



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

June 30, 2015

BRADLEY ZADELL – MANAGER
KC2 ENTERPRISES, LLC
POST OFFICE BOX 1438
APEX, NORTH CAROLINA 27502

FRANK FLOYD – MANAGER
1-3, LLC
341 KILMAYNE DRIVE – SUITE 201
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0037503
Carolina Crossings Subdivision
Lot #12 SFR
Single-Family Residence
Wastewater Irrigation System
Chatham County

Dear Messrs. Zadell and Floyd:

In accordance with your permit application received December 4, 2014, and subsequent additional information received May 15, 2015, we are forwarding herewith Permit No. WQ0037503 dated June 30, 2015, to KC2 Enterprises, LLC and 1-3, LLC for the construction and operation of the subject single-family residence wastewater treatment and irrigation facilities.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the conditions and limitations as specified therein. **An extension shall be requested at least six months prior to the expiration of this permit.** Upon receipt of the request, the Commission will review the adequacy of the facility described therein and, if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Please pay particular attention to the operation and maintenance requirements listed in Section III. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems. Also note that Condition VI.6. requires the Permittee to retain a set of Division approved plans and specifications for the life of the facilities permitted herein.


Please note the following permit condition is specific to your permit and requires your attention:

- Condition I.1. – This condition requires that prior to operation of the subject facility, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #12.

If any parts, requirements or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Alice M. Wessner at (919) 807-6425 or alice.wessner@ncdenr.gov.

Sincerely,


for S. Jay Zimmerman, P.G., Director
Division of Water Resources

cc: Chatham County Health Department Anne Lowry, Environmental Health Director,
anne.lowry@chathamnc.org (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
John R. Harman, P.E., 2112 White Oak Road, Raleigh, NC 27608 jackharman53@gmail.com
(Electronic Copy)
Beth Buffington, Public Water Supply Section – Protection and Enforcement Branch (Electronic Copy)
Central Files
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH

SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

KC2 Enterprises, LLC and 1-3, LLC
Chatham County

FOR THE

construction and operation of a 480 gallon per day (GPD) single-family residence wastewater treatment and irrigation facility consisting of:

a 1,000 gallon septic tank with an Orenco Residential Biotube[®] effluent filter; a 1,000 gallon recirculation tank with an AdvanTex[®] AX-20 filter treatment unit and a 30 gallon per minute (GPM) AdvanTex[®] recirculation pump; an Orenco ultraviolet (UV) disinfection unit; a 2,400 gallon field dosing tank with a 13 GPM pump, visual and audible alarms, drip irrigation controls, and a rain sensor; a 0.32 acre drip irrigation area with three zones and return lines; and all associated piping, valves, controls and appurtenances

to serve the single-family residence at Carolina Crossings Subdivision Lot #12, with no discharge of wastes to surface waters, pursuant to the application received December 4, 2014, and subsequent additional information received by the Division of Water Resources, and in conformity with the project plans, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. Prior to construction and operation of the proposed facilities, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #12. [15A NCAC 02T .0108 (b)(2), 02T .0604(e)]

2. Upon completion of construction and prior to operation of this permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Resources, Water Quality Permitting Section, 1636 Mail Service Center, Raleigh, NC 27699-1636. [15A NCAC 02T .0116]
3. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed facilities such that an in-place inspection can be made. Notification to the regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. [15A NCAC 02T .0108 (b)(2)]
4. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application. [15A NCAC 02T .0105, 02T .0109, 02T .0115(c)]
5. If a public or community sewage system is or becomes available, the subject single-family residence wastewater treatment and irrigation facilities shall be closed and all wastewater shall be discharged into the public or community sewage system within 180 days of its availability. Prior to the initiation of these connection activities, appropriate Division approval shall be received. [15A NCAC 02T .0607]

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02B .0200, 02L .0100]
3. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in the following table:

TABLE 1 – APPLICATION LIMITATIONS				
Field	Parameter	Hourly Rate	Yearly Max	Units
1	01284 – Non-Discharge Application Rate	0.13	20.13	inches

[15A NCAC 02T .0605(j)]

4. The subject facility has been approved to land apply wastewater effluent on the following fields:

TABLE 2 – IRRIGATION AREA INFORMATION						
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
1	KC2 Enterprises, LLC. and I-3, LLC.	Chatham	35° 47' 50"	-78° 57' 25"	0.32	Creedmoor

[G.S. 143-215.1]

5. The Operation and Maintenance Agreement (attached) between the Permittee and the Division of Water Resources is incorporated herein by reference and shall be a condition of this permit. Noncompliance with the terms of the Operation and Maintenance Agreement shall subject the Permittee to all sanctions provided by North Carolina General Statutes §143-215.6A to §143-215.6C for violation of or failure to act in accordance with the terms and conditions of this permit. [15A NCAC 02T .0115 (2)]
6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit. [15A NCAC 02T .0605(o)]
7. The compliance boundary is established at the property boundary. Any exceedance of standards at the compliance boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0107(i)]
8. The review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedance of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary. [15A NCAC 02L .0107(c)]
10. The facilities permitted herein shall be constructed according to the following setbacks:
- a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):
 - i. Any habitable residence or place of public assembly under separate ownership: 100
 - ii. Any habitable residence or place of public assembly owned by the Permittee: 15
 - iii. Any private or public water supply source: 100
 - iv. Surface waters: 100
 - v. Groundwater lowering ditches: 100
 - vi. Surface water diversions: 25
 - vii. Any well with exception of monitoring wells: 100
 - viii. Any property line: 50
 - ix. Top of slope of embankments or cuts of two feet or more in vertical height: 15
 - x. Any water line from a disposal system: 10
 - xi. Subsurface groundwater lowering drainage systems: 100
 - xii. Any swimming pool: 100
 - xiii. Public right of way: 50
 - xiv. Nitrification field: 20
 - xv. Any building foundation or basement: 15

[15A NCAC 02T .0606(a)]

b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

- i. Any habitable residence or place of public assembly under separate ownership: 100
- ii. Any private or public water supply source: 100
- iii. Surface waters: 50
- iv. Any well with exception of monitoring wells: 100
- v. Any property line: 50

[15A NCAC 02T .0606(b)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0604(f). [15A NCAC 02T .0604(f)]
2. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G .0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G .0200, and shall comply with all other conditions specified in the previously cited rules. [15A NCAC 02T .0117]
3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system. [15A NCAC 02T .0108(b)(1)]
4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Condition II.4. [15A NCAC 02T .0605(o)]
5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff. [15A NCAC 02T .0605(o)]
6. Only effluent from the Carolina Crossings Subdivision Lot #12 SFR shall be irrigated on the sites listed in Condition II.4. [G.S. 143-215.1]
7. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed. [15A NCAC 02T .0108(b)(1)]
8. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited. Fencing shall be provided to prevent access to the irrigation site (minimum 2-strand wire) and treatment units shall be secured with locks on all tank accesses and control panels. [15A NCAC 02T .0605(i)]
9. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T .1100. [15A NCAC 02T .1100]
10. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited. [15A NCAC 02T .0605(f)]
11. Pump/dosing tanks shall have audible and visual alarms external to any structure. [15A NCAC 02T .0605(n)]
12. Any excavation into bedrock shall be lined with a 10 millimeter (mm) synthetic liner. [15A NCAC 02T .0605(d)]

13. The Permittee is responsible for the operation and maintenance of the entire treatment and disposal system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed. The septic tank effluent filter shall be checked and cleaned at the same frequency as the septic tank. [15A NCAC 18A .1900, 02T .0605]
 - b. The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection. [15A NCAC 02T .0605(l)]
 - c. The storage, pump, and alarm systems shall be inspected monthly. The scum layer shall be removed at the same interval as the septic tank is cleaned out. [15A NCAC 02T .0108(b)(1)]
 - d. The system shall be inspected monthly to make certain of the proper operation of the drip lines that the system is free of leaks, that the vegetative growth allows a proper drip pattern, that the soil is assimilating the disposed treated wastewater with no surface runoff, and that no objectionable odors are being generated. [15A NCAC 02T .0108(b)(1)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed. [15A NCAC 02T .0108(c)]
2. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.
- b. Any facility failure resulting in a by-pass directly to receiving surface waters.
- c. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- d. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur. [15A NCAC 02T .0105(l)]

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0108(b)]
2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0108(b)]

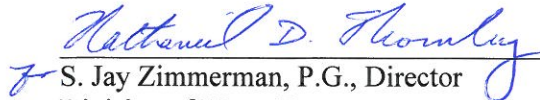
3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit, and may collect groundwater, surface water or leachate samples. [G.S. 143-215.3(a)(2)]

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C. [G.S. 143-215.6A to 143-215.6C]
2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation. [15A NCAC 02T .0110]
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n). [G.S. 14.-215.1]
4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200; erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500; and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes. [15A NCAC 02T .0105(c)(6)]
5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner. [15A NCAC 02T .0104]
6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0108(b)(1)]
7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110. [15A NCAC 02T .0110]
9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b). [15A NCAC 02T .0120]
10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall be cause for the Division to revoke this permit. [15A NCAC 02T .0105(e)(3)]

Permit issued this the 30th day of June 2015

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



S. Jay Zimmerman, P.G., Director
Division of Water Resources
By Authority of the Environmental Management Commission

Permit Number WQ0037503

ENGINEERING CERTIFICATION

Partial Final

In accordance with 15A NCAC 02T .0116, I, _____,
 as a duly registered Professional Engineer in the State of North Carolina, having the Permittee's
 authorization to periodically weekly fully observe the construction of the permitted facility,
 hereby state to the best of my abilities that due care and diligence was used in the observation of the
 construction, such that the facility was built within substantial compliance and intent of this permit, the
 Division approved plans and specifications, and other supporting documentation.

Any variation to this permit, the Division approved plans and specifications, and other supporting
 documentation has been documented in the attached as-built drawings, and shall serve as the
 Permittee's minor modification request to amend the permit accordingly.

Provide a brief narrative description of any variations: _____

Professional Engineer's Name			NC PE Seal, Signature & Date
Engineering Firm			
Mailing Address			
City	State	Zip	
Telephone	E-mail		

**THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING
 INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:
 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 WATER QUALITY PERMITTING SECTION
 NON-DISCHARGE PERMITTING UNIT**

By U.S. Postal Service:
 1617 MAIL SERVICE CENTER
 RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
 512 N. SALISBURY ST.
 RALEIGH, NORTH CAROLINA 27604



15A NCAC 02T .0600 – SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEMS
OPERATION AND MAINTENANCE AGREEMENT
FORM: SFRWWIS O&M 08-13

Division of Water Resources

Permit No. WQ0037503

County: Chatham

Property owner(s) as appearing on the recorded deed: KC2 Enterprises, LLC and 1-3, LLC

Mailing address: P. O. Box 1438; Apex, North Carolina 27502

Facility address: Lot 12; Carolina Crossings Subdivision; Near Apex-Martha's Chapel Vicinity; Chatham County

Irrigation Method: SPRAY DRIP

I / We agree to operate and maintain the single-family residence wastewater treatment and irrigation system as follows:

1. The Permittee is responsible for the operation and maintenance of the entire wastewater treatment and irrigation system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed.
 - b. The septic tank effluent filter shall be checked and cleaned annually.
 - c. Accessible sand filter surfaces shall be raked and leveled every six months and any vegetative growth shall be removed manually.
 - d. The tablet chlorinator shall be checked weekly. Wastewater grade tablets (calcium hypochlorite) shall be added as needed to provide proper chlorination (pool chlorine tablets shall not be used), OR
 The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection.
 - e. All pump and alarm systems shall be inspected monthly.
 - f. The irrigation system shall be inspected monthly to ensure that the system is free of leaks, that all irrigation equipment is operating as designed, that vegetative growth does not interfere with the system inspection or operation, that the soil is assimilating the disposed treated wastewater with no visible runoff or ponding, and that no objectionable odors are being generated.
2. Failure to pay the annual fee shall be cause for the Division to revoke the permit pursuant to 15A NCAC 02T .0105(e)(3).
3. The Permittee's failure to properly operate this system is subject to a penalty up to \$25,000 per day.
4. Failure to meet the permit conditions or violation of the State's surface water or groundwater regulations may void the permit.

All owners appearing on the legally recorded property deed shall sign this Operation & Maintenance Agreement

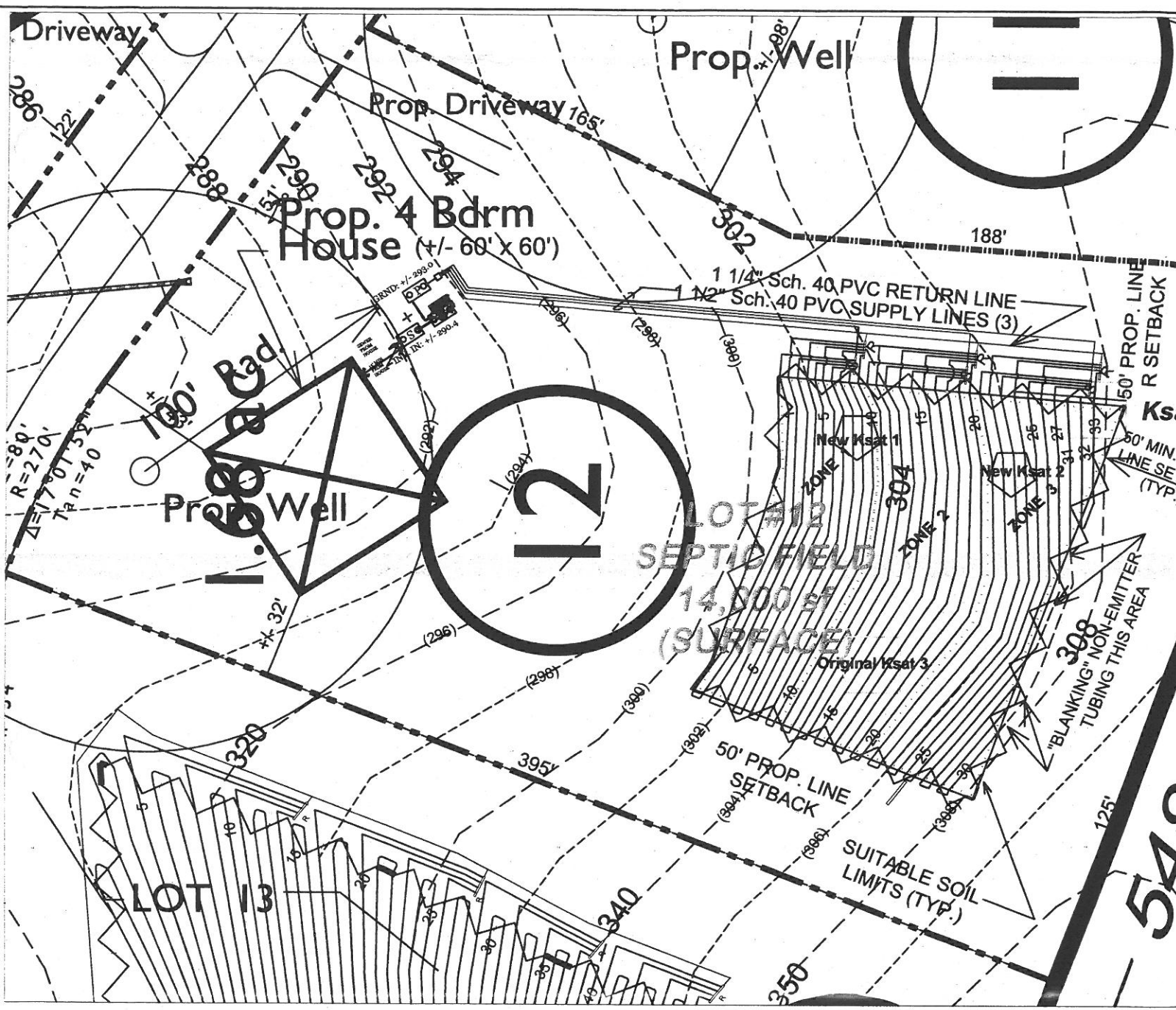
I / We understand the above requirements and agree to these terms as part of the issued permit.

Owner Signature: _____

Date: December 3, 2014

Owner Signature: _____

Date: December 3, 2014



SCALE 1" = 50'



NOTES:

- 1) SITE DATA WHICH INCLUDES PROPERTY BOUNDARIES, TOPO, UTILITIES, ROADS, AND OTHER SITE FEATURES WERE PROVIDED BY PLANS PREPARED BY CE GROUP, PLLC -RALEIGH, NC (PLANNERS & ENGINEERS) AND ARE SHOWN TO DISPLAY GENERAL SITE CONDITIONS AND ARE PRESUMED TO BE ACCURATE. LOCATIONS OF PROPOSED STRUCTURES (HOUSES, DRIVEWAYS, AND WELLS) ARE SUBJECT TO MODIFICATION IF WITHIN THE CONTEXT OF APPLICABLE RULES FOR SETBACKS.
- 2) ALL SEPTIC SYSTEM COMPONENTS TO INCLUDE TANKS, PUMPS, MANIFOLDS, AND SYSTEM CONFIGURATION ARE APPROXIMATE AND AS SUCH NO SPECIFIC ACCURACY EITHER VERTICAL OR HORIZONTAL IS IMPLIED. SUITABLE SOIL/DISPOSAL APPLICATION AREAS HAVE BEEN GPS LOCATED BY PROTOCOL SAMPLING, PLLC.-RALEIGH, NC (SOIL SCIENTISTS).
- 3) PROPERTY AND EASEMENT BOUNDARIES SHOWN ON THIS SITE SKETCH ARE APPROXIMATE AND ARE NOT INTENDED FOR LOCATING PROPERTY OR IDENTIFYING PROPERTY OR EASEMENT CORNERS. THIS IS NOT A SURVEY.





North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

June 30, 2015

BRADLEY ZADELL – MANAGER
KC2 ENTERPRISES, LLC
POST OFFICE BOX 1438
APEX, NORTH CAROLINA 27502

FRANK FLOYD – MANAGER
1-3, LLC
341 KILMAYNE DRIVE – SUITE 201
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0037504
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Lot #13 SFR
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Chatham County

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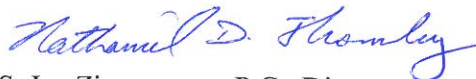
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Sincerely,


S. Jay Zimmerman, P.G., Director
Division of Water Resources

cc: Chatham County Health Department Anne Lowry, Environmental Health Director,
anne.lowry@chathamnc.org (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
John R. Harman, P.E., 2112 White Oak Road, Raleigh, NC 27608 jackharman53@gmail.com
(Electronic Copy)
Beth Buffington, Public Water Supply Section – Protection and Enforcement Branch (Electronic Copy)
Central Files
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEM PERMIT

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Chatham County

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This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. Prior to construction and operation of the proposed facilities, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #13. [15A NCAC 02T .0108 (b)(2), 02T .0604(e)]

2. Upon completion of construction and prior to operation of this permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Resources, Water Quality Permitting Section, 1636 Mail Service Center, Raleigh, NC 27699-1636. [15A NCAC 02T .0116]
3. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed facilities such that an in-place inspection can be made. Notification to the regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. [15A NCAC 02T .0108 (b)(2)]
4. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application. [15A NCAC 02T .0105, 02T .0109, 02T .0115(c)]
5. If a public or community sewage system is or becomes available, the subject single-family residence wastewater treatment and irrigation facilities shall be closed and all wastewater shall be discharged into the public or community sewage system within 180 days of its availability. Prior to the initiation of these connection activities, appropriate Division approval shall be received. [15A NCAC 02T .0607]

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02B .0200, 02L .0100]
3. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in the following table:

TABLE 1 – APPLICATION LIMITATIONS				
Field	Parameter	Hourly Rate	Yearly Max	Units
1	01284 – Non-Discharge Application Rate	0.13	17.4	inches

[15A NCAC 02T .0605(j)]

4. The subject facility has been approved to land apply wastewater effluent on the following fields:

TABLE 2 – IRRIGATION AREA INFORMATION						
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
1	KC2 Enterprises, LLC and 1-3, LLC	Chatham	35° 47' 48"	-78° 57' 25"	0.39	Creedmoor

[G.S. 143-215.1]

5. The Operation and Maintenance Agreement (attached) between the Permittee and the Division of Water Resources is incorporated herein by reference and shall be a condition of this permit. Noncompliance with the terms of the Operation and Maintenance Agreement shall subject the Permittee to all sanctions provided by North Carolina General Statutes §143-215.6A to §143-215.6C for violation of or failure to act in accordance with the terms and conditions of this permit. [15A NCAC 02T .0115 (2)]
6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit. [15A NCAC 02T .0605(o)]
7. The compliance boundary is established at the property boundary. Any exceedance of standards at the compliance boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0107(i)]
8. The review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedance of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary. [15A NCAC 02L .0107(c)]
10. The facilities permitted herein shall be constructed according to the following setbacks:
 - a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):
 - i. Any habitable residence or place of public assembly under separate ownership: 100
 - ii. Any habitable residence or place of public assembly owned by the Permittee: 15
 - iii. Any private or public water supply source: 100
 - iv. Surface waters: 100
 - v. Groundwater lowering ditches: 100
 - vi. Surface water diversions: 25
 - vii. Any well with exception of monitoring wells: 100
 - viii. Any property line: 50
 - ix. Top of slope of embankments or cuts of two feet or more in vertical height: 15
 - x. Any water line from a disposal system: 10
 - xi. Subsurface groundwater lowering drainage systems: 100
 - xii. Any swimming pool: 100
 - xiii. Public right of way: 50
 - xiv. Nitrification field: 20
 - xv. Any building foundation or basement: 15

[15A NCAC 02T .0606(a)]

b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

- i. Any habitable residence or place of public assembly under separate ownership: 100
- ii. Any private or public water supply source: 100
- iii. Surface waters: 50
- iv. Any well with exception of monitoring wells: 100
- v. Any property line: 50

[15A NCAC 02T .0606(b)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0604(f). [15A NCAC 02T .0604(f)]
2. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G .0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G .0200, and shall comply with all other conditions specified in the previously cited rules. [15A NCAC 02T .0117]
3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system. [15A NCAC 02T .0108(b)(1)]
4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Condition II.4. [15A NCAC 02T .0605(o)]
5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff. [15A NCAC 02T .0605(o)]
6. Only effluent from the Carolina Crossings Subdivision Lot #13 SFR shall be irrigated on the sites listed in Condition II.4. [G.S. 143-215.1]
7. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed. [15A NCAC 02T .0108(b)(1)]
8. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited. Fencing shall be provided to prevent access to the irrigation site (minimum 2-strand wire) and treatment units shall be secured with locks on all tank accesses and control panels. [15A NCAC 02T .0605(i)]
9. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T .1100. [15A NCAC 02T .1100]
10. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited. [15A NCAC 02T .0605(f)]
11. Pump/dosing tanks shall have audible and visual alarms external to any structure. [15A NCAC 02T .0605(n)]
12. Any excavation into bedrock shall be lined with a 10 millimeter (mm) synthetic liner. [15A NCAC 02T .0605(d)]

13. The Permittee is responsible for the operation and maintenance of the entire treatment and disposal system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed. The septic tank effluent filter shall be checked and cleaned at the same frequency as the septic tank. [15A NCAC 18A .1900, 02T .0605]
 - b. The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection. [15A NCAC 02T .0605(l)]
 - c. The storage, pump, and alarm systems shall be inspected monthly. The scum layer shall be removed at the same interval as the septic tank is cleaned out. [15A NCAC 02T .0108(b)(1)]
 - d. The system shall be inspected monthly to make certain of the proper operation of the drip lines that the system is free of leaks, that the vegetative growth allows a proper drip pattern, that the soil is assimilating the disposed treated wastewater with no surface runoff, and that no objectionable odors are being generated. [15A NCAC 02T .0108(b)(1)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed. [15A NCAC 02T .0108(c)]
2. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.
- b. Any facility failure resulting in a by-pass directly to receiving surface waters.
- c. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- d. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur. [15A NCAC 02T .0105(l)]

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0108(b)]
2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0108(b)]

3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit, and may collect groundwater, surface water or leachate samples. [G.S. 143-215.3(a)(2)]

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C. [G.S. 143-215.6A to 143-215.6C]
2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation. [15A NCAC 02T .0110]
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n). [G.S. 14.-215.1]
4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200; erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500; and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes. [15A NCAC 02T .0105(c)(6)]
5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner. [15A NCAC 02T .0104]
6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0108(b)(1)]
7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110. [15A NCAC 02T .0110]
9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b). [15A NCAC 02T .0120]
10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall be cause for the Division to revoke this permit. [15A NCAC 02T .0105(e)(3)]

Permit issued this the 30th day of June 2015

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



S. Jay Zimmerman, P.G., Director

Division of Water Resources

By Authority of the Environmental Management Commission

Permit Number WQ0037504

ENGINEERING CERTIFICATION

Partial Final

In accordance with 15A NCAC 02T .0116, I, _____, as a duly registered Professional Engineer in the State of North Carolina, having the Permittee's authorization to periodically weekly fully observe the construction of the permitted facility, hereby state to the best of my abilities that due care and diligence was used in the observation of the construction, such that the facility was built within substantial compliance and intent of this permit, the Division approved plans and specifications, and other supporting documentation.

Any variation to this permit, the Division approved plans and specifications, and other supporting documentation has been documented in the attached as-built drawings, and shall serve as the Permittee's minor modification request to amend the permit accordingly.

Provide a brief narrative description of any variations: _____

Professional Engineer's Name			NC PE Seal, Signature & Date
Engineering Firm			
Mailing Address			
City	State	Zip	
Telephone	E-mail		

**THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:
 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 WATER QUALITY PERMITTING SECTION
 NON-DISCHARGE PERMITTING UNIT**

By U.S. Postal Service:
 1617 MAIL SERVICE CENTER
 RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
 512 N. SALISBURY ST.
 RALEIGH, NORTH CAROLINA 27604



15A NCAC 02T .0600 – SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEMS
OPERATION AND MAINTENANCE AGREEMENT
FORM: SFRWWIS O&M 08-13

Division of Water Resources

Permit No. WR0037504

County: Chatham

Property owner(s) as appearing on the recorded deed: KC2 Enterprises, LLC and 1-3, LLC

Mailing address: P. O. Box 1438; Apex, North Carolina 27502

Facility address: Lot 13; Carolina Crossings Subdivision; Near Apex-Martha's Chapel Vicinity; Chatham County

Irrigation Method: SPRAY DRIP

I / We agree to operate and maintain the single-family residence wastewater treatment and irrigation system as follows:

1. The Permittee is responsible for the operation and maintenance of the entire wastewater treatment and irrigation system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed.
 - b. The septic tank effluent filter shall be checked and cleaned annually.
 - c. Accessible sand filter surfaces shall be raked and leveled every six months and any vegetative growth shall be removed manually.
 - d. The tablet chlorinator shall be checked weekly. Wastewater grade tablets (calcium hypochlorite) shall be added as needed to provide proper chlorination (pool chlorine tablets shall not be used), OR The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection.
 - e. All pump and alarm systems shall be inspected monthly.
 - f. The irrigation system shall be inspected monthly to ensure that the system is free of leaks, that all irrigation equipment is operating as designed, that vegetative growth does not interfere with the system inspection or operation, that the soil is assimilating the disposed treated wastewater with no visible runoff or ponding, and that no objectionable odors are being generated.
2. Failure to pay the annual fee shall be cause for the Division to revoke the permit pursuant to 15A NCAC 02T .0105(e)(3).
3. The Permittee's failure to properly operate this system is subject to a penalty up to \$25,000 per day.
4. Failure to meet the permit conditions or violation of the State's surface water or groundwater regulations may void the permit.

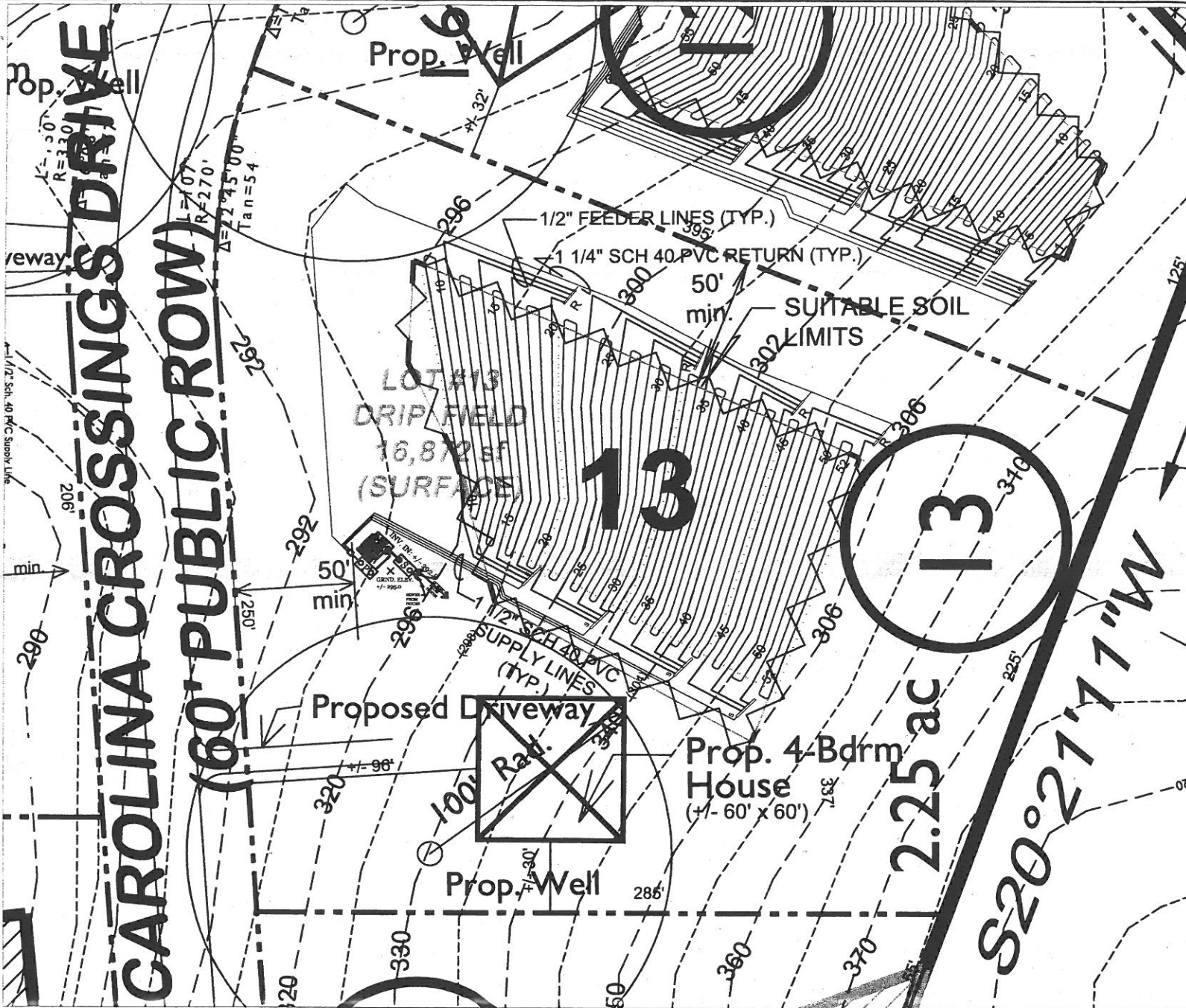
RECEIVED ENR/DWR

All owners appearing on the legally recorded property deed shall sign this Operation & Maintenance Agreement

I / We understand the above requirements and agree to these terms as part of the issued permit.

Owner Signature: [Signature]
Owner Signature: [Signature]

Water Quality
Permitting Section
Date: December 3, 2014
Date: December 3, 2014



SCALE 1" = 60'



NOTES:

- 1) SITE DATA WHICH INCLUDES PROPERTY BOUNDARIES, TOPO, UTILITIES, ROADS, AND OTHER SITE FEATURES WERE PROVIDED BY PLANS PREPARED BY CE GROUP, PLLC -RALEIGH, NC (PLANNERS & ENGINEERS) AND ARE SHOWN TO DISPLAY GENERAL SITE CONDITIONS AND ARE PRESUMED TO BE ACCURATE. LOCATIONS OF PROPOSED STRUCTURES (HOUSES, DRIVEWAYS, AND WELLS) ARE SUBJECT TO MODIFICATION IF WITHIN THE CONTEXT OF APPLICABLE RULES FOR SETBACKS.
- 2) ALL SEPTIC SYSTEM COMPONENTS TO INCLUDE TANKS, PUMPS, MANIFOLDS, AND SYSTEM CONFIGURATION ARE APPROXIMATE AND AS SUCH NO SPECIFIC ACCURACY EITHER VERTICAL OR HORIZONTAL IS IMPLIED. SUITABLE SOIL/DISPOSAL APPLICATION AREAS HAVE BEEN GPS LOCATED BY PROTOCOL SAMPLING, PLLC.-RALEIGH, NC (SOIL SCIENTISTS).
- 3) PROPERTY AND EASEMENT BOUNDARIES SHOWN ON THIS SITE SKETCH ARE APPROXIMATE AND ARE NOT INTENDED FOR LOCATING PROPERTY OR IDENTIFYING PROPERTY OR EASEMENT CORNERS. THIS IS NOT A SURVEY.

JOHN R. [unclear]

 5.14



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

June 30, 2015

BRADLEY ZADELL – MANAGER
KC2 ENTERPRISES, LLC
POST OFFICE BOX 1438
APEX, NORTH CAROLINA 27502

FRANK FLOYD – MANAGER
1-3, LLC
341 KILMAYNE DRIVE – SUITE 201
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0037501
Carolina Crossings Subdivision
Lot #16 SFR
Single-Family Residence
Wastewater Irrigation System
Chatham County

Dear Messrs. Zadell and Floyd:

In accordance with your permit application received December 4, 2014, and subsequent additional information received May 15, 2015, we are forwarding herewith Permit No. WQ0037501 dated June 30, 2015, to KC2 Enterprises, LLC and 1-3, LLC for the construction and operation of the subject single-family residence wastewater treatment and irrigation facilities.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the conditions and limitations as specified therein. **An extension shall be requested at least six months prior to the expiration of this permit.** Upon receipt of the request, the Commission will review the adequacy of the facility described therein and, if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Please pay particular attention to the operation and maintenance requirements listed in Section III. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems. Also note that Condition VI.6. requires the Permittee to retain a set of Division approved plans and specifications for the life of the facilities permitted herein.

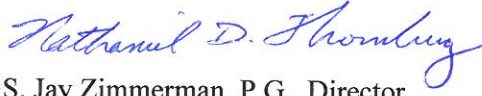
Please note the following permit condition is specific to your permit and requires your attention:

- Condition I.1. – This condition requires that prior to operation of the subject facility, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #16.

If any parts, requirements or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Alice M. Wessner at (919) 807-6425 or alice.wessner@ncdenr.gov.

Sincerely,


for S. Jay Zimmerman, P.G., Director
Division of Water Resources

cc: Chatham County Health Department Anne Lowry, Environmental Health Director,
anne.lowry@chathamnc.org (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
John R. Harman, P.E., 2112 White Oak Road, Raleigh, NC 27608 jackharman53@gmail.com
(Electronic Copy)
Beth Buffington, Public Water Supply Section – Protection and Enforcement Branch (Electronic Copy)
Central Files
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH

SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

KC2 Enterprises, LLC and 1-3, LLC
Chatham County

FOR THE

construction and operation of a 600 gallon per day (GPD) single-family residence wastewater treatment and irrigation facility consisting of:

a 1,500 gallon septic tank with an Orenco Residential Biotube[®] effluent filter; a 1,000 gallon recirculation tank with two AdvanTex[®] AX-20 filter treatment units and a 50 gallon per minute (GPM) AdvanTex[®] recirculation pump; an Orenco ultraviolet (UV) disinfection unit; a 5,400 gallon field dosing tank with a 17 GPM pump, visual and audible alarms, drip irrigation controls, and a rain sensor; a 0.44 acre drip irrigation area with four zones and return lines; and all associated piping, valves, controls and appurtenances

to serve the single-family residence at Carolina Crossings Subdivision Lot #16, with no discharge of wastes to surface waters, pursuant to the application received December 4, 2014, and subsequent additional information received by the Division of Water Resources, and in conformity with the project plans, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. Prior to construction and operation of the proposed facilities, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #19. [15A NCAC 02T .0108 (b)(2), 02T .0604(e)]

2. Upon completion of construction and prior to operation of this permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Resources, Water Quality Permitting Section, 1636 Mail Service Center, Raleigh, NC 27699-1636. [15A NCAC 02T .0116]
3. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed facilities such that an in-place inspection can be made. Notification to the regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. [15A NCAC 02T .0108 (b)(2)]
4. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application. [15A NCAC 02T .0105, 02T .0109, 02T .0115(c)]
5. If a public or community sewage system is or becomes available, the subject single-family residence wastewater treatment and irrigation facilities shall be closed and all wastewater shall be discharged into the public or community sewage system within 180 days of its availability. Prior to the initiation of these connection activities, appropriate Division approval shall be received. [15A NCAC 02T .0607]

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02B .0200, 02L .0100]
3. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in the following table:

TABLE 1 – APPLICATION LIMITATIONS				
Field	Parameter	Hourly Rate	Yearly Max	Units
1	01284 – Non-Discharge Application Rate	0.12	20.36	inches

[15A NCAC 02T .0605(j)]

4. The subject facility has been approved to land apply wastewater effluent on the following fields:

TABLE 2 – IRRIGATION AREA INFORMATION						
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
1	1-3, LLC and KC2 Enterprises, LLC	Chatham	35° 47' 37"	-78° 57' 26"	0.44	Creedmoor/White Store

[G.S. 143-215.1]

5. The Operation and Maintenance Agreement (attached) between the Permittee and the Division of Water Resources is incorporated herein by reference and shall be a condition of this permit. Noncompliance with the terms of the Operation and Maintenance Agreement shall subject the Permittee to all sanctions provided by North Carolina General Statutes §143-215.6A to §143-215.6C for violation of or failure to act in accordance with the terms and conditions of this permit. [15A NCAC 02T .0115 (2)]
6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit. [15A NCAC 02T .0605(o)]
7. The compliance boundary is established at the property boundary. Any exceedance of standards at the compliance boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0107(i)]
8. The review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedance of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary. [15A NCAC 02L .0107(c)]
10. The facilities permitted herein shall be constructed according to the following setbacks:
- a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):
 - i. Any habitable residence or place of public assembly under separate ownership: 100
 - ii. Any habitable residence or place of public assembly owned by the Permittee: 15
 - iii. Any private or public water supply source: 100
 - iv. Surface waters: 100
 - v. Groundwater lowering ditches: 100
 - vi. Surface water diversions: 25
 - vii. Any well with exception of monitoring wells: 100
 - viii. Any property line: 50
 - ix. Top of slope of embankments or cuts of two feet or more in vertical height: 15
 - x. Any water line from a disposal system: 10
 - xi. Subsurface groundwater lowering drainage systems: 100
 - xii. Any swimming pool: 100
 - xiii. Public right of way: 50
 - xiv. Nitrification field: 20
 - xv. Any building foundation or basement: 15

[15A NCAC 02T .0606(a)]

b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

- i. Any habitable residence or place of public assembly under separate ownership: 100
- ii. Any private or public water supply source: 100
- iii. Surface waters: 50
- iv. Any well with exception of monitoring wells: 100
- v. Any property line: 50

[15A NCAC 02T .0606(b)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0604(f). [15A NCAC 02T .0604(f)]
2. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G .0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G .0200, and shall comply with all other conditions specified in the previously cited rules. [15A NCAC 02T .0117]
3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system. [15A NCAC 02T .0108(b)(1)]
4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Condition II.4. [15A NCAC 02T .0605(o)]
5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff. [15A NCAC 02T .0605(o)]
6. Only effluent from the Carolina Crossings Subdivision Lot #16 SFR shall be irrigated on the sites listed in Condition II.4. [G.S. 143-215.1]
7. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed. [15A NCAC 02T .0108(b)(1)]
8. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited. Fencing shall be provided to prevent access to the irrigation site (minimum 2-strand wire) and treatment units shall be secured with locks on all tank accesses and control panels. [15A NCAC 02T .0605(i)]
9. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T .1100. [15A NCAC 02T .1100]
10. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited. [15A NCAC 02T .0605(f)]
11. Pump/dosing tanks shall have audible and visual alarms external to any structure. [15A NCAC 02T .0605(n)]
12. Any excavation into bedrock shall be lined with a 10 millimeter (mm) synthetic liner. [15A NCAC 02T .0605(d)]

13. The Permittee is responsible for the operation and maintenance of the entire treatment and disposal system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed. The septic tank effluent filter shall be checked and cleaned at the same frequency as the septic tank. [15A NCAC 18A .1900, 02T .0605]
 - b. The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection. [15A NCAC 02T .0605(1)]
 - c. The storage, pump, and alarm systems shall be inspected monthly. The scum layer shall be removed at the same interval as the septic tank is cleaned out. [15A NCAC 02T .0108(b)(1)]
 - d. The system shall be inspected monthly to make certain of the proper operation of the drip lines that the system is free of leaks, that the vegetative growth allows a proper drip pattern, that the soil is assimilating the disposed treated wastewater with no surface runoff, and that no objectionable odors are being generated. [15A NCAC 02T .0108(b)(1)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed. [15A NCAC 02T .0108(c)]
2. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.
- b. Any facility failure resulting in a by-pass directly to receiving surface waters.
- c. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- d. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur. [15A NCAC 02T .0105(1)]

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0108(b)]
2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0108(b)]

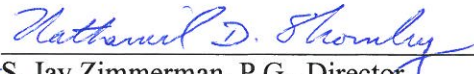
3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit, and may collect groundwater, surface water or leachate samples. [G.S. 143-215.3(a)(2)]

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C. [G.S. 143-215.6A to 143-215.6C]
2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation. [15A NCAC 02T .0110]
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n). [G.S. 14.-215.1]
4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200; erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500; and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes. [15A NCAC 02T .0105(c)(6)]
5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner. [15A NCAC 02T .0104]
6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0108(b)(1)]
7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110. [15A NCAC 02T .0110]
9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b). [15A NCAC 02T .0120]
10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall be cause for the Division to revoke this permit. [15A NCAC 02T .0105(e)(3)]

Permit issued this the 30th day of June 2015

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION


for S. Jay Zimmerman, P.G., Director
Division of Water Resources
By Authority of the Environmental Management Commission

Permit Number WQ0037501

ENGINEERING CERTIFICATION

Partial Final

In accordance with 15A NCAC 02T .0116, I, _____,
 as a duly registered Professional Engineer in the State of North Carolina, having the Permittee's
 authorization to periodically weekly fully observe the construction of the permitted facility,
 hereby state to the best of my abilities that due care and diligence was used in the observation of the
 construction, such that the facility was built within substantial compliance and intent of this permit, the
 Division approved plans and specifications, and other supporting documentation.

Any variation to this permit, the Division approved plans and specifications, and other supporting
 documentation has been documented in the attached as-built drawings, and shall serve as the
 Permittee's minor modification request to amend the permit accordingly.

Provide a brief narrative description of any variations: _____

Professional Engineer's Name			NC PE Seal, Signature & Date
Engineering Firm			
Mailing Address			
City	State	Zip	
Telephone	E-mail		

**THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING
 INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:
 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 WATER QUALITY PERMITTING SECTION
 NON-DISCHARGE PERMITTING UNIT**

By U.S. Postal Service:
 1617 MAIL SERVICE CENTER
 RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
 512 N. SALISBURY ST.
 RALEIGH, NORTH CAROLINA 27604



15A NCAC 02T .0600 – SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEMS
OPERATION AND MAINTENANCE AGREEMENT
FORM: SFRWWIS O&M 08-13

Division of Water Resources

Permit No. WQ0037500-1

County: Chatham

Property owner(s) as appearing on the recorded deed: KC2 Enterprises, LLC and 1-3, LLC

Mailing address: P. O. Box 1438; Apex, North Carolina 27502

Facility address: Lot 16; Carolina Crossings Subdivision; Near Apex-Martha's Chapel Vicinity; Chatham County

Irrigation Method: SPRAY DRIP

I / We agree to operate and maintain the single-family residence wastewater treatment and irrigation system as follows:

1. The Permittee is responsible for the operation and maintenance of the entire wastewater treatment and irrigation system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed.
 - b. The septic tank effluent filter shall be checked and cleaned annually.
 - c. Accessible sand filter surfaces shall be raked and leveled every six months and any vegetative growth shall be removed manually.
 - d. The tablet chlorinator shall be checked weekly. Wastewater grade tablets (calcium hypochlorite) shall be added as needed to provide proper chlorination (pool chlorine tablets shall not be used), OR
 The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection.
 - e. All pump and alarm systems shall be inspected monthly.
 - f. The irrigation system shall be inspected monthly to ensure that the system is free of leaks, that all irrigation equipment is operating as designed, that vegetative growth does not interfere with the system inspection or operation, that the soil is assimilating the disposed treated wastewater with no visible runoff or ponding, and that no objectionable odors are being generated.
2. Failure to pay the annual fee shall be cause for the Division to revoke the permit pursuant to 15A NCAC 02T .0105(e)(3).
3. The Permittee's failure to properly operate this system is subject to a penalty up to \$25,000 per day.
4. Failure to meet the permit conditions or violation of the State's surface water or groundwater regulations may void the permit.

All owners appearing on the legally recorded property deed shall sign this Operation & Maintenance Agreement

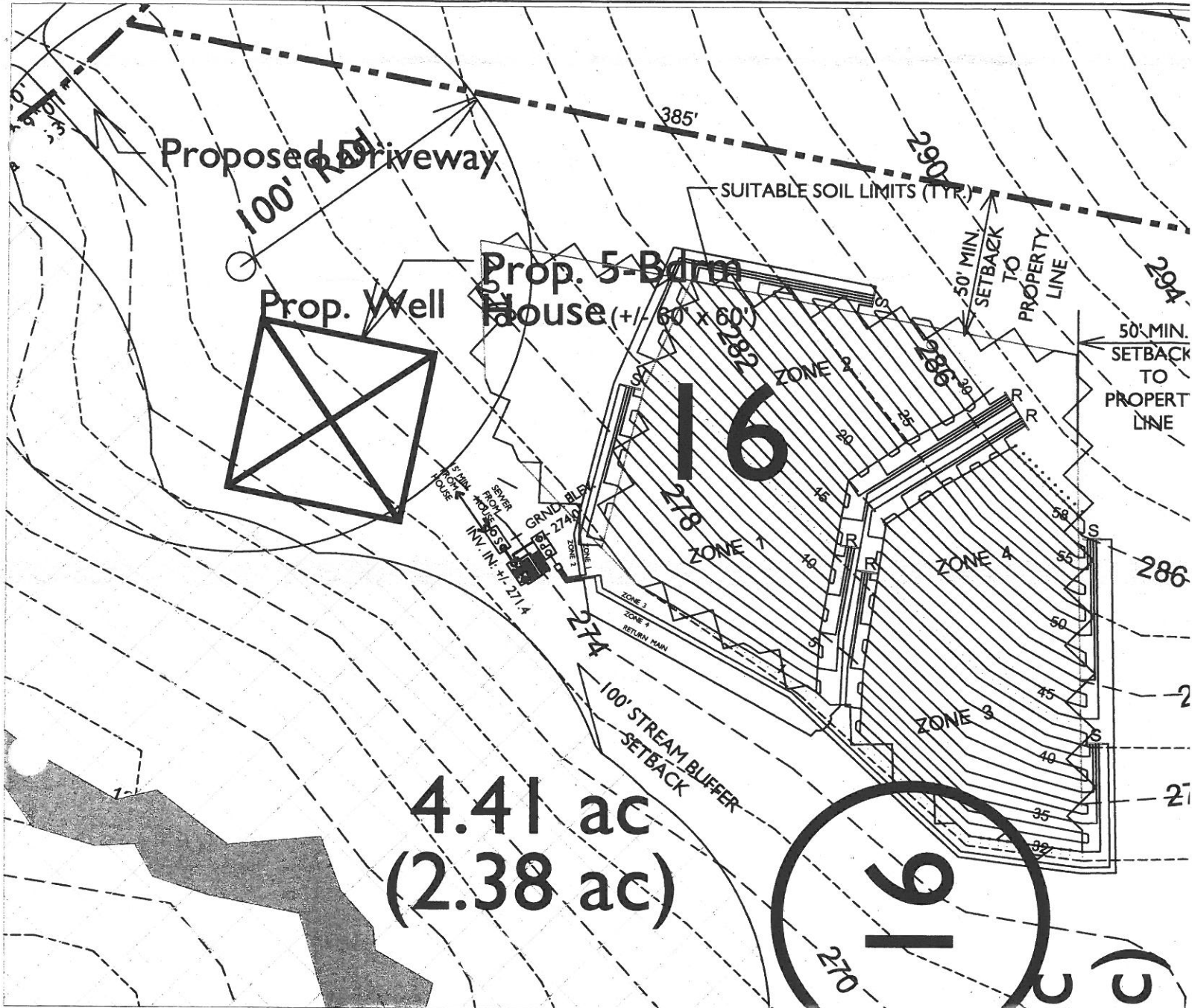
I / We understand the above requirements and agree to these terms as part of the issued permit.

Owner Signature: _____

Date: December 3, 2014

Owner Signature: _____

Date: December 3, 2014



SCALE 1" = 50'

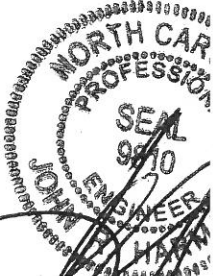


NOTES:

1) SITE DATA WHICH INCLUDES PROPERTY BOUNDARIES, TOPO, UTILITIES, ROADS, AND OTHER SITE FEATURES WERE PROVIDED BY PLANS PREPARED BY CE GROUP, PLLC -RALEIGH, NC (PLANNERS & ENGINEERS) AND ARE SHOWN TO DISPLAY GENERAL SITE CONDITIONS AND ARE PRESUMED TO BE ACCURATE. LOCATIONS OF PROPOSED STRUCTURES (HOUSES, DRIVEWAYS, AND WELLS) ARE SUBJECT TO MODIFICATION IF WITHIN THE CONTEXT OF APPLICABLE RULES FOR SETBACKS.

2) ALL SEPTIC SYSTEM COMPONENTS TO INCLUDE TANKS, PUMPS, MANIFOLDS, AND SYSTEM CONFIGURATION ARE APPROXIMATE AND AS SUCH NO SPECIFIC ACCURACY EITHER VERTICAL OR HORIZONTAL IS IMPLIED. SUITABLE SOIL/DISPOSAL APPLICATION AREAS HAVE BEEN GPS LOCATED BY PROTOCOL SAMPLING, PLLC.-RALEIGH, NC (SOIL SCIENTISTS).

3) PROPERTY AND EASEMENT BOUNDARIES SHOWN ON THIS SITE SKETCH ARE APPROXIMATE AND ARE NOT INTENDED FOR LOCATING PROPERTY OR IDENTIFYING PROPERTY OR EASEMENT CORNERS. THIS IS NOT A SURVEY.





North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

June 30, 2015

BRADLEY ZADELL – MANAGER
KC2 ENTERPRISES, LLC
POST OFFICE BOX 1438
APEX, NORTH CAROLINA 27502

FRANK FLOYD – MANAGER
1-3, LLC
341 KILMAYNE DRIVE – SUITE 201
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0037499
Carolina Crossings Subdivision
Lot #17 SFR
Single-Family Residence
Wastewater Irrigation System
Chatham County

Dear Messrs. Zadell and Floyd:

In accordance with your permit application received December 4, 2014, and subsequent additional information received May 15, 2015, we are forwarding herewith Permit No. WQ0037499 dated June 30, 2015, to KC2 Enterprises, LLC and 1-3, LLC for the construction and operation of the subject single-family residence wastewater treatment and irrigation facilities.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the conditions and limitations as specified therein. **An extension shall be requested at least six months prior to the expiration of this permit.** Upon receipt of the request, the Commission will review the adequacy of the facility described therein and, if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Please pay particular attention to the operation and maintenance requirements listed in Section III. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems. Also note that Condition VI.6. requires the Permittee to retain a set of Division approved plans and specifications for the life of the facilities permitted herein.

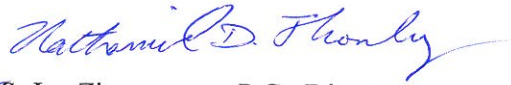
Please note the following permit conditions are specific to your permit and require your attention:

- Condition I.1. – This condition requires that prior to operation of the subject facility, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #17.

If any parts, requirements or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Alice M. Wessner at (919) 807-6425 or alice.wessner@ncdenr.gov.

Sincerely,


S. Jay Zimmerman, P.G., Director
Division of Water Resources

cc: Chatham County Health Department Anne Lowry, Environmental Health Director,
anne.lowry@chathamnc.org (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
John R. Harman, P.E., 2112 White Oak Road, Raleigh, NC 27608 jackharman53@gmail.com
(Electronic Copy)
Beth Buffington, Public Water Supply Section – Protection and Enforcement Branch (Electronic Copy)
Central Files
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH

SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

KC2 Enterprises, LLC and 1-3, LLC
Chatham County

FOR THE

construction and operation of a 600 gallon per day (GPD) single-family residence wastewater treatment and irrigation facility consisting of:

a 1,500 gallon septic tank with an Orenco Residential Biotube[®] effluent filter; a 1,000 gallon recirculation tank with two AdvanTex[®] AX-20 filter treatment units and a 50 gallon per minute (GPM) AdvanTex[®] recirculation pump; an Orenco ultraviolet (UV) disinfection unit; a 5,400 gallon field dosing tank with a 17 GPM pump, visual and audible alarms, drip irrigation controls and a rain sensor; a 0.39 acre drip irrigation area with four zones and return lines; and all associated piping, valves, controls and appurtenances

to serve the single-family residence at Carolina Crossings Subdivision Lot #17, with no discharge of wastes to surface waters, pursuant to the application received December 4, 2014, and subsequent additional information received by the Division of Water Resources, and in conformity with the project plans, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. Prior to construction and operation of the proposed facilities, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #17. [15A NCAC 02T .0108 (b)(2), 02T .0604(e)]

2. Upon completion of construction and prior to operation of this permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Resources, Water Quality Permitting Section, 1636 Mail Service Center, Raleigh, NC 27699-1636. [15A NCAC 02T .0116]
3. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed facilities such that an in-place inspection can be made. Notification to the regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. [15A NCAC 02T .0108 (b)(2)]
4. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application. [15A NCAC 02T .0105, 02T .0109, 02T .0115(c)]
5. If a public or community sewage system is or becomes available, the subject single-family residence wastewater treatment and irrigation facilities shall be closed and all wastewater shall be discharged into the public or community sewage system within 180 days of its availability. Prior to the initiation of these connection activities, appropriate Division approval shall be received. [15A NCAC 02T .0607]

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02B .0200, 02L .0100]
3. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in the following table:

TABLE 1 – APPLICATION LIMITATIONS				
Field	Parameter	Hourly Rate	Yearly Max	Units
1	01284 – Non-Discharge Application Rate	0.12	20.47	inches

[15A NCAC 02T .0605 (j)]

4. The subject facility has been approved to land apply wastewater effluent on the following fields:

TABLE 2 – IRRIGATION AREA INFORMATION						
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
1	KC2 Enterprises, LLC and 1-3, LLC	Chatham	35° 47' 35"	-78° 57' 31"	0.39	Creedmoor

[G.S. 143-215.1]

5. The Operation and Maintenance Agreement (attached) between the Permittee and the Division of Water Resources is incorporated herein by reference and shall be a condition of this permit. Noncompliance with the terms of the Operation and Maintenance Agreement shall subject the Permittee to all sanctions provided by North Carolina General Statutes §143-215.6A to §143-215.6C for violation of or failure to act in accordance with the terms and conditions of this permit. [15A NCAC 02T .0115 (2)]
6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit. [15A NCAC 02T .0605(o)]
7. The compliance boundary is established at the property boundary. Any exceedance of standards at the compliance boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0107(i)]
8. The review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedance of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary. [15A NCAC 02L .0107(c)]
10. The facilities permitted herein shall be constructed according to the following setbacks:
- a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):
 - i. Any habitable residence or place of public assembly under separate ownership: 100
 - ii. Any habitable residence or place of public assembly owned by the Permittee: 15
 - iii. Any private or public water supply source: 100
 - iv. Surface waters: 100
 - v. Groundwater lowering ditches: 100
 - vi. Surface water diversions: 25
 - vii. Any well with exception of monitoring wells: 100
 - viii. Any property line: 50
 - ix. Top of slope of embankments or cuts of two feet or more in vertical height: 15
 - x. Any water line from a disposal system: 10
 - xi. Subsurface groundwater lowering drainage systems: 100
 - xii. Any swimming pool: 100
 - xiii. Public right of way: 50
 - xiv. Nitrification field: 20
 - xv. Any building foundation or basement: 15

[15A NCAC 02T .0606(a)]

b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

- i. Any habitable residence or place of public assembly under separate ownership: 100
- ii. Any private or public water supply source: 100
- iii. Surface waters: 50
- iv. Any well with exception of monitoring wells: 100
- v. Any property line: 50

[15A NCAC 02T .0606(b)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0604(f). [15A NCAC 02T .0604(f)]
2. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G .0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G .0200, and shall comply with all other conditions specified in the previously cited rules. [15A NCAC 02T .0117]
3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system. [15A NCAC 02T .0108(b)(1)]
4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed Condition II.4. [15A NCAC 02T .0605(o)]
5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff. [15A NCAC 02T .0605(o)]
6. Only effluent from the Carolina Crossings Subdivision Lot #17 SFR shall be irrigated on the sites listed in Condition II.4. [G.S. 143-215.1]
7. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed. [15A NCAC 02T .0108(b)(1)]
8. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited. Fencing shall be provided to prevent access to the irrigation site (minimum 2-strand wire) and treatment units shall be secured with locks on all tank accesses and control panels. [15A NCAC 02T .0605(i)]
9. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T .1100. [15A NCAC 02T .1100]
10. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited. [15A NCAC 02T .0605(f)]
11. Pump/dosing tanks shall have audible and visual alarms external to any structure. [15A NCAC 02T .0605(n)]
12. Any excavation into bedrock shall be lined with a 10 millimeter (mm) synthetic liner. [15A NCAC 02T .0605(d)]

13. The Permittee is responsible for the operation and maintenance of the entire treatment and disposal system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed. The septic tank effluent filter shall be checked and cleaned at the same frequency as the septic tank. [15A NCAC 18A .1900, 02T .0605]
 - b. The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection. [15A NCAC 02T .0605(l)]
 - c. The storage, pump, and alarm systems shall be inspected monthly. The scum layer shall be removed at the same interval as the septic tank is cleaned out. [15A NCAC 02T .0108(b)(1)]
 - d. The system shall be inspected monthly to make certain of the proper operation of the drip lines that the system is free of leaks, that the vegetative growth allows a proper drip pattern, that the soil is assimilating the disposed treated wastewater with no surface runoff, and that no objectionable odors are being generated. [15A NCAC 02T .0108(b)(1)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed. [15A NCAC 02T .0108(c)]
2. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.
- b. Any facility failure resulting in a by-pass directly to receiving surface waters.
- c. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- d. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur. [15A NCAC 02T .0105(l)]

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0108(b)]
2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0108(b)]

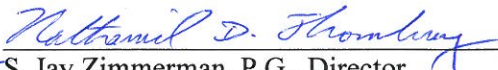
3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit, and may collect groundwater, surface water or leachate samples. [G.S. 143-215.3(a)(2)]

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C. [G.S. 143-215.6A to 143-215.6C]
2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation. [15A NCAC 02T .0110]
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n). [G.S. 14.-215.1]
4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200; erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500; and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes. [15A NCAC 02T .0105(c)(6)]
5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner. [15A NCAC 02T .0104]
6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0108(b)(1)]
7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110. [15A NCAC 02T .0110]
9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b). [15A NCAC 02T .0120]
10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall be cause for the Division to revoke this permit. [15A NCAC 02T .0105(e)(3)]

Permit issued this the 30th day of June 2015

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION


for S. Jay Zimmerman, P.G., Director
Division of Water Resources
By Authority of the Environmental Management Commission

Permit Number WQ0037499

ENGINEERING CERTIFICATION

Partial Final

In accordance with 15A NCAC 02T .0116, I, _____, as a duly registered Professional Engineer in the State of North Carolina, having the Permittee's authorization to periodically weekly fully observe the construction of the permitted facility, hereby state to the best of my abilities that due care and diligence was used in the observation of the construction, such that the facility was built within substantial compliance and intent of this permit, the Division approved plans and specifications, and other supporting documentation.

Any variation to this permit, the Division approved plans and specifications, and other supporting documentation has been documented in the attached as-built drawings, and shall serve as the Permittee's minor modification request to amend the permit accordingly.

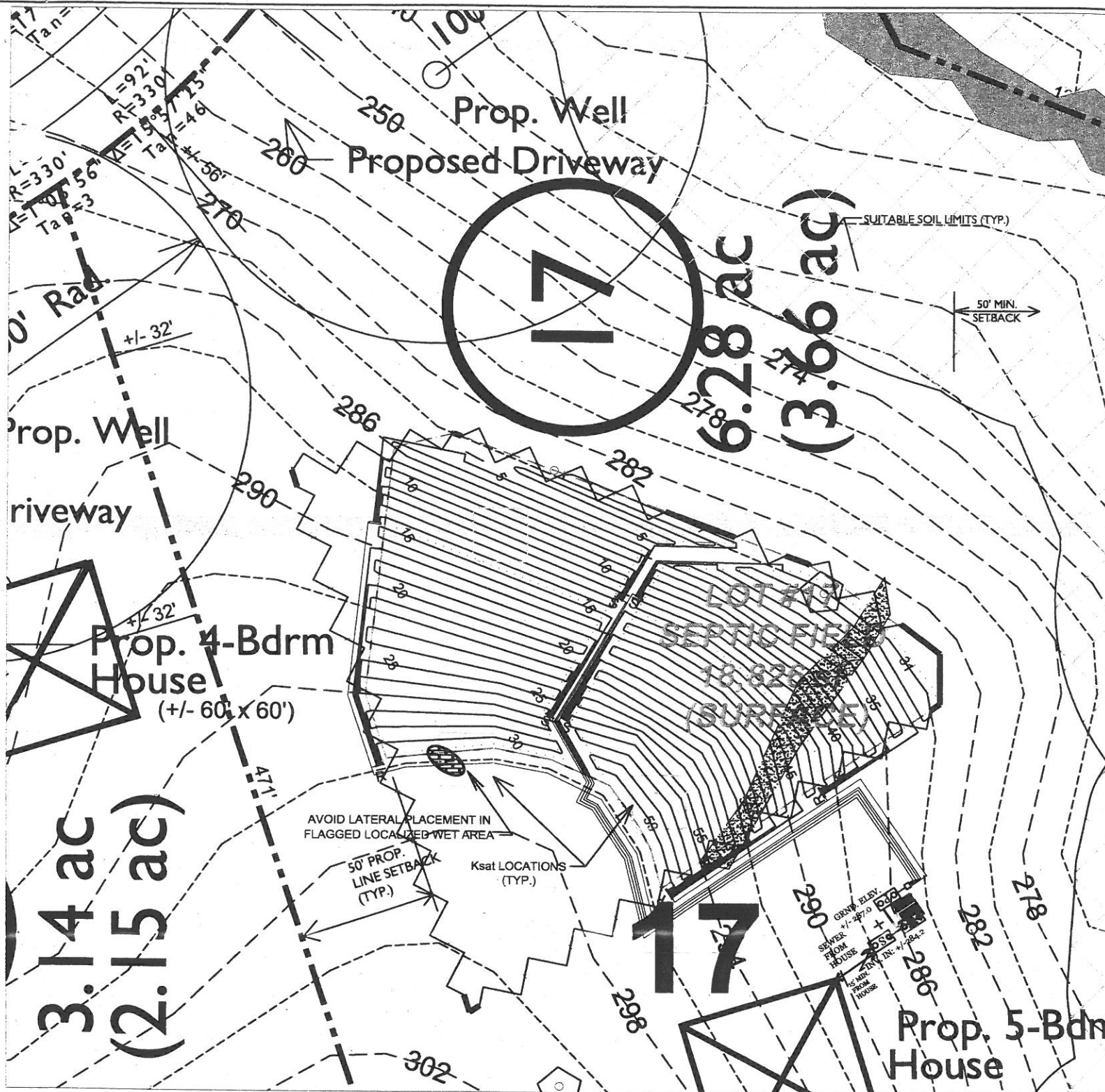
Provide a brief narrative description of any variations: _____

Professional Engineer's Name			NC PE Seal, Signature & Date
Engineering Firm			
Mailing Address			
City	State	Zip	
Telephone	E-mail		

**THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:
 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 WATER QUALITY PERMITTING SECTION
 NON-DISCHARGE PERMITTING UNIT**

By U.S. Postal Service:
 1617 MAIL SERVICE CENTER
 RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
 512 N. SALISBURY ST.
 RALEIGH, NORTH CAROLINA 27604



SCALE 1" = 50'



NOTES:

1) SITE DATA WHICH INCLUDES PROPERTY BOUNDARIES, TOPO, UTILITIES, ROADS, AND OTHER SITE FEATURES WERE PROVIDED BY PLANS PREPARED BY CE GROUP, PLLC -RALEIGH, NC (PLANNERS & ENGINEERS) AND ARE SHOWN TO DISPLAY GENERAL SITE CONDITIONS AND ARE PRESUMED TO BE ACCURATE. LOCATIONS OF PROPOSED STRUCTURES (HOUSES, DRIVEWAYS, AND WELLS) ARE SUBJECT TO MODIFICATION IF WITHIN THE CONTEXT OF APPLICABLE RULES FOR SETBACKS.

2) ALL SEPTIC SYSTEM COMPONENTS TO INCLUDE TANKS, PUMPS, MANIFOLDS, AND SYSTEM CONFIGURATION ARE APPROXIMATE AND AS SUCH NO SPECIFIC ACCURACY EITHER VERTICAL OR HORIZONTAL IS IMPLIED. SUITABLE SOIL/DISPOSAL APPLICATION AREAS HAVE BEEN GPS LOCATED BY PROTOCOL SAMPLING, PLLC.-RALEIGH, NC (SOIL SCIENTISTS).

3) PROPERTY AND EASEMENT BOUNDARIES SHOWN ON THIS SITE SKETCH ARE APPROXIMATE AND ARE NOT INTENDED FOR LOCATING PROPERTY OR IDENTIFYING PROPERTY OR EASEMENT CORNERS. THIS IS NOT A SURVEY.

NORTH CAROLINA PROFESSIONAL SEAL 9810 JOHN ENGINEER



15A NCAC 02T .0600 – SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEMS
OPERATION AND MAINTENANCE AGREEMENT
FORM: SFRWWIS O&M 08-13

Division of Water Resources

Permit No. WQ 0037499 County: Chatham

Property owner(s) as appearing on the recorded deed: KC2 Enterprises, LLC and 1-3, LLC

Mailing address: P. O. Box 1438; Apex, North Carolina 27502

Facility address: Lot 17; Carolina Crossings Subdivision; Near Apex-Martha's Chapel Vicinity; Chatham County

Irrigation Method: SPRAY DRIP

I / We agree to operate and maintain the single-family residence wastewater treatment and irrigation system as follows:

1. The Permittee is responsible for the operation and maintenance of the entire wastewater treatment and irrigation system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed.
 - b. The septic tank effluent filter shall be checked and cleaned annually.
 - c. Accessible sand filter surfaces shall be raked and leveled every six months and any vegetative growth shall be removed manually.
 - d. The tablet chlorinator shall be checked weekly. Wastewater grade tablets (calcium hypochlorite) shall be added as needed to provide proper chlorination (pool chlorine tablets shall not be used), OR
 The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection.
 - e. All pump and alarm systems shall be inspected monthly.
 - f. The irrigation system shall be inspected monthly to ensure that the system is free of leaks, that all irrigation equipment is operating as designed, that vegetative growth does not interfere with the system inspection or operation, that the soil is assimilating the disposed treated wastewater with no visible runoff or ponding, and that no objectionable odors are being generated.
2. Failure to pay the annual fee shall be cause for the Division to revoke the permit pursuant to 15A NCAC 02T .0105(e)(3).
3. The Permittee's failure to properly operate this system is subject to a penalty up to \$25,000 per day.
4. Failure to meet the permit conditions or violation of the State's surface water or groundwater regulations may void the permit.

All owners appearing on the legally recorded property deed shall sign this Operation & Maintenance Agreement

I / We understand the above requirements and agree to these terms as part of the issued permit.

Owner Signature: 

Date: December 3, 2014

Owner Signature: 

Date: December 3, 2014



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

June 30, 2015

BRADLEY ZADELL – MANAGER
KC2 ENTERPRISES, LLC
POST OFFICE BOX 1438
APEX, NORTH CAROLINA 27502

FRANK FLOYD – MANAGER
1-3, LLC
341 KILMAYNE DRIVE – SUITE 201
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0037500
Carolina Crossings Subdivision
Lot #19 SFR
Single-Family Residence
Wastewater Irrigation System
Chatham County

Dear Messrs. Zadell and Floyd:

In accordance with your permit application received December 4, 2014, and subsequent additional information received May 15, 2015, we are forwarding herewith Permit No. WQ0037500 dated June 30, 2015, to KC2 Enterprises, LLC and 1-3, LLC for the construction and operation of the subject single-family residence wastewater treatment and irrigation facilities.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the conditions and limitations as specified therein. **An extension shall be requested at least six months prior to the expiration of this permit.** Upon receipt of the request, the Commission will review the adequacy of the facility described therein and, if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Please pay particular attention to the operation and maintenance requirements listed in Section III. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems. Also note that Condition VI.6. requires the Permittee to retain a set of Division approved plans and specifications for the life of the facilities permitted herein.

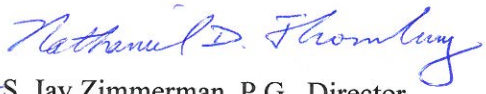
Please note the following permit condition is specific to your permit and requires your attention:

- Condition I.1. – This condition requires that prior to operation of the subject facility, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #19.

If any parts, requirements or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Alice M. Wessner at (919) 807-6425 or alice.wessner@ncdenr.gov.

Sincerely,


S. Jay Zimmerman, P.G., Director
Division of Water Resources

cc: Chatham County Health Department Anne Lowry, Environmental Health Director,
anne.lowry@chathamnc.org (Electronic Copy)
Raleigh Regional Office, Water Quality Regional Operations Section (Electronic Copy)
John R. Harman, P.E., 2112 White Oak Road, Raleigh, NC 27608 jackharman53@gmail.com
(Electronic Copy)
Beth Buffington, Public Water Supply Section – Protection and Enforcement Branch (Electronic Copy)
Central Files
Digital Permit Archive (Electronic Copy)

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

KC2 Enterprises, LLC and 1-3, LLC
Chatham County

FOR THE

construction and operation of a 600 gallon per day (GPD) single-family residence wastewater treatment and irrigation facility consisting of:

a 1,500 gallon septic tank with an Orenco Residential Biotube[®] effluent filter; a 1,000 gallon recirculation tank with two AdvanTex[®] AX-20 filter treatment units and a 50 gallon per minute (GPM) AdvanTex[®] recirculation pump; an Orenco ultraviolet (UV) disinfection unit; a 5,400 gallon field dosing tank with a 17 GPM pump, visual and audible alarms, drip irrigation controls, and a rain sensor; a 0.54 acre drip irrigation area with four zones and return lines; and all associated piping, valves, controls and appurtenances

to serve the single-family residence at Carolina Crossings Subdivision Lot #19, with no discharge of wastes to surface waters, pursuant to the application received December 4, 2014, and subsequent additional information received by the Division of Water Resources, and in conformity with the project plans, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until May 31, 2020, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. Prior to construction and operation of the proposed facilities, the Permittee submit documentation demonstrating that Parcel No. 0060710 has been properly subdivided and recorded in the Chatham County Register of Deeds. Documentation shall include a deed accompanied by a plat or survey map for Carolina Crossings Subdivision Lot #19. [15A NCAC 02T .0108 (b)(2), 02T .0604(e)]

2. Upon completion of construction and prior to operation of this permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Resources, Water Quality Permitting Section, 1636 Mail Service Center, Raleigh, NC 27699-1636. [15A NCAC 02T .0116]
3. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed facilities such that an in-place inspection can be made. Notification to the regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. [15A NCAC 02T .0108 (b)(2)]
4. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application. [15A NCAC 02T .0105, 02T .0109, 02T .0115(c)]
5. If a public or community sewage system is or becomes available, the subject single-family residence wastewater treatment and irrigation facilities shall be closed and all wastewater shall be discharged into the public or community sewage system within 180 days of its availability. Prior to the initiation of these connection activities, appropriate Division approval shall be received. [15A NCAC 02T .0607]

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or disposal facilities. [15A NCAC 02T .0108(b)(1)]
2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility. [15A NCAC 02B .0200, 02L .0100]
3. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in the following table:

TABLE 1 – APPLICATION LIMITATIONS				
Field	Parameter	Hourly Rate	Yearly Max	Units
1	01284 – Non-Discharge Application Rate	0.12	15.14	inches

[15A NCAC 02T .0605 (j)]

4. The subject facility has been approved to land apply wastewater effluent on the following fields:

TABLE 2 – IRRIGATION AREA INFORMATION						
Field	Owner	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
1	KC2 Enterprises, LLC and 1-3, LLC	Chatham	35° 47' 33"	-78° 57' 37"	0.54	Creedmoor

[G.S. 143-215.1]

5. The Operation and Maintenance Agreement (attached) between the Permittee and the Division of Water Resources is incorporated herein by reference and shall be a condition of this permit. Noncompliance with the terms of the Operation and Maintenance Agreement shall subject the Permittee to all sanctions provided by North Carolina General Statutes §143-215.6A to §143-215.6C for violation of or failure to act in accordance with the terms and conditions of this permit. [15A NCAC 02T .0115 (2)]
6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit. [15A NCAC 02T .0605(o)]
7. The compliance boundary is established at the property boundary. Any exceedance of standards at the compliance boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0107(i)]
8. The review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedance of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106. [15A NCAC 02L .0108]
9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary. [15A NCAC 02L .0107(c)]
10. The facilities permitted herein shall be constructed according to the following setbacks:
 - a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

i. Any habitable residence or place of public assembly under separate ownership:	100
ii. Any habitable residence or place of public assembly owned by the Permittee:	15
iii. Any private or public water supply source:	100
iv. Surface waters:	100
v. Groundwater lowering ditches:	100
vi. Surface water diversions:	25
vii. Any well with exception of monitoring wells:	100
viii. Any property line:	50
ix. Top of slope of embankments or cuts of two feet or more in vertical height:	15
x. Any water line from a disposal system:	10
xi. Subsurface groundwater lowering drainage systems:	100
xii. Any swimming pool:	100
xiii. Public right of way:	50
xiv. Nitrification field:	20
xv. Any building foundation or basement:	15

[15A NCAC 02T .0606(a)]

b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0600 shall be as follows (all distances in feet):

- i. Any habitable residence or place of public assembly under separate ownership: 100
- ii. Any private or public water supply source: 100
- iii. Surface waters: 50
- iv. Any well with exception of monitoring wells: 100
- v. Any property line: 50

[15A NCAC 02T .0606(b)]

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0604(f). [15A NCAC 02T .0604(f)]
2. Upon the Water Pollution Control System Operators Certification Commission's (WPCSOCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G .0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G .0200, and shall comply with all other conditions specified in the previously cited rules. [15A NCAC 02T .0117]
3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system. [15A NCAC 02T .0108(b)(1)]
4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Condition II.4. [15A NCAC 02T .0605(o)]
5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff. [15A NCAC 02T .0605(o)]
6. Only effluent from the Carolina Crossings Subdivision Lot #19 SFR shall be irrigated on the sites listed in Condition II.4. [G.S. 143-215.1]
7. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed. [15A NCAC 02T .0108(b)(1)]
8. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited. Fencing shall be provided to prevent access to the irrigation site (minimum 2-strand wire) and treatment units shall be secured with locks on all tank accesses and control panels. [15A NCAC 02T .0605(i)]
9. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T .1100. [15A NCAC 02T .1100]
10. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited. [15A NCAC 02T .0605(f)]
11. Pump/dosing tanks shall have audible and visual alarms external to any structure. [15A NCAC 02T .0605(n)]
12. Any excavation into bedrock shall be lined with a 10 millimeter (mm) synthetic liner. [15A NCAC 02T .0605(d)]

13. The Permittee is responsible for the operation and maintenance of the entire treatment and disposal system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed. The septic tank effluent filter shall be checked and cleaned at the same frequency as the septic tank. [15A NCAC 18A .1900, 02T .0605]
 - b. The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection. [15A NCAC 02T .0605(l)]
 - c. The storage, pump, and alarm systems shall be inspected monthly. The scum layer shall be removed at the same interval as the septic tank is cleaned out. [15A NCAC 02T .0108(b)(1)]
 - d. The system shall be inspected monthly to make certain of the proper operation of the drip lines that the system is free of leaks, that the vegetative growth allows a proper drip pattern, that the soil is assimilating the disposed treated wastewater with no surface runoff, and that no objectionable odors are being generated. [15A NCAC 02T .0108(b)(1)]

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed. [15A NCAC 02T .0108(c)]
2. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.
- b. Any facility failure resulting in a by-pass directly to receiving surface waters.
- c. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.
- d. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur. [15A NCAC 02T .0105(l)]

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities. [15A NCAC 02T .0108(b)]
2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request. [15A NCAC 02T .0108(b)]

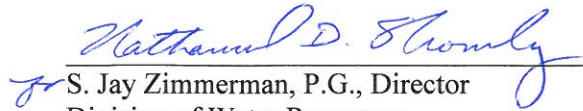
3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit, and may collect groundwater, surface water or leachate samples. [G.S. 143-215.3(a)(2)]

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C. [G.S. 143-215.6A to 143-215.6C]
2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation. [15A NCAC 02T .0110]
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n). [G.S. 14-215.1]
4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200; erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500; and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes. [15A NCAC 02T .0105(c)(6)]
5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner. [15A NCAC 02T .0104]
6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein. [15A NCAC 02T .0108(b)(1)]
7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority. [15A NCAC 02T .0105(j)]
8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110. [15A NCAC 02T .0110]
9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b). [15A NCAC 02T .0120]
10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall be cause for the Division to revoke this permit. [15A NCAC 02T .0105(e)(3)]

Permit issued this the 30th day of June 2015

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION


for S. Jay Zimmerman, P.G., Director
Division of Water Resources
By Authority of the Environmental Management Commission

Permit Number WQ0037500

ENGINEERING CERTIFICATION

Partial Final

In accordance with 15A NCAC 02T .0116, I, _____, as a duly registered Professional Engineer in the State of North Carolina, having the Permittee's authorization to periodically weekly fully observe the construction of the permitted facility, hereby state to the best of my abilities that due care and diligence was used in the observation of the construction, such that the facility was built within substantial compliance and intent of this permit, the Division approved plans and specifications, and other supporting documentation.

Any variation to this permit, the Division approved plans and specifications, and other supporting documentation has been documented in the attached as-built drawings, and shall serve as the Permittee's minor modification request to amend the permit accordingly.

Provide a brief narrative description of any variations: _____

Professional Engineer's Name			NC PE Seal, Signature & Date
Engineering Firm			
Mailing Address			
City	State	Zip	
Telephone	E-mail		

**THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:
 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER RESOURCES
 WATER QUALITY PERMITTING SECTION
 NON-DISCHARGE PERMITTING UNIT**

By U.S. Postal Service:
 1617 MAIL SERVICE CENTER
 RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
 512 N. SALISBURY ST.
 RALEIGH, NORTH CAROLINA 27604



15A NCAC 02T .0600 – SINGLE-FAMILY RESIDENCE WASTEWATER IRRIGATION SYSTEMS
OPERATION AND MAINTENANCE AGREEMENT

FORM: SFRWWIS O&M 08-13

Division of Water Resources

Permit No. WQ0037500

County: Chatham

Property owner(s) as appearing on the recorded deed: KC2 Enterprises, LLC and I-3, LLC

Mailing address: P. O. Box 1438; Apex, North Carolina 27502

Facility address: Lot 19; Carolina Crossings Subdivision; Near Apex-Martha's Chapel Vicinity; Chatham County

Irrigation Method: SPRAY DRIP

I / We agree to operate and maintain the single-family residence wastewater treatment and irrigation system as follows:

1. The Permittee is responsible for the operation and maintenance of the entire wastewater treatment and irrigation system including, but not limited to, the following items:
 - a. The septic tank shall be checked annually and pumped out as needed.
 - b. The septic tank effluent filter shall be checked and cleaned annually.
 - c. Accessible sand filter surfaces shall be raked and leveled every six months and any vegetative growth shall be removed manually.
 - d. The tablet chlorinator shall be checked weekly. Wastewater grade tablets (calcium hypochlorite) shall be added as needed to provide proper chlorination (pool chlorine tablets shall not be used), OR
 The ultraviolet disinfection unit shall be checked weekly. The lamp(s) and quartz sleeve(s) shall be cleaned or replaced as needed to ensure proper disinfection.
 - e. All pump and alarm systems shall be inspected monthly.
 - f. The irrigation system shall be inspected monthly to ensure that the system is free of leaks, that all irrigation equipment is operating as designed, that vegetative growth does not interfere with the system inspection or operation, that the soil is assimilating the disposed treated wastewater with no visible runoff or ponding, and that no objectionable odors are being generated.
2. Failure to pay the annual fee shall be cause for the Division to revoke the permit pursuant to 15A NCAC 02T .0105(e)(3).
3. The Permittee's failure to properly operate this system is subject to a penalty up to \$25,000 per day.
4. Failure to meet the permit conditions or violation of the State's surface water or groundwater regulations may void the permit.

All owners appearing on the legally recorded property deed shall sign this Operation & Maintenance Agreement

I / We understand the above requirements and agree to these terms as part of the issued permit.

Owner Signature: _____

Date: December 3, 2014

Owner Signature: _____

Date: December 3, 2014

