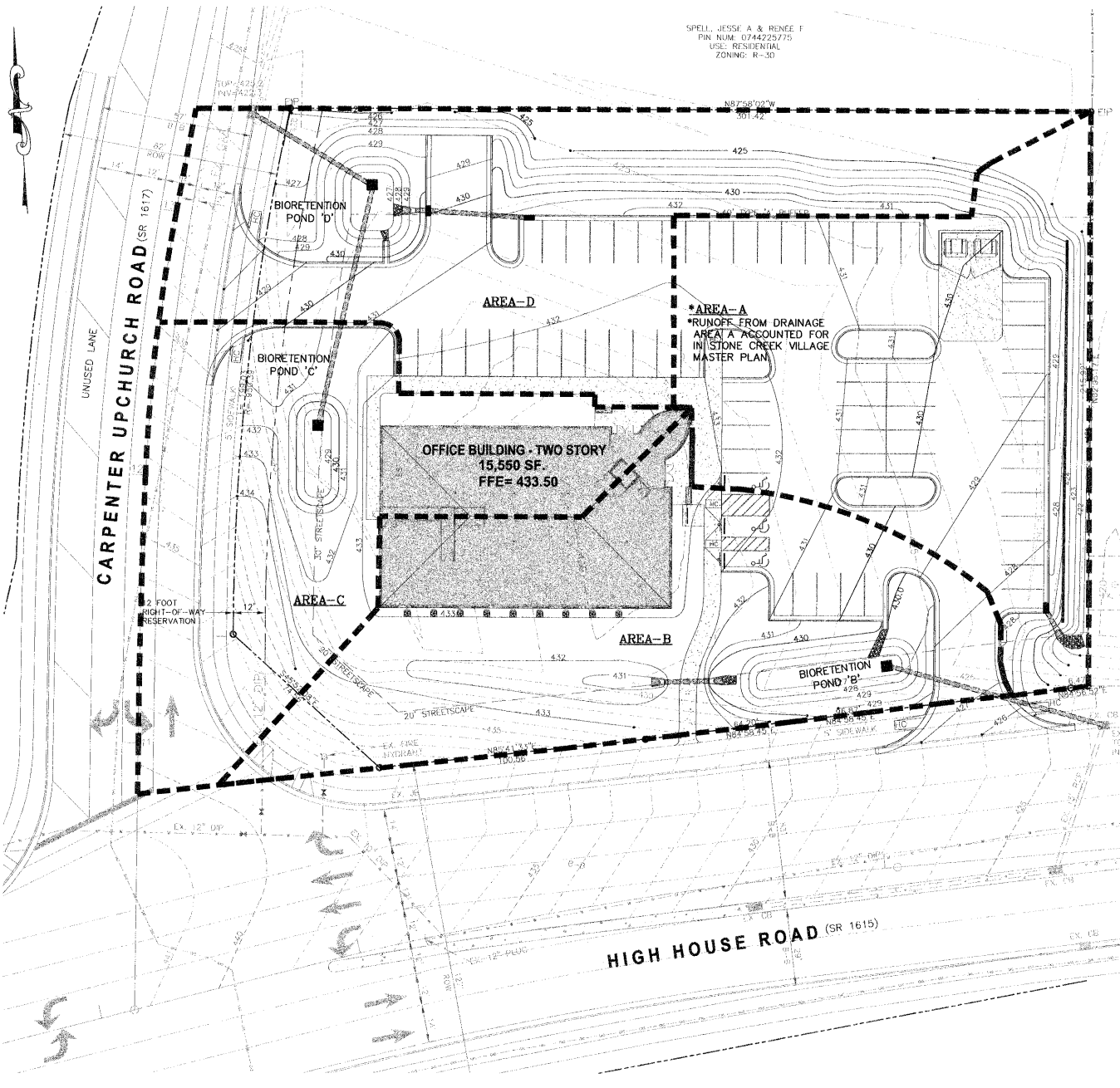


SPELL, JESSE A & RENEE F  
 PIN NUM: 0744225775  
 USE: RESIDENTIAL  
 ZONING: R-3D



**Pre and Post Development Runoff Calculations - Area B**

**Pre Development 1 Year Runoff**

S<sub>p</sub> = 0.016110  
 C = 0.25  
 Q = 0.025 cfs

**Post Development 1 Year Runoff**

S<sub>p</sub> = 0.016110  
 C = 0.25  
 Q = 0.025 cfs

**Required Storage to Reduce Runoff to 0.95 cfs**

S = (Q<sub>pre</sub> - Q<sub>post</sub>) x 60 x 60 x 24  
 = 0.000000

**Provided Pond Storage**

S<sub>15</sub> = 150 x 150 x 2.0 = 4500 cu ft

**10 Year Runoff**

S<sub>p</sub> = 0.016110  
 C = 0.25  
 Q = 0.025 cfs

**Required Storage to Reduce Runoff to 0.95 cfs**

S = (Q<sub>pre</sub> - Q<sub>post</sub>) x 60 x 60 x 24  
 = 0.000000

**Provided Pond Storage**

S<sub>15</sub> = 150 x 150 x 2.0 = 4500 cu ft

**10 Year Runoff**

S<sub>p</sub> = 0.016110  
 C = 0.25  
 Q = 0.025 cfs

**Required Storage to Reduce Runoff to 0.95 cfs**

S = (Q<sub>pre</sub> - Q<sub>post</sub>) x 60 x 60 x 24  
 = 0.000000

**Provided Pond Storage**

S<sub>15</sub> = 150 x 150 x 2.0 = 4500 cu ft

**TOTAL IMPERVIOUS AREA  
 AREAS B&C&D = 0.70 AC.**

**TOTAL GRASSED AREA  
 AREAS B&C&D = 0.72 AC.**

SEE SHEET 9 FOR BIORETENTION  
 POND DETAIL.

**Nitrogen Control Plan**  
 Commercial/Industrial/Residential Sites with Known Impervious Area

**Part I. Nitrogen Buffer**

Area Includes Nitrogen Buffer?  No  Yes

**Part II. Nitrogen Calculations (Method 2, Appendix C)**

Total area of property incl. RWY: 1.42 ac

Impervious Area incl. RWY: 0.70 ac

Grassed Area: 0.72 ac

Protected Open Space: 0.00 ac

**Pre-development loading**

Type of Land Cover	Area (ac)	NH <sub>3</sub> -N export coeff. (lb/acre/yr)	NH <sub>3</sub> -N export from use (lb/yr)
Permanently protected undisturbed open space (forest, wetland, meadow)	0.00	0.00	0.00
Permanently protected managed open space (grass, landscaping, etc.)	1.08	1.39	1.272
Impervious Area	0.72	21.20	2.644
<b>TOTAL</b>	<b>1.78</b>	<b>1.39</b>	<b>3.916</b>

Nitrogen Loading Rate (lb/acre/yr) = 3.24

**Post-development loading**

Type of Land Cover	Area (ac)	NH <sub>3</sub> -N export coeff. (lb/acre/yr)	NH <sub>3</sub> -N export from use (lb/yr)
Permanently protected undisturbed open space (forest, wetland, meadow)	0.00	0.00	0.00
Permanently protected managed open space (grass, landscaping, etc.)	0.72	1.39	0.96
Impervious Area	0.72	21.20	15.26
<b>TOTAL</b>	<b>1.42</b>	<b>21.20</b>	<b>16.22</b>

Nitrogen Loading Rate (lb/acre/yr) = 11.99

**Part III. Control of Peak Stormwater Flows for 1 year design storm**

Calculated Pre-development Peak Flow	Proposed Peak Flow	Area
3.24 cfs	2.74 cfs	Area A
0.36 cfs	0.36 cfs	Area B
0.75 cfs	0.75 cfs	Area C
3.71 cfs	3.71 cfs	Area D

**REVISIONS**

- 01-27-06 REVISED PER TOWN OF CARY 1st REVIEW.
- 03-10-06 REVISED PER TOWN OF CARY 2nd REVIEW.

**ADVANTAGE REALTY GROUP IV**  
 OFFICE BUILDING  
 2128 HIGH HOUSE ROAD  
 CARY NC

SCALE: 1"=20'  
 ORIGINAL DATE: 12-16-05  
 LATEST REVISION DATE: 03-10-06  
 PROJECT NO: 04-157

**NITROGEN CONTROL PLAN**

05-SP-154



**DEVELOPMENT ENGINEERING, INC.**  
 Professional Engineering Consultants  
 244 W. Millbrook Road, Raleigh, NC 27609  
 P. O. Box 17705, Raleigh, NC 27619  
 Phone: 919-847-8300  
 Fax: 919-847-2130  
 E-mail: Office@de-engineering.com

SHEET NO. **8**

FINAL PLAN - NOT RELEASED FOR CONSTRUCTION

City Project Number  
 05-SP-154  
 APPROVED  
 TOWN OF CARY

Approved by: [Signature] Date: 5/11/07  
 Planning: [Signature] Date: 5/13/07  
 Engineering: [Signature] Date: 4/12/07