



East Coast Engineering & Surveying, P.C.

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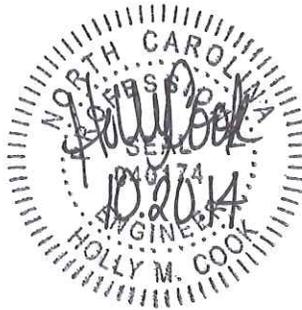
Subdivision Plan

of

Ocean Ridge Plantation, Phase VI, Section 1

Sunset Beach, NC

COMPLIANCE INVESTIGATION REPORT



October 2014

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Compliance Investigation Report **Ocean Ridge Plantation, Phase VI, Section 1**

1.0 Summary of Scope of Services

The purpose of this work is for East Coast Engineering and Surveying, PC (ECES) to provide professional services to perform compliance investigations and oversee compliance inspections for Ocean Ridge Plantation, Jaguars Lair, Phase VI, Section 1 located off of Old Georgetown Road in Sunset Beach, North Carolina.

This work includes the investigation of the installation and performance of the asphalt pavement, curb and gutter, pedestrian access, storm drainage system, and erosion & sediment control measures. This work also includes the investigation of the completion of the electrical installations, electrical crossing installations, and light pole installations.

Domestic water, fire service, and sanitary sewer investigations are not included as part of this work.

Our investigations are based upon aerial imagery, Brunswick County GIS records, Town of Sunset Beach records, NCDEMLR Wilmington Regional Office records, franchise utility records, information in hand, and visual observations in the field. No as-built survey records were provided for our use.

A topographic survey, including but not limited to horizontal alignments and vertical elevations of roadways, storm drainage structure rims and inverts, storm drainage pipes, slopes, and inverts, and any other work showing grades and physical features, was not included as part of this work.

Based on our investigations, the Roadway Testing Report by ECS Carolinas, LLP (ECS), and the NCDEMLR Stormwater Compliance Inspection Report, we have identified our findings and recommendations as stated in this Compliance Investigation Report.

2.0 Background Information

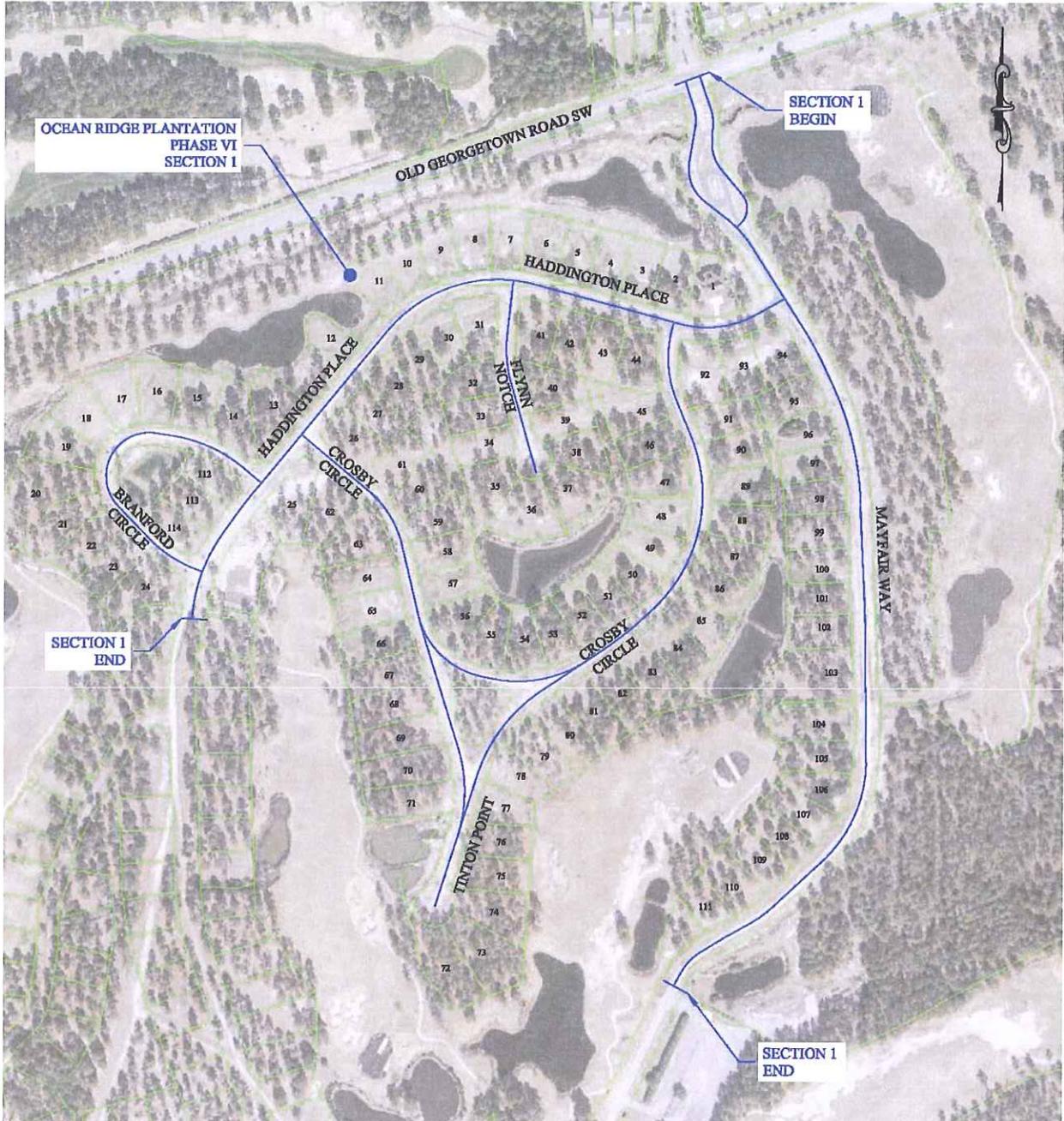
The 2008-2009 Subdivision Bond Documents for Ocean Ridge, Phase VI, Section 1 provided by the Town of Sunset Beach include the Infrastructure Construction Cost Estimate by Houston & Associates sealed May 2006. It appears that the Bond Estimate was completed prior to final design as the estimated item descriptions and quantities do not correspond with the approved plans by Cape Fear Engineering, Inc. approved in 2008 and 2010. A copy has been included as part of this report for reference purposes only.

East Coast Engineering & Surveying, PC has been tasked to evaluate the installation compliance, completion, and performance based on the approved plans by Cape Fear Engineering, Inc. (approved plan) only as part of this work.

See Appendix A – Section 1 Bond Estimate by Jay Houston of Houston & Associates.

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

3.0 Compliance Investigation – Roadways



Phase VI, Section 1 Roadway Exhibit

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

3.0 Compliance Investigation – Roadways

There is approximately 9,400 linear feet of private roadway located within Ocean Ridge Plantation, Jaguars Lair, Phase VI, Section 1. The following roadways, in full or in part, are located within this Section:

- Mayfair Way
- Haddington Place
- Crosby Circle
- Tinton Point
- Flynn Notch
- Branford Circle



The locations and widths of the roadways appears to be in general conformance with the approved plan with the exception of the southbound lanes of the Boulevard Road Section of Mayfair Way in the area of the guardhouse island where two (2) lanes separated by a curbed median were not constructed in accordance with the approved plan.

3.1 Roadway Testing

East Coast Engineering and Surveying, PC (ECES) obtained the services of ECS Carolinas, LLP (ECS) to conduct asphalt pavement cores to include stone base within the existing roadways, obtain underlying soil samples, conduct specific gravity and compaction tests, and provide a Roadway Testing Report of their findings.

In accordance with Town of Sunset Beach Code of Ordinances 98.15, ten (10) asphalt pavement cores were performed in random test locations throughout the subdivision based on the professional guidance of ECS. The results were compared to the design asphalt pavement section as shown on the approved plans. The results from the core tests determined that four (4) of the cores samples contained insufficient ABC stone thickness – test locations 3, 5, 6, and 9 – and one (1) of the core tests determined that test location 2 contained insufficient asphalt surface course. See the Phase VI, Section 1 Core Location Exhibit below for specific core locations and results.



The underlying soils were also tested at one (1) of the core locations per roadway. The subsurface soils investigations determined that the soils underneath of the pavement are classified as NCDOT Group I Good to Excellent Subgrade Soil Types with relatively high CBR values indicating a firm, suitable sub-grade that helps pavement performance.

The groundwater elevation was encountered approximately two (2) feet below grade at three (3) of the hand auger borings –locations 1, 4, and 8 - and was not encountered at the other two (2) borings – test locations 6 and 7. The seasonal high groundwater elevation is anticipated to rise significantly above the elevations encountered.

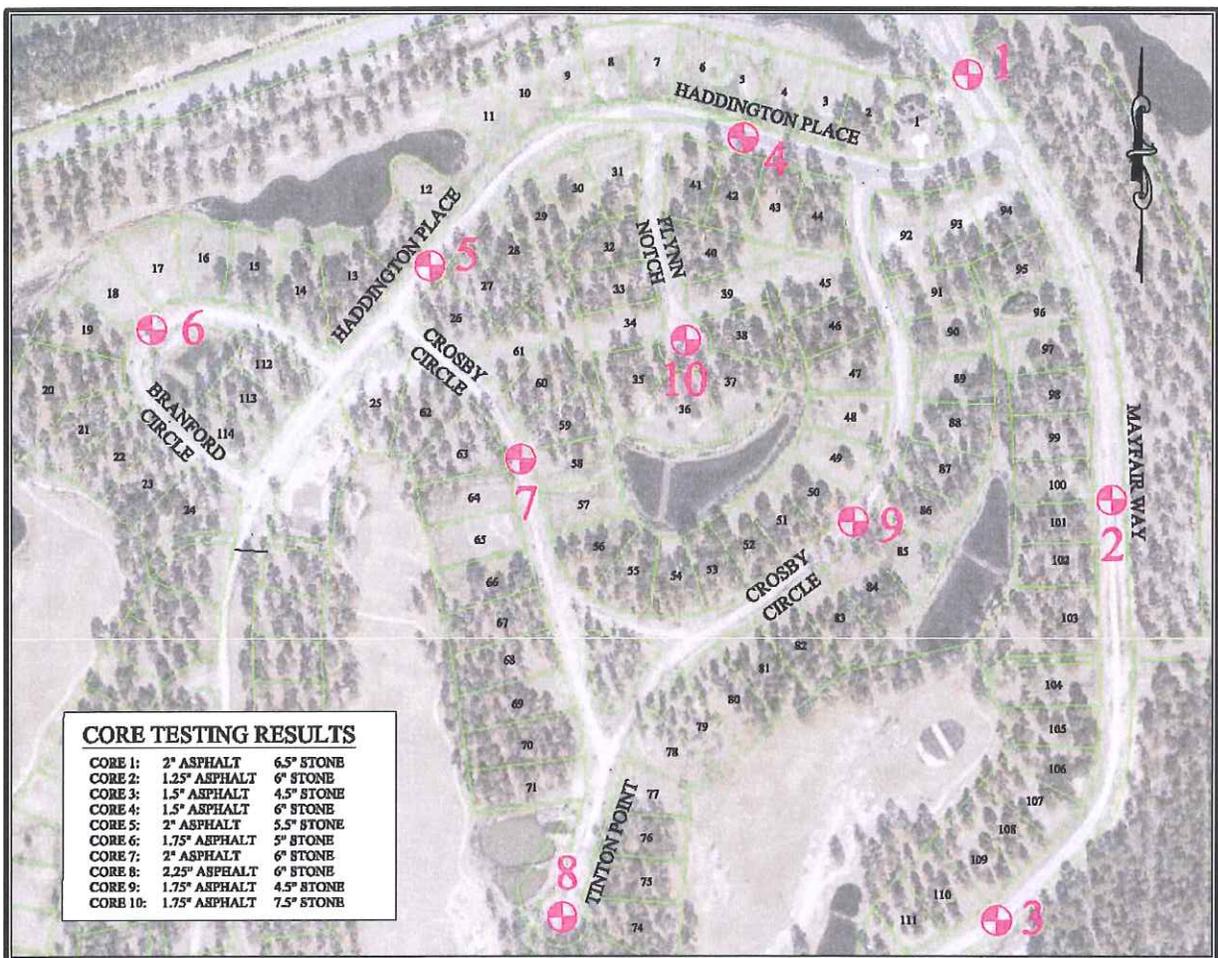
See Appendix B – Roadway Testing Report by ECS Carolinas, LLP for additional information regarding the testing performed and the results found by ECS.

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

On October 3, 2014, ECES Staff walked Section 1 of the subdivision with the Town of Sunset Beach Public Works Director and the Ocean Ridge Plantation HOA representative, Becky Nobles. All ten (10) core locations were observed and (9) of the (10) cores appeared to be patched within acceptable NCDOT standards to both ECES Staff and the Town. Ms. Noble declined to comment on the acceptability of the core patching. One (1) core along the east section of Crosby Circle, Core 9, was identified by all those in attendance as requiring additional patch to prevent ponding of stormwater.

Core 9 was subsequently enhanced to meet acceptable NCDOT core patching standards.

3.1 Roadway Testing



Phase VI, Section 1 Core Location Exhibit

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

3.2 Asphalt Pavement

In accordance with the approved Master Plan for Phase VI, the required pavement section for the subdivision was shown as 2" of surface asphalt over 6" of ABC Stone. Subsequent Section 1 plans show 1 1/2" surface asphalt over 6" of ABC Stone. As discussed above, five (5) of the ten (10) core samples were determined insufficient in accordance with the pavement section specified on the Section 1 approved plan. Please note that this section is the minimum pavement section allowed by NCDOT and is less than the minimum section currently allowed by the Town of Sunset Beach.



Our investigations support the findings in the Roadway Testing Report by ECS Carolinas, LLP included in Appendix B. Only one (1) residence has been constructed in the subdivision and the pavement is already showing signs of failure, including:

- Scores in the asphalt pavement on Mayfair Way near the end of Section 1 that appear to be created by heavy construction vehicles or maintenance vehicle equipment
- Visible depressions at the intersection of Mayfair Way and Haddington Place extending down Haddington Place to the intersection of Crosby Circle that appear to be created by the loads imposed by heavy construction vehicles, seasonal high groundwater elevation, inadequate pavement section, inadequate compaction, or any combination thereof
- Cracking and staining of pavement from standing stormwater due to lack of proper grading and/or seasonal high groundwater saturating the subgrade
- Pavement and shoulder failure at subdivision entrance



While ECES acknowledges that the purpose of this work is to investigate the installation and performance of the asphalt pavement section in accordance with the approved plan, it is in our professional opinion that the design pavement section does not appear to consider the following:



- Traffic loading impacts and roadway classifications for future sections of the development
- Loads imposed by future construction traffic required to develop the subdivision
- Loads imposed by current maintenance vehicle traffic
- Seasonal high groundwater elevation

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

ECES recommends that the developer provide additional surface course in the areas with insufficient thickness or the developer's engineer provide pavement design calculations by a licensed professional engineer in the state of North Carolina and in accordance with an acceptable NCDOT calculation method. The calculations should be based on the soils CBR values found in the ECS Report, pavement surface and base course depths found in the ECS Report, loads imposed by the Section 1 subdivision traffic, loads imposed by all future sections of the subdivision traffic, and loads imposed by future construction and maintenance traffic.

The seasonal high groundwater elevation and subsurface drainage should also be addressed as it is necessary to provide sufficient depth between the unsaturated soil and seasonal high groundwater elevation as it contributes to the degradation of the pavement and shortens its life.

Additionally, the areas of pavement failure should be repaired by a qualified paving contractor and the shoulders shall be properly shored.

3.3 Curb and Gutter

The locations, width, and condition of the concrete curb and gutter appears to be in general conformance with the approved plan with the exception of Mayfair Way extending from the subdivision entrance to the guardhouse island. Curb and gutter was not installed along this roadway section. The curb and gutter median island was also not installed along the southbound lanes of the Boulevard Road Section of Mayfair Way adjacent to the guardhouse island.

Please note that the approved plans do not show a typical roadway section for non-curb and gutter roadways.

There are areas along the curb and gutter throughout the subdivision with discernible scoring that appear to be created from construction vehicles and/or equipment. However, as of October 2014, the structural integrity of the constructed curb and gutter appears to be in acceptable condition.

The developer should notify all contractors to take extra precautions in the subdivision and enforce restrictions on heavy construction equipment in order to prevent further damage.

The implementation of adequate erosion and sediment control measures is imperative to ensure the safety, function, and life of the subdivision roadways.

Several roadways throughout the subdivision have gutter pans blocked by sediments and debris. In order for the gutter pan to function in accordance with the approved plan and prevent unnecessary ponding of stormwater on the asphalt roadway, all gutter pans should be checked regularly to make sure that they are free of sediments and debris. Sediment should be removed by →shoveling or sweeping and transported to a sediment controlled disposal area.

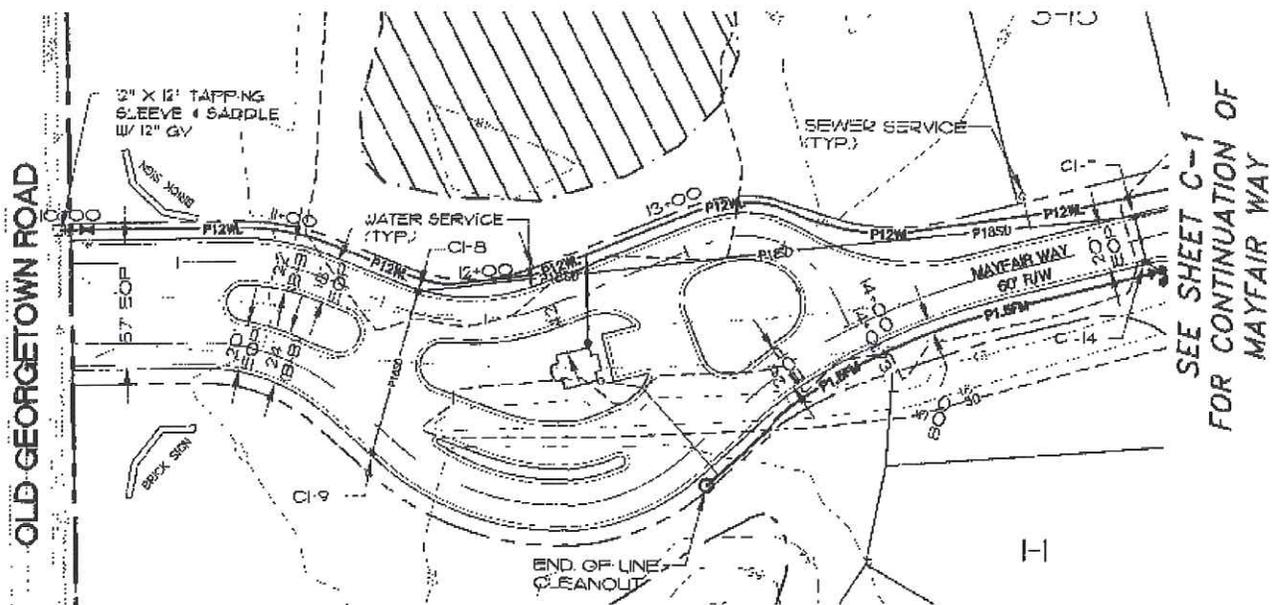


Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

3.3 Curb and Gutter



Boulevard Road Section Installed without Curb and Gutter



Boulevard Road Section with Curb and Gutter and Southbound Lane Median Island
 Mayfair Way Bifurcation Plan Sheet C-1A by Cape Fear Engineering, Inc.

Phase VI, Section 1 Mayfair Way Entrance Exhibit

Compliance Investigation Report **Ocean Ridge Plantation, Phase VI, Section 1**

3.4 Pedestrian Access

In accordance with the approved plan, 6.0' wide, 4.0" thick 3,000 psi concrete sidewalk is proposed along one side of the entire run of:

- Mayfair Way extending from the transition from a divided roadway to an undivided roadway to the end of Section 1
- Haddington Place extending from the intersection with Mayfair Way to the end of Section 1

As of the date of this report, no sidewalk has been constructed.

3.5 ADA Accessibility

Although the approved plan does not address ADA compliance, the installation of handicap ramps are required at all intersections with pedestrian flow.

In accordance with General Statute 136-44.14, "all street curbs in North Carolina being constructed or reconstructed for maintenance procedures, traffic operations, repairs, correction of utilities or altered for any reason after September 1, 1973, shall provide wheel chair ramps for the physically handicapped at all intersections where curb and gutter is provided and at other major points of pedestrian flow. Wheel chair ramps and depressed curbs shall be constructed in accordance with details contained in the Department of Transportation, Division of Highways' publication entitled, *Guidelines, Curb Cuts and Ramps for Handicapped Persons.*"

At a minimum, curb cuts and transitions will be required at the following locations:

- Mayfair Way
- Intersection of Mayfair Way and Haddington Place
- Intersections of Haddington Place and Crosby Circle
- Intersection of Haddington Place and Flynn Notch



4.0 Compliance Investigation – Erosion & Sediment Control

In accordance with the approved plan, "all erosion and sediment control practices will be checked for stability and operation following every runoff producing rainfall but in no case less than once every week. Place temporary seeding on any disturbed areas that are to be left idle for more than 15 days. Permanent grass shall be installed for all areas at final grade and in season, fertilize, water and reseed as required to establish a vigorous strand of grass."

Upon entrance into the subdivision, there are noticeable areas where the roadway shoulder is in need of shoring. Lack of appropriate erosion and sediment control measures appear to have contributed to the degradation of the

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

roadway shoulder. The buildup of sediments in the roadways can cause standing water which can shorten the life of the pavement.

As specified on the approved plan, the maximum slope of the roadway shoulder should not exceed one inch per foot (1"/1') along Two Way Street Sections and one half inch per foot (0.5"/1') along the Boulevard Road Section. The shoulder should tie into the existing ground elevation at 3:1 maximum slope.



In accordance with North Carolina General Statutes Chapter 113A Article 4, soil stabilization shall be attained on any area of a site where land disturbing activities have temporarily or permanently ceased for all construction activities including clearing, grading, or excavation activities resulting in the disturbance of land greater than or equal to one acre or are part of a common plan of development of that size.

August 2014 field investigations confirmed that there are no visible signs of erosion and sediment control maintenance throughout the subdivision. Considerable areas within the right of way have been left dormant for extended periods of time with minimal, if any, vegetated cover. Sediments and debris are making their way into the roadways clogging areas of gutter pans and drainage inlets. Sediments are making their way to the roadway storm drainage system and eventually into the stormwater management system.

After the NCDEMLR Notice of Inspection – Non Compliant Letter dated 8/25/14 was issued, subsequent field investigations in September 2014 showed the start of an effort and again in October 2014 showed further efforts to establish vegetation in a few areas within the right of way around the subdivision with the installation of erosion control matting and seeding.



In order to secure a Compliant Inspection by the State, ECES recommends that the deficiencies noted by the State and identified in this report are corrected and erosion and sediment control principles and practices specified on the approved plan are enforced until the completion of construction.

5.0 Compliance Investigation – Storm Drainage

The locations and layout of the roadway storm drainage system appears to be in general conformance with the approved plans. However, the drainage pattern of the section of Mayfair Way extending from the subdivision entrance to the area of the guardhouse island may be altered without the installation of the curb and gutter shown on the approved plan.

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1



An August 2014 field investigation found several of the drainage inlets were partially clogged with yard debris. After the NCDEMLR Notice of Inspection – Non Compliant Letter, subsequent field investigations showed minimal inlet clogging within the roadways. Inlets should be checked regularly and all debris removed to ensure they are operating at maximum efficiency.

At the time of inspection, the storm drainage basins were holding water and the bottom of the structures were not visible. This is not uncommon in this region as high groundwater elevations are prevalent.

The areas of visible ponding and cracking of the pavement within the roadways does not appear to be due to inadequate storm drainage infrastructure but from inadequate grading of the roadway itself. The storm drainage inlets and piping appear to adequately handle the subdivision runoff from the 10 year design storm and are operating as designed.

The Flynn Notch and Tinton Point roadways were designed at elevations cut from the existing ground by several feet. The groundwater is continuously draining over and staining the curb even in periods without significant rainfall. There are visible signs of the seasonal high groundwater rising up through sub grade and degrading the integrity of the pavement.



6.0 Compliance Investigation – Stormwater Management

In August 2014, ECES submitted a formal request for a compliance inspection by the State for existing Stormwater Permit SW8 070917 for Ocean Ridge Plantation, Phase VI, Section 1. As there is only a handful of State Stormwater Inspectors for this region, routine stormwater inspections typically do not take place unless a request is made.

See Appendix C – Stormwater Permit Compliance Inspection Request Dated 8/18/14.

The August 21, 2014 State Stormwater Inspection resulted in the issuance of a Notice of Inspection – Non Compliant Letter for all of the stormwater ponds. In summary, the following items were found non-compliant:

- Woody vegetation (scrub pines) on the pond banks needs to be removed
- The pond banks need to be seeded to established a permanent vegetated cover
- Areas along the pond banks are showing minimal to severe erosion and need to be filled, graded, and seeded
- All of the ponds have been used as sedimentation basins and the basin bottom elevations need to be verified and restored to design depths

Compliance Investigation Report
Ocean Ridge Plantation, Phase VI, Section 1

- The temporary slope drain in the northern corner of the main Pond #4 should be removed
- Unauthorized areas of the golf course are draining to Pond #4
- The pond outlet structures need to be cleaned and free of debris



See Appendix D – NCDEMLR Notice of Inspection – Non-Compliant Letter Dated 8/25/14 for additional information.

Stormwater pond certifications were issued by the developer’s engineer, Cape Fear Engineering, Inc., for all seven (7) stormwater ponds – 1, 2, 3, 4, 5, 7, and 8 - receiving runoff from Section 1 of the development over a period of time ranging from 2008 to 2013. The certifications address many of the issues found as non-compliant in the latest State Stormwater Inspection Letter.

See Appendix E – Designer’s Stormwater Certifications by Cape Fear Engineering, Inc. for additional information regarding the certifications.



The certifications for ponds 1, 2, 4, 5, 7, and 8 state that the pond banks have been seeded and partially vegetated and the owner shall take corrective actions as necessary to provide permanent vegetation and correct any eroded areas.

The certification for pond 4 also states that a temporary pipe has been installed in the northern corner of the main pool and once permanent vegetation is established, the pipe is to be removed.

The certifications for all seven (7) ponds state that the ponds are currently being utilized for sediment storage and the design depths shall be reduced almost immediately and shall be restored to design depths upon the completion of construction.

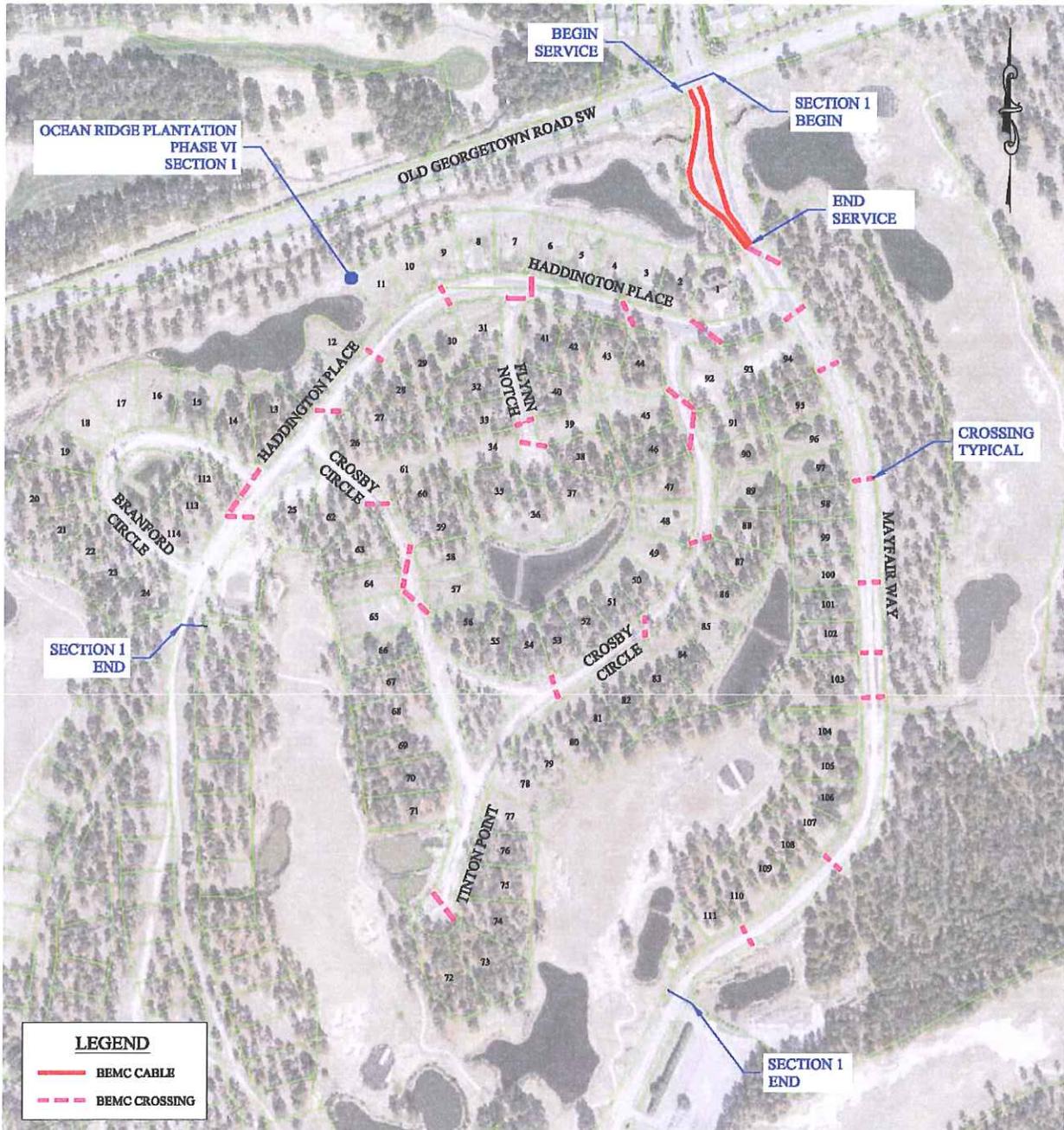
Stormwater Ponds can be used as temporary sediment basins throughout construction as long as they are maintained and function as designed. In accordance with the approved Stormwater Plan by Cape Fear Engineering, Inc. sealed 11/13/08, the sediment shall be removed when the level of sediment deposition reaches 25% of the initial design volume. The silts shall be removed and the design volume restored.

August 2014 field investigations confirm that the level of sediments in several of the ponds far exceed 25% of the initial design volume as bottom elevations were visible from top of bank observations during high water conditions after several periods of heavy rainfall.

In order to secure a Compliant Inspection by the State, ECES recommends that the deficiencies noted by the State and identified in this report are corrected and the stormwater principles and practices specified on the approved permit are enforced.

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

7.0 Completion Investigation – Brunswick Electric Membership Corporation (BEMC)



Brunswick Electric Membership Corporation (BEMC) Installation Exhibit

Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

7.1 Electric Installations

Installation records were obtained by Brunswick Electric Membership Corporation (BEMC) on September 11, 2014 for all installed electric cable.

BEMC Cables extend down Mayfair Way from Old Georgetown Road SW to the transition of the Boulevard Road Section to the Two Way Street Section to serve the existing residence on Lot 1 and the two (2) light poles located on Mayfair Way.

The service extends to serve the guardhouse island for future construction.



7.2 Electric Crossing Installations



Installation records were obtained by Brunswick Electric Membership Corporation (BEMC) on September 11, 2014 for all installed electric crossings.

BEMC has provided crossings throughout the subdivision that appear to be adequate to serve all of lots located within Section 1.

7.3 Light Pole Installations

As of the date of this Report, two (2) light poles have been installed within the subdivision right of way.

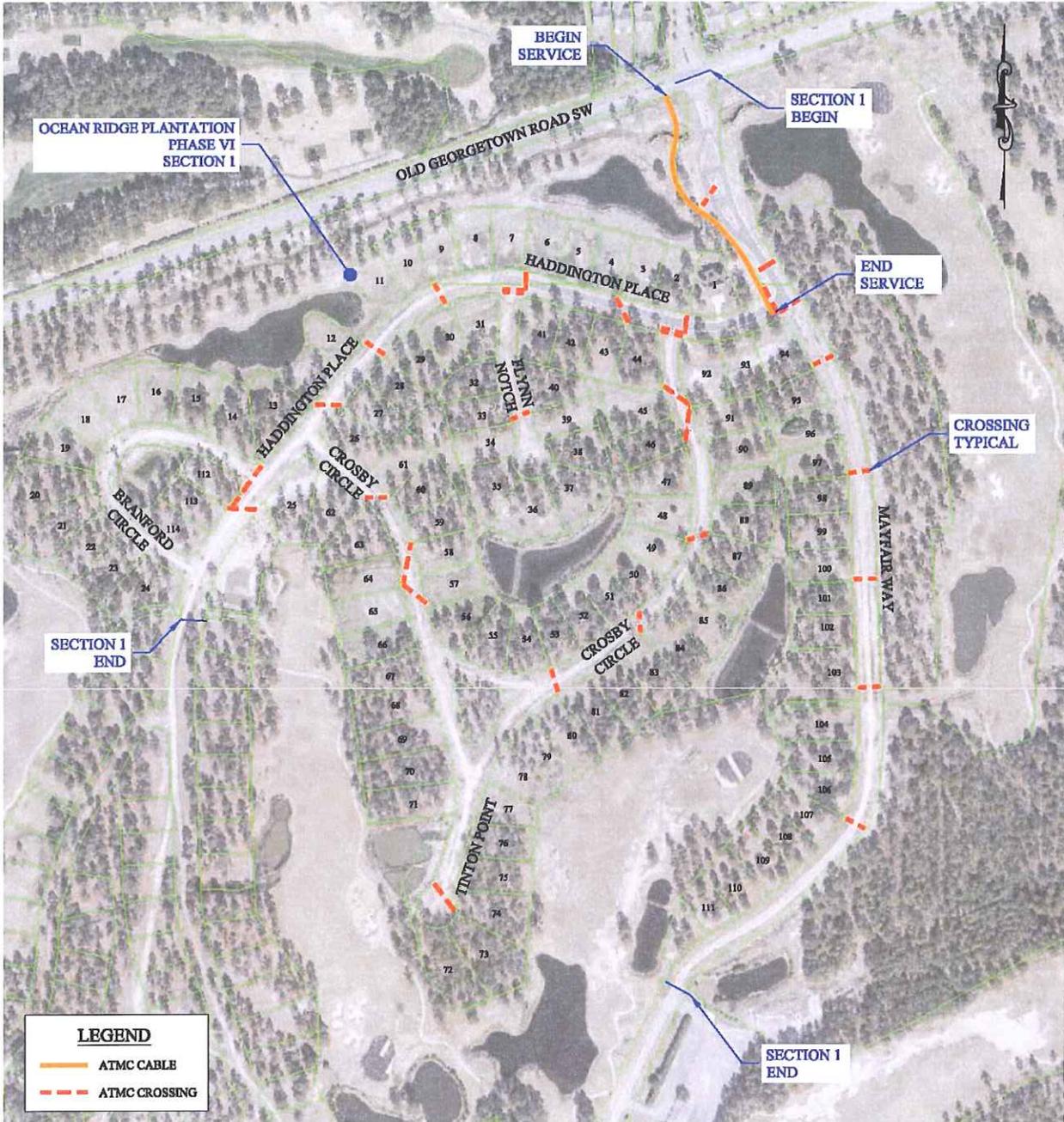
- Intersection of Mayfair Way and Haddington Place
- Guardhouse island

Although the approved plan does not include a lighting plan, it is in our professional opinion that adequate lighting should be provided throughout the subdivision for the safety of the public.



Compliance Investigation Report Ocean Ridge Plantation, Phase VI, Section 1

8.0 Completion Investigation – Atlantic Telephone Membership Cooperative (ATMC)



Atlantic Telephone Membership Cooperative (ATMC) Installation Exhibit

Compliance Investigation Report
Ocean Ridge Plantation, Phase VI, Section 1

8.1 Telecommunications Installations

Installation records were obtained by Atlantic Telephone Membership Cooperative (ATMC) on September 8, 2014 for all installed telecommunications cable.

ATMC Cable extends down Mayfair Way from Old Georgetown Road SW to the southwestern corner of the intersection of Mayfair Way and Haddington Place.

Lot 1 is the only lot in Section 1 currently served by ATMC. The service has also been stubbed to the guardhouse island for future construction.

8.2 Telecommunications Crossing Installations

Installation records were obtained by Atlantic Telephone Membership Cooperative (ATMC) on September 8, 2014 for all installed telecommunications crossings.

ATMC has provided crossings throughout the subdivision that appear to be adequate to serve all of lots located within Section 1.



9.0 Summary of Findings

In summary, the installation and performance of the asphalt pavement, curb and gutter, pedestrian access, storm water management system, and erosion control measures were found non-compliant with the approved plan.

The roadway storm drainage system was found to be in general compliance with the approved plan.

The locations of the electrical crossings and telecommunications crossings were found adequate to extend the services to all of the lots in Section 1. However, the installation of the electrical cables and telecommunications cables were found incomplete to service all of the lots in Section 1.

Subdivision Bond

KNOW ALL MEN BY THESE PRESENTS: BOND NO. 5028388

That Coastal Communities at Ocean Ridge Plantation LLC as Principal, and Bond Safeguard Insurance Company, a Illinois corporation authorized to do business in the State of North Carolina as surety, are held firmly bound unto Town of Sunset Beach as obligee, in the sum of One Million Two Hundred Thirty Four Thousand Five Hundred Forty One Dollars & 00/100 (\$1,234,541.00) lawful money of the United States of America, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Whereas, the Principal has entered into an agreement with Town of Sunset Beach as obligee, guaranteeing that the Principal will complete all improvements for Coastal Communities at Ocean Ridge Phase VI, Section 1, Brunswick County, North Carolina, in accordance with the plats submitted to and approved by obligee and in accordance with the engineer's report dated May 15, 2006 and said agreement, plats and report being made part of this bond, all of which improvements shall be completed and accepted by town's engineers on or before the date set forth in the agreement.

Now, therefore, the condition of this obligation is such, that if the Principal shall carry out all the terms of said agreement relating to the improvements and perform all the work as required by said plats, engineer's report and said agreement referenced herein, all within the time set forth in said agreement and to the satisfaction and approval of said engineers, then this obligation shall be null and void, otherwise to remain in full force and effect. This bond is not transferable or assignable.

No party other than the obligee shall have any rights hereunder as against the Surety.

The aggregate liability of the Surety of the Bond Obligation set forth herein shall not exceed the penal sum hereof for any cause or reason whatsoever, inclusive of attorney's fees or other costs.

SIGNED, SEALED AND DATED THIS 7th day of February, 2008

Coastal Communities at Ocean Ridge Plantation LLC

Attest: Anne M. Bartholomew

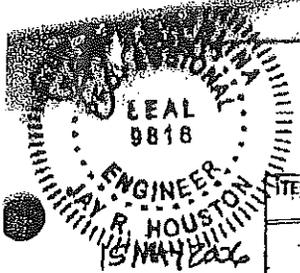
By: Mark A. Sanders
Mark A. Sanders, Managing Member

Bond Safeguard Insurance Company

[Signature]
Witness as to Surety:

By: Elana V. Sanchez
Elana V. Sanchez, Attorney-in-Fact

This Bond shall replace letter of credit #3082239 issued by Sun Trust in the amount of \$1,234,541.00



OCEAN RIDGE PLANTATION
Phase VI, Section 1
Infrastructure Construction Cost Estimate

May 15, 2006

LO# 1-114
(14)
50263488

ITEM	ITEM DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE	ITEM TOTAL
SEWER					
1	8" SDR21 Pressure Sewer	4,580	LF @ \$	9.50	43,510
2	6" SDR21 Pressure Sewer	1,300	LF @ \$	8.00	10,400
3	4" SDR21 Pressure Sewer		LF @ \$	5.50	0
4	3" SDR21 Pressure Sewer	3,100	LF @ \$	4.25	13,175
5	2" SDR21 Pressure Sewer	3,500	LF @ \$	3.75	13,125
6	8" Fittings & Valves		LF @ \$	650	0
7	6" Fittings & Valves	9	EA @ \$	500	4,500
8	6" Cleanouts	3	EA @ \$	300	900
9	4" Fittings & Valves	5	EA @ \$	350	1,750
10	4" Cleanouts	2	EA @ \$	250	500
11	3" Fittings & Valves	22	EA @ \$	275	6,050
12	3" Cleanouts	3	EA @ \$	200	600
13	2" Fittings & Valves	15	EA @ \$	200	3,000
14	2" Cleanouts	6	EA @ \$	200	1,200
15	Single Service Taps	4	EA @ \$	330	1,320
16	Double Service Taps	55	EA @ \$	440	24,200
SUB TOTAL					124,230
WATER:					
17	8" C-900 PVC		EA @ \$	17.00	0
18	8" MJ Tee		EA @ \$	425	0
19	8" MJ Plug Tapped 6"		EA @ \$	200	0
20	8" MJ Plug Tapped 2"		EA @ \$	175	0
21	8" Gate Valve & Box		EA @ \$	650	0
22	6" C-900 PVC	4,150	LF @ \$	13.50	56,025
23	6" MJ Tee	10	EA @ \$	440	4,400
24	6" Gate Valve & Box	7	EA @ \$	715	5,005
25	6" Cross		EA @ \$	450	0
26	6" MJ 45° Bend		EA @ \$	385	0
27	6" MJ Plug Tapped 4"	1	EA @ \$	495	495
28	4" C-900 PVC	1,650	LF @ \$	9.50	15,675
29	4" Gate Valve & Box	6	EA @ \$	600	3,600
30	4" Fittings	3	EA @ \$	150	450
31	2" Blowoff Assembly	3	EA @ \$	350	1,050
32	6" X 20" Tapping Sleeve	1	EA @ \$	2,600	2,600
33	8" Tapping Gate Valve & Box		EA @ \$	1,500	0
34	6" Tapping Gate Valve & Box	1	EA @ \$	1,100	1,100
35	Service Taps	114	EA @ \$	450	51,300
36	Fire Hydrant Assembly	5	EA @ \$	2,500	12,500
37	6" or 4" Thrust Collar	2	EA @ \$	400	800
38	Concrete Blocking	4	CY @ \$	300	1,200
SUB TOTAL					156,200
ROADWAY, DRAINAGE & MISC.					
39	Clearing and Grubbing	8	AC @ \$	3,000	22,500
40	Grading (Fine)	6,300	LF @ \$	7.50	47,250
41	Grading (Rough)	6,300	LF @ \$	12.00	75,600
42	6" ABC Base	14,000	SY @ \$	7.50	105,000
43	2" I-2 Asphalt	14,000	SY @ \$	10.75	150,500
44	Curb and Gutter (2')	12,600	LF @ \$	11.00	138,600
45	Curb Inlet & Grate	14	EA @ \$	1,500	21,000
46	20' Wide Vegetated Swale	375	LF @ \$	12.50	4,688
47	12" RC or HDPE Pipe	290	LF @ \$	15.00	4,350
48	15" RC or HDPE Pipe	210	LF @ \$	23.00	4,830
49	18" RC or HDPE Pipe	280	LF @ \$	27.00	7,560
50	24" RC or HDPE Pipe	700	LF @ \$	34.00	23,800
51	30" RC or HDPE Pipe	250	EA @ \$	43.00	10,750
52	36" RC or HDPE Pipe		EA @ \$	54.00	0
53	Pond Excavation-2.5 ac (6' to 8' depth)	12,500	CY @ \$	4.25	53,125
54	Stormwater Pond Outlet Structure	2	LS @ \$	6,000	12,000
55	Plained End Sections	2	EA @ \$	450.00	900
56	Catch Basins	2	LS @ \$	1,500	3,000
57	Underground Electric Cable	6,000	LF @ \$	3.50	21,000
58	Street Lights	6	EA @ \$	125	750
SUB TOTAL					707,203
GRAND TOTAL					987,633

Printed 5/15/06

+ 12.5% 246,908.25
1,234,541.25



October 17, 2014

East Coast Engineering
Attn: Ms. Holly Cook

Reference: Roadway Testing
Ocean Ridge Plantation – Jaguar’s Lair Roads
Sunset Beach, North Carolina

ECS Project No. 22. 21481

Dear Ms. Cook:

An ECS representative arrived on site, as requested, to cut asphalt cores at 10 locations in the roadways of Ocean Ridge Plantation – Jaguar’s Lair. The locations were selected by ECS and approved by East Coast Engineering prior to visiting the site. Please see the attached drawing for the approximate testing locations.

At each asphalt core location, the undersigned measured the thickness of the asphalt and the ABC stone. An asphalt core from each test location was returned to the ECS laboratory for further testing. The asphalt core and ABC stone thickness are as follows:

Core Location	Asphalt Core Thickness (in.)	ABC Stone Thickness (in.)
1 - Mayfair Way	2	6.5
2 - Mayfair Way	1.25	6
3 - Mayfair Way	1.5	4.5
4 - Haddington Place	1.5	6
5 - Haddington Place	2	5.5
6 - Branford Circle	1.75	5
7 - Crosby Circle	2	6
8 - Tinton Point	2.25	6
9 - Crosby Circle	1.75	4.5
10 - Flynn Notch	1.75	7.5

ECS also checked the underlying roadway soils at one location in each of the roads. The soils were checked by advancing six hand auger borings each to a depth of approximately three feet below the existing soil subgrade in the roadways. The underlying soils were sampled and were returned to the ECS laboratory for classification in accordance with AASHTO specifications. The approximate boring locations are shown on the attached drawing.

At the boring locations, a Kessler DCP was driven continuously through approximately the upper two feet of the soil subgrade. The Kessler DCP is driven into the soil by dropping a Dual-Mass 17.6 lb Hammer from a height of 22.6 in. The depth of cone penetration is measured at selected penetration or hammer drop intervals and the soil shear strength is reported in terms of DCP index. The DCP index is qualitative and based on the average penetration depth resulting from one blow of the 17.6 lb hammer.

Subsurface Conditions

The hand auger borings generally encountered fine to medium silty sands (SM), fine to medium clayey sands (SC) and fine to medium sands (SP) to the depths explored. The attached Hand Auger Boring Logs present the subsurface conditions encountered at each boring location.

Groundwater was encountered in hand auger borings R-1, R-4, and R-8 approximately 2.0 feet below existing grades. Groundwater was not encountered in hand auger borings R-6 and R-7 at the depths explored. We anticipate that water levels at the site could rise significantly during the wetter seasons of the year and after periods of heavy or extended rainfall.

Results

ECS has compared the above listed data to the NCDOT Subdivision Roads – Minimum Construction Standards.

According to the NCDOT Subdivision Roads – Minimum Construction Standards the pavement designs for this project should be based on Group I subgrade soils types as listed on page 23 of the standard. The subgrade soil samples were visually classified using ASTM D-2488 entitled "Description and Identification of Soils."

The NCDOT Subdivision Roads – Minimum Construction Standards indicates that the pavement should be designed for Group I subgrade soils having a minimum thickness of ABC stone of 6 inches and a minimum thickness of asphalt of 1 1/2 inches. Based on this information, the test results indicate that the minimum ABC stone thicknesses measured were not met at test locations 3, 5, 6, and 9.

Ocean Ridge Plantation – Jaguar's Lair Roads
Sunset Beach, North Carolina
October 17, 2014
ECS Project No. 22.21481

The asphalt cores sampled were tested for specific gravity. A maximum specific gravity, particle size analysis, and asphalt content were also determined from a composite sample. The asphalt tested appears to be in accordance with surface course asphalts utilized for NCDOT subdivision roads with respect to particle size analysis and asphalt content. The specific gravity of the asphalt cores tested is above the NCDOT requirements of 90% the maximum specific gravity except at location 4. It is our opinion that due to the age of the asphalt roads the compaction percentage should not be a determining factor in the integrity of the asphalt.

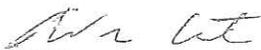
In conclusion, the subgrade soil types observed in the test locations were classified as Group I soils. The ABC stone thickness at 4 of the 10 test locations was not in accordance with the NCDOT Subdivision Roads – Minimum Construction Standards. The absence of the specified stone thickness may shorten the design life of the pavement. However, the in-situ soil CBR values are relatively high indicating a firm, suitable subgrade that may improve the pavement performance. As with all pavement designs, performance is a function of traffic including the number of vehicle passes and vehicle loads. The pavements are designed for residential traffic, but ECS has observed that housing in the neighborhood has not yet been built. The pavements are not designed for construction traffic.

Regardless of the section and type of construction utilized, saturation of the subgrade materials and asphalt pavement areas results in a softening of the subgrade material and shortened life span for the pavement. Therefore, we recommend that both the surface and subsurface materials for the pavement be properly graded to enhance surface and subgrade drainage. By quickly removing surface and subsurface water, softening of the subgrade can be reduced and the performance of the roadway can be improved.

If you have any questions after reviewing this letter or the attachments, please contact us at (910) 686-9114.

Respectfully Submitted,

ECS CAROLINAS, LLP


William Cromartie
Construction Service Manager



Winslow Goins, P.E.
Principal Engineer

Attachments: Site Maps and Pictures
Hand auger boring logs
Kessler DCP Data Sheets
Asphalt Data Sheet

Hand Auger Borings
 Ocean Ridge Plantation
 Sunset Beach, North Carolina
 ECS Project No. 22.21481
 September 29, 2014

<u>Boring</u>	<u>Depth</u>	<u>Soil Description</u>
R-1 H ₂ O = 24"	0-12" 12-36"	Gray/Black Sand w/Silt Black Silty Sand
R-4 H ₂ O = 24"	0-36"	Gray/Black Sand w/Silt
R-10 H ₂ O = N/A	0-48"	Auger refusal due to old asphalt underneath the existing pavement and stone
R-7 H ₂ O = NE	0-24" 24-36"	Black/Brown Silty Sand (hardpan) Black Silty Sand
R-8 H ₂ O = 24"	0-24" 24-36"	Black/Gray Silty Sand Tan/Gray Clayey Sand
R-6 H ₂ O = NE	0-24" 24"-36"	Black/Gray Silty Sand White/Orange Sand



East Coast Engineering & Surveying, P.C.
ENGINEERS • PLANNERS • SURVEYORS

August 18, 2014

Ms. Georgette Scott, Regional Engineer
NC Division of Energy, Mineral & Land Resources
127 Cardinal Drive Extension
Wilmington, North Carolina 28405-3845

Subject: Ocean Ridge Plantation, Jaguars Lair, Phase 6, Section 1
Sunset Beach, North Carolina
Stormwater Permit Compliance Inspection Request

Dear Ms. Scott,

On behalf of our client, the Town of Sunset Beach, this is an official request for compliance inspections for Ocean Ridge Plantation, Jaguars Lair, Phase 6, Section 1. This request includes any stormwater management facility receiving runoff from Section 1 of the development.

It is our understanding that the Town needs verification from the State that the facilities are being maintained and operating as designed and permitted in order to ensure that adequate bonding is available for this project prior to re-issuance, release, or transfer.

It appears that this project falls under Stormwater Permit No. SW8 070917 issued 10/02/07 and modified 11/02/12. I have enclosed a map of the subject property for your use.

Please inform me once the date of the compliance inspections has been scheduled so that I may attend the inspections.

Should you have any questions or comments, please contact me at (910) 754-8029 or hcook@eces.biz.

Thank you in advance for your assistance with this matter.

Sincerely,



Holly Cook, P.E.

Enclosures



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

August 25, 2014

Becky K. Noble, Manager
Coastal Communities at Ocean Ridge Plantation, LLC
131 Ocean Boulevard West
Holden Beach, NC 28462

**Subject: Notice of Inspection – Non Compliant
Ocean Ridge Phase 6 Section 1 & 3, Jaguars Lair
Permit No. SW8 070917
Brunswick County**

Dear Ms. Noble:

On August 21, 2014, the Wilmington Regional Office of the Division of Energy, Mineral and Land Resources (DEMLR) inspected Ocean Ridge Phase 6 Section 1 & 3, Jaguars Lair, in Brunswick County to determine the status of compliance with the State Stormwater Management Permit Number SW8 070917 issued originally on October 2, 2007 with the last modification on November 2, 2012. DEMLR file review and site inspection revealed that the site is not compliant with the terms and conditions of this permit. Please find a copy of the completed form entitled "Compliance Inspection Report" attached to this letter, which summarizes the findings of the recent inspection.

As indicated in the attached inspection report, the following deficiencies must be resolved:

1. A copy of the recorded deed restrictions must be submitted to this office.
2. In general, many areas of the roads have sand, sediment, or leaves that need to be removed. This debris can clog curb inlets if not maintained. In addition, it has been noted on the engineer's certification that all ponds have been used as sedimentation basins and the design depths, especially in the forebay, shall be reduced almost immediately. Therefore, we are requiring that the design depth be measured in each forebay for all seven (7) ponds, and that the forebay depth be restored as necessary.
3. Also, please reference the following instructions for each pond:

Pond 1: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. Main pond depth appears to be okay. Please verify depth.

Pond 2: A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. There was much sedimentation around the outlet structure, possibly clogging the orifice pipe. This sediment will have to be removed. In addition, the overall depths should be checked in the main pond and its design depth restored as needed.

Pond 3: Same as Pond 2, plus remove scrub pine trees and other unwanted vegetation from banks of pond.

Pond 4: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. Many areas of erosion need to be repaired. Bare areas will need to be re-seeded with grass. In addition, the overall depths should be checked in the main pond and its design depth restored as needed. There was a temporary slope drain installed in the northern corner of the main pond that should be removed. Relocate an inlet pipe (near the outlet structure) and install a permanent cap over it. The other end

Ms. Becky K. Noble
August 25, 2014

of the pipe located at a drop inlet on the golf course fairway should also be permanently capped. Alternately, this pipe may be removed entirely. No stormwater flow from the golf course should be directed to the wet pond.

Pond 5: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. An outlet structure could not be found due to the high water conditions. Most likely, this pond has much sediment around the outlet structure clogging the orifice. So, the overall depths should be checked in the main pond and its design depth restored as needed.

Pond 7: Same as Pond 5.

Pond 8: Severe erosion and sedimentation has occurred in this pond. Many areas of erosion need to be repaired. All pond banks will need to be seeded with grass. This pond has much sediment around the outlet structure, clogging the orifice. This sediment will have to be removed. In addition, the overall depths should be checked in the main pond and its design depth restored.

Please inform this Office in writing before September 24, 2014, of the specific actions that will be undertaken and the time frame that will be required to correct the deficiencies. Failure to provide the requested information, or to respond to this letter by the due date, may initiate enforcement action including the assessment of civil penalties of up to \$25,000 per day. If a written plan of action is not submitted to this office by September 24, 2014, then DEMLR staff will re-inspect the site and issue a Notice of Violation if the listed deficiencies have not been addressed.

If the project has changed its name, ownership, or mailing address, it is your responsibility to submit a completed and signed Name/Ownership Change form to DEMLR at least 30 calendar days prior to making the changes. Please include the name, mailing address and phone number of the person or entity that is now responsible for this permit on the Name/Ownership Change form.

If you have any questions, please contact me at the Wilmington Regional Office, telephone number (910) 796-7215 or via email at steven.pusey@ncdent.gov.

Sincerely,



Steve G. Pusey
Environmental Engineer

Enc: Compliance Inspection Report with Photos

 GDS\sgp: G:\WQ\Shared\Stormwater\Permits & Projects\2007\070917 HD\ 2014 08 CEI_deficient 070917

cc: Georgette Scott, Wilmington Regional Office Stormwater Supervisor
Matt Haley, PE – Cape Fear Engineering
Holly Cook, PE – East Coast Engineering & Surveying, PC
Brunswick County Engineering
Town of Sunset Beach Building Inspections
WiRO Stormwater File

Compliance Inspection Report

Permit: SW8070917 Effective: 11/02/12 Expiration: 10/02/21

Project: Ocean Ridge Phase 6 Section 1 Lot 114 and Section 3 Lots 1-14 and 27

Owner: Coastal Communities At Ocean Ridge Plantation Inc

County: Brunswick

Address: Int Of Mayfair Way And Old Georgetown Rd Sw

Region: Wilmington

City/State/Zip: Sunset Beach NC 28468

Contact Person: Becky Noble

Title:

Phone: 910-612-8797

Directions to Project:

Follow US17 south, left on NC 904, right at Old Georgetown Rd., first left on Mayfair Way into site.

Type of Project: State Stormwater - HD - Detention Pond

Drain Areas: 1 - (Calabash River) (03-07-59) (SA;HQW)
2 - (Calabash River) (03-07-59) (SA;HQW)
3 - (Calabash River) (03-07-59) (SA;HQW)
4 - (Calabash River) (03-07-59) (SA;HQW)
5 - (Calabash River) (03-07-59) (SA;HQW)
7 - (Calabash River) (03-07-59) (SA;HQW)
8 - (Calabash River) (03-07-59) (SA;HQW)

On-Site Representative(s):

Related Permits:

Inspection Date: 08/21/2014

Entry Time: 12:00PM

Exit Time: 03:00PM

Primary Inspector: Steven G Pusey

Phone:

Secondary Inspector(s):

Reason for Inspection: Routine

Inspection Type: Compliance Evaluation

Permit Inspection Type: State Stormwater

Facility Status: Compliant Not Compliant

Question Areas:

State Stormwater

(See attachment summary)

Permit: SW8070917

Owner - Project: Coastal Communities At Ocean Ridge Plantation Inc

Inspection Date: 08/21/2014

Inspection Type: Compliance Evaluation

Reason for Visit: Routine

Inspection Summary:

In general, many areas of the roads have sand, sediment, or leaves that need to be removed. This debris can clog curb inlets if not maintained. In addition, it has been noted on the engineer's certification that all ponds have been used as sedimentation basins and the design depths, especially in the forebay, shall be reduced almost immediately. Therefore, we are requiring that the design depth be measured in each forebay for all seven (7) ponds, and that the forebay depth be restored as necessary.

Pond 1: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. Main pond depth appears to be okay. Please verify depth.

Pond 2: A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. There was much sedimentation around the outlet structure, possibly clogging the orifice pipe. This sediment will have to be removed. In addition, the overall depths should be checked in the main pond and its design depth restored as needed.

Pond 3: Same as Pond 2, plus remove scrub pine trees and other unwanted vegetation from banks of pond.

Pond 4: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. Many areas of erosion need to be repaired. Bare areas will need to be re-seeded with grass. In addition, the overall depths should be checked in the main pond and its design depth restored as needed. There was a temporary slope drain installed in the northern corner of the main pond that should be removed. Relocate an inlet pipe (near the outlet structure) and install a permanent cap over it. The other end of the pipe located at a drop inlet on the golf course fairway should also be permanently capped. Alternately, this pipe may be removed entirely. No stormwater flow from the golf course should be directed to the wet pond.

Pond 5: Remove scrub pine trees and other unwanted vegetation from banks of pond. Wetland shrubs or plants can remain. A few areas of erosion need to be repaired. All banks of the pond need to be seeded with grass. An outlet structure could not be found due to the high water conditions. Most likely, this pond has much sediment around the outlet structure clogging the orifice. So, the overall depths should be checked in the main pond and its design depth restored as needed.

Pond 7: Same as Pond 5.

Pond 8: Severe erosion and sedimentation has occurred in this pond. Many areas of erosion need to be repaired. All pond banks will need to be seeded with grass. This pond has much sediment around the outlet structure, clogging the orifice. This sediment will have to be removed. In addition, the overall depths should be checked in the main pond and its design depth restored.

Permit: SW8070917 Owner - Project: Coastal Communities At Ocean Ridge Plantation Inc
 Inspection Date: 08/21/2014 Inspection Type: Compliance Evaluation Reason for Visit: Routine

File Review

Yes No NA NE

- Is the permit active?
 - Signed copy of the Engineer's certification is in the file?
 - Signed copy of the Operation & Maintenance Agreement is in the file?
 - Copy of the recorded deed restrictions is in the file?
- Comment: No copies of recorded deed restrictions were found in the file.

Built Upon Area

Yes No NA NE

- Is the site BUA constructed as per the permit and approval plans?
 - Is the drainage area as per the permit and approved plans?
 - Is the BUA (as permitted) graded such that the runoff drains to the system?
- Comment: This subdivision is partially built. Roads are complete for this phase but only some of the houses are built. Golf course is incomplete.

SW Measures

Yes No NA NE

- Are the SW measures constructed as per the approved plans?
 - Are the inlets located per the approved plans?
 - Are the outlet structures located per the approved plans?
- Comment:

Operation and Maintenance

Yes No NA NE

- Are the SW measures being maintained and operated as per the permit requirements?
 - Are the SW BMP inspection and maintenance records complete and available for review or provided to DWQ upon request?
- Comment: Pond 1: Trees and overgrowth on banks. A few areas of erosion. All pond banks to be seeded with grass. Main pond depth to be verified. Pond 2: A few areas of erosion. All pond banks to be seeded with grass. Overall depths to be verified and restored. Pond 3: Same as Pond 2, plus trees and overgrowth on banks. Pond 4: Trees and overgrowth on banks. Many areas of erosion. Bare areas need to be seeded with grass. Overall depths verified and restored. Temporary slope drain should be removed. Pipe from golf course should be permanently capped. Pond 5: Trees and overgrowth on banks. A few areas of erosion need to be repaired. All banks of pond to be seeded with grass. An outlet structure could not be found due to the high water conditions. Overall depths verified and restored. Pond 7: Same as Pond 5. Pond 8: Severe erosion and sedimentation. Many areas of erosion. All pond banks to be seeded with grass. Overall depths verified and restored.

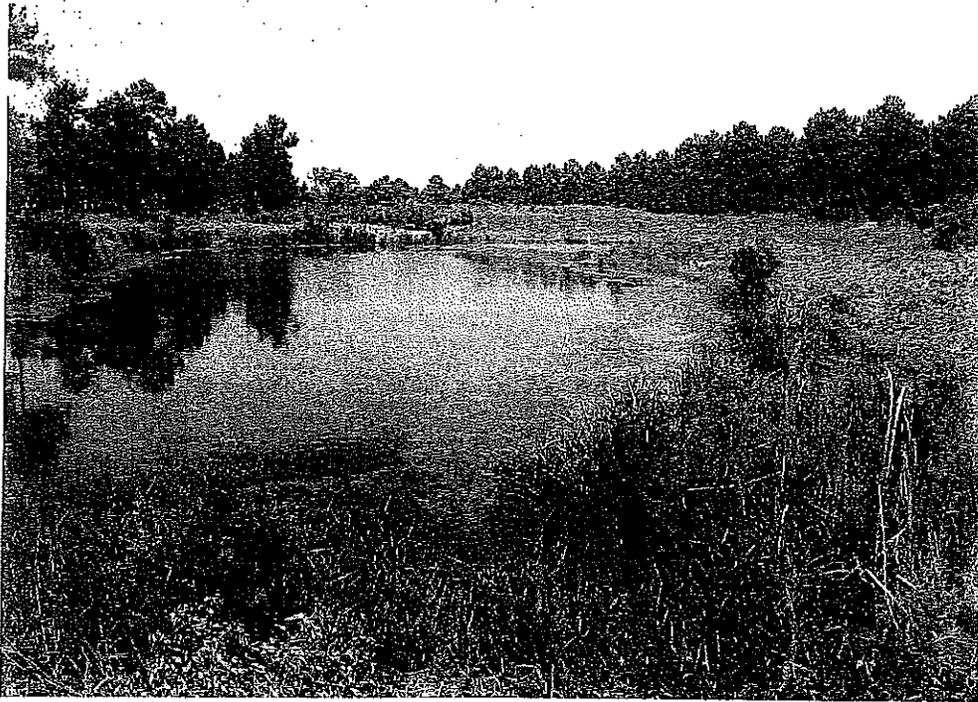
Pond 1



Pond 2



Pond 3



Pond 4



Pond 5



Pond 7



Pond 8





CAPE FEAR Engineering, Inc.

151 Poole Road, Suite 100
Belville, NC 28451
TEL (910) 383-1044
FAX (910) 383-1045
www.capefearengineering.com

Transmittal

To	NC DWQ SWPS
	127 Cardinal Drive Extension
	Wilmington, NC 28405
Attn:	Linda Lewis

Date:	October 18, 2010
File:	810-0611 "36"
Subject:	Ocean Ridge Plantation Ph 6, Section 1 & 3 (SW8 070917 Mod) Ponds 1, 2 & 7 Certifications

- As Requested
 For Your Files
 For Distribution
 For your Review / Action / Approval
 Sent via Mail
 Sent via Courier

Quantity	Drawing No.	Description
1	Original	P.E. Certification and Clarifications for Pond 1
1	Original	P.E. Certification and Clarifications for Pond 2
1	Original	P.E. Certification and Clarifications for Pond 7

REMARKS

CC: **Becky K. Noble**
 Town of Sunset Beach Building Inspections
 Brunswick County Building Inspections
 CFE File

Cape Fear Engineering, Inc.

Signed: 
 Matthew Haley, E.I.

File: 810-0611 "36"

Received By: _____

Date: _____

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Designer's Certification

I, PERRY DAVIS, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically) weekly / full time) the construction of the project,

OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAIR) - POND # 1
(Project)

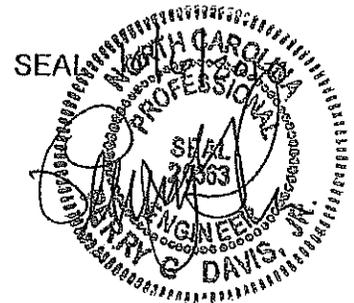
COASTAL COMMUNITIES AT OCEAN
for RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature [Handwritten Signature]
Registration Number 20563
Date 10.6.2010



Certification Requirements: OR VI SEC 1 - POND # 1

- ✓ 1. The drainage area to the system contains approximately the permitted acreage.
- SEE ATTACHED 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- SEE ATTACHED 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- SEE ATTACHED 4. All roof drains are located such that the runoff is directed into the system.
- ✓ 5. The outlet/bypass structure elevations are per the approved plan.
- ✓ 6. The outlet structure is located per the approved plans.
- ✓ 7. Trash rack is provided on the outlet/bypass structure.
- SEE ATTACHED 8. All slopes are grassed with permanent vegetation.
- ✓ 9. Vegetated slopes are no steeper than 3:1.
- ✓ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ✓ 11. The permitted amounts of surface area and/or volume have been provided.
- ✓ 12. Required drawdown devices are correctly sized per the approved plans.
- SEE ATTACHED 13. All required design depths are provided.
- ✓ 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
- ✓ 15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 1:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

2, 3, 4.

To date, only a section of the proposed roadway and no structures have been constructed. The runoff from all constructed built-upon area drains to the permitted system. The finished grade centerline of both the existing road and future roads have been designed approximately eighteen inches below lot grade to facilitate collection as development progresses.

8. All slopes have been seeded and permanent vegetation has been partly established. As required by the Pond's Operation and Maintenance Agreement and Permit Conditions, the owner shall continue to inspect / monitor the BMP take corrective actions as necessary to provide permanent vegetation.

13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Page 1 of 2

Designer's Certification

I, PERRY DAVIS, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically / weekly / full time) the construction of the project,

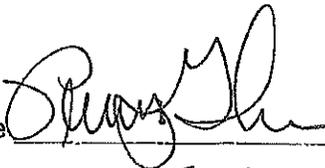
OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAIR) - POND #2
(Project)

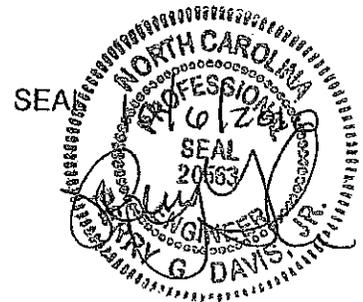
COASTAL COMMUNITIES AT OCEAN
for RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature 
Registration Number 20563
Date 10-6-2010



Certification Requirements: OR VI SEC 1 - POND #2

- ✓ 1. The drainage area to the system contains approximately the permitted acreage.
- SEE ATTACHED 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- SEE ATTACHED 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- SEE ATTACHED 4. All roof drains are located such that the runoff is directed into the system.
- ✓ 5. The outlet/bypass structure elevations are per the approved plan.
- ✓ 6. The outlet structure is located per the approved plans.
- ✓ 7. Trash rack is provided on the outlet/bypass structure.
- SEE ATTACHED 8. All slopes are grassed with permanent vegetation.
- ✓ 9. Vegetated slopes are no steeper than 3:1.
- ✓ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ✓ 11. The permitted amounts of surface area and/or volume have been provided.
- ✓ 12. Required drawdown devices are correctly sized per the approved plans.
- SEE ATTACHED 13. All required design depths are provided.
- ✓ 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
- ✓ 15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWG Regional Office
Town of SUNSET Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 2:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

2, 3, 4.

To date, only a section of the proposed roadway and no structures have been constructed. The runoff from all constructed built-upon area drains to the permitted system. The finished grade centerline of both the existing road and future roads have been designed approximately eighteen inches below lot grade to facilitate collection as development progresses.

8. All slopes have been seeded and permanent vegetation has been partly established. As required by the Pond's Operation and Maintenance Agreement and Permit Conditions, the owner shall continue to inspect / monitor the BMP take corrective actions as necessary to provide permanent vegetation.

13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Designer's Certification

I, PERRY DAVIS, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically weekly / full time) the construction of the project.

OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAIR) - POND #3
(Project)

COASTAL COMMUNITIES AT OCEAN RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature _____
Registration Number _____
Date _____



SEAL

State Stormwater Management Systems
Permit No. SWB 070917 Modification

Certification Requirements:

- ✓ 1. The drainage area to the system contains approximately the permitted acreage.
- ✓ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- SEE ATTACHED 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- SEE ATTACHED 4. All roof drains are located such that the runoff is directed into the system.
- ✓ 5. The outlet/bypass structure elevations are per the approved plan.
- ✓ 6. The outlet structure is located per the approved plans.
- ✓ 7. Trash rack is provided on the outlet/bypass structure.
- ✓ 8. All slopes are grassed with permanent vegetation.
- ✓ 9. Vegetated slopes are no steeper than 3:1.
- ✓ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ✓ 11. The permitted amounts of surface area and/or volume have been provided.
- ✓ 12. Required drawdown devices are correctly sized per the approved plans.
- SEE ATTACHED 13. All required design depths are provided.
- ✓ 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
- ✓ 15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 3:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

3. To date only road systems have been constructed. The currently installed impervious surfaces drain to the stormwater facilities.
4. No structures have been constructed at this time. In addition to note 3 above, the finished grade centerline of road is approximately eighteen inches below lot grade to facilitate collection as development progresses.
13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Designer's Certification

I, PERRY DAVIS, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically) weekly / full time) the construction of the project,

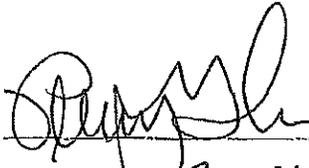
OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAKE) - POND # 7
(Project)

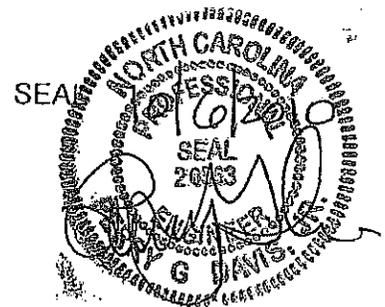
COASTAL COMMUNITIES AT OCEAN
for RIDGE PASTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature 
Registration Number 20563
Date 10.6.2010



State Stormwater Management Systems
Permit No. SW8 070917 Modification

Certification Requirements: OR VI SEC 1 - POND # 7

- ✓ 1. The drainage area to the system contains approximately the permitted acreage.
- SEE ATTACHED 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- SEE ATTACHED 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- SEE ATTACHED 4. All roof drains are located such that the runoff is directed into the system.
- ✓ 5. The outlet/bypass structure elevations are per the approved plan.
- ✓ 6. The outlet structure is located per the approved plans.
- ✓ 7. Trash rack is provided on the outlet/bypass structure.
- SEE ATTACHED 8. All slopes are grassed with permanent vegetation.
- ✓ 9. Vegetated slopes are no steeper than 3:1.
- ✓ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ✓ 11. The permitted amounts of surface area and/or volume have been provided.
- ✓ 12. Required drawdown devices are correctly sized per the approved plans.
- SEE ATTACHED 13. All required design depths are provided.
- ✓ 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
- ✓ 15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 7:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

2, 3, 4.

To date, only a section of the proposed roadway and no structures have been constructed. The runoff from all constructed built-upon area drains to the permitted system. The finished grade centerline of both the existing road and future roads have been designed approximately eighteen inches below lot grade to facilitate collection as development progresses.

8. All slopes have been seeded and permanent vegetation has been partly established. As required by the Pond's Operation and Maintenance Agreement and Permit Conditions, the owner shall continue to inspect / monitor the BMP take corrective actions as necessary to provide permanent vegetation.

13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.



CAPE FEAR Engineering, Inc.

151 Poole Road, Suite 100
Belville, NC 28451
TEL (910) 383-1044
FAX (910) 383-1045
www.capefearengineering.com

Transmittal

To	Town of Sunset Beach Inspections
Attn:	Jeff Curtis

Date:	6-25-09
File:	810-0611
Subject:	Utility Agreement with Brunswick County and Coastal Construction

- As Requested
 For Your Files
 For Distribution
 For your Review / Action / Approval
 Sent via Mail
 Sent via Courier

Quantity	Drawing No.	Description
2		Copies of Ocean Ridge Phase 6 Section 1 Pond #3 Engineers Certification
3		Original Copies of Tri-party Utility Agreement for Ocean Ridge Phase 6, Section 1, Lot #1.

REMARKS	Jeff,
	Please call me if you need any additional information. Lot #1 is in Pond #3 drainage area so I have attached the appropriate engineer pond certification. The storm drain is installed for Lot #1.
	Kevin McBride
	Cell:910-367-2324

CC: File

File:

Cape Fear Engineering, Inc.

Signed: *Kevin McBride*
Kevin McBride
Received By: *Kandy Walker*
Date: 6-25-09

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Designer's Certification

I, PERRY DAVIS, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically / weekly / full time) the construction of the project,

OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAIR) - POND #3
(Project)

COASTAL COMMUNITIES AT OCEAN
for RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature _____
Registration Number _____
Date _____



SEAL

Certification Requirements:

- ✓ 1. The drainage area to the system contains approximately the permitted acreage.
- ✓ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- SEE ATTACHED 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- SEE ATTACHED 4. All roof drains are located such that the runoff is directed into the system.
- ✓ 5. The outlet/bypass structure elevations are per the approved plan.
- ✓ 6. The outlet structure is located per the approved plans.
- ✓ 7. Trash rack is provided on the outlet/bypass structure.
- ✓ 8. All slopes are grassed with permanent vegetation.
- ✓ 9. Vegetated slopes are no steeper than 3:1.
- ✓ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
- ✓ 11. The permitted amounts of surface area and/or volume have been provided.
- ✓ 12. Required drawdown devices are correctly sized per the approved plans.
- SEE ATTACHED 13. All required design depths are provided.
- ✓ 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
- ✓ 15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 3:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

3. To date only road systems have been constructed. The currently installed impervious surfaces drain to the stormwater facilities.
4. No structures have been constructed at this time. In addition to note 3 above, the finished grade centerline of road is approximately eighteen inches below lot grade to facilitate collection as development progresses.
13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.



CAPE FEAR Engineering, Inc.

151 Poole Road, Suite 100
Belville, NC 28451
TEL (910) 393-1044
FAX (910) 393-1045
www.capefearengineering.com

Transmittal

To	NC DWQ SWPS
	127 Cardinal Drive Extension
	Wilmington, NC 28405
Attn:	Steve Pusey

Date:	May 15, 2013
File:	810-0611 "36"
Subject:	Ocean Ridge Plantation Ph 6, Section 1 & 3, Pond 3 Certification SW8 070917 Modification

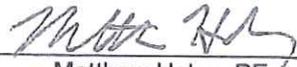
- As Requested
 For Your Files
 For Distribution
 For your Review / Action / Approval
 Sent via Mail
 Sent via Courier

Quantity	Drawing No.	Description
1		P.E. Certification and Clarifications for Pond 4

REMARKS

CC: **Becky K. Noble**
Town of Sunset Beach
CFE File: 810-0611 "36"

Cape Fear Engineering, Inc.

Signed: 
Matthew Haley, PE

Received By: _____

Date: _____

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

Page 1 of 2

Designer's Certification

I, MATTHEW HALEY, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically / weekly / full time) the construction of the project,

OCEAN RIDGE PHASE 6, SECTION 1 & 3 (JAGUARS LAIR) - Pond # 4
(Project)

COASTAL COMMUNITIES AT OCEAN
for RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature 

Registration Number 038615

Date 5-13-13



Certification Requirements: OR VI SEC 1 - POND # 4

1. The drainage area to the system contains approximately the permitted acreage.
- ~~SEE ATTACHED~~ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- ~~SEE ATTACHED~~ 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- ~~SEE ATTACHED~~ 4. All roof drains are located such that the runoff is directed into the system.
5. The outlet/bypass structure elevations are per the approved plan.
6. The outlet structure is located per the approved plans.
7. Trash rack is provided on the outlet/bypass structure.
- ~~SEE ATTACHED~~ 8. All slopes are grassed with permanent vegetation.
9. Vegetated slopes are no steeper than 3:1.
- ~~SEE ATTACHED~~ 10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
11. The permitted amounts of surface area and/or volume have been provided.
12. Required drawdown devices are correctly sized per the approved plans.
- ~~SEE ATTACHED~~ 13. All required design depths are provided.
14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 4:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

2, 3, 4.

To date, only a portion of the proposed roadway and no structures have been constructed. All currently constructed built-upon area drains to the permitted system.

8. The pond slopes have been seeded and vegetation has been partly established. As required by the Pond's Operation and Maintenance Agreement and Permit Conditions, the owner shall continue to inspect / monitor the BMP take corrective actions as necessary to provide permanent vegetation and to correct any eroded areas.

10. A temporary slope drain has been installed in the northern corner of the main pool to protect against erosion while permanent vegetation is established. Once permanent vegetation of the side-slopes in this area has been established, the slope drain will be removed.

At the time of as-built survey there was an additional inlet from the adjacent golf course fairway drainage system located near the permitted outlet structure. This inlet pipe was capped and covered to meet certification requirements. This inlet pipe will need to be relocated as necessary to direct flows away from pond #4.

13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths (especially in the forebay) shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.



CAPE FEAR Engineering, Inc.

151 Poole Road, Suite 100
Belville, NC 28451
TEL (910) 383-1044
FAX (910) 383-1045
www.capefearengineering.com

Transmittal

	Town of Sunset Beach
Attn:	Sandy Woods

Date:	3-19-08
File:	810-061
Subject:	Ocean Ridge Plantation Phase 6 Pond 5 Certification

- As Requested
 For Your Files
 For Distribution
 For your Review / Action / Approval
 Sent via Mail
 Sent via Courier

Quantity	Drawing No.	Description
1		Copy of Engineers' certification for Pond 5 Ocean Ridge Phase 6
1		Copy of signed transmittal from DENR / DWQ

REMARKS Sandy,

We will not receive a letter from DWQ concerning the approval of the certification. The engineers' certification is the proof that the pond has been certified. If I can provide you with any additional information regarding this issue please let me know

Thanks,

Kevin McBride

CC:

File:

Cape Fear Engineering, Inc

Signed: 

Received By: _____

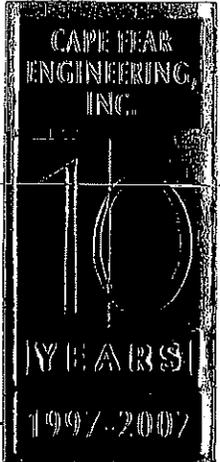
Date: _____



CAPE FEAR Engineering, Inc.

151 Poole Road, Suite 100
Belville, NC 28451
TEL (910) 383-1044
FAX (910) 383-1045
www.capefearengineering.com

RECEIVED
MAR 11 2008
P.C.



Transmittal

To	NCDENR-DWQ
	127 Cardinal Extension
	Wilmington, NC 28405
Attn:	Linda Lewis

Date:	March 11, 2008
File:	810-0611 "36"
Subject:	Ocean Ridge Ph. 6 Sections 1 & 3 SW8 070917 Plan Revision-Wet Ponds

- As Requested
 For Your Files
 For Distribution
 For your Review / Action / Approval
 Sent via Mail
 Sent via Courier

Quantity	Drawing No.	Description
1		Cover Letter
1	Copy	Designer's Certification
1	Copy	Design Narrative and Calculations
1	Copy	Hydrology Tools for Wetland Determination
2	Sets	Site Plans

REMARKS If you have any questions, comments, or require additional information please contact this office at (910)383-1044.

CC: File

File: 810-0611 "36"

Cape Fear Engineering, Inc.

Signed: *Meredith B. Butler for*
K. Davis Fennell, PE

Received By: _____

Date: _____

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8-070917
Brunswick County

Page 1 of 2

Designer's Certification

I, K. DAVIS FENNELL, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically / ~~weekly~~ / ~~full time~~) the construction of the project,

POND #5 AT OCEAN RIDGE PHASE 6 SECTION 1
(Project)

for COASTAL COMMUNITIES @ OCEAN RIDGE PLANTATION (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

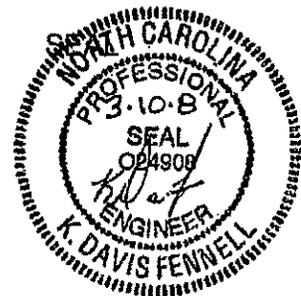
Noted deviations from approved plans and specifications:

DEVIATIONS NOTED ON PAGE 2 OF THIS FORM. COMPLETED CONSTRUCTION IS IN SUBSTANTIAL COMPLIANCE WITH APPROVED PLANS. A PLAN REVISION DOCUMENTING INFORMATION ON PAGE 2 IS SUBMITTED CONCURRENTLY.

Signature K. Davis

Registration Number 024908

Date 03/10/08



Certification Requirements:

1. The drainage area to the system contains approximately the permitted acreage.
2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- (1) 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- (1) 4. All roof drains are located such that the runoff is directed into the system.
- (2) 5. The outlet/bypass structure elevations are per the approved plan.
6. The outlet structure is located per the approved plans.
7. Trash rack is provided on the outlet/bypass structure.
- (3) 8. All slopes are grassed with permanent vegetation.
9. Vegetated slopes are no steeper than 3:1.
10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
11. The permitted amounts of surface area and/or volume have been provided.
12. Required drawdown devices are correctly sized per the approved plans.
- (4) 13. All required design depths are provided.
- (5) 14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Delaney Aycock, Brunswick County Building Inspections

1. Construction of built upon area is not complete as of this date.
2. Due to unforeseen existing conditions, the orifice was installed at elevation 40.2 to maintain positive drainage. The impact of this field change is negligible to the permanent pool area, temporary pool volume, and drawdown time. A plan revision documenting the change is submitted concurrently.
3. Slopes are grassed with temporary vegetation. The basin is currently utilized for sediment storage and temporary erosion control, and will require maintenance when construction is complete. Permanent vegetation shall be installed with the performance of this maintenance.
4. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.
5. Due to a historic drought, the water table is insufficient to maintain the permanent pool. The vegetated shelf has been seeded with temporary vegetation as the required wetland species cannot survive until the permanent pool of the pond can be maintained. When the permanent pool is established at the elevation of the orifice, the shelf shall be inspected, any erosion repaired, and the wetland species shall be installed.

Ocean Ridge Phase 6, Section 1 and Section 3
Stormwater Permit No. SW8 070917
Brunswick County

BIMS

Designer's Certification

I, MATTHEW HALEY, as a duly registered PROFESSIONAL ENGINEER in the State of North Carolina, having been authorized to observe (periodically) / weekly / full time) the construction of the project,

OCEAN RIDGE PHASE 6 SECTION 1 & 3 (JAGUARS LAKE) - POND #8
(Project)

COASTAL COMMUNITIES AT OCEAN RIDGE PLANTATION, LLC (Project Owner) hereby state that, to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

The checklist of items on page 2 of this form is a part of this Certification.

Noted deviations from approved plans and specifications:

SEE ATTACHED LIST OF CLARIFICATIONS

Signature Matthew Haley
Registration Number 038615
Date 10/29/13



Certification Requirements: OR VI SEC 1 - POND #8

1. The drainage area to the system contains approximately the permitted acreage.
- ~~SEE ATTACHED~~ 2. The drainage area to the system contains no more than the permitted amount of built-upon area.
- ~~SEE ATTACHED~~ 3. All the built-upon area associated with the project is graded such that the runoff drains to the system.
- ~~SEE ATTACHED~~ 4. All roof drains are located such that the runoff is directed into the system.
5. The outlet/bypass structure elevations are per the approved plan.
6. The outlet structure is located per the approved plans.
7. Trash rack is provided on the outlet/bypass structure.
- ~~SEE ATTACHED~~ 8. All slopes are grassed with permanent vegetation.
9. Vegetated slopes are no steeper than 3:1.
10. The inlets are located per the approved plans and do not cause short-circuiting of the system.
11. The permitted amounts of surface area and/or volume have been provided.
12. Required drawdown devices are correctly sized per the approved plans.
- ~~SEE ATTACHED~~ 13. All required design depths are provided.
14. All required parts of the system are provided, such as a vegetated shelf, and a forebay.
15. The required system dimensions are provided per the approved plans.

cc: NCDENR-DWQ Regional Office
Town of ~~SUNSET~~ Beach Building Inspections
Delaney Aycock, Brunswick County Building Inspections

List of Clarifications – Pond 8:

Note: The numbers of each of the following clarifications corresponds with the item numbers on the Certification Requirements page.

2, 3, 4.

To date, only a portion of the proposed roadway and no structures have been constructed. All currently constructed built-upon area drains to the permitted system.

8. The pond slopes have been seeded and vegetation has been partly established. As required by the Pond's Operation and Maintenance Agreement and Permit Conditions, the owner shall continue to inspect / monitor the BMP and take corrective actions as necessary to provide a full and vigorous stand of permanent vegetation and to correct any eroded areas.

13. The required design depths have been provided. The basin is currently utilized for sediment storage and temporary erosion control, and the design depths (especially in the forebay) shall be reduced almost immediately. Upon completion of construction and the stabilization of all disturbed areas within the drainage area, the basin shall be restored to design depths.