# **Environmental Impact Assessment**

# For

# IRONCLAD SELF STORAGE Expansion

**Chatham County, North Carolina** 

January 24, 2012

**Prepared for:** 

102 Vickers Road Chapel Hill, NC 27517

**Prepared by:** 

Warren D. Mitchell, PE 1709 Legion Road, Suite 201 Chapel Hill, NC 27517

# **Proposed Project Description and Need**

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

This project includes the expansion of an existing self-storage facility. The existing self-storage facility is on 5.41 acres at the intersection of Vickers Road (SR 1719) and US Hwy 15-501 south. The expansion will be on 5.0 acres on the east side of the existing facility and adjacent to Vickers Road. The expansion will include boat and RV storage, truck rental and one additional building for storage. The boat and RV storage area will be fenced in and the driveway inside the fence will be gravel but the parking spaces will be mulched. The driveway connecting the new property to the existing facility will be paved. A new driveway will be added at Vickers Road.

- 2) Provide a project location map showing surrounding areas. **See attachment A-5.**
- 3) Provide a project site plan showing existing and proposed facilities. **See attachment A-1 and A-2.**
- 4) Describe how this project fits into larger plans or connects with adjacent projects.

This expansion of the existing self storage facility is located at an existing commercial crossroads that contains an antiques shop, bathroom design store, veterinarian and kennel and future market and commercial use associated with a Compact Community – Briar Chapel. This site is located on a transportation corridor, US 15-501 which is mentioned several times in the Chatham County Land Development Plan as suitable for development in appropriate locations.

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

The existing self-storage facility provides a service to the public whereby Chatham County residents can safely store belongings convenient to where they live. The expansion will add moving truck rental allowing them to transport these items to their storage units. Additionally, boat and RV storage is being added to provide the same convenience for these items in a safe and secure location.

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

There is one phase of the expansion. The maximum amount of land disturbance that will occur during this phase is 6 acres which includes disturbance of a portion of the existing facility that was disturbed previously in 2004.

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

Only one new storage building is being proposed. The area of this building is 5000 square feet and the height is 20 feet.

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

The uses being added with this application include Boat Storage Facility; Recreational Vehicle Storage Facility; Self-storage facility / miniwarehouse storage facility with related retail and Services (i.e. moving truck rental)

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

Five truck spaces are proposed next to the current office building. A second truck parking area at the back of the existing facility is 13,650 square feet. A boat and RV area approximately 2 acres is size will be fenced in at the back of the proposed facility. Inside the fenced in area, 19,070 square feet will be gravel driveway and the remainder will be mulched for the boat and RV storage. See attachment A-2

- 10) Show areas to be cleared, graded, filled, paved, and landscaped. **See attachments A-2, A-3 and A-4.**
- 11) Show connections to existing utility and sewer lines or new utilities.

The new building and new site lighting will only require electricity that will be connected internally to the existing transformer. No additional utility services are required for the proposed expansion. The existing facility has a well and septic tank and no additional water or sewer is required for the proposed uses.

12) Show wastewater management systems on a map.

The wastewater from the existing office and apartment building is removed using a septic tank and drainfield. No new wastewater systems are being added. See attachment A-1

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

See attachment A-2

14) Show and describe any proposed stormwater control devices.

See attachment A-3. The stormwater system for this project will be designed to meet or exceed the County's stormwater ordinance. Two stormwater basins are proposed for the project to capture the stormwater and mitigate the quantity and quality from the development. One way the stormwater requirements are exceeded is that approximately one-third of the impervious area from the existing facility must be managed by one of the new stormwater basins. When the new expansion is constructed, one of the existing stormwater basins will be removed and the stormwater going to that basin will now be diverted to the new, larger basin. This new, larger basin will now improve the quality of the stormwater runoff from that part of the existing facility that today only receives management of the quantity or 'peak' discharge.

# **Alternatives Analysis**

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

There is really no reasonable alternative to the location of the proposed development. The applicant owns the existing self-storage facility and this is an expansion of that facility on adjacent land that is also owned by the applicant. The layout for the expansion takes advantage of the proximity to the existing facility by beginning the expansion at the edge of the existing paving instead of starting at the common property boundary. This is a more efficient use of space and connects the expansion to the existing facility without looking like two separate projects. By expanding the existing facility instead of creating a new facility, no new office facilities were needed to operate the expanded improvements. No utilities are required for the expansion other than electricity. Stormwater efficiency and quality will be improved with the expansion. The stormwater basin that was installed for the existing facility approved in 2003 was required to manage only quantity and had no quality component to the design. With the construction of the expansion, that old basin will be removed and the stormwater from the existing facility that did flow to that basin will now flow to a larger basin on the expansion property that is designed to also improve quality as well as quantity with the capture of 85% of total suspended solids.

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

The intent of this expansion is to add moving truck rental, boat storage, and RV storage. The moving truck storage area and the additional driveway entrance will be paved because the frequency of use. The boat and RV parking spaces will not be paved or even covered in gravel because it was not deemed necessary. Those parking spaces will be covered in the mulch that is created when the site is cleared. Because the frequency of use will be typically low for these areas, the mulch is a creative, environmentally friendly approach to traditional development methods.

# **Existing Environment and Project Impacts**

For each resource topic below, describe:

A. Existing resources and conditions.

This 5 acre tract is undeveloped and wooded. The trees are a mix of hardwoods and pines with pines being the dominant species. The age of the woods on this tract is approximately 40 years considering the average size of the diameter of the pine trees are 8 inches to 12 inches. There are no streams or wetlands located on the site. A ridge bisects the property

from north to south and creates runoff to the west and east. The site has a gentle slope averaging 6%. There are no steep slopes on this site.

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

The short term construction impacts include clearing 4.5 of the 5 acres of trees. The timber will be sold for lumber or pulp wood and the stumps and branches will be turned to mulch that will be used in the parking areas for the boats and RVs. 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 based on 8 years of operation experience with the existing facility. The stormwater basins should be inspected annually and repairs or maintenance done as needed to the basins. 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.

There are no significant trees on the property in size or species. 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 2 sediment basins that will become permanent stormwater basins upon site stabilization.

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

There are no streams or wetlands on this site. Neither of the other impacts (trees, soil) will require mitigation therefore none is planned.

# 1) Geography

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

The natural geography of the area is gentle. The geology consists of weathered rock. It is known as sand rock, Chapel Hill gravel or grit. The dominant soil type indicated on the county soil map is WeB –Wedowee and HeB – Herndon series. See attachment A-6.

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

See attachment A-1 for the site topo and attachment A-7 for the surrounding area topo.

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

No 100-year floodplains exist on or adjacent to the property.

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

See attachment A-3. The cut and fill operation will be executed to create a balanced site. The estimate of cut/fill is approximately 8,000 - 10,000 cubic yards.

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

The project does not include pond or dam work.

- 2) Soils and Prime Farmlands
- Identify dominant soils in the project area (County GIS or NRCS website) and show on a map.

WeB - Wedowee and HeB - Herndon series. See attachment A-6.

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

The soil is suitable for the proposed improvements being requested based on the earthmoving operations that took place on the existing facility. There are no wetlands on site or unsuitable soils expected. No new septic systems are being requested.

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

  The soil disturbance expected is shown on attachment A-3. No contamination is expected as a result of this project.
- If contamination is expected, discuss containment plans and procedures. **No contamination is anticipated.**
- If soil will be relocated, specify the number of square yards/feet to be moved, and its relocation site.

Soil will not be relocated. The site is designed to balance.

- Describe runoff management plans for the project.

Stormwater runoff from the proposed expansion will drain into one of two proposed stormwater basins shown on attachment A-3.

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

There will be no offsite impacts from soil disturbance.

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

See attachment A-8. Chatham County GIS.

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

This site will disturb 4.5 new acres of prime farmland soils which is currently wooded. Approximately 0.5 acres of these same soils will be retained / undisturbed. The site is 5.0 acres total.

# 3) Land Use

- Provide a map showing current use of land on the site and surrounding properties. **See attachment A-9.**
- Discuss how the current land use fits into the surrounding area (conservation, development, ecological function, etc).

The current land use is forestry. Another term is tree farm. This use fits into most any area including this location. The project site is bordered by a public road on one side, a self-storage facility on another side and forest on the other 2 adjacent boundaries.

- Provide the current zoning of the project site and the surrounding area.

## See attachment A-10

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

This expansion of the existing self-storage facility is located at an existing commercial crossroads that contains an antiques shop, bathroom design store, veterinarian and kennel and future market and commercial use associated with a Compact Community – Briar Chapel. This site is located on a transportation corridor, US 15-501 which is mentioned several times in the Land Development Plan as suitable for development in appropriate locations.

The following are three recommendations of the technical and advisory committees that worked on the Land Development Ordinance:

- Site commercial uses along major highways in clusters at specific, designated locations; design these commercial sites to retain a rural crossroads or village character; and integrate these uses with other nearby development.
- Site commercial clusters/compact communities so that they might be able to be served by transit in the future, especially along US 15-501 north of Pittsboro and US 64 east of Pittsboro.
- Site commercial clusters so that they extend up side roads off main thoroughfares rather than as strips along main thoroughfares.

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

Local land use plans will not need to be changed after project completion.

# 4) Wetlands

- Indicate whether wetlands are present; describe the basis for this determination and the identity of the person who made the determination.

No wetlands are present on site. This determination was made by Steven Ball, wetland scientist who is employed by S&EC (Soil and Environmental Consultants) of Raleigh, NC.

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

No wetlands are present on this site.

- If wetlands are to be filled, specify the number of acres that will be affected. **No wetlands are present on this site.**
- List all required permits and permitting agencies.

No wetlands are present on this site.

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

No wetlands are present on this site.

- 5) Public Lands and Scenic, Recreational, and State Natural Areas
- 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.

None of these places exist on or adjacent to the site/project area. This was confirmed by the Chatham County GIS and NC one map.

- 6) Areas of Archaeological or Historical Value
- Discuss any archaeological or historical studies of the project location; provide relevant references.

No archaeological or historical studies exist for the project site.

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

There are no standing structures on the project site. The remains of an old tobacco barn (25ft. x25ft.) exist on the site. The roof has collapsed and approximately half of the walls are standing. See attachment A-11.

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

No archaeological or historical resources are known to exist on the proposed project property.

- Describe plans for demolishing or rebuilding any structures.

The remains of the barn will be removed. The wood is rotten and is too old to have any value.

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

There are no significant resources in the project area.

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

I talked with Bev Wiggins of the Chatham County Historical Association on Thursday January 19, 2012 about the possibility of any cemeteries or historical relevance of this property. She said that the CCHA didn't have any records of any and she was going to forward an email stating that to Angela Birchett at Chatham County Planning.

# 7) Air Quality

- Describe the project's impacts on ambient air quality.

No impacts on ambient air quality will occur.

- Describe plans for any open burning during or after construction.

There are no plans for any open burning during or after construction.

- Indicate the number of proposed parking spaces, if applicable.

Five truck spaces are proposed next to the current office building. A second truck parking area at the back of the existing facility is 13,650 square feet. A boat and RV area approximately 2 acres is size will be fenced in at the back of the proposed facility. Inside the fenced in area, 19,070 square feet will be gravel driveway and the remainder will be mulched for the boat and RV storage. See attachment A-2.

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

No odors are anticipated with this storage facility.

- Provide a copy of any required traffic studies.

A traffic study was not required or prepared for this project.

## 8) Noise Levels

- Discuss current noise levels; use a benchmark, if possible.

The current noise level on the existing self-storage project is no higher than what you would expect from a single family house. There are no noisy activities currently or planned with the expansion.

- Describe any increases in noise levels expected from this project.

The site is currently wooded so any development activity will be an increase over a wooded property. But there will not be any increase in noise levels expected from the expansion than what occurs at the existing facility today.

- Specify the distance at which the increased noise will be heard.

Storage is a very quiet business because items do not make noise while they are parked or inside storage units. The applicant owns property on 3 sides of the expansion project and a public street is on the fourth side. The only noise expected from the project is people talking and vehicles being driven. These are normal domestic occurrences that you would hear at houses in any neighborhood.

- Discuss whether surrounding properties will be affected by noise levels.

I believe that any new noise from the project will be similar to the noise at the existing facility. Since the facility opened in 2004, there has never been a complaint from anyone about noise including anyone from the mobile home park adjacent to the facility.

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

The hours of operation today are 7:30 am to 8:30 pm.

# 9) Light Levels

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

The proposed lighting will be the same that we used to light the existing facility. Only cut-off light fixtures will be used on the expansion project. This is the best lighting option for having the smallest impact on adjacent residents and wildlife. The lighting plan is included on attachment A-2.

- 10) Surface and Groundwater Resources (discuss separately)
- Identify and provide a map of surface waters in the project area. Describe groundwater (aquifers) in the project area.

There are no surface waters on site. The stormwater from the west side of the site drains to a tributary which drains into Pokeberry Creek which drains to the Haw River. The east portion of the project drains to a tributary which drains to Hendon Creek which drains to Jordan Lake. See attachment A-12.

Groundwater aquifers are not close to the surface in this area which may be due to the topography, soils or a combination of both.

- Include names, locations, classifications, and use support ratings for surface waters. There are no surface waters on this site nor any that will be affected by this project.

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

The project is located in the Cape Fear River Basin. See attachment A-13

- Discuss any known groundwater quality issues.

I do not know of any groundwater quality issues. I have lived on the property since 2008 and I have been drinking the water from the well onsite since 2008. The water is the best I have ever had. When I had the well installed, the water was tested and those results were clear.

- Discuss drinking water sources.

There is a well that supplies all water needs including drinking water. US Hwy 15-501 has a public waterline that could be a source of drinking water.

## 11) Fish and Aquatic Habitats

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

This land is at the break point between 2 minor watersheds. There are no streams on site and no fish or aquatic habitats in or adjacent to the site/project area.

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

N/A

# 12) Wildlife and Natural Vegetation

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

See attachment (A-14). The site and the adjacent lands contain native hardwoods and pines. Wildlife on the property includes deer. No other animals of any size have been observed since 2003.

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

The site and the adjacent lands contain native hardwoods and pines. Species of trees include oak, hickory, poplar, beech, cedar, holly, and maple and loblolly pine. Wildlife on the property includes deer. No other animals of any size have been observed since 2003.

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

There are no suitable habitats on or adjacent to this property that exist for rare, threatened and/or endangered species as evidenced by the NC Natural Heritage Program layers on the Chatham County GIS.

- If wildlife will be displaced, discuss any limitations of adjacent areas to support them.

There is an abundance of adequate areas adjacent to this property to support the wildlife displaced from this development - only deer has been observed on the land.

- 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.

No invasive species have been found on site.

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

The site is 5 acres and approximately 4.5 acres will be cleared. The trees are mostly pine which will be used for lumber or pulp wood. The stumps and branches will be chipped and used for mulch in the boat / RV parking area.

# 13) Hazardous Materials

- 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. Our lease currently prohibits all hazardous materials in our existing facility and the planned expansion.

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

No hazardous material will be stored or introduced on site.

## References

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

State and Federal Permits Required

## C. Topographic Map

A topographic map with contours at vertical intervals of not more than five (5) feet, at the same scale as the First Plat, for all major subdivisions unless not deemed necessary by staff. Staff may require a topographic map for other subdivisions if necessary for adequate review. The date and method of preparing the topographic survey shall be stated.

See attachment A-1 and A-7.

### **D. Soils Evaluation**

A soils evaluation shall be performed by a certified/licensed soil scientist or persons approved by the Health Department to perform such evaluations or investigations. Such evaluations shall be performed unless a central sewage disposal system is proposed. A soils map showing the location of suitable soils and a letter of explanation shall be submitted to perform such evaluations or investigations.

There are no new waste water treatment systems, septic systems or drinking water wells planned for this project.

# **E. Utility Plans**

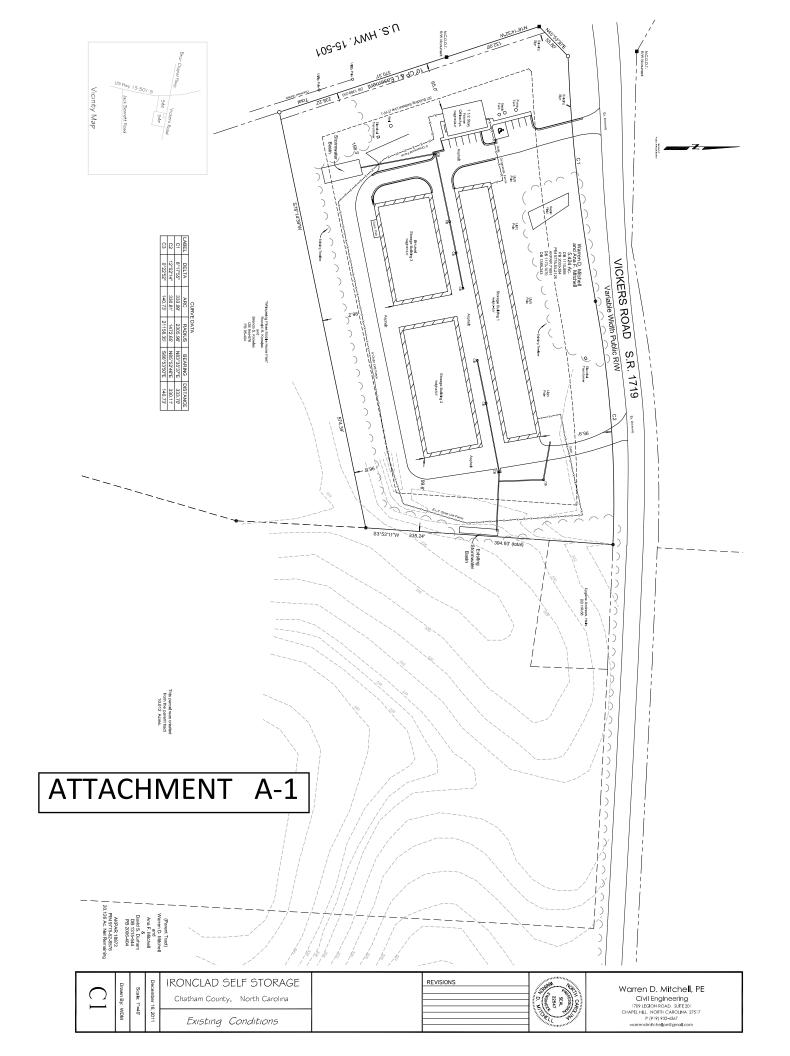
Plans of proposed utility layouts for sewer and water where applicable, showing feasible connections to the existing utility system, or any proposed utility system.

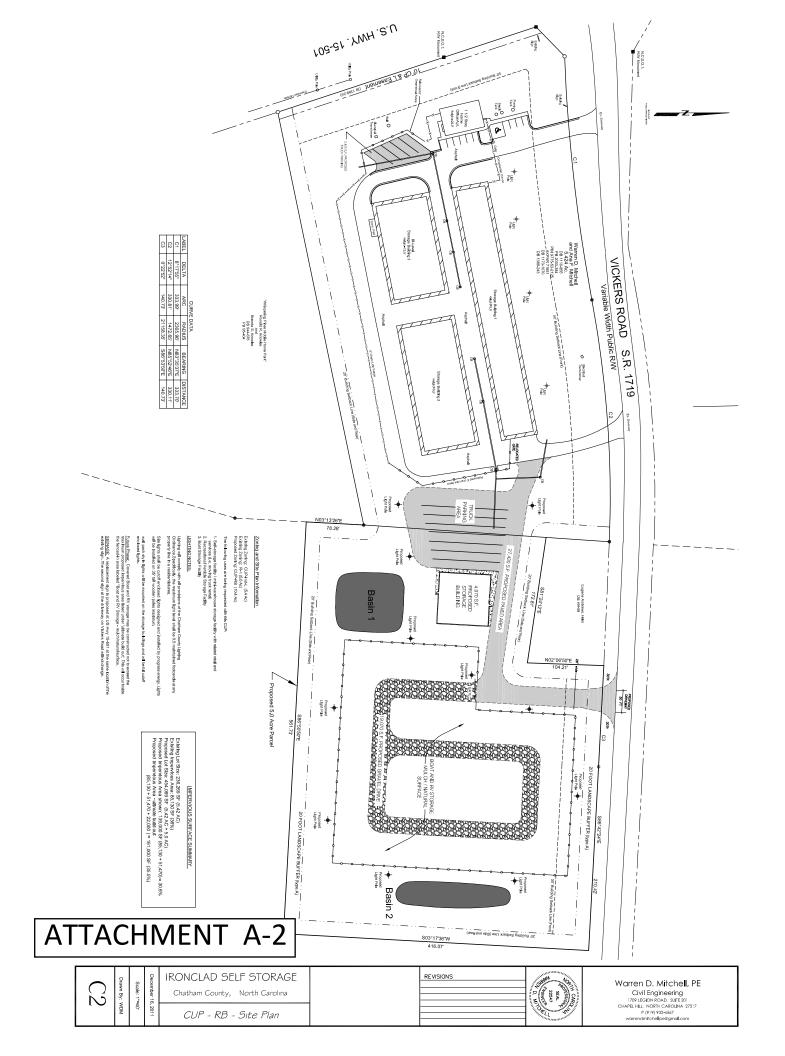
No new sewer or water connections or changes are proposed with this project.

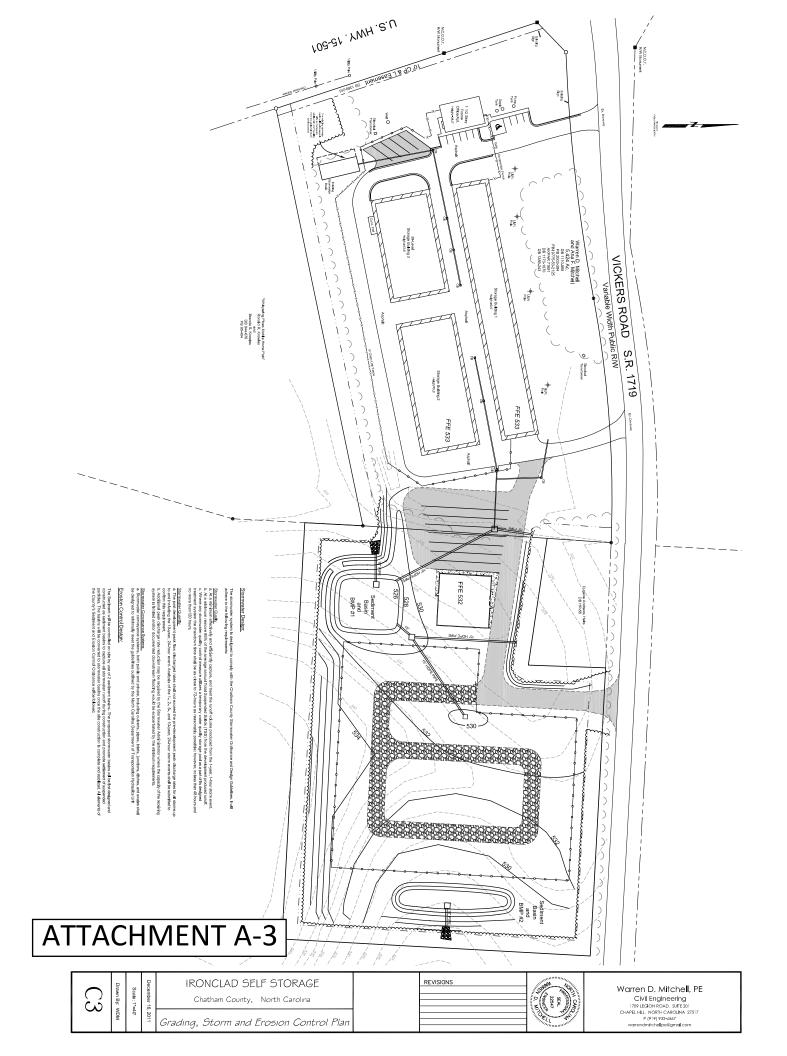
# F. U.S. Army Corps of Engineers and Division of Water Quality Permits or Certifications

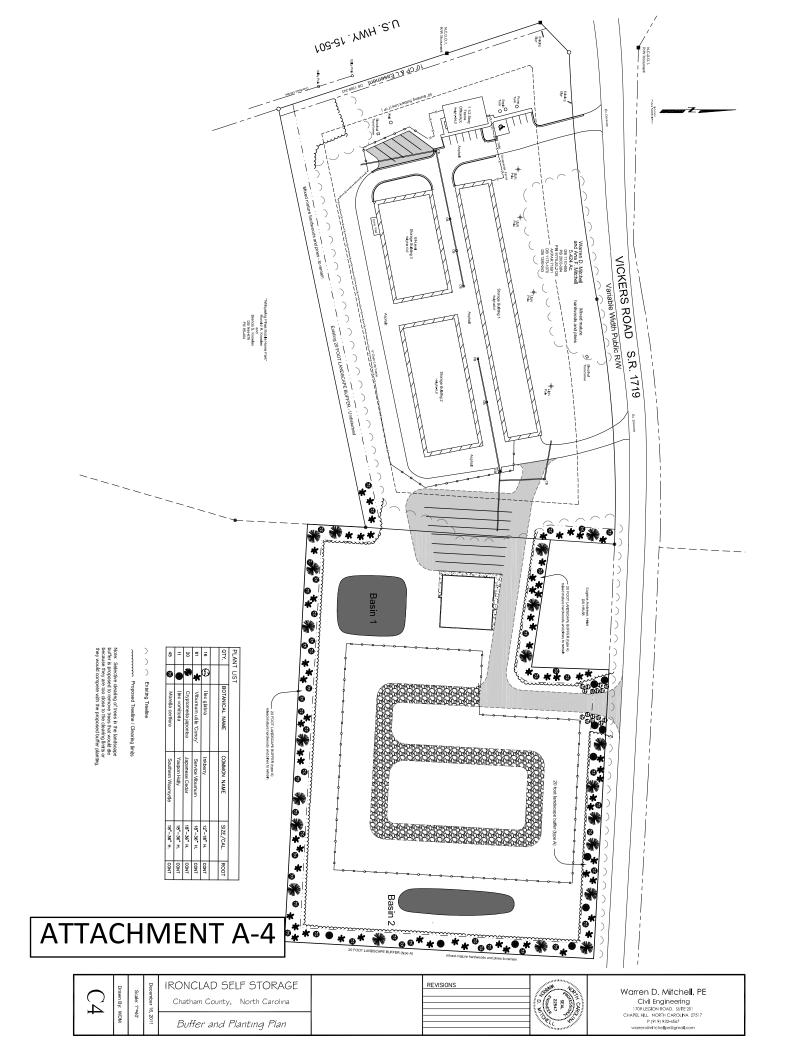
Indicate if US Army Corps of Engineers and/or NC Division of Water Quality permits or certifications will be required. These permits and/or certifications may be required when development improvements may involve the placement of excavated material or fill material into streams, creeks, lakes, or wetlands. If any of these permits or certifications will be required, copies of the approved permits shall be submitted at time of Construction Plan submittal.

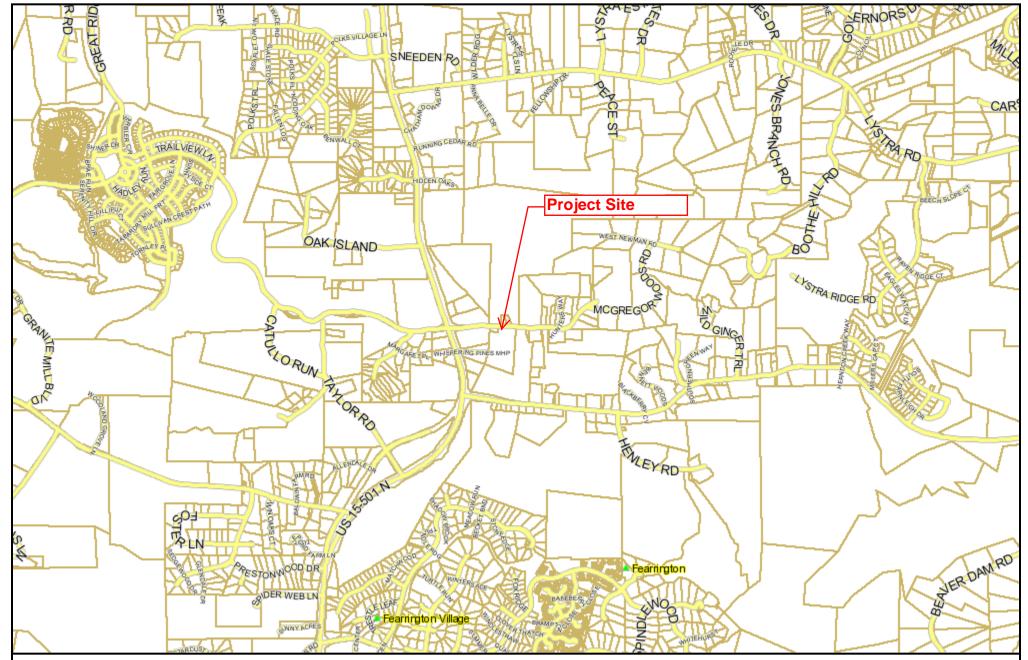
There are no State or Federal permits required for this project.













Property Map

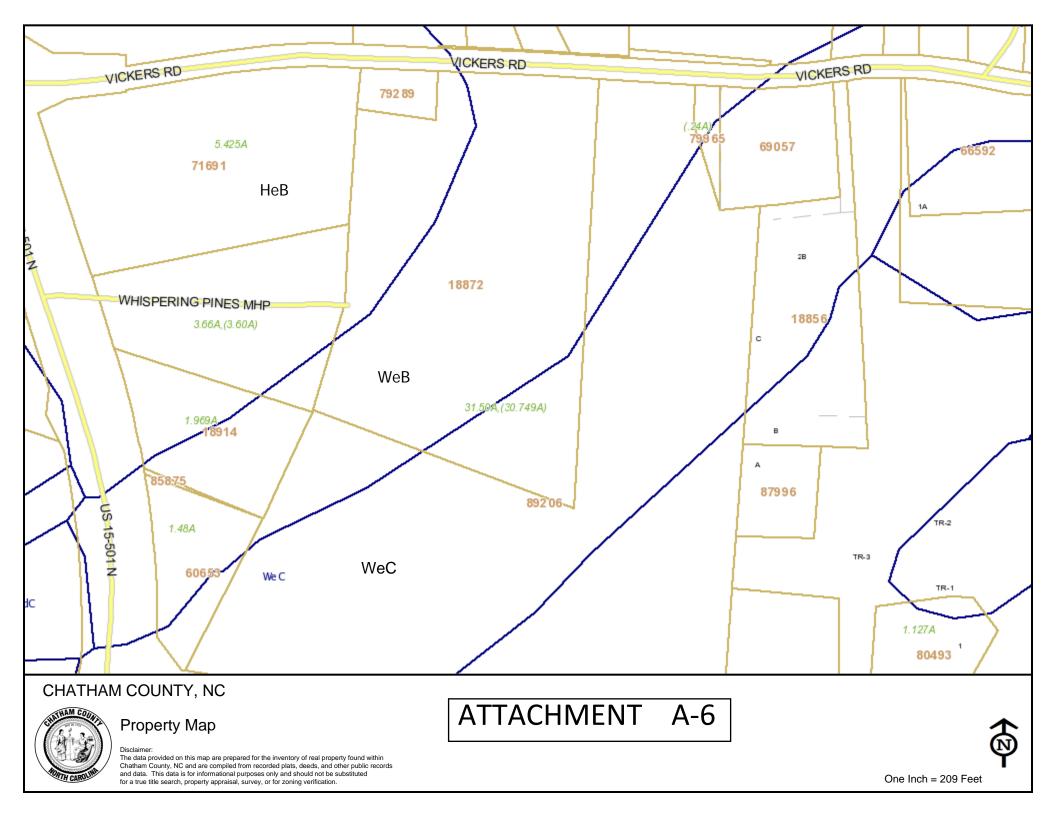
Disclaimer:

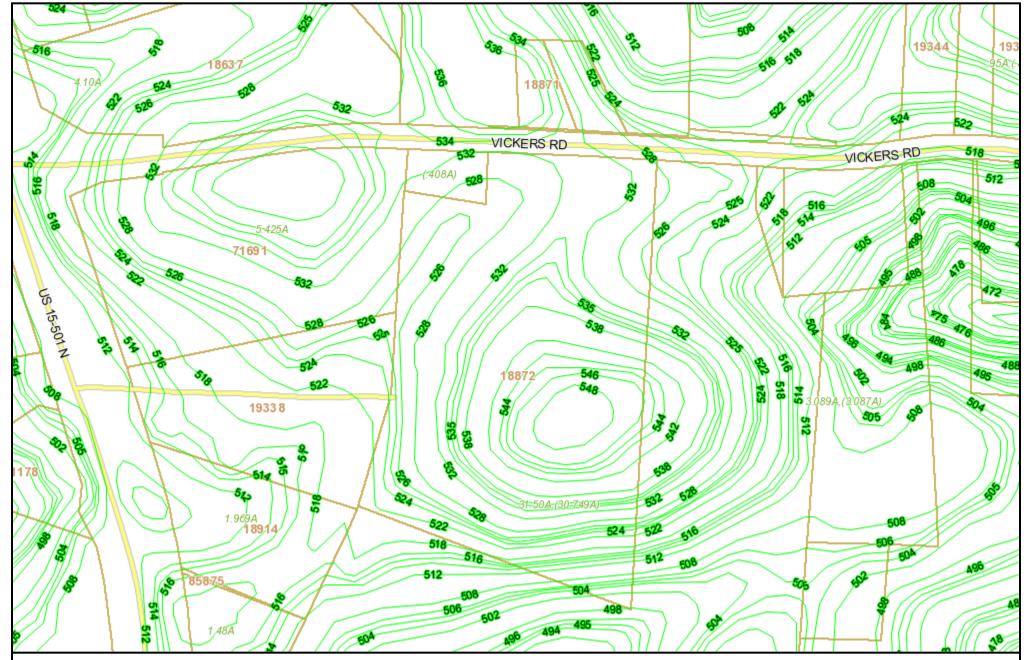
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ATTACHMENT A-5



One Inch = 1935 Feet







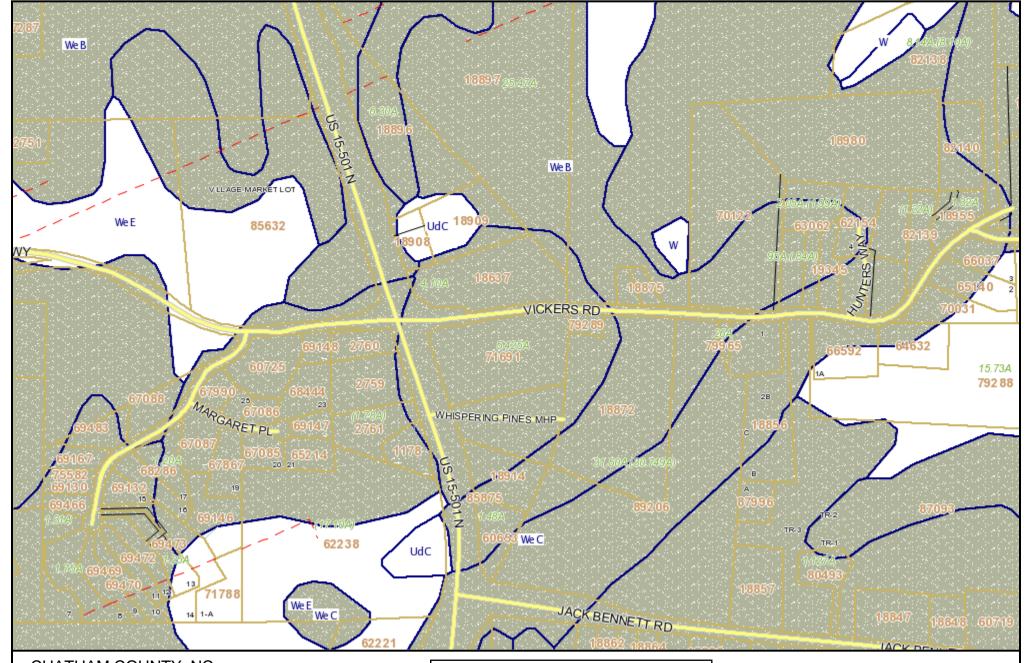
# Property Map

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ATTACHMENT A-7



One Inch = 200 Feet





# Property Map

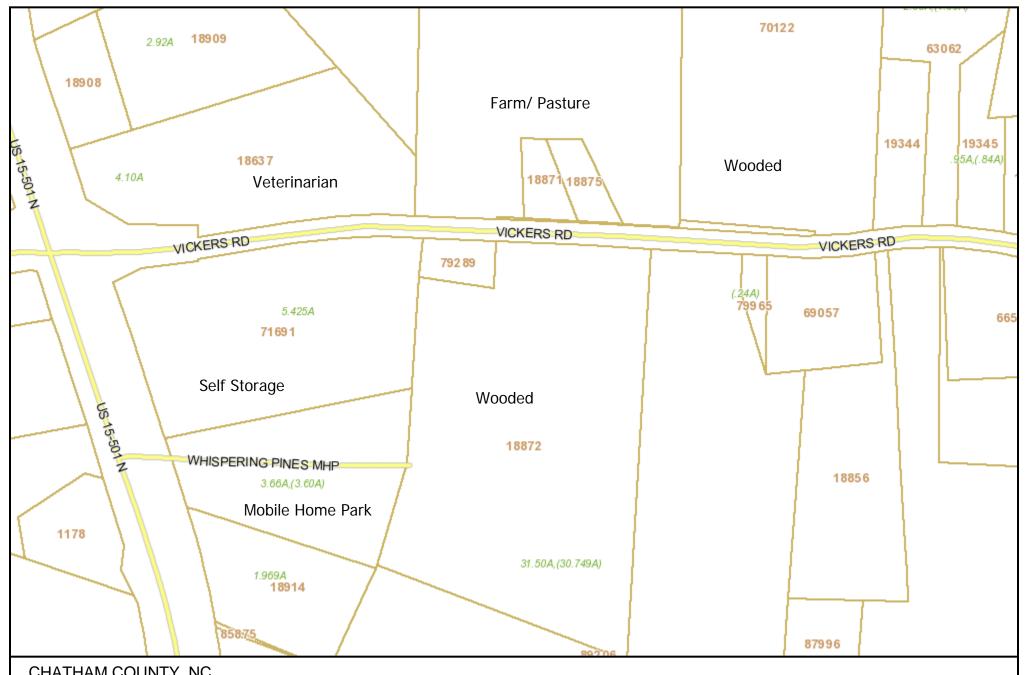
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# **ATTACHMENT**

This exhibit shows suitable soil for Farming



One Inch = 470 Feet



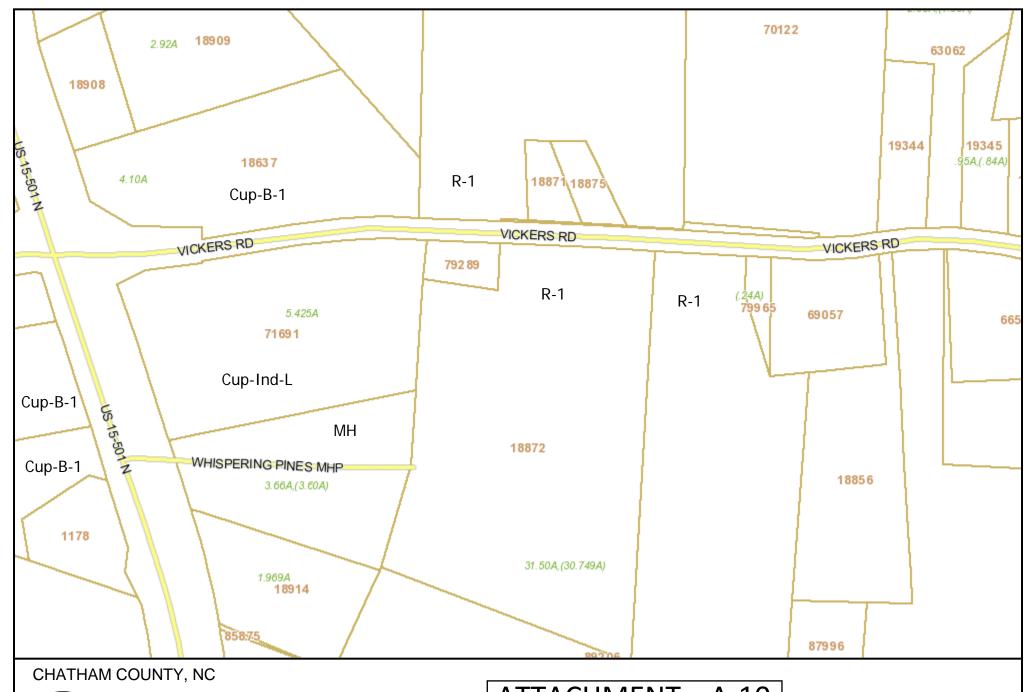


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# ATTACHMENT A-9







# Property Map

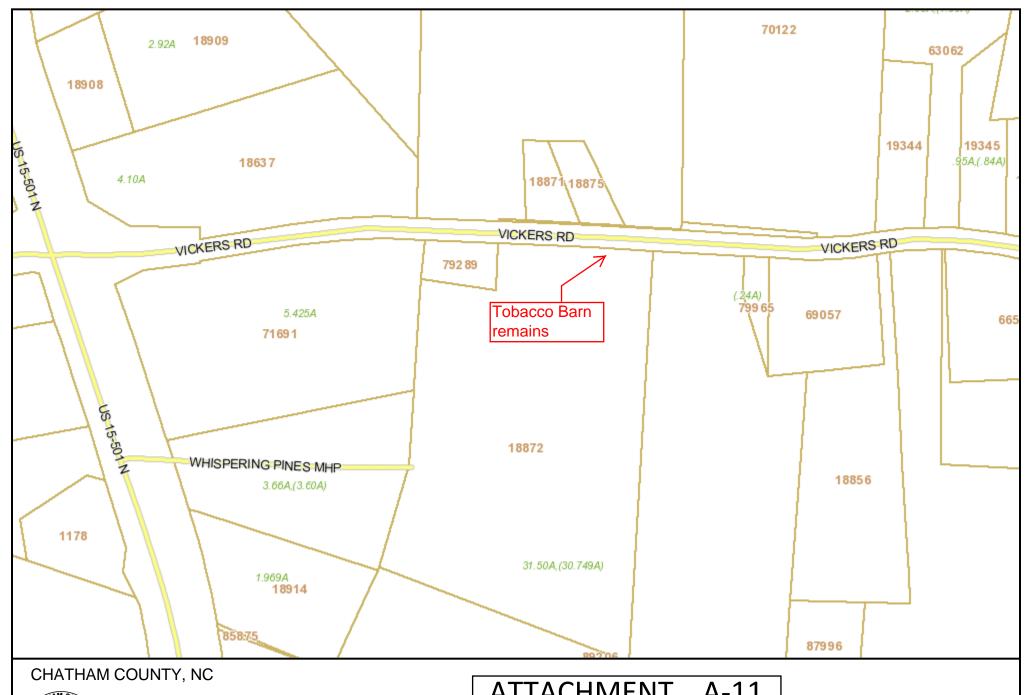
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ATTACHMENT A-10



One Inch = 218 Feet



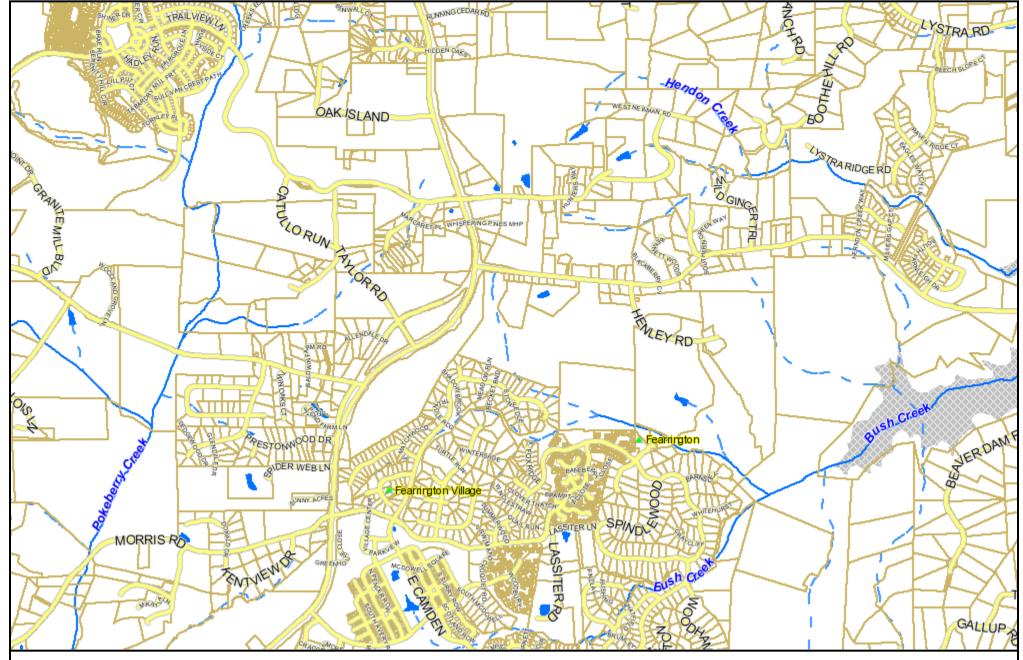
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# ATTACHMENT A-11



One Inch = 218 Feet





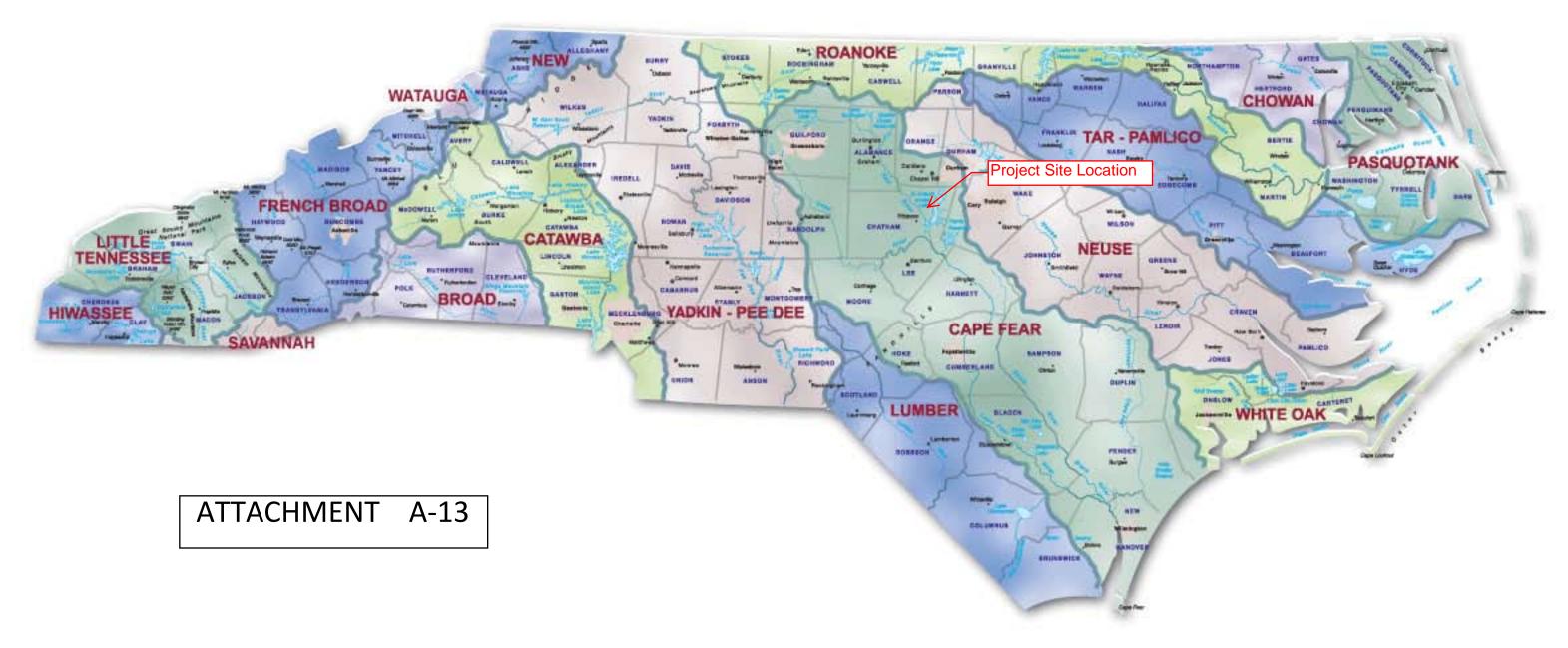
Property Map

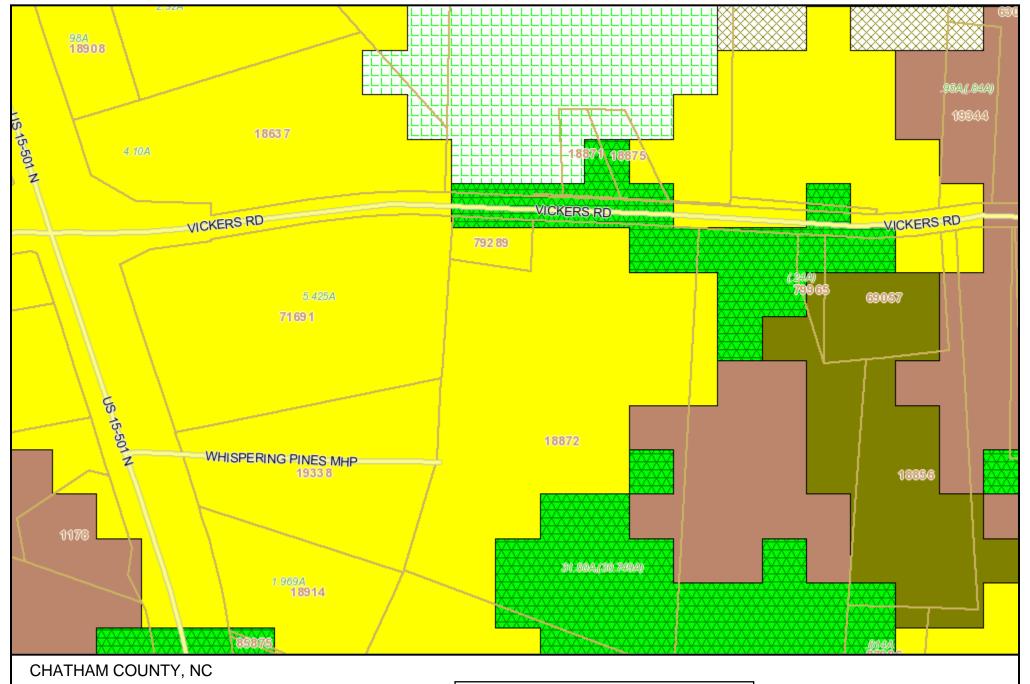
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ATTACHMENT A-12



One Inch = 1925 Feet







# Property Map

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ATTACHMENT A-14



One Inch = 202 Feet