

## Beaufort County Stormwater Management Utility Board (SWMU Board) Meeting Minutes

February 14, 2018 at 2:00 p.m. in Executive Conference Room, Administration Building, Beaufort County Government Robert Smalls Complex, 100 Ribaut Road, Beaufort, South Carolina

### Board Members

#### Present

Don Smith  
Marc Feinberg  
Allyn Schneider  
Larry Meisner  
William Bruggeman  
James Fargher  
Patrick Mitchell

#### Absent

#### Beaufort County Staff

Eric Larson  
Melissa Allen  
Patty Wilson  
Andrea Atherton

### Ex-Officio Members

#### Present

Kim Jones

#### Absent

Van Willis  
Andy Kinghorn  
Scott Liggett

#### Visitors

Alan Warren, USCB Lab  
Alice Howard, County Council  
Ellen Comeau, Clemson Extension  
Eric Hoover, Ward Edwards

### 1. Meeting called to order – Don Smith

- A. Agenda – Approved.
- B. January 10, 2018 Minutes – Approved.

### 2. Introductions – Completed.

### 3. Public Comment(s) – None.

### 4. Reports – Mr. Eric Larson and Mr. David Wilhelm provided a written report which is included in the posted agenda and can be accessed at:

<http://www.bcgov.net/departments/Administrative/beaufort-county-council/boards-and-commissions/council-appointed/board-list/stormwater-management-utility-board/agendas/2018/021418.pdf>

#### A. Utility Update – Eric Larson

In reference to item #3, staff reorganization, Mr. Larson explained that regulatory staff will now be reporting directly to him. Plan review (which was handled by the MS4 Coordinator) has been redistributed to a Public Works Engineer and a member in Community Development, allowing the MS4 Coordinator to focus on inspections.

In reference to Mr. Don Smith's question asking if the County is looking for a new Coordinator, Mr. Larson responded that Stormwater is actively advertising for that position and two stormwater inspectors.

Mr. Larson explained that he will not make the deadline for the Management Fee recommendation to the SWIC and has communicated this to them.

Mr. Smith asked how the presentation for regionalization went. Mr. Larson expressed it was well received and it was a priority topic during the County Council retreat; it is gaining momentum. The technical subcommittee will be meeting next week to work on the regional standard and mission statement.

Mr. Marc Feinberg asked about the Northern Regional Committee. Mr. Larson explained there has been Northern and Southern Plan Committees for years, but they are more of planning and zoning function and that the Northern committee has been very active. The SoLoCo committee was not, and this is like a rebirth of the group and they have also expanded their focus.

**B. Monitoring Update – Eric Larson**

Please reference the report which is included in the posted agenda. No additional updates.

**C. Stormwater Implementation Committee (SWIC) Report – Eric Larson**

The SWIC has not met since the last board meeting.

**D. Stormwater Related Projects – Eric Larson**

Mr. Larson provided an update on item 1, Okatie West Project, indicating that the contract was awarded and construction will begin soon. An error in the bid amount listed in the report was discovered during the board meeting. Correction to report - R. B. Baker Construction bid was not \$99,305, it was \$993,050.

In reference to item 4, Jenkins Island US278 widening, there is opposition to bioswales, as SCDOT does not want to accept responsibility and maintenance of them. They will be going back to the drawing board for BMP's and will likely do something more mechanical and engineered.

**E. Professional Contracts Report – Eric Larson**

Please reference the report which is included in the posted agenda. No additional updates.

**F. Regional Coordination – Eric Larson**

In reference to #5, Mr. Larson mentioned that the SESWA Regional Conference will be held in Hilton Head this fall and the host community will be looking for a field trip opportunity.

In reference to Academy Park, the project will be going to SRT in a few weeks.

**G. Municipal Reports – Eric Larson**

Ms. Kim Jones indicated the Town of Bluffton is still chasing failing septic systems. USCB came to the Town with a proposal to amend the current water quality contract by \$25,000 for the development of primers for microbial source tracking. This proposal was approved Tuesday night by their Council. This will cut down the turnaround time on source tracking to same day and they will be able to pinpoint failing systems. She expressed this

will be a big benefit to have this technology developed locally; which is handheld through an iPhone.

In response to Mr. Larry Meisner's question asking if the owner is required to repair, Ms. Jones explained it depends on where the system is located (jurisdiction, as well as work with DHEC), the Town would have to work with them to get into compliance, either through remediation or connection to sanitary sewer. The sanitary sewer ordinance requires mandatory hook up if a property owner is within 300 feet of sanitary sewer and has a failing septic system. In response to a question about the cost, Ms. Jones explained it could be several thousand (\$4-\$7k) to hook up, but if a grinder pump is needed because the property is against gravity it could cost possibly be \$30-\$40k. She noted that in the ordinance there are financial hardship allowances and that the watershed advisory committee will be going through and reviewing the ordinance over the next few months.

In response to Mr. Don Smith asking if there are any septic systems near 46, Mr. Larson indicated there are a few along Goethe Road near SC 46 that are still on septic systems.

Mr. Larson shared a report under City of Beaufort's update. The task force (DOT, Town of PR, School, County and City) is doing a watershed wide engineering study to come up with short and long term solutions to solve flooding problems and to prepare for grants later in the year. The County prepared an analysis by impervious area versus gross area, which is what the City proposed, as a method to determine shared costs. The proposals are out of the technical hands into the political hands. Mr. Larson noted that they want this to succeed to prove that regionalization works. The cost estimate for Phase 1, Initial Conceptual, is \$236,000. Cost estimates have not been prepared for Phase 2 Design/Bid, Phase 3 – Construction, or Phase 4 – Consultant Supervision. He expressed that this could potentially be a \$3-\$4 million project, so it is important to establish the methodology of sharing the project early on.

#### **H. Municipal Separate Storm Sewer System (MS4 Update) – Eric Larson**

Mr. Larson noted that the inspection reports/charts are showing a rolling twelve months and that staff is working on the vertical scales, since the number of inspections exceed enforcement.

Mr. Smith asked about the inspections. Mr. Larson indicated they are for erosion control on issued stormwater permit. A permit is needed for anything over 5,000 square feet, anything within ½ mile of water body or anything that is part of Larger Common Plan. The inspectors try to inspect each permit monthly. Mr. Larson explained the County is in an education phase, which is why violations are low and over time this will shift, as DHEC will expect the County to be more of an enforcement program.

Mr. Marc Feinberg asked about County and DHEC approval. Mr. Larson replied that the County is the first line issuing a local permit, then the applicant submits to DHEC with a copy of the County approved permit. DHEC reserves the right for full review and if they did review a project and found something they didn't like, they would likely send back corrective action to applicant and the County. In South Carolina, DHEC has not allowed the MS4 to be the one and only permitting for their jurisdiction, so there are two permits required for the same project.

Mr. Smith asked if Beaufort County is more stringent with BMP's. Mr. Larson replied that in most cases the County is and explained that DHEC has a different water quality volume standard, so the County has to look for that calculation during their review.

In response to question about inspections, Mr. Larson replied that the County does inspections on both commercial and residential because they are issuing permits for both.

In reference to item #7, the street sweeper is ready to be ordered [pending County Council final approval]. The plan is to use it on Buckwalter and Bluffton Parkway (currently contracted for quarterly sweeps) and use it on facility parking lots, as well as a few other hot spots to remove pollutants before they enter the stormsewer system.

#### **I. Maintenance Projects Report – David Wilhelm**

Please reference the report which is included in the posted agenda. No additional updates.

Mr. Larry Meisner commented that the first minor project (Bush Hog) doesn't look like minor. Mr. Larson replied that is because it is considered routine maintenance and they covered a lot of workshelves in that area.

Mr. Smith asked about the VacTruck and if the County has noticed any change in the volume (of material) that is found in the system. Mr. Larson said that truck is used on a lot of systems that have never been maintained since the truck was purchased and some that have been, so it varies.

#### **5. Unfinished Business**

**A. Update on Bessie Lane Easement Acquisition** – Met with Council Member [Mr. Gerald Dawson] and they are actively engaged, working to make contact property owners.

**B. Update on Orange Grove Easement Acquisition** - Met with Council Member [Mr. York Glover] and they are actively engaged, working to make contact property owners.

**C.** Mr. Smith asked if Mr. Larson had a chance to look into the Super Fund Sites. Mr. Larson replied that he had not. A brief discussion took place about sites in Gray's Hill and Lobeco between Mr. Smith and Mr. Patrick Mitchell.

#### **6. New Business –**

**A. Special Presentation - Animal Services Center Stormwater Design** – Mr. Eric Hoover, site Engineer, with Ward Edwards Engineering presented the stormwater design of the Beaufort County Animal Services site. He provided an overview of the site, indicating the Animal Services Center is on a 6.3 acre site, which was subdivided from a 97 acre site which is located off of HWY170, Rivers End property. There are wetlands to the North and South of the site, but there will be no impact to them as there is a 50 foot buffer. The elevation of the site was raised from 17 feet to 22 feet to match the elevation of HWY 170.

The Geotechnical engineer for the site indicated the soil was poor; they needed to remove 2 foot of soil from the footprint of the site and brought in about 4 foot of fill. After the site was elevated they had to wait 30 days before installing one thousand earthquake drains (36 foot long) on the site and then installed the slab.

There will be an onsite wet pond which is in the shape of a dog bone. The pond will drain to swale and then into a manmade stormwater pond and from their will outfall into the creek. The impervious run off will drain into gravel parking, gravel fenced-in areas or a swale prior to discharging into the wet pond.

Mr. Hoover explained how the design met the four criteria for the County's stormwater standards. The rate control was met by using the wet pond and outlet control structure, which was designed to meet the 100 year storm event, which exceeded the 25 year requirement at the time. The 95<sup>th</sup> percentile volume control was accomplished through the wet pond; the weir for the outlet

control volume will be set at 15.4 and will utilize irrigation reuse to get rid of the volume over 1.25 acres of landscape area. The effective impervious was met by including pervious parking, open space and the 25% required natural preserved tree area. The water quality requirement was met through having a wet pond and pervious area.

In response to a question about standards knowing that animals will be on site, Mr. Hoover explained that the each kennel has two floor drains that will tie into the overall sewer system. There is also a hair trap (that will be on a maintenance schedule), so the system doesn't clog. This will all go to a pump station and then into public sewer. The fenced-in area outside will contain four inches of pea gravel on top of a geotextile fabric layer that covers two inches of 57 stone to act as a choker and then 6" plastic edging will extend out 5 feet from the edge of the fence to contain the waste. Anything collected outside will go into a drain field.

Conversation took place following a question about the maintenance of irrigation systems. Mr. Hoover indicated that Animal Services will have to keep a monthly record to log the reuse volume. Ms. Kim Jones shared her experience with a similar system that is part of phase two of the 319 grant in the Pine Ridge Community. Mr. Hoover commented that pumps used for irrigation reuse are a part of the inspection check list, with the County being the MS4 they are looking over them. Mr. Larson commented that the criteria for a pump system is in the BMP manual and then there is also maintenance agreement that would run with the land for the owner(s) to maintain the system.

[The Animal Shelter Services presentation is attached.](#)

**7. Public Comment(s)** – Dr. Alan Warren from USBC Lab asked Mr. Larson if he briefed the Board on the Okatie West effort they are engaged in. In response, Mr. Larson shared that Stormwater and USCB Lab staff have been conducting monitoring three times a week (M/W/F) before there is disturbance to the project site. They are sampling above and below where they will be diverting into the pond, during the right time in the tide cycle, and doing flow measurements as well. This will give staff a good base line data (pre-construction) and then during the same season post construction will begin sampling again, so they are able to report on the effectiveness of the pond, six months post construction.

**8. Next Meeting Agenda** – Approved.

Brief discussion took place about Mr. Larson being away for training during the March meeting and future meeting topics that have been proposed to include budget, the annual DHEC report, and facility/convenience center inspection reports.

Additions to March 14, 2018 Agenda

- New Business -
  - Special Presentation – Lowcounty Stormwater Partners Plan (Ellen Comeau)

**9. Meeting Adjourned**

# Beaufort County Animal Services

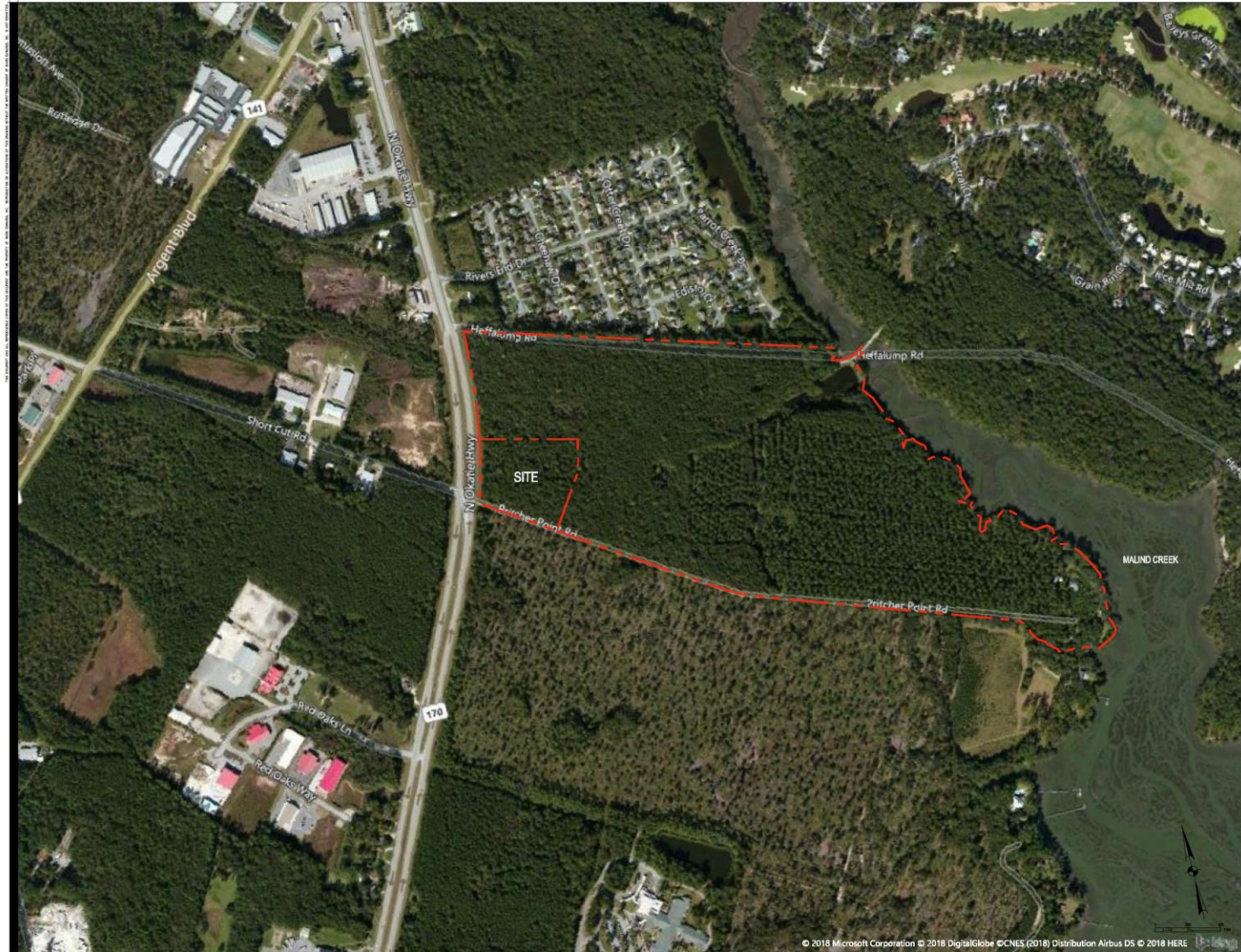
## Stormwater



**Ward  
Edwards**

E N G I N E E R I N G

# Overall Site



**GBA**  
GILBERT BUDITH ARCHITECTURE  
1010 W. 15th Street, Suite 100  
Beaufort, SC 29506

**Ward Edwards**  
ENGINEERING  
1001 S. 11th Street  
Beaufort, SC 29506

NO.	DATE	BY	DESCRIPTION




**BCASIHHA ANIMAL SERVICES COMPLEX**  
COUNTY OF BEAUFORT, SC  
10 PRITCHER POINT ROAD, BEAUFORT, SC 29506

PREPARED BY: JEM  
 CHECKED BY: JEM  
 APPROVED BY: JEM  
 DATE: 10/24/2017  
 SHEET: 1002/1002

**SITE EXHIBIT**





## Rate Control:

Table 4 -- Pre vs. Post Development Runoff Comparison

Design Storm	Pre-Development Runoff (cfs)	Post-Development Runoff (cfs)
95th Percent	0.83	0.46
2 Year	5.38	3.28
10 Year	10.58	6.97
25 Year	13.97	9.38
50 Year	16.93	11.41
100 Year	19.90	13.62

## 95<sup>th</sup> Percentile Storm Irrigation Calculation (WQV):

$$WQV = (95^{th} \text{ POST} - 95^{th} \text{ PRE})$$

$$WQV = (0.38 \text{ af} - 0.23 \text{ af}) \times (43,560 \text{ ft}^2 / 1.0 \text{ ac}) = 6,534 \text{ ft}^3$$

Table 5 -- Pond Stage Volume Relationship

Pond				
Stage (ft)	Elevation (ft)	Area (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	∫ Volume (ft <sup>3</sup> )
0.0	15.0	22,236	0	0
0.4	15.4	23,400	9,524	9,524
1.0	16.0	25,384	23,810	23,810
2.0	17.0	28,589	26,987	50,797
2.5	17.5	30,213	14,700	65,497

This volume will be retained within 0.27 ft above the normal water level of the proposed pond. The initial weir of the outlet control structure has been set at elevation 15.4 ft, above the volume control elevation, such that the water quality volume will not escape the site. This volume will then be dissipated onsite through the use of evapotranspiration and irrigation. It was assumed a minimum of 1 inch per week will be needed for irrigation with an additional 20% loss during operation due to evapotranspiration, resulting in a total use rate of 1.2 inches per week. In doing so, the complete water quality volume will be used within a 12 ½ day window after a rainfall event.

Irrigation Volume: 9,524 ft<sup>3</sup> = 0.219 Ac-Ft  
 Irrigation Rate: 1.2 inches per week  
 Irrigation Area: 1.25 acres  
 Drawdown Time: (0.219 Ac-Ft) / [(1.2 in/wk) x (1.25 Ac) x (1 ft-wk/84 in-days)] = 12.3 Days

# Effective Impervious



Beaufort County Animal Services  
 Proposed Conditions with credits for BMPs  
 Effective Impervious Analysis Method from BC BMP Handbook  
 11/29/2016

Item	Site Element	Area (acres)	Volume Control BMP	Effective Imperviousness (%)	Impervious Developed Area (acres)	Pervious Developed Area (acres)	Dedicated Open Space (acres)
1	Woods (D Soils)	1.56		0%	0.000	0.0	1.56
2	Developed Open Space (D Soils)	2.18		0%	0.000	2.2	0
3	Pervious Parking (D Soils)	0.18	Porous pavement	0%	0.000	0.180	0
4	Roof (D Soils)	0.45	Irrigation Reuse (Captured 2-in volume)	40%	0.180	0.270	0
5	Asphalt & Concrete (D Soils)	1.09	Irrigation Reuse (Captured 2-in volume)	40%	0.436	0.654	0
6	Wet Detention Pond	0.77		0%	0.000	0.0	0.77
	Total Area (acres)	6.23			0.616	3.28	2.33
	% Total Area				9.9%	52.7%	37.4%

**SITE CHARACTERIZATION:**

Total Site Area	= 6.23 acres
Impervious Developed Area	= 0.62 acres
Pervious Developed Area	= 3.28 acres
Dedicated Open Space	= 2.33 acres
Imperviousness of Developed Area ( $I_{DEV}$ )	= 15.9 %
Effective Imperviousness of Total Site	= 9.9%

**PHOSPHORUS:**

Base Required Pollutant Removal	= 15.92
Required Total Phosphorus Removal	= 0.0
Primary BMP Type (wet detention)	= 60%
Percent of Developed Area Served	= 72%
Calculated Primary BMP Removal	= 43.2

43.2% > 0.0% so BMPs are adequate for Phosphorus Removal

**FECAL COLIFORM:**

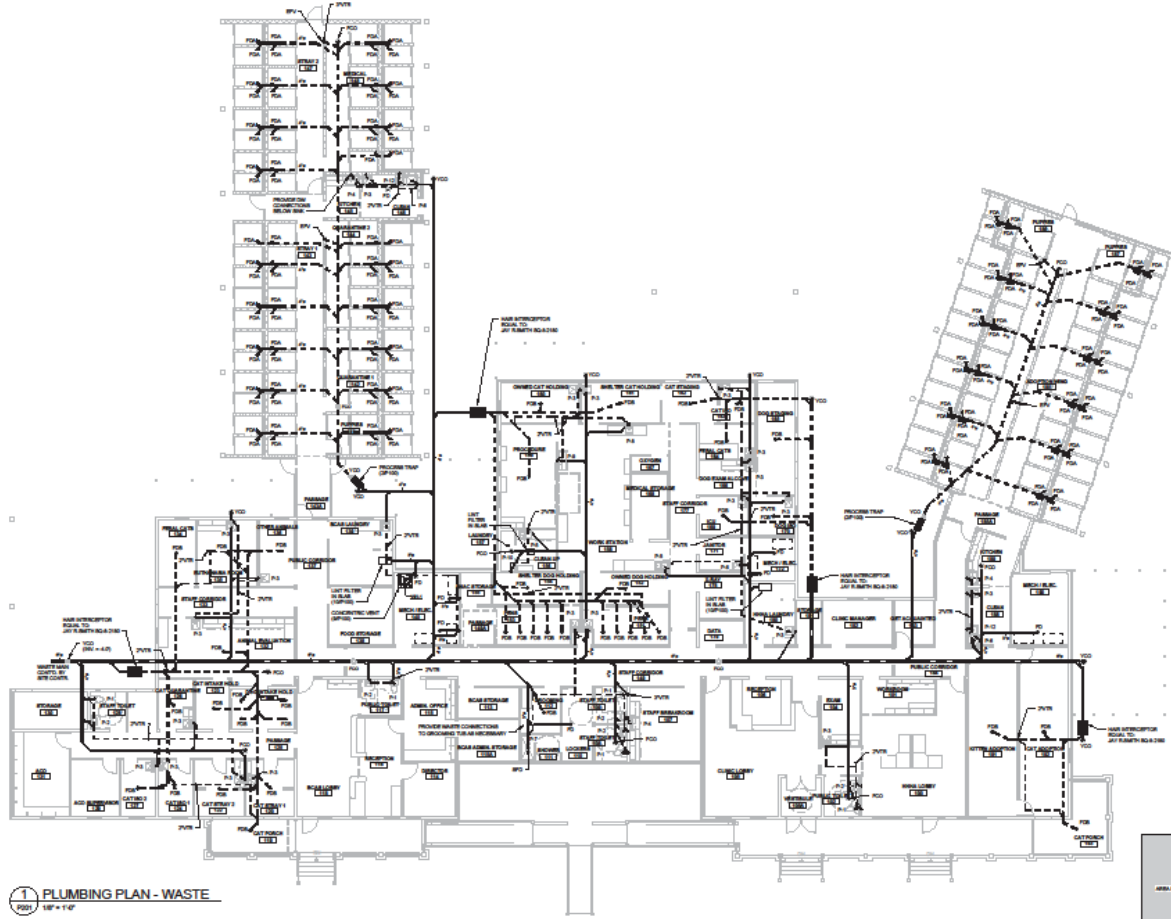
Base Required Pollutant Removal	= 52.85
Required Total Bacteria Removal	= 24.67
Primary BMP Type (wet detention)	= 80% Fecal Coliform Removal
Percent of Developed Area Served	= 72%
Calculated Primary BMP Removal	= 57.6

57.6% > 24.67% so BMPs are adequate for Bacteria Removal

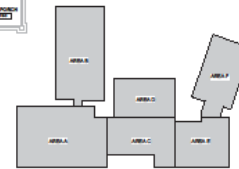
**NITROGEN:**

Base Required Pollutant Removal	= 15.92
Required Total Nitrogen Removal	= 0.0
Primary BMP Type (wet detention)	= 35% Nitrogen Removal
Percent of Developed Area Served	= 72%
Calculated Primary BMP Removal	= 25.2

25.2% > 0.0% so BMPs are adequate for Nitrogen Removal



**1 PLUMBING PLAN - WASTE**  
1/8" = 1'-0"



 **KEY PLAN**



**McKNIGHT-SMITH  
WARD & GRIFFIN**  
CORPORATE ARCHITECTURE  
500 WASHINGTON STREET, SUITE 300  
SPRINGFIELD, MASSACHUSETTS 01104

AREA / DATE / REVISION

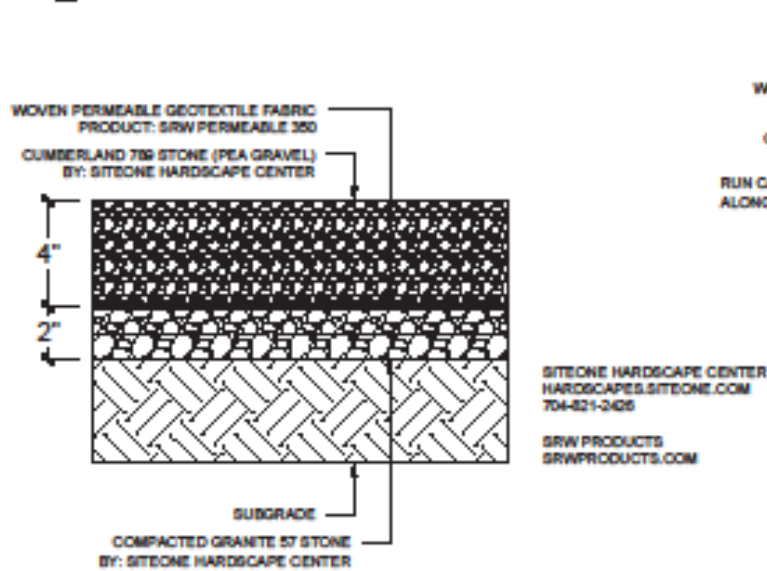
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**BCAS/HHA ANIMAL SERVICES COMPLEX**  
COUNTY OF BEAUFORT, NC  
110 PRITCHER POINT ROAD, OAK TIE, SC 29909

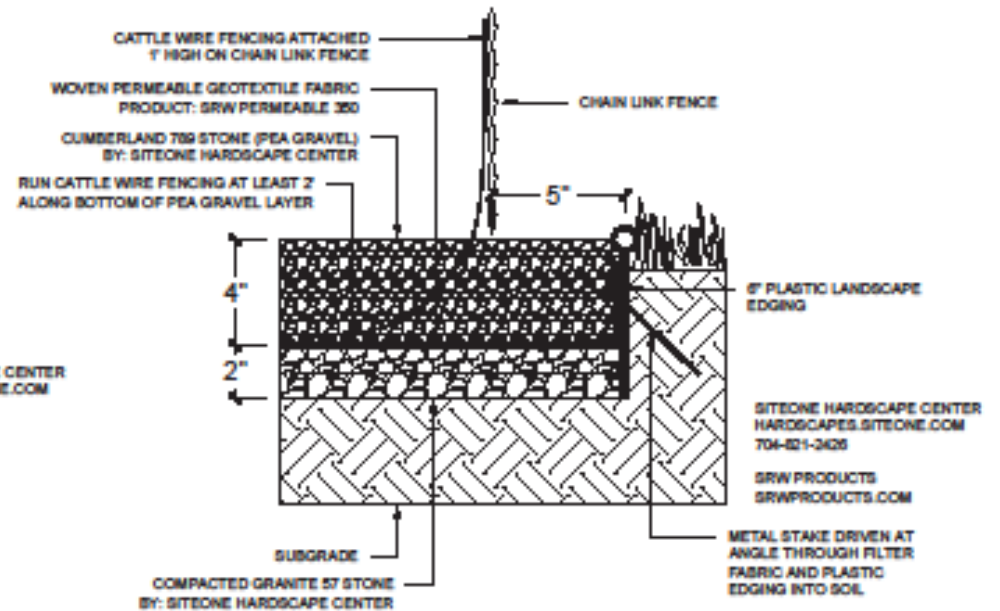
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# Pea Gravel



**NOTES:**

1. GEOTEXTILE FABRIC SHEETS TO HAVE AN 18" OVERLAP.
2. GEOTEXTILE FABRIC SHEETS AND OVERLAPPING FABRIC SEAMS TO BE SECURED WITH 8", 11 GAUGE LANDSCAPE STAPLES SPACED 48" O.C.



**NOTES:**

1. CATTLE WIRE FENCING TO BE ATTACHED BY WIRE TO CHAIN LINK FENCE EVERY 4 LINEAR FEET.
2. CATTLE WIRE FENCING TO BE SECURED TO THE GROUND BY THE SAME LANDSCAPE STAPLES USED FOR THE GEOTEXTILE FABRIC.

5  
L201

## PEA GRAVEL SURFACING

N.T.S.

6  
L201

## PEA GRAVEL AT FENCE BORDER

N.T.S.

# Aerial View

