MCADAMS

Environmental Quality Staff Review of Environmental Impact Assessment, Chatham County

Environmental Impact Assessment Item.

Proposed Project Description and Need

1. Describe the overall project in detail, including all proposed phases.

   This project involves the development of approximately 23 acres of land located at the southwest corner of the intersection of US-15/501 North and Polks Landing Road. At build-out, the development will include three parcels.

   Parcel A, approximately 20.84 acres, will be developed as a grocery anchored multi-tenant commercial development. Development on this parcel will include 61,000 square feet of commercial space. The largest box on this parcel is proposed to be a grocery store with a total gross floor area of 49,098 square feet. An additional 12,000 square feet of gross floor area is proposed for multi-tenant commercial uses. This parcel will also contain the required parking for the uses; a total of 306 spaces are proposed.

   Two outparcels are also proposed as part of the development. Outparcel A is a .96 acre parcel, Outparcel B is a 1.54 acre parcel. The future development of this parcels is not known, but the lots will be graded as part of the development of the shopping center.

2. Provide a project location map showing surrounding areas.

   See attached Exhibit A.

3. Provide a project site plan showing existing and proposed facilities.

   See attached Exhibit B.

4. Describe how this project fits into larger plans or connects with adjacent projects.

   The development is compatible with surrounding uses and is sited on a major thoroughfare, which is appropriate for the uses proposed.

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The land to the north and east is currently used, or being developed for, commercial uses. Where the development is adjacent to existing residential uses, required buffers and open space will be provided to allow for separation and screening between the uses. No interconnection is proposed to the adjacent residential developments. The development will connect to existing public street with parcels within the proposed development interconnected via internal private streets.

5. List and describe public facilities or benefits provided by the project.

   The project will provide additional shopping and dining opportunities for surrounding residents. This project will also result in increased property and sales tax revenue for Chatham County.

6. Discuss the land acreage to be disturbed during each phase.

   The project will be graded in one phase. Approximately 19 acres will be disturbed.

7. List square footage and height (in stores) of new buildings.

   - **Grocery anchor: 49,098 square feet, one story**
   - **Retail A: 12,000 square feet, one story.**

8. Describe proposed uses of all buildings and proposed facilities.

   - **Grocery anchor: The grocery store will include a full-service deli with hot and cold food selections.**
   - **Retail A: These spaces will be designed for general commercial / retail uses. Specific users are not known at this time.**
   - **Outparcels: Users of the outparcels have not been determined at this time.**

9. Show number of parking spaces in parking lots and decks.

   See attached Exhibit B

10. Show areas to be cleared, graded, filled, paved and landscaped.

    See attached Exhibit C

11. Show connections to existing utility and sewer lines or new utilities.

    There is no opportunity for a connection to public sewer in this area. An appropriately sized septic system will be install on the southern 7 acres of the development. The septic system will be designed to meet the needs of all future users in the development. Permits will be approved by the State of North Carolina in conjunction with Chatham County. Abandonment and removal of existing septic systems will be done only after proper permitting by Chatham County.

    Based on conversations with Chatham County Public Works, public water is available in this area. The proposed development will connect to public water services. Plans showing this connection have not been developed at this time.

12. Show wastewater management systems on a map.

    See Exhibit B

13. Show proposed areas of impervious and semi-pervious surfaces.

    See attached Exhibit C.

14. Show and describe any proposed stormwater control devices.

    See attached Exhibit B.

Existing pond located behind the grocery / multi-tenant commercial space will be converted to a stormwater BMP.

Alternatives Analysis

1. Discuss and compare all reasonable development alternatives (site selection, facility layout, utilities, stormwater management, construction methods, open space preservation, any other pertinent alternative considerations.

   The development proposed places structures between associated parking and US 15/501. The buildings will serve as a barrier to vehicular activities and limit disturbance to residences. The development is appropriately sited at a signalized intersection on a major thoroughfare. The stormwater management device will be sized to meet Chatham County requirements. Development of the parcel will be done in a manner to limit disturbance to surrounding properties and transportation facilities. Approximately 4 acres of open space will be preserved on the western side of development. Impervious surfaces will not exceed the prescribed maximum in the WS-IV PA Watershed Protection Overlay.

2. Discuss how the preferred alternative was selected and its benefits relative to other alternatives (including a no-build alternative, if applicable).

   The proposed development plan was designed to limit interference with existing neighboring residential uses, and allows for the construction of a stormwater control device that will serve the entirety of the development. The proposed design allows for the entire development to be served by an appropriately sized septic system.

Existing Environment and Project Impacts.

For each resource topic below, describe:

A. Existing resources and conditions.

There are 6 residential homes within the study area, in addition, to associated storage sheds. The study area includes a +/-0.57 acre man-made irrigation pond, +/- 9.37 acre maintained field and/or residential lawn areas, and +/- 16.55 acre Dry Mesic Oak-Hickory forest that is approximately 50 to 60 years old. There are no streams or wetlands located within the study area. There is a ridge located in the northeastern section of the study area. The study area lies within the following Cape Fear River Basins: HUC 030300020702 – Pokeberry Creek/Haw River watershed and HUC 030300020607 – Morgan Creek watershed. The extreme northeastern section of the study area drains to Cub Creek (DWR Stream Index Number 16-41-2-10-(0.5)); while the remainder of the study area drains to Pokeberry Creek (DWR Stream Index Number 13-39-12-3). Both Cub Creek and Pokeberry Creek have a stream classification of WS-IV and NSW. The study area has gentle slopes averaging 5 to 10%. There are no naturally occurring steep slopes within the study area.

B. Anticipated impacts (short-term construction impacts, long-term operation impacts, and indirect or secondary impacts.)

The short term construction impacts clearing 6.17 acre Dry Mesic Oak-Hickory forest. The timber will be sold for lumber or pulp wood and the stumps and branches will be turned to mulch. The soil will be graded to create a site with a gentle slope suitable for parking. There will be no significant long term operation impacts. The +/- 0.57 acre man-made irrigation pond will be utilized as a stormwater management facility. The stormwater basin should be inspected annually and repairs or maintenance done as needed to the basin. Landscaping will be maintained as required.

C. Discuss how potential impacts to the resource will be avoided and minimized through alternative selection, design strategies, construction methods, and long-term maintenance procedures.

Tree protection and open space areas are provided on the site plan. The slope of the site is considered gentle and no special methods are required for the earthmoving operations. The gentle slope of the site means the anticipated stormwater runoff will not create the same problems you would have on sites with more severe slopes. Sedimentation from earthmoving operations will be managed using a sediment basin that will become the permanent stormwater basin following site stabilization and the completion of the facility.

D. For unavoidable impacts, describe whether any compensatory mitigation is planned or required.

McAdams Company staff conducted field investigations on February 16, 2017 with the objective of flagging streams and wetlands (or jurisdictional waters of the U.S.) as defined by the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and identify waters subject to the Chatham County Watershed Protection Ordinance. There are no jurisdictional wetlands, streams, or open water areas as defined under the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and Appropriate Regional Supplements located within the study area. Therefore, compensatory mitigation is not planned and not required.

There is a +/- 0.57 acre man-made irrigation pond located within the study area that was determined to be non-jurisdictional. A request to the USACE confirming the jurisdictional delineation has been requested (see attached March 3, 2017 letter).

1. Geography

a) Discuss the geographic setting, geology, and topography of the project area and adjacent areas.

The subject property is located within the Piedmont Physiographic Province of North Carolina. A review of the Ecoregions of North Carolina and South Carolina (Griffith et al., 2002) shows the geology in the area of the subject property is comprised of quaternary to tertiary silty to clayey saprolite; Precambrian to Cambiran felsic to mafic metavolcanic roack, metamudstone, meta-argillite, phyllite, schist, gabbro, diorite, and granite within the Carolina Slate Belt. The Carolina Slate Belt contains dissected irregular plains, hills, linear ridges, and isolated monadnocks. The Carolina Slate Belt contains low to moderate gradient streams with mostly boulder and cobble substrates. Review of the United States Geological Survey (USGS) Farrington and Merry Oaks, North Carolina Quadrangle revealed that the subject property contains gentle topographic relief which range from approximately 480 feet to approximately 510 feet. The subject property has a topographic gradient which generally

slopes southwest with a small portion in the northeast corner sloping northeast.

b) Provide a topographic map of the property and surrounding area, use the county GIS website topography (2' contours interval) data at a scale appropriate for the project size, i.e., 1" = 100', etc.).

See attached USGS Topographic Vicinity Map (Exhibit D) and Stream/Wetland Delineation & Buffer Exhibit (Exhibit E) for topo.

c) Identify any 100-year floodplains (FEMA Special Flood Hazard Areas) on or adjacent to the property. If present, provide an appropriate-scale map of the flood-prone areas defined by the NC Flood Mapping Program.

NC FIRM Map Number 3710977500J (map revised 02/02/07) does not show floodplains or floodways on or adjacent to the subject property. See attached Exhibit E.

d) Show areas that will be graded or filled, and provide estimated cut/fill volumes.

A grading plan has not yet been developed for this project. The cut and fill operations will be executed to create a balanced site. The estimate of cut/fill is approximately 6,000 to 8,000 cubic yards.

e) If the project includes pond or dam work, show areas that will be flooded.

The +/- 0.57 acre man-made irrigation pond located within study area will be used utilized as a stormwater management facility.

2. Soils and Prime Farmlands

a) Identify dominant soils in the project area (county GIS or NRCS website) and show on a map.

The Soil Survey of Chatham County, North Carolina (Soil Conservation Service, 2006) lists the soils within the subject property as follows:

- **Vance sandy loam – very deep, well drained soils with slow permeability. 98% of the subject property contains this soil type.**

- **Wedowee – very deep, well drained soils with moderate permeability. 2% of the subject property contains this soil type.**

b) Discuss any soil constraints (fill, wetland soils, septic suitability, slopes, etc.) and indicate those areas on a map.

Soils located at the project site are moderately suited for development. There are managements concerns of shrink-swell potential and steepness of slope and boulders or large stones. Management considerations include:

- **Reinforcing foundations and footings of backfilling with coarse – textured material helps to strengthen buildings and prevent damage caused by wetness and shrinking and swelling**
- **Vegetated disturbed areas and providing erosion-control structures, such as sediment fences and catch basins, help eroding soil on site.**
- **Designing structures to conform to the natural slope improves soil performance**
- **Grading or shaping land prior to construction reduces damage from surface water and helps prevent soil erosion.**
- **Large stones and boulders may be encountered during excavation.**
- **Vegetating disturbed areas and providing erosion-control structures, such as sediment fences and catch basins, help to keep eroding soil on site.**

c) Describe any soil disturbance or contamination expected as a result of this project.

Soils to be disturbed are shown on Exhibit F. No contamination is expected as a result of this project.

d) If contamination is expected, discuss containment plans and procedures.

No contamination is anticipated.

e) If soil will be relocated, specify the number of square yards/feet to be moved, and its relocation site.

Project is designed to balance. Soil will be relocated.

f) Describe runoff management plans for the project.

The existing pond to the rear of the proposed grocery / multi-tenant building will be converted to a Stormwater BMP. All runoff from the development will be managed by this proposed stormwater management facility.

g) If soil disturbance is proposed, describe the off-site impacts expected from this activity.

There will be no offsite impacts from soil disturbance.

h) Provide a map of any prime or unique farmland soils in the project or service areas, and include reference used to make this determination.

See Exhibit F.

i) Describe impacts to prime or unique farmland soils, including acreage estimates of lost farmland soils and retained farmland soils.

There are 24.6 acres of prime farmland, and 0.4 acres of farmland of statewide importance within the 26.6-acre project area.

3. Land Use

a) Provide a map showing current use of land on the site and surrounding properties.

See Exhibit A.

b) Discuss how the current land use fits into the surrounding area (conservation, development, ecological function, etc.)

The proposed uses fit within the context of current uses, and uses currently under development. The site is designed to limit the disruption to existing residential uses to the south and west. An existing pond on the western portion of the property will be preserved as part of the development of this parcel.

c) Provide the current zoning of the project site and the surrounding area.

See Exhibit G.

d) Discuss how the proposed uses fit into the intended land use of the area (conservation, development, ecological function, quality of life).

The proposed uses fit within the context of current uses, and uses currently under development. The site is designed to limit the disruption to existing residential uses to the south and west. An existing pond on the western portion of the property will be preserved as part of the development of this parcel.

e) Indicate whether zoning or local land use plans will need to be changed after project completion.

A Conditional District rezoning request will be submitted to allow the development of this parcel as proposed. Once approved, no further changes to land use plans or zoning will be required.

4. Wetlands

a) Indicate whether wetlands are present, describe the basis for this determination and identity of the person who made the determination.

McAdams Company staff (George Buchholz, REM, PWS) conducted field investigations on February 16, 2017 with the objective of flagging streams and wetlands (or jurisdictional waters of the U.S.) as defined by the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and identify waters subject to the Chatham County Watershed Protection Ordinance. There are no jurisdictional wetlands, streams, or open water areas as defined under the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and Appropriate Regional Supplements located within the study area.

There is a +/- 0.57 acre man-made irrigation pond located within the study area that was determined to be non-jurisdictional. A request to the USACE confirming the jurisdictional delineation has been requested (see attached March 3, 2017 letter).

b) Show identified wetlands on a map, and describe all relevant details, such as acreage, types, delineation, function, etc.)

See attached Exhibit H.

c) If wetlands are to be filled, specify the number of acres that will be affected.

There are no jurisdictional wetlands, streams, or open water areas as defined under the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and Appropriate Regional Supplements located within the study area.

d) List all required permits and permitting agencies.

Section 404 & 401 of the Clean Water Act permits are not required.

e) If any diversions/additions/withdrawals of surface water will affect wetlands, describe those activities.

There will be no diversions/additions/withdrawals of surface water that affect wetlands as a result of the proposed project.

5. Public lands and Scenic, Recreational, and State Natural Areas

a) Provide a map of County or municipal parks, scenic, recreational or state natural areas (SNHAs, State or Federal Forests, etc.) on or adjacent to the site/project area.

There are no parks or public open space within 2 miles of the project area. There are several Significant Natural Heritage Areas (SNHA) and Natural Heritage Element Occurrences (NHEO) within the vicinity of the project area. SNHAs near the project area include Bennett Mountain (0.5 mi. SW), Herndon Creek Ravine (1.0 mi. SE), Boothe Hill (1.7 mi. SE), Cub Creek Forests and Beaver Ponds Registered Heritage Area (2.8 mi. NE), North Edwards Ridge (3.4 mi. NE). There are 7 current Natural Community NHEOs within 2.0 miles of the project area. Additionally, there are three historical NHEOs within 2.0 miles; one of these is a plant, and two are animals. Other lands managed for conservation near the project area include Triangle Land Conservancy Preserve (3.8 mi. NW), Lower Haw River State Natural Area (5.6 mi. SW), B. Everett Jordan Lake and Dam (2.8 mi. E), Jordan Lake Educational State Forest (5.0 mi. SE), Big Woods Road Upland Forest Registered Heritage Area (4.8 mi. SE),

Bush Creek Marshes Registered Heritage Area (2.8 mi. SE), Town of Chapel Hill Open Space (4.8 mi. NE) and Orange County Water and Sewer Authority Property (2.8 mi. NE). Exhibit E depicts SNHAs and NHEOs within 1.0 mile of the project area.

6. Areas of Archaeological or Historical Value

a) Discuss any archaeological or historical studies of the project location; provide relevant references.

This is not applicable to this project. An initial scoping letter (see attached March 9, 2017 letter) has been submitted to the North Carolina State Historic Preservation Office (SHPO) requesting comment from this agency regarding potential development uses within the study area.

b) Describe and identify on a map any structures (i.e., walls, buildings, etc.) on the site and provide estimated ages of those structures.

See attached Exhibit A.

c) Describe all impacts to any archaeological or historical resources in the proposed project area.

This is not applicable to this project.

d) Describe plans for demolishing or rebuilding any structures.

Existing structures on the property will be removed as part of the development of the parcels. Demolition will not occur until all required permits have been issued by Chatham County.

e) Provide photographs of any significant resources, including all structures older than 50-years.

There are no significant archaeological or historical within the study area (See attached Exhibit E). An initial scoping letter (see attached March 9, 2017 letter) has been submitted to the North Carolina State

Historic Preservation Office (SHPO) requesting comment from this agency regarding potential development uses within the study area.

f) Provide relevant correspondence with the Chatham County Historical Association and NC SHPO.

An initial scoping letter (see attached March 9, 2017 letter) has been submitted to the North Carolina State Historic Preservation Office (SHPO) requesting comment from this agency regarding potential development uses within the study area.

7. Air Quality

a) Describe the project's impacts on ambient air quality.

The site will not have any direct impact on ambient air quality.

b) Describe plans for any open burning during or after construction.

Currently, there are no plans for any open burning during or after construction.

c) Indicate the number of proposed parking spaces, if applicable.

306 parking spaces are proposed to serve the retail center on parcel A. The number of parking spaces that will be installed as part of the development of the outparcels is not known.

d) Describe whether the project will increase odor levels, or the likelihood of odor complaints.

There will be no increase in odor levels due to the development of this property.

e) Provide a copy of any required traffic studies.

A Traffic Impact Analysis has been completed and submitted to NCDOT for review.

8. Noise Levels

a) Discuss current noise levels; use a benchmark if possible.

Current noise levels in this area would be ambient noise due to vehicles traveling on public streets.

b) Describe any increases in noise levels expected from this project.

Noise levels will increase as a result of the proposed construction and operation. Any increase in noise levels would be negligible

c) Specify the distance at which the increased noise will be heard.

Any sound generated on the site would not be at a level that could be heard at any measurable distance off the property.

d) Discuss whether surrounding properties will be affected by noise levels.

There will be a negligible increase in noise levels during the development of this parcel. The effect of noise levels on the surrounding properties will be negligible.

e) If commercial uses are proposed, specify the hours of operation.

Typical hours of operation will be from 7 am to 11 pm.

9. Light Levels

a) Describe lighting plans for the project, including how lighting will impact adjacent residents and wildlife.

Lighting installed on the property will be designed to direct and shield any light sources away from public rights-of-way and adjacent residential uses.

10. Surface and Groundwater Resources (discuss separately)

a) Identify and provide a map of surface waters in the project area. Describe groundwater (aquifers) in the project area.

McAdams Company staff (George Buchholz, REM, PWS) conducted field investigations on February 16, 2017 with the objective of flagging streams and wetlands (or jurisdictional waters of the U.S.) as defined by the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual. There are no jurisdictional wetlands, streams, or open water areas as defined under the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and Appropriate Regional Supplements located within the study area. See attached Exhibit H.

There is a +/- 0.57 acre man-made irrigation pond located within the study area that was determined to be non-jurisdictional. A request to the USACE confirming the jurisdictional delineation has been requested (see attached March 3, 2017 letter).

Aquifers in the study area include:

- **Surficial aquifer: This aquifer is widely used throughout the State for individual home wells. The surficial aquifer is the shallowest and is also very sensitive to variations in rainfall amounts -- they are the first to dry-up in a drought.**

- **Fractured Bedrock aquifer: This aquifer is widely used for home water supply in the Piedmont. Usually six inch wells are drilled to intercept water bearing fractures which are more common in valleys or draws. Thick sequences of regolith (surficial aquifer) above fractured bedrock can improve yields to 200 gallons per minute or more. Industries and county or municipal well fields look for these higher yielding bedrock wells. Wells typically yield 5-35 gallons per minute.**

b) Include names, locations, classifications, and use support ratings for surface waters. Reference

The study area lies within the following Cape Fear River Basins: HUC 030300020702 – Pokeberry Creek/Haw River watershed and HUC 030300020607 – Morgan Creek watershed. The extreme northeastern section of the study area drains to Cub Creek (DWR Stream Index Number 16-41-2-10-(0.5)); while the remainder of the study area drains to Pokeberry Creek (DWR Stream Index Number 13-39-12-3). Both Cub Creek and Pokeberry Creek have a stream classification of WS-IV and NSW.

c) Specify and show on a map the river basin in which the project is located.

See attached Exhibit H.

d) Discuss any known groundwater quality issues.

Groundwater quality issues are not known. Public water is available to serve the proposed development.

e) Discuss drinking water sources.

There is a public water supply well located approximately 3,700 feet northeast of the study area. See attached Exhibit E. The study area is located within the Haw River (Jordan Lake) Water Supply Watershed and has a classification of WS-IV & NSW. See attached Exhibit H.

11. Fish and Aquatic Habitats

1. Describe fish and aquatic habitats in and adjacent to the site/project area.

There is a +/- 0.57 acre man-made irrigation pond located within the study area. There is a perennial stream located adjacent to the west of the study area. The man-made irrigation pond and perennial stream have potential habitat for fish, crayfish, macrobenthic, and amphibian species.

2. Discuss impacts to fish and aquatic life and their habitats, including a map showing those habitats.

The +/- 0.57 acre man-made irrigation pond is proposed to be modified into a stormwater management facility. There is a perennial stream located adjacent to the west of the study area has a riparian buffer associated with it. Potential impacts to fish, crayfish, macrobenthic, and amphibian species could be in the form of increased sedimentation and nutrient loadings within the pond and stream.

12. Wildlife and Natural Vegetation

a) Describe and provide a map of natural community types on and adjacent to the site/project area.

Approximately, 40 percent of the subject property is comprised of forested areas with a mixture of oak, hickory, and pine species dominating the canopy layer. The undeveloped forested land can be generally characterized as a Dry Mesic Oak-Hickory Forest according to the North Carolina Natural Heritage Program (NHP) classification system (Schafale and Weakley, 1990). Tree species on the property include various oak species (*Quercus* spp.), American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), various hickory species (*Carya* spp.), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*). Groundcover and secondary canopy layer species consist of common greenbriar (*Smilax rotundifolia*), giant cane (*Arundinaria gigantea*), sweet pepperbush (*Clethera alnifolia*), Virginia creeper (*Parthenocissus quinquefolia*), American holly (*Ilex opaca*), red cedar (*Juniperus virginiana*), various viburnum species (*Viburnum* spp.), and Christmas fern (*Polystichium acrostichoides*). See attached Exhibit I

b) List the species of dominant plants and animals observed on the site that typify those communities.

Tree species on the property include various oak species (*Quercus* spp.), American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), various hickory species (*Carya* spp.), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*). Groundcover and secondary canopy layer species consist of common greenbriar (*Smilax rotundifolia*), giant cane (*Arundinaria gigantea*), sweet pepperbush (*Clethera alnifolia*), Virginia creeper

(*Parthenocissus quinquefolia*), American holly (*Ilex opaca*), red cedar (*Juniperus virginiana*), various viburnum species (*Viburnum* spp.), and Christmas fern (*Polystichium acrostichoides*).

c) Evaluate and discuss whether suitable habitat exists for rare, threatened, and /or endangered species, as described in the NC Natural Heritage Program.

It is believed that there is no suitable habitat within the study area or within adjacent properties for rare, threatened and/or endangered species as evidenced by the NC Natural Heritage Program Elemental Occurrence data (See attached Exhibit E). In addition, McAdams Company staff (George Buchholz, REM, PWS) conducted field investigations on February 16, 2017 within the study area. The objective of the field investigations was to determine the presence of Federally Threatened or Endangered species and/or their habitat within the study area. The following Federally Threatened or Endangered species and/or their habitat potentially exists with Chatham County according to the U.S. Fish and Wildlife Service (USFWS): bald eagle (*Haliaeetus leucocephalus),* cape fear shiner *(Notropis mekistocholas),* red-cockaded woodpecker *(Picoides borealis),* and the harperella *(Ptilimnium nodosum).* No Federally Threatened or Endangered species were observed during the field investigations; however, it is acknowledged that for some species field investigations may not have been conducted during the optimal time of year. An initial scoping letter to the USFWS (see attached March 9, 2017 letter), was submitted requesting comment from this agency regarding potential development uses within the study area.

d) If wildlife will be displaced, discuss any limitation of adjacent areas to support them.

There is an abundance of adequate areas located to the west and south associated with the riparian buffers and the perennial stream located adjacent to the study area.

e) Identify, list, and describe the distribution of the invasive species present on the site. Consult the NC Botanical Garden's Web page, "Plants to Avoid in the Southeast US" for a list of invasive species common to the region.

Small patches of Chinese privet (*Ligustrum sinese*) and Japanese honeysuckle (*Lonicera japonica*) was observed along the southern and western property lines.

f) If forest will be cleared, discuss the extent of planned deforestation and specify the forestry methods to be used, including BMPs.

Approximately 6.17 acres will be cleared. The trees will be used for lumber or pulp wood. The stumps and branches will be used for mulch.

13. Hazardous Materials

a) List all hazardous materials to be stored or introduced during construction or operation.

No hazardous materials are expected to be stored or introduced during construction. It is anticipated that the operations of the proposed development will prohibit all hazardous materials.

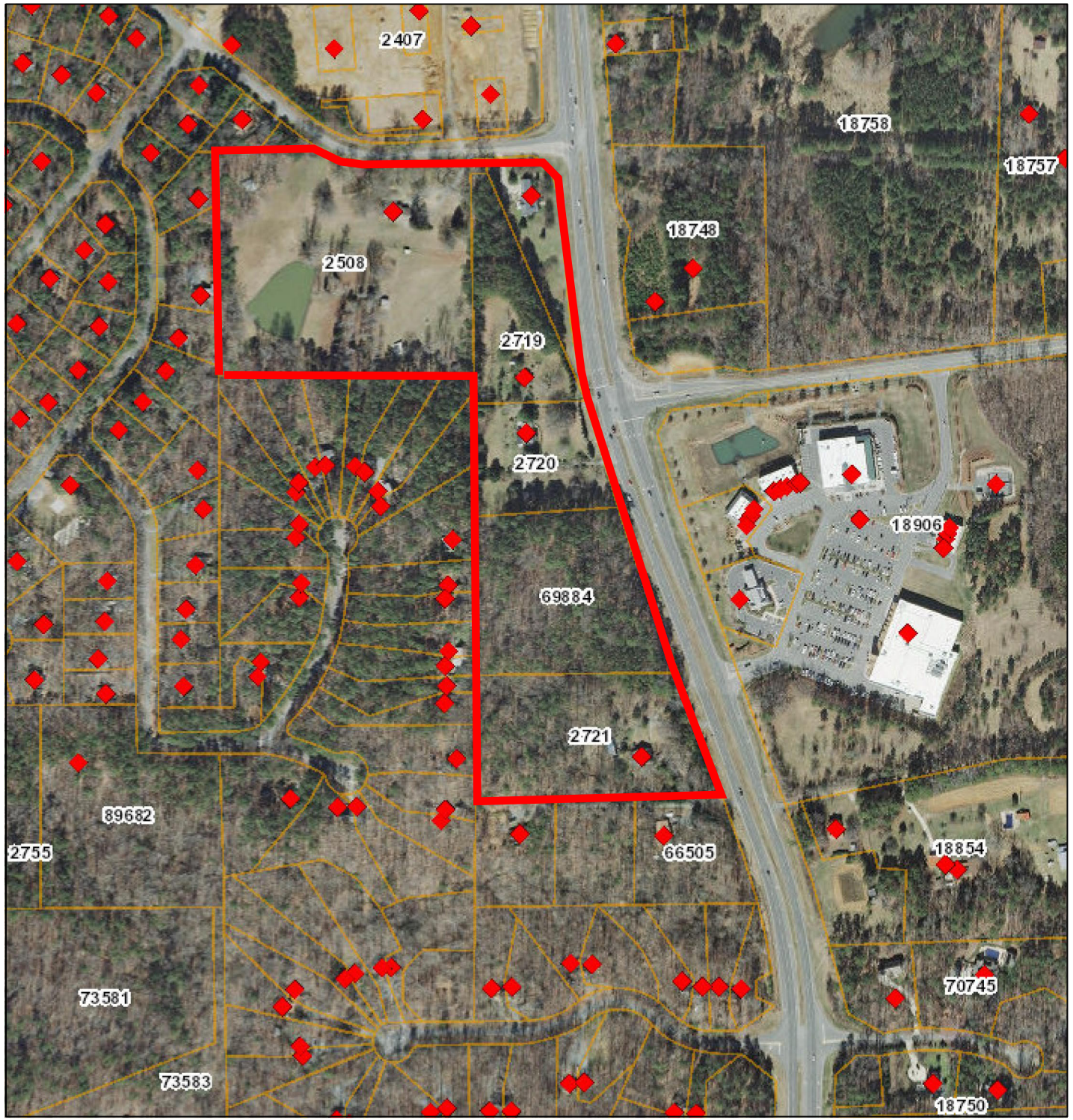
b) For each hazardous material, other than deminimis quantities or for routine housekeeping purposes, describe the procedures to be used to ensure their proper management, storage, and disposal.

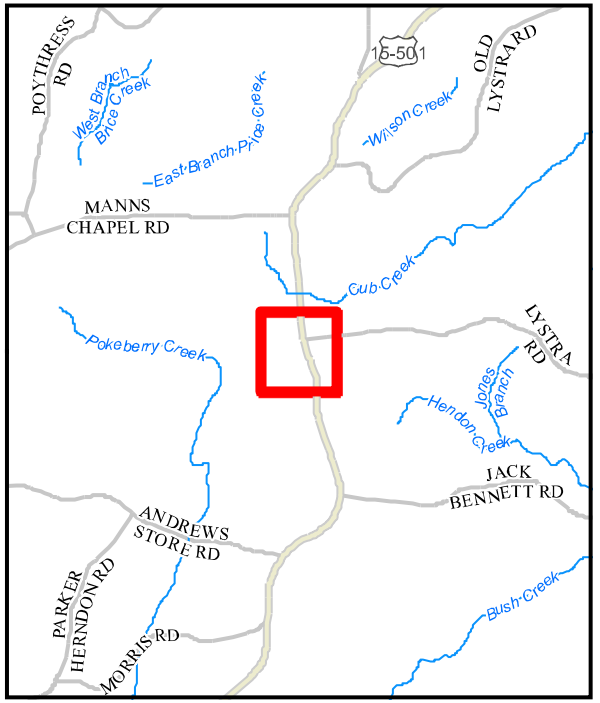
It is anticipated that the operations of the proposed development will prohibit all hazardous materials, and if present, proper management, storage, and disposal will be used documented in a waste management plan.

References

Exhibits (Maps, Figures, Tables, Photos, etc.)

Chatham County Tax Map Exhibit A





N

0 237.5 475 Feet

Service Layer Credits: NC911, Chatham County, Chatham County GIS
Chatham County, Chatham County GIS

Date: 3/14/2017
Time: 1:49:42 PM

CHATHAM COUNTY
NORTH CAROLINA

Exhibit B

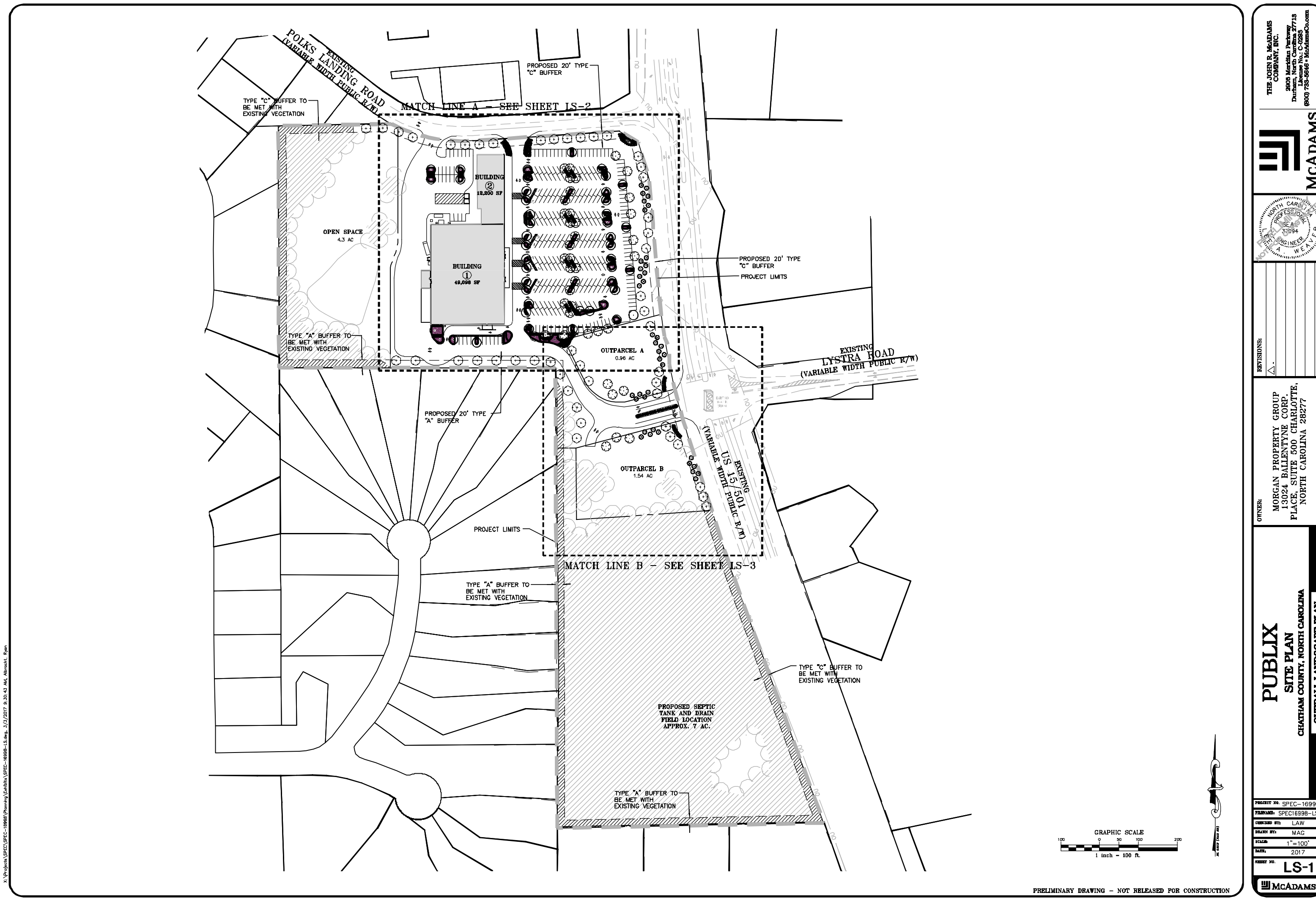
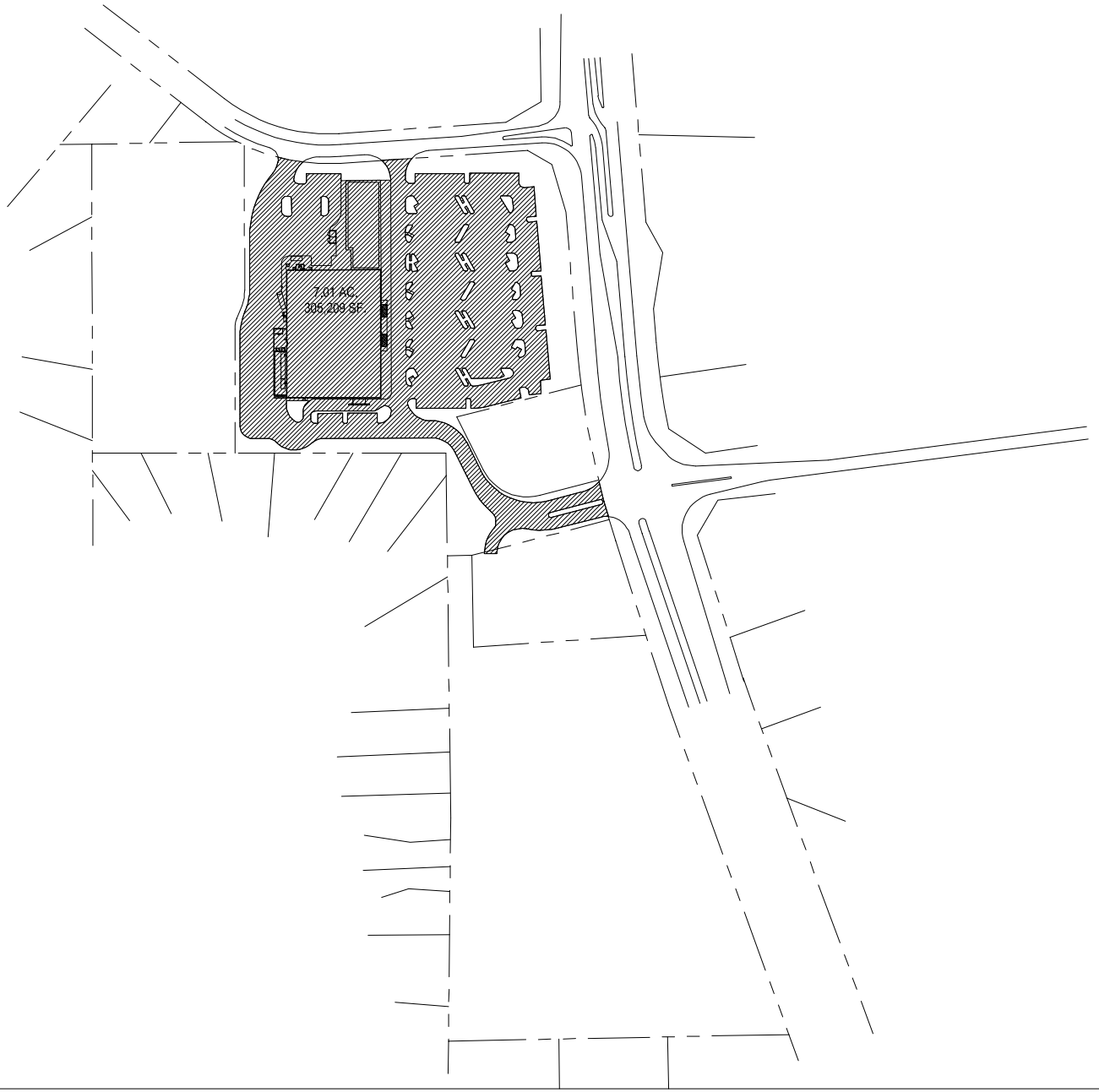

POLKS LANDING ROAD
EXISTING
(VARIABLE WIDTH PUBLIC R/W)
MATCH LINE A - SEE SHEET LS-2
PROPOSED 20' TYPE "C" BUFFER
TYPE "C" BUFFER TO BE MET WITH EXISTING VEGETATION
OPEN SPACE
4.3 AC
BUILDING
②
12,200 SF
BUILDING
①
49,098 SF
PROPOSED 20' TYPE "C" BUFFER
PROJECT LIMITS
TYPE "A" BUFFER TO BE MET WITH EXISTING VEGETATION
OUTPARCEL A
0.96 AC
EXISTING
LYSTRA ROAD
(VARIABLE WIDTH PUBLIC R/W)
PROPOSED 20' TYPE "A" BUFFER
EXISTING
US 15/501
(VARIABLE WIDTH PUBLIC R/W)
OUTPARCEL B
1.54 AC
PROJECT LIMITS
MATCH LINE B - SEE SHEET LS-3
TYPE "A" BUFFER TO BE MET WITH EXISTING VEGETATION
TYPE "C" BUFFER TO BE MET WITH EXISTING VEGETATION
PROPOSED SEPTIC TANK AND DRAIN FIELD LOCATION APPROX. 7 AC.
TYPE "A" BUFFER TO BE MET WITH EXISTING VEGETATION
GRAPHIC SCALE
1 inch = 100 ft.
PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION
THE JOHN R. McADAMS COMPANY, INC.
McADAMS
REVISIONS:
OWNER:
MORGAN PROPERTY GROUP
13024 BALLENTYNE CORP. PLACE, SUITE 500 CHARLOTTE, NORTH CAROLINA 28277
PUBLIX
SITE PLAN
CHATHAM COUNTY, NORTH CAROLINA
OVERALL LANDSCAPE PLAN
SPEC-16998
SPEC16998-LS1
LAW
MAG
1"=100'
2017
LS-1
McADAMS

Exhibit C

Impervious Surface Map



SITE PLAN

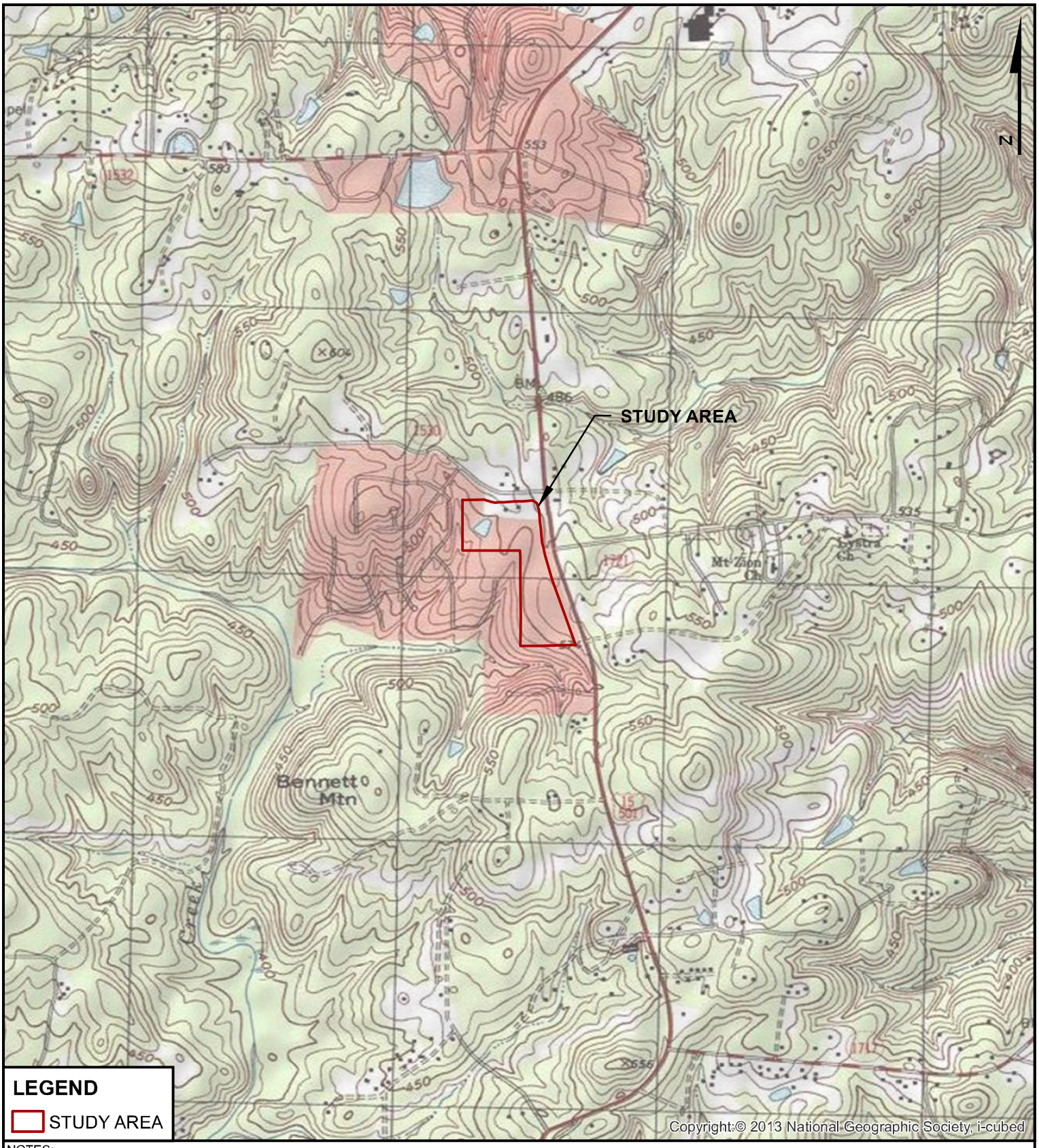
Jimmie D. Brown
FL RLA# 1508

1/31/16

JED

0' 100' 200'
SCALE: 1" = 100'

SP-4



LEGEND

STUDY AREA

NOTES:
1. USGS; 7.5 MINUTE, QUAD, "FARRINGTON", NORTH CAROLINA; 2002 NATIONAL GEOGRAPHIC SOCIETY
2. LAT: 35.833451 N, LONG: -79.090962 W

McAdams

ENVIRONMENTAL IMPACT ASSESSMENT
EXHIBIT D. USGS TOPOGRAPHIC VICINITY MAP
CHATHAM COUNTY PUBLIX
CHATHAM COUNTY, NORTH CAROLINA

0 1,000 2,000 Feet

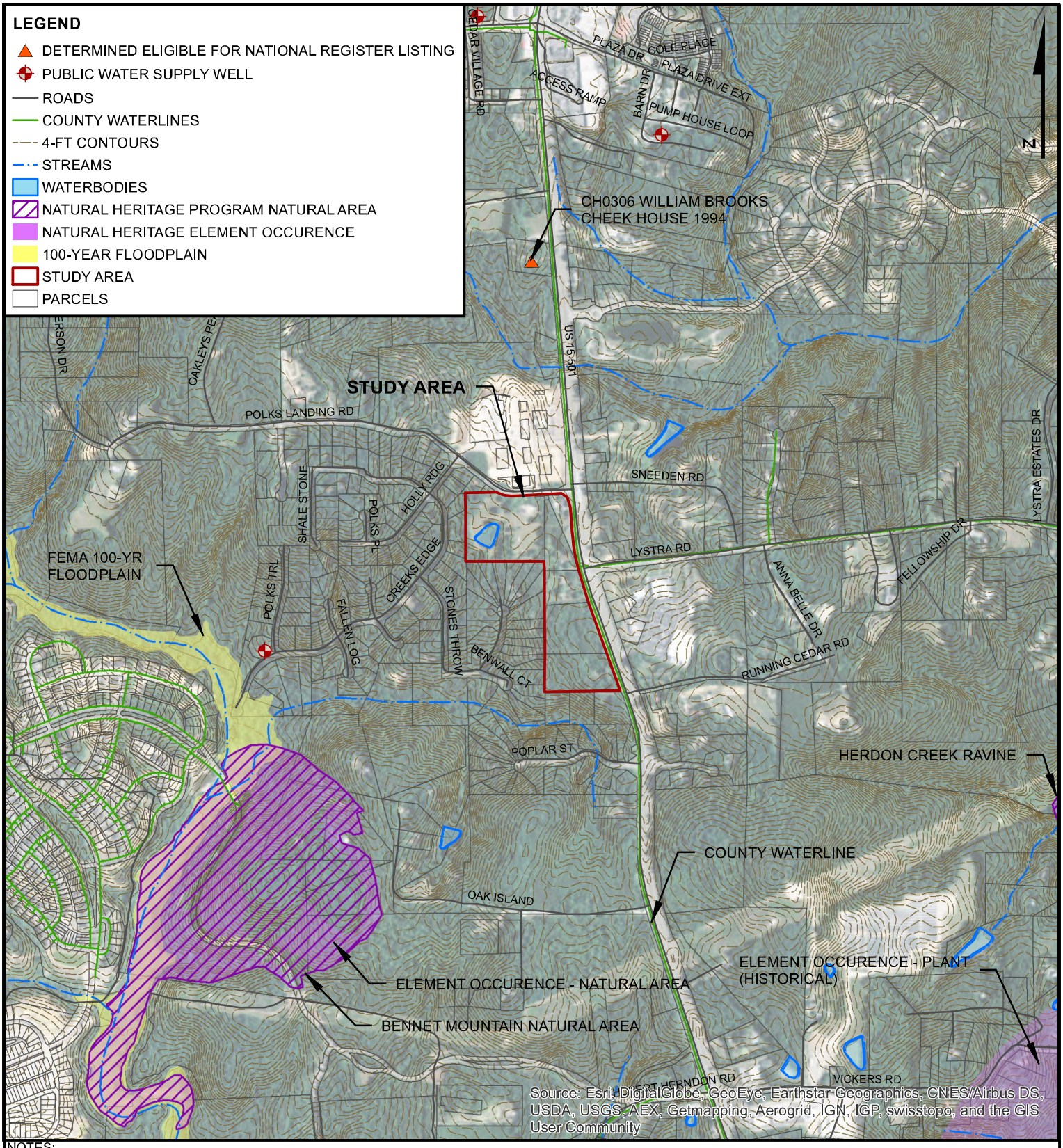
1 inch = 2,000 feet

DATE: 3/14/2017

JOB NO: SPEC-16998

DRAWN BY: roth

X:\Projects\SPEC\SPEC-16998\Storm\Wetlands\GIS\EIA FIGURES\SPEC16998_Figure 1 USGS.mxd, 3/14/2017 2:38:54 PM, roth



NOTES:
1. DATA FROM CHATHAM COUNTY GIS OPEN DATA PORTAL: COUNTY WATERLINE, CONTOUR, AND PARCEL (9/2016)
2. DATA FROM NC ONEMAP: NATURAL HERITAGE (2/2017), PUBLIC WATER SUPPLY SOURCES (2/2017), AND HYDROLOGY (11/26/2014)
3. FEMA FLOODPLAIN DATA FROM NC FLOODPLAIN MAPPING PROGRAM (MAP NO. 3710977500J, EFFECTIVE DATE 2/2/2007)
4. TRANSPORTATION DATA FROM NCDOT
5. THERE ARE NO MUNICIPAL OR COUNTY PARKS, SCENIC, OR RECREATIONAL AREAS ON OR ADAJACENT TO THE STUDY AREA.

McADAMS

ENVIRONMENTAL IMPACT ASSESSMENT
EXHIBIT E. ENVIRONMENTAL FEATURES MAP
CHATHAM COUNTY PUBLIX
CHATHAM COUNTY, NORTH CAROLINA

0 750 1,500 Feet

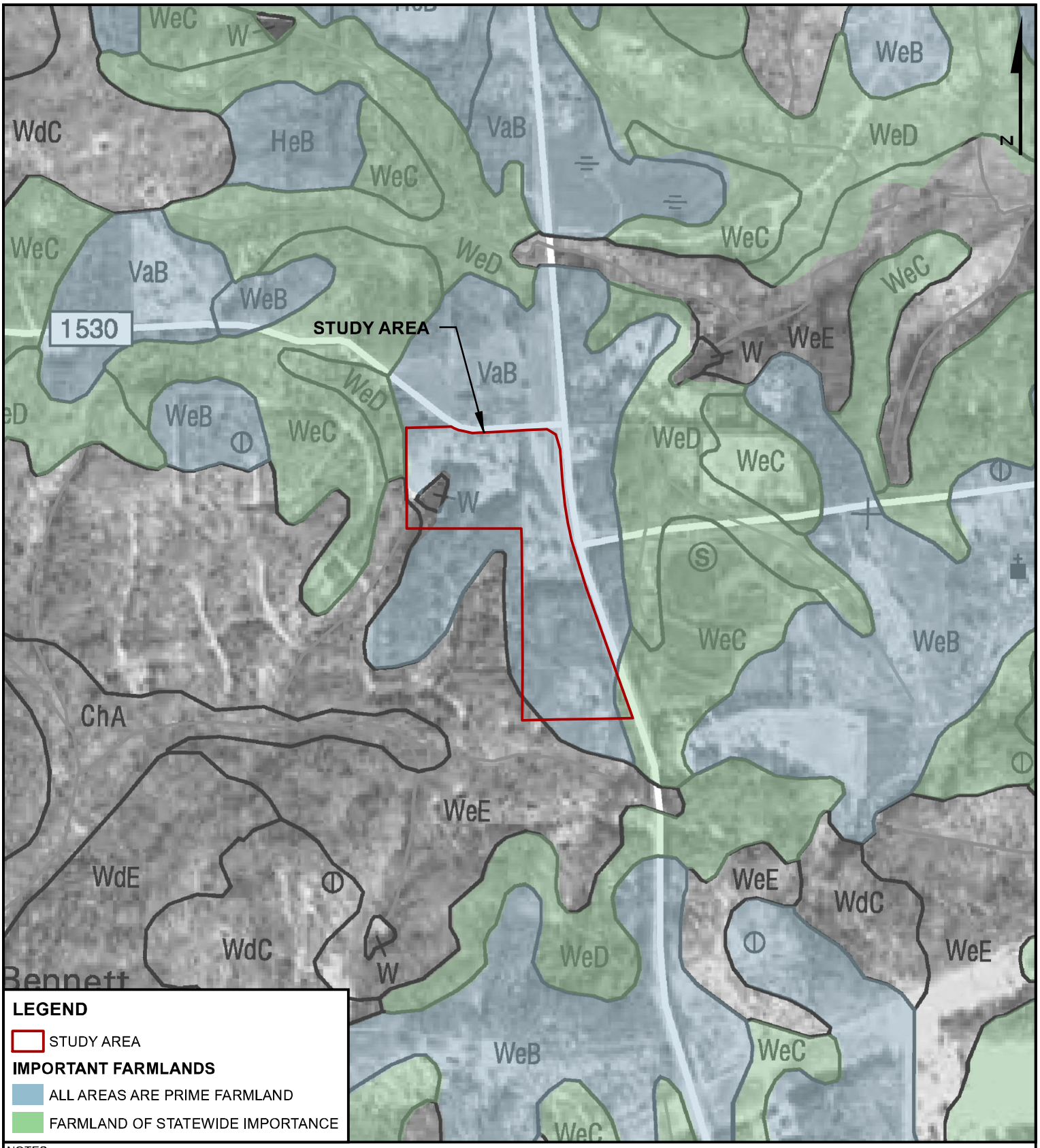
1 inch = 1,500 feet

DATE: 3/14/2017

JOB NO: SPEC-16998

DRAWN BY: roth

X:\Projects\SPEC\SPEC-16998\Storm\Wetlands\GIS\EIA FIGURES\SPEC16998_Figure 3 Env Features.mxd, 3/14/2017 2:43:43 PM, roth



NOTES:
1. USDA-SCS; SOIL SURVEY OF CHATHAM COUNTY, NORTH CAROLINA; SHEET 5
2. PRIME AND IMPORTANT FARMLANDS BASED ON "PRIME FARMLAND AND OTHER IMPORTANT FARMLANDS" TABLE ON PAGE 423 OF CHATHAM COUNTY SOIL SURVEY
3. LAT: 35.833451 N, LONG: -79.090962 W

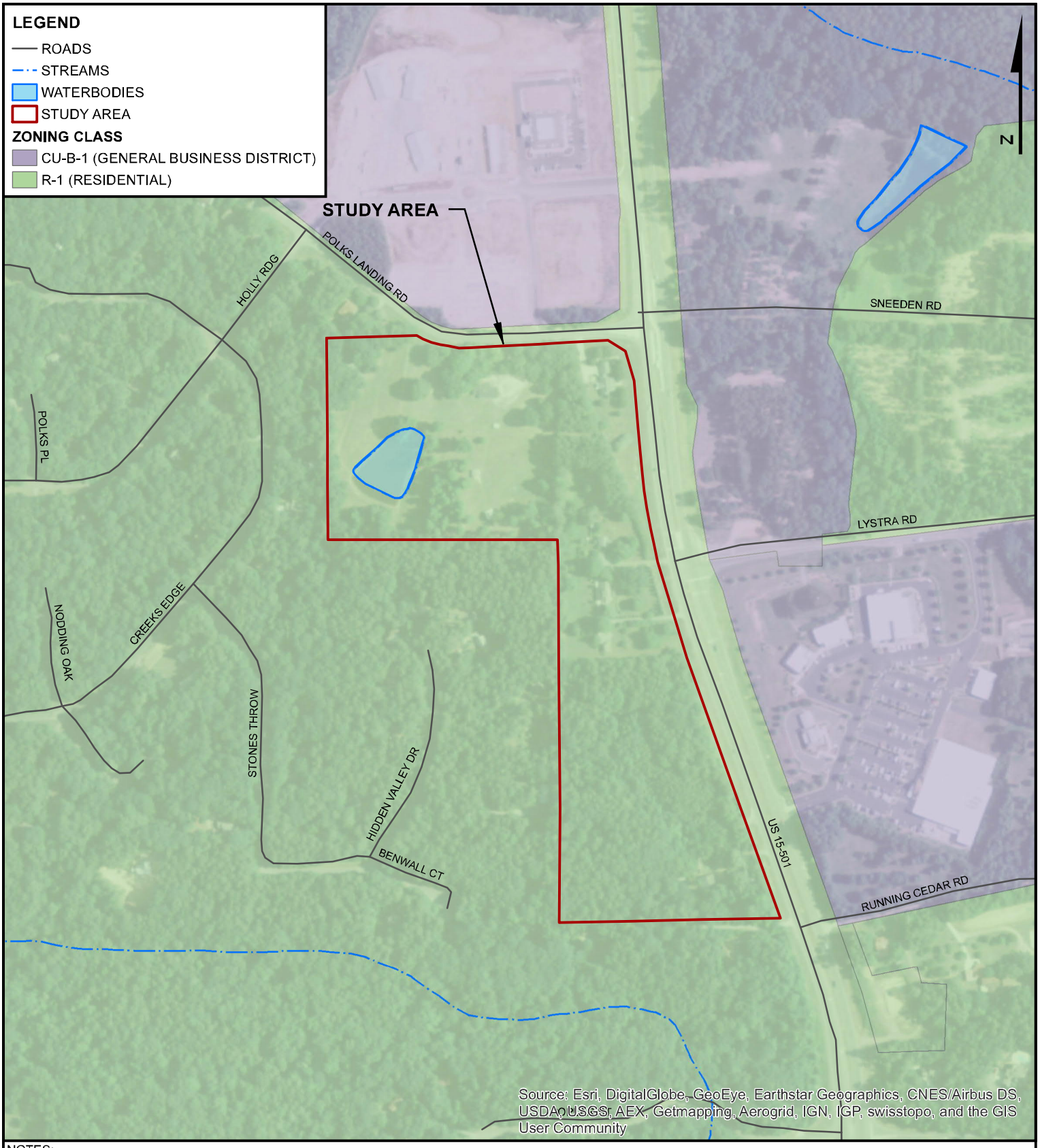
MCADAMS

ENVIRONMENTAL IMPACT ASSESSMENT
EXHIBIT F. NRCS SOIL SURVEY MAP
CHATHAM COUNTY PUBLIX
CHATHAM COUNTY, NORTH CAROLINA

0 500 1,000 Feet
1 inch = 1,000 feet

DATE: 3/14/2017
JOB NO: SPEC-16998
DRAWN BY: roth

X:\Projects\SPEC\SPEC-16998\Storm\Wetlands\GIS\EIA FIGURES\SPEC16998_Figure 2 Soil Survey.mxd, 3/14/2017 2:39:48 PM, roth



NOTES:
1. ZONING DATA FROM CHATHAM COUNTY GIS OPEN DATA PORTAL, JULY 2015

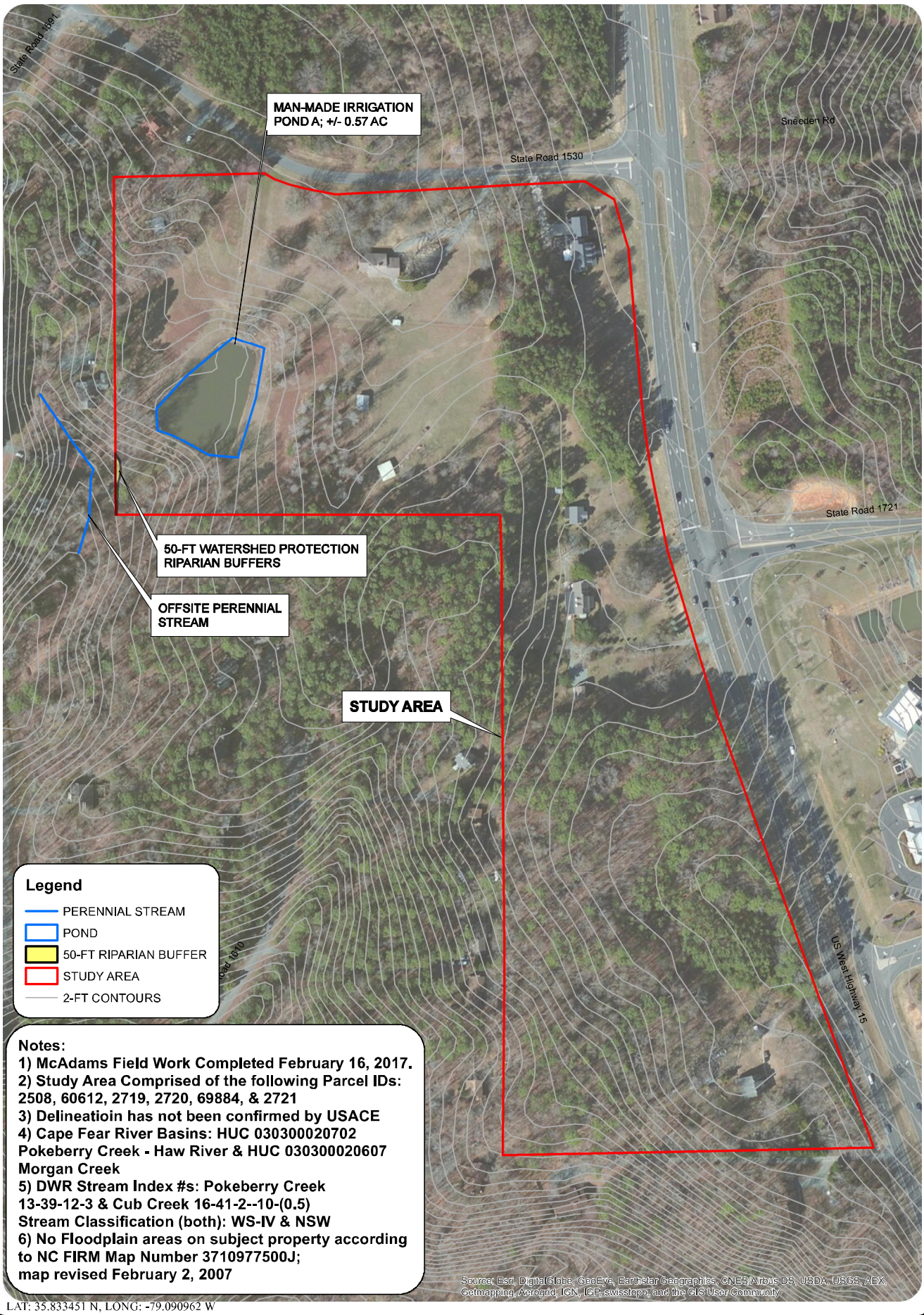
McAdams

ENVIRONMENTAL IMPACT ASSESSMENT
EXHIBIT G. ZONING MAP
CHATHAM COUNTY PUBLIX
CHATHAM COUNTY, NORTH CAROLINA

0 250 500 Feet
1 inch = 500 feet

DATE: 3/14/2017
JOB NO: SPEC-16998
DRAWN BY: roth

X:\Projects\SPEC\SPEC-16998\Storm\Wetlands\GIS\EIA FIGURES\SPEC16998_Figure 5 Zoning.mxd, 3/14/2017 2:45:56 PM, roth



LAT: 35.833451 N, LONG: -79.090962 W

N

0 50 100 200 Feet

1 inch = 200 feet

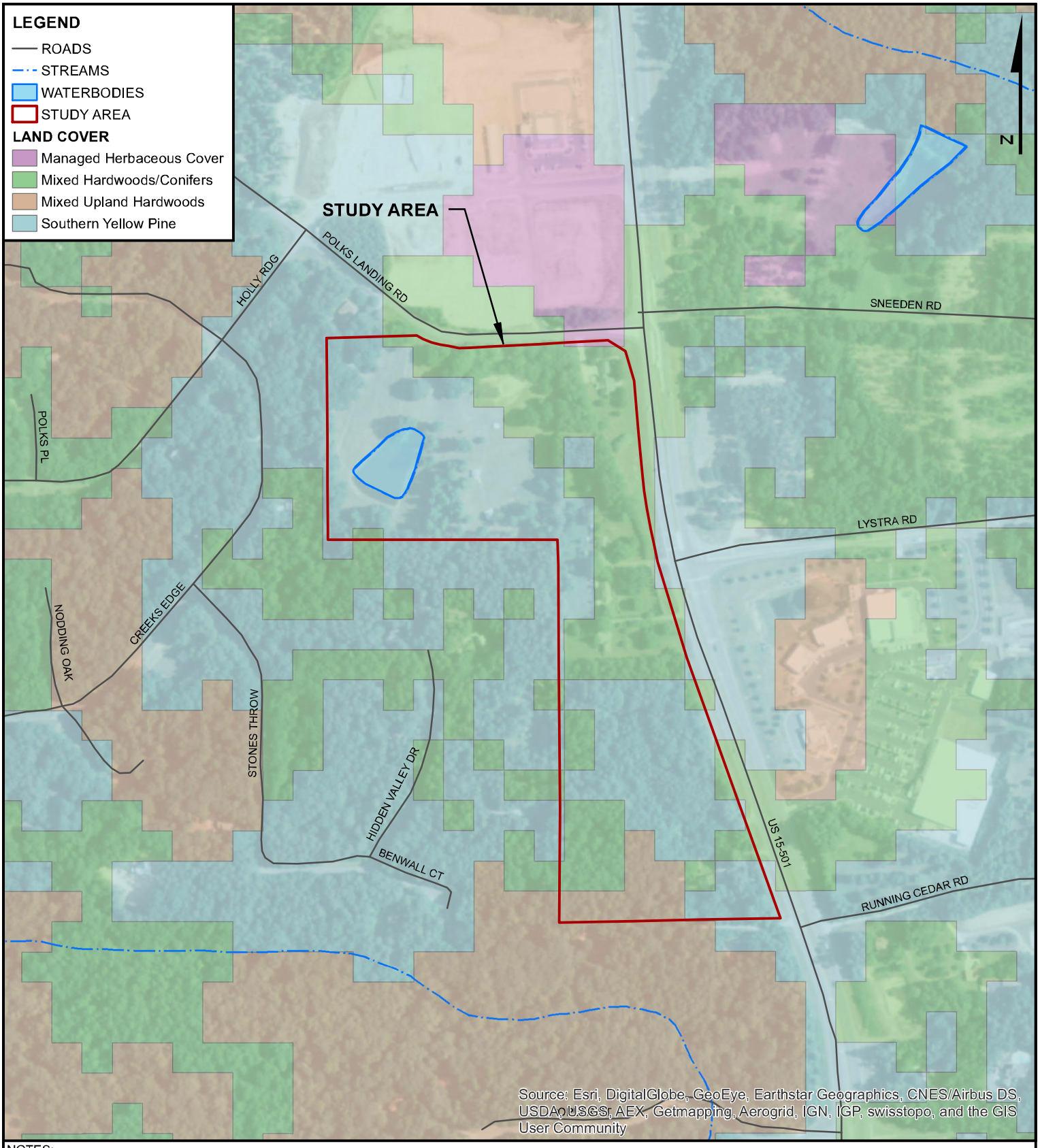
CHATHAM COUNTY PUBLIX

STREAM/WETLAND DELINEATION & BUFFER EXHIBIT
EXHIBIT H. EXISTING CONDITIONS
PROJECT #: SPEC-16998

CHATHAM COUNTY, NORTH CAROLINA

Date: 02/24/2017

McADAMS



NOTES:
1. LAND COVER DATA FROM CHATHAM COUNTY GIS OPEN DATA PORTAL, NOV. 1, 2016

McADAMS

ENVIRONMENTAL IMPACT ASSESSMENT
EXHIBIT I. NATURAL COMMUNITIES/LAND USE MAP
CHATHAM COUNTY PUBLIX
CHATHAM COUNTY, NORTH CAROLINA

0 250 500 Feet
1 inch = 500 feet

DATE: 3/14/2017
JOB NO: SPEC-16998
DRAWN BY: roth

X:\Projects\SPEC\SPEC-16998\Storm\Wetlands\GIS\EIA FIGURES\SPEC16998_Figure 4 LULC.mxd, 3/14/2017 2:47:56 PM, roth

State and Federal Permits Required