

BELMEADE

A PLANNED RESIDENTIAL COMMUNITY

Chatham County, North Carolina

August 14, 2006



APPLICANTS:
Belmeade Farms, LLC and
Crescent Resources, LLC

8450 Falls of Neuse Road, Suite 102
Raleigh, NC 27615

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I. DEVELOPMENT TEAM

Applicant/Developer:

Belmeade Farms, LLC
Contact Person: Patrick A. O'Neal
6208 Fayetteville Rd., Suite 104
Durham, NC 27713
(919) 806-3262

Crescent Resources, LLC
Contact Person: c/o Nick Robinson
8450 Falls of Neuse Road, Suite 102
Raleigh, NC 27615
(919) 542-2400

Attorneys

Bradshaw & Robinson, LLP
Contact Person: Nick Robinson
P.O. Box 607
Pittsboro, NC 27312
(919) 542-2400

Civil Engineer / Land Planner

C.E. Group, Inc.
Contact Person: Mark Ashness, PE, ASLA
11000 Regency Parkway, Suite 410
Cary, NC 27511
(919) 367-8790

Ecologist / Soils Evaluation

Soil & Environmental Consultants, P.A.
Contact Person: Sean Clark / Jim Beeson
11010 Raven Ridge Road
Raleigh, NC 27614
(919) 846-5900

Audubon International
Contact Person: Sarah Anderson
11104 Limehurst Place
Charlotte, NC 28273

Surveyor

Philip Post & Associates, Inc.
Contact Person:
401 Providence Road
Chapel Hill, NC 27514
(919) 929-1173

Transportation Engineer

Ramey Kemp & Associates
Contract Person: Rynal G. Stephenson, PE
4928-A Windy Hill Drive
Raleigh, NC 27609
(919) 872-5115

Wastewater Evaluation

TCW Wastewater
Contract Person: Tim Bannister
P.O. Box 1830
Indian Trail, NC 28079
(704) 821-8841

Economic Analysis

Miley Gallo & Associates
Contract Person: Lucy Gallo, CPA
2530 Meridian Parkway, Suite 200
Durham, NC 27713
(919) 806-4677

II. STATEMENT OF PURPOSE

Belmeade Farms, LLC in coordination with Crescent Resources, LLC is applying to Chatham County for approval of a Planned Unit Development subdivision located west of Pittsboro and immediately south of Highway 64. The project encompasses approximately 557 acres. The applicant's proposal calls for 197 single-family residential lots, a community amenity center, and a fine living center.

The land is located in an unzoned portion of the County to which the Subdivision Ordinance and other county-wide ordinances are applicable. A portion of the property was formerly located in the Town of Pittsboro's ETJ but, pursuant to a vote of the Pittsboro Board of Commissioners, the Town of Pittsboro has relinquished its jurisdiction over the property to the County. Applicant requests that the County accept the Town of Pittsboro's relinquishment of the portion of the property located within the Town's ETJ, such that the entire property will be governed by the County's ordinances applicable to the property in the unzoned portion of the County.

This planned unit development promotes the intent of the Chatham County subdivision regulations by ensuring orderly growth and efficient development of land, in an unzoned portion of the County. Infrastructure including water is either currently available at the site, or will be made available to meet the proposed development schedule. Crescent is an established and premier developer of environmentally conscious, projects throughout the Southeast and Southwest.

III. APPLICATION

**CHATHAM COUNTY
MAJOR SUBDIVISION
REVIEW CHECKLIST**

Subdivision Name: Belmeade _____

Review For: Sketch Prelim Final

Attach all supporting documentation regarding these approvals. If approvals are still pending, attach applications for approval.

SKETCH DESIGN REVIEW	APPROVAL DATE
<input checked="" type="checkbox"/> 25 Copies of Plat with topo along with one (1) 8-1/2 x 11 copy	_____
<input checked="" type="checkbox"/> Application w/Complete Adjacent Owner Addresses	_____
<input checked="" type="checkbox"/> Soil Scientist Report and soil map	_____
{ X } 1 electronic copy of all items above (see Digital Document Requirements)	
PRELIMINARY PLAT REVIEW	
<input type="checkbox"/> 25 Copies of Plat along with one (1) 8-1/2 x 11 copy
<input type="checkbox"/> Application w/ Complete Adjacent Owner Addresses
<input type="checkbox"/> Detailed Soils Map and Letter of explanation or D.E.M. approval {see Requirements for soil scientist report}	___/___/___
<input type="checkbox"/> NCDOT Approval (if public roads)	___/___/___
<input type="checkbox"/> DOT Comm. Driveway Permit	___/___/___
<input type="checkbox"/> Erosion Control Plan Approval (if new roads or one acre disturbed)	___/___/___
<input type="checkbox"/> U.S. Army Corps of Engineers Permit (if appl)	___/___/___
<input type="checkbox"/> Road Name Request Form	___/___/___
<input type="checkbox"/> County Public Water Approval (if applicable)	___/___/___
<input type="checkbox"/> State Public Water Approval (if applicable)	___/___/___
<input type="checkbox"/> Chatham Co. Schools' Road Comments (if new roads)	___/___/___
<input type="checkbox"/> Stormwater Management Plan Approval (if appl)	___/___/___
<input type="checkbox"/> Economic & Environmental Impact Study (if appl)	___/___/___
<input type="checkbox"/> Water / Sewer Impact Statement (if appl)	___/___/___
{ } 1 electronic copy of all items above (see Digital Document Requirements)	
FINAL PLAT REVIEW	
<input type="checkbox"/> 25 Copies of Plat	_____
<input type="checkbox"/> Application
{ } 1 electronic copy of all items above (see Digital Document Requirements)	___/___/___
<input type="checkbox"/> Chatham County Environmental Health Division septic improvement permits or NCDWQ septic permits for each lot.	___/___/___
<input type="checkbox"/> Road Completion Certificate or Financial Guarantee	___/___/___
<input type="checkbox"/> Utilities Completion Cert. or Financial Guarantee	___/___/___

Comment _____

Date Complete Application Rec'd: _____ / _____ / _____ By: _____

Chatham County Planning Department

P.O. Box 54
Pittsboro, NC 27312
Tel: (919) 542-8204
Fax: (919) 542-2698

Type of Review

- Sketch
- Preliminary
- Final

MAJOR SUBDIVISION APPLICATION

Name of Subdivision: Belmeade _____
Subdivision Applicant: Belmeade Farms, LLC and Crescent Resources, LLC **Subdivision Owner:** Belmeade Farms, LLC

Name: 1. Belmeade Farms, LLC _____ **Name:** Belmeade Farms, LLC _____

Address: 6208 Fayetteville Road, Suite 104 **Address:** Same _____
Durham North Carolina, 27713 _____

Phone:(W) (919) 06-3262 _____ **Phone:**(W) _____
Phone:(H) _____ **Fax:** (919) 806-3792 **Phone:**(H) _____ **Fax:** _____
E-Mail: bluskies@intrex.net _____ **E-Mail:** _____

- 2. Crescent Resources, LLC
8450 Falls of the Neuse Rd., Suite 102
Raleigh, NC 27615
(w) (919) 847-5004
(f) (919) 847-5090

Township: Center _____ **Zoning:** Unzoned _____ **P. I. N. #** 9721884042 _____
Flood Map # 3710972100J, 3710972200J and 3710973100J

Zone: X and AE _____ **Parcel #** 6000 _____
Watershed: Local Watershed

Existing Access Road: S.R. # 2161
S.R. road name U.S. Highway
64 and Adolph Taylor Road _____

Total Acreage: 556 (approx.) _____ **Total # of Lots:** 197 **Min. Lot Size:** 1.0 acres
Ph. I Acreage _____ **Ph. I # of lots** _____ **Max. Lot Size:** 4.2 acres
Ph. II Acreage. _____ **Ph. II # of lots** _____ **Avg. Lot Size:** 1.7
Ph. III Acreage _____ **Ph. III # of lots** _____

Type of new road: Private/ Length 29,200 approx. l.f. Public/ Length _____

Road Surface:
 paved
 gravel

Water System:
 individual wells
 community wells
 public system
name Chatham County

Sewer System:
 septic systems
 community system
 public system
name _____

List other facilities: commercial, recreation, etc., and the approximate acreage or square footage:
See Application text. _____

Belmeade Farms, LLC

Belmeade Farms, LLC

[Signature]
Signature of Applicant

Date 8/15/06

[Signature]
Signature of Owner

Date 8/16/06

Crescent Resources, LLC

Signature of Applicant

Date

For Office Use Only:

Notes: _____

Approved by County Commissioners:

Sketch _____
Preliminary _____
Final _____

Payment: Date _____ / _____ / _____ Amount: \$ _____

Chatham County Planning Department

P.O. Box 54
Pittsboro, NC 27312
Tel: (919) 542-8204
Fax: (919) 542-2698

Type of Review

- Sketch
- Preliminary
- Final

MAJOR SUBDIVISION APPLICATION

Name of Subdivision: _____

Subdivision Applicant:

Subdivision Owner:

Name: _____

Name: _____

Address: _____

Address: _____

Phone:(W) _____

Phone:(W) _____

Phone:(H) _____ Fax: _____

Phone:(H) _____ Fax: _____

E-Mail _____

E-Mail _____

Township: _____ Zoning: _____

P. I. N. # _____

Flood Map # _____ Zone: _____

Parcel # _____

Watershed: _____

Existing Access Road: S.R. # _____

S.R. road name _____

Total Acreage: _____

Total # of Lots: _____

Min. Lot Size: _____

Ph. I Acreage _____

Ph. I # of lots _____

Max. Lot Size: _____

Ph. II Acreage _____

Ph. II # of lots _____

Avg. Lot Size: _____

Ph. III Acreage _____

Ph. III # of lots _____

Type of new road: Private/ Length _____

Public/ Length _____

Road Surface:

paved

gravel

Water System:

individual wells

community wells

public system

name _____

Sewer System:

septic systems

community system

public system

name _____

List other facilities: commercial, recreation, etc., and the approximate acreage or square footage:

Crescent Resources, LLC



Signature of Applicant

Date 8/14/06

Signature of Owner

Date _____

For Office Use Only:

Notes: _____

Approved by County Commissioners:

Sketch _____

Preliminary _____

Final _____

Payment: Date _____ / _____ / _____

Amount: \$ _____

ADJACENT LAND OWNERS

Mr. B. F. McLeod, Jr., et al.
c/o Cliff Ransdell
111 E. Lakeside Drive
Fuquay Varina, NC 27526
Parcels 73451 and 12481

Mr. John F. Graybeal
Larua A. Heise
Mr. Holmes T. Graybeal
Louise Omoto Kessel
3396 Alston Chapel Road
Pittsboro, NC 27312
Parcel 63865

Mr. John F. Graybeal
3396 Alston Chapel Road
Pittsboro, NC 27312
Parcel 5894

Ms. Peggy Sue Overton
235 Old Cedar Drive
Pittsboro, NC 27312
Parcel 66175

Ms. Caroline S. Betts
c/o Caroline Brannen
340 Old Cedar Drive
Pittsboro, NC 27312
Parcel 64019

Mr. June R. Rollins, Trustee
41 West
880 White Oak Lane
St. Charles, IL 60175
Parcel 60852

Mr. James W. Brooks
47 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 79645

Mr. Luther I. Lott, Jr.
2480 Alston Chapel Road
Pittsboro, NC 27312
Parcel 6356

Ms. Mary F. Lee Parker
904 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 6029

Mr. James Kenneth Farrell
828 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 71856

Mr. Jesse M. McCrimmon
Mrs. Curtisteen G. McCrimmon
824 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 68987

Sim Burnett
Willie V. Burnett
P. O. Box 1149
Pittsboro, NC 27312
Parcel 60807

Mr. Darryl Eaves
560 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 79361

Luby Scurlock Eaves
c/o Herbert Eaves
260 Russell Chapel Road
Pittsboro, NC 27312
Parcels 5999, 73312 and 6038

Mr. Jimmy Lewis Eaves
492 Adolph Taylor Road
Pittsboro, NC 27312
Parcel 6036

Mr. Ralph N. French
Mrs. Loretta D. French
Lois E. French Heirs
c/o Lorenzo Cozart, Jr.
128 W. Orange Street
Hillsborough, NC 27278
Parcel 77596

Mr. Henry Wade Emerson
Mrs. Marion N. Emerson
P. O. Box 626
Pittsboro, NC 27312
Parcel 6054

Mr. Ralph N. French
Mrs. Loretta D. French
1205 Old Siler City Road
Pittsboro, NC 27312
Parcels 6057, 72244, 6041 and 80449

Solid Rock Baptist Church Trustees
3903 U.S. Highway 64 West
Pittsboro, NC 27312
Parcel 68615

Ms. Judith T. Lessler
97 Plantation Drive
Pittsboro, NC 27312
Parcel 5868

Mr. Jimmie B. Vaughn
Mrs. Catherine Vaughn
325 Plantation Drive
Pittsboro, NC 27312
Parcel 5876

State of North Carolina
Forestry Resources Division
U.S. Highway 64 West
Pittsboro, NC 27312
Parcel 68614

Mr. Robert J. Corley
202 Lakewood Drive
Spartanburg, SC 29302-4029
Parcel 5875

Mr. Richard Alston
674 Alston Horton Service Road
Pittsboro, NC 27312
Parcels 80187 and 6061

Aldine F. Horton
Hertie G. Horton
402 Snelling Road
Raleigh, NC 27609
Parcel 6030

IV. COMMUNITY SUMMARY

SITE LOCATION

The development site is approximately 557 acres and is located south of Highway 64, near the western interchange with Highway 64 Bypass and approximately 3.5 miles west of downtown Pittsboro. It is situated in Center Township in Chatham County. The site is convenient to Pittsboro, Chapel Hill, Cary, Apex, Siler City and the Burlington area (see attached location map).

The property is currently owned by Belmeade Farms, LLC. Portions of the site have been managed for timber production in the past. The proposed impervious coverage for the project is approximately 17.3%. The roadway system within the project will consist of private roads (possibly gated) with a grassed shoulder and ditch section.

The community will consist of 197 single-family residences situated on homesites that average 1.7 acres in size. The lots range in size from 1.0 acres to 4.2 acres. The property will retain over 30% in open space consisting of trails, stream buffers and natural areas, which open space will be conveyed to the property owners association. The overall density for the project is low at one unit per 2.2 net acres

Two amenity areas are planned for this community. The central amenity area will provide recreational opportunities for the residents, offering open play fields and an open-air pavilion. A second amenity, the fine living center, will provide community residents and all county residents with a facility for social activities (see attached list of possible activities). A network of walking trails will connect through the community to the amenity sites along the open space reserved within the project.

Fine Living

Winery, tasting room, barrel room, guest lectures and trips to NC wineries

Gourmet kitchen with guest or on-call chef

Day Spa with on call staff

Exercise facility with on-call trainers

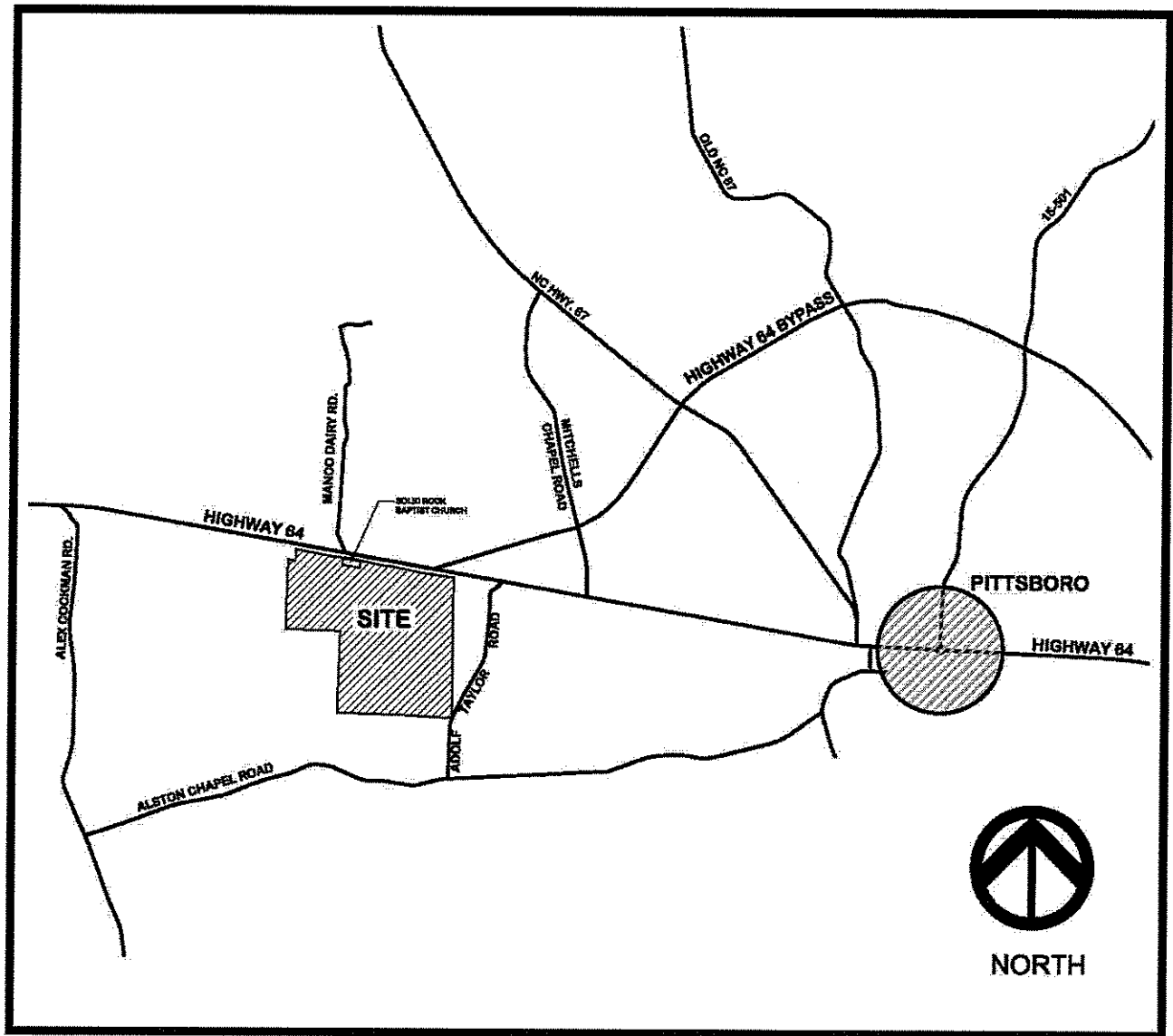
Art center with sculpture and painting classes, guest lectures

Activities room/library for book clubs, charity drives and functions, teas, lectures

Gardening center (e.g. hybrid roses)

Organic garden with herbs and other vegetables

Collectibles reference library with guest lectures



LOCATION SKETCH
(Not to Scale)

Belmeade Residential Community, Chatham County

Exhibit "A"
Property Of
Belmeade Farms, LLC
a North Carolina limited liability company

Situated in Center Township, Chatham County, North Carolina, on the South side of U. S. Hwy. 64, bounded and described as follows:

BEGINNING at an iron rod on the southerly right-of-way of U.S. Hwy 64 at its intersection with the northeasterly corner of N/F State Of North Carolina (Deed Book 339, Page 462); thence along the southerly right-of-way of U.S. Hwy. 64 the following courses and distances; South 80°09'44" East 21.91 feet; South 76°18'41" East 234.71 feet; South 80°03'40" East 364.99 feet; South 80°03'20" East 991.08 feet to a concrete highway right-of-way monument; thence South 03°57'59" West 80.50 feet to a concrete highway right-of-way monument; thence South 86°01'50" East 47.54 feet to a new iron pipe; thence along the boundary of Solid Rock Baptist Church the following courses and distances; South 09°51'54" West 157.37 feet; South 80°08'45" East 600.44 feet; North 09°51'54" East 246.42 to a new iron pipe set in the southerly right-of-way of U.S. Hwy. 64; thence along the southerly right-of-way of U.S. Hwy. 64 the following courses and distances; South 80°05'23" East 3.37 feet; South 75°52'21" East 200.03 feet; South 84°30'45" East 200.81 feet; South 79°59'49" East 105.02 feet; South 74°00'15" East 196.12 feet; South 80°04'08" East 448.56 feet; South 80°01'53" East 317.03 feet; South 76°45'13" East 325.61 feet; South 77°37'40" East 201.38 feet; South 79°44'33" East 221.31 feet; South 81°59'43" East 172.92 feet; South 82°50'04" East 107.33 feet; South 80°34'09" East 181.07 feet; South 83°11'02" East 143.60 feet; South 84°48'47" East 355.34 feet; South 89°29'07" East 120.42 to a new iron rod set at the northwesterly corner of N/F Henry W. Emerson; thence South 00°47'13" West 4787.18 feet to a new iron rod set inside the right-of-way of Adolph Taylor Road (S.R. 2161); thence North 87°34'20" West 3643.81 feet to an existing iron pipe in the northerly corner of N/F Carolyn S. Betts (Deed Book 525, Page 203, Plat Slide 87, Page 156) and N/F Peggy S. Overton (Deed Book 561, Page 561, Plat Slide 1990, Page 275); thence North 87°35'37" West 307.43 feet to an existing iron pipe in the easterly boundary of N/F John F. Graybeal (Deed Book 508, Page 755); thence North 01°34'54" East 2778.18 feet to an existing iron pipe in the northeasterly corner of N/F John F. Graybeal (Deed Book 1229, Page 486); thence North 88°37'36" West 1865.49 feet to an existing iron pipe on the corner of John F. Graybeal; thence North 01°29'54" East 691.11 feet to an existing iron pipe in the corner of Graybeal and N/F B. F. McLeod *et al* (Deed Book 732, Page 846); thence North 01°20'50" East 1683.89 feet to an existing iron pipe in the southwestery corner of N/F State of North Carolina (Deed Book 339, Page 462); thence along the southerly and easterly boundary of N/F State of North Carolina (Deed Book 339, Page 462) the following courses and distances; South 80°11'34" East 249.65 feet; North 02°16'44" East 405.94 feet to a new iron rod set in the southerly right-of-way of U.S. Hwy 64, being the point and place of BEGINNING, containing 556.640 acres;

And being the same property generally referred to in that plat recorded in Plat Slide 95, Page 165 and that deed recorded in Book 669, Page 817, less that portion conveyed to the North Carolina Department Of Transportation by deed recorded in Book 695, Page 229, Chatham County Registry.

For chain of title, see deeds recorded in Book 669, Page 817; Book 551, Page 568; Book 535, Page 671 and Book 263, Page 64, Chatham County Registry.

Aerial Map

Boundary Survey

Written Legal Description

V. EXISTING FEATURES

Site Description

The project consists of approximately 557 acres situated about 3.5 miles to the west of downtown Pittsboro and immediately south of Highway 64. There is an existing driveway onto the property currently being used by the Solid Rock Baptist Church. Approximately 5,000 feet of road frontage along Highway 64 exists at the northern entrance. Emergency access to the site will also be provided via Adolf Taylor Road in the southeast corner of the property.

The natural slope and elevation variation within the project is well suited for a planned residential community. Elevations on the site range from 402 MSL to 486 MSL. Approximately 86 % of the property has slopes between 0 - 10%.

SLOPE	ACREAGE	PERCENTAGE
0 – 5 %	267.7	48.1%
5 – 10 %	209.3	37.6%
10 – 15 %	59.0	10.6%
15 – 20 %	13.9	2.5%
More than 20 %	6.1	1.1%

Harlands Creek bisects the property, flowing from north to south. The current Master Plan provides a passive open space buffer along the both sides of this creek for a width of 100'. Other intermittent or perennial streams as delineated by the USGS Quadrangle Map are shown with 100' buffers on each side. The Existing Hydrology exhibit contained in this document illustrates the buffer locations. The property is located within a Local Watershed Area.

Informational maps reflecting the existing site features are attached.

Applicants are aware of no historical features located on the portion of the property designated for development; however, the Chatham County Historical Association has been invited to review the property.

USGS Overlay Map

Chatham County Soil Survey Map

Slope Analysis

Elevation Banding Map

Existing Vegetation Map

Historical Records Review



Soil & Environmental Consultants, PA

11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

August 11, 2006

S&EC Project No.: 9894.W2

Chatham Development Corp.
Attn: Steven O'neal
6208 Fayetteville Road Suite 104
Durham, NC 27713

Re: Historical Records Review / Natural Heritage Program File Search
Pittsboro Site
Chatham County, North Carolina

Dear Mr. O'neal:

In August 2006 S&EC conducted an updated review of records at the North Carolina State Historic Preservation Office (SHPO) for sites and structures of historical significance on the subject property. In addition, a file search for federally protected species was performed at the Natural Heritage Program office in Raleigh, North Carolina. The location of the project site is depicted on the attached Pittsboro and Siler City NE USGS quadrangles.

Findings - NC State Historic Preservation Office

North Carolina SHPO maintains records and locations of buildings, structures, and objects that are listed by local governments as historic landmarks or that are listed or eligible for listing on the National Register of Historic Places. The records check at the State Historic Preservation Office (SHPO) revealed that there are no structures on the property that appear on the National Registry (NR), Determination of Eligibility (DOE), Study List (SL), or Locally Designated (LD) lists. A Natural Registry Property, Alston-Degraffenreidit Plantation (CH 1), is located due north of the site on US 64. Please refer to the attached Pittsboro and Siler City NE USGS quadrangles for the exact locations of these properties.

Findings - NC Natural Heritage Program Office

North Carolina Natural Heritage Program records occurrences of rare plant and animal species, exemplary natural communities, and special animal habitats known to occur in North Carolina. The record check was performed in August 2006. The subject property is located on the Pittsboro and Siler City NE USGS quadrangles.

Charlotte Office:
236 LePhillip Court, Suite C
Concord, NC 28025
Phone: (704) 720-9405
Fax: (704) 720-9406

Greensboro Office:
2817-E Lawndale Drive
Greensboro, NC 27455
Phone: (336) 540-8234
Fax: (336) 540-8235

A list of the occurrences within a 3 mile radius of the property boundary within the Pittsboro and Siler City NE USGS quadrangles are listed below:

Pittsboro USGS

IPAs: Lesser Montmorillonite Forest

Animals: *Cambarus davidii* (Carolina Ladle Crayfish)
Hemidaetlylum scutatum (Four-toed Salamander)

Siler City NE USGS

Findings - NC Office of Archaeology

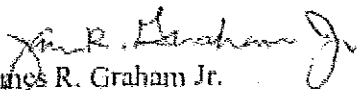
North Carolina Office of State Archaeology records archaeological sites and excavations. The record check was performed in August 2006. Archaeological sites in the surrounding area have been excavated. There is one historic artifact documented within the project boundary. However, due to high erosion and the low density of lithic scatter revealed in the survey these finds are not significant.

Summary

The records search at the Natural Heritage Program revealed that no rare plants or animals are documented within the project boundaries. An Identified Priority Area (IPA), Lesser Montmorillonite Forest, as designated by the Natural Heritage Program (NHP), is documented adjacent to the northern property line. The file search at the State Historic Preservation Office produced no records of structures on property listed on the National Registry (NR), Determination of Eligibility (DOE), Study List (SL), or Locally Designated (LD) lists. The records search at the North Carolina Office of Archaeology revealed no records of significant archaeological sites or artifacts documented within the project boundaries.

If you have any questions or need additional services, call us at 919-846-5900.

Sincerely,


James R. Graham Jr.
Biologist / Environmental Scientist


David Gainey
Environmental Specialist / Project Manager

Attachments: USGS Quad Map with Historical Site Locations and Occurrences of Rare Plant and Animal Species

VI. MASTER PLAN

Crescent is planning to build an attractive community with extensive open space, walking trails, and a central community amenity. The central amenity will include an open-air pavilion, playground, play field and possibly a swimming pool. A separate fine living center will provide facilities for social functions. There will be 197 single-family homesites. The lots will range in size from approximately one acre to just over 4.2 acres. See attached Sketch Master Plan.

LAND ALLOCATION

The following is a detailed summary of each land use, the associated approximate acreage as well as the percentage each use comprises of total acreage:

SINGLE FAMILY HOMESITES		± 335.57 Acres (60.3 %)
Average Homesite Size = 1.7 Acres		
ROAD RIGHT OF WAY		± 33.79 Acres (6.1 %)
Private Roads	± 29,200 l.f.	
OPEN SPACE & AMENITIES		± 187.23 Acres (33.6 %)
Stream Buffers/trails	± 106.18 Ac.	
General Open Space	± 60.45 Ac.	
Central Amenity	± 10.30 Ac.	
Fine Living Center	± 10.30 Ac.	

Approximately 30% of the project area will be left in open space, with over 60% of this space within the stream buffers that will have minimal disturbance. The open space will be utilized to enhance the views from residential homesites, provide walking trails and other passive recreational opportunities, and to further enhance protection of natural drainage courses found within the project.

In addition to open space preservation, a 50' undisturbed perimeter buffer is proposed for the project, overlaying the residential lots abutting the property boundary.

Sketch Master Plan

Central Amenity Concept Plan

Fine Living Center Concept Plan

VII. COMMUNITY SUMMARY

COMMUNITY SPECIFICATIONS

Belmeade will have rigorous architectural controls and restrictive covenants.

In order to protect both the aesthetic and environmental qualities of Harlands Creek, a riparian buffer will be reserved for a 100' width on both sides of the creek. Further buffers will be set aside for intermittent and perennial streams as described and illustrated in other parts of this document.

Significant investment in community appearance and architectural guidelines will be regulated through an architectural review board. Restrictive Covenants will be recorded at the time of final plat approval and will include building setback, square footage restrictions, etc.

All street lighting will comply with the proposed Chatham County Draft Lighting Ordinance to minimize impact to the night skies for the residents and adjoining neighborhoods.

Net Land Area Computation

556.59 Acres	Gross Land Area
81.12 Acres	100 Year Floodplain, Wetlands, Ponds > 1 Acre
<u>33.79</u> Acres	Right of Way
441.68 Acres	Net Land Area Available
19,239,581 s.f.	Net Land Area Available for Dwelling Units
197 Units	Proposed Dwelling Units
0.45 Units	Dwelling Units per Gross Acre
2.2 Acres	Area per Dwelling Unit

VIII. ROADWAY DESIGN

All roads within Belmeade will be private roads, constructed to NCDOT standards and maintained by the property owners association. Entrance gates will be provided near the Highway 64 entrance (beyond the point where public access to the fine living center is anticipated) and at the emergency access entry off of Adolf Taylor Road. All roadways will have a right-of-way width of least 50' with a grassed shoulder and ditch section. All road signs will be located within the right of way and will be intended to comply with applicable Chatham County standards.

Ramey Kemp & Associates, Inc. has provided an analysis of the impact of this project to the existing and projected traffic condition. A copy of this report is attached.

Typical Roadway Sections

Traffic Analysis

August 10, 2006

Jeff W. Westmoreland, RLA, ASLA
CE Group, Inc.
11000 Regency Parkway, Suite 410
Cary, NC 27511
P : 919-367-8790

Reference: Belmeade Residential Development
Chatham County, North Carolina

Subject: Traffic Assessment

Dear Mr. Westmoreland:

This letter provides a Traffic Assessment prepared by Ramey Kemp & Associates, Inc. (RKA) for the proposed Belmeade residential development, which is proposed to be located on the south side of US 64 Business and west of SR 2161 (Adolph Taylor Road). The purpose of this study is to determine impacts to the surrounding transportation system created by traffic generated by the development. This study considers traffic impacts to the site driveway intersection on US 64 and the site driveway intersection on Adolph Taylor Road. The study intersections were analyzed under existing (2006), background (2010), and combined (2010) traffic conditions with full site build out during the weekday a.m. and p.m. peak hours.

It is estimated that the proposed development will be fully built out in the year 2010. At full buildout, Belmeade is proposed to consist of 197 single-family homes situated on approximately 560 acres. Access to the development is proposed via a full access driveway on US 64 and one driveway on Adolph Taylor Road. The proposed driveway on US 64 is located at an existing median opening approximately 1,600 feet west of the interchange ramp with US 64 Bypass. Refer to Figure 1 for an illustration of the land use and access plan.

Existing (2006) Traffic Conditions

Existing (2006) peak hour traffic counts were conducted by RKA at the intersection of US 64 and the existing median opening at the proposed driveway location. Currently, a church exists on the south side of US 64 at the driveway location. Traffic counts were completed in 15-minute intervals during the a.m. peak period (7:00 a.m. – 9:00 a.m.) and the p.m. peak period (4:30 p.m. – 6:30 p.m.). A copy of the raw traffic count data can be

found in Appendix A. Refer to Figure 2 for an illustration of the existing (2006) traffic volumes.

According to NCDOT ADT maps, Adolph Taylor Road carried approximately 350 vehicles per day (vpd) in 2004. Since this traffic volume is considered low, peak hour counts were not conducted on this roadway. Based on the ADT volume, it is estimated that the roadway carries approximately 40 vehicles during the peak hours.

Background (2010) Traffic Conditions

Background (2010) traffic conditions reflect the traffic that is expected to be on the roadway network regardless of whether the proposed site is developed and includes an annual traffic growth rate of 3%. This study assumes there are no approved adjacent developments in the vicinity of the proposed site that are expected to affect the traffic patterns on the surrounding roadway network. Refer to Figure 3 for the background 2010 peak hour traffic volumes.

Trip Generation and Distribution

Trips generated by the proposed development were calculated utilizing methodology contained within the Institute of Transportation Engineers (ITE) *Trip Generation* manual, 7th Edition. At full build out, it is estimated that the proposed development will generate 1,940 total site trips (entering and exiting) during an average 24-hour weekday period. Of this total, 148 site trips (37 entering and 110 exiting) will occur during the a.m. peak hour and 197 site trips (124 entering and 73 exiting) will occur during the p.m. peak hour. Refer to Table 1 for a detailed breakdown of the trip generation results.

**TABLE 1
TRIP GENERATION**

PROPOSED BELMEADE RESIDENTIAL DEVELOPMENT

ITE Land Use (Code)	Density	Daily Volume (vpd)	AM Peak Hour (vph)		PM Peak Hour (vph)	
			Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	197 units	1,940	37	110	124	73

Site trip distributions were estimated based on existing traffic patterns, surrounding land uses, and engineering judgment. It is anticipated that 75% of the site traffic will access the site to/from the east on US 64 towards the US 64 Bypass interchange, while approximately 15% will travel to/from the west on US 64. Due to the proximity of lots to the access on Adolph Taylor Road, it is anticipated that approximately 10% of site trips will utilize the driveway on Adolph Taylor Road with 5% traveling to/from the north and

5% traveling to/from the south. Refer to Figure 4 for an illustration of the trip distribution and assignment of site traffic.

Combined (2010) Traffic Conditions

The total peak hour site trips expected to be generated by the proposed Belmeade development were added to the background (2010) traffic volumes to determine combined traffic conditions. Refer to Figure 5 for the combined (2010) a.m. and p.m. peak hour traffic volumes with full build out of the site.

Capacity Analysis

In order to determine the levels of service (LOS) at the study intersection of US 64 and the proposed site access, the existing (2006) and background (2010) traffic volumes were analyzed under the existing lane configurations and traffic control conditions and the combined (2010) traffic volumes were analyzed under proposed lane configurations and traffic control conditions.

Intersection capacity analyses were completed using Synchro Version 5.0. Synchro 5.0 analyzes intersections based on the methodologies and procedures outlined in the 2000 Highway Capacity Manual. Capacity analysis results for unsignalized intersections do not provide an overall level of service, but rather a level of service for movements and/or approaches that have a conflicting movement. Capacity and level of service are the design criteria for this traffic study. Refer to Table 2 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes "initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay".

TABLE 2
Highway Capacity Manual Levels of Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
Level Of Service	Average Control Delay Per Vehicle (Seconds)	Level Of Service	Average Control Delay Per Vehicle (Seconds)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

A summary of capacity analysis results are presented in Table 3 for existing, background, and combined a.m. and p.m. peak hour traffic conditions. The detailed capacity analysis reports can be found in the Appendix.

**TABLE 3
PEAK HOUR CAPACITY ANALYSIS RESULTS**

INTERSECTION	A P P R O A C H	LANE CONFIGURATION	LEVEL OF SERVICE			
			AM PEAK HOUR		PM PEAK HOUR	
			Appr.	Overall	Appr.	Overall
Existing (2006) Traffic Conditions						
US 64 at Site Driveway (median opening) (Unsignalized)	EB	1 LT, 2 TH, 1 RT	A ¹	N/A	A ¹	N/A
	WB	1 LT, 2 TH, 1 RT	--*		--*	
	NB	1 LT-TH-RT	A ²		A ²	
	SB	1 LT-TH-RT	B ²		C ²	
Background (2010) Traffic Conditions						
US 64 at Site Driveway (median opening) (Unsignalized)	EB	1 LT, 2 TH, 1 RT	A ¹	N/A	A ¹	N/A
	WB	1 LT, 2 TH, 1 RT	--*		--*	
	NB	1 LT-TH-RT	A ²		A ²	
	SB	1 LT-TH-RT	B ²		C ²	
Combined (2010) Traffic Conditions						
US 64 at Site Driveway (median opening) (Unsignalized)	EB	1 LT, 2 TH, 1 RT	A ¹	N/A	A ¹	N/A
	WB	1 LT, 2 TH, 1 RT	A ¹		A ¹	
	NB	1 LT, 1 TH-RT	B ²		B ²	
	SB	1 LT-TH-RT	C ²		C ²	

Bold type denotes lane improvement and/or revised lane configuration.

* No westbound left turns were observed, U-turns only.

1. Level of service for major street left turn movement.

2. Level of service for minor street approach.

Capacity analysis indicates that under existing (2006) traffic conditions, the northbound and southbound minor street approaches at the intersection with US 64 operate at LOS C or better during both the a.m. and p.m. peak hours. In addition, the eastbound and westbound left turn movements from US 64 operate at LOS A in the peak hours. Currently, auxiliary left and right turn lanes exist on US 64 at this location. The westbound left turn lane on US 64 currently provides approximately 250 feet of full width storage.

Under background (2010) traffic conditions with projected traffic growth, analysis indicates the northbound and southbound minor street approaches will continue to operate at LOS C or better during the a.m. peak hour and p.m. peak hour. The US 64 left turn movements will operate at LOS A during both the a.m. and p.m. peak hours. Traffic volumes on the minor street approaches are relatively low and existing roadway geometry provides more than adequate capacity for these traffic volumes.

With the addition of trips from full build out of the development, the northbound minor street approach is expected to operate at LOS B in the a.m. peak hour and p.m. peak hour. The northbound approach is analyzed with two outbound lanes (one left turn lane and one shared through-right turn lane). The southbound approach is expected to operate at LOS C during the a.m. peak hour and p.m. peak hour. The eastbound and westbound left turn movements on US 64 are expected to operate at acceptable levels of service in the a.m. and p.m. peak hours without improvements. The existing full width storage provided for the westbound left turn lane on US 64 should be adequate to accommodate full build out of the development.

Since most traffic volumes are expected to travel to/from the east on US 64, it is not anticipated that a traffic signal would be warranted at the intersection of US 64 and the site driveway. The left turning volume from the site driveway onto US 64 is expected to be relatively low since the majority of site trips will be turning right from the site driveway to access US 64 Bypass. Right turning vehicles are not expected to experience long delays turning onto US 64.

Since Adolph Taylor Road currently carries a low traffic volume and no significant changes to traffic patterns on this roadway are expected in the near future, the intersection of the site driveway at Adolph Taylor Road was not analyzed. This intersection is expected to operate at an acceptable level of service given the low traffic volumes on Adolph Taylor Road.

Conclusions

In conclusion, this study considers traffic impacts due to full build out of the Belmeade residential development which will include 197 single-family homes and is located on US 64 just west of the US 64 Bypass interchange. Based on the findings of this study, this development is not expected to have a significant impact on the surrounding transportation system. Access is provided on US 64 at an existing median opening with existing auxiliary left turn lanes and right turn lanes on US 64. These existing turn lanes are expected to be sufficient to handle future traffic from the development.

The secondary access on Adolph Taylor Road is also expected to operate at an acceptable level of service due to the low traffic volume on Adolph Taylor Road.

Recommendations

US 64 and Site Driveway (Existing Median Opening)

- Construct the Site Driveway with one ingress lane and two egress lanes. The egress lanes could be striped with either of two options. One option is to stripe the approach with one exclusive left turn lane and one shared through-right turn lane, while the second option is to stripe as one shared left-through lane and an exclusive right turn lane.

Mr. Jeff W. Westmoreland, RLA, ASLA

August 10, 2006

Page 6

- No additional improvements are recommended on US 64. The existing westbound left turn lane and eastbound right turn lane will provide sufficient storage for site traffic.

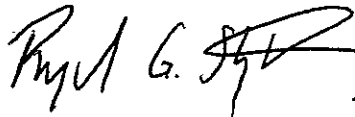
Adolph Taylor Road and Site Driveway

- Construct the Site Driveway with one ingress lane and one egress lane.
- No auxiliary turn lanes are required on Adolph Taylor Road due to the low traffic volumes on this roadway.

If you should have any questions relative to this correspondence, please feel free to contact me at (919) 872-5115.

Sincerely,

Ramey Kemp and Associates, Inc.



Rynal G. Stephenson, P.E.
Transportation Engineer



Attachments

FIGURES

BELMEADE
PITTSBORO, NORTH CAROLINA

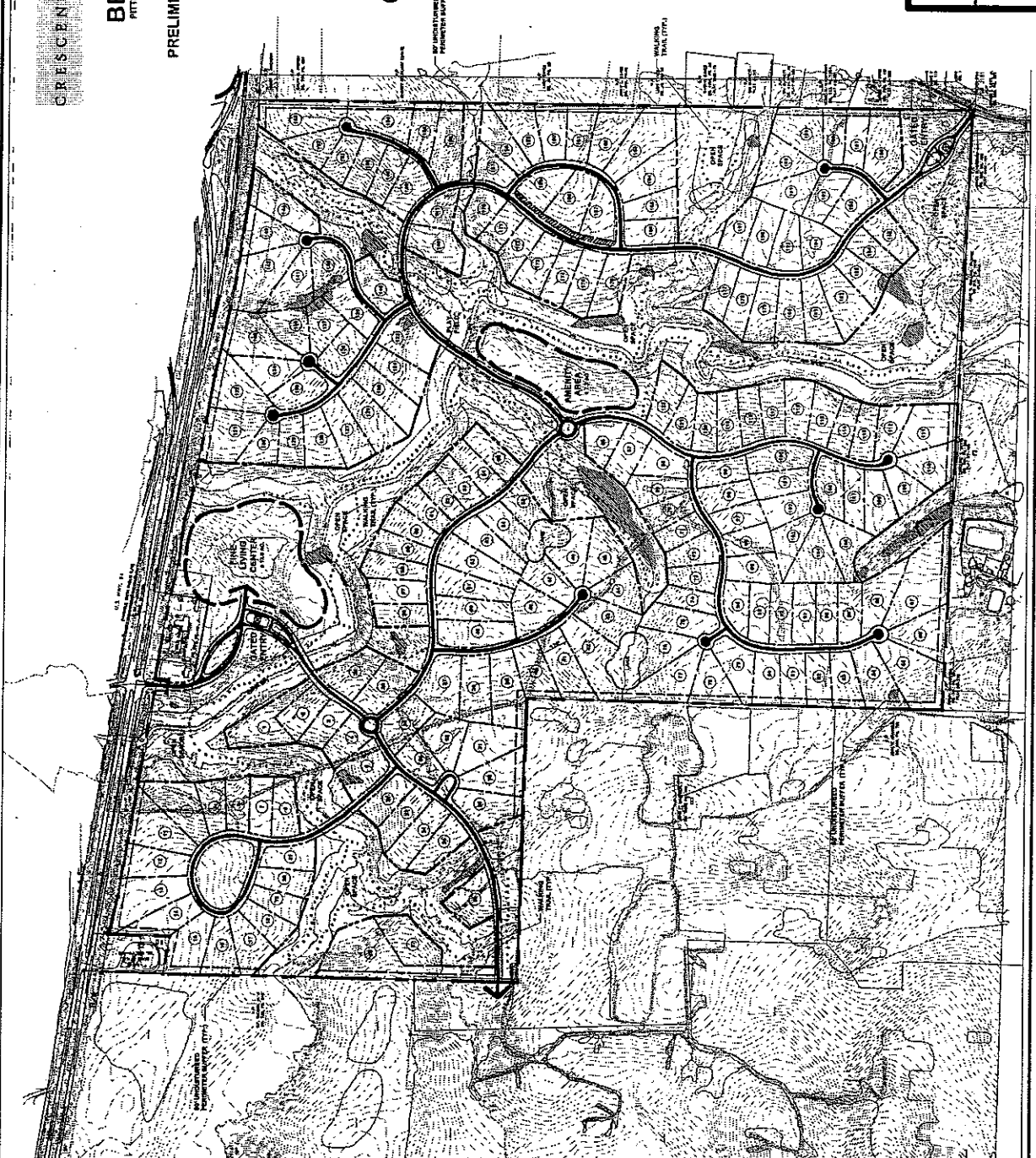
PRELIMINARY MASTER PLAN

AUGUST 1, 2006



SITE DATA

TOTAL SITE: 4.860 AC.
 197 RESIDENTIAL LOTS
 8.12 AC. MINIMUM
 (100' - 170' WIDTH, 200' x DEPTH)
 2,233 AC. RESIDENTIAL LOTS
 2,233 AC. PRIVATE STREET R.O.W.
 (4,200 L.P. STREETS)
 272 AC. AMENITY AREA
 175.3 AC. FINE LIVING CENTER
 4,128 AC. OPEN SPACE
 2,580.9 AC. PROJECT TOTAL

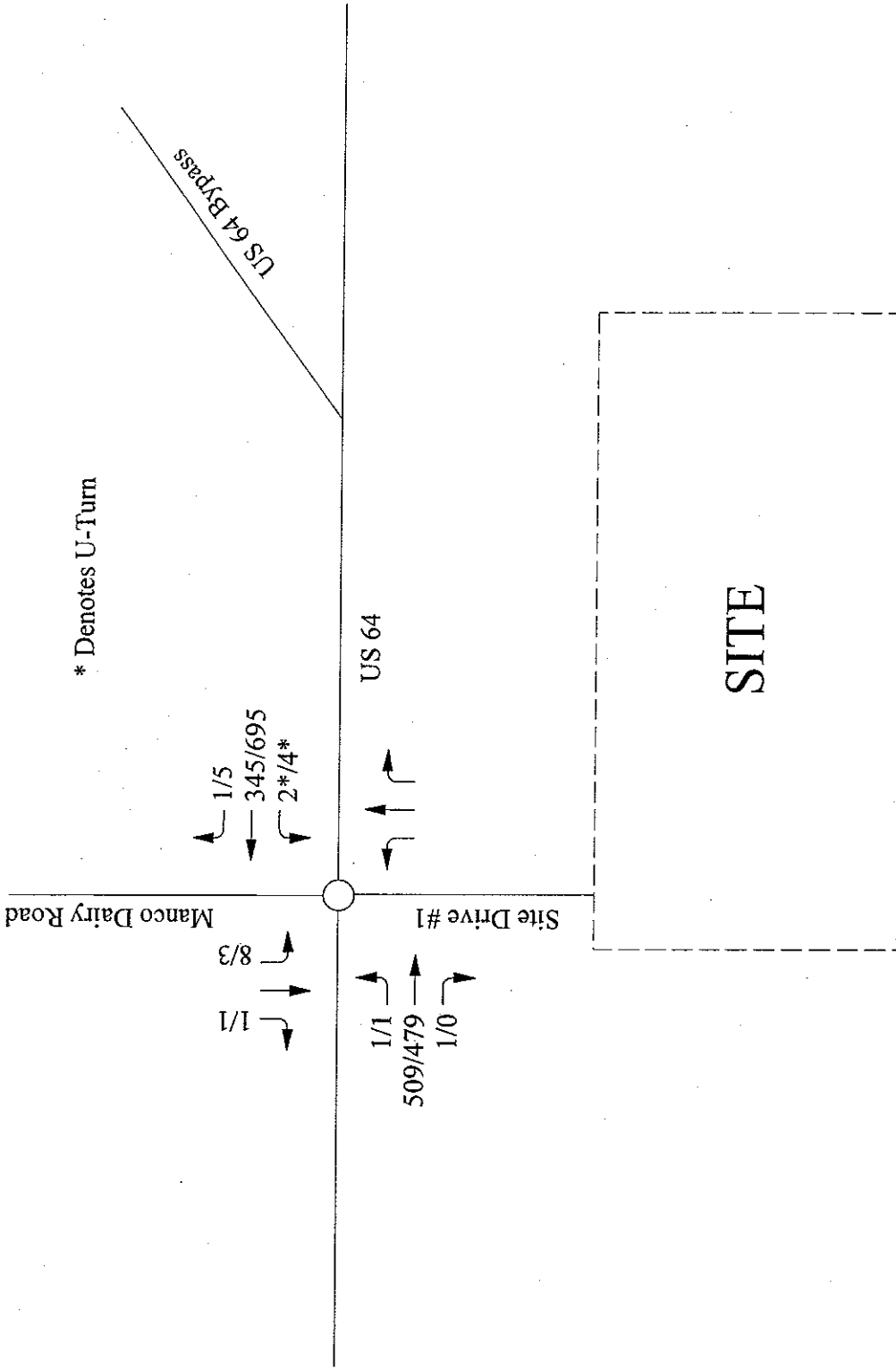


BELMEADE RESIDENTIAL DEVELOPMENT
PITTSBORO, NORTH CAROLINA

Site Plan

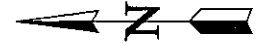
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Figure 1

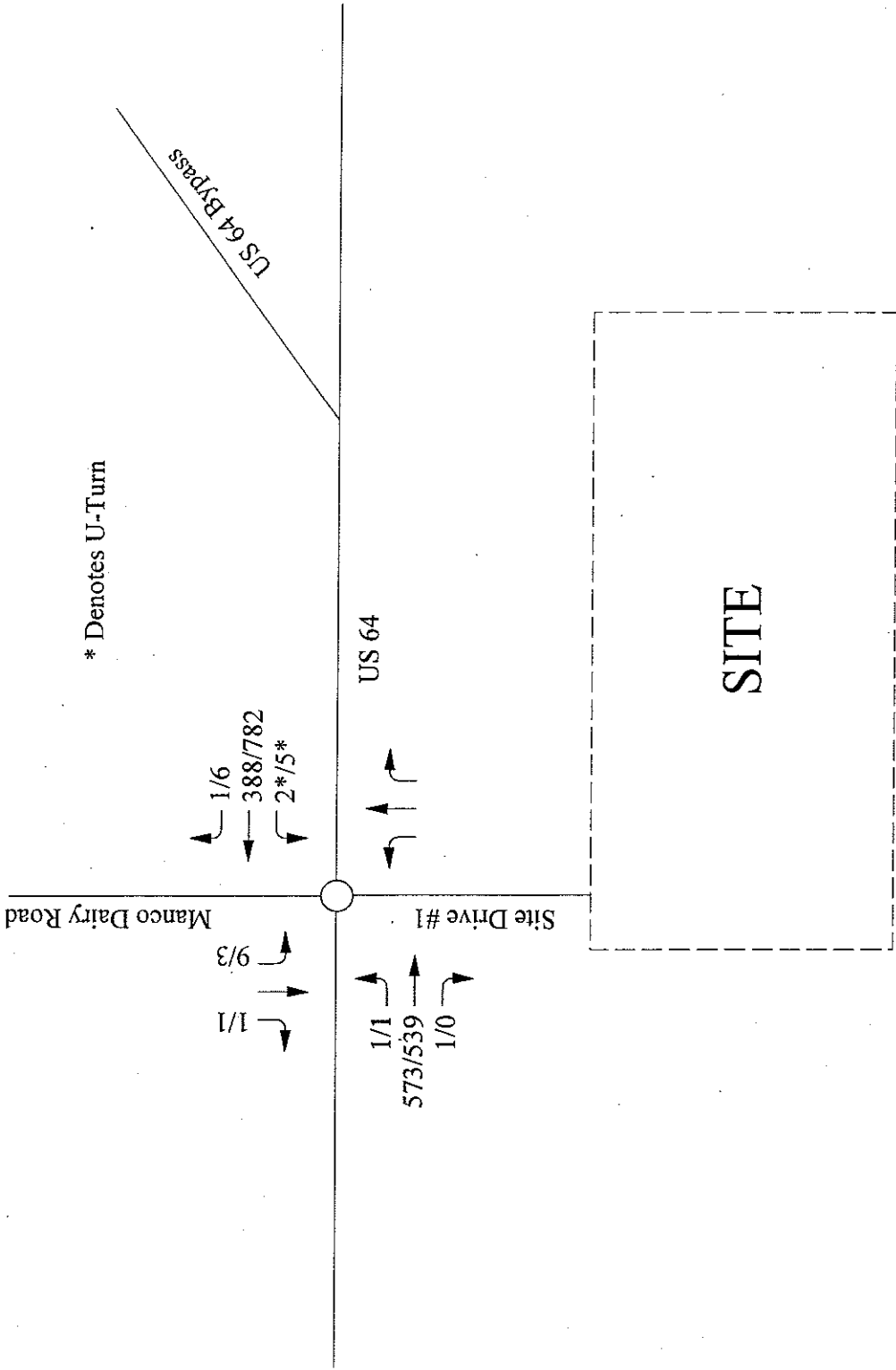


LEGEND

- Unsignalized Intersection
- X/Y AM/PM Peak Hour Traffic



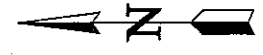
BELMEADE RESIDENTIAL DEVELOPMENT PITTSBORO, NORTH CAROLINA	
Existing (2006) Peak Hour Traffic	
Scale: Not to Scale	Figure 2



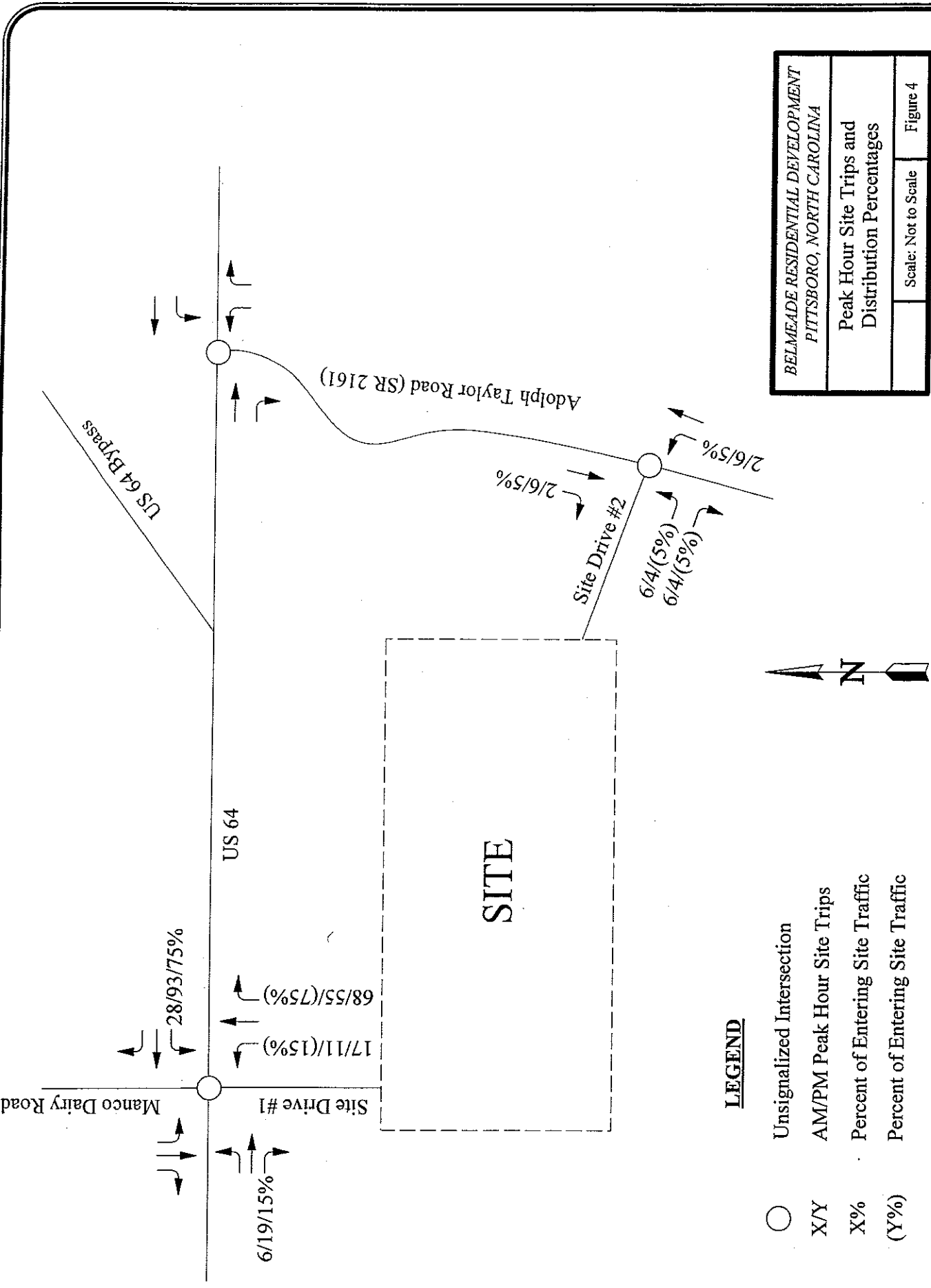
* Denotes U-Turn

LEGEND

- Unsignalized Intersection
- X/Y AM/PM Peak Hour Traffic



BELMEADE RESIDENTIAL DEVELOPMENT PITTSBORO, NORTH CAROLINA	
Background (2010) Peak Hour Traffic	
Scale: Not to Scale	Figure 3



**BELMEADE RESIDENTIAL DEVELOPMENT
PITTSBORO, NORTH CAROLINA**

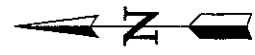
Peak Hour Site Trips and
Distribution Percentages

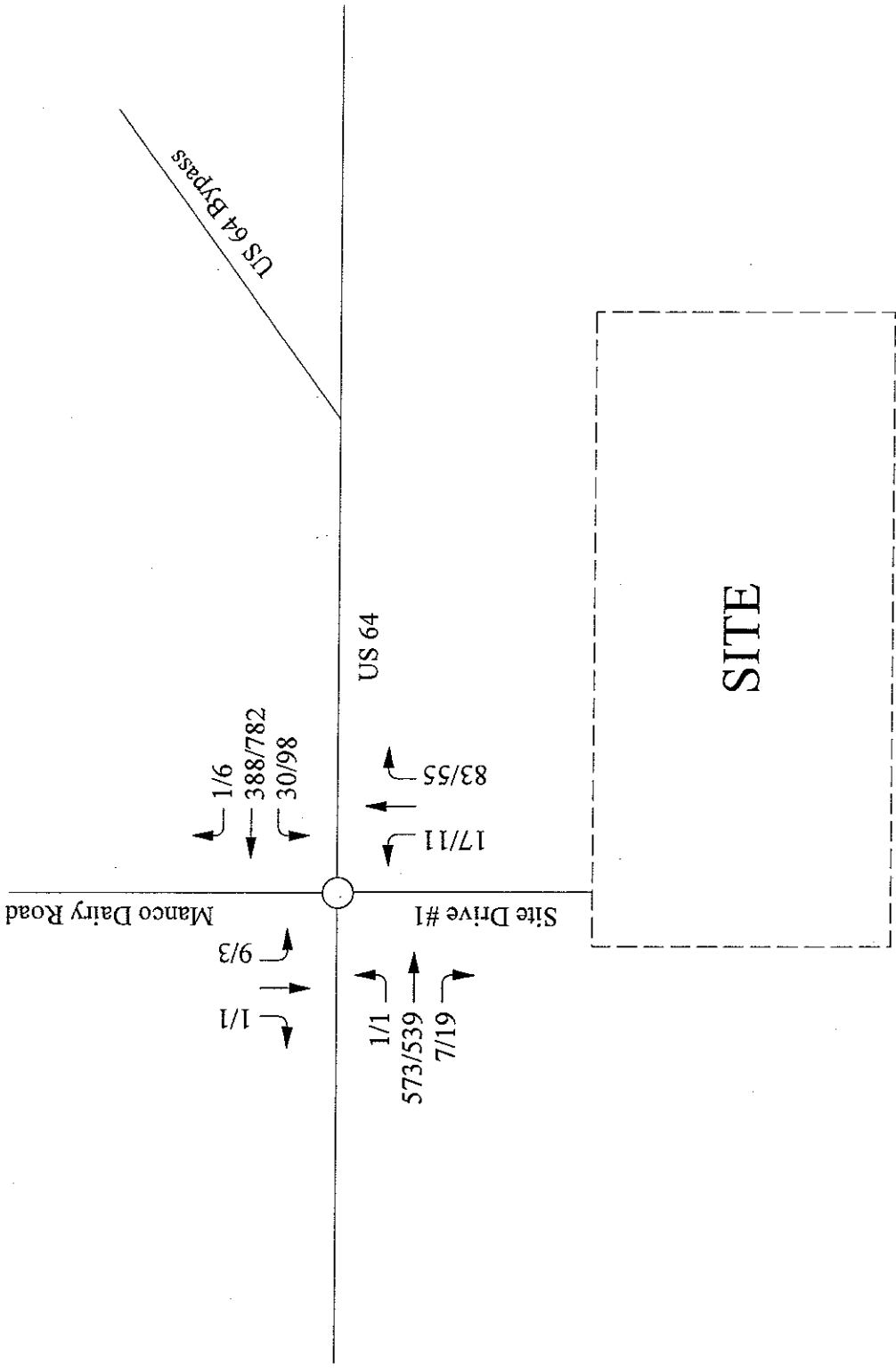
Scale: Not to Scale

Figure 4

LEGEND

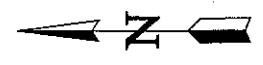
- Unsignalized Intersection
- X/Y AM/PM Peak Hour Site Trips
- X% Percent of Entering Site Traffic
- (Y%) Percent of Entering Site Traffic





LEGEND

- Unsignalized Intersection
- X/Y AM/PM Peak Hour Traffic



BELMEADE RESIDENTIAL DEVELOPMENT PITTSBORO, NORTH CAROLINA	
Combined (2010) Peak Hour Traffic	
Scale: Not to Scale	Figure 5

TECHNICAL APPENDIX

APPENDIX A

TRAFFIC COUNT DATA

Ramey Kemp and Associates, Inc.
 4928-A Windy Hill Drive
 Raleigh, NC 27609
 P:(919)872-5115 F:(919)878-5416

File Name : US64@MarcoDairy
 Site Code : 00081006
 Start Date : 08/10/2006
 Page No : 1

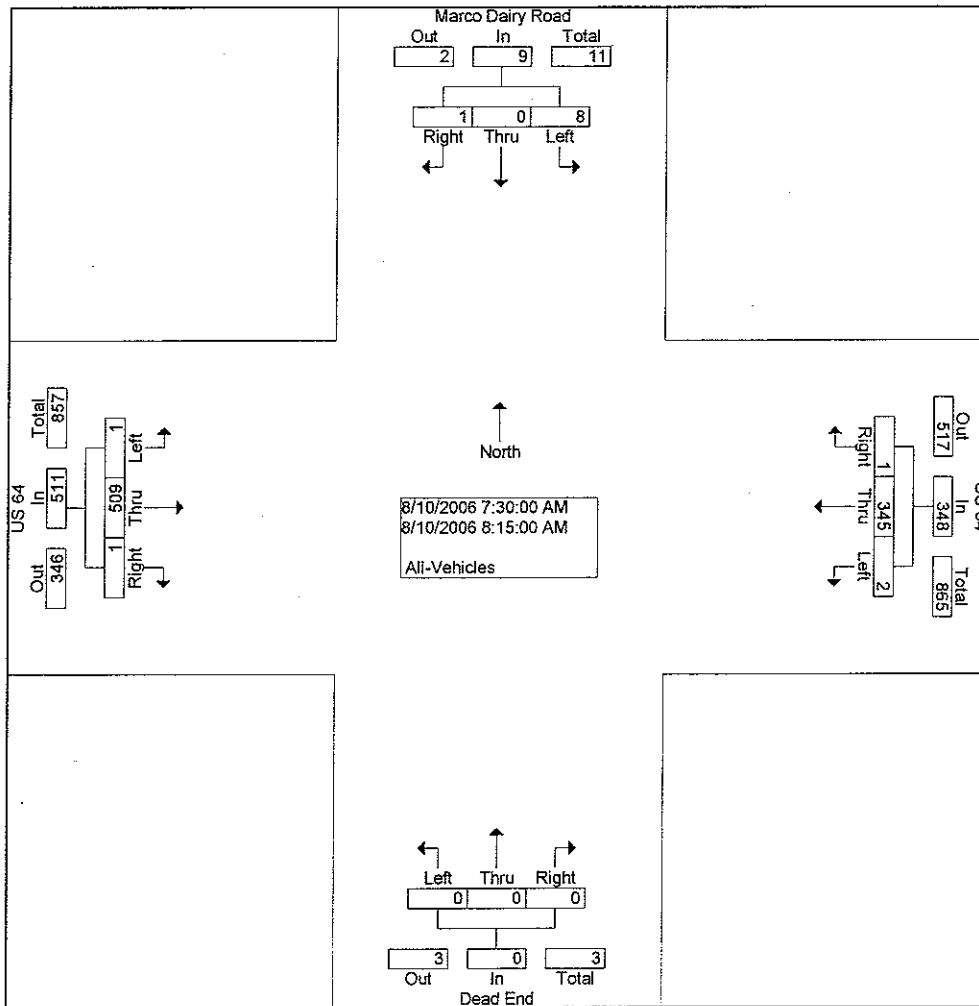
Groups Printed- All-Vehicles

Start Time	Marco Dairy Road Southbound				US 64 Westbound				Dead End Northbound				US 64 Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks			
07:00 AM	0	0	0	0	1	57	0	7	0	0	0	0	0	109	0	12	19	167	186
07:15 AM	1	0	0	0	0	65	0	10	0	0	0	0	0	102	0	6	16	168	184
07:30 AM	0	0	0	0	0	84	0	11	0	0	0	0	0	120	0	14	25	204	229
07:45 AM	3	0	0	0	0	87	0	7	0	0	0	0	1	137	0	16	23	228	251
Total	4	0	0	0	1	293	0	35	0	0	0	0	1	468	0	48	83	767	850
08:00 AM	1	0	0	0	1	90	0	16	0	0	0	0	0	120	0	13	29	212	241
08:15 AM	4	0	1	0	1	84	1	10	0	0	0	0	0	132	1	8	18	224	242
08:30 AM	0	0	0	0	0	94	0	16	0	0	0	0	1	104	0	12	28	199	227
08:45 AM	0	0	0	0	1	79	1	10	0	0	0	0	1	110	2	14	24	194	218
Total	5	0	1	0	3	347	2	52	0	0	0	0	2	466	3	47	99	829	928
****BREAK****																			
04:30 PM	3	0	0	0	1	155	1	9	0	0	0	0	0	120	0	11	20	280	300
04:45 PM	0	0	1	0	0	178	0	13	0	0	0	0	0	114	0	11	24	293	317
Total	3	0	1	0	1	333	1	22	0	0	0	0	0	234	0	22	44	573	617
05:00 PM	0	0	0	0	0	189	1	11	0	0	0	0	0	130	0	6	17	320	337
05:15 PM	0	0	0	0	3	173	3	10	0	0	0	0	1	115	0	7	17	295	312
05:30 PM	2	0	0	0	1	120	3	5	0	0	0	0	0	108	0	6	11	234	245
05:45 PM	1	0	0	0	1	142	1	10	0	0	0	0	0	93	0	8	18	238	256
Total	3	0	0	0	5	624	8	36	0	0	0	0	1	446	0	27	63	1087	1150
06:00 PM	0	0	1	0	0	140	2	10	0	0	0	0	0	104	0	5	15	247	262
06:15 PM	2	0	0	0	0	122	1	5	0	0	0	0	0	103	0	3	8	228	236
Grand Total	17	0	3	0	10	1859	14	160	0	0	0	0	4	1821	3	152	312	3731	4043
Apprch %	85.0	0.0	15.0		0.5	98.7	0.7		0.0	0.0	0.0		0.2	99.6	0.2				
Total %	0.5	0.0	0.1		0.3	49.8	0.4		0.0	0.0	0.0		0.1	48.8	0.1		7.7	92.3	

Ramey Kemp and Associates, Inc.
 4928-A Windy Hill Drive
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 P:(919)872-5115 F:(919)878-5416

File Name : US64@MarcoDairy
 Site Code : 00081006
 Start Date : 08/10/2006
 Page No : 2

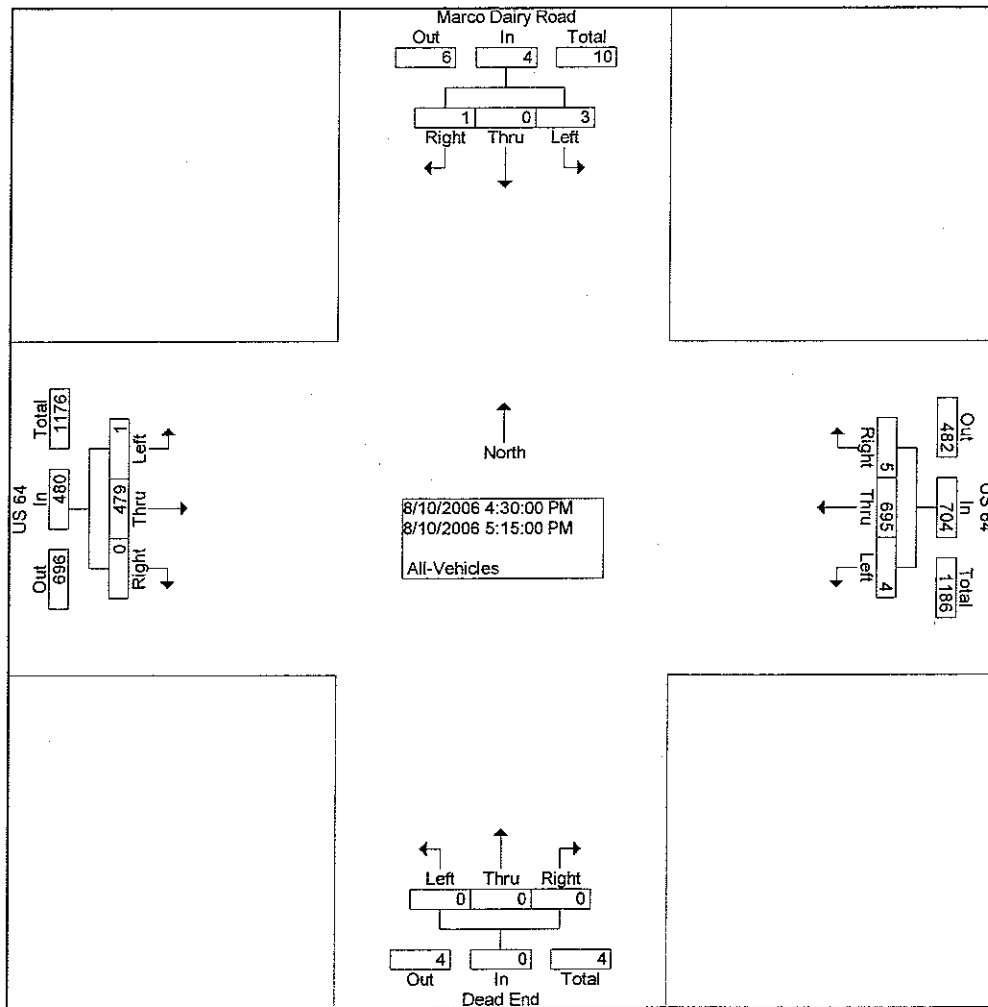
Start Time	Marco Dairy Road Southbound				US 64 Westbound				Dead End Northbound				US 64 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	8	0	1	9	2	345	1	348	0	0	0	0	1	509	1	511	868
Percent	88.9	0.0	11.1		0.6	99.1	0.3		0.0	0.0	0.0		0.2	99.6	0.2		
07:45 Volume	3	0	0	3	0	87	0	87	0	0	0	0	1	137	0	138	228
Peak Factor																	0.952
High Int.	08:15 AM				08:00 AM				6:45:00 AM				07:45 AM				
Volume	4	0	1	5	1	90	0	91	0	0	0	0	1	137	0	138	
Peak Factor	0.450								0.956								0.926



Ramey Kemp and Associates, Inc.
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File Name : US64@MarcoDairy
 Site Code : 00081006
 Start Date : 08/10/2006
 Page No : 3

Start Time	Marco Dairy Road Southbound				US 64 Westbound				Dead End Northbound				US 64 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 06:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	3	0	1	4	4	695	5	704	0	0	0	0	1	479	0	480	1188
Percent	75.0	0.0	25.0		0.6	98.7	0.7		0.0	0.0	0.0		0.2	99.8	0.0		
05:00 Volume	0	0	0	0	0	189	1	190	0	0	0	0	0	130	0	130	320
Peak Factor	0.928																
High Int.	04:30 PM																
Volume	3	0	0	3	05:00 PM				05:00 PM				0	130	0	130	
Peak Factor	0.333				0.926				0.923								



APPENDIX B

CAPACITY ANALYSIS RESULTS

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Volume (veh/h)	1	509	1	2	0	345	1	0	0	0	8	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	1	566	1	0	0	383	1	0	0	0	9	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			Raised
Median storage (veh)									1			1
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	384			0	567			761	952	283	668	952
vC1, stage 1 conf vol								568	568		383	383
vC2, stage 2 conf vol								193	384		285	569
vCu, unblocked vol	384			0	567			761	952	283	668	952
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)								6.5	5.5		6.5	5.5
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	100			100	100	100	98	100
cM capacity (veh/h)	1171			0	1001			389	367	714	453	367
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	1	283	283	1	0	192	192	1	0	10		
Volume Left	1	0	0	0	0	0	0	0	0	9		
Volume Right	0	0	0	1	0	0	0	1	0	1		
cSH	1171	1700	1700	1700	1700	1700	1700	1700	1700	476		
Volume to Capacity	0.00	0.17	0.17	0.00	0.00	0.11	0.11	0.00	0.00	0.02		
Queue Length (ft)	0	0	0	0	0	0	0	0	0	2		
Control Delay (s)	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7		
Lane LOS	A								A	B		
Approach Delay (s)	0.0				0.0				0.0	12.7		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization		25.6%										
ICU Level of Service										A		

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage (veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	192
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	192
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	818
Direction, Lane #	

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↑↑	↗		↔	↑↑	↗		↕			↕
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Volume (veh/h)	1	479	0	4	0	695	5	0	0	0	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	1	532	0	0	0	772	6	0	0	0	3	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			Raised
Median storage (veh)									1			1
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	778			0	532			922	1312	266	1041	1307
vC1, stage 1 conf vol								534	534		772	772
vC2, stage 2 conf vol								387	778		268	534
vCu, unblocked vol	778			0	532			922	1312	266	1041	1307
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)								6.5	5.5		6.5	5.5
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	100			100	100	100	99	100
cM capacity (veh/h)	835			0	1031			350	278	732	288	279
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	1	266	266	0	0	386	386	6	0	4		
Volume Left	1	0	0	0	0	0	0	0	0	3		
Volume Right	0	0	0	0	0	0	0	6	0	1		
cSH	835	1700	1700	1700	1700	1700	1700	1700	1700	332		
Volume to Capacity	0.00	0.16	0.16	0.00	0.00	0.23	0.23	0.00	0.00	0.01		
Queue Length (ft)	0	0	0	0	0	0	0	0	0	1		
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0		
Lane LOS	A								A	C		
Approach Delay (s)	0.0				0.0				0.0	16.0		
Approach LOS									A	C		
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			31.3%		ICU Level of Service				A			

Existing (2006)

Timing Plan: PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development



Movement SBR

Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	386
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	386
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	612

Direction, Lane #

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Volume (veh/h)	1	573	1	2	0	388	1	0	0	0	9	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	1	637	1	0	0	431	1	0	0	0	10	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			Raised
Median storage veh									1			1
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	432			0	638			856	1071	318	752	1071
vC1, stage 1 conf vol								639	639		431	431
vC2, stage 2 conf vol								217	432		321	640
vCu, unblocked vol	432			0	638			856	1071	318	752	1071
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)								6.5	5.5		6.5	5.5
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	100			100	100	100	98	100
cM capacity (veh/h)	1124			0	942			350	334	677	416	335
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	1	318	318	1	0	216	216	1	0	11		
Volume Left	1	0	0	0	0	0	0	0	0	10		
Volume Right	0	0	0	1	0	0	0	1	0	1		
cSH	1124	1700	1700	1700	1700	1700	1700	1700	1700	436		
Volume to Capacity	0.00	0.19	0.19	0.00	0.00	0.13	0.13	0.00	0.00	0.03		
Queue Length (ft)	0	0	0	0	0	0	0	0	0	2		
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5		
Lane LOS	A								A	B		
Approach Delay (s)	0.0				0.0				0.0	13.5		
Approach LOS									A	B		
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			27.6%		ICU Level of Service				A			

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage (veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	216
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	216
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	789
Direction, Lane #	

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Sign Control		Free				Free			Stop			Stop	
Grade		0%				0%			0%			0%	
Volume (veh/h)	1	539	0	5	0	782	6	0	0	0	3	0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (veh/h)	1	599	0	0	0	869	7	0	0	0	3	0	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type									Raised			Raised	
Median storage (veh)									1			1	
Upstream signal (ft)													
pX, platoon unblocked				0.00									
vC, conflicting volume	876			0	599			1037	1477	299	1171	1470	
vC1, stage 1 conf vol								601	601		869	869	
vC2, stage 2 conf vol								436	876		302	601	
vCu, unblocked vol	876			0	599			1037	1477	299	1171	1470	
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5	
tC, 2 stage (s)								6.5	5.5		6.5	5.5	
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0	
p0 queue free %	100			0	100			100	100	100	99	100	
cM capacity (veh/h)	767			0	974			313	245	697	250	247	
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1			
Volume Total	1	299	299	0	0	434	434	7	0	4			
Volume Left	1	0	0	0	0	0	0	0	0	3			
Volume Right	0	0	0	0	0	0	0	7	0	1			
cSH	767	1700	1700	1700	1700	1700	1700	1700	1700	291			
Volume to Capacity	0.00	0.18	0.18	0.00	0.00	0.26	0.26	0.00	0.00	0.02			
Queue Length (ft)	0	0	0	0	0	0	0	0	0	1			
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.6			
Lane LOS	A								A	C			
Approach Delay (s)	0.0				0.0				0.0	17.6			
Approach LOS									A	C			
Intersection Summary													
Average Delay			0.1										
Intersection Capacity Utilization			34.0%	ICU Level of Service				A					

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage (veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	434
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	434
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	570
Direction, Lane #	

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Volume (veh/h)	1	573	7	2	28	388	1	17	0	83	9	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	1	637	8	0	31	431	1	19	0	92	10	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			Raised
Median storage (veh)									1			1
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	432			0	644			918	1133	318	906	1140
vC1, stage 1 conf vol								639	639		493	493
vC2, stage 2 conf vol								279	494		413	647
vCu, unblocked vol	432			0	644			918	1133	318	906	1140
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)								6.5	5.5		6.5	5.5
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	97			94	100	86	97	100
cM capacity (veh/h)	1124			0	937			333	314	677	313	304
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	
Volume Total	1	318	318	8	31	216	216	1	19	92	11	
Volume Left	1	0	0	0	31	0	0	0	19	0	10	
Volume Right	0	0	0	8	0	0	0	1	0	92	1	
cSH	1124	1700	1700	1700	937	1700	1700	1700	333	677	333	
Volume to Capacity	0.00	0.19	0.19	0.00	0.03	0.13	0.13	0.00	0.06	0.14	0.03	
Queue Length (ft)	0	0	0	0	3	0	0	0	4	12	3	
Control Delay (s)	8.2	0.0	0.0	0.0	9.0	0.0	0.0	0.0	16.5	11.2	16.2	
Lane LOS	A				A				C	B	C	
Approach Delay (s)	0.0				0.6				12.1		16.2	
Approach LOS									B		C	
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization		36.6%			ICU Level of Service				A			

Combined (2010)
 Timing Plan: AM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Movement SBR

Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage (veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	216
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	216
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	789

Direction, Lane #

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↑↑	↔		↔	↑↑	↔		↔	↔		↔
Sign Control		Free				Free			Stop			Stop
Grade		0%				0%			0%			0%
Volume (veh/h)	1	539	19	5	93	782	6	11	0	55	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (veh/h)	1	599	21	0	103	869	7	12	0	61	3	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			Raised
Median storage (veh)									1			1
Upstream signal (ft)												
pX, platoon unblocked				0.00								
vC, conflicting volume	876			0	620			1243	1683	299	1438	1698
vC1, stage 1 conf vol								601	601		1076	1076
vC2, stage 2 conf vol								642	1082		363	622
vCu, unblocked vol	876			0	620			1243	1683	299	1438	1698
tC, single (s)	4.1			0.0	4.1			7.5	6.5	6.9	7.5	6.5
tC, 2 stage (s)								6.5	5.5		6.5	5.5
tF (s)	2.2			0.0	2.2			3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			0	89			95	100	91	98	100
cM capacity (veh/h)	767			0	956			243	188	697	161	176
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	
Volume Total	1	299	299	21	103	434	434	7	12	61	4	
Volume Left	1	0	0	0	103	0	0	0	12	0	3	
Volume Right	0	0	0	21	0	0	0	7	0	61	1	
cSH	767	1700	1700	1700	956	1700	1700	1700	243	697	196	
Volume to Capacity	0.00	0.18	0.18	0.01	0.11	0.26	0.26	0.00	0.05	0.09	0.02	
Queue Length (ft)	0	0	0	0	9	0	0	0	4	7	2	
Control Delay (s)	9.7	0.0	0.0	0.0	9.2	0.0	0.0	0.0	20.6	10.7	23.8	
Lane LOS	A				A				C	B	C	
Approach Delay (s)	0.0				1.0				12.3		23.8	
Approach LOS									B		C	
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization		43.0%			ICU Level of Service				A			

HCM Unsignalized Intersection Capacity Analysis
 3: US 64 & Manco Dairy Road

Synchro 5 Report
 Belmeade Residential Development

Movement	SBR
Lane Configurations	
Sign Control	
Grade	
Volume (veh/h)	1
Peak Hour Factor	0.90
Hourly flow rate (veh/h)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage (veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	434
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	434
tC, single (s)	6.9
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	570

Direction, Lane #

IX. EXISTING SITE HYDROLOGY

The closest significant stream to the project is Harlands Creek, which bisects the property as it flows from north to south. A 100' buffer is proposed along each side of this creek.

In addition to Harlands Creek the natural buffers previously mentioned along wet weather draws and intermittent streams, ample water quality structures are planned within areas of significant impervious coverage (amenity center, fine living center). All roadways are designed with shoulder and ditch section rather than curb and gutter. Soil and Environmental Consultants (S&EC) has conducted a preliminary site evaluation of the wetlands and stream features on the site. A copy of that report is attached.

The current classification within this area is Local Watershed Area. All of the proposed uses are allowed within this watershed classification. A portion of 100 Year floodplain along Harlands Creek is located within the project and is designated on the appropriate exhibits contained in this document. No buildings will be built in the 100 year floodplain. Bridge crossings of Harlands Creek are planned.

Based upon an estimated maximum impervious footprint of 15,000 square feet per lot (walks, drive, home, etc.), the total impervious area for the project at final build out will be approximately 17.3% of the entire site.

Maximum Potential Impervious Calculation

Residential Lots	Impervious Area	Total
197	15,000 s.f.	2,955,000 s.f.

Item	Impervious Area
1. Homesites	2,995,000 s.f.
2. Roadways	601,485 s.f.
3. Amenity	430,000 s.f.
4. Sidewalks & Trails	210,000 s.f.
TOTAL IMPERVIOUS	4,196,485 s.f.
TOTAL TRACT AREA	556.59 Ac. 24,245,060 s.f.
IMPERVIOUS PERCENTAGE	17.3 %

Existing Hydrology Map

Preliminary Wetland and Stream Evaluation



Soil & Environmental Consultants, PA

11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

November 9, 2005

S&EC Project No.: 9894.W1

Chatham Development Corp.
Attn: Steven O'Neal
6208 Fayetteville Rd, Suite 104
Durham, NC 27713

Re: Preliminary Wetland & Stream Evaluation
Highway 64 (Pittsboro site) ± 555 acres
Pittsboro, Chatham County, North Carolina

Dear Mr. O'Neal,

On October 12, 2005 S&EC completed a preliminary wetland & stream evaluation on the Highway 64 (Pittsboro) site. The approximately 555 acre tract is situated south of and adjacent to Highway 64 at the junction of Highway 64 Business and Highway 64 Bypass, west of Pittsboro, NC. Figure 1 and figure 2 show the location of the site on a USGS topographic quadrangle and Chatham County Soil Survey, respectively.

EXECUTIVE SUMMARY

We have determined that wetlands and other jurisdictional waters (i.e., streams, ponds, or lakes) exist on the site. The attached wetland sketch map depicts the approximate location of wetlands and jurisdictional waters identified during our evaluation. Please refer to the sketch map and the results and recommendations section below for more detailed information. A number of areas on the property were too thick to evaluate. These areas are noted on the sketch map for the site.

SCOPE OF WORK

The preliminary wetland delineation consisted of pedestrian reconnaissance of the property to examine the soils, vegetation, and hydrology for the presence of areas that meet the criteria for jurisdictional wetlands by the procedures described in the Corps of Engineers Wetlands Delineation Manual (January 1987 – Final Report). Areas on the site

Charlotte Office:
236 LePhillip Court, Suite C
Concord, NC 28025
Phone: (704) 720-9405
Fax: (704) 720-9406

Greensboro Office:
3817-E Lawndale Drive
Greensboro, NC 27455
Phone: (336) 540-8234
Fax: (336) 540-8235

with positive indicators of hydric soils and evidence of wetland hydrology and hydrophytic vegetation were identified and sketched on a site map. Proof of wetland hydrology would be the existence of hydric soils with oxidized root channels in the upper 12 inches of the soil profile, water borne deposits, drift lines, scour marks, drainage patterns, regional indicators of soil saturation, etc. Surface waters such as intermittent and perennial stream channels, ponds, and lakes, which are also subject to regulation by the US Army Corps of Engineers (USACE) as waters of the US, were also identified. These surface waters may also be referred to as jurisdictional waters to indicate that they are within the jurisdiction of the USACE. It is important to note that wetlands are also classified as waters of the US and regulated by the USACE.

S&EC's stream evaluation consisted of examining each topographic drainage feature on the site using NC-DWQ stream evaluation techniques. Specifically, these areas were assessed based on indicators of stream geomorphology, hydrology, and biology. Areas with sufficient stream indicators would be considered jurisdictional by the USACE. Please be aware that local, municipal buffers will likely apply to those stream features depicted on the USGS and Chatham County Soil Survey.

RESULTS & RECOMMENDATIONS

The results of the preliminary evaluation of jurisdictional wetlands and other waters of the US are discussed below.

Wetlands and Jurisdictional Waters:

We have determined that wetlands and other jurisdictional waters (i.e., streams) exist on the site. The attached sketch map depicts the approximate location of jurisdictional waters identified within the evaluated area.

Stream features on this site flow into Harlands Creek, which has been classified in NC-DWQ's "Classification and Water Quality Standards Applicable to Surface Waters and Wetlands of North Carolina" as C. **Please be aware that Chatham County may require stream buffers alongside features depicted on the USGS and Soil Survey maps.** Feature A, Harlands Creek, is an important/perennial stream throughout its extent on property. Feature B is jurisdictional from the property line through to its confluence with Harlands Creek. Features C and D both flow in from the northern property line and are jurisdictional through to their confluence with Harlands Creek. Feature E flows on property from the west and is jurisdictional from the property line through to its confluence with feature F. Feature F is jurisdictional from the property line through to its confluence with Harlands Creek. Feature G is a jurisdictional stream beginning at and below flag S-06, continuing downstream off property towards Harlands Creek. Feature H is located in an area too thick to evaluate. Feature I is a jurisdictional stream beginning at and below flag S-02 and continuing downstream towards Harlands Creek. However, the drainage below the origin of feature I is too thick to evaluate. Feature J is a jurisdictional stream beginning at and below flag S-05 and continuing downstream, off-property.

Feature K is a jurisdictional stream that originates off-site, flowing on property from the south, and continuing downstream to its confluence with feature F. Feature L exhibits weak evidence of a jurisdictional stream; however, this channel begins at and below flag S-11. Feature L becomes weakly defined as it flows downstream towards feature F, but will remain jurisdictional through, to its confluence with feature L. Feature M is a jurisdictional stream with its origin at flag S-03, continuing downstream southerly, off-site. Feature N is a perennial/important jurisdictional stream from its origin at flag S-01 downstream to its confluence with Harlands Creek.

Wetlands on site consist of relic beaver impoundments, riparian wetlands, and headwater forested wetlands. A large, extensive, relic beaver impoundment is located west of the confluence of feature E and feature F. A number of wetlands are present along the floodplain of Harlands creek. Other headwater forest wetlands exist in areas upslope of the stream origin for many features (see sketch map). Other areas on this site were too thick to evaluate. These areas are identified on the sketch map and must have transects cut through before S&EC can complete the evaluation. Please see the wetland sketch map for the approximate location of wetlands and areas that were not evaluated.

There are two marginal areas on the property that S&EC does not believe to be jurisdictional wetlands or waters due to weak evidence of hydrology, and/or hydric soils. However due to the marginal nature of these areas, these areas should be visited with a representative of the USACE to determine their jurisdictional status. No other wetlands or jurisdictional waters were found within the project boundaries.

It is important to note that the preliminary sketch map is intended to provide only an approximate size and location of the wetlands on-site. The actual size and location of wetlands may differ slightly from those depicted on the sketch map. If the final site plan proposes impacting any of these areas, then a detailed delineation should be performed and the flags surveyed to provide an accurate map.

If you choose to have us conduct a detailed delineation we will hang flags to demarcate the wetland boundaries. All S&EC flags comprising the wetland and other jurisdictional waters delineation should then be surveyed and a Wetland Delineation Map generated for use in obtaining USACE approval and permitting. Be aware that the areas noted as TTE on the attached wetland sketch map must have transects cut in order to access them adequately for a detailed delineation.

Please have the current property owner complete the attached agent authorization form if you would like S&EC to act on their behalf in interacting with the USACE. **S&EC cannot conduct correspondence with the USACE unless we have agent authorization (see attached Agent Authorization). This authorization form must be filled out in its entirety and signed by the current landowner and sent to S&EC (a faxed copy is acceptable).**

REGULATIONS

Regulations that apply to jurisdictional wetlands and waters present on the site are discussed below.

Proposed Cape Fear River Buffer Rules

It was decided by the Environmental Management Commission that temporary Cape Fear River Basin Rules would not be enacted prior to adopting permanent rules. A specific date has not been set as to when the permanent Cape Fear Buffer Rules will be enacted. **It is important to note that the decision to not adopt temporary rules can be changed at any time.** The buffer rules will protect up to 50 feet from the edge of existing "surface waters" (i.e., intermittent streams, perennial streams, ponds, lakes and estuaries) found within the Cape Fear River Basin. The 50-foot buffer consists of two zones. The first zone is measured 30 feet landward from the top bank of streams and is intended to contain an undisturbed forested area. The second zone extends 20 feet landward from the edge of the first zone and is intended to contain a vegetated buffer. Grading with re-vegetating is permissible in Zone 2 (the outer 20 feet of the 50 foot buffer). Mitigation for road crossings is mandatory for impacts greater than 150 feet in width and utility lines running parallel and within Zone 1. Please call if you would like to discuss the uses/allowances within buffered areas. **In order for a project not to be subject to these buffer rules, an approved site specific plan for proposed impacts to wetlands and other waters of the US would have to be obtained from the USACE and the DWQ prior to enactment of the rules.**

Chatham County Buffers

Areas on this site will be subject to local municipality buffers. Your engineer should have more details on these buffers.

Wetland Permitting

Wetland impact permits are issued on a per-project basis as determined by the USACE. The USACE has determined that impacts on parcels sub-divided from larger tracts are sometimes considered to be cumulative to existing impacts for the large tract. If this is the case, then thresholds as discussed below may not apply and impacts to wetlands must be considered in light of existing permits.

Preconstruction notification to the USACE and the NC-DWQ is not required for wetland impacts that meet the general conditions of Nationwide Permit 39 and that impact less than 1/10 acre per project. Preconstruction notification and approval by the USACE is required for wetland impacts that exceed 1/10 of an acre and /or any stream channel impacts. **Preconstruction notification and approval by the NC-DWQ is required for wetland impacts that exceed 1/10 of an acre if the property is west of I-95 or 1/3 of an acre if the project is east of I-95. Preconstruction notification and approval by the NC-DWQ is required for any stream channel impacts within buffered basins**

(i.e. the Neuse, Tar-Pamlico, Randleman, and portions of the Catawba Basins) or for cumulative stream impacts that exceed 150 linear feet in non-buffered basins. If development impacts exceed the thresholds for notification and proposed impervious area for the project or any part of the project exceeds 30%, then stormwater treatment to meet the pollutant removal design standard of 85% removal of total suspended solids (i.e., wet detention basins, stormwater wetlands, bioretention areas, etc.) and 30% of Nitrogen will likely be required by the NC-DWQ. The maximum permanent impact allowed per project under the nationwide permits is 1/2 acre of wetland and/or 300 linear feet of USACE important stream channel. Nationwide Permit 39 limits above-grade fills within 100-year floodplains specifically prohibiting above-grade fill within the floodway. Additionally, Nationwide Permit 39 limits stream channelization and relocation to streams with an average annual flow of less than 1cfs.

Per project impacts to vegetated wetlands in excess of 1 acre or impacts to streams that contain "significant aquatic function" in excess of 150 linear feet will most likely require mitigation by the NC-DWQ. The USACE may require mitigation for any wetland/jurisdictional waters impacts. Actual mitigation requirements are typically determined on a case-by-case basis. Wetland mitigation is a complex process that requires planning and monitoring. S&EC will discuss mitigation issues with you if we believe your project may require mitigation.

Impacts to channels containing "significant aquatic function" in excess of the notification thresholds may require mitigation. Channel mitigation is typically intended to replace lost significant aquatic functions and values. Relocating channels is considered to be an adverse impact and typically results in mitigation within the new channel. Therefore, this type of mitigation usually requires that meanders be created within constructed channels. Side-slopes and beds be vegetated; riprap is discouraged.

A complete NC-DWQ 401 Water Quality Certification application for a Nationwide Permit has a maximum 60-day processing period. A complete USACE Nationwide Permit application has a 45-day processing period, while Individual Permit applications submitted to the USACE have no maximum processing periods. **The USACE requires that all impacts to wetlands or Waters of the US, less than 1/10 acre, be reported to the USACE within 30 days of the completion of construction.**

Nationwide Permits can potentially be utilized if the project is designed to impact up to 1/2 acre of jurisdictional wetlands or waters of the US including a maximum of 300 linear feet of important stream channel impact under NWP 39. Cumulative impacts per project over these nationwide thresholds will require an individual permit. Individual Permits require an analysis to determine that the proposed impact is the least environmentally damaging practical alternative, typically require compensatory mitigation, notification to adjacent property owners, a public notice, and may require a public hearing. All impacts greater than 1/10 acre require written justification.

ADDITIONAL SERVICES

Please note that some areas on the site were too thick to evaluate. S&EC attempted to evaluate these areas, but was unable to reasonably observe these areas well enough to accurately report their contents. If you choose to have S&EC perform additional work, the following is a list of additional services that apply: (1) Delineate the boundary of wetland areas on-site, (2) Request that the USACE verify our delineation and assign mitigation requirements for streams, and (3) Send notice to the USACE and NC-DWQ for impacts to jurisdictional areas and riparian buffers, as well as address permitting issues, if required. This additional work can be completed at our hourly rates or a proposal can be generated. Please call Jason Payne if you need further explanation of the information provided.

Sincerely,



Jason Payne
Wetland Scientist



Steven Ball
Wetland Scientist

Attachments:

1. Figure 1 – USGS Map
2. Figure 2 – Soil Survey Map
3. Wetland Sketch Maps
4. Agent Authorization Form



Project No.
9894.W1

Project Mgr.:
Jason Payne

Scale:
1" = 2,000'

10/11/05

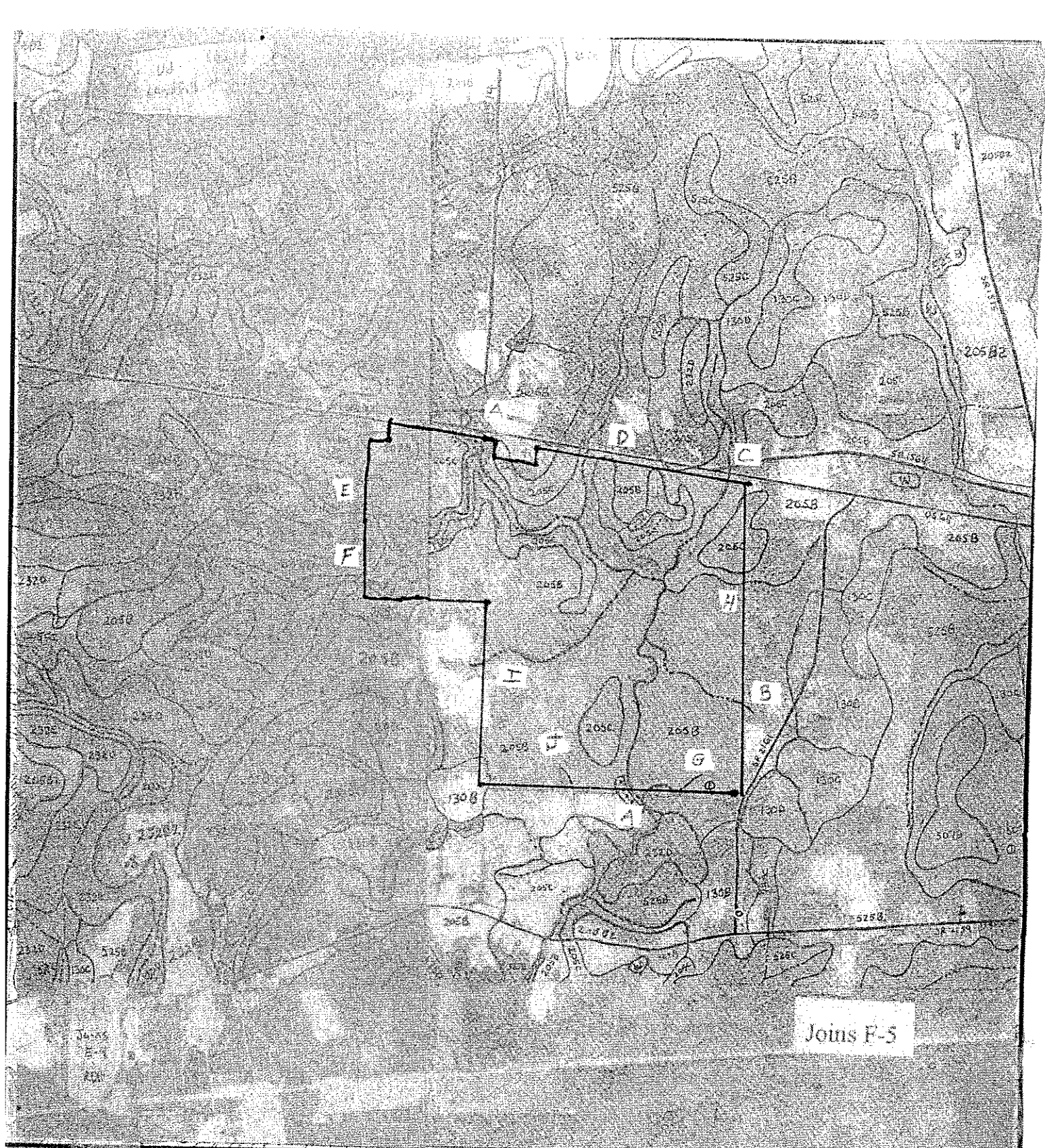
Figure 1 - 1:24K USGS
Topographic Quadrangle

Highway 64 Site(Pittsboro)
Chatham Development Corp.
Chatham County, NC

Pittsboro Quad (1993)
Siler City NE Quad (1980)



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Project No.
9894.W1

Project Mgr.:
Jason Payne

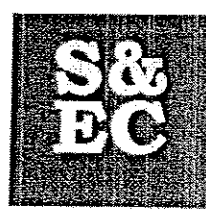
Scale:
1" = 2,000'

10/11/05

Figure 2 - NRCS Soil
Survey Map

Highway 64 Site(Pittsboro)
Chatham Development Corp.
Chatham County, NC

Chatham County
Soil Survey



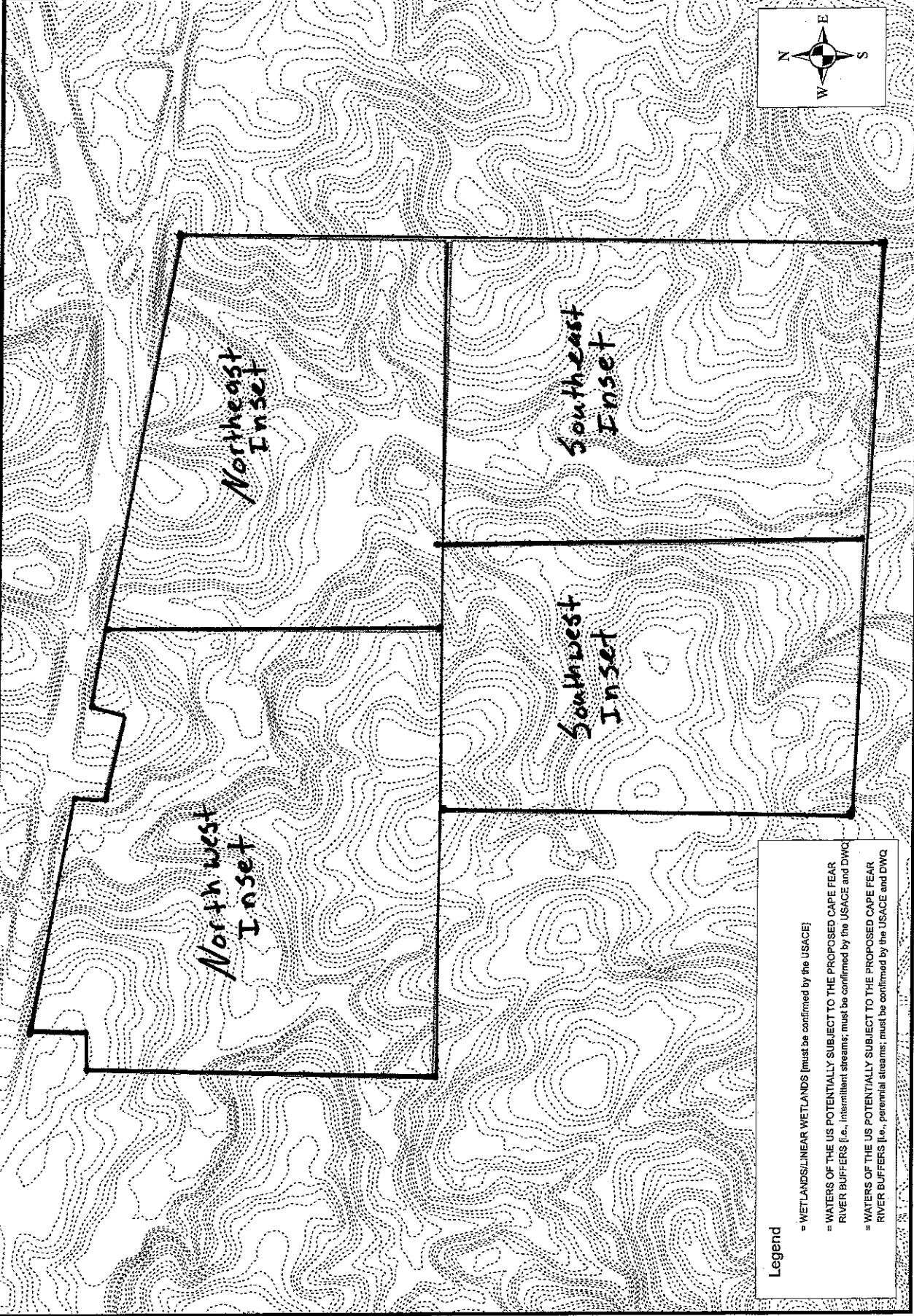
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 October 14, 2005

Preliminary Sketch Map
 Project Manager: Jason Payne
 Project Number: 9894.W1

Prepared by: Steven Ball
 Chatham Development Corp
 Chatham Co., NC
 Highway 64 Site (Pittsboro)
 Scale: 1" = 600'



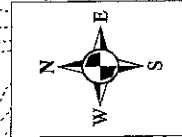
Legend

- = WETLANDS/LINEAR WETLANDS (must be confirmed by the USACE)
- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., intermittent streams; must be confirmed by the USACE and DWQ)
- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., perennial streams; must be confirmed by the USACE and DWQ)



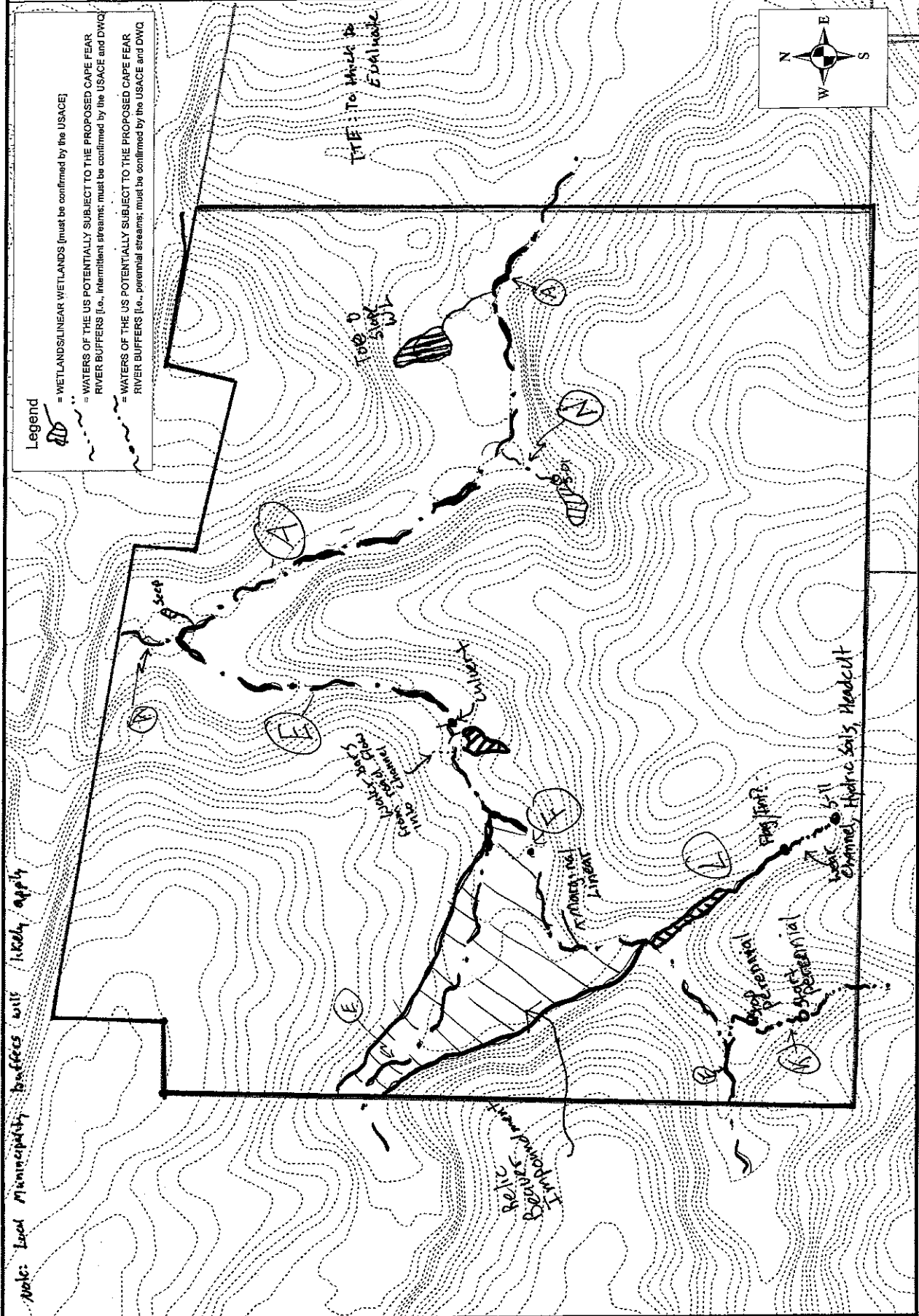
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 October 14, 2005

Project Manager: Jason Payne	Project Number: 9894.W1	Prepared by: Steven Ball
Northwest Wetland Sketch Map		
Scale: 1" = 300'		
Highway 64 Site (Pittsboro) Chatham Development Corp Chatham Co., NC		



Legend

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- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., intermittent streams; must be confirmed by the USACE and DWQ)
- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., perennial streams; must be confirmed by the USACE and DWQ)

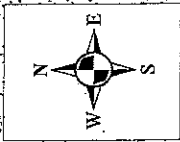




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 October 14, 2005

Project Manager: Jason Payne
 Project Number: 9894.W1
 Prepared by: Steven Ball

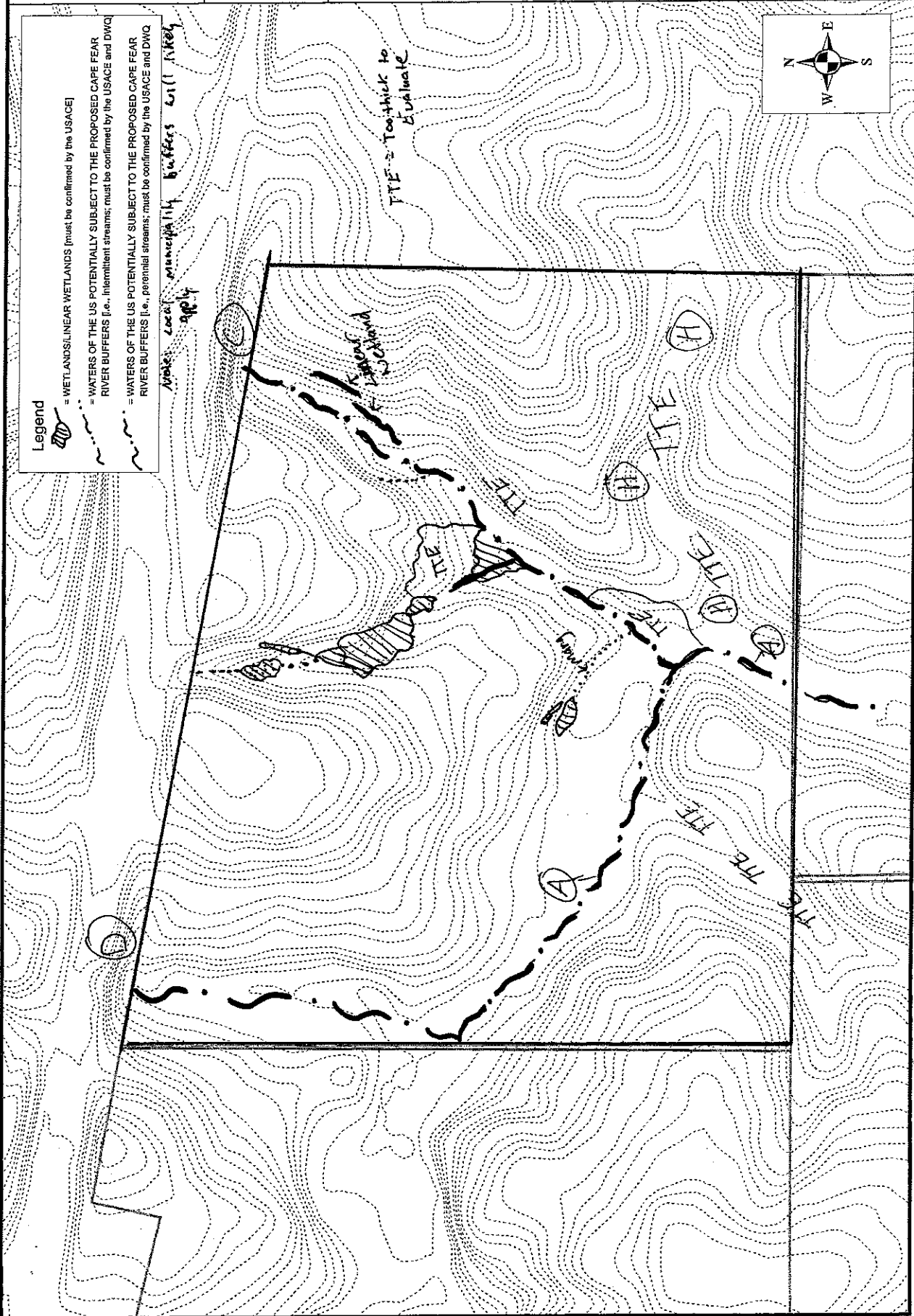
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 Highway 64 Site (Pittsboro)
 Chatham Development Corp
 Chatham Co., NC



Legend

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- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., intermittent streams; must be confirmed by the USACE and DWQ)
- = WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., perennial streams; must be confirmed by the USACE and DWQ)

Note: local man-made buffers will likely apply



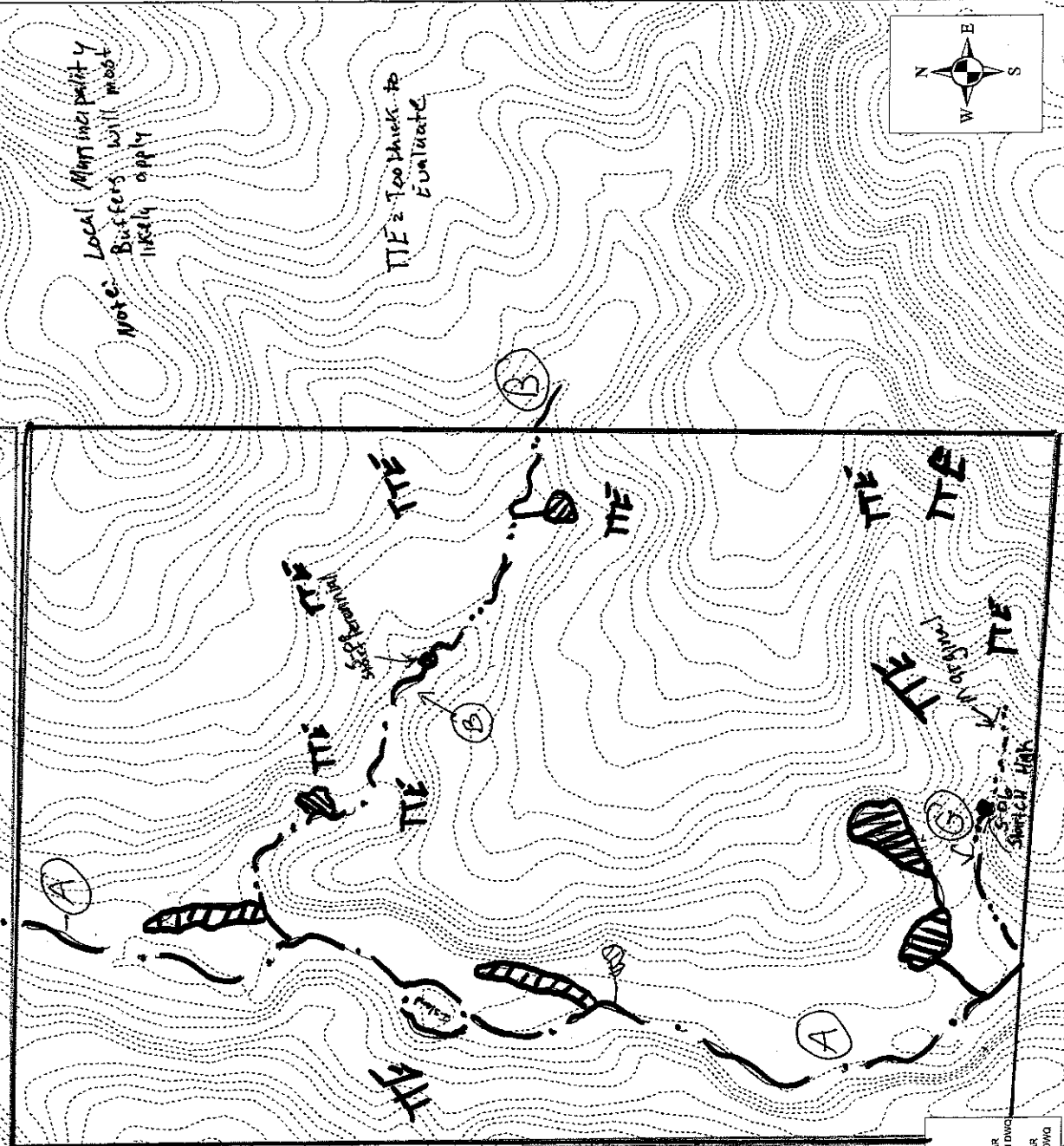
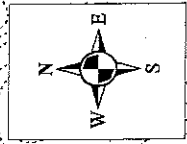


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 October 14, 2005

Project Manager: Jason Payne
 Project Number: 9894.W1

Prepared by: Steven Ball

Scale: 1" = 300'
 Highway 64 Site (Pittsboro)
 Chatham Development Corp
 Chatham Co. NC



Legend

- WETLANDS/LINEAR WETLANDS (must be confirmed by the USACE)
- WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., intermittent streams; must be confirmed by the USACE and DWM)
- WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., perennial streams; must be confirmed by the USACE and DWM)

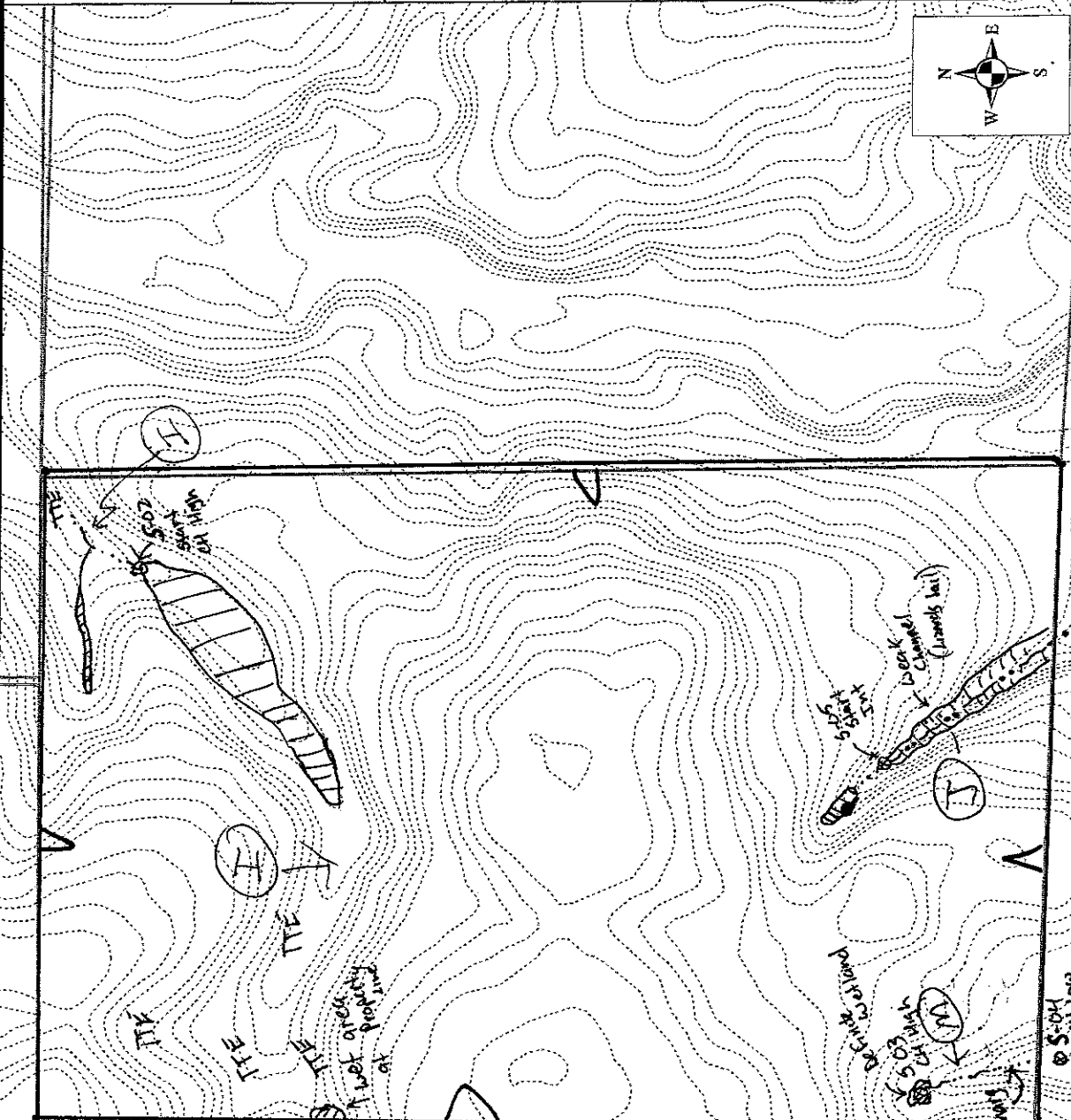
Highway 64 Site (Pittsboro)
Chatham Development Corp
Chatham Co, NC

Scale: 1" = 300'

Southwest
Wetland Sketch Map

Project Manager: Jason Payne
Project Number: 9894.W1
Prepared by: Steven Ball

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October 14, 2008



Note: Local municipality buffers will likely apply.
TTE = too thick to evaluate

- Legend
- WETLAND/LINEAR WETLANDS (must be confirmed by the USACE)
 - WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., intermittent streams; must be confirmed by the USACE and DWR)
 - WATERS OF THE US POTENTIALLY SUBJECT TO THE PROPOSED CAPE FEAR RIVER BUFFERS (i.e., perennial streams; must be confirmed by the USACE and DWR)

X. UTILITIES

Potable water supply will be provided by Chatham County. The County has plans to extend an existing water line down Alex Cockman Road to Highway 64. Belmeade proposes to run an off-site water line from this point to the project. This project has been discussed with the County Public Works Department to coordinate the timing of the water line extension with the proposed development schedule for this project. The applicant has no plans to utilize ground water as a potable water source for this project.

All wastewater will be treated by septic systems contained within each residential lot. A preliminary report evaluating the adequacy of the on-site soils is attached along with a map illustrating the approximate areas for these soils.

Electrical Service will be provided by Progress Energy.

Telephone Service will be provided by BellSouth.

It is anticipated that cable television service will be supplied by Time-Warner Cable.

Solid waste and recycling collection will be accomplished by curbside service utilizing a licensed hauler.

POTABLE WATER DEMAND

<u>USE</u>	<u>TYPE</u>	<u>FLOW RATE</u>	<u>DAILY RATE (GPD)</u>
Residential	197 Lots	400 Gal/Residence	78,800
Amenity			2,000
Fine Living Center			<u>6500</u>
TOTAL PERMITTED DEMAND			87,300

Utilities Plan – Water

Soil / Site Evaluation

Suitable Soil Map - Septic



Soil & Environmental Consultants, PA

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February 6, 2006
Project #9894.S2

Chatham Development Corp.
Attn: Mr. Steve O'Neal
6208 Fayetteville Rd., Suite 104
Durham, NC 27713

RE: Soil/Site Evaluation of Highway 64 site- 550 Acres Adjacent to Highway 64, Chatham County, NC.

Dear Mr. O'Neal:

Soil & Environmental Consultants, PA (S&EC) performed a preliminary subsurface and surface soil and site evaluation on the above referenced tract. This was performed at your request as part of the preliminary planning process in order to determine areas of soil that have potential for subsurface and surface wastewater disposal. Fieldwork was performed in February, 2006.

S&EC traversed the property and observed landforms (slope, drainage patterns, past use, etc.) as well as soil conditions (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) through the use of hand auger borings. The site was evaluated during moist soil conditions. From these observations, an evaluation of the site, relative to subsurface and surface disposal of wastewater, was developed. Soil areas were estimated in the field. The soil/site evaluation criteria used is that contained in 15 A NCAC 18A .1900 "Laws and Rules for Sewage Treatment and Disposal Systems". Surface soil boundaries were sketched onto the accompanying soil map.

FINDINGS

This site is located in the Slate Belt region of Chatham County. The upland soils on this tract are similar to the Georgeville and Lignum soil series. The Georgeville soil series has a loam surface material over a clay subsoil. These soils are at least 24 inches deep to prohibitive soil characteristics and are generally useable for subsurface septic systems. The Lignum soils exhibit soil wetness prior to 24 inches and are generally unsuitable for conventional subsurface septic systems, but may be suitable for surface septic systems.

The accompanying AutoCAD sketch map indicates the areas with potential use for subsurface and surface wastewater disposal. The green hatched units indicate areas of soils which are at least 24 inches deep to prohibitive soil characteristics and have potential for a conventional septic system, a modified conventional (shallow placed lines with no fill required over the disposal area) or a low pressure pipe system (LPP) and/or ultra-shallow conventional (shallow placed lines with fill required over the disposal field) system. The blue cross hatched areas (12 to 18 inch soils) have potential for surface applied systems (surface spray or drip irrigation). "UN" on the attached map indicates areas of soils that are generally unsuitable for the type of systems mentioned above.

The site plan for each lot must ensure that adequate soil area for system and repair is unaffected by site elements (house placement, driveway, wells, patios, decks, etc.) on that, or adjacent lots. The area ultimately designated by the appropriate permitting agency on the site plan for the septic system and repair must remain undisturbed (no mechanical clearing, excavation, heavy traffic or

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Greensboro Office:
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Greensboro, NC 27455
Phone: (336) 540-8234
Fax: (336) 540-8235

other significant site disturbing activities) until authorized by the health department or state Division of Water Quality, depending on the type of septic system specified. A lot with initially adequate useable soil area may be rendered unusable as a result of improper site planning and/or disturbance. A field layout of the proposed septic systems may be required as part of the individual lot development process.

Upon completion of a subdivision plan, S&EC recommends reviewing the plan before recording the subdivision lots. It is important to note that any preliminary certification that a subdivision plan meets does not represent approval or a permit for any site work, nor does it guarantee issuance of an improvement permit for any lot. Final site approval for issuance of improvements is based on regulations in force at the time of permitting and is dependent on satisfactory completion of individual site evaluations following application for an improvement permit detailing a specific use and siting.

GENERAL SUBSURFACE WASTEWATER CONSIDERATIONS

Once potentially useable areas are located through vertical borings, the next consideration is the horizontal extent of those areas. The size and configuration of the useable soil area dictate the utility of that area. The size of a subsurface disposal field is determined by: 1) the design flow from the source (120 gallons/bedroom/day in residences), and 2) the long term acceptance rate (LTAR) of the soil (based on the hydraulic conductivity of the soil, a function of the soil's texture, mineralogy, structure, porosity, etc.). The configuration must be such that an efficient layout of disposal lines (on contour) is possible. An additional consideration is the required setbacks for the system from various elements such as wells (100'), streams and ponds (50') or more (depending on watershed regulations), property lines (10'), top of embankment (15'), watershed buffers, etc. (see Attachment 1).

The utility of a potential useable soil area for a subsurface system is most accurately determined by an on-ground layout of the proposed system. The total area needed for system and repair areas will depend upon the system type, the layout of that system and the total design flow (factors mentioned above). A typical area needed for a 3 bedroom residence is approximately 12,000 to 15,000 ft² (could be more depending on site features) or 600 to 720 linear feet of conventional line (system and repair) or 1440 linear feet of LPP line (system and repair). These estimates reference Laws and Rules for Sewage Treatment and Disposal Systems for North Carolina and use a LTAR of 0.25 to 0.30 gpd/ft² for conventional septic systems (.1955), a LTAR of 0.25 to 0.30 gpd/ft² for modified conventional (.1956) and 0.10 gpd/ft² for LPP septic systems (.1957a). The health department will determine the ultimate LTAR after their lot evaluation. S&EC will be glad to assist in any system layout or sizing calculations if requested.

GENERAL SURFACE WASTEWATER CONSIDERATIONS

An additional consideration for surface wastewater application systems is the required setbacks from various elements such as wells (100'), streams and ponds (100') or more (depending on watershed regulations), property lines (150' for spray and 50' for drip), and off site residences (100' and 400' for drip and spray systems respectively).

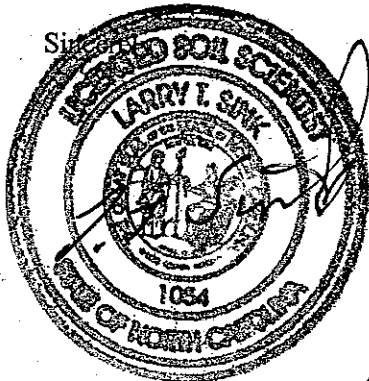
The total area needed for a surface system will depend upon the system type, the layout of that system, the total design flow, and water balance information. A typical area needed for a three or four bedroom residence is approximately 15,000 ft² – 20,000 ft² (could be more depending on water balance features) that meets all of the required setbacks.

This report discusses the general location of potentially useable soils for on-site subsurface and surface wastewater disposal and, of course, does not constitute or imply any approval or permit as

needed by the client from the local health department or state Division of Water Quality. S&EC is a professional consulting firm that specializes in the delineation of soil areas for wastewater disposal, and the layout and design of wastewater treatment systems. As a professional consulting firm, S&EC is hired for its professional opinion in these matters. The rules governing wastewater treatment (interpreted and governed by local and state agencies) are evolving constantly, and in many cases, affected by the opinions of individuals employed by these governing agencies. Because of this, S&EC cannot guarantee that areas delineated and/or systems designed will be permitted by the governing agencies. As always, S&EC recommends that anyone making financial commitments on a tract be fully aware of individual permit requirements on that tract prior to final action.

An individual septic system permit will be required for each lot prior to obtaining a building permit. This will involve a detailed evaluation by the local health department to determine, among other things, system size and layout, well, drive and house location. Only after developing this information can a final determination be made concerning specifics of system design and site utilization.

Soil & Environmental Consultants, PA is pleased to be of service in this matter and we look forward to assisting in any site analysis needs you may have in the future. Please feel free to call with any questions or comments.



Larry E. Sink
Larry Sink
NC Licensed Soil Scientist

Chris Murray
Soil Scientist in Training

Encl: Attachment 1
Setbacks for Surface Drip and Spray Irrigation
Soil Suitability Map

Attachment 1

.1950 Location of Sanitary Sewage Systems

(c) Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following:

- | | |
|--|-------------------------------------|
| (1) any private water supply source including a well or spring | 100 feet |
| (2) any public water supply source | 100 feet |
| (3) streams classified as WS-I | 100 feet |
| (4) water classified as S.A. | 100 feet from mean high water mark |
| (5) Other coastal waters | 50 feet from mean high water mark |
| (6) any other stream, canal, marsh, or other surface waters | 50 feet |
| (7) any Class I or Class II reservoir | 100 feet from normal pool elevation |
| (8) any permanent storm water retention pond | 50 feet from flood pool elevation |
| (9) any other lake or pond | 50 feet from normal pool elevation |
| (10) any building foundation | 5 feet |
| (11) any basement | 15 feet |
| (12) any property line | 10 feet |
| (13) top of slope of embankments or cuts of 2 feet or more vertical height | 15 feet |
| (14) any water line | 10 feet |
| (15) drainage systems: | |
| (A) Interceptor drains, foundation drains and storm water diversions | |
| (i) upslope | 10 feet |
| (ii) sideslope | 15 feet |
| (iii) downslope | 25 feet |
| (B) Groundwater lowering ditched and devices | 25 feet |
| (16) any swimming pool | 15 feet |
| (17) any other nitrification field (except repair area) | 20 feet |
| (b) Ground absorption, sewage treatment and disposal systems may be located closer than 100 feet from a private well supply, except springs and uncased wells located downslope and used as a source of drinking water, repairs, space limitations and other site-planning considerations but shall be located the maximum feasible distance and, in no case, less than 50 feet. | |
| (c) Nitrification fields and repair areas shall not be located under paved areas or areas subject to vehicular traffic. If effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe shall be used. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe. | |

Note: Systems over 3000 GPD or an individual nitrification fields with a capacity of 1500 GPD or more have more restrictive setback requirements, see .1950 (a) (17) (d) for specifics.

SETBACKS FOR SURFACE DRIP AND SPRAY IRRIGATION

<u>DRIP</u>	<u>SPRAY</u>	<u>PARAMETER</u>
10'	100'	INTERCEPTOR DRAINS, AND SURFACE WATER DIVERSIONS (UPSLOPE FROM SYSTEM).
15'	200'	RESIDENCE FOUNDATION/BASEMENT
15'	15'	2' CUT EMBANKMENT.
25'	100'	INTERCEPTOR DRAINS, SURFACE WATER DIVERSIONS, AND GROUND WATER LOWERING/SURFACE DRAINAGE DITCHES (DOWNSLOPE FROM SYSTEM).
50'	50'	PUBLIC RIGHT-OF-WAY SURFACE DISPOSAL
50'	150'	ANY PROPERTY LINE
100'	400'	PLACE OF PUBLIC ASSEMBLY OR HABITABLE RESIDENCE OFF PROPERTY.
100'	100'	ANY SWIMMING POOL, ANY WELL, ANY PUBLIC OR PRIVATE WATER SUPPLY, AND ANY LAKE OR IMPOUNDMENT.

- **SOME COUNTIES (i.e., WAKE) MAY HAVE ADDITIONAL FOUNDATION SETBACK REQUIREMENTS.**
- **ANY OR ALL OF THESE SETBACKS MAY BE VARIED IF THE ADJACENT PROPERTY OWNERS SIGN A WAIVER/PERMISSION NOTICE.**
- **SETBACKS FOR TERTIARY TREATED EFFLUENT TO BE APPLIED TO GOLF COURSED VARY FROM THIS TABLE.**

XI. ENVIRONMENTAL INVENTORY
ENVIRONMENTAL INVENTORY

Soil and Environmental Consultants (S&EC) has completed a Phase I Environmental Assessment for the project site. A copy of each report is attached.

From the executive summary of that report:

“S&EC identified no previously unknown or previously recorded environmental contamination problems on the subject property during this study. No recognized environmental conditions (REC’s) were noted during the field reconnaissance. S&EC has no recommendations for further studies or investigations relative to the environmental condition of this property or potential environmental contamination / liability problems on this property at this time, based on the scope of work and subject to the limitations as described in this report”



Soil & Environmental Consultants, PA

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August 11, 2006
S&EC Project No.: 9894.W2

Chatham Development Corp.
Attn: Steven O'neal
6208 Fayetteville Road Suite 104
Durham, NC 27713

Re: Threatened and Endangered Species Survey Report
Pittsboro Site
Chatham County, North Carolina

Dear Mr. O'neal:

The purpose of this report is to advise you on the existing habitat types and the potential presence of protected plant and animal species at the Pittsboro Site. The approximately 555 acre tract is situated south of and adjacent to Highway 64 at the junction of Highway 64 Business and Highway 64 Bypass, west of Pittsboro, NC. The location of the project site is depicted on the attached Pittsboro and Siler City NE USGS quadrangles.

Executive Summary

There are four federally listed in Chatham County, NC, none of which were observed onsite during the field survey.

Introduction

Under the Endangered Species Act (ESA) (1973), species may be listed as either "endangered" or "threatened." Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except pest insects and non-native species are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined

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Phone: (704) 720-9405
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Greensboro, NC 27455
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Fax: (336) 540-8235

species to include subspecies, varieties, and, for vertebrates, distinct population segments.

Section 4 of the ESA specifies that a species must be listed as endangered or threatened solely on the basis of its biological status and threats to its existence. When evaluating a species for listing, five factors are considered: 1) damage to, or destruction of, a species' habitat; 2) overuse of the species for commercial, recreational, scientific, or educational purposes; 3) disease or predation; 4) the inadequacy of existing protection; and 5) other natural or human related threats to the species' survival. When one or more of these factors imperils the survival of a species, the United States Fish and Wildlife Service (FWS) takes action to protect it. To ensure the accuracy of the data, the FWS decides all listings using sound science and peer review.

Section 7 of the ESA requires federal agencies to use their legal authorities to promote the conservation purposes of the law. This section also requires federal agencies to consult with the FWS to ensure that actions they authorize, fund, or carry out will not jeopardize listed species. The consulting agency then receives a "biological opinion" on the proposed action. In the relatively few cases where the FWS or National Marine Fisheries Service (NMFS) determines that the proposed action will January 1998 jeopardize the species, they must offer "reasonable and prudent alternatives" about how the proposed action could be modified to avoid potential impacts to the protected species. It is very rare to withdraw or terminate projects because of jeopardy to a listed species, however conditions to, and modifications of projects are common.

Section 10 of the ESA provides relief to private landowners who want to develop land inhabited by listed species. Landowners can receive a permit for the take of a listed species that may occur incidental to otherwise legal activities, provided they have developed an approved Habitat Conservation Plan (HCP). HCPs include an assessment of the likely impacts on the species from the proposed action, the steps that will be taken to minimize and mitigate those impacts, and the funding available to carry out those steps. When the FWS approves the HCP, the landowner can apply for an "incidental take" permit, which allows them to proceed with the proposed action.

RECORDS REVIEW

The North Carolina Natural Heritage Program (NHP) records occurrences of rare plant and animal species, exemplary natural communities, and special animal habitats known to occur in North Carolina. An updated record check was performed in August 2006. The subject property is located on the Pittsboro and Silk Hope USGS quadrangles.

Chatham County Federally Listed species:

- 1) Bald Eagle (*Haliaeetus leucocephalus*)
- 2) Red-cockaded Woodpecker (*Picoides borealis*)
- 3) Cape Fear Shiner (*Notropis mekistocholus*)
- 4) Harperella (*Ptilimnium nodosum*).

Other state-listed species and/or Federal Species of Concern:

<i>Aimophila aestivalis</i>	Bachman's sparrow	NC-SC	US-FSC
<i>Lanius ludovicianus</i>	Loggerhead shrike	NC-SC	
<i>Phalacrocorax auritus</i>	Double-crested cormorant	NC-SR	
<i>Hemidactylum scutatum</i>	Four-toed salamander	NC-SC	
<i>Etheostoma collis</i> pop.2	Carolina darter	NC-SC	US-FSC
<i>Moxostoma</i> sp 2	Carolina redbreast	NC-SR	US-FSC
<i>Alasmidonta undulata</i>	Triangle floater	NC-T	
<i>Alasmidonta varicosa</i>	Brook floater	NC-E	US-FSC
<i>Fusconaia masoni</i>	Atlantic pigtoe	NC-E	US-FSC
<i>Lampsilis cariosa</i>	Yellow lampmussel	NC-E	US-FSC
<i>Strophitus undulatus</i>	Creeping	NC-T	
<i>Villosa constricta</i>	Notched rainbow	NC-SC	
<i>Villosa delumbis</i>	Eastern creekshell	NC-SR	
<i>Villosa vaughaniana</i>	Carolina creekshell	NC-E	US-FSC
<i>Cambarus davidi</i>	Carolina ladle crayfish	NC-SR	
<i>Choroterpes basalis</i>	a mayfly	NC-SR	
<i>Gomphus abbreviatus</i>	Spine-crowned clubtail	NC-SR	
<i>Gomphus quadricolor</i>	Rapids clubtail	NC-SR	
<i>Gomphus septima</i>	Septima's clubtail	NC-SR	US-FSC
<i>Neurocordulia virginianensis</i>	Cinnamon shadowdragon	NC-SR	
<i>Tricorythodes robecki</i>	a mayfly	NC-SR	
<i>Allium cuthbertii</i>	Striped garlic	NC-SR-T	
<i>Baptisia albescens</i>	Thin-pod White Wild Indigo	NC-SR-P	
<i>Collinsonia tuberosa</i>	Piedmont horsebalm	NC-SR-P	
<i>Dichantherium annulum</i>	a witch grass	NC-SR-P	
<i>Fothergilla major</i>	Large witch-alder	NC-SR-T	
<i>Hexastylis lewisii</i>	Lewis's heartleaf	NC-SR-L	
<i>Isoetes virginica</i>	Virginia quillwort	NC-SR-L	US-FSC
<i>Monotropsis odorata</i>	Sweet pinesap	NC-SR-T	US-FSC
<i>Phacelia covillei</i>	Buttercup phacelia	NC-SR-T	US-FSC
<i>Porteranthus stipulatus</i>	Indian physic	NC-SR-P	
<i>Scutellaria nervosa</i>	Veined skullcap	NC-SR-P	
<i>Thermopsis mollis</i>	Appalachian golden-banner	NC-SR-P	

NC-SC: North Carolina Special concern

NC-SR: North Carolina Significantly Rare

NC-T: North Carolina Threatened

NC-E: North Carolina Endangered

US-FSC: US Special concern

"Endangered Species" (E) means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act.

"Threatened Species" (T) means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this act.

"Species of Special Concern" (SC) means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.

"Significantly Rare" (SR) Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.

Identified Priority Areas

The Lesser Montmorillonite Forest is a NHP Identified Priority Area (IPA), occurring adjacent to the site.

Local Elemental Occurrences

The closest protected elemental occurrence of a federally listed and / or endangered species is the Four-toed Salamander (*Hemidactylium scutatum*) (NC-SC). The Four-toed Salamander is documented adjacent to the site in the Lesser Montmorillonite Forest.

FIELD SURVEY

Natural communities are recurring assemblages of plants and animals found in particular physical environments. Each type of natural community has a unique set of environmental conditions that support certain species that have adapted to those conditions. By examining natural community types a majority of species can be accurately located by eliminating unsuitable habitat for survey. Species-specific action was focused on rare species that occur in only a fraction of the community type that are their habitat. Known populations of listed species were observed for visual references and intense surveys of suitable habitat were conducted.

RESULTS

Habitat Types

The habitat type that occurs throughout the property is Mixed hardwood/ pine forests which have been timbered extensively.

Protected Species

North Carolina Natural Heritage Program has documented 54 occurrences of State or Federally listed assemblages, communities, and species in Chatham County, NC. In Chatham County there are 14 Invertebrate Animals, 18 Natural Communities, 12 Vascular Plants, and 9 Vertebrate Animals, and 1 Animal Assemblage listed within the database. State and Federally listed species without obvious suitable habitat on property were omitted from the survey. The property boundaries were surveyed for suitable habitat of the following NHP documented species occurring within a 10 mile radius of the property:

Cape Fear Shiner

The Cape Fear Shiner inhabits sandy and rocky pools and runs of small to medium rivers. This type of habitat is found along the northeastern border of the property. Habitat for the Cape Fear Shiner does not occur on the property and no individuals of the species were observed.

Septima's Clubtail

Typical habitat for Septima's clubtail (*Gomphus septima*) (NC-SR; US-FSC) includes rivers with numerous rapids and exposed rocks. No suitable habitat occurs on the property and no individuals were observed.

Yellow Lampmussel

The yellow lampmussel (*Lampsilis cariosa*), (NC-E; US-FSC) can be found in gravel bars, margins of the flowing portions of waterbodies and cracks in bedrock in both large rivers and small streams. No suitable habitat occurs within the property boundaries and no individuals were observed.

Bald Eagle

The Bald Eagle (*Haliaeetus leucocephalus*) (NC-T; US-T) lives near large bodies of open water such as lakes, marshes, coasts, and rivers, where there are plenty of fish to eat and tall trees for nesting and roosting. Known populations occur in closer proximity to Lake Jordan. No trees of suitable nesting quality occur on property and no individuals were observed.

Red-cockaded Woodpecker

The Red-cockaded Woodpecker (RCW) (*Picoides borealis*) (NC-E; US-E), is a habitat specialist, requiring mature growth of pine forest with a grassland component underneath. For nesting/roosting habitat, open stands of pine containing trees 60 years old and older. Red-cockaded woodpeckers need live, large older pines in which to excavate their cavities. Longleaf pines (*Pinus palustris*) are most commonly used, but other species of southern pine are also acceptable. Dense stands (stands that are primarily hardwoods, or that have a dense hardwood understory) are avoided. Foraging habitat is provided in pine and pine hardwood stands 30 years old or older with foraging preference for pine trees 10 inches or larger in diameter. In good, moderately stocked, pine habitat, sufficient foraging substrate can be provided on 80 to 125 acres. Suitable

habitat for the RCW was not found, no nest sites were discovered on property. The Red-cockaded woodpecker has only a historical documentation in Chatham County.

Harperella

Harperella (*Ptilimnium nodosum*) (NC-E; US-E) typically occurs in two habitat types: (1) rocky or gravel shoals and margins of clear, swift-flowing stream sections; and (2) edges of intermittent pineland ponds in the coastal plain. This plant tolerates and may actually require a very specific and unusual water regime, which includes moderately intensive spring floods that may reduce or eliminate competing vegetation. Harperella is readily eliminated from its habitat by alterations of the water regime which result from impoundments, water withdrawal, and drainage or deepening of ponds. Other factors such as siltation, pollution, and shoreline development also threaten Harperella populations. Riverine populations flower beginning in late June or July and continue until frost. No suitable habitat and no populations of Harperella were found on property.

Buttercup Phacelia

Phacelia ranunculacea (NC-SR-T; US-FSC) (syn. *Phacelia covillei*) is documented as an element occurrence near the bridge over the Haw River on Chicken Bridge Road (SR 1545). Typical habitat for this species occurs within the fine textured soils of Piedmont alluvial forests and floodplains. *Phacelia ranunculacea* is documented only in Alamance, Chatham, Lee, and Harnett counties in North Carolina. *Phacelia ranunculacea* co-occurs with *Nemophylla aphylla*, these two species are very similar in overall appearance and phenology, flower and fruit characteristics are used to distinguish them from one another, which emphasizes the importance of conducting the field survey during the flowering and/or fruiting stages of its life cycle. This woodland herb species typically flowers in April to May and was apparent during the time of the survey. *Phacelia ranunculacea* can be differentiated from *P. dubia* in the field. Specifically, the leaves of *P. ranunculacea* are all petioled and the stamens are included within the corolla tube. In contrast, *P. dubia* cauline leaves are sessile and the stamens are weakly exerted from the corolla tube. The survey of the property and examination of the plant and animal communities revealed no presence of the buttercup phacelia on property.

Carolina Ladle Crayfish

The Carolina Ladle Crayfish (*Cambarus davidi*) (NC-SR) is documented from a single individual captured about 2 miles east of the property boundary in a tributary on Roberson Creek at US 64, Pittsboro (NHP EO ID 3066). *Cambarus davidi* is apparently limited to the upper Neuse and Cape Fear river basins in the eastern Piedmont Plateau of North Carolina (Cooper 2000). Suitable habitat for this species occurs in streams (under larger rocks) and burrows. Suitable habitat for *C. davidi* occurs on property, but no individuals were observed during the survey.

Four-toed Salamander

The four-toed salamander (*Hemidactylium scutatum*) (NC-SC) is documented from an egg mass observed under sphagnum in the Lessler Montmorillonite Forest adjacent to the property boundary (NHP EO ID 9662). *Hemidactylium scutatum* is a small, slender salamander is orange to grayish brown above, sometimes with small black and bluish


speckles on the sides. The tail is constricted (narrows) at its base, and there are only four toes on each hind foot (most salamanders have five toes). Adults are 2 to 4 inches (5 to 10 cm) long. Suitable habitat is found throughout much of the state, but only where boggy ponds or spring fed creeks are available in or near damp wooded habitat. When not breeding, they take refuge under rotting logs and leaf litter. They eat insects and insect larvae, spiders, worms, and other small invertebrates. Suitable habitat for *H. scutatum* occurs on property, but no individuals were encountered in the field survey.

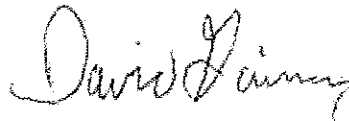
CONCLUSION / RECOMMENDATIONS

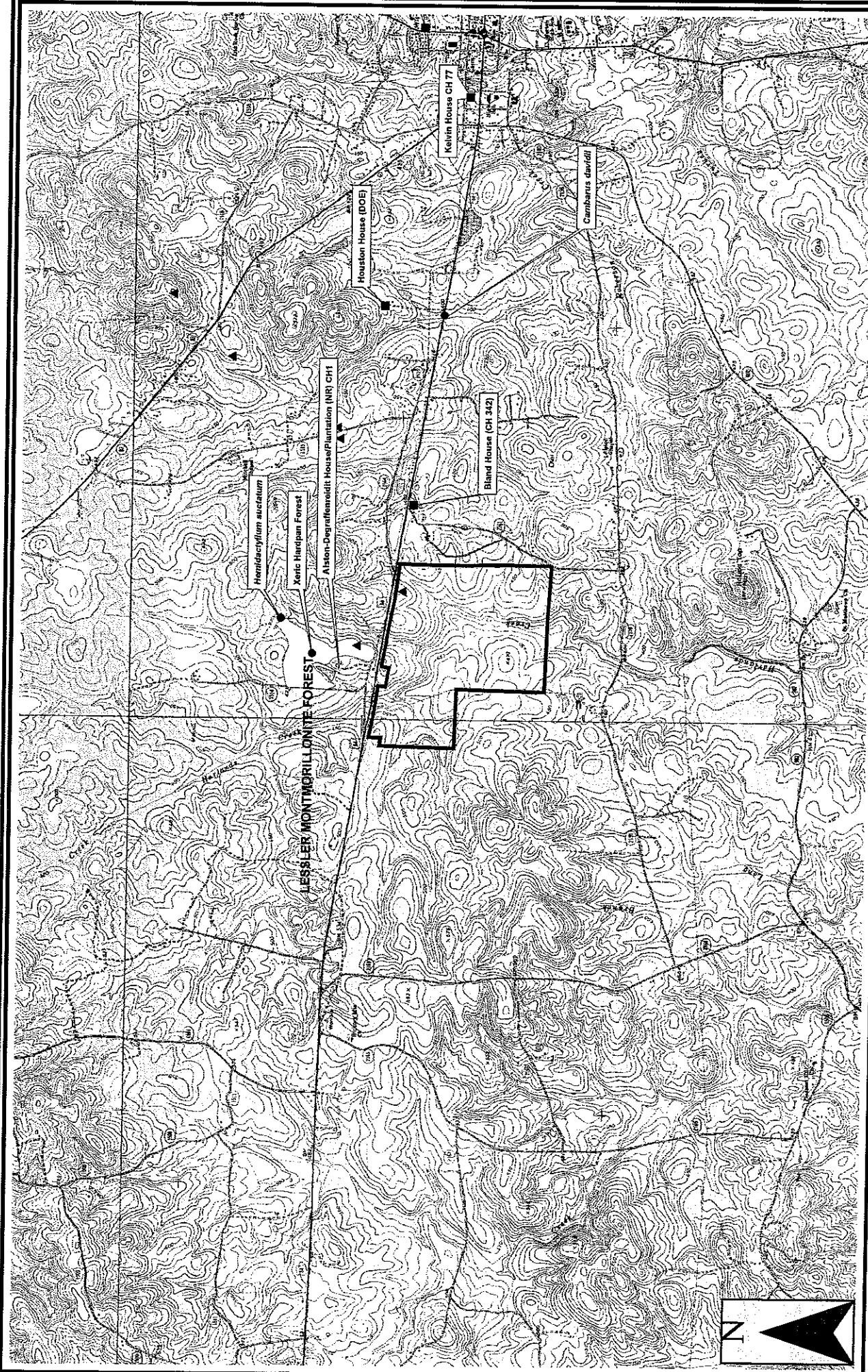
Of the species surveyed for none were found on property. Suitable habitat for the Carolina Ladle Crayfish and the Four-toed salamander exists on property, but none of these species were observed. No other state or federally listed species were found on property.

If you have any questions or need additional services please call us 919-846-5900.

Respectively,


James R. Graham Jr.
Biologist / Environmental scientist


David Gainey
Environmental Specialist



Project Number: 9894.W2
 Project Manager: David Gainey
 Scale: 1" = 2000'
 Date: 08/11/06

Map Title: Threatened and Endangered Species Survey
 Chatham County, NC
 Source: USGS Chatham County

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October 24, 2005
S&EC Project # 9894.S1

Chatham Development Corporation
Attn: Mr. Steve O'Neal
6208 Fayetteville Road
Suite 104
Durham, NC 27713

Re: Phase I Environmental Assessment.

Dear Mr. O'Neal:

We are enclosing two copies of a Phase I Environmental Assessment for the 554-acre site in Chatham County, referred to as the "Smith & Cox Property". This report was completed in accordance with our proposal dated 8-21-05.

Thank you very much for allowing S&EC to provide this service for you. Please let me know if we can be of further assistance or if you have any questions about the report.

Sincerely,

A handwritten signature in cursive script that reads "Don Wells".

Don Wells

Phase I
Environmental Assessment

Smith & Cox Property
554-Acre Site
Chatham County, NC

October 2005

Prepared for:

Chatham Development Corporation
Attn: Mr. Steve O'Neal
6208 Fayetteville Road
Suite 104
Durham, NC 27713

S&EC Project No. 9894.S1

**S&
EC**

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EXECUTIVE SUMMARY

Soil & Environmental Consultants, PA (S&EC) has completed a Phase I Environmental Assessment (EA) for an undeveloped 554-acre tract of land (subject property) in the western part of Chatham County, N. C. This property is on the south side of Highway US #64 at the intersection of this road and Business US #64. The Town of Pittsboro is about two miles to the east of this 554-acre tract. It has been referred to S&EC as the "Smith and Cox Property". S&EC was able to obtain lists the property owners as Louis Smith and Vernon Cox, however S&EC has not verified that information. On the date of inspection, there were no standing buildings or other major improvements on the property. Access to the property is from Highway US #64 which forms most of the northern boundary of this tract, and also from Adolph Taylor Road which intersects the southeast corner of the property. S&EC did not note any evidence of current or past buildings or other significant development activities on this tract of land. Almost the entire tract of land is now woodland, half of which is relatively mature stands and half of which is "cutover" and immature stands where old fields are converting to woodland. The old aerial photos indicate that it has been primarily wooded for at least the past 50 years.

S&EC was requested to perform this study by Mr. Steve O'Neal with Chatham Development Corporation in connection with their proposed purchase and construction of a residential development on the property. This report summarizes the results of the EA and has been prepared for the exclusive use of Chatham Development Corporation, the addressee of this report. Other parties to whom the addressee directly provides a copy of the report for use in connection with the proposed purchase and development of the property may also rely on it. Reliance by all others is expressly denied without the written consent of S&EC.

S&EC completed the EA in October of 2005 using standard techniques and practices for this type of study including a review of state and federal environmental agency files and databases, a review of the property's past land use history, an on-site reconnaissance of the property, and interviews with state and federal environmental agency officials and others as needed. S&EC did not complete a 50+-year past ownership review on the entire tract of land as is typically done during a Phase I EA. An attempt was made to obtain Sanborn maps of the subject property, but they were not available for this area.

S&EC identified no previously unknown or previously recorded environmental contamination problems on the subject property during this study. No recognized environmental conditions (REC's) were noted during the field reconnaissance. S&EC has no recommendations for further studies or investigations relative to the environmental condition of this property or potential environmental contamination / liability problems on this property at this time, based on the scope of work and subject to the limitations as described in this report. There are limitations on this study relative to the normal standards for a Phase I Environmental Assessment. The reader of this report should consider those limitations prior to accepting findings or recommendations of S&EC on the environmental condition of this property.

S&EC would like to note two issues relative to this property that will be of interest to Chatham Development Corporation. They do not necessarily represent any environmental contamination problems, however any potential purchaser / developer should be aware of these issues and should take them into account when purchasing the property and planning for its development. Each item of interest is discussed briefly as follows with more detailed information included within the body of this report.

DUMPS - During the field reconnaissance, S&EC noted the presence of several

solid waste "dumps" located on the south side of the subject property. Materials observed in these areas consisted primarily of logging debris, however there were some scattered other materials such as empty containers, household garbage, etc. These areas, based on a visual inspection, do not appear to contain hazardous wastes and do not appear to pose any significant threat to the subject property. In the absence of any sampling and analysis beyond visual inspection, S&EC would like to note there is a remote risk of hazardous waste or petroleum products being present in the dump area. S&EC does not typically recommend sampling around the type of "dumps" found on this property, as they are very typical of solid waste found on many undeveloped tracts of land in Chatham County. Other than unsightliness and the need to clean them up, these areas are normally not a problem, based on S&EC's past experience. S&EC will be glad to provide further information and perform sampling and analyses of the dump areas if deemed necessary.

JURISDICTIONAL WETLANDS / RIPARIAN BUFFERS - Based on the field reconnaissance portion of this study, and other work performed on the property, S&EC believes there are areas of jurisdictional "wetlands / waters of the U.S." located on this property. There are also areas that may be subject to the riparian buffer requirements under the "Chatham County Buffer Rules" and possibly other regulations as well. The potential jurisdictional areas include Harlands Creek which flows through the center of the tract, areas adjacent to the creek, and possibly areas adjacent to other drainageways on other parts of the property. Federal, state, and local regulations limit the amount and type of development that can occur in and around these areas. Jurisdictional areas will need to be carefully considered during site planning and construction.

The EA was designed and performed as a screening tool to identify "red flags" which indicate the potential for present or future environmental problems/liabilities. Limitations relative to this study include a lack of review

and analysis of the past ownership history of the property, a lack of discussions with present or past owners of the property, and a somewhat less than desirable field inspection of the property due to the heavy vegetation that covers parts of the property. The study did not attempt to address zoning considerations, infrastructure suitability for development, potential construction problems, and similar considerations. The reader/user of this report is cautioned to recognize the purpose, scope, and limitations of the Phase I study and to make appropriate use of this report.

I. INTRODUCTION

Soil & Environmental Consultants, PA (S&EC) has completed a Phase I Environmental Assessment (EA) for an approximate 554-acre tract of land (subject property) located in western Chatham County approximately two miles west of the Town of Pittsboro. Figure 1 shows the relationship of the subject property to nearby roads and other area features and landmarks. This EA was completed at the request of Mr. Steve O'Neal with Chatham Development Corporation in connection with their proposed purchase and development of this property. This report summarizes S&EC's findings and recommendations relative to the Phase I study. It is intended for the exclusive use of Chatham Development Corporation and others to whom they provide a copy of the report for use specifically in connection with the purchase and development of the property. All others are expressly denied reliance on this report without the written permission of S&EC.

The EA was completed during October of 2005 in accordance with S&EC's proposal of September 21, 2005 and the scope of work attached thereto (see Attachment 1 to this report). S&EC associate professional engineer Thomas V. Honeycutt, Jr. and S&EC soil scientist Don Wells and Environmental Technician Jason Burdette completed the work involved with the study. It was performed using a combination of generally recognized procedures for this type of study including a review of public environmental agency records, a review of past land uses, an examination of old aerial photographs, and a field reconnaissance of the property and the surrounding area in as much detail as was reasonably possible. This EA complies substantially with the guidelines in ASTM Standard E-1527 for the completion of Phase I Environmental Assessments. There are however limitations on this study relative to the guidelines.

S&EC's efforts in this EA did not include any type of subsurface investigation of soil, mineral, or groundwater resources. The study likewise did not include any

investigations as to zoning considerations, future access and traffic considerations, noise levels, or other related factors that might influence the future facilities or need to be taken into consideration for site planning.

The scope of this EA did not include soil and water testing, analysis of unknown materials, or "NEPA" (National Environmental Policy Act) type activities such as endangered species surveys, archaeological/historical resources surveys, wildlife / fisheries inventories, etc. S&EC does attempt to note and point out any obvious need for these type of studies as an associated part of the company's Phase I EA activities.

The study was designed as a screening tool to identify "red flags" that indicate the potential for the presence of past or current environmental problems or liabilities on the property, or that suggest the presence of conditions or situations that may seriously affect the property's future use. The study also included an investigation of adjacent properties for similar conditions which might directly or indirectly adversely impact the subject property.

II. DESCRIPTION OF PROPERTY

The subject property is situated on the south side of Highway US #64 just west of its intersection with Business #64. In fact this intersection is at the northeast corner of the subject property. Most of the northern boundary of this tract is formed by Highway US #64 (see Site Photos 1 & 2). Adolph Taylor Road skirts the southeast corner of the tract and provides a second point of access at that location (see Site Photo 3). Figures 1 & 2 show the location and general configuration of the tract. The subject property is bordered by woodland, residential development, and agricultural cropland on all sides. The general area features a mixture of agriculture, residential and small commercial development especially along the Highway US #64 Business corridor that are less than 10 years old. The area

surrounding the subject property historically has been a mostly rural area, however S&EC did observe from the field reconnaissance and from previous work in this general area that there has been increasing development pressure on this general area over the past ten years.

The 554-acre tract of land covered by this study is primarily unimproved and almost entirely woodland that is made up of both upland and bottomland species. Based on the field inspection, S&EC estimates that about half of the woodland is mature species, including both upland and bottomland species (see Site Photos 4 & 5). On the date of inspection it appeared that areas of the woodland on the south and west sides of the tract had been timbered within the recent past. There is a heavy vegetative cover on these areas at the present time (see Site Photo 6). S&EC also noted some small areas on the east side of the tract that appear to be in "old field succession." These are former agricultural fields that have been abandoned and are reverting to woodland. The review of old aerial photos indicates there were some small open fields on this side of the property in years past. The land uses of the subject property have remained relatively constant over the past 50 years based on S&EC's observations of old aerial photos and the recent field reconnaissance performed for this EA study.

The property may be used to some degree for outdoor recreational activities at this time such as off-road biking, hiking, nature observation, etc. S&EC did not observe any buildings of any type on this property nor any remnants of former buildings during the field inspection. S&EC noted no indication of past industrial or commercial activity on this tract of land. The property does not appear to have had any recent agricultural uses of significance.

There are no major surface water resource impoundments or surface water resources on the property. A small stream, Harlands Creek, flows through the central area of the property in a general north to south direction (see Site Photo 7).

S&EC believes there may be jurisdictional wetlands / waters of the U. S. associated with this stream and other drainageways on the property. More information relative to potential jurisdictional areas is included in Section VI of this report. Most of the subject property and immediately surrounding areas drain into Harlands Creek and eventually into the Haw River and Cape Fear River system. S&EC did not make any measurements of the depth to groundwater on the property, however it is likely to be in excess of 20' over most of the property except for the areas immediately adjacent to the small stream noted above.

This 554-acre tract has a somewhat trapezoidal shape. S&EC estimates that it has an average length of approximately 5000' and an average width of about 4500'. Figure 2 is a copy of segments of the USGS quadrangle sheets Pittsboro, N. C. and Siler City, N. C. that includes the area where the subject property is located. It provides some indication as to the general shape and configuration of the property. The major transportation arteries in the area include Highway US #64 and Highway NC 87 to the north and Highway US 15/501 to the east.

The topography of this property can best be described as moderately rolling with a general fall from north to south. Elevations vary from a maximum of around 460' mean sea level (msl) along a ridge adjacent to Highway US #64 on the north part of the tract to around 400' msl adjacent to Harlands Creek on the south side of the property. Figure 2 shows the property's topographic characteristics as well as its relationship to area physical features. In S&EC's opinion, this tract of land is typical of most of the undeveloped woodland in this part of Chatham County with the notation that parts of the woodland do appear to have been recently timbered.

III. REVIEW OF ENVIRONMENTAL AGENCY RECORDS - EXISTING CONTAMINATION PROBLEMS / POTENTIAL CONTAMINATION SOURCES

S&EC reviewed the files and/or databases of the Environmental Protection Agency (EPA) and various state agencies to identify any previously recorded known or potential hazardous waste sites, facilities that generate, store, or transport hazardous wastes, or registered underground storage tanks either on or in the vicinity of the subject property. Most of the EPA databases for North Carolina are maintained by the NC Department of Environment and Natural Resources (NCDENR). S&EC performed this review with the assistance of a computerized database search report provided by Environmental Data Resources, Inc. (EDR©) in Milford, Connecticut. Attachment 2 to this report is a copy of the report generated by EDR©. S&EC did not physically visit any of the agencies that maintain the subject databases nor did S&EC physically inspect any of the agency files for this EA. The computerized search of environmental files and databases by EDR© did not reveal the presence of any site on any database physically located on the subject property.

S&EC's goal for this part of the EA was to obtain and review information for any site or facility on the subject property or within the study distances recommended by ASTM for each particular database. All of the files/databases reviewed were the latest version available for public review. The following is a list of those databases reviewed, a brief description of each, the search area radius used in this study for each, and the results of the review for the subject property:

NATIONAL PRIORITIES LIST (NPL) - 1.0 mile - an inventory of sites, facilities, or locations with confirmed contamination problems that pose severe threats to human health and safety. These sites fall under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1973 and

the Superfund Amendments and Reauthorization Act of 1986 (SARA). They are sometimes referred to as "Superfund" sites and are under the jurisdiction of EPA. The NPL database is a subset of CERCLIS. EPA has established a ranking system for sites on this list according to their degree of threat to environmental health and safety. A cleanup schedule for the site is set by EPA. No sites on this list are located on or within the search area.

DELISTED NPL SITES - 1.0 mile - The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that EPA uses to delete sites from the NPL. In accordance with 40 CFR 5540.4554(e) sites may be deleted from the NPL when no further action is warranted or appropriate. The subject property has never been listed on the NPL nor have any facilities within the search radius.

RESOURCE CONSERVATION AND RECOVERY ACT INDEX SYSTEM

TREATMENT, STORAGE, DISPOSAL LIST (RCRIS - TSD) - 0.50 mile - a list of facilities and/or locations where hazardous wastes or substances are being treated, stored or disposed of. Inclusion of a facility or location on this list does not imply the presence of contamination but does indicate the site has at least a potential to have been contaminated in the past or to become contaminated in the future. The subject property is undeveloped and as expected is not listed on this database.

STATE HAZARDOUS WASTE SITES (SHWS) - 1.0 mile - This database is the state's equivalent to CERCLIS. These sites may or may not already be listed on the Federal CERCLIS database. This list includes priority sites planned for cleanup with state funds as well as sites where cleanup will be paid for by potentially responsible parties. The subject property is not on this list. Likewise there are no listed sites within the 1.0-mile radius.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT INDEX (CERCLIS) - 0.5 mile - a database of sites, facilities, or locations with "suspected" contamination problems of some type that have been reported to the EPA by states, municipalities, private companies, or individuals. Most of these sites are currently under investigation by EPA or a state regulatory agency pursuant to Section 5543 of the Comprehensive Environmental Response, Compensation, and Liability Act. The sites on this database may be on or proposed for the National Priorities List (NPL), or are in the screening and assessment phase for possible inclusion on the NPL. No sites were on this list for the subject property, or on any adjacent property within the search area for this database.

NO FURTHER REMEDIAL ACTION PLANNED (CERC - NFRAP) - 0.25 mile - This database contains former CERCLIS sites which have been removed from that database for the following reasons: the initial investigation found no contamination, the contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. The subject property has never been on the CERCLIS database and therefore will not be found on the NFRAP database.

CORRECTIVE ACTION REPORT (CORRACTS) - 1.0 mile - This database identifies hazardous waste handlers with corrective action under the Resource Conservation and Recovery Act underway. Neither the subject property nor any nearby properties appear on this list.

NC LIST OF SOLID WASTE FACILITIES (SWF) - 0.5 mile - a listing of currently active and closed landfills. This list contains information on the location and type of landfills under the jurisdiction of the Solid and Hazardous Waste Management Division of the N. C. Department of Environment and Natural Resources

(NCDENR). There are no listed landfills on the subject property or within the search distance for this database.

LEAKING UNDERGROUND STORAGE TANKS (LUST) - 0.5 mile - This database contains an inventory of all reported leaking underground storage tanks. The list is maintained by the State of North Carolina. The subject property has no listing for leaking tanks. S&EC noted no listings for leaking tanks within the half-mile search radius.

NC UNDERGROUND STORAGE TANK REGISTRY (UST) - 0.25 mile - a computerized database with information on registered underground tanks (number, size, contents, date of installation, and owner) at any facility, which comes under the Resource Conservation and Recovery Act Amendments of 1984 - Underground Storage Tank Regulations. The Registry contains no information on registered tanks for the subject property. S&EC did not observe any underground or above ground tanks on the property while doing the field reconnaissance. There are no registered tanks within the search radius however S&EC does believe there are tanks in use in this general area.

RCRA ADMINISTRATIVE ACTION TRACKING SYSTEM (RAATS) - subject property only - This database contains records on RCRA enforcement actions relative to major violators. It includes administrative and civil actions initiated by EPA up through September of 1995. Input of information into this database was discontinued after that time. This database contains no information relative to the subject property.

RCRIS SMALL QUANTITY GENERATORS - 0.25 mile - This database contains information on those facilities, which are classified as a "small quantity" generator of hazardous waste under RCRA. The subject property is undeveloped and does not show up on this database. There are no listed sites within the search radius.

RCRIS LARGE QUANTITY GENERATORS - 0.25 mile - This database contains information on facilities, which fall under the RCRA classification of "large quantity" generators of hazardous waste. There are no facilities on this database either on the subject property or within the search radius.

HAZARDOUS MATERIALS INFORMATION REPORTING SYSTEM (HMIRS) - subject property only - This list contains information on sites where spills of hazardous wastes have been reported to the U. S. Department of Transportation. The subject property does not show up on this list.

PCB ACTIVITY DATABASE SYSTEM (PADS) - subject property only - This database identifies generators, transporters, commercial storage facilities, and disposers of PCB's who are required to notify the EPA of such activities. The subject property is not included on this list.

EMERGENCY RESPONSE NOTIFICATION SYSTEM LIST (ERNS) - subject property only - also known as the "oil and chemical spills" list, this database stores information on all types of oil and chemical substances releases. This list has data on the amount and type of material released, the date of the release, the responsible party, and in some cases the final disposition of the incident. The data available from this database is often incomplete and misleading however. There are no incidents listed as having occurred on or immediately adjacent to the subject property as best S&EC could determine. S&EC would like to caution that the nature of the information in this database does not always provide a high level of certainty as to whether there have in fact been any "spills or releases" of petroleum or chemicals in a particular area.

FACILITY INDEX SYSTEM LIST (FINDS) - subject property only - a list of the facilities which are regulated by the major environmental programs within EPA.

This list contains information on any regulated facility that generates, stores, or transports hazardous waste or other regulated substance or material. It may also contain references to other databases on which a particular property might be found. This database does not contain a listing for the subject property.

TOXIC RELEASE INVENTORY SYSTEM (TRIS) - subject property only - a list which contains information on toxic chemical discharges into the air, water, or land from certain types of facilities as established by Title III - Emergency Planning and Community Right-to-Know Act of the Superfund Amendments and Reauthorization Act (SARA) of 1986. No listings were found on this database for the subject property.

NPL LIENS - subject property only - This list contains those properties which EPA has filed a lien against under CERCLA. EPA has the authority to file a lien against property to recover remedial action expenditures or when the property owner receives notification of potential liability for a hazardous waste cleanup. The subject property does not appear on this list.

NORTH CAROLINA HAZARDOUS SUBSTANCE DISPOSAL SITE (NC-HSDS) - 1.0 mile - This lists contains the locations of uncontrolled and unregulated hazardous waste sites. The file includes sites on the National Priority List (NPL) as well as those on the state priority list. The subject property is not included on this list nor is any other site included within the search radius.

TOXIC SUBSTANCES CONTROL ACT (TSCA) - subject property only - This database identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. The subject property is not included on this database.

MATERIAL LICENSING TRACKING SYSTEM (MLTS) - subject property only -

This database is maintained by the Nuclear Regulatory Commission (NRC) and contains a list of sites which use or possess radioactive materials to the extent they are subject to licensing regulations of the NRC. The subject property is not listed on this database.

RECORD OF DECISION (ROD) - 1.0 mile - This database documents decisions relative to permanent remedies at an NPL site. The information contains technical and health information to aid in the cleanup. There are no sites listed on this database for the subject property or any property within the search radius.

SUPERFUND (CERCLA) CONSENT DECREES (CONSENT) - 1.0 mile - This lists includes major legal settlements that establish responsibility and standards for cleanup at NPL sites. It documents decisions and settlements by U. S. District Courts relative to NPL sites. Neither the subject property nor any property within the search radius show up on this database.

COAL GAS - 1.0 mile - This list contains information on former manufactured gas (coal gas) sites - The subject property does not show up on this list nor does any other property within the search radius.

The above listed databases are the major databases that would typically indicate a potential environmental concern for a property. The database search completed by EDR© also included other minor databases which are usually very location oriented. It also included a search of the Brownfields databases as well. No Brownfields sites were noted on the subject property or on any adjacent property within the half-mile search radius.

S&EC's review of the information in the above lists/databases indicates there are no records of known or recorded contamination incidents on the subject property.

MATERIAL LICENSING TRACKING SYSTEM (MLTS) - subject property only - This database is maintained by the Nuclear Regulatory Commission (NRC) and contains a list of sites which use or possess radioactive materials to the extent they are subject to licensing regulations of the NRC. The subject property is not listed on this database.

RECORD OF DECISION (ROD) - 1.0 mile - This database documents decisions relative to permanent remedies at an NPL site. The information contains technical and health information to aid in the cleanup. There are no sites listed on this database for the subject property or any property within the search radius.

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COAL GAS - 1.0 mile - This list contains information on former manufactured gas (coal gas) sites - The subject property does not show up on this list nor does any other property within the search radius.

The above listed databases are the major databases that would typically indicate a potential environmental concern for a property. The database search completed by EDR© also included other minor databases which are usually very location oriented. It also included a search of the Brownfields databases as well. No Brownfields sites were noted on the subject property or on any adjacent property within the half-mile search radius.

S&EC's review of the information in the above lists/databases indicates there are no records of known or recorded contamination incidents on the subject property.

The information reviewed by S&EC did not note any contamination incidents, other facilities, or listed database sites in the immediate area which appear to pose any significant concern or that might threaten the subject property. S&EC has no recommendations for further studies or reviews on the subject property based on the information in the environmental agency databases/files.

IV. REVIEW OF FILES OF ADDITIONAL AGENCIES

S&EC's review of files and databases on known or suspected hazardous waste sites and facilities with potential for hazardous waste contamination is described above. In addition S&EC also performs a review of certain other agency files to identify other items of potential environmental interest associated with the subject property or adjacent areas. While these items do not necessarily represent environmental contamination problems, they may be important in terms of impacting the property's development in some way. Also additional information about the property may be discovered which identifies a need for further research into its past history. A summary of those additional agency file reviews follows:

A. N.C. DIVISION OF WATER QUALITY - Records of this agency were reviewed to determine if there are permitted wastewater discharges in the area, which might affect the subject property. S&EC also attempted to identify the presence of any potential water quality problems deserving consideration in the area. No particular water quality problems were noted, however the area does have ongoing development as S&EC noted numerous examples of projects under construction across this area. During periods of heavy rainfall and runoff, area streams are probably impacted to some degree by this development.

B. N.C. DIVISION OF AIR QUALITY - During past environmental assessments S&EC has contacted this agency to obtain information about air quality in the Chatham County area. There are no air quality monitoring stations on or adjacent

to the subject property. Officials with this agency stated air quality was generally within ambient standards in this area at the present time. There have been past violations and it is likely there are still occasional minor violations of air quality standards in and around the Durham metropolitan area and the Research Triangle area in general. Most of the violations have been and continue to be associated with vehicle emissions. There are no known chronic or severe air quality problems or major sources of emissions in the area of the subject property.

C. US. DEPARTMENT OF AGRICULTURE - Natural Resources Conservation Service (NRCS) - (old aerial photo review) - The Chatham County office of NRCS maintains a file of old aerial photographs of the county. S&EC was able to review at this office photos of the area containing the subject property that were taken in 1955, 1966, and 1993. Figures 3 - 5 are copies of the NRCS aerial photos reviewed by S&EC during this study. The purpose of reviewing these photos is to glean information about the property's past uses. Also the old aerial photos are useful for determining if other than currently existing buildings were on the property at any time. This type of information is helpful in identifying "suspect" past land uses that might have resulted in some type of environmental contamination or might have created an environmental liability situation for the property.

S&EC's review of the above referenced old aerial photos indicates that the subject property has undergone only minor changes over the period of time they cover. All three aerial photos reviewed by S&EC show the property was almost entirely in woodland at the time of the photo. The 1955 photo did show up some small areas of open cropland on the north-central and east-central parts of the property. It is possible that areas of the property were included in working farms at that time. When the 1966 aerial photo was made, the fields visible in the earlier photo had already begun to revert to woodland. There was almost no completely open land on the subject property visible in the '66 photo. The 1993 aerial photo suggested that parts of the property had been timbered recently but S&EC can

make no definitive statements about when and where timbering might have occurred based on the '93 aerial photo. There were no other significant visible changes in the property over the 1955 - 1993 period as observed from the old aerial photos. S&EC noted no distinguishable buildings on the property in any of the old aerial photos. Most of the immediately adjacent land has also been in woodland and cropland over the past 40 - 50 years according to the old aerial photos. This area of Chatham County has generally been in a rural setting over the period of time covered by the old aerial photos.

During the field reconnaissance, S&EC noted that there has been some development in the general area since the time the 1993 NRCS aerial photo was made. An aerial photo of the general area surrounding the subject property today would look somewhat different than any previous photograph. This area of the county continues to develop as S&EC noted several new subdivisions and commercial developments in the area during the field reconnaissance that had not shown up in any of the previous aerial photography. S&EC did not note any major industrial facilities in the immediate area.

S&EC noted no obvious "red flags" concerning past uses of the subject property itself or past uses of adjacent properties based on the old aerial photo review.

S&EC has no recommendations for further research into its past history based on the review of old aerial photos.

D. CHATHAM COUNTY REGISTER OF DEEDS (past ownership review) - S&EC was not provided for review and analysis a detailed chain-of-title for the subject property. S&EC normally reviews a 50+ year chain-of-title when performing a Phase I EA. The chain-of-title on a property is typically prepared from information obtained through some type of research at the Register of Deeds office in the county where the property is located. S&EC normally reviews the chain-of-title and analyzes the ownership history of the property for the purpose of

determining if there have been any past "suspect" owners who may have used the property in such a manner as to have created existing or potential environmental contamination problems or liabilities. As noted this activity was not completed in full for this EA study. This 554-acre tract of land has been referred to S&EC as the "Smith Property" and also in another source as the "Cox Property". A GIS map from the Chatham County Planning Department lists the property owners as Louis Smith and Vernon Cox as best S&EC could determine. S&EC assumes these individuals currently own the property however that has not been verified. S&EC was not provided with any specific information on the current or past ownership history of this tract of land.

The lack of a thorough review of the past ownership history of the property must be noted as a limitation for this EA with respect to the typical standards. A thorough review and analysis of the past ownership history covering at least the past 50+ years is a vital part of most Phase I EA's. While a complete past ownership history review and analysis was not completed for this EA, S&EC can offer several **general comments and speculations** about the past owners of this tract of land. Based on other aspects of this study, S&EC does not believe the subject property has had any past industrial or commercial owners that might have used it in a way to create environmental contamination problems or liabilities. S&EC believes it is likely that all of its previous owners likely have been individuals. There have been no major shifts in land use of this 554-acre tract over the last 40 - 50 years.

Based on the old aerial photo review and other information about the property learned during this study, it is S&EC's opinion there have been no past "suspect" owners of the subject tract. There is no evidence of any past industrial or commercial buildings or other large structures on the property. After completing other aspects of this study, S&EC has no reason to suspect that any past owner has deliberately or inadvertently contaminated this tract of land. Based on the scope

of this study, S&EC has no recommendations for further study or concern relative to the past ownership history of the subject property. Without a past ownership history review and analysis, there does remain at least some possibility that one or more of the past property owners may have had occasion to use the property in such a manner, dispose of some type of hazardous waste on the property, or could possibly have taken some other action on the property such that its environmental condition has been compromised. S&EC will be glad to perform a detailed chain-of-title review and analysis of the past ownership history of the property if furnished with that information. The data that was provided does not constitute the full chain-of-title information needed for a complete past ownership review and analysis per the ASTM standard. S&EC will also be glad to prepare an addendum to this report if deemed necessary that would provide a typical past ownership history analysis for a Phase I EA. It is S&EC's opinion that a more detailed chain-of-title review would have very little if any benefits on this EA.

V. FIELD RECONNAISSANCE

S&EC personnel visited the property during October 2005 for the purpose of performing a visual reconnaissance and inspection. Property maps, topo maps, and aerial photographs were used to relate ground position to property boundaries and to make notes on points of interest. Adjacent properties were also inspected from the subject property, however S&EC did not physically enter adjacent properties for the purpose of inspection except via public roads and streets. S&EC's goals and objectives for the field reconnaissance portion of the work included the following:

- Determining if underground storage tanks are present on the subject property.
- Noting land uses immediately adjacent to and in the general area of the subject property and determining if any landowners or activities may be

creating conditions that adversely affect the subject property.

- Searching for "dumps" or "landfill" areas where hazardous materials, barrels or other suspicious materials had been discarded or abandoned.
- Searching for areas with obvious fill, excavation, or other signs indicating the possibility that hazardous materials or other materials had been buried or potentially contaminated soil had been placed on-site.
- Noting areas of stressed or dead vegetation that might indicate the possible dumping of pesticides or other chemical compounds.
- Inspecting the exterior and interior of any existing buildings, to the extent access was available and to the extent safe entry could be made, to inventory contents and to note any potential hazardous wastes or hazardous materials that might be present in those buildings.
- Identifying and noting other actual or potential concerns which might require action by or influence the action of future owners.

S&EC performed a general reconnaissance of the area within an approximate one-mile radius of the subject property using a vehicle and traveling over available roads. As noted above this was done in an attempt to identify any other activities in the area which might in some way adversely affect the subject property. Aerial photographs were also used to identify local land uses and land features in the area.

S&EC would like to emphasize that the field reconnaissance on parts of the property was limited by the heavy vegetative cover present (see Site Photo 8). Parts of the woodland on the property are in "cutover" as they have been

timbered in the recent past. On the date of inspection, S&EC observed a large amount of small trees, vines, shrub-type vegetation and other similar vegetation on these areas. This vegetation severely limited ground visibility at these locations and hindered access to the property. S&EC observed the property to the maximum extent practicable using any available paths, access roads, etc. S&EC noted nothing suspicious about this property nor anything to suggest a there is a problem hidden by the thick vegetation. In order to improve the level of the field reconnaissance, heavy equipment would be needed to clear lines and sight and provide better access through the heavily vegetated areas. S&EC is not recommending this be done but will be glad to pursue this task if the level of field inspection for this study is deemed not to be adequate. The lack of a thorough field inspection on parts of the property is a limitation on this Phase I EA study. The reader / user of this report should determine the need for a higher level of field inspection in the heavily vegetated portions of the property.

VI. CONCLUSIONS AND RECOMMENDATIONS

None of the activities conducted as part of this Phase I Environmental Assessment have identified any definite present or past environmental contamination problems on the subject property or on any immediately adjacent property. S&EC noted no major problems with the subject property during the field reconnaissance. The public records review indicated no recorded past or present problems of an environmental nature in the area that would likely impact the subject property. S&EC has no reason to believe, based on the study, that there are any potential environmental problems or liabilities on this property that would prevent or severely impact any use of the property. **There were no recognized environmental conditions (REC's) identified for this property during the Phase I study. S&EC has no recommendations for additional investigations or studies relative to the environmental condition of this property, subject to the scope and limitations relative to this study as noted in**

this report.

S&EC would like to note two issues relative to this property that will be of interest to Chatham Development Corporation. They do not necessarily represent any environmental contamination problems, however any potential purchaser / developer should be aware of these issues and should take them into account when purchasing the property and planning for its development. Each item of interest is discussed briefly as follows with more detailed information included within the body of this report.

DUMPS - During the field reconnaissance, S&EC noted the presence of several small solid waste "dumps" located on the south side of the subject property (see Site Photos 9 & 10). Materials observed in these areas were primarily logging debris, however there were some scattered other materials such as empty containers, household garbage, etc. These areas, based on a visual inspection, do not appear to contain hazardous wastes and do not appear to pose any significant threat to the subject property. In the absence of any sampling and analysis beyond visual inspection, S&EC would like to note there is a remote risk of hazardous waste or petroleum products being present in the dump area. S&EC does not typically recommend sampling around the type of "dumps" found on this property, as they are very typical of solid waste found on many undeveloped tracts of land and areas where logging operations have taken place in Chatham County. Other than unsightliness and the need to clean them up, these areas are normally not a problem, based on S&EC's past experience. S&EC will be glad to provide further information and perform sampling and analyses of the dump areas if deemed necessary.

JURISDICTIONAL WETLANDS / RIPARIAN BUFFERS - Based on the field reconnaissance portion of this study and other work performed on the property, S&EC believes there are areas of jurisdictional "wetlands / waters of the U.S."

located on this property. There are also areas that may be subject to the riparian buffer requirements under the "Chatham County Buffer Rules" and possibly other regulations as well. The potential jurisdictional areas include Harlands Creek which flows through the center of the tract, areas adjacent to the creek and possibly areas adjacent to other drainageways on other parts of the property (see Site Photo 7). Federal, state, and local regulations limit the amount and type of development that can occur in and around these areas. If there are impacts beyond certain levels resulting from proposed development, there may be a need to obtain permits for the development. In some cases the issuance of permits is predicated on completion of mitigation measures needed to offset the loss of wetlands or wetland values. S&EC has not reviewed any specific plans for development of this property and cannot determine at this time if impacts to jurisdictional areas are likely. It may in fact be possible to avoid impacts to jurisdictional areas entirely and avoid the need for permits and mitigation. Jurisdictional areas will need to be carefully considered during site planning and construction.

This EA has been basically completed in accordance with ASTM Standard E-1527 with the exceptions previously noted with respect to the review and analysis of the past ownership history of the tract and the limitations on the field inspection due to the presence of extremely thick vegetation over much of the property. S&EC has performed this Phase I EA in the most comprehensive manner the scope of this type study will allow. However this study and any Phase I Environmental Assessment has many inherent limitations and should not be perceived as or assumed to be an absolute guarantee that all on-site or off-site environmental problems which may affect the property have been identified. No sampling or analysis of any type or specialized studies (i.e. archaeological or historic resources surveys, endangered species surveys, etc.) were included in this effort. Information contained in federal and state environmental agency databases has been used to draw conclusions about the property. That information is subject to

errors and to being incomplete.

The EA was designed and performed as a screening tool to identify "red flags" which indicate the potential for present or future environmental problems/liabilities. The reader/user of this report is cautioned to recognize the purpose, scope, and limitations of the Phase I study and to make appropriate use of this report. S&EC will be glad to answer questions and/or provide further information about this report or the work on which it is based upon request. S&EC is also prepared to do additional investigations, sampling, etc. if the results of this EA study are not as conclusive as desired.

**DOCUMENTARY
SITE
PHOTOGRAPHS**



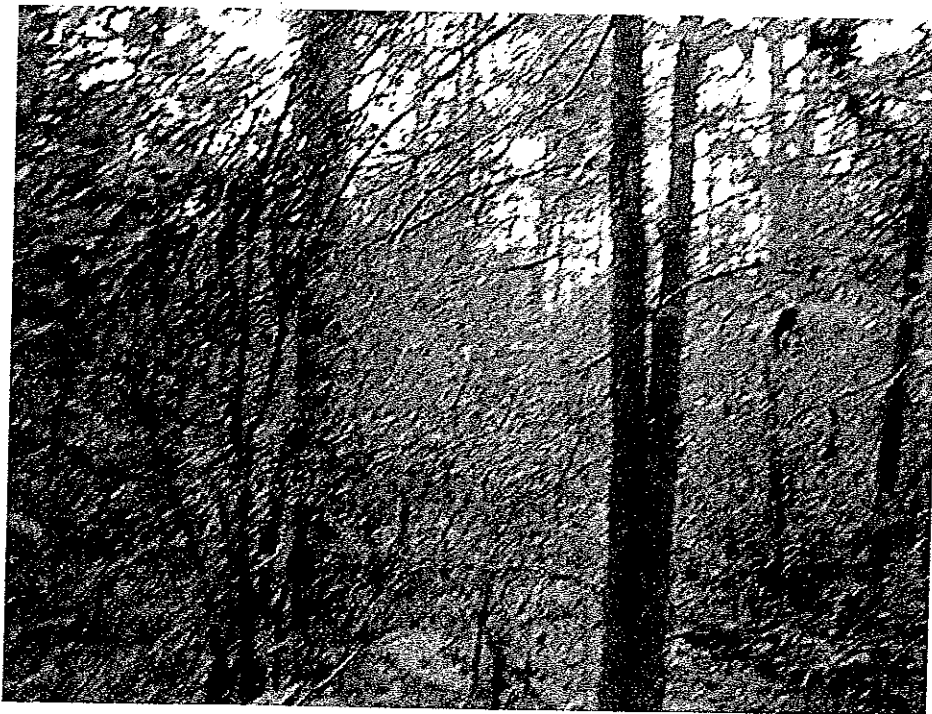
Site Photo 1: View of the subject property from Highway US #64.



Site Photo 2: Another view of Highway 64 and the subject property.



Site Photo 3: Adolph Taylor Road - southeast corner of the property.



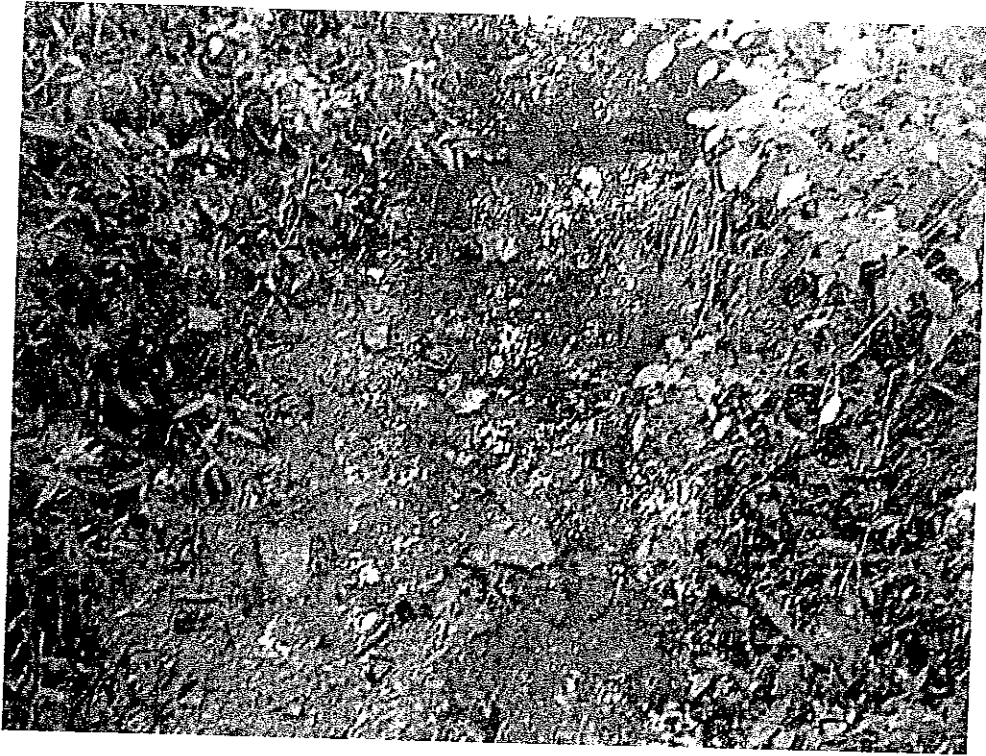
Site Photo 4: View of mature woodland - northeast corner of the property.



Site Photo 5: Woodland on the west side of 554-acre tract.



Site Photo 6: Example of "cutover" area on the north-central part of the property.



Site Photo 7: View of Harlands Creek-central part of the property.



Site Photo 8: Example of cutover area where field inspection was limited due to heavy vegetation.

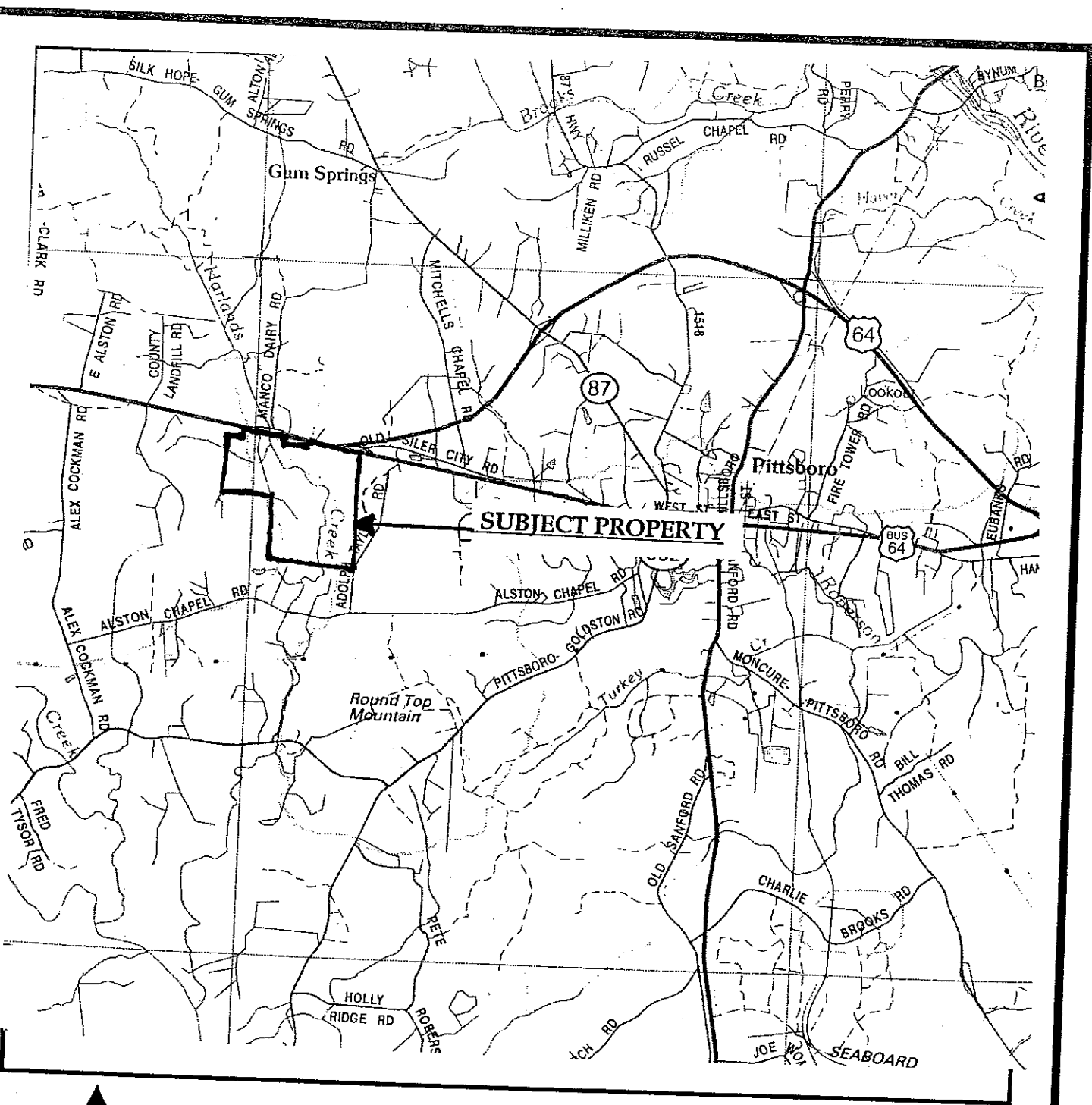


Site Photo 9: One of several “dump” sites observed on the property-this one is on the southeast corner.



Site Photo 10: Another “dump” area on the southwest corner of the tract.

**REPORT
FIGURES**

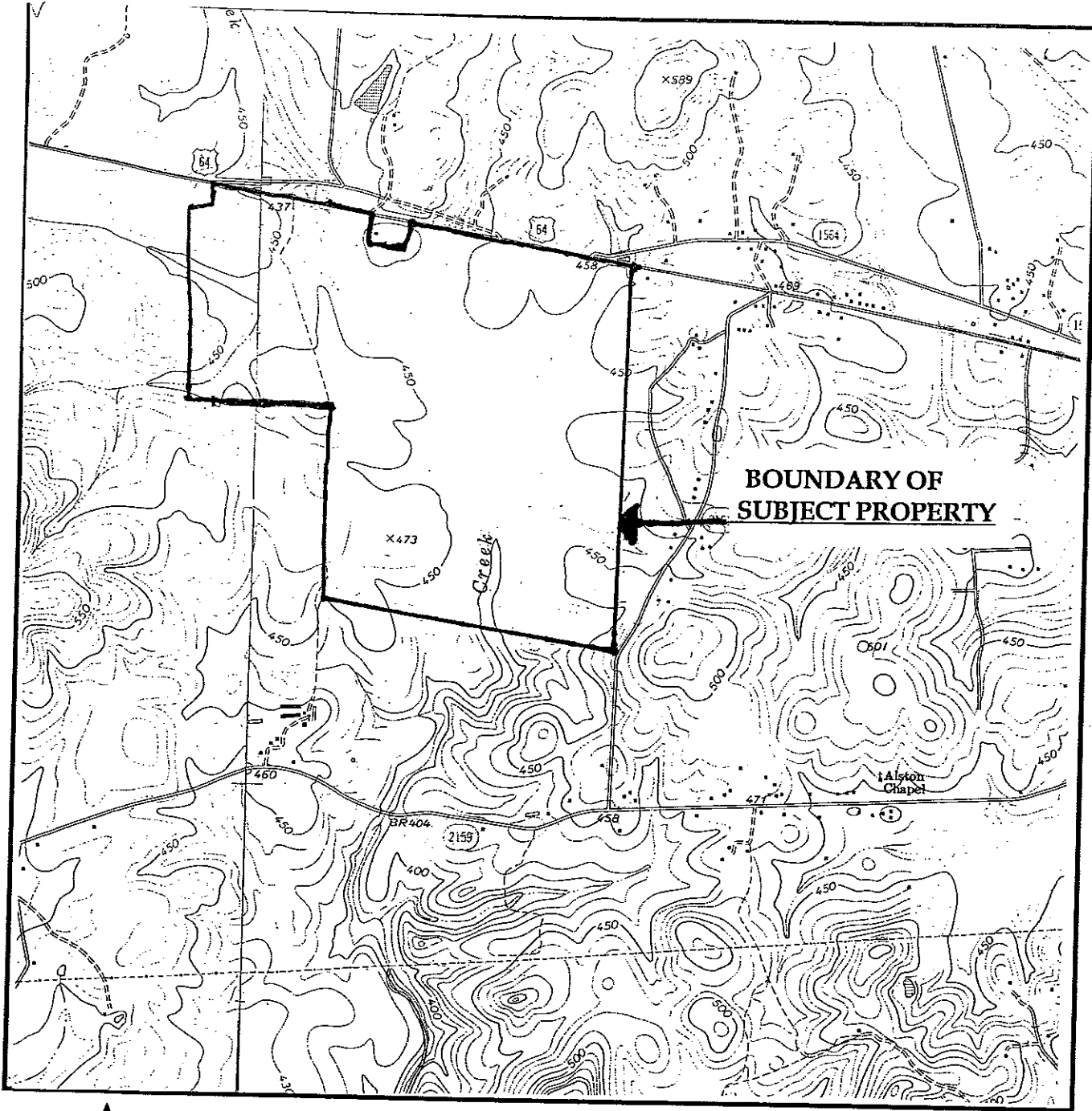


ct #:	Scale:
S1	1"=1.2 Miles
ct DW	Date:
	10/11/05

Figure 1 - Vicinity Map
 Smith property.
 554.59-Acres



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 (919) 846-5900 • (919) 846-9467
 Web Page: www.SandEC.com



**BOUNDARY OF
SUBJECT PROPERTY**



**USGS Quad Sheet
Pittsboro & Siler City Quad
Chatham County, NC**

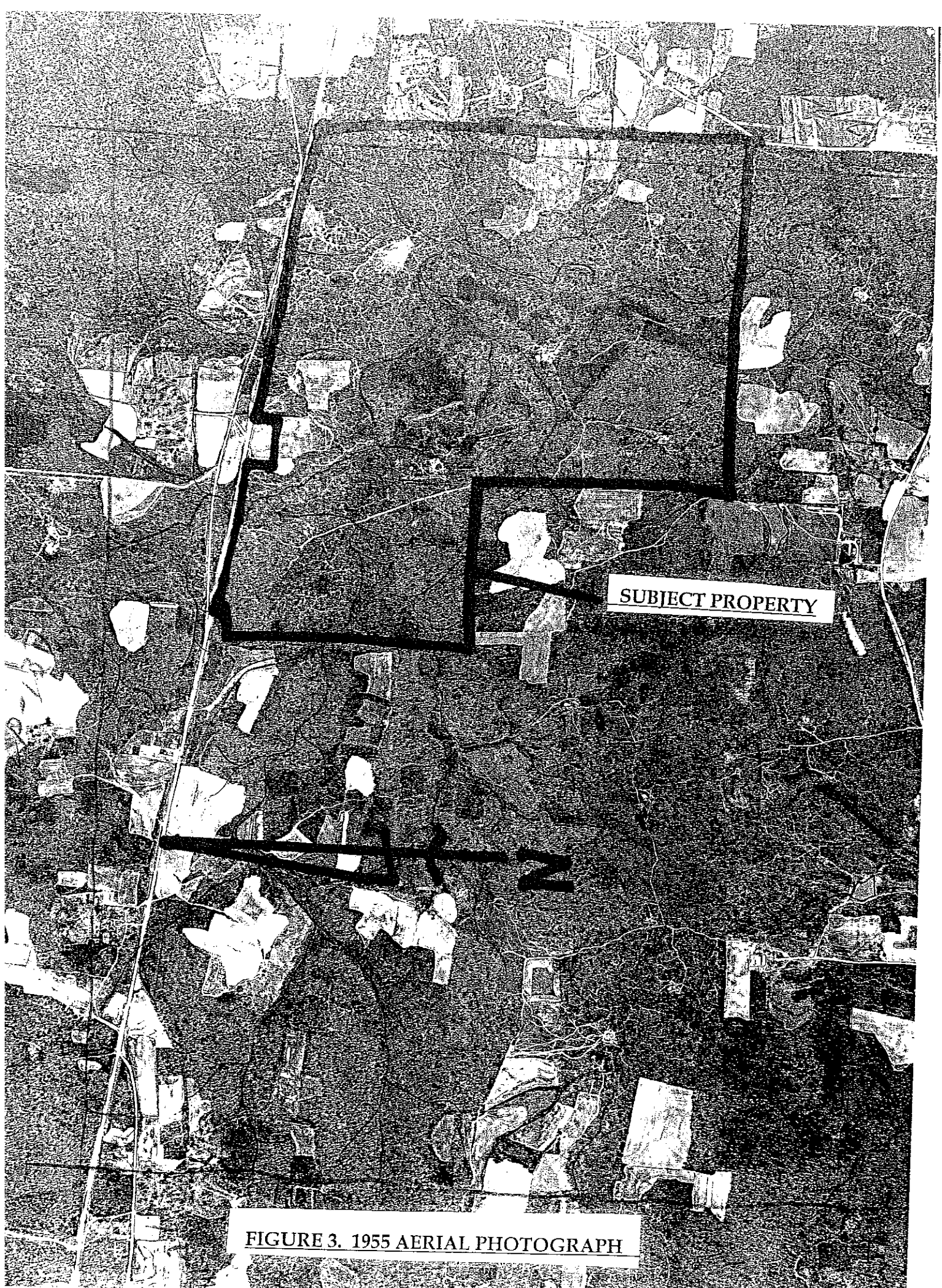
Project #: 9894.S1	Scale: 1"=2000'
Project Mgr.: DW	Date: 10/11/05

**Figure 2 – USGS Map
Smith Property**

554.59 - Acres

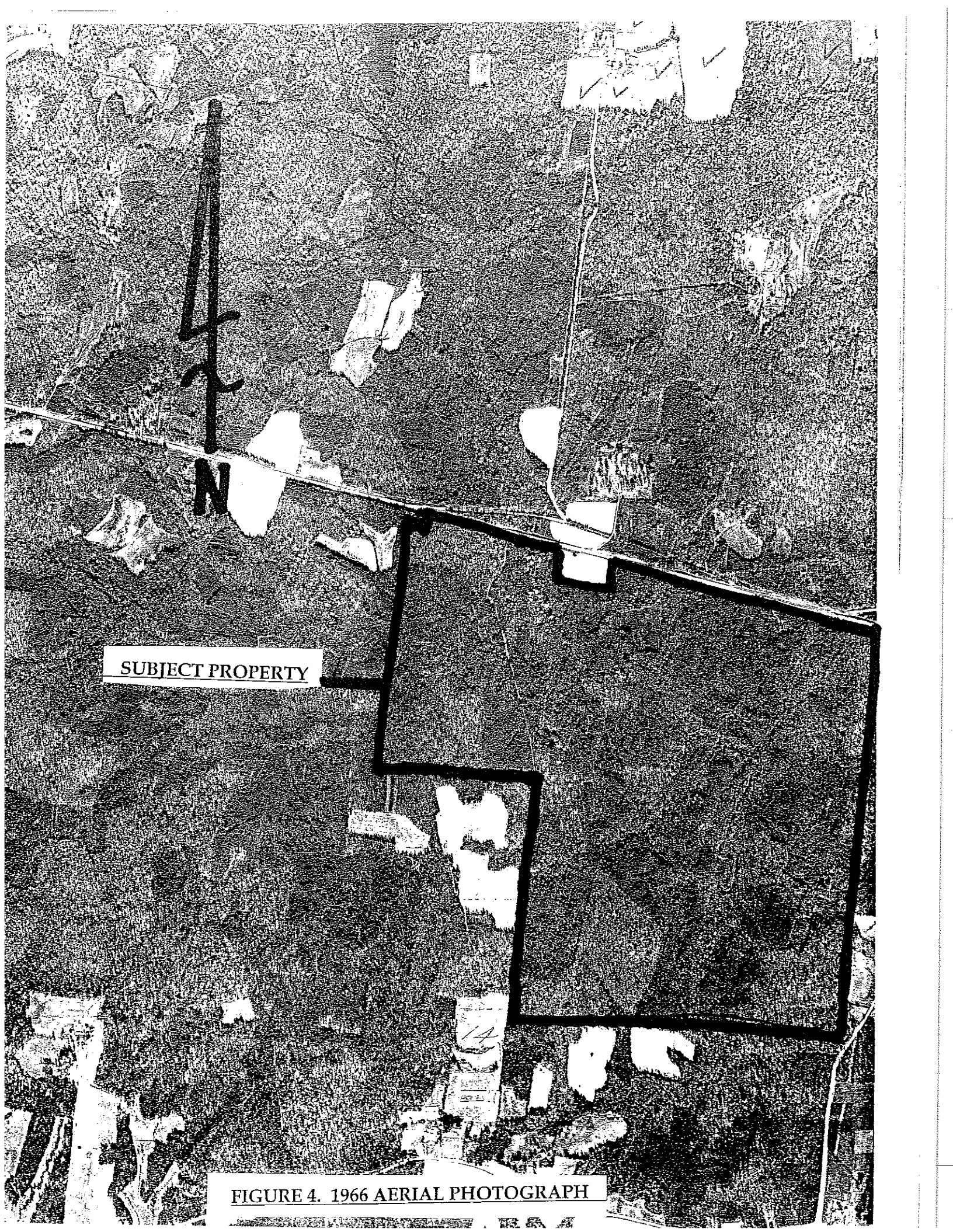


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SUBJECT PROPERTY

FIGURE 3. 1955 AERIAL PHOTOGRAPH



SUBJECT PROPERTY

FIGURE 4. 1966 AERIAL PHOTOGRAPH

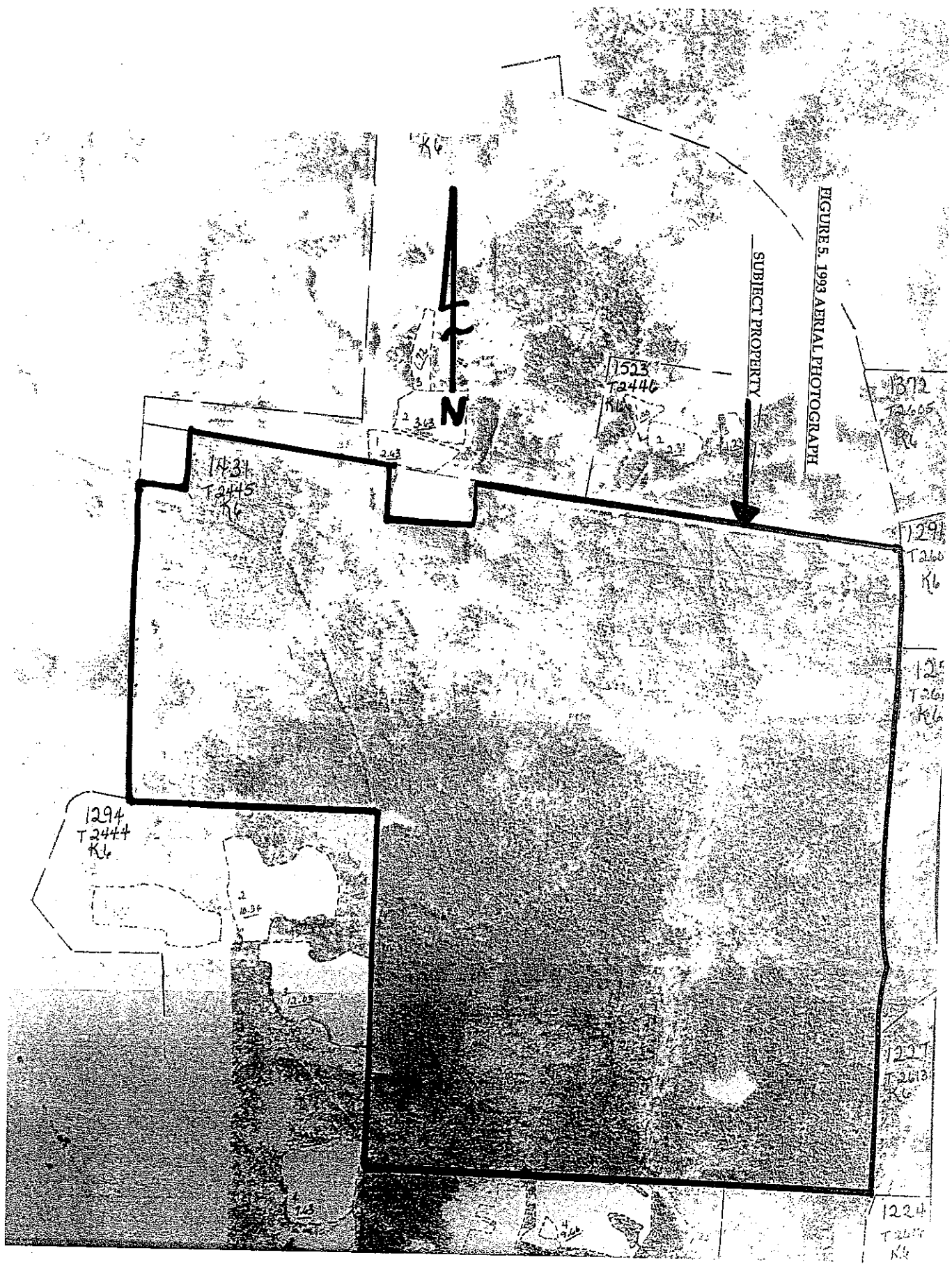


FIGURE 5. 1993 AERIAL PHOTOGRAPH

SUBJECT PROPERTY

K6

N

1372
T2465
K6

1291
T2460
K6

1290
T2460
K6

1294
T2444
K6

1034

1165

1227
T2463
K6

1224
T2467
K6

ATTACHMENT 1

S&EC PROPOSAL SCOPE OF WORK



Soil & Environmental Consultants, PA

11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

Scope of Work for Phase I - Environmental Assessment

S&EC proposes to complete the Environmental Assessment proceeding in the following manner:

1. Perform a thorough reconnaissance of the property and any buildings (see Special Condition A) to identify past or present waste generation, handling, or disposal activities including solid, liquid, and gaseous wastes. The property will be thoroughly investigated for the presence of old "dumps" of any type.
2. Provide inventory of existing materials, substances, etc., on-site which are regulated as hazardous substances, and/or which have potential for site contamination.
3. Review regulatory and other public agency records (as per ASTM 1527 standards) to determine the occurrence of recorded contamination on the subject property or adjacent property.
4. Search the chain-of-title (to be provided by client) and old aerial photographs, maps, etc., of subject property as applicable to identify past owners, and uses of property and research same if owner/activities indicating significant potential environmental contamination are discovered. If a chain-of-title covering at least fifty years back is not furnished by the client at least one week prior to the report due date, S&EC will review whatever the client does provide. S&EC will not perform a chain-of-title search within the scope of this proposal. The report will be based on the information available.
5. Review published soils data, topographical data, and hydro-geological information as required to provide insight on conditions regarding soil and water quality, restrictions, etc.
6. Investigate the usage, storage and disposal of pesticide products that may have occurred on the tract of land associated with past activities.
7. Collect and obtain laboratory analysis (see Special Condition B and C) on samples of soil, asphalt, concrete, etc., which have indicators of significant

environmental contamination (i.e. depressed vegetation, unusual stains, obvious spills of unidentified materials). We will not perform this step until first advising the client. Samples will be collected as appropriate to estimate the probability of past leakage and/or spills.

8. Identify existing adjacent land uses (within one mile) which might have potential, from an environmental standpoint, for affecting future uses of subject property (i.e. National Register of Historic Buildings, Districts, large industrial commercial waste discharges, etc.).
9. Prepare a written report (see Special Condition D) outlining the results of our findings with any recommendations for further study testing, etc. Two bound copies of the report will be finalized and delivered to client within 30 days after contract is signed unless client designates an alternate time frame. If additional copies are needed, S&EC will bill for clerical time and expenses.

This study does not address the presence of asbestos containing materials or lead based paint in existing buildings on the subject property. It does not assess the potential for accumulation of hazardous levels of radon gas or molds in existing or potential future structures on the property. S&EC can expand the scope of this study upon written request to include these additional parameters. Any additional work outside the scope above will be performed based on our fee schedule.

This proposal is valid for 90 days from the date given above. If this proposal is acceptable, then please fill in the S&EC Worksheet. Also, please fill in the blanks on the two attached contracts and return one signed contract back to S&EC (see Special Condition E).

SOIL & ENVIRONMENTAL CONSULTANTS, PA
SPECIAL CONDITIONS FOR PHASE I ENVIRONMENTAL ASSESSMENTS

- A. Access to enter property and to inspect the interior and exterior of all buildings will be provided to S&EC by the client on the day of field reconnaissance. S&EC will notify the client at least one week before the date of field reconnaissance, unless the client requests a time frame for the assessment which does not allow for the one week notice. If S&EC has to return to the site for a building(s) inspection because of a previous lack of access, that time will be billed over and above the proposal price at the contract hourly rate for the personnel's additional hours.
- B. If additional trips to the site are necessary strictly for the purpose of sample collection, that time will be billed over and above the proposal price and at the contract hourly rate for the personnel's additional time required.
- C. The cost for the laboratory analysis of any soil and water samples that S&EC deems necessary and is approved by the client is not included. The cost of those analyses will be added to the above.
- D. S&EC will prepare the Phase I Environmental Assessment Report in the company's standard format, unless the client provides S&EC their own or another mandatory format (i.e., format for a bank or lending institution) within 30 days after the contract is signed. Additional fees will be charged (at the standard rates above) for the actual time required if it is necessary to rewrite the report in another format after it has been started or completed in the S&EC format. Information on S&EC's standard format will be furnished upon request.
- E. Prior to submission of the final report, S&EC must have a signed contract in our possession with the appropriate client name and billing address specified.

ATTACHMENT 2

ENVIRONMENTAL AGENCY RECORDS



EDR® Environmental
Data Resources Inc

The EDR Radius Map with GeoCheck®

**Smith Property
3903 Solid Rock Road
Pittsboro, NC 27312**

Inquiry Number: 1531157.1s

October 12, 2005

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06461**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

3903 SOLID ROCK ROAD
PITTSBORO, NC 27312

COORDINATES

Latitude (North): 35.722200 - 35° 43' 19.9"
Longitude (West): 79.240300 - 79° 14' 25.1"
Universal Transverse Mercator: Zone 17
UTM X (Meters): 659163.8
UTM Y (Meters): 3954364.8
Elevation: 407 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 35079-F2 PITTSBORO, NC
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information
RCRA-SQG..... Resource Conservation and Recovery Act Information
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

SHWS..... Inactive Hazardous Sites Inventory

EXECUTIVE SUMMARY

SWF/LF.....	List of Solid Waste Facilities
LUST.....	Regional UST Database
UST.....	Petroleum Underground Storage Tank Database
OLI.....	Old Landfill Inventory
VCP.....	Responsible Party Voluntary Action Sites
INDIAN LUST.....	Leaking Underground Storage Tanks on Indian Land
INDIAN UST.....	Underground Storage Tanks on Indian Land

FEDERAL ASTM SUPPLEMENTAL

CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
Delisted NPL.....	National Priority List Deletions
FINDS.....	Facility Index System/Facility Registry System
HMIRS.....	Hazardous Materials Information Reporting System
MLTS.....	Material Licensing Tracking System
MINES.....	Mines Master Index File
NPL Liens.....	Federal Superfund Liens
PADS.....	PCB Activity Database System
US ENG CONTROLS.....	Engineering Controls Sites List
ODI.....	Open Dump Inventory
UMTRA.....	Uranium Mill Tailings Sites
FUDS.....	Formerly Used Defense Sites
INDIAN RESERV.....	Indian Reservations
DOD.....	Department of Defense Sites
RAATS.....	RCRA Administrative Action Tracking System
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
SSTS.....	Section 7 Tracking Systems
FTTS INSP.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

NC HSDS.....	Hazardous Substance Disposal Site
AST.....	AST Database
LUST TRUST.....	State Trust Fund Database
DRYCLEANERS.....	Drycleaning Sites
IMD.....	Incident Management Database

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas.....	Former Manufactured Gas (Coal Gas) Sites
---------------	--

BROWNFIELDS DATABASES

US BROWNFIELDS.....	A Listing of Brownfields Sites
US INST CONTROL.....	Sites with Institutional Controls
Brownfields.....	Brownfields Projects Inventory
INST CONTROL.....	No Further Action Sites With Land Use Restrictions Monitoring
VCP.....	Responsible Party Voluntary Action Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

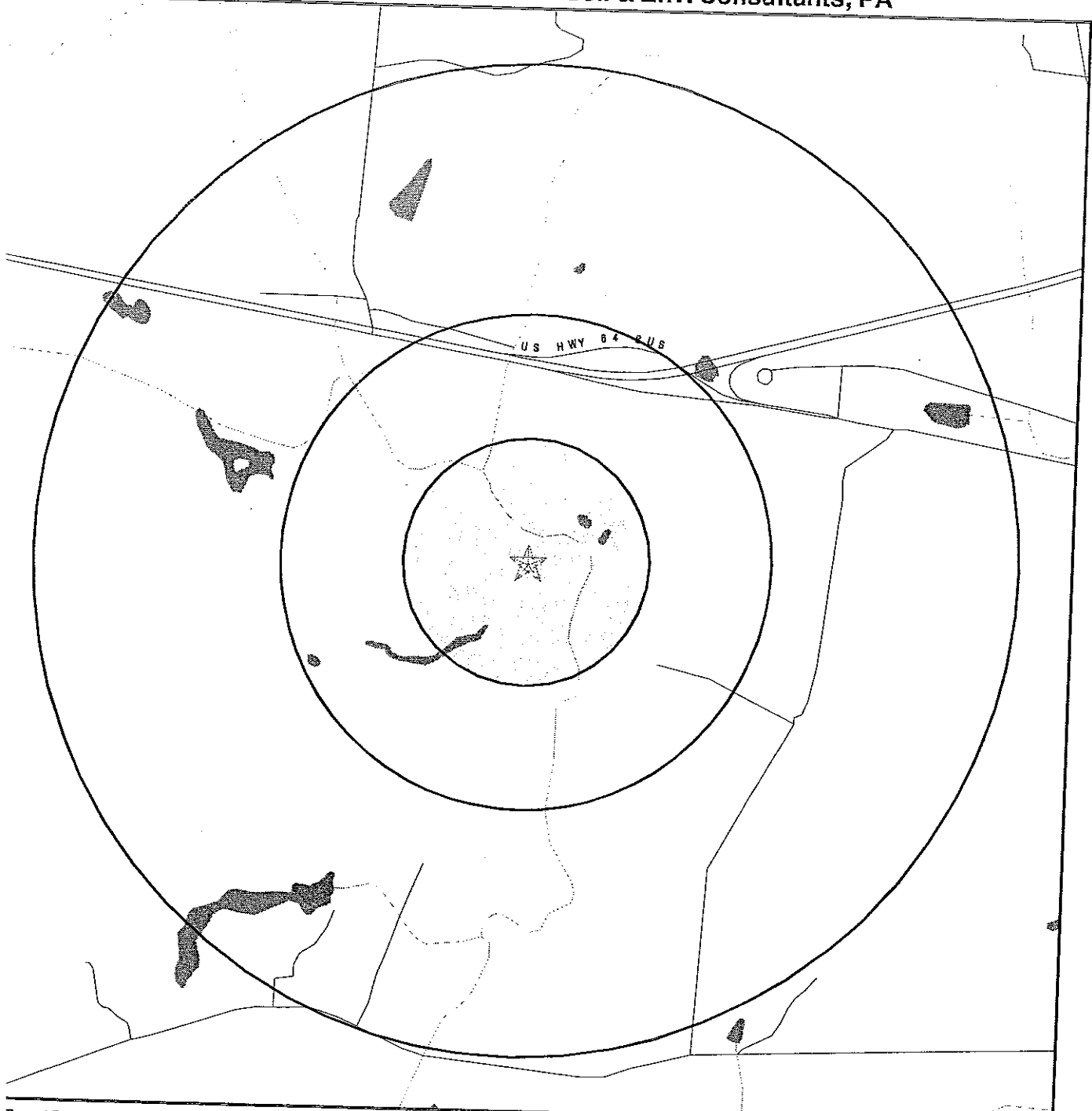
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

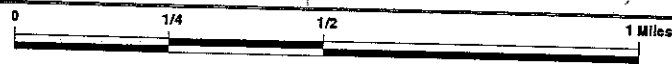
Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
CHATHAM CO LDFL	CERC-NFRAP
PETROMART #4	IMD, LUST
GORDONS BP SERVICE	IMD, LUST
AT&T	RCRA-SQG, FINDS, IMD, LUST
NC DFR-CHATHAM COUNTY OFFICE	IMD, LUST
JOHNSON PROPERTY (RAY) (FORMER	IMD, LUST
THOMAS, HERBERT RESIDENCE (FRM	IMD, LUST
BRIDGER, ED PROPERTY	IMD, LUST
BERRY, SANDY RESIDENCE	IMD, LUST
SHOP QUIK	IMD, LUST, UST, LUST TRUST
ATT MICROWAVE TOWER	IMD, LUST
DAVIS, WILLIAM G., DDS	IMD, LUST
CSX PROPERTY FORMER	IMD, LUST
VISTA POINT - GASKINS	LUST
C MINI MART #6	LUST TRUST
SPORTSMAN'S TRADING POST	LUST TRUST
DFR - CHATHAM CO. OFFICE	LUST TRUST
ESTATE OF ELVA J. BUTLER	LUST TRUST
OLDAHAM GROC.	UST
JOANNE BURKES	UST
PITTSBORO	UST
FRANK PERRY SERVICE STATION	UST
JOHNSON SERVICE STATION	UST
SPORTSMAN TRADING POST	UST
CHATHAM CO HDQ	UST
EARL THOMAS GRADING. INC.	UST
SMITH RESIDENCE JOHN W JR	UST
WICKER TRUCKING	FINDS
VISTA POINT	IMD
PANTRY # 174	IMD
WILSONVILLE BOAT AND RV STORAG	IMD
COUNCIL TRUCKING SPILL	IMD
JAMES TOMLINSON TRUCKING	IMD

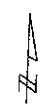
OVERVIEW MAP - 1531157.1s - Soil & Env. Consultants, PA



Target Property
 Sites at elevations higher than or equal to the target property
 Sites at elevations lower than the target property
 Coal Gasification Sites
 National Priority List Sites
 Landfill Sites
 Dept. Defense Sites



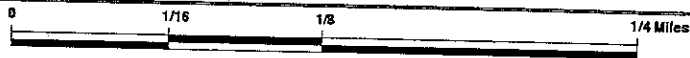
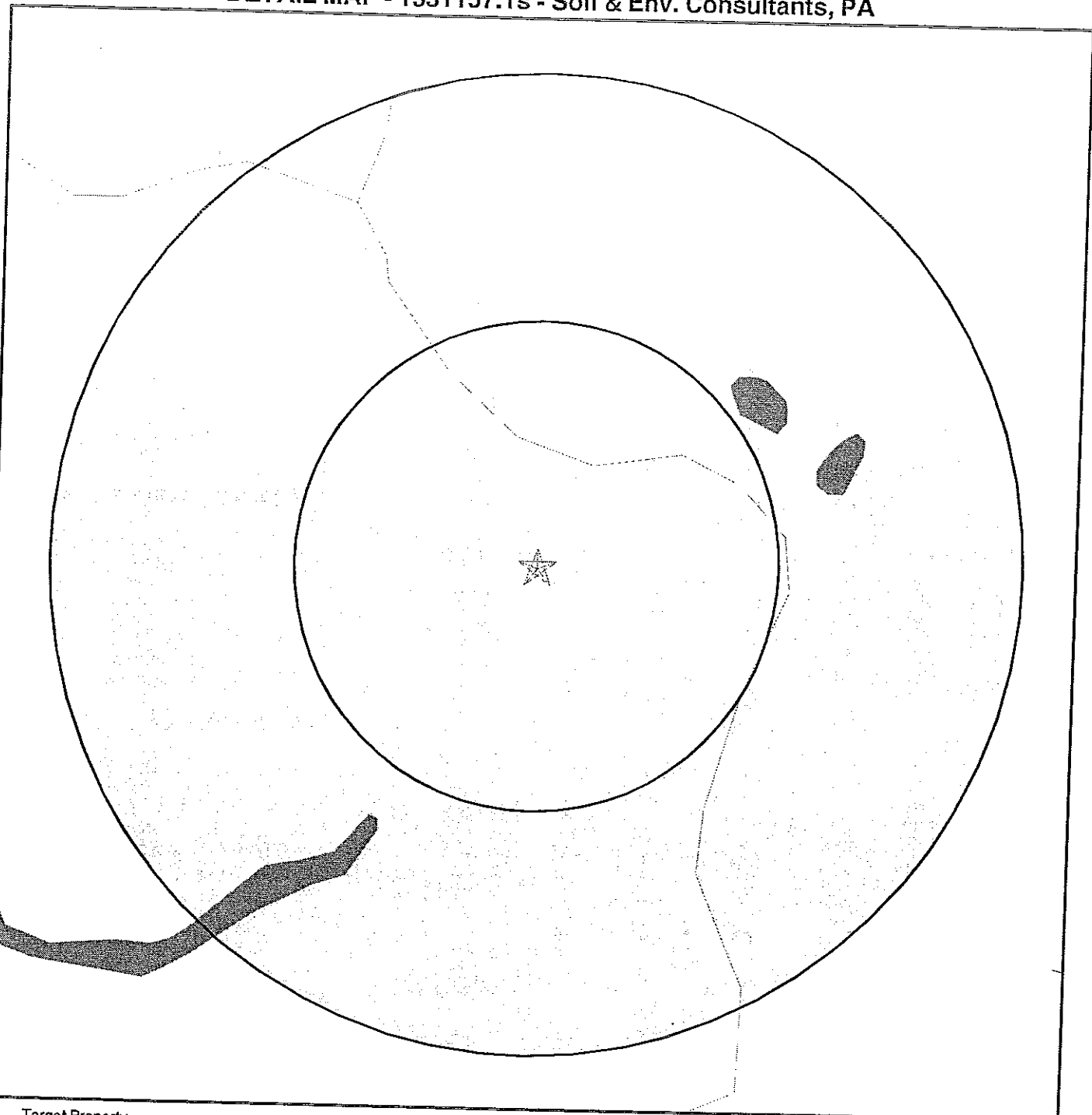
-  Indian Reservations BIA
-  Oil & Gas pipelines
-  Federal Wetlands
-  Hazardous Substance Disposal Sites



GET PROPERTY: Smith Property
 ADDRESS: 3903 Solid Rock Road
 CITY/STATE/ZIP: Pittsboro NC 27312
 PHONE: 35.7222 / 79.2403

CUSTOMER: Soil & Env. Consultants, PA
 CONTACT: Jason Burdette
 INQUIRY #: 1531157.1s
 DATE: October 12, 2005 1:26 pm

DETAIL MAP - 1531157.1s - Soil & Env. Consultants, PA



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

-  Indian Reservations BIA
-  Oil & Gas pipelines
-  Federal Wetlands
-  Hazardous Substance Disposal Sites

TARGET PROPERTY: ADDRESS: CITY/STATE/ZIP: LAT/LONG:	Smith Property 3903 Solid Rock Road Pittsboro NC 27312 35.7222 / 79.2403	CUSTOMER: CONTACT: INQUIRY #: DATE:	Soil & Env. Consultants, PA Jason Burdette 1531157.1s October 12, 2005 1:26 pm
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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL ASTM STANDARD</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
State Haz. Waste		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
OLI		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
FUDS		1.000	0	0	0	NR	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
DOD		1.000	0	0	0	0	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
NC HSDS		1.000	0	0	0	0	NR	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Target Property</u>	<u>Search Distance (Miles)</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
AST		TP	NR	NR	NR	NR	NR	0
LUST TRUST		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
IMD		0.500	0	0	0	NR	NR	0
<u>EDR PROPRIETARY HISTORICAL DATABASES</u>								
Coal Gas		1.000	0	0	0	0	NR	0
<u>BROWNFIELDS DATABASES</u>								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
Brownfields		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NO SITES FOUND

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PITTSBORO	U003137378	OLDAHAM GROG.	RT. 1	27312	UST
PITTSBORO	U003134325	JOANNE BURKES	ROUTE 1, BOX 792	27312	UST
PITTSBORO	S105765368	PETROMART #4	US 15-501 / MANNS CHAPEL RD		
PITTSBORO	S1069336640	WICKER TRUCKING	HWY 15/601 / 87 S		IMD, LUST
PITTSBORO	1003868299	CHATHAM CO LDFL	SR 1513		IMD
PITTSBORO	U003144260	PITTSBORO	S.R. 1954	27312	CERC-NFRAP
PITTSBORO	U003134477	FRANK PERRY SERVICE STATION	ROUTE 2 (N.C. 87)	27312	UST
PITTSBORO	U003134489	JOHNSON SERVICE STATION	RT. 2	27312	UST
PITTSBORO	S103717610	GORDONS BP SERVICE	ROUTE 3, HIGHWAY 15	27312	UST
PITTSBORO	1004745662	AT&T	RT 4 BOX 375		IMD, LUST
PITTSBORO	U001439456	SPORTSMAN TRADING POST	ROUTE 4, BOX 848-A	27312	RCRA-SQG, FINDS, IMD, LUST
PITTSBORO	S105912037	VISTA POINT	RT 6, BOX 796	27312	UST
PITTSBORO	S105201472	PANTRY # 174	620 HIGHWAY 64 WEST	27312	IMD
PITTSBORO	S106349430	WILSONVILLE BOAT AND RV STORAG	6125 HIGHWAY 64 EAST	27312	IMD
PITTSBORO	U001200076	CHATHAM CO HDQ	HWY 64 W	27312	IMD
PITTSBORO	S105218648	C MINI MART #6	HIGHWAY 64	27312	UST
PITTSBORO	S105218958	SPORTSMAN'S TRADING POST	HIGHWAY 64		LUST TRUST
PITTSBORO	S105219052	DFR - CHATHAM CO. OFFICE	HIGHWAY 64 WEST		LUST TRUST
PITTSBORO	S105765103	NC DFR-CHATHAM COUNTY OFFICE	HWY 64 W		LUST TRUST
PITTSBORO	S105707483	JOHNSON PROPERTY (RAY) (FORMER	10004 HIGHWAY 87 SOUTH		IMD, LUST
PITTSBORO	S105120637	COUNCIL TRUCKING SPILL	3511 HWY. 87 N	27312	IMD, LUST
PITTSBORO	S105765287	THOMAS, HERBERT RESIDENCE (FRM	9925 HWY 87N / PETE THOMAS RD.	27312	IMD
PITTSBORO	S105895449	BRIDGER, ED PROPERTY	PO BOX 917	27312	IMD
PITTSBORO	1007707053	SMITH RESIDENCE JOHN W JR	PO BOX 604		IMD, LUST
PITTSBORO	U001188109	EARL THOMAS GRADING, INC.	P.O. BOX 88--HIGHWAY 64 WEST	27312	IMD, LUST
PITTSBORO	S105695426	BERRY, SANDY RESIDENCE	EDDIE PERRY RD (RT 5, BOX 159)	27312	FINDS
PITTSBORO	S104913749	JAMES TOMLINSON TRUCKING	US HIGHWAY 902	27312	UST
PITTSBORO	S105219641	ESTATE OF ELVA J. BUTLER	46 NC HWY 87N	27312	IMD, LUST
PITTSBORO	U001204014	SHOP QUIK	8705 HWY.15-501 NORTH		IMD
PITTSBORO	S105764991	ATT MICROWAVE TOWER	OFF US 15/501 S.	27312	LUST TRUST
PITTSBORO	S105895481	DAVIS, WILLIAM G., DDS	60 WEST ST. (HWY 64 WEST)		IMD, LUST
PITTSBORO	S106896209	CSX PROPERTY FORMER	287 EAST STREET HWY. 64		IMD, LUST
VISTA POINT	S105765011	VISTA POINT - GASKINS	STATE ROAD 1700	27312	IMD, LUST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/01/05
Date Data Arrived at EDR: 08/03/05
Date Made Active in Reports: 08/22/05
Number of Days to Update: 19

Source: EPA
Telephone: N/A
Last EDR Contact: 08/03/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/27/05
Date Data Arrived at EDR: 05/04/05
Date Made Active in Reports: 05/16/05
Number of Days to Update: 12

Source: EPA
Telephone: N/A
Last EDR Contact: 08/05/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Quarterly

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/27/05
Date Data Arrived at EDR: 07/22/05
Date Made Active in Reports: 08/17/05
Number of Days to Update: 26

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Threatened and Endangered Species Survey Report
Phase I Environmental Assessment

XII. DEVELOPMENT SCHEDULE

YEAR

2007	Design and Permitting
2008	Phase 1 Plat Approval, Horizontal Construction
2010	Phase 2 Plat Approval, Horizontal Construction
2011	Phase 3 Plat Approval, Horizontal Construction

	HOMES COMPLETED (per year)	TOTAL
2008	15	15
2009	30	45
2010	35	80
2011	40	120
2012	40	160
2013	37	197

Preliminary Phasing Plan

XIII. ECONOMIC ANALYSIS



**LIMITED SCOPE
FISCAL IMPACT ANALYSIS OF
THE BELMEADE PROJECT**

PREPARED FOR

**CRESCENT COMMUNITIES
GREATER RALEIGH**

AUGUST 7, 2006

■ www.mileygallo.com

Research Triangle Park, NC ■
Columbia, SC ■

LIMITED SCOPE FISCAL IMPACT ANALYSIS OF THE BELMEADE PROJECT

1. INTRODUCTION

This limited scope analysis evaluates the fiscal impacts of the proposed Belmeade project on the Chatham County government and the Chatham County Board of Education. This analysis is intended to provide Chatham County and the Chatham County Board of Education with information to assist in evaluating the impacts the project will have on the community. This analysis will help the County and the School Board plan for changes in the demand for services that will occur over the project's buildout.

2. PROJECT DESCRIPTION

Belmeade is a single-family executive home community planned for development on 540 acres of land in northern Chatham County. Features include large lots; private security; a fine living center; sports facilities; and an extensive trail network. The project includes 197 lots on which homes will be constructed. The estimated average sales price of the homes is \$1,300,000.

The project will be developed by Crescent Communities Greater Raleigh (the "Developer"). The Developer has estimated an absorption rate of, on average, 33 dwelling units per year resulting in a buildout period of about six years.

Additional information regarding the methodology, assumptions and other supporting data of this limited scope analysis is available upon request.

3. EXECUTIVE SUMMARY

The Belmeade project will increase the Chatham County residential real estate tax base by \$256 million. As outlined in the accompanying tables, the Belmeade project will have a positive net fiscal impact on the Chatham County government and the Chatham County School Board. *As seen in Table 1, the net present value of the stream of annual surpluses at expanded service levels during the buildout period is \$1.5 million, assuming a discount rate of 6%.*

The following summary of revenues and expenditures at the time of Belmeade's buildout shows the positive fiscal impacts of the proposed development on Chatham County and the Chatham County Board of Education.

CHATHAM COUNTY GENERAL FUND ANNUAL FISCAL IMPACT OF BELMEADE AT BUILDOUT		
INCREMENTAL REVENUES		
PROPERTY TAXES	1,039,920	
SALES TAXES	<u>84,940</u>	
TOTAL INCREMENTAL REVENUES		\$ 1,124,860
INCREMENTAL EXPENDITURES		
CHATHAM COUNTY	\$ 192,037	
CHATHAM COUNTY SCHOOLS		
OPERATING	178,167	
DEBT SERVICE – CAPITAL	<u>128,157</u>	
TOTAL INCREMENTAL EXPENDITURES		<u>498,361</u>
ANNUAL INCREMENTAL BENEFIT AT EXISTING SERVICE LEVELS		626,499
INCREMENTAL COUNTY EXPENDITURES WITH EXPANDED SERVICES		<u>16,269</u>
ANNUAL INCREMENTAL BENEFIT, EXPANDED SERVICE LEVELS		<u>\$ 610,230</u>

4. FISCAL IMPACTS ON THE CHATHAM COUNTY GENERAL FUND

REVENUE IMPACTS

The impacts of the Belmeade project on the revenues of the Chatham County government are outlined in this section. The primary County revenues generated by the Belmeade project will be property taxes, sales taxes and impact fees.

The estimated revenues from all sources, generated over the six-year buildout of the project's development, are provided in Table 1. Annual County revenues grow from \$86,000 in Year 2 to \$1.1 million a year in the sixth year. Table 2 provides a detailed analysis of all County revenues from Belmeade at the project's buildout.

As seen in Table 2, the residential property values in Belmeade are expected to increase by \$256 million at buildout. Annual residential property taxes will be \$1 million, and property taxes from vehicles owned by Belmeade residents are estimated to be \$31,000 per year.

The Belmeade project will also generate economic activity that will result in increased sales tax collections for the Chatham County government. It is estimated that sales taxes will increase by \$85,000 a year at the time of the development's buildout. As seen in Table 2, these sales taxes will be generated by Articles 39, 40, 42 and 44 collections.

In addition to property taxes, the project will generate revenues from impact fees. The County's existing impact fee of \$2,900 per dwelling unit will generate \$571,300 for school construction at the project's buildout. Table 6 provides a description of fees and costs for new school construction as a result of the Belmeade project. The recreation exaction fee is estimated to be \$926 per lot.

ONE TIME REVENUES TO CHATHAM COUNTY

SCHOOL IMPACT FEES	<u>\$ 571,300</u>
RECREATION EXACTION FEES	<u>\$ 182,422</u>

SENSITIVITY ANALYSIS

The housing prices and absorption rates are based on projections by Crescent Communities Greater Raleigh. The estimated Belmeade home price is \$1.3 million; however, if the average unit sales price were to deviate 15% from the assumed average unit sales price [average unit sales price of \$1.1 million instead of the assumed average unit sales price of \$1.3 million], the net annual surplus at expanded service levels at buildout would be \$459,000 compared to the anticipated \$610,000.

TABLE 1

BELMEADE
BUILDDOUT ANALYSIS

	Total	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Annual Residential Sales	\$ 256,100,000	\$ 19,500,000	\$ 39,000,000	\$ 45,500,000	\$ 52,000,000	\$ 52,000,000	\$ 48,100,000
Annual Unit Sales	197	15	30	35	40	40	37
Cumulative Residential Sales	\$ 256,100,000	\$ 19,500,000	\$ 58,500,000	\$ 104,000,000	\$ 156,000,000	\$ 208,000,000	\$ 256,100,000
Cumulative # of Units	197	15	45	80	120	160	197
Per Capita Revenues:							
Property Taxes	\$ 3,205.79	\$ 3,205.79	\$ 3,205.79	\$ 3,205.79	\$ 3,205.79	\$ 3,205.79	\$ 3,205.79
Sales Taxes	174.56	174.56	174.56	174.56	174.56	174.56	174.56
Total Revenues - Per Capita	\$ 3,380.36	\$ 3,380.36	\$ 3,380.36	\$ 3,380.36	\$ 3,380.36	\$ 3,380.36	\$ 3,380.36
Per Capita Expenditures:							
Direct Expenditures Per Capita at Existing Service Levels, including Public School Operating Costs	\$ 760.81	\$ 760.81	\$ 760.81	\$ 760.81	\$ 760.81	\$ 760.81	\$ 760.81
School Debt Service - Per Capita	263.38	263.38	263.38	263.38	263.38	263.38	263.38
Expanded Service Levels Per Capita	33.44	33.44	33.44	33.44	33.44	33.44	33.44
Total Expenditures - Per Capita	1,057.63	1,057.63	1,057.63	1,057.63	1,057.63	1,057.63	1,057.63
Per Capita Surplus	\$ 2,322.73	\$ 2,322.73	\$ 2,322.73	\$ 2,322.73	\$ 2,322.73	\$ 2,322.73	\$ 2,322.73
Builddout Analysis:							
Revenues:							
Revenues	\$ 125,242	\$ 375,727	\$ 667,959	\$ 1,001,938	\$ 1,335,917	\$ 1,644,848	\$ 1,644,848
Total Revenues	125,242	375,727	667,959	1,001,938	1,335,917	1,644,848	1,644,848
Expenditures:							
Expenditures at Existing Service Levels	\$ 28,188	\$ 84,564	\$ 150,337	\$ 225,505	\$ 300,674	\$ 370,205	\$ 370,205
School Debt Service	9,758	29,274	52,043	78,065	104,087	128,157	128,157
Total Expenditures	\$ 37,946	\$ 113,839	\$ 202,380	\$ 303,571	\$ 404,762	\$ 498,362	\$ 498,362
Net Surplus at Existing Service Levels	\$ 87,295	\$ 261,887	\$ 465,577	\$ 698,367	\$ 931,157	\$ 1,146,487	\$ 1,146,487
Expenditures at Expanded Service Levels	1,239	3,716	6,607	9,910	13,214	16,269	16,269
Net Surplus with Expanded Service Levels	\$ 86,056	\$ 258,170	\$ 458,970	\$ 688,457	\$ 917,943	\$ 1,130,217	\$ 1,130,217
Expected New Residents	487	37	111	198	296	395	487
Public School Students	77	6	18	31	47	63	77
Net Present Value of Net Surplus at Expanded Service Levels, Discounted at 6%							
			\$ 2,704,337				

TABLE 2

BELMEADE		
CHATHAM COUNTY TAX REVENUE PER SINGLE-FAMILY HOUSEHOLD		
Residential Property Taxes:		
Residential tax base	\$ 256,100,000	
Tax rate	0.5970%	
Total estimated residential property taxes	<u>\$ 1,528,917</u>	
Motor Vehicle Property Taxes:		
Average motor vehicle value per household, based on Federal Reserve Bulletin survey	\$ 26,350	
# of Households	<u>197</u>	
Motor vehicle tax base	5,190,950	
Tax rate	0.5970%	
Total estimated motor vehicle property taxes	<u>\$ 30,990</u>	
Total Property Tax Revenues	<u>\$ 1,559,907</u>	
Article 39 Sales Tax:		
Residential tax base	\$ 256,100,000	Qualifying
# of households	<u>197</u>	sales tax
Average value	1,300,000	purchases
Earnings multiple	2.90	limited to food,
Estimated household earnings	\$ 448,000	gas and oil,
Estimated % of earnings for Chatham County purchases	3.55%	household
Estimated Chatham County Purchases - All Units	\$ 3,136,634	supplies,
Article 39 Sales Tax Rate	<u>1.00%</u>	and incidentals.
Article 39 Sales Tax Per Household	<u>\$ 31,366</u>	
<i>Calculated Article 39 Sales Tax per capita</i>	\$ 64	
<i>Estimated FY05 Actual Article 39 Sales Tax Per Capita</i>	\$ 62	
Article 40 Sales Tax Per Household:		
Estimated Belmeade Population	487	
FY05 Per Capita Rate - Table 3	\$ 38.15	
Article 40 Sales Tax Per Household	<u>\$ 18,565</u>	
Article 40 - 70% Unrestricted	\$ 12,996	
Article 40 - 30% Restricted	<u>5,570</u>	
Article 40 Sales Tax Per Household	<u>\$ 18,565</u>	
Article 42 Sales Tax Per Household:		
Estimated Belmeade Population	487	
FY05 Per Capita Rate - Table 3	\$ 37.86	
Article 42 Sales Tax Per Household	<u>\$ 18,423</u>	
Article 42 - 40% Unrestricted	\$ 7,369	
Article 42 - 60% Restricted	<u>11,054</u>	
Article 42 Sales Tax Per Household	<u>\$ 18,423</u>	
Article 44 Sales Tax Per Household:		
Estimated Belmeade Population	487	
FY05 Per Capita Rate - Table 3	\$ 34.09	
Article 44 Sales Tax Per Household:	<u>\$ 16,586</u>	
Total Sales Tax Revenues	<u>\$ 84,941</u>	
Total Tax Revenues	<u>\$ 1,644,848</u>	

TABLE 3

**BELMEADE
CHATHAM COUNTY FISCAL IMPACT - AT BUILDOUT
AT EXPANDED LEVELS OF SERVICE**

Incremental Tax Revenues:			
Property Taxes			
Residential	\$	1,528,917	
Motor Vehicle		30,990	
Total Property Taxes		\$ 1,559,907	
Sales Taxes			
Article 39	\$	31,366	
Articles 40 and 42		36,988	
Article 44		16,586	
Total Sales Taxes		84,940	
Total Incremental Tax Revenues			\$ 1,644,847
 Incremental Expenditures at Existing Service Levels:			
Chatham County Government			
Administration	\$	38,533	
Education, Culture, and Recreation (excluding schools)		13,604	
General Government		10,038	
Human Services		45,375	
Natural Resource Management		15,296	
Public Safety		69,191	
Total Chatham County Government Incremental Expenditures		\$ 192,037	
Chatham County Schools Operating Costs			178,167
Total Incremental Operating Expenditures at Existing Service Levels			370,204
 Incremental Chatham County Schools Capital Transportation Costs:			
Annual Debt Service - School Facilities		124,231	
Annual Debt Service - School Transportation		3,926	128,157
Total Incremental Expenditures at Existing Service Levels			498,361
Incremental Surplus at Existing Service Levels			\$ 1,146,486
 Expanded Service Level Expenditures:			
Public Safety:			
Emergency Medical Services	\$	8,443	
Public Safety		839	
Total Public Safety		\$ 9,282	
Contribution to Countywide CIP Program, including both Operating Costs and Annual Debt Service		6,987	
Total Expanded Service Level Expenditures		16,269	
Annual Incremental Surplus at Expanded Service Levels			\$ 1,130,217

TABLE 4

**BELMEADE
CHATHAM COUNTY SCHOOLS - PUBLIC SCHOOL STUDENTS**

	Elementary	Middle	High	Total
Single Family	0.15	0.12	0.12	0.39
Multifamily	0.07	0.03	0.03	0.13
Mobile Homes & Other	0.16	0.14	0.08	0.38

Public Use Microdata Sample (5%) 2000 Census

Source: David J. Cowen, Ph.D., Chair - Department of Geography, University of South Carolina

Analysis Prepared June 2005

	Elementary	Middle	High	Total
Belmeade	30	24	23	77

	Approved Subdivision Analysis	Proposed Subdivision Analysis
Bennett	N/A	N/A
Bonlee	0.2500	0.2500
Harrison	0.3232	0.3232
J.S. Waters	0.3981	0.3981
Moncure	0.2190	0.2190
North Chatham	0.2384	0.2384
Pittsboro	0.2759	0.2759
Siler City	0.3608	0.3608
Silk Hope	0.5000	0.5000

Source: Integrated Planning for School and Community (IPSAC) Land Use Study Report

Prepared for: Chatham County Schools

Prepared by: Operations and Research Education Laboratory, North Carolina State University

June 21, 2004

	Elementary	Middle	High	Total
Single Family	0.19	0.09	0.12	0.40
Multifamily	0.08	0.02	0.04	0.14
Mobile Homes & Other	0.19	0.09	0.09	0.37

Public Use Microdata Sample (5%) 1990 Census

Source: 1996 Chatham County Public School Impact Fee Report - Tischler and Associates, Inc.

TABLE 5

BELMEADE	
ANALYSIS OF CHATHAM COUNTY FY07 BUDGET	
CHATHAM COUNTY SCHOOLS OPERATING COSTS	
Expenditures:	
Salaries	\$ -
Other personnel costs	-
Operating	21,476,355
Public assistance	-
Debt	2,457,587
Transfers	-
Capital outlay	-
Less appropriation for capital outlay - evaluated separately	(1,585,300)
Less debt - new school debt service evaluated separately	<u>(2,457,587)</u>
Total expenditures	\$ 19,891,055
Revenues:	
Fees and permits	\$ -
Grants	-
Interest	-
Intergovernmental	1,150,250
Miscellaneous	-
Other taxes	-
Sales & service	-
Transfers	60,000
Fund balance	-
State ADM funds are separately considered in ADM Adjustment	<u>-</u>
Total revenues	\$ 1,210,250
Net cost - excluding sales and property taxes	\$ 18,680,805
Chatham County Public School Enrollment	8,110
Chatham County Per Student Net Cost	\$ 2,303
Estimated Marginal County Costs For Belmeade:	
Estimated Belmeade Public School Students	<u>77</u>
Marginal Operating Costs	\$ 178,167

TABLE 6

**BELMEADE
CHATHAM COUNTY SCHOOLS - CAPITAL COSTS**

<u>Based on Current Estimates</u>	<u>Elementary</u>	<u>Mill</u>	<u>HighSchool</u>	
Land - unimproved acreage	\$ 400,000	\$ 800,000	\$ 1,200,000	
Building, sitework, furnishings and equipment	15,588,015	16,866,687	39,917,413	
Technology costs	467,640	506,001	1,117,688	
Total Cost	<u>16,455,655</u>	<u>18,172,688</u>	<u>42,235,101</u>	
Student Capacity	700	650	1,000	
Capital Cost per Student	\$ 23,508	\$ 27,958	\$ 42,235	
	<u>30</u>	<u>24</u>	<u>23</u>	Total
Belmeade Public Schol Students				77
Capital Costs Allocable to Belmeade	\$ 702,364	\$ 683,970	\$ 971,693	\$ 2,358,026
Less:				
Impact Fees	\$ 220,677	\$ 180,694	\$ 169,929	\$ 571,300
	<u>220,677</u>	<u>180,694</u>	<u>169,929</u>	<u>571,300</u>
Net Chatham County School Capital Cost Attributable to Belmeade	<u>\$ 481,687</u>	<u>\$ 503,276</u>	<u>\$ 801,763</u>	<u>\$ 1,786,726</u>
Annual Debt Service	<u>\$ 32,233</u>	<u>\$ 33,678</u>	<u>\$ 58,321</u>	<u>\$ 124,231</u>
 <u>Chatham County School Transportation Capital Costs</u>				
Belmeade Estimated Enrollment	77			
Chatham County School bus ridership rate	49%			
Estimated Belmeade Bus Riders	<u>37.90</u>			
School Bus Capacity	60			
New School Buses Required	0.6317			
Cost of New School Bus	70,000			
Annual Debt Service Per School Bus	\$ 20,201			
Total Debt Service for Belmeade Buses	\$ 51,043			
Amortization Period - State Replaces Bus in Year	<u>13</u>			
Annual Schol Bus Transportation Capital Cost	<u>\$ 3,926</u>			

TABLE 7

BELMEADE
 SUMMARY OF HOUSING TYPES, PRICE RANGES AND HOUSING VALUES
 BASED ON MASTER PLAN

Lot Type	Average # of Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Single Family Units	197	\$ -	\$ 19,500,000	\$ 39,000,000	\$ 45,500,000	\$ 52,000,000	\$ 52,000,000	\$ 48,100,000	\$ -	\$ -	\$ -	\$ 256,100,000
Average	197	\$ -	\$ 19,500,000	\$ 39,000,000	\$ 45,500,000	\$ 52,000,000	\$ 52,000,000	\$ 48,100,000	\$ -	\$ -	\$ -	\$ 256,100,000
Annual Unit Sales		15	15	30	35	40	40	37	-	-	-	197
Cumulative Unit Sales		-	15	45	80	120	160	197	197	197	197	197
Cumulative Sales		-	19,500,000	58,500,000	104,000,000	156,000,000	208,000,000	256,100,000	256,100,000	256,100,000	256,100,000	256,100,000

XIV. COMPLIANCE WITH SUBDIVISION ORDINANCE

COMPLIANCE WITH CHATHAM COUNTY SUBDIVISION ORDINANCE

The proposed Belemeade subdivision meets all of the standards and goals of the Chatham County Subdivision Ordinance (the "Subdivision Ordinance"). An analysis of the purposes of the Subdivision Ordinance, the minimum standards of development and the special standards imposed for planned unit developments reveals that this Project meets all of the relevant purposes and meets or exceeds applicable standards. Because the Project is located in an area of the County that is unzoned, a conditional use permit is not required. Nor is any rezoning request necessary. All the Planning Board and Board of Commissioners need to determine is whether the proposal complies with the Subdivision Ordinance.

Under the Ordinance, Applicant could obtain approval for a subdivision of approximately 300 40,000 s.f. lots with limited open space and no amenities to offer to the public. Instead, JLPC proposes a carefully crafted planned unit development that calls for only 197 generously sized lots, proposes to create a fine living center with public access and proposes to leave undisturbed an additional 166 acres of conservation land or open space to be permanently dedicated to the property owners association.

A review of the purposes of the Zoning Ordinance leads to the conclusion that this Project should be approved. The purposes are set forth below along with a discussion of each.

*To protect and provide for the public health, safety and
general welfare of Chatham County. (Subdivision
Ordinance, Section 1.3A)*

The Project satisfies this purpose by converting a property, portions of which have been managed for timber production, into a beautiful residential community that provides recreational options for the County and preserves trees and protects watersheds that could otherwise be eliminated or harmed. The walking trails and fine living center certainly provide health and welfare opportunities.

To provide for the orderly growth and efficient development of the County, to avoid overcrowding of the land and extreme concentration of population. (Subdivision Ordinance, Sections 1.3B, H and K)

The Project meets this goal by subjecting a large unzoned tract of property to the strictures and requirements of a planned unit development rather than subjecting the property to unplanned, piece-meal development. As a result, careful attention has been given in this proposal to elements that make residential development orderly and efficient. The roads, water, wastewater, erosion control, stormwater management and schedule of development have all been carefully planned precisely in order to make the development orderly and efficient. For example, the density of the development is less than would be the case if the Project were not a planned unit development. The proposed density of one unit per 2.2 acres of land is less than what would otherwise be allowed under the Subdivision Ordinance. See Net Land Area Computation above. As further example, the provision of potable water to the Project presents an enormous benefit that prevents the drilling of 200 ground water wells and the resulting harsh demand on the water table.

To provide for coordination of subdivision streets with existing and/or planned streets and to insure an adequately planned street system avoiding sharp curves, steep grades and hazardous intersections. (Subdivision Ordinance, Sections. 1.3C, D and L).

The Project provides direct, public access from U.S. Highway 64 and limited access to Adolph Taylor Rd. It has minimal impact on any other existing roads. Even at maximum buildout (estimated to be in the year 2013) the number of vehicular trips generated by the subdivision is moderate. Traffic flow is anticipated to be orderly and safe. None of the new roads include steep grades or sharp curves. The only significant intersection is the intersection with U.S. 64, the design of which has been or will be approved by the NC DOT. See road information attached above.

To provide for safe and adequate water and sewer systems (Subdivision Ordinance, Section 1.3E).

The water system source is Chatham County, and the water and wastewater systems have been professionally designed. A detailed description of each can be found above.

*To provide for the dedication of rights of ways for streets
and utilities (Subdivision Ordinance, 1.3F)*

All rights of way for streets and utilities will be dedicated to the proper public authorities or to the property owners association, as applicable.

CONCLUSION

The Belmeade subdivision is positive growth for Chatham County. Taking all factors into consideration, Applicants request that the application be approved in all respects.