

**LINCOLN COUNTY PLANNING & INSPECTIONS DEPARTMENT**

302 NORTH ACADEMY STREET, SUITE A, LINCOLNTON, NORTH CAROLINA 28092  
704-736-8440 OFFICE 704-736-8434 INSPECTION REQUEST LINE 704-732-9010 FAX

To: Board of Commissioners  
Planning Board

From: Randy Hawkins, Zoning Administrator

Date: February 13, 2015

Re: Watershed Conditional Use Permit #19  
Newna Properties, LLC  
Parcel ID# 89695

*The following information is for use by the Lincoln County Board of Commissioners and Planning Board at their joint meeting/public hearing on March 2, 2015.*

**REQUEST**

The applicant is requesting a conditional use permit to allow the use of the high-density option in the WS-IV Critical Area of the Catawba/Lake Norman Watershed. The applicant is proposing to develop a 0.92-acre lot with a 6,000-square-foot medical office building and parking areas. The high-density option would allow the development to have a built-upon surface area covering up to 50 percent of the site, with the use of engineered stormwater controls. (Otherwise, in this watershed district, non-residential developments that require an erosion control plan are limited to a built-upon area of 24 percent.)

**SITE AREA AND DESCRIPTION**

The property is located on the west side of N.C. 16 Business about 500 feet north of Townsend Drive in Catawba Springs Township. It is zoned B-N (Neighborhood Business) and is adjoined by property zoned B-N, CZ B-G (Conditional Zoning General Business), I-G (General Industrial) and R-CR (Residential and Commercial Recreational). Land uses in this area include business, industrial and residential. This property is part of an area identified by the NC 16 Corridor Vision Plan as the South Triangle community center, where services and activities for the surrounding area are recommended to be concentrated.

## HIGH-DENSITY OPTION REQUIREMENTS

Under the water-supply watershed regulations of the Lincoln County Unified Development Ordinance, the Catawba/Lake Norman Watershed is designated for the use of the high-density option. The option requires the use of stormwater control structures to control and treat the runoff from the first one-inch of rain. The structures must be designed to meet the Best Management Practices (BMP) standards of the N.C. Department of Environment and Natural Resources. In this case, the plans call for a bioretention basin and an area of pervious pavement.

The regulations require the developer to post a bond or other financial security in an amount not less than 1.25 times the cost of constructing the necessary stormwater control structures. In addition, a binding agreement must be signed, requiring the owner to maintain, repair and, if necessary, reconstruct the structure in accordance with an approved operations and maintenance plan. Once the stormwater control structure have been constructed and inspected, and prior to the release of the financial security, the applicant is required to deposit with the county either cash or a similar approved instrument in an amount equal to 15 percent of the total construction cost or 100 percent of the cost of maintaining the structure over a 20-year period, whichever is greater.



# County Of Lincoln, North Carolina

## Planning Board

Applicant **Newna Properties, LLC**

Application No. **WSCUP #19**

Parcel# **89695**

Zoning District **B-N**

Proposed Conditional Use **high-density option in Catawba/Lake Norman Watershed**

### **FINDINGS OF FACT**

1. The use will not materially endanger the public health or safety if located where proposed and developed according to plan. YES \_\_\_\_\_ NO \_\_\_\_\_

FACTUAL REASONS CITED: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. The use meets all required conditions and specifications. YES \_\_\_\_\_ NO \_\_\_\_\_

FACTUAL REASONS CITED: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. The use will not substantially injure the value of adjoining or abutting property unless the use is a public necessity. YES \_\_\_\_\_ NO \_\_\_\_\_

FACTUAL REASONS CITED: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. The location and character of use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located and will be in general conformity with the Land Use Plan for the area in question. YES \_\_\_\_\_ NO \_\_\_\_\_

FACTUAL REASONS CITED: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

After having held a Public Hearing on \_\_\_\_\_ and in light of the Findings of Facts listed herein, the following action was taken by the Lincoln County Planning Board:

\_\_\_\_\_  
\_\_\_\_\_

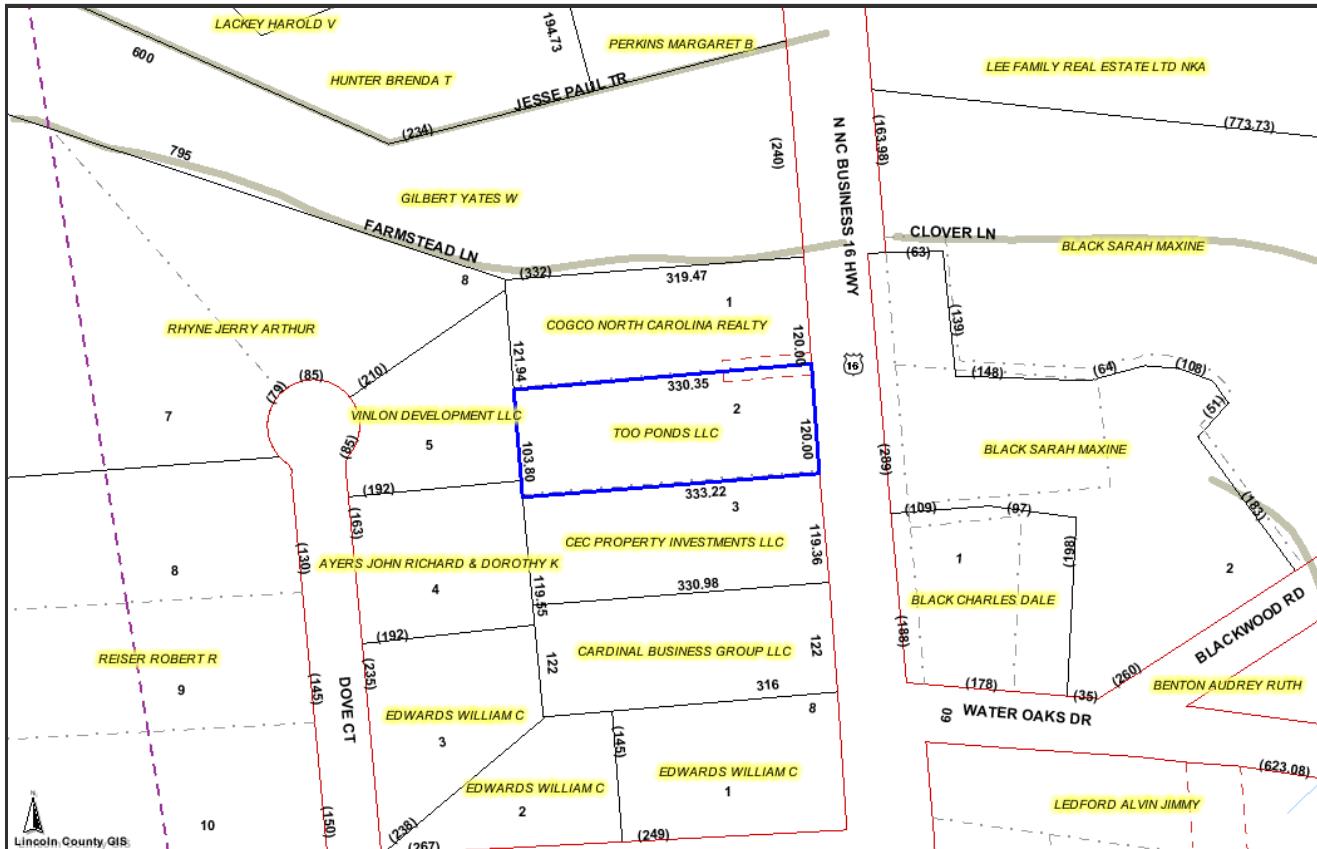
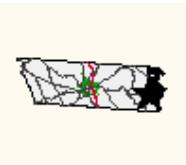
In recommending such Conditional Use, the following conditions were recommended by the Lincoln County Planning Board:

\_\_\_\_\_  
\_\_\_\_\_

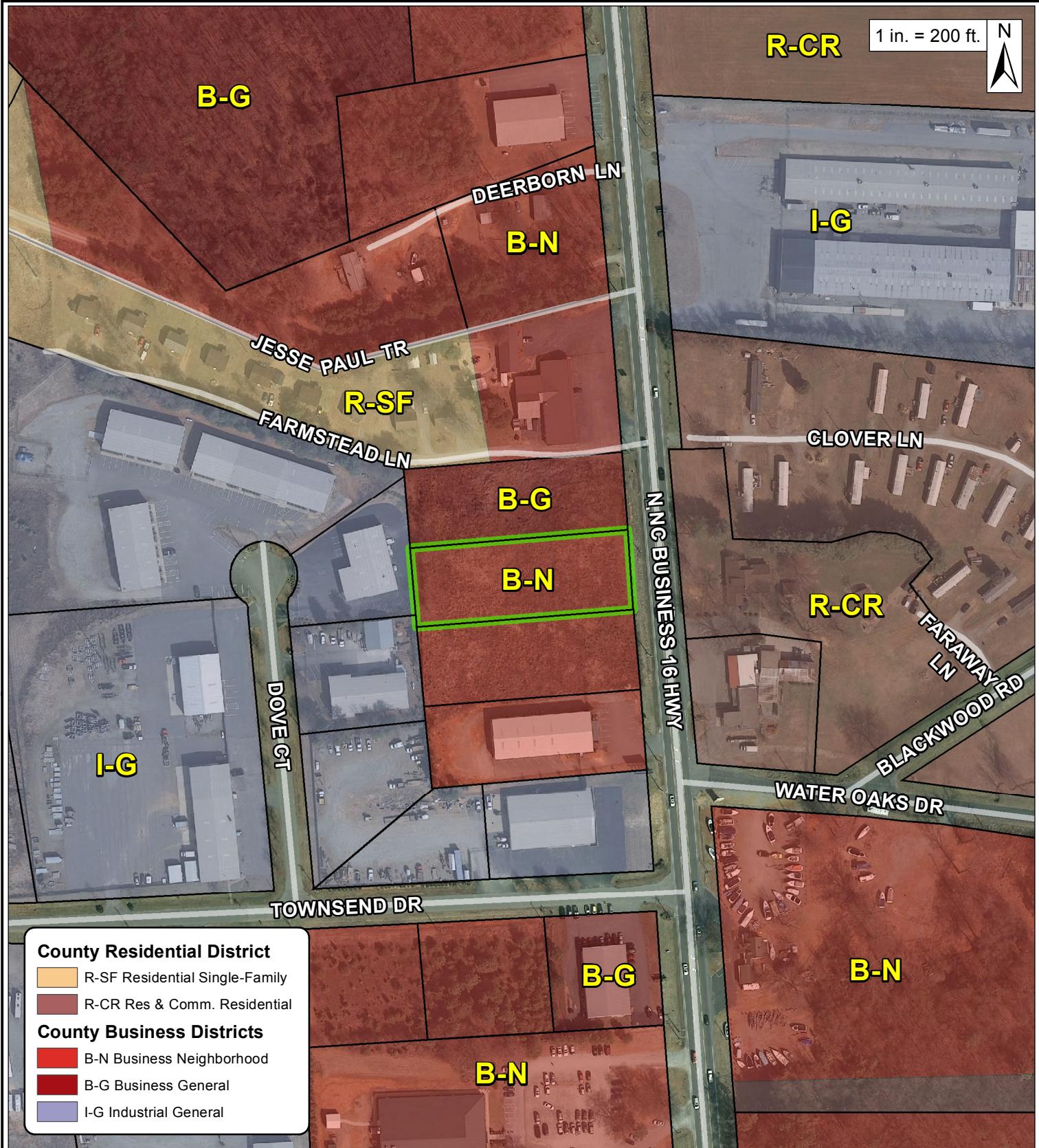


## Lincoln County, NC

Office of the Tax Administrator, GIS Mapping Division  
 Lincoln County and its mapping contractors assume no legal responsibility for  
 the information contained on this map. This map is not to be used for land  
 conveyance. The map is based on NC State Plane Coordinate System 1983 NAD.  
 Date: 1/21/2015 Scale: 1 Inch = 200 Feet



PHOTOS		PARCEL INFORMATION FOR 4602-68-4392																																										
 <b>Photo Not Available</b>		<p>Parcel ID <b>89695</b> Owner <b>TOO PONDS LLC</b>    Map <b>4602-02</b> Mailing <b>PO BOX 99</b>    Account <b>0210915</b> Address <b>LINCOLNTON NC 28093</b>    Deed <b>2167-779</b> Recorded <b>12/30/2009</b> Sale Price <b>0</b>    Land Value <b>\$300,562</b> Total Value <b>\$300,562</b> Previous Parcel <b>89432</b></p> <p>----- All values are for tax year 2014. -----</p> <p>Subdivision <b>Lot 2 TOO PONDS LLS RECOMBINATION</b> Plat <b>15-212</b>    Description <b>2 TOO PONDS LLC RECOMBINE</b> Deed Acres <b>1</b>    Address <b>N NC 16 HWY</b> Tax Acres <b>0.92</b>    Township <b>CATAWBA SPRINGS</b> Tax/Fire District <b>EAST LINCOLN / EL SEWER</b></p> <p><b>Improvement</b> No Improvements</p> <table> <tr> <td>Zoning District <b>B-N</b></td> <td>Calculated Acres <b>0.92</b></td> <td>Voting Precinct <b>TRIANGLE (TR30)</b></td> <td>Calculated Acres <b>0.92</b></td> </tr> <tr> <td><b>Watershed Class</b></td> <td></td> <td><b>Sewer District</b></td> <td></td> </tr> <tr> <td>WS-IVC</td> <td>0.92</td> <td>In the sewer District</td> <td></td> </tr> <tr> <td><b>2000 Census County</b></td> <td></td> <td><b>Tract</b></td> <td></td> </tr> <tr> <td>37109</td> <td></td> <td>071100</td> <td>2016</td> </tr> <tr> <td>37109</td> <td></td> <td>071200</td> <td>4028</td> </tr> <tr> <td><b>Flood</b></td> <td><b>Zone Description</b></td> <td><b>Block</b></td> <td></td> </tr> <tr> <td>X</td> <td>NO FLOOD HAZARD</td> <td>Panel</td> <td></td> </tr> <tr> <td></td> <td></td> <td>3710460200</td> <td>0.92</td> </tr> </table>							Zoning District <b>B-N</b>	Calculated Acres <b>0.92</b>	Voting Precinct <b>TRIANGLE (TR30)</b>	Calculated Acres <b>0.92</b>	<b>Watershed Class</b>		<b>Sewer District</b>		WS-IVC	0.92	In the sewer District		<b>2000 Census County</b>		<b>Tract</b>		37109		071100	2016	37109		071200	4028	<b>Flood</b>	<b>Zone Description</b>	<b>Block</b>		X	NO FLOOD HAZARD	Panel				3710460200	0.92
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### WATERSHED - CONDITIONAL USE PERMIT



Lincoln County  
Planning & Inspections  
302 N. Academy St.  
Suite A  
Lincolnton, NC 28092

Application	WSCUP #19
NCPIN#	4602-68-4392
PID#	89695

- Property Location(s)

See Attached Application for Parcel Information  
Property Location(s) Outlined in Red

1 in. = 200 ft.



R-CR

I-G

CLOVER LN

R-CR

FARAWAY LN  
BLACKWOOD RD

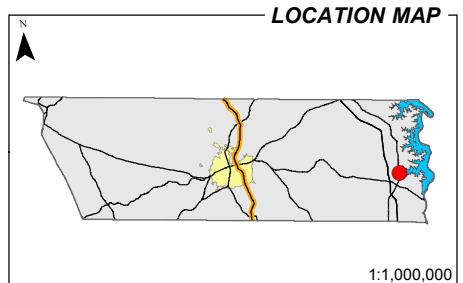
WATER OAKS DR

B-N

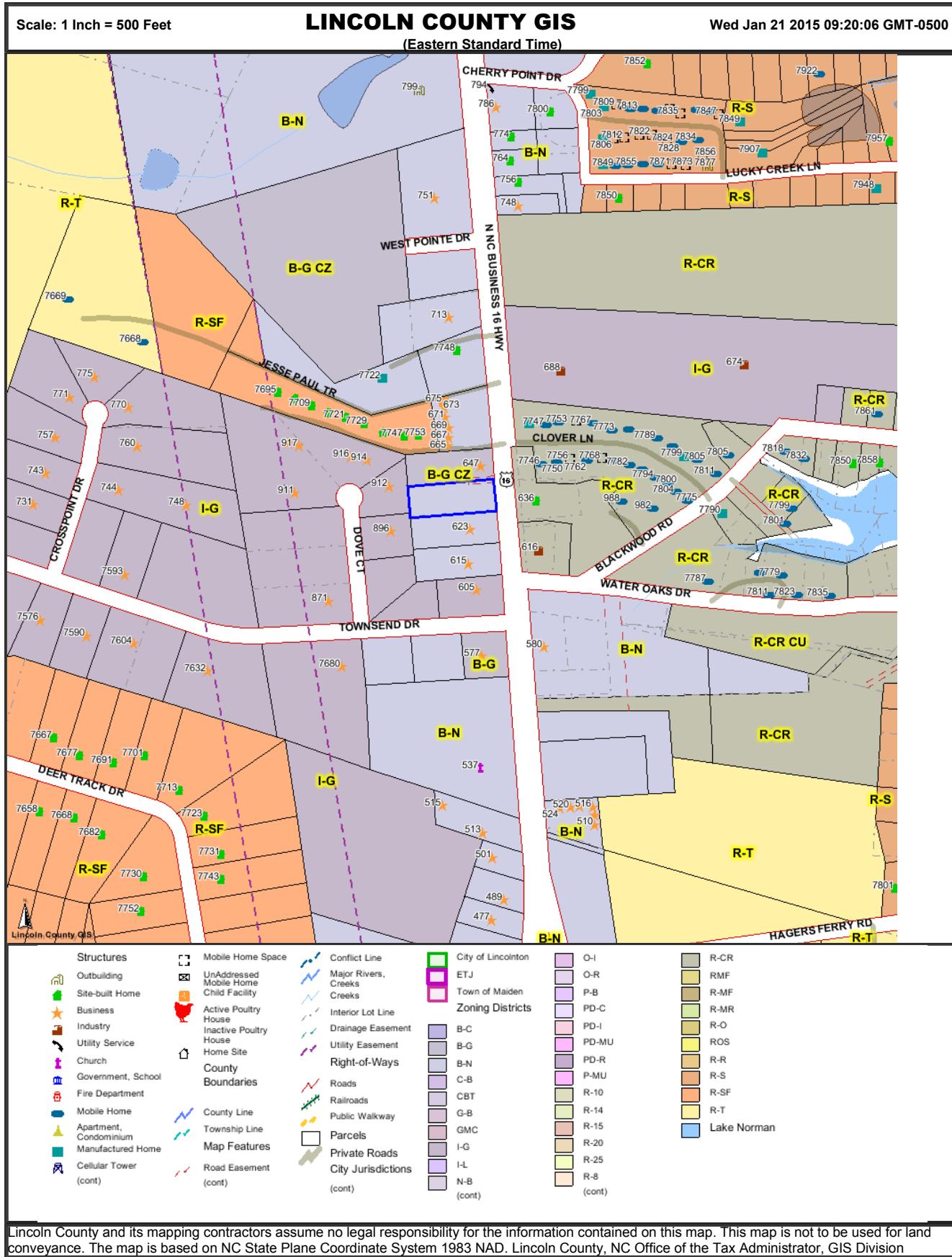
B-G

B-N

### LOCATION MAP



Property Location(s)





## **Watershed Conditional Use Permit**

### **Application**

Lincoln County Planning and Inspections Department  
Zoning Administrator  
302 N. Academy St., Suite A, Lincolnton, NC 28092

### **PART I**

Applicant Name Newna Properties, LLC  
Applicant Address 8107 E. Andrews Drive, Denver, N.C. 28037  
Applicant Phone Number 704-483-3421 or 704-740-7605  
Property Owner Name Newna Properties, LLC (to be acquired from Two Ponds, LLC)  
Property Owner Address 8107 E. Andrews Drive, Denver, N.C. 28037  
Property Owner Phone Number 704-483-3421 or 704-740-7605

### **PART II**

Property Location NC Hwy 16 Business  
Property ID (10 digits) 4602684392 Property size 0.92  
Parcel # (5 digits) 89695 Deed Book(s) 2167 Page(s) 779

### **PART III**

Watershed District WS IV Critical

Briefly describe how the property is being used and any existing structures.

Vacant lot

Briefly describe the proposed project and the why it would require a Watershed Conditional Use Permit.

High density option required for medical office building with parking. Development is not possible at low density option (24% max impervious)

**\$1,000.00 APPLICATION FEE MUST BE RECEIVED BEFORE PROCESSING.**

*I hereby certify that all knowledge of the information provided for this application and attachments is true and correct to the best of my knowledge.*

William F. Nada, Jr. W.F.N. January 14th 2015  
Applicant's Signature Date

**APPLICANT'S PROPOSED FINDINGS OF FACT**  
**FOR A CONDITIONAL USE PERMIT**

Application No. **WSCUP #19**

Applicant **NEWNA Properties, LLC**

Parcel ID# **89695**

Zoning District **B-N**

Proposed Conditional Use **high-density option in Catawba/Lake Norman Watershed**

**PROPOSED FINDINGS**

1. The use will not materially endanger the public health or safety if located where proposed and developed according to plan.

**The proposed medical office building will be accessed by an existing shared driveway that was permitted by NCDOT. The proposed building will be built to code.**

2. The use meets all required conditions and specifications.

**The stormwater plans have been reviewed by staff and found to comply with the requirements for the high-density option.**

3. The use will not substantially injure the value of adjoining or abutting property unless the use is a public necessity.

**This property is adjoined on both sides by property zoned business and on the rear by property zoned industrial.**

4. The location and character of use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located and will be in general conformity with the Land Use Plan for the area in question.

**This is an existing business area. This property is part of an area designated by the NC 16 Corridor Vision Plan as a community center, where commercial development should be concentrated.**

# STORMWATER MAINTENANCE PLAN

FOR

## DENVER MEDICAL OFFICE NEWNA PROPERTIES, LLC

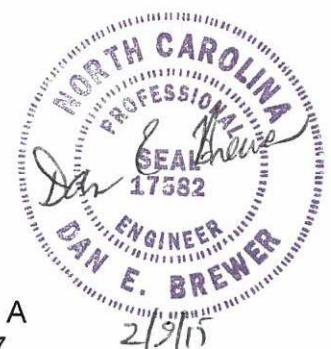
DENVER, LINCOLN COUNTY, NORTH CAROLINA

February 6, 2015

PREPARED BY:



128 Talbert Road, Suite A  
Mooresville, NC 28117  
Phone: (704) 662-0100  
Fax: (704) 662-0101



**STORMWATER MAINTENANCE PLAN  
FOR  
DENVER MEDICAL OFFICE, NEWNA PROPERTIES, LLC  
DENVER, LINCOLN COUNTY, NORTH CAROLINA**

The purpose of this plan is to assist in keeping a maintenance record and in the making of repairs of the referenced Best Management Practice (BMP). The maintenance record shall be written in the attached log and kept in a known set location. Any deficient BMP elements noted in the inspection shall be corrected, repaired, or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

**INTRODUCTION**

The Denver Medical Office project includes onsite stormwater treatment devices that include a bioretention basin, pervious pavement with stormwater detention. This stormwater maintenance plan has been designed and prepared in accordance with N.C. Department of Environment and Natural Resources regulations and with the Lincoln County Unified Development Ordinance, §7.3.9, High Density Option.

The Denver Medical Office is located within a designated WS-IV Protected Area of the Catawba/Lake Norman Watershed. With the high-density option, engineered stormwater controls are required to control and treat runoff from the first one inch of rainfall for development containing a built-upon area of 24 to 50 percent. The use of a bioretention basin in accordance with the NCDENR Chapter 12, and pervious pavement in accordance with the NCDENR Chapter 18, has been designed to achieve a minimum of 85 percent of total suspended solids.

**FINANCIAL GUARANTEES**

All new stormwater control structures approved employing the high density option require the posting of adequate financial assurance for the purpose of constructing, maintaining, repairing or reconstructing said devices.

1. If the Board of Commissioners approves the use of the high density option for a particular project, it may do so only after the applicant has posted a surety bond, cash, or equivalent security, in an amount not less than 1.25 times the cost of constructing the necessary stormwater control structure(s). Such financial security shall be made payable to Lincoln County and shall be in a form prescribed by the Board of Commissioners. All construction costs shall be verified by the County and the County may assess the applicant for actual costs associated with such verification. The total cost of the stormwater control structure shall include the value of all materials such as piping and other structures, seeding and soil stabilization, design and

engineering, grading, excavation, fill, and etc. The costs shall not be prorated as part of a larger project, but rather shall be priced as an individual project.

2. Once the stormwater control structure(s) has been constructed and inspected in the manner provided in §7.3.9.G, and approved by the Board of Commissioners, the Board of Commissioners may authorize the release of up to 75 percent of the surety bond or other equivalent device outlined in §7.3.9.E.1. The remaining portion of the surety bond or equivalent device may be released to the owning entity in accordance with §7.3.9.G.
3. Prior to said release, the applicant shall be required to deposit with the County either cash or similar instrument approved by the Board of Commissioners in an amount equal to 15 percent of the total construction cost (See §7.3.9.E.1) or 100 percent of the cost of maintaining, repairing, or reconstructing said structure over a 20 year period, whichever is greater. The estimated cost of maintaining the stormwater control structure shall be consistent with the approved operation and maintenance plan provided by the applicant as outlined in §7.3.9.D.

#### **DEFAULT**

1. Upon default of the applicant to complete the stormwater control structure as spelled out in the performance bond or other equivalent security, the Board of Commissioners may obtain and use all or any portion of the funds necessary to complete the improvements based on actual construction costs. The Board of Commissioners shall return any funds not spent in completing the improvements to the owning entity.
2. Upon default of the owning entity to maintain, repair and, if necessary, reconstruct the stormwater control structure in accordance with the approved operations and maintenance plan, the Board of Commissioners shall obtain and use any portion of the security outlined in §7.3.9.F to make necessary improvements based on the actual costs borne by the County to make such improvements.

#### **INSPECTIONS OF NEWLY CONSTRUCTED STRUCTURES**

All new stormwater control structures shall be inspected by the County after the owning entity notifies the Director that all construction has been completed. At this inspection the owning entity shall provide:

1. A signed deed, related easements, and survey plat for the structure in a manner suitable for filing with the Lincoln County Register of Deeds Office, if ownership of the stormwater control structure(s) is to be transferred to another person, firm, or entity. (This requirement will be waived for any repair work when such deed has previously been filed.)

2. A certification by an engineer or landscape architect (to the extent allowable by the General Statutes) stating that the stormwater control structure is complete and consistent with the approved Plan and all specifications previously stipulated by the County.
3. The Director shall forthwith present the materials submitted by the owning entity along with the County's inspection report to the Board of Commissioners for their review and approval. If the Board of Commissioners approves the inspection report and accepts the certification, deed and easements, the Director shall forthwith file said deed with the Lincoln County Register of Deeds Office. Release of up to 75 percent of the surety bond or equivalent security as called for in §7.3.9.E.1 shall be made in a manner prescribed in §7.3.9.E.2 and §7.3.9.E.3.
4. If deficiencies are found as a result of the inspection, the Board of Commissioners shall direct the owning entity to make necessary improvements. Reinspections will be made thereafter. No release of any funds shall be made by the County until all deficiencies are properly addressed to the County's satisfaction.
5. No sooner than one year after approval of the stormwater control structure(s) by the County, the owning entity may petition the Board of Commissioners to release the remaining value of the posted bond or security called for in §7.3.9.E.1. Upon receipt of said petition, the County shall forthwith inspect the stormwater control structure to determine whether the structure is performing as designed and intended. Once the inspection is made, the Director shall forthwith present the inspection report and recommendations to the Board of Commissioners.
6. An occupancy permit shall not be issued for any structure within the permitted development until the Board of Commissioners approves the stormwater control structure in the manner as herein prescribed.

#### **ANNUAL INSPECTION OF STORMWATER STRUCTURES**

1. All stormwater control structures shall be inspected by the County on an annual basis to determine whether the structures are performing as designed and intended. Records of inspection shall be maintained on forms approved or supplied by the North Carolina Department of Environment and Natural Resources (NCDENR). Annual inspections shall begin within one year of approval of the Board of Commissioners approval of the filing date of the deed for the stormwater control structure. A fee, in accordance with the fee schedule adopted by the Board of Commissioners shall be charged to the owning entity for annual inspections (and re-inspections) made. A copy of each inspection report shall be filed with the Director.
2. In the event the County's report indicates the need for corrective action or improvements, the Director shall notify the owning entity of the needed improvements and the date by which such improvements are to be completed. All improvements shall be consistent with the adopted

operations plan and specifications. Once such improvements are made, the owning entity shall forthwith contact the Director and ask that an inspection be made.

Permit Number: \_\_\_\_\_  
(to be provided by DWQ)  
Drainage Area Number: \_\_\_\_\_

## Bioretention Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

Important operation and maintenance procedures:

- Immediately after the bioretention cell is established, the plants will be watered twice weekly if needed until the plants become established (commonly six weeks).
- Snow, mulch or any other material will NEVER be piled on the surface of the bioretention cell.
- Heavy equipment will NEVER be driven over the bioretention cell.
- Special care will be taken to prevent sediment from entering the bioretention cell.
- Once a year, a soil test of the soil media will be conducted.

After the bioretention cell is established, I will inspect it **once a month and within 24 hours after every storm event greater than 1.0 inches (or 1.5 inches if in a Coastal County)**. Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

BMP element:	Potential problems:	How I will remediate the problem:
The entire BMP	Trash/debris is present.	Remove the trash/debris.
The perimeter of the bioretention cell	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
The inlet device: pipe, stone verge or swale	The pipe is clogged (if applicable).	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged (if applicable).	Replace the pipe.
	Erosion is occurring in the swale (if applicable).	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
	Stone verge is clogged or covered in sediment (if applicable).	Remove sediment and clogged stone and replace with clean stone.

BMP element:	Potential problems:	How I will remediate the problem:
The pretreatment area	Flow is bypassing pretreatment area and/or gullies have formed.	Regrade if necessary to route all flow to the pretreatment area. Restabilize the area after grading.
	Sediment has accumulated to a depth greater than three inches.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and restabilize the pretreatment area.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand.
The bioretention cell: vegetation	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices.
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Tree stakes/wires are present six months after planting.	Remove tree stake/wires (which can kill the tree if not removed).
The bioretention cell: soils and mulch	Mulch is breaking down or has floated away.	Spot mulch if there are only random void areas. Replace whole mulch layer if necessary. Remove the remaining mulch and replace with triple shredded hard wood mulch at a maximum depth of three inches.
	Soils and/or mulch are clogged with sediment.	Determine the extent of the clogging - remove and replace either just the top layers or the entire media as needed. Dispose of the spoil in an appropriate off-site location. Use triple shredded hard wood mulch at a maximum depth of three inches. Search for the source of the sediment and remedy the problem if possible.
	An annual soil test shows that pH has dropped or heavy metals have accumulated in the soil media.	Dolomitic lime shall be applied as recommended per the soil test and toxic soils shall be removed, disposed of properly and replaced with new planting media.

<b>BMP element:</b>	<b>Potential problems:</b>	<b>How I will remediate the problem:</b>
<b>The underdrain system (if applicable)</b>	Clogging has occurred.	Wash out the underdrain system.
<b>The drop inlet</b>	Clogging has occurred.	Clean out the drop inlet. Dispose of the sediment off-site.
	The drop inlet is damaged	Repair or replace the drop inlet.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the NC Division of Water Quality 401 Oversight Unit at 919-733-1786.

## Permeable Pavement Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

At all times, the pavement shall be kept free of:

- Debris and particulate matter through frequent blowing that removes such debris, particularly during the fall and spring.
- Piles of soil, sand, mulch, building materials or other materials that could deposit particulates on the pavement.
- Piles of snow and ice.
- Chemicals of all kinds, including deicers.

The permeable pavement will be inspected **once a quarter**. Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

BMP element:	Potential problem:	How to remediate the problem:
The perimeter of the permeable pavement	Areas of bare soil and/or erosive gullies	Regrade the soil if necessary to remove the gully, then plant ground cover and water until established.
	A vegetated area drains toward the pavement.	Regrade the area so that it drains away from the pavement, then plant ground cover and water until established.
The surface of the permeable pavement	Trash/debris present	Remove the trash/debris.
	Weeds	Do not pull the weeds (may pull out media as well). Spray them with a systemic herbicide such as glyphosate and then return within the week to remove them by hand. (Another option is to pour boiling water on them or steam them.)
	Sediment	Vacuum sweep the pavement.
	Rutting, cracking or slumping or damaged structure	Consult an appropriate professional.
Observation well	Water present more than five days after a storm event	Clean out clogged underdrain pipes. Consult an appropriate professional for clogged soil subgrade.
Educational sign	Missing or is damaged.	Replace the sign.

# **APPENDIX**

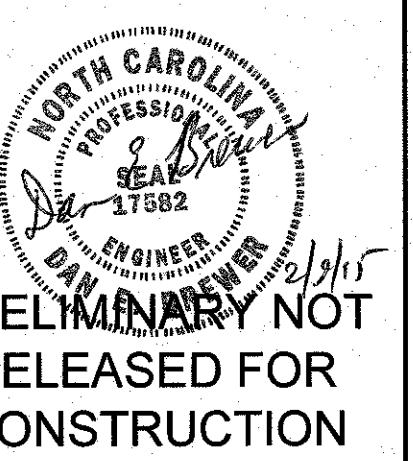
GRADING AND STORMWATER MANAGEMENT PLAN

BIORETENTION BASIN AND PERVIOUS PAVEMENT DETAILS

OPINION OF PROBABLE COSTS FOR BIORENTION BASIN

OPINION OF PROBABLE COSTS FOR PERVIOUS PAVEMENT





PRELIMINARY NOT  
RELEASED FOR  
CONSTRUCTION

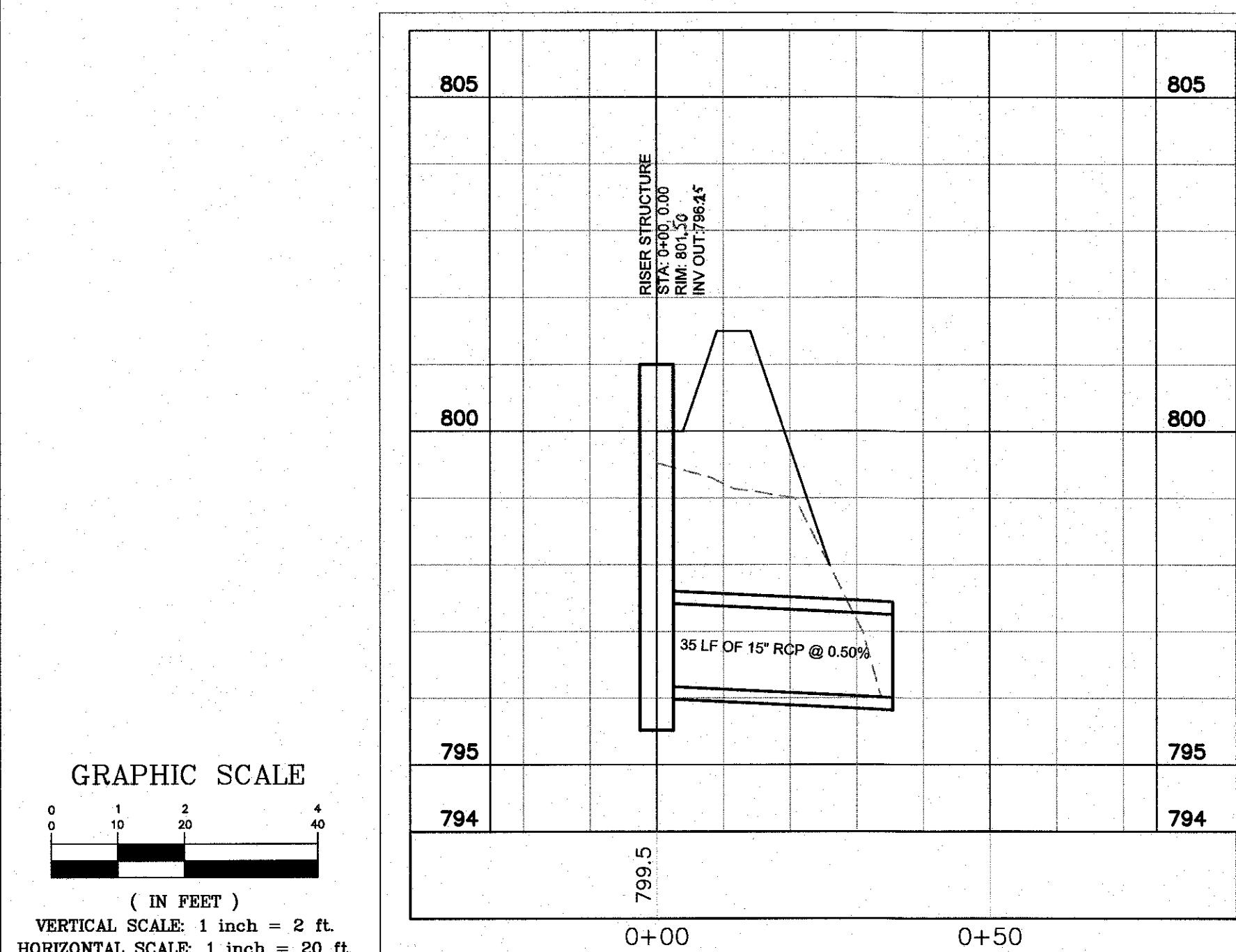
NC LICENSE # F-0891

# DENVER MEDICAL OFFICE

**A PROPERTIES, LLC**  
07 E. ANDREWS DRIVE  
DENVER, NC 28037

**A PROPERTIES**  
07 E. ANDREWS DRIVE  
DENVER, NC 28037

BIORETENTION DIMENSIONS/ELEVATIONS (FT)								
BMP NO	A	B	C	E	F	G	H	I
BMP-1	799.25	800.25	795.25	796.25	5x5	4'	801.5	799.00



## BIORETENTION OUTFALL PIPE

NEW STABILIZATION TIMEFRAMES			
Site Area Description	Stabilization	Timeframe Exceptions	
 Perimeter dikes, swales, ditches and slopes	7 days	None	
 High Quality Water (HQW) Zones	7 days	None	
 Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.	
 Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.	
 All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.	

## TEMPORARY SEEDING FOR WARM AND COOL SEASON

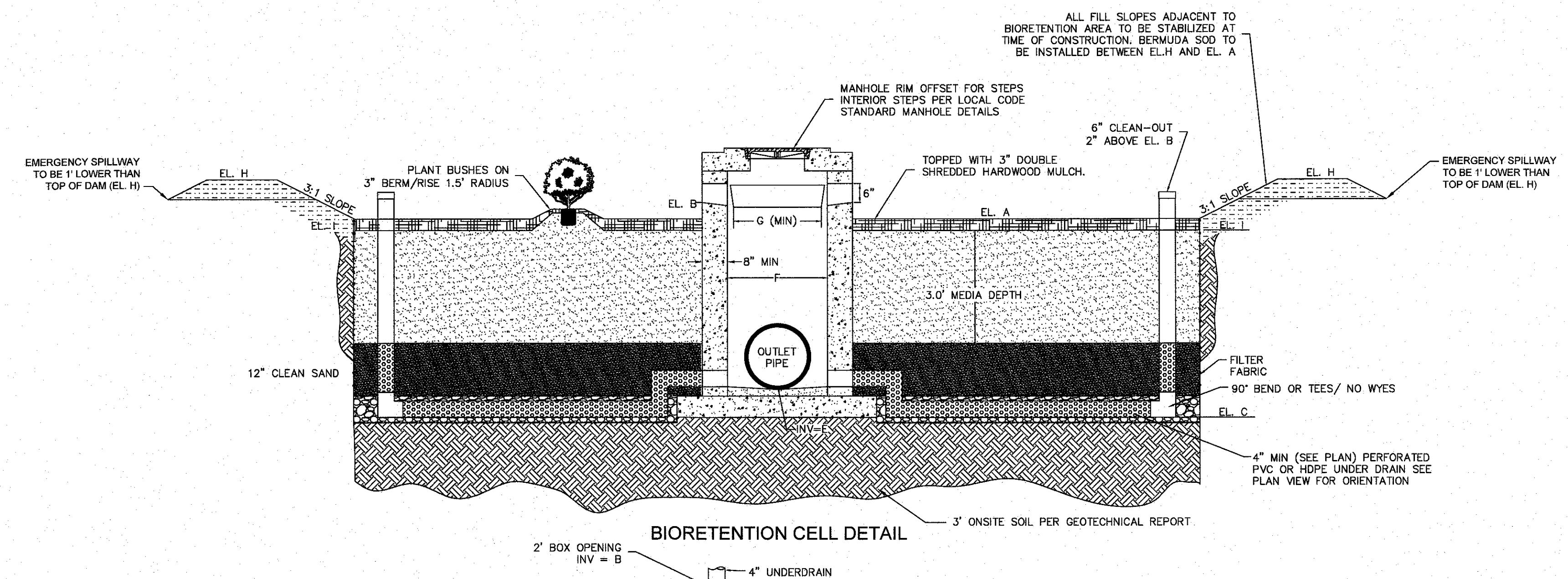
EARLY SUMMER SEASON		STEEP SLOPES
SEEDING MIXTURE	40 LBS/ACRE OF GERMAN MILLET 80 LBS/ACRE OF TALL FESUE	120 LBS/ACRE RYE (GRAIN) 80 LBS/ACRE TALL FESUE
SEEDING DATES	MAY 1 - AUGUST 15  REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE.  APPLY 4000 LBS/ACRE STRAW OR EQUIVALENT HYDROSEEDING.	October 25 - December 30  BETWEEN DECEMBER 30 - FEBRUARY 15, ADD 50 LBS/ACRE OF ANNUAL KOBE LESPEDEZA.  APPLY 4000 LBS/ACRE STRAW OR EQUIVALENT HYDROSEEDING.
SEEDING AMENDMENTS	APPLY LIME AND FERTILIZER PER SOIL TESTS, OR 2000 LBS/ACRE LIMESTONE AND 750 LBS/ACRE 10-10-10 FERTILIZER.	APPLY LIME AND FERTILIZER PER SOIL TESTS, OR 2000 LBS/ACRE LIMESTONE AND 750 LBS/ACRE 10-10-10 FERTILIZER.

**SEEDING SCHEDULE (SEASONAL)**

GENTLE SLOPES		STEEP SLOPES
SEEDING MIXTURE	80 LBS/ACRE OF TALL FESUE	100 LBS/ACRE TALL FESUE 30 LBS/ACRE SERICEA LESPEDEZA (UNSCARIFIED AFTER AUGUST 15) 10 LBS/ACRE KOBE LESPEDEZA
SEEDING DATES	FALL: AUGUST 25 - OCTOBER 15 LATE WINTER: FEBRUARY 15 - APRIL 15  TO EXTEND SPRING SEEDING INTO JUNE, ADD 15 LBS/ACRE HULLED BERMUDAGRASS  OVERSEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.	FALL: AUGUST 25 - OCTOBER 15 LATE WINTER: FEBRUARY 15 - APRIL 15  TO EXTEND SPRING SEEDING INTO JUNE, ADD 15 LBS/ACRE HULLED BERMUDAGRASS  OVERSEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.
SEEDING AMENDMENTS	APPLY LIME AND FERTILIZER PER SOIL TESTS, OR 4000 LBS/ACRE LIMESTONE AND 1000 LBS/ACRE 10-10-10 FERTILIZER.	APPLY LIME AND FERTILIZER PER SOIL TESTS, OR 4000 LBS/ACRE LIMESTONE AND 1000 LBS/ACRE 10-10-10 FERTILIZER.

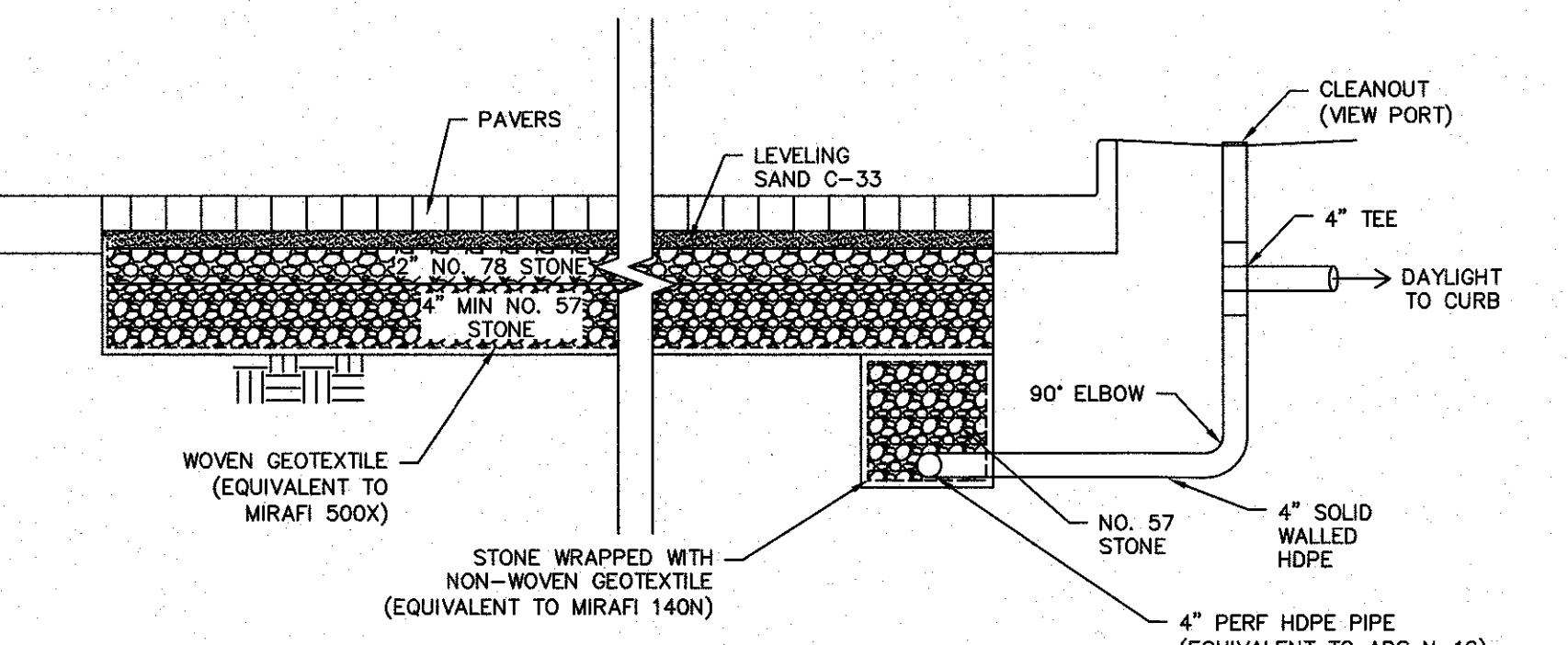
**NOTE 1**  
**GROUND COVER:** PROTECTIVE COVER MUST BE ESTABLISHED ON ALL DISTURBED AREAS WITHIN 21 CALENDAR DAYS AFTER LAND DISTURBING ACTIVITY IS COMPLETED OR HAS TEMPORARILY CEASED.

**NOTE 2**  
GRADED SLOPES AND FILLS: PROTECTIVE COVER MUST BE ESTABLISHED ON ALL GRADED SLOPES AND FILLS WITHIN 21 CALENDAR DAYS AFTER A PHASE OF GRADING IS COMPLETED OR HAS TEMPORARILY CEASED.



## OUTEALL PIPE SECTION VIEW

## OUTFALL PIPE PLAN VIEW



PERVIOUS PAVEMENT DETAIL  
SECTION A-A

NOTES:

1. ALTERNATE PERVIOUS PAVERS TO BE 4" PERVIOUS CONCRETE (ACI 522.1-08) OVER 6" STONE.
2. PERVIOUS PAVERS SHALL BE INSTALLED BY CERTIFIED CONTRACTOR.
3. SUBGRADE SLOPE WITHIN PAVER AREA SHALL BE 0.5% MAX.
4. PERVIOUS PAVEMENT SHALL NOT BE INSTALLED UNTIL THE DRAINAGE AREA IS STABILIZED.

#### PREVIOUS PAVEMENT DETAIL

NO. BY  
PROJECT  
DRAWN  
TITLE  
SHEET

FEET)

**C-3.0**



# ENGINEER'S ESTIMATE

128 Talbert Road, Suite A, Mooresville, NC 28117  
Phone: (704) 662-0100  
Fax: (704) 662-0101

PROJECT NAME: Denver Medical Office

LOCATION: Denver, NC

Bioretention Pond, Surety Bond

DATE PREPARED: February 6, 2015

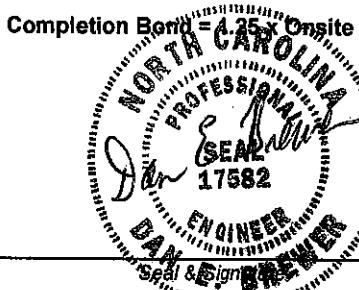
In the professional opinion of, Dan E. Brewer, as a duly registered Professional Engineer in the State of North Carolina, hereby certify that the probable costs for the new bioretention pond for the above project.

**Denver Medical Office – Engineer's  
Opinion of Probable Costs for New  
Bioretention Pond**

Description	Quantity	U/M	Unit Price	Extension
Excavation & Grading	160	CY	\$ 4.50	\$ 720.00
Media	100	CY	\$ 75.00	\$ 7,500.00
4" PVC Underdrain w/ filter fabric & stone	20	LF	\$ 20.00	\$ 400.00
4" PVC (solid)	6	LF	\$ 15.00	\$ 90.00
Class B Stone spillway	37.5	TON	\$ 20.00	\$ 750.00
Riser/Barrel assembly	1	LS	\$ 2,500.00	\$ 2,500.00
Landscaping	1	LS	\$ 1,500.00	\$ 1,500.00

TOTAL \$ 13,460.00

\$ 16,825.00



February 6, 2015  
Date

P. E. REGISTRATION NO.: 017582



# ENGINEER'S ESTIMATE

128 Talbert Road, Suite A, Mooresville, NC 28117  
Phone: (704) 662-0100  
Fax: (704) 662-0101

PROJECT NAME: Denver Medical Office

LOCATION: Denver, NC

Bioretention Pond, Maintenance Bond

DATE PREPARED: February 6, 2015

In the professional opinion of, Dan E. Brewer, as a duly registered Professional Engineer in the State of North Carolina, hereby certify that the probable costs for the bioretention pond maintenance for the above project.

**Denver Medical Office – Engineer's  
Opinion of Probable Costs for  
Bioretention Pond Maintenance**

Description	Times/yr	Unit Price/Time	Extension
Remove Sediment	1	\$ 250.00	\$ 250.00
Clean Media Surface	4	\$ 100.00	\$ 400.00
Flush Underdrain	1	\$ 200.00	\$ 200.00
Freshen Media	0.25	\$ 350.00	\$ 87.50

TOTAL \$ 937.50

20 Year Maintenance Total

\$ 18,750.00



P. E. REGISTRATION NO. 017582

February 6, 2015  
Date



# ENGINEER'S ESTIMATE

128 Talbert Road, Suite A, Mooresville, NC 28117  
Phone: (704) 662-0100  
Fax: (704) 662-0101

PROJECT NAME: Denver Medical Office

LOCATION: Denver, NC

Pervious Pavement, Surety Bond

DATE PREPARED: February 6, 2015

In the professional opinion of, Dan E. Brewer, as a duly registered Professional Engineer in the State of North Carolina, hereby certify that the probable costs for the pervious pavement for the above project.

**Denver Medical Office – Engineer's  
Opinion of Probable Costs for New  
Pervious Pavement**

Description	Quantity	UM	Unit Price	Extension
Excavation & Grading	70	CY	\$ 4.50	\$ 315.00
Pervious Pavement (Including Clean Stone Base and Geotextile)	422	SY	\$ 60.00	\$ 25,320.00
4" PVC Underdrain w/ filter fabric & stone	66	LF	\$ 15.00	\$ 990.00
4" PVC (solid)	20	LF	\$ 15.00	\$ 300.00

TOTAL \$ 26,925.00

Completion Bond #1/25 x Onsite

\$ 33,866.25



February 6, 2015  
Date

P. E. REGISTRATION NO. 017582



# ENGINEER'S ESTIMATE

128 Talbert Road, Suite A, Mooresville, NC 28117  
Phone: (704) 662-0100  
Fax: (704) 662-0101

PROJECT NAME: Denver Medical Office

LOCATION: Denver, NC

Pervious Pavement, Maintenance Bond

DATE PREPARED: February 6, 2015

In the professional opinion of, Dan E. Brewer, as a duly registered Professional Engineer in the State of North Carolina, hereby certify that the probable costs for the pervious pavement maintenance for the above project.

**Denver Medical Office – Engineer's  
Opinion of Probable Costs for  
Pervious Pavement Maintenance**

Description	Times/yr	Unit Price/Time	Extension
Remove Surface Debris & Clean with Vac Truck	0.5	\$ 500	\$ 250.00
Flush Underdrain	1	\$ 250.00	\$ 250.00

TOTAL \$ 500.00

\$ 10,000.00

20 Year Maintenance Total



February 6, 2015  
Date

P. E. REGISTRATION NO. 017582





