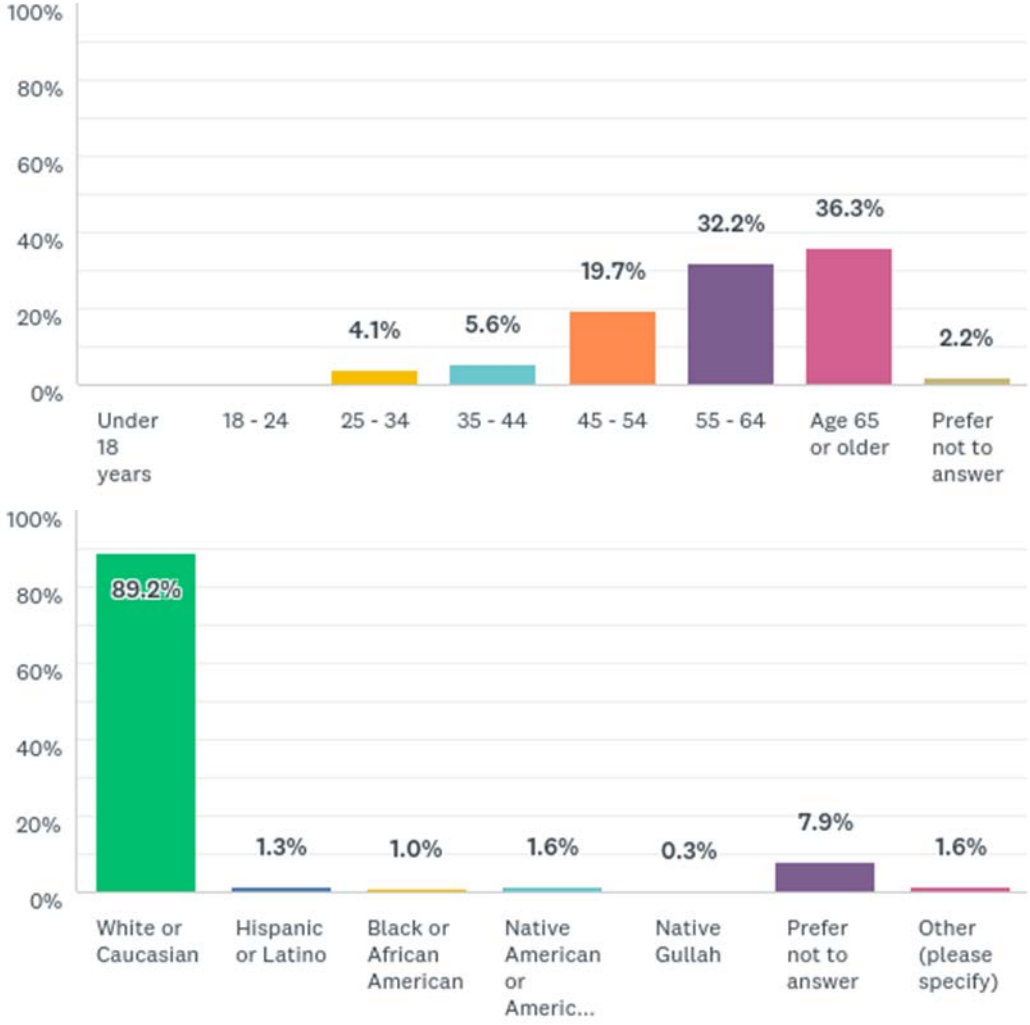
60 to 69 years	23.8%	25.8%	21.9%
70 to 79 years	39.7%	35.2%	44.1%
Over 80 years	9.7%	12.5%	7.0%

Source: US Census American Community Survey

Survey Respondents

Of the 368 respondents to the community survey, 89.2% identified themselves as white or Caucasian and 1.0% black or African American; 7.9% preferred not to answer the question. With regard to age, 36.3% of the respondents were age 65 or older and 32.2% were age 55 to 64. The demographics of the survey respondents are shown in Figure 2.

FIGURE 2. SURVEY RESPONDENTS



Population Forecast: Approximate "Build Out" Condition

Forecasting population is an inexact science and based on a variety of assumptions. For this plan, two forecasts were developed for the horizon year of 2035. The first forecast is an

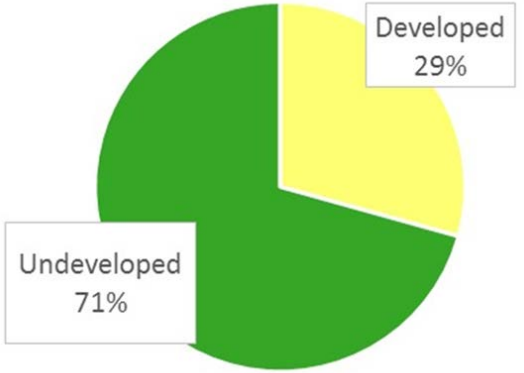
estimated "build-out" condition for the Island, excluding the Planned Unit Developments (PUDs) of Haig Point, Melrose, Oak Ridge and Bloody Point. These PUDs are subject to their approved densities. There are currently a total of 1,891 undeveloped parcels on the Island, of which 735 parcels are outside of the PUDs.

These 735 parcels are currently zoned rural, general urban, suburban, and urban center, each of which has maximum allowable densities. These allowable densities range from one dwelling unit per acre in the rural category to eight dwelling units per acre in the urban center category. Based on the percentage of parcels found in each category and the maximum dwelling units allowed, there is a potential total of 3,055 additional dwelling units on the Island.

Applying the average household size of 2.2 persons per household, the potential population could include an approximate addition of 6,720 persons excluding the PUDs.

Based on the approved PUD densities for Bloody Point, Haig Point, Melrose and Oak Ridge, an additional 2,691 dwelling units are approved, although this figure does include hotels and inns. Applying the same 2.2 persons per household, the additional population from the PUDs at build out is approximately 5,920. When combined with the potential population outside of the PUDs, the build out population on the island is approximately 12,640 persons. The developed and undeveloped parcels are shown in Figure 3.

FIGURE 3. DEVELOPED/UNDEVELOPED PARCELS



Developed Parcels	*592 (24%)*
Undeveloped Parcels	*1,891 (76%)*

Population Forecast: Historical Trend Analysis

With the large fluctuations in population, including both full time residents, as well as vacationers and tourists, a realistic estimate of future population growth is difficult. The previous plan population forecasts were focused on significant population growth, however, the need for ferry use and/or a private boat to access the island and the associated logistics will have an impact on the future population growth. The further development of the PUDs is also in flux given the history of insolvency with regard to Bloody Point and Melrose. Based on the historical trends, the average annual rate of growth in population over the fifteen years from 1990 to 2016 has been 3.65%.

Applying the average yearly growth rate for developing future population projections, the Island population by 2035 would be 1,013 full-time residents, coupled with the continuing swell in population through overnight tourists and day-trippers. While additional development on the Island is uncertain, but likely to occur in some form that will result in an increase in population growth, based on historical trends, those additional increases would likely be offset to some degree by out-migration.

Economic Development

The economy of Daufuskie Island is currently based on tourism and service industries supporting the tourist economic sector, as well as some of the service needs of the island residents. The South Carolina Department of Parks, Recreation and Tourism tracks the economic benefits of tourism throughout the state. While not broken down into geographies smaller than the county level, the impact of tourism on Daufuskie can be understood through the county-level statistics. Beaufort County ranks third in the State behind Horry and Charleston Counties in the generation of tourist/travel expenditures, with tourist generated spending totaling over $1.3 billion in 2016 with local tax receipts totaling over $39 million.

In recent years, there has been an increase in the establishment of small businesses across the Island, which are in addition to those already existing. These businesses include restaurants and coffee shop, artisan shops, and tourist supportive services. While new small businesses have started up, there also have been several economic set-backs for the Island.

The Melrose Resort went through bankruptcy in 2017 and its future is uncertain. The Bloody Point Resort also closed in 2017 due to financial issues. While the resorts experienced financial difficulties, the residential areas of Melrose and Bloody Point are separate entities and not related to the resort/club financial issues. Finally, one of the long-standing restaurants on the Island, which was also a major employer, closed its doors. These recent closures have had a detrimental impact on the economy of the Island.

To address these impacts and to move the economy forward, in early 2018, an initiative was undertaken to provide support to existing businesses and foster and support new endeavors. The Business Alliance is supported by the Clemson University Extension Service and is working on action steps to ensure the Island's economic stability and vitality.

The first community survey provided insights into the economy and employment status of island residents. Of the respondents to the survey, 40.3% indicated they were retired, with 34.4% employed full time. Of the 34.4% of full time employees, 18.8% are self-employed and/or business owners on the island; 56.5% work off the island and 17.2% work on the island from home.

The US Census American Community Survey (2012-2016) estimates support the community survey findings, showing approximately 27% of the population employed full-time. Tables 5, 6 and 7. provide a breakdown of the occupational and industry employment sectors and worker classification.

TABLE 5. OCCUPATIONS

Occupation	Percent of Workforce
Management, Business, Science and Arts	7.8%
Service	45.3%
Sales and Office	18.8%
Natural Resources, Construction, Maintenance	23.4%
Production, Transportation, and Material Moving	4.7%

Source: US Census American Community Survey Estimates
Note: Margin of Error range from +/- 7.2% to +/- 12.9%

TABLE 6. INDUSTRY

Industry	Percent of Workforce
Agriculture, Forestry, Fishing/Hunting/ Mining	0.0%
Construction	38.3%
Manufacturing	7.0%
Wholesale Trade	0.0%
Retail Trade	9.4%
Transportation, Warehousing, Utilities	5.5%
Information	0.0%
Finance and Insurance, Real Estate, Rental/Leasing	2.3%
Professional, Scientific, Management and Administrative and Waste Management Services	7.0%
Educational/Health Care/Social Assistance	15.6%

Arts, Entertainment, Recreation and Accommodation and Food Services	0.0%
Other Services, except Public Administration	14.8%
Public Administration	0.0%

Source: US Census American Community Survey Estimates
Note: Margin of Error range from +/-3% to +/-35%

TABLE 7. WORKER CLASSIFICATION

Class of Worker	Percent of Workforce
Private Wage and Salary Workers	65.6%
Government Workers	14.8%
Self-Employed Workers	19.5%

Source: US Census American Community Survey Estimates
Note: Margin of Error +/- 22%

Table 8 displays the family or household income. The median family income, or middle value, is $128,542.

TABLE 8. FAMILY INCOME

Income Estimate	Percent of Population
Less than $10,000	0.0%
$10,000 to $14,999	0.0%
$15,000 to $24,999	0.0%
$25,000 to $34,999	0.0%
$35,000 to $49,999	13.2%
$50,000 to $74,999	11.0%
$75,000 to $99,999	15.0%
$100,000 to $149,999	18.5%
$150,000 to $199,999	21.6%
Over $200,000	20.7%

Source: US Census American Community Survey Estimates
Note: Margin of Error +/- 13.3%

Natural Resources

As a coastal sea island, Daufuskie Island is home to significant natural resources and scenic viewsheds. A volunteer community organization, the Daufuskie Island Conservancy, was organized in 2005 "exclusively for the education, scientific and charitable purposes related to the study, protection and management of the natural resources of Daufuskie Island and the surrounding ecosystem. The Conservancy has regularly hosted environmental talks,

conducted an environmental survey, implemented an Adopt-A-Road program, and established a sustainable living farm, and is committed to the protection and preservation of the Island's resources.

One of the most significant resources for the Island is the salt marsh, one of the most unique ecosystems and habitats. The primary salt marsh vegetation is Spartina alterniflora and is plentiful in Daufuskie's salt marshes and is one of the few species that thrives in salt water. These marshes serve as a protection for many species, such as shrimp, crab and oysters, by protecting them in their larval or beginning stages.

In addition to the saltwater wetlands, or salt water marsh, Daufuskie also is home to freshwater wetlands. These freshwater wetlands, located in the interior of the island, provide a home to many fish and bird species, as well as vegetation. The saltwater wetlands or marsh comprise 17% of the area of Daufuskie, while the freshwater wetlands comprise 15%. The wetlands are shown in Figure 4.

FIGURE 4. WETLANDS

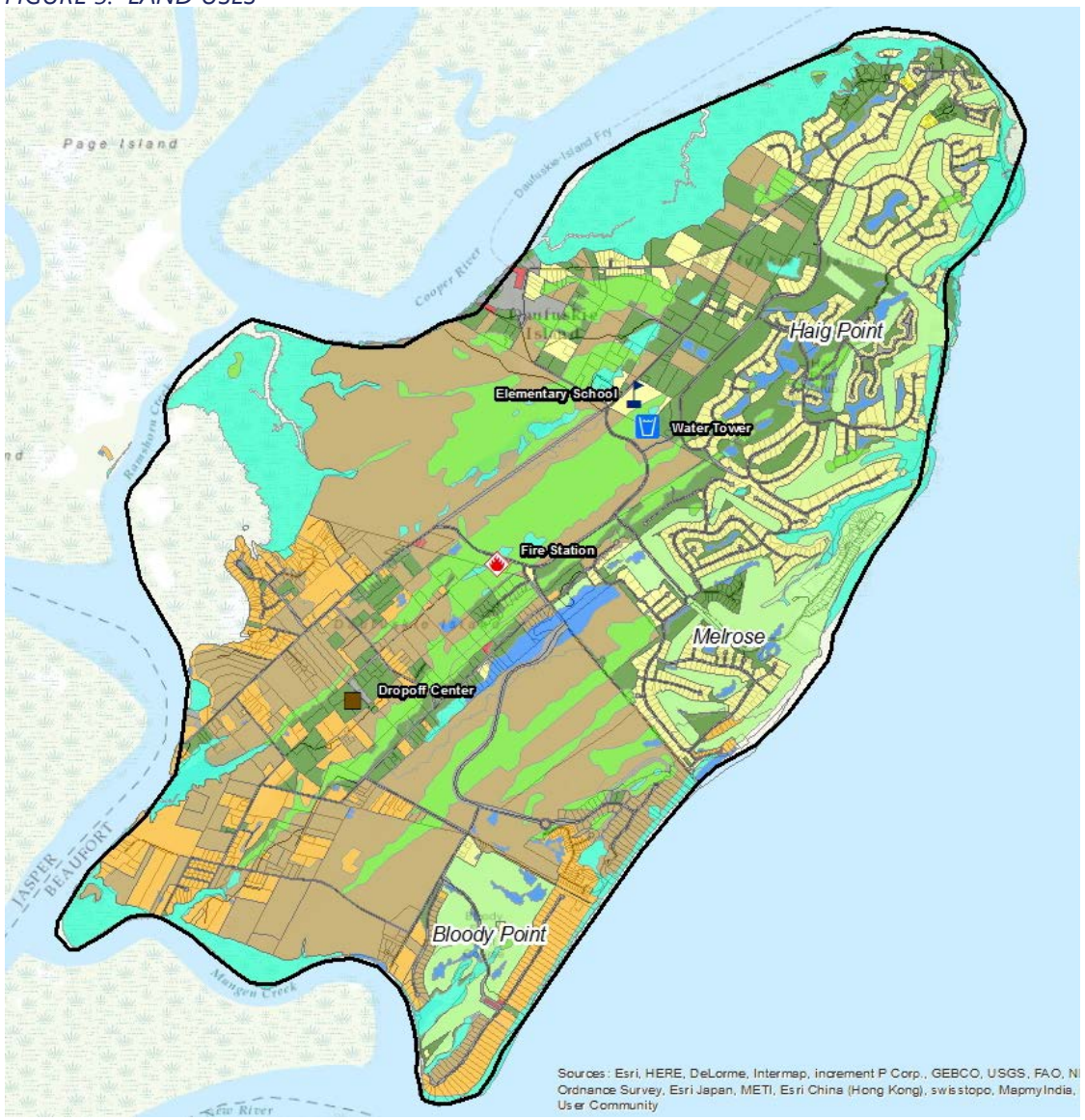
Wetlands

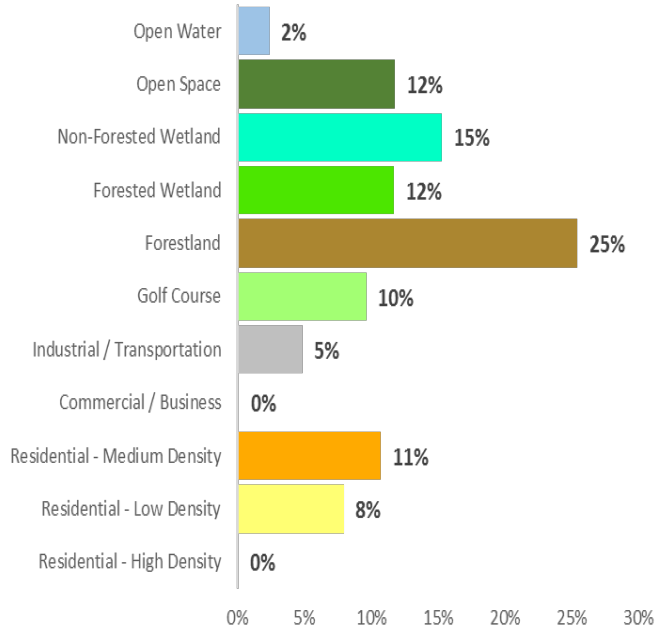
Saltwater	*17%*
Freshwater	*15%*

Another important element of the natural ecosystem is the beach which extends along the eastern side of the Island. The beach and dune system typically serve to protect the inland areas from high seas, waves and hurricanes. However, the beach system has sustained damage from Hurricane Matthew (2016) and Tropical Storm Irma (2017), both of which made landfall in the vicinity.

Coastal forestland is also an important natural resource. These forestlands, which include numerous varieties of trees and other vegetation, serve as a wildlife habitat for a variety of species, such as palmetto, pine, oak and sweetgum. Approximately 25% of the Island is comprised of forestland, shown in brown in Figure 5

FIGURE 5. LAND USES



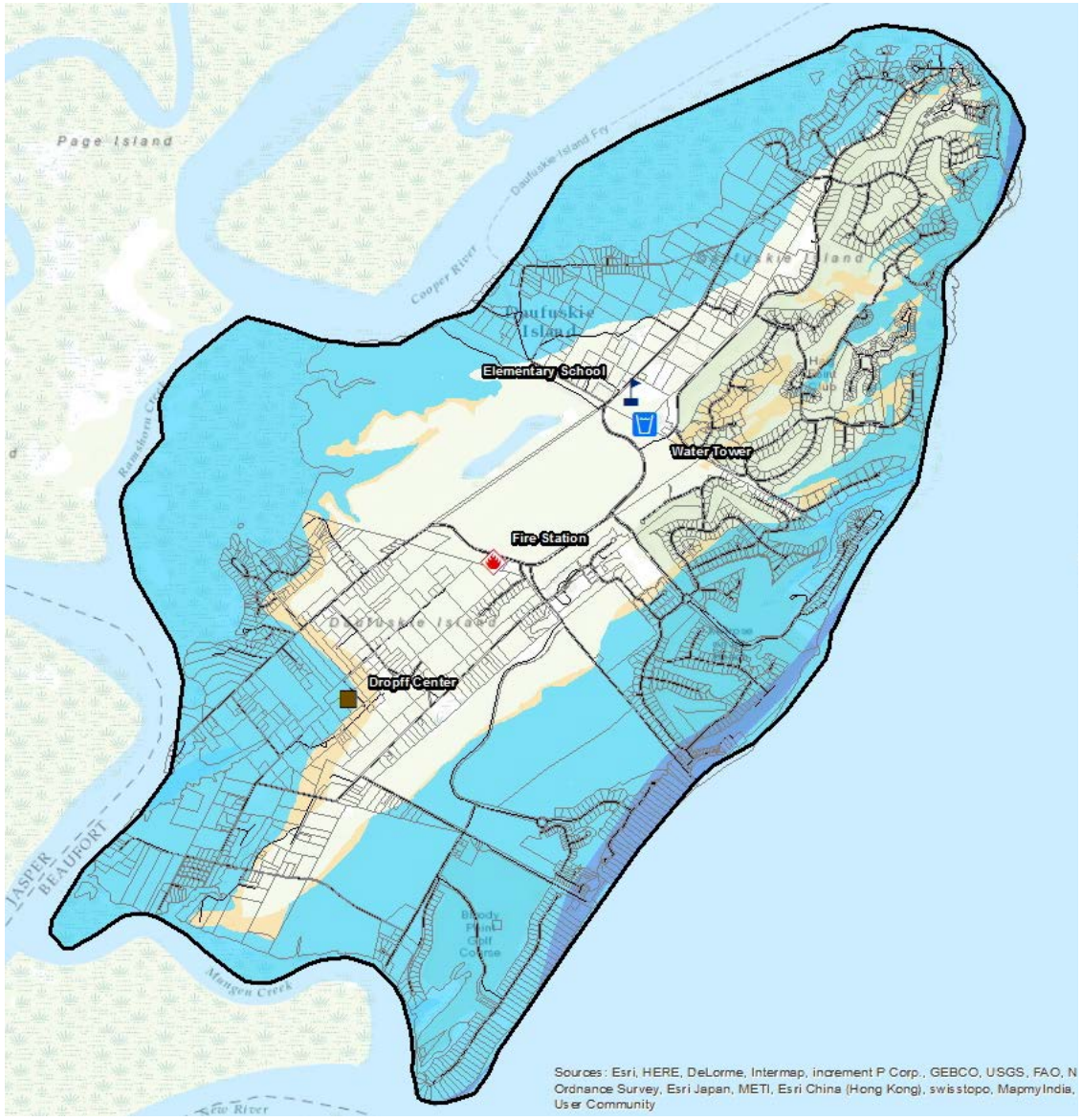


The Island is also home to a wide variety of creatures. The Atlantic Loggerhead, which is a federally threatened species, nests along the beaches of the southeast, including Daufuskie. A dedicated group of volunteers works to identify and protect the nests during the season, which typically begins in late May/early June and continues until mid-August. Both harmless snakes, such as kingsnake, garter snake and rat snake, and poisonous snakes, such as copperhead, rattler and cottonmouth moccasins are found on the Island. Alligators, which have made a comeback due to presence on the endangered list and is still protected, are also present on Daufuskie. According to the South Carolina Department of Health and Environmental Control (SCDHEC), approximately 300 species of birds have been recorded in the state and the vast majority of these birds can be found along the coast. These birds include both permanent residents as well as migratory and include both the threatened Wood Stork and Bald Eagle. A wide variety of animals can also be found on Daufuskie, such as raccoons, otters and white-tailed deer.

Soil types have an impact on development and land use, particularly with the prevalence of septic tank use. According to SCDHEC, the soils in the coastal area fall within the Atlantic Coast Flatwoods land resource area, except for a small portion in Berkeley County. These soils are typically a mix of sand and loam and drain moderately well to poorly.
Daufuskie Island, as a sea island, is prone to flooding and the Special Flood Hazard Areas have been mapped. Sixty-four percent of the island is included in a high risk zone (AE and VE), while 5% is included in a moderate risk zone (X). The remaining 31% of the island is in a low risk flood hazard zone.

In addition to the Special Flood Hazard Areas, the impacts of storm surge on the Island was also identified and mapped. In the event of a Category 1 storm, almost half of the Island (49%) will be impacted. In the event of a Category 5 storm, the entire island would be impacted. The following series of maps in Figures 6 and 7 depict the flood hazard areas and the impacts from storm surge.

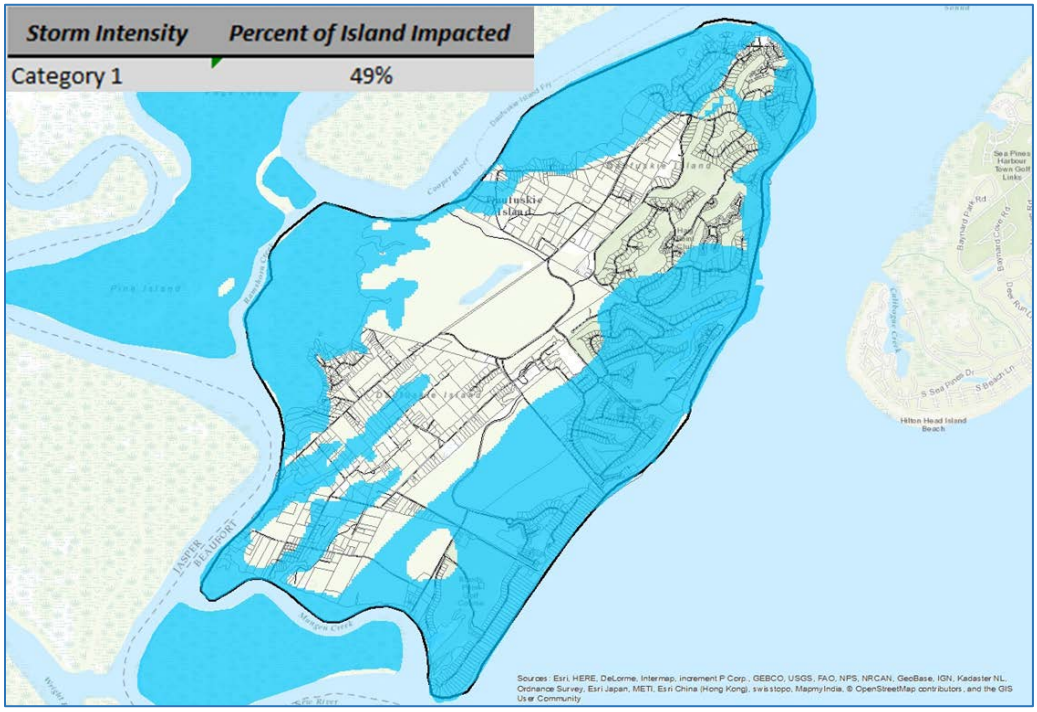
FIGURE 6. FLOOD HAZARD AREAS

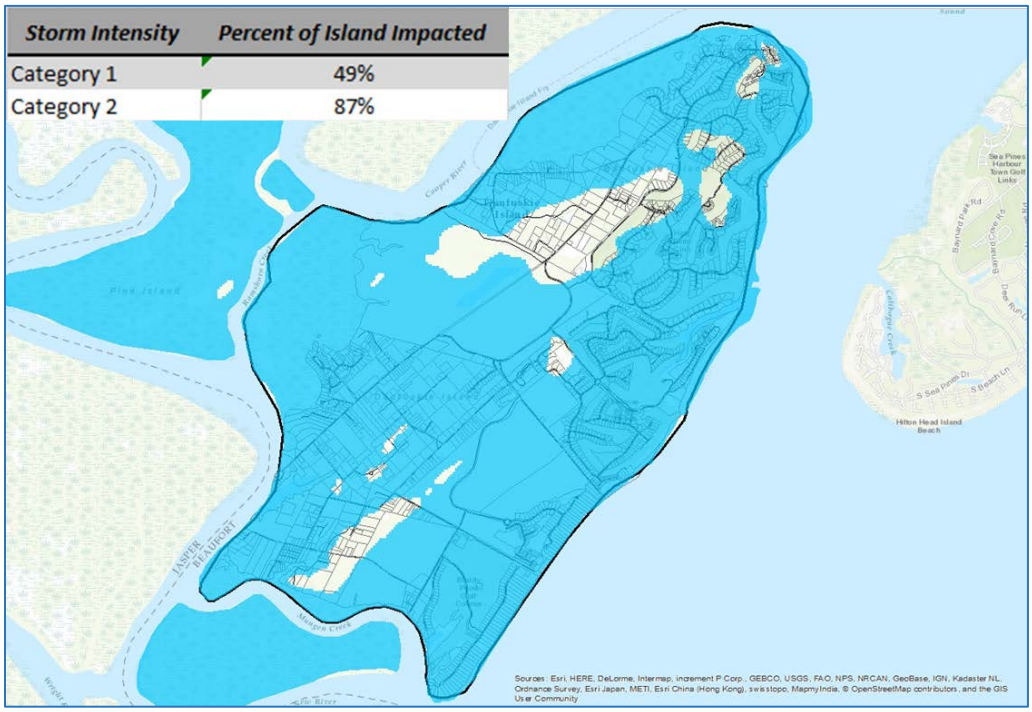


Flood Zones

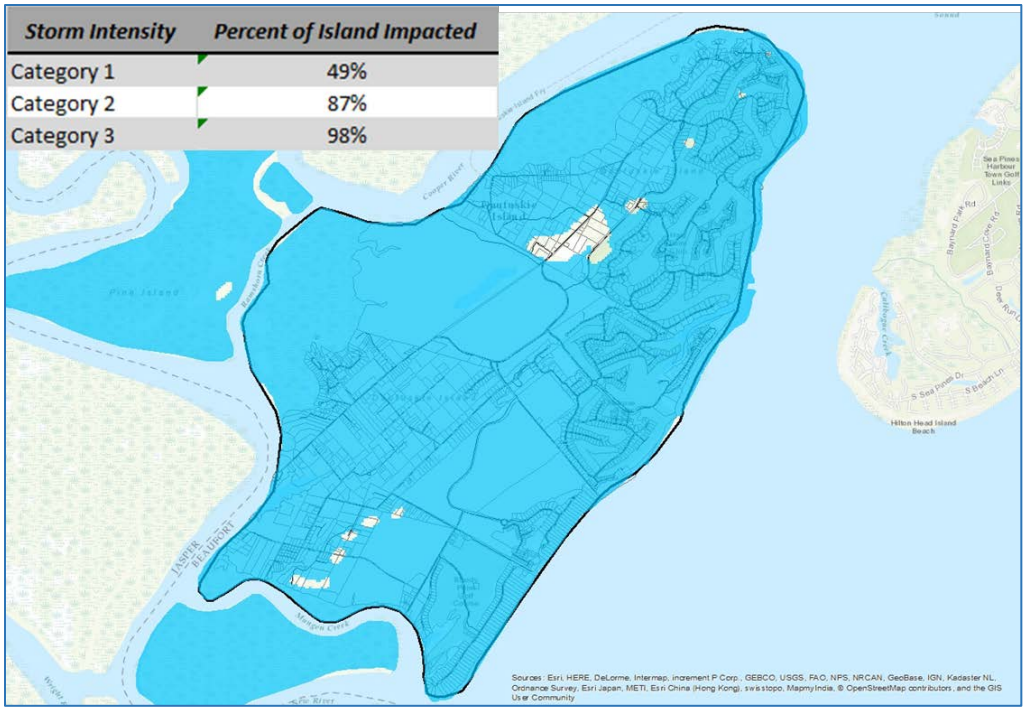
High Risk	*64%*
Moderate Risk	*5%*
Low Risk	*31%*

FIGURE 7. STORM IMPACTS

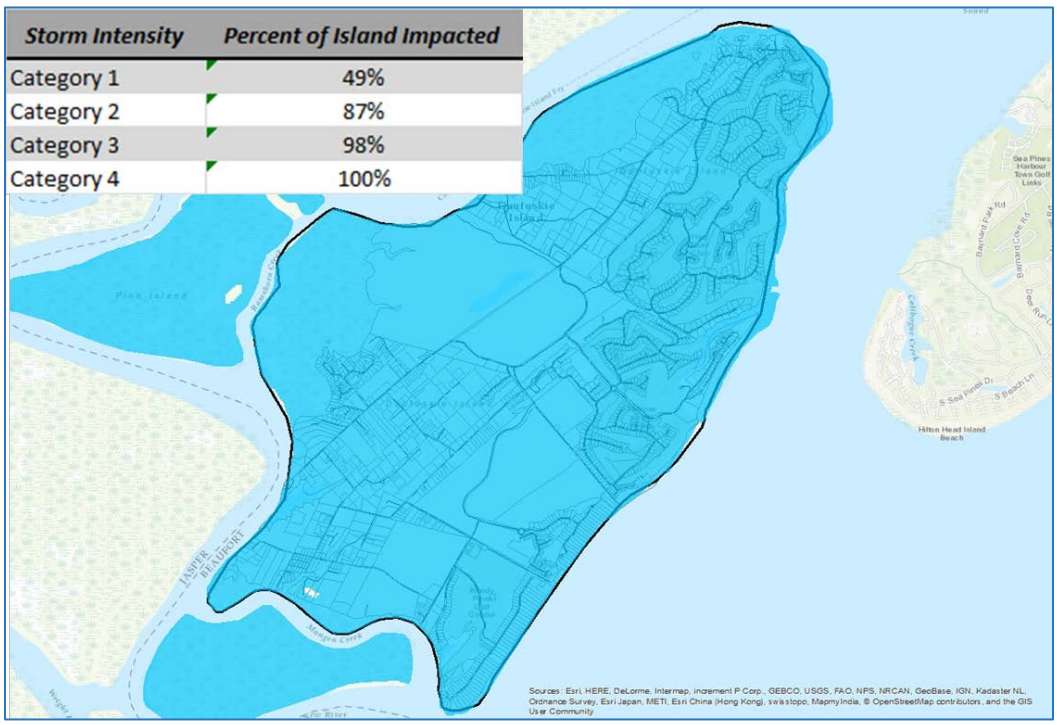




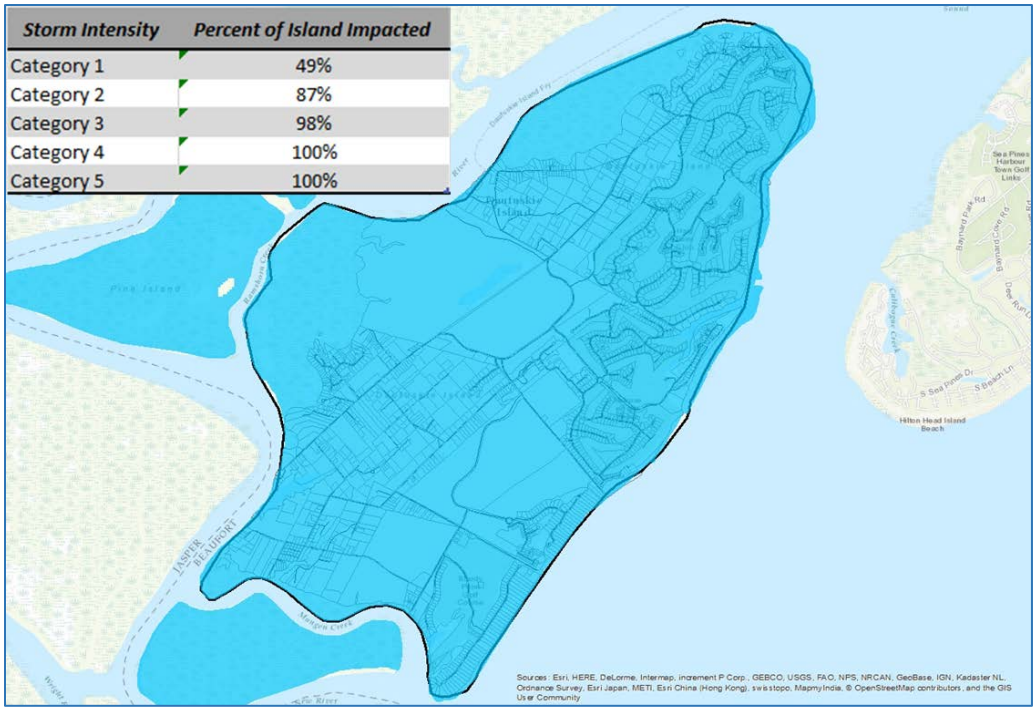
Storm Intensity	Percent of Island Impacted
Category 1	49%
Category 2	87%
Category 3	98%



Storm Intensity	Percent of Island Impacted
Category 1	49%
Category 2	87%
Category 3	98%
Category 4	100%



Storm Intensity	Percent of Island Impacted
Category 1	49%
Category 2	87%
Category 3	98%
Category 4	100%
Category 5	100%



Cultural Resources

In 1984, the US Department of the Interior/National Park Service designated Daufuskie Island as a Historic District and included the Island on the National Register. According to the statement of significance:

"...the district contains 241 contributing properties. Most of the building consist of folk housing. They were constructed from 1890-1930, but reflect a much earlier building technology. Thus, they are significant architecturally as a survival form."

"Other areas of significance are historical in nature. Military engagements of note during the Yemassee and Revolutionary Wars took place on Daufuskie. In addition, buildings, sites, and structures represent Daufuskie's antebellum plantation society based on the cultivation of long staple cotton as well as the history of the island in the early twentieth century when life revolved around the oyster industry, logging, and truck farming operations.
"

"Daufuskie's cultural resources illustrate a three-century long history that has evolved with a minimum of outside influence. Potentially valuable archeological sites and documented historic sites have escaped the ravaging effects of modern development through sheer inaccessibility."

Examples of the key properties identified include:

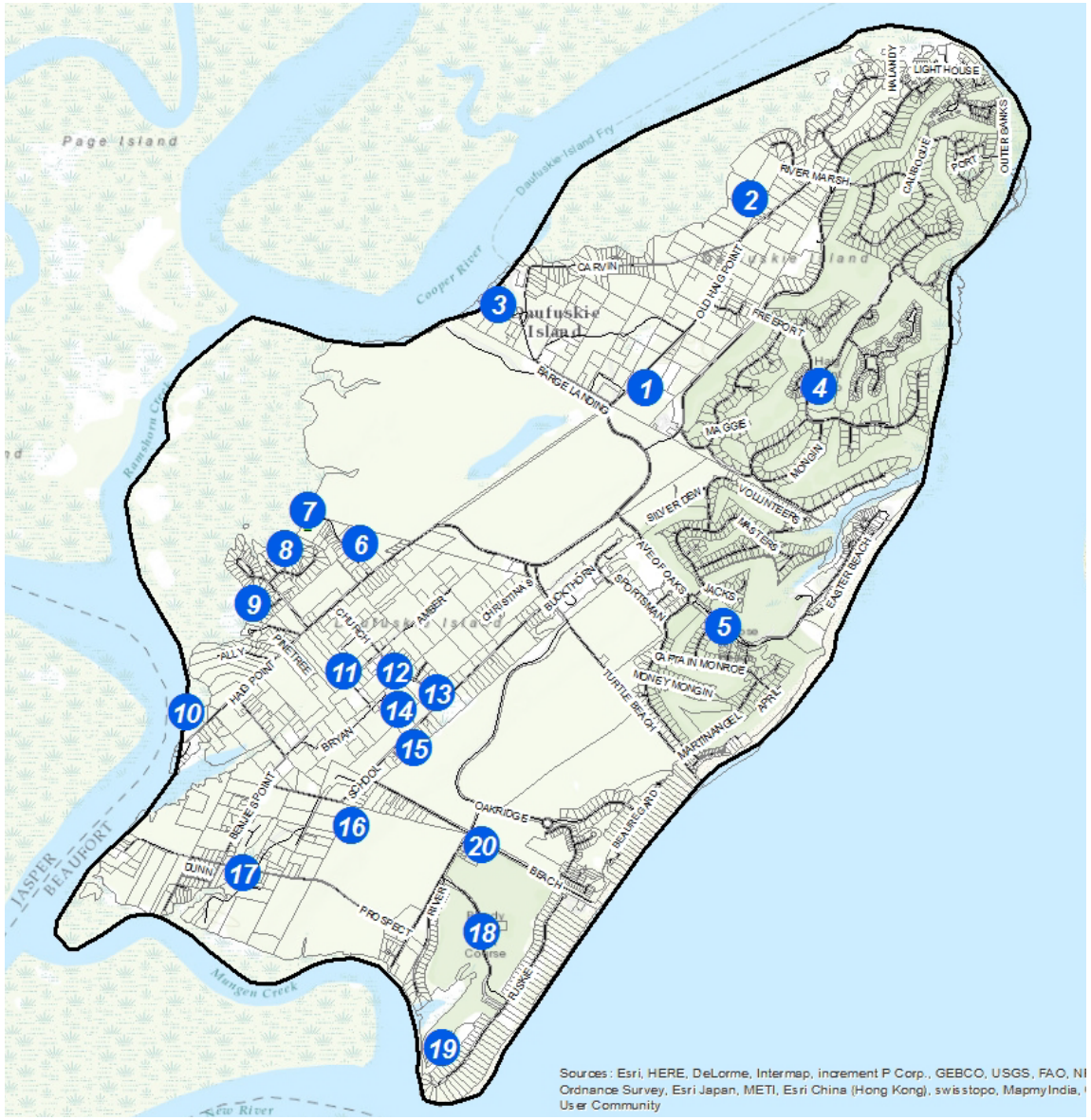
- Haig Point Lighthouse

- Mt. Carmel Baptist Church
- Janie Hamilton School
- First Union African Baptist Church
- Mary Fields School
- Oyster Society Hall
- Cemeteries

In 2001, the Daufuskie Island Historical Foundation was formed in order to preserve and protect the historical and cultural heritage of the Island. According to the Foundation, members have worked to acquire and restore historic buildings, established an Island museum, created a self-guided tour of historic sites and begun an archive of history for the Island.

The significant community cultural and historic features, which include those identified in the National Historic Register, are shown in Figure 8.

FIGURE 8. COMMUNITY CULTURAL AND HISTORIC RESOURCES



1. *Mt. Carmel Baptist Church No. 2*
2. *Tabby Ruin*
3. *Cooper River Cemetery*
4. *Haig Point*
5. *Melrose*
6. *Oyster Union Society Hall*
7. *Hinson White House*
8. *Mary Field Cemetery*
9. *Sarah Grant Home*
10. *Public Dock*
11. *White School House*
12. *The Council Tree*
13. *First Union African Baptist Church*
14. *Mary Fields School*
15. *Frances Jones Home*
16. *Moses Ficklin Cottage and Oak Tree*
17. *Mary Dunn Cemetery*
18. *Bloody Point*
19. *Bloody Point Cemetery*
20. *Bloody Point Lighthouse and Silver Dew Winery*

In addition to the local preservation and enhancement efforts and inclusion on the National Register, the US Department of Interior/National Park Service developed a Special Resource Study and Final Environmental Impact Statement: Low Country Gullah Culture in 2005. This study was authorized by the US Congress to determine the appropriate role for the National Park Service in the preservation of the Gullah Culture in response to the identification of the Gullah/Geechee culture as one of the most endangered historic resources and sites by the National Trust for Historic Preservation in 2004.

The study analyzed the Gullah culture ranging from the North Carolina/South Carolina border to North Florida to evaluate the cultural significance on a national level; to determine how to best protect and interpret the cultural resources; and develop recommendations for Congress on next steps.

The identified preferred alternative from the study was the creation of a National Heritage Area to connect and network cultural resources. The management of the partnership would eventually be managed by a local entity with start-up assistance from the National Park Service. This alternative led to the development of the Gullah Geechee Cultural Heritage Corridor. (https://www.gullahgeecheecorridor.org/)

Community Facilities

Water/Sewer

The Daufuskie Island Utility Company (DIUC) provides water/sewer service to the PUDs, and the service is available to the entire Island. With the mostly rural development patterns of the Island, residents outside of the PUDs primarily utilize individual or community wells and septic tanks for their water and sewer needs. The DIUC is the only water/sewer utility on the Island and provides water through the use of six wells. Wastewater collection and treatment is provided at two locations on the Island.

Solid Waste

The solid waste collection site for Daufuskie Island is located on Frances Jones Boulevard. The site, which only accepts residential refuse, consists of unmanned, open dumpsters. Once the dumpsters are full, they are barged off the Island and replaced with empty dumpsters. Because of the opportunity for illegal dumping with the open and unmanned containers, cameras have been installed to provide video surveillance. For a number of years, the Island has been working towards a "One Island Solution" for addressing solid waste, however, the initiative has not moved forward.

Fire/Emergency Services

Fire and emergency services are provided by the Daufuskie Island Fire and Rescue to the entire Island. The Daufuskie Island Fire District was created for the express purposes of

serving all properties on Daufuskie. The District is governed by the Daufuskie Island Fire District Board, which is comprised of five members appointed by the Beaufort County Council. The fire station is located on Haig Point Road and the staff includes 11 full time paid firefighters and 13 volunteer firefighters. The department also provides Emergency Medical Services to the Island.
The Beaufort County Sheriff's Department is responsible for law enforcement on the Island. There is no permanent officer stationed on Daufuskie, but there are officers assigned to answer calls and to be on the Island periodically.

Educational Facilities

The Daufuskie Island Elementary School is the only school on the Island and serves grades PK-5. Middle and high school students attend school on the mainland in Hilton Head and utilize the Haig Point ferry for transportation to and from the Island. The Daufuskie Island Elementary School, which has two classrooms, enrolls 26 students in 2018, with two full time teachers and four specialty teachers for supplemental subjects such as art and physical education.

According to South Carolina code, the following student teacher ratios shown in Table 9 are required and are currently met by the Daufuskie Island Elementary School; however with any significant student population increase, the capacity of the school would need to be addressed.

TABLE 9. STUDENT/TEACHER RATIO REQUIREMENT

Grade Level	Student/Teacher Ratio
PreK	20:1
K - 3	30:1
4 – 5 (English, Language Arts, Mathematics	30:1
4 - 5 (All other subjects)	35:1

Housing

There is a mix of housing stock on Daufuskie Island, ranging from mobile homes to upscale residences. According to the 2010 US Census, there were 447 housing units, with 133 or 29.8% occupied units and 314 and 70.2% unoccupied units. In 2016, the estimated housing units on the Island had grown to 465, with 227 of those units owner occupied. The characteristics of the units for 2010 and 2016 are shown in Table 10. The largest segment of the housing stock on the island is 1-unit detached housing which comprised 69.4% of the housing stock in 2010 and 85.6% in 2016.

TABLE 10. HOUSING UNITS- 2010 AND 2016

2010			2016		
Units in Structure	Number of Units	Percent of Total	Units in Structure	Number of Units	Percent of Total
1-unit, Detached	310	69.4%	1-unit, Detached	465	85.6%
2-unit, Detached	36	8.1%	2-unit, Detached	3	0.6%
2 units	0	0.0%	2 units	11	2.0%
3-4 units	66	14.8%	3-4 units	0	0.0%
5-9 units	15	3.4%	5-9 units	0	0.0%
10-19 units	0	0.0%	10-19 units	11	2.0%
20 or more units	0	0.0%	20 or more units	3	0.6%
Mobile Home	20	4.5%	Mobile Home	50	9.2%

Source: 2010 US Census and American Community Survey Estimates
Note: ACS Margin of Error ranges from +/-12% to +/-40%

Table 11 depicts the year of construction for the housing structures in 2010. As can be seen from the data, the highest construction period took place between 1980 and 1989, which corresponds to the development of the PUDs.

TABLE 11. YEAR STRUCTURE BUILT - 2010

Year of Construction	Number of Units	Percent of Total
Built 2005 or later	0	0.0%
Built 2000 to 2004	46	10.3%
Built 1990 to 1999	161	36.0%
Built 180 to 1989	200	44.7%
Built 1970 to 1979	0	0.0%
Built 1960 to 1969	26	5.8%
Built 1950 to 1959	0	0.0%
Built 1940-1949	0	0.0%
Built 1939 or earlier	14	3.1%

Source: 2010 US Census

The Census data also identifies that, in 2010 of the 133 owner occupied housing units, 77 units have a mortgage and 56 are without a mortgage. In 2016, the 227 owner occupied housing units were estimated to have 120 units with a mortgage and 107 without a mortgage.

The value of the owner-occupied units showed 15.0% were valued between $50,000 and $99,000, with the largest segment valued between $300,000 and $499,000 at 23.3% of the units. The median value of the housing units is $262,500 in 2010. Table 12 depicts the owner-occupied value of the housing units in 2010.

TABLE 12. VALUE OF OWNER-OCCUPIED UNITES - 2010

Unit Value	Number of Units	Percent of Total
Less than $50,000	0	0.0%
%50,000 to $99,000	20	15.0%
$100,000 to $149,000	6	4.5%
$150,000 to $199,000	23	17.3%
$200,000 to $299,000	28	21.1%
$300,000 to $499,000	31	23.3%
$500,000 to $999,000	15	11.3%
$1,000,000 or more	10	7.5%

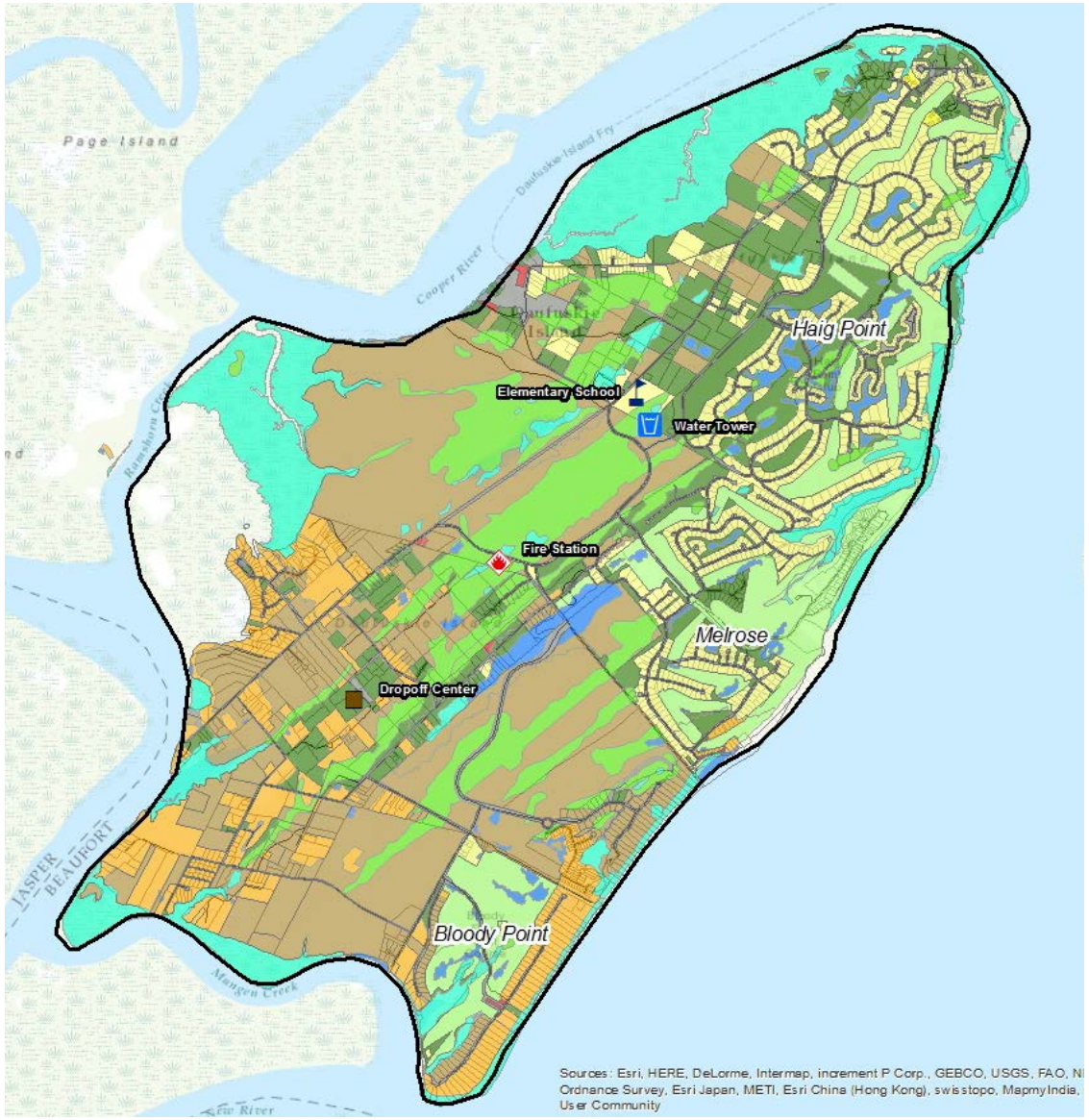
Source: 2010 US Census

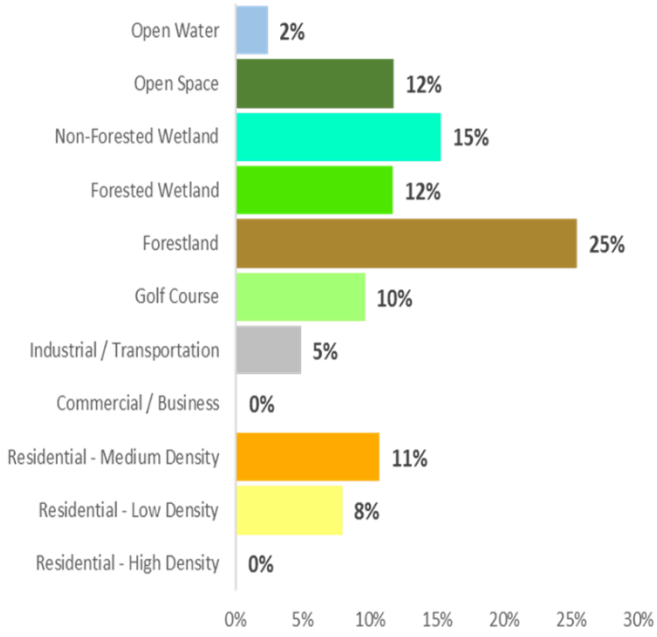
Census figures show that 43.6% of the occupied households reported no vehicle available. However, this figure only includes automobiles and does not include golf carts as a primary vehicle.

Land Use

The current land use on Daufuskie Island reflects its relatively undeveloped state. The largest existing land use is found to be forestland, making up 25% of the land. Wetlands also comprise a significant element of the existing land use, with 15% characterized as non-forested wetlands and 12% characterized as forested wetlands. Open space comprises 12% of the land use. Residential land uses comprise 19% of the land use, with 11% in medium density and 8% in low density. Golf courses comprise 10% of the existing land use, with industrial/transportation category at 5%. Figure 9 depicts the existing land use breakdown.

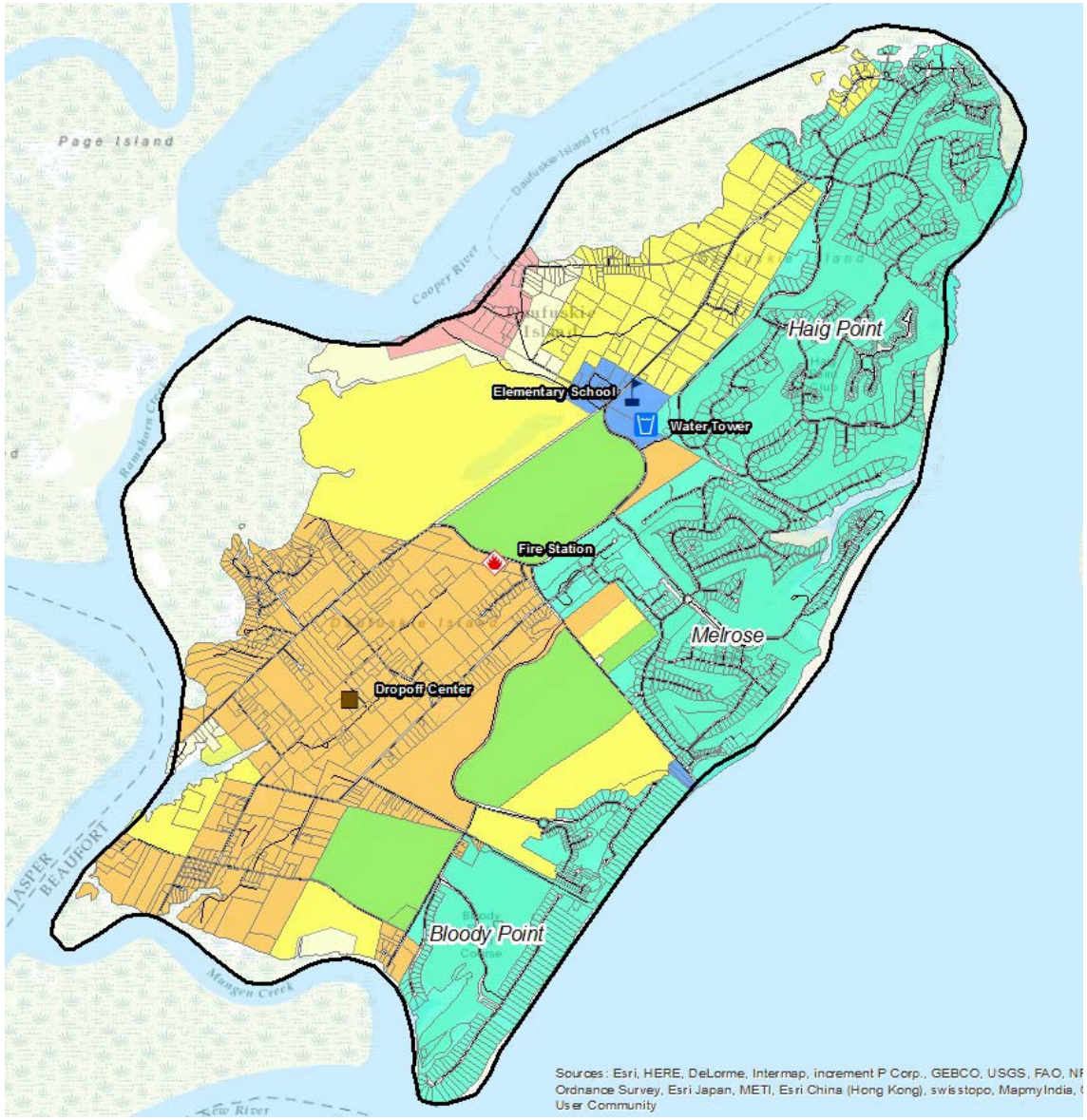
FIGURE 9. LAND USES

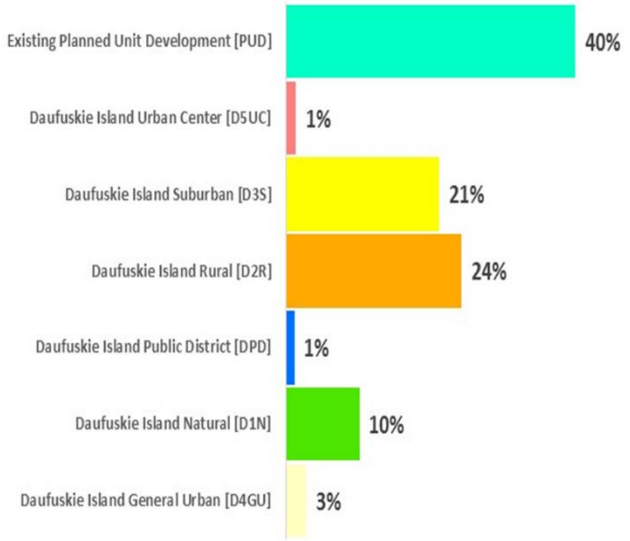




As noted in the population element discussion, there are currently 2,483 parcels identified on the island. Of these parcels 24%, or 592 are developed and 1,891 (76%) are undeveloped. For the Island as a whole, 71% is characterized as undeveloped and 29% as developed. The current zoning classifications on the Island include Planned Unit Development, which comprises 40% of the Island and includes Bloody Point, Haig Point, Melrose and Oak Ridge. The next largest zoning category is Daufuskie Island Rural at 24% and Daufuskie Island Suburban follows at 21%. The Daufuskie Island Natural category comprises 10% of the zoning with General Urban at 3% and Public District and Urban Center both at 1%. The existing zoning classifications are shown in Figure 10.

FIGURE 10. EXISTING ZONING





Transportation

There are several unique components to the transportation on Daufuskie Island. These components include the ferry systems that provide service from the Island to the mainland and the roadway network. In addition, the use of golf carts is a large percentage of the vehicle choice, although automobiles are utilized by many on the island. However, autos and gas-powered golf carts are restricted from use in some of the PUDs.

Roadway Network

The roadway network on Daufuskie Island is a mix of paved roads and unpaved roads and many are maintained by Beaufort County, although the ownership and rights of way are often unclear. Haig Point Road is the major facility providing north-south access and is paved. There is a web of unpaved public roads that serve the majority of the Island, as well as a mix of private drives and roadways. Haig Point Road, which is approximately 2.7 miles in length, joins with Cooper River Landing Road which is also paved and provides access to the Melrose Landing, currently the public ferry embarkation point. Cooper River Landing Road is approximately 0.70 miles in length, bringing the total of paved facilities on the island to about 3.5 miles. The unpaved roads total about 9.5 miles in length. Table 13 provides the breakdown of the paved and unpaved facilities maintained by Beaufort County for over 20 years. In addition to these identified facilities, there are numerous private roadways.

TABLE 13. ROADWAY NETWORK

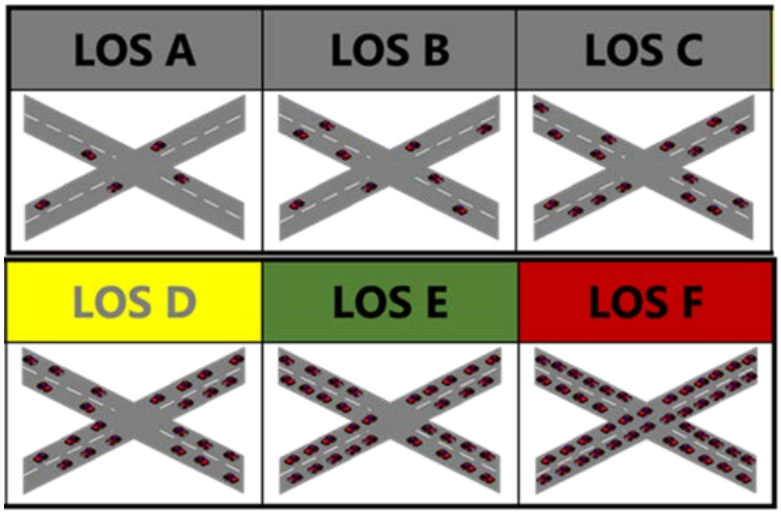
Paved Roadways	
Roadway	Length (in miles)
Haig Point Road	2.72
Cooper River Landing Road	0.70
Total Paved Roadways	3.42

Unpaved Roadways			
Roadway	Length (in miles)	Roadway	Length (in miles)
Freeport Road	0.21	Benji's Point Road	0.86
Carvin Road	0.90	Prospect Road	1.28
Old Haig Point Road	0.87	Pappy's Landing Road	0.78
Church Road	0.61	Beach Road	1.10
Turtle Beach Road	1.08	Frances Jones Road	0.25
School Road	1.58	Maryfield Road	0.23
Total Unpaved Roadways 9.75			

Source: Project Team/Google Earth

Traffic on the roadway network is low in the tourist off-season and increases significantly during the high tourist season and on weekend days. Roadway congestion is classified by Level of Service, which assigns a "grade" of A to F based on the level of congestion. Level of Service A is freeflowing and Level of Service F is gridlock. The graphic in Figure 11 illustrates the Levels of Service.

FIGURE 11. LEVEL OF SERVICE



Source: Georgia Department of Transportation

While formal traffic counts have not been taken, the roadway network on the Island operates at Level of Service A, even in the high tourist season.

Planned Unit Developments

The roadway networks within the PUDs are primarily paved and are maintained by the development associations. Bloody Point, Melrose, and Oak Ridge, originally gated, are currently open developments; Haig Point is the only PUD with active gate restrictions for entrance/exiting the development; however, the other PUDs may be gated in the future based on permitting in place. Table 14 displays the network, in miles, within each PUD.

TABLE 14. PUD TRANSPORTATION NETWORKS

Planned Unit Development	Roadway Network (in miles)
Bloody Point	1.87
Haig Point	9.57
Melrose	8.34
Oak Ridge / Beachfield	2.59

Source: Project Team/Google Earth

Multimodal Transportation

Because of the relatively low traffic volumes and the expectations of drivers to be in a mix of vehicles, particularly with golf carts, the roadway network serves all modes of transportation. Pedestrians and bicyclists successfully utilize the roadway network, although there are no designative pedestrian or bicycle facilities.

As described above, the use of golf carts make up a large percentage of the mode of travel on the Island. The golf carts are expected by automobile drivers and due to the expectations, the mix of vehicles is typically a successful scenario.

Public Ferry System

The Daufuskie Island ferry system is operated on a contract basis for Beaufort County and Palmetto Breeze, the rural transportation provider for Beaufort County and the South Carolina Lowcountry. Currently, the Haig Point Ferry operates the system under contract. The ferry provides connections from the Melrose Landing embarkation point on Cooper River Landing Road to the Hilton Head embarkation point located at Buckingham Landing, off of US 278/Fording Island Road. The ferry trip typically takes approximately 45 minutes to an hour and generally runs on the following schedule:

Departing Hilton Head/Buckingham Landing	Departing Daufuskie/Melrose Landing
7:00 am	8:30 am
10:00 am	11:30 am
1:00 pm	2:30 pm
4:00 pm	5:30 PM
9:00 pm (Fridays only)	10:15 PM (Fridays only)

Source: Daufuskie Island Ferry

According to the *Daufuskie Island Public Ferry Service Passenger* Guide (Nov. 2017), ferry is open to the public, with round trip for members of the general public costing $35.00. There are levels of tickets available for Daufuskie Island residents, part-time residents and property owners.

Level 1 - $2.00 One Way
Available for full time resident students (ages 5 to 18); full time resident seniors (ages 65 and over); and residents or property owners with disabilities

Level 2 - $3.00 One Way
Available for full-time resident homeowners, based on the Beaufort County Assessor's office

Level 3 - $4 One Way
Available for a full-time resident renter

Level 4 - $7 One Way
Available for non full-time property owners or homeowners, based on the Beaufort County Assessor's office

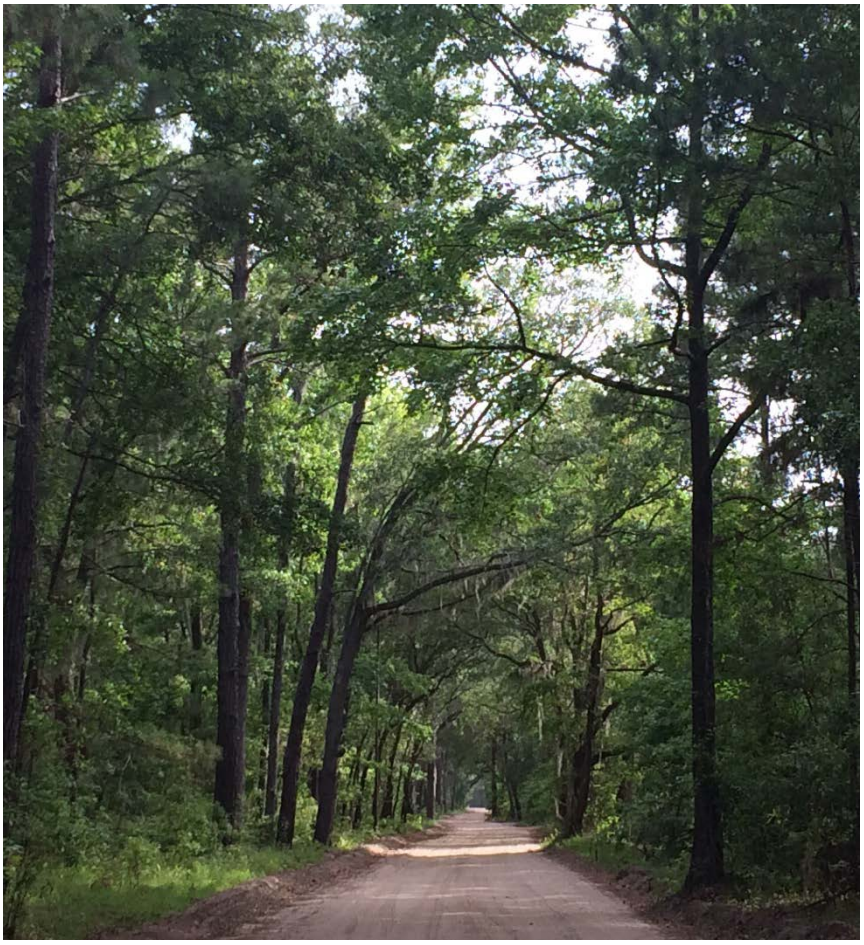
Additional Ferry Options

Calibogue Cruises operates between Hilton Head and Daufuskie Island, providing service from Broad Creek Marina on Hilton Head to the Freeport Marina on Daufuskie. The service

leaves Broad Creek at 10:30 am and 3:30 pm Tuesdays through Fridays and departs Freeport Marina at 11:30 am and 4:30 pm Tuesdays through Fridays. On Saturdays, the service leaves Hilton Head at 11:00 am and 4:00 pm and departs Freeport at noon and 5:00 pm.
There are also other private operators who provide ferry services on a schedule based on customer needs. These ferry services provide access to the public dock facility on Daufuskie and leave from Hilton Head, Bluffton and the Savannah area.

PUD Ferry Options

Haig Point currently operates a ferry to Hilton Head for their members, residents, and their guests. Their service provides access to Hilton Head at their embarkation point near Broad Creek Marina. Bloody Point service to downtown Savannah was discontinued in December, 2017 with the closure of the resort.



Chapter Five:

NEEDS AND OPPORTUNITIES

CHAPTER 5: NEEDS AND OPPORTUNITIES

The identification of the needs and opportunities facing the Island is the first step in the development of strategies to address these needs and capitalize on the opportunities. These strategies will enable the Island to meet the identified goals and achieve the vision for the future. Members of the community provided critical feedback on the needs and opportunities, as well as priorities, during public workshops, meetings and through the community surveys. The following lists the needs and opportunities for each element identified through the planning process for each element.

Population Needs, Issues and Opportunities

- Ability to age in place and remain on the Island
- Lack of diversity in the demographics of the population, particularly focused on the Gullah residential population
- Three distinct population groups and the need of services to support each of these groups
    - Full time and part time island residents
    - Day trippers
    - Longer term vacationers

Economic Development Needs, Issues and Opportunities

- Ability to earn a living
- Build the economy on strengths of the island
- Enhance tourism economy through ecotourism and cultural/historic tourism
- Foster small agri-businesses
- Maintain and foster diverse, unique small businesses
- Meaningful work opportunities on the Island
- Showcase Daufuskie's unique and special qualities
- Basic support services on the Island, such as retail and service amenities

Natural Resources Needs, Issues and Opportunities

- Cleanliness of the island
- Maintain/preserve natural beauty
- Preserve and protect the natural environment
- Preserve open space
- Preserve the undeveloped nature of the Island
- Preserve/protect wildlife and their natural habitats
- Need for vegetative buffers

Cultural/Historic Resources Needs, Issues and Opportunities

- Foster and support the artisan culture and the arts
- Maintain, preserve and protect cultural and historical assets
- Maintain, preserve and protect the Gullah heritage of the Island
- Preserve architectural integrity and diversity

Community Facilities Needs, Issues and Opportunities

- Community meeting space/event space
- Maintain public access to the river and ocean
- Preserve/protect the waterfront and beaches
- Maintain and support the local island school
- Use existing assets for community purposes
- Maintain and support the fire and emergency services on the Island
- Preserve and enhance community spaces, such as public parks
- Local dump/solid waste solution
- Sufficient infrastructure to support growth: community wastewater, underground utilities, sustainable refuse collection, and water supply

Governmental/Intergovernmental Coordination Needs, Issues and Opportunities

- Enhance working relationships with Beaufort County
- Identify other partnerships

Housing Needs, Issues and Opportunities

- Presence of dilapidated housing
- Preservation of the remaining Gullah / historic cottages

Land Use Needs, Issues and Opportunities

Within each jurisdiction, there are smaller areas that have distinct or unique characteristics. The identification of these specific areas, or character areas, are used as a planning tool to address the needs and opportunities that are specific to that area and to develop strategies tailored for that area. The characteristics can be focused on geographical elements, as well as development patterns. The identified character areas serve as a guide for the development of the land use element, zoning and the identification of areas for priority investments.

Character Areas

In the previously adopted plan, Beaufort County crafted future development strategies for the identified zoning districts to address the needs affecting those areas. These previously identified zoning districts formed the basis for the updated character areas for the plan.

Each of the character areas were developed through a community workshop where the participants divided into three working groups. These groups identified the character areas, issues and potential development strategies. In addition to the development strategies identified for each character area, the workshop participants also identified overall development strategies for the Island. The compilation of the work efforts from the breakout groups were presented to the Project Advisory Committee for review and input.

Each of the character areas is described in detail, with the special and defining characteristics that the public wishes to enhance and protect identified. Current zoning classifications within each of the character areas have also been identified and analyzed for their applicability to the character area. The character areas that have been identified include the following:

- South Island Historic
    - Gullah Heritage sub-area is a part of this area
- Mid-island Historic
- North Island Historic
- Village Centers
- Heritage Corridor
- Village Gateway Corridor
- Coastal Mashlands

Although the PUDs are not subject to this current plan, the workshop participants included each of the PUDs as their own character area.

- Haig Point PUD
- Melrose PUD
- Oakridge/Beachfield PUD
- Bloody Point PUD

The character areas are shown on the map on the following page.

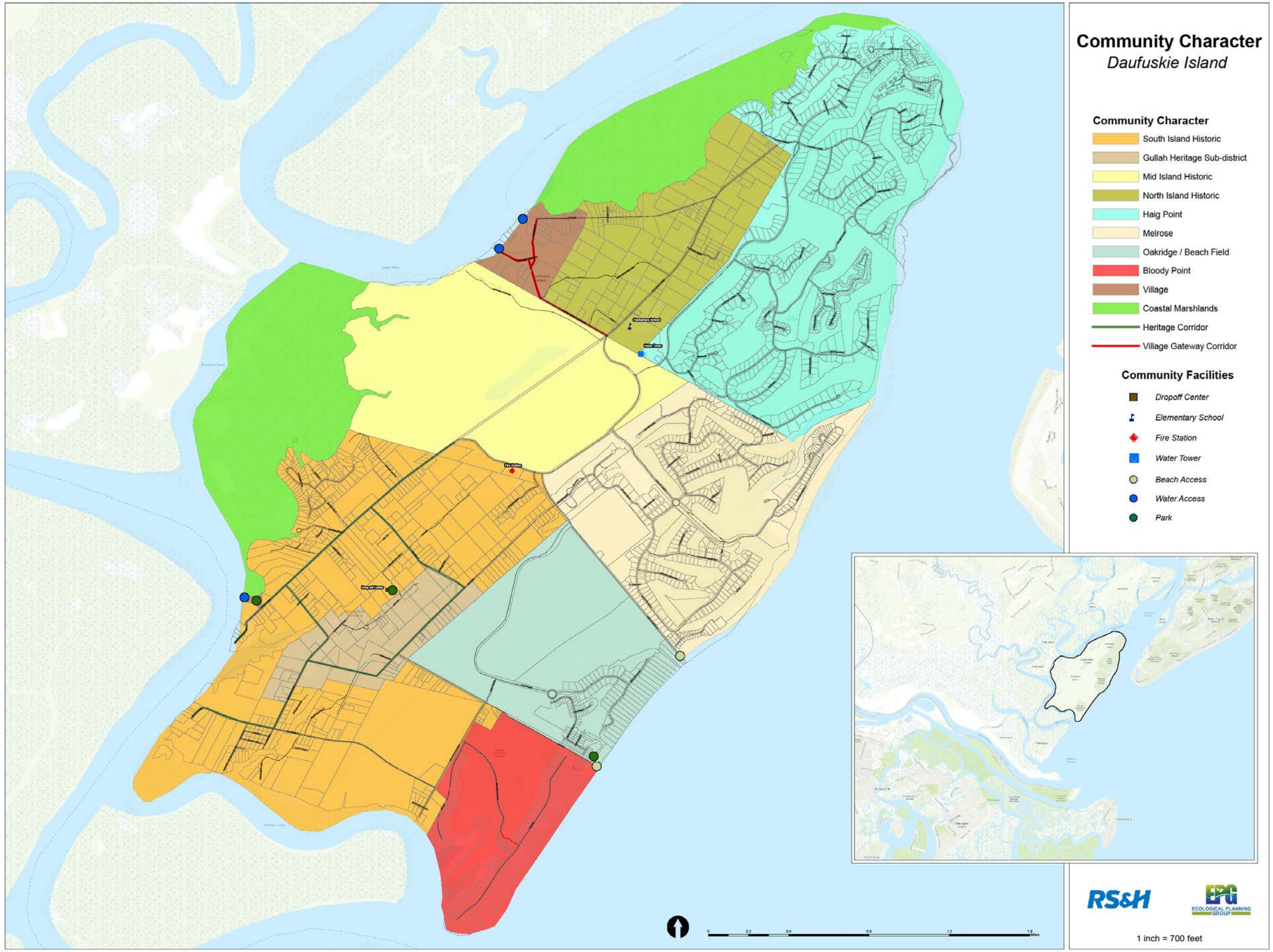

Community Character
Daufuskie Island
Community Character
South Island Historic
Gullah Heritage Sub-district
Mid Island Historic
North Island Historic
Haig Point
Melrose
Oakridge / Beach Field
Bloody Point
Village
Coastal Marshlands
Heritage Corridor
Village Gateway Corridor
Community Facilities
Dropoff Center
Elementary School
Fire Station
Water Tower
Beach Access
Water Access
Park
RS&H
EPG
ECOLOGICAL PLANNING GROUP
1 inch = 700 feet

Table 15 shows each of the character areas along with the current zoning districts, including their general purpose and permitted uses.

TABLE 15. CHARACTER AREAS AND CURRENT ZONING

COMPARISON OF DAUFUSKIE ISLAND CHARACTER AREA AND CURRENT ZONING CLASSIFICATIONS			
Character Area	Current Zoning, General Status and Permitted Development Types		
	Primary Current Daufuskie Island Zoning Classification	General Current Allowable Uses	Current Base Residential Density Allowed
South Island Historic	Rural - D2R	Primarily rural in nature with agricultural uses, residential homes, and adaptive residential commercial uses not to exceed 1,000 square feet. A portion of this area is identified as conservation.	1 DU/Acre (gross)
Mid-Island Historic	Suburban - D3S	Single family homes, small B&B uses allowed, and accessory guest houses permitted, along with small office and commercial uses allowed. A portion of this area is set aside in conservation. Barge landing and permitted portal/marina	3 DU/Acre (gross)
North Island Historic	Suburban - D3S	Single family homes, small B&B uses allowed, and accessory guest houses permitted, along with small office and commercial uses allowed	3 DU/Acre (gross)

Village	General Urban - D4GU and Urban Center - D5UC	Single family and multi-family residential, B&B, Inns and Hotels, along with office and commercial uses	4 DU/Acre (gross) in D4GU and 8 DU/Acre (gross) in D5UC
Heritage Corridor	Rural - D2R	Primarily rural in nature with agricultural uses, residential homes, and adaptive residential commercial uses not to exceed 1,000 square feet	1 DU/Acre (gross)
Village Gateway Corridor	Public District - PD, Suburban - D3S, General Urban - D4GU, and Urban Center - D5UC	Public uses and civic sites as well as the uses identified I n the D3S, D4GU, and D5UC above	Varies
Existing Approved PUDs	Existing Planned Unit Developments - PUD	Uses and densities as allowed by approved PUD. A portion of the Oakridge PUD has been set aside as conservation.	NA
Coastal Marshlands	Natural Preserve - T1NP	NA	NA

Strategies Affecting All Areas

Specific development strategies were identified for each of the individual character areas and were developed to preserve and enhance the existing character within the area. Development strategies that were applicable to all of the character areas were also identified and include the following:

- New development, redevelopment and restoration should be consistent with the existing character of the area in which the development occurs.
- Enhance the pedestrian environment where feasible.
- Historic structures should be preserved whenever possible.
- Prioritize tree preservation to protect the scenic and habitat value of the area.
- Encourage land uses, through clearly defined guidelines, that protect against stormwater pollution including xeriscaping, pervious surfaces and erosion and sedimentation control.
- Require the treatment of stormwater runoff quality and quantity prior to its discharge in the marsh.
- Limit housing density, size and height through zoning.

- Develop and adopt a wayfinding and directional signage plan to ensure consistency throughout the island.
- Encourage consistency with recommended design and architectural standards.
- Restore and maintain the tree canopy.

Character Area: South Island Historic

The South Island Historic character area is a unique rural residential area with some waterfront lots along the New River and Mungen Creek. In addition to the rural residential uses, low impact commercial service uses exist in this area. Most of the remaining Gullah structures lie in the South Historic area.

Characteristics

- Unique low density rural historic area
- Waterfront lots along Mungen Creek and the New River allow private water access
- Public access to water at the County dock
- Scenic views
- Low impact small commercial uses
- Small rural residential structures
- Areas of native Gullah family compounds
- Unpaved roads
- Community facilities
    - Mary Fields School
    - Fire Station
    - Church
    - Regional park at County dock site
- Cemeteries
    - Mary Field
    - White

Issues

- The Dump – location and maintenance
- Lack of buffers
- Abandoned and dilapidated structures
- County dock size/docking space
- Litter

Development Strategies

- The boat ramp, county dock and fishing pier are essential elements and should be preserved.
- Encourage safer pedestrian non-motorized mobility.
- Preserve historic structures whenever possible.
- Provide appropriate incentives for historic restoration projects.
- Preserve the scenic value of the area.
- Encourage preservation and enhancements of remaining Gullah areas
- Define a Gullah heritage area that supports the Gullah architectural styles

Character Area: Mid-Island Historic

A critical Daufuskie Island character area, this historic area consists of the undeveloped, environmentally sensitive areas bordering the Cooper River. A portion of this area has been placed in permanent conservation.

Characteristics

- Undeveloped
- Natural habitats and environmentally sensitive areas
- Waterfront system with freshwater wetlands
- Conservation area
- Water access to Cooper River

Issues

- Development pressures
- Preservation of unique environmental resources

Development Strategies

- Support projects enhancing wildlife habitats.
- Promote the area as a recreation area and eco-tourism destination.
- Preserve the greenspace adjacent the Cooper River and freshwater wetlands.
- Incorporate environmentally sensitive elements for any permitted development

Character Area: North Island Historic

This area is still rural in nature. The primary Island public spaces, such as the school and museum, are within this area. Some river view lots lie along Carvin Road bordering the Cooper River.

Characteristics

- Mix of housing types in a rural setting
- Low density
- Old growth trees
- Contains the public spaces of the Daufuskie Island school and Museum
- Tree canopy
- Unpaved roads
- Historic sites

Issues

- Dilapidated housing structures
- Stormwater runoff

Development Strategies

- Historic structures should be preserved whenever possible
- Enhance the pedestrian environment where feasible

- Preserve old growth trees
- Do not allow intrusion of heavy commercial uses
- Preserve the low-density character of the area
- Ensure any development does not negatively impact coastal marshlands

Character Area: Village Centers

There are two Village character areas that have been identified. The first is the area on the Cooper River that includes the private Freeport Marina and the public ferry access point at the Melrose landing. Freeport is developed with a dock, restaurant, general store and small rental units. The second village center is located at the southern end of the island in the area surrounding the public County dock. This area includes a public park, public restrooms and, until recently, a restaurant and small general store.

Characteristics

- Primary water access points
- Contains the primary commercial land on the island
- Environmentally sensitive areas exist
- Mix of paved and unpaved roads
- Tree canopy
- Cultural amenities
    - Gullah cemetery
    - Marsh Tackies
    - Public park/restrooms
    - Building that housed a restaurant and general store
    - Community gathering space

Issues

- Public ferry dock condition at Melrose dock
- Parking near Freeport is haphazard
- Condition of buildings at the public dock area and closure of the restaurant

Development Strategies

- Encourage village center type developments in this area.
- Promote area as access portals to the island's eco-tourism and low impact recreation destinations.
- Restrict or discourage uses that could contribute to water pollution.

Character Area: Village Gateway Corridor

This corridor runs from Old Haig Point Road to both the Melrose and Freeport marina sites along Cooper River Landing Road and Freeport Road to Carvin Road.

Characteristics

- Paved road connects Old Haig Point Road to Melrose dock
- Existing rural residential is limited along the corridor

- Historic and native housing is adjacent to corridor
- Limited development

Issues

- Litter along roadways

Development Strategies

- The corridor offers the opportunity to provide a mix of neighborhood commercial uses
- Shopping
- Crafts
- Restaurants
- Eco-tourism
- Encourage specialized commercial and mixed-use development along the corridor.
- Establish standards for a maximum percentage of residential use on a per parcel basis to encourage mixed use.
- Enhance pedestrian movements with streetscape improvements.
- Allow for an appropriate mix of retail, residential, and tourism-related uses consistent with the Plan vision.
- Implement traffic calming measures and parking improvements.
- Establish noise and sight buffers between commercial uses and adjacent residential areas.

Character Area: Heritage Corridor

The Heritage Corridor provides the major access routes serving the South Island Historic area and the proposed Gullah Heritage sub-area. It currently serves and links the community farm, the second village center area along with the County Dock and Park, the First African Baptist Church, Mary Fields School, and several small island shops and artist galleries.

Characteristics

- Part of South Historic area
- Significant historic, cultural and natural resources, including historic district designation
- Mix of paved and unpaved roads
- Uses include
    - Traditional cottages
    - Public uses/parks
    - Historic sites
    - Narrow unpaved streets

Issues

- Litter
- Road conditions on the unpaved portion

Development Strategies

- Establish standards and guidelines for signage.

- Provide signage for landmarks and commercial businesses.
- Preserve or restore historic structures whenever possible.
- Provide appropriate incentives for historic restoration projects.
- Ensure continued preservation of old growth trees, parks, and greenspace.
- Consider adoption of architectural standards for historic structures

Character Area: Haig Point PUD

This gated private golf community is located on the northern end of the Island. Amenities include golf, tennis, restaurants, and a private ferry system providing service to Hilton Head for residents, members and their guests.

Characteristics

- Gated community
- No public access
- Private ferry to Hilton Head
- Paved streets
- Golf course community
- Lighthouse and historic areas lie within gated area

Issues

- Public access to historic sites is limited

Development Strategies

- Permit only compatible uses allowed by the approved PUD agreement
- Develop agreements for access to historic sites

Character Area: Melrose PUD

This golf residential community is located on the eastern side of the Island with beach access. The development includes a resort currently owned by Redfish Holdings, LLC.

Characteristics

- Currently non-gated private community
- Low density residential with mix of single family and multi-family
- Community amenities
    - Inn
    - Golf
    - Tennis
    - Horse stables
    - Beach club/pool/restaurant facilities
- Paved roads

Issues

- History of bankruptcy issues
- Closure of community amenities
- Beach erosion
- Maintenance

Development Strategies

- Permit only compatible uses allowed by the approved PUD agreement

Character Area: Oakridge/Beachfield PUDs

This development is located on the eastern side of the Island and has beachfront access. Originally planned as a gated community, there is currently public access to this community.

Characteristics

- Non-gated private community
- Low density residential
- Paved roads
- Mostly undeveloped
- Beach access
- A section is in conservation

Issues

- Beach erosion
- Sensitive to storm surge

Development Strategies

- Permit only compatible uses allowed by the approved PUD agreement

Character Area: Bloody Point PUD

Bloody Point is located on the southern end of the island and has both beach access, as well as waterfront access to Mungen Creek. The most recent owner targeted Savannah as its market and provided ferry service from Bloody Point to downtown Savannah.

Characteristics

- Non-gated private community
- Low density residential
- Community amenities
    - Small Inn
    - Golf/Tennis/Pool
- Paved roads
- Private ferry to Savannah (not in service)
- Historic cemetery site

Issues

- Resort closed due to financial issues

Development Strategies

- Permit only compatible uses allowed by the approved PUD agreement
- Continue to provide public access to the historic cemetery site

Character Area: Coastal Marshlands

The coastal, saltwater marshlands primarily border the Cooper River, Ramshorn Creek and the New River.

Characteristics

- Unique natural environment
- Undeveloped, and not suited for development
- Flooding buffer
- Environmentally sensitive marine and wildlife habitat

Issues

- Impacts from adjacent development
- Stormwater runoff

Development Strategies

- No development should occur within or impacting these areas.

Transportation Needs, Issues and Opportunities

- Dedicated, well-maintained public ferry landing
- Maintain balance of paved/unpaved roads for safety, security, and access
- Reliable and convenient transportation to the Island
- Roadway maintenance
- Increasing automobile presence on the Island may result in the need to have more standard traffic markings/signage

Chapter Six:

ACHIEVING THE VISION

CHAPTER 6: ACHIEVING THE VISION

The Daufuskie Island Comprehensive Plan identifies the action steps that the community, in coordination with Beaufort County, will undertake to achieve the community vision. These action steps are implementable and are included in the following Plan Work Program, which serves as the Priority Investment element required by the comprehensive plan legislation. This work program is specifically targeted for the Daufuskie Island community and recognizes that, as an unincorporated area, the majority of the action steps will be accomplished by volunteer groups, committees and residents and take advantage of the skills and abilities within the community. It will be critical for the implementation of the identified action steps to coordinate closely with Beaufort County

Daufuskie Island Plan Work Program

The action steps and components of the Work Program have been identified to achieve the goals for the Island established during the planning process. Each of the identified action steps are categorized under its intended goal. To identify responsible party for moving the recommended action items forward, the implementation plan is centered on the Daufuskie Island Council and its existing committee structure. These existing committees include:

- Cultural and Historic Preservation
- Island Plan and Code
- External Outreach
- Ferry
- Roads
- Island Amenities
- Solid Waste
- Resources

The restructured committees incorporate all of these existing areas of focus, while combining and/or broadening the scope of interest for some committees. The updated committee structure, which will be standing Council committees, is shown along with the comparison to the existing committee structure and scope is shown in Table 16.

TABLE 16. 2018 COMMITTEE STRUCTURE

2018 Committee	Previous Committee	Scope
Cultural, Historic, and Natural Preservation	Cultural and Historic Preservation	Protection, preservation and enhancement of community cultural and historic resources
Island Plan and Code	Same	Plan implementation
Coordination	External Outreach	Coordination with Beaufort County; local governments; state, local and regional agencies
Transportation	Ferry Roads	Focus on all multimodal transportation needs and infrastructure
Community Facilities and Assets	Island Amenities Solid Waste	Focus on the maintenance, enhancement and development of facilities and infrastructure
Resource Development and Grants	Resource	Focus on marketing, branding, identification of financial resources and grant opportunities
Economic Development	None	Focus on economic development opportunities, promotion and education in coordination with the other committees

The community of Daufuskie Island includes many talented and accomplished residents with numerous contacts who can provide insight and assistance into all of these areas. A network of resources will need to be established that can, and are willing to provide support to each of these committees and their activities.

Daufuskie Island Goals

The following goals, not shown in any priority order, were identified by the community during the planning process:

A. Preservation of community character
B. Balance growth and development with the existing community character
C. Promote a sustainable economy compatible with existing community character
D. Preserve and enhance community assets, including the natural beauty of the island
E. Promote environmental stewardship
F. Preserve the island history and culture, including a focus on the native Gullah heritage

Each of the work items have been structured to assist in achieving these goals. Many of the action items identified will incorporate multiple goals. Each of the items also includes a

timeframe for action and/or if it is an ongoing activity. The identified timeframes are as follows:

- Short-range: 1-2 years
- Mid-Range: 3-5 years
- Long-Range: 5-10 years

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
ECONOMIC DEVELOPMENT COMMITTEE			
Promote eco-tourism and off-peak tourism	A,B.C,E	Ongoing	DI Council Committee and Volunteer Time/Eco-Tourism includes both existing peak season and promotion of tourism in off-peak season
Identify group camping sites and ensure sites are in accordance with code	A,B,C,E	Short-Range	DI Council Committee and Volunteer Time/Coordination with Plan Implementation Committee
Develop marketing and branding to effectively market Daufuskie Island as an eco-tourism destination	B,C	Short-Range/Ongoing	DI Council Committee and Volunteer Time/Identify resources for assistance with marketing and branding
Coordinate with existing birding trails and develop amenities for birding trail sites on Daufuskie Island	B,C,D	Mid-Range	DI Council Committee and Volunteer Time/Identify resources and assistance for research and coordination opportunities
Promote agri-business in coordination and cooperation with Daufuskie Community Farm	B,C,D,F	Mid-Range	DI Council Committee and Volunteer Time/Coordinate with Community Farm and other agri-business organizations to understand and develop opportunities
Work with Daufuskie small business initiative and SCORE Association (Service Corps of Retired Executives) to develop a support network and small business incubator	B,C	Long-Range	DI Council Committee and Volunteer Time/Coordinate with SCORE

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
Provide educational opportunities for the community to understand development requirements, pro-formas, etc.	B,C	Short-Range	DI Council Committee and Volunteer Time/Identify educational resources
Develop economic base to ensure young people can remain on the island and earn a living.	B,C	Ongoing	DI Council Committee and Volunteer Time
COMMUNITY FACILITIES AND ASSETS COMMITTEE			
Continue to work with County and community organizations and members to address the issues with the existing dump site with potential short-term solutions, ie. fencing, manning the facility, covered dumpsters	D,E	Ongoing	DI Council Committee, Community Organization and Citizen Volunteer Time
Continue to coordinate on a long-term, sustainable solid waste facility	D,E	Mid-Range	DI Council Committee, Community Organization and Citizen Volunteer Time
Continue and expand Adopt-A-Road Program	A,D,E	Ongoing	Volunteer time/Coordination with Daufuskie Island Conservancy
Coordinate to include in tourist pamphlets information regarding litter prevention and golf cart safety	A,B,D,E	Short-Range	DI Council Committee and Volunteer Time/Coordination with Existing Businesses with Tourist Information
Organize a volunteer network to maintain public facilities	A,B,D,E	Ongoing	DI Council Committee and Volunteer Time
Ensure roadway and dumpsite grading do not adversely impact environmental resources and drainage	E	Ongoing	DI Council Committee/Coordination with County

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
Identify services lacking for year-round Island residents, including those needed to serve aging populations, and prioritize need to develop options for meeting the identified needs	B,C	Ongoing	DI Council Committee, Community and Volunteer Time/Coordination with County, Other Organizations to Potentially Meet Needs
PLAN IMPLEMENTATION COMMITTEE			
Update and simplify Island Code	A,B,C,D,E,F	Short-Term	DI Council Committee
Monitor progress of plan recommendations	A,B,C,D,E,F	Ongoing	DI Council Committee
Establish on-island planning advisory board to provide input to County and County Planning Commission regarding Island developments and consistency with code	A,B,C,D,E,F	Short-Term/Ongoing	DI Council Committee
TRANSPORTATION COMMITTEE			
Work with County to identify and implement potential road material that can stabilize the unpaved roads without paving to avoid additional impervious surfaces and drainage issues	A,D,E	Mid-Term	DI Council Committee
Continue to Coordinate with County and Palmetto Breeze to provide stable, consistent, and quality public ferry service	A,B,C	Ongoing	DI Council Committee
Open discussions with SCDOT/Office of Public Transit to gain understanding of transit funding and explore additional options	A,B,C	Short-Term	DI Council Committee

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
Research other ferry systems' organizational structures, funding mechanisms to identify potential models	A,B,C	Short-Term	DI Council Committee
Continue to coordinate with County on acquisition of rights of way on roads maintained by the County for more than 20 years.	A,B,D,F	Ongoing	DI Council Committee
CULTURAL/HISTORIC/NATURAL PRESERVATION COMMITTEE			
Work with the Gullah Geechee National Heritage Corridor to promote Daufuskie and identify opportunities for heritage preservation and potential funding	A,B,D,F	Ongoing	DI Council Committee/Community Organizations and Community Members Volunteer Time
Coordinate with organizations such as the Preservation SC, Daufuskie Island Historical Foundation and other interested parties and agencies to address preservation of historic Gullah houses and identify grant opportunities	A,B,D,F	Ongoing	DI Council Committee/Community Organizations and Community Members Volunteer Time
Work with and support existing preservation groups on the island	A,B,D,E,F	Ongoing	DI Council Committee/Community Organizations and Community Members Volunteer Time
Meet with Tybee Island officials and SC state agencies to understand grant opportunities for beach renourishment	D,E	Short-Term	DI Council

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
Coordinate with Beaufort County to conduct a significant tree survey and develop protections within the code for significant trees	A,B,D,E	Mid-Term	DI Council/Beaufort County Staff Time
Continue with existing wayfinding signage	A,B,C,F	Ongoing	DI Council Committee/Community Organizations and Community Members Volunteer Time
COORDINATION COMMITTEE			
Continue close coordination with Beaufort County staff and elected officials on issues affecting Daufuskie Island	A,B,C,D,E,F	Ongoing	DI Council and Committee
Work with Beaufort County, state and regional agencies to identify funding for grants researcher and writer	A,B,C,D,E,F	Short-Term	DI Council and Committee
Establish committee, including Beaufort County officials, to examine and identify governance options for the Island	A,B,C,D,E,F	Mid-Term	DI Council and Committee
Continue to use existing tools to communicate community information (website, social media)	A,B,C,D,E,F	Ongoing	DI Council and Committee
Coordinate with Daufuskie Island Fire and Emergency Services and Beaufort County Emergency Management officials to educate and inform residents on hurricane preparedness	A,B,C,D,E,F	Ongoing	DI Council and Committee

Action Items	Goal Addressed by Action Item	Timeframe	Cost Estimate/Notes
Work with state economic development agencies and tourism agencies for assistance and support in developing programs to capitalize on tourism	A,B,C,D,E,F	Ongoing	DI Council and Committee
RESOURCE DEVELOPMENT AND GRANTS COMMITTEE			
Utilize existing community resources to identify potential grant opportunities	A,B,C,D,E,F	Short-Term	DI Council Committee and Community Organizations
Coordinate with community resources, organizations and businesses to develop major Island festival (in addition to Daufuskie Days)	A,B,C,D,E,F	Short-Term	DI Council Committee, Community Organizations and Businesses
Identify and hire grants researcher/writer (part time)	A,B,C,D,E,F	Long-Term	DI Council/Funding from Organizations, Proceeds from Fund-raisers and Festival

DAUFUSKIE ISLAND COMMUNITY DEVELOPMENT CODE

May, 2018

The Daufuskie Island Community Development Code was updated in conjunction with the update of the Daufuskie Island Plan. This initiative of the Daufuskie Island Council was undertaken to simplify the existing code and to ensure a user-friendly approach for the community and County staff.

This update was a collaborative effort and developed in coordination with Beaufort County and is consistent with Beaufort County codes and ordinances.

Article 1: Specific to Zones

Division 1.1: Establishment and Designation of Zones

Division 1.2: Transect Zones

Division 1.3: Overlay Zones

Division 1.4: Land Uses Allowed and Definitions

Division 2.1: Developments Within Rural Areas

Division 1.1: Establishment and Designation of Zones

Sections:

1.1.10 Purpose

This Division establishes the zones applied to property within the County on Daufuskie Island and adopts the County 's Zoning Map for Daufuskie Island.

1.1.20 Establishment of Zones

A. Zoning Map. The County Council hereby adopts the Daufuskie Island Zoning Map (hereafter referred to as the Zoning Map), which is on file with the Department. See Division 1.5 of the Beaufort County Community Development Code (Official Zoning Map). The Zoning Map is hereby incorporated into this Development Code by reference as though it were fully included here.

B. Zones Established. The Daufuskie Island portion of Beaufort County shall be divided into transect zones and overlay zones that implement the Comprehensive Plan. The zones in this Division are hereby established and shall be shown on the Zoning Map.

C. Interpretation of Zone Boundaries. Where uncertainty exists as to the boundaries of any of the zones shown on the Zoning Map or maps, the Planning Commission, upon written application, shall determine the location of such boundaries on said Zoning Map or maps and forward its recommendation to County Council as a Map Amendment in accordance Section 7.3.40. In cases where staff determines that an error has been made, there shall be no cost to any citizen who requests to correct the error. All dedicated public streets, and any other streets open and used by the public, on Daufuskie Island shall be zoned.

1.1.30 Transect Zones

The transect zones are described in Division 1.2 (Transect Zones). They primarily focus on rural historic as well as mixed-use, walkable areas of the County and range in function and density from primarily rural to residential areas with a mix of building types.

1.1.40 Overlay Zones

The overlay zones are described in Division 1.3 (Overlay Zones). Overlay zones include areas on Daufuskie Island that are subject to additional design standards or limitations. They primarily focus on the historic areas on the south end of Daufuskie Island.

1.1.50 Beaufort County Community Development Code

These divisions included in this Appendix specifically apply for the Daufuskie Island portion of Beaufort County. Other requirements not addressed in the divisions within this Appendix shall follow the requirements included in the Beaufort County Community Development Code.

Division 1.2: Transect Zones

Sections:

1.2.10 Purpose

This Division provides regulatory standards governing land use and building form within the transect zones. The Form-Based Code reflects the community vision for implementing the intent of the Comprehensive Plan to preserve Daufuskie Island's character and create livable and walkable places. These standards are intended to ensure that proposed development is compatible with existing character and future development on neighboring properties produces an environment of desirable character.

1.2.20 Applicability

The requirements of this Division shall apply to all proposed development within the transect zones and shall be considered in combination with the standards for specific uses in Article 4 (Specific to Use), if applicable, and the development standards in Article 5 of the Beaufort County Community Development Code (Supplemental to Zones). If there is a conflict between any standards, the provisions of Article 4 of the Beaufort County Community Development Code (Specific to Use) control over this Article 3 (Specific to Zones) and Article 5 (Supplemental to Zones).

1.2.30 Transect 1: Natural Preserve (DI-1P) Standards

A. Purpose

The Natural Preserve (DI-1P) Zone is intended to preserve areas that contain sensitive habitats, open space, and limited agricultural uses. This Zone typically does not contain buildings; however, single-family dwellings, small civic buildings or interpretive centers may be located within this zone if approved as a part of a conservation agreement.

B. Building Placement

Setback (Distance from ROW or property line)

Front (A):	50 feet minimum
Side Street (B):	50 feet minimum
Side (C):	
Main building	50 feet minimum
Ancillary building	20 feet minimum
Rear (D):	100 feet minimum

Lot size (One acre minimum)

Width (E):	150 feet minimum
Depth (F):	NA

Miscellaneous

Where existing adjacent buildings are in front of the regulated BTL or front setback, the building may be set to align with the façade of the front-most immediately adjacent property.

C. Building Form

Building Height

Main building (G):	35 feet with 2 stories maximum
Ancillary building:	35 feet with 2 stories maximum
Ground floor finish level	No minimum

Footprint

Maximum lot coverage:	NA

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

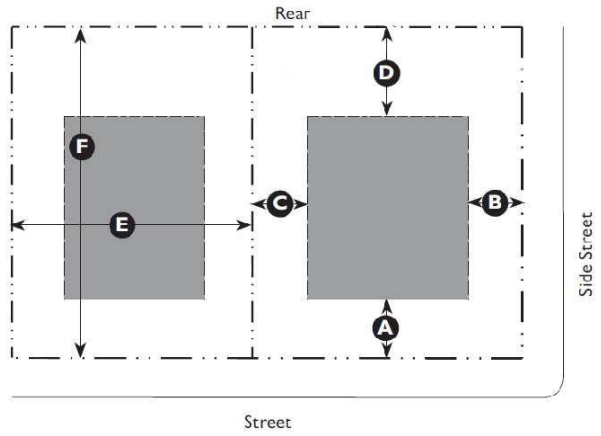
Notes

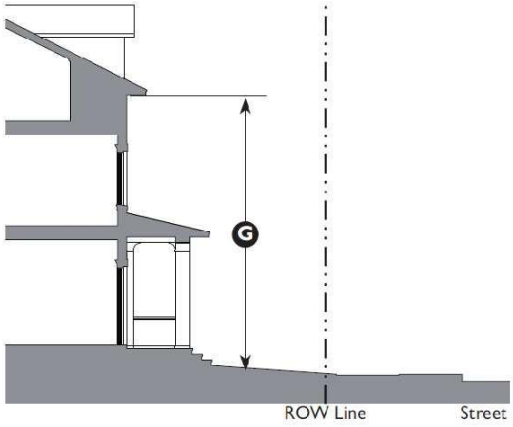
Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.

D. Gross Density

Gross density:	.01 du/acre

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.





Key

---- ROW / Property Line

Setback Line

Building Area

Facade Zone

Transect 2: Rural

The zones within transect 2 are rural in character**.** This transect, and the zones included, implement the Comprehensive Plan goals of preserving the rural and historic character of Daufuskie Island.

1.2.40.1 Transect 2: Rural Historic (DI-2R) Standards

A. Purpose

The Rural (DI-2R) Zone is intended to preserve the rural character of Daufuskie Island. This Zone applies to areas that consist of sparsely settled lands in an open or cultivated state. It may include large lot residential, small commercial or restaurant uses, farms where animals are raised, or crops are grown, parks, woodland, grasslands, trails, and open space areas.

The DI-2R Rural Zone implements the Comprehensive Plan goals of preserving the rural and historic character of Daufuskie Island.

B. Subzones

DI-2R-CP (Rural Conventionally Platted)

The intent of the DI-2R-CP subzone is to provide a district that preserves the currently approved conventionally platted subdivisions within this area of Daufuskie Island. This subzone allows for smaller lots that have already been approved by Beaufort County, however no further subdivision or recombination of the existing lots is allowed without obtaining a special permit from Beaufort County.

DI-2R-GH (Rural Gullah Heritage)

The intent of the DI-2R-GH subzone is to provide a district that preserves the Gullah heritage, while maintaining the rural character within this area of Daufuskie Island. This subzone preserves the Gullah heritage sites and ensures that new development is in character with the Gullah heritage.

C. Allowed Building Types and Architectural Guidelines

Building/Architecture Type	Specific Examples
Carriage House	5.1.30.A
Lowcountry Vernacular	5.3.40.B

The preferred architectural style in Transect 2 is Lowcountry Vernacular as illustrated in (A.) of 5.3.40.B of the Beaufort County Community Development Code. Building types allowed apply in all zones and subzones in Transect 2.

D. Building Placement

Setback (Distance from ROW or property line)

Front (A):	50 feet minimum
Side Street (B):	50 feet minimum
Side (C):	
Main building	20 feet minimum
Ancillary building	20 feet minimum
Rear (D):	50 feet minimum

Lot size (One acre minimum in zone DI-2R and subzone DI-2R-GH, and as currently defined in the approved and conventionally platted subdivisions in subzone DI-2R-CP)

Width (E):	100 feet minimum in DI-2R and DI-2R-GH As platted in DI-2R-CP
Depth (F):	NA

Miscellaneous

Where existing adjacent buildings are in front of the regulated BTL or front setback, the building may be set to align with the façade of the front-most immediately adjacent property. Loading docks, overhead doors, and other service entries may not be located on street-facing facades.

D. Building Form

Building Height

Main building (G):	2 stories maximum
Ancillary building:	2 stories maximum
Ground floor finish level	No minimum

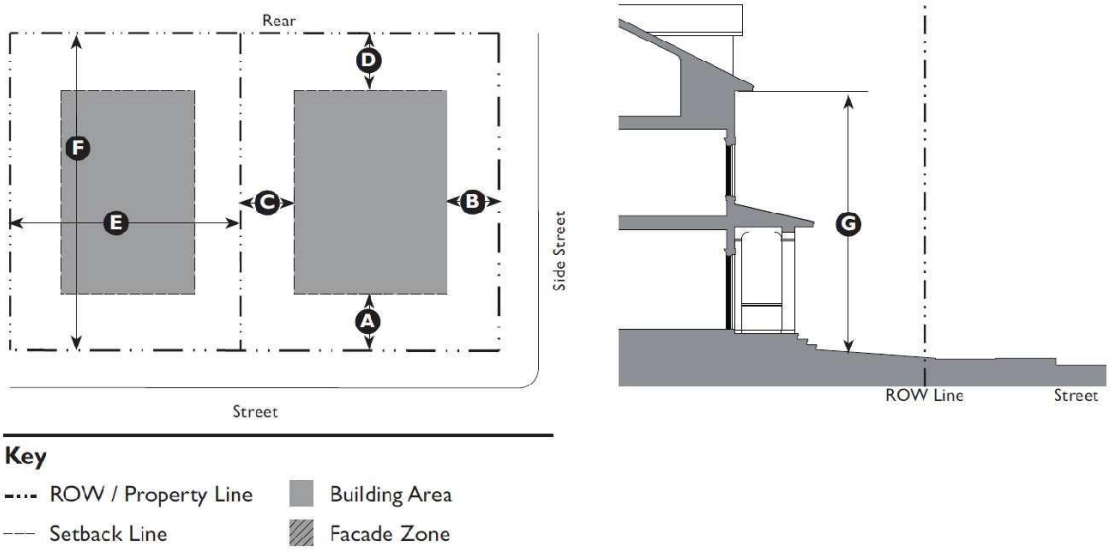
Footprint

Maximum lot coverage:	NA

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

Notes

Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.



E. Gross Density

Gross density:	1.0 du/acre (DI-2R and DI-2R-GH)
	As platted in DI-2R-CP

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.

F. Encroachment and Frontage Types

Encroachment

Front (H):	5 feet minimum
Side Street (I):	5 feet minimum
Side (J):	5 feet maximum
Rear (K):	5 feet minimum

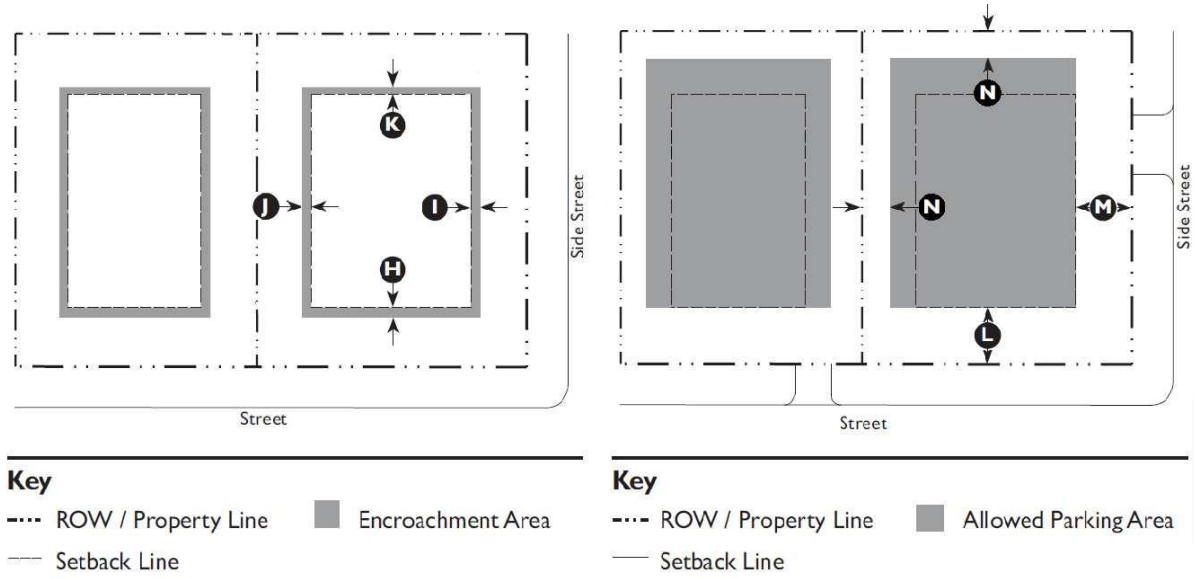
Encroachments are not allowed within a Street ROW/Alley ROW, or across a property line.

G. Buffers

In both DI-2R and DI-2R-HC a buffer of natural vegetation and trees shall be retained when developed. If the buffer area has been cleared prior to development, or does not exist, a buffer consisting of natural vegetation and trees shall be installed. Minimum buffer requirements are:

Front (A):	20 feet minimum
Side Street (B):	20 feet minimum
Side (C):	
Main building	10 feet minimum
Ancillary building	10 feet minimum
Rear (D):	20 feet minimum

All development in both DI-2R and DI-2R-HC abutting any street or road open and used by the public shall be subject to the requirements of the thoroughfare buffer for 2 or 3 lanes as described in Division 5.8.50 of the Beaufort County Community Development Code.



1.2.50 Transect 3: Edge (DI-3E) Standards

A. Purpose

The (DI-3E) Zone is intended to preserve the historic character and natural environment of Daufuskie Island. The (DI-3E) Zone is intended to provide a walkable, predominantly single-family neighborhood that integrates compatible multi-family housing types, such as duplexes and cottage courts within walking distance to village centers and commercial areas.

The DI-3E Zone implements the Comprehensive Plan goals of preserving and building upon the walkable character of portions of Daufuskie Island.

B. Allowed Building Types

1) Carriage House (see 5.1.40 of Beaufort County Community Development Code)
2) Estate House (see 5.1.50 of Beaufort County Community Development Code)
3) Village House (see 5.1.60 of Beaufort County Community Development Code)
4) Cottage Court (see 5.1.80 of Beaufort County Community Development Code)
5) Duplex (see 5.1.90 of Beaufort County Community Development Code)
6) Mansion Apartment (see 5.1.110 of Beaufort County Community Development Code)

C. Building Placement

Setback (Distance from ROW or property line)

Front (A):	15 feet minimum, 50 feet maximum
Side Street (B):	10 feet minimum, 50 feet maximum
Side (C):	
Main building	7.5 feet minimum
Ancillary building	5 feet minimum
Rear (D):	
Main building	15 feet minimum
Ancillary building	5 feet minimum

Lot size (43,560 square feet maximum)

Width (E):	100 feet maximum
Depth (F):	200 feet maximum

Maximum lot size does not apply to Recreation, Education, Safety, Public Assembly uses

Miscellaneous

Loading docks, overhead doors, and other service entries may not be located on street-facing facades.

D. Building Form

Building Height

Main building (G):	2 stories maximum
Ancillary building:	2 stories maximum
Ground floor finish level (H):	18 inches minimum
Upper floor(s) ceiling (I):	8 foot minimum clear

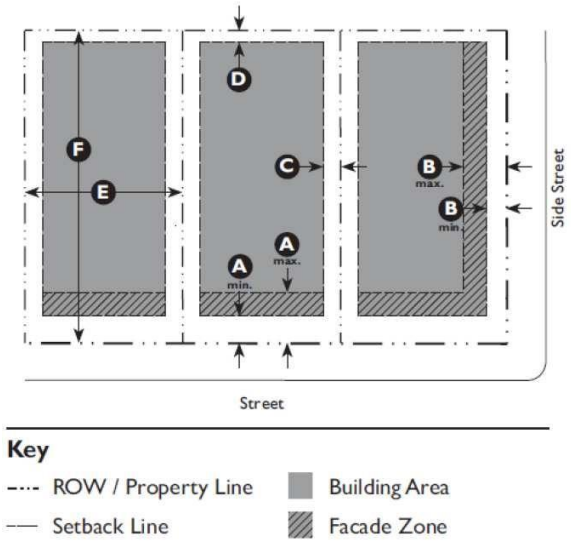
Footprint

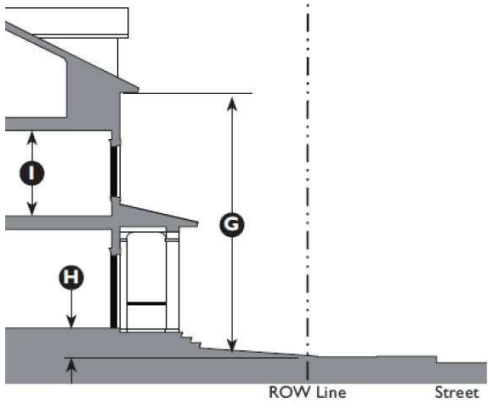
Maximum lot coverage:	30% of lot area

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

Notes

Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.





E. Gross Density

Gross density:	3.0 du/acre

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.

F. Encroachment and Frontage Types

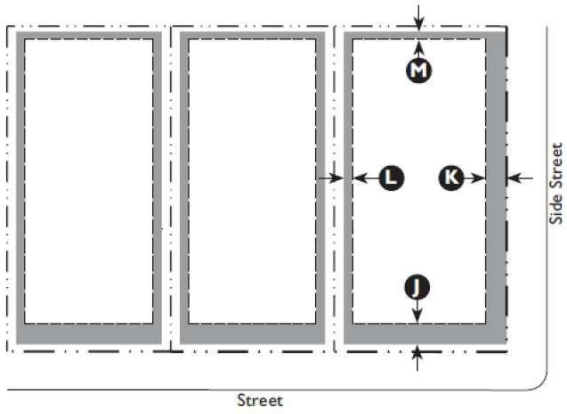
Encroachment

Front (J):	5 feet maximum
Side Street (K):	5 feet maximum
Side (L):	3 feet maximum
Rear (M):	5 feet maximum

Encroachments are not allowed within a Street ROW/Alley ROW, or across a property line.

Allowed Frontage Types

Common yard	Porch: Engaged
Porch projecting	Porch: Side yard

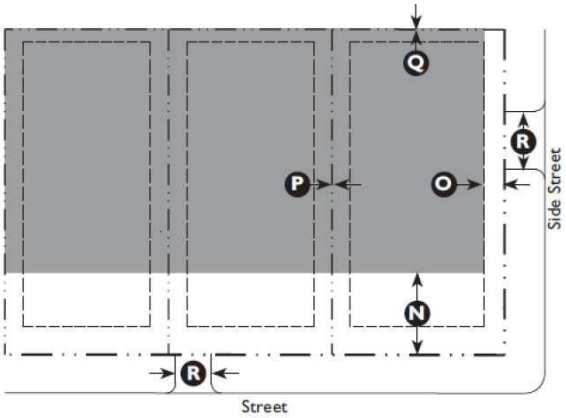


Key

---- ROW / Property Line

Encroachment Area

—— Setback Line



Key

---- ROW / Property Line

Allowed Parking Area

—— Setback Line

1.2.50 Transect 4: Suburban (DI-4SU) Standards

A. Purpose

The Suburban (DI-4SU) Zone is intended to integrate vibrant residential, commercial and retail environments, providing access to day-to-day amenities within walking distance within the zone as well as to the village centers.

The Suburban Zone implements the Comprehensive Plan goals of creating areas of higher intensity residential and commercial uses for Daufuskie Island.

B. Allowed Building Types

1) Carriage House (see 5.1.40 of Beaufort County Community Development Code)
2) Small Lot House (see 5.1.70 of Beaufort County Community Development Code)
3) Cottage Court (see 5.1.80 of Beaufort County Community Development Code)
4) Duplex (see 5.1.90 of Beaufort County Community Development Code)
5) Townhouse (see 5.1.100 of Beaufort County Community Development Code)
6) Mansion Apartment (see 5.1.110 of Beaufort County Community Development Code)
7) Apartment House (see 5.1.120 of Beaufort County Community Development Code)
8) Industrial/Agricultural (see 5.1.140 of Beaufort County Community Development Code)

C. Building Placement

Setback (Distance from ROW or property line)

Front (A):	15 feet minimum,30 feet maximum
Side Street (B):	10 feet minimum,30 feet maximum
Side (C):	
Main building	7.5 feet minimum
Ancillary building	5 feet minimum
Rear (D):	
Main building	15 feet minimum
Ancillary building	5 feet minimum

Lot size (20,000 square feet maximum)

Width (E):	100 feet maximum
Depth (F):	200 feet maximum

Maximum lot size does not apply to Recreation, Education, Safety, Public Assembly uses and uses developed on existing lots of record

Miscellaneous

Loading docks, overhead doors, and other service entries may not be located on street-facing facades.

D. Building Form

Building Height

Main building (G):	2 stories maximum
Ancillary building:	2 stories maximum
Ground floor finish level (H):	18 inches minimum
Upper floor(s) ceiling (I):	8 foot minimum clear

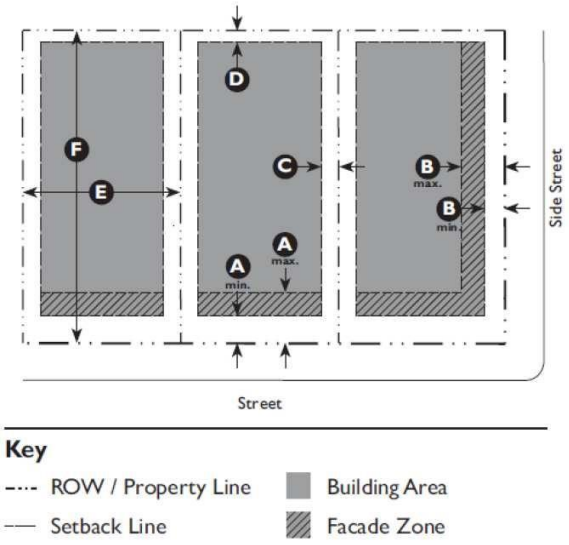
Footprint

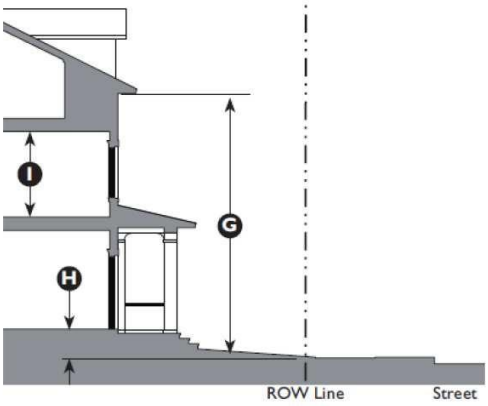
Maximum lot coverage:	30% of lot area

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

Notes

Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.





E. Gross Density

Gross density:	4.0 du/acre

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.

F. Encroachment and Frontage Types

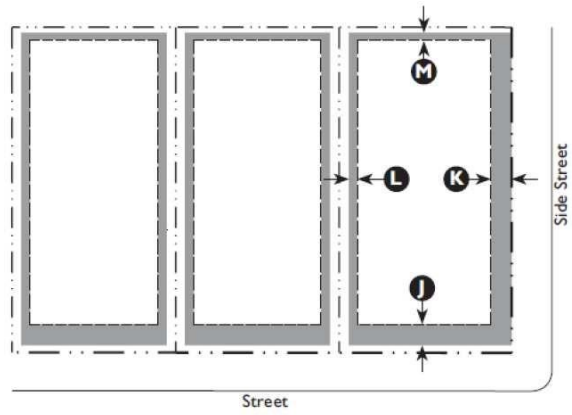
Encroachment

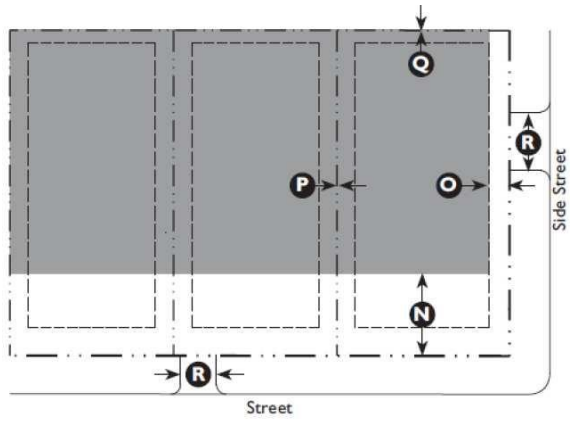
Front (J):	5 feet maximum
Side Street (K):	5 feet maximum
Side (L):	3 feet maximum
Rear (M):	5 feet maximum

Encroachments are not allowed within a Street ROW/Alley ROW, or across a property line.

G. Allowed Frontage Types

Common yard
Porch projecting
Porch: Engaged
Porch: Side yard





Key

---- ROW / Property Line
Encroachment Area
— Setback Line

Key

---- ROW / Property Line
Allowed Parking Area
— Setback Line

1.2.60 Transect 5:

The zones within transect 5 are the most urban in character**.** This transect, and the zones included, implement the Comprehensive Plan goals of preserving the character of Daufuskie Island while providing for the commercial needs of the island.

1.2.60.1 Transect 5: Village Center (DI-5VC) Standards

A. Purpose

The Village Center (DI-5VC) Zone is intended to integrate vibrant main-street commercial and retail environments, providing access to day-to-day amenities within walking distance, creating potential for water ferry embarkation points, and serving as a focal point for Daufuskie Island.

The Village Center Zone implements the Comprehensive Plan goals of creating areas of higher intensity residential and commercial uses for Daufuskie Island

B. Allowed Building Types

9) Carriage House (see 5.1.40 of Beaufort County Community Development Code)
10) Small Lot House (see 5.1.70 of Beaufort County Community Development Code)
11) Cottage Court (see 5.1.80 of Beaufort County Community Development Code)
12) Duplex (see 5.1.90 of Beaufort County Community Development Code)
13) Townhouse (see 5.1.100 of Beaufort County Community Development Code)
14) Mansion Apartment (see 5.1.110 of Beaufort County Community Development Code)
15) Apartment House (see 5.1.120 of Beaufort County Community Development Code)
16) Main Street Mixed Use (see 5.1.130 of Beaufort County Community Development Code)
17) Industrial/Agricultural (see 5.1.140 of Beaufort County Community Development Code)

C. Building Placement

Setback (Distance from ROW or property line)

Front (A):	15 feet minimum,20 feet maximum
Side Street (B):	10 feet minimum,20 feet maximum
Side (C):	
Main building	7.5 feet minimum
Ancillary building	5 feet minimum
Rear (D):	
Main building	15 feet minimum
Ancillary building	5 feet minimum

Lot size (20,000 square feet maximum)

Width (E):	100 feet maximum
Depth (F):	200 feet maximum

Maximum lot size does not apply to Commercial, Recreation, Education, Safety, Public Assembly uses and uses developed on existing lots of record.

Miscellaneous

Loading docks, overhead doors, and other service entries may not be located on street-facing facades.

D. Building Form

Building Height

Main building (G):	2.5 stories maximum
Ancillary building:	2 stories maximum
Ground floor finish level (H):	18 inches minimum
Upper floor(s) ceiling (I):	8 foot minimum clear

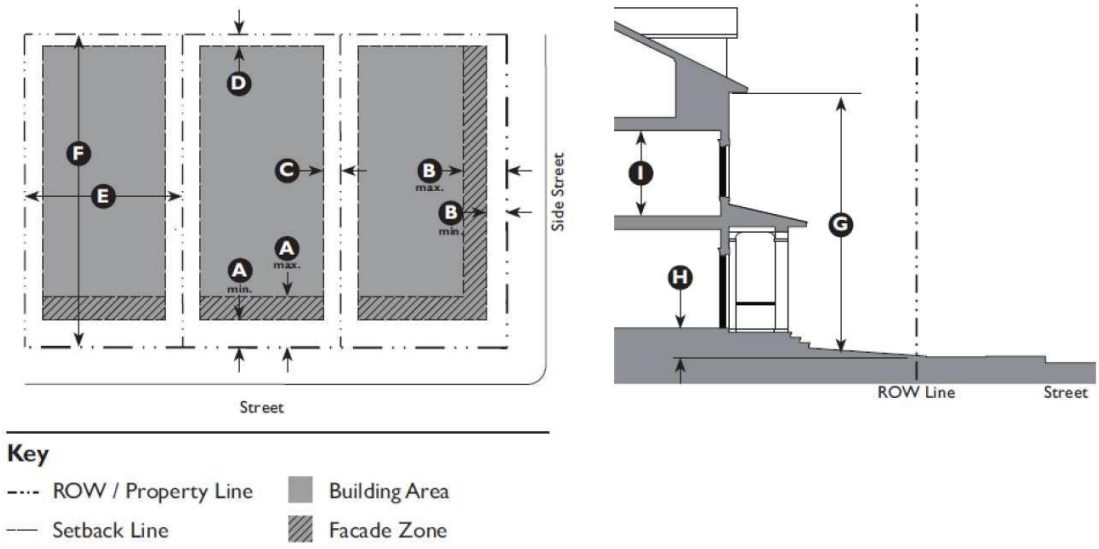
Footprint

Maximum lot coverage:	30% of lot area

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

Notes

Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.



E. Gross Density

Gross density:	8.0 du/acre

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.

F. Encroachment and Frontage Types

Encroachment

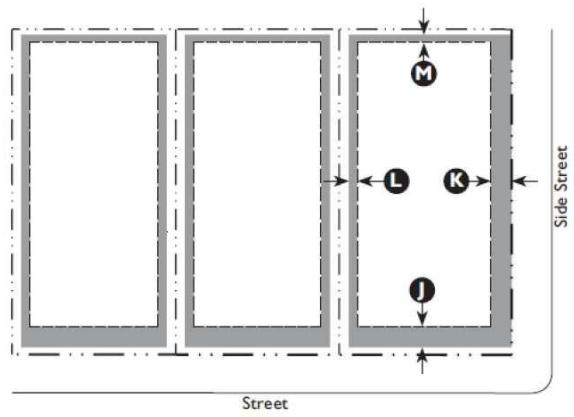
Front (J):	5 feet maximum
Side Street (K):	5 feet maximum
Side (L):	3 feet maximum

Rear (M): 5 feet maximum

Encroachments are not allowed within a Street ROW/Alley ROW, or across a property line.

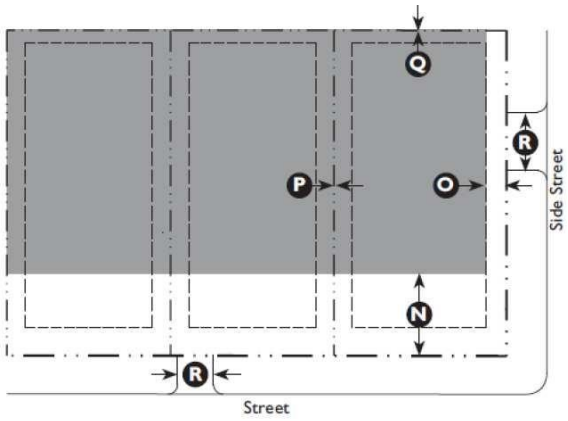
G. Allowed Frontage Types

Common yard
Porch projecting
Porch: Engaged
Porch: Side yard



Key

ROW / Property Line
Setback Line
Encroachment Area



Key

ROW / Property Line
Setback Line
Allowed Parking Area

1.2.60.2 Transect 5: Gateway Corridor (DI-5GC) Standards

A. Purpose

The Gateway Corridor (DI-5GC) Zone is intended to extend the concept of a vibrant main-street commercial and retail environments from the Village Center to public places in the Gateway Corridor, providing access to day-to-day amenities within walking distance, creating, and serving as a focal point for public space for Daufuskie Island.

The Gateway Corridor Zone implements the Comprehensive Plan goals of creating areas of higher intensity residential and commercial uses for Daufuskie Island and provide for public and civic uses.

B. Allowed Building Types

1) Carriage House (see 5.1.40 of Beaufort County Community Development Code)
2) Small Lot House (see 5.1.70 of Beaufort County Community Development Code)
3) Cottage Court (see 5.1.80 of Beaufort County Community Development Code)
4) Duplex (see 5.1.90 of Beaufort County Community Development Code)
5) Townhouse (see 5.1.100 of Beaufort County Community Development Code)
6) Mansion Apartment (see 5.1.110 of Beaufort County Community Development Code)
7) Apartment House (see 5.1.120 of Beaufort County Community Development Code)
8) Main Street Mixed Use (see 5.1.130 of Beaufort County Community Development Code)
9) Industrial/Agricultural (see 5.1.140 of Beaufort County Community Development Code)

C. Building Placement

Setback (Distance from ROW or property line)

Front (A):	15 feet minimum,30 feet maximum
Side Street (B):	10 feet minimum,30 feet maximum
Side (C):	
Main building	7.5 feet minimum
Ancillary building	5 feet minimum
Rear (D):	
Main building	15 feet minimum
Ancillary building	5 feet minimum

Lot size (20,000 square feet maximum)

Width (E):	100 feet maximum
Depth (F):	200 feet maximum

Maximum lot size does not apply to Commercial, Recreation, Education, Safety, Public Assembly uses and uses developed on existing lots of record.

Miscellaneous

Loading docks, overhead doors, and other service entries may not be located on street-facing facades.

D. Building Form

Building Height

Main building (G):	2 stories maximum
Ancillary building:	2 stories maximum
Ground floor finish level (H):	18 inches minimum
Upper floor(s) ceiling (I):	8 foot minimum clear

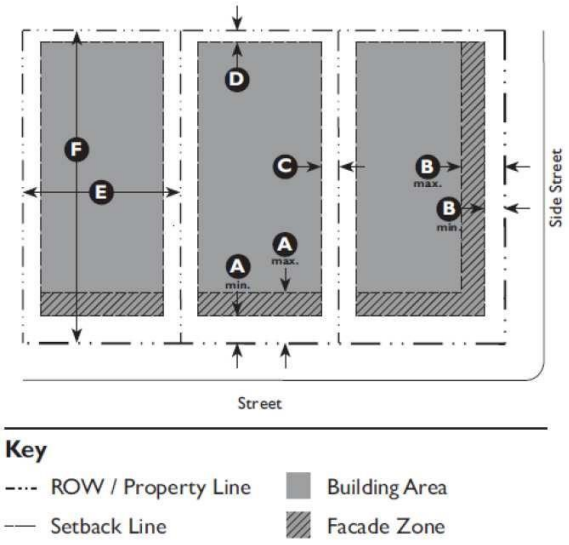
Footprint

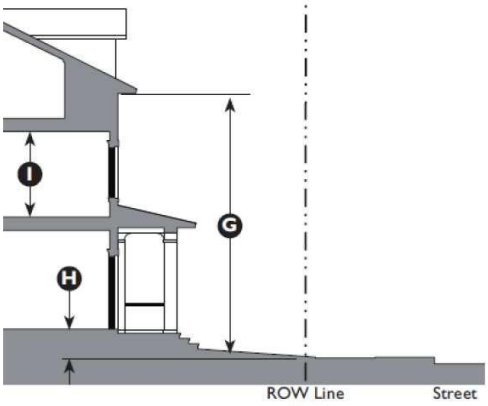
Maximum lot coverage:	30% of lot area

Lot coverage is the portion of a lot that is covered by any and all buildings, including accessory buildings.

Notes

Buildings located in a flood hazard zone will be required to be built above base flood elevation in accordance with Beaufort County Building Codes.





E. Gross Density

Gross density:	4.0 du/acre

The gross density is the total number of dwelling units on a site divided by the Base Site Area as defined in the Beaufort County Community Development Code.

F. Encroachment and Frontage Types

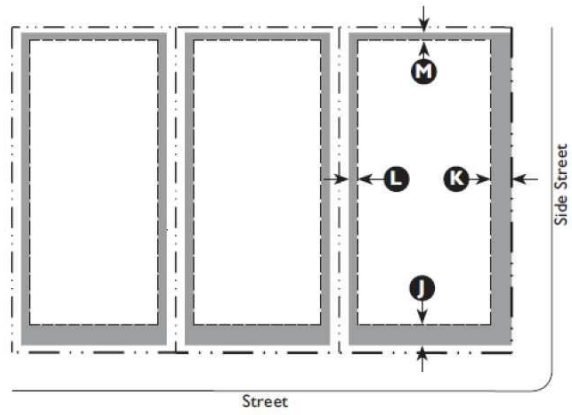
Encroachment

Front (J):	5 feet maximum
Side Street (K):	5 feet maximum
Side (L):	3 feet maximum
Rear (M):	5 feet maximum

Encroachments are not allowed within a Street ROW/Alley ROW, or across a property line.

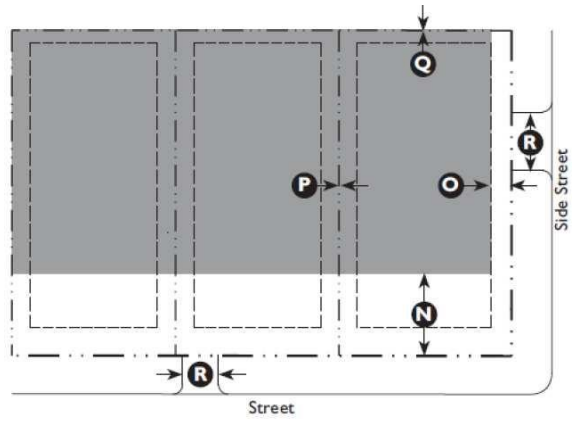
G. Allowed Frontage Types

Common yard
Porch projecting
Porch: Engaged
Porch: Side yard



Key

---- ROW / Property Line
Encroachment Area
— Setback Line



Key

---- ROW / Property Line
Allowed Parking Area
— Setback Line

Division 1.3: Overlay Zones

Sections:

1.3.10 Purpose

This Division provides regulatory standards governing land use and building form within special overlay zones. These zones are typically applied to certain areas of the County on Daufuskie Island where extreme physical or cultural constraints need increased planning guidelines and consideration.

1.3.20 Applicability

The requirements of this Division shall apply to all proposed development within the overlay zones and shall be considered in combination with the standards for specific uses in Article 4 (Specific to Use), if applicable, and the development standards in Article 5 (Supplemental to Zones) of the Beaufort County Community Development Code. If there is a conflict between any standards, the provisions of Article 4 (Specific to Use) control over Article 3 (Specific to Zones) and Article 5 (Supplemental to Zones).

1.3.30 Heritage Corridor (DI-HC-O) Standards

A. **Purpose.** The Heritage Corridor Overlay (DI-HC-O) zone is established to provide for the long-term protection of the culturally significant resources found on Daufuskie Island. The zone acknowledges Daufuskie Island's historic cultural landscape and its importance to Daufuskie Island and Beaufort County s most notable concentration of Gullah culture.

B. **District Boundaries.** The boundaries of the DI-HC-O zone on Daufuskie Island are depicted on the Beaufort County Official Zoning Map. Any parcel that abuts the defined boundary shall be considered to be included within the overlay corridor and its standards. Where the zone applies, the permitted uses shall be limited to the base zoning in DI-2R, except where additional limitations are established within the overlay zone.

C. **Site Design and Architecture.** Design features that impact other culturally significant locations, and franchise design are prohibited. All development within 200 feet of the streets of roads that define the district boundary in this zone shall be reviewed by the Planning Commission for both the site design and building style. Any development outside of this 200-foot standard shall not require review by the Planning

Commission. All design and buildings should be compatible with Lowcountry rural vernacular design and architecture as illustrated in Division 5.3 of the Beaufort County Community Development Code.

D. Use Limitations. The following specific uses are deemed to be incompatible with the DI-HC-O zone; and therefore, are prohibited:

Restricted Access (Gated Communities) An intentionally designed, secured bounded area with designated and landscaped perimeters, usually walled or fenced, that are designed to prevent access by non-residents.

Resort This use includes lodging that serves as a destination point for visitors and designed with some combination of recreation uses or natural areas. Typical types of activities and facilities include marinas, beaches, pools, tennis, golf, equestrian, restaurants, shops, and the like. This restriction does not apply to ecotourism or its associated lodging.

Golf Course This use includes regulation and par three golf courses having nine or more holes.

E. Buffers

A buffer of natural vegetation and trees shall be retained when developed. If the buffer area has been cleared prior to development, or does not exist, a buffer consisting of natural vegetation and trees shall be installed. Minimum buffer requirements are:

Front (A):	50 feet minimum
Side Street (B):	20 feet minimum
Side (C):	
Main building	10 feet minimum
Ancillary building	10 feet minimum
Rear (D):	20 feet minimum

All development shall be subject to the requirements of the thoroughfare buffer for 2 or 3 lanes as described in Division 5.8.50 of the Beaufort County Community Development Code.

Division 1.4: Land Uses Allowed and Definitions

1.4.10 Purpose

This Division establishes the land uses allowed in all zones within the County on Daufuskie Island and defines each of the land uses.

1.4.20 Consolidated Land Use Table and Land Use Definitions

The following table shown in 1.4.20.A defines the land uses that are allowed in each zone on Daufuskie Island. The uses are indicated as:

Permitted Use. A use that is permitted by right in a zone.

Conditional Use. A use that is permitted in a zone subject to the standards specified for that use being met, as determined by the Planning Commission.

Special Use. A use that may be permitted within a zone upon approval of a special use permit by the Zoning Board of Appeals (ZBOA). See Section 7.2.130 (Special Use Permits).

Not Permitted Use. A use that is not allowed or permitted in a zone.

The following table also 1.4.30.A defines the land use types for Daufuskie Island.

TABLE 1.4.20.A CONSOLIDATED USE TABLE: AGRICULTURAL

AGRICULTURAL USES									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. Agriculture and Crop Harvesting	---	P	---	P	P	---	---	---	NA
2. Agricultural and Support Services	---	P	---	P	P	---	---	---	NA
3. Animal Production	---	C	---	C	C	---	---	---	NA
4. Animal Production: Factory Farming	---	S	---	S	S	---	---	---	NA
5. Seasonal Farm-worker or Construction-worker Housing	---	S	---	S	S	S	S	S	NA
6. Commercial Stables	---	C	---	C	C	---	---	---	NA

Notes:

"P" indicates a use that is permitted by right
"C" indicates a use that is permitted with conditions
"S" indicates a use that is permitted as a special use
"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS

Agriculture

This category is intended to encompass land uses connected with a business activity involving farming, animal production, forestry and other businesses serving primarily agricultural needs.

Land Use Type	Definition
1. Agriculture and Crop Harvesting	A nursery, orchard, or farm, greater than 10,000 SF, primarily engaged in the growth and harvesting of fruits, nuts, vegetables, plants, or sod. The premises may include agricultural accessory structures, plant nurseries, and secondary retail or wholesale sales.
2. Agricultural Support Services	Nursery, orchard, forestry, or farm supply and support services including, but not limited to: equipment dealers, support uses for agricultural, harvesting, and/or animal production, seasonal packing sheds, etc.
3. Animal Production	The raising, breeding, feeding, and/or keeping of animals for the principal purpose of commercially producing products for human use or consumption, including, but not limited to: cattle, pigs, sheep, goats, fish (aquaculture), bees, rabbits, and poultry. This does not include "factory farming" operations.
4. Animal Production: Factory Farming	The raising, breeding, feeding and/or keeping of livestock (typically cows, pigs, turkeys, or chickens) n confinement at high stocking density for the purpose of commercially producing meat, milk, or eggs for human consumption.
5. Seasonal Farmworker Housing	Housing located on farmland for temporary occupancy during seasonal farming activity.
6. Forestry	Perpetual management, harvesting, replanting, and enhancement of forest resources for ultimate sale or use of wood products, subject to SC Forestry Commission BMPs.
7. Commercial Stables	Stabling, training, feeding or horses, mules, donkeys, or ponies, or the provision of riding facilities for use other than by the resident of the property, including riding academies. Also includes any structure or place where such animals are kept for riding, driving, or stabling for compensation or incidental to the operation of any club, association, ranch or similar purpose.

TABLE 1.4.20.A CONSOLIDATED USE TABLE: RESIDENTIAL

RESIDENTIAL USES									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. Detached Single Family Dwelling Unit	---	P	P	P	P	P	P	P	NA
2. Single Family Attached Dwelling Unit	---	---	---	---	---	---	---	---	NA
3. Two Family Dwelling Unit (Duplex)	---	---	---	---	P	P	P	P	NA
4. Multi-family Dwelling Unit	---	---	---	---	P	P	P	P	NA
5. Accessory Dwelling Unit	---	P	P	P	P	P	P	P	NA
6. Dwelling Unit - Family Compound	---	P	---	P	---	---	---	---	NA
7. Dwelling Unit – Cluster Compound	---	P	---	P	P	---	---	---	NA
8. Dwelling Unit - Group Home	---	S	---	S	S	S	S	S	NA
9. Community Residences (dorms, convents, assisted living, temporary shelters)	---	S	---	S	S	S	S	S	NA
10. Home Office	---	P	P	P	P	P	P	P	NA
11. Home Business	---	P	P	P	P	P	P	P	NA
12. Cottage Industry	---	P	S	P	S	---	S	S	NA
13. Live/Work	---	P	C	P	C	P	P	P	NA
14. Manufactured Home Community	---	---	---	---	---	---	---	---	NA

Notes:

"P" indicates a use that is permitted by right
"C" indicates a use that is permitted with conditions
"S" indicates a use that is permitted as a special use
"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS: RESIDENTIAL

Residential

Dwelling Unit – A room or group of internally connected rooms that have sleeping, cooking, eating, and sanitation facilities, but not more than one kitchen, which constitutes an independent housekeeping unit, designed to be occupied as a residence by one household.

Land Use Type	Definition
1. Dwelling: Single Family Detached Unit	A structure containing one dwelling unit on a single lot.
2. Dwelling: Single Family Attached Unit	A structure containing one dwelling unit on a single lot and connected along a property line to another dwelling unit on an adjoining lot by a common wall or other integral part of the principal building such as a breezeway or carport.
3. Dwelling: Two Family Unit (Duplex)	A structure containing two dwelling units on a single lot.
4. Dwelling: Multi-Family Unit	A structure containing three or more dwelling units on a single lot.
5. Dwelling: Accessory Unit	An auxiliary dwelling unit, no larger than 800 SF attached to a principal dwelling unit or located within an accessory structure on the same lot
6. Dwelling: Family Compound	A form of traditional rural development which provides for the placement of additional single family, detached dwelling units on, and/or subdivisions of, a single parcel of land owned by the same family for at least 50 years. Central facilities that provide services to the residents of the family compound may be included.
7. Dwelling: Cluster Compound	A form of development which provides for the placement of small, single family detached dwelling units on, and/or subdivisions of, a single parcel of land. Central facilities that provide services to the residents of the cluster compound may be included.
8. Dwelling: Group Home	Residential facility for nine or fewer mentally or physically handicapped persons providing care on a 24-hour basis and licensed by a state agency or department, or is under contract with a state agency or department for that purpose.

Residential (Continued)

Land Use Type	Definition
9. Community Residence	1. Dormitory: A building, or portion thereof, which contains living quarters for five or more students, staff, or members of a college, university, primary or secondary boarding school, theological school, or other comparable organization, provided that such building is either owned or managed by such organization, or is under contract with such organization for that purpose. 2. Convent or Monastery. The living quarters or dwelling units for a religious order or for the congregation of persons under religious vows. 3. Assisted Living Facility: A state-licensed facility for long-term residence exclusively by seniors and persons with disabilities who require assistance with daily activities, and which may include, without limitation, common dining, social and recreational features, special safety and convenience features designed for the needs of the elderly or disabled, such as emergency call systems, grab bars and handrails, special door hardware, cabinets, appliances, passageways, and doorways designed to accommodate wheelchairs, and the provision of social services for residents which must include at least two of the following: meal services, transportation, housekeeping, linen, and organized social activities. May include an accessory skilled nursing component. 4. Group Home (more than 9 persons). A state-licensed residential facility for more than 9 mentally or physically handicapped persons providing care on a 24-hour basis. 5. Temporary Shelter: A supervised publicly or privately operated shelter and services designed to provide temporary living accommodations to individuals or families who lack a fixed, regular and adequate residence. This does not include residential substance abuse facilities or halfway houses (see "Community Care Facility").
10. Home Office	An office use carried out for gain by a resident and conducted entirely within the resident's home. This use permits the employment of one individual who does not live in the home.
11. Home Business	An office or service use carried out for gain by a resident and conducted entirely within the resident's home and/or accessory structures. This use permits the employment of up to three individuals who do not reside on the premises.
12. Cottage Industry	Light industrial uses and boat, small engine (e.g. lawn mowers, but not vehicles), and farm equipment repair services carried out for gain by a resident and conducted on, or adjacent to, the property that contains the operator's residence. This use permits the employment of up to six individuals who do not reside on the premises.

Residential (Continued)

Land Use Type	Definition
13. Live/Work Unit	An integrated housing unit and working space, occupied and utilized by a single household in a structure that has been designed or structurally modified to accommodate joint residential occupancy and work activity, and which includes: complete kitchen, living, and sleeping space and sanitary facilities in compliance with the Building Code, and working space reserved for and regularly used by one or more occupants of the unit. Workspace is limited to a maximum fifty percent (50%) of the structure and located on the first floor with living space located to the rear or above. Activities are limited to those uses permitted in the underlying Zone in which the Live/Work unit is located.
14. Manufactured Home Community	A single parcel of land that contains two or more manufactured homes for use as dwelling units where home sites are leased to individuals who retain customary leasehold rights. This use does not include “Family Compounds.”

TABLE 1.4.20.A CONSOLIDATED USE TABLE: RETAIL/RESTAURANTS

Retail and Restaurants									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. General retail of 3,500 SF or less	---	P	----	P	P	P	P	P	NA
2. General retail - 3,500 SF to 10,000 SF	---	S	---	---	---	---	P	P	NA
3. General retail - Over 10,000 SF	---	---	---	---	---	---	S	S	NA
4. General Retail with Drive Thru Facilities	---	---	---	---	---	---	---	---	NA
5. Adult Oriented Businesses	---	---	---	---	---	---	S	S	NA
6. Bars, Taverns and Nightclubs	---	---	---	---	---	S	P	P	NA
7. Gas Stations and Fuel Sales	---	---	---	---	---	P	P	P	NA
8. Open Air Retail	---	P	---	P	P	P	P	P	NA
9. Restaurant, Café, Coffee Shops									
(a) Less than 40 seats in structure	---	P	---	P	P	P	P	P	NA
(b) 40 seats or more in structure	---	---	---	---	---	P	P	P	NA
10. Vehicle Sales and Rental - Light	---	---	---	---	---	S	P	P	NA
11. Vehicle Sales and Rental - Heavy	---	---	---	---	---	---	---	---	NA

Notes:

"P" indicates a use that is permitted by right
"C" indicates a use that is permitted with conditions
"S" indicates a use that is permitted as a special use
"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS: RETAIL/RESTAURANTS

Retail and Restaurants

Stores and shops used for the sale and display of goods directly to a consumer and structures where the principal uses are the preparation and sale of food and beverages.

Land Use Type	Definition
1. General Retail: 3,500 SF or less, 3,500 SF to 10,000 SF, or greater than 50,000 SF	Stores and shops that sell and/or rent goods and merchandise to the general public. This category does not include “Open Air Retail,” “Vehicle Sales and Rental,” or “Gas Stations/Fuel Sales.”
2. General Retail with a Drive Through Facility	Stores and shops where products may be purchased by motorists without leaving their vehicles.
3. Adult Oriented Business	A place of business that sells, rents, leases, operates on commission or fee, purveys, displays, or offers only to or for adults: products; goods of any nature; images; reproductions; activities; opportunities for experiences or encounters; moving or still pictures; entertainment or amusement distinguished by purpose and emphasis on matters depicting, describing, or relating by any means of communication from one person to another to specified sexual activities" or "specified anatomical areas".
4. Bar, Tavern, Nightclub	1. Bar, Tavern. A business where alcoholic beverages are sold for on-site consumption that is not part of a larger restaurant. Includes bars, taverns, pubs, and similar establishments where any food service is subordinate to the sale of alcoholic beverages. May also include beer brewing as part of a micro-brewery (“brew-pub”), and other beverage tasting facilities. 2. Night Club. A facility serving alcoholic beverages for on-site consumption, and providing entertainment, examples of which include live music and/or dancing, comedy, etc. Does not include adult oriented businesses.
5. Gas Station/Fuel Sales	An establishment where petroleum products are dispensed for retail sale. This use may include a retail convenience store and/or a single bay carwash. It does not include towing, vehicle body or engine repair (see “Vehicle Services”), or overnight vehicle storage.
6. Open Air Retail	A retail sales establishment operated substantially in the open air including, but not limited to: flea markets, monument sales, beach recreation rentals, and the like. Does not include “Vehicle Sales and Rental”, agricultural equipment sales and rental (see “Agricultural Support Services”), plant nurseries (see “Agriculture and Crop Harvesting”), or roadside stands and farmers markets (see “Temporary Uses”).
7. Restaurant, Café, Coffee Shop	A retail business selling ready-to-eat food and/or beverages for on- or off-premise consumption. These include eating establishments where customers are served from a walk-up ordering counter for either on- or off-premise consumption (“counter service”); and establishments where customers are served food at their tables for on-premise consumption (“table service”), that may also provide food for take-out, but does not include drive-through services, which are separately defined and regulated. This use includes all mobile kitchens.

Retail and Restaurants (Continued)

Land Use Type	Definition
8. Restaurant, Café, Coffee Shop with a Drive Through Facility	Facilities where food or other products may be purchased by motorists without leaving their vehicles. Examples of drive-through sales facilities include fast-food restaurants and drive-through coffee shops, etc.
9. Vehicle Sales and Rental: Automobiles, Light Trucks, Boats	A retail or wholesale establishment selling and/or renting automobiles, light trucks (less than 2-ton load capacity), vans, trailers, boats, and/or any other motorized or non-motorized vehicles (e.g. scooters, jet skis, golf carts, motorcycles) that includes outdoor display. May also include repair shops and the sales of parts and accessories incidental to vehicle dealerships. Does not include businesses dealing exclusively in selling used parts, auto wrecking and/or salvage (see "Salvage Operations"); the sale of auto parts/accessories separate from a vehicle dealership (see "General Retail"); or service stations (see "Vehicle Services").
10. Vehicle Sales and Rental: Heavy Equipment, Heavy Trucks, RVs, Mobile Homes	A retail or wholesale establishment selling and/or renting heavy equipment and/or trucks, RVs, or mobile homes. May also include accessory repair shops. Does not include farm equipment (see "Agricultural Support Services").

TABLE 1.4.20.A CONSOLIDATED USE TABLE: OFFICES/SERVICES

OFFICES and SERVICES									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. General Office and Services of 3,500 SF or less	---	C	----	C	C	P	P	P	NA
2. General Office and Services - 3,500 SF to 10,000 SF	---	---	---	---	---	P	P	P	NA
3. Animal Services: Clinic/Hospital	---	---	---	---	---	C	P	P	NA
4. Animal Services: Kennel	---	C	---	C	C	C	P	P	NA
5. Body Branding, Piercing, Tattooing	---	---	---	---	---	S	S	S	NA
6. Day Care: Family Home (up to 8 clients)	---	C	---	C	C	C	S	S	NA
7. Day Care: Commercial Center (9 or more clients)	---	---	---	---	---	C	S	S	NA
8. Lodging: Bed and Breakfast (5 rooms or less)	---	C	---	C	C	P	P	P	NA
9. Lodging: Inn (up to 24 rooms)	---	---	---	---	S	P	P	P	NA
10. Lodging: Hotel (25 to 50 rooms)	---	---	---	---	---	S	P	P	NA
11. Medical Service: Clinics/Offices	---	---	---	---	---	P	P	P	NA
12. Medical Service: Hospital	---	---	---	---	---	S	P	P	NA
13. Residential Storage Facility	---	---	---	---	---	S	S	S	NA
14. Vehicle Services: Minor Maintenance and Repair	---	C	---	C	C	P	P	P	NA
15. Vehicle Services: Major Maintenance and Repair	---	---	---	---	---	S	S	S	NA

Notes: "P" indicates a use that is permitted by right;
"C" indicates a use that is permitted with conditions
"S" indicates a use that is permitted as a special use
"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS: OFFICES/SERVICES

Offices and Services

This category is intended to encompass activities, without outdoor storage needs, that are primarily oriented towards office and service functions.

Land Use Type	Definition
1. General Offices & Services: 3,500 SF or less; 10,000 SF or less ; 25,000 SF or less; 50,000 SF or less; Greater than 50,000 SF	1. Bank/Financial Services. Financial institutions, including, but not limited to: banks, credit agencies, investment companies, security and commodity exchanges, ATM facilities. 2. Business Services. Establishments providing direct services to consumers, including, but not limited to: employment agencies, insurance agent offices, real estate offices, travel agencies, landscaping and tree removal companies, exterminators, carpet cleaners, and contractors' offices without exterior storage. 3. Business Support Services. Establishments providing services to other businesses, including, but not limited to: computer rental and repair, copying, quick printing, mailing and mailbox services. 4. Personal Services. Establishments providing non-medical services to individuals, including, but not limited to: barber and beauty shops, dry cleaners, small appliance repair, laundromats, massage therapists, pet grooming with no boarding, shoe repair shops, tanning salons, funeral homes. These uses may include incidental retails sales related to the services they provide. 5. Professional and Administrative Services. Office-type facilities occupied by businesses or agencies that provide professional or government services or are engaged in the production of intellectual property.
2. General Offices & Services: with a Drive Through Facility	Facilities where services may be obtained by motorists without leaving their vehicles. Examples of drive-through services include bank teller windows and drive-up ATMs, dry cleaners, etc.
3. Animal Services: Animal Clinic / Hospital	An establishment used by a veterinarian where animals are treated. This use may include boarding and grooming as accessory uses.
4. Animal Services: Kennel	A commercial facility for the boarding, breeding, and/or maintaining of animals for a fee that are not owned by the operator. This use includes pet day care facilities, animal training facilities (except horses – see "Commercial Stables") and may include grooming as an accessory use. This use includes the breeding of animals in outdoor structures, cages or pens for sale, but does not include animals for sale in pet shops (see "General Retail").
5. Body branding, piercing and tattoo facilities	An establishment whose principal business is the one or more of the following: any invasive procedure in which a permanent mark is burned into or onto the skin using either temperature, mechanical or chemical means; creation of an opening in the body for the purpose of inserting jewelry or other decorations (not including ear piercing); and/or placing designs, letters, figures, symbols or other marks upon or under the skin of any person using ink or other permanent coloration.

Offices and Services (Continued)

Land Use Types	Definition
6. Day Care: Family Care Home	A state-licensed facility in a private home where an occupant of the residence provides non-medical care and supervision for up to 8 unrelated adults or children, typically for periods of less than 24 hours per day for any client.
7. Day Care: Commercial Center	A state-licensed facility that provides non-medical care and supervision for more than 8 adults or children, typically for periods of less than 24 hours per day for any client. Facilities include, but are not limited to: nursery schools, preschools, after-school care facilities, and daycare centers.
8. Lodging: Bed and Breakfast (B&B)	The use of a single residential structure for commercial lodging purposes, with up to 5 guest rooms used for the purpose of lodging transient guests and in which meals may be prepared for them, provided that no meals may be sold to persons other than such guests, and where the owner resides on the property as his/her principal place of residence.
9. Lodging: Inn	A building or group of buildings used as a commercial lodging establishment having up to 24 guest rooms providing lodging accommodations to the general public.
10. Lodging: Hotel	A lodging establishment of 25 or more rooms in a building or group of buildings offering transient lodging accommodations on a daily rate to the general public.
11. Medical Services: Clinics and Medical Offices	1. Clinic. A facility other than a hospital where medical, mental health, surgical and other personal health services are provided on an outpatient basis. Examples of these uses include: Medical offices with five or more licensed practitioners and/or medical specialties, outpatient care facilities, urgent care facilities, other allied health services. These facilities may also include incidental medical laboratories and/or pharmacies. Counseling services by other than medical doctors or psychiatrists are included under "General Services - Professional/Administrative." 2. Medical Office. A facility other than a hospital where medical, dental, mental health, surgical, and/or other personal health care services are provided on an outpatient basis, and that accommodates no more than four licensed primary practitioners (for example, chiropractors, medical doctors, psychiatrists, etc., other than nursing staff) within an individual office suite. A facility with five or more licensed practitioners is classified under "Medical Services – Clinic." Counseling services by other than medical doctors or psychiatrists are included under "General Services – Professional / Administrative."
12. Medical Services: Hospital	An institution licensed by the State, where people, including inpatients, receive medical, surgical or psychiatric treatment and nursing care.
13. Residential Storage Facility	A building or buildings consisting of individual, small, self-contained units that are leased or owned for the storage of household goods. Outdoor storage of boats, trailers, and vehicles may be provided as an accessory use.

Offices and Services (Continued)

Land Use Types	Definition
14. Vehicle Services: Minor Maintenance and Repair	Incidental minor repairs to include replacement of parts and service to passenger cars and light trucks, but not including any operation defined as “Vehicle Services - Major Maintenance and Repair” or any other operation similar thereto. Examples include quick service oil, tune-ups, tires, brake and muffler shops. This use also includes car washes and detailing businesses as a principal use.
15. Vehicle Services: Major Maintenance and Repair	General repair, rebuilding or reconditioning of boats and/or motor vehicles; collision service including body or frame straightening or repair; vehicle paint shops; auto wrecker services.

TABLE 1.4.20.A CONSOLIDATED USE TABLE: RECREATION/EDUCATION/SAFETY/PUBLIC ASSEMBLY

RECREATION, EDUCATION, SAFETY, PUBLIC ASSEMBLY									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. Community Oriented Cultural Facility (less than 5,000 SF)	---	C	----	C	C	P	P	P	NA
2. Community Oriented Cultural Facility (5,000 SF or greater)	---	C	---	C	C	C	P	P	NA
3. Community Public Safety Facility	---	P	P	P	P	P	P	P	NA
4. Institutional Care Facility	---	---	---	---	S	S	S	S	NA
5. Detention Facility	---	---	---	---	S	S	S	S	NA
6. Meeting Facility/Place of Worship (less than 15,000 SF)	---	P	---	P	P	P	P	P	NA
7. Meeting Facility/Place of Worship (greater than 15,000 SF)	---	C	---	C	C	P	P	P	NA
8. Park, Playground, Outdoor Recreation Areas	S	P	P	P	P	P	P	P	NA
9. Recreation Facility: Commercial Indoor	---	---	---	---	S	P	P	P	NA
10. Recreation Facility: Commercial Outdoor	---	---	---	---	S	P	P	P	NA
11. Recreation Facility: Community Based	---	P	---	P	P	P	P	P	NA
12. Recreation Facility: Golf Course	---	---	---	---	---	---	---	---	NA

RECREATION, EDUCATION, SAFETY, PUBLIC ASSEMBLY (CONTINUED)									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
13. Recreation Facility: Campground	---	S	---	S	S	S	S	S	NA
14. Ecotourism	S	C	---	C	P	P	P	P	NA
15. School: Public or Private	---	C	---	C	S	P	P	P	NA
16. School: Specialized Training/Studios	---	S	---	S	S	P	P	P	NA
17. School: College or University	---	---	---	---	S	S	S	S	NA

Notes:

"P" indicates a use that is permitted by right
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"S" indicates a use that is permitted as a special use
"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS: RECREATION/EDUCATION/SAFETY/PUBLIC ASSEMBLY

Recreation, Education, Safety, Public Assembly

This category includes not-for-profit and for-profit recreation, education, safety, and public assembly functions that benefit the citizens of the community.

Land Use Type	Definition
1. Community Oriented Cultural Facility:	Public or non-profit facilities that provide educational and cultural experiences for the general public, examples of which include: aquariums, arboretums, art galleries, botanical gardens, libraries, museums, planetariums, civic centers and theaters predominantly used for live performances, and zoos. May also include accessory retail uses such as a gift/book shop, restaurant, etc.
2. Community Public Safety Facility	A public safety facility operated by a public agency including fire stations, other fire preventive and fire-fighting facilities, police and sheriff substations and headquarters, including interim holding facilities. May include ambulance dispatch on the same site. Does not include "Detention Facilities."
3. Institutional Care Facility	Facilities licensed by the State that provide living, sleeping, and sanitation accommodations in coordination with the provision of social, rehabilitative and/or medical services in a protective living environment for persons residing voluntarily, by court placement, or under protective control of the federal, state or county government; including, but not limited to, post-correctional facilities, residential substance abuse treatment facilities, residential treatment facilities for the mentally ill, skilled nursing homes not part of an assisted living or continuing care facility (see "Community Residence").
4. Detention Facility	A facility operated by a public agency, or is under contract with a public agency, that houses persons convicted of, or being held for, a crime. Such facilities include: prisons, detention facilities, work-release facilities, work camps, etc.

Recreation, Education, Safety, Public Assembly (Continued)

Land Use Types	Definition
5. Meeting Facility / Place of Worship:	A facility for public or private meetings, including: community centers, places of worship (e.g., churches, mosques, synagogues, etc.), meeting halls for clubs and other membership organizations, etc. This use includes all cemeteries.
6. Parks, Playgrounds, Outdoor Recreation Areas	An outdoor recreation facility that may provide a variety of recreational opportunities including playground equipment, playing fields, outdoor tennis and basketball courts, outdoor swimming pools, boat ramps and fishing piers; and areas for passive recreation such as hiking trails, picnic areas and bird blinds.
7. Recreation Facility: Commercial Indoor	An establishment providing indoor amusement and entertainment services, often for a fee or admission charge, including, but not limited to : bowling alleys, coin-operated amusement arcades, movie theaters, electronic game arcades (video games, pinball, etc.), indoor ice skating and roller skating rinks, pool and billiard rooms as primary uses. Does not include adult-oriented businesses. May include bars and restaurants as accessory uses. Any establishment with four or more electronic games or amusement devices (e.g., pool or billiard tables, pinball machines, etc.) or a premise where 50 percent or more of the floor area is occupied by electronic games or amusement devices is considered an indoor recreation facility; three or fewer machines or devices are not considered a use separate from the primary use of the site.
8. Recreation Facility: Commercial Outdoor	A facility for outdoor recreational activities where a fee is often charged for use. Examples include, but are not limited to, amusement and theme parks; go-cart tracks; golf driving ranges; miniature golf courses; marinas; watercraft rentals; and water parks. May also include commercial facilities customarily associated with the above outdoor commercial recreational uses, including bars and restaurants, video game arcades, etc. Marinas may include marine-related retail (bait and tackle, boat supplies), fuel sales, minor boat repair, and boat storage. This use does not include golf courses or campgrounds.
9. Recreation Facility: Community-Based	A community recreation center that may include one or more of the following: gymnasium; indoor swimming pool; indoor tennis, racquetball, and/or handball courts, and other indoor sports activities. This use includes all not-for-profit organizations chartered to provide community-based recreation services. Does not include commercial health/fitness facilities, which are included under “General Offices and Services.”
10. Recreation Facility: Golf Course	This use consists of regulation and par 3 golf courses having nine or more holes, and accessory facilities and uses, including driving ranges, clubhouses with bar and restaurant; locker and shower facilities; “pro shops” for on-site sales of golfing equipment and clothing; and golf cart storage facilities.

Recreation, Education, Safety, Public Assembly (Continued)

Land Use Types	Definition
11. Recreation Facility: Campground	Form of lodging where guests bring tents, travel trailers, campers, or other similar forms of shelter to experience natural environments. Campgrounds rent pads or spaces to guests. May also include accessory uses such as a camp store, shower/bathroom facilities, and recreational facilities.
12. Ecotourism	Organized, educational and mainly outdoor recreation with or without lodging that invites participants to learn about and promote ecological preservation, conservation, and sustainability. This use shall include at least two of the following characteristics: 1. Located near or within a wilderness setting, park, or protected area; 2. Interpretive educational program with or without guides; 3. Outdoor activities; or 4. Cultural experiences.

TABLE 1.4.20.A CONSOLIDATED USE TABLE: INFRASTRUCTURE/TRANSPORTATION/COMMUNICATION

INFRASTRUCTURE, TRANSPORTATION, COMMUNICATIONS									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. Airport, Aviation Services	---	S	----	----	----	----	----	----	NA
2. Infrastructure and Utilities: Regional (Major)	---	C	---	S	C	C	C	C	NA
3. Parking Facility: Public or Commercial	---	---	---	---	S	P	P	P	NA
4. Transportation Terminal	---	---	---	---	S	P	P	S	NA
5. Waste Management: Community Collection and Recycling	---	C	---	S	C	C	S	S	NA
6. Waste Management: Regional Waste Transfer and Recycling	---	S	---	S	S	S	S	S	NA
7. Waste Management: Regional Waste Disposal and Resource Recovery	---	---	---	---	---	---	---	---	NA
8. Wireless Communication Facility	---	S	S	S	S	S	S	S	NA

Notes:

"P" indicates a use that is permitted by right
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TABLE 1.4.30.A LAND USE DEFINITIONS: INFRASTRUCTURE/TRANSPORTATION/COMMUNICATIONS

Infrastructure, Transportation, Communications

This category encompasses land uses that provide the underlying infrastructure, utilities, and systems that allow a community to function.

Land Use Type	Definition
1. Airport / Aviation Services	An airport, runway, landing strip, seaport, or heliport providing accommodations by public, private, or not-for-profit entities for the conveyance of persons from one location to another by airplane, seaplane, helicopter, or other means of aviation. Includes facilities for loading and unloading areas.
2. Infrastructure and Utilities: Regional (Major)	Utility facilities that provide County-wide or regional service. Examples include public utility substations; water towers; waste treatment plants; and electrical substations.
3. Parking Facility, Public or Commercial	A public or commercial parking lot or structure providing parking either for free or for a fee. Does not include towing impound and storage facilities.
4. Transportation Terminal	A public or commercial site or structure providing access via water ferry or aviation, such as helicopter, to transport people or goods to a mainland location. Parking facilities either for free or for a fee may be included.
5. Waste Management Facility: Community Waste Collection and Recycling	A site, location, tract of land, or building that may be used for the purpose of collecting all types of residential waste and recyclables that are generated off site" in the local community to be transported by public or private companies to a waste recycling
6. Waste Management Facility: Regional Waste Transfer and Recycling	A site, location, tract of land, or building that is used for the purpose of transferring solid wastes and recyclables that are collected from residential, commercial, and Community Waste Collection and Recycling Facilities" prior to being transported to a solid waste disposal or resource recovery facility. Also includes facilities for separating and sorting recyclable materials from the waste stream. "
7. Waste Management Facility: Regional Waste Disposal and Resource Recovery	Disposal uses including sanitary landfills, construction waste and debris landfills, sludge disposal or storage; and resource recovery facilities, excluding disposal of industrial or radioactive waste materials.
8. Wireless Communications Facility	Public, commercial and private electromagnetic and photoelectric transmission, broadcast, repeater and receiving stations for radio, television, telephone, data network, and wireless communications, including commercial earth stations for satellite-based communications. Includes antennas, commercial satellite dish antennas, and equipment buildings. Does not include telephone, telegraph and cable television transmission facilities utilizing hard-wired or direct cable connections.

TABLE 1.4.20.A CONSOLIDATED USE TABLE: INDUSTRIAL

INDUSTRIAL									
Land Use Type	**Zoning Districts**								
	DI-1P	**DI-2R**	**DI-2R Sub-Districts**		**DI-3E**	**DI-4SU**	**DI-5VC**	**DI-5GC**	**DI-6PUD**
			DI-2R-CP	**DI-2R-GH**					
1. Manufacturing, Processing and Packaging - Light (less than 15,000 SF)	---	C	---	---	S	P	P	P	NA
2. Manufacturing, Processing and Packaging - Light (greater than 15,000 SF)	---	S	---	---	S	S	S	S	NA
3. Manufacturing, Processing and Packaging - Heavy	---	---	---	---	---	---	---	---	NA
4. Mining and Resource Extraction	---	S	---	S	S	S	S	S	NA
5. Outdoor Maintenance/Storage Yard	---	S	---	S	S	S	S	S	NA
6. Salvage Operations	---	---	---	---	---	---	---	---	NA
7. Warehousing	---	---	---	---	S	S	P	P	NA
8. Wholesaling and Distribution	---	---	---	---	S	S	P	P	NA

Notes:

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"—" indicates a use that is not permitted

TABLE 1.4.30.A LAND USE DEFINITIONS: INDUSTRIAL

Industrial

This category encompasses land uses that provide various industrial uses.

Land Use Type	Definition
1. Manufacturing, Processing, and Packaging – Light:	A facility accommodating manufacturing processes involving less intense levels of fabrication and/or production such as the assembly, fabrication, and conversion of already processed raw materials into products, where the operational characteristics of the manufacturing processes and the materials used are unlikely to cause significant impacts on surrounding land uses or the community. The premises may include secondary retail or wholesale sales. Examples of light manufacturing uses include: artisan / craft product manufacturing; clothing and fabric product manufacturing; furniture and fixtures manufacturing, cabinet shop, media production, photo/film processing lab not accessory to a retail business, printing & publishing, food preparation and packaging, winery, micro-brewery.
2. Manufacturing, Processing, and Packaging – Heavy	A facility accommodating manufacturing processes that involve and/or produce basic metals, building materials, chemicals, fabricated metals, paper products, machinery, textiles, and/or transportation equipment, where the intensity and/or scale of operations may cause significant impacts on surrounding land uses or the community. Examples of heavy manufacturing uses include the following: chemical product manufacturing; concrete, gypsum, and plaster product manufacturing; glass product manufacturing; paving and roofing materials manufacturing; petroleum refining and related industries; plastics, other synthetics, and rubber product manufacturing; primary metal industries; pulp and pulp product manufacturing; textile and leather product manufacturing; food products manufacturing.
3. Mining & Resource Extraction	Extractive uses such as surface mining for sand, gravel, clay and topsoil and any other such use. Quarrying is not permitted.
4. Outdoor Maintenance/ Storage Yard	An outdoor storage area for large equipment, vehicles, and/or other materials used by a public agency or a general or specialty contractor; lumberyards; and other industrial outdoor storage uses, excluding salvage operations. May include an accessory office.

Industrial (Continued)

5. Salvage Operations	Any land or structure used for storing, dismantling, reconditioning, collecting, purchasing or selling of scrap metal or other discarded goods and materials, including the collection, dismantlement and salvage of two or more inoperative vehicles, boats, trucks, or other types of machinery or equipment.
6. Warehousing	Facilities for the storage of furniture, household goods, or other commercial goods of any nature. May include an outdoor storage component, provided that the outdoor storage is not the primary use. Does not include mini-storage facilities offered for rent or lease to the general public (see "Residential Storage Facility") or warehouse facilities primarily used for wholesaling and distribution (see "Wholesaling and Distribution").
7. Wholesaling and Distribution	An establishment engaged in selling merchandise in bulk quantities to retailers; to contractors, industrial, commercial, agricultural, institutional, or professional business users; to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies.

Division 2.1: Developments Within Rural Areas

Sections:

2.1.10 Purpose

The purpose of this Division is to:

A. Provide standards for the subdivision of rural lands on Daufuskie Island that maintain the character and heritage of the rural lands while allowing to opportunity to provide for small dwellings in a Cottage Court design in Cluster Compounds to provide for affordable housing and housing that will allow the elderly to remain on Daufuskie Island.

B. Allow long-time rural residents to protect a traditional way of life and provide affordable housing for family members that in turn helps stabilize and preserve the Island's traditional rural communities.

2.1.20 Applicability

The standards found in this Division apply to zones and subzones within DI-2R district of Transect 2 on Daufuskie Island.

2.1.30 Small Lot Cottage Court Subdivisions

A. **Intent.** The rural small lot subdivision is designed to allow landowners of rural lots greater flexibility to subdivide land that is generally not allowed to be subdivided under this Development Code because of the density limitations in the DI-2R Zone to provide for Cluster Compound developments.

B. **Applicability.**

1. Use of the rural small lot cottage court subdivision option is limited as identified in Table 2.1.30.A and cannot be transferred to any other parcel.

C. **Minimum Development Standards for Rural Small Lot Cottage Court Subdivisions**. Rural small lot cottage court subdivisions shall comply with the following:

1. **Minimum Lot Size.** Minimum lot size for by-right lots is one quarter of an acre.

    1. **Parent Parcel.** The parent parcel constitutes the total site.

    2. **By-Right Lots**

        The number of by-rights lots allowed in a rural small lot subdivision is established in Table 2.1.30.A.

Restrictions on Future Subdivisions. A note shall appear on all plats for rural small lot cottage court subdivisions specifying the number of remaining by-right lots that can be subdivided from the parent tract. If all by-right lots are subdivided, the note shall state that remaining subdivisions of the parent parcel shall comply with the density requirements in underlying zone.

Table 2.1.30.A

TABLE 2.1.30.A	
Small Rural Lot Subdivisions	
Parcel Size (in acres)	Maximum Number of "By-right" Lots
1	2
2	4
3	6
4	8
5	9
6	10
7	10
8	10
9	10
10	10
Greater than 10	one lot per acre

2.1.40 Family Compound Standards

Family compounds shall comply with the following standards:

A. **Fifty (50) Years of Ownership.** A single member of the family, multiple members of the family, or an unbroken succession of family members shall own a family compound property for no less than 50 years. All owners of the property shall request the family compound.

B. **Familial Relationship of those Receiving Property and/or Dwelling Unit.** The person(s) for whom the family dwelling units are built, and/or the property subdivided shall be related to the owner of the property by blood, marriage, or adoption.

C. **Property May be Subdivided.** Family compounds shall be developed, and the dwelling units built, or the family compound property may be subdivided and conveyed by the landowner to a family member to build a dwelling unit. Family compounds that are subdivided are limited to the maximum number of units without clustering shown in Table 2.7.40.A.

D. **Family Compound Design.** The family compound shall be designed as follows:

1. Lots or dwelling units may be designed in a conventional form, or as a traditional cluster. For the purposes of this Section, traditional cluster means there must be a minimum of two dwelling units on the parcel and the average distance between dwelling units is no greater than 50 feet.

2. The maximum density that may be achieved on family compounds is outlined in Table 2.1.40.A (Maximum Densities of Family Compounds). This maximum density includes dwelling units and accessory dwelling units.

3. For family compounds that are clustered:

a. There is no minimum lot area;

b. The minimum separation between dwelling units is 15 feet; and

c. A land development plan shall be submitted for approval. See Section 7.2.60 (Land Development Plan). The land development plan shall be drawn to scale and clearly indicate all property lines and the location of all existing and proposed structures.

4. For family compounds that are not clustered the minimum lot area is one-half acre.

E. **Family Compound Design.** Family compounds that are subdivided shall be accompanied by covenants and cross easements, or similar restrictions and reservations, guaranteeing essential infrastructure and 50 feet of vehicular access for each lot.

F. Septic Systems and Reserve Areas. No family dwelling unit shall be built unless the appropriate agency has determined that septic systems and reserve areas in the family compound are sufficient to serve all units in the compound.

G. Leasing. No family dwelling unit shall be leased for five years from the date of approval unless the lessee is related to the property owner by blood, marriage, or adoption.

H. Conveyance of Land Approved as Family Compound. No portion of a tract of land approved as a family compound in accordance with this Section shall be conveyed for five years from the date of approval of the family compound unless the grantee is related to the property owner by blood, marriage, or adoption. This limitation on conveyance shall:

1. Be recorded on the plat of the property, on the plats of any property subdivided and conveyed by the landowner(s) under this Section, and in a database accessible to county staff.

2. Not operate to prohibit actions in foreclosure brought by lenders that are participating in the secondary mortgage market.

3. Not operate to prohibit sale by the county of the entire tract or a portion of it for nonpayment of property taxes.

I. Affidavit Required. Applicants must submit a sworn affidavit recorded in the Register of Deeds Office with the following information:

1. There has been no intentional misrepresentation during the application process;

2. There shall be no lease of a family dwelling unit to a nonfamily member within five years of approval; or

3. There shall be no conveyance of any portion of a tract of land granted a dwelling unit or lot under this section to a nonfamily member within five years of approval.

J. Violations and Enforcement.

1. A violation of this section shall consist of the following:

a. Intentional misrepresentation during the application process;

b. Lease of a family dwelling unit to a nonfamily member within five years of approval; or

c. Conveyance of any portion of a tract of land granted a dwelling unit or lot under this section to a nonfamily member within five years of approval.

2. Penalties may be waived by the Director if it can be shown that lease or conveyance to a nonfamily member was absolutely necessary to avoid foreclosure on either a family dwelling unit or any portion of a tract granted a dwelling unit under this section.

3. Until the violation has been addressed in accordance with Article 9 (Enforcement), the Director shall not permit additional dwelling units on the family compound or further subdivision under this section in the violator's family compound.

4. As a condition of approval, the applicant and the person(s) for whom the family dwelling unit is to be built or the property subdivided shall read and sign disclosure forms describing any violations of this section and applicable penalties.

5. A violation shall not have the effect of clouding the title of a parcel subdivided under this Section.

Table 2.1.40.A

TABLE 2.1.40.A		
Maximum Densities of Family Compounds		
Minimum Site Area (in acres)	Maximum Number of Units (with clustering)	Maximum Number of Units (without clustering)
up to1.99	4	3
2	8	4
3	10	6
4	12	8
5	14	10
6	16	12
7	17	13
8	18	14
9	19	15
10	20	16
Greater than 10	1.6 units per acre	1.2 units per acre

ITEM 11

ADMINISTRATIVE APPEAL OF THE STAFF REVIEW TEAM (SRT) APPROVAL OF THE UNDEVELOPED, UNSUBDIVIDED PORTION OF BEST BUY COMMERCIAL CENTER AT 1031, 1033, 1037, AND 1039 FORDING ISLAND ROAD R600-032-000-0455-0000; KNOWN AS OSPREY COVE APARTMENTS); APPELLANTS: THE CRESCENT PROPERTY OWNERS ASSOCIATION, INC, ET. AL.

MEMORANDUM

TO: Beaufort County, Planning Commission

FROM: Eric Greenway, AICP, Community Development Department

DATE: June 26, 2018

SUBJECT: Administrative Appeal of a Staff Review Team (SRT) Decision to Grant Final Approval to Osprey Cove Apartments proposed for property in and around the Best Buy Commercial Center as referenced by R600-032-000-0452-0000.

An application was submitted to the County's SRT for Final Approval of an apartment development located within the Best Buy commercial development fronting Fording Island Road. The property comprises five (5) acres and is zoned Regional Center Mixed Use (C5 RCMU) district.

The application was reviewed by the SRT on April 18, 2018. At that meeting, the SRT determined that the proposed development met the requirements of the Community Development Code (CDC) for Final Approval, including the zoning standards of the C5RCMU (e.g., maximum density, minimum lot size, minimum lot width, minimum setbacks). The SRT voted unanimously to grant conditional final approval of the project. Once all outstanding comments were addressed the plans would be approved for permitting.

The appellant maintains that the SRT erred in their decision to grant Final Approval to this development.

SRT SUBMITTAL

COUNTY OF BEAUFORT

STAFF REVIEW TEAM

ACTION FORM

MEMBERS PRESENT– Hillary (Present/2nd Motion), Nancy (Present/For), Charles (Present/For), Eric (Present/1st Motion)
STAFF PRESENT – Anthony Criscitiello (Planning Director), Tamekia Judge (Zoning Analyst III), Eric Greenway(Assistant Director), Joshua Gruber (Interim County Administrator), Tanner Powell (Stormwater), Ryan Lyle (AES Representative), Paul Moore (WEE Representative), Amanda Flake (Natural Resource Planner), Paul Summerville (Council Chairman), Christopher Inglese (County Attorney), Colin Kinton (Traffic Engineer)

PROJECT NAME	PROJECT TYPE
Osprey Cove Apartments	Residential (Multi-family)

APPLICANT/DEVELOPER NAME, ADDRESS, PHONE NUMBER
Ward Edwards Engineering, P.O. Box 381 Bluffton, SC 29910

PROJECT LOCATION	PIN	LAND AREA (ACRES)	LOTS/UNITS	BLDG AREA (SQ FT)
Bluffton	600-32-452	5	45	

DATE OF REVIEW	OVERLAY DISTRICT	FIRE DISTRICT	ZONING DISTRICT
4/18/2018	HCOD	Bluffton	C5

TYPE OF SRT REVIEW (CHECK ONE TO RIGHT): ☐ CONCEPTUAL ☐ PRELIMINARY X FINAL

SRT ACTION (CHECK ONE BELOW):

☐ APPROVED NO CONDITIONS:

☐ DISAPPROVED / REASON(S):

☐ APPROVED WITH CONDITIONS / CONDITIONS:

X APPROVED SUBJECT TO CONDITIONS / LIST OF CONDITIONS:

- Applicant shall address Stormwater requirements.
- Applicant shall revise the site plan to show the connectivity, handicap parking spaces being distributed, sidewalks, and sign to be placed on property.
- Applicant shall pay the BJWSA capacity fees and submit permit to construct water and sewer.
- Applicant shall submit a revised Arborist report.
- Applicant shall submit a revised landscape plan showing plantings to the rear of the buildings.

☐ DEFERRED / PLEASE SUBMIT THE FOLLOWING:

ZONING AND DEVELOPMENT ADMINISTRATOR

4/18/2018
DATE

Judge, Tamekia

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@bcgov4.onmicrosoft.com>
To: Paul Moore; Jennifer Baker; Taylor Reeves
Sent: Thursday, April 19, 2018 3:24 PM
Subject: Relayed: Osprey Cove Apartments (final)

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

Paul Moore

Jennifer Baker

Taylor Reeves

Subject: Osprey Cove Apartments (final)

BEAUFORT – JASPER WATER & SEWER AUTHORITY

6 SNAKE ROAD, OKATIE, SC 29909-3937
Phone 843.987.8100 | Fax 843.548.0096
Customer Service 843.987.9200
Operations & Maintenance 843.987.8046
Engineering 843.987.8065

www.bjwsa.org

Our mission: to inspire trust and enhance public health

ED SAXON, PE, GENERAL MANAGER
843.987.8040 (o) | 843.263.1924 (c)

March 19, 2018

Paul Moore, P.E.
Ward Edwards
P.O. Box 381
Bluffton, SC 29910

Re: Osprey Cove Apartments (BJWSA No. 2018-078)

The Authority has reviewed the plans for the above referenced project and approves them with comments for DHEC wastewater and water delegated review-permitting purposes. Please submit the following:

1. The original SC DHEC application for Permit to Construct, properly completed, signed in blue ink, with two (2) copies.
2. Four (4) copies of the stamped plans.
3. Two (2) copies of the appropriate water and wastewater design calculations, including flow and pump station calculations, pump curve etc.
4. Three (3) copies of a detailed 8½ x 11" location map, separate from the plans.
5. Two (2) copies of an overall layout sheet of the water system separate from the plans that shows the proposed water lines (highlighted for identification) and their sizes. Include only those existing streets and water lines immediately adjacent to the proposed water lines.
6. Two (2) copies of an overall layout sheet of the wastewater system separate from the plans that shows the proposed sewer lines (highlighted for identification) and their sizes. Include only those existing streets and sewer lines immediately adjacent to the proposed sewer lines.
7. DHEC's Ocean and Coastal Resource Management certification if applicable.
8. A check in the amount of $150.00 payable to SC DHEC for the delegated review fee.
9. A check in the amount of $230.00 payable to LCOG.
10. E mail plans in pdf format.

Please ensure *all* required documents are included in the submittal. If there is an omission of any of the above items, your package will be returned.

Water will be supplied from our main water system (DHEC 0720003). Sewer flows will be received and processed by the Cherry Point WWTP (ND 0074004). BJWSA will own, operate and maintain the constructed facilities once service authorization is obtained from this office.

The Capacity and Project Fees Quote is enclosed for payment by your client and should be included along with your DRP submittal. Since the commitment of capacity by BJWSA is a condition of SCDHEC's issuance of the water and wastewater construction permits, these fees must be paid to or otherwise secured through the Engineering Department at this time.

Upon receipt of the SC DHEC Construction Permit, a mandatory pre-construction conference must be scheduled. Prior to scheduling the pre-con meeting, the following must be received: Revised plans with any comments addressed and submitted in pdf format, electronic contractor and engineer approved submittals, two sets of printed plans, as well as project and capacity fees paid. Please contact Timothy Andrepont at 843-987-8067 to arrange a convenient time.

Should you have any questions or need further information, please do not hesitate to contact me.

Sincerely,

Richard Deuel, P.E.
Development Projects Manager

rgd/ss

Ward Edwards ENGINEERING

CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING

April 16, 2018

Hillary Austin
Zoning Department - Beaufort County
P.O. Drawer 1228
Beaufort, SC 29901

Subject: **SRT Review Response (Final)**
OSPREY COVE APARTMENTS
Ward Edwards Project Number: 170262

Hillary:

In response to the SRT review letter dated April 11th regarding our most recent submittal, please find the following:

Enclosures

1. Arborist Report
2. BJWSA Letter of Capability
3. Revised Landscape and Lighting Plans
4. Revised Site Plans
5. Revised Stormwater Report

Community Development

1. Why are all the HC parking spaces grouped together and not distributed on the property?
   The only building with ADA accessible units is Building "D", so all of the HC parking stalls are located together in front of that building.

2. The County Natural Resource Planner will review the independent Arborist Report once submitted. Dead diseased or dying trees must be mitigated 1 for 1 with a 2.5" caliper hardwood tree. On Sheet T1.0, the mitigation table should include the three dead trees referenced for a total of (46) 2.5" trees planted to meet required mitigation.
   Please see Attached Arborist Report.

3. Landscape Plan comments:
   a. Clearly identify/highlight the mitigation trees on the plans
      Please see revised Landscape Plans.
   b. Please explain why there aren't any foundation plantings proposed on the back-side of the each building.
      The rear of Building C and D are adjacent to wetlands and are not visible. Buildings A and B are adjacent to the Crescent golf course where a 25' setback is required. We have provided a 75' setback that is heavily wooded, therefore foundation plantings will not be seen and seem unnecessary.

NOTE: Stormwater Comments shown in red 4/17/18

c. Applicant is removing a total of 107", plus 3 trees for the dead trees. A total of 46 trees are required to be planted. Please revise planting plan showing the additional 8 trees.
Please see revised Landscape Plans.

4. Exterior Lighting plan & cut sheets: The Lighting Plan does not match the final site layout plan. Please revise and re-submit.
Please see the attached revised Lighting Plan.

5. Dumpster enclosure: Dumpster enclosure and gates must be 100% opaque and tall enough to completely conceal the dumpster. Please explain which materials and colors are being proposed and how tall the enclosure and gates will be.
Dumpster Enclosure details have been added to the plan set. Please see the revised Site Plans, Sheet C903.

6. Property Signage: Please identify the location of the monument sign. Approval of the monument sign is handled with a separate process. The monument structure design must match the building materials and colors.
A monument sign will be located at the entrance of the development. Please see the attached revised Site Plans, Sheet C901.

7. Meter, Power Source & AC unit screening for each building: Please describe the method of screening which will be used to conceal these items from view.
The AC equipment proposed for use does not require exterior condensers and therefore screening is not required. The AC units themselves are located in a mechanical closet outside of each unit on each floor. Meters will be screened by use of landscaping at the ends of each building.

8. Applicant shall submit BJWSA Letter of Capability and commitment to serve. Capacity fees shall be paid and receipt submitted.
Please see attached BJWA Letter of Capability.

Stormwater

9. The site is located within a master-planned development designed to meet the water quality and requirements that were in place at the time. This predated the volume requirements of the current Beaufort County BMP Manual. Applicant shall address volume control per Section 5 of the BMP Manual.
A volume control analysis of the proposed site plan we performed. The post-development impervious area will result in a small increase in runoff volume that will be detained in the proposed permeable paving. The net result is that the site will have no net increase in runoff volume in post-development conditions. See the revised Stormwater Report for the additional volume control calculations.

RESPONSE:
9a) Per BC BMP Manual, Section 2.1.4.3, "undeveloped land shall be considered as "meadow, in good condition," unless the natural ground cover generates a lower curve number or rational "C" value". Therefore, for Type A soils, the pre-development condition must be modeled as "Meadow" CN=30, opposed to the property's current condition of "Open Space- Fair" CN=49.

9b) Address Sections 2.1.4.8.a., 2.8 and 5.5 of the BMP Manual with regards to the proposed permeable paving. Items to be addressed should include seasonal high water table elevations and infiltration rates. Per 2.8.1.12. – 2.8.1.14, the information provided should be supported with a site specific investigation given the existing soil conditions and the proximity of the onsite wetlands.

10. Proposed plans illustrate a reduction of pond volume for Pond 3 with the proposed parking lot, sidewalk, and retaining wall adjacent to Building A. The proposed encroachments should be removed or the plans should show replacement of the lost pond volume.

    The pond banks in current conditions do not match the final proposed conditions from the stormwater master plan (SWMP) and the original approved Phase 2 Site Development Plans. The current pond banks slope upward from normal water level at an average of 5:1 slope. The original design for the ponds calls for the banks to slope from NWL at 3:1. This means that the pond top of bank is currently larger than needed for the SWMP and this gives the appearance that the Osprey Cove project is encroaching into the ponds. In reality, the Osprey Cove improvements are no more expansive than the original Phase 2 development previously approved by the County. While there may be a reduction in pond volume from the current condition of the ponds, there is no reduction in volume from the SWMP design of the ponds.

    RESPONSE: No pond storage reduction from current conditions will be permitted. Pond volume has recently been established and asbuilt per OCRM requirement to secure Notice of Termination the master-planned drainage system.

11. How will the runoff from the rooftops of the proposed buildings be collected and/ or directed to the storm water ponds?

    The downspouts for the proposed buildings will discharge into gravel splash pads and will follow the proposed grading that ultimately discharge into the existing stormwater facilities. This will result in runoff from the rooftops sheet flowing across landscaped or permeable areas.

    RESPONSE: Grading plan does not reflect this concept. Revise to ensure all runoff is properly routed. Provide post development drainage basin map.

12. The site plans call for demolition of a portion of the existing 18" storm sewer that discharges into Pond 4. The proposed drainage plan calls for a connection of the proposed storm sewer system to the remaining section of 18" storm sewer by means of a proposed junction box. The proposed storm upstream of the proposed junction box is specified as 24". The existing pipe was modeled as 24" as opposed to 18". Please address and revise accordingly.

    The proposed connection into Pond 4 has been revised so that the existing stub-out will be removed and replaced with a 24"outfall pipe. Please see the revised Stormwater Report.

    RESPONSE: ok

13. Building D is shown to encroach in the existing drainage easement.

    The location of Building D has been revised and will not encroach the existing drainage easement. Please see revised Site Layout, Sheet C401.

    RESPONSE: ok

14. The designer's certification statement should be added to the plans.

    The designer's certification has been added to the Cover Sheet, Sheet C001.

    RESPONSE: Signed copies will be required upon receiving final approval.

15. Please correct inconsistencies within the plans, calculations, and NOI regarding the amount of disturbed area. If the NOI will require revisions, the revisions should be initialed by the Engineer and Permittee.

    The Site Plans, NOI, and calculations have been revised. The total limits of disturbance are 2.70 acres. Please see attached revisions.

    RESPONSE: ok

If you have any questions or comments during your review, please do not hesitate to contact me at (843)384-5266 or pmoore@wardedwards.com.

Sincerely,
Ward Edwards Engineering

Paul Moore, PE
Project Manager

Ward Edwards ENGINEERING

CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING

April 16, 2018

Hillary Austin
Zoning Department - Beaufort County
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drw

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If you have any questions or comments during your review, please do not hesitate to contact me at (843)384-5266 or pmoore@wardedwards.com.

Sincerely,
Ward Edwards Engineering

Paul Moore, PE
Project Manager

STORMWATER MANAGEMENT REPORT

OSPREY COVE APARTMENTS

Prepared for Welles LOM, LLC

Project No. 170262

Project Location:
Beaufort County, South Carolina

Date: March 9, 2018

P.O. Box 381
Bluffton, SC 29910
Ph: (843) 837-5250 Fax: (843) 837-2558

Paul R. Moore, P.E.
South Carolina P.E. No. 22816

Table of Contents

Appendix A – Site Exhibits

- Exhibit 1 – Vicinity Map
- Exhibit 2 – USGS Quad Map
- Exhibit 3 – NRCS Soils Map
- Exhibit 4 – Flood FIRMette
- Exhibit 5 – Pre-development Conditions Map
- Exhibit 6 – Post-development Conditions Map
- Exhibit 7 – Post-development Drainage Map

Appendix B – Storm Sewer Collection System
Appendix C – Master Plan Stormwater Report

1.0 Project Description:

The proposed project is located at 1031, 1033, 1037, & 1039 Fording Island Road within JB Johnson Tract in Bluffton, Beaufort County, South Carolina, which is a master-planned development. The drainage master plan provides for stormwater runoff collection, conveyance, detention, and water quality. The 5.00 acre site is bound to the south by Fording Island Road, to the north/west by Crescent Property Owners Association, and to the east by wetlands. The proposed site development included 45-unit multifamily housing development, parking areas, sidewalks, and associated infrastructure.

Based on the *Soil Survey of Beaufort and Jasper Counties* (USDA Soil Conservation Service, 1980) the soils found onsite are Leon (Lo) and Rosedhu (Ro) which consists of deep, well drained, permeable fine sandy loam and is classified as HSG A/D. See Appendix A for the site soils map.

2.0 Design Scope, Methodology, and Criteria:

The site is part of a master planned development and therefore only requires verification that the proposed development is consistent with the original master plan design. The development was master planned to treat the stormwater from this site with an allowable impervious coverage of 90%. The proposed building and existing conditions have an impervious coverage of 75,360 SF or 32%. An excerpt from the Best Buy Commercial Center stormwater requirements is included in Appendix B. Table 1 shows the comparison of the allowable land uses between the master planned and the post-development of the site. Therefore, the proposed site is well below the allowable 90% impervious coverage.

Table 1 – Land Uses

Land Use	Allowable per Master Plan (ac)	Post-development Area (ac)
Building		0.62
Paving/Sidewalks		1.11
Total Impervious	**4.91 (90 %)**	**1.73 (32 %)**
Landscape/Grass		3.73
Permeable Pavers		
Total Pervious	**0.55 (10%)**	**3.73 (68 %)**
TOTAL SITE AREA	**5.46**	**5.46**

The existing master planned detention pond will serve as structural BMP's to meet the state and local water quality and quantity requirements. To the best of our knowledge, the pond was designed to meet first flush storage, sediment trapping and nutrient removal standards.

2.1 Existing Conditions Runoff

The site has already been cleared, grubbed, and a double 36" pipe drainage connection installed between the two existing stormwater ponds. Water, sewer, and power were extended to the western edge of the development site. The site is zoned C5RCMU and the property to the north is Crescent Pointe Golf Course (Zoned PUD).

2.2 Post-Development Runoff

The proposed improvements to the site consist of a 45-unit multifamily housing development and associated parking and infrastructure. Runoff generated from the buildings, parking areas, and sidewalks will be collected in grate inlets that convey the storm runoff into the proposed stormwater collection system before discharging into the existing stormwater management pond.

3.0 Sedimentation and Erosion Control

South Carolina DHEC regulations require that when runoff drains to a single outlet from land disturbing activities which disturb ten (10) acres or more than a sediment basin must be designed to meet a removal efficiency of 80 percent for suspended solids, or 0.5 ML/L peak settleable concentration, whichever is less. The project will disturb 2.70 acres. Therefore, the 80% removal efficiency is not required for the drainage areas. Sediment control measures are shown on the construction plans and include the following:

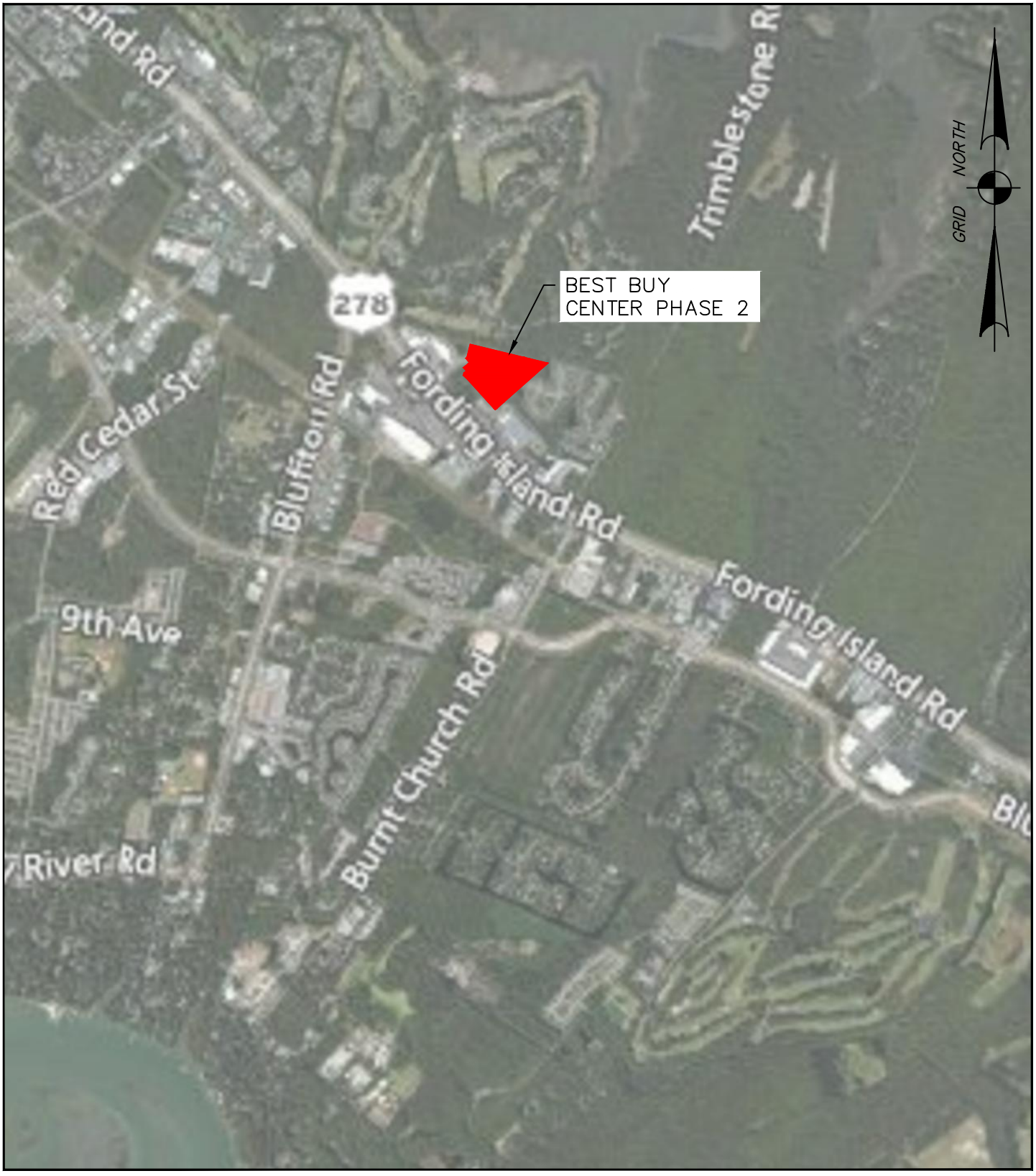
A. Construction entrance/exit will be used to minimize the effects of sediment movement due to construction traffic, and
B. Silt fencing will be used around the edge of disturbance to allow for sediment control during construction.
C. Inlet protection for all existing and proposed drainage structures.
D. Temporary and permanent seeding for all disturbed areas.

4.0 In Excess of Design Storm

To assure the proposed site will not be inundated with excessive ponding of runoff, the stormwater routing model was run using the 25-yr 24 hour design storm. The peak water level in the collection system during the 25-year event was checked against grate inlets, pavement elevations, and the building finished floor elevation to assure these items would not overtop. See Appendix B for the model results.

Appendix A

Site Exhibits



Ward Edwards
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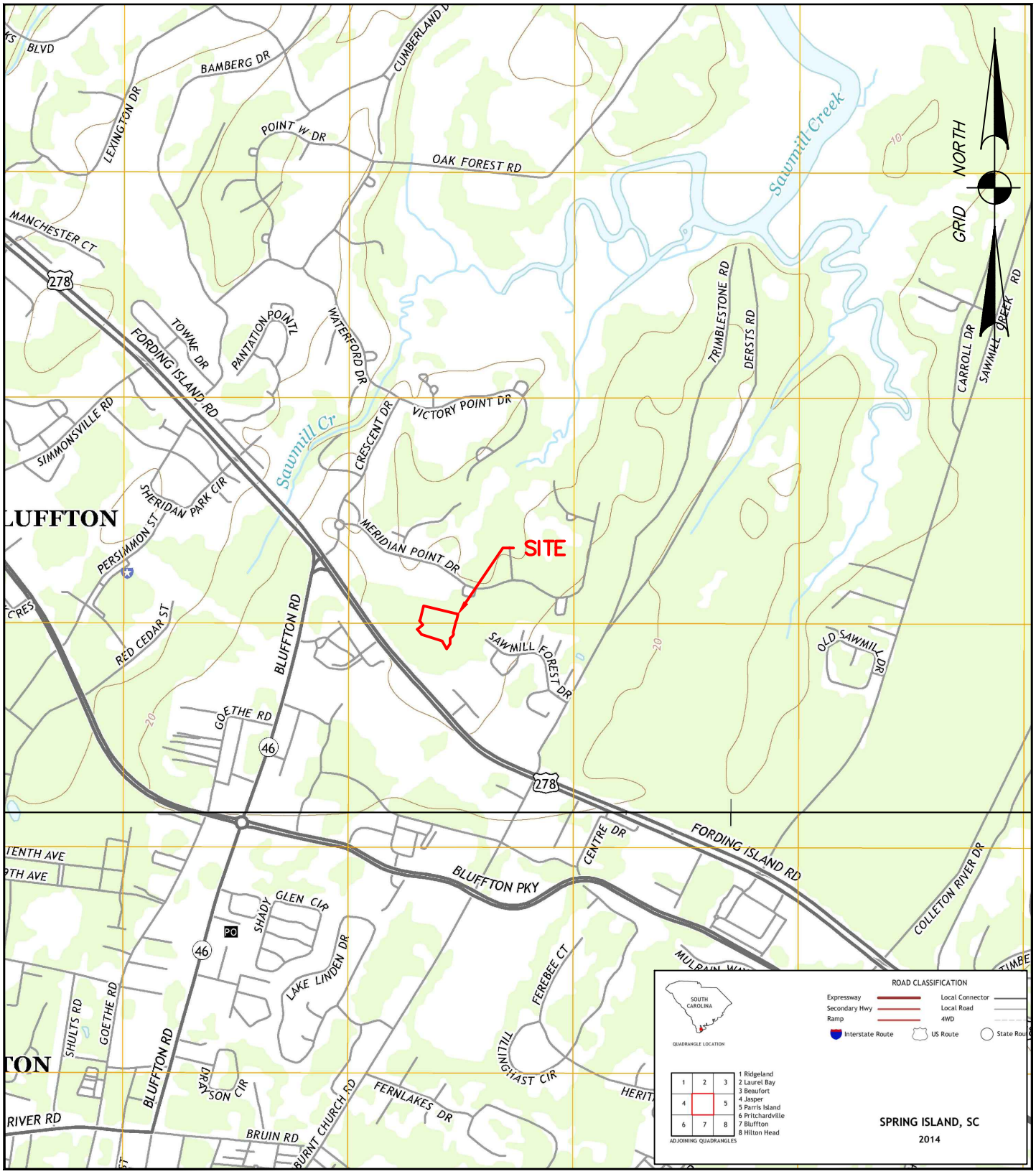
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

VICINITY MAP

BEST BUY CENTER PHASE 2

LOCATION: BLUFFTON, SC
DATE: 11/09/17
PROJECT #: 170262

SHEET: 1 OF 1
SCALE: 1"=2,000'



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WWW.WARDEDWARDS.COM

USGS QUAD MAP

BEST BUY CENTER PHASE 2

LOCATION: BLUFFTON, SC
DATE: 12/29/17
PROJECT #: 170262

SHEET: 1 OF 1
SCALE: 1"=2,000'

Hydrologic Soil Group—Beaufort County, South Carolina
(170262-PLOD)

Map Scale: 1:2,480 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Beaufort County, South Carolina
Survey Area Data: Version 13, Oct 5, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 20, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Lo	Leon fine sand, 0 to 2 percent slopes	A/D	8.8	61.5%
Rd	Ridgeland fine sand	B	0.2	1.6%
Ro	Rosedhu fine sand	A/D	5.3	37.0%
Totals for Area of Interest			**14.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

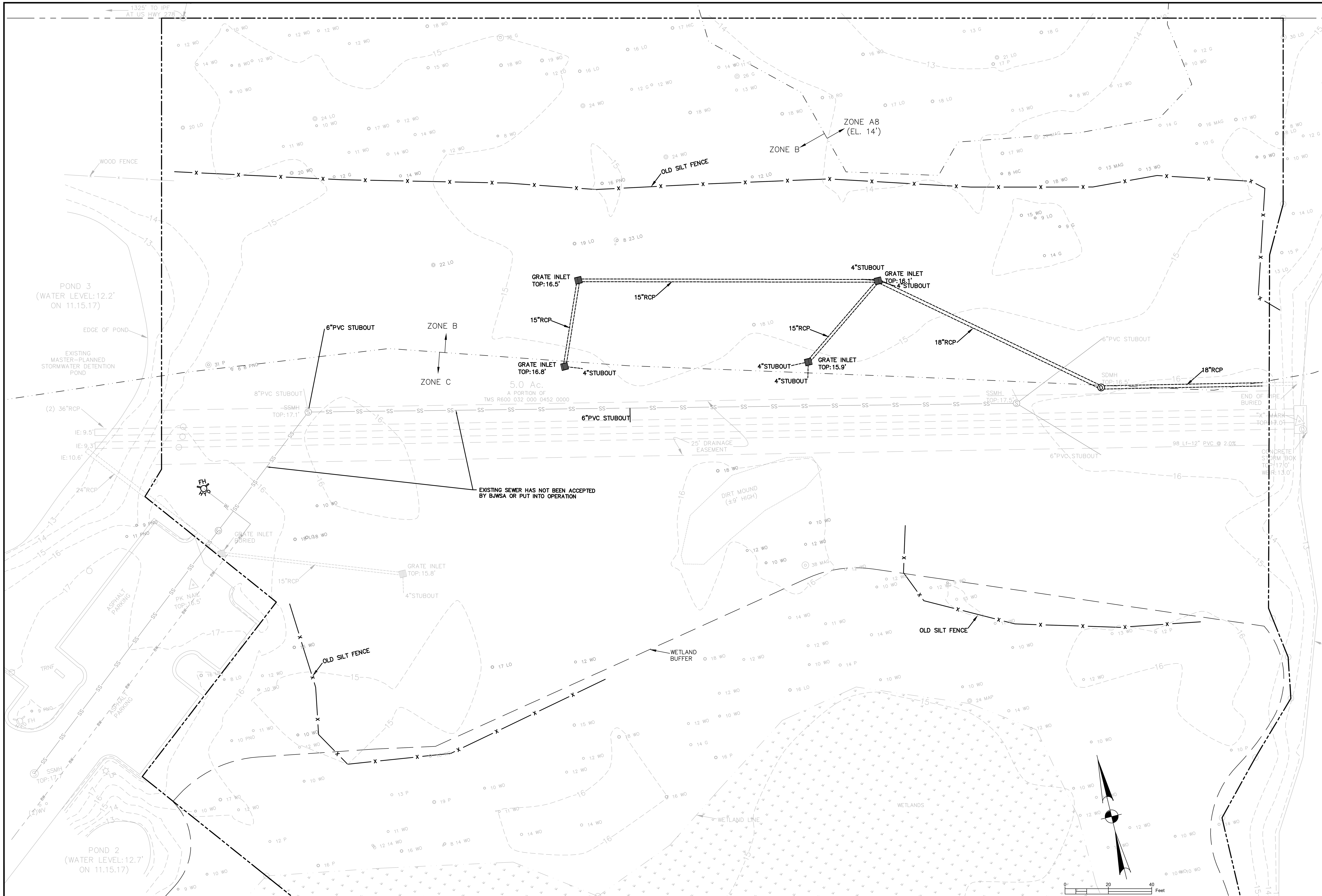
BEAUFORT
COUNTY,
SOUTH CAROLINA
(UNINCORPORATED AREAS)

PANEL 85 OF 163
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
450025 0085 D

MAP REVISED:
SEPTEMBER 29, 1986

Federal Emergency Management Agency


1325' TO IPF AT US HWY 278
WOOD FENCE
OLD SILT FENCE
ZONE A8 (EL. 14')
ZONE B
POND 3 (WATER LEVEL:12.2' ON 11.15.17)
EDGE OF POND
EXISTING MASTER-PLANNED STORMWATER DETENTION POND
GRATE INLET TOP: 16.5'
15"RCP
4"STUBOUT
GRATE INLET TOP: 16.1'
4"STUBOUT
15"RCP
18"RCP
6"PVC STUBOUT
ZONE B
ZONE C
GRATE INLET TOP: 16.8'
4"STUBOUT
GRATE INLET TOP: 15.9'
4"STUBOUT
SDMH TOP: 16.5'
18"RCP
5.0 Ac.
A PORTION OF TMS R600 032 000 0452 0000
8"PVC STUBOUT
SSMH TOP: 17.1'
(2) 36"RCP
IE: 9.5'
IE: 9.3'
IE: 10.6'
6"PVC STUBOUT
25' DRAINAGE EASEMENT
SSMH TOP: 17.5'
END OF PIPE BURIED
"X" MARK TOP 17.0'
8" L1-12" PVC @ 2.0%
CONCRETE STORM BOX
6"PVC STUBOUT
24"RCP
EXISTING SEWER HAS NOT BEEN ACCEPTED BY BJWSA OR PUT INTO OPERATION
FH
DIRT MOUND (±9' HIGH)
GRATE INLET BURIED
GRATE INLET TOP: 15.8'
15"RCP
4"STUBOUT
ASPHALT PARKING
PK NAIL TOP: 16.5'
TRNF
OLD SILT FENCE
WETLAND BUFFER
OLD SILT FENCE
SSMH TOP: 17.7'
WETLANDS
WETLAND LINE
POND 2 (WATER LEVEL: 12.7' ON 11.15.17)
0 20 40 Feet

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

PRE-DEVELOPMENT CONDITIONS

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 03/08/18

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
	PLAN REVISIONS	
1		
2		
3		
4		
5		
6		
7		

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/08/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=30'

SHEET
EXHIBIT

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 22816
03/08/18
PAUL R. MOORE

SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION
WARD EDWARDS, INC.
No. C00152

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
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5		
6		
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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

POST-DEVELOPMENT CONDITIONS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/08/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=30'

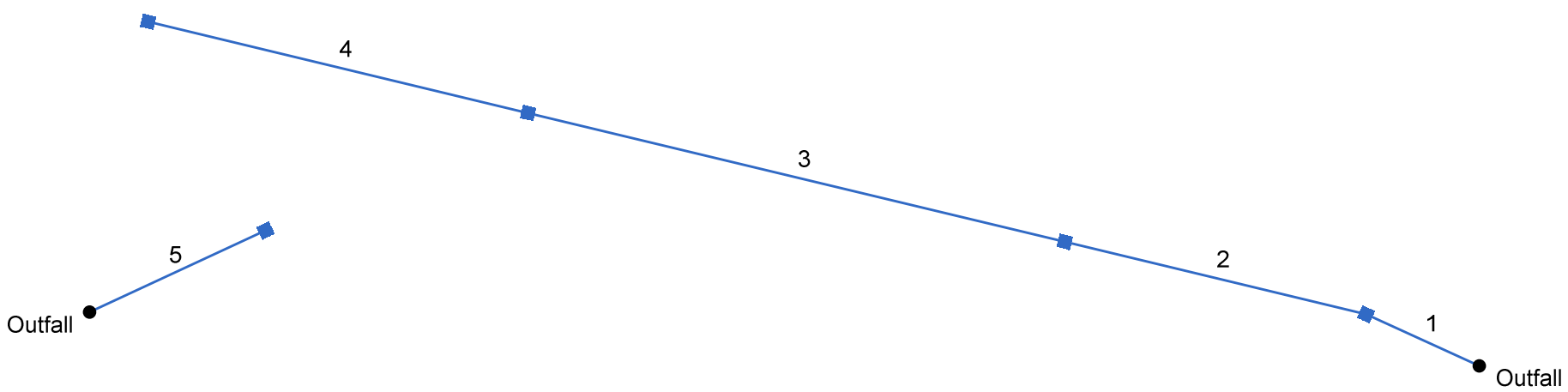
SHEET
EXHIBIT

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

Appendix B

Storm Sewer Collection System Sizing Worksheets

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: 170262-Storm analysis.stm	Number of lines: 5	Date: 2/13/2018

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	A1-OUT	9.97	24	Cir	38.454	12.39	12.53	0.364	14.95*	15.02*	0.08	15.10	End	DropGrate
2	A2-A1	8.55	24	Cir	95.974	12.53	12.77	0.250	15.10*	15.24*	0.06	15.30	1	DropGrate
3	A3-A2	5.22	18	Cir	170.918	12.77	13.20	0.252	15.30*	15.72*	0.07	15.79	2	DropGrate
4	A4-A3	2.31	15	Cir	121.000	13.20	13.50	0.248	15.79*	15.94*	0.05	16.00	3	DropGrate
5	Pipe - (7)	1.80	15	Cir	60.000	11.40	11.70	0.500	14.95*	15.00*	0.03	15.03	End	DropGrate

Project File: 170262-Storm analysis.stm | Number of lines: 5 | Run Date: 2/13/2018

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown).

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
(1)	(in) (2)	(cfs) (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(ft) (12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(K) (23)	(ft) (24)
1	24	9.97	12.39	14.95	2.00	3.14	3.17	0.16	15.11	0.194	38.454	12.53	15.02	2.00	3.14	3.17	0.16	15.18	0.194	0.194	0.075	0.50	0.08
2	24	8.55	12.53	15.10	2.00	3.14	2.72	0.12	15.22	0.143	95.974	12.77	15.24	2.00	3.14	2.72	0.12	15.36	0.143	0.143	0.137	0.50	0.06
3	18	5.22	12.77	15.30	1.50	1.77	2.95	0.14	15.43	0.247	170.918	13.20	15.72	1.50	1.77	2.95	0.14	15.86	0.247	0.247	0.422	0.50	0.07
4	15	2.31	13.20	15.79	1.25	1.23	1.88	0.06	15.84	0.128	121.000	13.50	15.94	1.25	1.23	1.88	0.05	16.00	0.128	0.128	0.155	1.00	0.05
5	15	1.80	11.40	14.95	1.25	1.23	1.47	0.03	14.98	0.078	60.000	11.70	15.00	1.25	1.23	1.47	0.03	15.03	0.078	0.078	0.047	1.00	0.03

Project File: 170262-Storm analysis.stm | Number of lines: 5 | Run Date: 2/13/2018

; c = cir e = ellip b = box

Appendix C

PUD Stormwater Excerpt

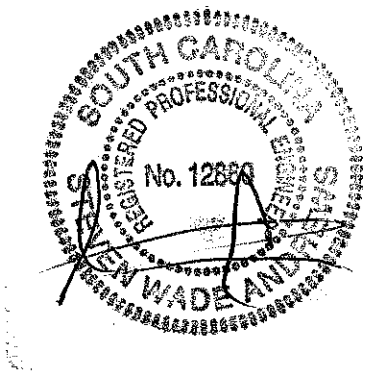
DRAINAGE CALCULATIONS
JB JOHNSON TRACT
INTERSECTION HWY 278 & HWY 46
BEAUFORT COUNTY, SC
PROJECT NO. 233001

PREPARED FOR:

DAVID OLIVER
STAFFORD PROPERTIES
80 W. WIEUCA RD, NE / SUITE 302
ATLANTA, GA 30342
(404) 256-9100

PREPARED BY:

ANDREWS ENGINEERING CO., INC.
40A SHANKLIN ROAD
BEAUFORT, SC 29906
(843) 466-0369



PROJECT NO. 233001
September 20, 2005

TABLE OF CONTENTS

DRAINAGE CALCULATIONS
JB JOHNSON TRACT

1.0 INTRODUCTION

The proposed JB Johnson Tract is 2-phase development on a 34.5-acre tract located between "The Crescent" residential golf course and the "Home Depot" on Highway 278 in Bluffton. This site provides the SCDOT with 2 drainage outfalls from Highway 278 to the Crescent Subdivision by means of two large ditches that meander through this property. Currently, an approximately 200 acre drainage basin is routed through this site including the majority of the developments located along both sides of highway 278 and east of highway 46 such as GrayCo, Home Depot, Heritage Motors, Target, Food Lion, Kitties Landing and Kitties Crossing. This storm drainage outfall ditch has to be re-routed in order to develop this property. The proposed route for this storm water is through a series of proposed interconnected retention ponds, which will provide water quality for the currently untreated highway 278 drainage that directly discharges to the Colleton River. The eastern SCDOT drainage outfall ditch will be routed through and treated by the onsite ponds, and the western outfall ditch will be piped straight through the site.

This development is contingent to the construction of a traffic signal to be installed on Highway 278 just east of this site, which will occur in conjunction with the widening of Highway 278 from 4 to 6 lanes. It will be constructed as a fully signalized intersection providing connection of the Home Depot to the Target Center, which is proposed to be constructed at the current location of the pond adjacent to the Pizza Hut / Taco Bell Express. A large portion of this storm retention pond will have to be filled to construct the proposed intersection; therefore the Johnson Tract ponds will have to provide the lost retention capacity. The complete storm sewer system consisting of the interconnected ponds will be constructed in phase 1. The proposed ponds will retain, treat, and discharge the storm water from both the on-site and off-site drainage basins draining to the eastern SCDOT outfall ditch into the existing outfall ditch through the Crescent Subdivision. This first phase will consist of 96,000 square feet of buildings including a Best Buy retail store, an Olive Garden restaurant, and a bank all located on the Highway 278 road frontage. Phase 2 development uses are undecided and will occur in the rear of the property.

Based on the "Soil Survey of Beaufort and Jasper Counties" (soil conservation service, 1980) the soil found on site contain Baratari (Ba) Soil, which is classified as hydrologic Group A/D, and Rosedue (Ro), which is classified as hydrologic Group B/D.

2.0 SCOPE

The scope of the drainage calculations will be to determine the following:

- Pre-development run-off rates for the 2, 10 & 25-year storm events
- Post-development run-off rates for the 2, 10 & 25-year storm events
- Required first flush run-off detention and calculations
- Sediment trapping calculations
- BMP calculations

3.0 DESIGN METHOD AND CRITERIA

Design Method:	SCS Method
Design Storm:	2, 10, & 25 year, 24-hr rainfall events
Rainfall Amount:	4.5, 6.8, & 8.0 inches (respectively)
Rainfall Distribution:	SCS Type III
SCS Peak Factor:	323

The Advanced Interconnected Pond Routing Computer Program, developed by Streamline Technologies, is used to compute run-off and to route the design storms through the proposed retention ponds and outfall structures. TR-55 methodology was utilized to determine the runoff index (curve number – CN) and the time of concentration (Tc) that were used as input in the ICPR model. The composite curve number for each basin was determined using the hydrologic soil type mentioned in the previous section. Please refer to Appendix B for CN and Tc values for each basin. The results are summarized below.

CURVE NUMBERS - TYPE "A/D"	
LAND USE	CURVE NUMBER
UPLAND	A/D : 43/82 : USED 66
WETLAND	A/D : 43/82 : USED 66
PAVE	PRE=98; POST=DCIA

4.0 PRE-DEVELOPMENT RUN-OFF

Pre-development run-off consists of an approximately 200-acre offsite drainage basin that is routed by ditch through this site. Currently the drainage from Highway 278 right of way is untreated and discharges directly to the Colleton River by means of 2 existing drainage ditches through the Johnson Tract which combine into one single ditch within The Crescent subdivision. The drainage areas, times of concentrations, and curve numbers for both the on and off site basins were derived by LIDAR digital topography, actual topographic surveys, asbuilt drawings, and project design information from previous nearby projects. The cumulative predevelopment flow rate results from both the offsite areas and the Johnson Tract are summarized below. Appendix A contains the pre-development drainage basin map.

PRE-DEVELOPMENT BASIN DATA					
BASIN	AREA (Ac)	SOILS	LAND USE	CN	Tc
PRE 1	3.25	100% - A/D	100% woods	66	38
PRE 2	12.62	100% - A/D	100% woods	66	90
PRE 3	3.63	100% - A/D	100% woods	66	64
PRE 4	15.17	100% - A/D	100% woods	66	142

Summary - Pre–Development Run-Off

Design Storm	Run-Off (cfs)
2-Year	42
10-Year	102
25-Year	136
100-Year	186

5.0 POST-DEVELOPMENT RUN-OFF

Phase 1 of the Johnson Tract development consists of constructing approximately 85,000 sf of buildings consisting of retail buildings, restaurants, a bank, and a combined entrance road to serve both the Johnson Tract and the existing Home Depot development. This entrance road will connect to the proposed signalized intersection located between the Taco Bell / Pizza Hut Express within the Home Depot development on the north side and Starbuck Coffee shop within the Target Center Development on the south side of Highway 278. This intersection will reduce the capacity of the existing Home Depot retention pond adjacent to the wetlands. The proposed 2.36-acre Pond #4 shall provide additional storm water capacity as necessary to handle that amount displaced by the removal of the Home Depot detention pond.

Post-development run-off from the proposed site will be routed into its respective wet detention pond. The offsite runoff draining to the eastern SCDOT drainage outfall ditch will be routed through the onsite detention ponds #3 and pond #4 to provide water quality. The offsite runoff draining to the western SCDOT drainage outfall ditch will be piped straight through the site to the Crescent Subdivision and will not be treated.

The onsite post development curve numbers were calculated by the ICPR program rather than computing a weighted curve number. This method weights a curve number for the drainage basin based on a percentage of directly connected impervious area (DCIA) which has a curve number of 98. Appendix A contains the post-development drainage basin map.

Summary - Post–Development Run-Off

Design Storm	Run-Off (cfs)
2-Year	30
10-Year	65
25-Year	106
100-Year	162

6.0 FIRST FLUSH CALCULATIONS

The South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management requires that the first half (1/2) inch of run-off over the entire site or the first one (1) inch of run-off over the built upon portion of the site depending on which is greater be stored and released over a twenty-four (24) hour period.

For wet detention ponds, Beaufort County BMP requires that the first one (1") inch of run-off over the entire site or the first three (3") inches of run-off over the built upon portion of the site, depending on which is greater, be stored and released over a twenty-four (24) hour period.

An ICPR model was set up to analyze the drawdown on the water surface elevation for the pond to insure that the release time is greater than 24 hours. The Beaufort County BMP manual was used to set the initial water stage because its requirement exceeded that of SCDHEC-OCRM. Appendix D includes the model results and the Time- Stage plot.

EXAMPLE WET DETENTION FIRST FLUSH REQUIRED STORAGE

BASIN 1 (POND 1)

One (1") inch over site = 1" x 2.06 Ac x (1/12) = 0.17 Ac-ft
Three (3") inches over built upon portion = 3" x 1.74 Ac x (1/12) = 0.435 Ac-ft
*Use 0.44 Ac-ft

Therefore, the rise in the pond due to the first flush runoff will be 2.85ft corresponding to a stage of 18.15. A single three (3") inch diameter orifice was set at elevation 15.3 to release the first flush volume over a 24-hour period. A summary of the input data and results are in Appendix E.

7.0 SEDIMENT TRAPPING CALCULATIONS

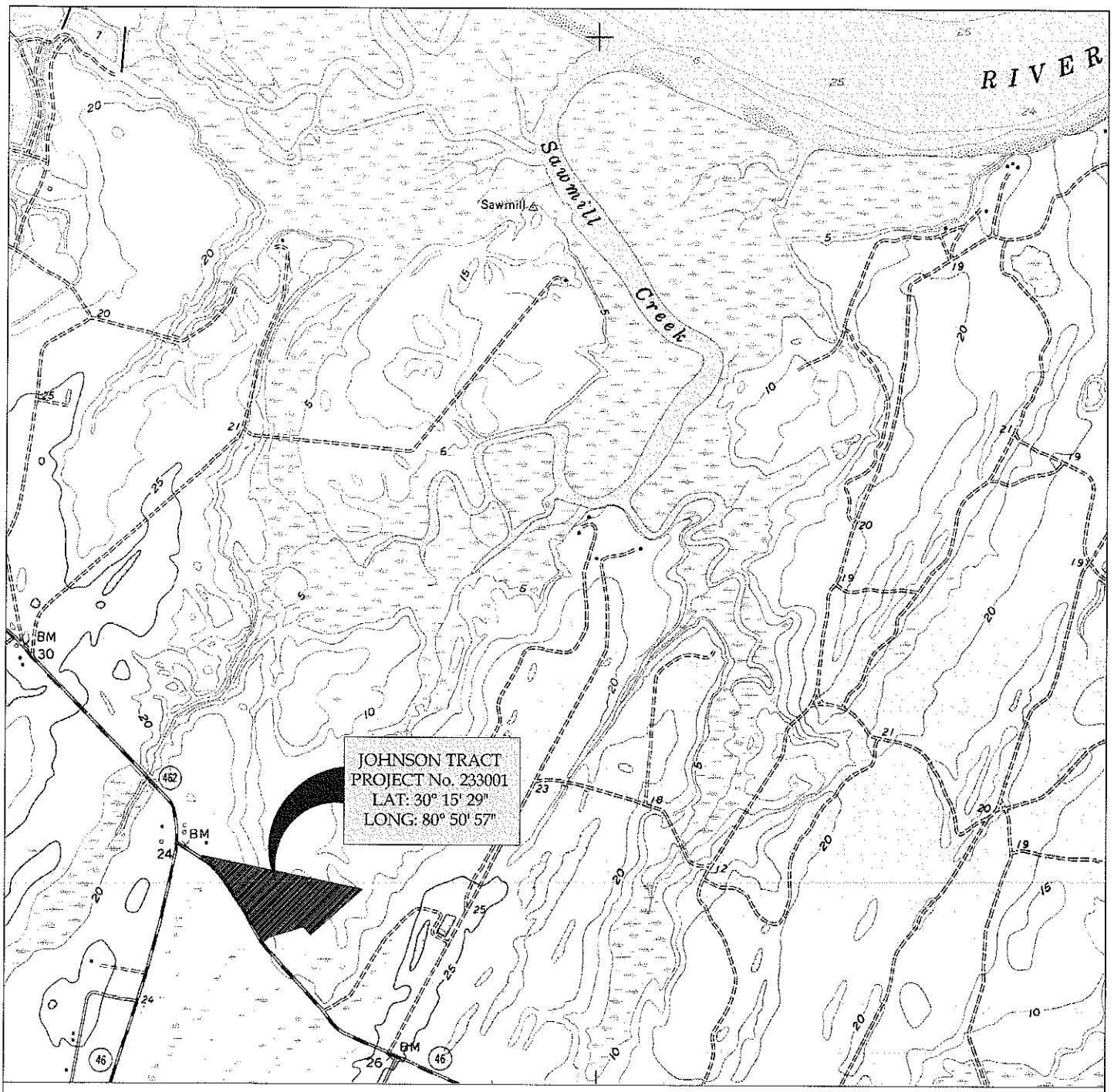
Detention ponds are sized based on the methods and figures provided in Appendix E of the OCRM handbook to achieve the required 80 % removal efficiency. The pond will release the first flush volume of over 24 hours, but the soil particle distribution for ponds 1 and 2 deemed too small for the high release rate, therefore a StormCeptor is required to provide pre- treatment for the first flush. The StormCeptor is sized based on the upstream drainage area and its corresponding impervious percentage. A summary of the input data and results are in Appendix E.

8.0 SUMMARY AND CONCLUSIONS

The proposed storm drainage and detention ponds will limit post-development run-off rates to rates that are equal to or less than pre-development conditions for the two (2), ten (10), and twenty-five (25) year storm events. The combination of the StormCeptor and detention pond will collectively treat the first flush volume. Energy dissipating rip-rap will be placed at both SCDOT drainage outfall locations pipe. The proposed drainage structures on this site will improve the water quality of both the onsite drainage as well as provide treatment for the offsite storm water from the SCDOT, which would otherwise not be treated before discharging to the Colleton River.

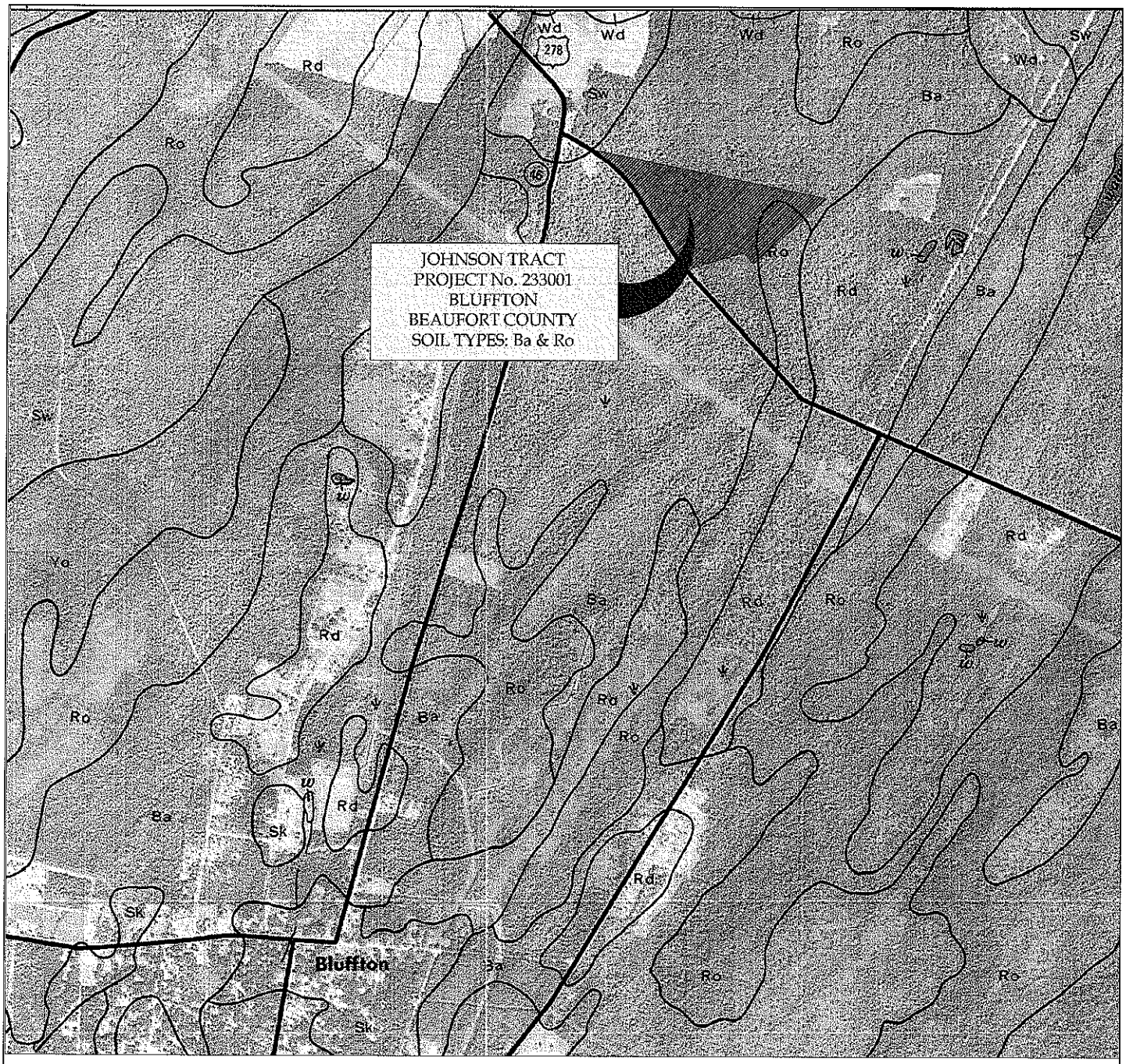
Appendix A
Site Exhibits

Andrews Engineering Co., Inc.
40-a Shanklin Road Beaufort, S.C. 29906 (843) 466-0369



USGS TOPOGRAPHIC MAP
SPRING ISLAND QUADRANGLE
7.5 MINUTE SERIES

Andrews Engineering Co., Inc.
40-a Shanklin Road Beaufort, S.C. 29906 (843) 466-0369



SCS SOILS SURVEY
FOR
BEAUFORT AND JASPER COUNTIES
SHEET #92

Appendix B
ICPR Model Input

==== Basins ====

Name: FOODLION
Group: BASE
Node: FLPOND
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 10.230
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 17.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: GRAY1
Group: BASE
Node: GP1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 4.110
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 12.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: GRAY2
Group: BASE
Node: GP2
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 6.590
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 20.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: GRAY3
Group: BASE
Node: GP3
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 1.980
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 44.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HOMED1
Group: PRE
Node: HDP1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 12.610
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 20.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HOMED2
Group: BASE
Node: HDP2
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 5.180
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 14.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HWY2 Node: XDOT2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 47.00
Area(ac): 0.610 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY3 Node: H3N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 60.00
Area(ac): 1.020 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY4 Node: XDOT3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 31.00
Area(ac): 0.640 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY5 Node: H5N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 53.00
Area(ac): 0.640 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY6 Node: H6N3 Status: Onsite
Group: PRE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 57.00
Area(ac): 4.010 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY7 Node: XDOT4 Status: Onsite
Group: PRE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 88.00
Area(ac): 3.030 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY8 Node: H8N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00

Rainfall Amount(in): 8.000
Area(ac): 0.720
Curve Number: 69.00
DCIA(%): 0.00
Time of Conc(min): 77.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HWY9
Group: BASE
Node: H9N1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 1.800
Curve Number: 69.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 89.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT PRE1
Group: PRE
Node: JT PRE1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 3.250
Curve Number: 66.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 38.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT PRE2
Group: PRE
Node: JT PRE2
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 12.620
Curve Number: 66.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 90.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT PRE3
Group: PRE
Node: BNDY3
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 3.630
Curve Number: 66.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 64.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT PRE4
Group: PRE
Node: JT PRE4
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 15.170
Curve Number: 66.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 142.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JTWET
Group: PRE
Node: W1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 12.590
Curve Number: 66.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 142.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: KITTIESK Node: KKPOND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 12.00
Area(ac): 4.070 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: KITTIESL Node: KLP Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 64.00
Area(ac): 20.050 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF1 Node: OP1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 54.00
Area(ac): 10.610 Time Shift(hrs): 0.00
Curve Number: 36.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF2 Node: OP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 56.00
Area(ac): 6.920 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF3 Node: OP3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 18.00
Area(ac): 4.870 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF4 Node: ON2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 50.00
Area(ac): 0.990 Time Shift(hrs): 0.00
Curve Number: 36.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: TARGET1 Node: TARP1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 30.00
Area(ac): 20.840 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: TARGET2 Node: TARP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 50.00
Area(ac): 28.850 Time Shift(hrs): 0.00
Curve Number: 60.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET2 Node: W2N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 91.00
Area(ac): 4.190 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET3 Node: W3N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 94.00
Area(ac): 4.310 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET4 Node: W4N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 85.00
Area(ac): 4.630 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========
==== Nodes ==========
==========

Name: BNDY1 Base Flow(cfs): 0.000 Init Stage(ft): 8.800
Group: PRE Warn Stage(ft): 11.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	8.800
60.00	8.800

Name: BNDY2 Base Flow(cfs): 0.000 Init Stage(ft): 11.200
Group: PRE Warn Stage(ft): 12.200
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	11.200
60.00	11.200

Name: BNDY3 Base Flow(cfs): 0.000 Init Stage(ft): 16.000
Group: PRE Warn Stage(ft): 18.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	16.000
60.00	16.000

Name: BRIDGE Base Flow(cfs): 0.000 Init Stage(ft): 9.000
Group: PRE Warn Stage(ft): 12.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: CN2 Base Flow(cfs): 0.000 Init Stage(ft): 11.200
Group: PRE Warn Stage(ft): 13.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: FLPOND Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.3100
23.000	0.6100

Name: GP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.0800
23.000	0.1600

Name: GP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.3500
22.000	0.5100

Name: GP3 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)

19.000	0.0300
23.000	0.0800

Name: H3N1 Base Flow(cfs): 0.000 Init Stage(ft): 18.300
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H5N1 Base Flow(cfs): 0.000 Init Stage(ft): 16.500
Group: BASE Plunge Factor: 1.00 Warn Stage(ft): 19.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)

Name: H6N1 Base Flow(cfs): 0.000 Init Stage(ft): 17.280
Group: PRE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H6N2 Base Flow(cfs): 0.000 Init Stage(ft): 16.380
Group: PRE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H6N3 Base Flow(cfs): 0.000 Init Stage(ft): 16.020
Group: PRE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H7N3 Base Flow(cfs): 0.000 Init Stage(ft): 17.700
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H8N1 Base Flow(cfs): 0.000 Init Stage(ft): 15.060
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H9N1 Base Flow(cfs): 0.000 Init Stage(ft): 15.800
Group: BASE Warn Stage(ft): 19.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: HDP1 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: PRE Warn Stage(ft): 16.500
Type: Stage/Area

Stage(ft)	Area(ac)
12.000	0.8000
17.000	1.2000

Name: HDP2 Base Flow(cfs): 0.000 Init Stage(ft): 17.000
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
14.000	0.1000
15.000	0.1500
16.000	0.1800
17.000	0.2300
18.000	0.2800
19.000	0.3300
20.000	0.3900

Name: JT PRE1 Base Flow(cfs): 0.000 Init Stage(ft): 17.000
Group: PRE Warn Stage(ft): 19.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: JT PRE2 Base Flow(cfs): 0.000 Init Stage(ft): 11.000
Group: PRE Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: JT PRE4 Base Flow(cfs): 0.000 Init Stage(ft): 15.000
Group: PRE Warn Stage(ft): 16.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: KKPOND Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.1400
23.000	0.3200

Name: KLP Base Flow(cfs): 0.000 Init Stage(ft): 21.700
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
21.690	0.7800
22.000	0.8500
23.000	0.9200

Name: ON1 Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: ON2 Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: OP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.500
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	2.4300
19.000	2.5500
20.000	2.6800
21.000	2.8100
22.000	2.9500

Name: OP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.2200
24.000	0.2700

Name: OP3 Base Flow(cfs): 0.000 Init Stage(ft): 22.000
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)
22.000	0.4500
24.000	0.5800

Name: TARP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: PRE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
15.000	0.3300
16.000	0.3700
17.000	0.4000
18.000	0.4300
19.000	0.4800
20.000	0.5300
21.000	0.5900
22.000	0.6400
23.000	0.7000

Name: TARP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.500
Group: BASE Warn Stage(ft): 22.500
Type: Stage/Area

Stage(ft)	Area(ac)
18.500	1.3900
19.500	1.4600
20.500	1.5500
21.500	1.6500
22.500	1.7500

Name: W2N1 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W2N2 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W2N3 Base Flow(cfs): 0.000 Init Stage(ft): 17.500
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W3N1 Base Flow(cfs): 0.000 Init Stage(ft): 21.500
Group: BASE Warn Stage(ft): 22.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W3N2 Base Flow(cfs): 0.000 Init Stage(ft): 21.800
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N1 Base Flow(cfs): 0.000 Init Stage(ft): 23.500
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N2 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N3 Base Flow(cfs): 0.000 Init Stage(ft): 19.800

Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT1 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: PRE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT2 Base Flow(cfs): 0.000 Init Stage(ft): 17.300
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT3 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: BASE Warn Stage(ft): 17.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT4 Base Flow(cfs): 0.000 Init Stage(ft): 14.500
Group: PRE Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT5 Base Flow(cfs): 0.000 Init Stage(ft): 15.500
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)

Cross Sections

Name: outfall-ds Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	13.000	0.050000
6.400	12.450	0.050000
9.500	11.500	0.050000
13.000	11.330	0.050000
18.000	10.290	0.050000
22.000	11.250	0.050000
24.000	11.300	0.050000
35.000	13.500	0.050000

Name: outfall-us Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	13.460	0.050000
5.300	10.820	0.050000
7.000	9.640	0.050000
9.000	9.310	0.050000
14.000	10.780	0.050000
22.000	14.380	0.050000

Name: R7-ds Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	20.360	0.050000
2.240	20.000	0.050000
11.480	19.000	0.050000
16.080	18.000	0.050000
18.910	17.000	0.050000
21.030	16.000	0.050000
21.380	15.000	0.050000
22.090	14.000	0.050000
25.160	13.000	0.050000
26.060	12.820	0.050000
26.220	13.000	0.050000
28.870	14.000	0.050000
30.230	15.000	0.050000
31.480	16.000	0.050000
56.950	17.000	0.050000

Name: R7-up Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	20.560	0.050000
4.790	20.000	0.050000
13.160	19.000	0.050000
18.330	18.000	0.050000
21.460	17.000	0.050000
23.630	16.000	0.050000
24.270	15.000	0.050000
25.350	14.000	0.050000
27.910	13.470	0.050000
30.780	14.000	0.050000
33.150	15.000	0.050000
34.360	16.000	0.050000
54.410	17.000	0.050000

Pipes

Name: CN2-BNDY2 From Node: CN2 Length(ft): 48.00
Group: PRE To Node: BNDY2 Count: 6
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	15.00	15.00
Rise(in):	15.00	15.00
Invert(ft):	11.200	11.200
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: GP2-GP1 From Node: GP2 Length(ft): 260.00
Group: BASE To Node: GP1 Count: 1
Friction Equation: Average Conveyance

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	18.000	17.300
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: GP3-GP1 From Node: GP3 Length(ft): 330.00
Group: BASE To Node: GP1 Count: 1
Friction Equation: Average Conveyance

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	18.800	17.800
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: H3N1-H2N1 From Node: H3N1 Length(ft): 74.00
Group: BASE To Node: XDOT2 Count: 2
Friction Equation: Average Conveyance

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	18.300	18.140
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: H5N1-XDOT3 From Node: H5N1 Length(ft): 64.00
Group: BASE To Node: XDOT3 Count: 1
Friction Equation: Average Conveyance

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	18.00	18.00
Rise(in):	18.00	18.00
Invert(ft):	16.580	16.070
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: H6N2-H6N3 From Node: H6N2 Length(ft): 125.00
Group: PRE To Node: H6N3 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Horz Ellipse	Horz Ellipse
Span(in):	42.00	42.00
Rise(in):	27.00	27.00
Invert(ft):	16.380	16.020
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Name: H6N3-H8N1 From Node: H6N3 Length(ft): 75.00
Group: PRE To Node: H8N1 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dn or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	16.060	15.100
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: H6N3-XDOT4 From Node: H6N3 Length(ft): 140.00
Group: PRE To Node: XDOT4 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	16.020	15.190
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: H8N1-XDOT4 From Node: H8N1 Length(ft): 80.00
Group: BASE To Node: XDOT4 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular

Span(in):	24.00	24.00	Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	15.060	14.810	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	H9N1-XDOT5	From Node: H9N1	Length(ft):	70.00
Group:	BASE	To Node: XDOT5	Count:	2
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	24.00	24.00	Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	15.800	15.500	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	ON2-H3N1	From Node: ON2	Length(ft):	68.00
Group:	BASE	To Node: H3N1	Count:	1
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	30.00	30.00	Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00	Exit Loss Coef:	0.00
Invert(ft):	18.350	18.300	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	OP1-W2N1	From Node: OP1	Length(ft):	24.00
Group:	BASE	To Node: W2N1	Count:	3
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	24.00	24.00	Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	20.200	20.200	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	TARP2-TARP1	From Node:	TARP2	Length(ft):	480.00
Group:	BASE	To Node:	TARP1	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	30.00	30.00		Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00		Exit Loss Coef:	0.00
Invert(ft):	12.880	15.500		Bend Loss Coef:	0.00
Manning's N:	0.011000	0.011000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W2N3-H9N1	From Node:	W2N3	Length(ft):	60.00
Group:	BASE	To Node:	H9N1	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	16.200	15.800		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W3N1-W2N1	From Node:	W3N1	Length(ft):	40.00
Group:	BASE	To Node:	W2N1	Count:	2
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	30.00	30.00		Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00		Exit Loss Coef:	0.00
Invert(ft):	21.500	20.200		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W4N2-W4N3	From Node:	W4N2	Length(ft):	60.00
Group:	BASE	To Node:	W4N3	Count:	2
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	20.200	19.800		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: W4N3-W2N3 From Node: W4N3 Length(ft): 320.00
Group: BASE To Node: W2N3 Count: 2
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	19.800	17.500
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

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==== Channels ====
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Name: BRIDGE-BNDY1 From Node: BRIDGE Length(ft): 100.00
Group: PRE To Node: BNDY1 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	9.000	8.800
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.030000	0.030000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Name: H6N1-H6N2 From Node: H6N1 Length(ft): 165.00
Group: PRE To Node: H6N2 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	17.280	16.380
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.035000	0.035000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	4.000	4.000
LtSdSlp(h/v):	4.00	4.00
RtSdSlp(h/v):	4.00	4.00

Name: H7N3-XDOT5 From Node: H7N3 Length(ft): 640.00
Group: BASE To Node: XDOT5 Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	17.700	15.500
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.025000	0.025000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	4.00	4.00
RtSdSlp(h/v):	4.00	4.00

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Name: JT PRE1-BRIDGE From Node: JT PRE1 Length(ft): 630.00
Group: PRE To Node: BRIDGE Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	17.000	9.000
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.050000	0.050000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Name: JT PRE2-BRIDGE From Node: JT PRE2 Length(ft): 100.00
Group: PRE To Node: BRIDGE Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	9.350	9.000
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.050000	0.050000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

Name: JT PRE4-CN2 From Node: JT PRE4 Length(ft): 2100.00
Group: PRE To Node: CN2 Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	15.000	11.200
TClpInitZ(ft):	9999.000	9999.000

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000

Manning's N:	0.200000	0.200000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	100.000	100.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	KLP-TARP2	From Node: KLP	Length(ft):	650.00
Group:	BASE	To Node: TARP2	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation:	Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm:	Automatic
Invert(ft):	21.700	20.700	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.050000	0.050000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name:	ON1-ON2	From Node: ON1	Length(ft):	250.00
Group:	BASE	To Node: ON2	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation:	Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm:	Automatic
Invert(ft):	18.350	18.350	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.030000	0.030000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name:	TARP2-OP1	From Node: TARP2	Length(ft):	800.00
Group:	BASE	To Node: OP1	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation:	Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm:	Automatic
Invert(ft):	21.700	21.200	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.030000	0.030000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		

LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Name:	W2N1-W2N2	From Node: W2N1	Length(ft):	350.00
Group:	BASE	To Node: W2N2	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	20.200	20.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	30.000	20.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	W2N2-W2N3	From Node: W2N2	Length(ft):	450.00
Group:	BASE	To Node: W2N3	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	20.200	20.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	20.000	15.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	W3N2-W3N1	From Node: W3N2	Length(ft):	500.00
Group:	BASE	To Node: W3N1	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	21.800	21.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	25.000	15.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	W4N1-W4N2	From Node: W4N1	Length(ft):	700.00
Group:	BASE	To Node: W4N2	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
			Solution Algorithm:	Automatic

Invert(ft):	23.500	20.200	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.500000	0.500000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	25.000	15.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	XDOT1-XDOT2	From Node: XDOT1	Length(ft):	400.00
Group:	PRE	To Node: XDOT2	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	19.000	17.300	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name:	XDOT2-JT PRE1	From Node: XDOT2	Length(ft):	30.00
Group:	PRE	To Node: JT PRE1	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	17.300	17.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name:	XDOT3-JT PRE2	From Node: XDOT3	Length(ft):	1100.00
Group:	PRE	To Node: JT PRE2	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	13.000	9.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				

Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Name:	XDOT4-XDOT3	From Node:	XDOT4	Length(ft): 300.00
Group:	BASE	To Node:	XDOT3	Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	14.500	13.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.030000	0.030000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.50	2.50		
RtSdSlp(h/v):	2.50	2.50		

Name:	XDOT5-XDOT4	From Node:	XDOT5	Length(ft): 800.00
Group:	BASE	To Node:	XDOT4	Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	15.500	14.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.025000	0.025000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	4.000	4.000		
LtSdSlp(h/v):	4.00	4.00		
RtSdSlp(h/v):	4.00	4.00		

==========

Drop Structures

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Name:	FLPOND-ON1	From Node:	FLPOND	Length(ft): 30.00
Group:	BASE	To Node:	ON1	Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	30.00	30.00	Solution Algorithm:	Automatic
Rise(in):	30.00	30.00	Flow:	Both
Invert(ft):	18.350	18.350	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure FLPOND-ON1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000

Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	8.00	Invert(ft):	18.350
Rise(in):	8.00	Control Elev(ft):	18.350

*** Weir 2 of 2 for Drop Structure FLPOND-ON1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	36.00	Invert(ft):	21.500
Rise(in):	36.00	Control Elev(ft):	21.500

Name:	GP1-H7N3	From Node: GP1	Length(ft): 50.00
Group:	BASE	To Node: H7N3	Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	15.00	15.00	Solution Algorithm:	Automatic
Rise(in):	15.00	15.00	Flow:	Both
Invert(ft):	18.000	17.700	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure GP1-H7N3 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	6.00	Invert(ft):	18.000
Rise(in):	6.00	Control Elev(ft):	18.000

*** Weir 2 of 2 for Drop Structure GP1-H7N3 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	24.00	Invert(ft):	20.000
Rise(in):	15.00	Control Elev(ft):	20.000

Name:	HDP1-XDOT4	From Node: HDP1	Length(ft): 40.00
Group:	PRE	To Node: XDOT4	Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	15.00	15.00	Solution Algorithm:	Automatic
Rise(in):	15.00	15.00	Flow:	Both
Invert(ft):	14.600	14.500	Entrance Loss Coef:	0.500
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.500
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure HDP1-XDOT4 ***

TABLE

Count:	1	Bottom Clip(in):	0.000

```
                Type: Vertical: Mavis          Top Clip(in): 0.000
                Flow: Both                   Weir Disc Coef: 3.200
            Geometry: Circular             Orifice Disc Coef: 0.600

            Span(in): 6.00                       Invert(ft): 14.800
            Rise(in): 6.00                    Control Elev(ft): 14.800

*** Weir 2 of 2 for Drop Structure HDP1-XDOT4 ***
                                                                    TABLE
               Count: 1                     Bottom Clip(in): 0.000
                Type: Horizontal              Top Clip(in): 0.000
                Flow: Both                   Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 24.00                      Invert(ft): 15.600
            Rise(in): 24.00                   Control Elev(ft): 15.600


-------------------------------------------------------------------------------------------------
        Name: HDP2-HDP1          From Node: HDP2              Length(ft): 1015.00
       Group: BASE                 To Node: HDP1                   Count: 1

             UPSTREAM      DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular     Circular               Solution Algorithm: Automatic
    Span(in): 36.00        36.00                             Flow: Both
    Rise(in): 36.00        36.00                  Entrance Loss Coef: 0.000
   Invert(ft): 14.700      12.000                     Exit Loss Coef: 0.000
  Manning's N: 0.013000    0.013000                 Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000       0.000                     Inlet Ctrl Spec: Use dn
 Bot Clip(in): 0.000       0.000                       Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure HDP2-HDP1 ***
                                                                    TABLE
               Count: 1                     Bottom Clip(in): 0.000
                Type: Vertical: Mavis         Top Clip(in): 0.000
                Flow: Both                   Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 12.00                      Invert(ft): 17.500
            Rise(in): 30.00                   Control Elev(ft): 17.500

*** Weir 2 of 3 for Drop Structure HDP2-HDP1 ***
                                                                    TABLE
               Count: 1                     Bottom Clip(in): 0.000
                Type: Vertical: Mavis         Top Clip(in): 0.000
                Flow: Both                   Weir Disc Coef: 3.200
            Geometry: Circular             Orifice Disc Coef: 0.600

            Span(in): 3.00                       Invert(ft): 17.000
            Rise(in): 3.00                    Control Elev(ft): 17.000

*** Weir 3 of 3 for Drop Structure HDP2-HDP1 ***
                                                                    TABLE
               Count: 1                     Bottom Clip(in): 0.000
                Type: Horizontal              Top Clip(in): 0.000
                Flow: Both                   Weir Disc Coef: 3.200
            Geometry: Circular             Orifice Disc Coef: 0.600

            Span(in): 36.00                      Invert(ft): 20.000
            Rise(in): 36.00                   Control Elev(ft): 20.000


-------------------------------------------------------------------------------------------------
        Name: KKPOND-ON2         From Node: KKPOND            Length(ft): 300.00
       Group: BASE                 To Node: ON2                    Count: 1

             UPSTREAM      DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular     Circular               Solution Algorithm: Automatic
    Span(in): 30.00        30.00                             Flow: Both
    Rise(in): 30.00        30.00                  Entrance Loss Coef: 0.000
   Invert(ft): 18.350      18.350                     Exit Loss Coef: 0.000
  Manning's N: 0.013000    0.013000                 Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000       0.000                     Inlet Ctrl Spec: Use dn
 Bot Clip(in): 0.000       0.000                       Solution Incs: 10
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure KKPOND-ON2 ***

TABLE

Count:	2	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	8.00	Invert(ft):	18.350
Rise(in):	8.00	Control Elev(ft):	18.350

*** Weir 2 of 2 for Drop Structure KKPOND-ON2 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	36.00	Invert(ft):	21.700
Rise(in):	36.00	Control Elev(ft):	21.700

Name:	TARP1-H6N1	From Node: TARP1	Length(ft): 355.00
Group:	PRE	To Node: H6N1	Count: 2

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	24.00	24.00	Solution Algorithm:	Automatic
Rise(in):	24.00	24.00	Flow:	Both
Invert(ft):	17.960	17.280	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

*** Weir 1 of 4 for Drop Structure TARP1-H6N1 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	12.00	Invert(ft):	18.500
Rise(in):	6.00	Control Elev(ft):	18.500

*** Weir 2 of 4 for Drop Structure TARP1-H6N1 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	36.00	Invert(ft):	19.000
Rise(in):	12.00	Control Elev(ft):	19.000

*** Weir 3 of 4 for Drop Structure TARP1-H6N1 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	68.00	Invert(ft):	20.000
Rise(in):	12.00	Control Elev(ft):	20.000

*** Weir 4 of 4 for Drop Structure TARP1-H6N1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000

```
                Type: Horizontal                Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 72.00                       Invert(ft): 21.000
            Rise(in): 72.00                Control Elev(ft): 21.000


================================================================================
==== Weirs =====================================================================
================================================================================

        Name: HDP1-JT PRE4          From Node: HDP1
       Group: PRE                     To Node: JT PRE4
        Flow: Both                      Count: 1
        Type: Vertical: Gravel      Geometry: Trapezoidal

          Bottom Width(ft): 10.00
     Left Side Slope(h/v): 4.00
    Right Side Slope(h/v): 4.00
             Invert(ft): 15.750
   Control Elevation(ft): 15.750
  Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
     Weir Discharge Coef: 3.200
  Orifice Discharge Coef: 0.600


--------------------------------------------------------------------------------

        Name: HDP1-XDOT4 eo         From Node: HDP1
       Group: PRE                     To Node: XDOT4
        Flow: Both                      Count: 1
        Type: Vertical: Gravel      Geometry: Trapezoidal

          Bottom Width(ft): 20.00
     Left Side Slope(h/v): 6.00
    Right Side Slope(h/v): 6.00
             Invert(ft): 14.800
   Control Elevation(ft): 14.800
  Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
     Weir Discharge Coef: 3.200
  Orifice Discharge Coef: 0.600


--------------------------------------------------------------------------------

        Name: OP1-W3N1              From Node: OP1
       Group: BASE                    To Node: W3N1
        Flow: Both                      Count: 1
        Type: Vertical: Mavis       Geometry: Trapezoidal

          Bottom Width(ft): 25.00
     Left Side Slope(h/v): 4.00
    Right Side Slope(h/v): 4.00
             Invert(ft): 21.500
   Control Elevation(ft): 21.500
  Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
     Weir Discharge Coef: 3.200
  Orifice Discharge Coef: 0.600


--------------------------------------------------------------------------------

        Name: OP2-W3N2              From Node: OP2
       Group: BASE                    To Node: W3N2
        Flow: Both                      Count: 1
        Type: Vertical: Mavis       Geometry: Trapezoidal

          Bottom Width(ft): 10.00
     Left Side Slope(h/v): 4.00
    Right Side Slope(h/v): 4.00
             Invert(ft): 21.800
   Control Elevation(ft): 21.800
  Struct Opening Dim(ft): 9999.00
```

TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OP3-W4N1 From Node: OP3
Group: BASE To Node: W4N1
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 25.00
Left Side Slope(h/v): 4.00
Right Side Slope(h/v): 4.00
Invert(ft): 23.500
Control Elevation(ft): 23.500
Struct Opening Dim(ft): 9999.00
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

==========

==== Hydrology Simulations ====

==========

Name: 002
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\002.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 4.50

Time(hrs)	Print Inc(min)
60.000	15.00

Name: 010
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\010.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 6.80

Time(hrs)	Print Inc(min)
60.000	15.00

Name: 025
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\025.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
60.000	15.00

Name: 100
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\100.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 10.00

Time(hrs)	Print Inc(min)
60.000	15.00

==========
==== Routing Simulations ==========
==========

Name: 002 Hydrology Sim: 002
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\002.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
PRE	Yes

Name: 010 Hydrology Sim: 010
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\010.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
PRE	Yes

Name: 025 Hydrology Sim: 025
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\025.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
PRE	Yes

Name: 100 Hydrology Sim: 100
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\pre\100.I32

Execute: Yes Restart: No Patch: No

Alternative: No

Max Delta Z(ft):	1.00	Delta Z Factor:	0.00500
Time Step Optimizer:	10.000		
Start Time(hrs):	0.000	End Time(hrs):	60.00
Min Calc Time(sec):	0.5000	Max Calc Time(sec):	60.0000
Boundary Stages:		Boundary Flows:	

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
PRE	Yes

Boundary Conditions

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233001 Johnson Tract
PREDEV - CN & Tc Calculations
Beaufort County, South Carolina

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Pre Dev1							
SHEET	100	0.0140	0.800				0.606
SHALLOW	150	0.0140	0.050				0.022
					Time of Concentration		.628
Pre Dev2							
SHEET	100	0.0022	0.800				1.271
SHALLOW	585	0.0020	0.050				0.225
					Time of Concentration		1.496
Pre Dev3							
SHEET	100	0.0040	0.800				1.000
SHALLOW	285	0.0040	0.050				0.078
					Time of Concentration		1.078
Pre Dev4							
SHEET	100	0.0013	0.800				1.568
SHALLOW	1600	0.0012	0.050				0.795
					Time of Concentration		2.363

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PREDEV - CN & Tc Calculations
Beaufort County, South Carolina

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Pre Dev1	Woods	(poor)	B	3.25	66
	Total Area / Weighted Curve Number			3.25	66
Pre Dev2	Woods	(poor)	B	12.63	66
	Total Area / Weighted Curve Number			12.63	66
Pre Dev3	Woods	(poor)	B	3.63	66
	Total Area / Weighted Curve Number			3.63	66
Pre Dev4	Woods	(poor)	B	15.17	66
	Total Area / Weighted Curve Number			15.17	66

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==== Basins ====
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Name: FOODLION Node: FLPOND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 17.00
Area(ac): 10.230 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: GRAY1 Node: GP1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 12.00
Area(ac): 4.110 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: GRAY2 Node: GP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 20.00
Area(ac): 6.590 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: GRAY3 Node: GP3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 44.00
Area(ac): 1.980 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HOMED2 Node: HDP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 14.00
Area(ac): 5.180 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY1 Node: XDOT1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 57.00
Area(ac): 1.760 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY2 Node: XDOT2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 47.00
Area(ac): 0.610 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY3 Node: H3N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 60.00
Area(ac): 1.020 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY4 Node: XDOT3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 31.00
Area(ac): 0.640 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY5 Node: H5N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 53.00
Area(ac): 0.640 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY8 Node: H8N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 77.00
Area(ac): 0.720 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: HWY9 Node: H9N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 89.00
Area(ac): 1.800 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: KITTIESK Node: KKPOND Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00

Rainfall Amount(in): 8.000 Time of Conc(min): 12.00
Area(ac): 4.070 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: KITTIESL Node: KLP Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 64.00
Area(ac): 20.050 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF1 Node: OP1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 54.00
Area(ac): 10.610 Time Shift(hrs): 0.00
Curve Number: 36.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF2 Node: OP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 56.00
Area(ac): 6.920 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF3 Node: OP3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 18.00
Area(ac): 4.870 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: OFF4 Node: ON2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 50.00
Area(ac): 0.990 Time Shift(hrs): 0.00
Curve Number: 36.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: TARGET1 Node: TARP1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 30.00
Area(ac): 20.840 Time Shift(hrs): 0.00
Curve Number: 80.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: TARGET2 Node: TARP2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 50.00
Area(ac): 28.850 Time Shift(hrs): 0.00
Curve Number: 60.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET2 Node: W2N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 91.00
Area(ac): 4.190 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET3 Node: W3N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 94.00
Area(ac): 4.310 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: WET4 Node: W4N1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 85.00
Area(ac): 4.630 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Nodes

Name: FLPOND Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.3100
23.000	0.6100

Name: GP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.0800
23.000	0.1600

Name: GP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.000

Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.3500
22.000	0.5100

Name: GP3 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
19.000	0.0300
23.000	0.0800

Name: H3N1 Base Flow(cfs): 0.000 Init Stage(ft): 18.300
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H5N1 Base Flow(cfs): 0.000 Init Stage(ft): 16.500
Group: BASE Plunge Factor: 1.00 Warn Stage(ft): 19.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)

Name: H7N3 Base Flow(cfs): 0.000 Init Stage(ft): 17.700
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H8N1 Base Flow(cfs): 0.000 Init Stage(ft): 15.060
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H9N1 Base Flow(cfs): 0.000 Init Stage(ft): 15.800
Group: BASE Warn Stage(ft): 19.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: HDP2 Base Flow(cfs): 0.000 Init Stage(ft): 17.000
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
14.000	0.1000
15.000	0.1500

16.000	0.1800
17.000	0.2300
18.000	0.2800
19.000	0.3300
20.000	0.3900

Name: KKPOND Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.1400
23.000	0.3200

Name: KLP Base Flow(cfs): 0.000 Init Stage(ft): 21.700
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)
21.690	0.7800
22.000	0.8500
23.000	0.9200

Name: ON1 Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: ON2 Base Flow(cfs): 0.000 Init Stage(ft): 18.350
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: OP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.500
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	2.4300
19.000	2.5500
20.000	2.6800
21.000	2.8100
22.000	2.9500

Name: OP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)
18.000	0.2200
24.000	0.2700

Name: OP3 Base Flow(cfs): 0.000 Init Stage(ft): 22.000
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)
22.000	0.4500
24.000	0.5800

Name: TARP2 Base Flow(cfs): 0.000 Init Stage(ft): 18.500
Group: BASE Warn Stage(ft): 22.500
Type: Stage/Area

Stage(ft)	Area(ac)
18.500	1.3900
19.500	1.4600
20.500	1.5500
21.500	1.6500
22.500	1.7500

Name: W2N1 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W2N2 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W2N3 Base Flow(cfs): 0.000 Init Stage(ft): 17.500
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W3N1 Base Flow(cfs): 0.000 Init Stage(ft): 21.500
Group: BASE Warn Stage(ft): 22.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W3N2 Base Flow(cfs): 0.000 Init Stage(ft): 21.800
Group: BASE Warn Stage(ft): 23.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N1 Base Flow(cfs): 0.000 Init Stage(ft): 23.500
Group: BASE Warn Stage(ft): 24.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N2 Base Flow(cfs): 0.000 Init Stage(ft): 20.200
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: W4N3 Base Flow(cfs): 0.000 Init Stage(ft): 19.800
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT1 Base Flow(cfs): 0.000 Init Stage(ft): 19.000
Group: BASE Warn Stage(ft): 21.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT2 Base Flow(cfs): 0.000 Init Stage(ft): 17.300
Group: BASE Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT3 Base Flow(cfs): 0.000 Init Stage(ft): 16.070
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT5 Base Flow(cfs): 0.000 Init Stage(ft): 15.500
Group: BASE Warn Stage(ft): 18.000
Type: Stage/Area

Stage(ft)	Area(ac)

Cross Sections

Name: outfall-ds Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	13.000	0.050000
6.400	12.450	0.050000
9.500	11.500	0.050000
13.000	11.330	0.050000
18.000	10.290	0.050000
22.000	11.250	0.050000
24.000	11.300	0.050000
35.000	13.500	0.050000

Name: outfall-us Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	13.460	0.050000
5.300	10.820	0.050000
7.000	9.640	0.050000
9.000	9.310	0.050000
14.000	10.780	0.050000
22.000	14.380	0.050000

Name: R7-ds Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	20.360	0.050000
2.240	20.000	0.050000
11.480	19.000	0.050000
16.080	18.000	0.050000
18.910	17.000	0.050000
21.030	16.000	0.050000
21.380	15.000	0.050000
22.090	14.000	0.050000
25.160	13.000	0.050000
26.060	12.820	0.050000
26.220	13.000	0.050000
28.870	14.000	0.050000
30.230	15.000	0.050000
31.480	16.000	0.050000
56.950	17.000	0.050000

Name: R7-up Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	20.560	0.050000
4.790	20.000	0.050000
13.160	19.000	0.050000
18.330	18.000	0.050000
21.460	17.000	0.050000
23.630	16.000	0.050000
24.270	15.000	0.050000
25.350	14.000	0.050000
27.910	13.470	0.050000
30.780	14.000	0.050000
33.150	15.000	0.050000
34.360	16.000	0.050000
54.410	17.000	0.050000

==== Pipes ====

Name: GP2-GP1 From Node: GP2 Length(ft): 260.00
Group: BASE To Node: GP1 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	18.000	17.300
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	GP3-GP1	From Node:	GP3	Length(ft):	330.00
Group:	BASE	To Node:	GP1	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.00
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	18.800	17.800		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	H3N1-H2N1	From Node:	H3N1	Length(ft):	74.00
Group:	BASE	To Node:	XDOT2	Count:	2
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	30.00	30.00		Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00		Exit Loss Coef:	0.00
Invert(ft):	18.300	18.140		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	H5N1-XDOT3	From Node:	H5N1	Length(ft):	64.00
Group:	BASE	To Node:	XDOT3	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	18.00	18.00		Entrance Loss Coef:	0.00
Rise(in):	18.00	18.00		Exit Loss Coef:	0.00
Invert(ft):	16.580	16.070		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	H8N1-XDOT4	From Node:	H8N1	Length(ft):	80.00
Group:	BASE	To Node:	XDOT4	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	15.060	14.810		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	H9N1-XDOT5	From Node:	H9N1	Length(ft):	70.00
Group:	BASE	To Node:	XDOT5	Count:	2
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	15.800	15.500		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	ON2-H3N1	From Node:	ON2	Length(ft):	68.00
Group:	BASE	To Node:	H3N1	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	30.00	30.00		Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00		Exit Loss Coef:	0.00
Invert(ft):	18.350	18.300		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	OP1-W2N1	From Node:	OP1	Length(ft):	24.00
Group:	BASE	To Node:	W2N1	Count:	3
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic
Geometry:	Circular	Circular		Flow:	Both
Span(in):	24.00	24.00		Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00		Exit Loss Coef:	0.00
Invert(ft):	20.200	20.200		Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000		Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000		Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000		Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	TARP2-TARP1	From Node:	TARP2	Length(ft):	480.00
Group:	BASE	To Node:	TARP1	Count:	1
				Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM		Solution Algorithm:	Automatic

Geometry:	Circular	Circular	Flow:	Both
Span(in):	30.00	30.00	Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00	Exit Loss Coef:	0.00
Invert(ft):	12.880	15.500	Bend Loss Coef:	0.00
Manning's N:	0.011000	0.011000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W2N3-H9N1	From Node: W2N3	Length(ft):	60.00
Group:	BASE	To Node: H9N1	Count:	1
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	24.00	24.00	Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	16.200	15.800	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W3N1-W2N1	From Node: W3N1	Length(ft):	40.00
Group:	BASE	To Node: W2N1	Count:	2
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	30.00	30.00	Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00	Exit Loss Coef:	0.00
Invert(ft):	21.500	20.200	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	W4N2-W4N3	From Node: W4N2	Length(ft):	60.00
Group:	BASE	To Node: W4N3	Count:	2
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	24.00	24.00	Entrance Loss Coef:	0.00
Rise(in):	24.00	24.00	Exit Loss Coef:	0.00
Invert(ft):	20.200	19.800	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Name:	W4N3-W2N3	From Node: W4N3	Length(ft): 320.00
Group:	BASE	To Node: W2N3	Count: 2
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Circular	Circular	Flow: Both
Span(in):	24.00	24.00	Entrance Loss Coef: 0.00
Rise(in):	24.00	24.00	Exit Loss Coef: 0.00
Invert(ft):	19.800	17.500	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==== Channels ====

Name:	H7N3-XDOT5	From Node: H7N3	Length(ft): 640.00
Group:	BASE	To Node: XDOT5	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Trapezoidal	Trapezoidal	Flow: Both
Invert(ft):	17.700	15.500	Contraction Coef: 0.000
TClpInitZ(ft):	9999.000	9999.000	Expansion Coef: 0.000
Manning's N:	0.025000	0.025000	Entrance Loss Coef: 0.000
Top Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Main XSec:			Inlet Ctrl Spec: Use dn
AuxElev1(ft):			Stabilizer Option: None
Aux XSec1:			
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	2.000	2.000	
LtSdSlp(h/v):	4.00	4.00	
RtSdSlp(h/v):	4.00	4.00	

Name:	KLP-TARP2	From Node: KLP	Length(ft): 650.00
Group:	BASE	To Node: TARP2	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Trapezoidal	Trapezoidal	Flow: Both
Invert(ft):	21.700	20.700	Contraction Coef: 0.000
TClpInitZ(ft):	9999.000	9999.000	Expansion Coef: 0.000
Manning's N:	0.050000	0.050000	Entrance Loss Coef: 0.000
Top Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Main XSec:			Inlet Ctrl Spec: Use dn
AuxElev1(ft):			Stabilizer Option: None
Aux XSec1:			
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	2.000	2.000	
LtSdSlp(h/v):	2.00	2.00	
RtSdSlp(h/v):	2.00	2.00	

Name:	ON1-ON2	From Node: ON1	Length(ft): 250.00
Group:	BASE	To Node: ON2	Count: 1
	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance

Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm:	Automatic
Invert(ft):	18.350	18.350	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.030000	0.030000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	3.00	3.00		
RtSdSlp(h/v):	3.00	3.00		

Name:	TARP2-OP1	From Node:	TARP2	Length(ft):	800.00
Group:	BASE	To Node:	OP1	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	21.700	21.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.030000	0.030000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name:	W2N1-W2N2	From Node:	W2N1	Length(ft):	350.00
Group:	BASE	To Node:	W2N2	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	20.200	20.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	30.000	20.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	W2N2-W2N3	From Node:	W2N2	Length(ft):	450.00
Group:	BASE	To Node:	W2N3	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	20.200	20.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				

Top Width(ft):		
Depth(ft):		
Bot Width(ft):	20.000	15.000
LtSdSlp(h/v):	10.00	10.00
RtSdSlp(h/v):	10.00	10.00

Name: W3N2-W3N1 From Node: W3N2 Length(ft): 500.00
Group: BASE To Node: W3N1 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	21.800	21.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	25.000	15.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name: W4N1-W4N2 From Node: W4N1 Length(ft): 700.00
Group: BASE To Node: W4N2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	23.500	20.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.500000	0.500000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	25.000	15.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name: XDOT1-XDOT2 From Node: XDOT1 Length(ft): 400.00
Group: BASE To Node: XDOT2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	19.000	17.300	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name: XDOT3-XDOT4 From Node: XDOT3 Length(ft): 300.00
Group: BASE To Node: XDOT4 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	16.070	14.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.030000	0.030000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.50	2.50		
RtSdSlp(h/v):	2.50	2.50		

Name:	XDOT5-XDOT4	From Node:	XDOT5	Length(ft):	800.00
Group:	BASE	To Node:	XDOT4	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	15.500	14.500	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.025000	0.025000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	4.000	4.000		
LtSdSlp(h/v):	4.00	4.00		
RtSdSlp(h/v):	4.00	4.00		

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Drop Structures

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Name:	FLPOND-ON1	From Node:	FLPOND	Length(ft):	30.00
Group:	BASE	To Node:	ON1	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	30.00	30.00	Solution Algorithm:	Automatic
Rise(in):	30.00	30.00	Flow:	Both
Invert(ft):	18.350	18.350	Entrance Loss Coef:	0.000
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure FLPOND-ON1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	8.00	Invert(ft):	18.350
Rise(in):	8.00	Control Elev(ft):	18.350

*** Weir 2 of 2 for Drop Structure FLPOND-ON1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000

```
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 36.00                      Invert(ft): 21.500
            Rise(in): 36.00                  Control Elev(ft): 21.500


-------------------------------------------------------------------------------------------------
        Name: GP1-H7N3          From Node: GP1              Length(ft): 50.00
       Group: BASE                To Node: H7N3                 Count: 1

              UPSTREAM      DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular      Circular               Solution Algorithm: Automatic
    Span(in): 15.00         15.00                             Flow: Both
    Rise(in): 15.00         15.00                 Entrance Loss Coef: 0.000
  Invert(ft): 18.000        17.700                    Exit Loss Coef: 0.000
 Manning's N: 0.013000      0.013000                Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                    Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000         0.000                      Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure GP1-H7N3 ***
                                                                                        TABLE
                Count: 1                    Bottom Clip(in): 0.000
                 Type: Vertical: Mavis         Top Clip(in): 0.000
                 Flow: Both                  Weir Disc Coef: 3.200
            Geometry: Circular             Orifice Disc Coef: 0.600

            Span(in): 6.00                       Invert(ft): 18.000
            Rise(in): 6.00                   Control Elev(ft): 18.000

*** Weir 2 of 2 for Drop Structure GP1-H7N3 ***
                                                                                        TABLE
                Count: 1                    Bottom Clip(in): 0.000
                 Type: Horizontal              Top Clip(in): 0.000
                 Flow: Both                  Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 24.00                      Invert(ft): 20.000
            Rise(in): 15.00                  Control Elev(ft): 20.000


-------------------------------------------------------------------------------------------------
        Name: HDP2-JTP5         From Node: HDP2             Length(ft): 1015.00
       Group: BASE                To Node: JTP5                 Count: 1

              UPSTREAM      DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular      Circular               Solution Algorithm: Automatic
    Span(in): 36.00         36.00                             Flow: Both
    Rise(in): 36.00         36.00                 Entrance Loss Coef: 0.000
  Invert(ft): 14.700        12.000                    Exit Loss Coef: 0.000
 Manning's N: 0.013000      0.013000                Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                    Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000         0.000                      Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure HDP2-JTP5 ***
                                                                                        TABLE
                Count: 1                    Bottom Clip(in): 0.000
                 Type: Vertical: Mavis         Top Clip(in): 0.000
                 Flow: Both                  Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 12.00                      Invert(ft): 17.500
            Rise(in): 30.00                  Control Elev(ft): 17.500

*** Weir 2 of 3 for Drop Structure HDP2-JTP5 ***
                                                                                        TABLE
                Count: 1                    Bottom Clip(in): 0.000
```

```
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Circular             Orifice Disc Coef: 0.600

              Span(in): 3.00                       Invert(ft): 17.000
              Rise(in): 3.00                  Control Elev(ft): 17.000

*** Weir 3 of 3 for Drop Structure HDP2-JTP5 ***
                                                                    TABLE
                 Count: 1                    Bottom Clip(in): 0.000
                  Type: Horizontal              Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Circular             Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 20.000
              Rise(in): 36.00                 Control Elev(ft): 20.000


-------------------------------------------------------------------------------------------------------
        Name: KKPOND-ON2          From Node: KKPOND            Length(ft): 300.00
       Group: BASE                  To Node: ON2                  Count: 1

             UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular      Circular                Solution Algorithm: Automatic
    Span(in): 30.00         30.00                             Flow: Both
    Rise(in): 30.00         30.00                Entrance Loss Coef: 0.000
  Invert(ft): 18.350        18.350                   Exit Loss Coef: 0.000
 Manning's N: 0.013000      0.013000               Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                   Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000         0.000                     Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure KKPOND-ON2 ***
                                                                    TABLE
                 Count: 2                    Bottom Clip(in): 0.000
                  Type: Vertical: Mavis         Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Circular             Orifice Disc Coef: 0.600

              Span(in): 8.00                       Invert(ft): 18.350
              Rise(in): 8.00                  Control Elev(ft): 18.350

*** Weir 2 of 2 for Drop Structure KKPOND-ON2 ***
                                                                    TABLE
                 Count: 1                    Bottom Clip(in): 0.000
                  Type: Horizontal              Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 21.700
              Rise(in): 36.00                 Control Elev(ft): 21.700


===========================================================================================
==== Weirs ================================================================================
===========================================================================================

        Name: OP1-W3N1            From Node: OP1
       Group: BASE                  To Node: W3N1
        Flow: Both                    Count: 1
        Type: Vertical: Mavis      Geometry: Trapezoidal

           Bottom Width(ft): 25.00
      Left Side Slope(h/v): 4.00
     Right Side Slope(h/v): 4.00
                Invert(ft): 21.500
    Control Elevation(ft): 21.500
  Struct Opening Dim(ft): 9999.00
                                        TABLE
         Bottom Clip(ft): 0.000
            Top Clip(ft): 0.000
      Weir Discharge Coef: 3.200
   Orifice Discharge Coef: 0.600
```

```
---------------------------------------------------------------------------------------------------
        Name: OP2-W3N2              From Node: OP2
       Group: BASE                    To Node: W3N2
        Flow: Both                      Count: 1
        Type: Vertical: Mavis      Geometry: Trapezoidal

          Bottom Width(ft): 10.00
       Left Side Slope(h/v): 4.00
      Right Side Slope(h/v): 4.00
                Invert(ft): 21.800
     Control Elevation(ft): 21.800
    Struct Opening Dim(ft): 9999.00
                                        TABLE
           Bottom Clip(ft): 0.000
              Top Clip(ft): 0.000
        Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600



---------------------------------------------------------------------------------------------------
        Name: OP3-W4N1              From Node: OP3
       Group: BASE                    To Node: W4N1
        Flow: Both                      Count: 1
        Type: Vertical: Mavis      Geometry: Trapezoidal

          Bottom Width(ft): 25.00
       Left Side Slope(h/v): 4.00
      Right Side Slope(h/v): 4.00
                Invert(ft): 23.500
     Control Elevation(ft): 23.500
    Struct Opening Dim(ft): 9999.00
                                        TABLE
           Bottom Clip(ft): 0.000
              Top Clip(ft): 0.000
        Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600



===================================================================================================
==== Hydrology Simulations ========================================================================
===================================================================================================

        Name: 002
    Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\002.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 4.50

Time(hrs)       Print Inc(min)
--------------- ---------------
60.000          15.00

---------------------------------------------------------------------------------------------------
        Name: 010
    Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\010.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 6.80

Time(hrs)       Print Inc(min)
--------------- ---------------
60.000          15.00

---------------------------------------------------------------------------------------------------
        Name: 025
    Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\025.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
60.000          15.00

---------------------------------------------------------------------------------------------------
```

Name: 100
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\100.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 10.00

Time(hrs)	Print Inc(min)
60.000	15.00

==========
==== Routing Simulations ==========
==========

Name: 002 Hydrology Sim: 002
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\002.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

Name: 010 Hydrology Sim: 010
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\010.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

Name: 025 Hydrology Sim: 025
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\025.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

```
         Name: 100                 Hydrology Sim: 100
     Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\100.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

       Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
   Time Step Optimizer: 10.000
       Start Time(hrs): 0.000                     End Time(hrs): 60.00
    Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
       Boundary Stages:                          Boundary Flows:
```

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

Boundary Conditions

==== Basins ====

Name: ENTRANCE
Group: POST
Node: JTP7
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 1.600
Curve Number: 69.00
DCIA(%): 80.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 12.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HOMED1
Group: POST
Node: JTP5
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 12.610
Curve Number: 80.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 20.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HWY6
Group: POST
Node: H6N3
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 4.010
Curve Number: 69.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 57.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: HWY7
Group: POST
Node: XDOT4
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 3.030
Curve Number: 69.00
DCIA(%): 0.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 88.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT1
Group: POST
Node: JTP1
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 2.060
Curve Number: 66.00
DCIA(%): 85.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 10.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT2
Group: POST
Node: JTP2
Type: SCS Unit Hydrograph
Status: Onsite

Unit Hydrograph: Uh323
Rainfall File: Scsiii
Rainfall Amount(in): 8.000
Area(ac): 1.370
Curve Number: 66.00
DCIA(%): 90.00
Peaking Factor: 323.0
Storm Duration(hrs): 24.00
Time of Conc(min): 10.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: JT3 Node: JTP3 Status: Onsite
Group: POST Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 10.00
Area(ac): 8.500 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 80.00

Name: JT4 Node: JTP4 Status: Onsite
Group: POST Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 10.00
Area(ac): 5.460 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 90.00

Name: JTBUFFER1 Node: OUTFALL1 Status: Onsite
Group: POST Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 20.00
Area(ac): 0.760 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: JTBUFFER2 Node: OUTFALL2 Status: Onsite
Group: POST Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 20.00
Area(ac): 2.470 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: JTWET Node: W1 Status: Onsite
Group: POST Type: SCS Unit Hydrograph

Unit Hydrograph: Uh323 Peaking Factor: 323.0
Rainfall File: Scsiii Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.000 Time of Conc(min): 142.00
Area(ac): 12.590 Time Shift(hrs): 0.00
Curve Number: 66.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

==========

==== Nodes ==========

Name: BNDY1 Base Flow(cfs): 0.000 Init Stage(ft): 8.800
Group: POST Warn Stage(ft): 11.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	8.800
60.00	8.800

Name: BNDY2 Base Flow(cfs): 0.000 Init Stage(ft): 11.200
Group: POST Warn Stage(ft): 12.200
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	11.200
60.00	11.200

Name: BRIDGE Base Flow(cfs): 0.000 Init Stage(ft): 9.000
Group: POST Warn Stage(ft): 12.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: CN2 Base Flow(cfs): 0.000 Init Stage(ft): 11.200
Group: POST Warn Stage(ft): 13.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: E1 Base Flow(cfs): 0.000 Init Stage(ft): 11.940
Group: POST Warn Stage(ft): 17.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H6N1 Base Flow(cfs): 0.000 Init Stage(ft): 17.280
Group: POST Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H6N2 Base Flow(cfs): 0.000 Init Stage(ft): 16.380
Group: POST Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: H6N3 Base Flow(cfs): 0.000 Init Stage(ft): 16.020
Group: POST Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: JNC_A Base Flow(cfs): 0.000 Init Stage(ft): 13.600
Group: POST Plunge Factor: 1.00 Warn Stage(ft): 17.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)

Name: JTP1 Base Flow(cfs): 0.000 Init Stage(ft): 15.300
Group: POST Warn Stage(ft): 20.000
Type: Stage/Area

Stage(ft)	Area(ac)
12.000	0.0830
13.000	0.0970
14.000	0.1110
15.000	0.1260
16.000	0.1440
17.000	0.1580
18.000	0.1750
19.000	0.1920
20.000	0.2100
21.000	0.2230

Name: JTP2 Base Flow(cfs): 0.000 Init Stage(ft): 13.000
Group: POST Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
9.000	0.1070
10.000	0.1220
11.000	0.1370
12.000	0.1530
13.000	0.1690
14.000	0.1860
15.000	0.2240
16.000	0.2440

Name: JTP3 Base Flow(cfs): 0.000 Init Stage(ft): 11.000
Group: POST Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
9.000	0.3300
10.000	0.3700
11.000	0.4300
12.000	0.4900
13.000	0.5600
14.000	0.6300
15.000	0.7100
16.000	0.7800

Name: JTP4 Base Flow(cfs): 0.000 Init Stage(ft): 12.000
Group: POST Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
9.000	1.5000
10.000	1.7000
11.000	1.9000
12.000	2.0000
13.000	2.1500
14.000	2.3000
15.000	2.4500
16.000	2.5000

Name: JTP5 Base Flow(cfs): 0.000 Init Stage(ft): 12.000
Group: POST Warn Stage(ft): 16.500
Type: Stage/Area

Stage(ft)	Area(ac)
11.000	0.0530
12.000	0.0670
13.000	0.0830
14.000	0.1000
15.000	0.1200

16.000	0.1500
17.000	0.1700

Name: JTP6 Base Flow(cfs): 0.000 Init Stage(ft): 14.000
Group: POST Warn Stage(ft): 17.000
Type: Stage/Area

Stage(ft)	Area(ac)
12.000	0.0800
13.000	0.1100
14.000	0.1400
15.000	0.1800
16.000	0.3000
17.000	0.4000

Name: JTP7 Base Flow(cfs): 0.000 Init Stage(ft): 12.000
Group: POST Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
12.000	0.0150
13.000	0.0260
14.000	0.0470
15.000	0.0780
16.000	0.1100

Name: OUTFALL1 Base Flow(cfs): 0.000 Init Stage(ft): 13.500
Group: POST Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: OUTFALL2 Base Flow(cfs): 0.000 Init Stage(ft): 9.350
Group: POST Warn Stage(ft): 12.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: TARP1 Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: POST Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
15.000	0.3300
16.000	0.3700
17.000	0.4000
18.000	0.4300
19.000	0.4800
20.000	0.5300
21.000	0.5900
22.000	0.6400
23.000	0.7000

Name: W1 Base Flow(cfs): 0.000 Init Stage(ft): 15.000
Group: POST Warn Stage(ft): 16.500
Type: Stage/Area

Stage(ft)	Area(ac)

Name: XDOT4 Base Flow(cfs): 0.000 Init Stage(ft): 14.500
Group: POST Warn Stage(ft): 17.500
Type: Stage/Area

Stage(ft)	Area(ac)

==== Pipes ====

Name: CN2-BNDY2 From Node: CN2 Length(ft): 48.00
Group: POST To Node: BNDY2 Count: 6
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	15.00	15.00
Rise(in):	15.00	15.00
Invert(ft):	11.200	11.200
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: E1-JTP5 (1-36) From Node: E1 Length(ft): 180.00
Group: POST To Node: JTP5 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	11.940	11.570
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: E1-JTP5 (1-42) From Node: E1 Length(ft): 180.00
Group: POST To Node: JTP5 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	42.00	42.00
Rise(in):	42.00	42.00
Invert(ft):	11.940	11.570
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	H6N2-H6N3	From Node: H6N2	Length(ft): 125.00
Group:	POST	To Node: H6N3	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Horz Ellipse	Horz Ellipse	Flow: Both
Span(in):	42.00	42.00	Entrance Loss Coef: 0.50
Rise(in):	27.00	27.00	Exit Loss Coef: 0.00
Invert(ft):	16.380	16.020	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Name:	H6N3-H8N1	From Node: H6N3	Length(ft): 75.00
Group:	POST	To Node: H8N1	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Circular	Circular	Flow: Both
Span(in):	24.00	24.00	Entrance Loss Coef: 0.00
Rise(in):	24.00	24.00	Exit Loss Coef: 0.00
Invert(ft):	16.060	15.100	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dn or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	H6N3-XDOT4	From Node: H6N3	Length(ft): 140.00
Group:	POST	To Node: XDOT4	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Circular	Circular	Flow: Both
Span(in):	24.00	24.00	Entrance Loss Coef: 0.00
Rise(in):	24.00	24.00	Exit Loss Coef: 0.00
Invert(ft):	16.020	15.190	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	JNC_A-OUTFALL1	From Node: JNC_A	Length(ft): 40.00
Group:	POST	To Node: OUTFALL1	Count: 1
			Friction Equation: Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm: Automatic
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.00
Rise(in):	36.00	36.00	Exit Loss Coef: 0.00
Invert(ft):	13.600	13.500	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: JTP5-JTP4 1-42 From Node: JTP5 Length(ft): 375.00
Group: POST To Node: JTP4 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	42.00	42.00
Rise(in):	42.00	42.00
Invert(ft):	11.500	10.750
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: JTP5-JTP4 2-36 From Node: JTP5 Length(ft): 375.00
Group: POST To Node: JTP4 Count: 2
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	11.500	10.750
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: JTP6-E1 From Node: JTP6 Length(ft): 75.00
Group: POST To Node: E1 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	14.500	13.760
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: JTP7-E1 From Node: JTP7 Length(ft): 100.00
Group: POST To Node: E1 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular

Span(in):	30.00	30.00	Entrance Loss Coef:	0.00
Rise(in):	30.00	30.00	Exit Loss Coef:	0.00
Invert(ft):	13.500	12.900	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	XDOT2-JNC_A	From Node: XDOT2	Length(ft):	360.00
Group:	POST	To Node: JNC_A	Count:	2
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:	0.00
Rise(in):	36.00	36.00	Exit Loss Coef:	0.00
Invert(ft):	17.300	13.600	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name:	XDOT4-E1	From Node: XDOT4	Length(ft):	270.00
Group:	POST	To Node: E1	Count:	2
			Friction Equation:	Average Conveyance
	UPSTREAM	DOWNSTREAM	Solution Algorithm:	Automatic
Geometry:	Circular	Circular	Flow:	Both
Span(in):	36.00	36.00	Entrance Loss Coef:	0.00
Rise(in):	36.00	36.00	Exit Loss Coef:	0.00
Invert(ft):	14.500	11.940	Bend Loss Coef:	0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
Bot Clip(in):	0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==========
==== Channels ==========
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Name:	BRIDGE-BNDY1	From Node: BRIDGE	Length(ft):	100.00
Group:	POST	To Node: BNDY1	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation:	Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm:	Automatic
Invert(ft):	9.000	8.800	Flow:	Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef:	0.000
Manning's N:	0.030000	0.030000	Expansion Coef:	0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef:	0.000
Main XSec:			Outlet Ctrl Spec:	Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec:	Use dn
Aux XSec1:			Stabilizer Option:	None
AuxElev2(ft):				
Aux XSec2:				
Top Width(ft):				

Depth(ft):		
Bot Width(ft):	2.000	2.000
LtSdSlp(h/v):	2.00	2.00
RtSdSlp(h/v):	2.00	2.00

Name: H6N1-H6N2 From Node: H6N1 Length(ft): 165.00
Group: POST To Node: H6N2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	17.280	16.380	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.035000	0.035000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	4.000	4.000		
LtSdSlp(h/v):	4.00	4.00		
RtSdSlp(h/v):	4.00	4.00		

Name: OUTFALL1-BRIDGE From Node: OUTFALL1 Length(ft): 350.00
Group: POST To Node: BRIDGE Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	13.500	9.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name: OUTFALL2-BRIDGE From Node: OUTFALL2 Length(ft): 100.00
Group: POST To Node: BRIDGE Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	9.350	9.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	2.000	2.000		
LtSdSlp(h/v):	2.00	2.00		
RtSdSlp(h/v):	2.00	2.00		

Name: W1-CN2 From Node: W1 Length(ft): 2100.00
Group: POST To Node: CN2 Count: 1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	15.000	11.200	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.200000	0.200000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	100.000	100.000		
LtSdSlp(h/v):	10.00	10.00		
RtSdSlp(h/v):	10.00	10.00		

Name:	XDOT4-JTP6	From Node:	XDOT4	Length(ft):	15.00
Group:	POST	To Node:	JTP6	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Trapezoidal	Trapezoidal	Friction Equation:	Average Conveyance
Invert(ft):	14.500	14.000	Solution Algorithm:	Automatic
TClpInitZ(ft):	9999.000	9999.000	Flow:	Both
Manning's N:	0.050000	0.050000	Contraction Coef:	0.000
Top Clip(ft):	0.000	0.000	Expansion Coef:	0.000
Bot Clip(ft):	0.000	0.000	Entrance Loss Coef:	0.000
Main XSec:			Exit Loss Coef:	0.000
AuxElev1(ft):			Outlet Ctrl Spec:	Use dc or tw
Aux XSec1:			Inlet Ctrl Spec:	Use dn
AuxElev2(ft):			Stabilizer Option:	None
Aux XSec2:				
Top Width(ft):				
Depth(ft):				
Bot Width(ft):	25.000	25.000		
LtSdSlp(h/v):	4.00	4.00		
RtSdSlp(h/v):	4.00	4.00		

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Drop Structures

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Name:	JTP1-JNC_A	From Node:	JTP1	Length(ft):	250.00
Group:	POST	To Node:	JNC_A	Count:	1

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	24.00	24.00	Solution Algorithm:	Automatic
Rise(in):	24.00	24.00	Flow:	Both
Invert(ft):	15.000	13.600	Entrance Loss Coef:	0.500
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

*** Weir 1 of 3 for Drop Structure JTP1-JNC_A ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	3.00	Invert(ft):	15.300
Rise(in):	3.00	Control Elev(ft):	15.300

*** Weir 2 of 3 for Drop Structure JTP1-JNC_A ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200

```
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 12.00                      Invert(ft): 17.500
              Rise(in): 18.00                   Control Elev(ft): 17.500

*** Weir 3 of 3 for Drop Structure JTP1-JNC_A ***
                                                                      TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 19.000
              Rise(in): 24.00                   Control Elev(ft): 19.000


-------------------------------------------------------------------------------------------------
        Name: JTP2-JTP3          From Node: JTP2              Length(ft): 70.00
       Group: POST                 To Node: JTP3                   Count: 1

              UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular       Circular             Solution Algorithm: Automatic
    Span(in): 24.00          24.00                           Flow: Both
    Rise(in): 24.00          24.00                Entrance Loss Coef: 0.000
  Invert(ft): 11.500         10.500                   Exit Loss Coef: 0.000
Manning's N: 0.013000        0.013000               Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                   Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000          0.000                     Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure JTP2-JTP3 ***
                                                                      TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 15.000
              Rise(in): 6.00                    Control Elev(ft): 15.000

*** Weir 2 of 3 for Drop Structure JTP2-JTP3 ***
                                                                      TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Circular             Orifice Disc Coef: 0.600

              Span(in): 3.00                       Invert(ft): 13.000
              Rise(in): 3.00                    Control Elev(ft): 13.000

*** Weir 3 of 3 for Drop Structure JTP2-JTP3 ***
                                                                      TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 24.00                      Invert(ft): 14.500
              Rise(in): 6.00                    Control Elev(ft): 14.500


-------------------------------------------------------------------------------------------------
        Name: JTP3-OUTFALL2      From Node: JTP3              Length(ft): 225.00
       Group: POST                 To Node: OUTFALL2               Count: 2

              UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular       Circular             Solution Algorithm: Automatic
    Span(in): 30.00          30.00                           Flow: Both
    Rise(in): 30.00          30.00                Entrance Loss Coef: 0.500
  Invert(ft): 9.600          9.350                    Exit Loss Coef: 0.000
Manning's N: 0.013000        0.013000               Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                   Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000          0.000                     Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

*** Weir 1 of 3 for Drop Structure JTP3-OUTFALL2 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	8.00	Invert(ft):	11.000
Rise(in):	8.00	Control Elev(ft):	11.000

*** Weir 2 of 3 for Drop Structure JTP3-OUTFALL2 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	12.00	Invert(ft):	12.000
Rise(in):	24.00	Control Elev(ft):	12.000

*** Weir 3 of 3 for Drop Structure JTP3-OUTFALL2 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	48.00	Invert(ft):	14.000
Rise(in):	24.00	Control Elev(ft):	14.000

Name:	JTP4-JTP3	From Node: JTP4	Length(ft): 550.00
Group:	POST	To Node: JTP3	Count: 2

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Friction Equation:	Average Conveyance
Span(in):	36.00	36.00	Solution Algorithm:	Automatic
Rise(in):	36.00	36.00	Flow:	Both
Invert(ft):	10.750	9.600	Entrance Loss Coef:	0.500
Manning's N:	0.013000	0.013000	Exit Loss Coef:	0.000
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dn
			Solution Incs:	10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

*** Weir 1 of 4 for Drop Structure JTP4-JTP3 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	3.00	Invert(ft):	12.000
Rise(in):	3.00	Control Elev(ft):	12.000

*** Weir 2 of 4 for Drop Structure JTP4-JTP3 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	36.00	Invert(ft):	14.000
Rise(in):	12.00	Control Elev(ft):	14.000

*** Weir 3 of 4 for Drop Structure JTP4-JTP3 ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200

```
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 48.00                      Invert(ft): 15.000
              Rise(in): 12.00                Control Elev(ft): 15.000

*** Weir 4 of 4 for Drop Structure JTP4-JTP3 ***
                                                                    TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 24.00                      Invert(ft): 13.000
              Rise(in): 12.00                Control Elev(ft): 13.000


-------------------------------------------------------------------------------------------------
        Name: TARP1-H6N1          From Node: TARP1              Length(ft): 355.00
       Group: POST                  To Node: H6N1                   Count: 2

              UPSTREAM       DOWNSTREAM              Friction Equation: Average Conveyance
    Geometry: Circular       Circular               Solution Algorithm: Automatic
    Span(in): 24.00          24.00                              Flow: Both
    Rise(in): 24.00          24.00                 Entrance Loss Coef: 0.000
  Invert(ft): 17.960         17.280                    Exit Loss Coef: 0.000
 Manning's N: 0.013000       0.013000                Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                    Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000          0.000                      Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting


*** Weir 1 of 4 for Drop Structure TARP1-H6N1 ***
                                                                    TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 12.00                      Invert(ft): 18.500
              Rise(in): 6.00                 Control Elev(ft): 18.500

*** Weir 2 of 4 for Drop Structure TARP1-H6N1 ***
                                                                    TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 36.00                      Invert(ft): 19.000
              Rise(in): 12.00                Control Elev(ft): 19.000

*** Weir 3 of 4 for Drop Structure TARP1-H6N1 ***
                                                                    TABLE
                 Count: 3                     Bottom Clip(in): 0.000
                  Type: Vertical: Mavis          Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 68.00                      Invert(ft): 20.000
              Rise(in): 12.00                Control Elev(ft): 20.000

*** Weir 4 of 4 for Drop Structure TARP1-H6N1 ***
                                                                    TABLE
                 Count: 1                     Bottom Clip(in): 0.000
                  Type: Horizontal               Top Clip(in): 0.000
                  Flow: Both                  Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 72.00                      Invert(ft): 21.000
              Rise(in): 72.00                Control Elev(ft): 21.000


===============================================================================================
==== Weirs ====================================================================================
===============================================================================================

        Name: JTP2-W1             From Node: JTP2
```

```
        Group: POST                  To Node: W1
         Flow: Both                    Count: 1
         Type: Vertical: Gravel     Geometry: Trapezoidal

            Bottom Width(ft): 25.00
       Left Side Slope(h/v): 10.00
      Right Side Slope(h/v): 10.00
                Invert(ft): 16.000
     Control Elevation(ft): 16.000
    Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
       Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600


--------------------------------------------------------------------------------------------------------
        Name: JTP4-W1             From Node: JTP4
       Group: POST                  To Node: W1
         Flow: Both                    Count: 1
         Type: Vertical: Gravel     Geometry: Trapezoidal

            Bottom Width(ft): 25.00
       Left Side Slope(h/v): 10.00
      Right Side Slope(h/v): 10.00
                Invert(ft): 15.250
     Control Elevation(ft): 15.250
    Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
       Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600


--------------------------------------------------------------------------------------------------------
        Name: JTP5-W1             From Node: JTP5
       Group: POST                  To Node: W1
         Flow: Both                    Count: 1
         Type: Vertical: Gravel     Geometry: Trapezoidal

            Bottom Width(ft): 10.00
       Left Side Slope(h/v): 4.00
      Right Side Slope(h/v): 4.00
                Invert(ft): 15.750
     Control Elevation(ft): 15.750
    Struct Opening Dim(ft): 9999.00
                                        TABLE
          Bottom Clip(ft): 0.000
             Top Clip(ft): 0.000
       Weir Discharge Coef: 3.200
    Orifice Discharge Coef: 0.600


========================================================================================
==== Hydrology Simulations ============================================================
========================================================================================

        Name: 002
    Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\002.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 4.50

Time(hrs)       Print Inc(min)
--------------- ---------------
60.000          15.00

--------------------------------------------------------------------------------------------------------
        Name: 010
    Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\010.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Scsiii
   Rainfall Amount(in): 6.80
```

Time(hrs)	Print Inc(min)
60.000	15.00

Name: 025
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\025.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
60.000	15.00

Name: 100
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\100.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 10.00

Time(hrs)	Print Inc(min)
60.000	15.00

==== Routing Simulations ====

Name: 002 Hydrology Sim: 002
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\002.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.01000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

Name: 010 Hydrology Sim: 010
Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\010.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.01000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 60.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	15.000

Group	Run
BASE	Yes
POST	Yes

```
-------------------------------------------------------------------------------------------------------
         Name: 025                  Hydrology Sim: 025
     Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\025.I32

      Execute: Yes          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.01000
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 60.00
     Min Calc Time(sec): 0.5000                Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)        Print Inc(min)
---------------- ---------------
60.000           15.000

Group            Run
---------------- -----
BASE             Yes
POST             Yes


-------------------------------------------------------------------------------------------------------
         Name: 100                  Hydrology Sim: 100
     Filename: F:\Projects\2003\233001_Johnson Tract\eng\ICPR\Ryan\post\100.I32

      Execute: Yes          Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.01000
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 60.00
     Min Calc Time(sec): 0.5000                Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)        Print Inc(min)
---------------- ---------------
60.000           15.000

Group            Run
---------------- -----
BASE             Yes
POST             Yes


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==== Boundary Conditions ======================================================================
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Appendix C
ICPR Model Output

233001 JOHNSON TRACT PRE-DEVELOPMENT
(BASIN RESULTS)

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
002	FOODLION	BASE	12.32	16.949	2.462	91434.624
010	FOODLION	BASE	12.32	30.568	4.512	167536.625
025	FOODLION	BASE	12.32	37.767	5.627	208946.978
100	FOODLION	BASE	12.32	49.765	7.523	279371.522
002	GRAY1	BASE	12.27	7.693	2.463	36740.031
010	GRAY1	BASE	12.27	13.807	4.512	67318.075
025	GRAY1	BASE	12.27	17.032	5.627	83956.805
100	GRAY1	BASE	12.27	22.404	7.524	112253.392
002	GRAY2	BASE	12.31	10.109	2.463	58909.197
010	GRAY2	BASE	12.31	18.367	4.512	107938.227
025	GRAY2	BASE	12.31	22.743	5.627	134616.871
100	GRAY2	BASE	12.31	30.043	7.524	179987.798
002	GRAY3	BASE	12.52	1.988	2.461	17689.366
010	GRAY3	BASE	12.52	3.663	4.510	32413.958
025	GRAY3	BASE	12.52	4.555	5.625	40426.371
100	GRAY3	BASE	12.52	6.049	7.520	54052.802
002	HOMED1	PRE	12.31	19.344	2.463	112723.062
010	HOMED1	PRE	12.31	35.146	4.512	206540.370
025	HOMED1	PRE	12.31	43.519	5.627	257590.099
100	HOMED1	PRE	12.31	57.488	7.524	344407.608
002	HOMED2	BASE	12.29	9.208	2.462	46296.939
010	HOMED2	BASE	12.29	16.556	4.511	84830.639
025	HOMED2	BASE	12.29	20.436	5.627	105798.496
100	HOMED2	BASE	12.29	26.899	7.523	141457.517
002	HWY2	BASE	12.64	0.359	1.601	3545.048
010	HWY2	BASE	12.53	0.788	3.348	7414.051
025	HWY2	BASE	12.53	1.034	4.347	9625.175
100	HWY2	BASE	12.53	1.459	6.090	13485.072
002	HWY3	BASE	12.80	0.508	1.603	5935.686
010	HWY3	BASE	12.67	1.125	3.352	12411.298
025	HWY3	BASE	12.67	1.478	4.351	16111.809
100	HWY3	BASE	12.67	2.089	6.096	22571.416
002	HWY4	BASE	12.47	0.490	1.602	3722.744
010	HWY4	BASE	12.40	1.066	3.351	7784.625
025	HWY4	BASE	12.40	1.394	4.350	10105.859
100	HWY4	BASE	12.40	1.958	6.094	14157.856
002	HWY5	BASE	12.72	0.347	1.601	3718.859
010	HWY5	BASE	12.60	0.771	3.348	7777.725
025	HWY5	BASE	12.60	1.011	4.346	10097.374
100	HWY5	BASE	12.60	1.427	6.089	14146.739
002	HWY6	PRE	12.67	2.065	1.602	23312.725
010	HWY6	PRE	12.67	4.592	3.349	48753.178
025	HWY6	PRE	12.67	6.025	4.348	63292.025
100	HWY6	PRE	12.67	8.500	6.092	88671.789
002	HWY7	PRE	13.10	1.158	1.599	17591.886
010	HWY7	PRE	13.10	2.560	3.345	36796.757
025	HWY7	PRE	13.10	3.357	4.343	47772.901
100	HWY7	PRE	13.10	4.735	6.086	66934.229
002	HWY8	BASE	13.00	0.302	1.602	4186.881
010	HWY8	BASE	13.00	0.665	3.350	8755.562
025	HWY8	BASE	12.83	0.874	4.349	11366.458
100	HWY8	BASE	12.83	1.238	6.093	15924.138
002	HWY9	BASE	13.05	0.680	1.601	10463.058
010	HWY9	BASE	13.05	1.510	3.349	21881.543
025	HWY9	BASE	13.05	1.983	4.348	28407.094
100	HWY9	BASE	13.05	2.802	6.091	39798.486
002	JT PRE1	PRE	12.50	1.867	1.397	16476.113
010	JT PRE1	PRE	12.50	4.378	3.049	35966.452
025	JT PRE1	PRE	12.50	5.822	4.008	47287.979
100	JT PRE1	PRE	12.50	8.333	5.699	67229.544
002	JT PRE2	PRE	13.20	3.990	1.397	63997.656
010	JT PRE2	PRE	13.00	9.364	3.049	139696.396
025	JT PRE2	PRE	13.00	12.541	4.009	183667.363
100	JT PRE2	PRE	13.00	18.116	5.700	261116.348
002	JT PRE3	PRE	12.80	1.460	1.394	18374.307
010	JT PRE3	PRE	12.80	3.447	3.045	40120.144

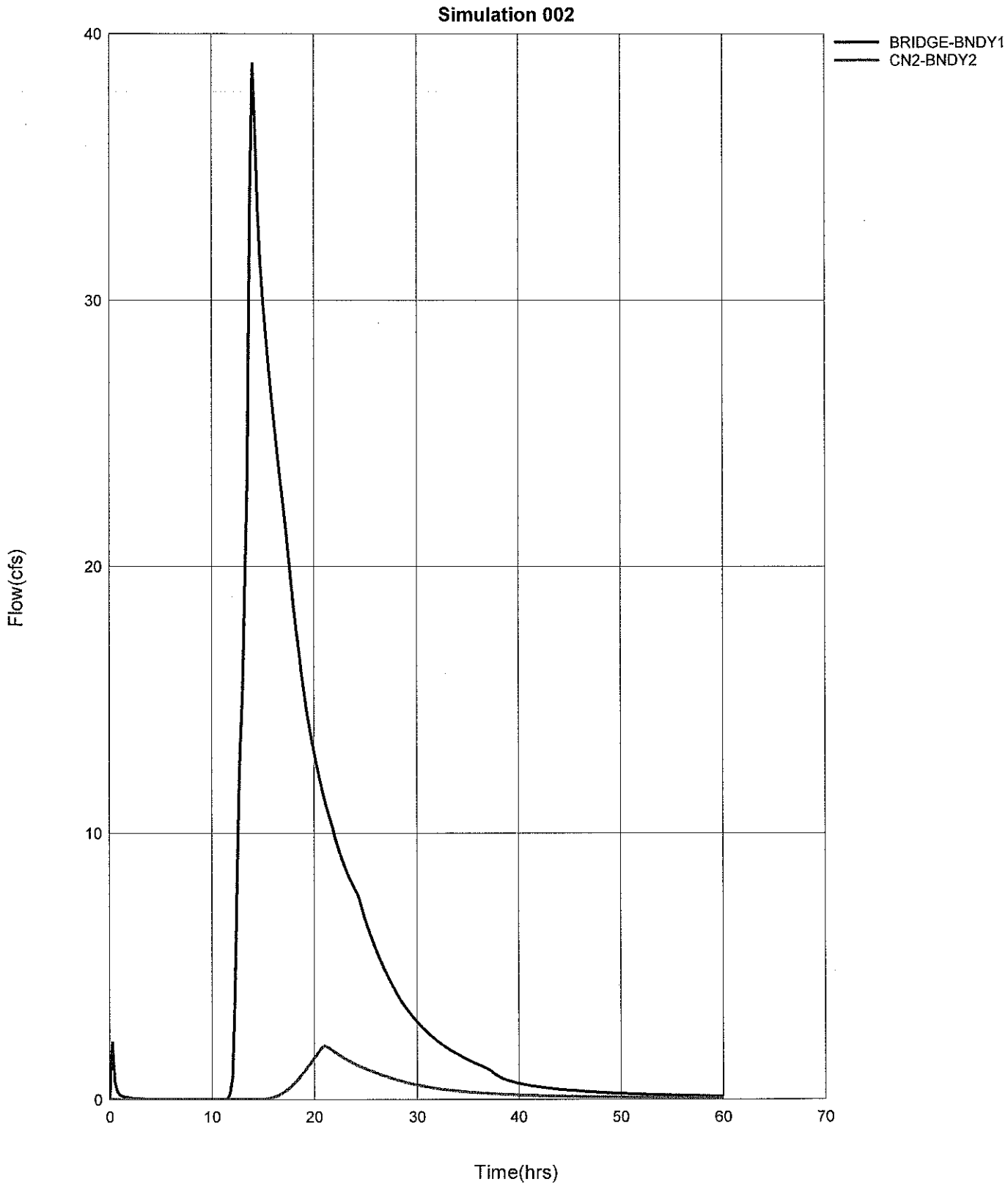
Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
025	JT PRE3	PRE	12.80	4.596	4.003	52753.037
100	JT PRE3	PRE	12.80	6.602	5.692	75005.587
002	JT PRE4	PRE	13.75	3.468	1.397	76929.736
010	JT PRE4	PRE	13.75	8.160	3.049	167924.726
025	JT PRE4	PRE	13.75	10.898	4.009	220780.759
100	JT PRE4	PRE	13.75	15.706	5.700	313879.569
002	JTWET	PRE	13.75	2.878	1.397	63846.103
010	JTWET	PRE	13.75	6.773	3.049	139365.346
025	JTWET	PRE	13.75	9.045	4.009	183232.021
100	JTWET	PRE	13.75	13.035	5.700	260497.282
002	KITTIESK	BASE	12.27	7.618	2.463	36382.463
010	KITTIESK	BASE	12.27	13.672	4.512	66662.911
025	KITTIESK	BASE	12.27	16.867	5.627	83139.707
100	KITTIESK	BASE	12.27	22.186	7.524	111160.901
002	KITTIESL	BASE	12.80	15.715	2.459	178982.428
010	KITTIESL	BASE	12.80	28.943	4.507	327996.268
025	KITTIESL	BASE	12.66	36.078	5.621	409084.915
100	KITTIESL	BASE	12.66	48.075	7.516	546991.729
002	OFF1	BASE	17.04	0.062	0.048	1835.630
010	OFF1	BASE	13.32	0.831	0.501	19293.166
025	OFF1	BASE	12.96	1.918	0.889	34249.187
100	OFF1	BASE	12.84	4.706	1.715	66063.408
002	OFF2	BASE	12.69	3.619	1.600	40200.021
010	OFF2	BASE	12.69	8.003	3.347	84078.638
025	OFF2	BASE	12.69	10.484	4.345	109155.716
100	OFF2	BASE	12.69	14.767	6.088	152932.604
002	OFF3	BASE	12.32	5.013	1.603	28339.991
010	OFF3	BASE	12.32	10.733	3.352	59257.864
025	OFF3	BASE	12.32	13.928	4.351	76925.990
100	OFF3	BASE	12.32	19.401	6.096	107767.446
002	OFF4	BASE	17.00	0.006	0.048	171.279
010	OFF4	BASE	13.11	0.080	0.501	1800.211
025	OFF4	BASE	12.89	0.188	0.889	3195.730
100	OFF4	BASE	12.78	0.462	1.715	6164.258
002	TARGET1	BASE	12.40	26.202	2.463	186292.515
010	TARGET1	BASE	12.40	47.921	4.512	341340.310
025	TARGET1	BASE	12.40	59.460	5.627	425707.982
100	TARGET1	BASE	12.40	78.737	7.524	569187.514
002	TARGET2	BASE	12.67	9.037	1.020	106841.266
010	TARGET2	BASE	12.67	25.149	2.464	258048.380
025	TARGET2	BASE	12.67	34.895	3.335	349232.861
100	TARGET2	BASE	12.67	52.310	4.901	513220.835
002	WET2	BASE	13.14	1.318	1.394	21197.505
010	WET2	BASE	13.14	3.103	3.043	46288.629
025	WET2	BASE	13.14	4.140	4.002	60865.396
100	WET2	BASE	13.14	5.953	5.690	86542.506
002	WET3	BASE	13.16	1.323	1.393	21786.158
010	WET3	BASE	13.16	3.121	3.041	47580.621
025	WET3	BASE	13.16	4.165	3.999	62566.775
100	WET3	BASE	13.16	5.994	5.686	88965.787
002	WET4	BASE	13.03	1.523	1.397	23474.826
010	WET4	BASE	13.03	3.603	3.049	51243.300
025	WET4	BASE	13.03	4.810	4.009	67373.305
100	WET4	BASE	13.03	6.924	5.699	95784.340

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
BNDY1	002	8.800	11.500	0.0000	5	38.946	0.000
BNDY1	010	8.800	11.500	0.0000	5	85.468	0.000
BNDY1	025	8.800	11.500	0.0000	5	110.487	0.000
BNDY1	100	8.800	11.500	0.0000	5	146.654	0.000
BNDY2	002	11.200	12.200	0.0000	9	2.015	0.000
BNDY2	010	11.200	12.200	0.0000	9	13.014	0.000
BNDY2	025	11.200	12.200	0.0000	9	21.545	0.000
BNDY2	100	11.200	12.200	0.0000	9	33.105	0.000
BNDY3	002	16.000	18.000	0.0000	0	1.438	0.000
BNDY3	010	16.000	18.000	0.0000	0	3.422	0.000
BNDY3	025	16.000	18.000	0.0000	0	4.572	0.000
BNDY3	100	16.000	18.000	0.0000	0	6.583	0.000
BRIDGE	002	11.136	12.500	0.0099	3995	38.993	38.946
BRIDGE	010	11.934	12.500	0.0099	5282	85.546	85.468
BRIDGE	025	12.250	12.500	0.0099	5813	110.611	110.487
BRIDGE	100	12.634	12.500	0.0099	6456	146.707	146.654
CN2	002	11.625	13.000	0.0002	112151	3.717	2.015
CN2	010	12.310	13.000	0.0007	123239	17.521	13.014
CN2	025	12.752	13.000	0.0011	130323	29.110	21.545
CN2	100	13.313	13.000	0.0011	139374	45.987	33.105
HDP1	002	15.865	16.500	0.0031	48316	20.032	22.353
HDP1	010	16.282	16.500	0.0029	49769	39.148	35.737
HDP1	025	16.442	16.500	0.0041	50326	49.300	42.968
HDP1	100	16.637	16.500	0.0044	51007	66.174	55.700
JT PRE1	002	17.759	19.000	0.0044	1968	6.800	10.405
JT PRE1	010	18.423	19.000	-0.0024	3056	23.208	23.139
JT PRE1	025	18.742	19.000	0.0035	3523	35.091	41.549
JT PRE1	100	19.147	19.000	0.0027	4064	54.479	54.415
JT PRE2	002	11.655	16.000	0.0037	7250	34.180	33.894
JT PRE2	010	12.408	16.000	0.0040	9001	64.956	64.671
JT PRE2	025	12.680	16.000	0.0048	9620	77.407	77.379
JT PRE2	100	13.019	16.000	0.0048	10358	94.125	94.216
JT PRE4	002	15.252	16.500	0.0003	109782	4.672	3.717
JT PRE4	010	15.727	16.500	-0.0008	118727	19.662	17.521
JT PRE4	025	15.936	16.500	0.0009	122906	28.586	29.110
JT PRE4	100	16.212	16.500	-0.0013	128420	41.930	45.987
XDOT1	002	19.000	21.000	0.0000	133	0.000	0.000
XDOT1	010	19.000	21.000	0.0000	133	0.000	0.000
XDOT1	025	19.079	21.000	0.0005	916	0.000	0.075
XDOT1	100	19.474	21.000	0.0015	1232	0.000	0.322
XDOT2	002	18.080	20.000	0.0027	1115	5.246	5.243
XDOT2	010	18.768	20.000	0.0018	1599	19.654	19.627
XDOT2	025	19.082	20.000	0.0029	1914	30.050	30.025
XDOT2	100	19.474	20.000	0.0029	2242	46.585	46.553
XDOT3	002	15.029	17.000	0.0050	7726	31.023	30.929
XDOT3	010	15.684	17.000	0.0046	9673	55.469	55.673
XDOT3	025	15.895	17.000	0.0050	10313	65.449	66.003
XDOT3	100	16.122	17.000	0.0050	11016	78.232	78.967
XDOT4	002	15.864	17.500	-0.0049	6950	43.915	30.671
XDOT4	010	16.280	17.500	0.0049	8698	72.231	54.081
XDOT4	025	16.440	17.500	-0.0049	9274	83.415	63.428
XDOT4	100	16.634	17.500	0.0050	9919	80.475	75.164

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
BRIDGE-BNDY1	PRE	002	13.98	38.946	0.099	13.98	11.136	13.98	10.259
BRIDGE-BNDY1	PRE	010	13.02	85.468	0.176	13.02	11.934	13.02	10.934
BRIDGE-BNDY1	PRE	025	12.83	110.487	0.271	12.83	12.250	12.83	11.206
BRIDGE-BNDY1	PRE	100	12.71	146.654	0.269	12.71	12.634	12.71	11.544
CN2-BNDY2	PRE	002	20.90	2.015	0.002	20.90	11.625	20.90	11.425
CN2-BNDY2	PRE	010	17.21	13.014	0.012	17.21	12.310	17.21	11.788
CN2-BNDY2	PRE	025	16.71	21.545	0.029	16.71	12.752	16.70	11.965
CN2-BNDY2	PRE	100	16.13	33.105	0.037	16.13	13.313	16.12	12.152
FLPOND-ON1	BASE	002	14.23	2.192	0.009	13.92	21.035	13.02	19.323
FLPOND-ON1	BASE	010	12.71	14.718	0.045	12.71	21.976	12.77	20.308
FLPOND-ON1	BASE	025	12.56	23.833	0.101	12.56	22.188	12.68	20.833
FLPOND-ON1	BASE	100	12.30	33.275	0.097	12.58	22.675	12.55	21.444
GP1-H7N3	BASE	002	13.28	4.852	0.015	13.28	20.332	13.34	18.412
GP1-H7N3	BASE	010	12.89	11.605	-2.986	13.23	21.405	12.49	18.693
GP1-H7N3	BASE	025	12.65	12.853	-3.309	13.28	22.220	12.36	18.725
GP1-H7N3	BASE	100	12.39	13.913	-3.579	13.39	23.525	12.16	18.719
GP2-GP1	BASE	002	13.41	2.544	1.737	13.32	20.374	13.28	20.332
GP2-GP1	BASE	010	12.90	5.640	1.860	13.27	21.545	13.23	21.405
GP2-GP1	BASE	025	14.78	5.600	-2.880	13.34	22.395	13.28	22.220
GP2-GP1	BASE	100	15.09	6.624	-2.352	13.44	23.752	13.39	23.525
GP3-GP1	BASE	002	12.21	1.772	1.241	13.20	20.383	13.28	20.332
GP3-GP1	BASE	010	12.87	2.826	1.179	13.16	21.583	13.23	21.405
GP3-GP1	BASE	025	13.00	2.928	1.165	13.15	22.492	13.28	22.220
GP3-GP1	BASE	100	13.04	3.597	1.135	13.23	23.938	13.39	23.525
H3N1-H2N1	BASE	002	12.93	4.933	0.019	12.93	18.932	12.93	18.653
H3N1-H2N1	BASE	010	12.78	18.921	0.044	12.78	19.536	12.78	19.167
H3N1-H2N1	BASE	025	12.69	29.221	0.076	12.69	19.864	12.69	19.429
H3N1-H2N1	BASE	100	12.56	45.176	0.105	12.56	20.318	12.58	19.758
H5N1-XDOT3	BASE	002	12.76	0.342	0.001	12.76	16.869	12.76	16.266
H5N1-XDOT3	BASE	010	12.75	0.750	0.001	12.75	17.017	12.75	16.357
H5N1-XDOT3	BASE	025	12.75	0.980	0.002	12.75	17.084	12.75	16.397
H5N1-XDOT3	BASE	100	12.75	1.375	0.002	12.75	17.186	12.75	16.458
H6N1-H6N2	PRE	002	14.06	14.664	-2.178	14.07	17.995	13.99	17.703
H6N1-H6N2	PRE	010	13.73	29.796	2.143	13.63	19.038	13.63	18.997
H6N1-H6N2	PRE	025	14.73	34.533	-2.148	13.60	19.339	13.58	19.310
H6N1-H6N2	PRE	100	14.16	53.515	17.563	13.85	20.110	13.80	20.101
H6N2-H6N3	PRE	002	14.08	14.669	-1.983	13.99	17.703	13.90	17.467
H6N2-H6N3	PRE	010	13.80	29.872	-1.983	13.63	18.997	13.58	18.357
H6N2-H6N3	PRE	025	12.66	34.725	2.209	13.58	19.310	13.09	18.419
H6N2-H6N3	PRE	100	14.07	37.446	2.356	13.80	20.101	13.42	18.787
H6N3-H8N1	PRE	002	13.87	7.593	0.033	13.90	17.467	13.87	15.847
H6N3-H8N1	PRE	010	13.56	15.452	0.042	13.58	18.357	13.56	16.221
H6N3-H8N1	PRE	025	12.65	29.962	15.910	13.09	18.419	15.89	17.379
H6N3-H8N1	PRE	100	12.37	29.497	15.911	13.42	18.787	13.29	17.431
H6N3-XDOT4	PRE	002	13.89	8.195	0.034	13.90	17.467	13.89	16.155
H6N3-XDOT4	PRE	010	13.56	17.076	6.785	13.58	18.357	13.56	16.795
H6N3-XDOT4	PRE	025	13.06	17.699	-0.414	13.09	18.419	13.06	16.860
H6N3-XDOT4	PRE	100	13.42	20.825	-0.407	13.42	18.787	12.56	17.190
H7N3-XDOT5	BASE	002	13.34	4.841	0.017	13.34	18.412	13.64	15.955
H7N3-XDOT5	BASE	010	12.72	11.892	-0.057	12.49	18.693	12.90	16.455
H7N3-XDOT5	BASE	025	12.56	13.193	0.071	12.36	18.725	12.67	16.561
H7N3-XDOT5	BASE	100	12.39	14.491	-5.414	12.16	18.719	14.31	16.723
H8N1-XDOT4	BASE	002	13.79	7.814	0.018	13.91	16.226	13.60	15.864
H8N1-XDOT4	BASE	010	13.53	15.984	0.023	13.53	16.922	12.81	16.280
H8N1-XDOT4	BASE	025	15.89	21.460	0.574	15.89	17.379	15.89	16.468
H8N1-XDOT4	BASE	100	13.19	22.196	0.832	13.29	17.431	12.59	16.634
H9N1-XDOT5	BASE	002	0.01	2.499	0.323	0.01	16.318	13.64	15.955
H9N1-XDOT5	BASE	010	16.05	3.634	-0.429	12.90	16.481	12.90	16.455
H9N1-XDOT5	BASE	025	15.05	5.307	-0.701	14.89	16.703	12.67	16.561
H9N1-XDOT5	BASE	100	17.62	10.138	-6.203	17.63	16.911	12.66	16.703
HDP1-JT PRE4	PRE	002	13.60	1.290	0.013	13.60	15.865	16.45	15.252
HDP1-JT PRE4	PRE	010	12.82	14.496	0.051	12.82	16.282	14.56	15.727
HDP1-JT PRE4	PRE	025	12.73	22.440	0.069	12.73	16.442	14.24	15.936
HDP1-JT PRE4	PRE	100	12.59	34.246	0.065	12.59	16.637	13.87	16.212
HDP1-XDOT4	PRE	002	13.85	0.356	0.271	13.60	15.865	13.60	15.864

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
HDP1-XDOT4	PRE	010	14.18	0.355	0.350	12.82	16.282	12.81	16.280
HDP1-XDOT4	PRE	025	13.82	0.357	-0.390	12.73	16.442	12.73	16.440
HDP1-XDOT4	PRE	100	21.25	0.318	-0.419	12.59	16.637	12.59	16.634
HDP1-XDOT4 eo	PRE	002	13.85	21.418	17.996	13.60	15.865	13.60	15.864
HDP1-XDOT4 eo	PRE	010	14.18	27.637	-26.516	12.82	16.282	12.81	16.280
HDP1-XDOT4 eo	PRE	025	13.82	29.141	-30.198	12.73	16.442	12.73	16.440
HDP1-XDOT4 eo	PRE	100	17.66	23.849	-28.594	12.59	16.637	12.59	16.634
HDP2-HDP1	BASE	002	12.74	3.584	0.012	12.74	18.522	13.60	15.865
HDP2-HDP1	BASE	010	12.62	8.117	0.013	12.62	19.306	12.82	16.282
HDP2-HDP1	BASE	025	12.60	10.492	0.016	12.60	19.654	12.73	16.442
HDP2-HDP1	BASE	100	12.53	15.526	0.020	12.53	20.139	12.59	16.637
JT PRE1-BRIDGE	PRE	002	12.64	10.405	-4.078	12.79	17.759	13.98	11.136
JT PRE1-BRIDGE	PRE	010	12.80	23.139	-6.331	12.80	18.423	13.02	11.934
JT PRE1-BRIDGE	PRE	025	12.48	41.549	-15.633	12.71	18.742	12.83	12.250
JT PRE1-BRIDGE	PRE	100	12.58	54.415	0.164	12.58	19.147	12.71	12.634
JT PRE2-BRIDGE	PRE	002	13.97	33.894	14.612	13.97	11.655	13.98	11.136
JT PRE2-BRIDGE	PRE	010	13.04	64.671	14.612	13.03	12.408	13.02	11.934
JT PRE2-BRIDGE	PRE	025	12.89	77.379	14.612	12.86	12.680	12.83	12.250
JT PRE2-BRIDGE	PRE	100	12.77	94.216	14.612	12.75	13.019	12.71	12.634
JT PRE4-CN2	PRE	002	20.87	3.717	-1.619	16.45	15.252	20.90	11.625
JT PRE4-CN2	PRE	010	16.20	17.521	-7.497	14.56	15.727	17.21	12.310
JT PRE4-CN2	PRE	025	15.85	29.110	-12.351	14.24	15.936	16.71	12.752
JT PRE4-CN2	PRE	100	15.13	45.987	-18.878	13.87	16.212	16.13	13.313
KKPOND-ON2	BASE	002	12.72	2.491	-0.181	12.74	19.937	12.96	19.281
KKPOND-ON2	BASE	010	12.43	3.878	-0.183	12.88	21.260	12.77	20.215
KKPOND-ON2	BASE	025	12.74	5.461	-0.188	12.73	21.842	12.68	20.763
KKPOND-ON2	BASE	100	12.45	13.063	-0.172	12.47	22.149	12.55	21.401
KLP-TARP2	BASE	002	14.28	7.472	0.013	14.28	23.353	14.28	21.313
KLP-TARP2	BASE	010	13.64	18.037	0.024	13.64	24.068	14.97	21.805
KLP-TARP2	BASE	025	13.58	25.760	0.026	13.43	24.361	14.75	22.940
KLP-TARP2	BASE	100	13.25	38.187	-0.025	13.22	24.710	14.20	24.149
ON1-ON2	BASE	002	14.21	2.209	0.006	13.02	19.323	12.96	19.281
ON1-ON2	BASE	010	12.74	14.497	0.041	12.77	20.308	12.77	20.215
ON1-ON2	BASE	025	12.58	23.164	0.074	12.68	20.833	12.68	20.763
ON1-ON2	BASE	100	12.68	30.930	0.084	12.55	21.444	12.55	21.401
ON2-H3N1	BASE	002	12.96	4.452	0.019	12.96	19.281	12.96	18.995
ON2-H3N1	BASE	010	12.77	17.811	0.040	12.77	20.215	12.77	19.729
ON2-H3N1	BASE	025	12.68	27.797	0.070	12.68	20.763	12.68	20.099
ON2-H3N1	BASE	100	12.55	43.268	0.115	12.55	21.401	12.52	20.495
OP1-W2N1	BASE	002	0.00	0.000	0.005	13.41	20.415	13.41	20.513
OP1-W2N1	BASE	010	0.00	0.000	0.005	13.27	20.535	13.27	20.658
OP1-W2N1	BASE	025	52.32	0.290	-0.086	28.83	20.640	13.26	20.721
OP1-W2N1	BASE	100	17.98	4.785	2.004	18.33	22.093	18.33	22.092
OP1-W3N1	BASE	002	0.00	0.000	-0.002	60.00	18.899	13.27	21.560
OP1-W3N1	BASE	010	0.00	0.000	-0.002	60.01	19.869	13.25	21.607
OP1-W3N1	BASE	025	0.00	0.000	-0.003	28.83	20.640	14.65	21.655
OP1-W3N1	BASE	100	0.00	0.000	0.008	18.33	22.093	18.31	22.099
OP2-W3N2	BASE	002	24.07	0.105	0.001	26.78	21.863	26.82	21.863
OP2-W3N2	BASE	010	13.86	2.206	0.031	16.12	22.669	16.13	22.663
OP2-W3N2	BASE	025	13.29	4.033	0.051	15.06	22.976	15.07	22.968
OP2-W3N2	BASE	100	12.86	7.557	0.022	14.20	23.408	14.21	23.394
OP3-W4N1	BASE	002	21.76	0.212	0.004	20.13	23.769	20.12	23.768
OP3-W4N1	BASE	010	16.75	1.092	0.021	15.34	24.279	15.33	24.278
OP3-W4N1	BASE	025	15.26	1.704	0.032	14.50	24.519	14.49	24.517
OP3-W4N1	BASE	100	14.43	3.021	0.142	13.77	24.896	13.77	24.893
TARP1-H6N1	PRE	002	14.05	14.664	0.034	14.05	19.614	14.07	17.995
TARP1-H6N1	PRE	010	13.60	29.773	0.112	13.61	20.672	13.63	19.038
TARP1-H6N1	PRE	025	14.73	34.487	0.109	13.87	21.526	13.60	19.339
TARP1-H6N1	PRE	100	13.80	37.287	0.131	13.82	23.131	13.85	20.110
TARP2-OP1	BASE	002	0.00	0.000	0.000	14.89	19.897	60.00	18.899
TARP2-OP1	BASE	010	14.97	0.034	0.000	14.97	21.805	14.97	21.221
TARP2-OP1	BASE	025	14.75	4.775	0.010	14.75	22.940	14.75	21.676
TARP2-OP1	BASE	100	14.20	25.338	-0.107	14.20	24.149	14.20	22.375
TARP2-TARP1	BASE	002	0.00	15.645	15.645	14.89	19.897	14.05	19.614
TARP2-TARP1	BASE	010	14.91	21.279	15.645	14.97	21.805	13.61	20.672

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
TARP2-TARP1	BASE	025	15.48	25.371	15.645	14.75	22.940	13.87	21.526
TARP2-TARP1	BASE	100	17.42	25.091	15.645	14.20	24.149	13.82	23.131
W2N1-W2N2	BASE	002	13.36	0.188	-0.001	13.41	20.513	17.79	20.385
W2N1-W2N2	BASE	010	13.21	0.424	-0.001	13.27	20.658	16.09	20.504
W2N1-W2N2	BASE	025	13.15	0.560	0.002	13.26	20.721	30.19	20.599
W2N1-W2N2	BASE	100	17.68	6.311	-0.009	18.33	22.092	18.58	21.915
W2N2-W2N3	BASE	002	17.79	0.037	-0.000	17.79	20.385	17.79	20.206
W2N2-W2N3	BASE	010	16.09	0.110	0.000	16.09	20.504	16.09	20.212
W2N2-W2N3	BASE	025	30.19	0.201	0.000	30.19	20.599	30.19	20.218
W2N2-W2N3	BASE	100	18.58	6.086	0.006	18.58	21.915	18.58	20.366
W2N3-H9N1	BASE	002	0.00	6.628	6.628	0.00	17.500	0.00	16.628
W2N3-H9N1	BASE	010	0.00	6.628	6.628	0.00	17.500	0.00	16.628
W2N3-H9N1	BASE	025	0.00	6.628	6.628	0.00	17.500	14.89	16.703
W2N3-H9N1	BASE	100	17.81	9.561	6.628	17.84	17.838	14.22	16.870
W3N1-W2N1	BASE	002	13.23	0.112	0.029	13.27	21.560	24.72	20.330
W3N1-W2N1	BASE	010	13.18	0.236	-0.029	13.25	21.607	30.89	20.282
W3N1-W2N1	BASE	025	14.62	0.412	0.029	14.65	21.655	31.35	20.636
W3N1-W2N1	BASE	100	13.88	0.844	-0.251	18.31	22.099	18.33	22.092
W3N2-W3N1	BASE	002	26.77	0.010	0.000	26.82	21.863	13.27	21.560
W3N2-W3N1	BASE	010	16.13	1.559	0.005	16.13	22.663	13.25	21.607
W3N2-W3N1	BASE	025	15.07	3.031	0.007	15.07	22.968	14.65	21.655
W3N2-W3N1	BASE	100	14.21	6.166	0.008	14.21	23.394	18.31	22.099
W4N1-W4N2	BASE	002	20.46	0.407	0.000	20.12	23.768	21.27	20.398
W4N1-W4N2	BASE	010	15.45	2.591	0.003	15.33	24.278	15.86	20.724
W4N1-W4N2	BASE	025	14.64	4.288	0.006	14.49	24.517	15.04	20.896
W4N1-W4N2	BASE	100	13.93	7.969	0.004	13.77	24.893	14.34	21.201
W4N2-W4N3	BASE	002	21.10	0.403	-0.033	21.27	20.398	21.10	19.947
W4N2-W4N3	BASE	010	15.86	2.559	-0.033	15.86	20.724	15.84	20.321
W4N2-W4N3	BASE	025	15.04	4.210	-0.033	15.04	20.896	15.02	20.480
W4N2-W4N3	BASE	100	14.33	7.714	-0.033	14.34	21.201	14.36	20.748
W4N3-W2N3	BASE	002	21.20	0.403	-0.003	21.35	19.998	21.20	17.644
W4N3-W2N3	BASE	010	15.84	2.559	0.004	15.84	20.321	15.84	17.850
W4N3-W2N3	BASE	025	15.02	4.210	0.009	15.02	20.480	15.02	17.947
W4N3-W2N3	BASE	100	14.32	7.713	0.009	14.36	20.748	14.32	18.108
XDOT1-XDOT2	PRE	002	0.00	0.000	0.000	0.00	19.000	12.89	18.080
XDOT1-XDOT2	PRE	010	0.00	0.000	0.000	0.00	19.000	12.79	18.768
XDOT1-XDOT2	PRE	025	12.83	0.075	0.013	12.75	19.079	12.70	19.082
XDOT1-XDOT2	PRE	100	13.06	0.322	0.036	12.58	19.474	12.58	19.474
XDOT2-JT PRE1	PRE	002	12.89	5.243	0.022	12.89	18.080	12.79	17.759
XDOT2-JT PRE1	PRE	010	12.79	19.627	0.038	12.79	18.768	12.80	18.423
XDOT2-JT PRE1	PRE	025	12.70	30.025	0.075	12.70	19.082	12.71	18.742
XDOT2-JT PRE1	PRE	100	12.58	46.553	0.087	12.58	19.474	12.58	19.147
XDOT3-JT PRE2	PRE	002	13.91	30.929	3.818	13.87	15.029	13.97	11.655
XDOT3-JT PRE2	PRE	010	12.97	55.673	3.567	12.92	15.684	13.03	12.408
XDOT3-JT PRE2	PRE	025	12.79	66.003	3.208	12.73	15.895	12.86	12.680
XDOT3-JT PRE2	PRE	100	12.62	78.967	2.951	12.53	16.122	12.75	13.019
XDOT4-XDOT3	BASE	002	13.79	30.671	-0.091	13.60	15.864	13.87	15.029
XDOT4-XDOT3	BASE	010	12.89	54.081	0.163	12.81	16.280	12.92	15.684
XDOT4-XDOT3	BASE	025	12.73	63.428	-0.199	12.73	16.440	12.73	15.895
XDOT4-XDOT3	BASE	100	12.60	75.164	-0.201	12.59	16.634	12.53	16.122
XDOT5-XDOT4	BASE	002	13.27	5.725	2.889	13.64	15.955	13.60	15.864
XDOT5-XDOT4	BASE	010	12.90	12.726	2.989	12.90	16.455	12.81	16.280
XDOT5-XDOT4	BASE	025	14.65	14.681	3.015	12.67	16.561	12.73	16.440
XDOT5-XDOT4	BASE	100	14.34	21.313	1.581	14.31	16.723	12.59	16.634



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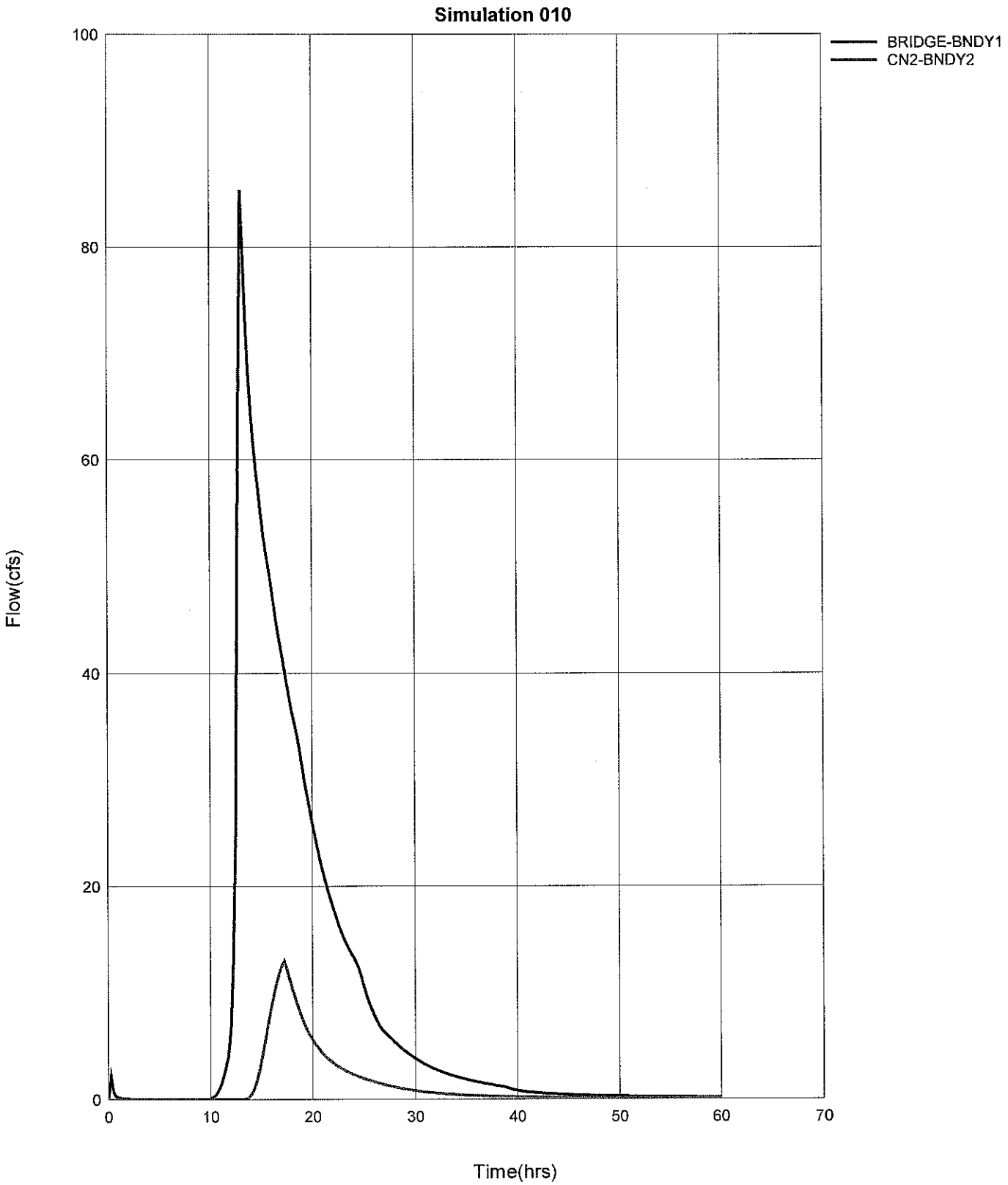

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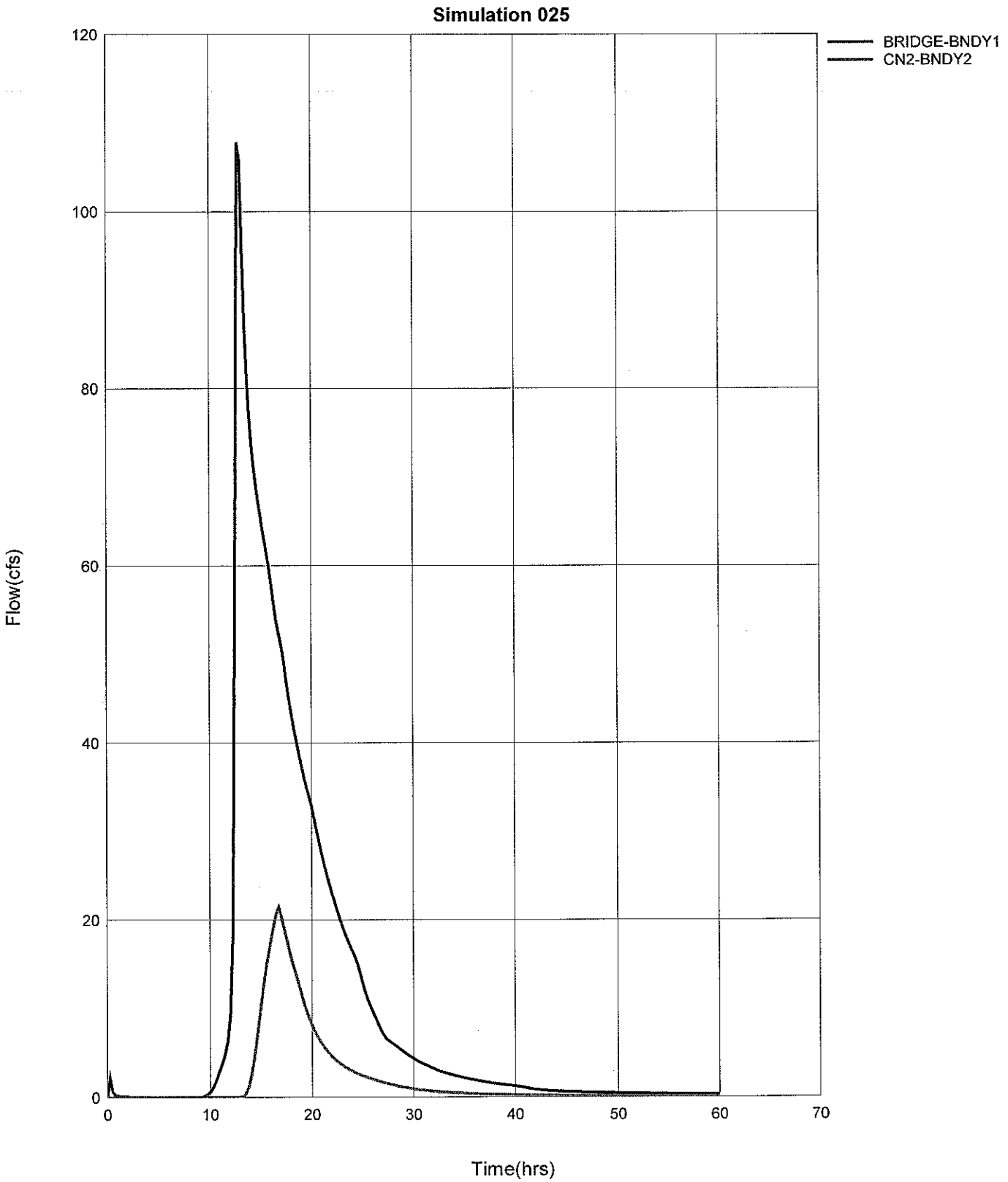

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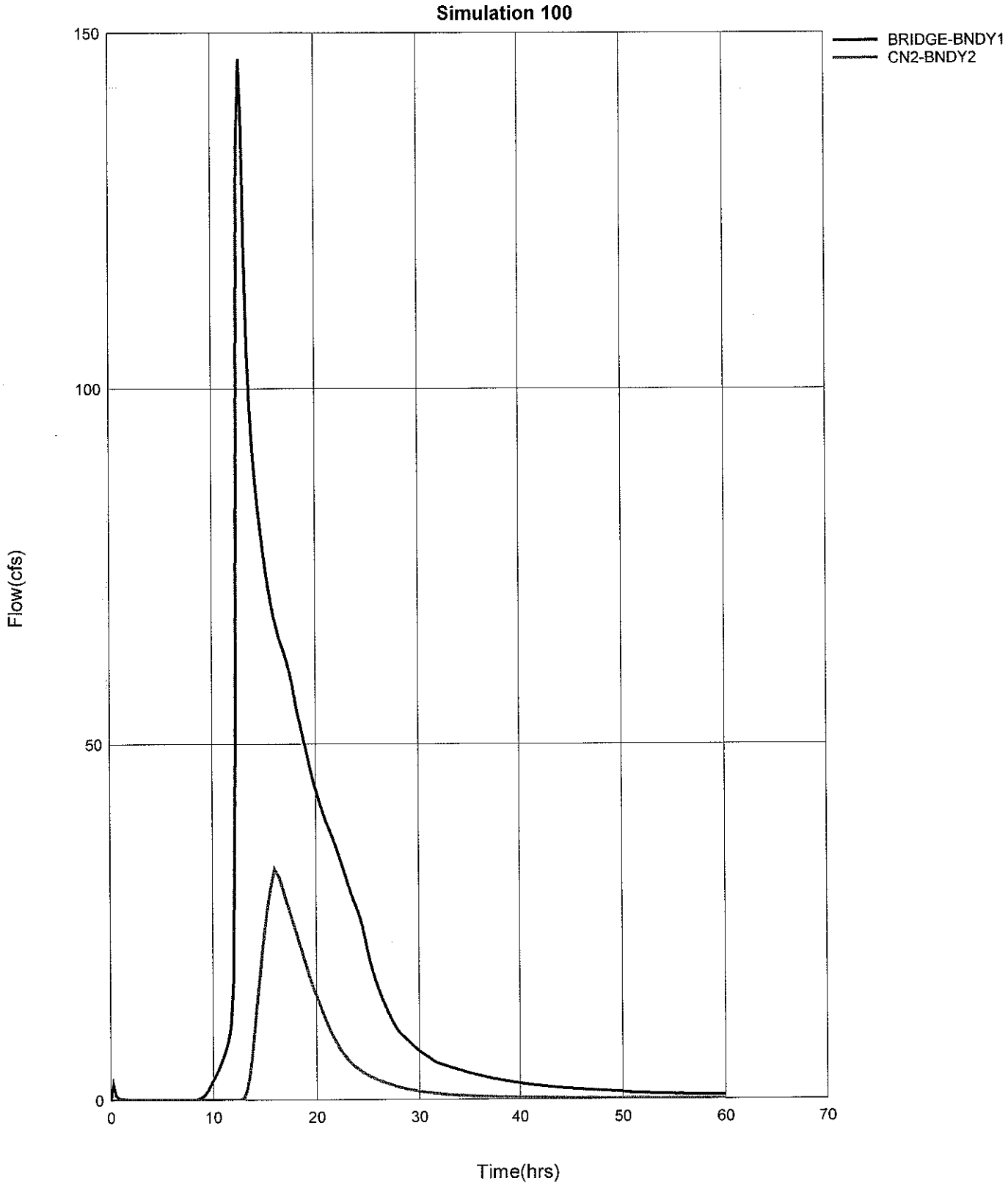

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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max T Outf
BNDY1	POST	002	0.00	8.800	11.500	0.0000	5	15.16	28.625	0
BNDY2	POST	002	0.00	11.200	12.200	0.0000	9	21.67	1.475	0
BRIDGE	POST	002	15.16	10.882	12.500	0.0062	2483	15.14	28.625	15
CN2	POST	002	21.67	11.567	13.000	0.0002	111201	21.60	2.926	21
E1	POST	002	15.34	14.224	17.000	-0.0100	1514	13.71	22.745	13
FLPOND	BASE	002	13.92	21.041	23.000	0.0084	21453	12.25	16.280	14
GP1	BASE	002	13.28	20.332	23.000	0.0071	5135	12.21	5.128	13
GP2	BASE	002	13.32	20.374	22.000	0.0077	19395	12.25	9.552	13
GP3	BASE	002	13.20	20.384	23.000	0.0056	2073	12.50	1.968	12
H3N1	BASE	002	12.92	18.940	22.000	0.0030	350	12.91	5.061	12
H5N1	BASE	002	12.76	16.869	19.000	-0.0800	149	12.75	0.344	12
H6N1	POST	002	14.08	17.995	20.000	0.0079	1015	14.05	14.660	14
H6N2	POST	002	13.99	17.702	20.000	0.0098	1431	14.06	14.660	14
H6N3	POST	002	13.91	17.467	20.000	0.0099	524	13.89	15.782	13
H7N3	BASE	002	13.33	18.412	20.000	0.0053	2393	13.28	4.855	13
H8N1	BASE	002	13.83	16.227	18.000	0.0045	264	13.82	7.810	13
H9N1	BASE	002	0.01	16.318	19.000	0.0183	286	0.00	6.628	0
HDP2	BASE	002	12.74	18.522	20.000	0.0064	13333	12.25	9.025	12
JNC_A	POST	002	12.92	14.619	17.000	0.0044	973	12.91	7.082	12
JTP1	POST	002	12.98	17.787	20.000	0.0079	7465	12.25	5.408	12
JTP2	POST	002	13.87	14.541	16.000	0.0046	8998	12.25	3.720	13
JTP3	POST	002	15.42	13.483	16.000	0.0071	25865	14.50	24.533	15
JTP4	POST	002	15.30	14.170	16.000	0.0042	101793	12.25	35.848	15
JTP5	POST	002	15.45	14.198	16.500	-0.0056	5984	13.55	31.918	13
JTP6	POST	002	13.77	15.721	17.000	0.0057	11966	12.89	7.024	13
JTP7	POST	002	12.30	14.344	16.000	0.0042	2626	12.25	3.941	12
KKPOND	BASE	002	12.73	20.020	23.000	0.0069	9266	12.25	7.533	12
KLP	BASE	002	14.28	23.353	23.000	0.0053	43612	12.75	15.653	14
ON1	BASE	002	13.00	19.333	21.000	0.0038	1093	14.27	2.193	14
ON2	BASE	002	12.94	19.293	21.000	0.0046	1159	12.92	4.579	12
OP1	BASE	002	60.00	18.899	22.000	0.0005	110596	17.00	0.062	0
OP2	BASE	002	26.78	21.863	24.000	0.0061	10986	12.75	3.590	24
OP3	BASE	002	20.13	23.769	24.000	0.0029	24611	12.25	4.634	21
OUTFALL1	POST	002	12.89	14.294	16.000	0.0034	1215	12.86	7.378	12
OUTFALL2	POST	002	15.36	11.363	12.000	0.0063	609	15.40	24.417	15
TARP1	POST	002	14.05	19.614	22.000	0.0045	22275	0.00	15.645	14
TARP2	BASE	002	14.89	19.897	22.500	-0.0359	66976	13.70	12.490	0
W1	POST	002	16.87	15.217	16.500	0.0005	109132	13.75	2.878	21
W2N1	BASE	002	13.41	20.513	22.000	0.0013	5872	12.66	0.594	13
W2N2	BASE	002	17.79	20.385	22.000	0.0005	9564	13.36	0.188	17
W2N3	BASE	002	0.00	17.500	20.000	-0.0086	386	21.07	0.428	0
W3N1	BASE	002	13.27	21.560	22.500	0.0002	3261	12.75	0.137	13
W3N2	BASE	002	26.82	21.863	23.000	0.0001	5982	24.07	0.105	26
W4N1	BASE	002	20.12	23.768	24.000	0.0004	9738	19.51	0.412	20
W4N2	BASE	002	21.27	20.398	21.000	0.0002	7812	20.46	0.407	21
W4N3	BASE	002	21.38	19.998	21.000	-0.0002	547	21.12	0.403	21
XDOT1	BASE	002	12.87	19.235	21.000	-0.0050	800	12.75	0.904	12
XDOT2	BASE	002	12.81	18.030	20.000	0.0031	2036	12.77	6.822	12
XDOT3	BASE	002	12.30	16.308	18.000	-0.0030	611	12.51	0.787	12
XDOT4	POST	002	13.77	15.730	17.500	0.0055	7227	13.57	22.633	14
XDOT5	BASE	002	13.52	15.879	18.000	0.0033	5603	13.30	5.508	13
BNDY1	POST	010	0.00	8.800	11.500	0.0000	5	12.92	59.055	0
BNDY2	POST	010	0.00	11.200	12.200	0.0000	9	18.43	6.182	0
BRIDGE	POST	010	12.92	11.530	12.500	0.0053	3220	12.90	59.066	12
CN2	POST	010	18.43	11.938	13.000	0.0003	117240	18.43	9.055	18
E1	POST	010	14.06	16.015	17.000	-0.0100	937	13.28	52.971	13
FLPOND	BASE	010	12.71	21.978	23.000	0.0079	23900	12.25	29.707	12
GP1	BASE	010	13.25	21.377	23.000	0.0081	5864	12.42	13.342	12
GP2	BASE	010	13.26	21.520	22.000	0.0069	21391	12.25	17.557	12
GP3	BASE	010	13.20	21.545	23.000	0.0077	2705	12.50	3.632	12
H3N1	BASE	010	12.77	19.539	22.000	0.0040	379	12.77	19.019	12
H5N1	BASE	010	12.75	17.017	19.000	-0.0800	155	12.75	0.751	12
H6N1	POST	010	13.63	19.037	20.000	0.0076	1744	13.60	29.772	13
H6N2	POST	010	13.63	18.996	20.000	0.0091	2039	13.73	29.794	13
H6N3	POST	010	13.58	18.357	20.000	0.0100	178	13.57	32.526	13
H7N3	BASE	010	12.51	18.707	20.000	0.0063	3119	12.93	11.612	12
H8N1	BASE	010	13.53	16.902	18.000	0.0037	219	13.52	15.983	13
H9N1	BASE	010	15.38	16.546	19.000	0.0183	308	0.00	6.628	15
HDP2	BASE	010	12.62	19.307	20.000	0.0059	15176	12.25	16.345	12
JNC_A	POST	010	12.80	15.609	17.000	0.0061	1160	12.79	24.705	12
JTP1	POST	010	12.57	18.461	20.000	0.0080	7965	12.25	8.417	12
JTP2	POST	010	12.63	14.918	16.000	0.0047	9622	12.25	5.730	12
JTP3	POST	010	15.11	14.417	16.000	0.0075	28898	15.02	47.774	15
JTP4	POST	010	15.03	15.508	16.000	0.0040	107917	12.30	73.203	14
JTP5	POST	010	14.08	15.729	16.500	0.0082	6298	12.56	65.172	12
JTP6	POST	010	13.28	16.382	17.000	0.0036	15101	13.51	20.427	13
JTP7	POST	010	14.08	16.012	16.000	0.0048	4814	12.25	6.190	12
KKPOND	BASE	010	12.87	21.279	23.000	0.0075	11241	12.25	13.566	12
KLP	BASE	010	13.65	24.068	23.000	0.0036	46611	12.75	28.936	13
ON1	BASE	010	12.76	20.313	21.000	0.0070	1818	12.71	14.789	12
ON2	BASE	010	12.77	20.220	21.000	0.0063	1860	12.74	17.983	12

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max T Outf
OP1	BASE	010	60.00	19.869	22.000	0.0004	116045	13.25	0.830	0
OP2	BASE	010	16.12	22.669	24.000	0.0056	11278	12.75	7.888	13
OP3	BASE	010	15.34	24.279	24.000	0.0030	26056	12.25	10.174	16
OUTFALL1	POST	010	12.81	14.990	16.000	0.0040	1745	12.80	25.404	12
OUTFALL2	POST	010	14.34	12.019	12.000	0.0064	739	15.25	48.177	15
TARP1	POST	010	13.61	20.672	22.000	0.0041	24873	12.50	33.362	13
TARP2	BASE	010	14.97	21.805	22.500	-0.0359	76563	13.11	34.503	14
W1	POST	010	15.04	15.507	16.500	0.0007	114146	14.28	14.118	18
W2N1	BASE	010	13.27	20.658	22.000	0.0007	6338	12.75	0.808	13
W2N2	BASE	010	16.09	20.504	22.000	0.0003	10401	13.21	0.424	16
W2N3	BASE	010	0.00	17.500	20.000	-0.0086	386	15.94	2.668	0
W3N1	BASE	010	13.25	21.607	22.500	0.0002	3444	12.75	0.273	13
W3N2	BASE	010	16.13	22.663	23.000	0.0015	9102	13.86	2.204	16
W4N1	BASE	010	15.33	24.278	24.000	0.0015	12973	14.67	2.650	15
W4N2	BASE	010	15.86	20.724	21.000	0.0005	10440	15.45	2.591	15
W4N3	BASE	010	15.89	20.321	21.000	0.0006	761	15.86	2.559	15
XDOT1	BASE	010	12.77	19.383	21.000	0.0025	1028	12.75	1.991	12
XDOT2	BASE	010	12.80	18.732	20.000	0.0049	2680	12.77	21.726	12
XDOT3	BASE	010	13.28	16.440	18.000	-0.0012	1013	12.50	1.742	12
XDOT4	POST	010	13.28	16.396	17.500	0.0042	9528	13.33	47.054	13
XDOT5	BASE	010	13.28	16.472	18.000	0.0031	8599	12.86	12.920	12
BNDY1	POST	025	0.00	8.800	11.500	0.0000	5	12.79	83.664	0
BNDY2	POST	025	0.00	11.200	12.200	0.0000	9	17.50	22.538	0
BRIDGE	POST	025	12.79	11.910	12.500	0.0056	3626	12.78	83.683	12
CN2	POST	025	17.50	12.800	13.000	-0.0004	131095	16.92	30.737	17
E1	POST	025	14.73	16.513	17.000	-0.0100	356	14.51	58.422	14
FLPOND	BASE	025	12.56	22.189	23.000	0.0100	24453	12.25	36.845	12
GP1	BASE	025	13.29	22.169	23.000	0.0089	6416	12.29	16.838	12
GP2	BASE	025	13.35	22.342	22.000	0.0080	22825	12.25	21.823	12
GP3	BASE	025	13.18	22.431	23.000	-0.0090	3187	12.50	4.520	12
H3N1	BASE	025	12.69	19.869	22.000	0.0054	358	12.68	29.369	12
H5N1	BASE	025	12.75	17.084	19.000	-0.0800	157	12.75	0.981	12
H6N1	POST	025	13.69	19.344	20.000	0.0063	1949	14.30	36.563	14
H6N2	POST	025	13.68	19.315	20.000	-0.0091	2247	14.27	36.953	14
H6N3	POST	025	13.14	18.415	20.000	-0.0414	159	14.19	40.605	12
H7N3	BASE	025	12.38	18.732	20.000	0.0078	3188	12.81	13.087	13
H8N1	BASE	025	14.79	17.410	18.000	0.0467	134	12.65	30.689	15
H9N1	BASE	025	14.67	16.861	19.000	0.0183	312	0.00	6.628	14
HDP2	BASE	025	12.60	19.654	20.000	0.0061	16085	12.25	20.225	12
JNC_A	POST	025	12.72	16.154	17.000	0.0072	1188	12.71	37.175	12
JTP1	POST	025	12.49	18.765	20.000	0.0074	8189	12.25	10.007	12
JTP2	POST	025	12.48	15.070	16.000	0.0045	9819	12.25	6.788	12
JTP3	POST	025	14.95	14.640	16.000	0.0075	29674	12.25	53.014	15
JTP4	POST	025	14.95	15.862	16.000	0.0052	108688	12.29	94.319	13
JTP5	POST	025	14.75	16.135	16.500	0.0086	6770	12.66	83.870	12
JTP6	POST	025	14.64	16.767	17.000	0.0040	16759	12.66	25.268	12
JTP7	POST	025	14.67	16.512	16.000	0.0059	5511	12.25	7.381	12
KKPOND	BASE	025	12.73	21.846	23.000	0.0083	12130	12.25	16.757	12
KLP	BASE	025	13.43	24.361	23.000	0.0027	47926	12.75	36.026	13
ON1	BASE	025	12.67	20.840	21.000	0.0099	2218	12.56	23.894	12
ON2	BASE	025	12.68	20.771	21.000	0.0085	2233	12.65	28.091	12
OP1	BASE	025	28.83	20.640	22.000	0.0006	120465	14.69	6.005	40
OP2	BASE	025	15.06	22.976	24.000	0.0062	11390	12.75	10.315	13
OP3	BASE	025	14.50	24.519	24.000	0.0041	26734	12.25	13.298	15
OUTFALL1	POST	025	12.72	15.316	16.000	0.0045	1978	12.71	38.233	12
OUTFALL2	POST	025	12.88	12.194	12.000	0.0074	785	14.93	52.967	14
TARP1	POST	025	13.90	21.530	22.000	0.0055	26884	12.50	43.256	14
TARP2	BASE	025	14.72	22.932	22.500	-0.0359	84147	13.04	48.854	14
W1	POST	025	14.94	15.860	16.500	0.0013	121919	13.48	32.222	16
W2N1	BASE	025	13.26	20.721	22.000	0.0007	6557	12.75	0.976	13
W2N2	BASE	025	30.19	20.599	22.000	0.0004	11068	13.15	0.560	30
W2N3	BASE	025	0.00	17.500	20.000	-0.0086	386	15.12	4.370	0
W3N1	BASE	025	14.65	21.655	22.500	0.0002	6543	14.12	0.427	14
W3N2	BASE	025	15.07	22.968	23.000	0.0009	10307	13.29	4.029	15
W4N1	BASE	025	14.50	24.517	24.000	0.0016	14506	13.92	4.383	14
W4N2	BASE	025	15.04	20.896	21.000	0.0012	11753	14.64	4.288	15
W4N3	BASE	025	15.07	20.480	21.000	0.0012	815	15.03	4.210	15
XDOT1	BASE	025	12.76	19.459	21.000	0.0027	1151	12.75	2.605	12
XDOT2	BASE	025	12.72	19.121	20.000	0.0058	2926	12.69	32.851	12
XDOT3	BASE	025	14.63	16.783	18.000	0.0014	1287	12.50	2.282	12
XDOT4	POST	025	14.63	16.775	17.500	0.0046	10926	14.19	58.999	12
XDOT5	BASE	025	14.67	16.845	18.000	0.0037	10602	13.93	19.057	14
BNDY1	POST	100	0.00	8.800	11.500	0.0000	5	12.58	119.949	0
BNDY2	POST	100	0.00	11.200	12.200	0.0000	9	16.84	42.276	0
BRIDGE	POST	100	12.58	12.357	12.500	0.0068	4099	12.59	150.173	12
CN2	POST	100	16.84	13.808	13.000	0.0009	147337	16.18	58.943	16
E1	POST	100	14.19	16.975	17.000	-0.0100	264	14.63	68.650	14
FLPOND	BASE	100	12.58	22.677	23.000	0.0100	25727	12.25	48.718	12
GP1	BASE	100	13.40	23.477	23.000	0.0081	7327	12.25	21.225	12
GP2	BASE	100	13.45	23.701	22.000	0.0076	25193	12.25	28.930	15
GP3	BASE	100	13.23	23.886	23.000	0.0082	3980	12.50	6.006	13

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max T Outf
H3N1	BASE	100	12.56	20.319	22.000	0.0054	309	12.56	45.207	12
H5N1	BASE	100	14.15	17.408	19.000	-0.0800	157	12.75	1.377	12
H6N1	POST	100	14.12	20.495	20.000	0.0062	2712	16.59	37.123	16
H6N2	POST	100	14.12	20.489	20.000	-0.0091	3018	16.59	37.221	16
H6N3	POST	100	14.08	19.309	20.000	-0.0413	135	12.58	41.852	12
H7N3	BASE	100	12.22	18.739	20.000	0.0083	3225	12.55	14.686	12
H8N1	BASE	100	14.09	18.396	18.000	0.0469	121	12.39	30.733	12
H9N1	BASE	100	14.19	17.441	19.000	0.0183	255	13.66	10.516	16
HDP2	BASE	100	12.53	20.139	20.000	0.0067	17352	12.25	26.672	12
JNC_A	POST	100	12.61	16.864	17.000	0.0062	1147	12.55	56.603	12
JTP1	POST	100	12.40	19.149	20.000	0.0081	8480	12.25	12.664	12
JTP2	POST	100	14.29	15.312	16.000	0.0050	10029	12.25	8.554	12
JTP3	POST	100	14.37	14.985	16.000	0.0099	30877	12.25	73.217	14
JTP4	POST	100	14.13	16.179	16.000	0.0052	109379	12.26	120.731	12
JTP5	POST	100	14.00	16.458	16.500	0.0091	7051	12.41	106.282	12
JTP6	POST	100	14.18	17.365	17.000	0.0032	19398	12.36	20.842	19
JTP7	POST	100	14.19	16.976	16.000	0.0065	6158	12.25	9.371	12
KKPOND	BASE	100	12.47	22.150	23.000	0.0095	12607	12.25	22.057	12
KLP	BASE	100	13.22	24.711	23.000	0.0026	49715	12.75	47.906	13
ON1	BASE	100	12.55	21.445	21.000	0.0099	2676	12.30	33.278	12
ON2	BASE	100	12.55	21.402	21.000	0.0087	2677	12.52	43.372	12
OP1	BASE	100	18.30	22.117	22.000	0.0008	131381	14.18	28.474	20
OP2	BASE	100	14.20	23.408	24.000	0.0038	11546	12.75	14.501	12
OP3	BASE	100	13.77	24.896	24.000	0.0042	27803	12.25	18.657	14
OUTFALL1	POST	100	12.59	15.674	16.000	-0.0099	2227	12.52	59.035	12
OUTFALL2	POST	100	12.58	12.605	12.000	0.0085	869	12.61	61.192	12
TARP1	POST	100	13.95	23.195	22.000	0.0052	31031	12.50	60.241	16
TARP2	BASE	100	14.22	24.159	22.500	-0.0359	92639	12.97	77.311	14
W1	POST	100	14.12	16.178	16.500	-0.0012	128184	12.88	61.233	16
W2N1	BASE	100	18.30	22.116	22.000	0.0007	11587	16.92	6.912	17
W2N2	BASE	100	18.55	21.937	22.000	0.0009	20558	17.66	6.510	18
W2N3	BASE	100	17.85	17.861	20.000	-0.0086	6842	17.61	9.797	17
W3N1	BASE	100	18.28	22.123	22.500	0.0005	8132	16.16	1.101	13
W3N2	BASE	100	14.21	23.394	23.000	0.0020	12012	12.86	7.558	14
W4N1	BASE	100	13.77	24.893	24.000	0.0018	16945	13.30	8.243	13
W4N2	BASE	100	14.34	21.201	21.000	0.0006	13977	13.93	7.969	14
W4N3	BASE	100	14.35	20.748	21.000	0.0006	859	14.34	7.714	14
XDOT1	BASE	100	12.62	19.686	21.000	-0.0043	1398	12.75	3.664	12
XDOT2	BASE	100	12.61	19.665	20.000	0.0053	3167	12.42	50.644	12
XDOT3	BASE	100	14.18	17.380	18.000	0.0013	1724	12.50	3.213	12
XDOT4	POST	100	14.17	17.373	17.500	0.0039	12938	13.72	65.535	14
XDOT5	BASE	100	14.19	17.420	18.000	0.0035	13554	13.66	22.269	14

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
BRIDGE-BNDY1	POST	002	15.16	28.625	0.122	15.16	10.882	15.16	10.051
BRIDGE-BNDY1	POST	010	12.92	59.055	0.148	12.92	11.530	12.92	10.589
BRIDGE-BNDY1	POST	025	12.79	83.664	0.222	12.79	11.910	12.79	10.912
BRIDGE-BNDY1	POST	100	12.58	119.949	0.533	12.58	12.357	12.58	11.302
CN2-BNDY2	POST	002	21.67	1.475	0.002	21.67	11.567	21.67	11.392
CN2-BNDY2	POST	010	18.43	6.182	-0.006	18.43	11.938	18.43	11.599
CN2-BNDY2	POST	025	17.50	22.538	-0.025	17.50	12.800	17.50	11.984
CN2-BNDY2	POST	100	16.84	42.276	0.037	16.84	13.808	16.84	12.263
E1-JTP5 (1-36)	POST	002	13.86	11.261	6.449	15.34	14.224	15.45	14.198
E1-JTP5 (1-36)	POST	010	13.32	20.742	6.740	14.06	16.015	14.08	15.729
E1-JTP5 (1-36)	POST	025	14.48	23.078	6.993	14.73	16.513	14.75	16.135
E1-JTP5 (1-36)	POST	100	14.60	27.150	5.831	14.19	16.975	14.00	16.458
E1-JTP5 (1-42)	POST	002	13.86	15.045	8.139	15.34	14.224	15.45	14.198
E1-JTP5 (1-42)	POST	010	13.32	29.842	8.774	14.06	16.015	14.08	15.729
E1-JTP5 (1-42)	POST	025	14.48	33.204	9.286	14.73	16.513	14.75	16.135
E1-JTP5 (1-42)	POST	100	14.60	39.063	7.302	14.19	16.975	14.00	16.458
FLPOND-ON1	BASE	002	14.27	2.193	0.014	13.92	21.041	13.00	19.333
FLPOND-ON1	BASE	010	12.71	14.789	0.111	12.71	21.978	12.76	20.313
FLPOND-ON1	BASE	025	12.56	23.894	0.199	12.56	22.189	12.67	20.840
FLPOND-ON1	BASE	100	12.30	33.278	0.219	12.58	22.677	12.55	21.445
GP1-H7N3	BASE	002	13.28	4.855	0.047	13.28	20.332	13.33	18.412
GP1-H7N3	BASE	010	12.93	11.612	-2.985	13.25	21.377	12.51	18.707
GP1-H7N3	BASE	025	12.81	13.087	-3.370	13.29	22.169	12.38	18.732
GP1-H7N3	BASE	100	12.55	14.686	-3.777	13.40	23.477	12.22	18.739
GP2-GP1	BASE	002	13.42	2.546	-2.666	13.32	20.374	13.28	20.332
GP2-GP1	BASE	010	12.98	5.904	-2.311	13.26	21.520	13.25	21.377
GP2-GP1	BASE	025	12.81	5.851	-2.640	13.35	22.342	13.29	22.169
GP2-GP1	BASE	100	15.09	6.589	-2.829	13.45	23.701	13.40	23.477
GP3-GP1	BASE	002	12.21	1.781	1.249	13.20	20.384	13.28	20.332
GP3-GP1	BASE	010	12.87	2.826	1.260	13.20	21.545	13.25	21.377
GP3-GP1	BASE	025	12.81	3.265	1.265	13.18	22.431	13.29	22.169
GP3-GP1	BASE	100	13.04	3.582	1.136	13.23	23.886	13.40	23.477
H3N1-H2N1	BASE	002	12.92	5.060	0.027	12.92	18.940	12.92	18.660
H3N1-H2N1	BASE	010	12.77	19.018	0.098	12.77	19.539	12.77	19.169
H3N1-H2N1	BASE	025	12.69	29.368	0.141	12.69	19.869	12.69	19.432
H3N1-H2N1	BASE	100	12.56	45.207	0.143	12.56	20.319	12.59	19.758
H5N1-XDOT3	BASE	002	12.75	0.342	0.002	12.76	16.869	12.75	16.266
H5N1-XDOT3	BASE	010	12.75	0.750	0.002	12.75	17.017	12.75	16.357
H5N1-XDOT3	BASE	025	12.75	0.980	0.010	12.75	17.084	14.63	16.783
H5N1-XDOT3	BASE	100	12.75	1.366	0.012	14.15	17.408	14.18	17.380
H6N1-H6N2	POST	002	14.06	14.660	2.114	14.08	17.995	13.99	17.702
H6N1-H6N2	POST	010	13.73	29.794	2.148	13.63	19.037	13.63	18.996
H6N1-H6N2	POST	025	14.27	36.953	-2.121	13.69	19.344	13.68	19.315
H6N1-H6N2	POST	100	16.59	37.221	21.738	14.12	20.495	14.12	20.489
H6N2-H6N3	POST	002	14.09	14.665	-2.012	13.99	17.702	13.91	17.467
H6N2-H6N3	POST	010	13.82	29.869	-2.010	13.63	18.996	13.58	18.357
H6N2-H6N3	POST	025	14.19	37.961	2.221	13.68	19.315	13.14	18.415
H6N2-H6N3	POST	100	16.71	37.405	2.204	14.12	20.489	14.08	19.309
H6N3-H8N1	POST	002	13.86	7.591	-0.065	13.91	17.467	13.86	15.846
H6N3-H8N1	POST	010	13.57	15.451	-0.064	13.58	18.357	13.57	16.221
H6N3-H8N1	POST	025	12.65	29.924	15.912	13.14	18.415	14.79	17.410
H6N3-H8N1	POST	100	12.39	29.953	-15.919	14.08	19.309	14.09	18.396
H6N3-XDOT4	POST	002	13.88	8.191	0.067	13.91	17.467	13.88	16.155
H6N3-XDOT4	POST	010	13.56	17.075	-0.067	13.58	18.357	13.56	16.795
H6N3-XDOT4	POST	025	14.19	22.238	-6.225	13.14	18.415	14.19	16.874
H6N3-XDOT4	POST	100	13.12	25.396	-6.191	14.08	19.309	14.17	17.373
H7N3-XDOT5	BASE	002	13.33	4.848	0.047	13.33	18.412	13.33	15.927
H7N3-XDOT5	BASE	010	12.88	11.844	2.891	12.51	18.707	13.28	16.472
H7N3-XDOT5	BASE	025	13.93	15.499	-5.831	12.38	18.732	14.67	16.845
H7N3-XDOT5	BASE	100	12.64	16.785	-6.309	12.22	18.739	14.19	17.420
H8N1-XDOT4	BASE	002	13.83	7.809	0.033	13.83	16.227	13.83	15.804
H8N1-XDOT4	BASE	010	13.53	15.982	0.042	13.53	16.902	13.28	16.396
H8N1-XDOT4	BASE	025	15.32	21.372	0.692	14.79	17.410	14.63	16.775
H8N1-XDOT4	BASE	100	12.57	20.726	0.780	14.09	18.396	14.17	17.373
H9N1-XDOT5	BASE	002	0.01	2.500	-0.335	0.01	16.318	0.01	15.893

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
H9N1-XDOT5	BASE	010	15.81	3.259	-0.310	15.38	16.546	13.28	16.472
H9N1-XDOT5	BASE	025	14.67	9.360	7.817	14.67	16.861	14.67	16.845
H9N1-XDOT5	BASE	100	16.29	12.258	6.883	14.19	17.441	14.19	17.420
HDP2-JTP5	BASE	002	12.74	3.585	0.021	12.74	18.522	15.45	14.198
HDP2-JTP5	BASE	010	12.62	8.119	0.026	12.62	19.307	14.08	15.729
HDP2-JTP5	BASE	025	12.60	10.495	0.036	12.60	19.654	14.75	16.135
HDP2-JTP5	BASE	100	12.53	15.534	0.040	12.53	20.139	14.00	16.458
JNC_A-OUTFALL1	POST	002	12.92	7.080	0.048	12.92	14.619	12.92	14.337
JNC_A-OUTFALL1	POST	010	12.80	24.680	0.118	12.80	15.609	12.80	15.102
JNC_A-OUTFALL1	POST	025	12.72	37.152	0.149	12.72	16.154	12.72	15.483
JNC_A-OUTFALL1	POST	100	12.56	56.959	-0.642	12.61	16.864	12.52	15.946
JTP1-JNC_A	POST	002	12.98	0.850	0.005	12.98	17.787	12.92	14.619
JTP1-JNC_A	POST	010	12.57	3.396	0.018	12.57	18.461	12.80	15.609
JTP1-JNC_A	POST	025	12.48	4.937	0.026	12.49	18.765	12.72	16.154
JTP1-JNC_A	POST	100	12.40	8.608	0.031	12.40	19.149	12.61	16.864
JTP2-JTP3	POST	002	13.86	0.334	0.001	13.87	14.541	15.42	13.483
JTP2-JTP3	POST	010	12.62	1.984	0.012	12.63	14.918	15.11	14.417
JTP2-JTP3	POST	025	12.48	3.433	0.018	12.48	15.070	14.95	14.640
JTP2-JTP3	POST	100	14.27	6.723	0.030	14.29	15.312	14.37	14.985
JTP2-W1	POST	002	0.00	0.000	0.000	13.87	14.541	16.87	15.217
JTP2-W1	POST	010	0.00	0.000	0.000	12.63	14.918	15.04	15.507
JTP2-W1	POST	025	0.00	0.000	0.000	12.48	15.070	14.94	15.860
JTP2-W1	POST	100	0.00	0.000	-0.008	14.29	15.312	14.12	16.178
JTP3-OUTFALL2	POST	002	15.42	24.179	0.076	15.42	13.483	15.36	11.363
JTP3-OUTFALL2	POST	010	15.28	47.701	0.090	15.11	14.417	14.34	12.019
JTP3-OUTFALL2	POST	025	15.00	52.339	0.126	14.95	14.640	12.88	12.194
JTP3-OUTFALL2	POST	100	14.40	59.833	0.163	14.37	14.985	12.58	12.605
JTP4-JTP3	POST	002	15.02	22.825	0.089	15.30	14.170	15.42	13.483
JTP4-JTP3	POST	010	15.02	45.231	0.670	15.03	15.508	15.11	14.417
JTP4-JTP3	POST	025	14.95	49.330	0.673	14.95	15.862	14.95	14.640
JTP4-JTP3	POST	100	13.65	50.771	1.029	14.13	16.179	14.37	14.985
JTP4-W1	POST	002	0.00	0.000	0.000	15.30	14.170	16.87	15.217
JTP4-W1	POST	010	14.28	7.847	-0.043	15.03	15.508	15.04	15.507
JTP4-W1	POST	025	13.48	19.091	0.105	14.95	15.862	14.94	15.860
JTP4-W1	POST	100	12.86	35.438	-0.178	14.13	16.179	14.12	16.178
JTP5-JTP4 1-42	POST	002	13.71	12.399	4.023	15.45	14.198	15.30	14.170
JTP5-JTP4 1-42	POST	010	12.71	29.982	-4.923	14.08	15.729	15.03	15.508
JTP5-JTP4 1-42	POST	025	12.48	36.006	-5.135	14.75	16.135	14.95	15.862
JTP5-JTP4 1-42	POST	100	12.41	40.414	-5.542	14.00	16.458	14.13	16.179
JTP5-JTP4 2-36	POST	002	13.02	16.042	-8.585	15.45	14.198	15.30	14.170
JTP5-JTP4 2-36	POST	010	13.34	35.610	-8.585	14.08	15.729	15.03	15.508
JTP5-JTP4 2-36	POST	025	12.79	46.039	-8.633	14.75	16.135	14.95	15.862
JTP5-JTP4 2-36	POST	100	12.41	55.208	5.932	14.00	16.458	14.13	16.179
JTP5-W1	POST	002	0.00	0.000	0.000	15.45	14.198	16.87	15.217
JTP5-W1	POST	010	0.00	0.000	0.000	14.08	15.729	15.04	15.507
JTP5-W1	POST	025	14.75	8.584	0.023	14.75	16.135	14.94	15.860
JTP5-W1	POST	100	14.00	23.356	0.082	14.00	16.458	14.12	16.178
JTP6-E1	POST	002	13.77	5.999	0.033	13.77	15.721	13.77	14.466
JTP6-E1	POST	010	13.28	24.421	12.650	13.28	16.382	14.06	16.015
JTP6-E1	POST	025	12.63	24.005	12.875	14.64	16.767	14.73	16.513
JTP6-E1	POST	100	19.69	22.908	-11.935	14.18	17.365	14.19	16.975
JTP7-E1	POST	002	12.29	3.614	0.642	12.30	14.344	15.34	14.224
JTP7-E1	POST	010	12.86	9.809	-11.943	14.08	16.012	14.06	16.015
JTP7-E1	POST	025	12.48	10.812	-12.150	14.67	16.512	14.73	16.513
JTP7-E1	POST	100	12.21	11.661	-12.165	14.19	16.976	14.19	16.975
KKPOND-ON2	BASE	002	12.70	2.631	-0.181	12.73	20.020	12.94	19.293
KKPOND-ON2	BASE	010	12.43	3.902	-0.183	12.87	21.279	12.77	20.220
KKPOND-ON2	BASE	025	12.74	5.536	-0.187	12.73	21.846	12.68	20.771
KKPOND-ON2	BASE	100	12.45	13.087	-0.172	12.47	22.150	12.55	21.402
KLP-TARP2	BASE	002	14.28	7.473	0.032	14.28	23.353	14.28	21.313
KLP-TARP2	BASE	010	13.65	18.038	0.041	13.65	24.068	14.97	21.805
KLP-TARP2	BASE	025	13.58	25.758	0.047	13.43	24.361	14.72	22.932
KLP-TARP2	BASE	100	13.25	38.193	0.026	13.22	24.711	14.22	24.159
ON1-ON2	BASE	002	14.25	2.211	0.008	13.00	19.333	12.94	19.293
ON1-ON2	BASE	010	12.74	14.569	0.100	12.76	20.313	12.77	20.220

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ON1-ON2	BASE	025	12.58	23.198	0.148	12.67	20.840	12.68	20.771
ON1-ON2	BASE	100	12.68	30.945	0.162	12.55	21.445	12.55	21.402
ON2-H3N1	BASE	002	12.94	4.578	0.025	12.94	19.293	12.94	19.005
ON2-H3N1	BASE	010	12.77	17.907	0.095	12.77	20.220	12.77	19.733
ON2-H3N1	BASE	025	12.68	27.945	0.132	12.68	20.771	12.68	20.103
ON2-H3N1	BASE	100	12.55	43.299	0.140	12.55	21.402	12.52	20.495
OP1-W2N1	BASE	002	0.00	0.000	-0.008	13.41	20.415	13.41	20.513
OP1-W2N1	BASE	010	0.00	0.000	-0.008	13.27	20.535	13.27	20.658
OP1-W2N1	BASE	025	32.91	0.184	-0.075	28.83	20.640	13.26	20.721
OP1-W2N1	BASE	100	17.90	4.963	-0.351	18.30	22.117	18.30	22.116
OP1-W3N1	BASE	002	0.00	0.000	-0.006	60.00	18.899	13.27	21.560
OP1-W3N1	BASE	010	0.00	0.000	-0.006	60.00	19.869	13.25	21.607
OP1-W3N1	BASE	025	0.00	0.000	-0.006	28.83	20.640	14.65	21.655
OP1-W3N1	BASE	100	0.00	0.000	-0.006	18.30	22.117	18.28	22.123
OP2-W3N2	BASE	002	24.07	0.105	0.000	26.78	21.863	26.82	21.863
OP2-W3N2	BASE	010	13.86	2.204	0.011	16.12	22.669	16.13	22.663
OP2-W3N2	BASE	025	13.29	4.029	0.016	15.06	22.976	15.07	22.968
OP2-W3N2	BASE	100	12.86	7.558	0.035	14.20	23.408	14.21	23.394
OP3-W4N1	BASE	002	21.76	0.212	-0.007	20.13	23.769	20.12	23.768
OP3-W4N1	BASE	010	16.75	1.092	0.038	15.34	24.279	15.33	24.278
OP3-W4N1	BASE	025	15.26	1.704	0.078	14.50	24.519	14.50	24.517
OP3-W4N1	BASE	100	14.43	3.021	0.178	13.77	24.896	13.77	24.893
OUTFALL1-BRIDGE	POST	002	12.89	7.376	0.035	12.89	14.294	15.16	10.882
OUTFALL1-BRIDGE	POST	010	12.81	25.384	0.115	12.81	14.990	12.92	11.530
OUTFALL1-BRIDGE	POST	025	12.72	38.214	0.146	12.72	15.316	12.79	11.910
OUTFALL1-BRIDGE	POST	100	12.58	88.831	-33.381	12.59	15.674	12.58	12.357
OUTFALL2-BRIDGE	POST	002	15.40	24.417	0.089	15.36	11.363	15.16	10.882
OUTFALL2-BRIDGE	POST	010	15.25	48.180	0.104	14.34	12.019	12.92	11.530
OUTFALL2-BRIDGE	POST	025	14.94	52.971	0.149	12.88	12.194	12.79	11.910
OUTFALL2-BRIDGE	POST	100	12.62	61.390	-0.531	12.58	12.605	12.58	12.357
TARP1-H6N1	POST	002	14.05	14.660	0.070	14.05	19.614	14.08	17.995
TARP1-H6N1	POST	010	13.60	29.772	0.123	13.61	20.672	13.63	19.037
TARP1-H6N1	POST	025	14.30	36.563	0.146	13.90	21.530	13.69	19.344
TARP1-H6N1	POST	100	16.59	37.123	0.151	13.95	23.195	14.12	20.495
TARP2-OP1	BASE	002	0.00	0.000	0.000	14.89	19.897	60.00	18.899
TARP2-OP1	BASE	010	14.97	0.034	0.000	14.97	21.805	14.97	21.221
TARP2-OP1	BASE	025	14.72	4.706	0.003	14.72	22.932	14.72	21.672
TARP2-OP1	BASE	100	14.22	25.600	-0.117	14.22	24.159	14.22	22.382
TARP2-TARP1	BASE	002	0.00	15.645	15.645	14.89	19.897	14.05	19.614
TARP2-TARP1	BASE	010	14.91	21.277	15.645	14.97	21.805	13.61	20.672
TARP2-TARP1	BASE	025	14.98	25.099	15.645	14.72	22.932	13.90	21.530
TARP2-TARP1	BASE	100	17.11	25.361	15.645	14.22	24.159	13.95	23.195
W1-CN2	POST	002	21.60	2.926	-1.282	16.87	15.217	21.67	11.567
W1-CN2	POST	010	18.43	9.055	-3.942	15.04	15.507	18.43	11.938
W1-CN2	POST	025	16.92	30.737	-12.915	14.94	15.860	17.50	12.800
W1-CN2	POST	100	16.18	58.943	-23.968	14.12	16.178	16.84	13.808
W2N1-W2N2	BASE	002	13.36	0.188	0.001	13.41	20.513	17.79	20.385
W2N1-W2N2	BASE	010	13.21	0.424	-0.001	13.27	20.658	16.09	20.504
W2N1-W2N2	BASE	025	13.15	0.560	0.002	13.26	20.721	30.19	20.599
W2N1-W2N2	BASE	100	17.66	6.510	0.003	18.30	22.116	18.55	21.937
W2N2-W2N3	BASE	002	17.79	0.037	-0.000	17.79	20.385	17.79	20.206
W2N2-W2N3	BASE	010	16.09	0.110	0.000	16.09	20.504	16.09	20.212
W2N2-W2N3	BASE	025	30.19	0.201	0.000	30.19	20.599	30.19	20.218
W2N2-W2N3	BASE	100	18.55	6.281	0.005	18.55	21.937	18.55	20.369
W2N3-H9N1	BASE	002	0.00	6.628	6.628	0.00	17.500	0.00	16.628
W2N3-H9N1	BASE	010	0.00	6.628	6.628	0.00	17.500	0.00	16.628
W2N3-H9N1	BASE	025	0.00	6.628	6.628	0.00	17.500	14.67	16.861
W2N3-H9N1	BASE	100	17.80	9.766	6.628	17.85	17.861	14.19	17.441
W3N1-W2N1	BASE	002	13.23	0.112	0.029	13.27	21.560	24.72	20.330
W3N1-W2N1	BASE	010	13.24	0.237	-0.029	13.25	21.607	30.87	20.282
W3N1-W2N1	BASE	025	14.63	0.412	-0.029	14.65	21.655	31.34	20.636
W3N1-W2N1	BASE	100	13.91	0.844	-0.252	18.28	22.123	18.30	22.116
W3N2-W3N1	BASE	002	26.77	0.010	0.000	26.82	21.863	13.27	21.560
W3N2-W3N1	BASE	010	16.13	1.559	0.005	16.13	22.663	13.25	21.607
W3N2-W3N1	BASE	025	15.07	3.030	0.006	15.07	22.968	14.65	21.655

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
W3N2-W3N1	BASE	100	14.21	6.166	0.008	14.21	23.394	18.28	22.123
W4N1-W4N2	BASE	002	20.46	0.407	0.000	20.12	23.768	21.27	20.398
W4N1-W4N2	BASE	010	15.45	2.591	0.003	15.33	24.278	15.86	20.724
W4N1-W4N2	BASE	025	14.64	4.288	0.007	14.50	24.517	15.04	20.896
W4N1-W4N2	BASE	100	13.93	7.969	0.005	13.77	24.893	14.34	21.201
W4N2-W4N3	BASE	002	21.12	0.403	-0.034	21.27	20.398	21.12	19.947
W4N2-W4N3	BASE	010	15.86	2.559	-0.034	15.86	20.724	15.89	20.321
W4N2-W4N3	BASE	025	15.03	4.210	-0.034	15.04	20.896	15.07	20.480
W4N2-W4N3	BASE	100	14.34	7.714	-0.034	14.34	21.201	14.35	20.748
W4N3-W2N3	BASE	002	21.22	0.403	0.001	21.38	19.998	21.22	17.644
W4N3-W2N3	BASE	010	15.82	2.558	0.004	15.89	20.321	15.82	17.850
W4N3-W2N3	BASE	025	15.00	4.209	0.005	15.07	20.480	15.00	17.947
W4N3-W2N3	BASE	100	14.33	7.714	0.007	14.35	20.748	14.33	18.108
XDOT1-XDOT2	BASE	002	12.77	1.461	-0.623	12.87	19.235	12.81	18.030
XDOT1-XDOT2	BASE	010	12.48	2.412	0.984	12.77	19.383	12.80	18.732
XDOT1-XDOT2	BASE	025	12.78	2.595	0.932	12.76	19.459	12.72	19.121
XDOT1-XDOT2	BASE	100	12.42	6.717	-5.156	12.62	19.686	12.61	19.665
XDOT2-JNC_A	POST	002	12.81	6.262	0.041	12.81	18.030	12.81	14.039
XDOT2-JNC_A	POST	010	12.80	21.648	0.112	12.80	18.732	12.80	14.412
XDOT2-JNC_A	POST	025	12.72	32.769	0.140	12.72	19.121	12.72	14.606
XDOT2-JNC_A	POST	100	12.61	49.920	0.120	12.61	19.665	12.61	14.862
XDOT3-XDOT4	BASE	002	12.40	0.946	-0.387	12.30	16.308	13.77	15.730
XDOT3-XDOT4	BASE	010	12.54	1.721	-0.081	13.28	16.440	13.28	16.396
XDOT3-XDOT4	BASE	025	12.52	2.207	-0.068	14.63	16.783	14.63	16.775
XDOT3-XDOT4	BASE	100	12.48	2.779	-0.065	14.18	17.380	14.17	17.373
XDOT4-E1	POST	002	13.74	16.455	0.116	13.77	15.730	13.74	12.661
XDOT4-E1	POST	010	13.97	34.128	-10.199	13.28	16.396	15.02	15.939
XDOT4-E1	POST	025	14.51	46.805	-9.857	14.63	16.775	14.73	16.513
XDOT4-E1	POST	100	14.63	54.243	9.671	14.17	17.373	14.19	16.975
XDOT4-JTP6	POST	002	12.89	7.024	-1.898	13.77	15.730	13.77	15.721
XDOT4-JTP6	POST	010	13.51	20.427	-1.667	13.28	16.396	13.28	16.382
XDOT4-JTP6	POST	025	12.66	25.268	-1.375	14.63	16.775	14.64	16.767
XDOT4-JTP6	POST	100	12.36	20.842	-0.894	14.17	17.373	14.18	17.365
XDOT5-XDOT4	BASE	002	13.47	5.353	2.787	13.52	15.879	13.77	15.730
XDOT5-XDOT4	BASE	010	12.98	12.247	-3.207	13.28	16.472	13.28	16.396
XDOT5-XDOT4	BASE	025	14.93	14.902	-3.141	14.67	16.845	14.63	16.775
XDOT5-XDOT4	BASE	100	14.30	21.530	1.745	14.19	17.420	14.17	17.373

PRE vs POST
DRAINAGE BASIN SUMMARY

PRE DEVELOPMENT

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs	
BNDY1	2	8.8	11.5	0	5	38.946	0	
BNDY2	2	11.2	12.2	0	9	2.015	0	Pre- 2yr
BNDY3	2	16	18	0	0	1.438	0	42.40
BRIDGE	2	11.136	12.5	0.0099	3995	38.993	38.946	
CN2	2	11.625	13	0.0002	112151	3.717	2.015	
HDP1	2	15.865	16.5	0.0031	48316	20.032	22.353	
JT PRE1	2	17.759	19	0.0044	1968	6.8	10.405	
JT PRE2	2	11.655	16	0.0037	7250	34.18	33.894	
JT PRE4	2	15.252	16.5	0.0003	109782	4.672	3.717	
XDOT1	2	19	21	0	133	0	0	
XDOT2	2	18.08	20	0.0027	1115	5.246	5.243	
XDOT3	2	15.029	17	0.005	7726	31.023	30.929	
XDOT4	2	15.864	17.5	-0.0049	6950	43.915	30.671	
BNDY1	10	8.8	11.5	0	5	85.468	0	
BNDY2	10	11.2	12.2	0	9	13.014	0	Pre- 10yr
BNDY3	10	16	18	0	0	3.422	0	101.90
BRIDGE	10	11.934	12.5	0.0099	5282	85.546	85.468	
CN2	10	12.31	13	0.0007	123239	17.521	13.014	
HDP1	10	16.282	16.5	0.0029	49769	39.148	35.737	
JT PRE1	10	18.423	19	-0.0024	3056	23.208	23.139	
JT PRE2	10	12.408	16	0.004	9001	64.956	64.671	
JT PRE4	10	15.727	16.5	-0.0008	118727	19.662	17.521	
XDOT1	10	19	21	0	133	0	0	
XDOT2	10	18.768	20	0.0018	1599	19.654	19.627	
XDOT3	10	15.684	17	0.0046	9673	55.469	55.673	
XDOT4	10	16.28	17.5	0.0049	8698	72.231	54.081	

PRE vs POST
DRAINAGE BASIN SUMMARY

BNDY1	25	8.8	11.5	0	5	110.487	0	
BNDY2	25	11.2	12.2	0	9	21.545	0	Pre- 25yr
BNDY3	25	16	18	0	0	4.572	0	136.60
BRIDGE	25	12.25	12.5	0.0099	5813	110.611	110.49	
CN2	25	12.752	13	0.0011	130323	29.11	21.545	
HDP1	25	16.442	16.5	0.0041	50326	49.3	42.968	
JT PRE1	25	18.742	19	0.0035	3523	35.091	41.549	
JT PRE2	25	12.68	16	0.0048	9620	77.407	77.379	
JT PRE4	25	15.936	16.5	0.0009	122906	28.586	29.11	
XDOT1	25	19.079	21	0.0005	916	0	0.075	
XDOT2	25	19.082	20	0.0029	1914	30.05	30.025	
XDOT3	25	15.895	17	0.005	10313	65.449	66.003	
XDOT4	25	16.44	17.5	-0.0049	9274	83.415	63.428	
BNDY1	100	8.8	11.5	0	5	146.654	0	
BNDY2	100	11.2	12.2	0	9	33.105	0	Pre- 100yr
BNDY3	100	16	18	0	0	6.583	0	186.34
BRIDGE	100	12.634	12.5	0.0099	6456	146.707	146.65	
CN2	100	13.313	13	0.0011	139374	45.987	33.105	
HDP1	100	16.637	16.5	0.0044	51007	66.174	55.7	
JT PRE1	100	19.147	19	0.0027	4064	54.479	54.415	
JT PRE2	100	13.019	16	0.0048	10358	94.125	94.216	
JT PRE4	100	16.212	16.5	-0.0013	128420	41.93	45.987	
XDOT1	100	19.474	21	0.0015	1232	0	0.322	
XDOT2	100	19.474	20	0.0029	2242	46.585	46.553	
XDOT3	100	16.122	17	0.005	11016	78.232	78.967	
XDOT4	100	16.634	17.5	0.005	9919	80.475	75.164	

PRE vs POST
DRAINAGE BASIN SUMMARY

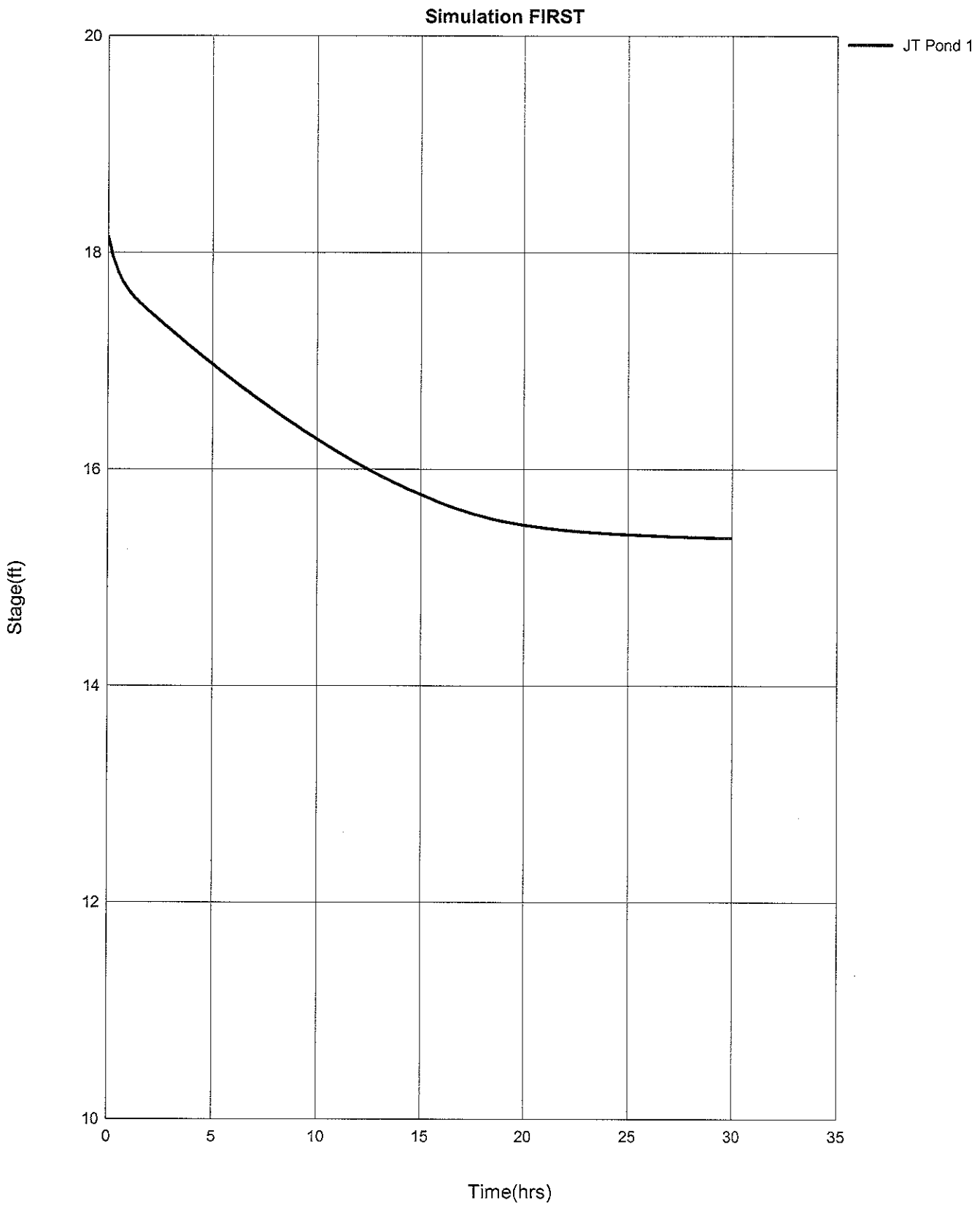
POST DEVELOPMENT								
Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs	
BNDY1	2	8.8	11.5	0	5	28.625	0	Post- 2yr
BNDY2	2	11.2	12.2	0	9	1.475	0	30.10
JTP1	2	17.787	20	0.0079	7465	5.408	0.85	
JTP2	2	14.541	16	0.0046	8998	3.72	0.334	
JTP3	2	13.483	16	0.0071	25865	24.533	24.179	
JTP4	2	14.17	16	0.0042	101793	35.848	22.825	
JTP5	2	14.198	16.5	-0.0056	5984	31.918	27.893	
JTP6	2	15.721	17	0.0057	11966	7.024	5.999	
JTP7	2	14.344	16	0.0042	2626	3.941	3.614	
OUTFALL1	2	14.294	16	0.0034	1215	7.378	7.376	
OUTFALL2	2	11.363	12	0.0063	609	24.417	24.417	
XDOT1	2	19.235	21	-0.005	800	0.904	1.461	
XDOT2	2	18.03	20	0.0031	2036	6.822	6.262	
XDOT3	2	16.308	18	-0.003	611	0.787	0.946	
XDOT4	2	15.73	17.5	0.0055	7227	22.633	22.958	
XDOT5	2	15.879	18	0.0033	5603	5.508	5.353	
BNDY1	10	8.8	11.5	0	5	59.055	0	Post- 10yr
BNDY2	10	11.2	12.2	0	9	6.182	0	65.24
JTP1	10	18.461	20	0.008	7965	8.417	3.396	
JTP2	10	14.918	16	0.0047	9622	5.73	1.984	
JTP3	10	14.417	16	0.0075	28898	47.774	47.701	
JTP4	10	15.508	16	0.004	107917	73.203	52.024	
JTP5	10	15.729	16.5	0.0082	6298	65.172	62.087	
JTP6	10	16.382	17	0.0036	15101	20.427	24.421	
JTP7	10	16.012	16	0.0048	4814	6.19	9.809	
OUTFALL1	10	14.99	16	0.004	1745	25.404	25.384	
OUTFALL2	10	12.019	12	0.0064	739	48.177	48.18	
XDOT1	10	19.383	21	0.0025	1028	1.991	2.412	
XDOT2	10	18.732	20	0.0049	2680	21.726	21.648	
XDOT3	10	16.44	18	-0.0012	1013	1.742	1.721	
XDOT4	10	16.396	17.5	0.0042	9528	47.054	53.334	
XDOT5	10	16.472	18	0.0031	8599	12.92	12.247	

PRE vs POST
DRAINAGE BASIN SUMMARY

BNDY1	25	8.8	11.5	0	5	83.664	0	Post- 25yr
BNDY2	25	11.2	12.2	0	9	22.538	0	106.20
JTP1	25	18.765	20	0.0074	8189	10.007	4.937	
JTP2	25	15.07	16	0.0045	9819	6.788	3.433	
JTP3	25	14.64	16	0.0075	29674	53.014	52.339	
JTP4	25	15.862	16	0.0052	108688	94.319	63.755	
JTP5	25	16.135	16.5	0.0086	6770	83.87	79.742	
JTP6	25	16.767	17	0.004	16759	25.268	24.005	
JTP7	25	16.512	16	0.0059	5511	7.381	10.812	
OUTFALL1	25	15.316	16	0.0045	1978	38.233	38.214	
OUTFALL2	25	12.194	12	0.0074	785	52.967	52.971	
XDOT1	25	19.459	21	0.0027	1151	2.605	2.595	
XDOT2	25	19.121	20	0.0058	2926	32.851	32.769	
XDOT3	25	16.783	18	0.0014	1287	2.282	2.207	
XDOT4	25	16.775	17.5	0.0046	10926	58.999	59.419	
XDOT5	25	16.845	18	0.0037	10602	19.057	14.902	
BNDY1	100	8.8	11.5	0	5	119.949	0	Post- 100yr
BNDY2	100	11.2	12.2	0	9	42.276	0	162.23
JTP1	100	19.149	20	0.0081	8480	12.664	8.608	
JTP2	100	15.312	16	0.005	10029	8.554	6.355	
JTP3	100	14.985	16	0.0099	30877	73.217	59.833	
JTP4	100	16.179	16	0.0052	109379	120.731	76.527	
JTP5	100	16.458	16.5	0.0091	7051	106.282	101.87	
JTP6	100	17.365	17	0.0032	19398	20.842	22.908	
JTP7	100	16.976	16	0.0065	6158	9.371	11.661	
OUTFALL1	100	15.674	16	-0.0099	2227	59.035	88.831	
OUTFALL2	100	12.605	12	0.0085	869	61.192	61.39	
XDOT1	100	19.686	21	-0.0043	1398	3.664	6.717	
XDOT2	100	19.665	20	0.0053	3167	50.644	49.92	
XDOT3	100	17.38	18	0.0013	1724	3.213	2.779	
XDOT4	100	17.373	17.5	0.0039	12938	65.535	65.517	
XDOT5	100	17.42	18	0.0035	13554	22.269	21.53	

STORM	PRE	POST
2	42.4	30.1
10	101.9	65.237
25	136.6	106.2
100	186.3	162.23

Appendix D
First Flush Calculation Results



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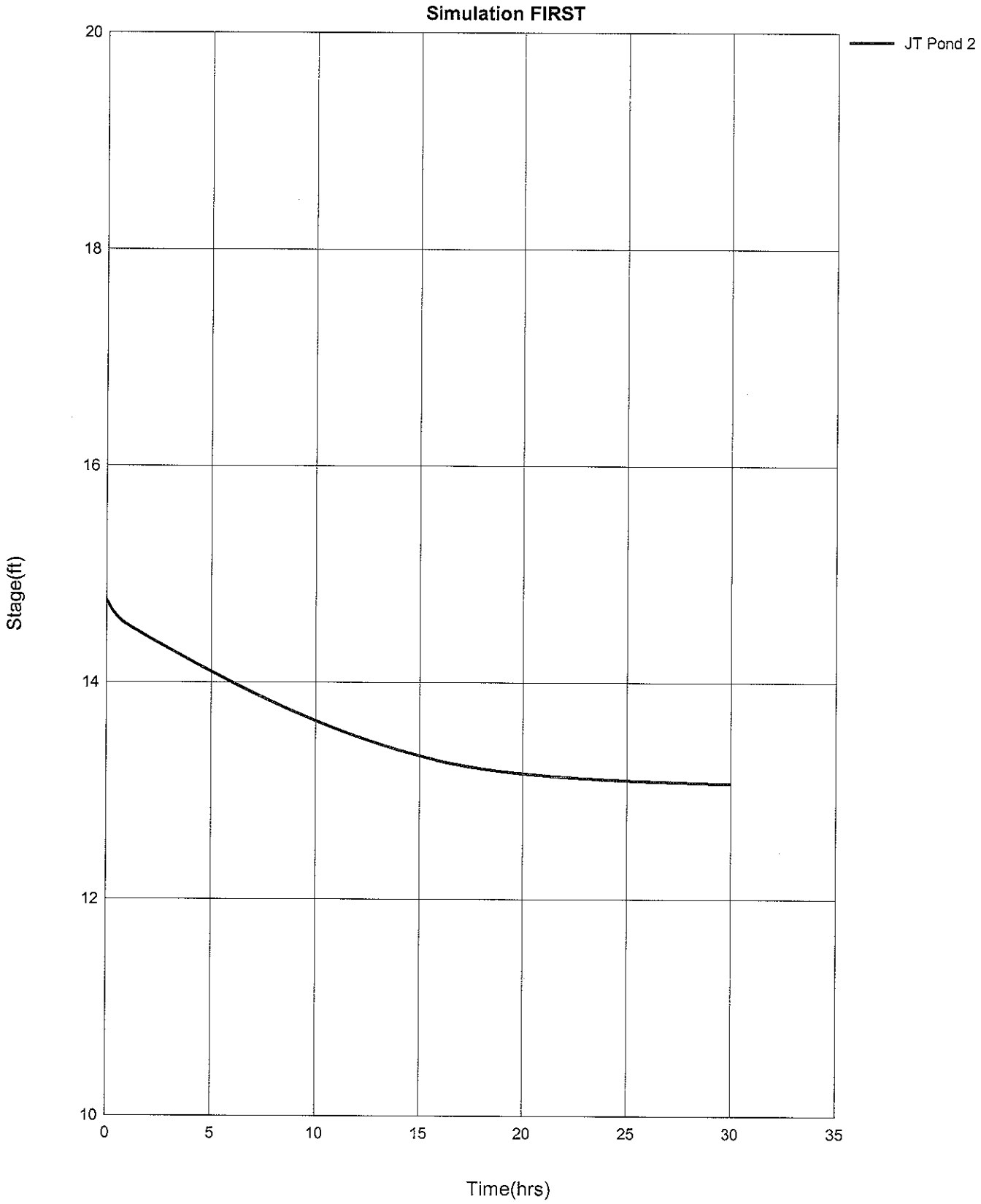

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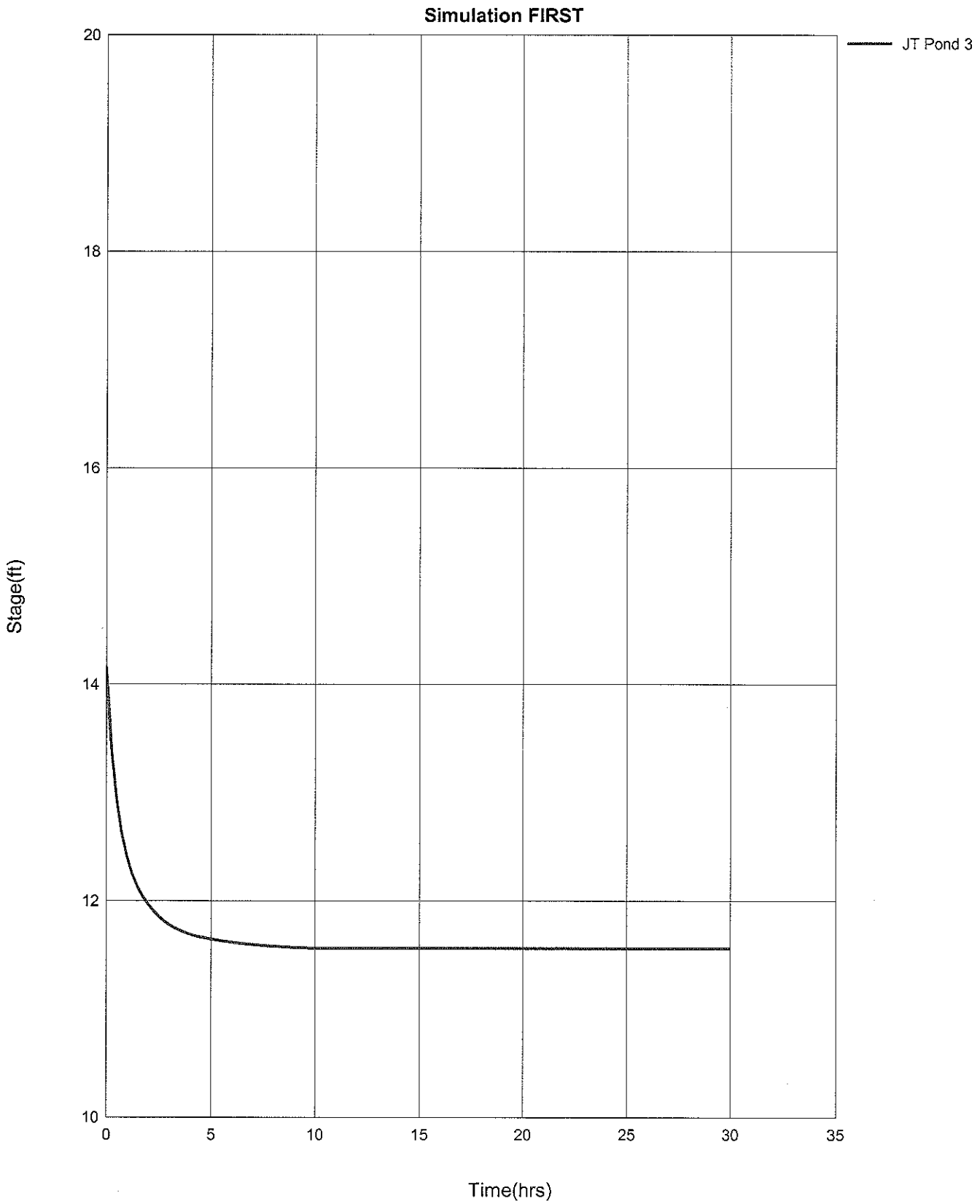

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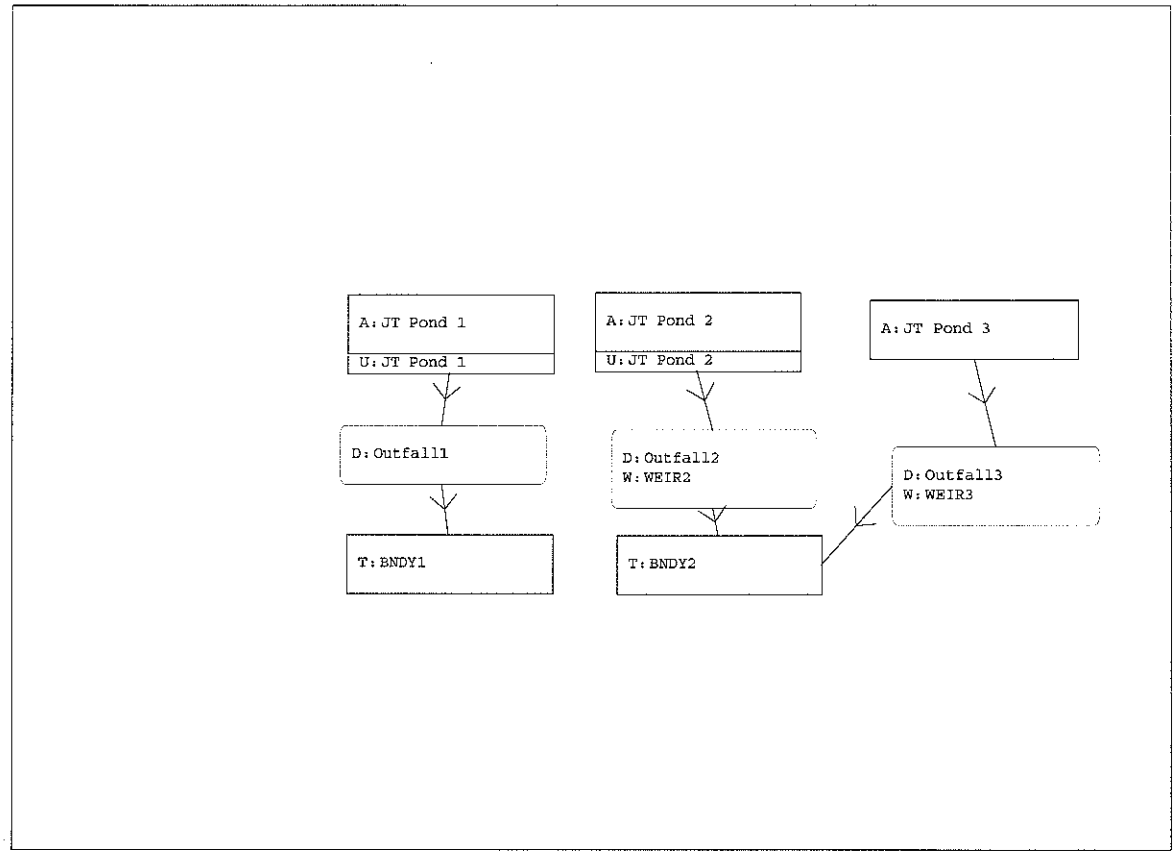
233001_FIRST FLUSH
NODE MAP

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit Hydro
S Santa Barbara

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach



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233001_FIRST FLUSH STAGE

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
FIRST	JT Pond 3	BASE	0.00	14.160	15.500	28000	0.000	29.764	0.000	0.
FIRST	JT Pond 3	BASE	0.25	13.425	15.500	25689	0.000	16.646	0.000	0.
FIRST	JT Pond 3	BASE	0.50	12.948	15.500	24235	0.000	10.372	0.000	0.
FIRST	JT Pond 3	BASE	0.75	12.629	15.500	23263	0.000	6.788	0.000	0.
FIRST	JT Pond 3	BASE	1.00	12.406	15.500	22582	0.000	4.630	0.000	1.
FIRST	JT Pond 3	BASE	1.25	12.249	15.500	22105	0.000	3.312	0.000	1.
FIRST	JT Pond 3	BASE	1.51	12.130	15.500	21741	0.000	2.426	0.000	1.
FIRST	JT Pond 3	BASE	1.75	12.042	15.500	21472	0.000	1.870	0.000	1.
FIRST	JT Pond 3	BASE	2.01	11.969	15.500	21265	0.000	1.541	0.000	1.
FIRST	JT Pond 3	BASE	2.26	11.909	15.500	21106	0.000	1.287	0.000	1.
FIRST	JT Pond 3	BASE	2.51	11.858	15.500	20975	0.000	1.075	0.000	1.
FIRST	JT Pond 3	BASE	2.76	11.816	15.500	20862	0.000	0.896	0.000	1.
FIRST	JT Pond 3	BASE	3.01	11.781	15.500	20772	0.000	0.737	0.000	1.
FIRST	JT Pond 3	BASE	3.26	11.752	15.500	20696	0.000	0.612	0.000	1.
FIRST	JT Pond 3	BASE	3.50	11.728	15.500	20633	0.000	0.514	0.000	1.
FIRST	JT Pond 3	BASE	3.76	11.706	15.500	20577	0.000	0.431	0.000	1.
FIRST	JT Pond 3	BASE	4.01	11.689	15.500	20532	0.000	0.369	0.000	1.
FIRST	JT Pond 3	BASE	4.26	11.676	15.500	20498	0.000	0.254	0.000	1.
FIRST	JT Pond 3	BASE	4.50	11.666	15.500	20471	0.000	0.222	0.000	1.
FIRST	JT Pond 3	BASE	4.76	11.656	15.500	20445	0.000	0.215	0.000	1.
FIRST	JT Pond 3	BASE	5.01	11.647	15.500	20421	0.000	0.202	0.000	1.
FIRST	JT Pond 3	BASE	5.26	11.638	15.500	20399	0.000	0.182	0.000	1.
FIRST	JT Pond 3	BASE	5.50	11.631	15.500	20379	0.000	0.169	0.000	1.
FIRST	JT Pond 3	BASE	5.75	11.624	15.500	20361	0.000	0.156	0.000	1.
FIRST	JT Pond 3	BASE	6.00	11.617	15.500	20343	0.000	0.143	0.000	1.
FIRST	JT Pond 3	BASE	6.25	11.611	15.500	20328	0.000	0.130	0.000	1.
FIRST	JT Pond 3	BASE	6.50	11.605	15.500	20313	0.000	0.119	0.000	1.
FIRST	JT Pond 3	BASE	6.75	11.600	15.500	20300	0.000	0.109	0.000	1.
FIRST	JT Pond 3	BASE	7.00	11.596	15.500	20288	0.000	0.101	0.000	1.
FIRST	JT Pond 3	BASE	7.25	11.591	15.500	20277	0.000	0.093	0.000	1.
FIRST	JT Pond 3	BASE	7.50	11.587	15.500	20266	0.000	0.087	0.000	1.
FIRST	JT Pond 3	BASE	7.75	11.584	15.500	20256	0.000	0.080	0.000	1.
FIRST	JT Pond 3	BASE	8.00	11.580	15.500	20247	0.000	0.075	0.000	1.
FIRST	JT Pond 3	BASE	8.25	11.577	15.500	20239	0.000	0.069	0.000	1.
FIRST	JT Pond 3	BASE	8.50	11.574	15.500	20231	0.000	0.064	0.000	1.
FIRST	JT Pond 3	BASE	8.75	11.571	15.500	20224	0.000	0.060	0.000	1.
FIRST	JT Pond 3	BASE	9.00	11.569	15.500	20218	0.000	0.042	0.000	1.
FIRST	JT Pond 3	BASE	9.25	11.567	15.500	20213	0.000	0.040	0.000	1.
FIRST	JT Pond 3	BASE	9.50	11.565	15.500	20208	0.000	0.039	0.000	1.
FIRST	JT Pond 3	BASE	9.75	11.564	15.500	20204	0.000	0.037	0.000	1.
FIRST	JT Pond 3	BASE	10.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.25	11.562	15.500	20201	0.000	0.000	0.000	1.

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
FIRST	JT Pond 3	BASE	20.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	30.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	30.01	11.562	15.500	20201	0.000	0.000	0.000	1.

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
002	JT Pond 1	BASE	0.00	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	0.26	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	0.50	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	0.77	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	1.02	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	1.27	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	1.52	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	1.77	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	2.02	15.300	20.000	5724	0.000	0.000	0.000	0.
002	JT Pond 1	BASE	2.27	15.300	20.000	5724	0.015	0.000	0.000	0.
002	JT Pond 1	BASE	2.52	15.309	20.000	5731	0.078	0.000	0.001	0.
002	JT Pond 1	BASE	2.77	15.320	20.000	5740	0.068	0.001	0.003	0.
002	JT Pond 1	BASE	3.02	15.333	20.000	5749	0.090	0.002	0.004	0.
002	JT Pond 1	BASE	3.27	15.347	20.000	5761	0.097	0.004	0.006	0.
002	JT Pond 1	BASE	3.52	15.361	20.000	5772	0.093	0.006	0.008	0.
002	JT Pond 1	BASE	3.77	15.375	20.000	5782	0.097	0.009	0.010	0.
002	JT Pond 1	BASE	4.02	15.388	20.000	5792	0.093	0.013	0.012	0.
002	JT Pond 1	BASE	4.27	15.402	20.000	5804	0.119	0.017	0.014	0.
002	JT Pond 1	BASE	4.52	15.416	20.000	5815	0.099	0.022	0.017	0.
002	JT Pond 1	BASE	4.77	15.427	20.000	5824	0.100	0.026	0.019	0.
002	JT Pond 1	BASE	5.02	15.440	20.000	5834	0.121	0.031	0.021	0.
002	JT Pond 1	BASE	5.27	15.452	20.000	5843	0.101	0.036	0.023	0.
002	JT Pond 1	BASE	5.52	15.463	20.000	5852	0.122	0.040	0.025	0.
002	JT Pond 1	BASE	5.77	15.476	20.000	5862	0.122	0.046	0.028	0.
002	JT Pond 1	BASE	6.02	15.488	20.000	5871	0.130	0.051	0.031	0.
002	JT Pond 1	BASE	6.27	15.499	20.000	5880	0.131	0.056	0.033	0.
002	JT Pond 1	BASE	6.52	15.510	20.000	5888	0.125	0.061	0.036	0.
002	JT Pond 1	BASE	6.77	15.522	20.000	5898	0.152	0.065	0.039	0.
002	JT Pond 1	BASE	7.02	15.533	20.000	5906	0.131	0.070	0.042	0.
002	JT Pond 1	BASE	7.27	15.544	20.000	5915	0.156	0.073	0.045	0.
002	JT Pond 1	BASE	7.52	15.557	20.000	5926	0.175	0.078	0.048	0.
002	JT Pond 1	BASE	7.77	15.575	20.000	5939	0.217	0.086	0.052	0.
002	JT Pond 1	BASE	8.02	15.597	20.000	5956	0.251	0.097	0.057	0.
002	JT Pond 1	BASE	8.27	15.617	20.000	5973	0.224	0.104	0.062	0.
002	JT Pond 1	BASE	8.52	15.637	20.000	5988	0.253	0.109	0.067	0.
002	JT Pond 1	BASE	8.77	15.659	20.000	6006	0.267	0.114	0.072	0.
002	JT Pond 1	BASE	9.02	15.684	20.000	6025	0.290	0.120	0.078	0.
002	JT Pond 1	BASE	9.27	15.709	20.000	6045	0.297	0.126	0.084	0.
002	JT Pond 1	BASE	9.52	15.735	20.000	6064	0.302	0.131	0.090	0.
002	JT Pond 1	BASE	9.77	15.763	20.000	6087	0.345	0.137	0.097	0.
002	JT Pond 1	BASE	10.02	15.793	20.000	6110	0.339	0.143	0.104	0.
002	JT Pond 1	BASE	10.27	15.826	20.000	6136	0.404	0.150	0.112	0.
002	JT Pond 1	BASE	10.52	15.864	20.000	6166	0.421	0.156	0.120	0.
002	JT Pond 1	BASE	10.77	15.907	20.000	6200	0.501	0.164	0.130	0.
002	JT Pond 1	BASE	11.02	15.961	20.000	6242	0.575	0.173	0.141	0.
002	JT Pond 1	BASE	11.27	16.022	20.000	6286	0.632	0.183	0.153	0.
002	JT Pond 1	BASE	11.51	16.099	20.000	6333	0.842	0.194	0.168	0.
002	JT Pond 1	BASE	11.75	16.209	20.000	6400	1.181	0.209	0.189	0.
002	JT Pond 1	BASE	12.00	16.538	20.000	6601	4.242	0.249	0.244	0.
002	JT Pond 1	BASE	12.25	17.152	20.000	6995	5.402	0.310	0.343	0.
002	JT Pond 1	BASE	12.50	17.604	20.000	7330	2.504	0.456	0.425	0.
002	JT Pond 1	BASE	12.75	17.750	20.000	7438	1.301	0.757	0.465	0.
002	JT Pond 1	BASE	13.00	17.776	20.000	7457	0.815	0.823	0.486	0.
002	JT Pond 1	BASE	13.26	17.767	20.000	7451	0.684	0.800	0.502	0.
002	JT Pond 1	BASE	13.51	17.748	20.000	7436	0.566	0.752	0.515	0.
002	JT Pond 1	BASE	13.76	17.726	20.000	7420	0.520	0.699	0.527	0.
002	JT Pond 1	BASE	14.01	17.703	20.000	7403	0.457	0.647	0.537	0.
002	JT Pond 1	BASE	14.26	17.680	20.000	7386	0.412	0.597	0.546	0.
002	JT Pond 1	BASE	14.51	17.659	20.000	7370	0.400	0.555	0.554	0.
002	JT Pond 1	BASE	14.76	17.639	20.000	7356	0.350	0.517	0.562	0.
002	JT Pond 1	BASE	15.01	17.620	20.000	7341	0.333	0.482	0.569	0.
002	JT Pond 1	BASE	15.26	17.603	20.000	7329	0.327	0.454	0.576	0.
002	JT Pond 1	BASE	15.51	17.586	20.000	7316	0.283	0.428	0.582	0.
002	JT Pond 1	BASE	15.76	17.570	20.000	7304	0.287	0.405	0.588	0.
002	JT Pond 1	BASE	16.01	17.555	20.000	7294	0.272	0.386	0.594	0.
002	JT Pond 1	BASE	16.26	17.541	20.000	7283	0.260	0.370	0.599	0.
002	JT Pond 1	BASE	16.51	17.527	20.000	7273	0.240	0.357	0.604	0.
002	JT Pond 1	BASE	16.76	17.514	20.000	7263	0.249	0.347	0.609	0.
002	JT Pond 1	BASE	17.01	17.498	20.000	7251	0.177	0.340	0.614	0.
002	JT Pond 1	BASE	17.26	17.477	20.000	7236	0.167	0.338	0.617	0.
002	JT Pond 1	BASE	17.51	17.455	20.000	7219	0.152	0.337	0.621	0.
002	JT Pond 1	BASE	17.76	17.432	20.000	7203	0.162	0.335	0.624	0.
002	JT Pond 1	BASE	18.01	17.410	20.000	7186	0.152	0.333	0.627	0.
002	JT Pond 1	BASE	18.26	17.387	20.000	7169	0.147	0.331	0.630	0.
002	JT Pond 1	BASE	18.51	17.362	20.000	7151	0.113	0.329	0.633	0.
002	JT Pond 1	BASE	18.76	17.336	20.000	7132	0.136	0.327	0.635	0.
002	JT Pond 1	BASE	19.01	17.312	20.000	7114	0.134	0.325	0.638	0.
002	JT Pond 1	BASE	19.26	17.287	20.000	7095	0.118	0.322	0.641	0.
002	JT Pond 1	BASE	19.51	17.262	20.000	7077	0.128	0.320	0.643	0.
002	JT Pond 1	BASE	19.76	17.237	20.000	7058	0.116	0.318	0.646	0.
002	JT Pond 1	BASE	20.01	17.211	20.000	7039	0.111	0.316	0.648	0.
002	JT Pond 1	BASE	20.26	17.185	20.000	7019	0.103	0.313	0.650	0.

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
002	JT Pond 1	BASE	20.51	17.158	20.000	6999	0.108	0.311	0.653	0.
002	JT Pond 1	BASE	20.76	17.132	20.000	6980	0.103	0.309	0.655	0.
002	JT Pond 1	BASE	21.01	17.106	20.000	6961	0.108	0.306	0.657	0.
002	JT Pond 1	BASE	21.26	17.080	20.000	6942	0.110	0.304	0.659	0.
002	JT Pond 1	BASE	21.51	17.055	20.000	6923	0.103	0.302	0.661	0.
002	JT Pond 1	BASE	21.76	17.029	20.000	6904	0.108	0.299	0.664	0.
002	JT Pond 1	BASE	22.01	17.004	20.000	6886	0.102	0.297	0.666	0.
002	JT Pond 1	BASE	22.26	16.977	20.000	6869	0.083	0.294	0.668	0.
002	JT Pond 1	BASE	22.51	16.951	20.000	6852	0.094	0.292	0.669	0.
002	JT Pond 1	BASE	22.76	16.924	20.000	6836	0.081	0.289	0.671	0.
002	JT Pond 1	BASE	23.01	16.898	20.000	6820	0.101	0.287	0.673	0.
002	JT Pond 1	BASE	23.26	16.872	20.000	6804	0.077	0.284	0.675	0.
002	JT Pond 1	BASE	23.51	16.846	20.000	6789	0.099	0.282	0.677	0.
002	JT Pond 1	BASE	23.76	16.821	20.000	6773	0.077	0.279	0.679	0.
002	JT Pond 1	BASE	24.01	16.794	20.000	6757	0.072	0.276	0.680	0.
002	JT Pond 1	BASE	24.26	16.763	20.000	6738	0.020	0.273	0.681	0.
002	JT Pond 1	BASE	24.51	16.728	20.000	6717	0.004	0.270	0.681	0.
002	JT Pond 1	BASE	24.76	16.692	20.000	6695	0.000	0.266	0.681	0.
002	JT Pond 1	BASE	25.01	16.657	20.000	6673	0.000	0.262	0.681	0.
002	JT Pond 1	BASE	25.26	16.622	20.000	6652	0.000	0.258	0.681	0.
002	JT Pond 1	BASE	25.51	16.587	20.000	6631	0.000	0.255	0.681	0.
002	JT Pond 1	BASE	25.76	16.552	20.000	6610	0.000	0.251	0.681	0.
002	JT Pond 1	BASE	26.01	16.519	20.000	6589	0.000	0.247	0.681	0.
002	JT Pond 1	BASE	26.26	16.485	20.000	6568	0.000	0.243	0.681	0.
002	JT Pond 1	BASE	26.51	16.452	20.000	6548	0.000	0.239	0.681	0.
002	JT Pond 1	BASE	26.76	16.419	20.000	6528	0.000	0.236	0.681	0.
002	JT Pond 1	BASE	27.01	16.387	20.000	6509	0.000	0.232	0.681	0.
002	JT Pond 1	BASE	27.26	16.355	20.000	6489	0.000	0.228	0.681	0.
002	JT Pond 1	BASE	27.51	16.324	20.000	6470	0.000	0.224	0.681	0.
002	JT Pond 1	BASE	27.76	16.293	20.000	6451	0.000	0.220	0.681	0.
002	JT Pond 1	BASE	28.01	16.262	20.000	6433	0.000	0.216	0.681	0.
002	JT Pond 1	BASE	28.26	16.232	20.000	6414	0.000	0.212	0.681	0.
002	JT Pond 1	BASE	28.51	16.203	20.000	6396	0.000	0.208	0.681	0.
002	JT Pond 1	BASE	28.76	16.174	20.000	6379	0.000	0.204	0.681	0.
002	JT Pond 1	BASE	29.01	16.145	20.000	6361	0.000	0.200	0.681	0.
002	JT Pond 1	BASE	29.26	16.117	20.000	6344	0.000	0.196	0.681	0.
002	JT Pond 1	BASE	29.51	16.089	20.000	6327	0.000	0.193	0.681	0.
002	JT Pond 1	BASE	29.76	16.062	20.000	6311	0.000	0.189	0.681	0.
002	JT Pond 1	BASE	30.00	16.037	20.000	6295	0.000	0.185	0.681	0.
002	JT Pond 2	BASE	0.00	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	0.26	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	0.50	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	0.77	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	1.02	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	1.27	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	1.52	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	1.77	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	2.02	13.000	15.500	7362	0.000	0.000	0.000	0.
002	JT Pond 2	BASE	2.27	13.001	15.500	7362	0.030	0.000	0.000	0.
002	JT Pond 2	BASE	2.52	13.008	15.500	7368	0.070	0.000	0.001	0.
002	JT Pond 2	BASE	2.77	13.015	15.500	7373	0.049	0.000	0.003	0.
002	JT Pond 2	BASE	3.02	13.022	15.500	7378	0.073	0.001	0.004	0.
002	JT Pond 2	BASE	3.27	13.031	15.500	7385	0.074	0.002	0.005	0.
002	JT Pond 2	BASE	3.52	13.040	15.500	7391	0.069	0.003	0.007	0.
002	JT Pond 2	BASE	3.77	13.048	15.500	7397	0.073	0.004	0.008	0.
002	JT Pond 2	BASE	4.02	13.056	15.500	7403	0.071	0.005	0.010	0.
002	JT Pond 2	BASE	4.27	13.066	15.500	7410	0.094	0.007	0.011	0.
002	JT Pond 2	BASE	4.52	13.074	15.500	7417	0.070	0.009	0.013	0.
002	JT Pond 2	BASE	4.77	13.082	15.500	7422	0.076	0.011	0.015	0.
002	JT Pond 2	BASE	5.02	13.091	15.500	7429	0.094	0.014	0.016	0.
002	JT Pond 2	BASE	5.27	13.099	15.500	7435	0.072	0.016	0.018	0.
002	JT Pond 2	BASE	5.52	13.107	15.500	7441	0.096	0.019	0.020	0.
002	JT Pond 2	BASE	5.77	13.116	15.500	7448	0.091	0.022	0.022	0.
002	JT Pond 2	BASE	6.02	13.125	15.500	7454	0.099	0.025	0.024	0.
002	JT Pond 2	BASE	6.27	13.134	15.500	7461	0.098	0.028	0.026	0.
002	JT Pond 2	BASE	6.52	13.141	15.500	7466	0.094	0.031	0.028	0.
002	JT Pond 2	BASE	6.77	13.151	15.500	7473	0.118	0.035	0.030	0.
002	JT Pond 2	BASE	7.02	13.158	15.500	7479	0.095	0.038	0.032	0.
002	JT Pond 2	BASE	7.27	13.167	15.500	7485	0.123	0.042	0.034	0.
002	JT Pond 2	BASE	7.52	13.178	15.500	7493	0.138	0.047	0.037	0.
002	JT Pond 2	BASE	7.77	13.191	15.500	7503	0.174	0.052	0.040	0.
002	JT Pond 2	BASE	8.02	13.207	15.500	7515	0.192	0.059	0.044	0.
002	JT Pond 2	BASE	8.27	13.220	15.500	7524	0.163	0.065	0.048	0.
002	JT Pond 2	BASE	8.52	13.234	15.500	7535	0.197	0.070	0.052	0.
002	JT Pond 2	BASE	8.77	13.249	15.500	7546	0.204	0.074	0.056	0.
002	JT Pond 2	BASE	9.02	13.265	15.500	7558	0.222	0.082	0.060	0.
002	JT Pond 2	BASE	9.27	13.282	15.500	7570	0.223	0.090	0.065	0.
002	JT Pond 2	BASE	9.52	13.297	15.500	7582	0.230	0.098	0.069	0.
002	JT Pond 2	BASE	9.77	13.316	15.500	7596	0.267	0.103	0.074	0.
002	JT Pond 2	BASE	10.02	13.334	15.500	7609	0.256	0.108	0.080	0.
002	JT Pond 2	BASE	10.27	13.355	15.500	7625	0.317	0.113	0.086	0.

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
002	JT Pond 2	BASE	10.52	13.379	15.500	7642	0.323	0.119	0.092	0.
002	JT Pond 2	BASE	10.77	13.408	15.500	7664	0.397	0.126	0.100	0.
002	JT Pond 2	BASE	11.02	13.443	15.500	7690	0.448	0.133	0.109	0.
002	JT Pond 2	BASE	11.27	13.481	15.500	7718	0.493	0.141	0.118	0.
002	JT Pond 2	BASE	11.51	13.534	15.500	7757	0.687	0.151	0.130	0.
002	JT Pond 2	BASE	11.75	13.611	15.500	7814	0.999	0.165	0.147	0.
002	JT Pond 2	BASE	12.00	13.902	15.500	8030	3.895	0.208	0.197	0.
002	JT Pond 2	BASE	12.25	14.319	15.500	8629	4.115	0.258	0.280	0.
002	JT Pond 2	BASE	12.50	14.508	15.500	8944	1.101	0.283	0.334	0.
002	JT Pond 2	BASE	12.75	14.559	15.500	9028	0.711	0.376	0.353	0.
002	JT Pond 2	BASE	13.00	14.578	15.500	9059	0.530	0.424	0.365	0.
002	JT Pond 2	BASE	13.26	14.584	15.500	9069	0.467	0.441	0.376	0.
002	JT Pond 2	BASE	13.51	14.581	15.500	9064	0.384	0.433	0.385	0.
002	JT Pond 2	BASE	13.76	14.576	15.500	9055	0.364	0.418	0.392	0.
002	JT Pond 2	BASE	14.01	14.568	15.500	9043	0.315	0.398	0.399	0.
002	JT Pond 2	BASE	14.26	14.559	15.500	9028	0.287	0.375	0.406	0.
002	JT Pond 2	BASE	14.51	14.551	15.500	9015	0.285	0.357	0.411	0.
002	JT Pond 2	BASE	14.76	14.542	15.500	9000	0.240	0.337	0.417	0.
002	JT Pond 2	BASE	15.01	14.533	15.500	8985	0.236	0.319	0.422	0.
002	JT Pond 2	BASE	15.26	14.526	15.500	8972	0.232	0.306	0.427	0.
002	JT Pond 2	BASE	15.51	14.516	15.500	8957	0.194	0.292	0.431	0.
002	JT Pond 2	BASE	15.76	14.508	15.500	8943	0.207	0.282	0.435	0.
002	JT Pond 2	BASE	16.01	14.500	15.500	8929	0.191	0.277	0.439	0.
002	JT Pond 2	BASE	16.26	14.490	15.500	8914	0.183	0.276	0.443	0.
002	JT Pond 2	BASE	16.51	14.480	15.500	8897	0.169	0.275	0.447	0.
002	JT Pond 2	BASE	16.76	14.470	15.500	8881	0.178	0.274	0.450	0.
002	JT Pond 2	BASE	17.01	14.456	15.500	8857	0.110	0.273	0.453	0.
002	JT Pond 2	BASE	17.26	14.440	15.500	8831	0.118	0.271	0.456	0.
002	JT Pond 2	BASE	17.51	14.424	15.500	8804	0.107	0.269	0.458	0.
002	JT Pond 2	BASE	17.76	14.408	15.500	8778	0.118	0.268	0.460	0.
002	JT Pond 2	BASE	18.01	14.392	15.500	8751	0.106	0.266	0.463	0.
002	JT Pond 2	BASE	18.26	14.376	15.500	8724	0.102	0.264	0.465	0.
002	JT Pond 2	BASE	18.51	14.357	15.500	8693	0.075	0.262	0.467	0.
002	JT Pond 2	BASE	18.76	14.340	15.500	8664	0.103	0.260	0.469	0.
002	JT Pond 2	BASE	19.01	14.323	15.500	8637	0.095	0.259	0.471	0.
002	JT Pond 2	BASE	19.26	14.305	15.500	8607	0.081	0.257	0.472	0.
002	JT Pond 2	BASE	19.51	14.288	15.500	8578	0.094	0.255	0.474	0.
002	JT Pond 2	BASE	19.76	14.270	15.500	8549	0.080	0.253	0.476	0.
002	JT Pond 2	BASE	20.01	14.252	15.500	8519	0.078	0.251	0.478	0.
002	JT Pond 2	BASE	20.26	14.233	15.500	8488	0.073	0.249	0.479	0.
002	JT Pond 2	BASE	20.51	14.215	15.500	8458	0.078	0.247	0.481	0.
002	JT Pond 2	BASE	20.76	14.197	15.500	8428	0.073	0.245	0.482	0.
002	JT Pond 2	BASE	21.01	14.179	15.500	8398	0.079	0.242	0.484	0.
002	JT Pond 2	BASE	21.26	14.161	15.500	8369	0.078	0.240	0.486	0.
002	JT Pond 2	BASE	21.51	14.143	15.500	8340	0.073	0.238	0.487	0.
002	JT Pond 2	BASE	21.76	14.126	15.500	8311	0.078	0.236	0.489	0.
002	JT Pond 2	BASE	22.01	14.109	15.500	8282	0.071	0.234	0.490	0.
002	JT Pond 2	BASE	22.26	14.090	15.500	8251	0.055	0.232	0.491	0.
002	JT Pond 2	BASE	22.51	14.072	15.500	8221	0.070	0.230	0.493	0.
002	JT Pond 2	BASE	22.76	14.053	15.500	8190	0.056	0.228	0.494	0.
002	JT Pond 2	BASE	23.01	14.036	15.500	8162	0.075	0.225	0.495	0.
002	JT Pond 2	BASE	23.26	14.017	15.500	8131	0.051	0.223	0.497	0.
002	JT Pond 2	BASE	23.51	14.000	15.500	8103	0.075	0.221	0.498	0.
002	JT Pond 2	BASE	23.76	13.982	15.500	8089	0.050	0.219	0.499	0.
002	JT Pond 2	BASE	24.01	13.964	15.500	8075	0.049	0.216	0.500	0.
002	JT Pond 2	BASE	24.26	13.942	15.500	8059	0.003	0.214	0.501	0.
002	JT Pond 2	BASE	24.51	13.918	15.500	8042	0.000	0.210	0.501	0.
002	JT Pond 2	BASE	24.76	13.895	15.500	8024	0.000	0.207	0.501	0.
002	JT Pond 2	BASE	25.01	13.872	15.500	8007	0.000	0.204	0.501	0.
002	JT Pond 2	BASE	25.26	13.849	15.500	7990	0.000	0.201	0.501	0.
002	JT Pond 2	BASE	25.51	13.827	15.500	7974	0.000	0.198	0.501	0.
002	JT Pond 2	BASE	25.76	13.804	15.500	7957	0.000	0.195	0.501	0.
002	JT Pond 2	BASE	26.01	13.783	15.500	7941	0.000	0.192	0.501	0.
002	JT Pond 2	BASE	26.26	13.761	15.500	7925	0.000	0.188	0.501	0.
002	JT Pond 2	BASE	26.51	13.740	15.500	7909	0.000	0.185	0.501	0.
002	JT Pond 2	BASE	26.76	13.719	15.500	7894	0.000	0.182	0.501	0.
002	JT Pond 2	BASE	27.01	13.698	15.500	7879	0.000	0.179	0.501	0.
002	JT Pond 2	BASE	27.26	13.678	15.500	7864	0.000	0.176	0.501	0.
002	JT Pond 2	BASE	27.51	13.658	15.500	7849	0.000	0.172	0.501	0.
002	JT Pond 2	BASE	27.76	13.638	15.500	7834	0.000	0.169	0.501	0.
002	JT Pond 2	BASE	28.01	13.619	15.500	7820	0.000	0.166	0.501	0.
002	JT Pond 2	BASE	28.26	13.600	15.500	7806	0.000	0.163	0.501	0.
002	JT Pond 2	BASE	28.51	13.582	15.500	7792	0.000	0.160	0.501	0.
002	JT Pond 2	BASE	28.76	13.563	15.500	7779	0.000	0.156	0.501	0.
002	JT Pond 2	BASE	29.01	13.545	15.500	7765	0.000	0.153	0.501	0.
002	JT Pond 2	BASE	29.26	13.528	15.500	7752	0.000	0.150	0.501	0.
002	JT Pond 2	BASE	29.51	13.511	15.500	7740	0.000	0.147	0.501	0.
002	JT Pond 2	BASE	29.76	13.494	15.500	7727	0.000	0.143	0.501	0.
002	JT Pond 2	BASE	30.00	13.478	15.500	7716	0.000	0.140	0.501	0.
FIRST	JT Pond 3	BASE	0.00	14.160	15.500	28000	0.000	29.764	0.000	0.
FIRST	JT Pond 3	BASE	0.25	13.425	15.500	25689	0.000	16.646	0.000	0.

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
FIRST	JT Pond 3	BASE	0.50	12.948	15.500	24235	0.000	10.372	0.000	0.
FIRST	JT Pond 3	BASE	0.75	12.629	15.500	23263	0.000	6.788	0.000	0.
FIRST	JT Pond 3	BASE	1.00	12.406	15.500	22582	0.000	4.630	0.000	1.
FIRST	JT Pond 3	BASE	1.25	12.249	15.500	22105	0.000	3.312	0.000	1.
FIRST	JT Pond 3	BASE	1.51	12.130	15.500	21741	0.000	2.426	0.000	1.
FIRST	JT Pond 3	BASE	1.75	12.042	15.500	21472	0.000	1.870	0.000	1.
FIRST	JT Pond 3	BASE	2.01	11.969	15.500	21265	0.000	1.541	0.000	1.
FIRST	JT Pond 3	BASE	2.26	11.909	15.500	21106	0.000	1.287	0.000	1.
FIRST	JT Pond 3	BASE	2.51	11.858	15.500	20975	0.000	1.075	0.000	1.
FIRST	JT Pond 3	BASE	2.76	11.816	15.500	20862	0.000	0.896	0.000	1.
FIRST	JT Pond 3	BASE	3.01	11.781	15.500	20772	0.000	0.737	0.000	1.
FIRST	JT Pond 3	BASE	3.26	11.752	15.500	20696	0.000	0.612	0.000	1.
FIRST	JT Pond 3	BASE	3.50	11.728	15.500	20633	0.000	0.514	0.000	1.
FIRST	JT Pond 3	BASE	3.76	11.706	15.500	20577	0.000	0.431	0.000	1.
FIRST	JT Pond 3	BASE	4.01	11.689	15.500	20532	0.000	0.369	0.000	1.
FIRST	JT Pond 3	BASE	4.26	11.676	15.500	20498	0.000	0.254	0.000	1.
FIRST	JT Pond 3	BASE	4.50	11.666	15.500	20471	0.000	0.222	0.000	1.
FIRST	JT Pond 3	BASE	4.76	11.656	15.500	20445	0.000	0.215	0.000	1.
FIRST	JT Pond 3	BASE	5.01	11.647	15.500	20421	0.000	0.202	0.000	1.
FIRST	JT Pond 3	BASE	5.26	11.638	15.500	20399	0.000	0.182	0.000	1.
FIRST	JT Pond 3	BASE	5.50	11.631	15.500	20379	0.000	0.169	0.000	1.
FIRST	JT Pond 3	BASE	5.75	11.624	15.500	20361	0.000	0.156	0.000	1.
FIRST	JT Pond 3	BASE	6.00	11.617	15.500	20343	0.000	0.143	0.000	1.
FIRST	JT Pond 3	BASE	6.25	11.611	15.500	20328	0.000	0.130	0.000	1.
FIRST	JT Pond 3	BASE	6.50	11.605	15.500	20313	0.000	0.119	0.000	1.
FIRST	JT Pond 3	BASE	6.75	11.600	15.500	20300	0.000	0.109	0.000	1.
FIRST	JT Pond 3	BASE	7.00	11.596	15.500	20288	0.000	0.101	0.000	1.
FIRST	JT Pond 3	BASE	7.25	11.591	15.500	20277	0.000	0.093	0.000	1.
FIRST	JT Pond 3	BASE	7.50	11.587	15.500	20266	0.000	0.087	0.000	1.
FIRST	JT Pond 3	BASE	7.75	11.584	15.500	20256	0.000	0.080	0.000	1.
FIRST	JT Pond 3	BASE	8.00	11.580	15.500	20247	0.000	0.075	0.000	1.
FIRST	JT Pond 3	BASE	8.25	11.577	15.500	20239	0.000	0.069	0.000	1.
FIRST	JT Pond 3	BASE	8.50	11.574	15.500	20231	0.000	0.064	0.000	1.
FIRST	JT Pond 3	BASE	8.75	11.571	15.500	20224	0.000	0.060	0.000	1.
FIRST	JT Pond 3	BASE	9.00	11.569	15.500	20218	0.000	0.042	0.000	1.
FIRST	JT Pond 3	BASE	9.25	11.567	15.500	20213	0.000	0.040	0.000	1.
FIRST	JT Pond 3	BASE	9.50	11.565	15.500	20208	0.000	0.039	0.000	1.
FIRST	JT Pond 3	BASE	9.75	11.564	15.500	20204	0.000	0.037	0.000	1.
FIRST	JT Pond 3	BASE	10.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	10.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	11.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	12.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	13.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	14.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	15.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	16.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	17.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	18.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	19.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	20.75	11.562	15.500	20201	0.000	0.000	0.000	1.

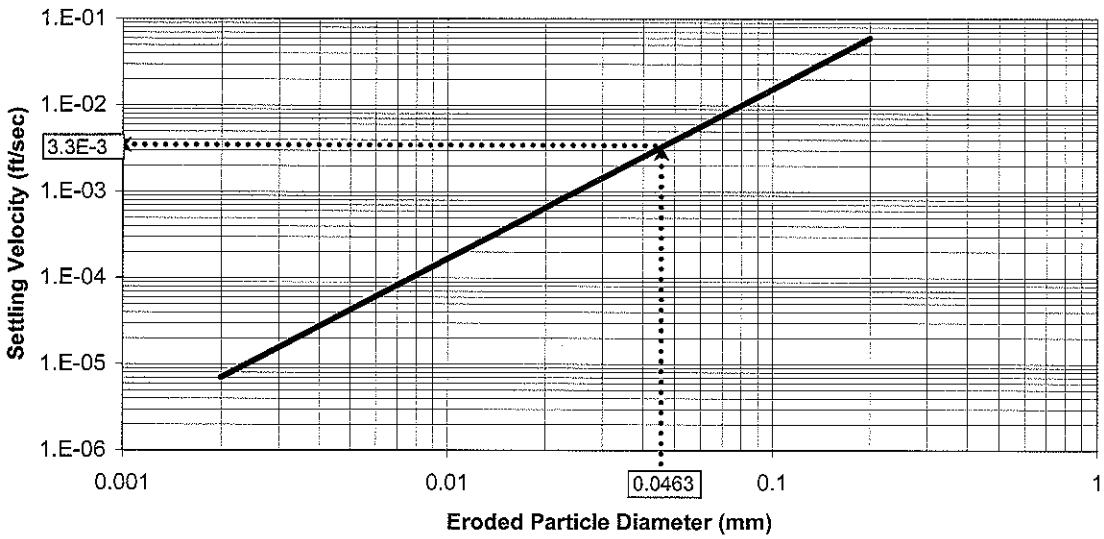
Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	To Vol
FIRST	JT Pond 3	BASE	21.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	21.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	22.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	23.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	24.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	25.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	26.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	27.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	28.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.25	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.50	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	29.75	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	30.00	11.562	15.500	20201	0.000	0.000	0.000	1.
FIRST	JT Pond 3	BASE	30.01	11.562	15.500	20201	0.000	0.000	0.000	1.

Appendix E
Erosion Control Calculations

POND 1- SEDIMENT TRAPPING CALCULATIONS

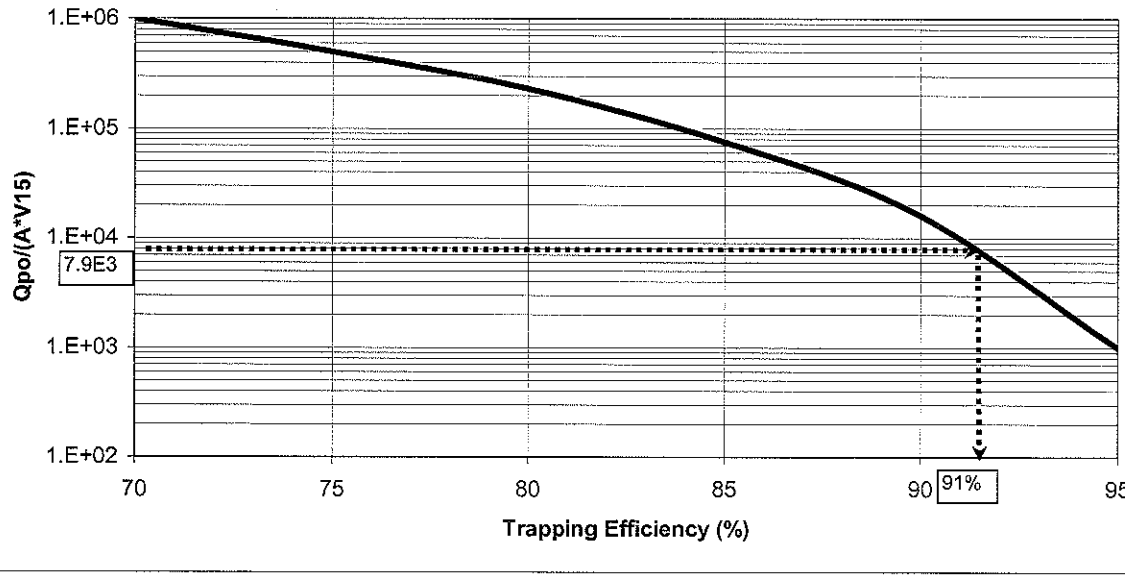
Drainage Area (ac):	2.06
Soil Type:	Baratari (A/D)
Eroded Particle Size [D15]:	0.0463
Settling Velocity [V15] (from Figure 1)	3.30E-03

Figure 1: Settling Velocity vs. Eroded Particle Diameter



Pond Area at outfall invert (ac):	0.13
Peak Discharge 10-yr Storm [q10] (cfs)	3.4
q10 / (A * V15)	*7.9E+03*
Trapping Efficiency (from Figure 2A)	91%

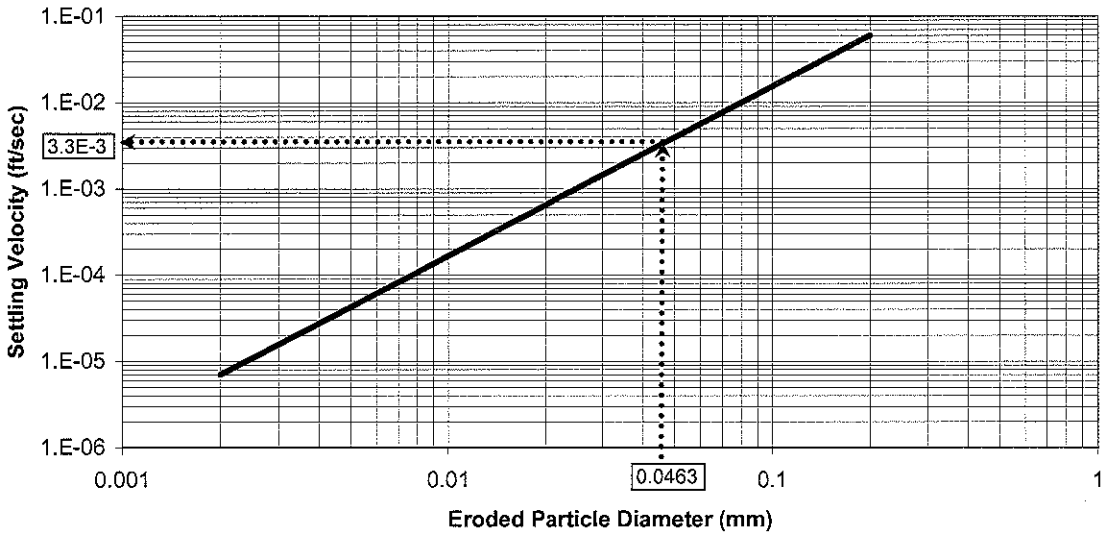
Figure 2a: Sediment Trapping Efficiency of Ponds



POND 2- SEDIMENT TRAPPING CALCULATIONS

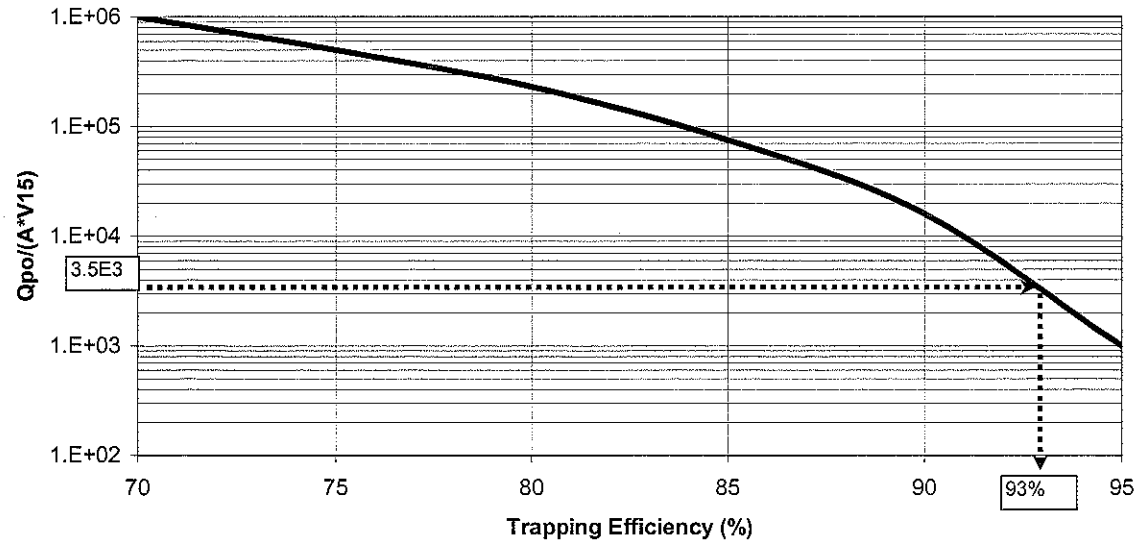
Drainage Area (ac):	1.44
Soil Type:	Baratari (A/D)
Eroded Particle Size [D15]:	0.0463
Settling Velocity [V15] (from Figure 1)	3.30E-03

Figure 1: Settling Velocity vs. Eroded Particle Diameter



Pond Area at outfall invert (ac):	0.17
Peak Discharge 10-yr Storm [q10] (cfs)	1.98
q10 / (A * V15)	*3.5E+03*
Trapping Efficiency (from Figure 2A)	93%

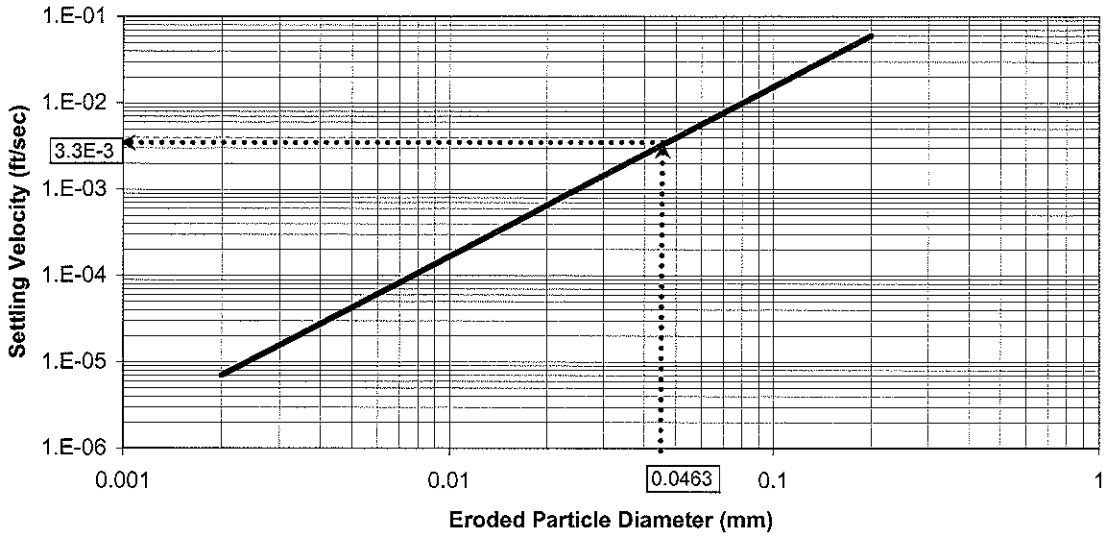
Figure 2a: Sediment Trapping Efficiency of Ponds



POND 3- SEDIMENT TRAPPING CALCULATIONS

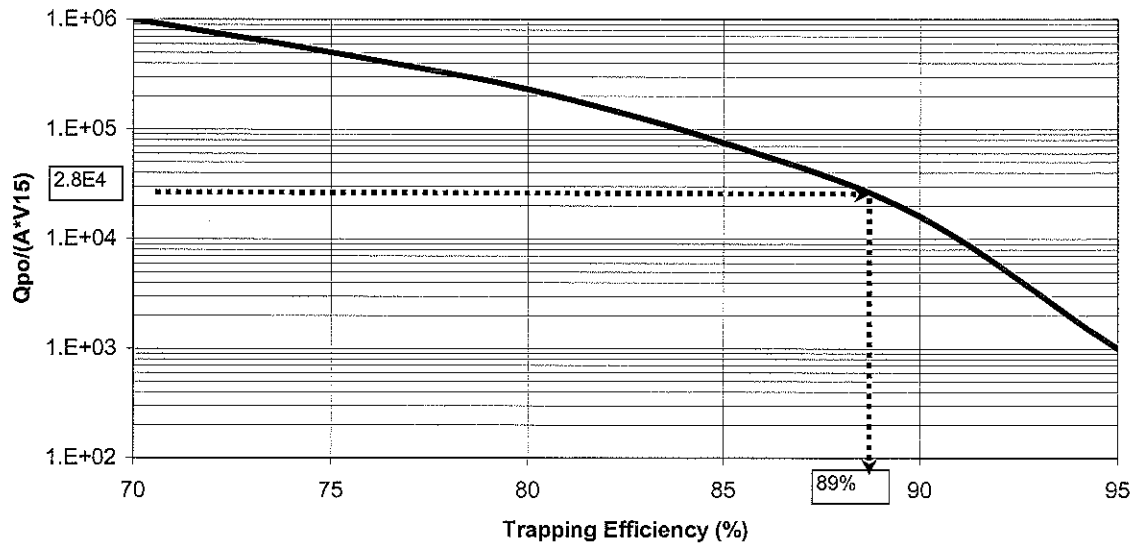
Drainage Area (ac):	8.41
Soil Type:	Baratari (A/D)
Eroded Particle Size [D15]:	0.0463
Settling Velocity [V15] (from Figure 1)	3.30E-03

Figure 1: Settling Velocity vs. Eroded Particle Diameter



Pond Area at outfall invert (ac):	0.52
Peak Discharge 10-yr Storm [q10] (cfs)	47.7
q10 / (A * V15)	*2.8E+04*
Trapping Efficiency (from Figure 2A)	89%

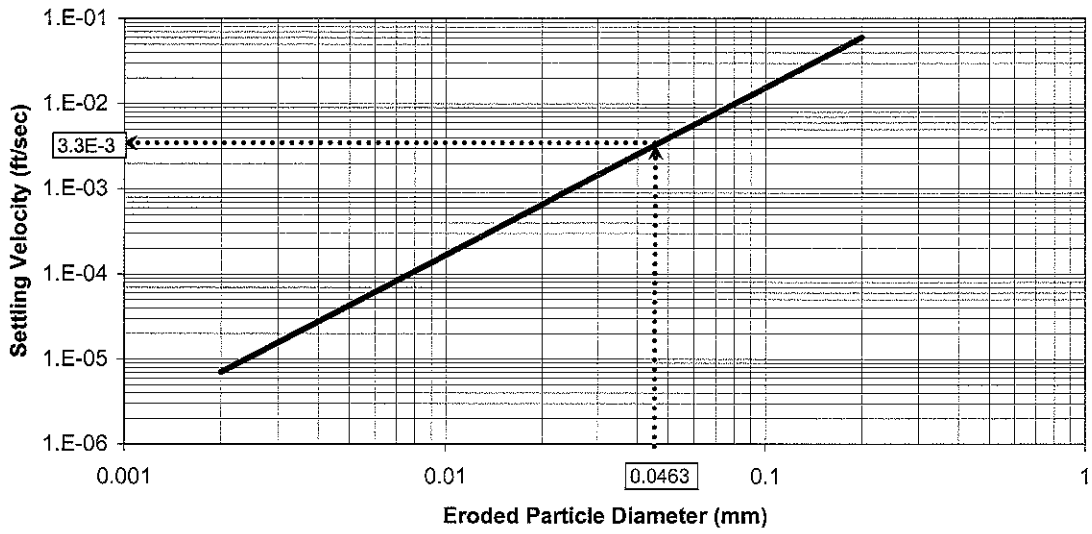
Figure 2a: Sediment Trapping Efficiency of Ponds



POND 4- SEDIMENT TRAPPING CALCULATIONS

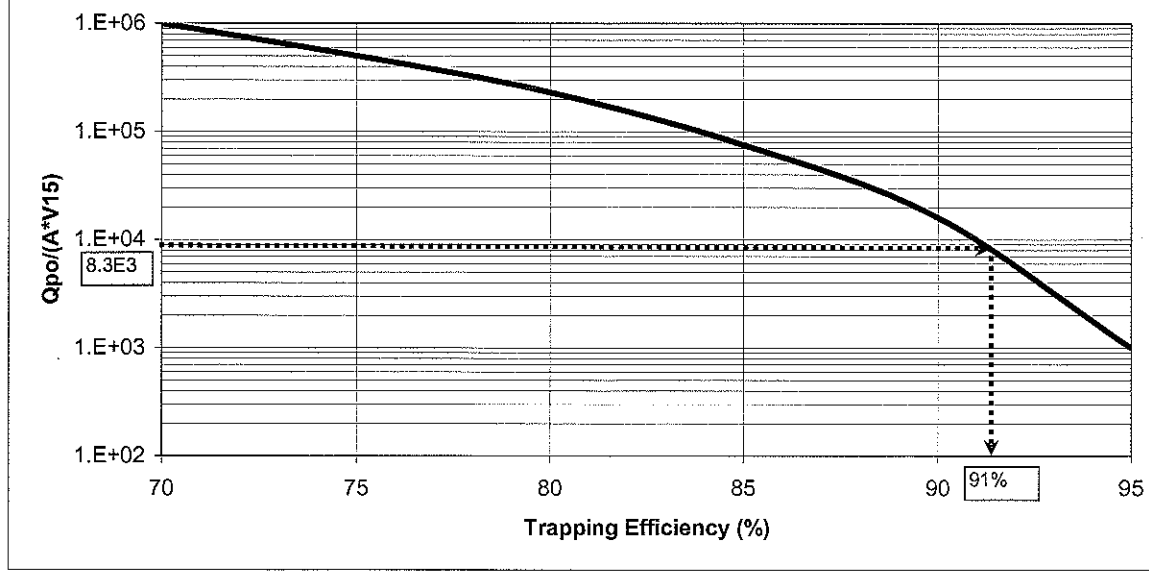
Drainage Area (ac):	5.46
Soil Type:	Baratari (A/D)
Eroded Particle Size [D15]:	0.0463
Settling Velocity [V15] (from Figure 1)	3.30E-03

Figure 1: Settling Velocity vs. Eroded Particle Diameter



Pond Area at outfall invert (ac):	1.91
Peak Discharge 10-yr Storm [q10] (cfs)	52
q10 / (A * V15)	*8.3E+03*
Trapping Efficiency (from Figure 2A)	91%

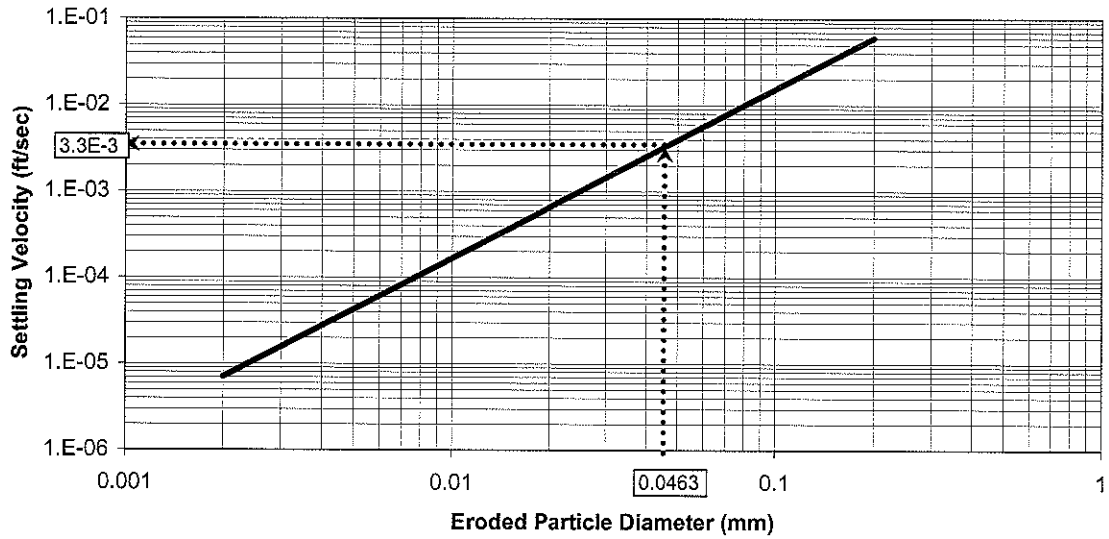
Figure 2a: Sediment Trapping Efficiency of Ponds



POND SUMMARY- SEDIMENT TRAPPING CALCULATIONS

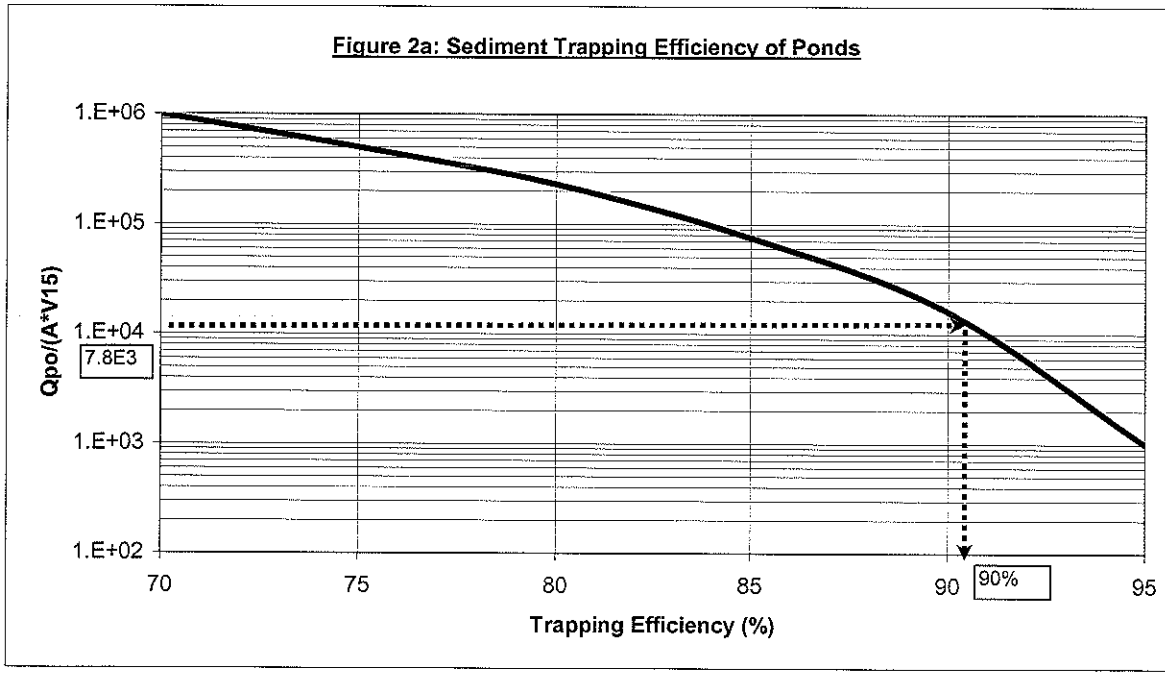
Drainage Area (ac):	17.37
Soil Type:	Baratari (A/D)
Eroded Particle Size [D15]:	0.0463
Settling Velocity [V15] (from Figure 1)	3.30E-03

Figure 1: Settling Velocity vs. Eroded Particle Diameter



Pond Area at outfall invert (ac):	2.73
Peak Discharge 10-yr Storm [q10] (cfs)	105.08
q10 / (A * V15)	*1.2E+04*
Trapping Efficiency (from Figure 2A)	91%

Figure 2a: Sediment Trapping Efficiency of Ponds



Rinker Stormceptor CD Sizing Program
United States
Version 4.0.0

Project Details			
Project	Johnson Tract- JT1	Project #	233001
Location	Bluffton	Company	Andrews Engineering
Date	9/08/05	Contact	Ryan Lyle

Selected Rainfall Station	
State	SOUTH CAROLINA
Name	MONCKS CORNER 4 N
ID #	
Elev. (ft)	49
Latitude	N 33 deg 15 min
Longitude	W 79 deg 59 min

Particle Size Distribution		
Diam. (um)	Percent (%)	Spec. Gravity
150	60	2.65
400	20	2.65
2000	20	2.65

Site Parameters	
Total Area (ac)	2.06
Imperviousness (%)	85.
Impervious Area (ac)	1.75

Stormceptor Sizing Table		
Stormceptor Model	% Runoff Treated	% TSS Removal
STC 450	53	69
STC 900	71	81
STC 1200	71	81
STC 1800	71	81
STC 2400	80	87
STC 3600	80	87
STC 4800	89	91
STC 6000	89	92
STC 7200	94	94
STC 11000	97	96
STC 13000	97	96
STC 16000	99	97

Comments :

Stormceptor CD Sizing Program Version 4.0.0

Country United States

Date 9/08/05

Project Number	233001
Project Name	Johnson Tract- JT1
Project Location	Bluffton
Company	Andrews Engineering
Designer	Ryan Lyle

Notes

Rainfall Station	MONCKS CORNER 4 N
Rainfall File	SC5946.NDC
Latitude =	N 33 deg 15 min
Longitude =	W 79 deg 59 min
Elevation =	49. ft
Rainfall Period of Record	1984 to 1994

Site Parameters

Total Drainage Area	2.06 ac
Total Imperviousness (%)	85.00
Overland Flow Width	599. ft
Overland Slope (%)	2.0
Impervious Depression Storage	0.020 in
Pervious Depression Storage	0.200 in
Impervious Mannings n	0.015
Pervious Mannings n	0.250

Infiltration Parameters

Horton Infiltration Used

Initial (Max) Infiltration Rate	2.44 in/h
Final (Min) Infiltration Rate	0.40 in/h
Infiltration Decay Rate (1/sec)	0.00055
Infiltration Regeneration Rate (1/sec)	0.010

Daily evaporation 0.100 in/day

Sediment build-up reduces the storage volume for settling calculations
A maintenance cycle of 12 months was chosen
(The Stormceptor will be cleaned out every 12 months)

TSS Loading Calculations

Buildup / Washoff Loading Chosen

Buildup Washoff allocates more washoff in the rising limb of the hydrograph

Target Event Mean Concentration (mg/l)	125.
Buildup Exponent	0.400
Washoff Exponent	0.200
Availability Factors for Particles >=	400. um
Availability = A + Bi^C	
A =	0.057
B =	0.040
i =	rainfall intensity
C =	1.100

Stormwater Particle Size Distribution Table

Diameter (um)	Percent (%)	Specific Gravity	Settling Velocity ft/s
150.0	60.0	2.65	0.0475
400.0	20.0	2.65	0.2123
2000.0	20.0	2.65	0.9417

Rainfall records	1984 to 1994
Total rainfall period	11 years
Total rainfall =	390.2 in
Average annual rainfall =	35.5 in

Rainfall event analysis

2.0 hour inter event time used to determine # of events

< in	Events	%	Vol in	%
0.25	589	60.0	51.	13.2
0.50	156	15.9	58.	14.9
0.75	85	8.7	53.	13.5
1.00	53	5.4	46.	11.7
1.25	26	2.7	30.	7.7
1.50	19	1.9	26.	6.7
1.75	16	1.6	26.	6.8
2.00	13	1.3	24.	6.1
2.25	3	0.3	6.	1.6
2.50	3	0.3	7.	1.8
2.75	7	0.7	18.	4.7
3.00	3	0.3	9.	2.2
3.25	1	0.1	3.	0.8
3.50	0	0.0	0.	0.0
3.75	2	0.2	7.	1.8
4.00	1	0.1	4.	1.0
4.25	0	0.0	0.	0.0
4.50	2	0.2	9.	2.2
4.75	1	0.1	5.	1.2
5.00	0	0.0	0.	0.0
5.25	0	0.0	0.	0.0
5.50	0	0.0	0.	0.0
5.75	0	0.0	0.	0.0
6.00	0	0.0	0.	0.0
6.25	0	0.0	0.	0.0
6.50	0	0.0	0.	0.0
6.75	0	0.0	0.	0.0
7.00	0	0.0	0.	0.0
7.25	0	0.0	0.	0.0
7.50	0	0.0	0.	0.0
7.75	0	0.0	0.	0.0
8.00	0	0.0	0.	0.0
8.25	1	0.1	8.	2.1
> 8.25	0	0.0	0.	0.0

Total rain 390. in
Number of rain events 981

Rainfall intensity analysis

Average intensity = 0.18 in/h

< in/h	Number	%	Vol in	%
0.25	7296	85.2	169.	43.4
0.50	688	8.0	61.	15.5
0.75	213	2.5	32.	8.3
1.00	132	1.5	29.	7.3
1.25	71	0.8	20.	5.1
1.50	45	0.5	16.	4.0
1.75	39	0.5	16.	4.0
2.00	30	0.4	14.	3.6
2.25	13	0.2	7.	1.8
2.50	5	0.1	3.	0.8
2.75	9	0.1	6.	1.5
3.00	9	0.1	6.	1.7
3.25	4	0.0	3.	0.8
3.50	6	0.1	5.	1.3
3.75	1	0.0	1.	0.2
4.00	0	0.0	0.	0.0
4.25	0	0.0	0.	0.0
4.50	1	0.0	1.	0.3
4.75	2	0.0	2.	0.6
5.00	0	0.0	0.	0.0
5.25	0	0.0	0.	0.0
5.50	0	0.0	0.	0.0
5.75	0	0.0	0.	0.0
6.00	0	0.0	0.	0.0
6.25	0	0.0	0.	0.0
6.50	0	0.0	0.	0.0
6.75	0	0.0	0.	0.0
7.00	0	0.0	0.	0.0
7.25	0	0.0	0.	0.0
7.50	0	0.0	0.	0.0
7.75	0	0.0	0.	0.0
8.00	0	0.0	0.	0.0
8.25	0	0.0	0.	0.0
> 8.25	0	0.0	0.	0.0

Total rainfall = 390.2 in
Total evaporation = 16.9 in
Total infiltration = 55.4 in
% Rainfall as runoff = 82.2 %

Average Event Mean Concentration for TSS (mg/l) 118.7

TSS Removal Simulation Results Table

Stormceptor Model	Treated Q cfs	% Runoff Treated	Tank TSS Removal (%)	Overall TSS Removal (%)
STC 450	0.283	53.	89.	69.
STC 900	0.636	71.	92.	81.
STC 1200	0.636	71.	92.	81.
STC 1800	0.636	71.	92.	81.
STC 2400	1.059	80.	93.	87.
STC 3600	1.059	80.	93.	87.
STC 4800	1.766	89.	94.	91.
STC 6000	1.766	89.	94.	92.
STC 7200	2.472	94.	95.	94.
STC 11000	3.531	97.	96.	96.
STC 13000	3.531	97.	96.	96.
STC 16000	4.944	99.	97.	97.

JT1

STC 900

Hydrology Table - Volume of Runoff Treated vs By-Pass Flow Rate

Treated Q cfs	Treated Vol ft3	Over Vol ft3	Tot Vol	% Treated
0.035	327263.	2072252.	2399560.	13.6
0.141	896034.	1503472.	2399560.	37.3
0.318	1344251.	1055271.	2399560.	56.0
0.565	1646396.	753142.	2399560.	68.6
0.883	1850692.	548849.	2399560.	77.1
1.271	2005829.	393714.	2399560.	83.6
1.730	2127141.	272407.	2399560.	88.6
2.260	2219824.	179726.	2399560.	92.5
2.860	2286953.	112601.	2399560.	95.3
3.531	2330106.	69451.	2399560.	97.1
4.273	2359085.	40473.	2399560.	98.3
5.085	2378042.	21519.	2399560.	99.1
5.968	2388835.	10728.	2399560.	99.6
6.922	2394630.	4931.	2399560.	99.8
7.946	2397196.	2363.	2399560.	99.9
9.041	2399370.	189.	2399560.	100.0
10.206	2399560.	0.	2399560.	100.0
11.442	2399560.	0.	2399560.	100.0
12.749	2399560.	0.	2399560.	100.0
14.126	2399560.	0.	2399560.	100.0
15.574	2399560.	0.	2399560.	100.0
17.092	2399560.	0.	2399560.	100.0
18.681	2399560.	0.	2399560.	100.0
20.341	2399560.	0.	2399560.	100.0
22.072	2399560.	0.	2399560.	100.0
23.873	2399560.	0.	2399560.	100.0
25.744	2399560.	0.	2399560.	100.0
27.687	2399560.	0.	2399560.	100.0
29.700	2399560.	0.	2399560.	100.0
31.783	2399560.	0.	2399560.	100.0

End of Simulation

Rinker Stormceptor CD Sizing Program
United States
Version 4.0.0

Project Details			
Project	Johnson Tract- JT2 & JT3	Project #	233001
Location	Bluffton	Company	Andrews Engineering
Date	9/08/05	Contact	Ryan Lyle

Selected Rainfall Station	
State	SOUTH CAROLINA
Name	MONCKS CORNER 4 N
ID #	
Elev. (ft)	49
Latitude	N 33 deg 15 min
Longitude	W 79 deg 59 min

Particle Size Distribution		
Diam. (um)	Percent (%)	Spec. Gravity
150	60	2.65
400	20	2.65
2000	20	2.65

Site Parameters	
Total Area (ac)	9.85
Imperviousness (%)	81.2
Impervious Area (ac)	8.00

Stormceptor Sizing Table		
Stormceptor Model	% Runoff Treated	% TSS Removal
STC 450	22	41
STC 900	38	56
STC 1200	38	57
STC 1800	38	57
STC 2400	50	66
STC 3600	50	66
STC 4800	62	73
STC 6000	62	74
STC 7200	69	78
STC 11000	76	84
STC 13000	76	84
STC 16000	82	88

Comments :

Stormceptor CD Sizing Program Version 4.0.0

Country United States

Date 9/08/05

Project Number	233001
Project Name	Johnson Tract- JT2 & JT3
Project Location	Bluffton
Company	Andrews Engineering
Designer	Ryan Lyle

Notes

Rainfall Station	MONCKS CORNER 4 N
Rainfall File	SC5946.NDC
Latitude =	N 33 deg 15 min
Longitude =	W 79 deg 59 min
Elevation =	49. ft
Rainfall Period of Record	1984 to 1994

Site Parameters

Total Drainage Area	9.85 ac
Total Imperviousness (%)	81.20
Overland Flow Width	1310. ft
Overland Slope (%)	2.0
Impervious Depression Storage	0.020 in
Pervious Depression Storage	0.200 in
Impervious Mannings n	0.015
Pervious Mannings n	0.250

Infiltration Parameters

Horton Infiltration Used

Initial (Max) Infiltration Rate	2.44 in/h
Final (Min) Infiltration Rate	0.40 in/h
Infiltration Decay Rate (1/sec)	0.00055
Infiltration Regeneration Rate (1/sec)	0.010

Daily evaporation 0.100 in/day

Sediment build-up reduces the storage volume for settling calculations
A maintenance cycle of 12 months was chosen
(The Stormceptor will be cleaned out every 12 months)

TSS Loading Calculations

Buildup / Washoff Loading Chosen

Buildup Washoff allocates more washoff in the rising limb of the hydrograph

Target Event Mean Concentration (mg/l)	125.
Buildup Exponent	0.400
Washoff Exponent	0.200
Availability Factors for Particles >=	400. um
Availability = A + Bi^C	
A =	0.057
B =	0.040
i =	rainfall intensity
C =	1.100

Stormwater Particle Size Distribution Table

Diameter (um)	Percent (%)	Specific Gravity	Settling Velocity ft/s
150.0	60.0	2.65	0.0475
400.0	20.0	2.65	0.2123
2000.0	20.0	2.65	0.9417

Rainfall records	1984 to 1994
Total rainfall period	11 years
Total rainfall =	390.2 in
Average annual rainfall =	35.5 in

Rainfall event analysis

2.0 hour inter event time used to determine # of events

< in	Events	%	Vol in	%
0.25	589	60.0	51.	13.2
0.50	156	15.9	58.	14.9
0.75	85	8.7	53.	13.5
1.00	53	5.4	46.	11.7
1.25	26	2.7	30.	7.7
1.50	19	1.9	26.	6.7
1.75	16	1.6	26.	6.8
2.00	13	1.3	24.	6.1
2.25	3	0.3	6.	1.6
2.50	3	0.3	7.	1.8
2.75	7	0.7	18.	4.7
3.00	3	0.3	9.	2.2
3.25	1	0.1	3.	0.8
3.50	0	0.0	0.	0.0
3.75	2	0.2	7.	1.8
4.00	1	0.1	4.	1.0
4.25	0	0.0	0.	0.0
4.50	2	0.2	9.	2.2
4.75	1	0.1	5.	1.2
5.00	0	0.0	0.	0.0
5.25	0	0.0	0.	0.0
5.50	0	0.0	0.	0.0
5.75	0	0.0	0.	0.0
6.00	0	0.0	0.	0.0
6.25	0	0.0	0.	0.0
6.50	0	0.0	0.	0.0
6.75	0	0.0	0.	0.0
7.00	0	0.0	0.	0.0
7.25	0	0.0	0.	0.0
7.50	0	0.0	0.	0.0
7.75	0	0.0	0.	0.0
8.00	0	0.0	0.	0.0
8.25	1	0.1	8.	2.1
> 8.25	0	0.0	0.	0.0

Total rain 390. in
Number of rain events 981

Rainfall intensity analysis

Average intensity = 0.18 in/h

< in/h	Number	%	Vol in	%
0.25	7296	85.2	169.	43.4
0.50	688	8.0	61.	15.5
0.75	213	2.5	32.	8.3
1.00	132	1.5	29.	7.3
1.25	71	0.8	20.	5.1
1.50	45	0.5	16.	4.0
1.75	39	0.5	16.	4.0
2.00	30	0.4	14.	3.6
2.25	13	0.2	7.	1.8
2.50	5	0.1	3.	0.8
2.75	9	0.1	6.	1.5
3.00	9	0.1	6.	1.7
3.25	4	0.0	3.	0.8
3.50	6	0.1	5.	1.3
3.75	1	0.0	1.	0.2
4.00	0	0.0	0.	0.0
4.25	0	0.0	0.	0.0
4.50	1	0.0	1.	0.3
4.75	2	0.0	2.	0.6
5.00	0	0.0	0.	0.0
5.25	0	0.0	0.	0.0
5.50	0	0.0	0.	0.0
5.75	0	0.0	0.	0.0
6.00	0	0.0	0.	0.0
6.25	0	0.0	0.	0.0
6.50	0	0.0	0.	0.0
6.75	0	0.0	0.	0.0
7.00	0	0.0	0.	0.0
7.25	0	0.0	0.	0.0
7.50	0	0.0	0.	0.0
7.75	0	0.0	0.	0.0
8.00	0	0.0	0.	0.0
8.25	0	0.0	0.	0.0
> 8.25	0	0.0	0.	0.0

Total rainfall = 390.2 in
Total evaporation = 17.6 in
Total infiltration = 69.9 in
% Rainfall as runoff = 78.2 %

Average Event Mean Concentration for TSS (mg/l) 114.4

TSS Removal Simulation Results Table

Stormceptor Model	Treated Q cfs	% Runoff Treated	Tank TSS Removal (%)	Overall TSS Removal (%)
STC 450	0.283	22.	84.	41.
STC 900	0.636	38.	85.	56.
STC 1200	0.636	38.	87.	57.
STC 1800	0.636	38.	87.	57.
STC 2400	1.059	50.	87.	66.
STC 3600	1.059	50.	88.	66.
STC 4800	1.766	62.	89.	73.
STC 6000	1.766	62.	89.	74.
STC 7200	2.472	69.	90.	78.
STC 11000	3.531	76.	92.	84.
STC 13000	3.531	76.	92.	84.
STC 16000	4.944	82.	93.	88.

Hydrology Table - Volume of Runoff Treated vs By-Pass Flow Rate

Treated Q cfs	Treated Vol ft3	Over Vol ft3	Tot Vol	% Treated
0.035	456449.	10455119.	10911442.	4.2
0.141	1451291.	9460313.	10911442.	13.3
0.318	2655222.	8256600.	10911442.	24.3
0.565	3891419.	7020146.	10911442.	35.7
0.883	4995873.	5916328.	10911442.	45.8
1.271	5928889.	4982682.	10911442.	54.3
1.730	6699270.	4212694.	10911442.	61.4
2.260	7326326.	3585246.	10911442.	67.1
2.860	7843776.	3068025.	10911442.	71.9
3.531	8276272.	2635293.	10911442.	75.8
4.273	8648989.	2262706.	10911442.	79.3
5.085	8981438.	1930112.	10911442.	82.3
5.968	9276609.	1635026.	10911442.	85.0
6.922	9534121.	1377420.	10911442.	87.4
7.946	9763515.	1148041.	10911442.	89.5
9.041	9965565.	945917.	10911442.	91.3
10.206	10139733.	771760.	10911442.	92.9
11.442	10289673.	621813.	10911442.	94.3
12.749	10415490.	495979.	10911442.	95.5
14.126	10518482.	392976.	10911442.	96.4
15.574	10598915.	312561.	10911442.	97.1
17.092	10666124.	245354.	10911442.	97.8
18.681	10721850.	189618.	10911442.	98.3
20.341	10767269.	144196.	10911442.	98.7
22.072	10803906.	107558.	10911442.	99.0
23.873	10832047.	79412.	10911442.	99.3
25.744	10853211.	58245.	10911442.	99.5
27.687	10868821.	42634.	10911442.	99.6
29.700	10881260.	30185.	10911442.	99.7
31.783	10889536.	21912.	10911442.	99.8

End of Simulation

Appendix F

Beaufort County BMP Worksheets

Worksheet
Evaluate Proposed BMP Sizing
Wet Detention Pond
POND 1

Pond Tributary Area (Acres)	2.06	A_{trib}
Drainage Basin Impervious Percentage	84.5%	
Pond Impervious Tributary Area (Acres)	1.74	$A_{imptrib}$
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 1 (3.0 inches *$A_{imptrib}$/12)	0.435	V_{sc1}
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 2 (1.0 inches * A_{trib}/12)	0.17	V_{sc2}
Required Permanent Pool Volume	0.44	V_{recq}
Permanent Pool Surface Area (acres)	0.13	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	4	D_{pool}
Permanent Pool Volume (acre-feet) (SA_{pool} * D_{pool})	0.52	V_{pool}
If permanent pool volume Vpool is less that the required pool volume V_{reqd}, then one or more of the following revisions is required:	Meets Requ's	

1. Increase the surface area of the permanent pool Sa_{pool}
2. Increase the permanent pool depth D_{pool}, while staying within the 7 ft. maximum mean depth

All Yellow areas are formulas

Worksheet
Evaluate Proposed BMP Sizing
Wet Detention Pond
POND 2

Pond Tributary Area (Acres)	1.44	A_{trib}
Drainage Basin Impervious Percentage	91.0%	
Pond Impervious Tributary Area (Acres)	1.31	$A_{imptrib}$
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 1 (3.0 inches *$A_{imptrib}$/12)	0.3275	V_{sc1}
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 2 (1.0 inches * A_{trib}/12)	0.12	V_{sc2}
Required Permanent Pool Volume	0.33	V_{recq}
Permanent Pool Surface Area (acres)	0.17	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	3	D_{pool}
Permanent Pool Volume (acre-feet) (SA_{pool} * D_{pool})	0.51	V_{pool}

If permanent pool volume Vpool is less that the required pool volume V_{reqd}, then one or more of the following revisions is required: **Meets Requ's**

1. Increase the surface area of the permanent pool Sa_{pool}
2. Increase the permanent pool depth D_{pool}, while staying within the 7 ft. maximum mean depth

All Yellow areas are formulas

Worksheet
Evaluate Proposed BMP Sizing
Wet Detention Pond
POND 3

Pond Tributary Area (Acres)	8.41	A_{trib}
Drainage Basin Impervious Percentage	79.7%	
Pond Impervious Tributary Area (Acres)	6.7	$A_{imptrib}$
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 1 (3.0 inches *$A_{imptrib}$/12)	1.675	V_{sc1}
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 2 (1.0 inches * A_{trib}/12)	0.70	V_{sc2}
Required Permanent Pool Volume	1.68	V_{recq}
Permanent Pool Surface Area (acres)	0.52	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	4	D_{pool}
Permanent Pool Volume (acre-feet) (SA_{pool} * D_{pool})	2.08	V_{pool}

If permanent pool volume Vpool is less that the required pool volume V_{reqd}, then one or more of the following revisions is required: **Meets Requ's**

1. Increase the surface area of the permanent pool Sa_{pool}
2. Increase the permanent pool depth D_{pool}, while staying within the 7 ft. maximum mean depth

All Yellow areas are formulas

Worksheet
Evaluate Proposed BMP Sizing
Wet Detention Pond
POND 4

Pond Tributary Area (Acres)	5.46	A_{trib}
Drainage Basin Impervious Percentage	90.8%	
Pond Impervious Tributary Area (Acres)	4.96	$A_{imptrib}$
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 1 (3.0 inches $*A_{imptrib}/12$)	1.24	V_{sc1}
Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 2 (1.0 inches $* A_{trib}/12$)	0.46	V_{sc2}
Required Permanent Pool Volume	1.24	V_{recq}
Permanent Pool Surface Area (acres)	1.91	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	3	D_{pool}
Permanent Pool Volume (acre-feet) ($SA_{pool} * D_{pool}$)	5.73	V_{pool}

If permanent pool volume Vpool is less that the required pool volume V_{reqd}, then one or more of the following revisions is required: **Meets Requ's**

1. Increase the surface area of the permanent pool Sa_{pool}
2. Increase the permanent pool depth D_{pool}, while staying within the 7 ft. maximum mean depth

All Yellow areas are formulas

Worksheet
Evaluate Proposed BMP Sizing
Wet Detention Pond
POND SUMMARY

TOTAL Pond Tributary Area (Acres)	17.37	A_{trib}
Drainage Basin Impervious Percentage	84.7%	
TOTAL Pond Impervious Tributary Area (Acres)	14.71	$A_{imptrib}$
TOTAL Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 1 (3.0 inches $*A_{imptrib}/12$)	3.6775	V_{sc1}
TOTAL Permanent Pool Water Quality Volume (acre-feet) based on sizing criteria 2 (1.0 inches $* A_{trib}/12$)	1.45	V_{sc2}
TOTAL Required Permanent Pool Volume	3.68	V_{recq}
TOTAL Permanent Pool Surface Area (acres)	2.73	SA_{pool}
AVERAGE Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	3.5	D_{pool}
TOTAL Permanent Pool Volume (acre-feet) ($SA_{pool} * D_{pool}$)	8.84	V_{pool}

If permanent pool volume Vpool is less that the required pool volume V_{reqd}, then one or more of the following revisions is required: **Meets Requ's**

1. Increase the surface area of the permanent pool Sa_{pool}
2. Increase the permanent pool depth D_{pool}, while staying within the 7 ft. maximum mean depth

All Yellow areas are formulas

233001 - 30 Ac Johnson Tract
Pond 1

Pond Dimensions From CAD	Contour Elevation (ft)	Contour Area from CAD (sf)	Contour Area from CAD (Ac)
Pond Bottom	12	3,615	0.083
	13	4,225	0.097
	14	4,835	0.111
	15	5,489	0.126
	16	6,273	0.144
	17	6,882	0.158
	18	7,623	0.175
	19	8,364	0.192
	20	9,148	0.210
	21	9,714	0.223

BEAUFORT COUNTY BMP DESIGN VERIFICATION-WET DETENTION

Tributary Area (Acres)	2.06	A_{trib}
Impervious Percentage	84.5%	
Impervious Tributary Area (Acres)	1.74	$A_{imptrib}$
Water Quality Volume (acre-feet) (3.0 inches *$A_{imptrib}$/12)	0.435	V_{sc1}
Water Quality Volume (acre-feet) (1.0 inches * A_{trib}/12)	0.17	V_{sc2}
Required Permanent Pool Volume	0.44	V_{recq}
Permanent Pool Surface Area (acres)	0.13	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	4	D_{pool}
Permanent Pool Volume (acre-feet)	0.52	V_{pool}

Meets Requ's

Pond Volume Calculations

	Elevation (ft)	Surface Area (sf)	Pond Vol. (cf)
Info for Contour Above	19.00	8,364	41,318
Storm Event Pond Elevation	**18.15**	**7,734**	**34,477**
Info for Contour Below	18.00	7,623	33,325
Info for Contour Above	16.00	6,273	19,495
NWL (Normal Water Level)	**15.30**	**5,724**	**15,295**
Info for Contour Below	15.00	5,489	13,613

Storm Storage Volume (cf) = 19,182

Storm Storage Volume (Ac-ft) = 0.44

233001 - 30 Ac Johnson Tract

Pond 1

	Pond Elevation (ft)	Surface Area (sf)	Storage Area (Ac)	Storage Volume (cf)	Storage Volume (ac-ft)
Pond Bottom	**12.00**	**3,615**	**0.083**	**0**	**0.000**
	12.25	3,768	0.087	923	0.021
	12.50	3,920	0.090	1,884	0.043
	12.75	4,073	0.094	2,883	0.066
	13.00	**4,225**	**0.097**	**3,920**	**0.090**
	13.25	4,378	0.101	4,995	0.115
	13.50	4,530	0.104	6,109	0.140
	13.75	4,683	0.108	7,261	0.167
	14.00	**4,835**	**0.111**	**8,451**	**0.194**
	14.25	4,999	0.115	9,680	0.222
	14.50	5,162	0.119	10,950	0.251
	14.75	5,325	0.122	12,261	0.281
	15.00	**5,489**	**0.126**	**13,613**	**0.313**
	15.25	5,685	0.131	15,010	0.345
NWL=15.3	15.50	5,881	0.135	16,456	0.378
	15.75	6,077	0.140	17,951	0.412
	16.00	**6,273**	**0.144**	**19,495**	**0.448**
	16.25	6,425	0.148	21,082	0.484
	16.50	6,578	0.151	22,707	0.521
	16.75	6,730	0.155	24,370	0.559
	17.00	**6,882**	**0.158**	**26,072**	**0.599**
	17.25	7,068	0.162	27,816	0.639
	17.50	7,253	0.167	29,606	0.680
	17.75	7,438	0.171	31,442	0.722
	18.00	**7,623**	**0.175**	**33,325**	**0.765**
	18.25	7,808	0.179	35,254	0.809
	18.50	7,993	0.184	37,229	0.855
	18.75	8,178	0.188	39,250	0.901
	19.00	**8,364**	**0.192**	**41,318**	**0.949**
	19.25	8,560	0.197	43,433	0.997
	19.50	8,756	0.201	45,597	1.047
	19.75	8,952	0.206	47,810	1.098
	20.00	**9,148**	**0.210**	**50,072**	**1.149**
	20.25	9,289	0.213	52,377	1.202
	20.50	9,431	0.217	54,717	1.256
	20.75	9,572	0.220	57,092	1.311
	21.00	**9,714**	**0.223**	**59,503**	**1.366**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**

233001 - 30 Ac Johnson Tract
Pond 2

Pond Dimensions From CAD

	Contour Elevation (ft)	Contour Area from CAD (sf)	Contour Area from CAD (Ac)
Pond Bottom	9	4,661	0.107
	10	5,314	0.122
	11	5,968	0.137
	12	6,665	0.153
	13	7,362	0.169
	14	8,102	0.186
	15	9,757	0.224
	16	10,629	0.244

BEAUFORT COUNTY BMP DESIGN VERIFICATION-WET DETENTION

Tributary Area (Acres)	1.44	A_{trib}
Impervious Percentage	91.0%	
Impervious Tributary Area (Acres)	1.31	$A_{imptrib}$
Water Quality Volume (acre-feet) (3.0 inches *$A_{imptrib}$/12)	0.3275	V_{sc1}
Water Quality Volume (acre-feet) (1.0 inches * A_{trib}/12)	0.12	V_{sc2}
Required Permanent Pool Volume	0.33	V_{recq}
Permanent Pool Surface Area (acres)	0.17	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	3	D_{pool}
Permanent Pool Volume (acre-feet)	0.51	V_{pool}

Meets Requ's

Pond Volume Calculations

	Elevation (ft)	Surface Area (sf)	Pond Vol. (cf)
Info for Contour Above	15.00	9,757	40,621
Storm Event Pond Elevation	**14.76**	**9,360**	**38,327**
Info for Contour Below	14.00	8,102	31,691
Info for Contour Above	14.00	8,102	31,691
NWL (Normal Water Level)	**13.00**	**7,362**	**23,959**
Info for Contour Below	13.00	7,362	23,959

Storm Storage Volume (cf) = 14,368

Storm Storage Volume (Ac-ft) = 0.33

233001 - 30 Ac Johnson Tract

Pond 2

	Pond Elevation (ft)	Surface Area (sf)	Storage Area (Ac)	Storage Volume (cf)	Storage Volume (ac-ft)
Pond Bottom	**9.00**	**4,661**	**0.107**	**0**	**0.000**
	9.25	4,824	0.111	1,186	0.027
	9.50	4,988	0.115	2,412	0.055
	9.75	5,151	0.118	3,679	0.084
	10.00	**5,314**	**0.122**	**4,987**	**0.114**
	10.25	5,478	0.126	6,336	0.145
	10.50	5,641	0.130	7,726	0.177
	10.75	5,804	0.133	9,157	0.210
	11.00	**5,968**	**0.137**	**10,629**	**0.244**
	11.25	6,142	0.141	12,143	0.279
	11.50	6,316	0.145	13,700	0.315
	11.75	6,490	0.149	15,301	0.351
	12.00	**6,665**	**0.153**	**16,945**	**0.389**
	12.25	6,839	0.157	18,633	0.428
	12.50	7,013	0.161	20,365	0.468
	12.75	7,187	0.165	22,140	0.508
NWL	**13.00**	**7,362**	**0.169**	**23,959**	**0.550**
	13.25	7,547	0.173	25,823	0.593
	13.50	7,732	0.178	27,733	0.637
	13.75	7,917	0.182	29,689	0.682
	14.00	**8,102**	**0.186**	**31,691**	**0.728**
	14.25	8,516	0.196	33,768	0.775
	14.50	8,930	0.205	35,949	0.825
	14.75	9,344	0.215	38,233	0.878
	15.00	**9,757**	**0.224**	**40,621**	**0.933**
	15.25	9,975	0.229	43,088	0.989
	15.50	10,193	0.234	45,609	1.047
	15.75	10,411	0.239	48,184	1.106
	16.00	**10,629**	**0.244**	**50,814**	**1.167**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**

233001 - 30 Ac Johnson Tract
Pond 3

Pond Dimensions From CAD

	Contour Elevation (ft)	Contour Area from CAD (sf)	Contour Area from CAD (Ac)
Pond Bottom	9	14,375	0.33
	10	16,117	0.37
	11	18,731	0.43
	12	21,344	0.49
	13	24,394	0.56
	14	27,443	0.63
	15	30,928	0.71
	16	33,977	0.78

BEAUFORT COUNTY BMP DESIGN VERIFICATION-WET DETENTION

Tributary Area (Acres)	8.41	A_{trib}
Impervious Percentage	79.7%	
Impervious Tributary Area (Acres)	6.7	$A_{imptrib}$
Water Quality Volume (acre-feet) (3.0 inches *$A_{imptrib}$/12)	1.675	V_{sc1}
Water Quality Volume (acre-feet) (1.0 inches * A_{trib}/12)	0.70	V_{sc2}
Required Permanent Pool Volume	1.68	V_{recq}
Permanent Pool Surface Area (acres)	0.52	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	4	D_{pool}
Permanent Pool Volume (acre-feet)	2.08	V_{pool}

Meets Requ's

Pond Volume Calculations

	Elevation (ft)	Surface Area (sf)	Pond Vol. (cf)
Info for Contour Above	15.00	30,928	130,679
Storm Event Pond Elevation	**14.16**	**28,000**	**105,929**
Info for Contour Below	14.00	27,443	101,494
Info for Contour Above	12.00	21,344	52,707
NWL (Normal Water Level)	**11.00**	**18,731**	**32,670**
Info for Contour Below	11.00	18,731	32,670

Storm Storage Volume (cf) = 73,259

Storm Storage Volume (Ac-ft) = 1.682

233001 - 30 Ac Johnson Tract

Pond 3

	Pond Elevation (ft)	Surface Area (sf)	Storage Area (Ac)	Storage Volume (cf)	Storage Volume (ac-ft)
Pond Bottom	**9.00**	**14,375**	**0.330**	**0**	**0.000**
	9.25	14,810	0.340	3,648	0.084
	9.50	15,246	0.350	7,405	0.170
	9.75	15,682	0.360	11,271	0.259
	10.00	**16,117**	**0.370**	**15,246**	**0.350**
	10.25	16,771	0.385	19,357	0.444
	10.50	17,424	0.400	23,631	0.542
	10.75	18,077	0.415	28,069	0.644
NWL	**11.00**	**18,731**	**0.430**	**32,670**	**0.750**
	11.25	19,384	0.445	37,434	0.859
	11.50	20,038	0.460	42,362	0.972
	11.75	20,691	0.475	47,453	1.089
	12.00	**21,344**	**0.490**	**52,707**	**1.210**
	12.25	22,107	0.508	58,138	1.335
	12.50	22,869	0.525	63,760	1.464
	12.75	23,631	0.543	69,573	1.597
	13.00	**24,394**	**0.560**	**75,576**	**1.735**
	13.25	25,156	0.578	81,770	1.877
	13.50	25,918	0.595	88,154	2.024
	13.75	26,681	0.613	94,729	2.175
	14.00	**27,443**	**0.630**	**101,494**	**2.330**
	14.25	28,314	0.650	108,464	2.490
	14.50	29,185	0.670	115,651	2.655
	14.75	30,056	0.690	123,056	2.825
	15.00	**30,928**	**0.710**	**130,679**	**3.000**
	15.25	31,690	0.728	138,506	3.180
	15.50	32,452	0.745	146,524	3.364
	15.75	33,215	0.763	154,732	3.552
	16.00	**33,977**	**0.780**	**163,131**	**3.745**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**

233001 - 30 Ac Johnson Tract
Pond 4

Pond Dimensions From CAD

	Contour Elevation (ft)	Contour Area from CAD (sf)	Contour Area from CAD (Ac)
Pond Bottom	9	65,340	1.5
	10	74,052	1.7
	11	82,764	1.9
	12	87,120	2
	13	93,654	2.15
	14	100,188	2.3
	15	106,722	2.45
	16	108,900	2.5

BEAUFORT COUNTY BMP DESIGN VERIFICATION-WET DETENTION

Tributary Area (Acres)	5.46	A_{trib}
Impervious Percentage	89.9%	
Impervious Tributary Area (Acres)	4.91	$A_{imptrib}$
Water Quality Volume (acre-feet) (3.0 inches $*A_{imptrib}/12$)	1.23	V_{sc1}
Water Quality Volume (acre-feet) (1.0 inches $* A_{trib}/12$)	0.46	V_{sc2}
Required Permanent Pool Volume	1.23	V_{recq}
Permanent Pool Surface Area (acres)	1.91	SA_{pool}
Permanent Pool Mean Depth (feet) (must be in the range of 3 - 7 feet)	3	D_{pool}
Permanent Pool Volume (acre-feet)	5.73	V_{pool}

Meets Requ's

Pond Volume Calculations

	Elevation (ft)	Surface Area (sf)	Pond Vol. (cf)
Info for Contour Above	13.00	93,654	323,433
Storm Event Pond Elevation	**12.60**	**91,040**	**286,494**
Info for Contour Below	12.00	87,120	233,046
Info for Contour Above	13.00	93,654	323,433
NWL (Normal Water Level)	**12.00**	**87,120**	**233,046**
Info for Contour Below	12.00	87,120	233,046

Storm Storage Volume (cf) = 53,448

Storm Storage Volume (Ac-ft) = 1.227

233001 - 30 Ac Johnson Tract

Pond 4

	Pond Elevation (ft)	Surface Area (sf)	Storage Area (Ac)	Storage Volume (cf)	Storage Volume (ac-ft)
Pond Bottom	**9.00**	**65,340**	**1.500**	**0**	**0.000**
	9.25	67,518	1.550	16,607	0.381
	9.50	69,696	1.600	33,759	0.775
	9.75	71,874	1.650	51,455	1.181
	10.00	**74,052**	**1.700**	**69,696**	**1.600**
	10.25	76,230	1.750	88,481	2.031
	10.50	78,408	1.800	107,811	2.475
	10.75	80,586	1.850	127,685	2.931
	11.00	**82,764**	**1.900**	**148,104**	**3.400**
	11.25	83,853	1.925	168,931	3.878
	11.50	84,942	1.950	190,030	4.362
	11.75	86,031	1.975	211,402	4.853
NWL	**12.00**	**87,120**	**2.000**	**233,046**	**5.350**
	12.25	88,754	2.038	255,030	5.855
	12.50	90,387	2.075	277,423	6.369
	12.75	92,021	2.113	300,224	6.892
	13.00	**93,654**	**2.150**	**323,433**	**7.425**
	13.25	95,288	2.188	347,051	7.967
	13.50	96,921	2.225	371,077	8.519
	13.75	98,555	2.263	395,511	9.080
	14.00	**100,188**	**2.300**	**420,354**	**9.650**
	14.25	101,822	2.338	445,605	10.230
	14.50	103,455	2.375	471,265	10.819
	14.75	105,089	2.413	497,333	11.417
	15.00	**106,722**	**2.450**	**523,809**	**12.025**
	15.25	107,267	2.463	550,558	12.639
	15.50	107,811	2.475	577,443	13.256
	15.75	108,356	2.488	604,464	13.877
	16.00	**108,900**	**2.500**	**631,621**	**14.500**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	0	0.000	0	0.000
	0.00	**0**	**0.000**	**0**	**0.000**

233010
JOHNSON TRACT
BMP CALCULATIONS

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGRADATION WATER QUALITY GOAL

PAGE 1: SITE CHARACTERIZATION - TOTAL PHOSPHORUS

Total Site Area (acres)	34.67 A_{site}	
Impervious Developed Area (acres) * includes all surfaces that significantly impedes or prevents natural infiltration of water into the soil. Examples include roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface.	14.71 A_{devimp}	
Pervious Developed Area (acres) includes improved areas such as lawns that do not impede natural infiltration of water into the soil, but may cause stormwater pollution loads due to fertilization or application of pesticides; also includes porous pavements	2.64 $A_{devperv}$	
Dedicated Open Space (acres) includes undisturbed common space, flood plain easement areas, conservation easement areas, vegetated stream buffers, and stormwater management facilities (e.g., ponds, swales)	17.32 A_{dedop}	
NOTE: The total site area A_{site} should be equal to the sum of $A_{devimp} + A_{devperv} + A_{dedop}$	34.67 A_{site}	check
Impervious of Developed Area (%) $I_{dev} = A_{devimp}/(A_{devimp} + A_{devperv}) * 100$	85 I_{dev}	

*Because fertilized sections of golf courses exhibit total P loads characteristic of medium density residential development, these areas should be treated as 25% impervious in the BMP worksheet calculations, even though they are actually 0% impervious. Unfertilized golf course areas can be treated as 0% impervious.

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGRADATION WATER QUALITY GOAL

PAGE 2: PHOSPHORUS REMOVAL REQUIREMENTS AND BMP PLAN EFFECTIVENESS

Base Required Pollutant Removal (%) for Developed Area — 61 R_{base}
(Using Total Phosphorous as Target Pollutant)
Based on total-P data in Figure 3-4,

R_{base}= $(I_{dev}*2.7)-27$ if I_{dev} is 11-25% impervious
202

$(I_{dev}*0.4)+30$ if I_{dev} is 26-50% impervious
64

$(I_{dev}*0.2)+40$ if I_{dev} is 51-70% impervious
57

$(I_{dev}*0.48)+20$ if I_{dev} is 71-100% impervious
61

Required Total Phosphorus Removal (%) for Developed Area, Adjusted for Dedicated Open Space Maintained On Site — 22 R_{req}
$R_{req} = 100-[(100-R_{base})/((A_{devimp}+A_{devperv})/A_{site})]$
(If $R_{req} < 0$, then enter 0)

Primary BMP Type — WET DETENTION

Assumed Primary BMP Total Phosphorous Removal (%) — 60 E_{pri}

Wet Detention:	60%
Extended Dry Detention:	30%
Mod. Ext. Dry Detention:	60%
Grass Swale w/Check Dams:	25%
Biofiltration Swale:	15%
Infiltration:	55%
Bioretention	55%
Innovative - Swirl Concentrator	30%
Innovative - Settling/Filtration	60%
Innovative - Settling/Wetland	60%

Percent of Developed Area that is Served by Primary BMP — 60 S_{pri}

Calculated Primary BMP Removal (%) — 36 R_{pri}
$R_{pri} = E_{pri}*S_{pri}/100$

If primary BMP removal does not satisfy the pollutant removal requirement (i.e., if $R_{pri}<R_{req}$), then complete calculations on page 3.

36%>23% Design is Adequate
Rpri>Rreq

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGREDATION WATER QUALITY GOAL

PAGE 3 EVALUATION OF SUPPLEMENTAL BMPs FOR PHOSPHORUS CONTROL

Supplemental Pre-Treatment BMP Type	n/a
Percent of Developed Area that is Served by Supplemental Pre-Treatment BMPs	S_{sup}
Assumed Supplemental BMP Total Phosphorus Removal (%) (see total-P removal efficiencies listed above for primary BMPs)	E_{sup}
Calculated removal by Primary and Pre-Treatment BMPs $R_{pri-sup} = 100 * (1 - ((1 - S_{sup}/100 * E_{sup}/100) * (1 - R_{pri}/100)))$	36 $R_{pri-sup}$
	Rpri-sup>Rreq

If primary BMP plus pre-treatment BMP removal does not satisfy the pollutant removal requirement (I.e., if $R_{pri-sup} < R_{req}$), then one or more of the following revisions is required:.

1. Reduce the amount of impervious area (A_{devimp}), and increase the pervious area (A_{devper}) and/or dedicated open space area (A_{dedop}) accordingly.

2. Choose more effective primary and/or pre-treatment BMPs.

3. Increase the percentage of developed area that is treated by the BMPs (S_{pri}, S_{sup}).

4. Increase the amount of dedicated open sapce (A_{dedop}), and reduce the amount of developed pervious area (A_{devper}) accordingly. This is most effective if the additional dedicated open space is loacted on part of the site that does not drain to the primary BMP: this effectively increases the percentage of developed area that drains to the BMP.

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGRADATION WATER QUALITY GOAL

PAGE 1: SITE CHARACTERIZATION - FECAL COLIFORM BACTERIA

Total Site Area (acres)	34.67 A_{site}	
Impervious Developed Area (acres) * includes all surfaces that significantly impedes or prevents natural infiltration of water into the soil. Examples include roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface.	14.71 A_{devimp}	
Pervious Developed Area (acres) includes improved areas such as lawns that do not impede natural infiltration of water into the soil, but may cause stormwater pollution loads due to fertilization or application of pesticides; also includes porous pavements	2.64 $A_{devperv}$	
Dedicated Open Space (acres) includes undisturbed common space, flood plain easement areas, conservation easement areas, vegetated stream buffers, and stormwater management facilities (e.g., ponds, swales)	17.32 A_{dedop}	
NOTE: The total site area A_{site} should be equal to the sum of $A_{devimp} + A_{devperv} + A_{dedop}$	34.67 A_{site}	check
Impervious of Developed Area (%) $I_{dev} = A_{devimp}/(A_{devimp} + A_{devperv}) * 100$	85 I_{dev}	

*For bacteria evaluation, treat golf courses like any other land use (I.e, do not treat pervious golf course area as 25% impervious)

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGRADATION WATER QUALITY GOAL

PAGE 2: BACTERIA REMOVAL REQUIREMENTS AND BMP PLAN EFFECTIVENESS

Base Required Pollutant Removal (%) for Developed Area — 70 R_{base}
(Using Fecal Coliform Bacteria as Target Pollutant)
Based on bacteria data in Figure 3-4,

R_{base}= $\frac{(I_{dev}*8.8)-44}{702}$ if I_{dev} is 6-10% impervious

$\frac{(I_{dev}*1.5)+29}{156}$ if I_{dev} is 11-25% impervious

$\frac{(I_{dev}*0.12)+64}{74}$ if I_{dev} is 26-50% impervious

70 if I_{dev} is 51-100% impervious

Required Bacteria Removal (%) for Developed Area, Adjusted for Dedicated Open Space Maintained On Site — 40 R_{req}

$R_{req} = 100-[(100-R_{base})/((A_{devimp}+A_{devperv})/A_{site})]$
(If $R_{req} < 0$, then enter 0)

Primary BMP Type — WET DETENTION

Assumed Primary BMP Total Phosphorous Removal (%) — 80 E_{pri}

Wet Detention:	80%
Extended Dry Detention:	35%
Mod. Ext. Dry Detention:	50%
Grass Swale w/Check Dams:	30%
Biofiltration Swale:	10%
Infiltration:	90%
Bioretention	70%
Innovative - Swirl Concentrator	10%
Innovative - Settling/Filtration	35%
Innovative - Settling/Wetland	70%

Percent of Developed Area that is Served by Primary BMP — 60 S_{pri}

Calculated Primary BMP Removal (%) — 48 R_{pri}
$R_{pri} = E_{pri}*S_{pri}/100$

If primary BMP removal does not satisfy the pollutant removal requirement (i.e., if $R_{pri}<R_{req}$), then complete calculations on page 3.

48%=40% Design is Adequate
Rpri>Rreq

WORKSHEET TO EVALUATE PROPOSED BMP PLAN: ANTIDEGREDATION WATER QUALITY GOAL

PAGE 3 EVALUATION OF SUPPLEMENTAL BMPs FOR BACTERIA CONTROL

Supplemental Pre-Treatment BMP Type	n/a	
Percent of Developed Area that is Served by Supplemental Pre-Treatment BMPs		S_{sup}
Assumed Supplemental BMP Total Phosphorus Removal (%) (see total-P removal efficiencies listed above for primary BMPs)		E_{sup}
Calculated removal by Primary and Pre-Treatment BMPs	48	$R_{pri\text{-}sup}$

$R_{pri\text{-}sup} = 100 * (1 - ((1 - S_{sup}/100 * E_{sup}/100) * (1 - R_{pri}/100)))$

Rpri-sup>Rreq

If primary BMP plus pre-treatment BMP removal does not satisfy the pollutant removal requirement (I.e., if $R_{pri\text{-}sup} < R_{req}$), then one or more of the following revisions is required:.

1. Reduce the amount of impervious area (A_{devimp}), and increase the pervious area (A_{devper}) and/or dedicated open space area (A_{dedop}) accordingly.

2. Choose more effective primary and/or pre-treatment BMPs.

3. Increase the percentage of developed area that is treated by the BMPs (S_{pri}, S_{sup}).

4. Increase the amount of dedicated open sapce (A_{dedop}), and rediuce the amount of developed pervious area (A_{devper}) accordingly. This is most effective if the additional dedicated open space is loacted on part of the site that does not drain to the primary BMP: this effectively increases the percentage of developed area that drains to the BMP.

D.1 Stormwater Permit Application and Fee Schedule

BEAUFORT COUNTY

-STORMWATER PERMIT APPLICATION-

DATE ACCEPTED	RECEIVED BY	FILING FEE	RECEIPT#	PERMIT#	PIN# R600 032 0452

PROJECT NAME:	PROJECT TYPE:
Osprey Cove Apartments	Residential Multi-Family
PROJECT LOCATION:	
1031, 1033, 1037, & 1039 Fording Island Road, Bluffton	

APPLICANT/DEVELOPER NAME, ADDRESS, PHONE#	PROPERTY OWNER NAME, ADDRESS, PHONE#
WELLES LOM, LLC, 980 N. Michigan Ave., Ste. 1600 Chicago, IL 60611 Mike Thomas, 843-715-9434	SR 278 LLC, 1805 US Hwy 82 West Tifton, GA 31793
EMAIL mthomas.icon@gmail.com	EMAIL
SWPPP PREPARER NAME, ADDRESS, PHONE#	CONTRACTOR NAME, ADDRESS, PHONE#
Paul Moore, PE PO Box 381 Bluffton, SC 29910 (843) 837-5250	
EMAIL wpowell@wardedwards.com	EMAIL
QUALIFIED INSPECTOR NAME, ADDRESS, PHONE#	ADDITIONAL INFORMATION:
EMAIL	

CATEGORY A (Single Family Home)

- ☐ COPY OF TEIR I STORMWATER POLLUTION PREVENTION PLAN (SWPPP) – (See Appendix E)
- ☐ PLOT PLAN SHOWING, VACINITY MAP, NORTH ARROW, GRAPHIC SCALE, PROPOSED IMPROVEMENTS
- ☐ STEP II VOLUME CONTROL (See Section 5.3) (http://stormwaterworksheet.createandsolve.com)
- ☐ APPLICATION FEE

CATEGORY B (Non Residential and Attached Residential)

- ☑ COPY OF TEIR II STORMWATER POLLUTION PREVENTION PLAN (SWPPP) – (See Appendix E)
- ☑ POST CONSTRUCTION STORMWATER PLAN CHECKLIST WITH LOCATION OF ALL ITEMS INDICATED.
- ☑ SITE PLAN: VACINITY MAP, PROJECT LOCATION, NORTH ARROW, GRAPHIC SCALE, PROPOSED IMPROVEMENTS
- ☑ CONSTRUCTION PLANS
- ☑ DRAINAGE CALCULATIONS (See Section 5.3)
- ☑ APPLICATION FEE

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

NOTICE OF INTENT (NOI)

For Coverage(s) of Primary Permittees Under South Carolina NPDES General Permit For Stormwater Discharges From Construction Activities SCR100000

(Maintain As Part of On-Site SWPPP)

For Official Use Only

File Number: _____

Permit Number: SCR10_____

Submittal Package Complete: _____

Submission of this Notice of Intent constitutes notice that the Applicant identified in Section II intends to be authorized as a Primary Permittee in the state of South Carolina under NPDES General Permit SCR1000000. ***Fees required for review and NPDES coverage of each application type are as listed on page 2 of the Instructions.***

Date: 03/26/2018

Project/Site Name: Osprey Cove Apartments **County:** Beaufort County

(Modification or Change of Information Only) **Prior Approved NPDES Permit or File Number:** _____

Do you want this project to be considered for the Expedited Review Program (ERP)? ☐ **Yes or** ☑ **No (See instructions)**

I. Notice of Intent (NOI) Application Type(s)

A. **Project (Application/Review) Type(s)** (Select **ALL** that apply):

☑ New Project (Initial Notification) Ongoing Project: ☐ Permitted or ☐ Un-Permitted

☐ Late Notification ☐ Low Impact Development (LID) or Project Design Above Regulatory Requirements

☐ New Owner/Operator or Company Name Change **(see instructions, attach Form A (Transfer of Ownership))**

☐ Major Modification: **(see instructions, attach Form B (Major Modifications))**

☑ MS4 Project Review

☑ Ocean and Coastal Resource Management (OCRM) Review

☐ Change of Information/Other (Specify): _____

B. If Applicable, identify the entity designated as **MS4 Reviewer and MS4 Operator** (i.e., Lexington County, City of Greer, etc.): **MS4 Reviewer**_____ **MS4 Operator** Beaufort County

II. Primary Permittee Information ☐ Change of Information

☐ Person or ☑ Company | If a Company, are you a ☐ Lending Institution or ☐ Government Entity? Company EIN **(If applicable):** EIN: 82-2312504

A. **Primary Permittee Name:** Welles LOM, LLC

Mailing Address: 980 N. Michigan Ave, Ste 1600 City: Chicago State: IL Zip: 60611

Phone: 843-715-9434 Fax: _____ Email Address: mthomas.icon@gmail.com

B. **Contact /ODSA Name** (If different from above OR if owner is a company): Mike Thomas

Mailing Address: same City: _____ State: _____ Zip: _____

Phone: 843-816-0678 Fax: _____ Email Address: same

C. **Property Owner Name** (If different from above): SR 278 LLC

Mailing Address: 1805 US Hwy 82 West City: Tifton State: GA Zip: 31793

Phone: _____ Fax: _____ Email Address: _____

III. Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) Preparer Information ☐ Change of Information

A. **C-SWPPP Preparer Name:** Paul Moore, PE

B. **Registered Professional** ☑ Engineer ☐ Landscape Architect ☐ Tier B Land Surveyor **S. C. Registration #:** 22816

C. **Company/Firm Name:** Ward Edwards Engineering **S. C. COA # :** C00152

Mailing Address: P.O. Box 381 City: Bluffton State: SC Zip: 29910

Phone: 843-837-5250 Fax: _____ Email Address: pmoore@wardedwards.com

IV. Project/Site Information ☐ Change of Information

A. **Type of Construction Activity(ies)** (Select **ALL** that apply):

☐ Commercial ☐ Industrial ☐ Institutional ☐ Mass Grading ☐ Linear ☐ Utility/Infrastructure

☐ Residential: Single-family ☑ Residential: Multi-family ☐ Multi-use (Commercial & Residential)

☐ Site Preparation (No New Impervious Area) ☐ Other (Specify) _____

B. **Site Address/Location** (street address, nearest intersection, etc.) 1031, 1033, 1037, & 1039 Fording Island Rd

City/Town (If in limits): Bluffton Zip Code: 29910

Latitude: 32 ° 15 ' 28 " N Longitude: - 80 ° 50 ' 52 " W (Source): ☐ GPS ☑ Web Site: Google Earth

Tax Map Number (s) (List all): R600 032 000 0452 0000

C. Is this site located on **Indian Land**? ☐Yes ☑No

D. **Proposed Start Date:** 06/01/2018 **Proposed Completion Date:** 03/01/2019

E. **Disturbed Area** (nearest tenth of an acre): 2.7 **Total Area** (acres): 5.0

F. **Modification Only:**(nearest tenth of an acre): **Disturbed Area: Current (Approved) Area:** _____
Disturbed Area Change (Increase Only): _____ **Total Disturbed Area (After Change):** _____

G. Is this project part of a **Larger Common Plan for Development or Sale (LCP)**? ☑ Yes ☐ No
LCP/ Overall Development Name: Johnson Tract Check here if this is the **First Phase.** ☐

Previous State Permit/File Number: _____ **Previous NPDES Coverage Number:** SCR10 _____

H. Any **Flooding Problems** exist downstream of or adjacent to this site? ☐Yes ☑No (If yes, provide detailed description of flooding problems and applicable floodway/flood zone information in the C-SWPPP).

I. Active **S.C. DHEC Warning Notice, Notice to Comply or Notice of Violation** for this site or LCP? ☐Yes ☑No

J. List Relevant **State and Federal Environmental Permits or Approvals** applied for or obtained for this site (e.g., **RCRA, USACOE, Nationwide**, etc.). **If None, list None.**
n/a

K. **Any Waiver(s)/Variances/Exceptions Requested for this Project?** (If yes, identify below and include **Waiver Request and Justifications** in the C-SWPPP for each proposed request).

1. Small Construction Activity Waiver(s) From NPDES permitting **(Section 1.4 & Appendix B)**? ☐ Yes ☑ No
If yes, Identify requested waiver: ☐ Rainfall Erosivity Waiver ☐ TMDL Waiver ☐ Equivalent Analysis Waiver

2. Detention Waiver **(72-302(B)**? ☐ Yes ☑ No | 3. Other (Specify): _____

V. Waterbody Information (Attach additional sheet(s) as needed) ☐ Change of Information

A. **Receiving Waterbody(s) (RWB) Information** (List the nearest and next nearest receiving waterbodies to which the sites stormwater discharges will drain. If stormwater discharges drain to multiple waterbodies, list all such waterbodies).

1. Name of Receiving Waterbodies (RWB)	2. Distance to RWB (feet)	3. Classification of RWB
a. Nearest: Sawmill Creek	14,700	ORW
b. Next Nearest: Colleton River	19,200	ORW
c. Coastal Zone ONLY: Coastal Receiving Water (CRW): Colleton River	19,200	Not Applicable
d. Other Waterbodies:		

B. **Waters of the U.S. / State Information** (Attach additional sheet(s) as needed)

Waters of the U.S./ State	1. On the site?	2. Delineated/ Identified?	3. Impacts?	4. Amount of impacts
a. Jurisdictional wetlands	☑Yes ☐No	☑Yes ☐No	☐Yes ☑No	____ Ac
b. Non-jurisdictional wetlands	☐Yes ☑No	☐Yes ☐No	☐Yes ☐No	____ Ac
c. Other Water(s): _____	☐Yes ☑No	☐Yes ☐No	☐Yes ☐No	____ Ac ____ Feet
d. Coastal Zone ONLY: Direct Critical Area	☐Yes ☑No	☐Yes ☐No	☐Yes ☐No	____ Ac ____ Feet

5. If yes for impacts in B.3, describe each impact and activity, and list all permits (e.g., USACOE Nationwide Permit, DHEC General Permit) and certifications that have been applied for or obtained for each impact:
_____

C. **S.C. Navigable Waters (SCNW) Information (Section 2.6.5)** The Department will address any issues related to State Navigable Waters' Program under SC Regulation 19-450 during the review of the C-SWPPP for activities that will **NOT** require a 404 permit or a 401 certification. (Attach additional sheet(s) as needed).

1. **Are S. C. Navigable Waters (SCNW) on the site:** ☐Yes ☑ No
a. If **no**, do not complete this question. Proceed to Section D (Impaired Waterbodies).
b. If **yes**, provide the name of S.C. Navigable Waters (SCNW) on the site: _____

2. If **yes for C.1**, will construction activities cross over or occur in, under, or thru the SCNW? ☐Yes ☐ No
If yes, describe SCNW activities (e.g., road crossing, sub-aqueous utility line, temporary or permanent structures, etc.) and proceed to Section C.3: _____

3. Identify permits providing coverage of SCNW activities proposed for your site. If NONE, list none.

Permits/Certifications	Permit or Certification No.	Corresponding Covered SCNW Activity(ies)
a. DHEC General/ Other DHEC Permit	none	
b. USACOE **404 Permit or 401 Certification**	none	
c. SCNW Permit If applied for or issued, identify **Date applied for or issued:** _____	none	☐ **All Activities** or ☐ **Some Activities (Describe):**

d. If a SCNW Permit has NOT been applied for provide an additional plan sheet that shows plan and profile views (drawn to scale) of the SCNW and associated activities. Include a description of all proposed activities on this plan.

D. **Impaired Waterbodies Information** (Attach additional sheet(s) as needed)

1. 303(d) Listed Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4 and the **Name of the Corresponding Waterbody?**		b. **Is this WQMS(s) listed on the most current 303(d) List? If No, proceed to Section 2 of this table. If Yes, complete items c thru f.**	c. List the pollutant(s) identified as **"CAUSES"** of the impairment	d. Will any pollutants causing the impairment be present in your site's construction stormwater discharges?	e. If **yes for d,** list the **"USE SUPPORT"** impairment(s) affected by the pollutant(s) identified in c.
Nearest DHEC WQMS(s)	**Corresponding Waterbody**				
RT-13061	Sawmill Creek	☐ Yes ☑ No		☐ Yes ☐ No	
18-06	Colleton River	☐ Yes ☑ No		☐ Yes ☐ No	
18-15	Colleton River	☐ Yes ☑ No		☐ Yes ☐ No	

f. If **yes for d** above, **will use of the BMPs proposed for your project ensure the site's discharges will NOT contribute to or cause further WQS violations for the impairment(s) listed in c?** ☐ Yes ☐ No

(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

2. TMDL Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4?	b. Has a TMDL(s) been developed for this WQMS(s)? **If No, identify as such below and proceed to Section VI. If Yes, complete items c thru f of this table.**	c. If **yes for b,** what pollutants are listed as "CAUSES" or causing the impairment?	d. If **yes for b,** has the standard been **"ATTAINED" or " Fully Supported"** for the impairment(s)?	e. If **no for d (Not Attained),** will any pollutants causing the impairment be present in your site's construction stormwater discharges?
RT-13061	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No
18-06	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No
18-15	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No

f. If **yes for e** above, **are your discharges consistent with the assumptions and requirements of the TMDL(s)?** ☐ Yes ☐ No

(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

VI. Signatures and Certifications

DO **NOT** SIGN IN BLACK INK! **Read the Certifications below (in entirety). Provide date, printed name, and signatures below.** If you are a **New Owner/Operator,** as Primary Permittee you must also sign and date the applicable Comprehensive SWPPP Acceptance & Compliance Agreement below.

C-SWPPP PREPARER: "One copy of the C-SWPPP, all specifications and supporting calculations, forms, and reports are herewith submitted and made a part of this application. I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000." **(This should be the person identified in Section III).**

Paul Moore, PE	Paul Moore	22816
Printed Name of C-SWPPP Preparer	**Signature of C-SWPPP Preparer**	**S. C. Registration #**

PRIMARY PERMITTEE: "I or I (on behalf of my company and its contractors and agents), as the case may be, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that DHEC enforcement actions may be taken if the terms and conditions of the C-SWPPP are not met and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

"I or I (on behalf of my company and its contractors and agents), as the case may be, also hereby certify that all land-disturbing construction and associated activity pertaining to this site shall be accomplished pursuant to and in keeping with the terms and conditions of the approved plans and SCR100000. I also certify that a responsible person will be assigned to the project for day-to-day control. I hereby grant authorization to the to S. C. Department of Health and Environmental Control (DHEC) and/or the local implementing agency the right of access to the site at all times for the purpose of on site inspections during the course of construction and to perform maintenance inspections following the completion of the land-disturbing activity." **(See Section 122.22 of S.C. Reg. 61-9 for signatory authority information.)** Having understood the above information, I am signing this certification as Primary Permittee to the aforementioned NPDES general permit."

Joseph P. Concepcion	Vice President
Printed Name of Primary Permittee	**Title/Position**
Joseph P. Concepcion	3-27-18
Signature of Primary Permittee	**Date Signed**

SIGN HERE

NPDES CGP FEE SCHEDULE B

(ONLY for Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper Counties)
Submit payment for NPDES Coverage fees only to DHEC.

The schedule should be attached to DHEC Form 2617. Do not send payment in window envelope. **DO NOT MAIL CASH.** DHEC will notify the Project Owner/ Operator if the check or credit card payment cannot be processed. **The review clock will start when acceptable payment is received and after the project is deemed consistent with the S.C. Coastal Zone Management Plan.**

1. Identify (√) the Project/Review Types (NOTE: You may ONLY select Item 1.a OR 1.b BELOW). Enter NPDES coverage fee of $125 in the right-hand column if any of the following project/review types apply to this application. Proceed to Item 2.	(√)	NPDES Coverage Fee(s)
a. Project or LCP that is located within ½ mile of CRW (Item V.A) that will ultimately disturb more than 0.5 acres (if select a, do not select b)	☐	$ 125 .00
b. Project or LCP that is NOT located within ½ mile of CRW (Item V.A) that will ultimately disturb one (1) acre or more (if select b, do not select a)	☑	
c. New Owner/Operator (Transfer of Ownership)/Company Name Change ($125 NPDES Coverage fee is required by the Department for Transfers of Ownership and Company Name Changes)	☐	
d. Unpermitted Ongoing Project or Late Notification	☐	
e. MS4 Project Review (Item I.A and I.B)	☑	
f. Other (Specify): _____	☐	

2. Determine the Project Review Fees (Review fees cannot exceed $2000 for a project).
NOTE: COMPLETE ITEM 2.a BELOW. COMPLETE EITHER SECTION 3 OR SECTION 4. DO NOT COMPLETE BOTH SECTIONS.

a. Enter the disturbed area (Item IV.E) for this project. Proceed to Item 3 OR Item 4. _____ (nearest tenth of an acre)

3. PROJECT OR LCP LOCATED WITHIN ½ MILE OF A CRW (ITEM V.A)	(√)	Review Fees
a. Will this project or LCP (Item IV.G) ultimately disturb more than 0.5 acres?	☐Yes ☐No	
b. Is this project exempt from S. C. Reg. 72-300 et seq.?	☐Yes ☐No	

1. If this project will NOT ultimately disturb more than 0.5 acres and is not part of an LCP, **your project is automatically covered under this permit and the NPDES coverage fee and review fee are not required.** See section 1.3.1.B. See the **BOW-SPWS** for "Less Than 1-Acre of Land Disturbance - Coastal Counties".
2. If this project or LCP will ultimately disturb more than 0.5 acres, **proceed to Item 3.c.**

c. Enter the project review fees (based on $100/ disturbed acre) in the right-hand column. (Multiply the disturbed area (Item 2.a.) by $100/disturbed area). If the disturbed area for this project (Item 2.a.) totals 20.0 acres or more, enter $2000 in the right-hand column. Review fees cannot exceed $2000 for a project. **Proceed to item 3.d**	$ _____ .00
d. Total Required Fees (Coastal Project located WITHIN ½ mile of a CRW (Item V.A) Add the values in the right-hand columns of Items 1 and 3.c. (The Department will not review this project until all required fees are received). **Proceed to Item 5.**	$ _____ .00

4. PROJECT OR LCP NOT LOCATED WITHIN ½ MILE OF A CRW (ITEM V.A)	(√)	Review Fees
a. Will this project or LCP (Item IV.G) ultimately disturb one (1) acre or more?	☐Yes ☐No	
b. Is this project exempt from S. C. Reg. 72-300 et seq.?	☐Yes ☐No	

1. If this project will NOT ultimately disturb one (1) acre or more, and is not part of an LCP, coverage under SCR100000 is NOT required; see the **BOW-SPWS** for "Less Than 1-Acre of Land Disturbance - Coastal Counties".
2. If this project or LCP will ultimately disturb one (1) acre or more, **proceed to Item 4.c.**

c. Enter the project review fees (based on $100/ disturbed acre) in the right-hand column. (Multiply the disturbed area (Item 2.a.) by $100/disturbed area). If the disturbed area for this project (Item 2.a.) totals 20.0 acres or more, enter $2000 in the right-hand column. Review fees cannot exceed $2000 for a project. **Proceed to item 4.d.**	$ _____ .00
d. Total Required Fees (Coastal Project NOT located WITHIN ½ mile of a CRW (Item V.A) Add the values in the right-hand columns of Items 1 and 4.c. (The Department will not review this project until all required fees are received). **Proceed to Item 5.**	$ 125 .00

5. Identify the Method of Payment: ☐ **Payment by Check:** (Attach a signed and dated check payable to S.C. DHEC to the front of this fee schedule. All checks must be less than 30 days old and must be for the entire amount of required fees). ☐ **Payment by Credit Card:** (Check here if you wish to pay via credit card using the on-line payment system). The Department will contact you via e-mail to provide instructions and the invoice number necessary for online payment. **Please provide an e-mail address where the invoice number may be sent:**

_____

For official use only: Invoice Number _____

State of South Carolina	)	**Permanent Stormwater Facility Maintenance**
	)	**and Responsibility Agreement**
County of Beaufort	)	**Tax Map No.** R600 032 000 0452 0000

This Agreement is entered into this _____ day of _____, 20____, by and between WELLES LOM, LLC (hereinafter referred to as "Landowner") and the County of Beaufort, political subdivision of the State of South Carolina (hereinafter referred to as "County").

It is agreed as follows:

Landowner Responsible for Stormwater Facility:

The South Carolina Stormwater Management and Sediment Reduction Act of 1991 (§48-14-10, et. seq.) and Regulation 72-308 provide that a Landowner shall adequately establish and maintain stormwater management/Best Management Practices (BMP) facilities upon making certain improvements to the Landowner's property. This law applies to any individual, partnership, corporation or other entity, constructing a stormwater facility. It also applies to all subsequent owners of the property. The obligation applies to the maintenance of all pipes, equipment, and channels built to convey stormwater to a retention facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater on the property. (All fixtures and graded or excavated improvements for controlling stormwater are herein the "Facility"). Adequate maintenance is herein defined as keeping the Facility in good working condition so that the Facility is performing all of its design functions in accordance with the purposes for which it is designed.

Maintenance Required:

The Landowner, its successors and assigns, will perform the maintenance, repair, and replacement necessary to keep the Facility in good working order. In the event a maintenance schedule for the Facility (including sediment removal) is outlined on the approved plans, the schedule must be followed.

Inspection Required:

The Landowner, its successors and assigns, shall regularly and periodically inspect the Facility in its entirety. Records shall be kept to identify the dates and maintenance performed and shall be made available to the County at the County's request. The purpose of the inspection is to assure safe and proper functioning of the Facility. The inspection shall cover all parts of the Facility including, but not limited to, berms, outlet structures, pond areas, and access roads. The Landowner's failure to inspect shall be treated as a breach of this Agreement just as much as a failure to repair if repair is needed after inspection.

Access Permitted:

The Landowner grants permission to the County, its authorized employees and agents, to enter upon the Property and to inspect the Facility whenever the County deems necessary. The purpose of inspection is to follow-up on reported or observed deficiencies, to respond to citizen complaints, or to make an inspection if a significant time has passed after the last inspection. The County shall provide the Landowner a copy of the inspection findings and a directive to commence with the repairs if

necessary. In the case of multiple Landowners of a single property, notice to one shall suffice as notice to all.

No Duty on the County:

This Agreement creates no affirmative duty on the County to inspect, and it imposes no liability of any kind whatsoever on the County for omissions in inspecting. The Landowner agrees to hold the County harmless from any liability in the event the Facility fails to operate properly due to the Landowner's failure to abide by the terms of this Agreement.

Landowner Covenants:

The Landowner accepts responsibility for ownership and proper maintenance of the stormwater system, the Facility (pond, swales, etc.) on parcel # (R 600 032 000 0452 0000) located at 1031, 1033, 1037 & 1039 Fording Island Road , (see attached Site Map) Beaufort, South Carolina, per the approved maintenance plan. The specific BMPs on the property are listed below:

1) Pond interconnect pipes
2) _____
3) _____
4) _____
5) _____

Landowner will complete any necessary repairs and/or preventive maintenance procedures in a timely manner to ensure proper functioning as a stormwater management device(s).

Landowner understands that the maintenance plan may be amended or revised at any time by the County in order to address changed conditions or to address conditions not being effectively met by the Facility. Following the County's sending notice; Landowner will abide by any prescribed changes.

This covenant to maintain the Facility shall run with the land. Landowner will continue to own and maintain the Facility until the County is notified in writing of a transfer in ownership and maintenance responsibility. The notification will include a date for the transfer of responsibility which will become effective upon the County's receipt of a letter of acceptance from the new owner. Notwithstanding the provision for a letter of acceptance, any new Landowner shall be responsible for all duties and obligations created by this Permanent Stormwater Facility and Maintenance Responsibility Agreement upon it being executed and filed in the Register of Deeds Office for Beaufort County.

Landowner understands that failure to adhere to the signed Maintenance Agreement may result in fines of up to $1,000.00 per day, per violation and /or the institution of a court action, or such other and additional penalties, fines, or assessments as shall be enacted and provided for by the general law of the state or by local regulation lawfully enacted.

(Signatures contained on the next page)

IN WITNESS our hand and seal this 27th day of March, 2018.

WITNESS 1

WITNESS 2

Land Owner Name: Joseph P. Concepcion
(Print)

Land Owner Signature:

Mailing Address: Engerman Real Estate
980 N. Michigan Ave #1660 Chicago, IL 60302

Phone Number: 3125449612

County of Beaufort

WITNESS 1

WITNESS 2

BY:
Gary Kubic
ITS: County Administrator

STATE OF ~~SOUTH CAROLINA~~ Illinois)
) ACKNOWLEDGEMENT
COUNTY OF ~~BEAUFORT~~ Cook)

The foregoing instrument was acknowledged before me this 27th day of March, 2018 by Joseph Concepcion, (Landowner's name).

Nicole Clark
Notary Public for ~~South Carolina~~ Illinois
My Commission Expires: 12/20/20

OFFICIAL SEAL
NICOLE CLARK
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:12/20/20

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGEMENT
COUNTY OF BEAUFORT)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____ by Gary Kubic, County Administrator for Beaufort County.

Notary Public for South Carolina
My Commission Expires: _____

Stormwater Plan
Final Design Checklist for Residential and Commercial Developments.

REVISED 08/24/16

Please indicate the location and page number(s) where each item below can be found in your SWPPP or supporting calculations. If an item is not applicable, please put N/A. Beaufort County reserves the right to modify this checklist at any time. For stormwater questions please contact Public Works Stormwater Division at 843-255-2805.

Project Name: Osprey Cove Apartments

Checklist Completed by Paul Moore, PE

Printed Name: Paul Moore, PE

Signature: Paul Moore

Date: 3/19/18

1. **CURRENT COMPLETED APPLICATION FORM/DHEC NOI**
- All items in the checklist should be submitted inserted in your final permit plans

2. **VICINITY MAP**
- Include North arrow and scale
- Outlined project location
- Road names
- Public or private Right of Way
- Location Map

3. **COVER SHEET**
- Project Name
- Engineer's Contact Information (name, mailing address, telephone, fax, email)
- Developer's Contact Information (name, mailing address, telephone, fax, email)
- Contractor's Contact Information (name, mailing address, telephone, fax, email)

4. **SITE PLAN CHECKLIST**
- Size of plans should be 24" x 36"
- Engineer stamp and signature in blue ink.
- Plans to Scale and North Arrow
- Contours are to be tied to a known datum, no **assumed** elevations,
- Lot Layout
- Property lines, adjacent landowners' names
- Existing and proposed contours for entire parcel.
- Limits of disturbed area outlined on the plans.
- Road and Ditch profiles with existing and proposed ground elevations (if no contours are shown on the plans).
- Construction entrance/exit
- Standard notes (See Item #15 of this checklist)
- Individual lot erosion control plan and contours (unless exempt)

5. **USGS TOPOGRAPHIC MAP**
- Project boundary outlined
- Route of runoff from site to nearest waterbody shown
- Critical areas downstream of site indicated

6. **SOILS INFORMATION**
- Predominate soil types found at the site identified on the plans or on a separate map

7. **FLOODWAY MAPS/FEMA FLOOD INSURANCE MAP**
- Project boundary outlined, if in close proximity of floodplain/floodway

8. **WETLANDS/WATERS-OF-THE-STATE (WOS)**
- Delineation of all waters of the State (WoS), including wetlands, shown and labeled on plans
(Delineation not required if a 100-ft buffer can be maintained between the WoS and all land disturbing activities)
- Additional, separate plan sheet that shows all WoS, on the site and the impacted areas with a description of the activity(s), whether it is permanently or temporary, and any other relevant

9. **PERMANENT STORMWATER MANAGEMENT STRUCTURE MAINTENANCE PLAN**
- Signed Maintenance Agreement from a responsible party accepting ownership and maintenance of the structure or BMP. This document needs to be recorded with the Beaufort County Register of Deeds.

10. **TMDL/ 303d IMPAIRED WATERBODIES**
- List the nearest SCDHEC Water Quality Monitoring Station (WQMS) that the site's stormwater discharges drain to and the waterbody on which it is located.

11. **NAVIGABLE WATERS**
- Extra plan sheet showing impacts to navigable water and description of activity included if S.C. Navigable Waters (SCNW) crossing and separate SCNW permit has not been obtained for all activities

12. **DRAINAGE AREA MAPS & REPORT**
- Provide drainage area map outlining the area draining to all erosion and sediment control BMPs on site. Show existing and proposed contours for the road layout and BMP placement.
- Place calculated design flows on each pipe and BMPs
- Time of concentrations
- Curve numbers for each drainage area.
- Routing hydrographs for the 2,5,10,25, and 100-year storm event
- Pipe capacities for the design storm
- Basin stage/storage and stage discharge calculations
- Pre drainage area map (site without proposed development)
- Post drainage area map (with proposed development)
- Include off-site drainage areas
- Label watershed areas within the drainage area map with (watershed identifier, CN, area, length, slope)

13. **AS-BUILTS**
- Submit 2 original asbuilt hard copies, signed and sealed by a South Carolina Licensed Land Survey or Engineer. Submit one digital copy of asbulits in GIS format .lyr, shp or gdb file with the coordinate system being state plane NAD_1983_StatePlane_South_Carolina_FIPS_3900_Feet_Intl

14. **STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**
- Cover and title page
- Project and SWPPP contact information
- Site and activity description including site map
- Identification of potential pollution sources including but not limited to: trash, paint and concrete washout, vehicle maintenance practices, etc.
- Description of controls to reduce pollutants
- Construction sequence
- Time schedule for each activity on the construction sequence
- Maintenance and inspection procedures
- Records of maintenance activities and inspections
- SWPPP amendments
- SWPPP certifications

15. **STANDARD NOTES:**
1. If necessary, slopes which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction.
2. Temporary berms may be needed until the slope is brought to grade.
3. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
4. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
5. Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
6. All sediment and erosion control devices shall be inspected every seven (7) days. Damaged or ineffective devices shall be repaired or replaced, as necessary. OR
   All sediment and erosion control devices shall be inspected at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. Damaged or ineffective devices shall be repaired or replaced, as necessary.
7. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove any sediments before being pumped back into any waters of the State.
8. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during

construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.

9. The contractor must take necessary action to minimize the tracking of mud onto the paved roadway construction areas. The contractor shall daily remove mud/soil from pavement, as may be required.
10. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
11. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in stormwater discharges.
12. Provide written proof that all off-site easements have been obtained. (include implementation of all stormwater and sediment controls in the first phase of construction).

16. **APPLICANT AND DEVELOPER CERTIFICATIONS**
- The following certifications must be signed on all final sets of plans

Applicant's Certification
I (We) hereby certify that all clearing, grading, construction, and/or development will be done pursuant to this plan and I (we) are responsible for the land disturbance and related maintenance thereof. Beaufort County authorities will be allowed to enter the project site for the purposed of on-site inspections.

SIGN HERE

Joseph P. Concepcion

Date Owner/Person Financially Responsible

Joseph P. Concepcion

Print Name of Owner/Person Financially Responsible

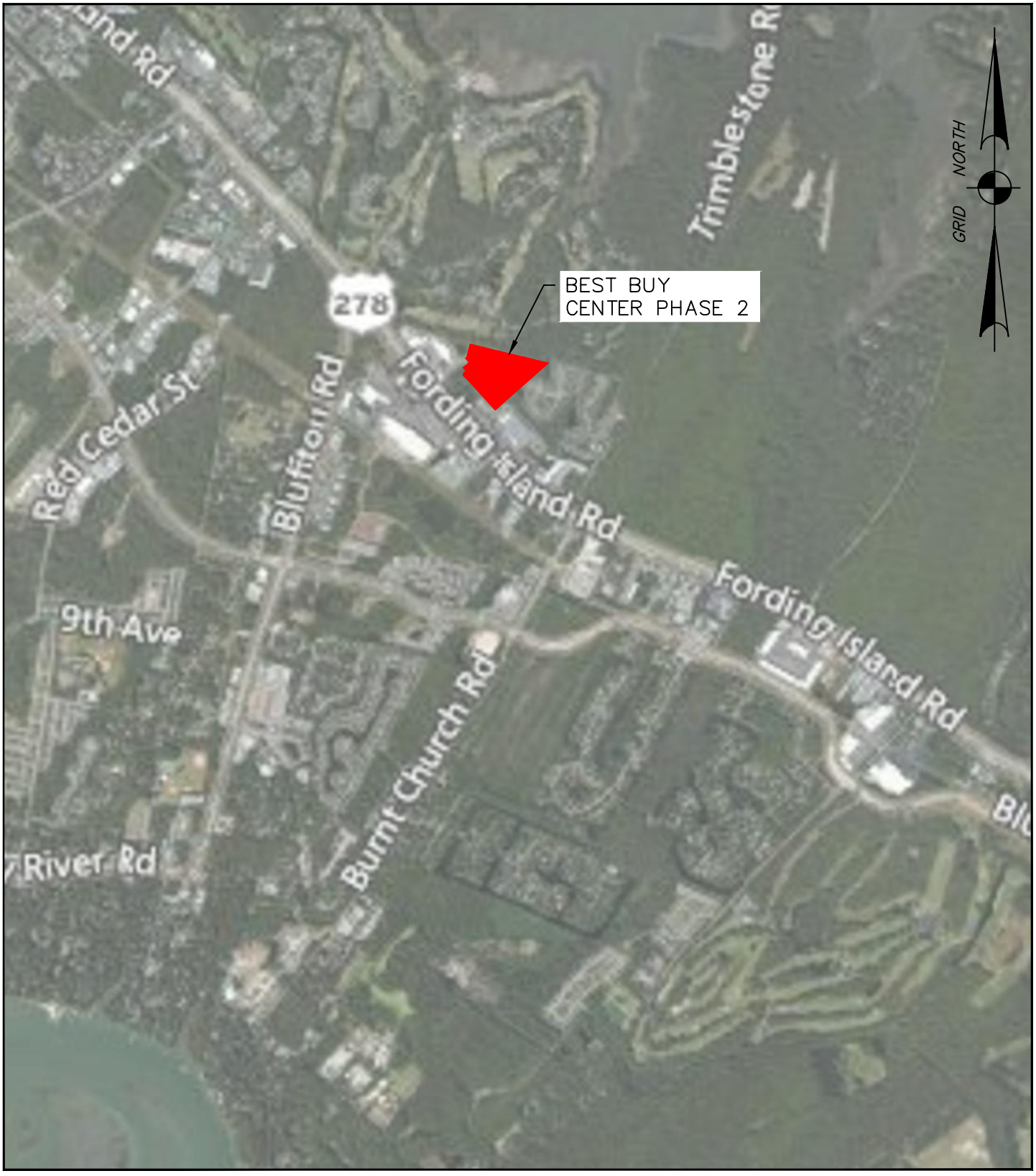
Designer's Certification
"I hereby certify that this plan is designed to contain soil on the property concerned to the maximum extent, to provide for the protection of the property and the proposed improvements thereon from the effects of flooding, to provide for the control of the runoff from the property, and that all the provisions for sediment control and storm drainage are in accordance with the Stormwater Best Management Practices and Stormwater Ordinance for Beaufort County, South Carolina."

Paul Moore 3/19/18

Date Designer's Signature and Certification

Paul Moore, PE

Print Name of Designer



Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

VICINITY MAP

BEST BUY CENTER PHASE 2

LOCATION: BLUFFTON, SC
DATE: 11/09/17
PROJECT #: 170262

SHEET: 1 OF 1
SCALE: 1"=2,000'

Andrew Ahmann
190 May River Rd.
Bluffton S.C. 29910

January 18, 2017

To whom it concerns,

Ahmann Landscape performed the requested Tree Assessment for the property located at 1031 Fording Island Rd, Bluffton, S.C. 29910.

Trees recommend for removal are as listed:

1. 17" Live Oak
2. 18" Live Oak
3. 19" Live Oak

It is recommended that these tree are to be removed, the canopy is declining due to storm damage with 60% of the canopy being dead wood, the trees are also up rooting. It would be a safety concern to leave the trees in an area where there will be pedestrian traffic. Please feel free to contact me with any questions.

Warm regards,

Andrew Ahmann
Certified Arborist
SO-6578A
aahmann@ahmannlandscape.com
843-415-5006

DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

NOTICE OF INTENT (NOI)
For Coverage(s) of Primary Permittees Under South Carolina NPDES General Permit For Stormwater Discharges From Construction Activities SCR100000
(Maintain As Part of On-Site SWPPP)

For Official Use Only
File Number: _____
Permit Number: SCR10_____
Submittal Package Complete: _____

Submission of this Notice of Intent constitutes notice that the Applicant identified in Section II intends to be authorized as a Primary Permittee in the state of South Carolina under NPDES General Permit SCR1000000. ***Fees required for review and NPDES coverage of each application type are as listed on page 2 of the Instructions.***

Date: 03/26/2018
Project/Site Name: Osprey Cove Apartments **County:** Beaufort County
(Modification or Change of Information Only) **Prior Approved NPDES Permit or File Number:** _____

Do you want this project to be considered for the Expedited Review Program (ERP)? ☐ **Yes or** ☑ **No (See instructions)**

I. Notice of Intent (NOI) Application Type(s)
A. **Project (Application/Review) Type(s)** (Select **ALL** that apply):
- ☑ New Project (Initial Notification) Ongoing Project: ☐ Permitted or ☐ Un-Permitted
- ☐ Late Notification ☐ Low Impact Development (LID) or Project Design Above Regulatory Requirements
- ☐ New Owner/Operator or Company Name Change **(see instructions, attach Form A (Transfer of Ownership))**
- ☐ Major Modification: **(see instructions, attach Form B (Major Modifications))**
- ☑ MS4 Project Review
- ☑ Ocean and Coastal Resource Management (OCRM) Review
- ☐ Change of Information/Other (Specify): _____

B. If Applicable, identify the entity designated as **MS4 Reviewer and MS4 Operator** (i.e., Lexington County, City of Greer, etc.): **MS4 Reviewer** _____ **MS4 Operator** Beaufort County

II. Primary Permittee Information
☐ **Change of Information**

☐ Person or ☑ Company | If a Company, are you a ☐ Lending Institution or ☐ Government Entity? Company EIN **(If applicable):** EIN: 82-2312504

A. **Primary Permittee Name:** Welles LOM, LLC
Mailing Address: 980 N. Michigan Ave. Ste 1600 City: Chicago State: IL Zip: 60611
Phone: 843-715-9434 Fax: _____ Email Address: mthomas.icon@gmail.com

B. **Contact /ODSA Name** (If different from above OR if owner is a company): Mike Thomas
Mailing Address: same City: _____ State: _____ Zip: _____
Phone: 843-816-0678 Fax: _____ Email Address: same

C. **Property Owner Name** (If different from above): SR 278 LLC
Mailing Address: 1805 US Hwy 82 West City: Tifton State: GA Zip: 31793
Phone: _____ Fax: _____ Email Address: _____

III. Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) Preparer Information
☐ **Change of Information**

A. **C-SWPPP Preparer Name:** Paul Moore, PE
B. **Registered Professional** ☑ Engineer ☐ Landscape Architect ☐ Tier B Land Surveyor **S. C. Registration #:** 22816
C. **Company/Firm Name:** Ward Edwards Engineering **S. C. COA #:** C00152
Mailing Address: P.O. Box 381 City: Bluffton State: SC Zip: 29910
Phone: 843-837-5250 Fax: _____ Email Address: pmoore@wardedwards.com

IV. Project/Site Information
☐ **Change of Information**

A. **Type of Construction Activity(ies)** (Select **ALL** that apply):
☐ Commercial ☐ Industrial ☐ Institutional ☐ Mass Grading ☐ Linear ☐ Utility/Infrastructure
☐ Residential: Single-family ☑ Residential: Multi-family ☐ Multi-use (Commercial & Residential)
☐ Site Preparation (No New Impervious Area) ☐ Other (Specify) _____

B. **Site Address/Location** (street address, nearest intersection, etc.) 1031, 1033, 1037, & 1039 Fording Island Rd
City/Town (If in limits): Bluffton Zip Code: 29910
Latitude: 32 ° 15 ' 28 " N Longitude: - 80 ° 50 ' 52 " W (Source): ☐ GPS ☑ Web Site: Google Earth
Tax Map Number (s) (List all): R600 032 000 0452 0000

C. Is this site located on **Indian Land**? ☐ Yes ☑ No

D. **Proposed Start Date**: 06/01/2018 **Proposed Completion Date**: 03/01/2019

E. **Disturbed Area** (nearest tenth of an acre): 2.7 **Total Area** (acres): 5.0

F. **Modification Only:**(nearest tenth of an acre): **Disturbed Area: Current (Approved) Area:** _____ **Disturbed Area Change (Increase Only):** _____ **Total Disturbed Area (After Change):** _____

G. Is this project part of a **Larger Common Plan for Development or Sale (LCP)**? ☑ Yes ☐ No

LCP/ Overall Development Name: Johnson Tract Check here if this is the **First Phase.** ☐

Previous State Permit/File Number: _____ **Previous NPDES Coverage Number:** SCR10 _____

H. Any **Flooding Problems** exist downstream of or adjacent to this site? ☐ Yes ☑ No (If yes, provide detailed description of flooding problems and applicable floodway/flood zone information in the C-SWPPP).

I. Active **S.C. DHEC Warning Notice, Notice to Comply or Notice of Violation** for this site or LCP? ☐ Yes ☑ No

J. List Relevant **State and Federal Environmental Permits or Approvals** applied for or obtained for this site (e.g., **RCRA, USACOE, Nationwide**, etc.). **If None, list None.**

n/a

K. **Any Waiver(s)/Variances/Exceptions Requested for this Project?** (If yes, identify below and include **Waiver Request and Justifications** in the C-SWPPP for each proposed request).

1. Small Construction Activity Waiver(s) From NPDES permitting **(Section 1.4 & Appendix B)**? ☐ Yes ☑ No
   If yes, Identify requested waiver: ☐ Rainfall Erosivity Waiver ☐ TMDL Waiver ☐ Equivalent Analysis Waiver

2. Detention Waiver **(72-302(B)**? ☐ Yes ☑ No | 3. Other (Specify): _____

V. Waterbody Information (Attach additional sheet(s) as needed)

☐ **Change of Information**

A. **Receiving Waterbody(s) (RWB) Information** (List the nearest and next nearest receiving waterbodies to which the sites stormwater discharges will drain. If stormwater discharges drain to multiple waterbodies, list all such waterbodies).

1. Name of Receiving Waterbodies (RWB)	2. Distance to RWB (feet)	3. Classification of RWB
a. Nearest: Sawmill Creek	14,700	ORW
b. Next Nearest: Colleton River	19,200	ORW
c. Coastal Zone ONLY: Coastal Receiving Water (CRW): Colleton River	19,200	Not Applicable
d. Other Waterbodies:		

B. **Waters of the U.S. / State Information** (Attach additional sheet(s) as needed)

Waters of the U.S./ State	1. On the site?	2. Delineated/ Identified?	3. Impacts?	4. Amount of impacts
a. Jurisdictional wetlands	☑ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☑ No	____ Ac
b. Non-jurisdictional wetlands	☐ Yes ☑ No	☐ Yes ☐ No	☐ Yes ☐ No	____ Ac
c. Other Water(s): _____	☐ Yes ☑ No	☐ Yes ☐ No	☐ Yes ☐ No	____ Ac ____ Feet
d. Coastal Zone ONLY: Direct Critical Area	☐ Yes ☑ No	☐ Yes ☐ No	☐ Yes ☐ No	____ Ac ____ Feet

5. If yes for impacts in B.3, describe each impact and activity, and list all permits (e.g., USACOE Nationwide Permit, DHEC General Permit) and certifications that have been applied for or obtained for each impact:

C. **S.C. Navigable Waters (SCNW) Information (Section 2.6.5)** The Department will address any issues related to State Navigable Waters' Program under SC Regulation 19-450 during the review of the C-SWPPP for activities that will **NOT** require a 404 permit or a 401 certification. (Attach additional sheet(s) as needed).

1. Are S. C. Navigable Waters (SCNW) on the site: ☐ Yes ☑ No

a. If **no**, do not complete this question. Proceed to Section D (Impaired Waterbodies).

b. If **yes**, provide the name of S.C. Navigable Waters (SCNW) on the site: _____

2. If **yes for C.1**, will construction activities cross over or occur in, under, or thru the SCNW? ☐ Yes ☐ No

If yes, describe SCNW activities (e.g., road crossing, sub-aqueous utility line, temporary or permanent structures, etc.) and proceed to Section C.3: _____

3. Identify permits providing coverage of SCNW activities proposed for your site. If NONE, list none.

Permits/Certifications	Permit or Certification No.	Corresponding Covered SCNW Activity(ies)
a. DHEC General/ Other DHEC Permit	none	
b. USACOE **404 Permit or 401 Certification**	none	
c. **SCNW Permit** If applied for or issued, identify **Date applied for or issued:** _____	none	☐ **All Activities** or ☐ **Some Activities (Describe):**

d. If a SCNW Permit has NOT been applied for provide an additional plan sheet that shows plan and profile views (drawn to scale) of the SCNW and associated activities. Include a description of all proposed activities on this plan.

D. **Impaired Waterbodies Information** (Attach additional sheet(s) as needed)

1. 303(d) Listed Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4 and the **Name of the Corresponding Waterbody?**		b. **Is this WQMS(s) listed on the most current 303(d) List? If No, proceed to Section 2 of this table. If Yes, complete items c thru f.**	c. List the pollutant(s) identified as **"CAUSES"** of the impairment	d. Will any pollutants causing the impairment be present in your site's construction stormwater discharges?	e. If **yes for d**, list the **"USE SUPPORT"** impairment(s) affected by the pollutant(s) identified in c.
Nearest DHEC WQMS(s)	**Corresponding Waterbody**				
RT-13061	Sawmill Creek	☐ Yes ☑ No		☐ Yes ☐ No	
18-06	Colleton River	☐ Yes ☑ No		☐ Yes ☐ No	
18-15	Colleton River	☐ Yes ☑ No		☐ Yes ☐ No	

f. If **yes for d** above, **will use of the BMPs proposed for your project ensure the site's discharges will NOT contribute to or cause further WQS violations for the impairment(s) listed in c?** ☐ Yes ☐ No
(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

2. TMDL Impaired Waterbodies

a. Name of **Nearest DHEC Water Quality Monitoring Stations (WQMS)(s)** that receives stormwater from your construction site and/or thru an MS4?	b. Has a TMDL(s) been developed for this WQMS(s)? **If No, identify as such below and proceed to Section VI. If Yes, complete items c thru f of this table.**	c. If **yes for b**, what pollutants are listed as "CAUSES" or causing the impairment?	d. If **yes for b**, has the standard been **"ATTAINED" or " Fully Supported"** for the impairment(s)?	e. If **no for d (Not Attained)**, will any pollutants causing the impairment be present in your site's construction stormwater discharges?
RT-13061	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No
18-06	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No
18-15	☐ Yes ☑ No		☐ Yes ☐ No	☐ Yes ☐ No

f. If **yes for e** above, **are your discharges consistent with the assumptions and requirements of the TMDL(s)?** ☐ Yes ☐ No
(NOTE: If no for f, this site is NOT eligible for coverage under the CGP). See Instructions.

VI. Signatures and Certifications DO **NOT** SIGN IN BLACK INK! **Read the Certifications below (in entirety). Provide date, printed name, and signatures below.** If you are a **New Owner/Operator**, as Primary Permittee you must also sign and date the applicable Comprehensive SWPPP Acceptance & Compliance Agreement below.

C-SWPPP PREPARER: "One copy of the C-SWPPP, all specifications and supporting calculations, forms, and reports are herewith submitted and made a part of this application. I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000." **(This should be the person identified in Section III).**

Paul Moore, PE — **Printed Name of C-SWPPP Preparer**

Paul R Moore — **Signature of C-SWPPP Preparer**

22816 — **S. C. Registration #**

PRIMARY PERMITTEE: "I or I (on behalf of my company and its contractors and agents), as the case may be, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that DHEC enforcement actions may be taken if the terms and conditions of the C-SWPPP are not met and I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

"I or I (on behalf of my company and its contractors and agents), as the case may be, also hereby certify that all land-disturbing construction and associated activity pertaining to this site shall be accomplished pursuant to and in keeping with the terms and conditions of the approved plans and SCR100000. I also certify that a responsible person will be assigned to the project for day-to-day control. I hereby grant authorization to the to S. C. Department of Health and Environmental Control (DHEC) and/or the local implementing agency the right of access to the site at all times for the purpose of on site inspections during the course of construction and to perform maintenance inspections following the completion of the land-disturbing activity." **(See Section 122.22 of S.C. Reg. 61-9 for signatory authority information.)** Having understood the above information, I am signing this certification as Primary Permittee to the aforementioned NPDES general permit."

Joseph P. Concepcion — **Printed Name of Primary Permittee**

Vice President — **Title/Position**

Joseph P. Concepcion — **Signature of Primary Permittee**

3-27-18 — **Date Signed**

SIGN HERE

NPDES CGP FEE SCHEDULE B

(ONLY for Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper Counties)
Submit payment for NPDES Coverage fees only to DHEC.

The schedule should be attached to DHEC Form 2617. Do not send payment in window envelope. **DO NOT MAIL CASH**. DHEC will notify the Project Owner/ Operator if the check or credit card payment cannot be processed. **The review clock will start when acceptable payment is received and after the project is deemed consistent with the S.C. Coastal Zone Management Plan.**

1. Identify (√) the Project/Review Types (NOTE: You may ONLY select Item 1.a OR 1.b BELOW). Enter NPDES coverage fee of $125 in the right-hand column if any of the following project/review types apply to this application. Proceed to Item 2.	(√)	NPDES Coverage Fee(s)
a. Project or LCP that is located within ½ mile of CRW (Item V.A) that will ultimately disturb more than 0.5 acres (if select a, do not select b)	☐	$ 125 .00
b. Project or LCP that is NOT located within ½ mile of CRW (Item V.A) that will ultimately disturb one (1) acre or more (if select b, do not select a)	☑	
c. New Owner/Operator (Transfer of Ownership)/Company Name Change ($125 NPDES Coverage fee is required by the Department for Transfers of Ownership and Company Name Changes)	☐	
d. Unpermitted Ongoing Project or Late Notification	☐	
e. MS4 Project Review (Item I.A and I.B)	☑	
f. Other (Specify): _____	☐	

2. Determine the Project Review Fees (Review fees cannot exceed $2000 for a project).
NOTE: COMPLETE ITEM 2.a BELOW. COMPLETE EITHER SECTION 3 OR SECTION 4. DO NOT COMPLETE BOTH SECTIONS.

a. Enter the disturbed area (Item IV.E) for this project. Proceed to Item 3 OR Item 4. _____ (nearest tenth of an acre)

3. PROJECT OR LCP LOCATED WITHIN ½ MILE OF A CRW (ITEM V.A)	(√)	Review Fees
a. Will this project or LCP (Item IV.G) ultimately disturb more than 0.5 acres?	☐Yes ☐No	
b. Is this project exempt from S. C. Reg. 72-300 et seq.?	☐Yes ☐No	

1. If this project will NOT ultimately disturb more than 0.5 acres and is not part of an LCP, **your project is automatically covered under this permit and the NPDES coverage fee and review fee are not required.** See section 1.3.1.B. See the **BOW-SPWS** for "Less Than 1-Acre of Land Disturbance - Coastal Counties".
2. If this project or LCP will ultimately disturb more than 0.5 acres, **proceed to Item 3.c.**

c. Enter the project review fees (based on $100/ disturbed acre) in the right-hand column. (Multiply the disturbed area (Item 2.a.) by $100/disturbed area). If the disturbed area for this project (Item 2.a.) totals 20.0 acres or more, enter $2000 in the right-hand column. Review fees cannot exceed $2000 for a project. **Proceed to item 3.d**	$ _____ .00
d. Total Required Fees (Coastal Project located WITHIN ½ mile of a CRW (Item V.A) Add the values in the right-hand columns of Items 1 and 3.c. (The Department will not review this project until all required fees are received). **Proceed to Item 5.**	$ _____ .00

4. PROJECT OR LCP NOT LOCATED WITHIN ½ MILE OF A CRW (ITEM V.A)	(√)	Review Fees
a. Will this project or LCP (Item IV.G) ultimately disturb one (1) acre or more?	☐Yes ☐No	
b. Is this project exempt from S. C. Reg. 72-300 et seq.?	☐Yes ☐No	

1. If this project will NOT ultimately disturb one (1) acre or more, and is not part of an LCP, coverage under SCR100000 is NOT required; see the **BOW-SPWS** for "Less Than 1-Acre of Land Disturbance - Coastal Counties".
2. If this project or LCP will ultimately disturb one (1) acre or more, **proceed to Item 4.c.**

c. Enter the project review fees (based on $100/ disturbed acre) in the right-hand column. (Multiply the disturbed area (Item 2.a.) by $100/disturbed area). If the disturbed area for this project (Item 2.a.) totals 20.0 acres or more, enter $2000 in the right-hand column. Review fees cannot exceed $2000 for a project. **Proceed to item 4.d.**	$ _____ .00
d. Total Required Fees (Coastal Project NOT located WITHIN ½ mile of a CRW (Item V.A) Add the values in the right-hand columns of Items 1 and 4.c. (The Department will not review this project until all required fees are received). **Proceed to Item 5.**	$ 125 .00

5. Identify the Method of Payment: ☐ **Payment by Check:** (Attach a signed and dated check payable to S.C. DHEC to the front of this fee schedule. All checks must be less than 30 days old and must be for the entire amount of required fees). ☐ **Payment by Credit Card:** (Check here if you wish to pay via credit card using the on-line payment system). The Department will contact you via e-mail to provide instructions and the invoice number necessary for online payment. **Please provide an e-mail address where the invoice number may be sent:**

_____

For official use only: Invoice Number _____

COUNTY COUNCIL OF BEAUFORT COUNTY
Beaufort County Community Development
Multi Government Center • 100 Ribaut Road
Post Office Drawer 1228, Beaufort, SC 29901-1228
OFFICE (843) 255-2170
FAX (843) 255-9446

April 11, 2018

Mr. Paul Moore
Ward Edwards Engineering
Post Office Box 381
Bluffton, SC 29910

Re: Osprey Cove Apartments - (Final)

Dear Mr. Moore:

Please have this letter will serve as the recommendations from each member of the SRT for final review of the referenced project:

COMMUNITY DEVELOPMENT:

1. Why are all the HC parking spaces grouped together and not distributed on the property?

2. The County Natural Resource Planner will review the independent Arborist Report once submitted. Dead diseased or dying trees must be mitigated 1 for 1 with a 2.5" caliper hardwood tree. On Sheet T1.0, the tree mitigation table should include the three dead trees referenced for a total of (46) 2.5" trees planted to meet required mitigation.

3. Landscape Plan comments:
   a. Clearly identify/highlight the mitigation trees on the plans.
   b. Please explain why there aren't any foundation plantings proposed on the back-side of each building.
   c. Applicant is removing a total of 107", plus 3 trees for the dead trees. A total of 46 trees are required to be planted. Please revise planting plan showing the additional 8 trees.

4. Exterior Lighting plan & cut-sheets: The lighting plan does not match the final site layout plan. Please revise and re-submit.

5. Dumpster enclosure: Dumpster enclosure and gates must be 100% opaque and tall enough to completely conceal the dumpster. Please explain which materials and colors are being proposed and how tall the enclosure and gates will be.

6. Property Signage: Please identify the location of the monument sign. Approval of the monument sign is handled with a separate process. The monument structure design must match the building materials and colors.

7. Meter, Power Source & AC unit Screening for each building: Please describe the method of screening which will be used to conceal these items from view.

8. Applicant shall submit BJWSA Letter of Capability and commitment to Serve. Capacity fees shall be paid and receipt submitted.

STORMWATER:

9. The site is located within a master-planned development designed to meet the water quality and requirements that were in place at the time. This predated the volume requirements of the current Beaufort County BMP Manual. Applicant shall address volume control per Section 5 of the BMP Manual.

10. Proposed plans illustrate a reduction of pond volume for Pond 3 with the proposed parking lot, sidewalk, and retaining wall adjacent to Building A. The proposed encroachments should be removed or the plans should show replacement of the lost pond volume.

11. How will the runoff from the rooftops of the proposed buildings be collected and/or directed to the storm water ponds?

12. The site plans call for demolition of a portion of the existing 18" storm sewer that discharges into Pond 4. The proposed drainage plan calls for a connection of the proposed storm sewer system to the remaining section of 18" storm sewer by means of a proposed junction box. The proposed storm upstream of the proposed junction box is specified as 24". The existing pipe was modeled as 24" as opposed to 18". Please address and revise accordingly.

13. Building D is shown to encroach in the existing drainage easement.

14. The designer's certification statement should be added to the plans.

15. Please correct inconsistencies within the plans, calculations, and NOI regarding the amount of disturbed area. If the NOI will require revisions, the revisions should be initialed by the Engineer and Permittee.

Please provide your written response to include construction drawings, plats, etc. to any issues raised by individual SRT members no later than Friday at 12:00 p.m. prior to your scheduled SRT meeting. Failure to address any item will result in your application being deferred until your entire response has been received. You may also request that your scheduled SRT meeting be postponed to allow additional time to address these comments. You may only reschedule the SRT meeting twice to correct deficiencies to avoid an additional filing fee

NOTE: THE SRT RESERVES THE RIGHT TO CONSIDER ADDITIONAL INFORMATION RELATED TO THE PROJECT LISTED ABOVE PRIOR TO THE DATE OF THE SRT MEETING. THEREFORE, THE SRT'S DECISIONS MAY CHANGE ACCORDING TO NEW FACTS OR THE CONSIDERATION OF ADDITIONAL FACTS UNKNOWN AS OF THE DATE OF THIS REPORT.

Sincerely,

HAAust

Hillary A. Austin
Zoning & Development Administrator

Judge, Tamekia

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@bcgov4.onmicrosoft.com>
To: Paul Moore; Taylor Reeves
Sent: Wednesday, April 11, 2018 3:11 PM
Subject: Relayed: Osprey Cove Apts - Final

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

Paul Moore

Taylor Reeves

Subject: Osprey Cove Apts - Final

PROJECT NARRATIVE FOR FINAL STAFF REVIEW TEAM (SRT)
BEAUFORT COUNTY, SOUTH CAROLINA

Project:	**Osprey Cove Apartments – (Final SRT)**	
Date:	**March 26, 2018**	
Applicant:	**WELLES LOM, LLC** 980 N. Michigan Ave., Ste. 1600 Chicago, IL 60611 Michael Thomas, mthomas.icon@gmail.com Office: (843) 715-9434 Mobile: (843) 816-0678	
Agent:	Paul Moore, PE Ward Edwards Engineering P.O. Box 381 Bluffton, SC 29910 Office: (843) 837-5250 Mobile: (843) 384-5266	
Parcel:	911 Addresses:	1031, 1033, 1037, & 1039 Fording Island Rd
	Property ID:	R600 032 000 0452 0000
	Current Owner:	SR 278 LLC 1805 US Highway 82 West Tifton, GA 31793
	Acreage:	14.389 acres (entire Parcel R600-32-452) ±5.00 acres (Phase 2 only)
Zoning:	C5 Regional Center Mixed-Use (C5RCMU)	
Overlays:	N/A (Per Nancy Moss, the project is not located within DRB jurisdiction)	
Approval sought:	**Final SRT**	

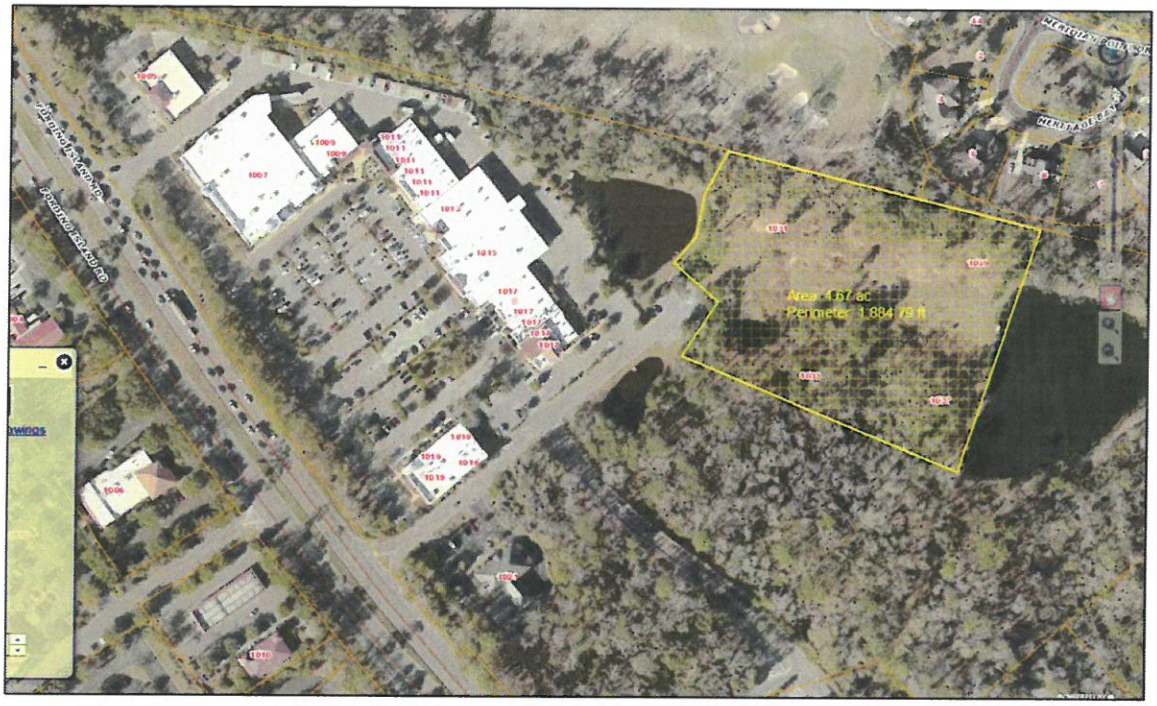
Project Description:
Applicant proposes development of a 45-unit multifamily housing development on a 5.0 acre (3.40 acre upland) portion of Best Buy Center on Fording Island Road in Bluffton, Beaufort County, South Carolina.

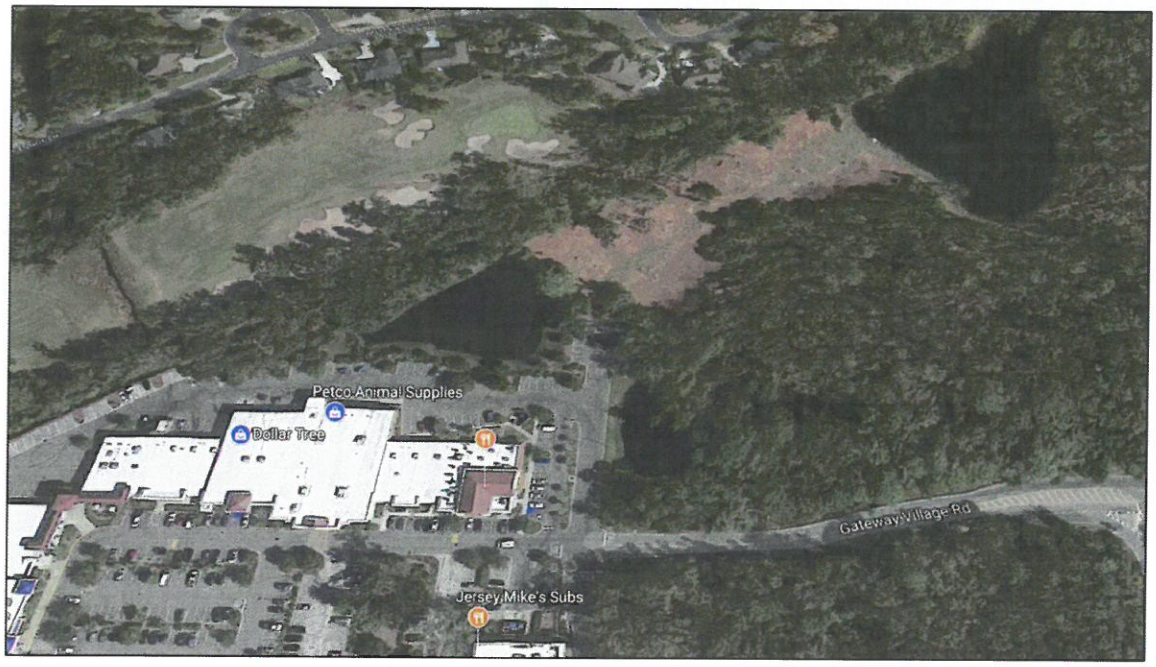
Development Permit History:

Phase II of Best Buy Center was previously designed and permitted as a commercial office complex. Beaufort County Development Permit #4775 was issued on January 9, 2008 with a two year validity period and the ability to request five (5) one-year extensions.

Existing Site Condition:

The site has already been cleared, grubbed, and a double 36" pipe drainage connection installed between the two existing stormwater ponds. Water, sewer, and power were extended to the western edge of the development site. The site is zoned C5RCMU and the property to the north is Crescent Pointe Golf Course (Zoned PUD).





Allowed Uses (Division 3.3):

- Single-Family Detached Unit: TCP
- Single-Family Attached Unit: TCP
- Two Family Unit (Duplex): TCP
- Multi-Family Unit: P
- Accessory Unit: TCP
- Community Residence (dorms, convents, assisted living, temporary shelters): TCP

P=permitted, TCP=Permitted only as part of a Traditional Community Plan under requirements of Division 2.3

Building Height (3.3.50):

Per CDC Section 3.3.50, the maximum allowable building height is 3 stories.

Gross Density and Floor Area Ratio (3.3.50):

- 15.0 d.u./acre max (Gross Density is total # of dwelling units on a site divided by the Base Site Area as calculated in Division 6.1.40.F)
- Base Site Area = 3.40 acres x 15.0 du/acre = **51 units allowed, 45 provided**

Setbacks:

Distance from ROW/Property Line
Front: 25' min.
Side, Main Building: 15' min (provided).
Side, Ancillary Building: 15' min.
Rear: 10' min (75' provided)

Buffers (Section 5.8):

Foundation Buffer Required – min. 8 ft
180 sq ft tree island required every 8 parking spaces
Perimeter buffer: Type B per Table 58.90.F (Proposed Residential II adjacent to Residential I)
Type B=20 ft or 10 ft (depending on planting types)
A vegetative buffer exists at 75' as recorded through an easement between the Owner and the CPOA. (ref Book 2259/Page 1599. Exhibit D-3)

Access:

The site will be accessed from Phase 1 of Best Buy Center, which is accessed from Fording Island Road (US 278). An access easement will be provided from Fording Island Road to the 5.0-acre parcel.

Parking (3.3.50):

Required Parking Spaces:
Multi-family units: 2.75 per unit (2.5 per unit/4 BR apt + .25 per unit/guest)
Units Proposed: 45
Parking Spaces Required: 2.75 x 45 = 124
Parking Spaces Provided: 124

Stormwater:
There is an existing stormwater management system previously designed, approved, constructed for the entirety of Best Buy Center—including Phase 2. At the 11/15 SRT Discussion, Eric Larson stated the existing master planned stormwater system will be sufficient as long as it was intended to accommodate runoff from this site and impervious surface coverage is equal to or less than the amount assumed in the master plan.

Utilities:
BJWSA water and sewer mains are located nearby and will be extended to serve the proposed building.

Wetlands:
There is a declaration of restrictive covenants defining the wetlands and mitigation buffers. A copy of the covenants are included for reference.

Maintenance Responsibility:
Bluffton Fire District will be responsible for maintenance of the constructed facility.

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

VICINITY MAP

BEST BUY CENTER PHASE 2

LOCATION: BLUFFTON, SC
DATE: 11/09/17
PROJECT #: 170262

SHEET: 1 OF 1
SCALE: 1"=2,000'

Andrew Ahmann
190 May River Rd.
Bluffton S.C. 29910

January 18, 2017

To whom it concerns,

Ahmann Landscape performed the requested Tree Assessment for the property located at 1031 Fording Island Rd, Bluffton, S.C. 29910.

Trees recommend for removal are as listed:

1. 17" Live Oak
2. 18" Live Oak
3. 19" Live Oak

It is recommended that these tree are to be removed, the canopy is declining due to storm damage with 60% of the canopy being dead wood, the trees are also up rooting. It would be a safety concern to leave the trees in an area where there will be pedestrian traffic. Please feel free to contact me with any questions.

Warm regards,

Andrew Ahmann
Certified Arborist
SO-6578A
aahmann@ahmannlandscape.com
843-415-5006

BEAUFORT COUNTY
COMMUNITY DEVELOPMENT CODE
- MULTI FAMILY AND NONRESIDENTIAL FINAL PLAN APPLICATION-

PERMIT	DATE ACCEPTED	RECEIVED BY	FILING FEE	RECEIPT#	ZONING	OVERLAY DISTRICT
					C5RCMU	n/a

PROJECT NAME	PROJECT TYPE
Osprey Cove Apartments	Commercial

APPLICANT (DEVELOPER) NAME ADDRESS PHONE#	PROPERTY OWNER NAME, ADDRESS, PHONE#
Welles LOM, LLC980 N. Michigan Ave., Ste. 1600, Chicago, IL 60611 / Mike Thomas, 843-715-9434, mthomas.icon@gmail.com	Welles LOM, LLC980 N. Michigan Ave., Ste. 1600, Chicago, IL 60611 / Mike Thomas, 843-715-9434, mthomas.icon@gmail.com

PROJECT LOCATION	PIN	LAND AREA (ACRES)	BLDG AREA	#BLDGS	#UNITS	FIRE DISTRICT
1031,1033,1037, & 1039 Fording Island Road, Bluffton SC 29910	R600 032 000 0452 0000	2.7 disturbed acres	27,000 SF	4	45	Bluffton

- FINAL PLAN INFORMATION REQUIRED -

IS THE PROPERTY RESTRICTED BY RECORDED COVENANTS THAT ARE CONTRARY TO OR CONFLICT WITH THE REQUESTED PERMIT ACTIVITY YES ( ) NO ( )

- ☒ EIGHT BLACK LINE COPIES OF THE DEVELOPMENT SITE PLAN WITH INFRASTRUCTURE CONSTRUCTION DRAWINGS
- ☒ VICINITY MAP SHOWING PROJECT LOCATION, NORTH ARROW, GRAPHIC SCALE AND DATE (Site Plans)
- ☒ DEVELOPMENT PROPERTY BOUNDARY LINES WITH BEARINGS AND DISTANCES (Site Plans)
- ☒ EXISTING ROADS, STREETS, HIGHWAYS ON OR ADJACENT TO PROPERTY (NAME, NUMBER, RIGHT OF WAY WIDTH) (Site Plans)
- ☒ EXISTING DRAINAGE DITCHES, CANALS, WATER COURSES ON OR ADJACENT TO PROPERTY (Site Plans)
- ☒ EXISTING BUILDINGS, STRUCTURES AND FACILITIES ON THE DEVELOPMENT PROPERTY (Site Plans)
- ☒ EXISTING ELECTRIC, TELEPHONE, GAS, WATER, SEWER UTILITY LINES ON OR ADJACENT TO THE PROPERTY (Site Plans)
- ☒ ADJACENT PROPERTY EXISTING LAND USES AND PROPERTY OWNER NAMES (Site Plans)
- ☒ NARRATIVE DESCRIBING NATURE & SCOPE OF PROJECT
- ☐ WETLANDS BOUNDARY DETERMINATION & CERTIFICATION
- ☐ PROTECTED RESOURCES SITE CAPACITY ANALYSIS (ART. 5) (Reference Narrative)
- ☒ TREE SURVEY & INDICATION OF REQUESTED TREE REMOVAL (Site Plans)
- ☒ TREE PROTECTION ZONES & PROPOSED TREE PROTECTION METHODS (Site Plans)
- ☒ TREE PLANTING AND REPLACEMENT PLAN (Landscaping Plans)
- ☒ ARCHAELOGICAL SITE DETERMINATION FROM PLANNING
- ☒ EXISTING AND PROPOSED FIRE HYDRANT LOCATIONS (Site Plans)
- ☒ PROPOSED ACCESS TO EXISTING ROADS, CIRCULATION ROUTES, PARKING SPACE LAYOUT & DIMENSIONS (Site Plans)
- ☐ TRAFFIC IMPACT ANALYSIS (N/A)
- ☒ PROPOSED SETBACKS, BUFFERS, OPEN SPACE AREAS AND LANDSCAPED AREAS (Site Plans)
- ☒ TOPOGRAPHIC SURVEY, DRAINAGE PLAN, CALCULATIONS AND BMP ANALYSIS
- ☒ FINAL WATER SUPPLY & SEWAGE DISPOSAL PLANS (Site Plans)
- ☒ FINAL DESIGN & LAYOUT OF UNDERGROUND ELECTRIC, TELEPHONE, GAS & CABLE TV UTILITY LINES (Site Plans)
- ☒ LETTERS OF CAPABILITY & COMMITMENT TO SERVE WATER, SEWER, UNDERGROUND ELECTRIC & TELEPHONE FROM THE AFFECTED AGENCIES
- ☒ FINAL HEALTH DEPARTMENT PERMITS OR APPROVALS FOR WATER AND SEWER SYSTEMS (DRP Letter, BJWSA)
- ☐ OCRM PERMITS AND APPROVALS (Pending)
- ☐ CORRIDOR REVIEW BOARD APPROVAL (N/A)
- ☐ SCDOT ENCROACHMENT PERMIT (N/A)
- ☒ FIRE SAFETY STANDARDS APPROVAL BY FIRE OFFICIAL
- ☒ OTHER APPLICABLE AGENCY PERMITS OR APPROVALS
- ☒ EXTERIOR LIGHTING PLAN

APPLICANTS SIGNATURE _____ DATE 3/26/18 REVIEW DATE _____

WETLAND DOCUMENTS

3 0 PB Andrews Eng 1846

BEAUFORT COUNTY SC- ROD
BK 02457 PGS 0517-0519
DATE: 10/11/2006 12:23:23 PM
INST # 2006082144 RCPT# 44881

STATE OF SOUTH CAROLINA

COUNTY OF BEAUFORT

DECLARATION OF RESTRICTIVE COVENANTS

THIS DECLARATION OF RESTRICTIVE COVENANTS FOR WETLANDS PRESERVATION ("Declaration") is made this 1st day of March 2006, by Stafford Rhodes, LLC ("Declarant").

RECITALS

WHEREAS, Stafford Rhodes, LLC the owner of certain real property ("real property" includes wetlands, any interest in submerged lands, uplands, associated riparian/littoral rights) located in Beaufort County, South Carolina, known as JB Johnson Tract – Best Buy Center, a 34.67 acre commercially zoned real property (TMP: R600 032 000 0005 0000) more particularly described as the "Total Preserved Wetlands" and "Total Preserved Upland Buffer" as referenced on the attached plat entitled "Wetlands Preservation Plat" for Stafford Rhodes, LLC by Andrews & Burgess dated 08/30/2006 ("Property"); and

WHEREAS, as compensatory mitigation under Federal and State law for Department of the Army Permit No. 2004-1B-358 ("Permit") issued by the U.S. Army Corps of Engineers, Charleston District ("Corps" or "Charleston District," to include any successor agency), and certification(s) and/or permit(s) issued by the S.C. Department of Health and Environmental Control ("DHEC," to include any successor agency), and in recognition of the continuing benefit to the permitted property, and for the protection of waters of the United States and scenic, resource, environmental, and general property values, Declarant have agreed to place certain restrictive covenants on the Property, in order that the Property shall remain substantially in its natural condition forever.

NOW THEREFORE, Declarant hereby declare that the Property shall be held, transferred, conveyed, leased, occupied or otherwise disposed of and used subject to the following restrictive covenants, which shall run with the land and be binding on all heirs, successors, assigns (they are included in the term, "Declarant," below), lessees, or other occupiers and users.

1. **Prohibitions**. Declarant is and shall be prohibited from the following: filling, draining, flooding, dredging, impounding, clearing, burning, cutting or destroying vegetation, cultivating, excavating, erecting, constructing, releasing wastes, or otherwise doing any work on the Property; introducing exotic species into the Property (except biological controls previously approved in writing by the Corps and DHEC; and from changing the grade or elevation, impairing the flow or circulation of waters, reducing the reach of waters, and any other discharge or activity requiring a permit under clean water or water pollution control laws and regulations, as amended. The following are expressly excepted from this paragraph: a) cumulatively very small impacts associated with hunting (excluding planting or burning), fishing, and similar recreational or educational activities, consistent with the continuing natural condition of the Property; b) removal or trimming of vegetation hazardous to person or property, or of timber downed or damaged due to natural disaster; c) restoration or mitigation required under law, d) construction of ditches, swales, and outfalls as pre-approved in writing by the U.S. Corps of Engineers (COE) and the South Carolina Department of Health and Environmental Control (DHEC) that are both required and the minimum necessary for compliance with applicable stormwater management and sediment reduction laws and regulations. These ditches shall not be constructed so as to drain wetlands through alteration of the hydrology. Activities allowed under this exception shall be limited as follows:

1. All such activities shall be applicable to upland buffer areas only and not wetlands.
2. All such activities shall be the minimum size and number necessary.
3. Ditches and swales shall have a bottom width of not more than five feet (1.52 meters), a depth below adjacent natural ground elevation of not more than four feet (1.22 meters), and a side slope of not less than three feet vertical to one foot horizontal (3V:1H).
4. The side slopes and surrounding areas of ditches and swales shall be stabilized and restored immediately following construction with natural vegetation. The bottoms of ditches and swales may be cleared and periodically maintained by removal of vegetation. Vegetation shall not be removed by use of herbicides or other chemical means.
5. Upon completion of the work, disturbed areas other than ditches and swales shall be restored to the original contours and elevations and shall be permanently stabilized by restoration of natural vegetation;

d) Installation and maintenance of necessary utilities in designated upland buffer areas as previously approved in writing by the COE and SCDHEC. All excavated areas shall be restored to pre-existing grade immediately following construction. Utility construction in wetland mitigation areas may be allowed if properly permitted by appropriate state and federal authorities; and, e) construction and maintenance of pedestrian paths and/or boardwalks up to 4' in width as previously approved in writing by the COE and SCDHEC.

2. **Amendment**. After recording, these restrictive covenants may only be amended by a recorded document signed by the Corps and DHEC and Declarant. The recorded document, as amended, shall be consistent with the Charleston District model conservation restrictions at the time of amendment. Amendment shall be allowed at the discretion of the Corps and DHEC, in consultation with resource agencies as appropriate, and then only in exceptional circumstances. Mitigation for amendment impacts will be required pursuant to Charleston District mitigation policy at the time of amendment. There shall be no obligation to allow an amendment.

3. **Notice to Government**. Any permit application, or request for certification or modification, which may affect the Property, made to any governmental entity with authority over wetlands or other waters of the United States, shall expressly reference and include a copy (with the recording stamp) of these restrictive covenants.

4. **Reserved Rights**. It is expressly understood and agreed that these restrictive covenants do not grant or convey to members of the general public any rights of ownership, entry or use of the Property. These restrictive covenants are created solely for the protection of the Property, and for the consideration and values set forth above, and Declarant reserve the ownership of the fee simple estate and all rights appertaining thereto, including without limitation the rights to exclude others and to use the property for all purposes not inconsistent with these restrictive covenants.

5. **Compliance Inspections**. The Corps, DHEC, and their authorized agents shall have the right to enter and go upon the lands of Declarant, to inspect the Property and take actions necessary to verify compliance with these restrictive covenants.

6. **Enforcement**. The Declarant grant to the Corps, the U.S. Department of Justice, and/or *DHEC*, a discretionary right to enforce these restrictive covenants in a judicial action against any person(s) or other entity(ies) violating or attempting to violate these restrictive covenants; provided, however, that no violation of these restrictive covenants shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to a complete restoration for any violation, as well as any other judicial remedy such as civil penalties. Nothing herein shall limit the right of the Corps to modify, suspend, or revoke the Permit.

7. **Property Transfers**. Declarant shall include the following notice on all deeds, mortgages, plats, or any other legal instruments used to convey any interest in the Property (failure to comply with this paragraph does not impair the validity or enforceability of these restrictive covenants):

NOTICE: This Property Subject to Declaration of Restrictive Covenants
Recorded at plat book 115 page 172, September 5, 2006

8. **Marking of Property**. The perimeter of the Property shall at all times be plainly marked by permanent signs saying, "Protected Natural Area," or by an equivalent, permanent marking system.

9. **Recording of Plat**. A plat depicting the boundaries of the Property subject to these restrictive covenants shall be recorded in the deed records office of Beaufort County in which the Property is situated prior to the recording of these restrictive covenants. The plat is recorded at plat book 115 page 172, September 5, 2006.

10. **Separability Provision**. Should any separable part of these restrictive covenants be held contrary to law, the remainder shall continue in full force and effect.

IN WITNESS WHEREOF, the Declarant has duly executed this Declaration of Restrictive Covenants the date written above.

IN THE PRESENCE OF:

Kevin Donegan

Mark Jones

Declarant

By: David J. Oliver

Its: Authorized Member of Stafford Rhodes, LLC

STATE OF GEORGIA

PROBATE

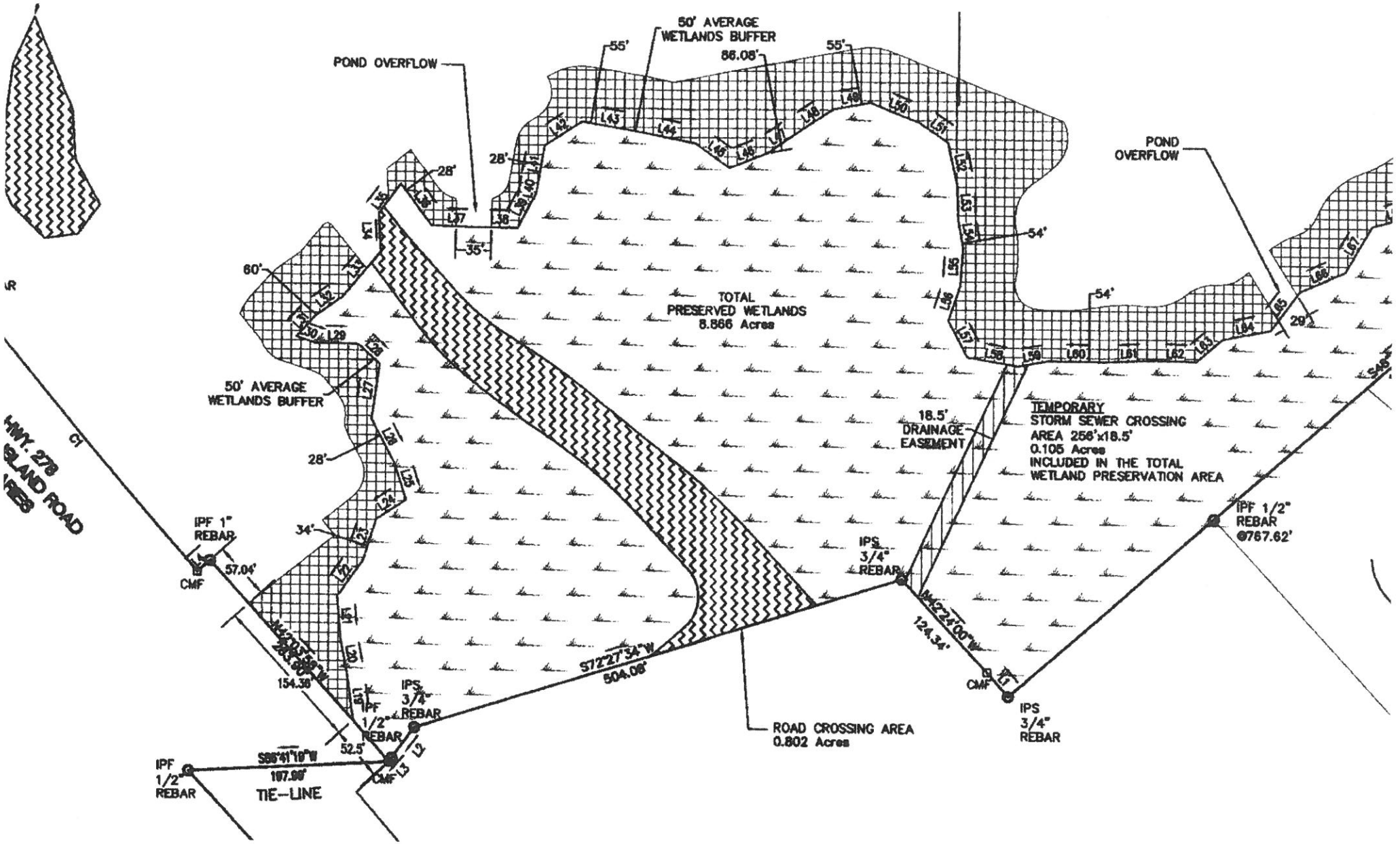
COUNTY OF FULTON

PERSONALLY appeared before me _, the undersigned witness, and made oath that she saw the within named Stafford Rhodes, LLC by David J. Oliver sign, seal and as his act and deed, deliver the within named Declaration of Restrictive Covenants; and that he with the other witness named above witnessed the execution thereof.

Joyce Sepegum

SWORN to and subscribed before me
this 1st day of March, 2006.

NOTARY PUBLIC FOR Georgia
My Commission Expires: 5-13-07


POND OVERFLOW
50' AVERAGE WETLANDS BUFFER
55'
86.08'
55'
28'
28'
35'
60'
TOTAL PRESERVED WETLANDS 8.866 Acres
54'
54'
POND OVERFLOW
50' AVERAGE WETLANDS BUFFER
28'
34'
18.5' DRAINAGE EASEMENT
TEMPORARY STORM SEWER CROSSING AREA 256'x18.5' 0.105 Acres INCLUDED IN THE TOTAL WETLAND PRESERVATION AREA
HWY. 278
GLAND ROAD
IPF 1" REBAR
CMF
57.04'
IPS 3/4" REBAR
IPF 1/2" REBAR @767.62'
154.38'
IPF 1/2" REBAR
IPS 3/4" REBAR
S72°27'34"W
504.06'
N42°24'00"W
124.34'
CMF
IPS 3/4" REBAR
52.5'
S88°41'19"W
197.99'
IPF 1/2" REBAR
TIE-LINE
CMF
ROAD CROSSING AREA 0.802 Acres

BEAUFORT COUNTY DEVELOPMENT STANDARDS ORDINANCE
--FIRE SAFETY STANDARDS APPROVAL FORM—

APPLICANT (DEVELOPER) NAME, ADDRESS	ZONE	TELEPHONE
Welles LOM, LLC, 980 N Michigan Ave STE 1600 Chicago, IL 60611	C5RCMU	

PROJECT NAME	TYPE	LOCATION
Osprey Cove Apartements		1031, 1033, 1037, & 1039 Fording Island Rd Bluffton, sc

DISTRICT #	MAP #	PARCEL #	# LOTS/UNITS	DENSITY
R600	032	0452	45 Units	

LAND AREA	BUILDING AREA	HEIGHT (FINISHED GRADE TO ROOF EAVES)
5.0 Acres	27,000	28'-3"

NUMBER OF BUILDINGS	HEIGHT (FINISHED GRADE TO BOTTOM OF HIGHEST WINDOW)
4	22'-6"

FIRE DISTRICT	FIRE OFFICIAL
Bluffton	Dan Wiltse

BASED ON A REVIEW OF THE SITE PLAN AND INFORMATION SUBMITTED BY THE APPLICANT, I HEREBY

- ☒ APPROVE
- ☐ APPROVE WITH CONDITIONS
- ☐ DISAPPROVE

- ☐ PRELIMINARY
- ☐ FINAL

(FIRE OFFICIAL)

3-23-18
DATE

CONDITIONS:

CERTIFICATION OF COMPLIANCE

DATE INSPECTION REQUESTED

ZONING/DEVELOP PERMIT #

BASED ON AN INSPECTION OF THE SUBJECT PROJECT:

- ☐ THE FOLLOWING DEFICIENCIES OR CORRECTIONS ARE NOTED & MUST BE ADDRESSED
- ☐ THE COMPLETED PROJECT IS IN COMPLIANCE WITH THE FIRE SAFETY STANDARDS OF THE ZONING & DEVELOPMENT STANDARDS ORDINANCE

(FIRE OFFICIAL)

DATE

PALMETTO
ELECTRIC COOPERATIVE INC.

One Cooperative Way Hardeeville, SC 29927-5123 843-208-5551

March 6, 2018

Taylor Reeves
Ward Edwards Engineering
PO Box 381
Bluffton, SC 29910
treeves@wardedwards.com

Re: Osprey Cove

Dear Taylor:

Palmetto Electric Cooperative, Inc. ("PECI") has ample power available to serve the above referenced project. The enclosed redline drawing shows existing and proposed locations of PECI's cable and equipment.

The owner/developer is responsible for providing and installing a four-inch schedule 40 PVC electric conduit buried at 42 inches below finished grade as shown on the enclosed drawing. There will also need to be three-conduits from the transformers to the meters as well as sleeves for the outdoor lighting as shown. In addition, the owner/developer must provide, install and maintain all commercial type services.

Please have the enclosed easement information form completed and returned so that we may draft an electric utility easement. When the easement has been recorded, a copy will be forwarded to you for your file.

Thank you for your cooperation in this matter. Please contact me at (843) 208-5512 or via email thutchinson@palmetto.coop if you have any questions or if I may be of further assistance.

Sincerely,
PALMETTO ELECTRIC COOPERATIVE, INC.

Tim Hutchinson
System Engineer

TH:mhl
Encl.

c: Mr. Tony Brabham, PECI
Mrs. Kristin Keller, PECI

COUNTY ARCHAEOLOGICAL LETTER

COUNTY COUNCIL OF BEAUFORT COUNTY
BEAUFORT COUNTY PLANNING DEPARTMENT
Multi Government Center, 100 Ribaut Road, Room 115
P.O. Drawer 1228, Beaufort, SC 29901-1228
Phone: (843) 255-2140 // FAX: (843) 255-9432

November 13, 2017

Heath Duncan, PE
Vice President and Project Manager
Ward Edwards Engineering
P.O. Box 381, Bluffton, SC 29910

RE: Best Buy Center – Phase 2, Bluffton, SC

Dear: Mr. Duncan:

I am writing in response to your request for an archaeological review, as required in Section 5.10.100 of the Beaufort County Community Development Code, for the above referenced project.

An extensive examination of existing documentation has been conducted. The documents examined include the website portal used by professional archaeologists in the State of South Carolina, SC ArchSite, which is authored and maintained by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH) to store the presence and extent of archaeological sites and above-ground historic structures; copies of the records of all the archaeological properties listed in the National Register of Historic Places in Beaufort County; and all other documentation maintained by the Beaufort County Planning Department regarding archaeological and historic resources.

Based on our records, it is the opinion of the Planning Office that any proposed development will have no effect on any archaeological resources listed in, or eligible for listing in, the National Register of Historic Places. Therefore I am authorized by the Planning Director to issue you an Archaeological Permit of Approval. **I remind you that this does not relieve you of your responsibilities under Section 106 of the National Historic Preservation Act of 1966, as amended, and that if any state or federal permits are required for this project the permitting agency may require an archaeological survey.**

We request that you cease work to notify this office immediately if archaeological or paleontological materials are encountered prior to or during construction. Archaeological remains consist of any materials one hundred years or older made, or altered, by man which remain from past historic or prehistoric times. Examples include pottery fragments, metal, wood, arrowheads, stone implements or tools, human burials, historic docks, structure, or non-recent vessel remains. Paleontological remains consist of animal remains, original or fossilized, such as teeth, tusks, bone, or entire skeleton.

If I can be of further assistance please contact our office at (843) 255-2140.

Sincerely,
Robert Merchant

Long Range Planner

COUNTY COUNCIL OF BEAUFORT COUNTY
BEAUFORT COUNTY COMMUNITY
DEVELOPMENT DEPARTMENT
Multi Government Center, 100 Ribaut Road, Room 115
P.O. Drawer 1228, Beaufort, SC 29901-1228
Phone: (843) 255-2140 // FAX: (843) 255-9432

December 13, 2017

Mr. Heath Duncan
Ward Edwards Engineering
PO Box 381
Bluffton, SC 29910

Re: Best Buy Phase 2 Natural Resources Delineation

Dear Mr. Duncan,

I am writing in response to your submittal of the natural resources delineation of the Best Buy Phase 2 in Bluffton as per Division 5.11.20 – Resource Protection Standards (Beaufort County Community Development Code). The total site is 5 acres, but there are existing protected natural resource areas that include the freshwater wetland (0.63 acres), wetland buffer (0.97 acres), and 75 foot property line buffer(0.89 acres). A review of the rest of the property, which is 2.51 acres, has been conducted and it appears that you do not have any natural resources on site. Therefore your project will be exempt from the natural resources delineation for the remaining 2.51 acres.

Sincerely,

Amanda Flake
Natural Resources Planner

Cc: Delores Frazier, Assistant Planning Director
Hillary Austin, Zoning Administrator

COUNTY COUNCIL OF BEAUFORT COUNTY
BEAUFORT COUNTY PLANNING DEPARTMENT
Multi Government Center, 100 Ribaut Road, Room 115
P.O. Drawer 1228, Beaufort, SC 29901-1228
Phone: (843) 255-2140 // FAX: (843) 255-9432

November 13, 2017

Heath Duncan, PE
Vice President and Project Manager
Ward Edwards Engineering
P.O. Box 381, Bluffton, SC 29910

RE: Best Buy Center – Phase 2, Bluffton, SC

Dear: Mr. Duncan:

I am writing in response to your request for an archaeological review, as required in Section 5.10.100 of the Beaufort County Community Development Code, for the above referenced project.

An extensive examination of existing documentation has been conducted. The documents examined include the website portal used by professional archaeologists in the State of South Carolina, SC ArchSite, which is authored and maintained by the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the South Carolina Department of Archives and History (SCDAH) to store the presence and extent of archaeological sites and above-ground historic structures; copies of the records of all the archaeological properties listed in the National Register of Historic Places in Beaufort County; and all other documentation maintained by the Beaufort County Planning Department regarding archaeological and historic resources.

Based on our records, it is the opinion of the Planning Office that any proposed development will have no effect on any archaeological resources listed in, or eligible for listing in, the National Register of Historic Places. Therefore I am authorized by the Planning Director to issue you an Archaeological Permit of Approval. **I remind you that this does not relieve you of your responsibilities under Section 106 of the National Historic Preservation Act of 1966, as amended, and that if any state or federal permits are required for this project the permitting agency may require an archaeological survey.**

We request that you cease work to notify this office immediately if archaeological or paleontological materials are encountered prior to or during construction. Archaeological remains consist of any materials one hundred years or older made, or altered, by man which remain from past historic or prehistoric times. Examples include pottery fragments, metal, wood, arrowheads, stone implements or tools, human burials, historic docks, structure, or non-recent vessel remains. Paleontological remains consist of animal remains, original or fossilized, such as teeth, tusks, bone, or entire skeleton.

If I can be of further assistance please contact our office at (843) 255-2140.

Sincerely,
Robert Merchant

Long Range Planner

HARGRAY

February 23, 2018

Taylor Reeves, Designer
Ward Edwards Engineering
P.O. Box 381
Bluffton, SC 29910

Dear Mr. Reeves:

SUBJ: Letter of Intent to Provide Service for: **1031, 1033, 1037, & 1039 Fording Island Road**
Osprey Cove Apartments

Hargray Engineering Services has reviewed the master plan for the above referenced project. Hargray Communications has the ability and intent to serve the above referenced project. Forward to our office a digital copy of the plan that has been approved by the county/town for use with Microstation or AutoCAD. Our office will then include owner/developer conduit requirements on the approved plan and return to your office.

By accepting this letter of intent to serve, you also accept responsibility to forward the requirements and Project Application Form to the owner/developer. The Project Application Form identifies the minimum requirements to be met as follows:

- Commercial buildings – apartments – villas: Minimum 4 inch diameter conduit Schedule 40 (gray electrical) PVC with pull string buried at 24 to 30 inch depth, from the equipment room or power meter location to a point designated by Hargray at the road right-of-way or property line. **Conduits are required from each building site and multiple conduits may apply.**
- Commercial buildings with multiple "units" may require conduit(s) minimum ¾" from main equipment entry point to termination point inside unit. Plenum type ceilings require conduits or flame retardant Teflon wiring to comply with code.
- Hotel or large commercial project requirements would be two (2) 4-inch diameter Schedule 40 PVC underground conduits.
- Equipment rooms to have ¾ inch 4'x8' sheet of plywood mounted on wall to receive telephone equipment.
- A dedicated 110-volt, 20 amp circuit with a four way outlet to power external equipment for the site. For Commercial Application.
- A power ground accessible at equipment room or an insulated #6 from the service panel or power MGN to the backboard.
- Residential wiring requires CAT5E wiring (4 or 6 Pair) twisted wire for Telephone and Data. Industry Standard.
- All interior wiring should be pulled to the area immediately adjacent to the plywood backboard or power meter location. A minimum of 5' of slack is required for terminations.
- CATV inside wiring will be RG6 foil wrapped 66% braid minimum, home run to each outlet.
- A 120 AC 15 A dedicated power outlet is to be located in the service yard to supply AC power to the ONU. Power to the ONU will be provided through a Pull Out Disconnected Switch, manufactured by Square D Company, or equivalent. The Horsepower Rating for the disconnect switch is 240VAC max, 60A, not fusible.

CATV Requirements

Hargray CATV services, requires you to install one 4" Schedule 40 (gray electrical) PVC pipe to a point designated to the road right of way or property line. The "service facilities" are required to be in separate pipes to ensure quality transmission and reception for both facilities.

Any Commercial or Subdivision areas installing pipe as required should extend the pipe 5' (feet) beyond any placed or planned curbed or sidewalk edge for facility access, away from the roadside.

Should there be any changes or additions to the original master plan, this letter will only cover the areas that are shown on the original master plan. All changes or additions would require another Letter of Intent to supply service. All costs incurred by the Telephone/CATV Company resulting from any requested change or failure to comply with minimum requirements shall be borne by the Developer. **Commercial projects require pre-construction meeting with Telco/CATV Company to review requirements.** I am available to discuss these requirements in more detail at your convenience.

Aid in or Aid to Construction may apply to certain projects.

Easements are required prior to installing facilities to your site.

Sincerely,

Frank Mills
Manager, Facilities Engineering
843-816-1032

Requirement for Letter of Intent to Provide Service

HARGRAY COMMUNICATIONS COMPANY, INC

CONTACT INFORMATION

Engineering Services Construction Application

Project Owner Name:	Welles LOM, LLC	Phone No.:	843.715.9434
Address:	980 N. Michigan Ave. STE 1600	City, State, Zip	Chicago, IL 60611
Developer Name:	Mike Thomas	Phone No.:	843.816.0678
Address:		City, State, Zip	
Project Manager Name:	Ward Edwards, Inc. / Paul Moore, PE	Phone No.:	843-837-5250
Address:	PO Box 381	City, State, Zip	Bluffton, SC 29910

PROJECT INFORMATION

Project Name/Location	1031,1033,1037, & 1039 Fording Island Road		
Proposed Start and Finish Dates	06/01/2018-03/01/2019	Lots	
No. of Phases	1	Units Per Phase	Condominium Units 45
Comments:			Commercial Sq. Ft. 27,000

REQUIREMENTS INFORMATION

APPLICATION REQUIREMENTS

****Engineering note: Check boxes that apply to applicant.**

Hargray Communications Company Inc must have copies of the following items before we can furnish a "Letter of Intent" and schedule your project.

- [x] One copy of development or site plans indicating property and/or lot lines, proposed buildings, roads, parking, water, sewer and drainage layout.
- [x] Digital copy of county/town approved plan.

PROJECT REQUIREMENTS

<u>These must be in place before service can be provided</u>.

- [x] * Commercial Buildings-Apartments-Villas - Hotels Minimum 4 inch diameter conduit Sch. 40 PVC with pull string buried at 24 to 30 inch depth, from the equipment room or power meter location to a point designated by Hargray at the road right-of- way or property line. **Conduits are required from each building site & multiple conduits may apply.**
- [x] * Commercial buildings with multiple "units" may require conduit(s) minimum ¾" from main equipment entry point to termination point inside unit. Plenum type ceilings require conduits or flame retardant Teflon wiring to comply with code.
- [x] A dedicated 110-volt, 20 amp circuit with a four way outlet to power external equipment for the site. For Commercial Application.
- [x] **Equipment rooms to have ¾ inch 4'X8' sheet of plywood mounted on wall to receive telephone equipment.**
- [x] **A power ground accessible at equipment room or an insulated #6 from the service panel or power MGN to the backboard.**
- [x] Residential wiring requires CAT5E wiring (4 or 6 Pair) twisted wire for Telephone and Data (industry standard).
- [x] **CATV inside wiring will be RG6 foil wrapped 66% braid minimum, home run to each outlet.**
- [x] All interior wiring should be pulled to the area immediately adjacent to the plywood backboard or power meter location. A minimum of 5' of slack is required for terminations.
- [x] A 120 AC 15 A dedicated power outlet is to be located in the service yard to supply AC power to the ONU. Power to the ONU will be provided through a Pull Out Disconnected Switch, manufactured by Square D Company, or equivalent. The Horsepower Rating for the disconnect switch is 240VAC max, 60A, not fusible.
- [ ] Easements are required.

*** Commercial projects require pre-construction meeting with Telco/CATV Company to review requirements.**

I understand and agree to provide or meet the application and project requirements as stated above <u>and to inform the contractor/builder of these requirements</u>. I understand that if the project design changes or the proposed start date is delayed by nine (9) months or more, that I must submit a new application. All costs incurred by TELCO resulting from any requested change or failure to comply with minimum requirements, shall be borne by the Developer. **Aid in or Aid to Construction may apply to certain projects.**

~~Applicant/Representative~~ ~~Date~~ Engineering Services Representative 2/23/2018 Date 2-28-18

After recording return to:

Hargray Communication Group, Inc.
Attn: Legal Department
856 William Hilton Parkway, Bldg. C.
P.O. Box 5986
Hilton Head Island, SC 29938

STATE OF SOUTH CAROLINA)
)
COUNTY OF _____)

NON-EXCLUSIVE TELECOMMUNICATIONS AND VIDEO AND/OR BROADBAND FACILITIES EASEMENT AND INDEFEASIBLE RIGHT TO USE

THIS NON-EXCLUSIVE TELECOMMUNICATIONS AND VIDEO AND/OR BROADBAND FACILITIES EASEMENT AND INDEFEASIBLE RIGHT OF USE ("Easement") given this _____ day of _____, 2018, by _____("Grantor"), to Hargray Communications Group, Inc., a South Carolina Corporation (hereinafter referred to as "Grantee").

W I T N E S S E T H:

That in consideration of the sum of One Dollar ($1.00) received from Grantee, Grantor does hereby grant a Non-Exclusive Telecommunications and Video and/or Broadband Facilities Easement and Indefeasible Right of Use to Grantee in, across, through, under and over that certain real property (including the buildings and other structures thereon) ("Property") hereinafter more fully described on Exhibit "A" attached hereto, which easement shall include, without limitation, an indefeasible right to use any current or future conduit system owned, controlled or authorized by Grantor for purposes of serving the Property with communications or other utility services (the "Conduit System").

Grantor hereby grants and conveys to Grantee, its successors and assigns, the perpetual right, privilege and authority, from time to time, to enter upon, construct, extend, inspect, operate, replace, relocate, repair and perpetually maintain over, under and through the Property, including, but not limited to, over and under and through any and all streets, alleys, roads and/or other public ways or areas of the said Property now existing or hereafter laid out, telecommunications and cablevision systems ("Systems"), including cables, wires, poles, pedestals, and other usual fixtures and appurtenances as may from time to time be or become convenient or necessary for the provision of telecommunications and video and/or broadband services to the homes and other structures located within the Property, together with the indefeasible right to use the Conduit System, and right of ingress and egress, and access to and from such easement, across and upon the Property, as may be necessary or convenient for the purposes connected therewith. The easement herein granted is an easement in-gross in favor of Hargray Communications Group, Inc., its affiliates, successors and assigns.

Grantee agrees to maintain all Systems, including cables, wires, poles, pedestals and other usual fixtures and appurtenances in good condition, and Grantee shall repair and restore any damage to Grantor's real or personal property, restore all paving resulting from Grantee's construction, installation and/or maintenance of the Systems, or any use or presence surrounding the Property.

Grantor reserves the right to grant other easements or rights-of-ways upon, over across, through or under the easement property for utility, access or other purposes which do not unreasonably interfere with Grantee's easement hereunder. Grantor further reserves the right to construct any manner of things, including, but not limited to, roads, landscaping and signage or other items upon, over, across, through and under the Grantee's Systems, which do not unreasonably interfere with Grantee's easement hereunder.

Grantor further grants and conveys to Grantee the right, from time to time, to trim trees and underbrush that create obstructions to the non-exclusive utilization of the easement by Grantee; provided, however, any damage to the Property of Grantor caused by Grantee in maintaining or repairing said lines shall be borne by Grantee; provided, further, however, the Grantor shall have the right to request relocation of any underground facility from time to time at Grantor's expense; provided that such relocation continues to afford Grantee the use of Conduit System(s) on the Property.

It is specifically agreed that all Systems Facilities shall be located underground, with the exception of those pedestals and other fixtures that are necessary and are designed for above-ground location.

NOW THEREFORE, Grantor hereby warrants and represents that it is the fee simple owner of the Property and has the right and authority to make this Grant of easement. Grantor further covenants, that Hargray Communications Group, Inc., and its affiliates, success and assigns, subject to the terms and conditions of this instrument, shall peaceably and quietly enjoy the use of the easement herein granted in perpetuity without hindrance, objection or molestation.

The words "Grantor" and "Grantee" shall include their heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, Grantor has caused this Easement to be duly executed the day and year first above written.

WITNESSES:

GRANTOR: _____

_____

First Witness

_____

By: _____

Its: _____

_____

Second Witness/Notary Public

STATE OF SOUTH CAROLINA)
)
COUNTY OF _____)

PROBATE

PERSONALLY appeared before me the undersigned witness, and made that s/he saw the within named _____, by _____, its _____, sign and seal and deliver the within written instrument, and that s/he with the other witness, whose signature appears above, witnessed the execution thereof.

_____
First Witness

SWORN TO before me this _____
day of _____, 20_____

_____
Notary Public for _____
My Commission Expires:_____

A:\easement form.wpd

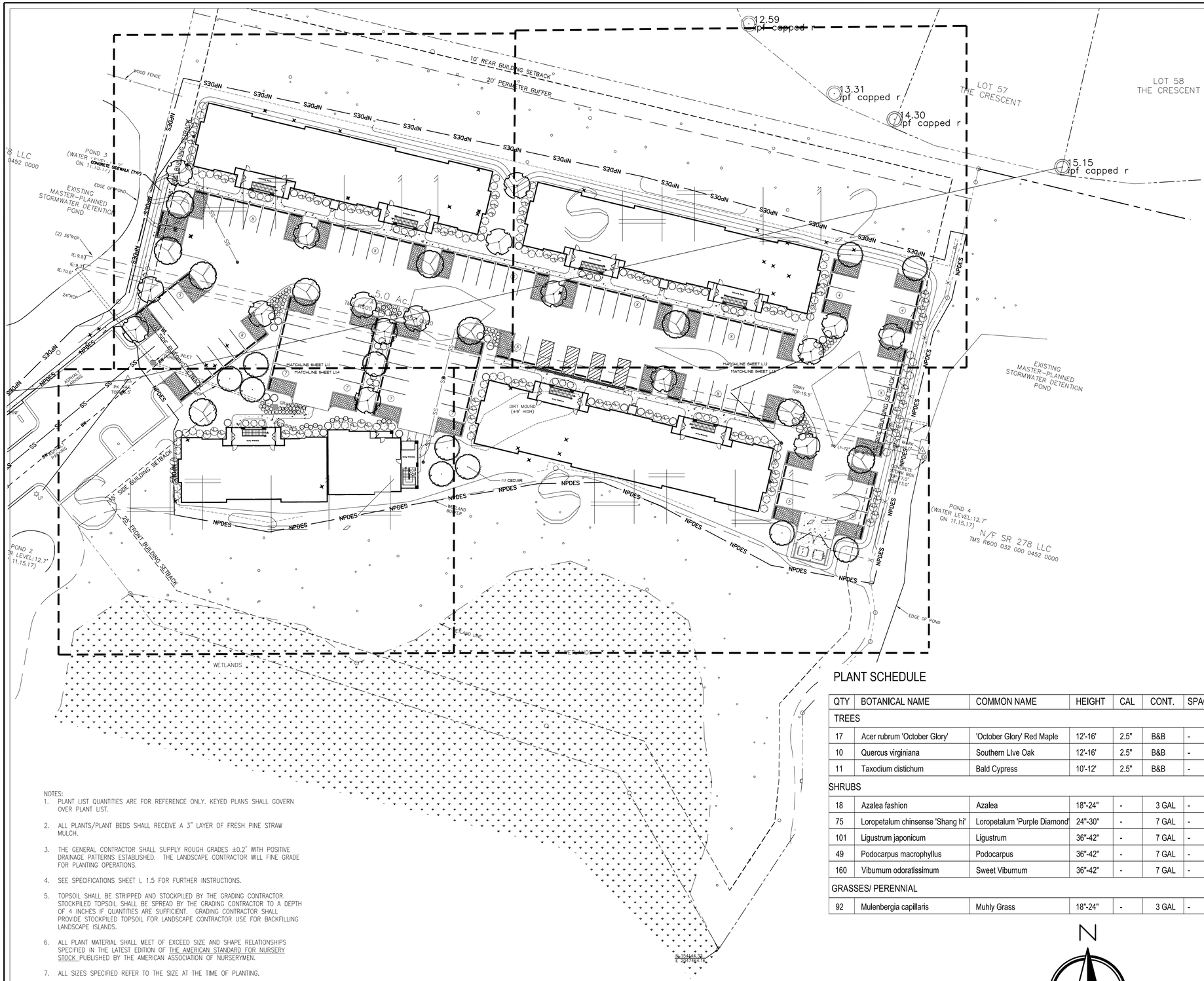
EXHIBIT "A"

Easement and Access Area

All that certain piece, parcel, or tract of land containing (fill in legal)

This being the same property, or a portion thereof, as described by Deed (fill in derivation)

(Add Tax Map number)



NOTES:

1. PLANT LIST QUANTITIES ARE FOR REFERENCE ONLY. KEYED PLANS SHALL GOVERN OVER PLANT LIST.
2. ALL PLANTS/PLANT BEDS SHALL RECEIVE A 3" LAYER OF FRESH PINE STRAW MULCH.
3. THE GENERAL CONTRACTOR SHALL SUPPLY ROUGH GRADES ±0.2' WITH POSITIVE DRAINAGE PATTERNS ESTABLISHED. THE LANDSCAPE CONTRACTOR WILL FINE GRADE FOR PLANTING OPERATIONS.
4. SEE SPECIFICATIONS SHEET L 1.5 FOR FURTHER INSTRUCTIONS.
5. TOPSOIL SHALL BE STRIPPED AND STOCKPILED BY THE GRADING CONTRACTOR. STOCKPILED TOPSOIL SHALL BE SPREAD BY THE GRADING CONTRACTOR TO A DEPTH OF 4 INCHES IF QUANTITIES ARE SUFFICIENT. GRADING CONTRACTOR SHALL PROVIDE STOCKPILED TOPSOIL FOR LANDSCAPE CONTRACTOR USE FOR BACKFILLING LANDSCAPE ISLANDS.
6. ALL PLANT MATERIAL SHALL MEET OF EXCEED SIZE AND SHAPE RELATIONSHIPS SPECIFIED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
7. ALL SIZES SPECIFIED REFER TO THE SIZE AT THE TIME OF PLANTING.
8. IRRIGATION SYSTEM TO BE DESIGNED BY CONTRACTOR AND SUBMITTED TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

PLANT SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CAL	CONT.	SPACING	NOTES
TREES							
17	Acer rubrum 'October Glory'	'October Glory' Red Maple	12'-16'	2.5"	B&B	-	Single trunk, well balanced crown
10	Quercus virginiana	Southern LIve Oak	12'-16'	2.5"	B&B	-	Single trunk, well balanced crown
11	Taxodium distichum	Bald Cypress	10'-12'	2.5"	B&B	-	Single trunk
SHRUBS							
18	Azalea fashion	Azalea	18"-24"	-	3 GAL	-	-
75	Loropetalum chinsense 'Shang hi'	Loropetalum 'Purple Diamond'	24"-30"	-	7 GAL	-	-
101	Ligustrum japonicum	Ligustrum	36"-42"	-	7 GAL	-	-
49	Podocarpus macrophyllus	Podocarpus	36"-42"	-	7 GAL	-	-
160	Viburnum odoratissimum	Sweet Viburnum	36"-42"	-	7 GAL	-	-
GRASSES/ PERENNIAL							
92	Mulenbergia capillaris	Muhly Grass	18"-24"	-	3 GAL	-	-

0 20' 40' 80'

SCALE: 1" = 40'

- [ ] NOT FOR CONSTRUCTION
- [ ] RELEASED FOR CONSTRUCTION

DATE: _____ BY: _____

Know what's below. Call before you dig.

ISSUED FOR:	ISSUE DATE:	BY:

A New Apartment Project for:

Osprey Cove Apartments

Fording Island Road

Bluffton, South Carolina

THOMAS DESIGN GROUP, INC

74 Sparwheel Lane
Hilton Head Island, SC 29926
843.715.9434

TDG Project # 1700.06

SHEET L1.0

811

Know what's below.
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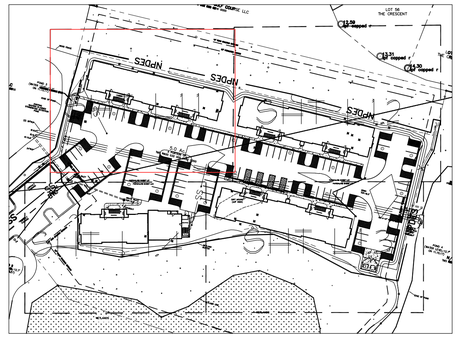
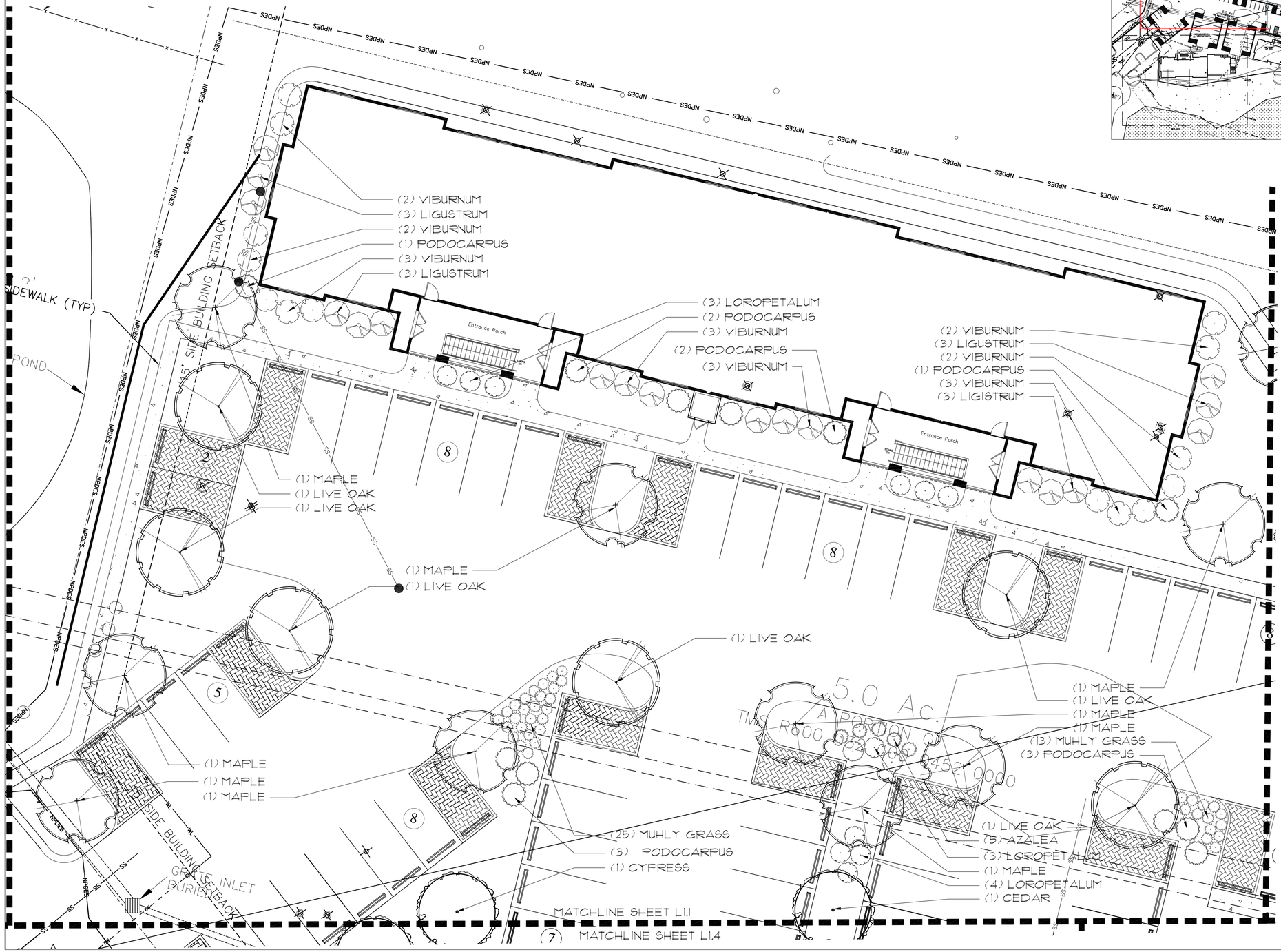
SHEET KEY:





N

0 5' 10' 20'

SCALE: 1" = 10'

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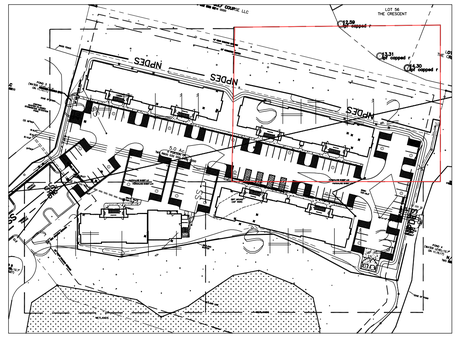

(1) MAPLE
(2) VIBURNUM
(3) LIGUSTRUM
(2) VIBURNUM
(1) PODOCARPUS
(3) VIBURNUM
(3) LIGUSTRUM
(3) LOROPETALUM
(2) PODOCARPUS
(3) VIBURNUM
(2) PODOCARPUS
(3) VIBURNUM
(2) VIBURNUM
(3) LIGUSTRUM
(2) VIBURNUM
(1) PODOCARPUS
(3) VIBURNUM
(3) LIGISTRUM
(1) CEDAR
(1) CEDAR
(5) LIGUSTRUM
(1) MAPLE
(1) MAPLE
(1) MAPLE
(1) LIVE OAK
(3) PODOCARPUS
(13) MUHLY GRASS
(1) MAPLE
(3) VIBURNUM
Entrance Porch
Entrance Porch
S30dN
NPDES
SS
4
8
MATCHLINE SHEET L1.2

N

0 5' 10' 20'
SCALE: 1" = 10'

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SHEET
L1.2

MATCHLINE SHEET L1.2

MATCHLINE SHEET L1.3

(1) MAPLE

(3) VIBURNUM

SDMH
TOP: 16.5'

(2) VIBURNUM
(1) LIVE OAK
(3) PODOCARPUS
(13) MUHLY GRASS

(5) LIGUSTRUM
(5) VIBURNUM
(1) LIVE OAK

DIRT MOUND
(±9' HIGH)(3) LIGUSTRUM
(3) VIBURNUM
(1) PODOCARPUS
(2) VIBURNUM
(3) LIGUSTRUM
(2) VIBURNUM

(3) LIGUSTRUM
(1) PODOCARPUS
(3) LOROPETALUM
(3) LIGISTRUM
(1) PODOCARPUS
(3) LOROPETALUM

(3) LIGISTRUM
(5) VIBURNUM
(1) PODOCARPUS
(3) VIBURNUM
(3) LIGUSTRUM
(2) VIBURNUM

(1) CEDAR

(1) CYPRESS
(5) LIGISTRUM
(1) CYPRESS

98 Lf–12" PVC @ 2.0%

SIDE BUILDING SETBACK

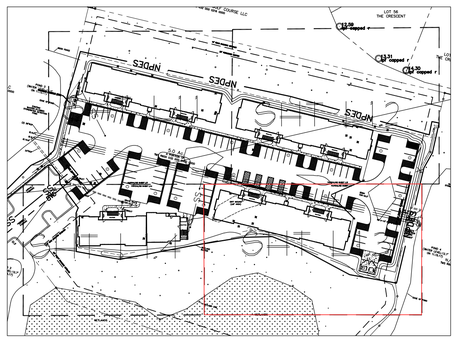
END OF P
BURIED
TOP: M
TOP: 17.

CONCRE
STORM E
TOP: 17.0
WEIR: 13.0

NPDES

ELAND
FER

SHEET KEY:



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

0 5' 10' 20'
SCALE: 1" = 10'

N

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SHEET
L1.3

MATCHLINE SHEET L1.1

MATCHLINE SHEET L1.4

(2) CYPRESS
(3) PODOCARPUS
(28) MUHLY GRASS
(5) AZALEA

(4) LOROPETALUM
(1) MAPLE

(2) CYPRESS
(3) AZALEA

(1) LIVE OAK

(3) LIGUSTRUM
(3) VIBURNUM
(1) PODOCARPUS
(2) VIBURNUM
(3) LIGUSTRUM
(2) VIBURNUM

(3) LOROPETALUM
(2) PODOCARPUS

(1) PODOCARPUS
(3) LIGUSTRUM
(2) VIBURNUM
(2) PODOCARPUS
(5) AZALEA
(2) VIBURNUM
(3) LIGUSTRUM

ASPHALT PARKING

PK NAIL
TOP: 16.5'

RCP

GRADE BREAK

STUBOUT

Entrance Porch

Entrance Porch

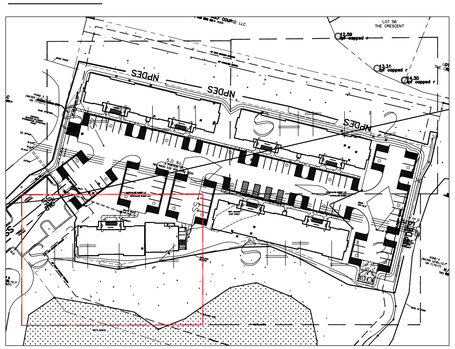
NPDES

15' SIDE BUILDING SETBACK

25' FRONT BUILDING SETBACK

WETLAND BUFFER

SHEET KEY:



SCALE: 1" = 10'

0 5' 10' 20'

N

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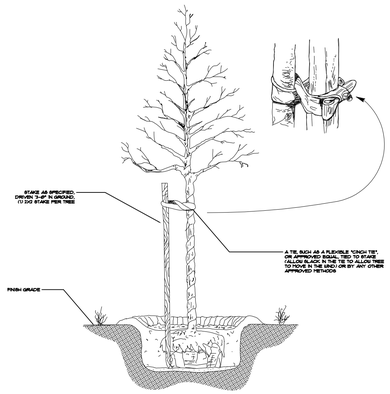
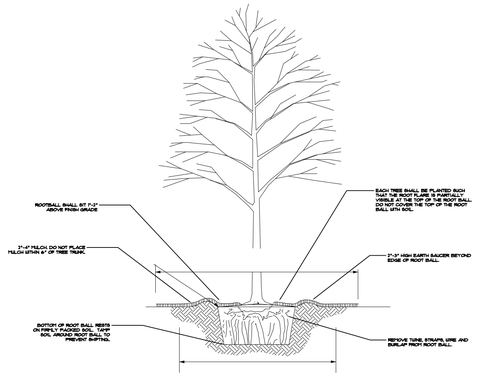
SHEET
L1.4



NOTES:
1. STAKE TREES ONLY WHEN NECESSARY, STAKES TO BE REMOVED 6 MONTHS AFTER PLANTING.
2. OTHER ALTERNATE STAKING METHODS MAY BE USED UPON APPROVAL BY MUNICIPALITY.

ALTERNATIVE TREE STAKING
NOT TO SCALE



NOTES:
1. TREES SHALL BE PRUNED IMMEDIATELY AFTER PLANTING TO REMOVE DEAD, BROKEN, DISEASED, DYING OR RUBBING BRANCHES. CO-DOMINANT STEMS LESS THAN 4" IN DIAMETER AT THE FORK SHALL BE PRUNED OFF AND ONE MAIN STEM REMAIN. TREE TOPPING OR HEADING IS NOT PERMITTED AT ANY TIME.
2. STAKING IS NOT REQUIRED, BUT IF INSTALLED IT SHALL BE REMOVED NO LATER THAN ONE YEAR AFTER PLANTING

TREE PLANTING
NOT TO SCALE

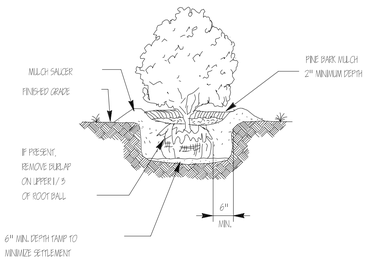
GENERAL:
BEFORE BEGINNING ANY WORK, ALL UTILITIES AND UNDERGROUND CONSTRUCTION SHALL BE LOCATED BY THE LANDSCAPE CONTRACTOR SO THAT PROPER PRECAUTIONS MAY BE TAKEN NOT TO DISTURB OR DAMAGE ANY SUBSURFACE IMPROVEMENTS. WHERE PUBLIC UTILITIES ARE PRESENT, THE LANDSCAPE CONTRACTOR SHALL REQUEST ON SITE LOCATIONS BY ALL UTILITY COMPANIES AND CONFIRM THAT SUCH LOCATIONS HAVE V=BEEN MARKED. THE LANDSCAPE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MAKING, AT HIS OWN EXPENSE, ANY REPAIRS TO DAMAGED UTILITIES RESULTING FROM WORK COVERED IN THIS CONTRACT.

THE LANDSCAPE CONTRACTOR SHALL TAKE MEASURES TO PREVENT DUST, MUD, MARKS ETC., FROM SOILING AND DAMAGING IMPROVEMENTS. ANY DAMAGE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

PLANTS SHALL BE WATERED PRIOR TO TRANSPORTATION AND SHALL BE KEPT MOIST UNTIL PLANTED. ALL PLANTS SHALL BE PROTECTED FROM DESICCATION DURING DELIVERY WITH A PROTECTIVE COVER OR ENCLOSED TRUCK.

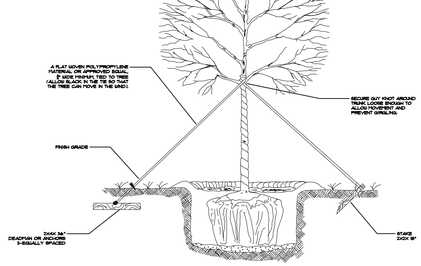
ALL PLANTING AND PLANT MATERIALS REQUIRED BY THIS CONTRACT SHALL BE IN A SATISFACTORY AND ACCEPTABLE CONDITION WHEN THE CONTRACTOR APPLIES FOR PAYMENT.
INSTALL TREE PLUMB. DO NOT DEPEND ON STAKING TO PULL PLANT TO A PLUMB POSITION. STAKING SHALL BE ON AN AS NEEDED BASIS.

INSPECTION:
THE OWNER'S REPRESENTATIVE SHALL INSPECT THE TOTAL WORK FOR ACCEPTANCE UPON REQUEST OF THE LANDSCAPE CONTRACTOR. ANY UNSATISFACTORY ITEMS SHALL BE NOTED AND MUST BE REMEDIED BY THE LANDSCAPE CONTRACTOR PRIOR TO ACCEPTANCE. UPON SATISFACTORY COMPLETION OF ALL WORK, THE OWNER'S REPRESENTATIVE SHALL CERTIFY IN WRITING, ACCEPTANCE OF THE WORK. PAYMENT FOR CONTRACT WORK TO THE CONTRACTOR PURSUANT TO ISSUANCE OF ACCEPTANCE SHALL BE DEEMED THE FINAL PAYMENT FOR SAID WORK.



NOTES
1. CLEANLY PRUNE ONLY DAMAGED, DISEASED AND OR WEAK BRANCHES IF NECESSARY.
2. FINISHED GRADE AROUND PLANT TO BE THE SAME AS ORIGINAL GRADE OF PLANT WHEN GROWN.

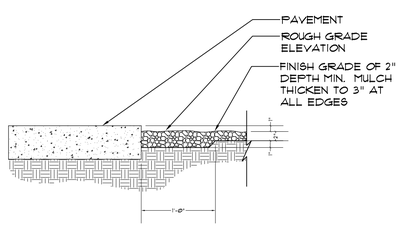
SHURB PLANTING
NOT TO SCALE



NOTE:
-SELECT DEADMAN, ANCHORS OR STAKES TO SECURE TREE

NOTES:
1. STAKE TREES ONLY WHEN NECESSARY, STAKES TO BE REMOVED 6 MONTHS AFTER PLANTING.
2. TREES LARGER THAN 2" CALIPER SHOULD BE STAKED BY THREE STRAPS WHEN NECESSARY.

TREE STAKING
NOT TO SCALE



FINISHED GRADE OF MULCH AT PAVEMENT
NOT TO SCALE

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Bluffton, South Carolina

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843.715.9434

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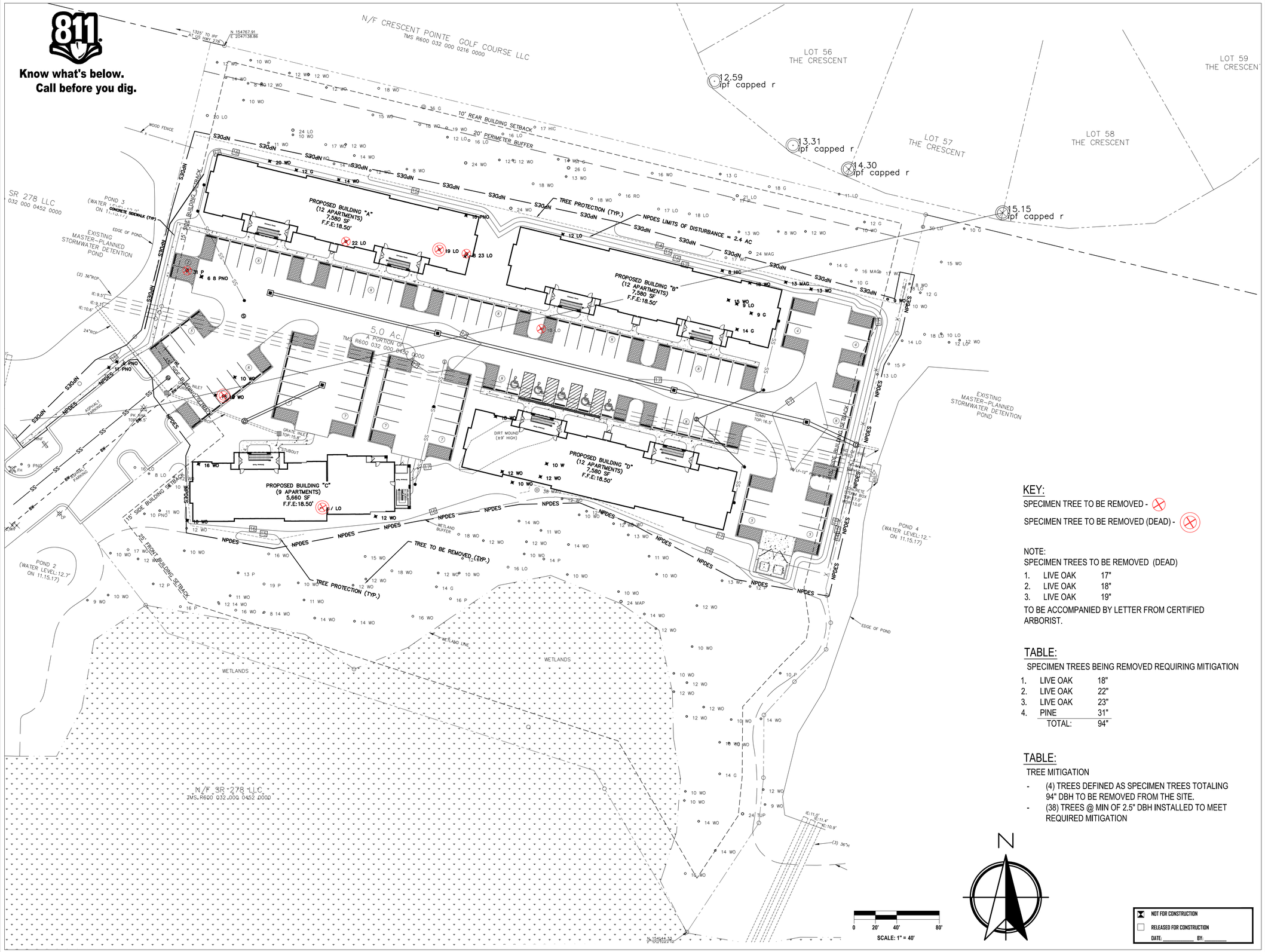
SHEET L1.5



KEY:

SPECIMEN TREE TO BE REMOVED -

SPECIMEN TREE TO BE REMOVED (DEAD) -

NOTE:
SPECIMEN TREES TO BE REMOVED (DEAD)

1. LIVE OAK 17"
2. LIVE OAK 18"
3. LIVE OAK 19"

TO BE ACCOMPANIED BY LETTER FROM CERTIFIED ARBORIST.

TABLE:

SPECIMEN TREES BEING REMOVED REQUIRING MITIGATION

1.	LIVE OAK	18"
2.	LIVE OAK	22"
3.	LIVE OAK	23"
4.	PINE	31"
	TOTAL:	94"

TABLE:

TREE MITIGATION

- (4) TREES DEFINED AS SPECIMEN TREES TOTALING 94" DBH TO BE REMOVED FROM THE SITE.
- (38) TREES @ MIN OF 2.5" DBH INSTALLED TO MEET REQUIRED MITIGATION

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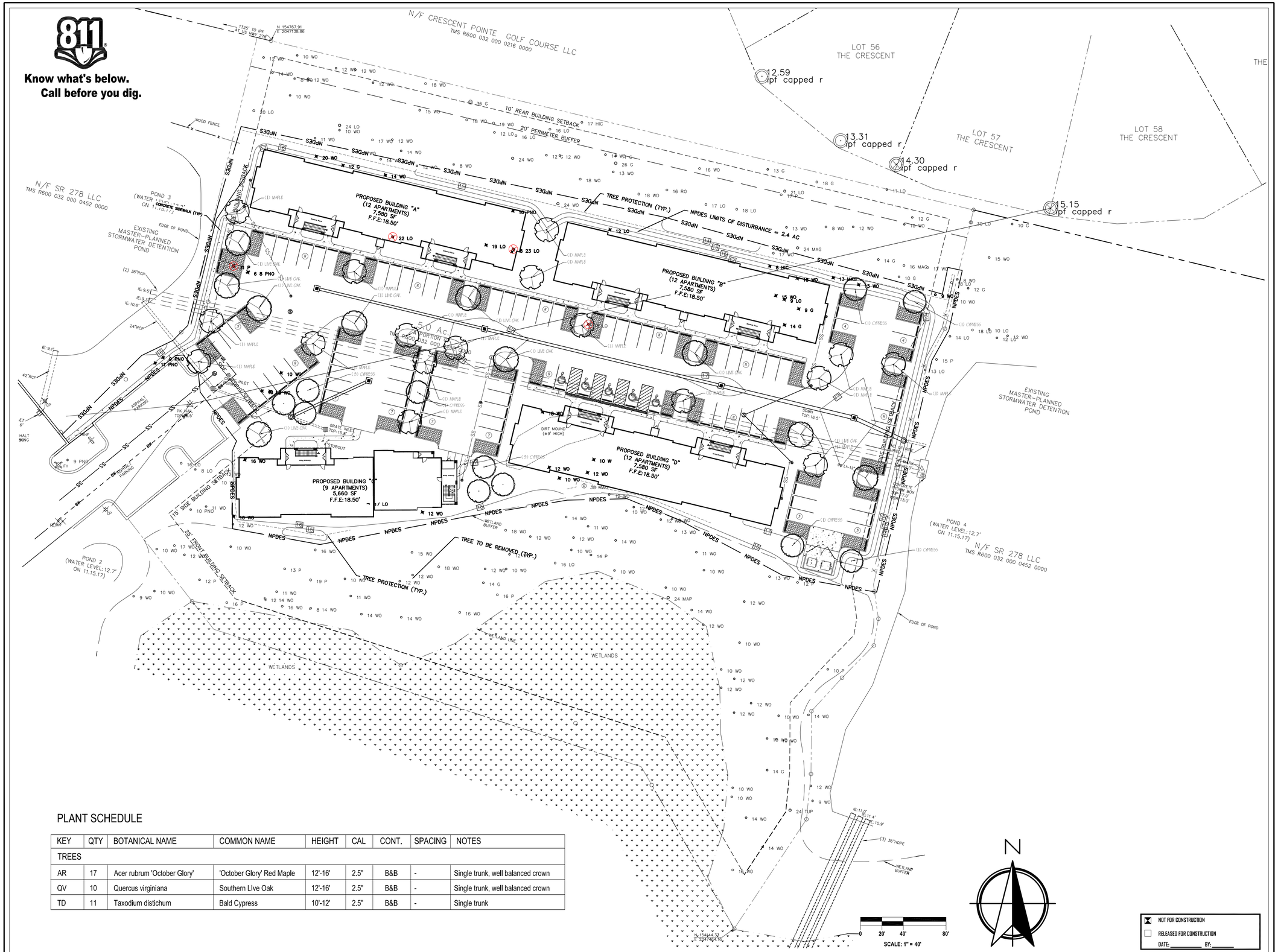

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CAL	CONT.	SPACING	NOTES
TREES								
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QV	10	Quercus virginiana	Southern LIve Oak	12'-16'	2.5"	B&B	-	Single trunk, well balanced crown
TD	11	Taxodium distichum	Bald Cypress	10'-12'	2.5"	B&B	-	Single trunk

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SITE DEVELOPMENT PLANS
FOR
OSPREY COVE APPARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

GENERAL NOTES:
1. BOUNDARY INFORMATION PROVIDED BY A TREE & TOPOGRAPHIC SURVEY OF 5.0 ACERS U.S. HIGHWAY 278 BEST BUY COMMERCIAL SITE, DATED 11/15/17, BY COOK LAND SURVEYING.
2. TOPOGRAPHIC DATA PROVIDED BY COOK LAND SURVEYING, DATED 11/15/17.
3. APPROXIMATE LOCATION OF CERTAIN EXISTING UNDERGROUND UTILITY LINES AND STRUCTURES ARE SHOWN ON THE PLANS FOR INFORMATION ONLY ADDITIONAL UNDERGROUND LINES OR STRUCTURES MAY EXIST THAT ARE NOT SHOWN. CALL SOUTH CAROLINA 811 AT 811 OR 1–888–721–7877 BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM MONDAY THRU FRIDAY AT LEAST THREE WORKING DAYS BEFORE COMMENCING CONSTRUCTION. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND NEAR THE CONSTRUCTION SITE.
4. COMPLY WITH "SOUTH CAROLINA UNDERGROUND FACILITY DAMAGE PREVENTION ACT (EFFECTIVE JUNE 7, 2012). NOTIFICATION OF INTENT TO EXCAVATE MAY BE GIVEN BY CALLING THE TOLL FREE NUMBER: 1–800–922–0983.
5. PROTECT BENCH MARKS AND PROPERTY MONUMENTS FROM DAMAGE DURING CONSTRUCTION OPERATIONS. REPLACE ANY BENCH MARKS OR MONUMENTS DAMAGED OR DESTROYED AS A RESULT OF CONTRACTOR'S OPERATIONS, AT NO COST TO THE OWNER, BY A LICENSED SURVEYOR IN THE STATE OF SOUTH CAROLINA.
6. OFF–STREET PARKING FOR THE CONTRACTOR'S EMPLOYEES AND AUTHORIZED VISITORS TO THE SITE MUST BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION.
7. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO WEIGHT LIMITS PRESCRIBED FOR ALL PUBLIC ROADS WHEN HAULING EQUIPMENT AND MATERIALS TO AND FROM THE PROJECT SITE. DAMAGES TO EXISTING PAVEMENT DUE TO THE CONTRACTOR'S CONSTRUCTION OPERATIONS OR IMPROPER TRANSPORTATION OF MATERIALS AND EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. AT LEAST ONE DRIVING LANE ON PUBLIC ROADS SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES. TRAFFIC LANES WILL ONLY BE CLOSED WITH THE EXPRESS WRITTEN CONSENT OF THE AGENCY HAVING JURISDICTION OVER THE ROADWAY. NOTIFY AGENCY HAVING JURISDICTION AT LEAST 5 DAYS BEFORE CLOSING ANY DRIVING LANES TO TRAFFIC. PROVIDE TRAFFIC CONTROL DEVICES, SIGNS AND FLAGMEN AS REQUIRED TO ENSURE PUBLIC SAFETY.
9. CONTRACTOR SHALL COORDINATE DEMOLITION, CLEARING AND CONSTRUCTION OF IMPROVEMENTS TO MINIMIZE INTERFERENCE WITH VEHICULAR AND PEDESTRIAN TRAFFIC AND WITH OPERATIONS OF EXISTING FACILITIES.

WATER AND SEWER LINE CONSTRUCTION:
1. ALL WATER AND SEWER LINE CONSTRUCTION SHALL CONFORM TO APPLICABLE STATE AND BEAUFORT JASPER WATER SEWER AUTHORITY (BJWSA) REQUIREMENTS, STANDARDS AND SPECIFICATIONS.
2. BJWSA WILL BE RESPONSIBLE FOR INSPECTION AND APPROVAL OF ALL WATER AND SEWER SYSTEM CONSTRUCTION AND FOR ACCEPTANCE FOR OPERATION AND MAINTENANCE.
3. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY OWNERS AND FOR FIELD VERIFICATION OF BOTH HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO COMMENCING CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. NOTIFY THE PROJECT ENGINEER, IF CONFLICTS WITH EXISTING STRUCTURES REQUIRE THAT PROPOSED UTILITIES BE RELOCATED.
5. THE CONTRACTOR MUST NOTIFY BJWSA FORTY–EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION, INSPECTION OR TESTING OF THE WATER DISTRIBUTION SYSTEM.
6. PIPE, FITTINGS, VALVES AND APPURTENANCES FOR WATER AND SEWER LINES SHALL ALL BE IN ACCORDANCE WITH THE REQUIREMENTS CONTAINED IN THE BJWSA TECHNICAL SPECIFICATIONS.
7. INSTALLATION OF WATER AND SEWER LINES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE BJWSA STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
8. CONTRACTOR SHALL INSTALL MECHANICAL RESTRAINTS ON ALL BENDS, PLUGS AND TEES, 2" OR LARGER, ON WATERLINES AND SANITARY SEWER FORCE MAINS.
9. ALL WATER MAINS SHALL BE STERILIZED AND PRESSURE TESTED IN ACCORDANCE WITH BJWSA SPECIFICATIONS.
10. SEPARATION OF WATER MAINS AND SEWERS:
    A. PARALLEL INSTALLATION: UNLESS OTHERWISE SPECIFICALLY SHOWN IN A SPECIAL DETAIL ON THE PLANS, INSTALL WATER MAINS AT LEAST 10–FT. HORIZONTALLY FROM ANY EXISTING OR PROPOSED SANITARY SEWER OR SANITARY SEWER FORCE MAIN, THE DISTANCE BEING MEASURED IN A HORIZONTAL PLANE BETWEEN THE OUTSIDE SURFACES OF THE PIPES.
    B. CROSSINGS: UNLESS OTHERWISE SPECIFICALLY SHOWN IN A SPECIAL DETAIL ON THE PLANS, INSTALL WATER LINES CROSSING SANITARY SEWERS OR SANITARY SEWER FORCE MAINS TO PROVIDE A MINIMUM VERTICAL SEPARATION OF 18–INCHES BETWEEN THE OUTSIDE SURFACES OF THE PIPES. THIS SHALL BE THE CASE WHETHER THE WATER LINE IS ABOVE OR BELOW THE SANITARY SEWER LINE. WHENEVER POSSIBLE LOCATE THE WATER LINE ABOVE THE SEWER LINE. WHERE A NEW WATER LINE CROSSES A NEW SEWER LINE, PLACE A FULL LENGTH OF DUCTILE IRON PIPE FOR WATER LINE AT THE CROSSING WITH PIPE POSITIONED SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE POINT OF CROSSING. WHERE A NEW WATER LINE CROSSES AN EXISTING SEWER LINE, PLACE ONE FULL LENGTH OF DUCTILE IRON PIPE WATER LINE SO THAT THE JOINTS ARE AS FAR FROM THE POINT OF CROSSING AS POSSIBLE.
11. THE CONTRACTOR SHALL CUT AND PATCH EXISTING PAVEMENT AS REQUIRED FOR THE INSTALLATION OF UTILITY LINES.
12. SANITARY MANHOLE RIM GRADES SHOWN ARE APPROXIMATE. ADJUST RIM ELEVATIONS TO BE FLUSH WITH FINISHED GRADE.
13. THE CONTRACTOR UNDER THIS CONTRACT SHALL NOT MAKE ANY CONNECTIONS TO THE EXISTING WATER OR SANITARY SEWER SYSTEMS UNLESS EXPRESSLY AUTHORIZED TO DO SO BY THE BJWSA. ALL WATER AND SEWER IMPROVEMENTS UNDER THIS CONTRACT MUST BE CONSTRUCTED COMPLETE, TESTED, INSPECTED AND APPROVED BY THE BJWSA BEFORE ANY AUTHORIZATION TO CONNECT WILL BE GIVEN. COORDINATION OF TESTING, INSPECTION AND CONNECTIONS WITH THE BJWSA IS THE RESPONSIBILITY OF THE CONTRACTOR UNDER THIS CONTRACT.
14. ALL WATER MAINS SHALL BE INSTALLED WITH THIRTY–SIX INCHES (36") MINIMUM COVER (FROM FINISHED GRADE). MAXIMUM DEPTH SHALL BE FIVE FEET (5'). WHERE WATER MAINS MAY CONFLICT WITH OTHER UTILITIES, THE WATER MAIN CROSSING SHALL BE CONSTRUCTED WITH DUCTILE IRON PIPE, MECHANICAL JOINT 45–DEG. BENDS AND MECHANICAL RESTRAINTS.

WORK ON SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY:
1. CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS AND SPECIAL PROVISIONS CONTAINED IN THE SCDOT ENCROACHMENT PERMIT(S) ISSUED FOR THIS PROJECT.
2. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING CONSTRUCTION NOTIFICATION FORM (48 HOUR MINIMUM) AND COORDINATION OF ALL WORK WITHIN SCDOT RIGHTS–OF–WAY WITH THE LOCAL AND/OR DISTRICT SCDOT ENGINEERING REPRESENTATIVE.
3. CONTRACTOR IS RESPONSIBLE FOR PREPARING AND SUBMITTING A TRAFFIC CONTROL PLAN TO SCDOT FOR APPROVAL MINIMUM 48 HOURS PRIOR TO CONDUCTING WORK IN THE RIGHT–OF–WAY. ALL TRAFFIC CONTROL PLANS SHALL CONFORM TO MUTCD AND SCDOT GUIDELINES AND SPECIFICATIONS.
4. ALL SIGNAGE, PAVEMENT MARKINGS, AND MARKERS SHALL CONFORM TO MUTCD GUIDELINES AND SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
5. ALL PAVING AND DRAINAGE CONSTRUCTION SHALL CONFORM TO SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
6. ALL PAVEMENT MARKINGS IN SCDOT RIGHT–OF–WAY SHALL BE THERMOPLASTIC AND CONFORM TO MUTCD GUIDELINES AND SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
7. REMOVAL OF PAVEMENT MARKINGS SHALL CONFORM TO SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 609.4.1.2.

TREE PROTECTION-BEAUFORT COUNTY
1. ALL TREES HAVING A TRUNK DIAMETER OF 8–INCHES (dbh) OR LARGER, AND SPECIMEN TREES MUST BE PRESERVED UNLESS SPECIFICALLY APPROVED FOR REMOVAL IN ACCORDANCE WITH THE BEAUFORT COUNTY ZONING AND DEVELOPMENT STANDARDS ORDINANCE AND INDICATED ON THE PLANS TO BE REMOVED.
2. PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION OPERATIONS ON THE SITE, THE CONTRACTOR SHALL ERECT TREE PROTECTION BARRIERS AROUND EACH TREE OR GROUP OF TREES DESIGNATED FOR PRESERVATION IN ACCORDANCE WITH THE DETAILS ON THE PLANS AND THE REQUIREMENTS CONTAINED IN ARTICLE VI, SECTION 106–1648 OF THE BEAUFORT COUNTY ZONING AND DEVELOPMENT STANDARDS ORDINANCE.
3. A TREE PROTECTION ZONE SHALL BE ESTABLISHED IN ACCORDANCE WITH THE PROVISIONS CONTAINED IN ARTICLE VI, SECTION 106–1648 OF THE BEAUFORT COUNTY ZONING AND DEVELOPMENT STANDARDS ORDINANCE FOR EACH EXISTING TREE DESIGNATED FOR PRESERVATION. THE MINIMUM TREE PROTECTION ZONE AS DEFINED IN THE ORDINANCE IS A CIRCULAR AREA CENTERED ON THE TREE AND HAVING A RADIUS OF THE GREATER OF 5–FT. OR ONE–HALF FOOT PER INCH dbh (DIAMETER AT BREAST HEIGHT). THE SIZE OR CONFIGURATION OF THE TREE PROTECTION ZONE MAY BE MODIFIED ONLY UPON APPROVAL BY THE DEVELOPMENT REVIEW TEAM.
4. THE AREA WITHIN THE TREE PROTECTION ZONE MUST REMAIN OPEN AND UNPAVED. NO CHANGE OF GRADE WILL BE ALLOWED WITHIN THE TREE PROTECTION ZONE EXCEPT FOR A 2–INCH CUT OR 2–INCH FILL OF TOPSOIL, SOD OR MULCH. ANY ACTIVITY WITHIN THE TREE PROTECTION ZONE IS SUBJECT TO APPROVAL BY THE ZONING AND DEVELOPMENT ADMINISTRATOR. THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN THE TREE PROTECTION ZONE:
    a. PLACEMENT OR STORAGE OF ANY SOIL, DEBRIS, OILS, FUEL, PAINTS, BUILDING MATERIALS OR ANY OTHER MATERIALS.
    b. BURNING
    c. VEHICLE PARKING
    d. PAVING
    e. TRENCHING FOR UTILITIES
5. WHERE UTILITY LINES MUST PASS THRU THE TREE PROTECTION ZONE, THEY SHALL BE INSTALLED BY HORIZONTAL BORING BENEATH THE ROOTS OF THE TREE.
6. WHERE IT IS NECESSARY FOR MACHINERY AND EQUIPMENT TO PASS WITHIN THE TREE PROTECTION ZONE, APPROVAL MUST BE OBTAINED FROM THE ZONING AND DEVELOPMENT ADMINISTRATOR. SPECIAL MEASURES WILL BE REQUIRED TO PROTECT THE ROOTS FROM EXCESSIVE COMPACTION.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL TREE REMOVAL PERMITS AND FOR COORDINATING ALL INSPECTIONS REQUIRED BY BEAUFORT COUNTY IN CONNECTION WITH TREE PRESERVATION AND REMOVAL ACTIVITIES. DURING CONSTRUCTION.

OSPREY COVE APARTMENTS
BJWSA PROJECT #: 2018-078

SITE GRADING AND DRAINAGE:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 72–HOUR NOTICE TO ALL RESPECTIVE UTILITY COMPANIES FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. TEMPORARY CONTROL OF STORM WATER DRAINAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEQUENCING AND CONSTRUCTION TECHNIQUES SHALL PREVENT OBSTRUCTION OF STORM SEWERS, PONDING IN TRAFFIC AREAS OR RISING OF WATER LEVELS WHICH WOULD ENTER ADJACENT BUILDINGS OR STRUCTURES.
3. FULL WIDTH OF STREET AND ROAD RIGHTS–OF–WAY MUST BE CLEARED AND GRADED AS SHOWN IN THE DETAILS ON THE DRAWINGS
4. SUBGRADE PREPARATION: TOP SOIL SHALL BE REMOVED FROM PAVED AREAS TO A MINIMUM DEPTH AS RECOMMENDED IN THE PROJECT'S GEOTECHNICAL REPORT. ALL EXCAVATION SHALL BE TO SUBGRADE LIMITS.
5. ALL UTILITY PIPE LINES, CONDUITS AND SLEEVES UNDER PAVED AREAS MUST BE IN PLACE PRIOR TO COMPLETION OF THE ROADWAY SUBGRADE COMPACTION.
6. FINISH GRADING SHALL INCLUDE THE PLACEMENT OF TOPSOIL OVER ALL UNPAVED AREAS NOT OCCUPIED BY BUILDINGS OR STRUCTURES AND FINE GRADING AROUND BUILDINGS, ADJACENT TO WALKS, CURBS, GUTTERS AND STRUCTURES TO ASSURE POSITIVE DRAINAGE.

SCDHEC/OCRM SEDIMENT AND EROSION CONTROL STANDARD NOTES (REVISED DEC-2012):
1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
    a. WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
    b. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH–DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY, OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72–300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT–LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50–FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10–FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND–DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
    a. WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL.
    b. WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS.
    c. FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.
    d. SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE–CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON–SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON–LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON–SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

DRY UTILITY CONDUITS FOR ELECTRIC, TELEPHONE AND CABLE TV:
1. ALL DRY UTILITY CONDUIT ENDS SHALL BE CAPPED AND MARKED WITH A STEEL REBAR STAKE IMBEDDED ONE (1) FOOT BELOW GROUND SURFACE.
2. 48" MINIMUM BURY DEPTH FOR ALL ELECTRICAL CONDUITS.
3. MAINTAIN MINIMUM 12" VERTICAL CLEARANCE WHEN CROSSING WATER, SEWER, AND STORM DRAIN LINES.
4. MAINTAIN MINIMUM 18" HORIZONTAL CLEARANCE WHEN PARALLELING WATER, SEWER AND STORM DRAIN LINES.
5. EXTEND CONDUIT BEYOND PAVEMENT, CURB, AND SIDEWALKS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE INSTALLATION OF ALL UTILITY SERVICE CONNECTIONS. REFER TO APPROVED BUILDING PLANS FOR THE EXACT LOCATION OF ALL SERVICE CONNECTIONS. THE CONTRACTOR MUST INSTALL ALL CONDUITS, AS SHOWN ON THE PLANS OR AS REQUIRED BY RESPECTIVE UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS WITH REGARDS TO THE INSTALLATION OF UTILITIES AND CONDUIT.
7. LOCATIONS SHOWN ON THE PLANS FOR PROPOSED DRY UTILITY CONDUITS ARE APPROXIMATE ONLY. ALL DIMENSIONING AND STAKING SHOULD BE BASED ON ECONOMICAL AND PRACTICAL CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE RESPECTIVE UTILITY REPRESENTATIVES, PRIOR TO ANY CONDUIT INSTALLATION.
8. TRANSFORMER PADS SHALL BE LOCATED AS DIRECTED BY THE RESPECTIVE UTILITY REPRESENTATIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE CODE REQUIREMENTS.
9. NOTIFY THE ENGINEER IF CONFLICTS WITH EXISTING OR PROPOSED STRUCTURES REQUIRE PROPOSED UTILITIES BE RELOCATED.

SITE CLEARING AND DEMOLITION:
1. NO CLEARING SHALL OCCUR WITHIN DESIGNATED BUFFER ZONES, TREE PROTECTION ZONES, OUTSIDE OF THE PROPERTY LINES OR BEYOND THE CLEARING LIMITS UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE PLANS.
2. ONLY THOSE TREES DESIGNATED ON THE DRAWINGS FOR REMOVAL ARE TO BE REMOVED AS PART OF THE SITE CLEARING OPERATIONS.
3. THE CONTRACTOR SHALL INSTALL A CONTINUOUS LINE OF FLAGGING OR FENCING ALONG THE LIMITS OF CLEARING PRIOR TO COMMENCING ANY CLEARING, DEMOLITION, OR CONSTRUCTION WORK ON THE PROJECT.
4. EXERCISE CAUTION DURING CLEARING OPERATIONS TO AVOID FELLING TREES INTO DESIGNATED TREE PROTECTION ZONES.
5. NO BURNING WILL BE ALLOWED WITHIN 50 FEET OF A TREE PROTECTION ZONE OR TREE DRIP LINE. CONTRACTOR SHALL COORDINATE ANY BURNING OPERATIONS WITH LOCAL JURISDICTION AND FIRE DEPARTMENTS.
6. SELECTIVE CLEARING AREAS SHALL BE CLEARED OF ALL BRUSH AND UNDERSTORY GROWTH.

UTILITY CONTACTS:

PALMETTO ELECTRIC	843–208–5512	1 COOPERATIVE WAY, HARDEEVILLE, SC 29927
SCE&G	843–525–7700	108 ROBERT SMALLS PKWY, BEAUFORT, SC 29906
BJWSA	843–987–9292	6 SNAKE ROAD, OKATIE, SC 29909
HARGRAY COMMUNICATIONS	843–815–1675	PO BOX 3380, BLUFFTON, SC 29910
TIME WARNER CABLE	843–913–7940	11 OFFICE PARK ROAD, HILTON HEAD, SC 29928
CENTURY LINK	843–525–0044	2127 BOUNDARY ST #16, BEAUFORT, SC 29902
SANTEE COOPER	843–761–8000	1 RIVERWOOD DRIVE, MONCKS CORNER, SC 29461

CONTRACTOR NOTE:

CONTRACTOR TO OBTAIN AND BECOME FAMILIAR WITH GEOTECHNICAL REPORT #__________PREPARED BY___________. ALL WORK MUST CONFORM TO PROJECT TECHNICAL SPECIFICATIONS FOR PHASE 2 BEST BUY COMMERCIAL CENTER PREPARED BY WARD EDWARDS ENGINEERING. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE TECHNICAL SPECIFICATIONS IF NOT PROVIDED WITH THE DRAWINGS.

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

PROJECT INFORMATION

DEVELOPER:
WELLES LOM, LLC
980 N. MICHIGAN AVE. STE 1600
CHICAGO, IL 60611
843.715.9434
MTHOMAS.ICON@GMAIL.COM

PROPERTY OWNER:
SR 278 LLC
1805 US HIGHWAY 82 WEST
TIFTON, GA 31793

SOURCE OF TITLE:
BEAUFORT COUNTY REGISTER OF DEEDS,
DEED BOOK 2091 PAGE 1773

PROJECT STREET ADDRESS:
1031 FORDING ISLAND RD

PROPERTY IDENTIFICATION NO.:
County I.D. #:R600 032 000 0452 0000

LATITUDE / LONGITUDE:
N 32° 15' 28"
W 80° 50' 52"

DEVELOPMENT PERMIT JURISDICTION:
BEAUFORT COUNTY

PROPERTY ZONING:
REGIONAL CENTER MIXED–USE (C5RCMU)

FLOOD ZONE:
B / C

VERTICAL CONTROL DATUM:
NGVD29

SITE AREA:
TOTAL: 5.0 ACRES
DISTURBED: 2.70 ACRES

USE:
EXISTING: UNDEVELOPED
PROPOSED: MULTIFAMILY
4 BUILDINGS
27,000 SQ FT
45 UNITS

BUILDING HEIGHT:
MAXIMUM: 3 STORIES
PROPOSED: 3 STORIES

REQUIRED SETBACKS:
FRONT: 25 FEET
REAR: 10 FEET
SIDE: 15 FEET

REQUIRED BUFFERS:
PERIMETER: TYPE "B" (20' OR 10' DEPENDING ON PLANTING)

SURFACE COVERAGE:
MAX IMPERVIOUS ALLOWED: 90 %
MIN OPEN SPACE REQUIRED: 10 %
EXISTING IMPERVIOUS: 0 SQ. FT. (0 %)
PROPOSED IMPERVIOUS: 75,360 SQ. FT. (32 %)
OPEN SPACE PROVIDED: 116,225 SQ. FT.(53 %)
WETLANDS/NAT. RESOURCE: 26,157 SQ. FT. (15 %)

PARKING SUMMARY:
PARKING USE TYPES
USE TYPE = 2.75 SPACES/DU.
PARKING REQUIRED:
USE TYPE = 124 SPACES
PARKING PROVIDED:
TOTAL = 124 SPACES
ACCESSIBLE PARKING REQUIRED: 5 SPACES, 2 VAN–ACCESSIBLE
ACCESSIBLE PARKING PROVIDED: 5 SPACES, 2 VAN–ACCESSIBLE

DESIGN TEAM

LAND SURVEYOR:
COOK LAND SURVEYING
843.247.1311

GEOTECHNICAL ENGINEER:
COMPANY
PHONE

ARCHITECT:
COMPANY
PHONE

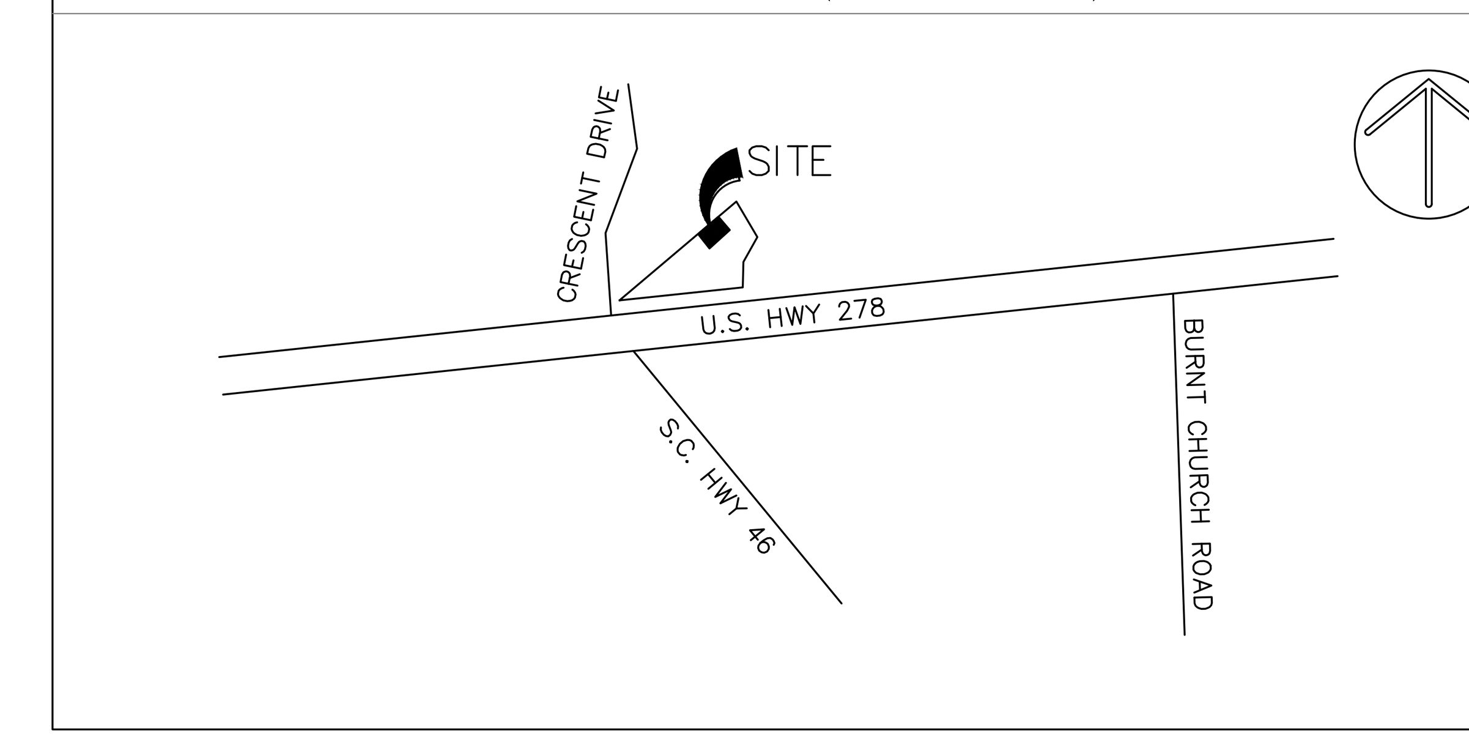
WETLAND CONSULTANT:
COMPANY
PHONE

LANDSCAPE ARCHITECT:
COMPANY
PHONE

PERMITS

PERMIT	PERMIT #	ISSUED	EXPIRES
BJWSA			
FIRE MARSHAL			
SCDHEC/MS4 STORMWATER			
SCDHEC WATER			
SCDHEC WASTEWATER			
SCDOT ENCROACHMENT UTILITY			
SCDOT ENCROACHMENT DRIVEWAY			
MUNICIPALITY DEVELOPMENT			
USACE DETERMINATION			
USACE PERMIT			

VICINITY MAP (NOT TO SCALE)



SCHEDULE OF DRAWINGS

RELEASE SCHEDULE

RELEASE NO.	DESCRIPTION	DATE
A.	RELEASED FOR CONCEPT SRT	11-20-17
B.	RELEASED TO CZC	01-26-18
C.	RELEASED FOR PERMITTING	02-23-18
D.	RELEASED TO BJWSA	03-08-18
E.	RELEASED FOR FINAL SRT	03-27-18

SEQUENCE OF CONSTRUCTION ACTIVITIES

ESTIMATED START DATE: 06–01–18 ESTIMATED COMPLETION DATE: 03–01–19
ITEMS MUST OCCUR IN THE ORDER LISTED; ITEMS CANNOT OCCUR CONCURRENTLY UNLESS SPECIFICALLY NOTED.

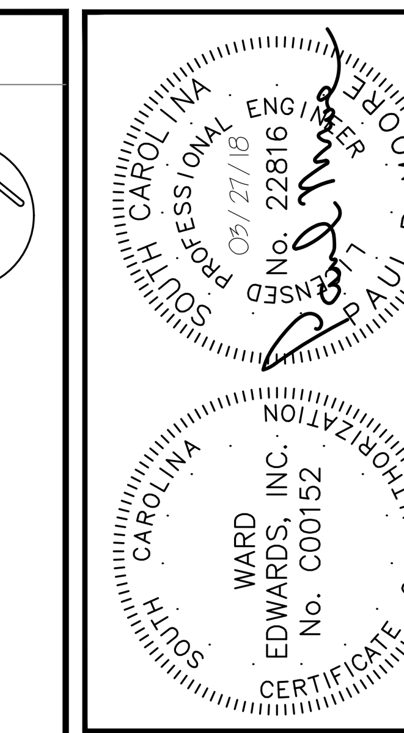
PHASE 1: (INITIAL)
1. RECEIVE NPDES COVERAGE FROM DHEC.
2. HOLD PRE–CONSTRUCTION MEETING.
3. NOTIFY DHEC EQC REGIONAL OFFICE OR OCRM OFFICE 48 HOURS PRIOR TO BEGINNING LAND–DISTURBING ACTIVITIES.
4. INSTALLATION OF CONSTRUCTION ENTRANCE.
5. CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).
7. INSTALL TREE PROTECTION.
8. INSTALL INLET PROTECTION.
9. INSTALL SEDIMENT TUBES.
10. CLEARING & GRUBBING ONLY IN AREAS OF BASIN.

PHASES 2 & 3: (INTERMEDIATE & FINAL)
11. INSTALLATION OF BASIN AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES & DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED). INSTALL SURFACE DEWATERING SKIMMER PRIOR TO MOVING TO NEXT STEP.
12. CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
13. ROUGH GRADING.
14. INSTALLATION OF STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
15. INSTALL ALL REQUIRED UTILITIES AND CURBING.
16. FINE GRADING, PAVING, ETC.
17. PLACE TOPSOIL & ESTABLISH FINISH GRADES.
18. PERMEABLE PAVERS SHALL BE LAID WHEN ALL HEAVY CONSTRUCTION IS COMPLETED.
19. CLEAN–OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE–GRADING OF DETENTION POND BOTTOMS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
20. INSTALL PERMANENT SEEDING.
21. FLUSH ANY SEDIMENT FROM STORM SEWER PIPES AND INLETS.
22. REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES (INCLUDING SKIMMER) AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER / OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES).
23. PERFORM AS–BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE.
24. SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

- NOTE: PERFORM WEEKLY SITE INSPECTIONS DURING LAND DISTURBING ACTIVITIES AND MAKE RECOMMENDATIONS FOR ADDITIONAL BMPs OR MAINTENANCE OF EXISTING BMPs
- NOTE: ALL PUMPED DEWATERING SHALL BE PERFORMED USING AN APPROPRIATELY SIZED PUMPED WATER FILTER BAG.

SCDHEC-OCRM CERTIFICATION:

"I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM. FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 OF THE CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72–300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000."



PLAN REVISIONS

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS
COVER SHEET & CONSTRUCTION NOTES

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	NO SCALE

SHEET
C001

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

N/F CRESCENT POINTE GOLF COURSE LLC
TMS R600 032 000 0216 0000

LOT 57
THE CRESCENT

N:154767.97
E:2513138.86

1325' TO IPF
AT US HWY 278

10' REAR BUILDING SETBACK

20' PERIMETER BUFFER

ZONE A8
(EL. 14')

ZONE B

PROPOSED BUILDING "A"
(12 APARTMENTS)
7,575 SF
F.F.E:18.00'

PROPOSED BUILDING "B"
(12 APARTMENTS)
7,575 SF
F.F.E:18.00'

15' SIDE BUILDING SETBACK

ZONE B

ZONE C

5.0 AC
A PORTION OF
TMS R600 032 000 0452 0000

SDMH
TOP:16.5'

6"PVC STUBOUT

15' SIDE BUILDING SETBACK

EXISTING
MASTER-PLANNED
STORMWATER DETENTION
POND

ZONE B

ZONE C

CONCRETE
STORM BOX
TOP:17.0'
WSE:13.0'

POND 4
(WATER LEVEL:12.7'
ON 11.15.17)

N/F SR 278 LLC
TMS R600 032 000 0452 0000

EDGE OF POND

ZONE B
ZONE A8
(EL. 14')

N/F SR 278 LLC
TMS R600 032 000 0452 0000

POND 3
(WATER LEVEL:12.2'
ON 11.15.17)

EXISTING
MASTER-PLANNED
STORMWATER DETENTION
POND

EDGE OF POND

ZONE A8
(EL. 14')

ZONE C

FLOOD ZONE LINE
AS SCALED FROM REF.1

PROPOSED SIDEWALK
CONNECTION TO SHOPPING
CENTER

15' SIDE BUILDING SETBACK

PROPOSED BUILDING "D"
(12 APARTMENTS)
7,580 SF
F.F.E:18.00'

PROPOSED BUILDING "C"
(9 APARTMENTS)
5,660 SF
F.F.E:18.00'

WETLAND
BUFFER

15' SIDE BUILDING SETBACK

25' FRONT BUILDING SETBACK

BEST BUY
SHOPPING
CENTER

WETLAND LINE

WETLANDS

POND 2
(WATER LEVEL:12.7'
ON 11.15.17)

PROPOSED 5.0 AC PARCEL TO BE
SUBDIVIDED FROM PARENT PARCEL

ZONE C

ZONE B

WETLAND
BUFFER

SITE ACCESS
TO US-278

TO U.S. HIGHWAY 278

N/F SR 278 LLC
TMS R600 032 000 0452 0000

N:154548.16

0 30 60 Feet

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

SOUTH CAROLINA PROFESSIONAL ENGINEER
ROBERT C. MOORE
No. 22816
LICENSED
05/17/18

SOUTH CAROLINA AUTHORIZATION OF CERTIFICATE OF
WARD EDWARDS, INC.
No. C00152

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
3		
4		
5		
6		
7		

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS

OVERALL SITE PLAN

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=30'

SHEET
C002

NOTES:

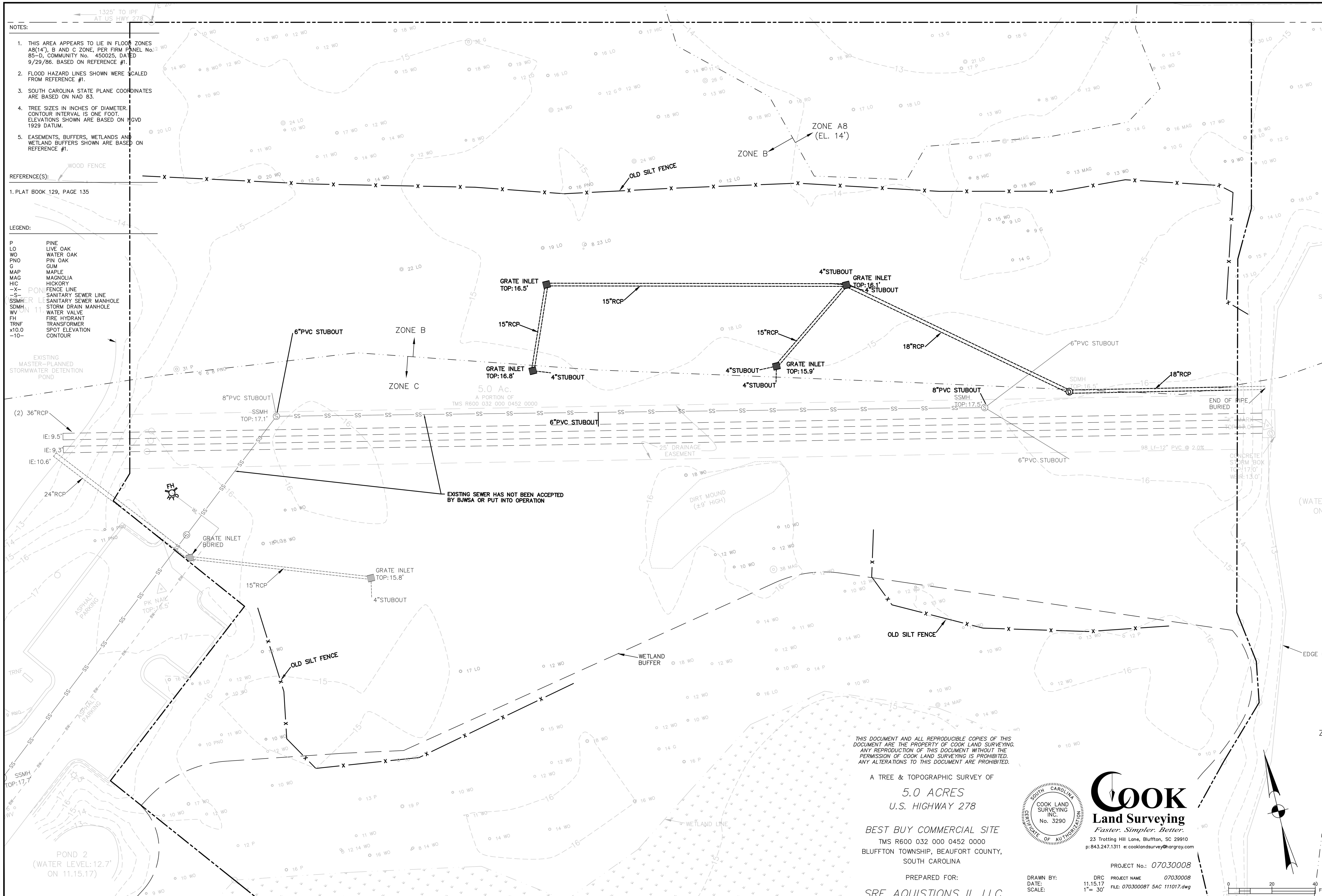
1. THIS AREA APPEARS TO LIE IN FLOOD ZONES A8(14'), B AND C ZONE, PER FIRM PANEL No. 85–D, COMMUNITY No. 450025, DATED 9/29/86. BASED ON REFERENCE #1.
2. FLOOD HAZARD LINES SHOWN WERE SCALED FROM REFERENCE #1.
3. SOUTH CAROLINA STATE PLANE COORDINATES ARE BASED ON NAD 83.
4. TREE SIZES IN INCHES OF DIAMETER. CONTOUR INTERVAL IS ONE FOOT. ELEVATIONS SHOWN ARE BASED ON NGVD 1929 DATUM.
5. EASEMENTS, BUFFERS, WETLANDS AND WETLAND BUFFERS SHOWN ARE BASED ON REFERENCE #1.

REFERENCE(S):

1. PLAT BOOK 129, PAGE 135

LEGEND:

P	PINE
LO	LIVE OAK
WO	WATER OAK
PNO	PIN OAK
G	GUM
MAP	MAPLE
MAG	MAGNOLIA
HIC	HICKORY
–X–	FENCE LINE
–S–	SANITARY SEWER LINE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
WV	WATER VALVE
FH	FIRE HYDRANT
TRNF	TRANSFORMER
x10.0	SPOT ELEVATION
–10–	CONTOUR



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A TREE & TOPOGRAPHIC SURVEY OF

5.0 ACRES

U.S. HIGHWAY 278

BEST BUY COMMERCIAL SITE

TMS R600 032 000 0452 0000

BLUFFTON TOWNSHIP, BEAUFORT COUNTY, SOUTH CAROLINA

PREPARED FOR:

SRE AQUISTIONS II, LLC

SOUTH CAROLINA COOK LAND SURVEYING INC. No. 3290 CERTIFICATE OF AUTHORIZATION

COOK Land Surveying
Faster. Simpler. Better.
23 Trotting Hill Lane, Bluffton, SC 29910
p: 843.247.1311 e: cooklandsurvey@hargray.com

DRAWN BY: DRC
DATE: 11.15.17
SCALE: 1"= 30'

PROJECT No.: 07030008
PROJECT NAME 07030008
FILE: 07030008T 5AC 111017.dwg

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 03/27/18 LICENSED

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		

PLAN REVISIONS

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

EXISTING CONDITIONS PLAN

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=20'

SHEET
C101

1325' TO IPF AT US HWY 278

10' REAR BUILDING SETBACK

20' PERIMETER BUFFER

NPDES LIMITS OF DISTURBANCE = 2.4 AC

1,025 LF SILT FENCE

TREE PROTECTION (TYP.)

WOOD FENCE

OLD SILT FENCE

ZONE A8 (EL. 14')

ZONE B

ZONE C

POND 3 (WATER LEVEL:12.2' ON 11.15.17)

EDGE OF POND

EXISTING MASTER-PLANNED STORMWATER DETENTION POND

15' SIDE BUILDING SETBACK

TYPE "A" INLET PROTECTION (TYP. OF 6)

GRATE INLET TOP:16.5'

GRATE INLET TOP:16.8'

GRATE INLET TOP:15.9'

GRATE INLET TOP:16.1'

15"RCP

18"RCP

4"STUBOUT

6"PVC STUBOUT

8"PVC STUBOUT

SSMH TOP:17.5'

SDMH TOP:16.5'

5.0 Ac. A PORTION OF TMS R600 032 000 0452 0000

25' DRAINAGE EASEMENT

EXISTING SEWER HAS NOT BEEN ACCEPTED BY BJWSA OR PUT INTO OPERATION.

DIRT MOUND (4.9' HIGH)

98 LF-12" PVC @ 2.0%

END OF BURIED

CONCRETE STORM BOX WIDTH 3.0'

(2) 36"RCP

IE: 9.5'

IE: 9.3'

IE: 10.6'

24"RCP

S30dN

NPDES

CONSTRUCTION ENTRANCE

CWS

DC

USE DUST CONTROL MEASURES AND SWEEPING AS NEEDED TO KEEP SEDIMENT OFF EXISTING STREETS.

CONCRETE WASHOUT STATION

65 LF SILT FENCE

490 LF (960 TOTAL) DOUBLE ROW SILT FENCE

TREE PROTECTION (TYP.)

25' FRONT BUILDING SETBACK

ASPHALT PARKING

PK NAIL TOP:16.1'

POND 2 (WATER LEVEL:12.7' ON 11.15.17)

WETLAND BUFFER

WETLAND LINE

0 20 40 Feet

RUNOFF CONVEYANCE MEASURES

VEGETATED CHANNELS:	VC
RIPRAP-LINED CHANNELS:	RC
ECB OR TRM-LINED CHANNELS:	ECB
PAVED CHANNELS:	PC PC PC
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	TD TD
PERMANENT DIVERSION DITCH:	PD PD
DIVERSION DIKE OR BERM:	DD DB
LEVEL SPREADER:	LS
SUBSURFACE DRAIN:	SSD SSD

SEDIMENT CONTROL

SEDIMENT BASIN:	SB
TEMPORARY SEDIMENT TRAP:	ST
ROCK SEDIMENT DIKE:	RSD
ROCK CHECK DAM:	RCD OR
SEDIMENT TUBE:	ST
SILT FENCE:	SF
REINFORCED SILT FENCE:	RSF
TYPE A-FABRIC INLET PROTECTION:	A
TYPE A-SEDIMENT TUBE INLET PROTECTION:	A
TYPE B - WIRE MESH AND STONE DROP INLET PROTECTION:	B
TYPE C - BLOCK AND GRAVEL INLET PROTECTION:	C
TYPE D - RIGID INLET FILTERS:	D
TYPE E - SURFACE COURSE CURB INLET FILTER:	E
TYPE F - INLET TUBE:	F
TYPE FB - FILTER BAG:	FB
CONCRETE WASHOUT	CWS

LIMITS OF DISTURBANCE: NPDES

EROSION PREVENTION

LAND GRADING:	LG OR AGG
SURFACE ROUGHENING:	SR
TOPSOILING:	TS
TEMPORARY SEEDING:	TS
MULCHING:	M
ECB OR TRM:	ECB
FGM:	FGM
BFM:	BFM
PERMANENT SEEDING:	PS
SODDING:	SO
RIPRAP:	RIP
OUTLET PROTECTION:	RIPRAP ECB or TRM
DUST CONTROL:	DC
POLYACRYLAMIDE (PAM):	PAM

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SOUTH CAROLINA PROFESSIONAL ENGINEER ROBERT C. MOORE LICENSED No. 22816 05/27/18

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION WARD EDWARDS, INC. No. C00152

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
3		
4		
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6		
7		

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

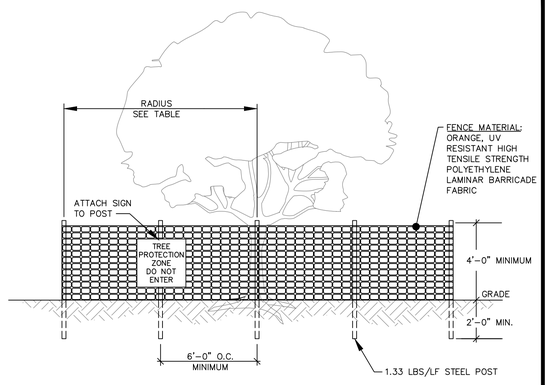
WELLES LOM, LLC
CHICAGO, ILLINOIS

INITIAL EROSION CONTROL PLAN

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=20'

SHEET
C201



NOTES:
1. ALL TREES DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING.
2. INSTALL TREE PROTECTION FENCE TO RADIUS INDICATED IN TABLE UNLESS OTHERWISE INDICATED ON PLANS.
3. WARNING SIGNS TO BE MADE OF DURABLE WATERPROOF MATERIAL.
4. ALL WARNING SIGN LETTERS TO BE AT LEAST 3 INCHES HIGH, CLEARLY LEGIBLE AND SPACED A MINIMUM OF ONE EVERY 40 FT. FOR PROTECTION AREAS LESS THAN 40 FT IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER SIDE.
5. THE SIZE OF EACH WARNING SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
8. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. FENCING MUST REMAIN UPRIGHT AND SLACK FREE.

TABLE – RADIUS OF TREE PROTECTION ZONE (TPZ)	
JURISDICTION	RADIUS OF CIRCULAR TPZ
BEAUFORT COUNTY DSO 106-1846(b)(2)OR	1 FOOT PER INCH OF TRUNK DBH OR 5 FEET, WHICHEVER IS GREATER
TOWN OF BLUFFTON UDO 5.3.3, C(1)	1.5 FEET PER INCH OF TRUNK DBH
TOWN OF HILTON HEAD LMO 16-6-104, J	FENCING AT DRIP LINE FOR ALL TREES PROPOSED TO BE RETAINED
CITY OF BEAUFORT UDO 7.3, D(3)	0.5 FOOT PER INCH OF TRUNK DBH OR 5 FEET, WHICHEVER IS GREATER
JASPER COUNTY ZONING ORD. ART. 13	FENCING AT DRIP LINE FOR "SIGNIFICANT" AND "LANDMARK" TREES
CITY OF HARDEEVILLE MZDSO 4.8, F	FENCING AT DRIP LINE FOR "PROTECTED TREES", SEE PLANS FOR ALL OTHERS

DBH = TRUNK DIAMETER AT BREAST HEIGHT

TREE PROTECTION FENCE

DETAIL #02915-008

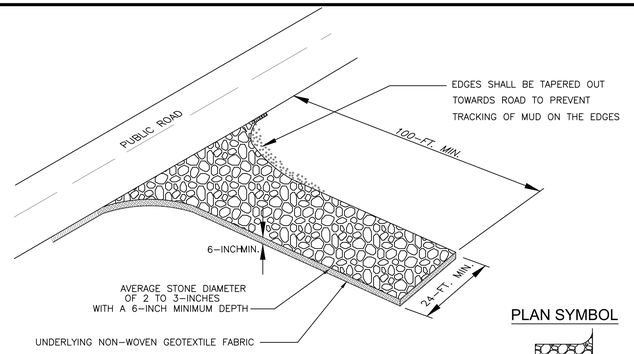
ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./ACRE)
ANIONIC ASPHALT EMULSION	7:1*	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1*	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1*	FINE SPRAY	300

*USE MANUFACTURER'S RECOMMENDATIONS WHEN AVAILABLE.

MAINTENANCE:
- PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.
- SUPPLEMENT SURFACE COVERING AS NEEDED.

INSTALLATION:
- APPLY ACCORDING TO APPROVED PLAN.
- MULCH DISTURBED AREAS AMD TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATACK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.
- IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.
- COVER SURFACES WITH CRUSHED STONE OR GRAVEL.
- APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACES MOIST.
- APPLY SPRAY-ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1.

(DC) DUST CONTROL ON DISTURBED AREAS



SPECIFICATION	SIZE
ROCK PAD THICKNESS	6 INCHES
ROCK PAD WIDTH	24 FEET
ROCK PAD LENGTH	100 FEET
ROCK PAD STONE SIZE	D = 2-3 INCHES

PLAN SYMBOL

South Carolina Department of Health and Environmental Control

CONSTRUCTION ENTRANCE

STANDARD DRAWING NO. SC-06 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

CONSTRUCTION ENTRANCE – GENERAL NOTES

1. Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surfaces, such as parking lots.
2. Install a non-woven geotextile fabric prior to placing any stone.
3. Install a culvert pipe across the entrance when needed to provide positive drainage.
4. The entrance shall consist of 2-inch to 3-inch D50 stone placed at a minimum depth of 6-inches.
5. Minimum dimensions of the entrance shall be 24-feet wide by 100-feet long, and may be modified as necessary to accommodate site constraints.
6. The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.
8. Limestone may not be used for the stone pad.

CONSTR. ENTRANCE – INSPECTION & MAINTENANCE

1. The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.
4. Reshape the stone pad as necessary for drainage and runoff control.
5. Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off-site by vehicles. Frequent washing will extend the useful life of stone pad.
6. Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.
7. During maintenance activities, any broken pavement should be repaired immediately.
8. Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post-construction.

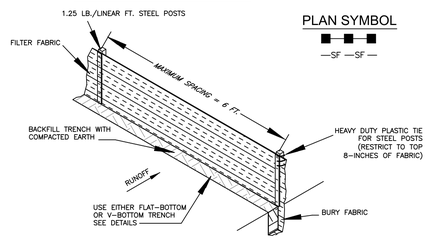
South Carolina Department of Health and Environmental Control

CONSTRUCTION ENTRANCE

STANDARD DRAWING NO. SC-06 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

SILT FENCE INSTALLATION



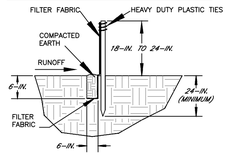
PLAN SYMBOL

—SF—SF—

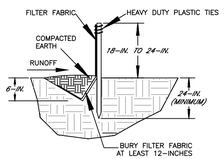
SILT FENCE – GENERAL NOTES

1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
3. Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
   - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
   - Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 Page 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

SILT FENCE – POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE – FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE – INSPECTION & MAINTENANCE

1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

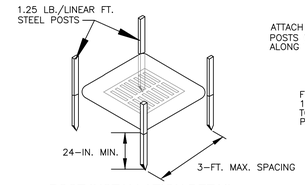
South Carolina Department of Health and Environmental Control

SILT FENCE

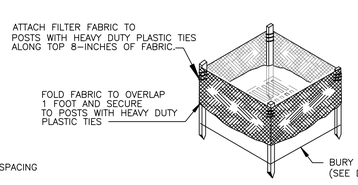
STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

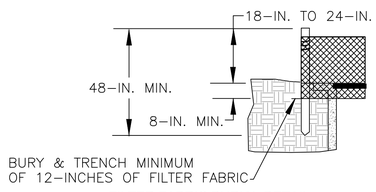
POST INSTALLATION DETAIL



FILTER FABRIC INSTALLATION DETAIL



FILTER FABRIC BURIAL DETAIL



PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

TYPE A – FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A – POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24-inches. A minimum height of 1- to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3-feet on center.

TYPE A – INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

PROFESSIONAL ENGINEER — SOUTH CAROLINA — No. 22816 — REGISTERED — 05/17/18 — R. TAYLOR MOORE

WARD EDWARDS, INC. — NO. C00152 — CERTIFICATE OF AUTHORIZATION — SOUTH CAROLINA

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
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Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

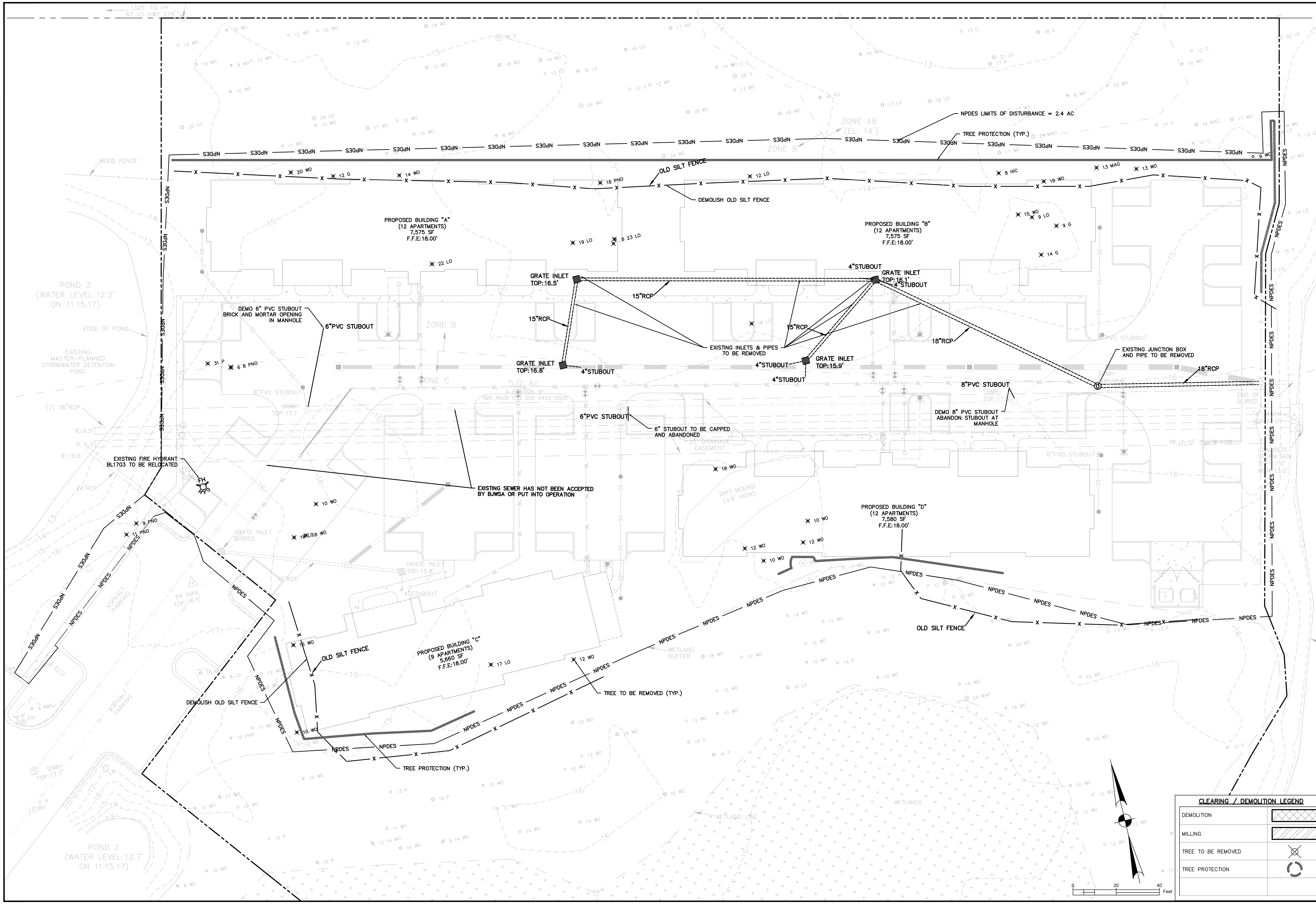
OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS

INITIAL EROSION CONTROL DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

SHEET
C202


1325' TO IPF AT US HWY 278
NPDES LIMITS OF DISTURBANCE = 2.4 AC
TREE PROTECTION (TYP.)
ZONE AE (EL 14')
ZONE B
WOOD FENCE
OLD SILT FENCE
DEMOLISH OLD SILT FENCE
PROPOSED BUILDING "A" (12 APARTMENTS) 7,575 SF F.F.E:18.00'
PROPOSED BUILDING "B" (12 APARTMENTS) 7,575 SF F.F.E:18.00'
PROPOSED BUILDING "C" (9 APARTMENTS) 5,660 SF F.F.E:18.00'
PROPOSED BUILDING "D" (12 APARTMENTS) 7,580 SF F.F.E:18.00'
POND 3 (WATER LEVEL:12.2' ON 11.15.17)
POND 2 (WATER LEVEL:12.7' ON 11.15.17)
EDGE OF POND
EXISTING MASTER-PLANNED STORMWATER DETENTION POND
GRATE INLET TOP:16.5'
GRATE INLET TOP:16.1'
GRATE INLET TOP:16.8'
GRATE INLET TOP:15.9'
4"STUBOUT
15"RCP
18"RCP
DEMO 6" PVC STUBOUT BRICK AND MORTAR OPENING IN MANHOLE
6"PVC STUBOUT
EXISTING INLETS & PIPES TO BE REMOVED
EXISTING JUNCTION BOX AND PIPE TO BE REMOVED
8"PVC STUBOUT
DEMO 8" PVC STUBOUT ABANDON STUBOUT AT MANHOLE
6" STUBOUT TO BE CAPPED AND ABANDONED
EXISTING FIRE HYDRANT BL1703 TO BE RELOCATED
EXISTING SEWER HAS NOT BEEN ACCEPTED BY BJWSA OR PUT INTO OPERATION
25' DRAINAGE EASEMENT
DIRT MOUND (±9' HIGH)
WETLAND BUFFER
WETLAND LINE
WETLANDS
TREE TO BE REMOVED (TYP.)
ASPHALT PARKING
PK NAIL TOP:16.5'
SSMH TOP:17.7'
CLEARING / DEMOLITION LEGEND
DEMOLITION
MILLING
TREE TO BE REMOVED
TREE PROTECTION
0 20 40 Feet

OSPREY COVE APARTMENTS

BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

CLEARING & DEMOLITION PLAN

Ward Edwards ENGINEERING
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WWW.WARDEDWARDS.COM

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 LICENSED 03/27/18 PAUL R. MOORE

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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PLAN REVISIONS

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SCALE:	1"=20'

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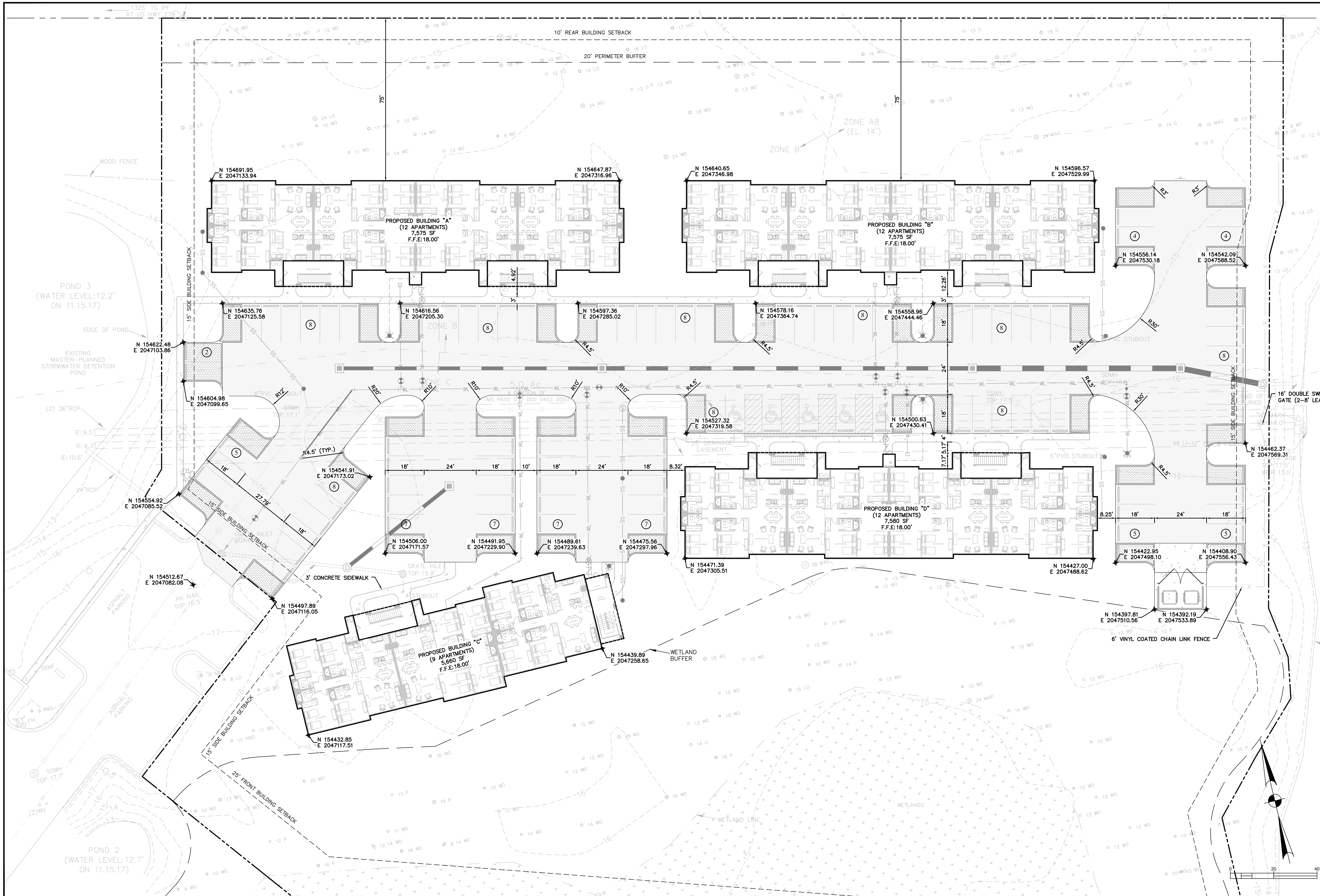

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 LICENSED PAUL R. MOORE 03/27/18

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PLAN REVISIONS

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BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

SITE LAYOUT PLAN

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PROJECT #:	170262
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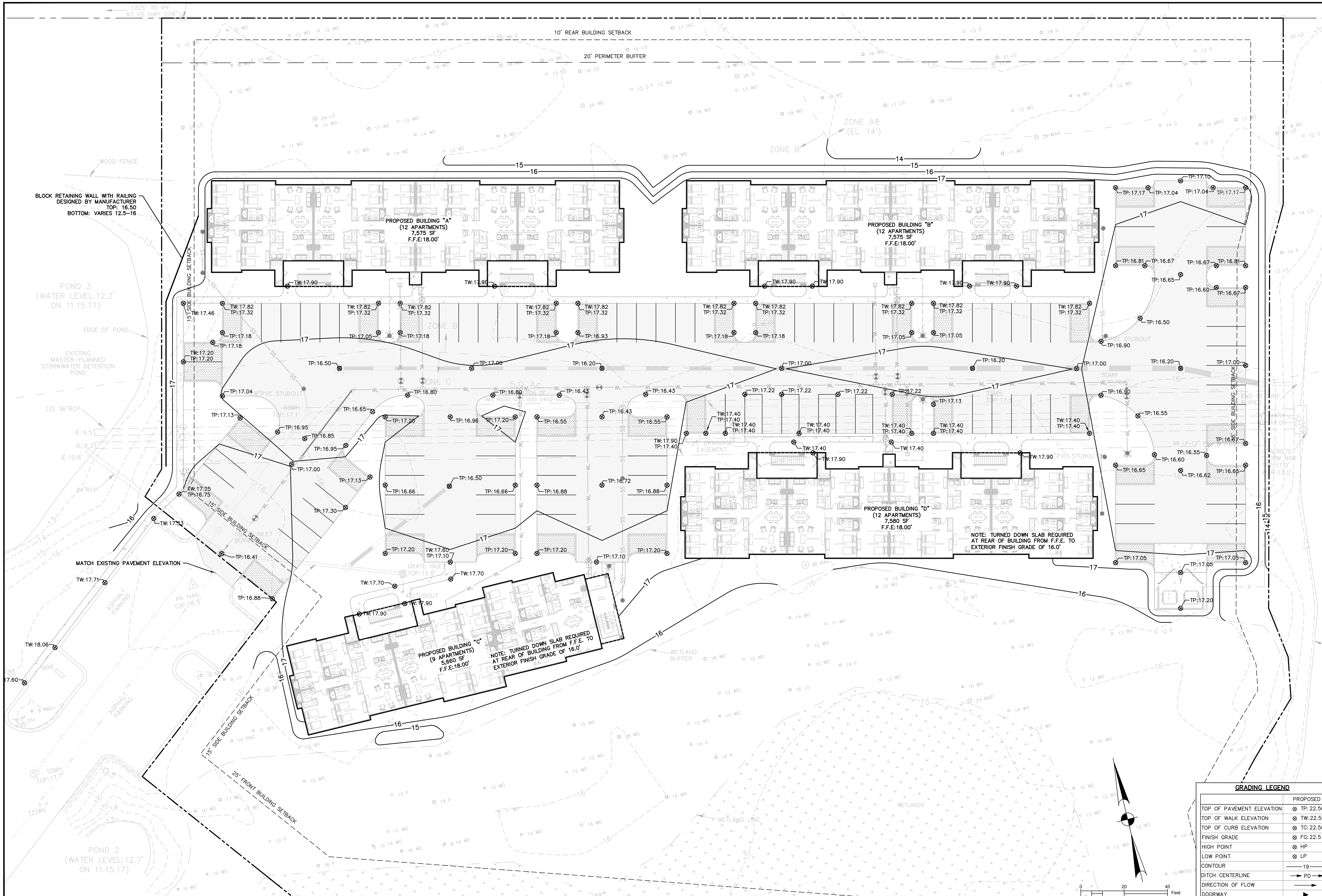
SHEET
C401



GRADING LEGEND

	PROPOSED
TOP OF PAVEMENT ELEVATION	⊗ TP: 22.50
TOP OF WALK ELEVATION	⊗ TW: 22.50
TOP OF CURB ELEVATION	⊗ TC: 22.50
FINISH GRADE	⊗ FG: 22.5
HIGH POINT	⊗ HP
LOW POINT	⊗ LP
CONTOUR	——19——
DITCH CENTERLINE	→ PD →
DIRECTION OF FLOW	→
DOORWAY	▶

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NO.	DESCRIPTION	DATE
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OSPREY COVE APARTMENTS

BEAUFORT COUNTY, SOUTH CAROLINA

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CHICAGO, ILLINOIS

GRADING PLAN

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SHEET
C501

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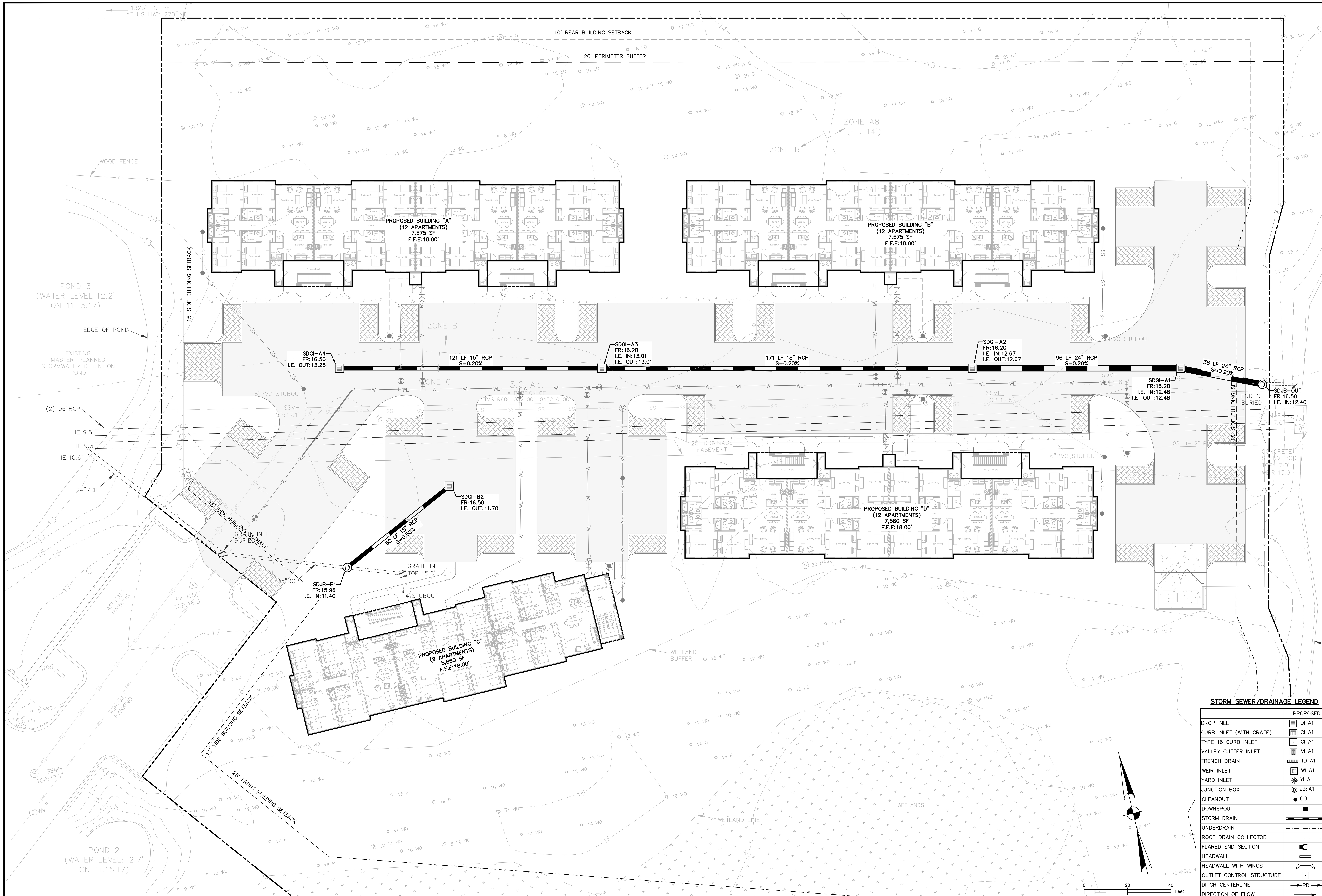

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STORM SEWER/DRAINAGE LEGEND

	PROPOSED
DROP INLET	DI: A1
CURB INLET (WITH GRATE)	CI: A1
TYPE 16 CURB INLET	CI: A1
VALLEY GUTTER INLET	VI: A1
TRENCH DRAIN	TD: A1
WEIR INLET	WI: A1
YARD INLET	YI: A1
JUNCTION BOX	JB: A1
CLEANOUT	CO
DOWNSPOUT	
STORM DRAIN	
UNDERDRAIN	
ROOF DRAIN COLLECTOR	
FLARED END SECTION	
HEADWALL	
HEADWALL WITH WINGS	
OUTLET CONTROL STRUCTURE	
DITCH CENTERLINE	PD
DIRECTION OF FLOW	

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DRAINAGE PLAN

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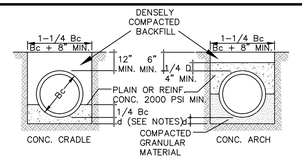
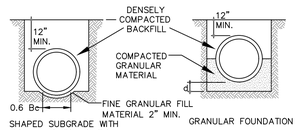
SHEET
C601



CLASS A

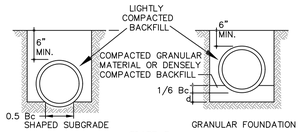
LEGEND
Bc = OUTSIDE DIAMETER
H = BACKFILL COVER OVER TOP OF PIPE
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE
As = AREA OF TRANSVERSE STEEL IN THE CRADLE OF ARCH EXPRESSED AS A PERCENTAGE OF AREA OF CONC. AT INVERT OR CROWN

DIA.	d (MIN.)
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

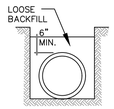


CLASS B

MAXIMUM ALLOWABLE TRENCH DEPTH			
PIPE SIZE	CLASS D BEDDING	CLASS C BEDDING	CLASS A OR B BEDDING
ALL SIZES	NOT TO BE USED	15'	30'



CLASS C



CLASS D

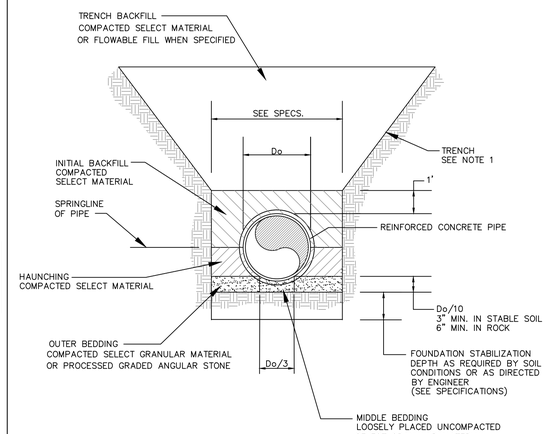
NOTES:
FOR CLASS A BEDDINGS USE d AS DEPTH OF CONCRETE BELOW PIPE UNLESS OTHERWISE INDICATED BY SOIL OR DESIGN CONDITIONS

FOR CLASS B AND C BEDDINGS SUBGRADE SHOULD BE EXCAVATED (OR OVER EXCAVATED IF NECESSARY) SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED

SPECIAL CARE MAY BE NECESSARY WITH CLASS A OR OTHER UNYIELDING FOUNDATIONS TO CUSHION PIPE FROM SHOCK WHEN BLASTING CAN BE ANTICIPATED IN THE AREA

TRENCH BEDDINGS FOR CIRCULAR CONCRETE PIPE

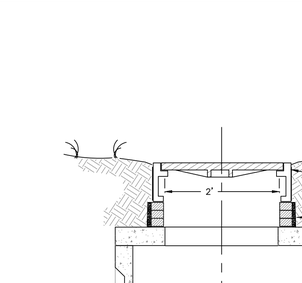
DETAIL 02630-007



NOTES:
1: DEPTH OF VERTICAL TRENCH AND SIDE SLOPES OF TRENCH MAY VARY DEPENDING ON DEPTH OF EXCAVATION AND TRENCH PROTECTION SYSTEM USED. COMPLY WITH OSHA REGULATIONS (STANDARDS – 29 CFR) PART 1956 SUBPART P, EXCAVATIONS.

2. WHEN PROCESSED ANGULAR STONE IS USED FOR MIDDLE AND OUTER BEDDING, THE STONE SHALL BE COMPLETELY WRAPPED IN FILTER FABRIC TO PREVENT MIGRATION OF SURROUNDING SOILS.

EMBEDMENT DETAIL FOR REINFORCED CONCRETE PIPE

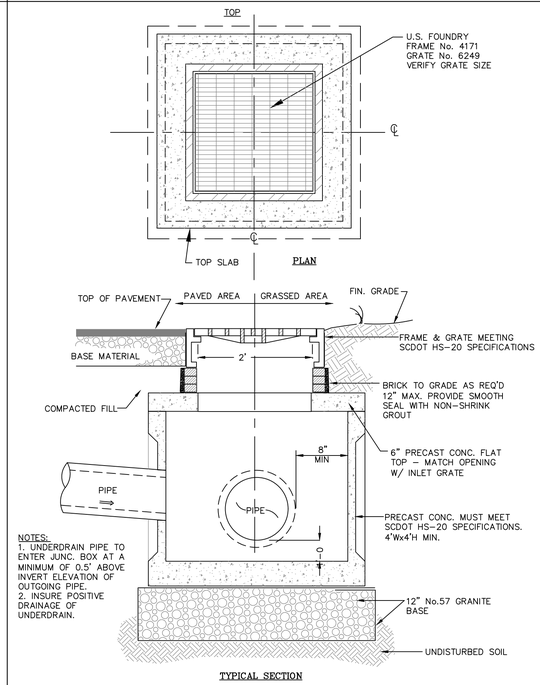


NOTES:
1. UNDERDRAIN PIPE TO ENTER JUNC. BOX AT A MINIMUM OF 0.5' ABOVE INVERT ELEVATION OF OUTGOING PIPE.
2. INSURE POSITIVE DRAINAGE OF UNDERDRAIN

TYPICAL SECTION

JUNCTION BOX WITH FRAME AND COVER

DETAIL 02630-030



NOTES:
1. UNDERDRAIN PIPE TO ENTER JUNC. BOX AT A MINIMUM OF 0.5' ABOVE INVERT ELEVATION OF OUTGOING PIPE.
2. INSURE POSITIVE DRAINAGE OF UNDERDRAIN.

TYPICAL SECTION

GRATE INLET

DETAIL 02630-027

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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS

DRAINAGE DETAILS

☑ NOT FOR CONSTRUCTION
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PROJECT #:	170262
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SHEET
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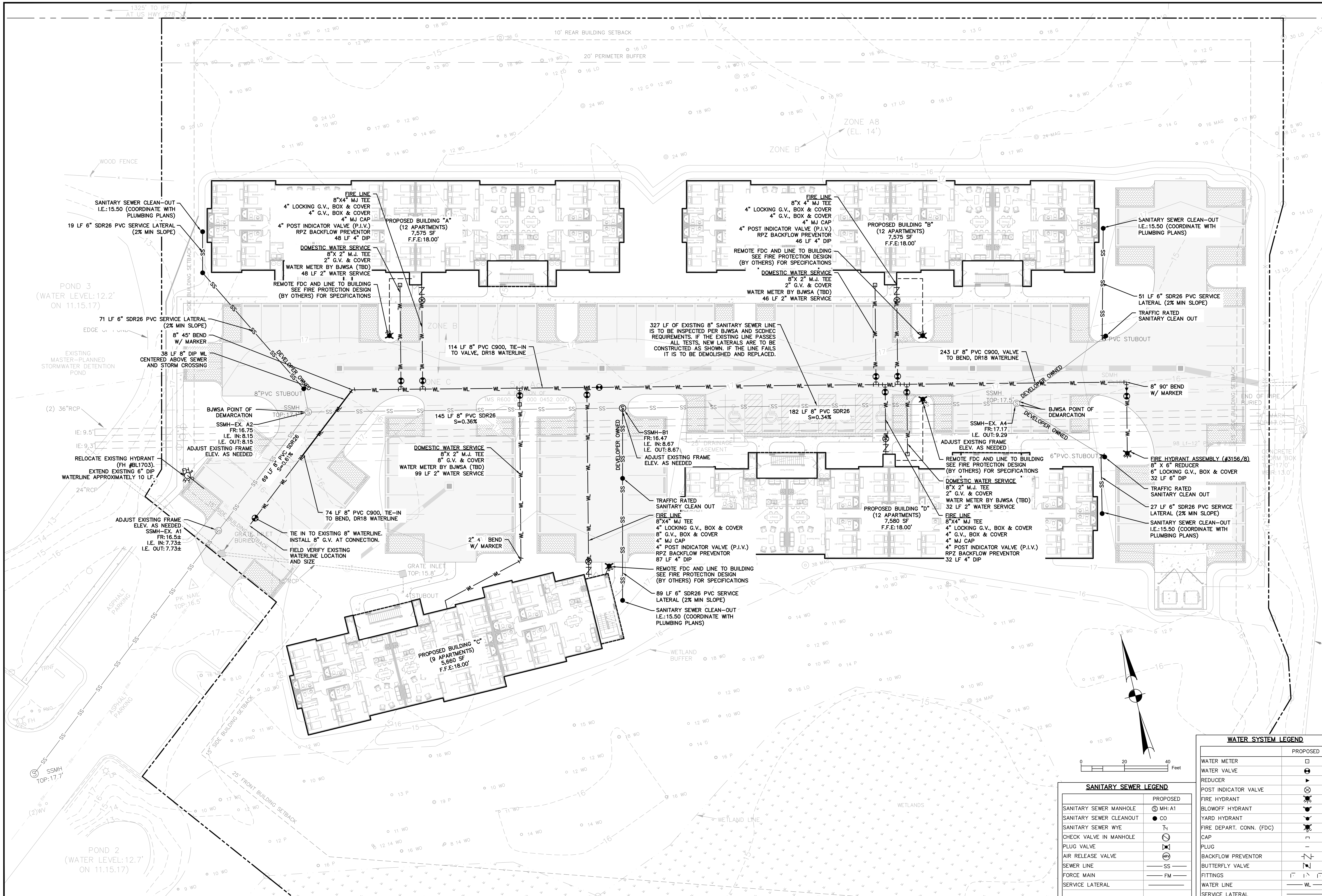
1325' TO IPF AT US HWY 278
10' REAR BUILDING SETBACK
20' PERIMETER BUFFER
ZONE A8 (EL. 14')
ZONE B
WOOD FENCE
POND 3 (WATER LEVEL:12.2' ON 11.15.17)
EXISTING MASTER-PLANNED STORMWATER DETENTION POND
SANITARY SEWER CLEAN-OUT I.E.:15.50 (COORDINATE WITH PLUMBING PLANS)
19 LF 6" SDR26 PVC SERVICE LATERAL (2% MIN SLOPE)
FIRE LINE
8"X4" MJ TEE
4" LOCKING G.V., BOX & COVER
4" G.V., BOX & COVER
4" MJ CAP
4" POST INDICATOR VALVE (P.I.V.)
RPZ BACKFLOW PREVENTOR
48 LF 4" DIP
PROPOSED BUILDING "A" (12 APARTMENTS) 7,575 SF F.F.E:18.00'
DOMESTIC WATER SERVICE
8"X 2" M.J. TEE
2" G.V. & COVER
WATER METER BY BJWSA (TBD)
48 LF 2" WATER SERVICE
REMOTE FDC AND LINE TO BUILDING SEE FIRE PROTECTION DESIGN (BY OTHERS) FOR SPECIFICATIONS
71 LF 6" SDR26 PVC SERVICE LATERAL (2% MIN SLOPE)
8" 45° BEND W/ MARKER
38 LF 8" DIP WL CENTERED ABOVE SEWER AND STORM CROSSING
DEVELOPER OWNED
114 LF 8" PVC C900, TIE-IN TO VALVE, DR18 WATERLINE
BJWSA POINT OF DEMARCATION
SSMH-EX. A2 FR:16.75 I.E. IN:8.15 I.E. OUT:8.15
ADJUST EXISTING FRAME ELEV. AS NEEDED
145 LF 8" PVC SDR26 S=0.36%
89 LF 8" PVC SDR26 S=0.61%
RELOCATE EXISTING HYDRANT (FH #BL1703). EXTEND EXISTING 6" DIP WATERLINE APPROXIMATELY 10 LF.
74 LF 8" PVC C900, TIE-IN TO BEND, DR18 WATERLINE
ADJUST EXISTING FRAME ELEV. AS NEEDED SSMH-EX. A1 FR:16.5± I.E. IN:7.73± I.E. OUT:7.73±
TIE IN TO EXISTING 8" WATERLINE. INSTALL 8" G.V. AT CONNECTION.
FIELD VERIFY EXISTING WATERLINE LOCATION AND SIZE
DOMESTIC WATER SERVICE 8"X 2" M.J. TEE 8" G.V. & COVER WATER METER BY BJWSA (TBD) 99 LF 2" WATER SERVICE
2" 4 BEND W/ MARKER
PROPOSED BUILDING "C" (9 APARTMENTS) 5,660 SF F.F.E:18.00'
SSMH-B1 FR:16.47 I.E. IN:8.67 I.E. OUT:8.67
ADJUST EXISTING FRAME ELEV. AS NEEDED
TRAFFIC RATED SANITARY CLEAN OUT
FIRE LINE 8"X4" MJ TEE 4" LOCKING G.V., BOX & COVER 8" G.V., BOX & COVER 4" MJ CAP 4" POST INDICATOR VALVE (P.I.V.) RPZ BACKFLOW PREVENTOR 87 LF 4" DIP
REMOTE FDC AND LINE TO BUILDING SEE FIRE PROTECTION DESIGN (BY OTHERS) FOR SPECIFICATIONS
89 LF 6" SDR26 PVC SERVICE LATERAL (2% MIN SLOPE)
SANITARY SEWER CLEAN-OUT I.E.:15.50 (COORDINATE WITH PLUMBING PLANS)
PROPOSED BUILDING "B" (12 APARTMENTS) 7,575 SF F.F.E:18.00'
FIRE LINE 8"X 4" MJ TEE 4" LOCKING G.V., BOX & COVER 4" G.V., BOX & COVER 4" MJ CAP 4" POST INDICATOR VALVE (P.I.V.) RPZ BACKFLOW PREVENTOR 46 LF 4" DIP
REMOTE FDC AND LINE TO BUILDING SEE FIRE PROTECTION DESIGN (BY OTHERS) FOR SPECIFICATIONS
DOMESTIC WATER SERVICE 8"X 2" M.J. TEE 2" G.V. & COVER WATER METER BY BJWSA (TBD) 46 LF 2" WATER SERVICE
327 LF OF EXISTING 8" SANITARY SEWER LINE IS TO BE INSPECTED PER BJWSA AND SCDHEC REQUIREMENTS. IF THE EXISTING LINE PASSES ALL TESTS, NEW LATERALS ARE TO BE CONSTRUCTED AS SHOWN. IF THE LINE FAILS IT IS TO BE DEMOLISHED AND REPLACED.
182 LF 8" PVC SDR26 S=0.34%
243 LF 8" PVC C900, VALVE TO BEND, DR18 WATERLINE
SANITARY SEWER CLEAN-OUT I.E.:15.50 (COORDINATE WITH PLUMBING PLANS)
51 LF 6" SDR26 PVC SERVICE LATERAL (2% MIN SLOPE)
TRAFFIC RATED SANITARY CLEAN OUT
8" 90° BEND W/ MARKER
BJWSA POINT OF DEMARCATION
SSMH-EX. A4 FR:17.17 I.E. OUT:9.29
ADJUST EXISTING FRAME ELEV. AS NEEDED
REMOTE FDC AND LINE TO BUILDING SEE FIRE PROTECTION DESIGN (BY OTHERS) FOR SPECIFICATIONS
DOMESTIC WATER SERVICE 8"X 2" M.J. TEE 2" G.V. & COVER WATER METER BY BJWSA (TBD) 32 LF 2" WATER SERVICE
PROPOSED BUILDING "D" (12 APARTMENTS) 7,580 SF F.F.E:18.00'
FIRE LINE 8"X4" MJ TEE 4" LOCKING G.V., BOX & COVER 4" G.V., BOX & COVER 4" MJ CAP 4" POST INDICATOR VALVE (P.I.V.) RPZ BACKFLOW PREVENTOR 32 LF 4" DIP
FIRE HYDRANT ASSEMBLY (#3156/8) 8" X 6" REDUCER 6" LOCKING G.V., BOX & COVER 32 LF 6" DIP
TRAFFIC RATED SANITARY CLEAN OUT
27 LF 6" SDR26 PVC SERVICE LATERAL (2% MIN SLOPE)
SANITARY SEWER CLEAN-OUT I.E.:15.50 (COORDINATE WITH PLUMBING PLANS)
8"PVC STUBOUT
6"PVC STUBOUT
4"STUBOUT
GRATE INLET TOP:15.8'
PK NAIL TOP:16.5'
ASPHALT PARKING
SSMH TOP:17.7'
POND 2 (WATER LEVEL:12.7' ON 11.15.17)
15' SIDE BUILDING SETBACK
25' FRONT BUILDING SETBACK
WETLAND BUFFER
WETLANDS
WETLAND LINE
0 20 40 Feet

SANITARY SEWER LEGEND

	PROPOSED
SANITARY SEWER MANHOLE	Ⓢ MH: A1
SANITARY SEWER CLEANOUT	● CO
SANITARY SEWER WYE	
CHECK VALVE IN MANHOLE	
PLUG VALVE	
AIR RELEASE VALVE	ARV
SEWER LINE	—— SS ——
FORCE MAIN	—— FM ——
SERVICE LATERAL	————

WATER SYSTEM LEGEND

	PROPOSED
WATER METER	⊡
WATER VALVE	
REDUCER	▶
POST INDICATOR VALVE	⊗
FIRE HYDRANT	HYD
BLOWOFF HYDRANT	
YARD HYDRANT	
FIRE DEPART. CONN. (FDC)	FDC
CAP	⊓
PLUG	—
BACKFLOW PREVENTOR	
BUTTERFLY VALVE	
FITTINGS	
WATER LINE	—— WL ——
SERVICE LATERAL	————

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED 03/27/18

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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OSPREY COVE APARTMENTS

BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

UTILITY PLAN

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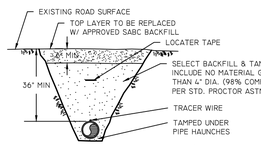
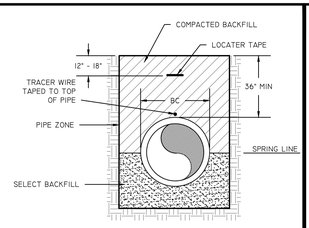
SHEET
C701

BJWSA UTILITY AS-BUILT SURVEY REQUIREMENTS

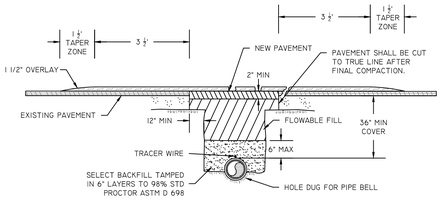
1. CONTRACTOR SHALL PROVIDE ENGINEER WITH ELECTRONIC FILE OF SURVEYED UTILITY AS-BUILT POINTS. POINT DESCRIPTIONS SHALL BE CLEAR AND UNDERSTANDABLE.
2. CONTRACTOR SHALL ALSO PROVIDE CORRESPONDING REDLINE DRAWING TO SUPPLEMENT OR CLARIFY ELECTRONIC FILE CONTENT.
3. CONTRACTOR SHALL SCHEDULE SURVEYOR TO BE PRESENT DURING INSTALLATION IN ORDER TO OBTAIN ACCURATE INFORMATION ON UNDERGROUND FITTINGS AND SANITARY/STORM CROSSING ELEVATIONS. MULTIPLE SURVEYOR MOBILIZATIONS MAY BE NEEDED. IF SURVEYOR IS NOT PRESENT DURING INSTALLATION, CONTRACTOR SHALL ENSURE SURVEYOR HAS ACCESS TO ALL UTILITY COMPONENTS LISTED IN THESE NOTES.
4. CONTRACTOR'S SURVEYOR SHALL BE A PROFESSIONAL LAND SURVEYOR LICENSED IN SOUTH CAROLINA. CONTRACTOR'S SURVEYOR WILL REVIEW AND SIGN THE BJWSA CERTIFICATION ON THE UTILITY AS-BUILT DRAWING PREPARED BY ENGINEER UPON COMPLETION.
5. UTILITY AS-BUILT POINTS SHALL BE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND THE USGS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).
6. AS BUILT SURVEY SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING:
   - a. GRAVITY SEWER
     - i. MANHOLE LOCATIONS, FRAME ELEVATION, ALL INVERT ELEVATIONS
     - ii. CLEANOUT LOCATIONS, GROUND ELEVATION, INVERT ELEVATION
     - iii. POINTS FOR PERMANENT VISIBLE STRUCTURES NEARBY MANHOLES AND CLEANOUTS FOR REFERENCE (PAVEMENT, BUILDINGS, MANHOLES, CATCH BASINS, POWER POLES, OR PROPERTY CORNERS)
   - b. FORCE MAIN
     - i. ELEVATION ON TOP OF FORCE MAIN CONNECTION TO MANHOLE OR FORCE MAIN MANIFOLD
     - ii. AIR RELEASE VALVES
     - iii. SIMPLE FORCE MAIN ALIGNMENTS ON 100 LF INCREMENTS
     - iv. ARCS, BENDS ON 50 LF INCREMENTS
   - c. WATER
     - i. HORIZONTAL AND VERTICAL LOCATION OF ALL VALVES, BENDS, TEES, AND STORM/SANITARY CROSSING POINTS (FOR AS-BUILT SEPARATION CALCULATONS)
     - ii. FIRE HYDRANTS
     - iii. CONCRETE MARKERS, CONNECTIONS TO EXISTING LINES, BACKFLOW PREVENTORS, AIR RELEASE VALVES
     - iv. POINTS FOR PERMANENT VISIBLE STRUCTURES NEAR WATER SYSTEM ELEMENTS DESCRIBED ABOVE FOR REFERENCE (PAVEMENT, BUILDINGS, MANHOLES, CATCH BASINS, POWER POLES, OR PROPERTY CORNERS). TWO SURVEYED REFERENCE POINT LOCATIONS ARE REQUIRED FOR EACH FITTING.
   - d. PUMP STATIONS
     - i. COMPLETE LAYOUT OF PUMP STATION
     - ii. MANHOLE LOCATIONS, FRAME ELEVATION, ALL INVERT ELEVATIONS
     - iii. FENCING & GATES, CONTROL PANEL
     - iv. TOP OF SLAB (INCL. BRASS BENCHMARK) & BOTTOM OF WETWELL
     - v. INFLUENT LINE INVERT
     - vi. FLOAT LEVELS (PUMP OFF, PUMP ON, LEAD/LAG, BOHT PUMPS ON, HIGH WATER)
     - vii. PROPERTY CORNERS, YARD HYDRANT, LIGHT POLE, DISCHARGE PIPING/VALVES



UNPAVED ROADWAY BEDDING DETAIL



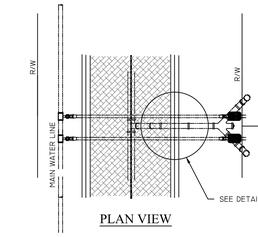
TYPICAL BEDDING DETAIL



PAVED AREA DETAIL

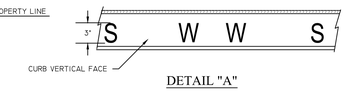
NOTES:
1. PAVEMENT CUT TO EXTEND 12" BEYOND EDGES OF TRENCH AS SHOWN.
2. MATCH EXISTING PAVEMENT TYPE AND THICKNESS. MINIMUM THICKNESS OVER TRENCH IS 2".
3. ALL INSTALLATIONS IN PUBLIC ROADWAYS SHALL COMPLY WITH CONDITIONS OUTLINED ON APPLICABLE ENCROACHMENT PERMIT.

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
BEDDING PRESSURE PIPE DETAIL		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–02
SCALE: N.T.S	APPROVED BY: ERS	

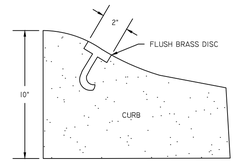


PLAN VIEW

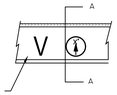
NOTES:
1. CURB MARKING SHALL BE PERPENDICULAR WITH SERVICE LOCATION.
2. CURB MARKING SHALL BE EMBOSSED INTO CURB FACE.
   - A. WATER SERVICES SHALL BE DENOTED WITH A "W".
   - B. SEWER SERVICES SHALL BE DENOTED WITH A "S".
   - C. VALVES SHALL BE DENOTED BY A "V".
   - D. BENDS SHALL BE DENOTED WITH A "B".
3. VALVE AND PIPELINE MARKERS ARE NOT REQUIRED IF A SURVEYORS 2'Ø BRASS DISK IS EMBEDDED ADJACENT TO EMBOSSED LETTER AND MARKED TO INDICATE LOCATION OF REFERENCED ITEM.
4. DISC MUST BE EMBEDDED, MAY NOT PROTRUDE PASS CONCRETE SURFACE OR EMBEDDED MORE THAN 3/8".



DETAIL "A"

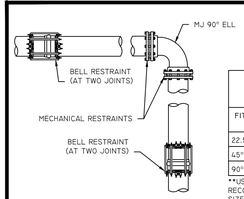


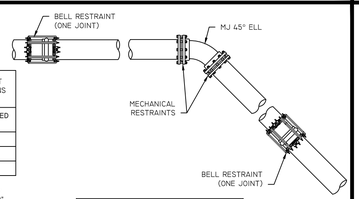
SECTION A-A



DETAIL "B"

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
CURB MARKING DETAIL		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–07
SCALE: N.T.S	APPROVED BY: ERS	

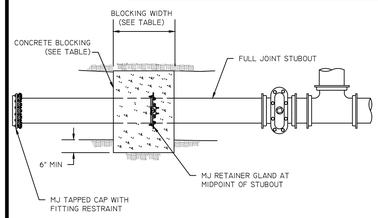




MINIMUM RESTRAINT DISTANCE FOR MAINS 10" AND SMALLER	
FITTING	**RESTRAINED JOINTS
22.5° ELL	1
45° ELL	1
90° ELL	2

**USE ENGINEER'S RECOMMENDATIONS FOR SIZES GREATER THAN 10"

TYPICAL FITTING AND JOINT RESTRAINT

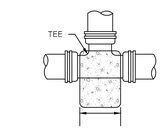


TYPICAL FUTURE STUBOUT

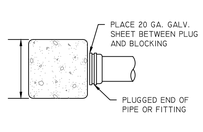
MINIMUM BLOCKING DIMENSIONS		
PIPE SIZE (IN)	BLOCKING BEARING AREA (FT²)	BLOCKING WIDTH (IN)
4	2	24
6	4	24
8	7	36
10	11	36
12	15	36
OVER 12" BY THE DESIGN ENGINEER		

NOTE:
1. THE MINIMUM DIMENSIONS TABLE IS BASED ON AN ASSUMED SOIL BEARING OF 2000 LBS PER SQ. FT. IF BEARING VALUE FOR SOIL IS LESS THAN AREA SHOWN HEREIN SHOULD BE INCREASED ACCORDINGLY.
2. JOINT IS DEFINED TO BE A MINIMUM OF 18" IN LENGTH.

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
MECHANICAL RESTRAINT		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–08
SCALE: N.T.S	APPROVED BY: ERS	

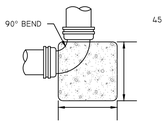


PIPE	AREA AGAINST UNDISTURBED SOIL
4"	1'-2" X 1'-2"
6"	1'-6" X 1'-6"
8"	1'-9" X 1'-9"
10"	2'-2" X 2'-2"
12"	2'-8" X 2'-8"

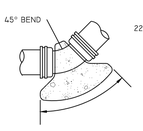


PIPE	AREA AGAINST UNDISTURBED SOIL
4"	1'-2" X 1'-2"
6"	1'-6" X 1'-6"
8"	1'-9" X 1'-9"
10"	2'-2" X 2'-2"
12"	2'-8" X 2'-8"

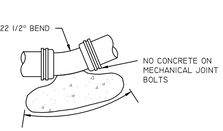
NOTE:
1. CONCRETE THRUST BLOCKING SHALL ONLY BE USED WHERE MECHANICAL RESTRAINTS ARE NOT FEASIBLE. PRIOR APPROVAL MUST BE OBTAINED FROM BJWSA PRIOR TO USING THRUST BLOCKING.



PIPE	AREA AGAINST UNDISTURBED SOIL
4"	1'-0" X 1'-0"
6"	1'-0" X 1'-0"
8"	2'-0" X 2'-0"
10"	2'-6" X 2'-6"
12"	3'-0" X 3'-0"

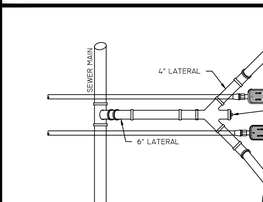


PIPE	AREA AGAINST UNDISTURBED SOIL
4"	1'-0" X 1'-0"
6"	1'-3" X 1'-3"
8"	1'-6" X 1'-6"
10"	2'-0" X 2'-0"
12"	2'-3" X 2'-3"



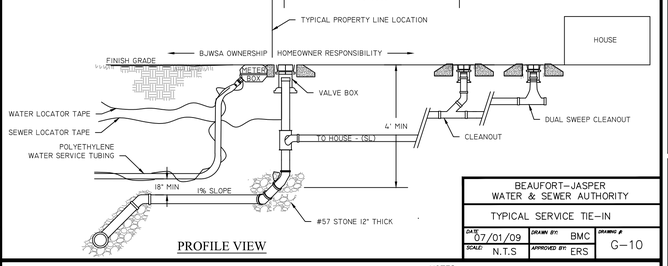
PIPE	AREA AGAINST UNDISTURBED SOIL
4"	1'-0" X 1'-0"
6"	1'-0" X 1'-0"
8"	1'-2" X 1'-2"
10"	1'-6" X 1'-6"
12"	1'-8" X 1'-8"

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
RESTRAINT, THRUST BLOCKING		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–09
SCALE: N.T.S	APPROVED BY: ERS	



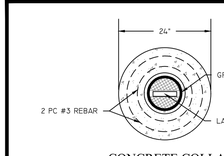
PLAN VIEW

NOTES:
1. CLEANOUTS NOT MORE THAN 70' APART.
2. CLEANOUTS SHALL BE INSTALLED BY PLUMBER AT EACH SERVICE CONNECTION AND AS OTHERWISE REQUIRED.

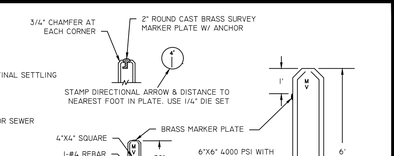


PROFILE VIEW

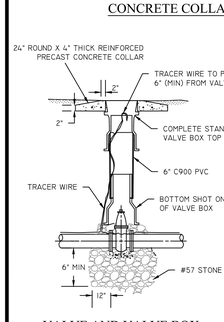
BEAUFORT–JASPER WATER & SEWER AUTHORITY		
TYPICAL SERVICE TIE–IN		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–10
SCALE: N.T.S	APPROVED BY: ERS	



CONCRETE COLLAR



URBAN CONCRETE MARKER

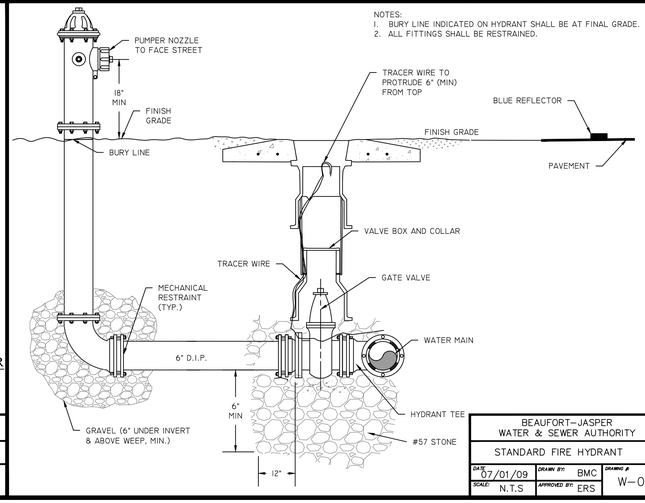


VALVE AND VALVE BOX

NOTES:
1. MARKERS
   - A. VALVE MARKERS ARE REQUIRED FOR EACH VALVE (EXCEPT HYDRANT VALVES). PIPE LINE MARKERS ARE REQUIRED AT FITTINGS AND EACH 700' WHERE LINES RUN THROUGH AN UNDEVELOPED AREA. AR MANHOLE REQUIRES MANHOLE.
   - B. MARKER PAINTING
     WATER - PAINTING NOT REQUIRED
     SEWER INFLUENT - TOP 4" GREEN
     SEWER EFFLUENT - TOP 4" PURPLE
   - C. MARK MARKERS AS FOLLOWS
     MV - MAIN VALVE
     AV - AIR RELEASE VALVE
     PIPELINE - PIPELINE MARKER
   - D. VALVE AND PIPELINE MARKERS IN MOWED AREAS TO BE SET TO AN EXPOSURE OF NOT MORE THAN 18" OR LESS THAN 6" ABOVE FINAL GRADE.
   - E. IF SOILS ARE NOT STABLE ENOUGH TO MAINTAIN THE URBAN MARKERS VERTICAL, CONCRETE FOOTINGS ARE TO BE INSTALLED.
2. VALVE BOX LID SHALL BE WITHIN 1" OF COLLAR TOP. COLLAR TOP IS TO BE NO MORE THAN 1" ABOVE FINAL GRADE AND NO LOWER THAN 1" BELOW FINAL GRADE.
3. CONCRETE COLLAR NOT REQUIRED IN PAVEMENT. VALVE BOX TOP IS TO BE TRAFFIC RATED.

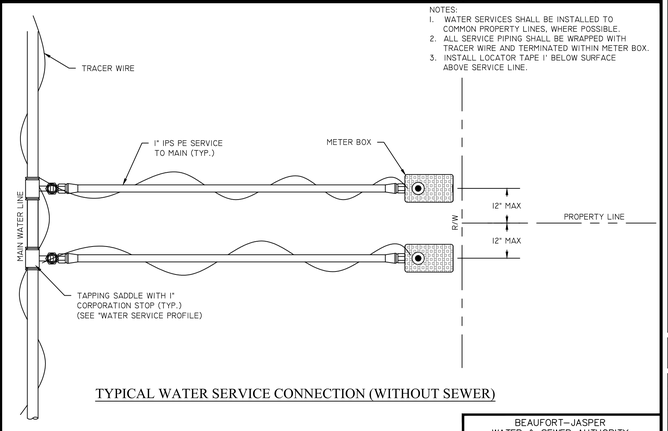
RURAL CONCRETE MARKER

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
STANDARD VALVE DETAIL		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: G–12
SCALE: N.T.S	APPROVED BY: ERS	



NOTES:
1. BURY LINE INDICATED ON HYDRANT SHALL BE AT FINAL GRADE.
2. ALL FITTINGS SHALL BE RESTRAINED.

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
STANDARD FIRE HYDRANT		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: W–03
SCALE: N.T.S	APPROVED BY: ERS	



TYPICAL WATER SERVICE CONNECTION (WITHOUT SEWER)

NOTES:
1. WATER SERVICES SHALL BE INSTALLED TO COMMON PROPERTY LINES, WHERE POSSIBLE.
2. ALL SERVICE PIPING SHALL BE WRAPPED WITH TRACER WIRE AND TERMINATED WITHIN METER BOX.
3. INSTALL LOCATOR TAPE 1' BELOW SURFACE ABOVE SERVICE LINE.

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
WATER SERVICE PLAN VIEW		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: W–08
SCALE: N.T.S	APPROVED BY: ERS	

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
3		
4		
5		
6		
7		

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-5258
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS

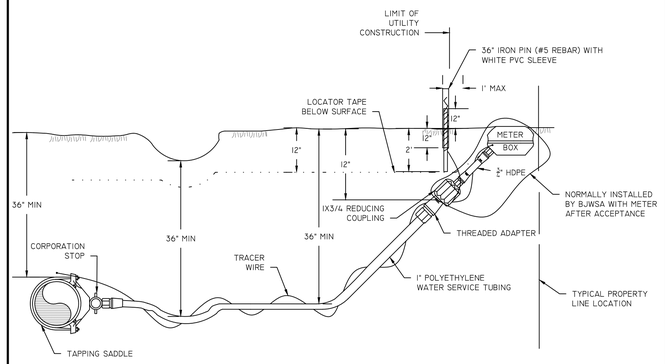
UTILITY DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

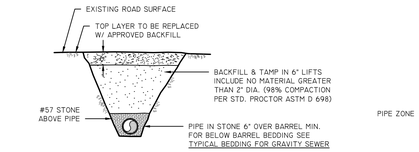
PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

SHEET
C702

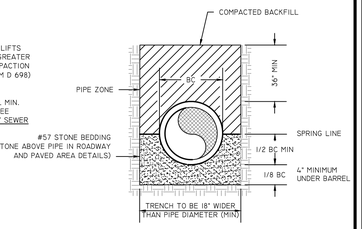
IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY



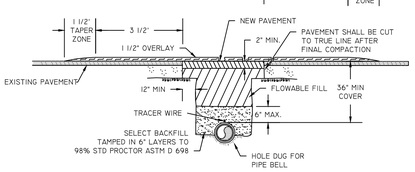
BEAUFORT–JASPER WATER & SEWER AUTHORITY		
WATER SERVICE PROFILE		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: W–09
SCALE: N.T.S	APPROVED BY: ERS	



UNPAVED ROADWAY BEDDING DETAIL



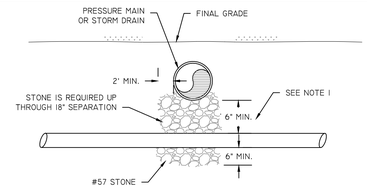
TYPICAL BEDDING FOR GRAVITY SEWER PIPE



PAVED AREA DETAIL

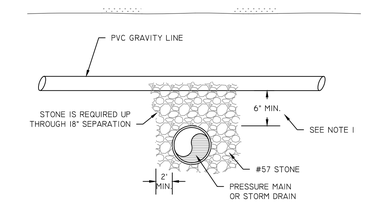
NOTES:
1. PAVEMENT CUT TO EXTEND 12" BEYOND EDGES OF TRENCH INSTALLATION CUT. FINAL CUT TO BE MADE AFTER FINAL COMPACTION.
2. MATCH EXISTING PAVEMENT TYP. THICKNESS IS TO BE 2" UNLESS EXISTING IS THICKER.
3. ALL INSTALLATIONS IN PUBLIC ROADWAYS SHALL COMPLY WITH CONDITIONS OUTLINED ON APPLICABLE ENCROACHMENT PERMIT, IF MORE STRINGENT.

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
BEDDING DETAIL, GRAVITY PIPE		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: S–01
SCALE: N.T.S	APPROVED BY: ERS	



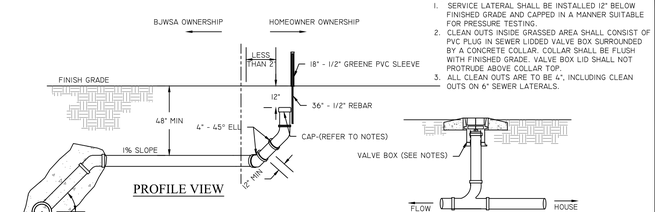
GRAVITY MAIN CROSSING UNDER STORM DRAIN / PRESSURE MAIN

NOTE:
1. SYSTEMS SHOULD NOT BE DESIGNED WITH LESS THAN 12" SEPARATION. IF LESS SEPARATION IS UNAVOIDABLE, WRITTEN AUTHORIZATION FROM BJWSA IS REQUIRED.



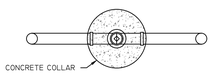
GRAVITY MAIN CROSSING OVER STORM DRAIN / PRESSURE MAIN

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
GRAVITY MAIN CROSSING		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: S–03
SCALE: N.T.S	APPROVED BY: ERS	



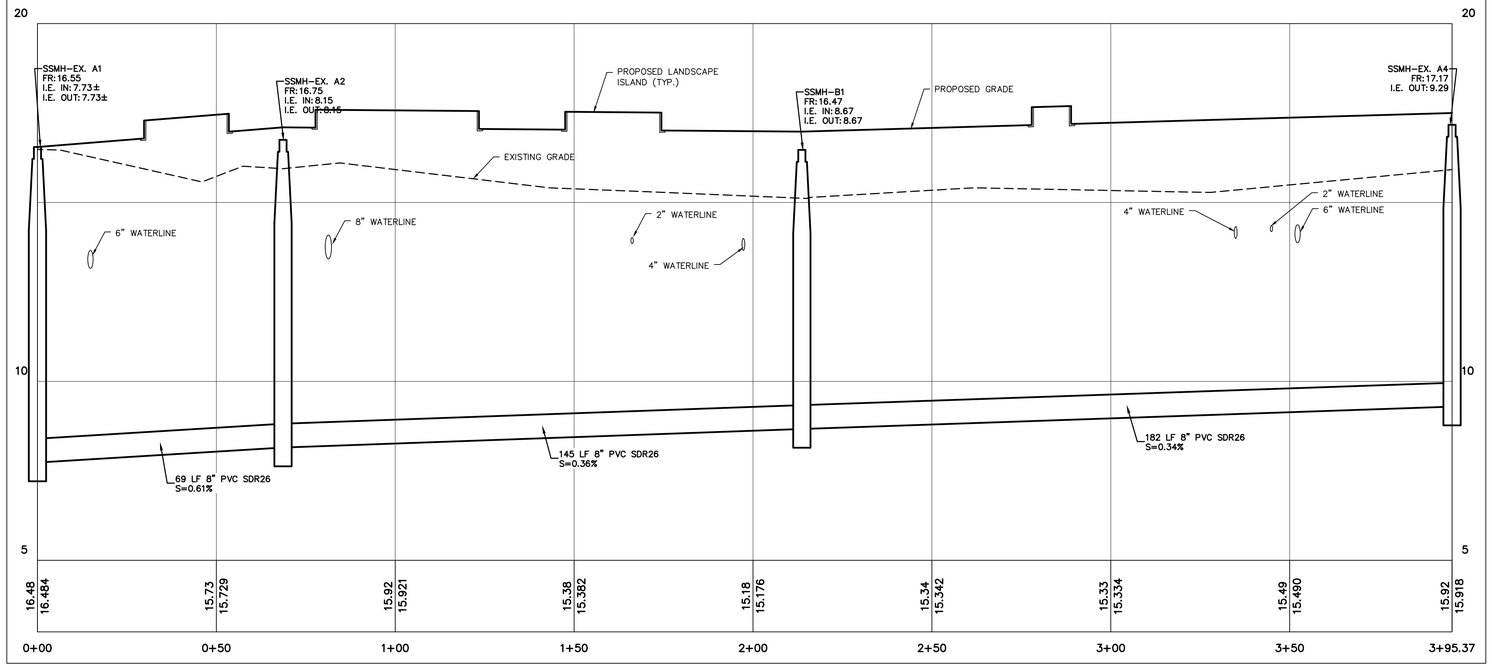
NOTES:
1. SERVICE LATERAL SHALL BE INSTALLED 12" BELOW FINISHED GRADE AND CAPPED IN A MANNER SUITABLE FOR PRESSURE TESTING.
2. CLEAN OUTS INSIDE GRASSED AREA SHALL CONSIST OF PVC PLUG IN SEWER LIDDED VALVE BOX SURROUNDED BY A CONCRETE COLLAR. COLLAR SHALL BE FLUSH WITH FINISHED GRADE. VALVE BOX LID SHALL NOT PROTRUDE ABOVE COLLAR TOP.
3. ALL CLEAN OUTS ARE TO BE 4", INCLUDING CLEAN OUTS ON 6" SEWER LATERALS.

CLEAN OUT INSTALLATION - PROFILE VIEW



CLEAN OUT - PLAN VIEW

BEAUFORT–JASPER WATER & SEWER AUTHORITY		
SEWER SERVICE, SINGLE		
DATE: 07/01/09	DRAWN BY: BMC	DRAWING #: S–11
SCALE: N.T.S	APPROVED BY: ERS	



SANITARY SEWER PROFILE

NO.	DESCRIPTION	DATE
7		
6		
5		
4		
3		
2		
1	PLAN REVISIONS	

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P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA
WELLES LOM, LLC
CHICAGO, ILLINOIS

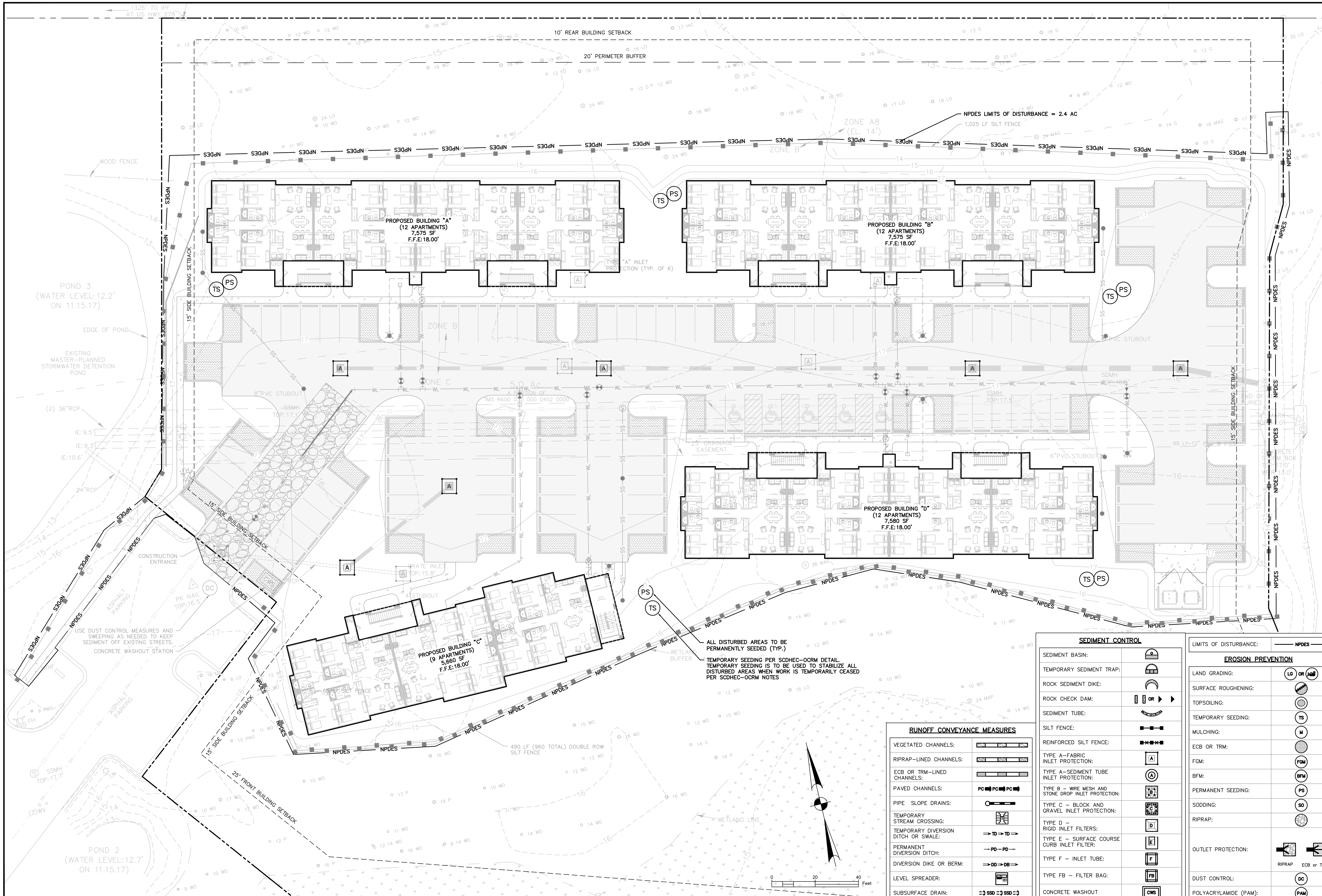
UTILITY DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

SHEET
C703

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



RUNOFF CONVEYANCE MEASURES

VEGETATED CHANNELS:	
RIPRAP-LINED CHANNELS:	
ECB OR TRM-LINED CHANNELS:	
PAVED CHANNELS:	PC PC PC
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	TD TD
PERMANENT DIVERSION DITCH:	PD PD
DIVERSION DIKE OR BERM:	DD DB
LEVEL SPREADER:	
SUBSURFACE DRAIN:	SSD SSD

SEDIMENT CONTROL

SEDIMENT BASIN:	
TEMPORARY SEDIMENT TRAP:	
ROCK SEDIMENT DIKE:	
ROCK CHECK DAM:	OR
SEDIMENT TUBE:	
SILT FENCE:	
REINFORCED SILT FENCE:	
TYPE A-FABRIC INLET PROTECTION:	A
TYPE A-SEDIMENT TUBE INLET PROTECTION:	A
TYPE B - WIRE MESH AND STONE DROP INLET PROTECTION:	B
TYPE C - BLOCK AND GRAVEL INLET PROTECTION:	C
TYPE D - RIGID INLET FILTERS:	D
TYPE E - SURFACE COURSE CURB INLET FILTER:	E
TYPE F - INLET TUBE:	F
TYPE FB - FILTER BAG:	FB
CONCRETE WASHOUT	CWS

LIMITS OF DISTURBANCE:	NPDES

EROSION PREVENTION

LAND GRADING:	LG OR
SURFACE ROUGHENING:	
TOPSOILING:	
TEMPORARY SEEDING:	TS
MULCHING:	M
ECB OR TRM:	
FGM:	FGM
BFM:	BFM
PERMANENT SEEDING:	PS
SODDING:	SO
RIPRAP:	
OUTLET PROTECTION:	RIPRAP / ECB or TRM
DUST CONTROL:	DC
POLYACRYLAMIDE (PAM):	PAM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 03/27/18

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION WARD EDWARDS, INC. No. C00152

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
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4		
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7		

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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

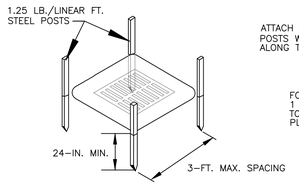
INTERMEDIATE EROSION CONTROL PLAN

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

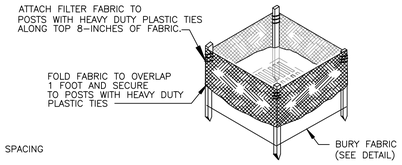
PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=20'

SHEET
C801

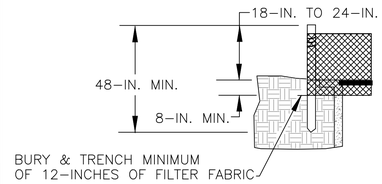
IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



POST INSTALLATION DETAIL



FILTER FABRIC INSTALLATION DETAIL



FILTER FABRIC BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC–07 PAGE 1 of 2

NOT TO SCALE — FEBRUARY 2014 DATE

TYPE A – FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36–inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12–inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24–inches above the ground.

TYPE A – POST REQUIREMENTS

1. Silt Fence posts must be 48–inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38–inches and a nominal "T" length of 1.48–inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24–inches. A minimum height of 1– to 2– inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3–feet on center.

TYPE A – INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC–07 PAGE 2 of 2

GENERAL NOTES — FEBRUARY 2014 DATE

TEMPORARY SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET	40 LBS/AC												
RYE, GRAIN	56 LBS/AC												
RYEGRASS	50 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET OR JAPANESE MILLET	40 LBS/AC												
RYE, GRAIN OR OATS	56 LBS/AC 75 LBS/AC												
RYEGRASS	50 LBS/AC												

TS TEMPORARY SEEDING - COASTAL

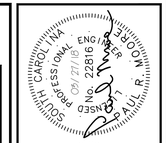
DETAIL 02370-011

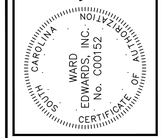
PERMANENT SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET BAHIAGRASS	10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BAHIAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET ATLANTIC COASTAL PANICGRASS	10 LBS/AC 15 LBS/AC PLS												
BROWNTOP MILLET SWITCHGRASS (ALAMO) LITTLE BLUESTEM SERICEA LESPEDEZA	10 LBS/AC 8 LBS/AC PLS 4 LBS/AC 20 LBS/AC												
BROWNTOP MILLET WEEPING LOVEGRASS	10 LBS/AC 8 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET BAHIAGRASS	10 LBS/AC 40 LBS/AC												
RYE, GRAIN BAHIAGRASS CLOVER, CRIMSON (ANNUAL)	10 LBS/AC 40 LBS/AC 5 LBS/AC												
BROWNTOP MILLET BAHIAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON KOBE LESPEDEZA (ANNUAL)	10 LBS/AC 12 LBS/AC 10 LBS/AC												
BROWNTOP MILLET BAHIAGRASS BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 20 LBS/AC 6 LBS/AC 40 LBS/AC												
BROWNTOP MILLET SWITCHGRASS LITTLE BLUESTEM INDIANGRASS	10 LBS/AC 8 LBS/AC PLS 3 LBS/AC PLS 3 LBS/AC PLS												

PS PERMANENT SEEDING - COASTAL

DETAIL 02370-010





NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

INTERMEDIATE EROSION CONTROL DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

SHEET
C802

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

1325' TO IPF AT US HWY 278

10' REAR BUILDING SETBACK

20' PERIMETER BUFFER

WOOD FENCE

PROPOSED BUILDING "A"
(12 APARTMENTS)
7,575 SF
F.F.E:18.00'

PROPOSED BUILDING "B"
(12 APARTMENTS)
7,575 SF
F.F.E:18.00'

NO PARKING SIGN

15' SIDE BUILDING SETBACK

POND 3
(WATER LEVEL:12.7'
ON 11.15.17)

CONCRETE SIDEWALK (TYP)

ASPHALT PAVING (TYP)

EDGE OF POND

EXISTING MASTER-PLANNED STORMWATER DETENTION POND

ZONE A8
(EL. 14')

ZONE B

ZONE C
5.0 Ac.
A PORTION OF
TMS R600 039 000 0452 0000

8"PVC STUBOUT

SSMH
TOP:17.1'

(2) 36"RCP

IE:9.5'

IE:9.3'

IE:10.6'

24"RCP

15' SIDE BUILDING SETBACK

GRATE INLET
BURIED

SAW CUT CLEAN EDGE

ASPHALT PARKING

RNF

FH

SSMH
TOP:17.7'

(2)WV

POND 2
(WATER LEVEL:12.7'
ON 11.15.17)

GRATE INLET
TOP:15.6'

8"PVC STUBOUT

PROPOSED BUILDING "C"
(9 APARTMENTS)
5,660 SF
F.F.E:18.00'

15' SIDE BUILDING SETBACK

25' FRONT BUILDING SETBACK

PROPOSED BUILDING "D"
(12 APARTMENTS)
7,580 SF
F.F.E:18.00'

WHEEL STOP (TYP.)

HANDICAP RAMP TYPE "B"

HANDICAP PARKING SEE ACCESSIBLE PARKING DETAIL

PERVIOUS PAVERS PARKING (TYP.)

0.5' HEADER CURB (TYP.)

WETLAND BUFFER

WETLANDS

WETLAND LINE

SSMH
TOP:17.5'

SDMH
TOP:16.5'

8"PVC STUBOUT

24' DRAINAGE EASEMENT

98 LF-12" RCP

SDMH
TOP:17.0'

CONCRETE STORM BOX
17.0'
W:13.0'

15' SIDE BUILDING SETBACK

NO PARKING SIGN MOUNTED TO DUMPSTER ENCLOSURE GATE

CONCRETE DUMPSTER PAD

0 20 40 Feet

PAVING HATCH LEGEND

PROPOSED CONCRETE PAVING	
PROPOSED SIDEWALK/ CONCRETE	
REINFORCED GRASS FIRE LANE	
PROPOSED AGGREGATE/ STONES	
PROPOSED ASPHALT (LIGHT DUTY)	
PROPOSED ASPHALT (HEAVY DUTY)	
MILL & OVERLAY ASPHALT	
PROPOSED CONCRETE PAVERS	

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

PROFESSIONAL ENGINEER
SOUTH CAROLINA
No. 22816
LICENSED
TIMOTHY R. MOORE
5/17/18

CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA
WARD EDWARDS, INC.
No. C00152

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
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OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

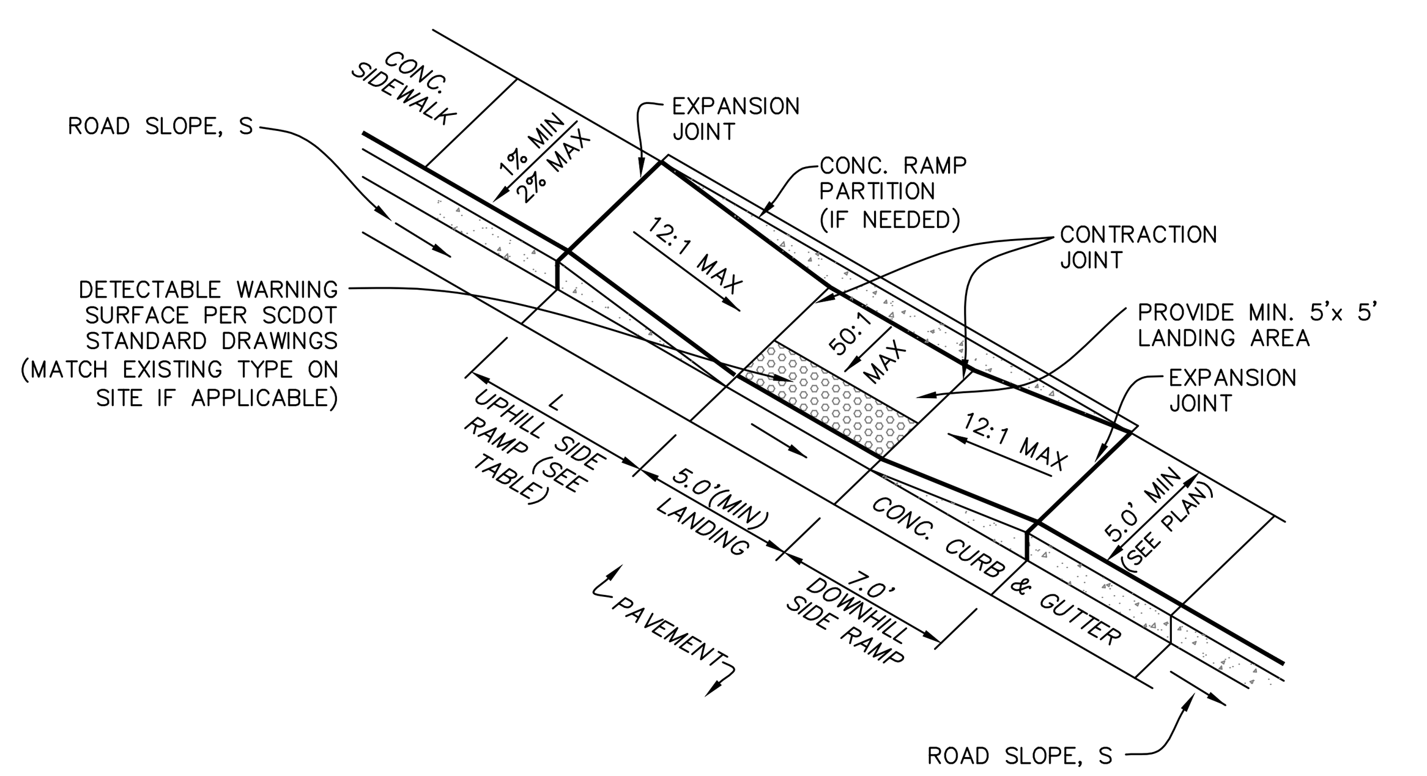
WELLES LOM, LLC
CHICAGO, ILLINOIS

PAVING PLAN

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	1"=20'

SHEET
C901

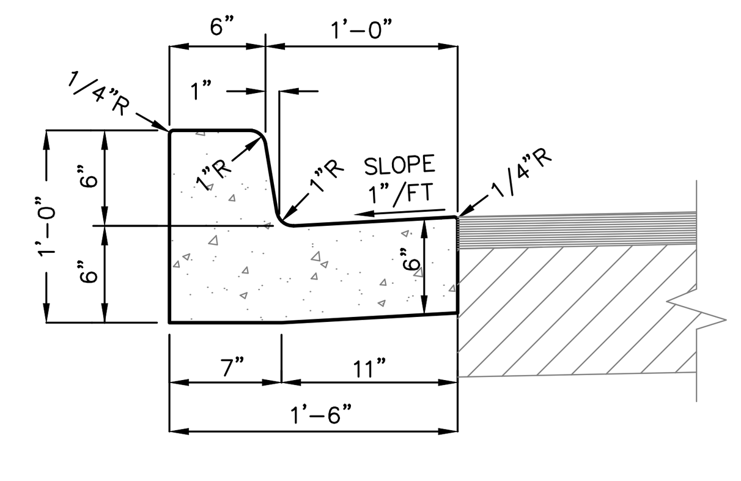


ROAD SLOPE, S (%)	L, (UPHILL SIDE RAMP), [FT]
S ≤ 1%	7'-0"
1% < S ≤ 3%	10'-0"
S > 3%	15'-0"

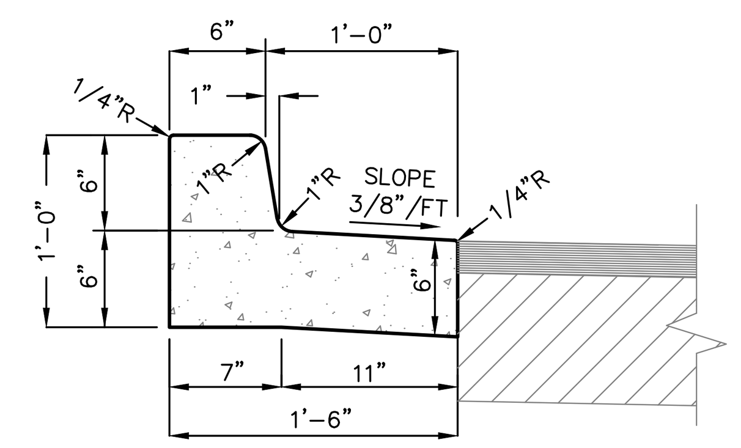
NOTES:
1. ALL CONCRETE SHALL BE CLASS A, 3,000 PSI.
2. REFER TO STANDARD DETAILS FOR SIDEWALKS, CURB & GUTTER, AND CONCRETE JOINTS.
3. CURB RAMP SHALL BE BROOM-FINISHED TO PROVIDE A ROUGH, SKID-RESISTANT SURFACE. ALL JOINTS AND EDGES SHALL BE HAND TOOLED.
4. GUTTER FLOW LINE AND PLAN PROFILE SHALL BE MAINTAINED THROUGH THE RAMP AREA. THE SURFACE OF THE RAMP SHALL BE FLUSH WITH THE FLOWLINE OF THE CURB AND GUTTER.
5. PLACE DETECTABLE WARNING IN LINE AND FLUSH WITH BACK OF "DROPPED CURB".
6. SIDE SLOPES OF THE RAMP ARE NOT TO EXCEED 12:1 (8.33%) AT ANY LOCATION WHERE PEDESTRIAN TRAFFIC CROSSES THE RAMP.
7. CROSS SLOPES OF SIDEWALK, RAMP, AND LANDING TO BE BETWEEN 100:1 (1%) AND 50:1 (2%).

CONCRETE CURB RAMP TYPE-B

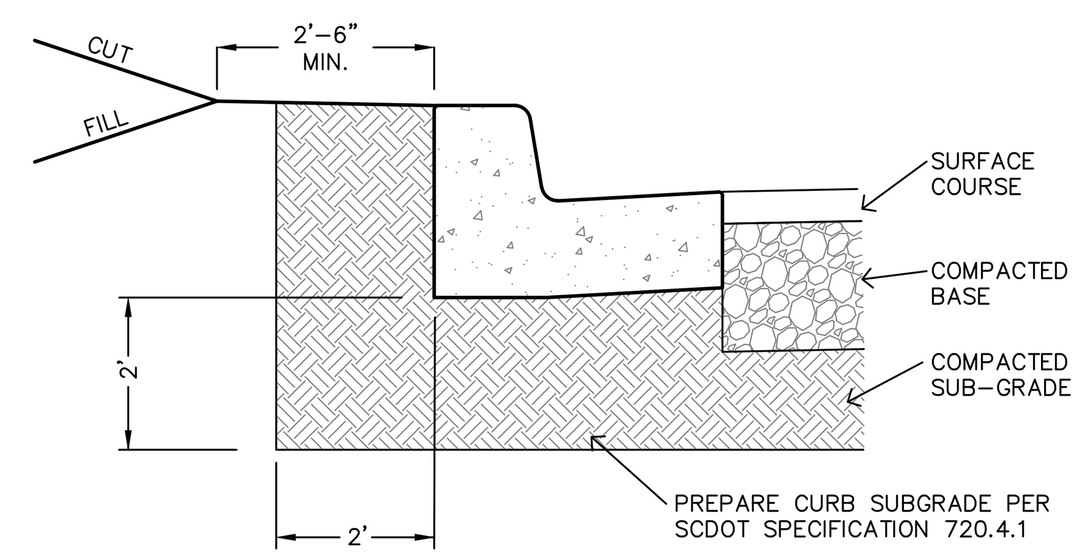
DETAIL 03300-029A



NORMAL GUTTER



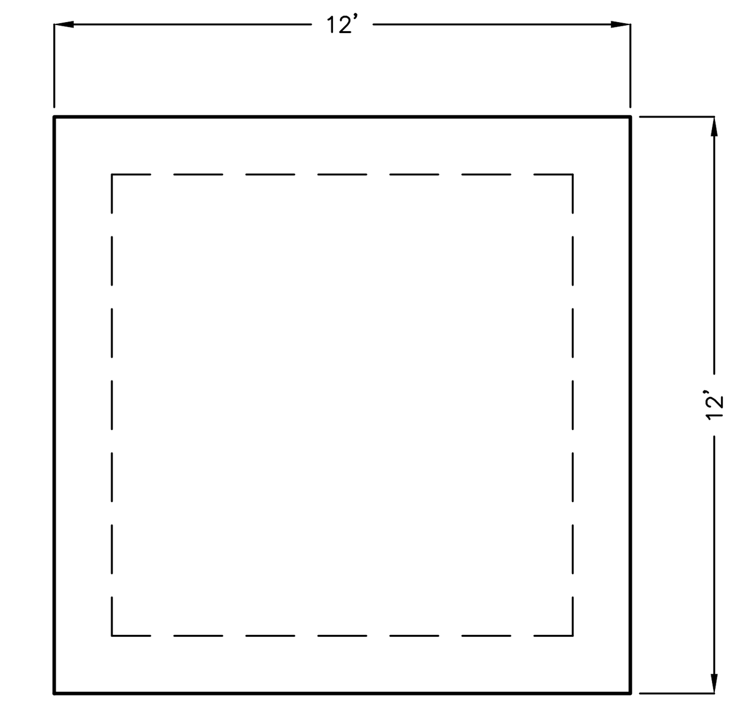
PITCHED GUTTER



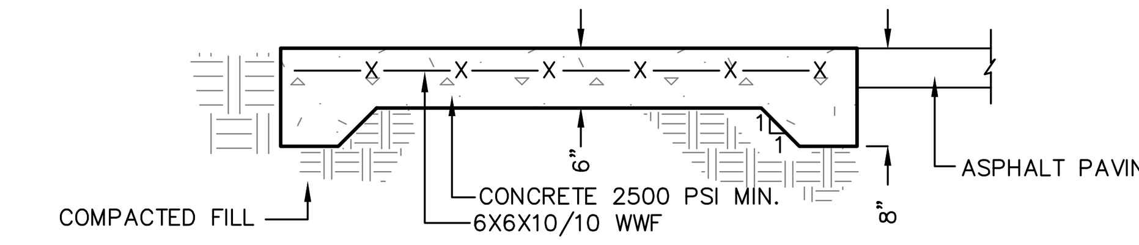
NOTES:
1. USE NORMAL OR PITCHED GUTTER AS REQUIRED TO MATCH PAVING SLOPE.
2. ALL CONCRETE SHALL BE 3,000 PSI.
3. PROVIDE CONTRACTION JOINTS EVERY TEN FEET (10').
4. PROVIDE EXPANSION JOINTS EVERY FIFTY (50') FEET AND AT ALL TANGENT POINTS.
5. PROVIDE EXPANSION JOINTS WHERE CURB ABUTS SIDEWALKS OR OTHER RIGID STRUCTURES.
6. EXPANSION JOINTS SHALL BE 1/2" WITH PRE-MOLDED JOINT FILLER.
7. TOOL ALL EXPOSED EDGES & JOINTS TO 1/4" RADIUS.
8. PROVIDE LIGHT BROOM FINISH.

18" CURB AND GUTTER

DETAIL 03300-004A



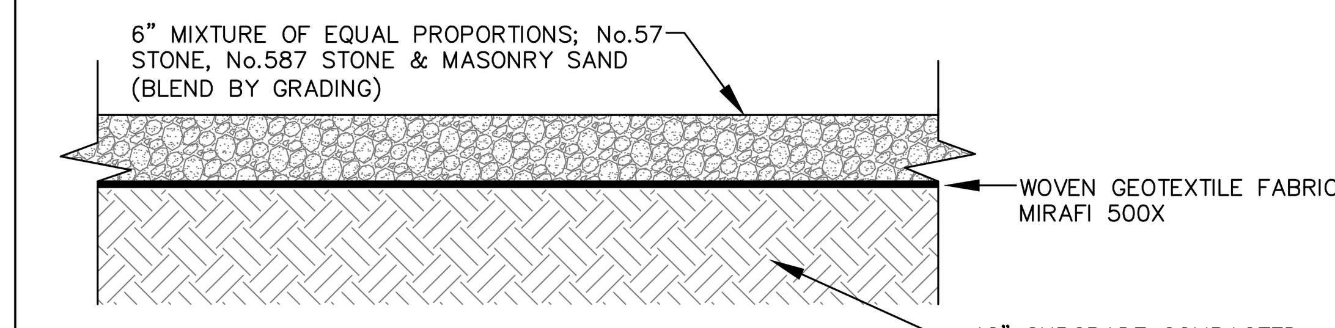
PLAN



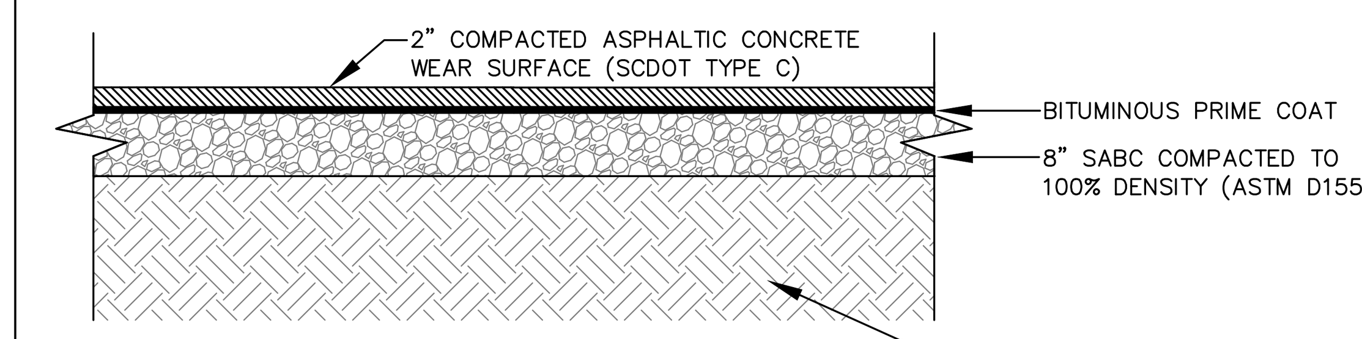
SECTION

CONCRETE DUMPSTER PAD

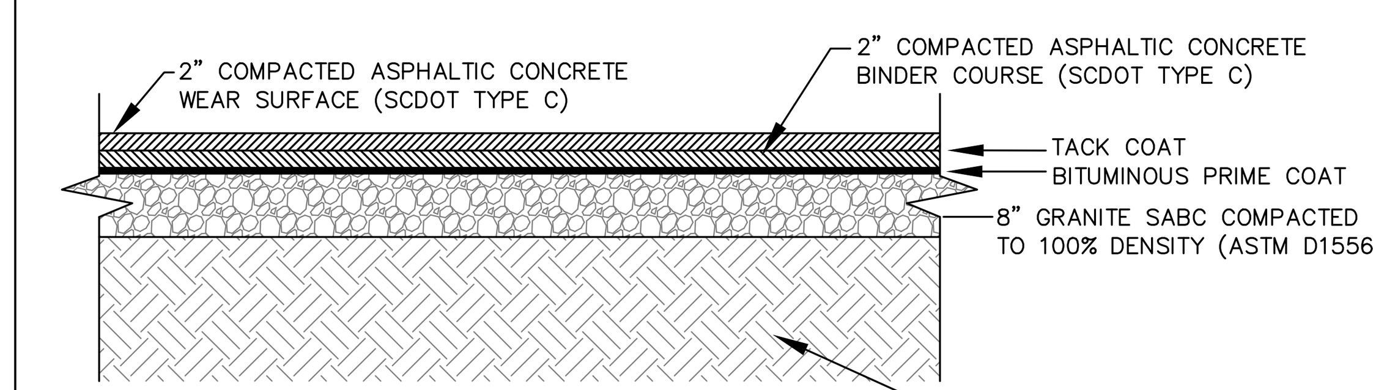
DETAIL 03300-016



AGGREGATE PAVING SECTION



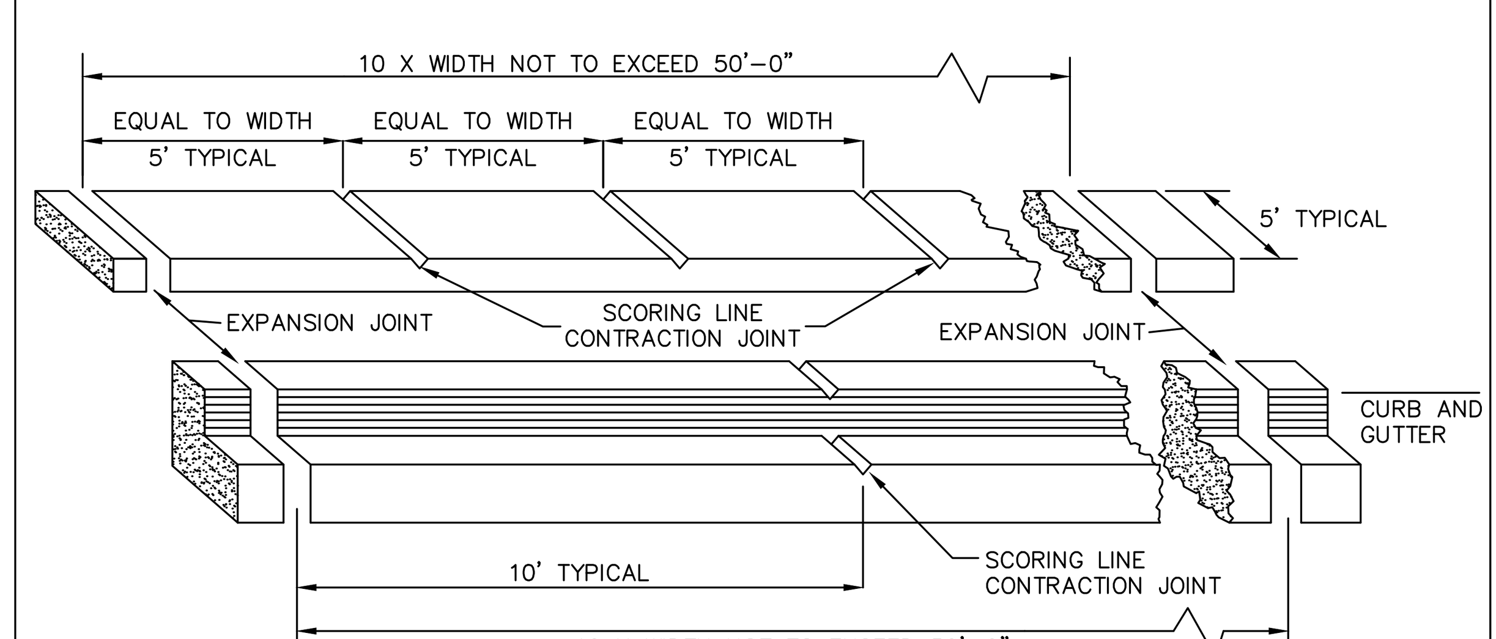
ASPHALT PAVING SECTION



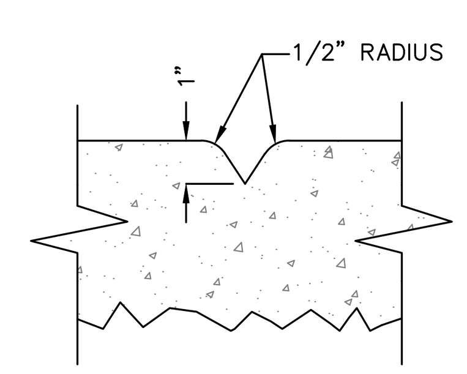
HEAVY DUTY ASPHALT PAVING SECTION

TYPICAL PAVING SECTIONS

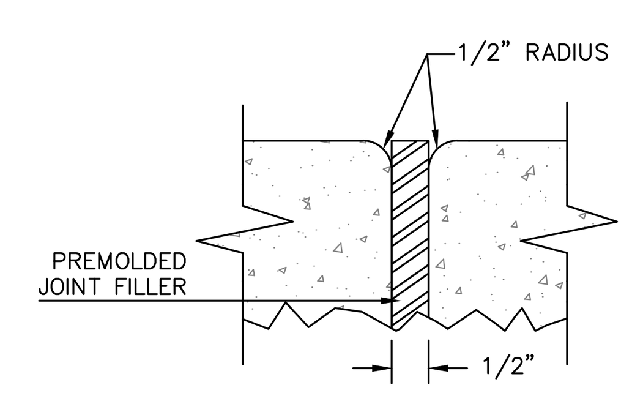
DETAIL 02740-016



ISOMETRIC



CONTRACTION JOINT
SCORING LINE

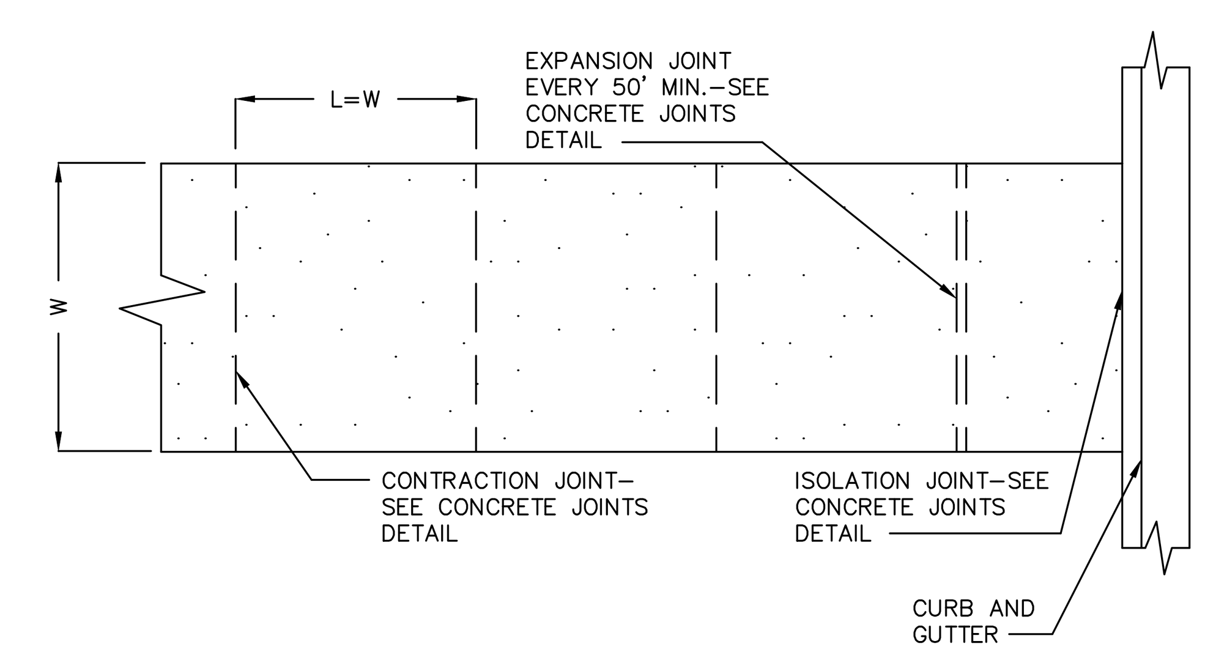


EXPANSION JOINT

NOTES:
1. EXPANSION JOINTS, 1/2 INCH THICK, SHALL BE PLACED IN THE SIDEWALK AND CURBING AT THE POINT OF CURVATURE (PC) AND POINT OF TANGENCY (PT) OF ALL CURVES, AT THE OUTER EDGES OF DRIVEWAYS, AND AT UNIFORM INTERVALS AS SHOWN. EXPANSION JOINTS SHALL MEET SCDOT SPECIFICATION SECTION 702.2.2.1.
2. TRANSVERSE SCORING LINES (CONTRACTION JOINTS) IN THE SIDEWALK SHALL BE PLACED BETWEEN EXPANSION JOINTS AT UNIFORM INTERVALS EQUAL TO THE WIDTH OF THE WALK AS SHOWN.
3. LONGITUDINAL SCORING LINES WILL BE REQUIRED IN WALKS WIDER THAN 5 FEET OR AS DIRECTED BY THE ENGINEER.
4. TRANSVERSE CONTRACTION JOINTS IN THE CURBING SHALL BE PLACED BETWEEN EXPANSION JOINTS AT UNIFORM 10' INTERVALS.
5. TRANSVERSE AND LONGITUDINAL SCORING LINES SHALL BE A DEPTH OF 1" AND NOT LESS THAN 1/4 INCH OR MORE THAN 1/2 INCH IN WIDTH. THE CORNERS OF THE SCORING LINES SHALL HAVE A 1/2 INCH MINIMUM RADII.
6. JOINTS IN THE CURB AND GUTTER SHALL ALIGN WITH CORRESPONDING JOINTS IN THE SIDEWALK.

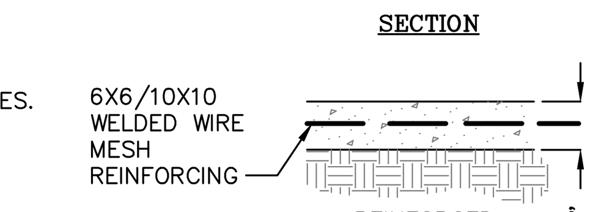
EXPANSION JOINTS AND SCORING LINES

DETAIL 03300-007A



NOTES:
1. W = VARIES, REFER TO STAKING PLAN. FILL IN BASED ON SITE PLAN
2. L = WIDTH OF PAVING UNLESS OTHERWISE INDICATED ON PLAN.
3. SLOPE = AS INDICATED ON GRADING PLAN, NOT TO EXCEED 2% CROSS OR 8.33% LONGITUDINAL.
4. ALL CONCRETE SHALL BE CLASS A 3000 PSI.
5. FINISH: BROOM WITH HAND TOOLED JOINTS AND EDGES.

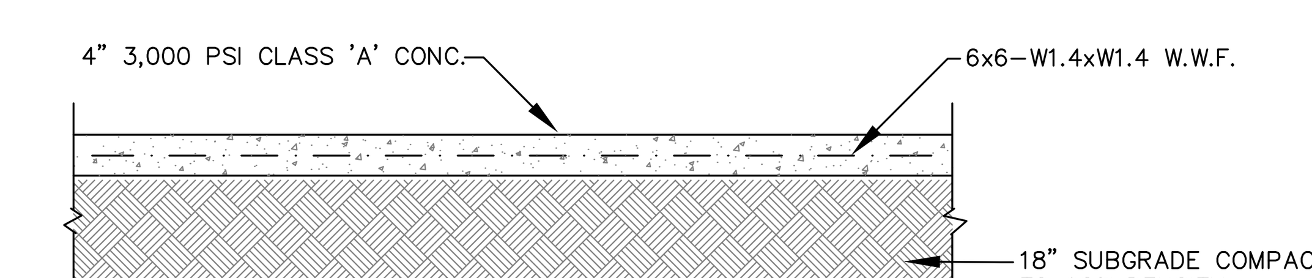
SECTION



REINFORCED

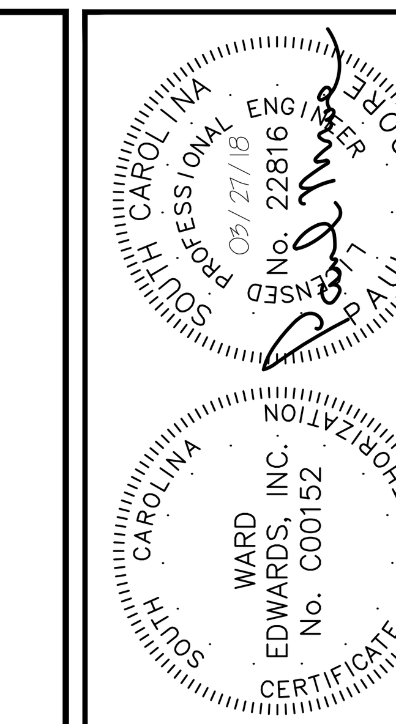
CONCRETE SIDEWALK

DETAIL 03300-006



CONCRETE PAVING SECTION

DETAIL #03300-034



NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		

PLAN REVISIONS

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

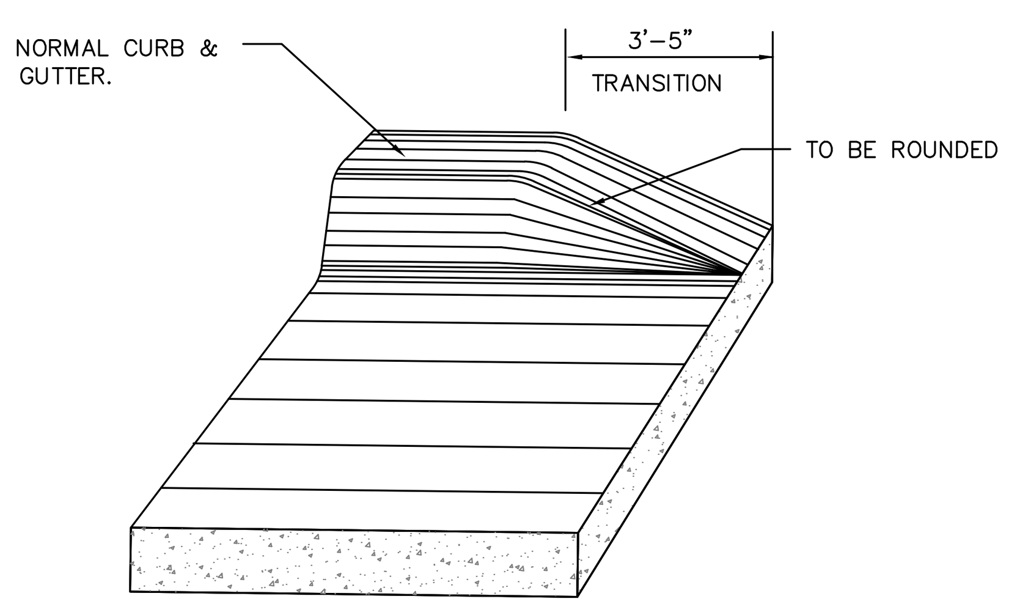
PAVING DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

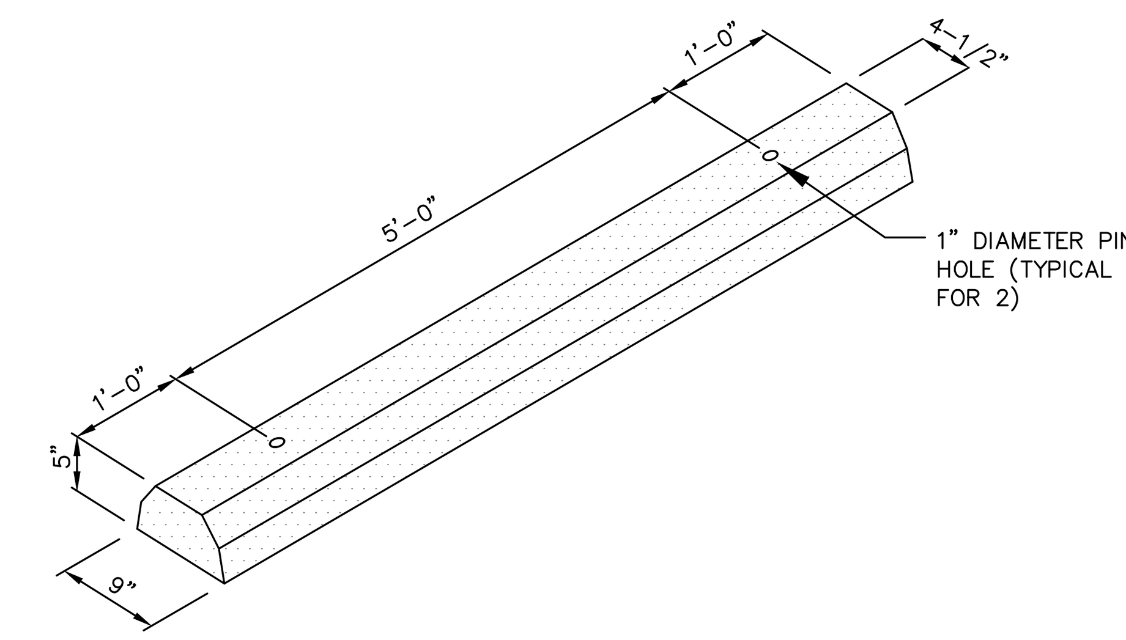
SHEET
C902

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

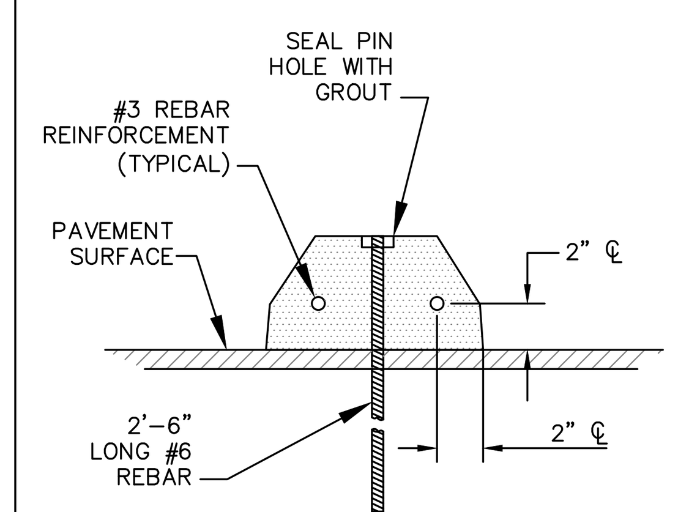


CURB AND GUTTER TRANSITION DETAIL

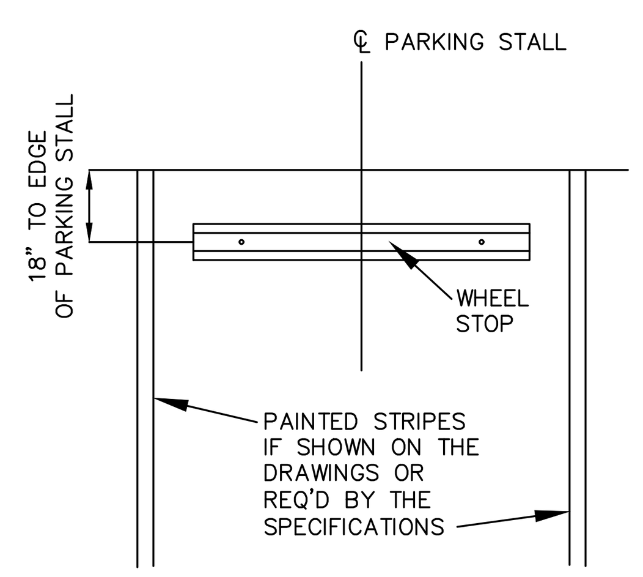
DETAIL 03300-020



ISOMETRIC



SECTION

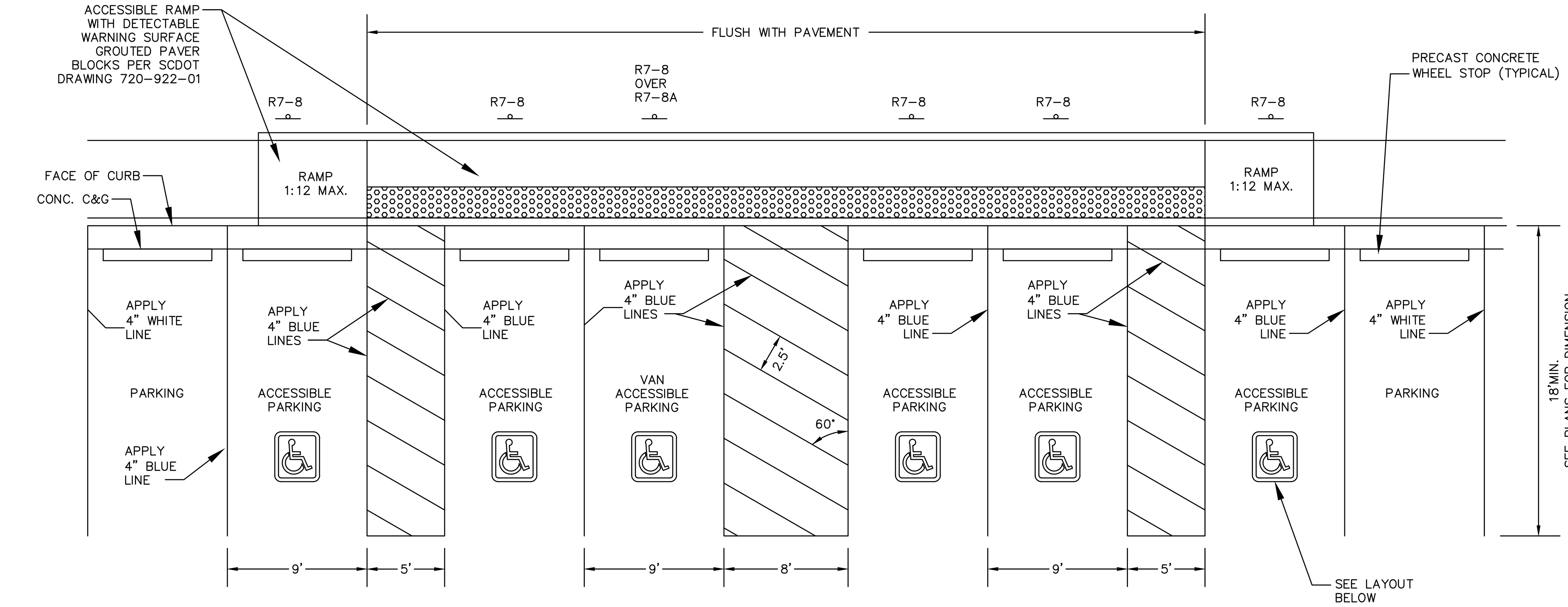


INSTALLATION PLAN

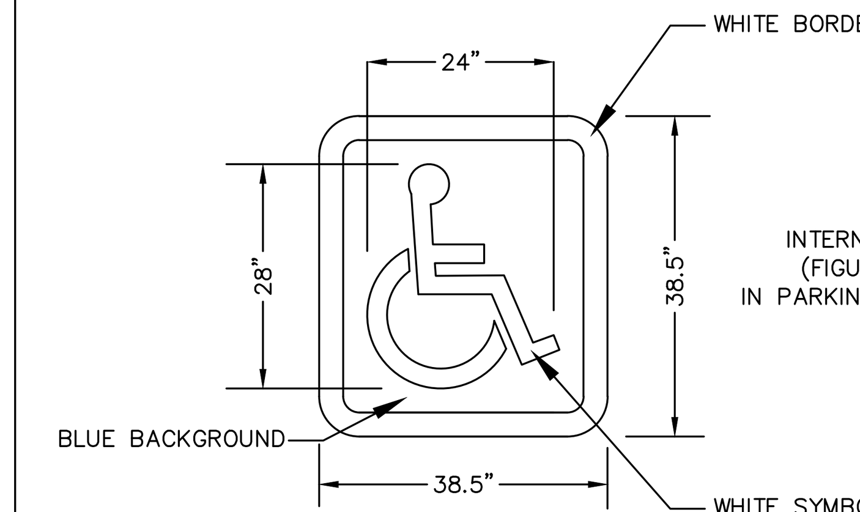
NOTES:

1. WHEEL STOPS SHALL BE STEEL REINFORCED PRECAST UNITS CONSISTING OF SCDOT CLASS 3000 CONCRETE, MINIMUM. ALTERNATE MATERIAL COMPOSITION MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. WHEEL STOPS SHALL BE INSTALLED PERPENDICULAR TO PARKING STALL AND SHALL BE PLACED A MINIMUM OF 18" FROM END OF PARKING STALL OR OBSTRUCTION.
3. ANCHORING PINS SHALL BE DRIVEN FLUSH TO THE TOP OF THE WHEEL STOP AND PIN HOLES SHALL BE GROUTED UPON INSTALLATION.

PRECAST CONCRETE WHEEL STOP

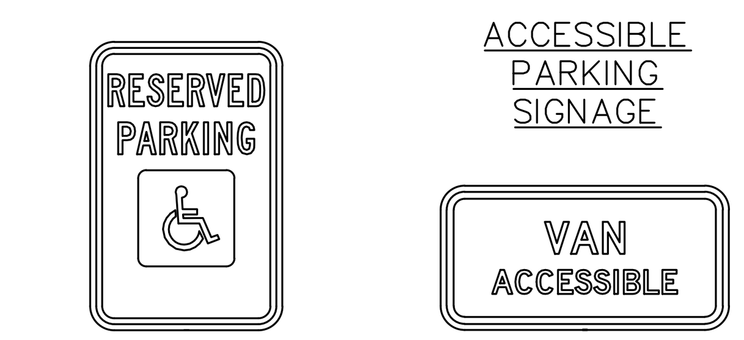


NOTE:
ACCESS AISLE FOR VAN-ACCESSIBLE SPACES SHALL BE ON PASSENGER SIDE OF THE PARKING SPACE.



INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING (FIGURE 3B-22, MUTCD, 2009) TO BE CENTERED IN PARKING SPACE APPROX. 3.5' FROM THE ENTRANCE OF THE PARKING SPACE

ACCESSIBLE PARKING SIGNAGE



R7-8
(12" X 18")

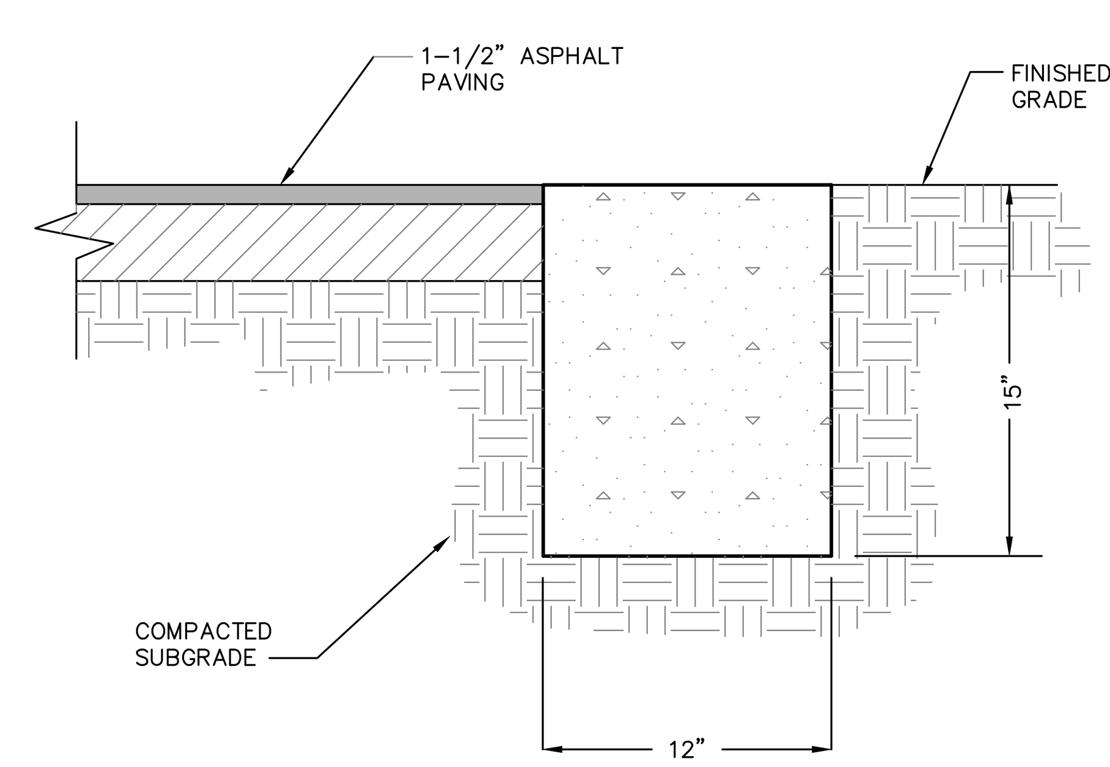
R7-8A
(12" X 6')

SIGN NOTES

1. MOUNT SIGN TO 2-3/8" DIA. GALVANIZED ROUND SIGN POSTS (TYP) WITH POST CAP AT TOP.
2. PROVIDE ALL MOUNTING HARDWARE AS REQUIRED FOR COMPLETE INSTALLATION.
3. POST SHALL BE SET 3' BELOW GRADE IN 0.2 CY 4,000 PSI CONCRETE.
4. MOUNTING HEIGHT 84" FROM GRADE TO BOTTOM EDGE OF R7-8.

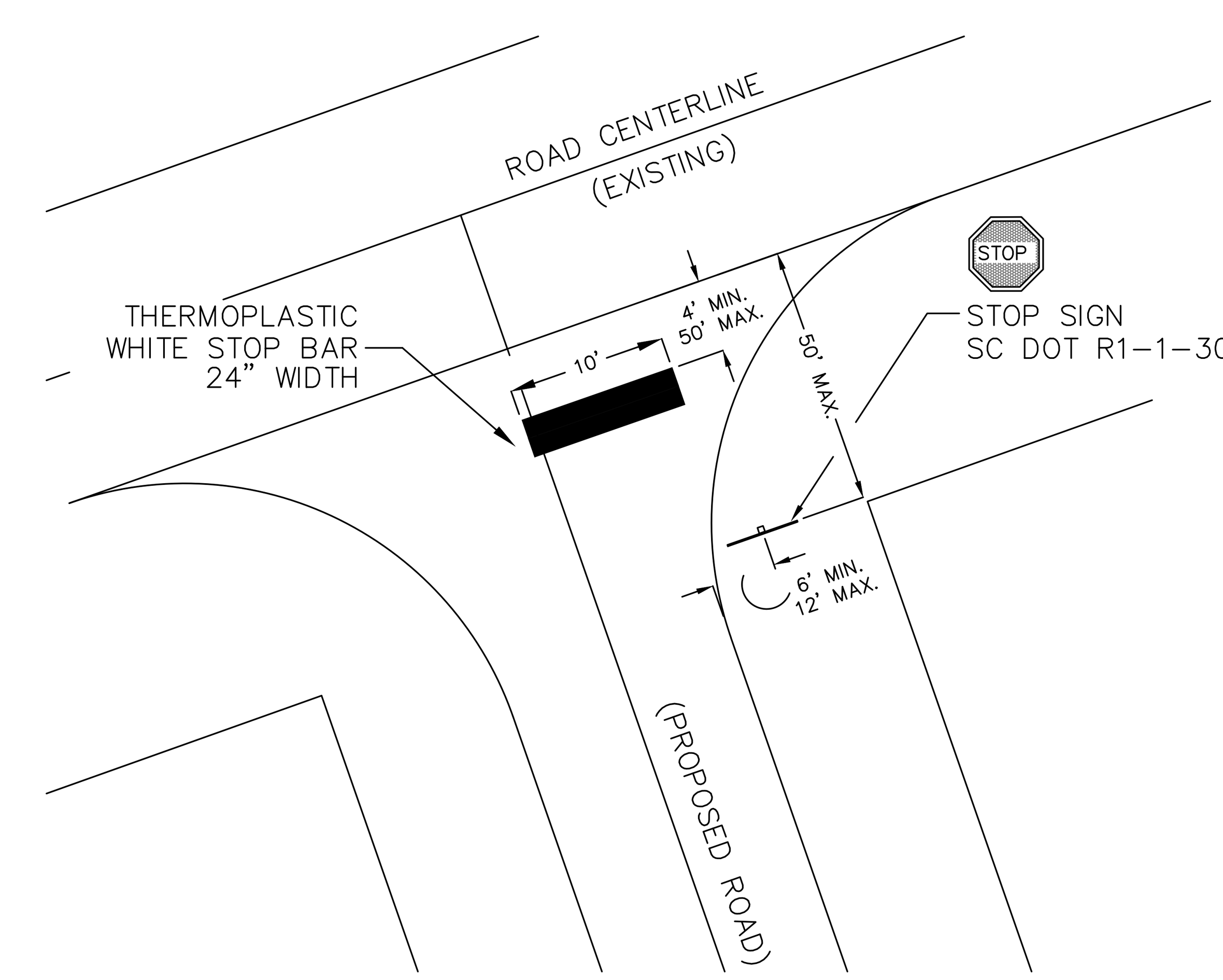
ACCESSIBLE PARKING DETAIL

DETAIL 02740-007A



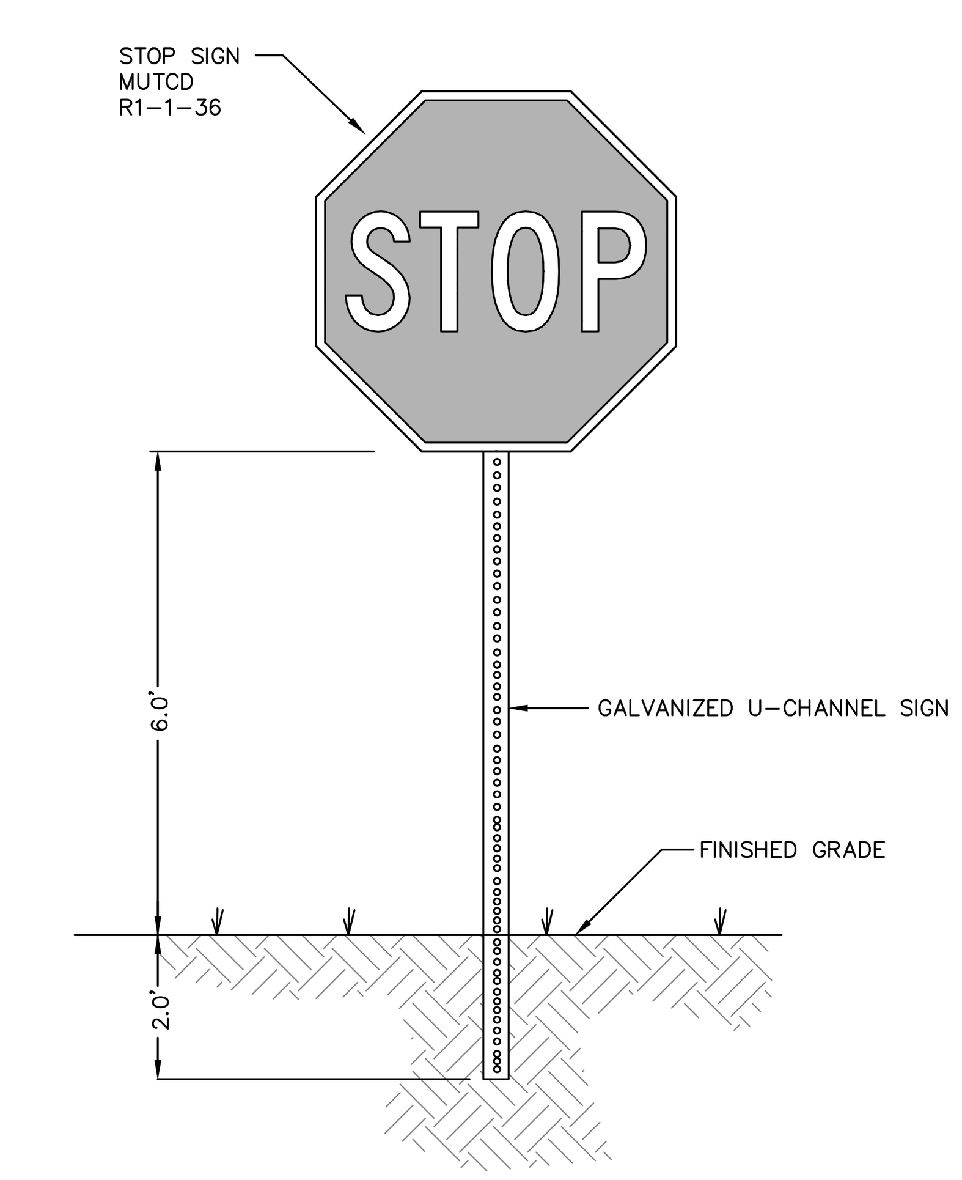
FLUSH HEADER CURB

DETAIL 03300-005



TYPICAL STOP SIGN & STOP BAR STRIPING AT INTERSECTION

DETAIL #02740-018



NOTE:
ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (LATEST EDITION) AND THE DEPARTMENT OF TRANSPORTATION STANDARDS AT THE LOCATIONS SHOWN ON THE PLANS.

STOP SIGN

DETAIL #02890-002

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 03/27/18

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
1		
2		
3		
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5		
6		
7		

PLAN REVISIONS

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

OSPREY COVE APARTMENTS
BEAUFORT COUNTY, SOUTH CAROLINA

WELLES LOM, LLC
CHICAGO, ILLINOIS

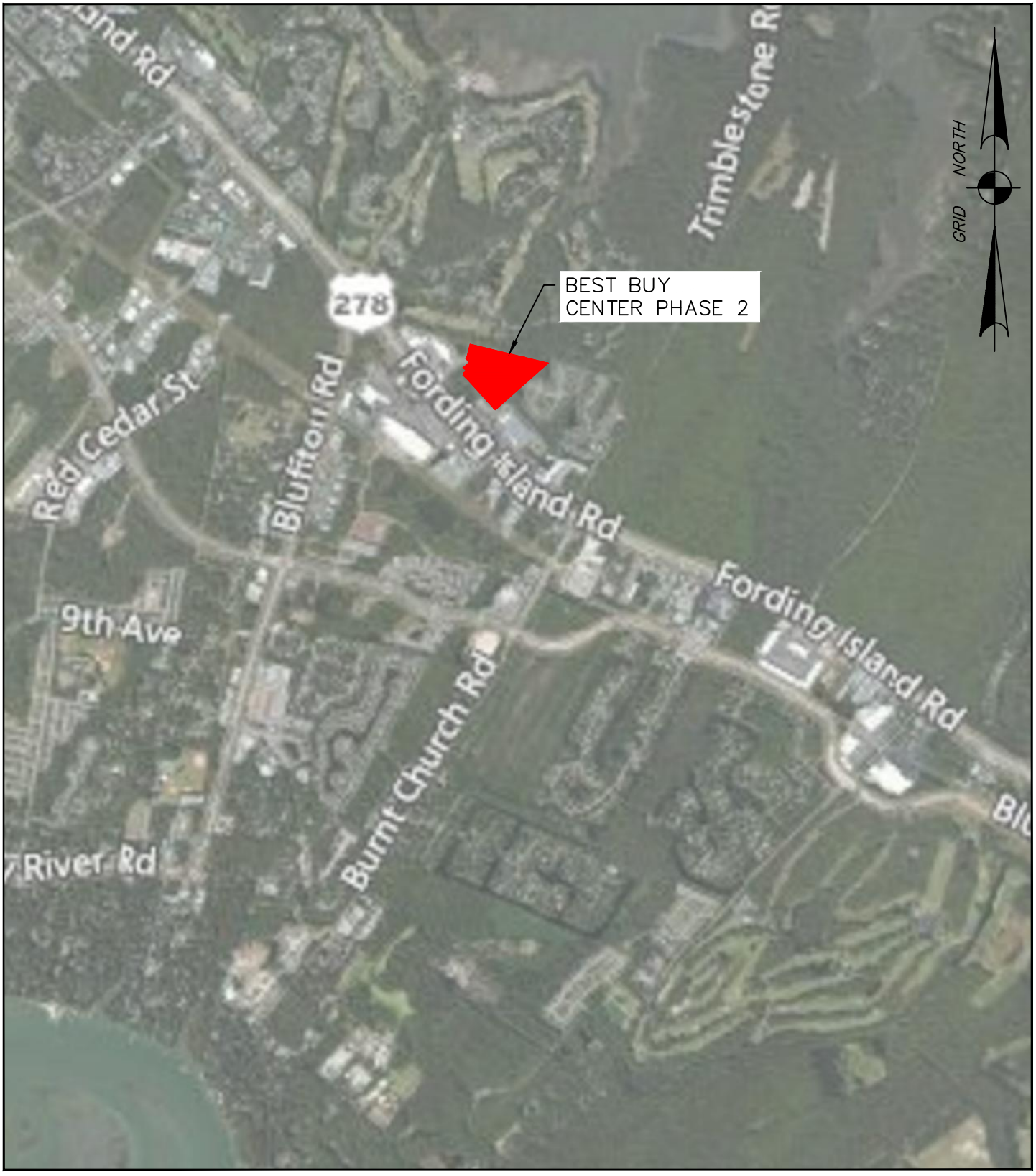
PAVING DETAILS

☑ NOT FOR CONSTRUCTION
☐ RELEASED FOR CONSTRUCTION

PROJECT #:	170262
DATE:	03/27/18
DESIGNED BY:	TCR
CHECKED BY:	PRM
SCALE:	AS NOTED

SHEET
C903

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



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PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

VICINITY MAP

BEST BUY CENTER PHASE 2

LOCATION: BLUFFTON, SC
DATE: 11/09/17
PROJECT #: 170262

SHEET: 1 OF 1
SCALE: 1"=2,000'

NOTES

1. P.E.C.I. ONLY PROVIDES LIGHTING DESIGNS AS REQUESTED BY THE CUSTOMER OR AS REQUESTED BY LOCAL GOVERNING AGENCIES.

2. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE LIGHT VALUES, LOCATIONS, LIGHT TYPE, POLE TYPE, AND MOUNTING HEIGHT ARE IN COMPLIANCE WITH ALL LOCAL GOVERNING AGENCY REQUIREMENTS AND/OR RECOMMENDATIONS.

3. ANY OBSTRUCTIONS, OR THE INTRODUCTION OF, WITHIN THE LIGHTED SPACE MAY PRODUCE RESULTS THAT ARE DIFFERENT FROM THE PREDICTED VALUES.

THESE PLANS ARE FOR THE APPROVAL AND CONSTRUCTION OF PALMETTO ELECTRIC COOPERATIVE, INC. OUTDOOR LIGHTS ONLY.

GRAPHIC SCALE

30 0 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F CRESCENT POINTE GOLF COURSE LLC
TMS R600 032 000 0216 0000

N/F SR 278 LLC
TMS R600 032 000 0452 0000

%%UBuilding "A"
(12 Apartments)

%%UBuilding "B"
(12 Apartments)

%%UBuilding "C"
(9 Apartments)

%%UBuilding "D"
(12 Apartments)

5.0 Ac.
A PORTION OF
TMS R600 032 000 0452 0000

10' REAR BUILDING SETBACK
20' PERIMETER BUFFER
15' SIDE BUILDING SETBACK
25' FRONT BUILDING SETBACK
WETLAND LINE
WETLANDS
POND 2
ASPHALT PARKING
PK NAIL TOP:16.5'
TRNF
FH
LP

LED LARGE AUTOBAHN

APPLICATIONS
Walkways, driveways, malls, shopping centers, commercial and industrial complexes, and residential areas.

SPECIFICATIONS
UL1572 Listed Suitable for Wet Locations
Heavy-duty die-cast aluminum housing and door
Polyester powder finish standard in dark bronze

Luminaire Location Summary

LumNo	Label	X	Y	Z	Orient	Tilt
1	AUTOBAHN LARGE	2047357.	154511.4	20	74.478	0
2	AUTOBAHN LARGE	2047172.	154632.3	20	255.323	0
3	AUTOBAHN LARGE	2047304.	154600.2	20	258.93	0
4	AUTOBAHN LARGE	2047307.	154502.6	20	168.17	0
5	AUTOBAHN LARGE	2047239.	154518.2	20	163.787	0
6	AUTOBAHN LARGE	2047168.	154554.5	20	130.851	0
7	AUTOBAHN LARGE	2047534.	154542.8	20	347.44	0
8	AUTOBAHN LARGE	2047565.	154438.0	20	163.645	0
9	AUTOBAHN LARGE	2047470.	154483.0	20	77.007	0
10	AUTOBAHN LARGE	2047442.	154566.6	20	257.391	0

Calculation Summary

Label	CalcType	Units	Avg	Max	Min
CalcPts_1	Illuminance	Fc	1.50	7.1	0.2

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
→	10	AUTOBAHN LARGE	SINGLE	N.A.	0.720	320EQ LED 3000K AT 20' MOUNTING HEIGHT ON 25' WOOD POLE

PALMETTO ELECTRIC COOPERATIVE, INC.
1 COOPERATIVE WAY
HARDEEVILLE, SOUTH CAROLINA 29927
(843) 208-5551 / FAX (843) 208-5532

PALMETTO ELECTRIC COOPERATIVE INC.
A Touchstone Energy™ Partner

REMARKS:

DESIGNED BY:	TJH
CHECKED BY:	ENG
DRAWN BY:	AKM
DATE:	3/8/18
SCALE:	1" = 30'
PROJECT NO.:	1802002L
MAP NO:	66546047
SHEET NO.	1 OF 1

PRIMARY PROPOSAL FOR
OSPREY COVE
278
BEAUFORT COUNTY, SOUTH CAROLINA

NAME: N:\Maps\S\Jobs\1802002L.DVG

PALMETTO ELECTRIC COOPERATIVE, INC.

Beaufort County Development Division
Planning Department
PO Drawer 1228
Beaufort, SC 29901

Approval for Outdoor Lighting

Thursday, March 08, 2018

PROJECT # - 1802002L

PROJECT NAME - Osprey Cove

PROJECT LOCATION - Best Buy Phase II

PROJECT TYPE -

The Beaufort County Planning Department has reviewed the following project and has determined that it is in accordance with the provisions of the Development Standards Ordinance (DSO) for Site Lighting and recommends the design approved for construction.

To be approved and signed by Beaufort County Planning Department ONLY.

Signature: _____ Title: _____

Print Name: _____ Date: _____

☐ Approved As Submitted ☐ Approved With Modifications Listed Below: ☐ Denied with Reasons Noted Below:

Please Note: As applicant/owner/developer, it is your responsibility to make sure that Palmetto Electric receives a copy of this site lighting approval.

A Touchstone Energy℠ Partner
The power of human connections
ONE COOPERATIVE WAY • HARDEEVILLE, SC • 29927
PHONE: 843-208-5511 • FAX: 843-208-5532

Monthly Outdoor Light Cost For:

Osprey Cove

Best Buy Phase II

Job Number: 1802002L

Total Monthly Cost: $393.00
Total Allowable Footage: 1000

Watt	Type	Option	Fixture	Pole Ft Height	Pole Type	LightID	Cost Per Fixture	Fixture Count	Total
320E	LED	Single	Autobahn Large	25	Wood	ALEE14	$39.30	10	**$393.00**

Additional Charges: Where it is necessary for the Cooperative to install more than the allowed lengths of overhead or underground wiring for each pole stated below, charges for the excess length will be as follows:

	Allowance	*Excess Length Charge*
Overhead	*150 ft*	*$0.50 per foot*
Underground	*100 ft*	*$1.75 per foot*
Road Bores		*$9.50 per foot*

Any contribution-in-aid of construction required by the COOPERATIVE for unusual conditions (transformers, road bores, lengthy spans, etc.) shall be paid in full by the CUSTOMER in advance of actual installation.

Thursday, March 08, 2018

ILLUMA KNIGHT PROGRAM

LETTERS OF APPROVAL

* Lettters of approval are generated by PECI and are included in both the Customer and Town/County packages. It is the customer's responsibility to ensure that:

1) The lighting package is submitted to the appropriate local governing body for approval.

2) PECI receives the signed approval from the local governing body.

CONTRACTS

* Contracts are generated after letters of approval have been received by PECI.

* The original contract, signed by the customer, must be returned to PECI in order for staking, scheduling and construction of the lighting project to begin. Faxed contracts CANNOT be accepted.

Work cannot begin until PECI has a signed contract

INSTALLATION CHARGES

* Each pole location includes 100' of underground wire and 150' of overhead wire from any PECI energy source, i.e., transformer, pedestal, or existing outdoor light at no additional charge to the customer by use of mechanical trenching methods.

* Any underground footage over 100' will be charged at a rate of $1.75 per foot and overhead footage over 150' will be charged at a rate of $.50 per foot.

CONDUIT

* All light wire will be in schedule 40 conduit provided by PECI and must be buried at a minimum depth of 36".
* For parking lots or roads, crossing sleeves must be schedule 40 conduit at a minimum depth of 36" and provided by the customer.

POLES

* Poles are set directly into soil at depths specified by the manufacturer.

LIGHT OPERATION

* All PECI outdoor lights are operated by a photocell which turns the lights on at dusk and off at dawn. There are no exceptions.

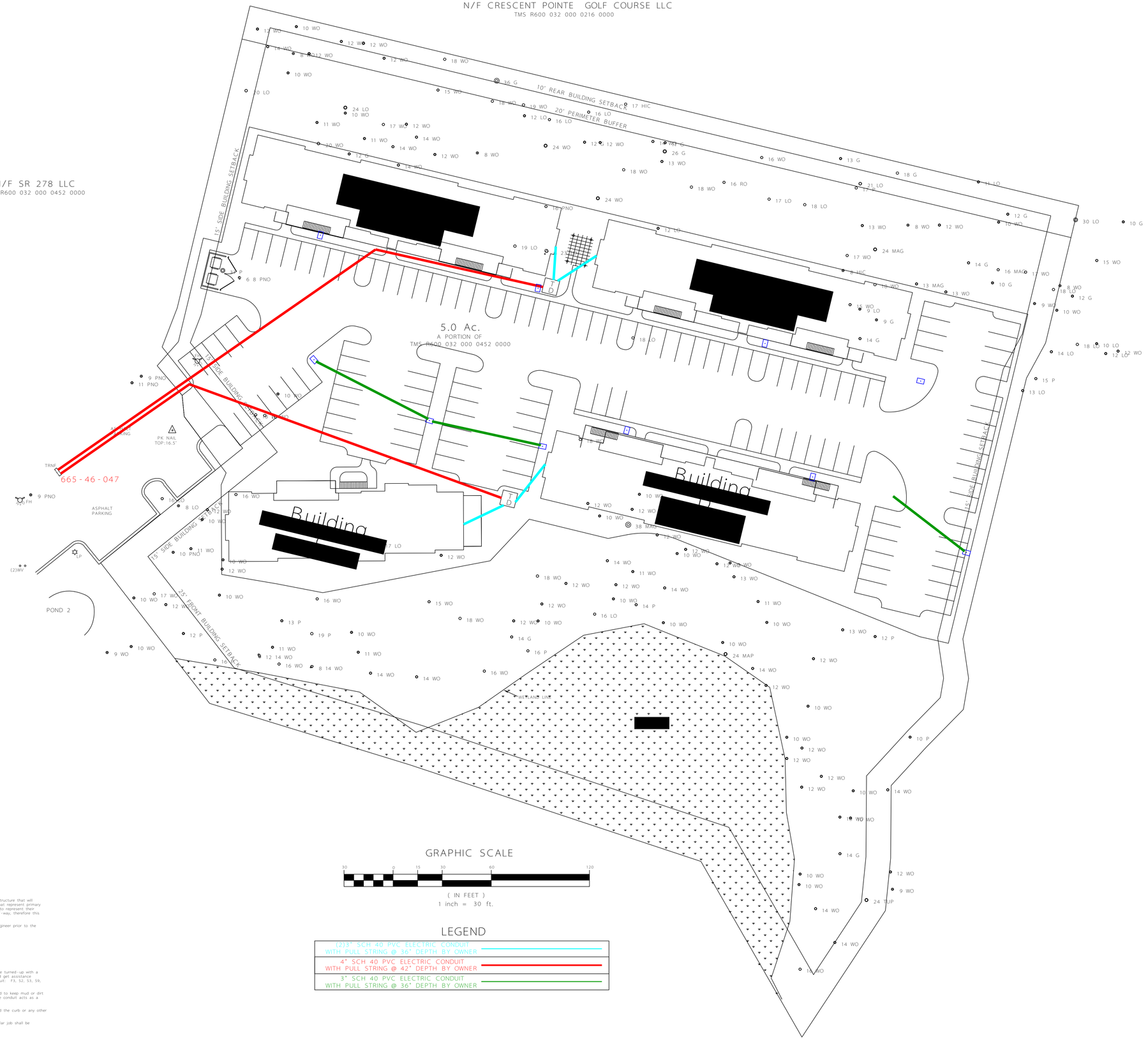
AID-TO-CONSTRUCTION

* Additional costs may include road bores, charged at $9.50 per foot, and/or additional PECI equipment, i.e., transformers, pedestals. This fee, if needed, must be paid, in full, prior to any construction.

LANDSCAPING IRRIGATION

* Any landscaping that must be removed for installation of the lights is the responsibility of the customer to remove and re-install as necessary.

* It is the responsibility of the customer to locate irrigation pipe and any other customer owned buried equipment to avoid conflicts with new installation.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

LEGEND

- (2)3" SCH 40 PVC ELECTRIC CONDUIT WITH PULL STRING @ 36" DEPTH BY OWNER
- 4" SCH 40 PVC ELECTRIC CONDUIT WITH PULL STRING @ 42" DEPTH BY OWNER
- 3" SCH 40 PVC ELECTRIC CONDUIT WITH PULL STRING @ 36" DEPTH BY OWNER

Redline Notes:

1. This redline drawing is a schematic representation of the electrical infrastructure that will be installed for this project and is not GPS correct. Usually all of the lines that represent primary and secondary cable are buried in the same trench, but are shown separately to represent their connectivity. This trench will be on private property and not the road right-of-way, therefore this area should be clear and to rough grade before construction can begin.

2. Coordinate with a Palmetto Electric Cooperative, Inc. (PEC) field engineer prior to the installation to ensure clarity of what is expected.

3. All conduit shall be schedule 40 electrical PVC.

4. All conduit elbows shall be sweep.

5. All conduit joints shall be glued.

6. All conduits shall have pull string.

7. All conduits that end at a pad-mounted piece of equipment shall be turned-up with a sweep 90 degree elbow. If the equipment is existing, treat it as energized and get assistance from PEC). These are typical types of equipment that require turned-up conduit: F3, S2, S3, S9, S11, S12,TDVXL or Vm.

8. All conduit that does not end at a piece of equipment shall be capped to keep mud or dirt out and shall be marked to ease in locating the end. This could be where the conduit acts as a sleeve crossing a parking lot, road or wetland.

9. When the conduit is being used as a sleeve, extend it 5 feet beyond the curb or any other obstruction or utility.

10. Typical depths are given in the legend, and the details of any particular job shall be verified with the PEC) field representative.

NAME: M:\Mapl18\Jobs\1802002P.DWG

PALMETTO ELECTRIC COOPERATIVE, INC.
1 COOPERATIVE WAY
HARDEEVILLE, SOUTH CAROLINA 29927
(843) 208-5551 / FAX (843) 208-5532

PALMETTO ELECTRIC COOPERATIVE INC.
A Touchstone Energy™ Partner

REMARKS:

DESIGNED BY:	TJH
CHECKED BY:	ENG
DRAWN BY:	AKM
DATE:	2/26/18
SCALE :	1" = 30'
PROJECT NO.:	1802002P
MAP NO:	66546047

SHEET NO.
1
OF
1

PRIMARY PROPOSAL FOR
OSPREY COVE
278
BEAUFORT COUNTY, SOUTH CAROLINA

PALMETTO
ELECTRIC COOPERATIVE INC.

One Cooperative Way Hardeeville, SC 29927-5123 843-208-5551

March 6, 2018

Taylor Reeves
Ward Edwards Engineering
PO Box 381
Bluffton, SC 29910
treeves@wardedwards.com

Re: Osprey Cove

Dear Taylor:

Palmetto Electric Cooperative, Inc. ("PECI") has ample power available to serve the above referenced project. The enclosed redline drawing shows existing and proposed locations of PECI's cable and equipment.

The owner/developer is responsible for providing and installing a four-inch schedule 40 PVC electric conduit buried at 42 inches below finished grade as shown on the enclosed drawing. There will also need to be three-conduits from the transformers to the meters as well as sleeves for the outdoor lighting as shown. In addition, the owner/developer must provide, install and maintain all commercial type services.

Please have the enclosed easement information form completed and returned so that we may draft an electric utility easement. When the easement has been recorded, a copy will be forwarded to you for your file.

Thank you for your cooperation in this matter. Please contact me at (843) 208-5512 or via email thutchinson@palmetto.coop if you have any questions or if I may be of further assistance.

Sincerely,
PALMETTO ELECTRIC COOPERATIVE, INC.

Tim Hutchinson
System Engineer

TH:mhl
Encl.

c: Mr. Tony Brabham, PECI
Mrs. Kristin Keller, PECI

EASEMENT INFORMATION FORM

ALL that certain piece, parcel or lot of land described and known as:

NAME OF CURRENT OWNER: _____

NUMBER OF ACRES: _____

TAX DISTRICT: _____

MAP & PARCEL NO.: _____

AREA OF COUNTY: _____

TOWN/TOWNSHIP: _____

PLANTATION: _____

SUBDIVISION: _____

LOCATION: _____

LOT: _____

PLAT REFERENCE: **Book:** _____ **Page:** _____

DERIVATION: _____

NAME: _____

(Previous Owner of Land)

Deed Book: _____ **Page No.:** _____

OTHER: _____

_____

_____

Austin, Hillary

From: Austin, Hillary
Sent: Monday, April 30, 2018 4:04 PM
To: 'Paul Moore'
Cc: Greenway, Eric; Criscitiello, Anthony
Subject: OSPREY COVE APARTMENTS

Hello Heath,
It has just been brought to our attention that the parcel proposed for the Osprey Cove Apartments must be subdivided from the parent parcel. Apparently Parcel 452 was created through a deed, which is not permitted in SC. Please submit subdivision plats and all pertinent document to the SRT for final approval of the apartment plat. The permit for the construction of the apartments will not be issued until all of the conditions listed on the SRT's Action Form, and the subdivision of the parcel is approved and recorded.

Please do not hesitate to give me a call if you have any questions.

Thanks,

Hillary A. Austin
Zoning & Development Administrator
Post Office Drawer 1228
Beaufort, SC 29901
843.255.2173
Email: hillarya@bcgov.net

ADMINISTRATIVE APPEAL APPLICATION

APPLICATION FOR ADMINISTRATIVE APPEALS OF DECISIONS BY THE STAFF REVIEW TEAM (SRT)

DATE OF SRT DECISION BEING APPEALED: 18 April 2018

FOR PLANNING DEPARTMENT USE ONLY

Appeal # MISC 2018-05 Date Rec'd Application: 5-17-2018

Planning Commission Hearing Date: July 2, 2018 Application Received by: Barbara Childs

The Crescent Property Owners' Association, Inc., Paul and Cindy Muzyk, Charles and Cindy Snyder, Katherine B. Beverly, and Michael and Ann Marie Lemire

c/o Chester C. Williams, Esq. 843-842-5411

Appellant's Name Phone / Email

c/o Chester C. Williams, Esq., PO Box 6028, Hilton Head Island, SC 29938

Appellant's Mailing Address (City, State and Zip Code)

RECEIVED
MAY 17 2018
Community Development Dept.

1. **PROPERTY INFORMATION:**

   A. Address of property affected by this Appeal:

   Undeveloped, unsubdivided portion of Best Buy Commercial Center at 1031, 1033, 1037, and 1039 Fording Island Road, Bluffton, SC 29910

   B. Property Identification Number (PIN): Portion of R600-032-000-0455-0000

2. **SUBMISSION:** Please attach a narrative describing in detail the reason for this appeal. Include any supportive information that substantiates your position. If the Appellant is not the owner of the affected property, include a notarized document signed by the property owner authorizing the appellant to represent the property owner in this appeal. Application submission must be received by the Beaufort County Community Development office **no later than three (3) weeks before a scheduled Planning Commission meeting** (call the Beaufort County Community Developmnet office at 843-255-2140 for the scheduled meeting dates). See the attached Narrative.

3. **FEE:** An application processing fee of **$75.00** must accompany this application. Make checks payable to Beaufort County. Attached.

4. **NOTIFICATION:** **NO LATER THAN 15 days prior to the hearing, the Appellant must:**
   a. Mail a letter/notify in writing the property owners within 500 feet of the affected property (see the attached sample letter); and
   b. Give/provide the Community Development Department proof of the mailing (including a copy of the letter sent to the property owners; and a list of the property owners notified, including their property identification numbers (PIN) and addresses). Not applicable. See CDC Section 7.4.50.

5. **HEARING TRANSCRIPTION:** If verbatim minutes are required, the Appellant must hire a court reporter for his/her Planning Commission hearing and give a copy of those verbatim minutes to the Planning Department for County files. The Planning Commission will only provide summary, not verbatim, minutes of the proceedings.

I, the undersigned appellant, hereby submit this application with the attached information. The information and documents provided are complete and accurate to the best of my knowledge.

17 May 2018

Signature of Appellant Chester C. Williams, Esq., attorney for Appellants Date

Rev. 09.30.15

LAW OFFICE OF
CHESTER C. WILLIAMS, LLC
17 Executive Park Road, Suite 2
Post Office Box 6028
Hilton Head Island, SC 29938-6028
Telephone (843) 842-5411
Telefax (843) 842-5412
Email Firm@CCWLaw.net

17 May 2018

Chester C. Williams
ALSO MEMBER LOUISIANA BAR

Thomas A. Gasparini
ALSO MEMBER CALIFORNIA BAR
(Inactive)
ALSO MEMBER OHIO BAR
(Inactive)

CERTIFIED CIRCUIT COURT
ARBITRATORS AND MEDIATORS

Mr. Eric Greenway
Director of Community Development
PO Drawer 1228
Beaufort, SC 29901-1228

Hand Delivered

Re: Final Major Land Development Plan Approval for Osprey Cove Apartments;
Our File No. 01893-001

Dear Eric:

We represent The Crescent Property Owners' Association, Inc. and several individual residential property owners in The Crescent.

On behalf of our clients, we are delivering to you herewith an Application for Administrative Appeal to the Beaufort County Planning Commission of the 18 April 2018 decision by you, as the Director of Community Development, and the County Staff Review Team to approve the Final Major Land Development Plan for the proposed Osprey Cove Apartments development.

Also enclosed are the five original letters from the Appellants to you by which they have authorized us to file the enclosed Application.

Attached to the enclosed Application is a narrative describing in detail the reasons for this appeal. Our check for the $75.00 application filing fee payable to Beaufort County is also enclosed.

We note that the Application form refers to mailing notification letters to property owners within 500 feet of the affected property; however, Section 7.4.50.B of the Beaufort County Community Development Code does not require mailed notice of an administrative appeal to the Planning Commission, and further, if mailed notice is required, CDC Section 7.4.50.B.3.a places the burden of preparing and mailing any required notice on the Director, and not on the applicant. Please either confirm or correct our understanding of the mailed notice provisions of CDC Section 7.4.50.B as they relate to this Application.

We also note that CDC Section 7.4.50 seems to say that the hearing by the Planning Commission on an administrative appeal is a public hearing. While we agree that the Planning Commission's hearing on the enclosed Application must be held during a public meeting of the Planning Commission, *i. e.*, a meeting that is

open to the general public to attend, we disagree with the proposition that the Planning Commission's hearing on the enclosed Application must be a public hearing, *i. e.*, a hearing at which the Planning Commission is required to take comments from members of the general public who are not proper parties to this appeal, and we will object to any attempt by the Planning Commission or any party who is not a proper party to this appeal to appear at, or offer any documentary or testimony evidence for inclusion in the record of, the hearing on this appeal.

Please send us a full copy of the record of materials considered by the SRT in making the decision to approve the Final Major Land Development Plan for the proposed Osprey Cove Apartments development when those materials are transmitted to the Planning Commission, as required by CDC Section 7.3.70.C.3.

You will note in the Application narrative that we have indicated that certain parties may be necessary parties to this appeal, without acknowledging that those parties are, in fact or in law, necessary parties. Some of those parties are represented by Walter J. Nester, III, Esq. and others are represented by Edward M. Hughes, Esq. Along with their respective copies of this letter, we are sending each of Mr. Nester and Mr. Hughes a copy of the enclosed Application.

With best regards, we are

Very truly yours,

LAW OFFICE OF CHESTER C. WILLIAMS, LLC

Chester C. Williams

CCW/
Enclosures
cc: Mr. John B. Nastoff
Mr. Herbert T. Brown
Mr. and Mrs. Paul A. Muzyk
Mr. and Mrs. Charles W. Snyder
Ms. Katherine B. Beverley
Mr. and Mrs. Michael D. Lemire
Douglas W. MacNeille, Esq.
Walter J. Nester, III, Esq.
Edward M. Hughes, Esq.

THE CRESCENT
PROPERTY OWNERS' ASSOCIATION, INC.
10 Crescent Circle
Bluffton, SC 29910

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

The Crescent Property Owners' Association, Inc. has authorized Chester C. Williams, Esq. to file on our behalf an appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project.

Very Truly Yours,

John B Nastoff

John B. Nastoff, President

JBN/

cc: Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

We own our home located at 3 Heritage Bay Court in The Crescent.

We personally join in the appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project to be filed on behalf of The Crescent Property Owners' Association, Inc., and we authorize Chester C. Williams, Esq. to include us individually as appellant in that appeal filing.

Very Truly Yours,

Paul Muzyk

Cindy Muzyk

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

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Very Truly Yours,

Charles Snyder

Cindy Snyder

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

AUTHORIZATION LETTER

16 May 2018

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Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

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Very Truly Yours,

Katherine B. Beverly

Katherine B. Beverly

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

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Very Truly Yours,

Michael Lemire

Ann Marie Lemire

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

STATE OF SOUTH CAROLINA	)	**BEFORE**
	)	**THE PLANNING COMMISSION OF**
	)	**BEAUFORT COUNTY, SOUTH CAROLINA**
	)	
	)	**APPLICATION FOR APPEAL**
COUNTY OF BEAUFORT	)	**NO. MISC 2018-____**

APPEAL APPLICATION NARRATIVE

The Crescent Property Owners' Association, Inc. (the "CPOA"), for itself and on behalf of its constituent members, Paul A. and Cynthia P. Muzyk, Charles W. and Cynthia B. Snyder, Katherine B. Beverly, and Michael D. and Anne-Marie M. Lemire (collectively, the "Individual Appellants" and, together with the CPOA, the "Appellants"), by and through their undersigned attorney,[1] appeal to the Planning Commission (the "Planning Commission") of Beaufort County, South Carolina (the "County") to overturn the 18 April 2018 approval by the Beaufort County Community Development Department, through the Staff Review Team (the "SRT"), of the final review application for a Major Land Development Plan for the proposed multi-family residential development known as the Osprey Cove Apartments project (the "Project") to be located on a portion of the Best Buy Commercial Center tract originally intended for office development in Bluffton, SC. A copy of the 18 April 2018 Staff Review Team Action Form evidencing the approval of the Project, subject to conditions (the "SRT Approval"), is attached hereto as Exhibit B.

I. BACKGROUND

The Best Buy Commercial Center (the "Shopping Center") was developed by Stafford Rhodes, LLC in 2009 on a portion of a tract of land containing 34.505 acres. Portions of the Shopping Center have been completed and are open to the public. On 4 January 2010, Stafford Rhodes, LLC established a condominium regime encompassing portions of the Shopping Center that had

[1] Copies of the letters authorizing the filing of this Appeal by the undersigned on behalf of the Appellants are attached hereto as Exhibits A-1 through A-5.

been completed.[2] The proposed location of the Project is part of a 14.389 acre tract shown and designated as "Future Phase" on the Condominium Plat recorded in Beaufort County Plat Book 129 at Page 135 (the "Condominium Plat"),[3] specifically, a 5.00 acre portion of the 14.389 acre tract (the "Future Phase Tract"). The Future Phase Tract is designated as Beaufort County Tax Parcel R600-032-000-0452-0000.

The CPOA is the homeowners' association of the owners of residential properties located in The Crescent, an established subdivision located in Bluffton, SC. The Individual Appellants are owners of homes in The Crescent and are members of the CPOA. The Crescent is immediately adjacent to the Shopping Center, and portions of the common properties owned by the CPOA are contiguous with the Shopping Center in general, and the proposed location of the Project in particular. Single family residences owned by members of the CPOA, including the homes owned by the Individual Appellants, are in very close proximity to the proposed location of the Project.

During the development planning for the Shopping Center, Stafford Rhodes, LLC and the CPOA entered into that certain Easement Agreement and Consent to Improvements dated 25 October 2005 and recorded in Beaufort County Record Book 2259 at Page 1583 (the "Easement Agreement").[4] The Easement Agreement addresses, among other things, buffers, screening fences and berms, noise from operation of the Shopping Center, light pollution from the Shopping Center, height restrictions, and access rights over certain portions of the CPOA's property. In return for its approval of the plans for the development of the Shopping Center, the CPOA and its members were granted certain rights with regard to the future development of the Shopping Center and the Future Phase Tract, including, without limitation, the right to be advised of any material changes in the development plan, and the further right to approve or object to any material changes in the development plan.

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[2] The Master Deed establishing Fording 278 Horizontal Property Regime dated 17 December 2009 is recorded in Beaufort County Record Book 2921 at Page 1943.

[3] A reduced size copy of the Condominium Plat, on which the Future Phase tract is marked in red and the approximate proposed location of the Project is marked in blue, is attached hereto as Exhibit C.

[4] A copy of the Easement Agreement is attached hereto as Exhibit D.

The plans for the Shopping Center attached to the Easement Agreement show the proposed location of the Project was intended for development of three commercial office buildings.

In accordance with plans approved by the County, and consistent with the Easement Agreement, the Shopping Center, except for the Future Phase Tract, was constructed, and has been open for business for many years.

By way of that certain Special Warranty Deed recorded on 6 October 2014 in Beaufort County Record Book 3351 at Page 473 (the "2014 Deed"), Stafford Rhodes, LLC conveyed the Future Phase Tract to SR 278 Investments, LLC.[5] Just over a year later, by way of that certain Special Warranty Deed recorded on 4 November 2015 in Beaufort County Record Book 3441 at Page 210 (the "2015 Deed"), SR 278 Investments, LLC conveyed the Future Phase Tract to Stafford Bluffton Land, LLC ("StaffordBL").[6]

Sometime in 2017, Ward Edwards Engineering ("Ward Edwards"), representing either StaffordBL or some other entity, began discussions with the County's Community Development Department regarding development of a portion of the Future Phase Tract as a site for the Project.

On 15 November 2017, the SRT held a meeting with representatives of Ward Edwards concerning the proposed development of the Project on a portion of the Future Phase Tract, and apparently advised Ward Edwards, among other things, that the proposed change of use for the Future Development Area from commercial to multifamily residential required a new Development Permit.

On 21 November 2017, a Conceptual Plan Application for the proposed development of the Project (the "Conceptual Plan Application") was filed with the County.[7] The applicant on the Conceptual Plan application is Thomas Design Group, LLC, and the owner of the property designated on that application is SR 278 LLC. To the Appellants' knowledge and belief, SR 278 LLC has never owned any part of the Future Phase Tract, including the location

[5] A copy of the 2014 Deed is attached hereto as Exhibit E.

[6] A copy of the 2015 Deed is attached hereto as Exhibit F.

[7] A copy of the Conceptual Plan Application, without the development plan documents referred to therein, is attached hereto as Exhibit G.

of the Project. Also note, in particular, that in response to the question on the Conceptual Plan Application asking if the property is restricted by recorded covenants that are contrary to or conflict with the requested permitted activity, the applicant checked the "No" box.

On 26 March 2018, a Multifamily and Nonresidential Final Plan Application for the proposed development of the Project (the "Final Plan Application") was filed with the County.[8] The applicant on the Final Plan Application is Welles LOM, LLC ("Welles") and Mike Thomas, who are also designated on the Final Plan Application as the property owner. To the Appellants' knowledge and belief, neither Welles LOM, LLC nor Mr. Thomas own any part of the Future Phase Tract, including the proposed location of the Project. The Final Plan Application was signed on behalf of the applicant by Paul Moore, an employee of Ward Edwards. Also note, in particular, that the Final Plan Application is incomplete because the applicants failed or refused to answer the question on the Final Plan Application asking if the property is restricted by recorded covenants that are contrary to or conflict with the requested permitted activity.

After the filing of the Final Plan Application, Hillary A. Austin, the County's Zoning and Development Administrator, in her letter of 11 April 2018 to Mr. Moore, documented specific issues about the Final Plan Application raised by members of the SRT.[9]

On 16 April 2018, two days before the SRT Approval was issued, in a response letter to Ms. Austin, Mr. Moore provided answers to the SRT members' issues with the Final Plan Application.[10]

On 18 April 2018 the SRT reviewed and approved the Final Plan Application for the Project, as evidenced by the SRT Approval.

By way of his letter of 25 April 2018 to the CPOA, Walter J. Nester, III, Esq., representing StaffordBL, formally advised the CPOA that Stafford was

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[8] A copy of the Final Plan Application, with the four page narrative, but without the other development plan documents referred to therein, is attached hereto as Exhibit H.

[9] A copy of Ms. Austin's letter to Mr. Moore is attached hereto as Exhibit I.

[10] A copy of Mr. Moore's response letter to Ms. Austin is attached hereto as Exhibit J.

planning to develop a portion of the Future Phase Tract for the Project, and sought the CPOA's approval of the plans for the Project.[11] Mr. Nester's letter included a copy of the set of plans for the Project that the SRT had reviewed and approved a week earlier, and by its terms served as formal notice to the CPOA of "Permitting Modifications", as defined in the Easement Agreement. Review and approval of, or objection to, Permitting Modifications is the mechanism provided in the Easement Agreement for the CPOA to exercise its rights in connection with changes to the planned development of the Best Buy Commercial Center and the Future Phase Tract.

The plans for the Project included with Mr. Nester's letter to the CPOA show the proposed construction of four (4) multi-story apartment buildings rather than the commercial office buildings shown on the plans attached to the Easement Agreement.

Pursuant to the review and approval or objection rights of the CPOA set forth in the Easement Agreement, by way of his letter of 3 May 2018 to Mr. Nester, Douglas W. MacNeille, Esq., counsel for the CPOA, provided Mr. Nester with detailed objections of the CPOA to the proposed development of the Project.[12]

The Appellants disagree with and object to the SRT Approval of the Project, allege that the SRT and the County's Director of the Department of Community Development (the "Director")[13] failed to require that the Final Plan Application be fully completed when filed, incorrectly relied on information provided by or on behalf of StaffordBL, Welles, or Mr. Thomas regarding the Future Phase Tract when reviewing the Project and issuing the SRT Approval, and incorrectly construed or interpreted the provisions of the Code of Laws of South Carolina (1976), as amended (the "SC Code") and the County's Community Development Code (the "CDC") when reviewing the Project and issuing the SRT Approval, and therefore erred in issuing the SRT Approval; and seek relief by this Appeal.

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[11] A copy of Mr. Nester's letter to the CPOA, without the enclosures, is attached hereto as Exhibit K.

[12] A copy of Mr. MacNeille's letter to Mr. Nester is attached hereto as Exhibit L.

[13] Anthony J. Criscitiello was the Director when the SRT Approval was issued. Since then, Mr. Criscitiello has retired, and Eric Greenway is now the Director.

For the reasons set forth above and below, the Appellants seek to have the SRT Approval rescinded and cancelled for failure to comply with applicable South Carolina laws and County ordinances.

II. DEVELOPMENT PLANS – ISSUANCE OF PERMITS

SC Code Section 6-29-1150(A), which is part of the South Carolina Local Government Comprehensive Planning Enabling Act of 1994 (the "State Enabling Act"), says that "land development regulations adopted by [the County] must include a specific procedure for the submission and approval or disapproval by the planning commission or designated staff."

CDC Sections 7.5.60.A.3.a(6) and 7.2.60.E.2.c give the Director the power and duty to review and make decisions on Major Land Development Plan applications. CDC Section 7.5.60.A.3 allows the Director to delegate his or her authority to act under the CDC to a "designee". For purposes of this Appeal, the Appellants assume that Ms. Austin, who signed the SRT Approval, had the requisite delegated authority to act on the Major Land Development Application for the Project.

III. THE AUTHORITY AND POWER OF THE PLANNING COMMISSION – APPEALS OF STAFF ACTION ON LAND DEVELOPMENT PLANS

SC Code Section 6-29-340(B) charges the Planning Commission with the power and duty to, among other things, prepare and recommend for adoption to the County Council regulations for the subdivision or development of land, and appropriate revisions thereof, and "to oversee the administration of the regulations that may be adopted [by the County] as provided in [the State Enabling Act]".

SC Code Section 6-29-1150(C) says that, "Staff action, if authorized, to approve or disapprove a land development plan may be appealed to the planning commission by any party in interest." Further, CDC Section 7.2.60.E.2.d says, "The decision of the Director on a Major Land Development Plan may be appealed to the Planning Commission."

IV. STANDING

The CPOA, for itself and as the representative of its constituent members, who are owners of real property within The Crescent residential

development, is a party to, and a beneficiary of, the Easement Agreement. The Individual Appellants are members of the CPOA and are the owners of residential properties located in the very near vicinity of the proposed location of the Project, and are also beneficiaries of the Easement Agreement. The SRT Approval of the Project, over the objections of the CPOA as detailed in the 3 May 2018 letter from Mr. MacNeille to Mr. Nester, violates the rights of the Appellants. As such, the Appellants have a personal stake in, and will be adversely affected by, the SRT Approval. The Appellants allege that the proposed development of the Project, for uses other than, and in a manner other than, that contemplated by the Easement Agreement, will result in injury in fact to the CPOA and its members, including the Individual Appellants; that there is a causal connection between the injury suffered, or to be suffered, by the Appellants as a result of the development of the Project; and that the injury suffered, or to be suffered, by the Appellants as a result of the development of the Project will be redressed by a favorable decision of the Planning Commission to reverse the SRT Approval. Given that the CPOA and the Individual Appellants are owners of properties contiguous with and in the near vicinity of the Future Phase Tract, and that the Appellants have rights under the Easement Agreement, the Appellants are clearly parties in interest under SC Code Section 6-29-1150(C), and are aggrieved parties under CDC Section 7.3.70.

V. NECESSARY PARTY

StaffordBL, the apparent record owner of the Future Phase Tract, including the proposed location of the Project that is the subject of the SRT Approval, and, because of violations of SC Code Section 6-29-1149 by the recording of the 2014 Deed and the 2015 Deed, both Stafford Rhodes, LLC and SR 278 Investments, LLC, and Welles and Mr. Thomas, as the applicants under the Final Plan Application, may all be necessary parties to this Appeal; however, the Appellants do not admit that any of StaffordBL, Stafford Rhodes, LLC, SR 278 Investments, LLC, Welles, or Mr. Thomas are a necessary party to this Appeal. Nevertheless, the Appellants ask that StaffordBL, Stafford Rhodes, LLC, SR 278 Investments, LLC, Welles and Mr. Thomas receive notice of all matters and hearings associated with this Appeal, while reserving the right to challenge any attempt by StaffordBL, Stafford Rhodes, LLC, SR 278 Investments, LLC, Welles, or Mr. Thomas to participate in this Appeal.

VI. GROUNDS FOR APPEAL

The Appellants allege that the SRT Approval was wrongfully and improperly issued by the SRT and Ms. Austin, and that the approval of the SRT Approval was arbitrary and capricious, and contrary to the explicit provisions of the State Enabling Act and the CDC, for the reasons set forth below.

VII. THE APPELLANT'S ARGUMENTS FOR APPEAL

The Appellants submit that a thorough review of the history of the proposed development of the Project leading up to, and including, the SRT Approval, leads to the conclusion that the SRT Approval was wrongly issued and should be reversed.

A. StaffordBL is not the lawful owner of the Future Phase Tract, and the Future Phase Tract is not legally subdivided

Notwithstanding the fact that StaffordBL is the apparent record owner of the Future Phase Tract by virtue of the 2014 Deed and the 2015 Deed, the Future Phase Tract has not been legally subdivided as required by the State Enabling Act and the CDC. The 2014 Deed and the 2015 Deed both purport to convey title to the Future Phase Tract with a property description that incorporates by reference the Condominium Plat. When Ms. Austin stamped the Condominium Plat for recording on 17 November 2009, she included a specific hand-written notation stating, "Not Approved for Subdivision of Property". In addition, the title block of the Condominium Plat says, "Condominium Plat (Not a Subdivision)".

SC Code Section 6-29-1190 makes it a misdemeanor for an owner of property being developed in the County to transfer title to any part of the development without first having received approval of a development plan or subdivision plat for the property conveyed. Further, CDC Section 7.2.70.B prohibits the sale or transfer of land absent the prior approval by the County of a subdivision plat and the recordation of that approved plat in the Beaufort County public records.

The Appellants allege that StaffordBL and its agents failed or refused to disclose to the County the fact that the vesting of title to the Future Phase Tract in StaffordBL was accomplished in violation of SC Code Section 6-29-1190 and CDC Section 7.2.70.B. If that is the case, and Ms. Austin has

seemingly agreed it is the case, as evidenced by her email of 30 April 2018 to Mr. Moore,[14] then clear violations of both SC Code Section 6-29-1190 and CDC Section 7.2.70.B are established. The violations of SC Code Section 6-29-1190 and CDC Section 7.2.70.B by the recording of the 2014 Deed and the 2015 Deed were pointed out to Ms. Austin, Eric Greenway, and Rob Merchant by counsel for the CPOA at a meeting on 30 April 2018.

The fact that there is no recorded approved subdivision plat of the Future Phase Tract means that, at a minimum for the purposes of compliance with the development requirements of the CDC, StaffordBL is not the lawful owner of the Future Phase Tract.

CDC Section 7.4.30.A requires that an application, such as the Final Plan Application, be made by the owner of the property or a person authorized by the owner in writing. As such, any application to the County by or on behalf of StaffordBL, including the Final Plan Application that resulted in the SRT Approval, is void, and any such application must be made by, or upon the authorization, the lawful owner of the Future Phase Tract.

The Appellants also allege that because there was no approved subdivision of the Future Phase Tract at the time of the filing of the Final Plan Application that resulted in the SRT Approval, that application was premature, and should not have been accepted by or acted on by the County or the SRT.

Because title to the Future Phase Tract was conveyed to StaffordBL in violation of SC Code Section 6-29-1190 and CDC Section 7.2.70.B, the SRT Approval should be reversed by the Planning Commission.

Further, because the Future Phase Tract has not been legally subdivided from the Best Buy Commercial Center tract, the SRT Approval should not have been issued, and it should therefore be reversed by the Planning Commission.

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[14] A copy of Ms. Austin's email to Mr. Moore is attached hereto as Exhibit M. Note that the header on the email says it was sent to Mr. Moore, but the salutation states, "Hello Heath", which is apparently a reference to Heath Duncan, another employee at Ward Edwards.

B. Neither Welles nor Mr. Thomas are the lawful owner of the Future Phase Tract

The Final Plan Application states that the property owner is Welles and Mr. Thomas.

The Appellants allege that Welles and Mr. Thomas and Mr. Moore, who signed the Final Plan Application, failed or refused to disclose to the County the fact neither Welles nor Mr. Thomas own the property that is the subject of the Final Plan Application.

Again, CDC Section 7.4.30.A requires that an application, such as the Final Plan Application, be made by the owner of the property or a person authorized by the owner in writing. As such, any application to the County by or on behalf of Welles or Mr. Thomas, including the Final Plan Application that resulted in the SRT Approval, is void, and any such application must be made by, or upon the authorization, the lawful owner of the Future Phase Tract.

Because neither Welles nor Mr. Thomas are the owner of the Future Phase Tract, the SRT Approval should be reversed by the Planning Commission.

C. Applicable recorded restrictive covenant

i. The State Enabling Act and the CDC

SC Code Section 6-29-1145 requires the County, in an application for a permit, to ask the applicant if the tract or parcel of land that is the subject of the application is restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the permitted activity; and further prohibits the County from issuing any permit for any activity that is contrary to, conflicts with, or is prohibited by any restrictive covenant that the County has actual notice of, unless and until the County receives confirmation from the applicant that the restrictive covenant has been released for the tract or parcel of land by action of the appropriate authority or property holders or by court order.

CDC Section 1.4.40 provides that nothing in the CDC is intended to supersede, annul, or interfere with any easement, covenant, deed restriction, or other agreement between private parties; that in the review of an application for development approval or permit, the County shall inquire whether land proposed for development is restricted by any recorded covenant that is

contrary to, conflicts with, or prohibits the permitted activity and that if the County has actual notice of a restrictive covenant that is contrary to, conflicts with, or prohibits the permitted activity requested in the application that is allowed under the CDC, the County shall not approve the activity, unless the landowner demonstrates the restrictive covenant is released.

ii. The Final Plan Application is incomplete

As required by both SC Code Section 6-29-1145 and CDC Section 1.4.40, the form for the Final Plan Application contains, the following question to be answered by the applicant:

> IS THE PROPERTY RESTRICTED BY RECORDED COVENANTS THAT ARE CONTRARY TO OR CONFLICT WITH THE REQUESTED PERMIT ACTIVITY YES ( ) NO ( )

Neither "YES ( )" nor "NO ( )" on the Final Plan Application is checked or otherwise completed. While the County's application form contains the statutorily required question about existing covenants, the Final Plan Application submitted for the Project does not include an answer to that question. Accordingly, the Final Plan Application is incomplete, and the County and the SRT should not have acted on it, or approved it.

CDC Section 7.4.30.F requires the Director to determine whether an application is complete or incomplete, and, if it is incomplete, to notify the applicant of the submittal deficiencies. Clearly, if an application form is not fully completed, then the application cannot be complete.

Because the Final Plan Application was incomplete when Mr. Moore submitted it, the SRT should not have acted on it, or approved it, and the SRT Approval should therefore be reversed by the Planning Commission.

iii. The Easement Agreement contains covenants applicable to the Future Phase Tract

By his letter to the CPOA, Mr. Nester, counsel for StaffordBL, has sought the CPOA's approval of the plans for the development of the Project. The CPOA's approval of those plans is required by the Easement Agreement. By his response letter to Mr. Nester, Mr. MacNeille, counsel for the CPOA, has provided StaffordBL with detailed objections to the plans for the development of the Project.

Section 1(a)(ii) of the Easement Agreement provides that the CPOA has the right to review and approve, or oppose, any changes to the original plans for the development of the Best Buy Commercial Center tract, including the Future Phase Tract, as contemplated by the Easement Agreement. The Easement Agreement further requires formal notice to the CPOA of any proposed modifications to those plans, and a time-limited procedure for review of the proposed modifications by the CPOA.

Section 3(b) of the Easement Agreement provides that all "covenants and provisions" of the Easement Agreement

> shall be deemed to run with the land, burden the Properties affected thereby, and shall be binding upon the parties hereto and their successors, assigns, designees, agents, tenants and employees and inure to the benefit of the parties hereto and their successors, assigns, designees, agents, tenants and employees.

The above quoted language from the Easement Agreement, which is recorded in the Beaufort County public land records, very clearly establishes that the Easement Agreement is a covenant, running with, and burdening, the Future Phase Tract which must be dealt with as provided in SC Code Section 6-29-1145 and Section 1.4.40 of the CDC. Further the Easement Agreement is clearly an easement, as referred to in Section 1.4.40 of the CDC.

The Easement Agreement's requirement for the consent of the CPOA for approval of material modifications to the exhibits attached to the Easement Agreement is a covenant running with the land that is the Future Phase Tract, and it cannot be ignored by the County when reviewing any proposal for the development of the Future Phase Tract.

Further, StaffordBL, Welles, and Mr. Thomas, and their respective agents had an obligation to disclose the covenants contained in the Easement Agreement to the County in the Final Plan Application that resulted in the SRT Approval, which they failed or refused to do.

iv. The SRT Approval cannot be validly issued unless the restrictive covenant is released

At the 18 April 2018 meeting of the SRT, prior to issuance of the SRT Approval, Mr. MacNeille, as counsel to the CPOA, brought the Easement Agreement and its included covenants to the attention of the SRT, and further

advised the SRT that the CPOA had not approved the plans for the development of the Project. Despite the clear requirements of SC Code Section 6-29-1145 and CDC Section 1.4.40 to the contrary, and actual notice of the covenants in the Easement Agreement provided to the SRT by Mr. MacNeille at the 18 April 2018 meeting, the SRT Approval was nevertheless issued by the SRT contrary to law.

By his letter of 25 April 2018, Mr. Nester formally advised the CPOA of proposed changes to the development of the Future Phase Tract as shown on the plans for the development of the Project, and sought the CPOA's approval of those changes. That notice triggered the time limit for the CPOA's review of those proposed changes, with the resulting detailed objections contained in the response letter from Mr. MacNeille to Mr. Nester.

Under SC Code Section 6-29-1190, unless and until the County receives confirmation from StaffordBL that the restrictive covenant contained in the Easement Agreement has been released by the CPOA or by court order, or that the CPOA has approved the plans for the proposed development of the Future Phase Tract, the County cannot approve the Final Plan Application for the development of the Project, and the SRT Approval should therefore not have been issued.

Because the CPOA has not released the restrictive covenant contained in the Easement Agreement, and has not approved the plans for the proposed development of the Future Phase Tract, the SRT Approval should not have been issued, and it should therefore be reversed by the Planning Commission.

D. The Final Plan Application approved by the SRT does not meet the requirements of Section 7.2.60.F of the CDC, and was incomplete

While CDC Section 7.4.40.D.1 permits the Director to approve an application subject to conditions, the SRT Approval with conditions shows on its face that the Final Plan Application was incomplete when conditionally approved.

CDC Section 7.4.40.D.2 provides that conditions of approval of an application shall be limited to those deemed necessary to ensure compliance with the standards of the CDC, and shall be related in both type and amount to the anticipated impacts of the proposed development on the public and

surrounding development. The Appellants allege that the conditions of the SRT Approval do not meet the requirements of CDC Section 7.4.40.D.2.

The conditions as stated in the SRT Approval are:

1. Applicant shall address Stormwater requirements.

2. Applicant shall revise the site plan to show the connectivity, handicap parking spaces being distributed, sidewalks, and sign to be placed on property.

3. Applicant shall pay the BJWSA capacity fees and submit permit to construct water and sewer.

4. Applicant shall submit a revised Arborist report.

5. Applicant shall submit a revised landscape plan showing plantings to the rear of the buildings.

Of the five listed conditions, the second, third, and fourth conditions do not relate to anticipated impacts of the proposed development on the public and surrounding development, but rather address the specifics of the Final Plan Application itself. Those three conditions go to the completeness of the Final Plan Application, and without the inclusion of those materials in the Final Plan Application, it should have been considered incomplete.

The 11 April 2018 letter from Ms. Austin to Mr. Moore, and Mr. Moore's 16 April 2018 response letter to Ms. Austin addressed 15 issues raised by members of the SRT. The answers to the SRT inquiries provided by Mr. Moore apparently did not address all of the issues raised by the SRT, resulting in the conditions attached to the SRT Approval. This demonstrates clearly that the SRT Approval was premature, and did not yet meet the requirements of the CDC when approved.

Because the materials submitted to the SRT in connection with the Final Plan Application that resulted in the SRT Approval did not meet the requirements of the CDC, the SRT Approval should be reversed by the Planning Commission.

VIII. CONCLUSION

The record of this Appeal shows that:

1. The Future Phase Tract has not been legally subdivided from the remainder of the Best Buy Commercial Center tract;

2. Neither StaffordBL, Welles, nor Mr. Thomas is the lawful owner of the Future Phase Tract;

3. No one is sure who the proper applicant for the Final Plan Application is, or who the owner of the proposed location of the Project is;

4. The Easement Agreement is a recorded restrictive covenant running with the land that includes the Future Phase Tract;

5. The restrictive covenants in the Easement Agreement are contrary to, conflict with, and prohibit the development of the Project absent the approval by the CPOA of the plans for the development of the Project;

6. The Easement Agreement is an easement;

7. The CPOA has the right to review and approve or oppose the proposed development of the Project on a portion of the Future Phase Tract;

8. The CPOA has objected to the proposed development of the Project, and has not released the restrictive covenant contained in the Easement Agreement from the Future Phase Tract;

9. The Final Permit Application for the development of the Project that resulted in the SRT Approval was incomplete as submitted; and

10. The Final Permit Application for the development of the Project that resulted in the SRT Approval does not meet the requirements of the CDC.

Because the Future Phase Tract has not been legally subdivided from the remainder of the Best Buy Commercial Center tract as required by SC Code

Section 6-29-1190, the SRT Approval should not have been issued, and it should therefore be reversed by the Planning Commission.

Because title to the Future Phase Tract was conveyed to StaffordBL in violation of SC Code Section 6-29-1190, the SRT Approval should be reversed by the Planning Commission.

Because the Easement Agreement is a restrictive covenant under SC Code Section 6-29-1145, and is an easement under Section 1.4.40 of the CDC, which runs with, and burdens, title to the land that is the Future Phase Tract, and because the CPOA has rights under the Easement Agreement to review and approve or oppose the proposed development of the Project, the Easement Agreement is a restrictive covenant that is contrary to, conflicts with, and prohibits the development of the Project. Therefore, the SRT Approval should be reversed by the Planning Commission.

Because the Final Plan Application was incomplete when submitted, under CDC Section 7.4.30.E.2.c, the Director was prohibited from processing the Final Plan Application, and it should have been acted on by the SRT, and the SRT Approval should therefore be reversed by the Planning Commission.

Because the materials submitted to the SRT in connection with the Final Plan Application that resulted in the SRT Approval did not meet the requirements of the CDC, the SRT Approval should be reversed by the Planning Commission.

The CPOA asks that the Planning Commission consider this Appeal, the record of this matter, the testimony and materials to be introduced into the record of this Appeal at the hearing, find and hold that

1. the Future Phase Tract has not been legally subdivided from the remainder of the Best Buy Commercial Center tract;

2. neither StaffordBL, Welles, nor Mr. Thomas is the lawful owner of the Future Phase Tract or the proposed location of the Project;

3. the Final Plan Application was not made by or with the consent of the true owner of the Future Phase Tract or the proposed location of the Project;

4. the Easement Agreement is a recorded restrictive covenant running with the land that includes the Future Phase Tract for purposes of SC Code Section 6-29-1145;

5. the Easement Agreement is a recorded restrictive covenant running with the land that includes the Future Phase Tract and is an easement for purposes of Section 1.4.40 of the CDC;

6. the SRT Approval of the Final Plan Application for the development of the Project is contrary to, conflicts with, or is prohibited by the restrictive covenants contained in the Easement Agreement;

7. the Final Plan Application for the development of the Project was incomplete as submitted; and

8. the Final Plan Application for the Project does not meet the requirements of the CDC;

and reverse the SRT Approval.

The Appellants reserve the right to submit additional materials, documents, and information to the Planning Commission in connection with this Appeal.

Respectfully submitted on behalf of the CPOA 17 May 2018.

Chester C. Williams, Esquire
Law Office of Chester C. Williams, LLC
17 Executive Park Road, Suite 2
PO Box 6028
Hilton Head Island, SC 29938-6028
843-842-5411
843-842-5412 (fax)
Firm@CCWLaw.net

Exhibit A-1 (1 page)

THE CRESCENT
PROPERTY OWNERS' ASSOCIATION, INC.
10 Crescent Circle
Bluffton, SC 29910

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

The Crescent Property Owners' Association, Inc. has authorized Chester C. Williams, Esq. to file on our behalf an appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project.

Very Truly Yours,

John B Nastoff

John B. Nastoff, President

JBN/

cc: Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

Exhibit A-2 (1 page)

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

We own our home located at 3 Heritage Bay Court in The Crescent.

We personally join in the appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project to be filed on behalf of The Crescent Property Owners' Association, Inc., and we authorize Chester C. Williams, Esq. to include us individually as appellant in that appeal filing.

Very Truly Yours,

Paul Muzyk

Paul Muzyk

Cindy Muzyk

Cindy Muzyk

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

Exhibit A-3 (1 page)

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: *Application for Appeal*

Dear Mr. Greenway:

We own our home located at 1 Heritage Bay Court in The Crescent.

We personally join in the appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project to be filed on behalf of The Crescent Property Owners' Association, Inc., and we authorize Chester C. Williams, Esq. to include us individually as appellant in that appeal filing.

Very Truly Yours,

Charles Snyder

Cindy Snyder

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

Exhibit A-4 (1 page)

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

I own my home located at 6 Heritage Bay Court in The Crescent.

I personally join in the appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project to be filed on behalf of The Crescent Property Owners' Association, Inc., and I authorize Chester C. Williams, Esq. to include me individually as appellant in that appeal filing.

Very Truly Yours,

Katherine B. Beverly

Katherine B. Beverly

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

Exhibit A-5 (1 page)

AUTHORIZATION LETTER

16 May 2018

Mr. Eric Greenway
Community Development Director
PO Drawer 1228
Beaufort, SC 29901-1225

Re: Application for Appeal

Dear Mr. Greenway:

We own our home located at 4 Heritage Bay Court in The Crescent.

We personally join in the appeal to the Beaufort County Planning Commission of the Beaufort County Staff Review Team's final approval on 18 April 2018 of the Osprey Cove Apartments project to be filed on behalf of The Crescent Property Owners' Association, Inc., and we authorize Chester C. Williams, Esq. to include us individually as appellant in that appeal filing.

Very Truly Yours,

Michael Lemire

Ann Marie Lemire

cc: Mr. John B. Nastoff
Chester C. Williams, Esq.
Douglas C. MacNeille, Esq.

COUNTY OF BEAUFORT

STAFF REVIEW TEAM

ACTION FORM

Exhibit B (1 page)

MEMBERS PRESENT– Hillary (Present/2nd Motion), Nancy (Present/For), Charles (Present/For), Eric (Present/1st Motion)
STAFF PRESENT – Anthony Criscitiello (Planning Director), Tamekia Judge (Zoning Analyst III), Eric Greenway(Assistant Director), Joshua Gruber (Interim County Administrator), Tanner Powell (Stormwater), Ryan Lyle (AES Representative), Paul Moore (WEE Representative), Amanda Flake (Natural Resource Planner), Paul Summerville (Council Chairman), Christopher Inglese (County Attorney), Colin Kinton (Traffic Engineer)

PROJECT NAME	PROJECT TYPE
Osprey Cove Apartments	Residential (Multi-family)

APPLICANT/DEVELOPER NAME, ADDRESS, PHONE NUMBER
Ward Edwards Engineering, P.O. Box 381 Bluffton, SC 29910

PROJECT LOCATION	PIN	LAND AREA (ACRES)	LOTS/UNITS	BLDG AREA (SQ FT)
Bluffton	600-32-452	5	45	
DATE OF REVIEW	**OVERLAY DISTRICT**	**FIRE DISTRICT**		**ZONING DISTRICT**
4/18/2018	HCOD	Bluffton		C5

TYPE OF SRT REVIEW (CHECK ONE TO RIGHT): ☐ CONCEPTUAL ☐ PRELIMINARY X FINAL

SRT ACTION (CHECK ONE BELOW):

☐ APPROVED NO CONDITIONS:

☐ DISAPPROVED / REASON(S):

☐ APPROVED WITH CONDITIONS / CONDITIONS:

X APPROVED SUBJECT TO CONDITIONS / LIST OF CONDITIONS:

- Applicant shall address Stormwater requirements.
- Applicant shall revise the site plan to show the connectivity, handicap parking spaces being distributed, sidewalks, and sign to be placed on property.
- Applicant shall pay the BJWSA capacity fees and submit permit to construct water and sewer.
- Applicant shall submit a revised Arborist report.
- Applicant shall submit a revised landscape plan showing plantings to the rear of the buildings.

☐ DEFERRED / PLEASE SUBMIT THE FOLLOWING:

ZONING AND DEVELOPMENT ADMINISTRATOR

4/18/2018
DATE

Exhibit C (1 page)

The Project Location (Blue)

The Future Phase Tract (Red)

22 27 Pkg Calloway 907

Exhibit D (21 pages)

BEAUFORT COUNTY SC - ROD
BK 02259 PGS 1583-1603
FILE NUM 2005092578
10/31/2005 12:13:17 PM
REC'D BY S SMITH RCPT# 372848
RECORDING FEES 27.00

STATE OF SOUTH CAROLINA)
COUNTY OF BEAUFORT)

EASEMENT AGREEMENT AND CONSENT TO IMPROVEMENTS

THIS AGREEMENT (the "Agreement") is entered into as of this 25th day of October, 2005, ("Effective Date") by and among **CRESCENT PROPERTY OWNERS ASSOCIATION, INC.** ("CPOA"), and **STAFFORD RHODES, LLC**, a Georgia limited liability company (hereinafter "Stafford"), Stafford and CPOA being herein referenced to as "Party" or "Parties" as the consent permits);

WITNESSETH:

WHEREAS, Stafford is the owner of certain unimproved real commercial property known as the Stafford Property described on **Exhibit A** attached hereto and by reference incorporated herein (the "Stafford Property"); and

WHEREAS, Stafford intends to develop the Stafford Property as a commercial retail shopping center (the "Shopping Center"); and

WHEREAS, CPOA represents all of the residential property owners of separate parcels of real property located in the Crescent Plantation Subdivision Beaufort County, South Carolina (herein the "Residential Property") adjacent to the Shopping Center (the Residential and Stafford Properties being herein referred to as the "Properties") and described on **Exhibit "C"** hereto; and

WHEREAS, CPOA holds enforcement and other rights with respect to various covenants and restrictions applicable to all homeowners in the Residential Property, as described in plats and instruments recorded in the Office of the Register of Deeds for Beaufort County, South Carolina (the "Covenants and Restrictions") including, but not limited to, the following:

1). "A Subdivision Plat of The Crescent, Phase 1" dated 11/11/98, prepared by Coastal Surveying Co., Inc. by Antoine Vinel, S.C.R.L.S. No. 9064, and recorded in the Office of the Register of Deeds for Beaufort County, South Carolina in Plat Book 69 at Page 165."

2). That certain set of restrictive covenants entitled "Covenants and Restrictions Affecting for the Crescent," dated March 9, 1999, and recorded in the Office of the Register of Deeds for Beaufort County, South Carolina in Book 1146, Page 751; and

WHEREAS, certain agreements are necessary between CPOA and Stafford concerning the respective rights and obligations of the parties in connection with: (i) the location and size of the undisturbed buffer along the common property line separating the Properties; (ii) size and location of an earthen berm and screening fence along the eastern edge of such buffer; (iii) noise from the operation of the Shopping Center; (iv) screening the lighting fixtures of the proposed Shopping Center; (v) a height restriction on improvements constructed on the Shopping Center; and (vii) the granting of rights to deliver, store and stage equipment and related access rights over certain portions of the Residential Property hereinafter described as the "CPOA Easement Area" .

WHEREAS, as requested by CPOA, Stafford has agreed to make certain modifications to the proposed development plans of the Shopping Center, in consideration of which CPOA shall: (i) consent

to said plans and reasonably cooperate with the execution of any documents required by Stafford's lender to affirm this agreement; (ii) consent to the location of such improvements proposed, provided such improvements are constructed in accordance with the plans; and (iii) grant the temporary easement rights hereafter described.

NOW THEREFORE, for and in consideration of the mutual promises and the agreements contained herein, and for other good and valuable consideration, the adequacy and sufficiency of which is hereby acknowledged by the parties hereto, CPOA and Stafford agree as follows:

1. **REQUIRED IMPROVEMENTS BY STAFFORD; CONSENT OF CPOA; EASEMENTS.** Stafford and CPOA agree as follows with respect to improvements to be made to the Stafford Property.

(a) (i) The Site plan, BJWSA Option 1 plan, fencing and landscaping plans relating to the site improvements (the "Required Improvements") which Stafford has agreed to complete are described and shown in the following: **Overall Site Plan,** dated December 3, 2004, prepared by **Andrews Engineering Co., Inc.** (the "Site Plan"); the **BJWSA Option 1 Plan** ("Opton 1 Plan") depicting the sanitary sewer outfall dated December 3, 2004, prepared by **Andrews Engineering Co., Inc.**; the **Privacy Fence Design Plan Sheets A and B** for Stafford Commercial Center Bluffton, South Carolina, prepared by **Corcoran Nelson Nardone Associates, Inc.** dated October 24, 2004, as revised (the "Fence Plan"); the **Landscaping Plan** (the "Landscaping Plan Sheets L-1, L-2, L-3"), dated **June 18, 2004 and last revised December 3, 2004, 2004,** prepared by **The Greenery, Inc.**, as revised; and the Lighting Plan, dated November 24, 2004 prepared by **Palmetto Electric Co., Inc.** (the "Lighting Plan") (the Drainage Plan, Fence Plan, Grading Plan, Landscaping Plan and Lighting Plan herein, collectively, the "Required Improvements Plans"). CPOA and Stafford have agreed and do hereby confirm their agreement, that such Required Improvements Plans and the Required Improvements contemplated by such Required Improvements Plans, as the same may be modified as a part of the process to secure the "Required Permitting"("Permitting Modifications"), represent all of the improvements to the Stafford Property required to be completed by Stafford for the benefit of the parties hereto. The first page of each such Required Improvements Plan has been initialed by Stafford and CPOA and are attached hereto as **Exhibits "D-1"** through **"D-5"**, respectively, and by reference hereto are incorporated herein. CPOA and Stafford have initialed the entire Required Improvements Plans as evidence of the acknowledgment and approval of the same by such parties. Further, except as provided by 1(a)(ii) hereof, CPOA agrees to Permitting Modifications hereinafter imposed by appropriate governing authorities and agreed to by Stafford. As used herein, "Required Improvements" and "Required Improvements Plans" shall include such Permitting Modifications.

(ii) Any Permitting Modifications involving the expenditure by Stafford of more than $25,000.00 and resulting in material modifications to any of the Plans, shall be subject to the reasonable approval of CPOA, not to be unreasonably withheld, conditioned or delayed. Any notice of any such Permitting Modifications requiring Stafford shall give CPOA not less than fifteen (15) business days to approve or object to such Modifications (the "Permitting Review Period"), during which Period CPOA shall provide to Stafford notice of its approval thereof; or its disapproval thereof and stating, with specificity, its detailed objections to the required Permitting Modifications. Such approval or disapproval with any detailed objections to the Permitting Modifications shall be submitted in writing to Stafford within the Permitting Review Period. Upon such approval, or should such CPOA fail timely so to approve such Modifications or provide

such detailed objections, as the case may be, then in either of such events, for all purposes of this Agreement, CPOA shall be conclusively deemed to have approved the Permitting Modifications and the timely and proper satisfaction of all of the same.

(iii) Should CPOA timely state its detailed objections to required Permitting Modifications ("Permitting Disapproval Notice"), Stafford shall have such time as reasonably necessary to have the same revised to accommodate such objections. However, if Stafford is unable after diligent efforts to cause the applicable governmental authorities to amend the same to accommodate CPOA's objections, Stafford may proceed with such Permitting Modifications notwithstanding such objections.

(b) (i) Upon issuance of requisite permits and approvals by appropriate local government authorities (the "Required Permitting"), Stafford, at its sole cost and expense, shall construct all of the Required Improvements when completing the construction of the Shopping Center and such Required Improvements shall, in any event be substantially completed in accordance with the Required Improvements Plans and the specifications described therein, in a good and workmanlike manner. The Required Improvements should be substantially completed prior to completion of the Shopping Center. Should Stafford defer development of the Shopping Center or the Phase II property, such Required Improvements may be deferred until such time that the development commences.

(ii) Upon substantial completion of the Required Improvements, as evidenced by written notice from Stafford to CPOA, CPOA shall have the right within fifteen (15) business days after such notice (the "Review Period"), to (A) enter the Stafford Property and verify such completion and compliance with the Required Improvements Plans; and (B) provide to Stafford notice of its approval thereof; or its disapproval thereof and stating, with specificity, its detailed objections to the completed Required Improvements. Such approval, or disapproval with any detailed objections to the completed Required Improvements, shall be submitted in writing to Stafford within the Review Period. Upon such approval, or should such CPOA fail timely so to approve such completion or provide such detailed objections, as the case may be, then in either of such events, for all purposes of this Agreement, CPOA shall be conclusively deemed to have approved the completion of the Required Improvements and the timely and proper satisfaction of all of the obligations of Stafford with respect to such Required Improvements.

(iii) Should CPOA timely state its detailed objections to the completed Required Improvements ("Disapproval Notice"), Stafford shall have not less than sixty (60) days to correct and complete the detailed punch-list items set forth in the Disapproval Notice. Upon the timely completion and verification thereof by Stafford and CPOA, for all purposes hereof, CPOA shall be conclusively deemed to have approved the completion of the Required Improvements and the timely and proper satisfaction of all of the obligations of Stafford with respect to such Required Improvements. Failure to complete the punch-list items set forth in the Disapproval Notice shall constitute a breach by Stafford.

(iv) Any objections stated as punch-list items in the Disapproval Notice shall relate solely to non-compliance with the Required Improvements Plans, it being acknowledged, understood and agreed by CPOA, that neither may request nor attempt to change, enlarge, or impose additional demands or requirements with respect to any further improvements or modifications to the Stafford Property or the Shopping Center.

(c) (i) In addition to the requirements set forth 1(a) above, Stafford shall establish and take reasonable good faith efforts to promulgate and enforce rules and regulations for the Shopping Center to control the noise relating to garbage collection, landscaping and other maintenance and operational-related activities conducted on the Shopping Center by Stafford, their agents and tenants. Further, such rules shall include the requirements that (i) each Tenant in the Shopping Center ("Tenants") schedule all deliveries to the Shopping Center between the hours of 6:30 am and 10:00 pm, and (ii) that all Tenants arrange for garbage collection only between the hours of 6:30 am and 10:00 pm.

(ii) Neither the failure of any Tenant to comply with any such rules and regulations nor the failure of the County to enforce applicable ordinances and control such activities shall constitute a breach by Stafford of this Agreement.

(d) Stafford agrees that without the prior consent of CPOA, not to be unreasonably withheld, conditioned or delayed, it shall construct no improvements on the Stafford Property the highest floor of which is above a height of more than thirty-five (35) feet as measured from the ground on which such improvements are located. ~~to the roof~~ peak of such improvement. IG CPOA Stafford

(e) (i) Under a separate agreement (the "Links Agreement"), an adjoining owner to the Stafford Property and the Residential Properties (herein " Links") is granting to Stafford, perpetual, non-exclusive rights, privileges and easements over, under, across and through portions of the property owned by Links (the 'Links Property") (the "Links Sewer Line Easement Area"), for the purposes of (A) tying into the sewer line and , related pump station ("Links Sewer Facilities") located within the Links Sewer Line Easement Area; and (B) providing on-going sanitary sewer service to and for the benefit of the Stafford Property and the Shopping Center, all as more fully provided herein. The Links Sewer Line Easement Area runs, and shall be contiguous, to the Stafford Property. In connection therewith, CPOA hereby grants to Stafford the following easement rights:

Temporary, non exclusive easement rights for a period of thirty (30) days ("Temporary Easement Period") beginning on the date of construction relating to tying into the Links Sewer Facilities for such reasonable rights of ingress, egress and entry onto and over the roadway located on, the CPOA Property known as Meridian Point Drive, as described on Exhibit B attached hereto ("CPOA Road Easement Area") for the purpose of the delivery of equipment and materials necessary in completing construction of and maintenance from time to time, if necessary of the Links Sewer Facilities and related facilities in the Links Sewer Line Easement Area. This Easement shall include a reasonable right of entry to the CPOA Road Easement Area and ~~CPOA Water Line Easement Area~~ and continuing from time to time during the ~~Temporary Easement Period~~, without unreasonable interference for the purpose of effecting such rights, privileges and easements referenced herein, provided, however, all entry by Stafford shall be subject to CPOA's standard gate entry fee(s). IG CPOA Stafford

2. **REPRESENTATIONS; WARRANTIES.** (a) CPOA and Stafford hereby represent and warrant the following: (i) each of such Parties hereby represents and warrants that such Party is duly authorized to enter into this Agreement, but if any individual has concerns they may pursue them independently; (ii) the individual officers or managers of CPOA executing this Agreement, represent and warrant that they are duly authorized and have the full power and authority to do so on behalf of their respective

principals; each has the full power and authority to execute this Agreement, as such owners, without restriction and without the joinder and consent of any other person or entity.

(b) Stafford hereby represents and warrants that it is duly authorized to enter into this Agreement and the individuals executing this Agreement on its behalf warrant that they are duly authorized to execute this Agreement on behalf of Stafford.

3. **NON-EXCLUSIVE EASEMENT; NATURE.** (a) The easement granted herein are temporary and non-exclusive and do not create any rights for the benefit of the general public. The parties shall do all things needful to perpetuate the status of the easements created by this Agreement as private easements, including cooperating with each other in the periodic publication of legal notices or physically barring access to the affected areas as may be required by law for the purposes expressed in this Section.

(b) All covenants and provisions of this Agreement shall be deemed to run with the land, burden the Properties affected thereby and shall be binding upon the parties hereto and their successors, assigns, designees, agents, tenants and employees and inure to the benefit of the parties hereto and their successors, assigns, designees, agents, tenants and employees.

4. **ATTORNEYS FEES.** In any action or proceeding brought by any Party hereto as a result of the failure of any other Party to comply (after any applicable cure period) with the terms hereof, the prevailing Party shall be entitled to collect reasonable attorneys' fees and costs actually incurred.

5. **ESTOPPELS.** Upon twenty (20) days prior written notice, the parties hereto shall provide to each other such estoppel certificates (without warranties) as may be reasonably requested addressed to purchasers, investors or lenders, as the case may be.

6. **LIMITATION OF LIABILITY.** Any liability of the parties hereto arising under or with respect to any of the foregoing covenants or indemnities shall be limited to their interests in the their respective Property, and in no event shall any person or entity be entitled to look to assets of the parties hereto other than said interests and all proceeds therefrom as provided herein, nor shall their respective partners, officers, directors, members, investors or employees have any liability whatsoever for payment or satisfaction of any such liability.

7. **GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina.

8. **RECITALS; MODIFICATION.** The recitals set forth above are incorporated herein by reference as fully and with the same force and effect as if set forth herein at length. This Agreement shall not be modified or amended except by an agreement in writing signed by the parties hereto.

9. **COUNTERPARTS.** This Agreement may be executed in several counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

10. **NOTICES.** All notices, payments, demands or requests required or permitted to be given pursuant to this Agreement shall be in writing and shall be deemed to have been properly given or served and shall be effective either upon the second (2nd) business day

after being deposited in the United States mail, postpaid and registered or certified with return receipt requested; or upon confirmed delivery, when sent by facsimile transmission or by private courier service for same-day or overnight delivery. The time period in which a response to any notice, demand or request must be given shall commence on the date of receipt by the addressee thereof. Rejection or other refusal to accept delivery or inability to deliver because of changed address, of which no notice has been given, shall constitute receipt of the notice, demand or request sent. Any such notice, demand or request shall be sent to the respective addresses set forth below:

To CPOA:	c/o Mr. Jim Chesney, President #7 Victory Point Circle Bluffton, SC 29910
With Copy To:	Mr. Douglas MacNeille c/o Ruth & MacNeille 40 Pope Avenue P.O. Drawer 5706 Hilton Head, SC 29938
And to:	Allied Management P.O. Box 7431 Hilton Head, SC 29938
To Stafford:	Mr. David J. Oliver Stafford Properties, Inc. 80 W. Wieuca Road, Suite 302 Atlanta, Georgia 30342 Telephone: (404) 256-9100 Telefax: (404) 256-6358
With Copy To:	George A. Mattingly, Esq. Arnall Golden Gregory LLP 171 17th Street, NW Suite 2100 Atlanta, Georgia 30363 Telephone: (404) 873-8196 Telefax: (404) 873-8197

By notice in accordance with the above to all parties shown above, the parties hereto may designate from time to time a change of address for all such notices.

11. **EFFECTIVE DATE; FURTHER CONDITION.** This Agreement shall be effective as of the Effective Date, provided that the rights, privileges and obligations stipulated herein shall be conditioned on the acquisition by Stafford of fee simple title to the Stafford Property within one (1) year after such Effective Date. Should such event not occur within such time, this Agreement shall be of no further force and effect.

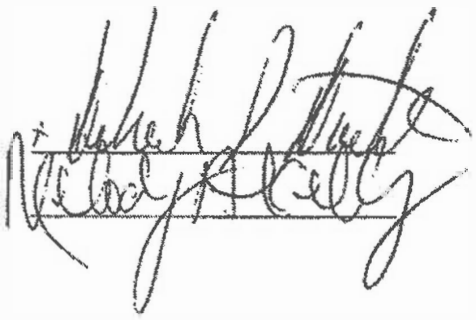
12. **INSURANCE; INDEMNITY.** Stafford shall name CPOA as an additional insured on its liability and workman compensation insurance policies, obtained in connection with the construction of the Sewer Line and Pump Station and provide CPOA with appropriate evidence thereof. Stafford does hereby agree to indemnify, hold harmless

and defend CPOA, from and against any injury, liability, claim, lien, loss, damage, cost or expense (including, without limitation, court costs and reasonable attorneys' fees) to persons or property resulting from any work done on any CPOA property in connection with such Sewer Line and Pump Station installation. This paragraph shall survive any termination of this Agreement.

[Signatures on the following page]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement through their respective duly authorized representatives, as of the date first above written.

WITNESSES:



CPOA:

CRESCENT PROPERTY OWNERS ASSOCIATION, INC.

By: Jim Chesney
Its: President

Attest: Douglas W. Martin
Its: Attorney

(CORPORATE SEAL)

STATE OF South Carolina

COUNTY OF Beaufort

ACKNOWLEDGEMENT

I, the undersigned Notary Public, do hereby certify that Jim Chesney, and Douglas W. Martin as President and Atty., respectively of Crescent Property Owners Association, Inc., a South Carolina corporation, on behalf of the corporation, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

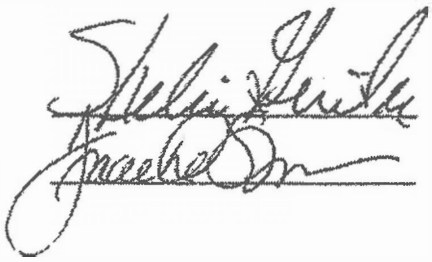
Witness my hand and official seal this 14th day of October, 2005.

N. Elody A. Kelly [SEAL]
Notary Public South Carolina

My commission expires: 10/22/09

[Executions continue on following page]

WITNESSES:



STAFFORD RHODES, LLC
a Georgia limited liability company

By: Stafford Development Company,
its Managing Member

By: _____
Its: Vice President

STATE OF GEORGIA

ACKNOWLEDGEMENT

COUNTY OF FULTON

I, the undersigned Notary Public, do hereby certify that DAVID J. OLIVER, as V.P. of Stafford Development Company, a Georgia corporation, as Managing Member of Stafford Rhodes, LLC on behalf of the limited liability company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal this 10th day of OCTOBER, 2005.

_____ [SEAL]
Notary Public

My commission expires: _____

INDEX OF EXHIBITS

Exhibit "A"	Stafford Property Description
Exhibit "B"	CPOA Road Easement Area
Exhibit "C"	Crescent Property Owners Association Property Description
Exhibit "D-1"	Overall Site Plan – Reduced copy attached; full size version in CPOA's possession
Exhibit "D-2"	Fence Plan – Reduced copy attached; full size version in CPOA's possession
Exhibit "D-3"	Grading Plan – Reduced copy attached; full size version in CPOA's possession
Exhibit "D-4"	Landscaping Plan – Reduced copy attached; full size version in CPOA's possession
Exhibit "D-5"	Lighting Plan – Reduced copy attached; full size version in CPOA's possession

EXHIBIT A

BEGINNING at a concrete monument on the eastern right-of-way for U.S. Hwy. 278, said monument being the common corner with Tax Parcel R600-032-000-0241-0000, and running with the common line with said parcel S 76° 27' 27" E for a distance of 2500.38' to a concrete monument, thence turning and running with the common line with Sawmill Forest Subdivision S 48° 29' 47" W for a distance of 1036.66' to an iron pin, thence turning and running with the common line with N/F HD Development of Maryland Inc. N 40° 34' 22" W for a distance of 31.79' to a concrete monument, thence turning and continuing with said line N 42° 24' 00" W for a distance of 124.34' to an iron pin, thence turning and continuing with said line S 72° 27' 34" W for a distance of 504.08' to an iron pin, thence turning and continuing with said line S 36° 59' 28" W for a distance of 37.56' to an iron pin, thence turning and continuing with said line S 43° 43' 12" W for a distance of 4.58' to a concrete monument on the eastern right-of-way of U.S.Hwy. 278, thence turning and running with said right-of-way N 42° 03' 58" W for a distance of 263.90' to an iron pin, thence turning and continuing with said right-of-way S 48° 13' 38" W for a distance of 16.96' to a concrete monument, thence turning and continuing with said right-of-way in a northerly direction around a curve with an arc distance of 359.07', having a radius of 5635.54', and a chord of N 39° 40' 15" W 359.01' to an iron pin, thence turning and continuing with said right-of-way N 27° 08' 25" W for a distance of 269.21' to an iron pin, thence turning and continuing with said right-of-way N 83° 02' 47" W for a distance of 58.83' to an iron pin, thence turning and continuing with said right-of-way N 34° 59' 00" W for a distance of 773.92' to the POINT OF BEGINNING and containing 34.505 acres or 1,503,048 square feet.

Said tract of land being depicted on ALTA/ACSM Land Title Survey for Stafford Rhodes, LLC, prepared by Andrews Engineering Co., Inc., bearing seal and certification of Gary B. Burgess, PE PLS, Registration No. 15229, dated March 25, 2003, last revised January 6, 2005.

TMS No. 600-032-000-0005-0000

EXHIBIT "B"

"CPOA ROAD EASEMENT AREA"

All that certain piece and parcel of land consisting of road rights-of-way from the intersection of Crescent Drive and U.S. Highway 278 over Crescent Drive to Meridian Pointe Drive, and over Meridian Pointe Drive to its terminus, all as depicted and shown on "A Subdivision Plat of The Crescent, Phase 1" dated 11/11/98, last revised 4/21/98, prepared by Coastal Surveying Co., Inc. by Antoine Vinel, SCRLS No. 9064 and recorded in the Office of the Register of Deeds for Beaufort County, South Carolina in Plat Book 69 at Page 165.

EXHIBIT "C"

All those certain pieces, parcels or lots of land lying and being in Bluffton Township, Beaufort County, South Carolina, consisting of "Parcel I" having and containing 226.547 acres, more or less, "Parcel II" having and containing 22.565 acres, more or less, "Parcel III" having and containing 14.004 acres, more or less, and "Parcel IV" having and containing 3.442 acres, more or less, and being more fully shown and depicted on that certain plat entitled "A Boundary Plat of The Crescent Tract I, Bluffton Township, Beaufort County, South Carolina", said plat being dated May 7, 1998, and recorded on September 18, 1998 in the Office of the Register of Deeds for Beaufort County, South Carolina in Plat Book 66 at Page 156.

SAVE AND EXCEPT, all those certain pieces, parcels or lots of land lying and being in Bluffton Township, Beaufort County, South Carolina, consisting of "Parcel I" having and containing 17.03 acres, more or less, "Parcel II" having and containing 22.57 acres, more or less, "Parcel III" having and containing 12.98 acres, more or less, "Parcel IV" having and containing 3.42 acres, more or less, "Parcel V" having and containing 34.30 acres, more or less, "Parcel VI" having and containing 36.58 acres, more or less, "Parcel VII" having and containing 14.00 acres, more or less, "Parcel VIII" having and containing 19.21 acres, more or less, and "Parcel IX" having and containing 60.43 acres, more or less, and being more fully shown and depicted on that certain plat entitled "A Boundary Plat of The Crescent Golf Course, Bluffton Township, Beaufort County, South Carolina", said plat being prepared by Coastal Surveying Co., Inc., Antoine Vinel, S.C.R.L.S. #9064, said plat being dated May 7, 1998, last revised November 11, 1998 and recorded on September 21, 1998 in the Office of the Register of Deeds for Beaufort County, South Carolina in Plat Book 66 at Page 157 and re-recorded in Plat Book 67 at Page 171, said record office. For a more detailed description of metes and bounds, courses and distances, reference is made to said plats of record.

Exhibit "D-1"

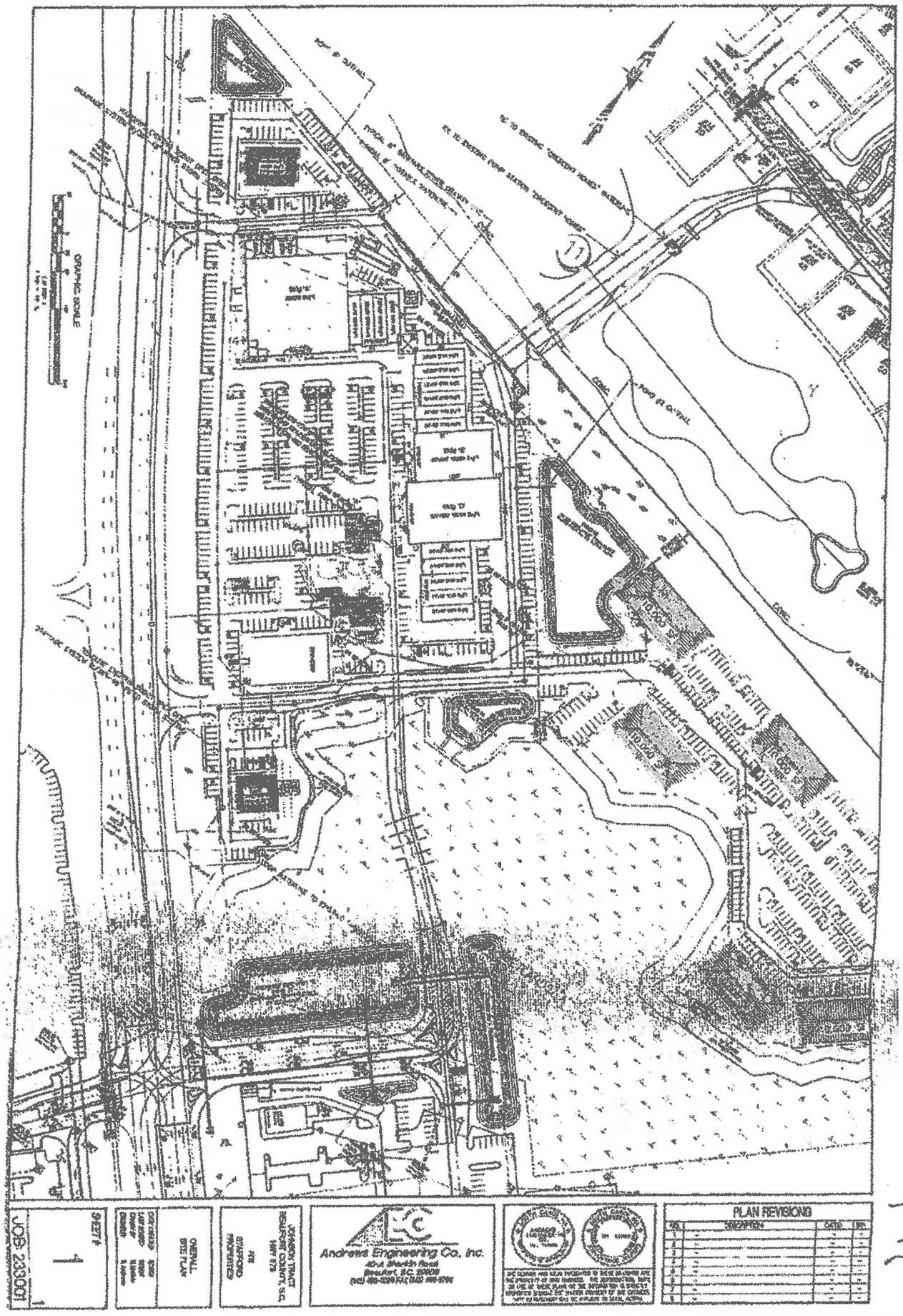
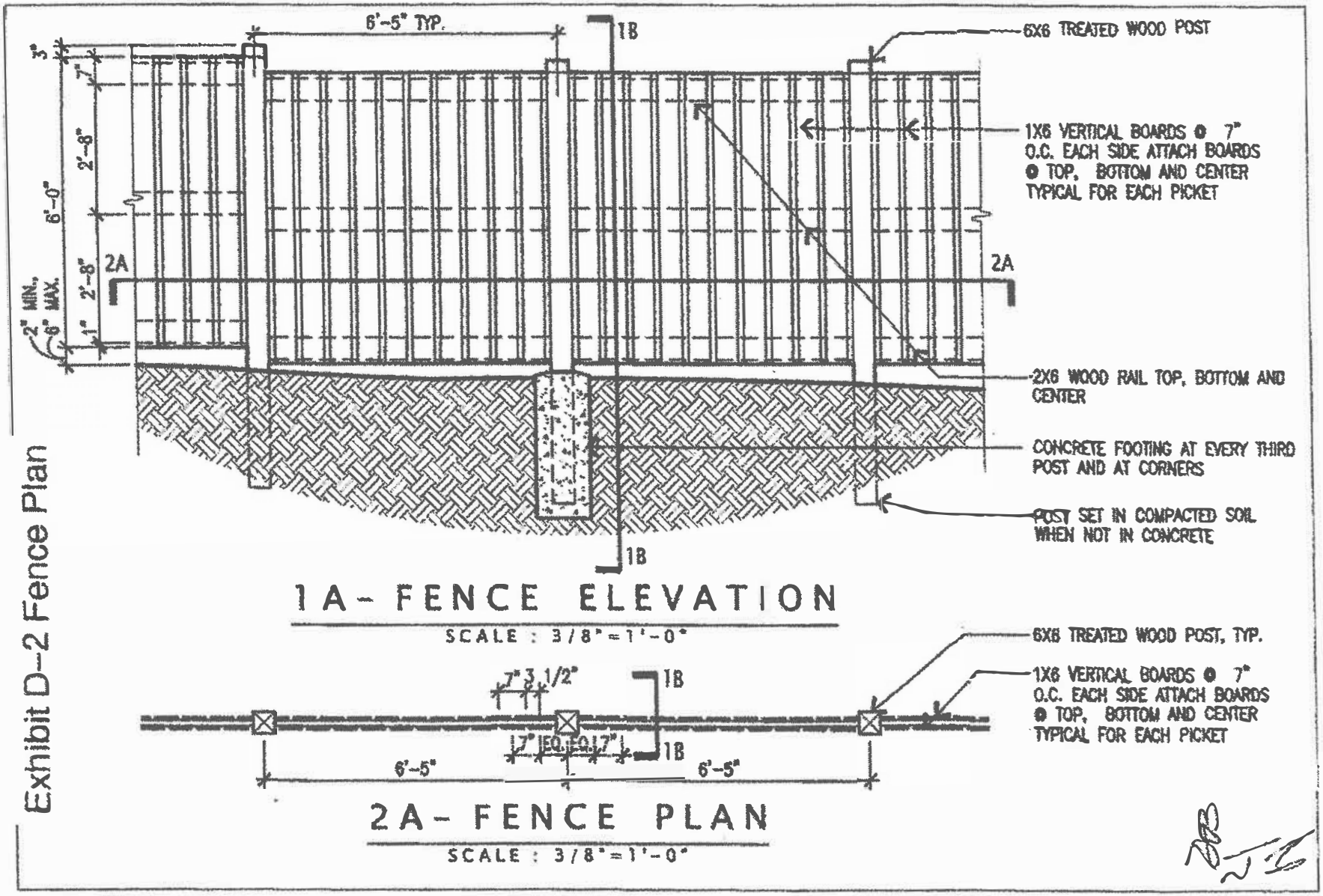


Exhibit D-2 Fence Plan



1A - FENCE ELEVATION

SCALE : 3/8"=1'-0"

2A - FENCE PLAN

SCALE : 3/8"=1'-0"

Privacy Fence for
HIGHWAY 278 COMMERCIAL CENTER

Bluffton, South Carolina

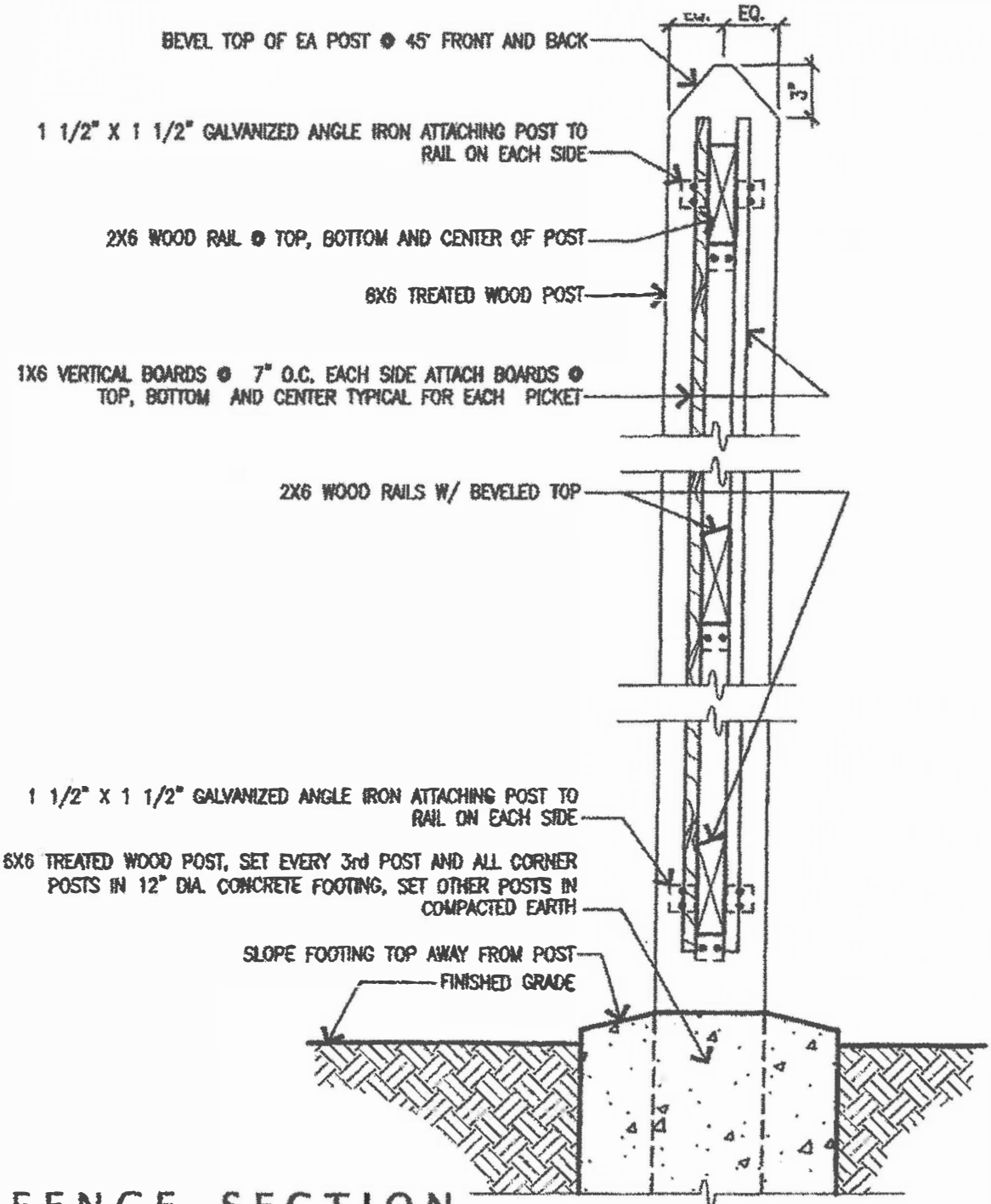
CORCORAN NELSON NARDONE I ASSOCIATES, INC

ARCHITECTURE | PLANNING | PREDESIGN | INTERIOR DESIGN | PROJECT MANAGEMENT | GRAPHIC DESIGN

Sheet Ref.:
Project No.: A02350
Date: 10/24/04

Sheet Number
A

Exhibit D-2 Fence Plan



1B- FENCE SECTION

SCALE : 1 1/2" = 1'-0"

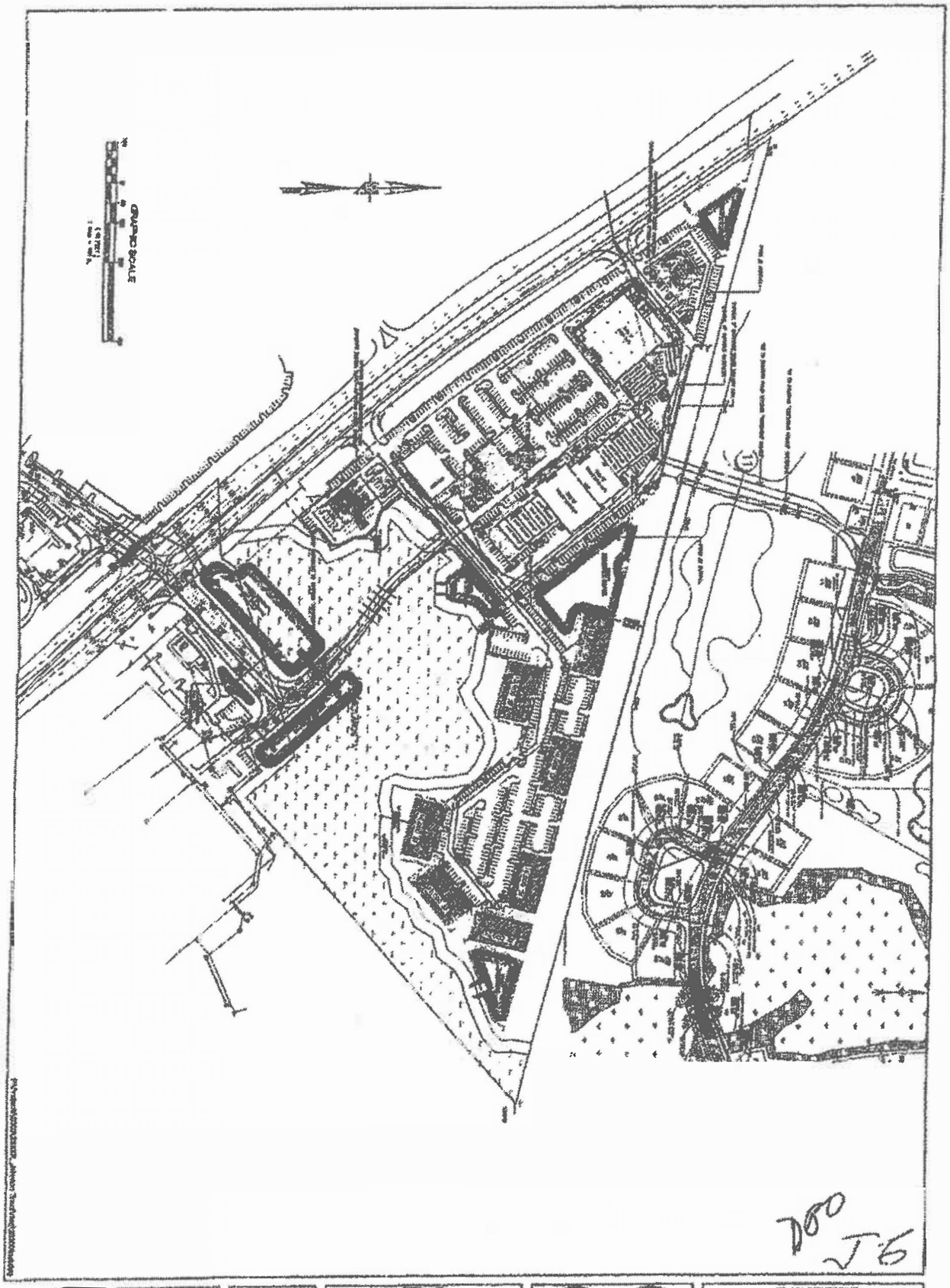
JFO JTB

Privacy Fence for
HIGHWAY 278 COMMERCIAL CENTER — Bluffton, South Carolina

CORCORAN NELSON NARDONE I ASSOCIATES, INC
110 LUCIE STREET NW | SUITE 100 | ATLANTA GEORGIA 30303-2146 | 404.522.0077 | 404.522.0060 FAX
ARCHITECTURE | PLANNING | ENGINEERING | INTERIOR DESIGN | PROJECT MANAGEMENT | GRAPHIC DESIGN

Sheet Ref.:
Project No.: A02350
Date: 10/24/04
Sheet Number B

Exhibit "D-3"



D80 J6

Exhibit D-4 Landscape Plan

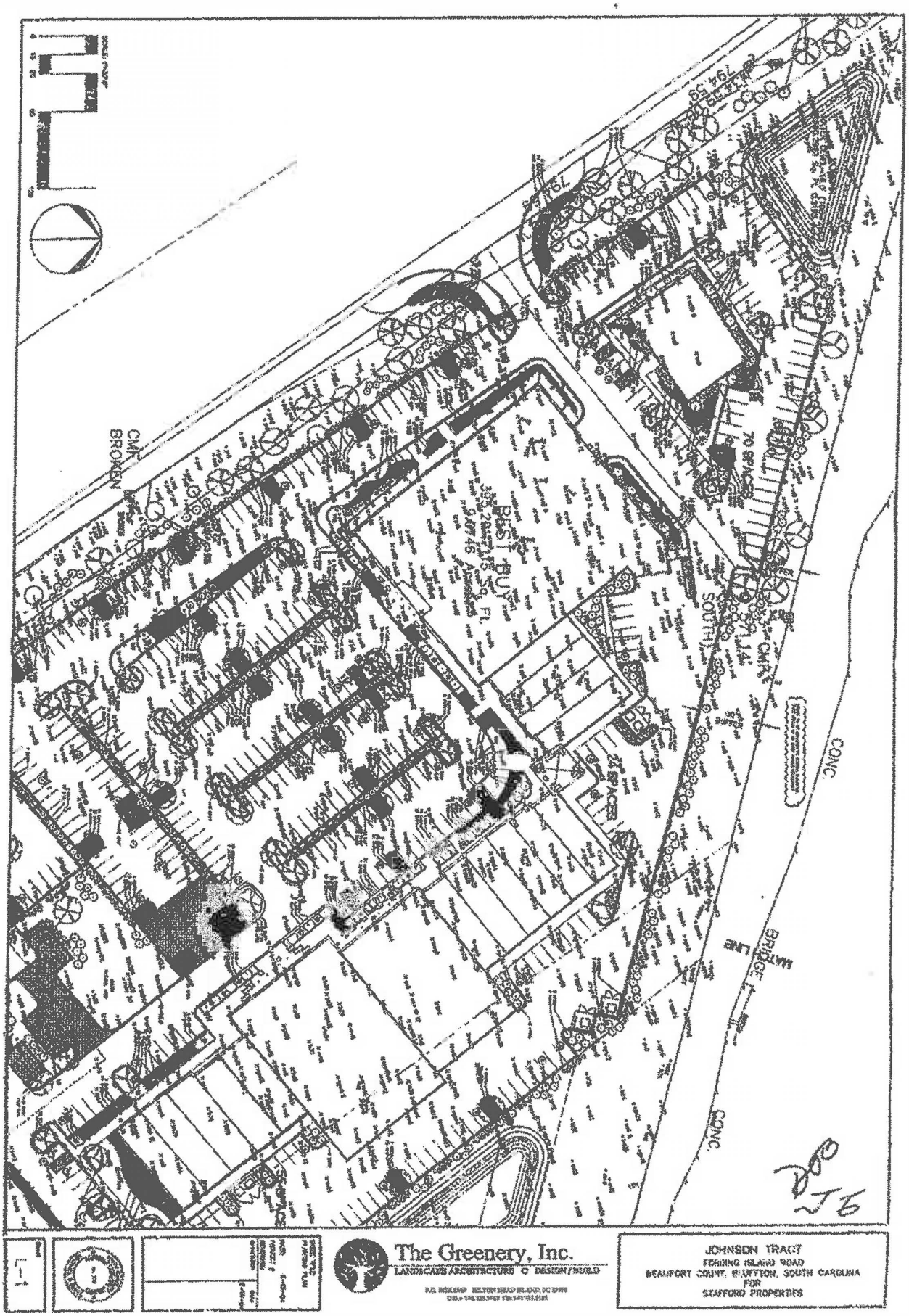


Exhibit D–4 Landscape Plan

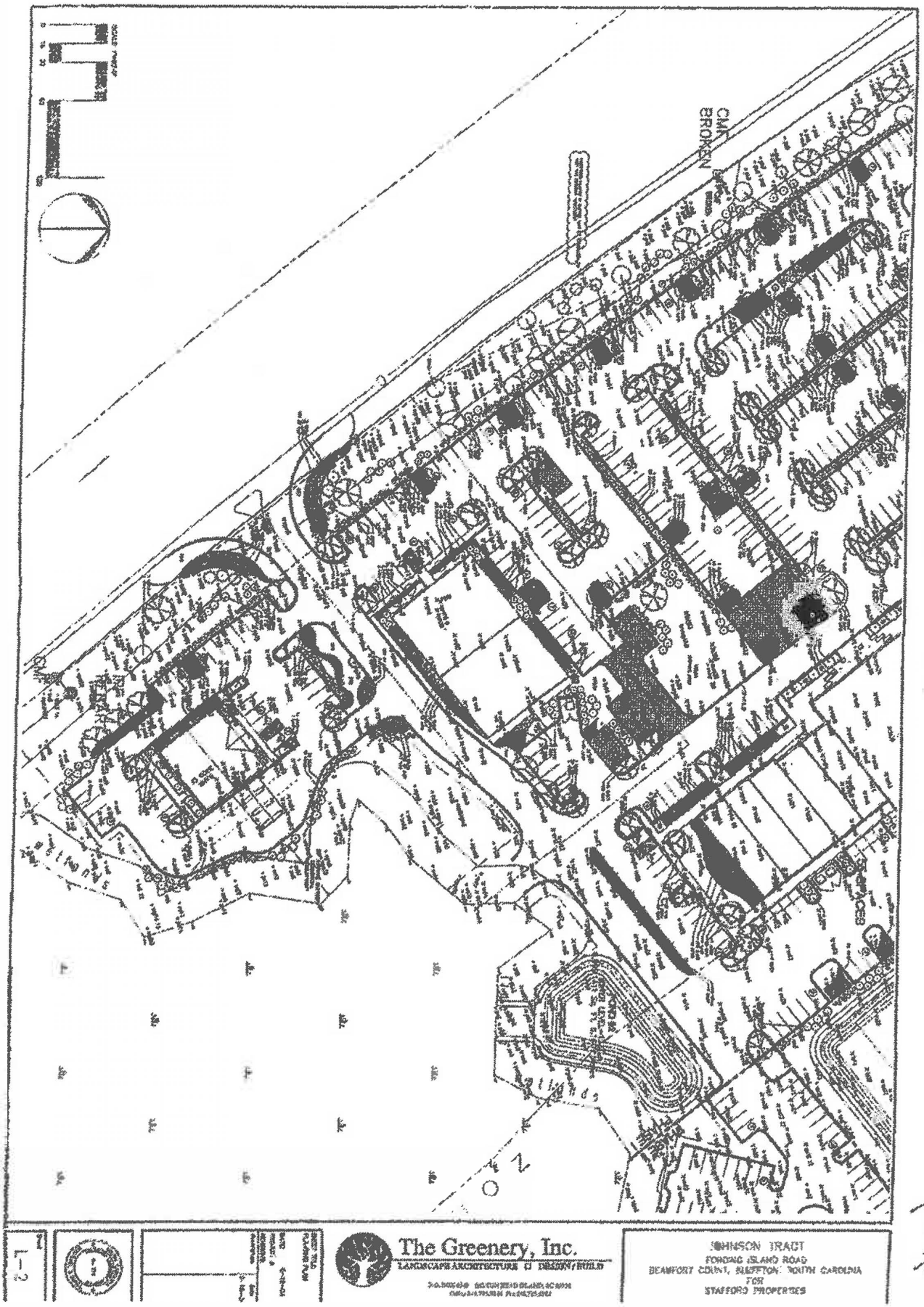
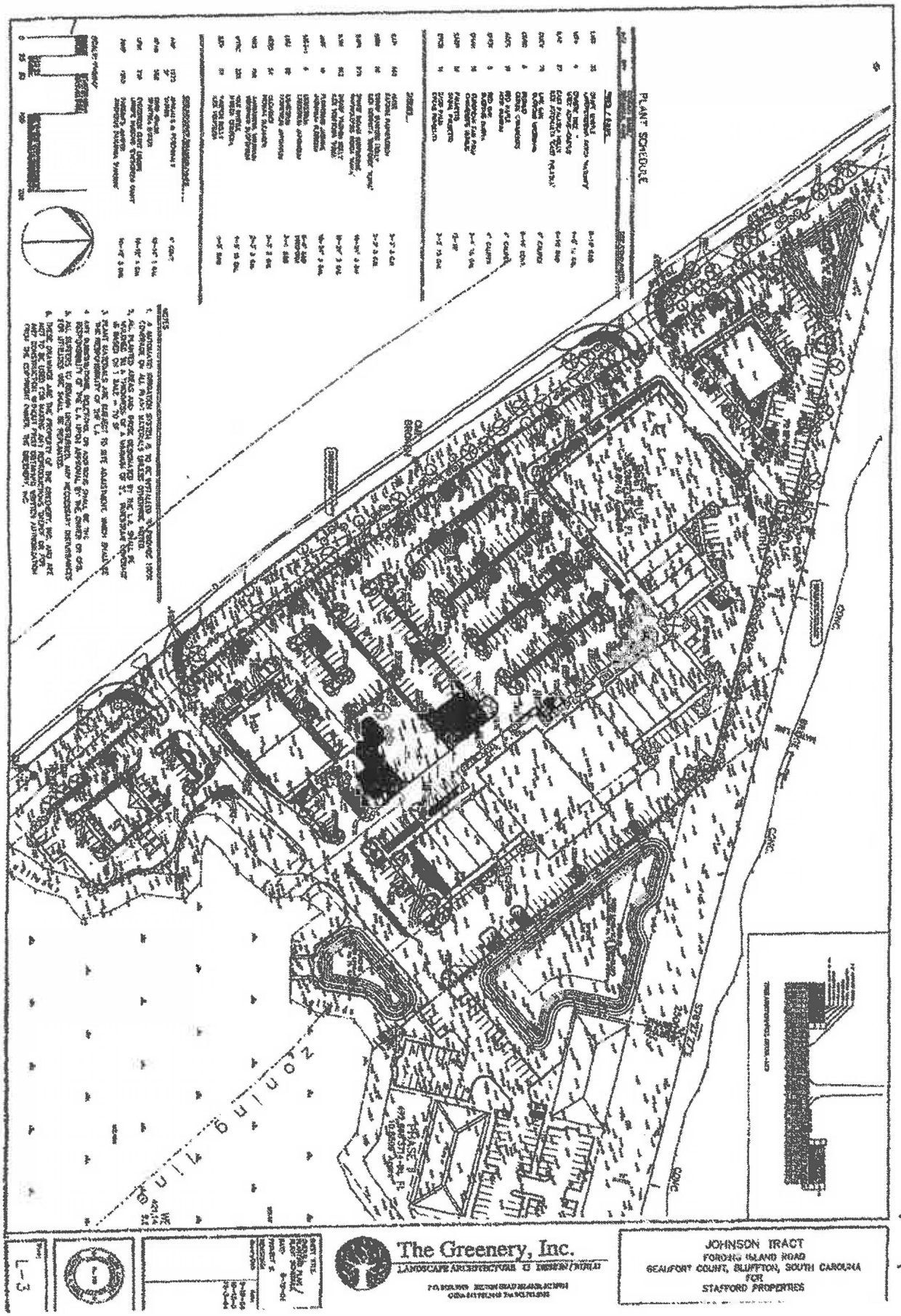
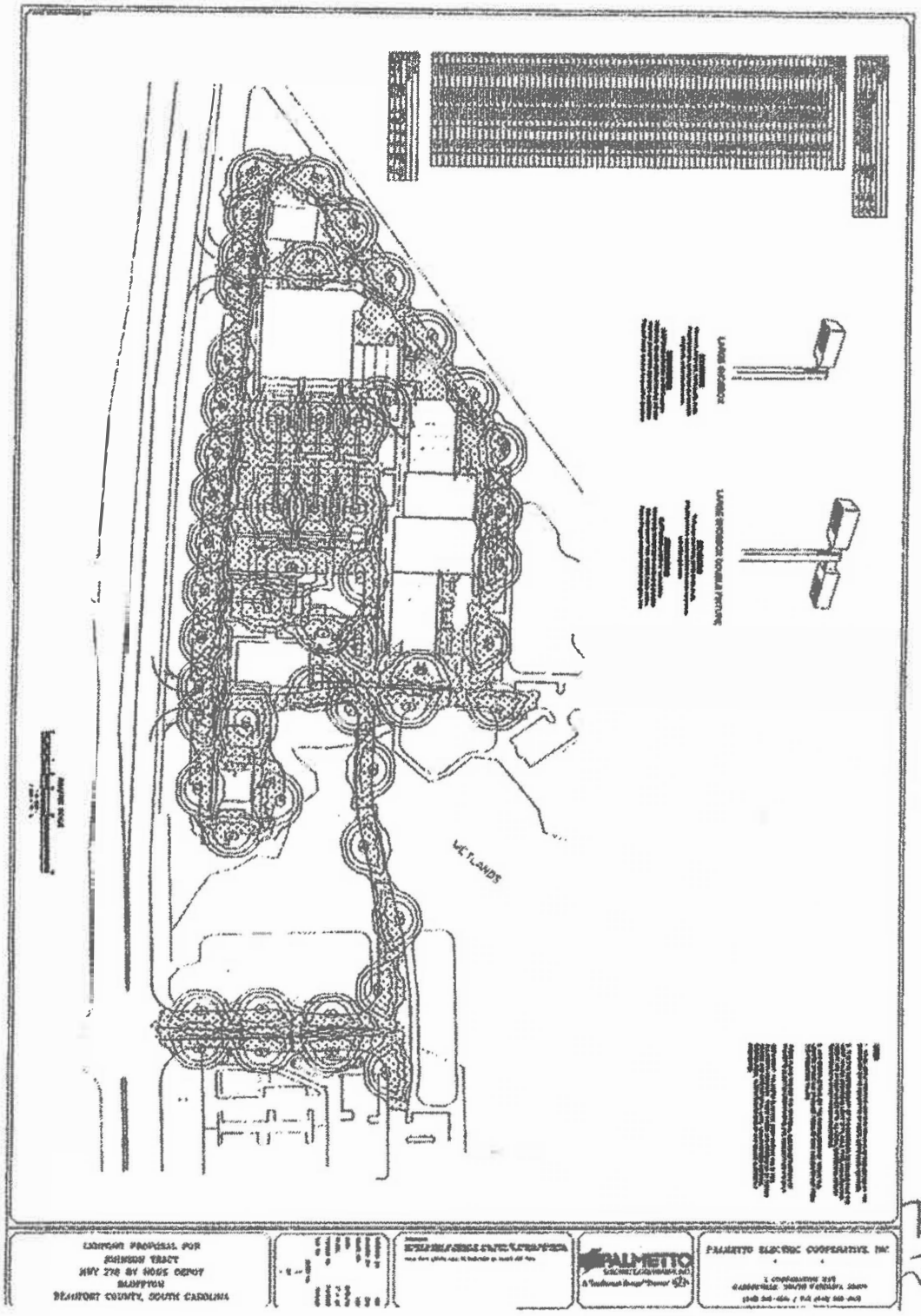


Exhibit D--4 Landscape Plan



Book2259/Page1602

Exhibtit D-5



9
1 5
Harbor
Sub

RECORDED
2017 Mar -23 02:35 PM
BEAUFORT COUNTY AUDITOR

BEAUFORT COUNTY SC - ROD
BK 3351 Pgs 473-481
FILE NUM 2014048229
10/06/2014 12:50:08 PM
REC'D BY fjenkins RCPT# 754949
RECORDING FEES $15.00

Mail after recording to: Harbor City Title Insurance Agency, Inc., 6201 Fairview Road, Suite 325, Charlotte, NC 28210; File No. 1408 2303

Exhibit E (9 pages)

This document prepared by and ~~should be returned to:~~

George A. Mattingly, Esq.
Arnall Golden Gregory LLP
171 17th Street, NW
Suite 2100
Atlanta, Georgia 30363

ADD DMP Record 3/20/2017 04:52:10 PM
BEAUFORT COUNTY TAX MAP REFERENCE

Dist	Map	SMap	Parcel	Block	Week
R600	032	000	0455	0000	00

GRANTEE'S ADDRESS: SR 278 Investments, LLC
1805 US Highway 82 West
Tifton, GA 31793

SPECIAL WARRANTY DEED

STATE OF SOUTH CAROLINA

COUNTY OF BEAUFORT

KNOW ALL MEN BY THESE PRESENTS: That, **STAFFORD RHODES, LLC**, a Georgia limited liability company, hereinafter called Grantor, for and in consideration of the sum of Ten and No/100th Dollars ($10.00) and other good and valuable consideration hereby acknowledged to have been paid to said Grantor by **SR 278 INVESTMENTS, LLC**, a Georgia limited liability company, hereinafter called Grantee, does hereby grant, bargain, sell, and convey unto the said Grantee, subject to the matters and reservations hereinafter set forth, Grantor's entire interest in and to the following described property, to-wit:

DMP R600 032 000 0452 0000

*All that certain 14.389 acre tract or parcel of land lying and being in Beaufort County, South Carolina, and being more particularly referenced as "**Future Phase**" on that certain plat of survey recorded in the Land Records for Beaufort County, South Carolina, in Plat Book 129 at Page 135, together with all buildings, structures, improvements and fixtures located thereon, and expressly including **Proposed Building I (1031 Fording Island Rd.), Proposed Building J (1037 Fording Island Rd.), Proposed Building K (1033 Fording Island Rd.), Proposed Building L (1039 Fording Island Rd.), Wetlands "A1", Wetlands "A2", Wetlands "A3"**, and **any other Common Elements located thereon**, and being more particularly described in Exhibit "A" attached hereto and by this reference made a part hereof (the "Property").*

NOTICE: PORTIONS OF THE PROPERTY ARE SUBJECT TO THE DECLARATION OF RESTRICTIVE COVENANTS RECORDED AT PLAT BOOK 115, PAGE 172, BEAUFORT COUNTY, SOUTH CAROLINA REGISTRY OF DEEDS ("DECLARATION").

TOGETHER with all and singular the rights of ways, easement rights, hereditaments and appurtenances thereunto belonging or in anywise appertaining.

TO HAVE AND TO HOLD unto said Grantee and unto Grantee's successors and assigns forever, subject to the reservations and restrictions of a limited warranty deed in the state of South Carolina.

AND, subject to ad valorem taxes not yet due and payable, and the matters set forth on Exhibit "B" attached hereto and hereby made a part hereof, Grantor will warrant and defend the right and title to the Property unto Grantee against the lawful claims of all persons claiming by, through, or under Grantor, Grantor's agents, successors and assigns against itself and its successors and assigns, and against all persons claiming through or under Grantor but not otherwise.

SIGNATURE OF GRANTOR SET FORTH ON ATTACHED PAGE

SIGNATURE PAGE OF GRANTOR

IN WITNESS WHEREOF, Grantor has caused this Special Warranty Deed to be executed in its name and its seal to be hereunto affixed, effective as of the 23rd day of September, 2014.

WITNESSES:

SIGNED, sealed and delivered in the presence of:

Witness
Print Name: Chad Tullos

Witness
Print Name: T. Stephen Edwards

GRANTOR:

STAFFORD RHODES, LLC
a Georgia limited liability company

By: Stafford Capital Corporation,
a Georgia corporation, Its manager

By: DeNean Stafford
Print Name:
Its: DENEAN STAFFORD PRESIDENT [SEAL]

ACKNOWLEDGMENT

STATE OF Georgia)
)
COUNTY OF Tift)

ACKNOWLEDGMENT

I Rhonda Hill, a Notary Public for the state and county aforesaid, do hereby certify that DeNean Stafford personally appeared before me this day and acknowledged that s/he is the President of Stafford Capital Corporation, which is the manager of Stafford Rhodes, LLC, a Georgia limited liability company, and that by authority duly given s/he executed the foregoing instrument on behalf of Stafford Capital Corporation, acting for and on behalf of Stafford Rhodes, LLC as the act and deed of the foregoing Stafford Rhodes, LLC for the purposes stated in such instrument and s/he is personally known to me.

Witness my hand and official seal
this 23rd day of September, 2014.

Notary Public for Tift County
My commission expires:
[SEAL]

RHONDA T. HILL NOTARY PUBLIC GEORGIA EXPIRES APR. 24, 2016 TIFT COUNTY

EXHIBIT A TO SOUTH CAROLINA SPECIAL WARRANTY DEED

Legal Description

Being the "FUTURE PHASE PROPERTY" described in the Master Deed (hereafter defined) for the FORDING 278 HORIZONTAL PROPERTY REGIME and being located in the Town of Bluffton, Beaufort County, South Carolina, a horizontal property regime established pursuant to the South Carolina Horizontal Property Act (Section 27-31-10 et seq., S.C. Code Ann. 1976, as amended), the Master Deed being dated December 17, 2009, with appended By-laws and Exhibits, including Survey and Plot Plan, Floor Plans and Elevations, which Master Deed, including By-laws and Exhibits, and being duly recorded in the ROD Office for Beaufort County on January 4, 2010, in Book 02921, at Page 1943, as amended (the "Master Deed"), together with an undivided interest in the Common Elements described in the Master Deed. The Master Deed, By-laws and Exhibits, and the records thereof are incorporated herein and by this reference made a part hereof.

The Property is conveyed subject to applicable covenants, restrictions, easements and other matters of record set forth in the Master Deed, as the same may be amended from time to time by instruments recorded in said ROD Office, and is benefitted by and conveyed together with all easements applicable to the Future Phase Property under the Master Deed, all of which constituting covenants running with the land and shall bind any person having at any time any interest or estate in the Future Phase Property, and such person's family, servants and visitors as though such provisions were recited and stipulated at length herein.

BEING a portion of the same premises conveyed to Stafford Rhodes, LLC by Nonie C. Johnson and Margaret J. Schultz, as Co-Trustees of the J.B. Johnson Marital Trust U/W dated 10/5/95 by deed recorded in the ROD Office for Beaufort County on January 28, 2005 in Book 02091, Page 1773.

TMS# A Portion of R600 032 000 0452 0000

EXHIBIT B

PERMITTED EXCEPTIONS
TO SOUTH CAROLINA SPECIAL WARRANTY DEED

All exceptions and other matters shown in that certain Owner's Title Insurance Commitment # 1406-2353, issued in the name of SR 278 INVESTMENTS, LLC on September 10, 2014.

(SR Investments)
6765701v2

STATE OF GEORGIA)

COUNTY OF TIFT)

TRANSFER TAX AFFIDAVIT

PERSONALLY appeared before me the undersigned, who being duly sworn, deposes and says:

1. I have read the information on this Affidavit and I understand such information.

2. The property, bearing TMS No.: a portion of R600-032-000-0452-0000, is being transferred by STAFFORD RHODES, LLC to SR 278 INVESTMENTS, LLC, on September 22nd 2014.

3. Check one of the following: The Deed is

   A. ___ subject to the deed recording fee as a transfer for consideration paid or to be paid in money or money's worth.

   B. __ not subject to the deed recording fee as a transfer between a corporation, a partnership or other entity and a stockholder, partner or owner of the entity, or is a transfer to a trust or as a distribution to a trust beneficiary.

   C. __x__ EXEMPT from the deed recording fee because (exemption # 8)

   (Explain, if required)
   No consideration Paid

4. Check one of the following if either item 3(A) or item 3(B) above has been checked:

   A. ___ The fee is computed on the consideration paid or to be paid in money or money's worth in the amount of $_____.00.

   B. ___ The fee is computed on the fair market value of the realty which is $ N/A

   C. ___ The fee is computed on the fair market value of the realty as established for property tax purposes which is $ _____

5. Check YES ___ or NO __X__ to the following: A lien or encumbrance existed on the land, tenement or realty before the transfer and remained on the land, tenement or realty after the transfer. If "YES", the amount of the outstanding balance of this lien or encumbrance is $TBD.

6. The DEED recording fee is computed as follows: $0.00.

7. As required by Code Section 12-24-70, I state that I am a responsible person who was connected with the transaction as: Grantor.

8. I understand that a person required to furnish this affidavit who willfully furnishes a false or fraudulent affidavit is guilty of a misdemeanor and, upon conviction, must be fined not more than one thousand dollars or imprisoned not more than one year, or both.

STAFFORD RHODES, LLC,
a Georgia limited liability company

By: Stafford Capital Corporation,
a Georgia Corporation, Its manager

By: DeAnn Stafford
Print Name:
Its: DENEAN STAFFORD
PRESIDENT

Sworn to and subscribed before
me this 9 day of Sept, 2014.

Rhonda Hill
Notary Public
Print Name: Rhonda Hill
My Commission Expires:
[Notary Seal]

RHONDA T. HILL
NOTARY PUBLIC
GEORGIA
EXPIRES
APR. 24, 2016
TIFT COUNTY

EXEMPTIONS FROM DEED RECORDING FEE - SECTION 12-24-40

Effective 6-10-97

Exempted from the Fee imposed by this chapter are Deeds:

1. transferring realty in which the value of the realty, as defined in Section 12-24-30, is equal to or less than $100;

2. transferring realty to the federal government or to the state, its agencies and departments, and its political subdivisions, including school districts;

3. that are otherwise exempted under the laws and Constitution of this State or of the United States;

4. transferring realty in which the gain or loss is recognized by reasons of Section 1041 of the Internal Revenue Code as defined in Section 12-6-40(A);

5. transferring realty in order to partition realty, as long as no consideration is paid for the transfer other than the interest in the realty that are exchanged in order to effect the partition;

6. transferring an individual grave space at a cemetery owned by a cemetery company licensed under Chapter 55 of Title 39;

7. that constitute a contract for the sale of timber to be cut;

8. transferring realty to a corporation, a partnership, or a trust as a stockholder, partner, or trust beneficiary of the entity or so as to become a stockholder, partner, or trust beneficiary of the entity as long as no consideration is paid for the transfer other than stock in the corporation, interest in the partnership, beneficiary interest in the trust, or the increase in value in the stock or interest held by the grantor. However, except for transfers from one family trust to another family trust without consideration, the transfer of realty from a corporation, a partnership, or a trust to a stockholder, partner, or trust beneficiary of the entity is subject to the fee, even if the realty is transferred to another corporation, a partnership, or trust.

9. transferring realty from a family partnership to a partner or from a family trust to a beneficiary, as long as no consideration is paid for the transfer other than a reduction in the grantee's interest in the partnership or trust. A 'family partnership' is a partnership whose partners are all members of the same family. A 'family trust' is a trust in which the beneficiaries are all members of the same family. 'Family' means the grantor, the grantor's spouse, parents, grandparents, sisters, brothers, children, stepchildren, grand children, and the spouses and lineal descendant of any of them, and the grantor's and grantor's spouse's heirs under statute of descent and distribution. A 'family partnership' or 'family trust' also includes charitable entities, other family partnerships and family trusts of the grantor, and 'charitable entity' means an entity which may receive deductible contributions under Section 170 of the Internal Revenue Code as defined in Section 12-6-40(A);

10. transferring realty in a statutory merger or consolidation from a constituent corporation to the continuing or new corporation;

11. transferring realty in a merger or consolidation partnership to the continuing or new partnership;

12. that constitute or corrective deed or a quitclaim deed used to confirm title already vested in the grantee, as long as no consideration is paid or is to be paid under the corrective or quitclaim deed.

13. transferring realty subject to a mortgage to the mortgagee whether by a deed in lieu of foreclosure executed by the mortgagor or deed executed pursuant to foreclosure proceedings.

Exhibit F
13
McNair
6019

RECORDED,
2017 Mar -23 02:36 PM
BEAUFORT COUNTY AUDITOR

BEAUFORT COUNTY SC - ROD
BK 3441 Pgs 210-216
FILE NUM 2015057916
11/04/2015 11:58:16 AM
REC'D BY cwarren RCPT# 792706
RECORDING FEES $13.00
County Tax $464.20
State Tax $1,097.20

This document should be returned to:

George A. Mattingly, Esq.
Arnall Golden Gregory LLP
171 17th Street, NW
Suite 2100
Atlanta, Georgia 30363

ADD DMP Record 3/20/2017 04:52:55 PM
BEAUFORT COUNTY TAX MAP REFERENCE

Dist	Map	SMap	Parcel	Block	Week
R600	032	000	0455	0000	00

Exhibit F (7 pages)

This document prepared under the supervision of:

Walter J. Nester, III, Esq.
McNair Law Firm, P.A.
23-B Shelter Cove Lane
Suite 400
Hilton Head, SC 29928

GRANTEE'S ADDRESS: STAFFORD BLUFFTON LAND, LLC
1805 US Highway 82 West
Tifton, GA 31793

SPECIAL WARRANTY DEED

STATE OF SOUTH CAROLINA

COUNTY OF BEAUFORT

KNOW ALL MEN BY THESE PRESENTS: That, **SR 278 INVESTMENTS, LLC,** a Georgia limited liability company, hereinafter called Grantor, for and in consideration of the sum of Ten and No/100th Dollars ($10.00) and other good and valuable consideration hereby acknowledged to have been paid to said Grantor by **STAFFORD BLUFFTON LAND, LLC,** a Georgia limited liability company, hereinafter called Grantee, does hereby grant, bargain, sell, and convey unto the said Grantee, subject to the matters and reservations hereinafter set forth, Grantor's entire interest in and to the following described property, to-wit:

All that certain tract or parcel of land lying and being in Beaufort County, South Carolina, and being more particularly described in Exhibit "A" attached hereto and by this reference made a

(FPP, SWD- SR Investments)
HILTONHEAD 946761v1

part hereof together with all buildings, structures, improvements and fixtures located thereon (the "Property").

NOTICE: PORTIONS OF THE PROPERTY ARE SUBJECT TO THE PRESERVED WETLANDS SHOWN ON PLAT AT PLAT BOOK 115, PAGE 172, BEAUFORT COUNTY, SOUTH CAROLINA REGISTRY OF DEEDS ("DECLARATION").

TOGETHER with all and singular the rights of ways, easement rights, hereditaments and appurtenances thereunto belonging or in anywise appertaining.

TO HAVE AND TO HOLD unto said Grantee and unto Grantee's successors and assigns forever, subject to the reservations and restrictions of a limited warranty deed in the state of South Carolina.

AND, subject to ad valorem taxes not yet due and payable, and the matters set forth on Exhibit "B" attached hereto and hereby made a part hereof, Grantor will warrant and defend the right and title to the Property unto Grantee against the lawful claims of all persons claiming by, through, or under Grantor, Grantor's agents, successors and assigns against itself and its successors and assigns, and against all persons claiming through or under Grantor but not otherwise.

SIGNATURE OF GRANTOR SET FORTH ON ATTACHED PAGE

SIGNATURE PAGE OF GRANTOR

IN WITNESS WHEREOF, Grantor has caused this Special Warranty Deed to be executed in its name and its seal to be hereunto affixed, effective as of the 23rd day of October, 2015.

WITNESSES:

SIGNED, sealed and delivered in the presence of:

Witness
Print Name: Chad Tullos

Witness
Print Name: Gene Arnold

GRANTOR:

SR 278 INVESTMENTS, LLC
a Georgia limited liability company

By: Stafford Capital Corporation,
a Georgia corporation, Its manager

By: _____
Print Name: Frank J. Jones Jr.
Its: Treasurer
[SEAL]

ACKNOWLEDGMENT

STATE OF Georgia)
)
COUNTY OF Tift)

ACKNOWLEDGMENT

I Rhonda Hill, a Notary Public for the state and county aforesaid, do hereby certify that Frank Jones personally appeared before me this day and acknowledged that s/he is the Treasurer of Stafford Capital Corporation, which is the manager of SR 278 INVESTMENTS, LLC, a Georgia limited liability company, and that by authority duly given s/he executed the foregoing instrument on behalf of Stafford Capital Corporation, acting for and on behalf of SR 278 INVESTMENTS, LLC as the act and deed of the foregoing SR 278 INVESTMENTS, LLC for the purposes stated in such instrument and s/he is personally known to me.

Witness my hand and official seal
this 16th day of Oct, 2015

Notary Public for Georgia
My commission expires: 04/24/16
[SEAL]

RHONDA T. HILL
NOTARY PUBLIC
GEORGIA
EXPIRES
APR. 24, 2016

(FPP, SWD- SR Investments)

EXHIBIT A TO SOUTH CAROLINA SPECIAL WARRANTY DEED

Legal Description

All that certain 14.389 acre tract or parcel of land lying and being in Beaufort County, South Carolina, and being more particularly referenced as "Future Phase" on that certain plat of survey recorded in the Beaufort County records in Plat Book 129 at Page 135, together with all buildings, structures, improvements and fixtures located thereon, and expressly including Proposed Building I (1031 Fording Island Rd.), Proposed Building J (1037 Fording Island Rd.), Proposed Building K (1033 Fording Island Rd.), Proposed Building L (1039 Fording Island Rd.), Wetlands "A1", Wetlands "A2", Wetlands "A3", and any other Common Elements located thereon, and being more particularly described as follows:

Being the "FUTURE PHASE PROPERTY" described in the Master Deed (hereafter defined) for the FORDING 278 HORIZONTAL PROPERTY REGIME and being located in the Town of Bluffton, Beaufort County, South Carolina, a horizontal property regime established pursuant to the South Carolina Horizontal Property Act (Section 27-31-10 et seq., S.C. Code Ann. 1976, as amended), the Master Deed being dated December 17, 2009, with appended By-laws and Exhibits, including Survey and Plot Plan, Floor Plans and Elevations, which Master Deed, including By-laws and Exhibits, and being duly recorded in the ROD Office for Beaufort County on January 4, 2010, in Book 02921, at Page 1943, as amended (the "Master Deed"), together with an undivided interest in the Common Elements described in the Master Deed. The Master Deed, By-laws and Exhibits, and the records thereof are incorporated herein and by this reference made a part hereof.

The Property is conveyed subject to applicable covenants, restrictions, easements and other matters of record set forth in the Master Deed, as the same may be amended from time to time by instruments recorded in said ROD Office, and is benefitted by and conveyed together with all easements applicable to the Future Phase Property under the Master Deed, all of which constituting covenants running with the land and shall bind any person having at any time any interest or estate in the Future Phase Property, and such person's family, servants and visitors as though such provisions were recited and stipulated at length herein.

The within property is also conveyed subject to all other applicable obligations, restrictions, limitations, and covenants of record in the Office of the Register of Deeds for Beaufort County, South Carolina.

BEING the same premises conveyed to SR 278 INVESTMENTS, LLC by Stafford Rhodes, LLC by deed recorded in the ROD Office for Beaufort County on October 6, 2014 in Book 3351, Page 473.

TMS# A Portion of R600 032 000 0452 0000

Together with all easements applicable to the Future Phase Property under the Master Deed, all of which constitute covenants running with the land.

Exhibit A

EXHIBIT B

PERMITTED EXCEPTIONS
TO SOUTH CAROLINA SPECIAL WARRANTY DEED

All exceptions and other matters shown in that certain Owner's Title Insurance Commitment # ☆_____, issued in the name of STAFFORD BLUFFTON LAND, LLC on October 19, 2015.

☆ 199998-00140 - 15- WJN

STATE OF GEORGIA)

TRANSFER TAX AFFIDAVIT

COUNTY OF TIFT)

PERSONALLY appeared before me the undersigned, who being duly sworn, deposes and says:

1. I have read the information on this Affidavit and I understand such information.

2. The property, bearing TMS No.: a portion of R600-032-000-0452-0000, is being transferred by SR 278 INVESTMENTS, LLC to STAFFORD BLUFFTON LAND, LLC, on October 23, 2015.

3. Check one of the following: The Deed is

   A. _x_ subject to the deed recording fee as a transfer for consideration paid or to be paid in money or money's worth.

   B. ___ not subject to the deed recording fee as a transfer between a corporation, a partnership or other entity and a stockholder, partner or owner of the entity, or is a transfer to a trust or as a distribution to a trust beneficiary.

   C. ___ EXEMPT from the deed recording fee because (exemption # 8)

   (Explain, if required)

   Check one of the following if either item 3(A) or item 3(B) above has been checked:

___ The fee is computed on the consideration paid or to be paid in money or money's worth in the amount of $ 421,965.10.

   A. ___ The fee is computed on the fair market value of the realty which is $ N/A

   B. ___ The fee is computed on the fair market value of the realty as established for property tax purposes which is $ _____.

4. Check YES ___ or NO _X_ to the following: A lien or encumbrance existed on the land, tenement or realty before the transfer and remained on the land, tenement or realty after the transfer. If "YES", the amount of the outstanding balance of this lien or encumbrance is $TBD.

5. The DEED recording fee is computed as follows: $421,965.10/500.00 times $1.85 = $1,561.[illegible].

6. As required by Code Section 12-24-70, I state that I am a responsible person who was connected with the transaction as: Grantor.

7. I understand that a person required to furnish this affidavit who willfully furnishes a false or fraudulent affidavit is guilty of a misdemeanor and, upon conviction, must be fined not more than one thousand dollars or imprisoned not more than one year, or both.

SR 278 INVESTMENTS, LLC,
a Georgia limited liability company

By: Stafford Capital Corporation,
a Georgia Corporation, Its manager

By: _____
Print Name: Frank Jones, Jr.
Its: Treasurer

[SEAL]

Sworn to and subscribed before
me this 19th day of Oct, 2015

_____
Notary Public
Print Name: Rhonda Hill
My Commission Expires: 04/24/16
[Notary Seal]

App# 1931

COUNTY OF BEAUFORT
COMMUNITY DEVELOPMENT CODE
CONCEPTUAL PLAN APPLICATION

Exhibit G (1 page)

DATE ACCEPTED	RECEIVED BY	ZONING	OVERLAY DISTRICT	DISTRICT	MAP#	PARCEL#
11/21/17		C5	N/A	600	32	452

PROJECT NAME	PROJECT TYPE
Best Buy Center - Phase 2	Multifamily

APPLICANT (DEVELOPER) NAME, ADDRESS, PHONE #	PROPERTY OWNER NAME, ADDRESS, PHONE #
Thomas Design Group, LLC; 74 Sparwheel Ln, HHI, SC 29926 Mike Thomas, Owner	SR 278 LLC, 1805 US HWY 82 W, TIFTON, GA 31793

FIRE DISTRICT	DENSITY	LAND AREA (ACRES)	# LOTS	# UNITS	SQFT. BLDG.	# BLDGS	DATE OF PREAPPL MEETING
Bluffton	15/ac.	5.00	1	45	Varies	4	11/15/17

FLOOR AREA RATIO	PROJECT LOCATION	MINIMUM LOT WIDTH	MINIMUM LOT DEPTH	MINIMUM LOT SIZE
n/a	1031 Fording Isl Rd	n/a	n/a	n/a

IS THE PROPERTY RESTRICTED BY RECORDED COVENANTS THAT ARE CONTRARY TO OR CONFLICT WITH THE REQUESTED PERMIT ACTIVITY YES ☐ NO ☑

- ☑ SEVEN COPIES BLACK/BLUE LINES OF PROPOSED PROJECT LAYOUT, NORTH ARROW, GRAPHIC SCALE AND DATE
- ☑ VICINITY MAP SHOWING PROJECT LOCATION
- ☑ DEVELOPMENT PROPERTY BOUNDARY LINES WITH BEARINGS AND DISTANCES
- ☑ NARRATIVE DESCRIBING NATURE AND SCOPE OF PROJECT
- ☑ TREE SURVEY AND INDICATION OF REQUESTED TREE REMOVAL
- ☐ NATURAL RESOURCE SURVEY
- ☑ WETLANDS BOUNDARY DETERMINATION AND CERTIFICATION
- ☑ PROPOSED PARKING SPACES (IF APPLICABLE)
- ☑ ARCHAEOLOGICAL/HISTORIC SITE DETERMINATION
- ☐ PROPOSED MODULATION (IF APPLICABLE)
- ☐ BUILDING TYPE **(TRANSECT ZONES ONLY, EXCEPT T1, T2R, & T2RN)**
- ☑ PROPOSED SETBACK, BUFFER, OPEN SPACE AND CIVIC AREAS, LANDSCAPED AREAS
- ☑ ADJACENT PROPERTY EXISTING LAND USES AND PROPERTY OWNERS NAMES
- ☑ EXISTING BUILDINGS, STRUCTURES, FACILITIES AND EASEMENTS ON DEVELOPMENT PROPERTY
- ☑ CONCEPTUAL DRAINAGE PLAN
- ☐ FOR COMMUNICATION TOWERS – CO-LOCATION STUDY AND VISUAL IMPACT ANALYSIS
- ☐ EXISTING AND PROPOSED COUNTY WIDE COVERAGE BY SERVICE PROVIDER
- ☑ DIGITAL COPY OF ENTIRE PROJECT

RECEIVED
NOV 21 2017
Community Development Dept.

APPLICANT'S SIGNATURE _____ DATE 2017.11.20 REVIEW DATE 2017.12.13

Exhibit H (5 pages)

BEAUFORT COUNTY
COMMUNITY DEVELOPMENT CODE
- MULTI FAMILY AND NONRESIDENTIAL FINAL PLAN APPLICATION-

PERMIT	DATE ACCEPTED	RECEIVED BY	FILING FEE	RECEIPT#	ZONING	OVERLAY DISTRICT
					C5RCMU	n/a

PROJECT NAME	PROJECT TYPE
Osprey Cove Apartments	Commercial

APPLICANT (DEVELOPER) NAME, ADDRESS, PHONE#	PROPERTY OWNER NAME, ADDRESS, PHONE#
Welles LOM, LLC980 N. Michigan Ave , Ste. 1600, Chicago, IL 60611 / Mike Thomas, 843-715-9434, mthomas.icon@gmail.com	Welles LOM, LLC980 N. Michigan Ave., Ste 1600, Chicago, IL 60611 / Mike Thomas, 843-715-9434, mthomas.icon@gmail.com

PROJECT LOCATION	PIN	LAND AREA (ACRES)	BLDG AREA	#BLDGS	#UNITS	FIRE DISTRICT
1031,1033,1037, & 1039 Fording Island Road, Bluffton SC 29910	R600 032 000 0452 0000	2.7 disturbed acres	27,000 SF	4	45	Bluffton

- FINAL PLAN INFORMATION REQUIRED -

IS THE PROPERTY RESTRICTED BY RECORDED COVENANTS THAT ARE CONTRARY TO OR CONFLICT WITH THE REQUESTED PERMIT ACTIVITY YES ( ) NO ( )

- ☒ EIGHT BLACK LINE COPIES OF THE DEVELOPMENT SITE PLAN WITH INFRASTRUCTURE CONSTRUCTION DRAWINGS
- ☒ VICINITY MAP SHOWING PROJECT LOCATION, NORTH ARROW, GRAPHIC SCALE AND DATE (Site Plans)
- ☒ DEVELOPMENT PROPERTY BOUNDARY LINES WITH BEARINGS AND DISTANCES (Site Plans)
- ☒ EXISTING ROADS, STREETS, HIGHWAYS ON OR ADJACENT TO PROPERTY (NAME, NUMBER, RIGHT OF WAY WIDTH) (Site Plans)
- ☒ EXISTING DRAINAGE DITCHES, CANALS, WATER COURSES ON OR ADJACENT TO PROPERTY (Site Plans)
- ☒ EXISTING BUILDINGS, STRUCTURES AND FACILITIES ON THE DEVELOPMENT PROPERTY (Site Plans)
- ☒ EXISTING ELECTRIC, TELEPHONE, GAS, WATER, SEWER UTILITY LINES ON OR ADJACENT TO THE PROPERTY (Site Plans)
- ☒ ADJACENT PROPERTY EXISTING LAND USES AND PROPERTY OWNER NAMES (Site Plans)
- ☒ NARRATIVE DESCRIBING NATURE & SCOPE OF PROJECT
- ☐ WETLANDS BOUNDARY DETERMINATION & CERTIFICATION
- ☐ PROTECTED RESOURCES SITE CAPACITY ANALYSIS (ART. 5) (Reference Narrative)
- ☒ TREE SURVEY & INDICATION OF REQUESTED TREE REMOVAL (Site Plans)
- ☒ TREE PROTECTION ZONES & PROPOSED TREE PROTECTION METHODS (Site Plans)
- ☒ TREE PLANTING AND REPLACEMENT PLAN (Landscaping Plans)
- ☒ ARCHAEOLOGICAL SITE DETERMINATION FROM PLANNING
- ☒ EXISTING AND PROPOSED FIRE HYDRANT LOCATIONS (Site Plans)
- ☒ PROPOSED ACCESS TO EXISTING ROADS, CIRCULATION ROUTES, PARKING SPACE LAYOUT & DIMENSIONS (Site Plans)
- ☐ TRAFFIC IMPACT ANALYSIS (N/A)
- ☒ PROPOSED SETBACKS, BUFFERS, OPEN SPACE AREAS AND LANDSCAPED AREAS (Site Plans)
- ☒ TOPOGRAPHIC SURVEY, DRAINAGE PLAN, CALCULATIONS , ANDBMP ANALYSIS
- ☒ FINAL WATER SUPPLY & SEWAGE DISPOSAL PLANS (Site Plans)
- ☒ FINAL DESIGN & LAYOUT OF UNDERGROUND ELECTRIC, TELEPHONE, GAS & CABLE TV UTILITY LINES (Site Plans)
- ☒ LETTERS OF CAPABILITY & COMMITMENT TO SERVE WATER, SEWER, UNDERGROUND ELECTRIC & TELEPHONE FROM THE AFFECTED AGENCIES
- ☒ FINAL HEALTH DEPARTMENT PERMITS OR APPROVALS FOR WATER AND SEWER SYSTEMS (DRP Letter, BJWSA)
- ☐ OCRM PERMITS AND APPROVALS (Pending)
- ☐ CORRIDOR REVIEW BOARD APPROVAL (N/A)
- ☐ SCDOT ENCROACHMENT PERMIT (N/A)
- ☒ FIRE SAFETY STANDARDS APPROVAL BY FIRE OFFICIAL
- ☒ OTHER APPLICABLE AGENCY PERMITS OR APPROVALS
- ☒ EXTERIOR LIGHTING PLAN

APPLICANTS SIGNATURE _____ DATE 3/26/18 REVIEW DATE _____

PROJECT NARRATIVE FOR FINAL STAFF REVIEW TEAM (SRT)
BEAUFORT COUNTY, SOUTH CAROLINA

Project:	Osprey Cove Apartments – (Final SRT)	
Date:	**March 26, 2018**	
Applicant:	**WELLES LOM, LLC** 980 N. Michigan Ave., Ste. 1600 Chicago, IL 60611 Michael Thomas, mthomas.icon@gmail.com Office: (843) 715-9434 Mobile: (843) 816-0678	
Agent:	Paul Moore, PE Ward Edwards Engineering P.O. Box 381 Bluffton, SC 29910 Office: (843) 837-5250 Mobile: (843) 384-5266	
Parcel:	911 Addresses:	1031, 1033, 1037, & 1039 Fording Island Rd
	Property ID:	R600 032 000 0452 0000
	Current Owner:	SR 278 LLC 1805 US Highway 82 West Tifton, GA 31793
	Acreage:	14.389 acres (entire Parcel R600-32-452) ±5.00 acres (Phase 2 only)
Zoning:	C5 Regional Center Mixed-Use (C5RCMU)	
Overlays:	N/A (Per Nancy Moss, the project is not located within DRB jurisdiction)	
Approval sought:	**Final SRT**	

Project Description:
Applicant proposes development of a 45-unit multifamily housing development on a 5.0 acre (3.40 acre upland) portion of Best Buy Center on Fording Island Road in Bluffton, Beaufort County, South Carolina.

Development Permit History:

Phase II of Best Buy Center was previously designed and permitted as a commercial office complex. Beaufort County Development Permit #4775 was issued on January 9, 2008 with a two year validity period and the ability to request five (5) one-year extensions.

Existing Site Condition:

The site has already been cleared, grubbed, and a double 36" pipe drainage connection installed between the two existing stormwater ponds. Water, sewer, and power were extended to the western edge of the development site. The site is zoned C5RCMU and the property to the north is Crescent Pointe Golf Course (Zoned PUD).

Allowed Uses (Division 3.3):

- Single-Family Detached Unit: TCP
- Single-Family Attached Unit: TCP
- Two Family Unit (Duplex): TCP
- Multi-Family Unit: P
- Accessory Unit: TCP
- Community Residence (dorms, convents, assisted living, temporary shelters): TCP

P=permitted, TCP=Permitted only as part of a Traditional Community Plan under requirements of Division 2.3

Building Height (3.3.50):

Per CDC Section 3.3.50, the maximum allowable building height is 3 stories.

Gross Density and Floor Area Ratio (3.3.50):

- 15.0 d.u./acre max (Gross Density is total # of dwelling units on a site divided by the Base Site Area as calculated in Division 6.1.40.F)
- Base Site Area = 3.40 acres x 15.0 du/acre = **51 units allowed, 45 provided**

Setbacks:

Distance from ROW/Property Line
Front: 25' min.
Side, Main Building: 15' min (provided).
Side, Ancillary Building: 15' min
Rear: 10' min (75' provided)

Buffers (Section 5.8):

Foundation Buffer Required – min. 8 ft
180 sq ft tree island required every 8 parking spaces
Perimeter buffer: Type B per Table 58.90.F (Proposed Residential II adjacent to Residential I)
Type B=20 ft or 10 ft (depending on planting types)
A vegetative buffer exists at 75' as recorded through an easement between the Owner and the CPOA. (ref Book 2259/Page 1599. Exhibit D-3)

Access:

The site will be accessed from Phase 1 of Best Buy Center, which is accessed from Fording Island Road (US 278). An access easement will be provided from Fording Island Road to the 5.0-acre parcel.

Parking (3.3.50):

Required Parking Spaces:
Multi-family units: 2.75 per unit (2.5 per unit/4 BR apt + .25 per unit/guest)
Units Proposed: 45
Parking Spaces Required: 2.75 x 45 = 124
Parking Spaces Provided: 124

Stormwater:
There is an existing stormwater management system previously designed, approved, constructed for the entirety of Best Buy Center—including Phase 2. At the 11/15 SRT Discussion, Eric Larson stated the existing master planned stormwater system will be sufficient as long as it was intended to accommodate runoff from this site and impervious surface coverage is equal to or less than the amount assumed in the master plan.

Utilities:
BJWSA water and sewer mains are located nearby and will be extended to serve the proposed building.

Wetlands:
There is a declaration of restrictive covenants defining the wetlands and mitigation buffers. A copy of the covenants are included for reference.

Maintenance Responsibility:
Bluffton Fire District will be responsible for maintenance of the constructed facility.

COUNTY COUNCIL OF BEAUFORT COUNTY
Beaufort County Community Development
Multi Government Center • 100 Ribaut Road
Post Office Drawer 1228, Beaufort, SC 29901-1228
OFFICE (843) 255-2170
FAX (843) 255-9446

April 11, 2018

Exhibit I (3 pages)

Mr. Paul Moore
Ward Edwards Engineering
Post Office Box 381
Bluffton, SC 29910

Re: Osprey Cove Apartments - (Final)

Dear Mr. Moore:

Please have this letter will serve as the recommendations from each member of the SRT for final review of the referenced project:

COMMUNITY DEVELOPMENT:

1. Why are all the HC parking spaces grouped together and not distributed on the property?

2. The County Natural Resource Planner will review the independent Arborist Report once submitted. Dead diseased or dying trees must be mitigated 1 for 1 with a 2.5" caliper hardwood tree. On Sheet T1.0, the tree mitigation table should include the three dead trees referenced for a total of (46) 2.5" trees planted to meet required mitigation.

3. Landscape Plan comments:
   a. Clearly identify/highlight the mitigation trees on the plans.
   b. Please explain why there aren't any foundation plantings proposed on the back-side of each building.
   c. Applicant is removing a total of 107", plus 3 trees for the dead trees. A total of 46 trees are required to be planted. Please revise planting plan showing the additional 8 trees.

4. Exterior Lighting plan & cut-sheets: The lighting plan does not match the final site layout plan. Please revise and re-submit.

5. Dumpster enclosure: Dumpster enclosure and gates must be 100% opaque and tall enough to completely conceal the dumpster. Please explain which materials and colors are being proposed and how tall the enclosure and gates will be.

6. Property Signage: Please identify the location of the monument sign. Approval of the monument sign is handled with a separate process. The monument structure design must match the building materials and colors.

7. Meter, Power Source & AC unit Screening for each building: Please describe the method of screening which will be used to conceal these items from view.

8. Applicant shall submit BJWSA Letter of Capability and commitment to Serve. Capacity fees shall be paid and receipt submitted.

STORMWATER:

9. The site is located within a master-planned development designed to meet the water quality and requirements that were in place at the time. This predated the volume requirements of the current Beaufort County BMP Manual. Applicant shall address volume control per Section 5 of the BMP Manual.

10. Proposed plans illustrate a reduction of pond volume for Pond 3 with the proposed parking lot, sidewalk, and retaining wall adjacent to Building A. The proposed encroachments should be removed or the plans should show replacement of the lost pond volume.

11. How will the runoff from the rooftops of the proposed buildings be collected and/or directed to the storm water ponds?

12. The site plans call for demolition of a portion of the existing 18" storm sewer that discharges into Pond 4. The proposed drainage plan calls for a connection of the proposed storm sewer system to the remaining section of 18" storm sewer by means of a proposed junction box. The proposed storm upstream of the proposed junction box is specified as 24". The existing pipe was modeled as 24" as opposed to 18". Please address and revise accordingly.

13. Building D is shown to encroach in the existing drainage easement.

14. The designer's certification statement should be added to the plans.

15. Please correct inconsistencies within the plans, calculations, and NOI regarding the amount of disturbed area. If the NOI will require revisions, the revisions should be initialed by the Engineer and Permittee.

Please provide your written response to include construction drawings, plats, etc. to any issues raised by individual SRT members no later than Friday at 12:00 p.m. prior to your scheduled SRT meeting. Failure to address any item will result in your application being deferred until your entire response has been received. You may also request that your scheduled SRT meeting be postponed to allow additional time to address these comments. You may only reschedule the SRT meeting twice to correct deficiencies to avoid an additional filing fee

NOTE: THE SRT RESERVES THE RIGHT TO CONSIDER ADDITIONAL INFORMATION RELATED TO THE PROJECT LISTED ABOVE PRIOR TO THE DATE OF THE SRT MEETING. THEREFORE, THE SRT'S DECISIONS MAY CHANGE ACCORDING TO NEW FACTS OR THE CONSIDERATION OF ADDITIONAL FACTS UNKNOWN AS OF THE DATE OF THIS REPORT.

Sincerely,

Hillary A. Austin
Zoning & Development Administrator

April 16, 2018

Exhibit J (4 pages)

Hillary Austin
Zoning Department - Beaufort County
P.O. Drawer 1228
Beaufort, SC 29901

Subject: **SRT Review Response (Final)**
OSPREY COVE APARTMENTS
Ward Edwards Project Number: 170262

Hillary:

In response to the SRT review letter dated April 11th regarding our most recent submittal, please find the following:

Enclosures

1. Arborist Report
2. BJWSA Letter of Capability
3. Revised Landscape and Lighting Plans
4. Revised Site Plans
5. Revised Stormwater Report

Community Development

1. Why are all the HC parking spaces grouped together and not distributed on the property?
   The only building with ADA accessible units is Building "D", so all of the HC parking stalls are located together in front of that building.

2. The County Natural Resource Planner will review the independent Arborist Report once submitted. Dead diseased or dying trees must be mitigated 1 for 1 with a 2.5" caliper hardwood tree. On Sheet T1.0, the mitigation table should include the three dead trees referenced for a total of (46) 2.5" trees planted to meet required mitigation.
   Please see Attached Arborist Report.

3. Landscape Plan comments:
   a. Clearly identify/highlight the mitigation trees on the plans
      Please see revised Landscape Plans.
   b. Please explain why there aren't any foundation plantings proposed on the back-side of the each building.
      The rear of Building C and D are adjacent to wetlands and are not visible. Buildings A and B are adjacent to the Crescent golf course where a 25' setback is required. We have provided a 75' setback that is heavily wooded, therefore foundation plantings will not be seen and seem unnecessary.

c. Applicant is removing a total of 107", plus 3 trees for the dead trees. A total of 46 trees are required to be planted. Please revise planting plan showing the additional 8 trees.
Please see revised Landscape Plans.

4. Exterior Lighting plan & cut sheets: The Lighting Plan does not match the final site layout plan. Please revise and re-submit.
Please see the attached revised Lighting Plan.

5. Dumpster enclosure: Dumpster enclosure and gates must be 100% opaque and tall enough to completely conceal the dumpster. Please explain which materials and colors are being proposed and how tall the enclosure and gates will be.
Dumpster Enclosure details have been added to the plan set. Please see the revised Site Plans, Sheet C903.

6. Property Signage: Please identify the location of the monument sign. Approval of the monument sign is handled with a separate process. The monument structure design must match the building materials and colors.
A monument sign will be located at the entrance of the development. Please see the attached revised Site Plans, Sheet C901.

7. Meter, Power Source & AC unit screening for each building: Please describe the method of screening which will be used to conceal these items from view.
The AC equipment proposed for use does not require exterior condensers and therefore screening is not required. The AC units themselves are located in a mechanical closet outside of each unit on each floor. Meters will be screened by use of landscaping at the ends of each building.

8. Applicant shall submit BJWSA Letter of Capability and commitment to serve. Capacity fees shall be paid and receipt submitted.
Please see attached BJWA Letter of Capability.

Stormwater

9. The site is located within a master-planned development designed to meet the water quality and requirements that were in place at the time. This predated the volume requirements of the current Beaufort County BMP Manual. Applicant shall address volume control per Section 5 of the BMP Manual.
A volume control analysis of the proposed site plan we performed. The post-development impervious area will result in a small increase in runoff volume that will be detained in the proposed permeable paving. The net result is that the site will have no net increase in runoff volume in post-development conditions. See the revised Stormwater Report for the additional volume control calculations.

10. Proposed plans illustrate a reduction of pond volume for Pond 3 with the proposed parking lot, sidewalk, and retaining wall adjacent to Building A. The proposed encroachments should be removed or the plans should show replacement of the lost pond volume.
The pond banks in current conditions do not match the final proposed conditions from the stormwater master plan (SWMP) and the original approved Phase 2 Site Development Plans. The current pond banks slope upward from normal water level at an average of 5:1 slope. The original design for the ponds calls for the banks to slope from NWL at 3:1. This means that the pond top of bank is currently larger than needed for the SWMP and this gives the appearance that the Osprey Cove project is encroaching into the ponds. In reality, the Osprey Cove improvements are no more expansive than the original Phase 2 development previously approved by the County. While there may be a reduction in pond volume from the current condition of the ponds, there is no reduction in volume from the SWMP design of the ponds.

11. How will the runoff from the rooftops of the proposed buildings be collected and/ or directed to the storm water ponds?
The downspouts for the proposed buildings will discharge into gravel splash pads and will follow the proposed grading that ultimately discharge into the existing stormwater facilities. This will result in runoff from the rooftops sheet flowing across landscaped or permeable areas.

12. The site plans call for demolition of a portion of the existing 18" storm sewer that discharges into Pond 4. The proposed drainage plan calls for a connection of the proposed storm sewer system to the remaining section of 18" storm sewer by means of a proposed junction box. The proposed storm upstream of the proposed junction box is specified as 24". The existing pipe was modeled as 24" as opposed to 18". Please address and revise accordingly.
The proposed connection into Pond 4 has been revised so that the existing stub-out will be removed and replaced with a 24"outfall pipe. Please see the revised Stormwater Report.

13. Building D is shown to encroach in the existing drainage easement.
The location of Building D has been revised and will not encroach the existing drainage easement. Please see revised Site Layout, Sheet C401.

14. The designer's certification statement should be added to the plans.
The designer's certification has been added to the Cover Sheet, Sheet C001.

15. Please correct inconsistencies within the plans, calculations, and NOI regarding the amount of disturbed area. If the NOI will require revisions, the revisions should be initialed by the Engineer and Permittee.
The Site Plans, NOI, and calculations have been revised. The total limits of disturbance are 2.70 acres. Please see attached revisions.

If you have any questions or comments during your review, please do not hesitate to contact me at (843)384-5266 or pmoore@wardedwards.com.

Sincerely,
Ward Edwards Engineering

Paul Moore, PE
Project Manager

Exhibit K (1 page)

McNAIR
ATTORNEYS

Walter J. Nester, III

wnester@mcnair.net
T 843.785.2171
F 843.686.5991

April 25, 2018

Via UPS Next Day Air

Crescent Property Owners Association, Inc.
Attn: Mr. John Nastoff
10 Crescent Circle
Bluffton, South Carolina 29910

Re: Stafford Bluffton Land, LLC ("Stafford") - Crescent Property Owners Association, Inc. ("CPOA")
Our File Number: 068276.00001

Dear Mr. Nastoff:

This firm represents Stafford and I understand you have had discussions with Chad Tullos regarding the proposed plans of Osprey Cove, LLC for development upon property which is the subject of that certain Easement Agreement and Consent to Improvements recorded in Book 2259 at Page 1583 in the Office of the Register of Deeds for Beaufort County (the "Easement and Consent") a copy of which is enclosed. In accordance with Sections 1(a)(ii) and 10 of the Easement and Consent, this correspondence shall serve as notice of Permitting Modifications proposed by Stafford and commencement of the Permitting Review Period. Enclosed is the proposed Consent and Approval with Proposed Site Development Plans which include the site plan and drainage plan.

Please contact me if you have any questions.

Sincerely,

McNAIR LAW FIRM, P.A.

Walter J. Nester, III

WJN:jls
Enclosures

cc: Douglas MacNeille, Esquire (*w/enclosures, via E-mail only*)
Edward M. Hughes, Esquire (*w/enclosures, via E-mail only*)
Atlantic States Management (*w/enclosures, via E-mail only*)
Stafford Bluffton Land, LLC (*w/enclosures, via E-mail only*)

McNAIR LAW FIRM, P.A.
Shelter Cove Executive Park
23-B Shelter Cove Lane, Suite 400
Hilton Head Island, SC 29928

Mailing Address
Post Office Drawer 3
Hilton Head Island, SC 29938

mcnair.net

Exhibit L (4 pages)

RUTH & MACNEILLE P.A.

DOUGLAS W. MACNEILLE*
WILLIAM A. RUTH (1942-2008)

* Admitted in California (Inactive)

ATTORNEYS AND COUNSELORS AT LAW

10 OFFICE WAY, SUITE 200
P. O. DRAWER 5706
HILTON HEAD ISLAND, SOUTH CAROLINA
29938-5706

TELEPHONE: (843) 785-4251
FAX: (843) 686-5104

Sender E-Mail:
douglas@ruthandmacneille.com

May 3, 2018

Via Email & 1st Class Mail
Walter J. Nester, III
McNair Law Firm, P.A.
Post Office Drawer 3
Hilton Head Island, SC 29938

RE: Stafford Bluffton Land, LLC ("Stafford")
Crescent Property Owners Association, Inc. ("CPOA")
Your File Number: 068276.00001

Dear Walter:

I refer you to your letter of April 25, 2018 to CPOA. As you know, this law firm represents CPOA. Further, CPOA has associated Chester C. Williams, Esq. as co-counsel in connection with the pending Permitting Modifications requested by Stafford for the parcel adjoining the Best Buy Commercial Center in Bluffton (i.e. the Osprey Cove Apartments), referred to in your letter of April 25, 2018.

On April 29, 2018, I requested on behalf of CPOA an additional 15 business day extension of time within which to respond; however, you denied my request in your response letter to me dated May 2, 2018.

Given the present status of this matter, CPOA, in accordance with the provisions of Paragraphs 1(a)(2) and 10 the Easement Agreement and Consent to Improvements by and between CPOA and Stafford Rhodes, LLC dated October 25, 2005 and recorded in Beaufort County Record Book 2259 at Page 1583 (the "Agreement"), herewith states its objections to the Permitting Modifications, as follows:

1. The Osprey Cove Apartments project is planned for a portion of the property described in Exhibit A (the "Stafford Property") to the Agreement. Plans for the development of the Stafford Property were presented to CPOA in 2005. Those plans, the first pages of which are attached as Exhibit D-1 through D-5 to the Agreement, show the area designated for the Osprey Cove Apartments project was to be developed as three office buildings, and the Permitting Modifications now proposed by Stafford is for the development and construction of four (4) apartment buildings, including 45 Apartments.

2. The Agreement contains specific covenants, promises by Stafford Rhodes,

LLC made in consideration of the easements granted by CPOA, running with the entirety of the Stafford Property, recorded in the Beaufort County land records. As such, any review and/or approval by Beaufort County of any application for the Osprey Cove Apartments project must consider the requirements of *both* S.C. Code Ann. Sec. 6-29-1145 and Beaufort County Community Development Code Section 1.4.40. These code sections, read together, provide that Beaufort County "...shall not approve the activity, unless the landowner demonstrates the restrictive covenant is released." It is clear to me and CPOA that any development of the Stafford Property in general, and the proposed location of the Osprey Cove Apartments, in particular, in a manner other than that represented to CPOA in the Agreement, without first obtaining the consent of CPOA, is a violation of the Agreement.

3. It is unfortunate that you denied by request for an extension of the time available to CPOA to review the plans for the Osprey Cove Apartments, because with additional time, CPOA may have been able to reach an acceptable level of comfort with Stafford's proposed change in the plans for the development of the Stafford Property. Without that extension, CPOA has no choice but to decline to approve the Permitting Modifications presented by the plans for the Osprey Cove Apartments.

4. Based upon the information presently available to CPOA, for the reasons set forth below, CPOA *cannot* consent to the Permitting Modifications at this time.

5. The proposed Permitting Modifications constitute a material change in use from the Business Offices to Apartments, which will have a material adverse effect on the adjoining and nearby properties owned by Crescent residents, CPOA and the Crescent Golf Links.

6. A primary concern of CPOA is the effect that the proposed development of the Osprey Cove Apartments will have on property values, especially for the homeowners living on Heritage Bay Court and Meridian Point Drive in the Crescent. The plans and modifications submitted by Stafford do not include any information concerning what measures will be taken to minimize the impact on the adjoining landowners (fencing, landscaping, sound barriers, etc.).

7. The proposed plans for the Osprey Cove Apartments submitted by Stafford to Beaufort County are being modified on an ongoing basis, and CPOA is not been provided with a final set of drawings, including elevation drawings that would allow CPOA to better evaluate the proposed development of the Osprey Cove Apartments.

8. The proposed Permitting Modifications will certainly result in a material change in traffic generation by the use of the site proposed for the Osprey Cove Apartments, from normal business hours for the original business

office use to a 24-hour, 7-day a week basis for multifamily residential use, and increased sewage discharge into a BJWSA lift station from Apartments as opposed to Business Offices, a lift station that is critical to many owners in The Crescent. Before CPOA is able to further consider the Permitting Modifications, it will require that a traffic impact analysis documenting the change in traffic trip generation rates for the Permitting Modifications as opposed to the original, promised development plans. In addition, Further, before CPOA is able to further consider the Permitting Modifications, it will require proof that the owner of Crescent Golf Links and BJWSA have reviewed and approved the sanitary sewer capacity requirements for the Permitting Modifications and the effect of the Permitting Modifications on the sewer lift station serving the Permitting Modifications.

9. Considering the proposed change from business office use, which typically results in on-site activity only during normal business hours, to multifamily residential use, which results in all day, all night, all week on-site activity the Permitting Modifications will clearly result in a much greater impact on adjacent and nearby properties, in contravention of what was promised to CPOA in the Agreement;

10. CPOA is concerned about the potential for an increase in crime and noise levels coming from the property and will require additional concept information on the Osprey Cove Apartments (e.g., occupancy restrictions, rental rates, restrictions on short-term rental, etc.). Michael Thomas has represented to CPOA that rents for the proposed apartments will be in the range of $2,000.00 per month. Based on that representation, if CPOA later consents to the Permitting Modifications, CPOA may require a restrictive covenants, enforceable by CPOA, be imposed on the Osprey Cove Apartments tract that will prohibit the leasing of any apartment for a monthly rental of less than $2,000.00 per month.

11. Review of changes in storm water drainage resulting from the Permitting Modifications is underway, however, at this point, CPOA does not have enough information or guidance from its engineers to determine the sufficiency of the storm water drainage plans for the Permitting Modifications and what effect, if any, those changes in proposed storm water drainage will have on the residential properties on Meridian Point Drive and the Crescent Golf Links, both of which have flooded in the past.

12. The plans for the Permitting Modifications are insufficient to allow CPOA to determine whether the requirements of fencing, sound buffers and landscaping as required by the Agreement will be provided as part of the Permitting Modifications. We believe that these matters must be addressed under the terms of the Agreement.

13. CPOA believes it is likely that parking lot lighting for the proposed Osprey Cove Apartments will be substantially different from what was

proposed in the Agreement, but due to your refusal to grant an extension of CPOA's review period, CPOA has been unable to determine how this may affect homes on Heritage Bay Court in Meridian Point Drive.

14. It has come to CPOA's attention that the conveyances of the tract that includes the proposed site of the Osprey Cove Apartments from Stafford Rhodes, LLC to SR 278 Investments, LLC by the deed recorded in Beaufort County Record Book 3351 at Page 473 and by SR 278 Investments, LLC to Stafford recorded in Beaufort County Record Book 3441 at Page 210 (which was prepared under your supervision) violate SC Code Section 6-29-1190 because Beaufort County has not approved the subdivision of that tract, and are therefore illegal conveyances.

15. It also has come to CPOA's attention that Stafford, which is a Georgia LLC, is *not* authorized to transact business in South Carolina.

16. A final and important concern of CPOA is the fact that it appears that Stafford has been attempting to obtain approval for these Permitting Modifications *without* the required involvement of CPOA, and this present serious concerns over the level of candor coming from Stafford.

To be clear, this letter constitutes CPOA' timely detailed objections to the Permitting Requirements under Section 1(a)(iii) of the Agreement. Accordingly, Stafford has such time as reasonably necessary to have the Permitting Modifications revised to accommodate CPOA's objections. CPOA looks forward to receiving the revised Permitting Modification.

I will be happy to discuss this matter with you further at your convenience. Best regards, I am

Very Truly Yours,

Douglas W. MacNeille

cc: Mr. John Nastoff
Mr. Herb Brown
Chester C. Williams, Esq.
Edward M. Hughes, Esq.
George A. Mattingly Esq.

Exhibit M (1 page)

Subject: FW: OSPREY COVE APARTMENTS

From: Austin, Hillary
Sent: Monday, April 30, 2018 4:04 PM
To: 'Paul Moore' <pmoore@wardedwards.com>
Cc: Greenway, Eric <egreenway@bcgov.net>; Criscitiello, Anthony <tonyc@bcgov.net>
Subject: OSPREY COVE APARTMENTS

Hello Heath,
It has just been brought to our attention that the parcel proposed for the Osprey Cove Apartments must be subdivided from the parent parcel. Apparently Parcel 452 was created through a deed, which is not permitted in SC. Please submit subdivision plats and all pertinent document to the SRT for final approval of the apartment plat. The permit for the construction of the apartments will not be issued until all of the conditions listed on the SRT's Action Form, and the subdivision of the parcel is approved and recorded.

Please do not hesitate to give me a call if you have any questions.

Thanks,
Hillary A. Austin
Zoning & Development Administrator
Post Office Drawer 1228
Beaufort, SC 29901
843.255.2173
Email: hillarya@bcgov.net

From:	Greenway, Eric
To:	Law Office of Chester C. Williams
Cc:	John Nastoff; Herb Brown; Doug MacNeille; Walter Nester; Ed Hughes; Childs, Barbara; Keaveny, Thomas; Spade, Heather
Subject:	RE: Osprey Cove Apartments Appeal MISC 2018-05
Date:	Friday, June 15, 2018 3:45:31 PM
Attachments:	image002.jpg

Chet,

Thanks, once again the materials will be available on-line approximately one week prior to the July 2nd meeting. Again, I feel compelled to point out the following sections of the CDC since your Supplemental Memorandum included a statement that you reserve the right to submit additional items to the Planning Commission:

Please keep in mind the CDC states that no new information that has not been previously reviewed or considered may be submitted for an appeal. I have included the language from section 7.3.70 C 5 as a reference below:

5. **Public Hearing Procedures.** See Section 7.4.70 (Public Hearing Procedures). Appeals from a decision of administrative agents shall be heard by the ZBOA or the Planning Commission as appropriate, based solely on the materials (plans, documents, reports, studies, drawings, and testimony) available to the body or agent rendering the initial decision and advisory bodies prior to the decision. Appeals shall not consider new or altered plans, except that information submitted, but not discussed or considered in rendering a decision, shall be considered part of the original evidence. If hearings were held and testimony given, transcripts and other record items of those proceedings shall be the exclusive basis of the appeal. The appeal shall also consider this Section's standards and state law.
6. **Decision-Making Body Review and Decision.** Applicable to a decision by the appropriate appellate body following a public hearing. See Section 7.4.90, (Decision-Making Body Review and Decision). The public hearing shall be on the record of the appeal, with presentations limited to arguments on the record of the appeal as it relates to the grounds for appeal specified in the Appeal application.
a. The appellate body shall base its decision solely on the record of the appeal, as supplemented by arguments presented at the public hearing, and the standards in Subsection 7.30.70.D. The final decision of the appellate body shall be one of the following:
(1) Affirmation of the decision or interpretation (in whole or in part);
(2) Modification of the decision or interpretation (in whole or in part); or
(3) Reversal of the decision or interpretation (in whole or in part).

Thank you and if you have questions please feel free to give me a call.

Eric L. Greenway, AICP
Community Development Director
Beaufort County Council

Office: 843-255-2143
Cell: 843-441-6129

From: Law Office of Chester C. Williams <firm@ccwlaw.net>
Sent: Friday, June 15, 2018 3:31 PM
To: Greenway, Eric <egreenway@bcgov.net>
Cc: John Nastoff <johnnastoff@gmail.com>; Herb Brown <brownhhsc@gmail.com>; Doug MacNeille <douglas@ruthandmacneille.com>; Walter Nester <wnester@McNair.net>; Ed Hughes <EHughes@NexsenPruet.com>; Childs, Barbara <barbarac@bcgov.net>
Subject: Osprey Cove Apartments Appeal MISC 2018-05

Dear Eric:

See our letter to you of today, attached, and the enclosed Supplemental Memorandum for inclusion in the record of Osprey Cove Apartments appeal.

Regards,

Chet Williams

Law Office of Chester C. Williams, LLC
17 Executive Park Road, Suite 2
PO Box 6028
Hilton Head Island, SC 29938-6028
843-842-5411
843-842-5412 (fax)
Firm@CCWLaw.net
www.CCWLaw.net

by download from www.adobe.com.