



Orange County Planning and Inspections Department

**APPLICATION FOR
CLASS A SPECIAL USE PERMIT**

APPLICANT INFORMATION:

Date: 12/19/14

Applicant: THE WALDORF EDUCATIONAL ASSOCIATION OF NORTH CAROLINA Phone: (919) 967-1858

Address: 6211 JERICHO ROAD Cell Phone: _____
CHAPEL HILL, NC 27514 E-mail: SBENNETT@EMERSONWALDORF.ORG

Agent: SUMMIT DESIGN & ENGINEERING SERVICES Phone: (919) 732-3883

Address: 504 MEADOWLAND DRIVE Cell Phone: _____
HILLSBOROUGH, NC 27278 E-mail: TERRY.BOYLAN@SUMMITDE.NET

Address of subject property: 6211 JERICHO ROAD, CHAPEL HILL, NC 27514

Parcel Identification Number (PIN): SEE ATTACHED Lot Size: SEE ATTACHED

Zoning Designation: RURAL BUFFER (RB) Watershed Overlay: N/A

Other Overlay Zoning Districts: N/A

Request (include detailed description of proposed land use): THE EMERSON WALDORF SCHOOL REQUESTS THIS SPECIAL USE PERMIT TO BE USED AS A GUIDE IN MANAGING THE GROWTH OF THE STUDENT POPULATION FROM 258 STUDENTS IN 2014 TO APPROXIMATELY 350 STUDENTS IN 2030. THE SPECIAL USE MASTERPLAN WILL INCLUDE PROPOSED LOCATIONS FOR NEW AND RELOCATED BUILDINGS AND ASSOCIATED INFRASTRUCTURE TO SUPPORT STUDENT POPULATION GROWTH. THE EXISTING LAND USE (SCHOOLS: ELEMENTARY, MIDDLE AND SECONDARY) WILL REMAIN THE SAME.

SUBMITTAL INFORMATION Per Section 2.7.3 of the Unified Development Ordinance (UDO), all Class A Special Use Permit applications are required to submit the following:

- 1) 26 copies of a site plan prepared by a registered North Carolina land surveyor, landscape architect, architect, or engineer containing all required information detailed within Section 2.5 of the UDO. This site plan will also need to contain all relevant information demonstrating that the proposed special use compliance with all general and specific standards governing the proposed special use as detailed within Article(s) 5 and 6 of the UDO.
- 2) A detailed narrative outlining the proposed land use including operational requirements, the location of facility, appearance, etc.,
- 3) Documentation establishing compliance with Section 5.3.2 inclusive of the UDO.
- 4) The names and addresses of the owners involved with the project,
- 5) A list of property owners within 500 feet of the subject parcel and the name and address of each property owner, as currently listed in the Orange County tax records,
- 6) Elevations of all structures proposed to be used in the development,
- 7) 26 copies of the Environmental Assessment and/or Environmental Impact Statement if required by Section 6.16 of the UDO,
- 8) Statement outlining the anticipated development schedule for the completion of the project,

**** NOTE: It should be remembered that the review of all special use permit applications/modifications are carried out in a *quasi-judicial* format meaning that decisions relating to the approval or denial of an application are based solely on the sworn testimony of all parties involved with the case, both those for and against an application, as well as the review of competent material and substantial evidence submitted during the public hearing.**

Further the applicant has the burden of establishing, by the submission of competent material and substantial evidence, the existence of facts and conditions that demonstrate the projects compliance with the various requirements and standards detailed within the Unified Development Ordinance. **

I (we), the undersigned, have been made aware of the process for the review and action associated with a Class A Special Use Permit application and understand that only completed applications, containing all information required by the Orange County UDO shall be reviewed and acted upon by the County.

I (we) understand that it shall be my (our) responsibility to present evidence to the County in the form of sworn testimony, exhibits, documents, models, plans, and the like support the request for approval of the Class A Special Use Permit.

Further I (we) understand that any assistance I (we) may receive from County staff in preparing this application in no way guarantees a favorable recommendation by staff on the merits of this proposal nor does it guarantee an approval of the request by the County.

Applicant

Date:

Applicant

Date:



**ATTACHMENT TO CLASS A SPECIAL USE PERMIT
APPLICATION**

<u>Parcel ID #</u>	<u>Lot Size</u>
9871-64-7391	22.16 ac
9871-64-5632	2.60 ac
9871-72-1935	22.12 ac
9871-74-3098	5.62 ac
9871-65-8140	2.77 ac



SUMMIT

DESIGN AND ENGINEERING SERVICES

919.732.3883 SUMMIT-ENGINEER.COM

504 Meadowland Drive, Hillsborough, NC 27278

Letter of Transmittal

TO Orange County Planning Department
131 West Margaret Lane
Hillsborough, NC 27278

DATE 04/15/2014	PROJ. NO. 14-0108
RE: Emerson Waldorf School SUP Submittal #2	

ATTN Mr. Patrick R. Mallett

WE ARE SENDING YOU:

- Attached
 Under Separate Cover
 Transmitted Via _____
 Prints
 Reproducible
 Specifications
 Shop Drawings
 Copy of Letter
 Change Order

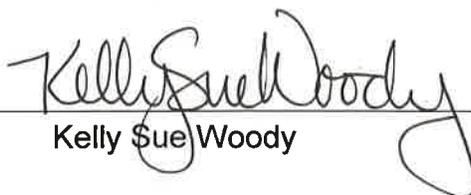
COPIES	DRAWING	DATE	DESCRIPTION
2	24 X 36		Plans
2	11x17		Plans
1			SUP Narrative
1			Response to Comments
1			Biological Inventory
1			Forest Stewardship Plan

TRANSMITTED:

- For Approval
 As Requested
 For Your Use
 For Review and Comment

COMMENTS

COPY TO _____

SIGNATURE: 

Kelly Sue Woody

EMERSON WALDORF SCHOOL CAMPUS MASTER PLAN

SPECIAL USE PERMIT NARRATIVE

1. INTRODUCTION

The Emerson Waldorf School (EWS), established in Chapel Hill in 1984, is a Pre-K thru grade 12 private school located on a 54 acre campus at 6211 New Jericho Road at its intersection with Millhouse Road in Orange County, NC. The existing school campus currently contains approximately 22,971 sf of classroom and support facilities in twelve buildings with an existing student population of +/-260, supported by a staff of 53 FT/PT teachers and administrators. The school includes Early Childhood (Kindergarten and Nursery), Lower School (1st -8th grades), and High School (9th – 12th grades). A school owned and operated teaching farm is located across Millhouse Road from the main campus. All students are transported to and from campus by private vehicle. Bus transportation is not offered by the school except for off campus trips, which only occur a couple of times per year.

1.1 About Waldorf – The EWS provides an integrated Waldorf curriculum and environment which encourages and promotes independent thinking and social responsibility as well as academic and artistic excellence. The EWS is affiliated with the international association of Waldorf Schools, one of the largest school movements in the world. Waldorf education, founded by Rudolf Steiner in Germany in 1919, is dedicated to the effort to guide the spirit in the human being to discover the spirit in the universe.

1.2 Purpose and Intent – The EWS is requesting a Special Use Permit for an updated campus masterplan that will provide a road map by which the school can plan for the location of new buildings and support facilities, phased over a period of 15 years, and would support an increase in student population to approximately 350 students and 55 staff by 2030. All proposed improvements would be located on the existing 54 acre school campus. No increase in campus acreage is proposed.

The school's proposed master plan includes:

- a 1,776 sf building addition that would connect the existing east and west wings of the lower school building **(P1 on Sheet C-4)**
- a 1,650 sf 8th Grade Classroom Bldg **(P2 on Sheet C-4)**
- renovation of an existing 1,573 sf for Eurhythm (dance) **(P2-A on Sheet C-4)**
- three new building additions to the high school campus totaling approximately 6,644 sf **(P5-A,B,C,D on Sheet C-4)**
- a 5,220 sf addition to the Early Childhood Center **(P4 on Sheet C-4)**
- a 13,942 sf Gymnasium **(P7 on Sheet C-4)**
- a 12,593 sf Auditorium **(P8 on Sheet C-4)**
- a 1,364 sf renovation / addition to existing Shop Bldg for relocation of school administration **(P3 on Sheet C-4)**
- an 11,800 sf Arts Center **(P6 on Sheet C-4)**
- internal roadways, surface parking and pedestrian improvements
- potable water, septic system and stormwater infrastructure improvements as required to support the expanding facilities on campus

1.3 Parcel Identification Numbers and Zoning for Campus Parcels

PIN	ZONING	PIN	ZONING
9871 64 7391	PDHR1, RB	9871 64 5632	RB
9871 65 8140	RB	9871 74 3098	RB
9871 72 1935	RB		

1.4 Current Land Uses – the current campus is zoned RB (Rural Buffer) and PDHR1 (Planned Development) and the land use is Private School. Adjacent properties are zoned RB and PDHR1 and the current land uses are single family residential.

1.5 Permitted Uses – The existing school campus was permitted under a de-facto Class B Special Use Permit used for permitting schools before 2002. The existing daycare / kindergarten building was permitted in 2006. One of the goals of the Class A Special Use Permit that Emerson Waldorf is requesting is to fold previous Special Use Permits into the new Permit so that future phases of school expansion can be permitted under the same Special Use Permit and approved via staff level approval of site plans conforming to the approved Master Plan.

1.6 Compliance with Future Land Uses – This proposal conforms to the many goals and future visions for this area remaining in the “RURAL BUFFER” as set forth by Orange County’s Comprehensive Plan. Through the school’s managed growth and emphasis on respect for the environment and for their neighbors, the EWS will promote conformity to the County’s vision for this area of the county.

1.7 Operation Schedule – The school operates 5 days a week on a traditional September to May school schedule. Summer camps are offered from mid-June through July from 8:30-3:30 daily M-F. Students are transported to and from campus by the individual families. No bus service is provided.

2. FINDINGS OF FACT (PERFORMANCE STANDARDS)

As this project requires the review and approval of a Class A Special Use Permit, there are three general standards contained within Section 5.3.2(A)(2) of the Unified Development Ordinance that the County must affirm in approving the project. Within this portion of the narrative, the applicant would like to offer a summary of the evidence we intend to produce, justifying an affirmative finding.

(1) The Use will maintain and promote the public, health, safety and general welfare.

Campus improvements associated with implementation of the various elements proposed in the master plan include:

Internal traffic pattern adjustments and parking improvements, based on NCDOT MTSA Traffic Management Unit recommendations will provide the ability to stack carpool traffic on campus roads during daily student drop off and pickup times. These improvements will also better separate on-campus automobile circulation from pedestrian circulation.

Fire and EMS rescue access to existing and proposed buildings on campus will be better articulated to improve response times and reduce conflict with on-campus traffic. New buildings will be sprinklered

where required by Building Code. Nearby fire points (ponds) will continue to provide adequate water for fire-fighting requirements associated with a larger campus.

Stormwater collection and treatment for improved areas of campus will meet current State requirements which are above those that were in place during the initial development. Low impact stormwater collection in disconnected systems will be promoted to allow more infiltration of stormwater run-off into the on-site soils.

(2) The Use will maintain or enhance the value of contiguous property (unless the Use is a public necessity, in which case the Use need not maintain or enhance the value of contiguous property).

Future campus expansion as part of this master plan is planned to continue to develop in a low impact, pedestrian focused manner as all previous development on the campus. The goals of promoting walkability and on campus student safety, as well as minimizing the impact on the wooded, residential setting of the existing campus and on the surrounding residential areas will remain the mission and the development trend of the EWS. Parking and internal traffic improvements will reduce potential conflict and congestion on surrounding roads. Due to the fact that the existing property use is not changing, it is highly anticipated that the values of contiguous properties will be maintained as their current values are based on the fact that a school is already in the proximity. An outside expert has been obtained to provide additional material and expert testimony on this issue.

(3) The location and character of the Use, if developed according to the plan submitted, will be in harmony with the area in which it is to be located and the Use is in compliance with the plan for the physical development of the County as embodied in these regulations or in the Comprehensive Plan, or portion thereof, adopted by the Board of County Commissioners.

The master plan improvements proposed to the campus are intended to be constructed in such a manner as to minimize visual, acoustic and aesthetic impacts on the surrounding area and to keep the expanding campus in harmony with the surrounding residential properties that it now strives to achieve. Again, the existing use of the property as a school minimizes, if not omits any potential concerns of the proposed use violating the harmony of the existing area.

3. SPECIFIC STANDARDS OF EVALUATION:

3.1.1 Harmonious and Efficient Organization

This master plan has been strategically prepared, to the greatest extent possible to promote harmonious and efficient organization in relation to existing topography, existing vegetation, the character of adjoining property, the type and size of existing, and proposed building(s) by incorporating like sized structures in a sprawling type organization so as to minimize disturbance to the natural environment. This allows EWS to preserve the topo and natural portions of the site to the greatest extent possible.

3.1.2 Preservation of Natural State

Based on a review of the various school parcels, Rich Shaw, the Orange County Land Conservation Manager, states; "There is no significant natural heritage area known to exist on or adjacent to the subject property. However, there is a stream that flows through the southernmost parcel (PIN X-1935)

that should be protected from any future development activities. The stream appears (from aerial photography) to have forested buffer on both sides and it would be important to maintain (and possibly enhance) those buffers to protect water quality and stream habitats. The northernmost Waldorf properties are in fairly close proximity to a forested riparian corridor along New Hope Creek, which is located about 0.4 mile north of the Waldorf parcel on Galilean Trail. That section of New Hope Creek is identified as a significant wildlife corridor that links other protected open space properties. Maintaining the forest cover on the northernmost Waldorf parcels (as much as feasible) will contribute to the current relatively forested and open space character of that neighborhood, which also provides habitat to plants and wildlife that utilize the New Hope Creek corridor”.

Future site plans submitted subsequent to the Master plan will preserve desirable vegetation and other unique natural features in their natural state when practical and as required by the Orange County Unified Development Ordinance. A Biological Inventory has been conducted to better assess the types of environmentally sensitive areas existing on-site and there are no findings or major indications that a development in accordance with the Master Plan would adversely impact significant wildlife. An Environmental Protection Plan will be provided with each future site plan for the development and shall include the locations of all existing trees 12” dbh. and larger.

3.1.3 Cultural and Archeological Resources

Based on a review of the various school parcels, Peter Sandbeck, the Orange County Cultural Resources Coordinator, states; “There are no previously identified historic properties or resources located on the school parcels. There is a recorded historic farmstead, formally known as the Blackwood Farm (OR0432) but now better known as Spence’s Farm, located immediately south of the subject property along Millhouse Road. The Blackwood Farm (PIN 9871634523) property consists of an early house (built c. 1825-50), plus several 19th century log and stone outbuildings, and thus represents a noteworthy agricultural complex from that period. Therefore, any proposed development activity should take into consideration its impact on this adjacent historic resource. Given the proximity of the school parcels to the early farmstead, care should be taken to locate, identify and protect any potential human burial sites or cemeteries. The current Cemetery Census map does not show any identified burials on the school parcels”.

Again, the individual site plans will take into consideration any potential cultural and archeological resources affected by the respective development and accommodate the preservation of these areas as required.

3.1.4 Enhancement of Residential Privacy – Future site plans developed under this master plan will provide reasonable visual, lighting and acoustic privacy for all adjacent residential properties and public rights of way. Given the required 100’ Vegetated buffer around much of the property, the Residential Privacy will be inherent and consistent with existing use/property as a school.

3.1.5 Emergency Access - Revised plans to address the MSTA comments have created additional drive widths, parking areas, etc. by which an emergency vehicles can now improve their response time to emergency conditions at the EWS. During the individual site plan approval, other site features shall be arranged to permit practical emergency vehicle access to all sides of existing and proposed buildings.

3.1.6 Pedestrian Circulation and Access to Public Ways - A pedestrian circulation system is proposed which is direct, efficient, and pleasant. All buildings and parking areas on the campus are connected by a sidewalk system. Pedestrian sidewalks will be hard surfaces and ADA compliant where required. Pedestrian sidewalks are largely separated from vehicular traffic by wooded or landscaped areas. Landscaping is integrated into the pedestrian system to provide shade (trees) and aesthetic beauty, and to reinforce separation from motorized vehicles. Crosswalks are strategically located to safely cross pedestrians at primary building access points and at internal intersections. Future crosswalks will be at walk level, with no ramps or step downs. Pedestrian-way lighting may be provided by post lights as well as with bollard lights in high use areas.

3.1.7 External and Internal Campus Traffic Circulation – A Traffic Impact Analysis (TIA) has been performed by SEPI Engineering & Construction Inc. as part of this Special Use Permit request. The TIA has been reviewed by the NCDOT District Engineer and by the NCDOT Municipal and School Transportation Assistance (MSTA) Traffic Management Unit. The recommendations of those reviews by NCDOT are included in the proposed Master plan's Traffic Plan (TP-1). Note: all students are transported to and from campus by private vehicle. Parents of students in grades 1 through 3 are required to park and walk their children into their classrooms. Older students are generally dropped off /picked-up at designated spots shown on the TP-1. Some high school students drive to school and park in designated areas shown on the TP-1 and others are dropped off. Bus transportation is not offered by the school.

3.1.8 Proposed Schedule for Campus Activities Outside of Regular School Operating Hours -

- **Arts Center** - Besides classroom and academic space, this building will house a performance space and theater suitable for evening events. These events would occur once or twice a month. Smaller evening gatherings (committees, etc.) would use the facility on a weekly basis.
- **Eurythmy** - Occasional (monthly) and small (50 person) evening performances.
- **Auditorium** - The auditorium would host larger performances and events perhaps once or twice monthly. The facility would also be available for occasional (once or twice a month) rental as availability dictates.
- **Gym** - The gym will be used primarily for after-school athletics practice during the weekdays. Once or twice a week the gym will be used for games with an occasional night time game as well. Night-time usage would end by 9 pm. Occasional (once or twice a month) daytime weekend usage will occur as well. The gym will also be used for PE class on days when the weather does not allow for outdoor class. Occasional (once or twice a month) the facility may be rented out for basketball or other activities. In all cases night time usage would end at 9 pm.
- **Playing Field** - The playing field is in use 3-5 afternoons per week in the Fall and Spring for sports practice. There are occasional pick-up soccer or ultimate frisbee games on the weekends and one or two weekend ultimate frisbee tournaments in the Spring. The field will not be lighted. The field is used during the school day for PE class.
- **EWS Biodynamic Garden** (South of Playing Field) - This property is currently used for the farming and gardening curriculum. Activities here include daily harvesting, weeding, gardening and similar activities. Classes are also taught here during the school day and on occasional weekend days.

- **Offsite Parking is neither needed nor anticipated for future parking needs at activities beyond normal school hours due to parking revisions around the existing facility and proposed conditions. All required parking for these events is expected to remain on-site. Parking Counts/ Expectations are:**

Auditorium 300 seats - 75 spaces vicinity of building.

Arts Center 150 seats - 38 spaces vicinity of building.

Concurrent events are not anticipated.

3.1.9 Sanitary Sewer / Septic System - NCDENR Division of Water Quality has issued and periodically updated Permit No. WQ0004508 for the continued operation of a 3,750 gpd wastewater collection, treatment and 77,850 sf surface irrigation disposal site on campus across New Jericho Road. The wastewater system includes individual septic tanks at each existing building. As new buildings are added in future phases of the master plan, the existing permit shall be updated to include additional waste flows. Additional septic field capacity may be required as the capacity of the existing surface irrigation disposal site is reached. The existing permit is in effect until June 30, 2015 and must be renewed by the school.

As each future building in the master plan undergoes construction plan review, NCDENR will review the adequacy of the existing septic system to serve that building and will revise/update the permit on file with NCDENR accordingly to include the sewer service load that the building will add to the existing septic system.

3.1.10 Potable Water - NCDENR Division of Water Quality issued and has periodically updated Water System Permit No. NC0368470 for the continued operation of a 23 gallon per minute (16,500 gpd) well on the west side of the Emerson Waldorf campus. This well replaced 2 smaller capacity wells on campus and so is labeled "Well No. 3" on the Water System Permit. In addition to the well, constructed in 2001, the permit lists a 3000 gallon hydro-pneumatic tank, a hypochlorite feed system for lead and copper control, a sodium hydroxide feed for PH control, 1105 lf of 2" waterline, 178 lf of 1" waterline and 139 lf of ¾" waterline to serve the needs of the existing buildings on campus.

The Permit references an engineer's report from Diehl and Phillips Engineers, Cary, NC, dated July 5, 2001 that contains the following water use projections (based on 10 gpd per students /staff - without showers or cafeteria):

5 yr – 260 students / staff growth (2006) – 2600 gpd requirement

10 yr – 300 students/ staff growth (2011) – 3000 gpd requirement

15 yr – 300 students / staff growth (2016) – 3000 gpd requirement

20 yr – 300 students / staff growth (2021) – 3000 gpd requirement

The school's current master plan for growth to 2030 includes 350 students and 50 staff for a potable water requirement of 4000 gpd – well below the current well capacity of 16,500 gpd.

As each future building in the master plan undergoes construction plan review, NCDENR will review the adequacy of the existing well system to serve that building and will revise/update the permit on file with

NCDENR accordingly to include the water service load that the building will add to the existing well system.

3.1.11 Fire Protection - per a meeting with Jason Shepherd, the Orange County Fire Marshall, and follow-up correspondence with Chief Mike Tapp of the New Hope Fire Department, there is currently appropriate water supplies via utilizing nearby water points at ponds located on Blackwood Mountain Road and at Cornerstone Drive to accommodate fire response requirements for the existing school campus. As the school develops, there is no guarantee that additional supply and capacity needs will not require supplemental water supply from a municipal sources. This requirement and subsequent design of utilities (if necessary) will be provided at the individual site plan approval process.

3.1.12 Police/EMS – The school is currently served by, and will continue to be served by, the Orange County Sheriff's Department and Orange County EMS.

3.1.13 Solid Waste - Existing collection of garbage and recyclables generated by the school is currently handled by private contractor. The school composts organic wastes where practicable. Waste areas have been shown on the revised plans.

3.1.14 Storm Water Control – It is anticipated that the respective review departments associated with Stormwater Control will request site specific treatment options, locations, that will be tracked on an overall map so as to ensure that all disturbances and impervious areas are adequately tracked and treated. Protective measures will ensure that collection and treatment of storm water runoff created or altered by future phases will not adversely affect the campus or neighboring properties or public storm drainage systems. Provisions will be made for construction of stormwater collection measures (SCM) including low impact design, grading, gutters, ditches, piping and the use of disconnected impervious surfaces to maximize stormwater infiltration on site as well as direct storm water to on-site SCMs. Surface water on all paved areas will be collected at intervals that do not obstruct vehicular or pedestrian traffic.

3.1.15 Erosion Control - It is understood that land clearing and disturbance in excess of 20,000 sf associated with future buildings or site improvements cannot commence without a formal erosion and sedimentation control plan reviewed and approved by the County. All future construction will be thoughtfully planned, whether subject to County review or not, so as to preserve existing vegetation and land forms to the greatest extent possible.

3.1.16 Exterior Lighting – Due to the specificity required to produce lighting plans, the applicant would like to commit to at a minimum meeting the Orange County UDO standards for such lighting. The applicant would respectfully request that the county staff assess the need for lighting on a site by site basis upon the individual submittals of all proposed future buildings. Lighting will be pedestrian scale along walkways as previously noted. Fixture design will be complementary to building architecture and will feature sustainable finishes to the greatest extent possible. The school does not anticipate providing ball field lighting for the existing play field across Millhouse Road from the main campus.

3.1.17 Protection of Property Values - Elements of future phases of construction shall be arranged to have minimum negative impact on values of adjoining property and other on-site uses. The organization of campus buildings and the orientation of the campus on site are designed to minimize unnecessary disturbance of natural areas, concentrate high activity areas into the center of the property, and maximize natural buffers adjacent to surrounding properties. This proposed master plan is not anticipated to negatively impact the adjacent lot values since the actual “use” of the property will not be changing.

3.1.18 Neighborhood Meetings

A neighborhood meeting was held on January 6, 2015 at the Orange County Planning Department. All neighbors within 500 l.f. of the school property were notified of the meeting by certified mail. A subsequent meeting was held on April 10, 2015 @ 12:00 p.m. at the same location. All notification standards were provided as required by Orange County’s UDO.

4. CONCLUSION

Development and operation of the EWS Campus will be conducted in strict accordance with all applicable requirements of the Orange County Zoning Ordinance and applicable Master Plan Conditions of Approval as amended for the school campus. This Special Use Permit application and associated plans are compiled and submitted in order to convey the owner’s intent. Timely review and processing of the information is appreciated and further input and guidance from staff and the respective boards is welcomed.

EXHIBIT – A

**BIOLOGICAL
INVENTORY**

EXHIBIT – B

**TREE SURVEY
INFORMATION**



SUMMIT

DESIGN AND ENGINEERING SERVICES

919.732.3883 SUMMIT-ENGINEER.COM

504 Meadowland Drive, Hillsborough, NC 27278

April 15, 2015

Pat Mallett, Planner II
Orange County Planning & Inspections Dept.
131 W. Margaret Lane
Suite 201
PO Box 8181
Hillsborough, NC 27278

Re: Emerson Waldorf School located at 6211 Jericho Road, Chapel Hill, NC 27514
(Orange County PINs: 9871-64-7391; 9871-64-5632; 9871-65-8140; 9871-74-3098;
and 9871-72-1935)

Dear Mr. Mallett:

On behalf of our client and the applicant, Summit Design and Engineering Services is providing to you responses to all applicable comments dated January 13, 2015 following our submittal of plans to the Orange County Planning Department on December 19, 2014.

Summit Design and Engineering Services will be more than happy to address and provide any clarification needed on the attached responses and looks forward to discussing these matters with you further.

Sincerely,

SUMMIT DESIGN AND ENGINEERING SERVICES

Chad E. Abbott, PE
Manager, Land Development Dept.

Responses to all comments are in Bold Red Italics.

I. EXISTING BUILDING/SITE INFORMATION (C2 and C-3):

As required under Section 5.8.4 of the Orange County Unified Development Ordinance (UDO), you are required to provide a breakdown of existing conditions on the property, including the number and square footage of existing buildings. On Sheet C-2 you provide notes on 'Building Schedule' that provides what appears to staff to be a breakdown of existing buildings and square footages. If this is correct please rename the block appropriately to indicate you are providing a breakdown of existing building(s), their uses, and square footages.

Response: The "Building Schedule" has been renamed "Existing Building Information" and total square footage and building counts have been added.

We also request the following information as required by Section 5.8.4 of the UDO:

1. Provide a detailed breakdown on Sheet C-2 in the total number of employees/staff laid out as follows:
 - a. Students per grade level,
 - b. Teachers,
 - c. Admin workers,
 - d. Grounds/maintenance,
 - e. Other Emerson Waldorf employees, including part-time, and
 - f. Daycare employees as well as students.

Please note: You will need to differentiate between the daycare staff and Emerson Waldorf staff as there are different requirements associated with each entity (i.e. parking, special use permit standards, and state requirements etc.).

Please provide a note on the site plan denoting the daycare operation is a permitted use of property subject to a previously issued Class B Special Use Permit by the County.

The plan will need to note/label the 'daycare' area including: classroom(s), outdoor play area (and required sq. ft.), parking, etc. You also need to keep in mind nothing associated with this plan can reduce required play area (i.e. 75 sq. ft. outdoor play area per child) for the previously approved daycare use.

Response: "Existing Student & Staff Information" table has been added with the above information and notes as requested. Modifications to play area are not proposed on the masterplan. Should additions to students be made we request that the school provide for evidence of required area at the time of the Site Plan Approval.

2. Under the parking information provide additional detail on the size and dimensions of the parking spaces as required under Section 5.8.4 (A) (1) (a) of the UDO You will also to identify the uses of said spaces as follows:
 - a. Number and location of visitor parking spaces by category (e.g. elementary school drop off);
 - b. Number and location of teacher/employee parking spaces;
 - c. Number and location of student parking; and
 - d. Number and location of daycare parking spaces.

Response: Parking Schedule on sheet C-4 has been updated as requested and additional note added regarding parking space size/dimensions.

3. Please provide a note on Sheet C-2 under the parking schedule indicating if there are busses and/or vans serving the school or not. If there are, you will need to identify and provide detail on the number of bus van parking spaces on-site.

Response: A note has been added stating: "Note: The school does not provide bus transportation to or from the school. The school currently has 1 bus and 1 van that are used for designated trips only and not for daily pick up/drop off."

4. Please note the location of all existing student drop-off and pick-up points on Sheet C-2 as this is the current conditions sheet.

Response: Existing student drop-off and pickup locations have been added as requested. Please note there are no pick up/drop off points for Early Childhood and Lower School students as their parents are required to park and walk them to their classes.

II. BIOLOGICAL INVENTORY:

Per Section 5.8.4 (A) (1) (f) of the UDO you are required to provide a biological inventory for the properties subject to the permit application. This inventory has to be prepared in accordance with the standards detailed in Section 5.17.6 (A) (2) (b) of the UDO and is required to identify the following:

1. Habitat diversity,
2. Species diversity,
3. Species of special concern such as those designated as threatened or endangered,
4. Last known sighting,
5. Candidate species likely to be present which may warrant protection,
6. Specimen trees outstanding in size and/or species, and
7. The status and source of the information compiled in the inventory.

Response: See the Biological Inventory prepared by the Catena Group, dated March 2015, attached as Exhibit A. Also, please find the Forest Stewardship Plan, dated June 2014, attached as Exhibit B.

The biological inventory is also required to be accompanied by an analysis describing the following:

- Habitat integrity;
- Relationships between habitats and to ecological communities offsite;
- Any existing threats to flora and fauna; and
- Potential for habitat enhancement.

This inventory is required as part of the SUP application submittal. While Sheets C-2, C-3 and the Narrative cover some of these items, it does not address all of the required line items.

Response: See the Biological Inventory prepared by the Catena Group, dated March 2015, attached as Exhibit A. Also, please find the Forest Stewardship Plan, dated June 2014, attached as Exhibit B.

Please ensure all of the above are included or addressed with your next revision. Please also remove the old tree survey shown on sheets C-2 and C-3, which is now outdated. Provide an updated survey and tree stand descriptions to meet the above.

Response: Old trees shown on C-2 and C-3 have been removed as requested. See attached Forest Stewardship Plan (Exhibit B) for survey/tree stand descriptions and the Biological Inventory (Exhibit A) for additional detail on habitats.

Please also provide a Resource Management Plan as defined in Article 10 of the UDO and as required under Section 5.8.4 of the UDO.

Response: Please see Sheet C-6 “Landscape, Tree Preservation & Natural Resource Plan”

III. **LANDSCAPING:**

1. Provide a Landscape and Tree Preservation Plan as required in UDO Section 5.8.4 A (b) on a new sheet.

The Master Site Plan will need to illustrate and label required zoning buffers and building setbacks as well as all identified tree protection areas.

The plan should reference how the landscaping requirements are intended to be met. The current plan only implies tree plantings to meet the off-street parking areas.

Please note we are not requiring the full blown landscaping plan as part of this submittal but we are requiring a detailed description/illustration of required buffers and a typical planned buffer planting scheme.

We will also require you to identify and label all tree protection areas, limits of disturbance, etc.

Response: Please see Sheet C-6 “Landscape, Tree Preservation & Natural Resource Plan”. -Due to the Master Plan component of this SUP, the applicant requests that the existing buffers noted on the plans serve as all Primary Tree Protection Areas. Since the existing site is predominately wooded, it is the applicant’s intention to provide for the level of detail needed for secondary tree protection areas on a site by site basis when submitting plans to Orange County Planning Department.

-Buffers & Setbacks are now shown. Should additional specific secondary tree protection areas be required to be committed to at this time, the applicant would request the County place conditions on the SUP to preserve all other vegetation until additional plans are

generated for each building noting the actual disturbance required for construction as well as disturbances needed for stormwater treatment.

2. Please add the following note(s) on this new landscaping sheet:

- a. There needs to be a general note added to this aforementioned new sheet indicating all development requirements associated with Section 6.8 shall be complied with,

Response: Note has been added as requested.

- b. Provide a note indicating that existing foliage will be protected in accordance with the provisions of Section 6.8, including the following specific references:

1. Per Section 6.8.4 (A) (1) of the UDO all existing trees located within the Primary Tree Protection Area as defined within the UDO shall be protected. Please note we are asking for your to identify and label all tree protection areas,

Response: Per previous response, if this level of detail is required at this time we would propose to provide Primary Tree Protection Areas as shown and allow for Secondary Tree Protection Areas to be identified at the time of the Site Plan Approval.

2. Per Section 6.8.4 (B) (1) add a note reading as follows:

Existing trees, regardless of size, shall not be cut or otherwise damaged or destroyed within a primary tree protection area except as shown on an approved Landscape and Tree Preservation Plan, plot plan, or site plan

Response: Primary Tree Protection Areas have been shown to allow for exceptions needed.

3. Section 6.8.4 (B) (3) add a note reading as follows:

During construction activities, adequate protective measures shall be provided to minimize damage to existing trees and other vegetation.

Response: Note has been added as requested.

4. Section 6.8.4 (B) (7) add a note reading as follows:

Signs shall be posted identifying the tree protection areas and shall state the area is not to be disturbed. Such protective devices shall effectively protect the critical root zones, trunks, and tops of trees to be retained and shall be maintained until all work has been completed.

Response: Note has been added as requested.

5. Please provide the following note:

Native, non-invasive, and drought tolerant species shall be used where additional landscape areas are proposed.

Response: Note has been added as requested.

6. Add a note indicating that all site plans submitted to the County proposing development of buildings, consistent with this Master Plan, shall contain all required documentation demonstrating compliance with the specific landscaping and buffer regulations contained within Section 6.8 of the UDO.

Response: Note has been added as requested.

IV. SITE ACCESS:

1. Please evaluate the proposed ingress/egress for vehicular and pedestrian movements at New Jericho Road and on-site. Your evaluation should address staff concerns that:
- a. Left turn delays may create stacking onto the public right-of-way;
Response: Per the Traffic Engineer, Jeff Hochanadel, "All movements at the intersection of New Jericho Road and Site Driveway 3 are projected to operate at a LOS A during the 2030 build-out AM and PM hours. With all queue stacking on-site, no significant queuing is projected along New Jericho Road for vehicles wishing to turn left into the site." Also, "all movements at the intersection of New Jericho Road / Millhouse Road are projected to operate at a LOS C or better during the 2030 build-out AM and PM peak hours. The longest queue projected to be experienced is along the southbound approach of New Jericho at Millhouse Road (59 feet, or 3 vehicles, during the AM peak hour)."
 - b. The drop offs (aka "kiss and go") lane may create internal delays;
Response: Drop off areas and lanes have been revised. See Sheet TP-1.
 - c. The pedestrian crossing at Mill House Road to the athletic field may be unsafe and improperly located given the existing roadway and property topography;
Response: This issue is being evaluated by NCDOT. The applicant is open to and willing to comply with any NCDOT mandates regarding this crossing.
 - d. NC DOT and County staff are still reviewing the possible need for external traffic improvements (i.e. a turn land on Millhouse Road and/or New Jericho Road for example) as we continue to review the submitted Traffic Impact Assessment.
Response: Noted.

2. Illustrate the appropriate sight distance triangles for all existing and proposed driveways and the proposed pedestrian crossing.
Response: Site distance triangles have been added as requested on the entrances at Public Rights of Way.
3. Please show location of internal directional signage providing information to motorists and pedestrians on the location of parking, drop off areas, school buildings, facilities, etc.
Response: Please see Sheet TP-1 for proposed directional signage.
4. Indicate AM/PM peak hour trip generation information on the cover sheet.
Response: Please see Sheet TP-1 for trip generation information per MSTA.
5. Illustrate the drop-off and pick up areas with the relative amount of car storage.
Response: Please see Sheet TP-1 for drop-off and pick up areas and car storage.
6. Indicate on-site and off-site (e.g. NCDOT) signage that will be proposed to avoid confusion and delays during student pick up drop off periods.
Response: Please see Sheet TP-1 for proposed on-site directional signage. Off-site signage will be installed as needed per NCDOT direction.
7. Illustrate internal pedestrian walks ways and off-street parking cross walks (e.g. the crossing from the parking to the Gazebo/coffee stand student parent collection area).
Response: Please see Sheet TP-1 for proposed cross walks. Please note that coffee stand has been eliminated to help improve traffic flow on-site.
8. Illustrate parent off-street parking areas (e.g. areas where parents park and escort children to Gazebo).
Response: Please see Sheet TP-1 for proposed parking areas.

V. SOLID WASTE:

1. Request for master trash and recycling plan illustrating areas for solid waste pick and/or disposal areas. Note, this may be contracted privately but the areas need to be defined to ensure no site conflicts (e.g. utility lines and parking).
Response: Solid waste and recycling pickup is located just uphill from the existing lower school building next to the access road leading behind the building. Pickup is always done outside of school hours.

VI. PROGRAMMING:

1. Outline on the Master Plan (and in the narrative) activities beyond normal school operations that may occur (e.g. internal and/or external programs anticipated in the Gym, Eurhythmy, Auditorium and Arts Center, Ball field). This should demonstrate intensity, frequency, type of use and special provisions.

For example, the Auditorium is envisioned to have XX specials events each year consisting of YY activities with ZZ participants.

Response: Please see the narrative for requested information.

2. Illustrate number of seats and/or other performance standards used to meet off-site parking requirements (e.g. Auditorium: 200 seats. 50 spaces provided at rate of 1 parking space per 4 seats).

Response: Please see the narrative for requested information.

VII. OFF-STREET LIGHTING:

1. Provide a Photometric Plan as required in UDO Section 6.11. The Plans should lighting for all outdoor areas (e.g. balls fields, trails and off street parking areas).

Response: Due to the specificity required to produce lighting plans, the applicant would like to commit to at a minimum meeting the Orange County UDO standards for such lighting. The applicant would respectfully request that the county staff assess the need for lighting on a site by site basis upon the individual submittals of all proposed future buildings. Lighting will be pedestrian scale along walkways. Fixture design will be complementary to building architecture and will feature sustainable finishes to the greatest extent possible. The school does not anticipate providing ball field lighting for the existing play field across Millhouse Road from the main campus.

VIII. EMERGENCY SERVICES:

1. Please address Jason Shepherd's comment (via e-mail on January 5, 2015) regarding the narrative Section 3.1.10 Fire Protection.

"My recollection of my meeting did not indicate me saying that there are adequate water supplies for the property for future expansion. We currently have to my knowledge, appropriate water supply, but I stated that depending on future growth, future code changes and design, there is a possibility that a municipal water supply may be needed for fire protection of designed buildings. I cannot rule out design and code requirements."

Response: Per a meeting with Jason Shepherd, the Orange County Fire Marshall, and follow-up correspondence with Chief Mike Tapp of the New Hope Fire Department, there is currently appropriate water supplies via utilizing nearby water points at ponds located on Blackwood Mountain Road and at Cornerstone Drive to accommodate fire response requirements for the existing school campus. As the school develops, there is no guarantee that additional supply and capacity needs will not require supplemental water supply from a municipal sources. This requirement and subsequent design of utilities (if necessary) will be provided at the individual site plan approval process.

Biological Inventory

Emerson Waldorf School
Orange County, North Carolina



Prepared for:

Emerson Waldorf School
6211 Jericho Road
Chapel Hill, NC 27514

Prepared by:



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March 2015

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1.0 INTRODUCTION

The Catena Group (Catena) was contracted by Charles Viles, Chair of the Emerson Waldorf School (EWS) Campus Planning Committee, to conduct a biological inventory as part of a Special Use Permit (SUP) application for proposed new development at the EWS campus located at 6211 Jericho Road, Chapel Hill, North Carolina (Figure 1). The study site is comprised of five parcels (PINs 987-172-1935, 987-165-8140, 987-164-5632, 987-164-7391, and 987-174-3098), totaling approximately 49 acres.

The purpose of this investigation is to conduct a basic flora and fauna inventory, with an emphasis on protected species and rare or significant natural habitats. This inventory provides a qualitative reference, or baseline, on general abundance, distribution, and habitat association for flora and fauna species occurring on the property.

2.0 ORANGE COUNTY UNIFIED DEVELOPMENT ORDINANCE (UDO)

As outlined in the January 13, 2015, Orange County Planning Department review of the EWS Master Plan and Class A Special Use Permit Materials, the follow items were requested:

“Per Section 5.8.4 (A (1) (f) of the UDO you are required to provide a biological inventory for the properties subject to the permit application. This inventory has to be prepared in accordance with the standards detailed in Section 5.17.6 (A) (2) (b) of the UDO and is required to identify the following:

1. Habitat diversity,
2. Species diversity,
3. Species of special concern such as those designated as threatened or endangered,
4. Last known sighting,
5. Candidate species likely to be present which may warrant protection,
6. Specimen trees outstanding in size and/or species, and
7. The status and source of the information compiled in the inventory.

The biological inventory is also required to be accompanied by an analysis describing the following:

1. Habitat integrity;
2. Relationships between habitats and to ecological communities offsite;
3. Any existing threats to flora and fauna; and
4. Potential for habitat enhancement.”

3.0 METHODOLOGY

3.1. *Pre-Field Investigation Database Search*

Prior to conducting field surveys, Catena reviewed any available survey information for the area. The North Carolina Natural Heritage Program (NCNHP) systematic inventory (database) of rare

plant and animal species, the North Carolina Wildlife Resources Commission (NCWRC), and the US Fish and Wildlife Service (USFWS) list of threatened and endangered species for Orange County were consulted. Appendix A contains a list of threatened, endangered and rare species known in Orange County.

3.2. Field Investigation

Catena conducted the field survey on March 11, 2015, under warm and partly sunny conditions. Floral (plant) communities, rare species habitat, and significant fauna (wildlife) observations were identified and notable features were surveyed using a hand-held GPS unit (sub-meter accuracy).

3.2.1. Floral Communities

Plant surveys were conducted during the field investigation. Natural communities follow those described by Michael Schafale in the *Guide to the Natural Communities of North Carolina, Fourth Approximation* (2012). A natural community is defined as, "A distinct and reoccurring assemblage of populations of plants, animals, bacteria, and fungi naturally associated with each other and their physical environment." (Schafale 2012). Plant community types significantly altered by human disturbance typically do not fall into a natural classification, and are thus categorized in general terms (i.e. shrub/scrub, maintained/disturbed, etc.). Specimen trees or other significant floral features encountered were noted and mapped.

3.2.2. Faunal Communities

Visual faunal surveys were conducted during the field investigation. This cursory effort identified the presence of habitats suitable for protected and rare species, and also included field identification of species encountered (visual observation of species, scat and/or tracks) to the highest taxonomic level as practicable in the allocated timeframe. Sampling results (faunal community) will be considered representative of the community/habitat type sampled. Important faunal locations as observed during the field investigation were noted and mapped.

4.0 RESULTS

This section describes species composition and relative proportions of both natural and disturbed vegetative communities within the project area. Dominant species within each community are noted with a "D". Faunal species typical of the plant community are provided and species observed during the field investigation are noted with an "*". Plant community mapping is displayed on Figure 2. Scientific names are included in Appendix B. Photographs are included in Appendix C.

4.1. *Floral Communities and Associated Fauna*

Four communities were identified within the study area: Dry-Mesic Oak-Hickory Forest-Piedmont Subtype, Piedmont Headwater Stream Forest-Typic Subtype, Piedmont Semipermanent Impoundment-Shrub Subtype, Mixed Pine Forest, and Maintained/Disturbed (Figure 2). A description of each community type and the fauna associated with it follows.

4.1.1. *Dry-Mesic Oak-Hickory Forest-Piedmont Subtype (37.7% coverage)*

The Dry-Mesic Oak-Hickory Forest community is found on the parcels located north of Millhouse Road and west of New Jericho Road (Figure 2). The parcel to the east of New Jericho Road is also used as the septic spray field for the EWS campus. Access was restricted to this area by NC Department of Environment and Natural Resources regulations (NCDENR). Based on surveys traversing the boundary of this parcel, it was included in this community. This community is typically dominated by various oak and hickory species along with varying amounts of pine, maple, and poplar. Soils are typically acidic and support acid tolerant species. Canopy species observed include American beech, black oak^D, loblolly pine^D, Eastern red-cedar, pignut hickory, post oak, red maple, scarlet oak, shortleaf pine, slippery elm, tulip poplar, Virginia pine^D, white ash, white oak^D, Southern red oak, sweetgum, and sycamore. Subcanopy/shrub species include American beech, American holly, black cherry, Blue Ridge blueberry, Callery pear, common persimmon, downy arrow-wood, eastern red-cedar, flowering dogwood, hillside blueberry, painted buckeye, possumhaw, red maple, slippery elm, sourwood, southern blackhaw, southern red oak, sugar maple, tulip poplar, virginia pine, white oak, sweetgum, sycamore, and winged elm. This layer also includes the invasive autumn olive, Chinese privet, and nandina. Herbaceous species observed in this community include Christmas fern, crane-fly orchid, poison ivy, rattlesnake plantain, rattlesnake weed, southern grape fern, and striped wintergreen. The invasive Japanese honeysuckle vine is also present in this community.

Faunal species expected to occur in the community are white-tailed deer*, raccoon, grey fox, and the eastern gray squirrel*. Bird species typical for this community type include yellow bellied sapsucker*, red bellied woodpecker*, downy woodpecker*, hairy woodpecker*, northern flicker*, Carolina chickadee*, northern cardinal, tufted titmouse*, yellow-rumped warbler*, northern mockingbird, and American robin*. Predator and scavenger birds typically include the red-shouldered hawks* and turkey and black vultures, respectively. Marbled salamander, redback salamander, red-spotted newt, spotted salamander, white-spotted slimy salamander, eastern box turtle, eastern fence lizard, eastern garter snake, racer, rat snake, ringneck snake, and worm snake are also expected to occur in the community.

While conducting the field survey, Keith Bartholomew of EWS, indicated the location of a ephemeral seep located near the western edge of this community. During the field assessment the seep was dry. Seeps offer unique habitat for many faunal species including frogs and salamanders. Species that could utilize this transient habitat include American toad, Fowlers toad, northern cricket frog, spring peeper, southern two-lined salamander, and three-lined salamander.

4.1.2. Piedmont Headwater Stream Forest-Typic Subtype (7.6% coverage)

The Piedmont Headwater Stream Forest community is found on the southern parcels located south of Millhouse Road and east of New Jericho Road (Figure 2). This community is typically found along floodplains of small Piedmont streams. These forested areas are only moderately impacted by flooding and alluvial processes, resulting in vegetation that includes a majority of upland species with a few floodplain species. Soils within this community are typically coarse textured. Canopy species observed include black willow, eastern red-cedar, loblolly pine^D, sweetgum, and willow oak. Subcanopy/shrub species include American elderberry, American persimmon, black willow, eastern red-cedar, Pennsylvania blackberry, river birch, strawberry bush, sugarberry, wax myrtle, and yaupon. The invasive Chinese privet, Japanese barberry, and Multiflora rose are also present. Herbaceous species include American pokeweed, common bottlebrush grass, common rush, gill-over-the-ground, sedge, and tall fescue. The invasive Japanese stiltgrass is prominent throughout this community. Vines observed include muscadine and whiteleaf catbriar in addition to the invasive English ivy, Japanese honeysuckle, and winter creeper. Mistletoe, a parasitic plant that only grows on the branches of deciduous trees, was also observed.

In the recent past, portions of this community were utilized by a plant nursery. Gingko, live oak, and golden rain tree were observed, which are remnants of this prior land use.

Faunal species expected to occur in the community are similar to the Dry Mesic Oak Hickory Forest which include white tailed deer*, raccoon, grey fox, and the eastern gray squirrel*. Bird species typical for this community type include yellow bellied sapsucker*, red bellied woodpecker*, downy woodpecker, hairy woodpecker*, northern flicker*, Carolina chickadee*, yellow-rumped warbler*, northern cardinal, tufted titmouse*, northern mockingbird, Carolina wren, and American robin*. Predator and scavenger birds typically include the red-shouldered hawks* and turkey and black vultures, respectively. American toad, Fowlers toad, northern cricket frog, spring peeper, upland chorus frog, marbled salamander, redback salamander, red-spotted newt, southern two-lined salamander, spotted salamander, three-lined salamander, white-spotted slimy salamander, eastern box turtle, eastern fence lizard, eastern garter snake, eastern ribbon snake, racer, rat snake, ringneck snake, and worm snake are also expected to occur in the community.

4.1.3. Piedmont Semipermanent Impoundment-Shrub Subtype (2.3% coverage)

The Piedmont Semipermanent Impoundment community is located on the parcel directly south of Millhouse Road at the location of an old farm pond. This community is composed of successional species typical of a breeched impoundment. Aerial photography from 2002 depicts a full pond within this community. Aerials from early 2004, depict a breeched impoundment and the area has since been undergoing succession. Black willow^D is the dominant tree species dominating the western side of the community. Sycamore was observed along the community margins. The herbaceous layer was dominated by smartweed mixed with common rush and sedges.

Faunal species expected to use this community North American beaver, raccoon, and white tailed deer*. Bird species typically include yellow-rumped warbler*, tufted titmouse*, Carolina chickadee*, Northern cardinal, and great blue heron*. American toad, Fowlers toad, northern cricket frog, spring peeper, upland chorus frog, marbled salamander, redback salamander, red-spotted newt, southern two-lined salamander, spotted salamander, three-lined salamander, white-spotted slimy salamander, eastern box turtle, eastern fence lizard, eastern garter snake, eastern ribbon snake, racer, rat snake, ringneck snake, and worm snake are also expected to occur in the community.

4.1.4. *Mixed Pine Forest (6.8% coverage)*

The Mixed Pine Forest is located at the southern most end of the study area. The community contains a large area of downed, dead pine trees that were killed by *Ips* bark beetles according to the EWS Forestry Stewardship Plan developed in 2014. Remaining canopy species include a majority of loblolly pine^D with a few green ash. Subcanopy/shrub species include Eastern red-cedar, mullet bush, and red maple. This layer also includes the invasive autumn olive and Chinese privet. The herbaceous layer was sparse but included azure bluet, common dandelion, dock, and purple henbit. Vines observed were Carolina jessamine and the invasive Japanese honeysuckle. Bradford pear and Burford holly were also observed. These non-native species are most likely escapees from the adjacent former plant nursery.

Faunal species expected to occur in the community are similar to the Dry Mesic Oak Hickory Forest which include white tailed deer*, raccoon, grey fox, and the eastern gray squirrel*. Bird species typical for this community type include yellow bellied sapsucker*, red bellied woodpecker*, downy woodpecker*, hairy woodpecker*, Northern flicker*, Carolina chickadee*, yellow-rumped warbler*, northern cardinal, tufted titmouse*, mockingbird, Carolina wren*, and American robin*. Predator and scavenger birds typically include the red-shouldered hawks* and turkey and black vultures, respectively. American toad, Fowlers toad, redback salamander, red-spotted newt, eastern box turtle, eastern fence lizard, eastern garter snake, racer, rat snake, ringneck snake, and worm snake are also expected to occur in the community.

4.1.5. *Maintained/Disturbed (45.7% coverage)*

Maintained/disturbed areas are found throughout the study area in places where the vegetation is periodically mowed, such as roadside shoulders, lawns, and landscaped areas around building and athletic courts. The vegetation in this community is comprised of low growing grasses and herbs, in addition to scattered, discontinuous, often non-native canopy and subcanopy/ shrub species. Canopy species observed include American beech, American sycamore, green ash, loblolly pine, post oak, red maple, tulip poplar, Virginia pine, and white oak. Subcanopy/ shrub species include abelia, azalea, black cherry, burning bush, crape-myrtle, eastern redbud, eastern red-cedar, fig, hemlock, inland American hornbeam, Japanese apricot, leatherleaf mahonia, leatherleaf viburnum, painted buckeye, and winged elm. This layer also includes the invasive autumn olive and thorny olive. Herbaceous plants observed included broomsedge along roadways and paths, Carolina horsenettle, crocus, daffodil, hellebore, lamb's ear, and poison ivy. In addition the invasive Chinese lespedeza and common chickweed were also observed. Vine species included clematis, common greenbriar, cross-vine, and the invasive Japanese

honeysuckle. The southern portion of the study area includes the EWS farm. Non-crop herbaceous species observed in the field area include Bermuda grass, daffodil, hairy bittercress, tall fescue, white clover, and wild garlic.

Faunal species expected to occur in the community are similar to the Dry Mesic Oak Hickory Forest which include white tailed deer*, raccoon, grey fox, and the eastern gray squirrel. Bird species typical for this community type include Carolina chickadee*, yellow-rumped warbler*, northern cardinal, Eastern bluebird, house finch, American goldfinch, tufted titmouse*, Northern mockingbird, Carolina wren*, and American robin*. Predator and scavenger birds typically include the red-tailed hawks*, American kestrel, turkey vulture, and black vulture. American toad, Fowlers toad, redback salamander, red-spotted newt, eastern box turtle, eastern fence lizard, eastern garter snake, racer, rat snake, ringneck snake, and worm snake are also expected to occur in the community.

4.2. *Rare Species*

Catena searched for Orange County listed protected species and/or habitat in the study area (Appendix A). No protected species or habitat was observed within the project area.

4.3. *Significant Trees*

Across the EWS campus a few exceptionally large trees were noted (Figure 2). The Dry-Mesic Oak-Hickory Forest community contained a very large White oak and Post Oak. The Piedmont Semipermanent Impoundment community contained multiple very large loblolly pines.

5.0 CONCLUSION

Disturbed communities (Mixed Pine Forest and Maintained/Disturbed) comprised the majority of the property (approximately 52.4% of the property). The remaining 47.6% is comprised of natural communities (Dry-Mesic Oak-Hickory Forest-Piedmont Subtype, Piedmont Headwater Stream Forest-Typic Subtype, and Piedmont Semipermanent Impoundment-Shrub Subtype). Plants and animals observed on this property are consistent with local communities. No protected species were observed within the property during the field investigation.

6.0 STANDARD OF CARE

The environmental services performed by Catena have been conducted with that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its industry practicing in the same locality under similar budget and time constraints. No other warranty, expressed or implied is made.

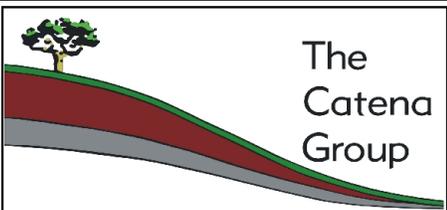
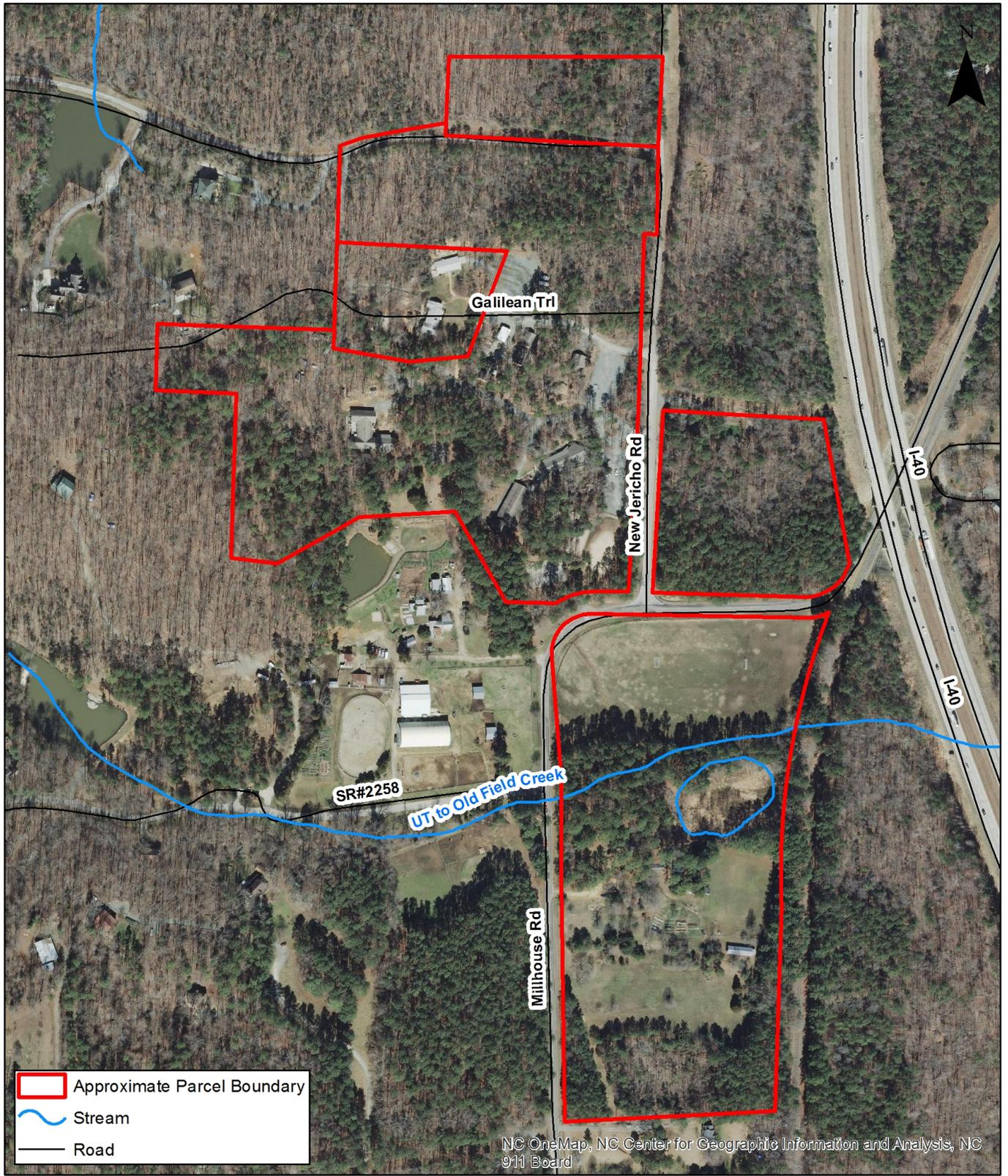
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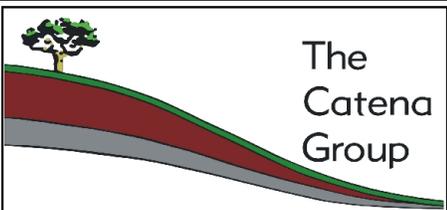
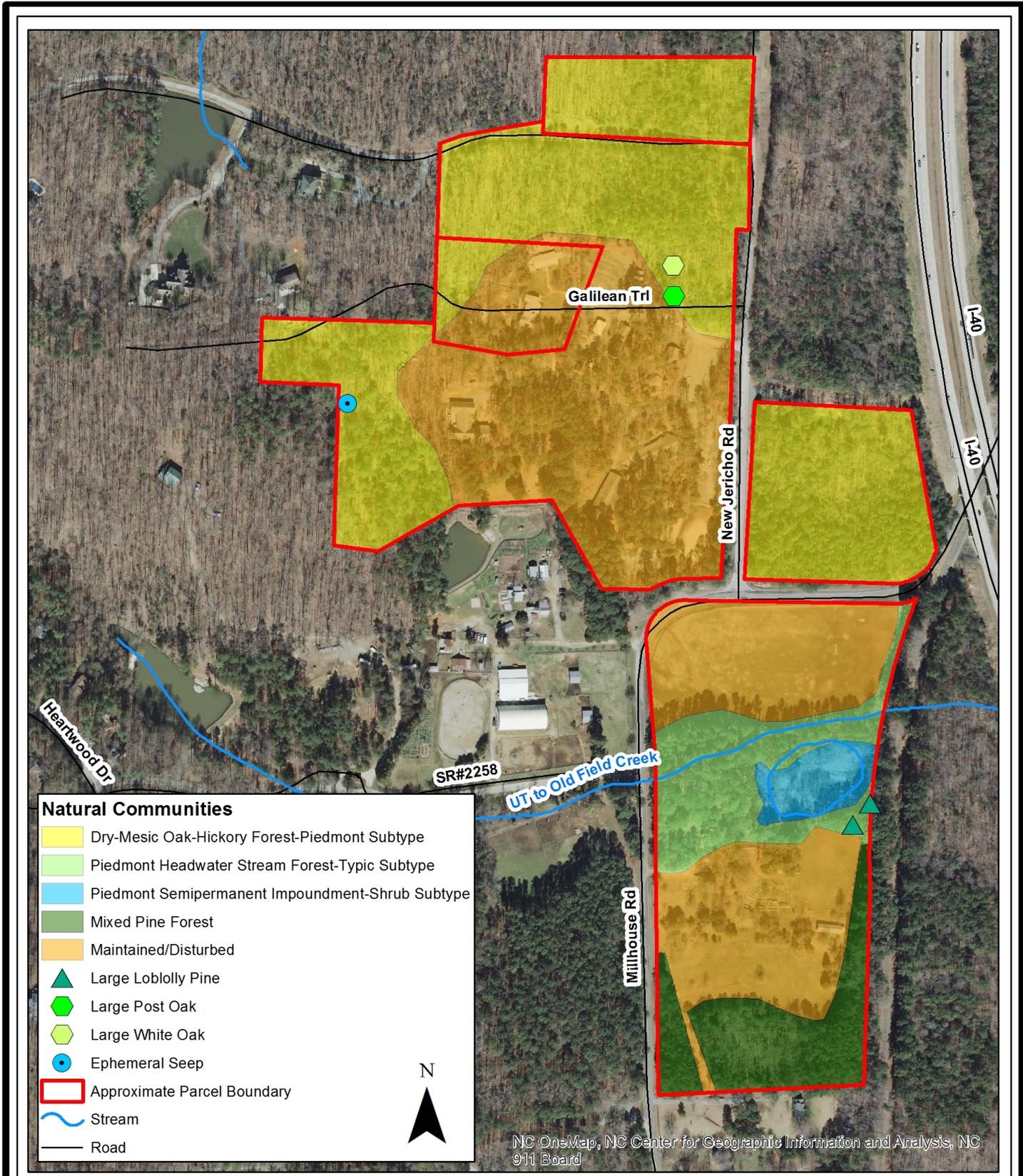


The
Catena
Group

Emerson Waldorf School
 Biological Inventory
 Vicinity Map
 Orange County, North Carolina

Date: March 2015
 Scale: 0 100 200 Feet
 Job No.: 6210

Figure
1



Emerson Waldorf School
 Biological Inventory
 Natural Communities
 Orange County, North Carolina

Date: March 2015
 Scale: 0 100 200 Feet
 Job No.: 6210

Figure
2

Appendix A

Federally Threatened and Endangered Plant and Animal Species in Orange County

US Fish & Wildlife Service

Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species, Orange County, North Carolina, Updated: 12-27-2012 (<http://www.fws.gov/raleigh/species/cntylist/orange.html>)

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
American eel	<i>Anguilla rostrata</i>	FSC	Current
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGPA	Current
Carolina darter	<i>Etheostoma collis lepidinion</i>	FSC	Current
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	Historic
Roanoke bass	<i>Ambloplites cavifrons</i>	FSC	Current
Invertebrate:			
Atlantic pigtoe	<i>Fusconaia masoni</i>	FSC	Current
Brook floater	<i>Alasmidonta varicosa</i>	FSC	Current
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	Current
Green floater	<i>Lasmigona subviridis</i>	FSC	Current
Savannah lilliput	<i>Toxolasma pullus</i>	FSC	Current
Yellow lampmussel	<i>Lampsilis cariosa</i>	FSC	Current
Vascular Plant:			
Butternut	<i>Juglans cinerea</i>	FSC	Historic
Creamy tick-trefoil	<i>Desmodium ochroleucum</i>	FSC	Historic
Michaux's sumac	<i>Rhus michauxii</i>	E	Historic
Smooth coneflower	<i>Echinacea laevigata</i>	E	Historic
Sweet pinesap	<i>Monotropsis odorata</i>	FSC	Current
Torrey's Mountain-mint	<i>Pycnanthemum torrei</i>	FSC	Current

Definitions of Federal Status Codes:

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)

BGPA = Bald and Golden Eagle Protection Act. See below.

FSC = Federal Species of Concern. FSC is an informal term. It is not defined in the federal Endangered Species Act. In North Carolina, the Asheville and Raleigh Field Offices of the US Fish and Wildlife Service (Service) define Federal Species of Concern as those species that appear to be in decline or otherwise in need of conservation and are under consideration for listing or for which there is insufficient information to support listing at this time. Subsumed under the term "FSC" are all species petitioned by outside parties and other selected focal species identified in Service strategic plans, State Wildlife Action Plans, or Natural Heritage Program Lists.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

EXP = experimental population. A taxon listed as experimental (either essential or nonessential). Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

Bald and Golden Eagle Protection Act (BGPA):

In the July 9, 2007 Federal Register(72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For mor information, visit <http://www.fws.gov/migratorybirds/baldeagle.htm>

Threatened due to similarity of appearance(T(S/A)):

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

Definitions of Record Status:

Current - the species has been observed in the county within the last 50 years.

Historic - the species was last observed in the county more than 50 years ago.

Obscure - the date and/or location of observation is uncertain.

Incidental/migrant - the species was observed outside of its normal range or habitat.

Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

Appendix B

Common and Scientific Names

Floral Species

Common name	Scientific Name
Abelia	<i>Abelia x grandiflora</i>
American beech	<i>Fagus grandifolia</i>
American elderberry	<i>Sambucus canadensis</i>
American holly	<i>Ilex opaca</i>
American persimmon	<i>Diospyros virginiana</i>
American pokeweed	<i>Phytolacca americana</i>
American sycamore	<i>Platanus occidentalis</i>
Autumn olive	<i>Elaeagnus umbellata*</i>
Azalea	<i>Rhododendron sp.</i>
Azure bluet	<i>Houstonia caerulea</i>
Bermuda grass	<i>Cynodon dactylon</i>
Black cherry	<i>Prunus serotina</i>
Black oak	<i>Quercus velutina</i>
Black willow	<i>Salix nigra</i>
Blue Ridge blueberry	<i>Vaccinium pallidum</i>
Bradford pear	<i>Pyrus calleryana "Bradford"</i>
Broomsedge	<i>Andropogon virginicus var. virginicus</i>
Burford holly	<i>Ilex cornuta</i>
Burning bush	<i>Euonymus alatus</i>
Callery pear	<i>Pyrus calleryana</i>
Carolina horsenettle	<i>Solanum carolinense</i>
Carolina jessamine	<i>Gelsemium sempervirens</i>
Chinese lespedeza	<i>Lespedeza cuneata*</i>
Chinese privet	<i>Ligustrum sinense*</i>
Christmas fern	<i>Polystichum acrostichoides</i>
Clematis	<i>Clematis sp.</i>
Common bottlebrush grass	<i>Elymus hystrix</i>
Common chickweed	<i>Stellaria media*</i>
Common dandelion	<i>Taraxacum officinale</i>
Common greenbriar	<i>Smilax rotundifolia</i>
Common persimmon	<i>Diospyros virginiana</i>
Common rush	<i>Juncus effusus ssp. Solutus</i>
Crane-fly orchid	<i>Tipularia discolor</i>
Crape-myrtle	<i>Lagerstroemia indica</i>
Crocus	<i>Crocus sp</i>
Cross-vine	<i>Bignonia capreolata</i>
Daffodil	<i>Narcissus sp.</i>
Dock	<i>Rumex sp.</i>

Common name	Scientific Name
Downy arrow -wood	<i>Viburnum rafinesqueanum</i>
Eastern redbud	<i>Cercis canadensis</i>
Eastern red-cedar	<i>Juniperus virginiana</i>
English ivy	<i>Hedera helix*</i>
Fig	<i>Ficus sp.</i>
Flowering dogwood	<i>Cornus florida</i>
Gill-over-the-ground	<i>Glechoma hederacea</i>
Ginkgo	<i>Ginkgo biloba</i>
Golden rain tree	<i>Koelreuteria paniculata</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Hairy bittercress	<i>Cardamine hirsuta</i>
Hellebore	<i>Helleborus sp.</i>
Hemlock	<i>Tsuga canadensis</i>
Hillside blueberry	<i>Vaccinium pallidum</i>
Inland American hornbeam	<i>Carpinus caroliniana var. virginiana</i>
Japanese apricot	<i>Prunus mume</i>
Japanese barberry	<i>Berberis thunbergii*</i>
Japanese honeysuckle	<i>Lonicera japonica*</i>
Japanese stiltgrass	<i>Microstegium vimineum*</i>
Lamb's ear	<i>Stachys byzantina</i>
Leatherleaf mahonia	<i>Berberis bealei</i>
Leatherleaf viburnum	<i>Viburnum rhytidophyllum</i>
Live oak	<i>Quercus virginiana</i>
Loblolly pine	<i>Pinus taeda *</i>
Mimosa	<i>Albizia julibrissin*</i>
Mistletoe	<i>Phoradendron leucarpium</i>
Mullet bush	<i>Baccharis halimifolia</i>
Multiflora rose	<i>Rosa multiflora*</i>
Muscadine	<i>Muscadinia rotundifolia</i>
Nandina	<i>Nandina domestica*</i>
Painted buckeye	<i>Aesculus sylvatica</i>
Pennsylvania blackberry	<i>Rubus pensilvanicus</i>
Pignut hickory	<i>Carya glabra</i>
Poison ivy	<i>Toxicodendron radicans</i>
Possomhaw	<i>Ilex decidua</i>
Post oak	<i>Quercus stellata</i>
Purple henbit	<i>Lamium amplexicaule</i>
Rattlesnake plantain	<i>Goodyera pubescens</i>
Rattlesnake weed	<i>Hieracium venosum</i>

Common name	Scientific Name
Red maple	<i>Acer rubrum</i>
River birch	<i>Betula nigra</i>
Scarlet oak	<i>Quercus coccinea</i>
Sedge	<i>Carex sp.</i>
Shortleaf pine	<i>Pinus echinata</i>
Slippery elm	<i>Ulmus rubra</i>
Smartweed	<i>Polygonum sp.</i>
Sourwood	<i>Oxydendrum arboreum</i>
Southern blackhaw	<i>Viburnum rufidulum</i>
Southern grape fern	<i>Sceptridium biternatum</i>
Southern red oak	<i>Quercus falcata</i>
Strawberry bush	<i>Eunymus americanus</i>
Striped wintergreen	<i>Chimaphila maculata</i>
Sugar maple	<i>Acer saccharum</i>
Sugarberry	<i>Celtis laevigata</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Platanus occidentalis</i>
Tall fescue	<i>Festuca arundinacea</i>
Thorny olive	<i>Elaeagnus pungens*</i>
Tulip poplar	<i>Liriodendron tulipifera</i>
Virginia pine	<i>Pinus virginiana</i>
Wax myrtle	<i>Morella cerifera</i>
White ash	<i>Fraxinus americana</i>
White clover	<i>Trifolium repens</i>
White oak	<i>Quercus alba</i>
Whiteleaf catbriar	<i>Smilax glauca</i>
Wild garlic	<i>Allium sp.</i>
Willow oak	<i>Quercus phellos</i>
Winged elm	<i>Ulmus alata</i>
Winter creeper	<i>Euonymus fortunei*</i>
Yaupon	<i>Ilex vomitoria</i>

* Invasive Species

Faunal Species

Common Name	Scientific Name
American goldfinch	<i>Spinus tristis</i>
American kestrel	<i>Falco sparverius</i>
American robin	<i>Turdus migratorius</i>
American toad	<i>Anaxyrus americanus</i>
Black vulture	<i>Coragyps atratus</i>

Carolina chickadee	<i>Poecile carolinensis</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Eastern bluebird	<i>Sialia sialis</i>
Eastern box turtle	<i>Terrapene carolina carolina</i>
Eastern fence lizard	<i>Sceloporus undulatus</i>
Eastern garter snake	<i>Thamnophis sirtalis</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Eastern ribbon snake	<i>Thamnophis sauritus sauritus</i>
Fowlers toad	<i>Anaxyrus fowleri</i>
Gray fox	<i>Urocyon cinereoargenteus</i>
Great blue heron	<i>Ardea herodias</i>
Hairy woodpecker	<i>Picoides villosus</i>
House finch	<i>Haemorhous mexicanus</i>
Marbled salamander	<i>Ambystoma opacum</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern flicker	<i>Colaptes auratus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern cricket frog	<i>Acris crepitans</i>
Raccoon	<i>Procyon lotor</i>
Racer	<i>Coluber constrictor</i>
Rat snake	<i>Elaphe obsoleta</i>
Redback salamander	<i>Plethodon cinereus</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-spotted newt	<i>Notophthalmus viridescens</i>
Ringneck snake	<i>Diadophis punctatus</i>
Southern two-lined salamander	<i>Eurycea cirrigera</i>
Spotted salamander	<i>Ambystoma maculatum</i>
Spring peeper	<i>Pseudacris crucifer</i>
Three-lined salamander	<i>Eurycea guttolineata</i>
Tufted titmouse	<i>Baeolophus bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Upland chorus frog	<i>Pseudacris feriarum</i>
White-spotted slimy salamander	<i>Plethodon cylindraceus</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Worm snake	<i>Carphophis amoenus</i>
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>
Yellow-rumped warbler	<i>Setophaga coronata</i>

Appendix C

Site Photographs



Large White Oak in the Dry-Mesic Oak-Hickory Forest-Piedmont Community



Large Post Oak in the Dry-Mesic Oak-Hickory Forest-Piedmont Community



Crane fly orchid



Dry-Mesic Oak-Hickory Forest community



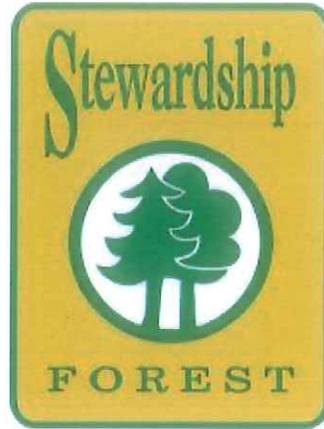
Evidence of white tailed deer



Large Loblolly pines in the Piedmont Headwater Stream Forest Community



Ips bark beetle evidence in the Mixed Pine Forest



Forest Stewardship Plan
Waldorf Educational Association
of North Carolina, Inc.

6211 New Jericho Road
Chapel Hill, NC 27516

By:

John M. McBryde, District 11 Water Quality Forester
NC Registered Forester # 1639



Kelly Douglass, Forest Stewardship Biologist
Certified Wildlife Biologist
NC Certified Environmental Educator



June 2014

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Property Description

The Waldorf Educational Association of North Carolina, Inc. is a private school that opened in 1984 (<http://www.emersonwaldorf.org/>) and is located at 6211 New Jericho Road in Chapel Hill, NC. The school teachings are based on the “philosophical and pedagogical indications of Dr. Rudolf Steiner,” which includes the following practices: multi-sensory learning, interdisciplinary, individual focus on students, creative play, and natural science exploration. The school offers classes for student’s age 0-18 and includes a nursery, Parent-Child, Pre-K, and K-12. The school is a fully sponsored member of the Association of Waldorf Schools in North America (AWSNA; since 1987) and the Waldorf Early Childhood Association of North America. In 2010, the school became accredited by the Southern Association of Colleges and Schools (SASC) and the Southern Association of Independent Schools (SAIS).

The property is comprised of 5 tax parcels that total 55.27 acres (This acreage is according to the tax records. For management purposes, the plan will use acreage reflected using ArcGIS totaling 49.23 acres). This includes the school grounds as well as woodland, open land, horse pasture, a rental cabin, and an abandoned pond. The property has received minimal forest and wildlife management in the past; however, it has been used for recreation and educational opportunities. Site improvements have been made for internal road access, additional educational buildings, and enhancing walking trails. The tract also includes an onsite farm, where students grow and sell produce at the Farmer’s Market open every Thursday.

Current Management Objectives

The School plans to manage this tract for recreation, aesthetics, water quality, forest health, and as an educational tool for attending students. Their management objectives include:

- ✓ Providing a safe learning environment for students.
- ✓ Permaculture - a “philosophy of working with, rather than against nature...of looking at plants and animals in all their functions, rather than treating any areas as a single product system” Bill Mollison ***The definition and description of permaculture is from Wikipedia***
 - ✓ Branch of ecological/environmental design and engineering
 - ✓ Develops sustainable architecture and self-maintained agricultural systems
 - ✓ 3 core tenets: Care for the earth; Care for the people; Return of surplus
 - ✓ 12 design principles: Observe and interact; catch and store energy; obtain a yield; apply self-regulation and accept feedback; use and value renewable resources and services; produce no waste; design from patterns to details; integrate rather than

- segregate; use small and slow solutions; use and value diversity; use edges and value the marginal; creatively use and respond to change
- ✓ Common practices of permaculture: agroforestry, natural building, rainwater harvesting, sheet mulching, managed rotational grazing, etc
 - ✓ Enhancing the aesthetical and recreational values of the property
 - ✓ Ecological sustainability
 - ✓ Water quality and soil erosion
 - ✓ Native species management
 - ✓ Maintain farm/garden area for students
 - ✓ Maintain home/horse pasture (rental property)
 - ✓ Maintain playing field for students
 - ✓ Future development and expansion of the school

Area Descriptions & Recommendations

The following section breaks the property up into management areas based on timber types, management recommendations, and your objectives. Each of these areas is depicted on your management map located at the back of this plan.

Management Area 1

Area Description

Management Area 1; +/- 3.9 acres, is a mixed upland pine forest that is around 63-65 years of age. Dominant species include loblolly pine with Virginia pine and shortleaf pine scattered throughout. Co-dominant upland hardwood species include: scarlet oak, white oak, and southern red oak. Evidence of old skid trails and cedar stumps suggest that this area was logged 65 years ago and regenerated naturally on its own. Presently, the trees are 11-20 inches in diameter (at breast height) and are 75-80 feet tall. The midstory and understory are fairly open and consist of sweetgum, red maple, elm, grapevine, muscledwood, sourwood, beech, dogwood, white ash, black cherry, Japanese honeysuckle, green brier, crane fly orchid, and wood sorrel. There is an abundance of dead trees/debris on the forest floor, mostly Virginia pine, that have fallen due to age, stress, and past storm damage. The soils in this area are well drained with gentle slopes (4-8%).

Management Area 1 Recommendations

The timber in this area is approaching maturity and has become stagnant in growth. Many Virginia pine trees have died and fallen to the forest floor. This is typical of Virginia pine of this age and size. Virginia pine has a very shallow root system that

cannot support ice damage or very high winds well. The loblolly pine and shortleaf pine are of good to excellent quality and would bring in revenues, if harvested, that would assist in paying for reforestation as well as additional improvements across the property.

Below are 3 options for management. These options coincide with your objectives to provide the students with a safe learning environment and educational opportunities while also enhancing wildlife habitat, forest health, and biodiversity.

Option #1 – Clearcut harvest (including removal of potential hazard trees), prepare the site for planting and subsequent planting of either shortleaf pine or loblolly pine seedlings.

I recommend that you hire a consulting forester (see information below in plan on consultants) and clearcut harvest this area, which would include harvesting all merchantable and unmerchantable trees. Harvesting should occur when the soil is dry to prevent soil compaction and rutting. I have also included an abundance of information in the plan below about harvesting timber.

Once the trees have been harvested, ideally some type of site preparation should occur. Being that this is a small area, a back pack spray application of herbicides to kill any reproduction would aid in future tree planting. However, I understand that you are not interested in applying chemicals to your property, so a site preparation burn may be a more feasible practice. A site preparation burn would help to clean up the site, consume any Virginia pine seed that is on the ground, and also recycle nutrients back into the soil. If either of these 2 practices are not possible, then you will have to plant the pine seedlings without site preparation. However, if this occurs, it will take a lot of timber stand improvement to make sure survival of the seedlings is achieved (i.e. cutting undesirable competition with brushsaws, etc.). Site preparation (chemical application and burning) should occur during the summer months.

Once the site has been prepared, I recommend that you plant either loblolly pine seedlings or shortleaf pine seedlings across the entire area. The trees should be planted on a 10 X 10 foot spacing, yielding 436 pine trees per acre. I would recommend hiring a tree planting crew to complete this work; however, if you want to make this an educational opportunity, you could have students and/or faculty plant the trees under the supervision of a professional. Tree planting typically cost around \$80 per acre to plant loblolly pine seedlings and around \$100 per acre to plant shortleaf pine seedlings (trees and labor). The seedlings should be planted during the winter months (December through March) of the year following harvest.

Option #2

Similar to Option #1, this option would be to reforest the portion south of Galilean Trail in pines after the clearcut harvest, but not reforest the 1.5-acre portion north of Galilean Trail. As we discussed on-site, you could manage the 1.5-acre portion as early successional habitat to provide cover, forage, and nesting habitat for a variety of wildlife species. This would include installing fire lines around the area and burning the vegetation every 2-3 years. You can also broadcast native wildflower seed after the first burn to help create fine fuels (to help burn the area successfully) and encourage pollinator habitat. The creation and maintenance of early successional habitat can also be an excellent educational opportunity for your students, especially if they help broadcast the seed after the burn. For more information on creating fire lines, the benefits of prescribed burning, and selecting grass and flower seed to broadcast on the area, contact Kelly Douglass with the NC Wildlife Resources Commission at (919) 621-3317 or kelly.douglass@ncwildlife.org.

Option #3

A third option would be to maintain the current stand of trees. If this option is chosen, drastic improvements to the current stand would need to be made to provide a safe learning environment for your students. The condition of the walking trails throughout this area suggest that students frequently use this area for recreational purposes. This can be extremely dangerous with the amount of downed trees and more importantly the potential of other trees falling in this area. You would need to remove all trees that pose a threat to falling in this stand, which would include any snags and most of the Virginia pine.

Maintain walking trails

There are several walking trails throughout this area that could be improved. Once harvesting has ceased, cleaning up these trails should be done immediately so they are cleared and ready for restoring. If the logger is equipped with a whole tree chipper, mulch from this operation can be used to spread across the trails.

Management Area 2

Area Description

Management Area 2; +/- 1.2 acres, is a mixed upland pine forest that is around 60 years of age. Dominant species include loblolly pine with Virginia pine and shortleaf pine scattered throughout. Presently, the trees are 10-19 inches in diameter (at breast height) and are 75-85 feet tall. The midstory and understory are fairly open and consist of eastern red cedar, red maple, blackgum, white oak, post oak, blackjack oak, American beech, elm, Japanese honeysuckle, green brier, crane-fly orchid, mosses, and violets.

There are several downed/fallen trees in the understory but not nearly as much as in Area 1. The soils in this area are well drained with gentle slopes (4-8%).

Management Area 2 Recommendations

The recommendations for this area are identical to Management Area 1 (options #1 & #3). If harvesting occurs, your consulting forester should make sure that the area is clearly marked so that the loggers do not cut near the sprinklers in Area 5.

Management Area 2A

Area Description

Management Area 2A; +/- 4.4 acres, is very similar to Area 2, but the trees are slightly larger and there is an abundance of invasive plant species. Presently, the trees are 13-23 inches in diameter (at breast height) and are 75-85 feet tall. The midstory and understory are fairly open and consist of eastern red cedar, red maple, blackgum, white oak, post oak, blackjack oak, American beech, elm, persimmon, eastern red bud, wax myrtle, multiflora rose, leatherleaf mahonia, Chinese privet, Japanese stilt grass, Russian olive, hellebore, Christmas fern, Chinese silvergrass, Japanese honeysuckle, and daffodil. The soils in this area are well and somewhat poorly drained with gentle slopes (2-6%).

Management Area 2A Recommendations

The recommendations for this area are also identical to Management Areas 1 (options #1 & #3) & 2. I would most likely recommend that replant this area in loblolly pine seedlings, since that is what is currently growing now.

A major focus in this area should be maintaining water quality, since there is a stream that intersects this area. Appropriate forested buffers should be left along this area during harvesting in accordance with the Jordan Lake Buffer Rules (Cape Fear River Basin). See below for more information about buffer rules and rules affecting harvesting near streams.

Another major focus of this area, and several other areas on the property, should be eradication (or at least controlling) exotic, invasive plants to help promote the regeneration of native flora and increase plant diversity. See the section on invasive plant control later in the plan.

An old pond, with breached dam, exists in this area. It is currently providing excellent habitat for amphibians and reptiles and could either be fixed (drained and dam repaired) and used for fishing purposes, or maintained as is to continue providing habitat for

amphibians. This area, if left as is, could be used as an excellent educational opportunity for students to learn about the life cycle of certain species (like amphibians) and the importance of conserving water and protecting water quality.

Management Area 3

Area Description

Management Area 3; +/- 5.7 acres, is an upland hardwood stand with scattered mixed pine throughout that is around 65 years of age. The stand is dominated by white oak, with pignut hickory, northern red oak, post oak, sweetgum, and loblolly pine throughout. Evidence of old skid trails and cedar stumps suggest that this area was logged 65 years ago and regenerated naturally on its own. Presently, the trees are 10-18 inches in diameter (at breast height) and are 70-75 feet tall. Stand quality is good with some mortality throughout and hypoxylon canker present on snags. The midstory and understory are fairly open and consist of red maple, black cherry, flowering dogwood, eastern red cedar, scattered blackgum, poverty grass, greenbrier, and low bush blueberry. The soils in this area are well drained with gentle slopes (3-8%).

Management Area 3 Recommendations

The trees in this area are growing well and should continue to do so. I recommend that you maintain this area as a mature hardwood forest, as this area is aesthetically pleasing and is used for school programs and student recreation.

The trees are healthy but some hazard trees should be removed from the area to prevent student injury. Wildlife habitat can be improved by a practice called crop tree release. This kind of work can be accomplished with a chainsaw by selecting a few crop trees per acre (a mix of red and white oaks) and removing the competing hardwoods on at least 3 sides (4 is preferred). Be sure to protect the other mast producing trees in the area, including blackgum, black cherry, and flowering dogwood. Any snags left should be positioned away from walking trails. Maintain walking trails with mulch where possible.

Management Area 4

Area Description

Management Area 4; +/- 3.6 acres, is mixed upland pine forest that is around 32 years of age. This area was hit hard by IPS beetles many years ago leaving a large hole in the canopy with several smaller holes throughout of dead and downed pine trees. Most of the damage was done to the east of the power line right of way. The overstory trees that are left standing are 7-16 inches in diameter (at breast height) and are 60-65 feet tall. The

holes where IPS beetles killed the overstory trees have regenerated naturally with low value hardwoods, including red maple, sweetgum, elm, and Russian olive. The soils in this area are well drained with gentle slopes (4-8%).



Management Area 4 Recommendations

This area is a major safety hazard not only to the students and faculty at the school, but to neighboring landowners as well. Many of the dead trees have already fallen within the stand but there is an abundance of dead trees still standing that pose a threat to falling on someone or adjacent property.

I recommend that you lump this area in with the other areas to be harvested so that clean up can begin. Have your consulting forester include this area with Areas 1, 2, and 2A when those harvests occur. The logger should harvest all standing timber that is living. If they are comfortable with it, they can also fell any dead trees still standing as well. Some site preparation will be necessary and may include bulldozer work and burning piles. I cannot give any site preparation recommendations at this time; once the timber harvest is complete, we can reassess what needs to be done to get this stand growing again.

Once the site preparation is completed, plant either loblolly or shortleaf pine seedlings following the guidance laid out in Area 1 & 2.

Again, I recommend eradicating, or at least controlling, the exotic, invasive plants in this area. See the section below for more information.

Management Area 5

Area Description

Management Area 5; +/- 3.8 acres, is the waste water spray field located on the property. This area is an upland pine hardwood stand that is around 65 years of age. Dominant species include: sweetgum, red maple, loblolly pine, shortleaf pine, Virginia pine, elm, white oak, and willow oak. Presently, the trees are 9-21 inches in diameter (at breast height) and are 75-80 feet tall. The midstory and understory are somewhat open and consist of eastern red cedar, red maple, black cherry, elm, American beech, Japanese honeysuckle, cranefly orchid, mosses, violets, greenbrier, leatherleaf mahonia (1 plant observed), and Japanese stilt grass. The soils in this area are well and somewhat poorly drained with gentle slopes (2-6%).

Management Area 5 Recommendations

I recommend that you allow this area to continue to grow as long as the spray field is in place. No heavy equipment should be in this area and no students or faculty should enter either. Ensure that this area is marked as “Do Not Enter” and that the signs are visible from all sides when approaching the stand.

Again, I recommend eradicating, or at least controlling, the exotic, invasive plants in this area. See the section below for more information.

Management Area A

Area Description

Management Area A; +/- 21.7 acres total, is made up of the school administrative buildings, indoor and outdoor classrooms, playgrounds, parking lot, basketball court, school garden, and sports/playing field. There are pockets of trees located throughout this area, mostly dominated by loblolly pine. The trees are around 76 years of age, 12-30 inches in diameter (at breast height), and are 85-100 feet tall. The understory is manicured from the maintenance crew and has little vegetation growing, except for a few

areas near the basketball court where there is an understory and a midstory present. The soils in this area are well drained with gentle slopes (3-8%).

Management Area A Recommendations

The trees in this area are approaching maturity with many already mature. We discussed ensuring that forest health and student safety are the main objectives for this area. I recommend that you identify the trees in this area that pose a hazard to falling and have those removed. This would include any snags, trees with tops broken out, and trees that are leaning on other trees (snags away from buildings and play areas should be maintained for wildlife). Continue to maintain this area for school activities. Continue to remove poison ivy from trees so that students do not touch (also use this as an educational opportunity for identification). Landscaping should consist of native plants and shrubs. Focus new development in this area so other areas can be more easily managed. Songbird boxes can be erected throughout the area to encourage various species to frequent the area and can also be used as an educational opportunity for the students (especially if they help monitor and maintain the boxes). These should be maintained annually in the winter months (remove wasp nests, old nesting material, etc). Boxes should be placed on metal poles using predator guards.

Management Area B

Area Description

Management Area B; +/- 5.0 acres, includes the rental cabin, horse pasture, and surrounding areas (see map). This area is mostly made up with various yard trees and shrubs, many of which are exotic, invasive species. Species include: crepe myrtle, nandina, star magnolia, multiflora rose, leatherleaf mahonia, Russian olive, hellebore, Chinese silvergrass, Japanese honeysuckle, and daffodil.

Management Area B Recommendations

I recommend that you maintain this area as is.

Again, I recommend eradicating, or at least controlling, the exotic, invasive plants in this area. See the section below for more information.

Invasive Plant Species Control

During our site visit, we noted the presence of 5 exotic, invasive plants: tree-of-heaven, multiflora rose, Japanese stilt grass, Chinese privet, and Japanese honeysuckle. We recommend controlling these species through the use of targeted, spot spray herbicide applications. Be sure to use the correct herbicide and application rates. When using herbicides, follow all label instructions. Near the stream and pond, we recommend using herbicides approved for aquatic use only, or using glyphosate with a surfactant with low toxicity to aquatic animals (e.g., Agri-dex Spray Adjuvant). Most likely, it will take several herbicide applications to keep these species under control. Information on controlling this species may be found at the following website:

<http://www.invasive.org/eastern/srs/>. See the forestry leaflets *Exotic, Non-native and Invasive Plants are a Problem, Multiflora Rose, Tree-of-Heaven, Japanese Stilt Grass, Chinese Privet, and Japanese Honeysuckle* for more information.

Water Quality

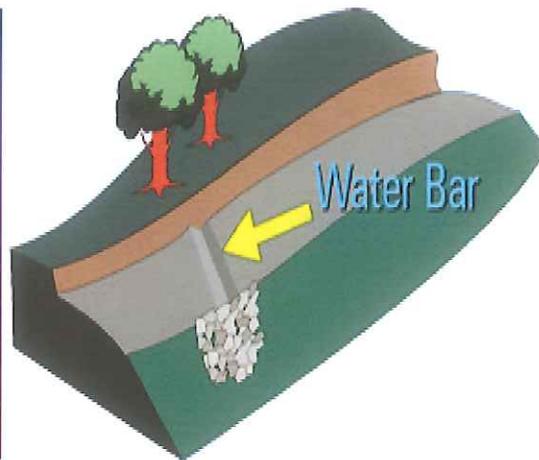
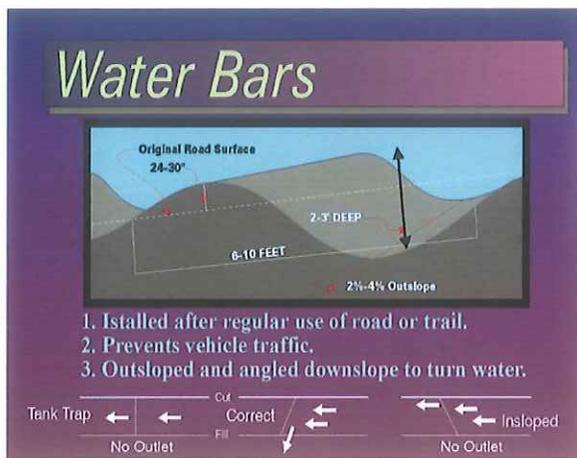
Overall, water quality on your property is good and you have been maintaining your internal road system well. If you decide to install new roads or renovate existing roads, the following information could be useful to you. Some of these can also be used on walking trails (on a much smaller scale) if erosion becomes a problem. Below are some tips and diagrams.

Water Bars

Constructed with a bulldozer or tractor, a water bar is an earthen fill "mound-trench" built into the road or trail at a 15 to 30 degree down slope angle. It diverts rainwater off the pathway, thus minimizing erosion by preventing stormwater runoff from moving long distances along travel corridors. The water bar should be built such that the uphill end of the bar ties into any adjacent bank or cutwall to receive ditch flow. An energy absorber on the downslope outfall, such as riprap, brush, and treetops, will serve to slow and dissipate the water's movement; particularly if outflow can lead to gully erosion. When installed in series, the number used is dependent on the slope of the road or trail as follows:

Grade of Road/Trail (Degrees)	Spacing (feet) between Water Bars
5	135
10	80
15	60
20	45
30	35

Water bars are usually installed after regular use of the forest road or skid trail has ended. A high relief water bar (three feet or greater in height) will serve as a deterrent for normal vehicle traffic. Water bars should be stabilized with grass seeding/mulching or volunteer growth at the time of project closeout. Armoring the water bars with crushed stone should be considered under circumstances of steep grades and highly erodible soils. After the tract is closed and before vegetation has fully re-colonized and stabilized the water bar, it is important to check in periodically to be certain a major storm flow event has not damaged the water bar and rendered it nonfunctional.



Broad-based Dips

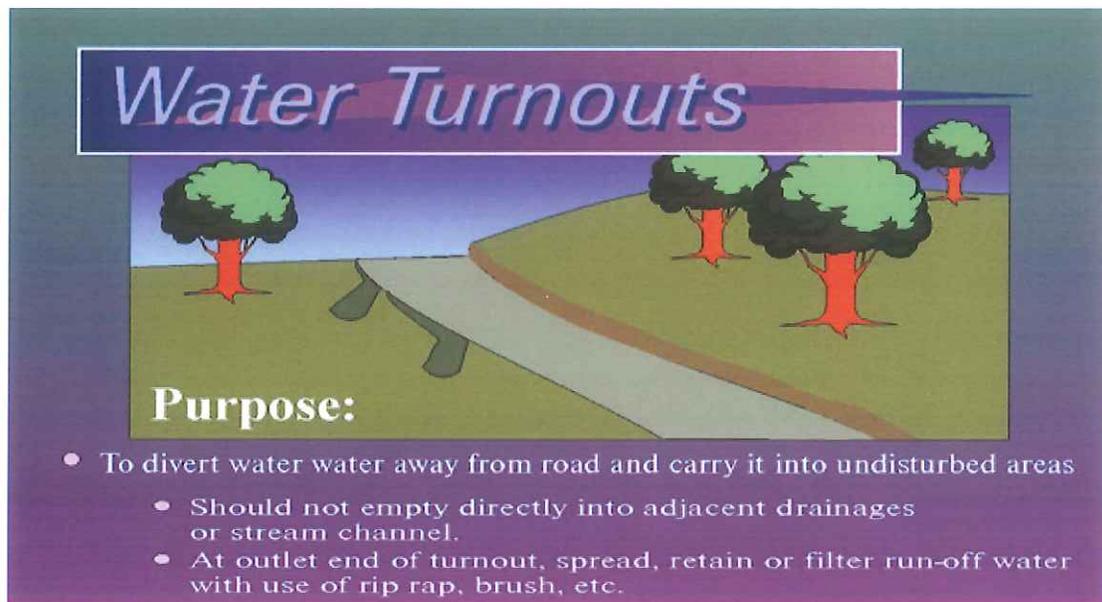
As its name implies, a broad-based dip is a broad earthen dip-hump combination built into the surface of a flat or insloped access road. The dip forms a reverse or outsloped cross-drain to divert flowing water from one side of the roadway to the other. This structure is usually applied to haul roads with slopes less than 12%. The dip is preferred over the water bar as it allows truck traffic to maintain a fairly uniform speed traversing the tract as opposed to the stop and go, "speed bump" characteristics of the water bars. A broad-based dip is not a substitute stream crossing method but rather a method to control transport of water from a paralleling road should ditch on one side of the road to the other. Slope of the land again dictates the spacing of this BMP as follows:

Road Grade (%))	Broad-Based Dip Spacing
2-4	200-300
5-7	160-180
8-10	140-150

Key points to remember during the installation phase include installing the dip at a 30-degree downslope, tying the upper end of the dip into an adjacent bank to avoid water by-passing the dip, providing a cross-drain outslope of about 3%, and energy absorbers as described in the water bar discussion. On highly erodible soils, the broad-based dip should be armored with crushed stone or rock ballast.

Water Turnouts

Water turnouts can be a ditch, trench, or other conveyance used to divert stormwater runoff away from a road surface or adjacent ditch. The turnout, which can be the width of a backhoe bucket or a bulldozer blade, carries water into undisturbed areas of vegetation to both dissipate energy and disperse water flow to the forest floor. Water turnouts should intersect a ditch line at the same depth and be outsloped 1-3%. On sloping roads, turnouts should be 30-45 degrees downslope. The use of water turnouts is often dependent on gradient of the property and availability of suitable outlets. Water turnouts should be spaced at a distance to provide good road drainage thus avoiding water pooling which can lead to soil compaction, souping, or rutting. A water turnout can have a secondary application of functioning as a minor sediment trap, therefore, maintenance is important to ensure the turnout is neither subject to erosion itself from excessive runoff events or sedimentation to the point of becoming nonfunctional. As with other water control structures covered in this section, tract closure should include perennial grass seeding/mulching or volunteer vegetation growth to enhance long-term stability of the turnout. Most importantly, water turnouts must not empty directly into streams or other water channels (i.e., drainage ways, ditches, channalized streams, etc.) leading directly to streams and other waters of the State.

The diagram features a purple background. At the top, the title "Water Turnouts" is written in a white, italicized font within a white-bordered box. Below the title is a 3D illustration of a road on a slope. A grey road surface leads to a turnout, which is a shallow channel cut into the earth. The turnout carries water away from the road and into a grassy area with several green trees. The turnout ends in a slight depression. Below the illustration, the word "Purpose:" is written in white. Underneath, there is a bulleted list of three points in white text.

Water Turnouts

Purpose:

- To divert water away from road and carry it into undisturbed areas
- Should not empty directly into adjacent drainages or stream channel.
- At outlet end of turnout, spread, retain or filter run-off water with use of rip rap, brush, etc.

Miscellaneous

Selling Timber & Consulting Foresters

Consulting Forester

I HIGHLY recommend having a private consulting forester handle your timber sale. Although they charge a fee, consultants generally find their landowner a better price for their stumpage. This should be the first thing you do, as your consultant can help you decide when to begin work. I have enclosed a list of consultants that you may contact.

Attached you will find some information about selling timber and information that needs to be part of the timber sale contract. As with any forestry operation, someone should monitor the operation closely. You could also notify the NC Forest Service when logging is occurring so we can perform a water quality inspection.

Environmental Concerns

All forestry activities should be performed in a responsible manner and with minimum site disturbance. The following need to be considered when harvesting:

- ✓ All forestry activities are required to follow the NC Forest Practice Guidelines (FPG's) in order to remain exempt from the Sedimentation Pollution Control Act. FPG's are performance standards established to help protect North Carolina's water quality.
- ✓ The law holds you equally responsible for compliance with these regulations. You need to use your timber contract to put the responsibility back on the logger and timber buyer.
- ✓ Forestry activities must also comply with the Neuse, Tar-Pamlico, and Jordan Lake River Basin rules (where applicable).
- ✓ Any activity involving heavy machinery should be done when the soil is dry to help prevent rutting and soil compaction.

Timber "Basis"

$$\text{Timber Sale \$\$} - \text{Timber Basis} = \text{Taxable Income}$$

You will owe federal and state tax on any net timber sale income (your "gain"). Your taxable income is the gross dollar value of the sale, less any costs of selling the timber (consultant fees, temporary road improvements, etc.), AND less your adjusted timber "basis".

Your original basis is usually one of the following:

- 1) the purchase price of your timber on the day that you purchased that timber (probably purchased with the land).
- 2) the fair market value at date of death in the case of inheritance (assuming the estate was valued at full fair market value, including the timber).
- 3) the donor's basis if the timber is received by gift.
- 4) all capitalized reforestation expenditures (If you planted the trees and did not expense the reforestation costs, then your basis will be the cost of reforestation).

The adjusted basis will be the original basis plus any capitalized annual management expenses or less any depletion, casualty loss, amortization or other tax write-off of basis dollars.

It is very important to establish your basis before the timber sale in order to reduce the amount of your federal taxes. This basis should be established by a registered forester and should be assigned **BEFORE** the timber is cut.

Taxation of Timber Sale Income – Capital Gains

- ✓ Timber is real property and is therefore a capital asset (like land or houses).
- ✓ When you sell timber, the money you make (minus the costs of selling timber and minus your timber basis) is a “long-term capital gain”, assuming that you have owned the timber for more than one year.
- ✓ The Federal Government taxes “long-term capital gains” at a lower rate than regular income (wages or farm income).
- ✓ The top “capital gains” rate is currently set at 15% while tax rates on regular income can be as high as 35%. Additionally, “capital gains” are not subject to self-employment taxation (currently 15%) as is farm income.
- ✓ As you can see, reporting timber sale income as a “capital gain” can greatly reduce your tax burden.
- ✓ You may want to enlist the services of a tax accountant who is familiar with the minutia of forestry taxation.

Reforestation

Following harvest, you should contact us immediately so a reforestation plan can be prepared. Site preparation can run as high as \$250 per acre; however, it is usually much less and is often nothing. Planting tree seedlings costs about \$75 per acre. All reforestation costs are eligible for cost-share funds that pay up to 40% of the total cost.

There are also substantial Federal Tax Incentives for Reforestation that can further reduce the amount of your reforestation investment. Contact us as soon as cutting is finished. Delaying can raise the cost of reforestation substantially.

Federal Tax Incentives for Reforestation

Up to \$10,000 of qualifying reforestation expense may be taken as a federal tax deduction in the year that the reforestation expenses are incurred. Any additional reforestation expenses (with no limit) can be amortized over the next 84 months as additional federal tax deductions. The proper use of these tax incentives can greatly reduce the total amount of your forestry investment. Be sure to mention these incentives to your accountant. Also, see this web site: <http://www.timbertax.org/>

Keep in mind that all cost-share payments are “income” and you will receive a Federal 1099 in January of the following year. You will have to pay income tax on any cost-share payment unless you elect the option to exclude these reforestation cost-share payments from taxable income (IRS Code Section 126). However, if you chose to do this, you will not be able to count the cost-shared portion of your reforestation expense toward the Reforestation Tax Deductions mentioned above.

Boundary Line Maintenance and Landowner Liability

It is important that you maintain the boundary line around your property. I have enclosed a brochure entitled “Woodland Owner Notes: Maintaining Forest Property Boundaries.” It is also important that you understand your obligation to those who have permission to use your land as well as anyone trespassing on your land. Please refer to the enclosed brochure entitled “Woodland Owner Notes: Land Ownership, Liability, and the Law in North Carolina.”

A great way for the students to learn more about wildlife, ecosystems, and permaculture would be getting involved in a few citizen science projects that are sponsored by conservation agencies. Below are a few projects that may be of interest to you:

- Dragonfly Pond Watch Program (The Xerces Society): <http://www.xerces.org/dragonfly-migration/pondwatch/>
- Bumble Bee Watch (The Xerces Society): <http://www.xerces.org/bumble-bee-watch/>
- The Great Backyard Bird Count (The Cornell Lab of Ornithology, National Audubon Society, Bird Studies Canada): <http://gbbc.birdcount.org/>
- Christmas Bird Count (National Audubon Society): <http://birds.audubon.org/christmas-bird-count>
- Hummingbirds at Home (National Audubon Society): <http://www.hummingbirdsathome.org/>
- NestWatch (The Cornell Lab of Ornithology): <http://nestwatch.org/>

- FrogWatch USA (Association of Zoos and Aquariums):
<http://www.aza.org/frogwatch/>

North Carolina's Forestry Present-Use Valuation (PUV) Property Tax Program

You may want to check with the Tax Office in Hillsborough to see if your property qualifies for the present use tax valuation. This valuation is used on tracts of timber, over 20 acres that are being managed in a responsible manner. This classification could greatly reduce your tax burden. **Take a copy of this plan down to the Tax Office upon receipt, if needed!**

Final Thoughts

Thank you for keeping North Carolina a beautiful place to work and live. Your interest in forest stewardship is to be commended. Kelly Douglass and I enjoyed talking with you about the future management of your property. If you have any questions or concerns, please don't hesitate to call us. I can be reached in Hillsborough at 919-732-8105 and Kelly can be reached at (919) 621-3317.

Sincerely,



John M. McBryde

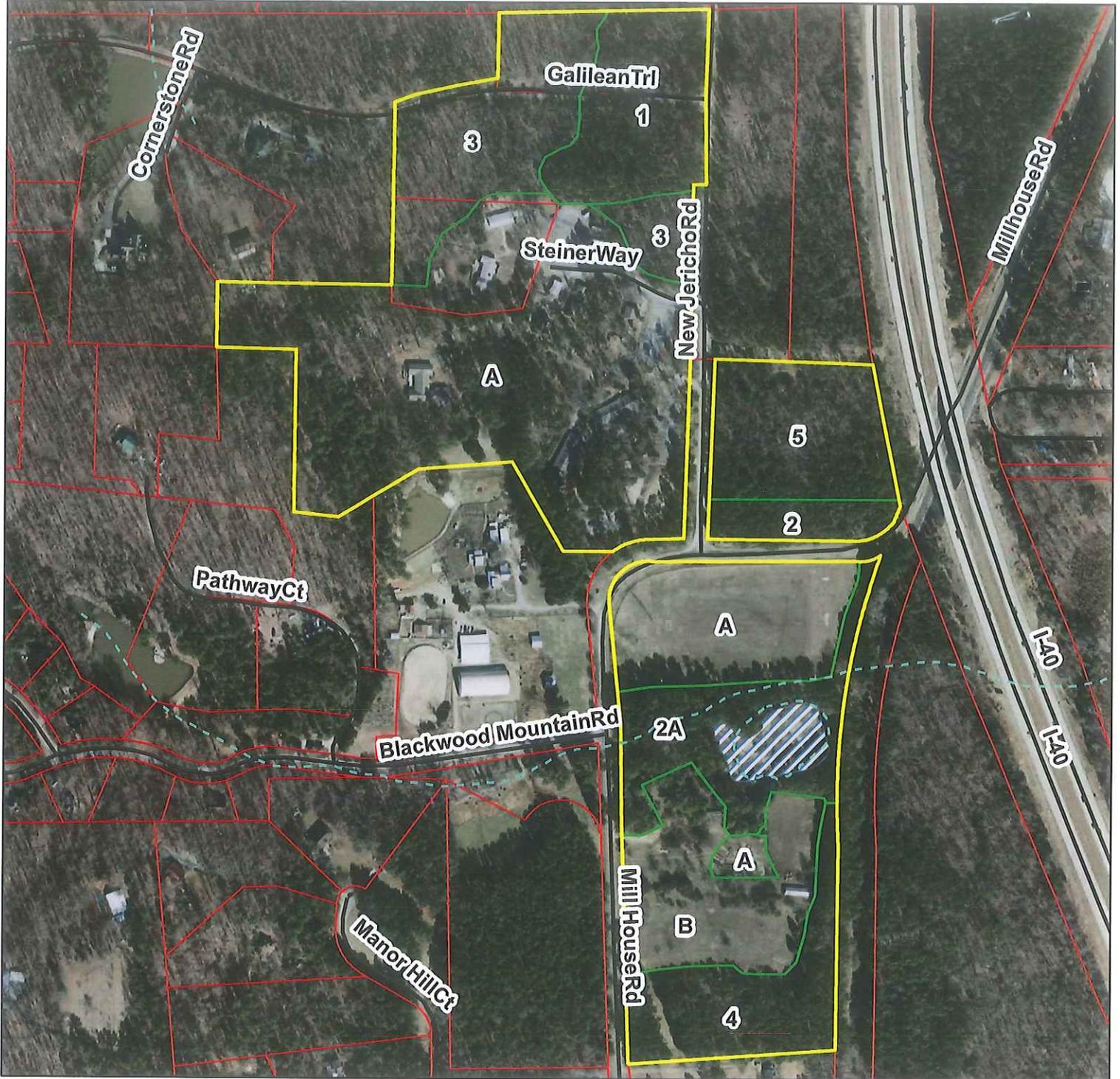
District 11 Water Quality Forester

NC Registered Forester # 1639

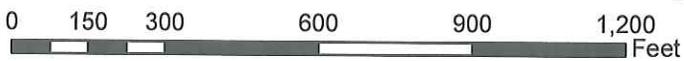


Management Map

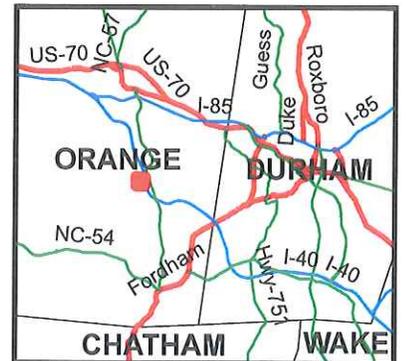
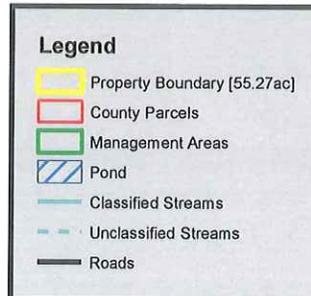
Emerson Waldorf School



Boundaries and acreages are approximate.



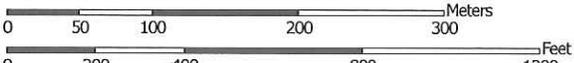
Landowner: Waldorf Educational Association of NC, Inc.
 Location: 6211 Jerico Rd., Chapel Hill, NC
 PINs: 9871647391; 9871645632; 9871658140;
 9871743098; 9871721935
 County: Orange
 Date: March 26, 2014
 Data Source: NC One Map Orthophoto 2010



Soil Map—Orange County, North Carolina
(PropBoundAll)



Map Scale: 1:4,920 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

-  Area of Interest (AOI)
-  Area of Interest (AOI)
-  Soils
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points
-  Special Point Features
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Water Features
-  Streams and Canals
-  Transportation
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
-  Background
-  Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, North Carolina
 Survey Area Data: Version 13, Dec 21, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 10, 2010—Apr 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

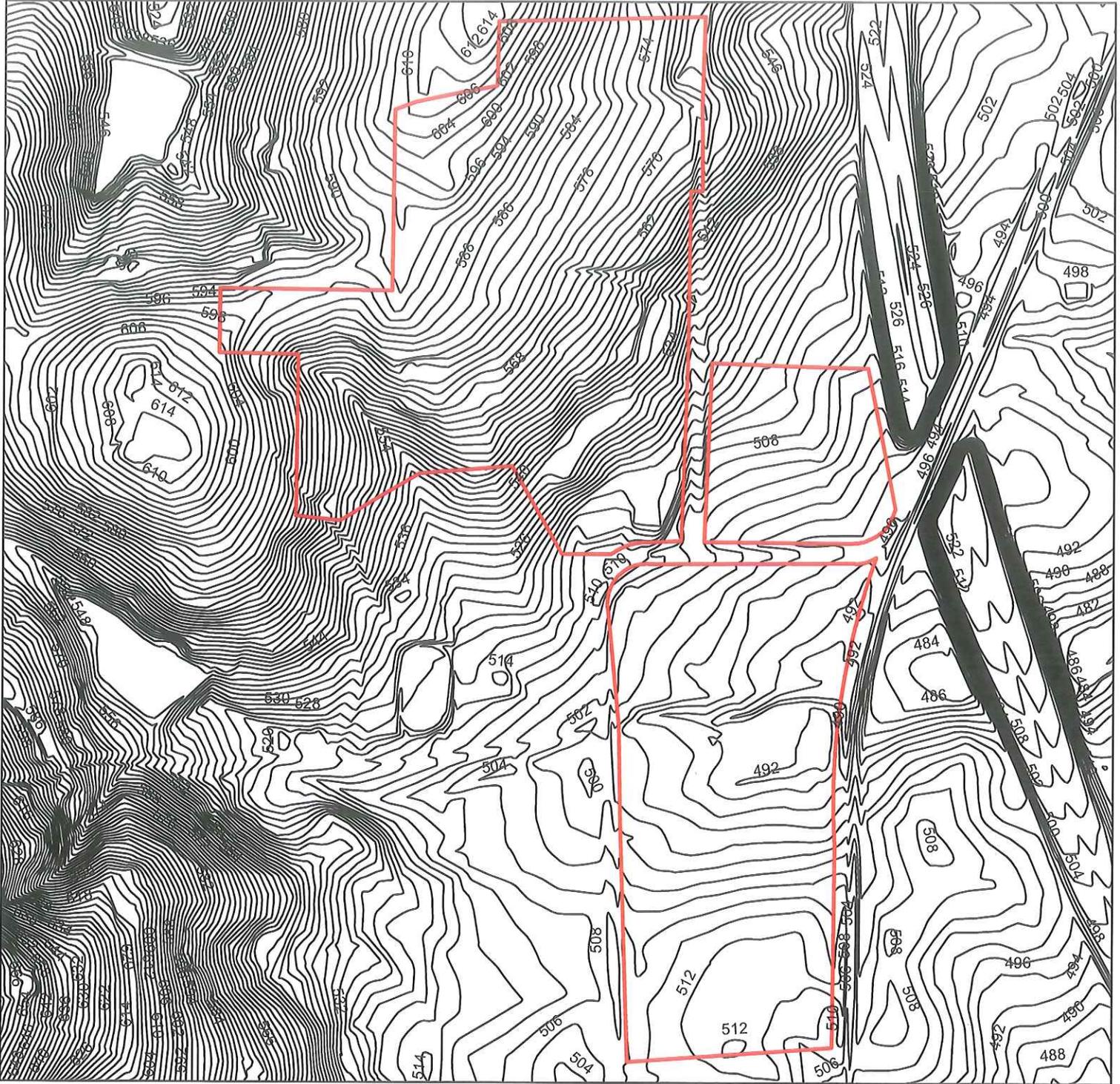
Orange County, North Carolina (NC135)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EnB	Enon loam, 2 to 6 percent slopes	13.5	26.5%
EnC	Enon loam, 6 to 12 percent slopes	24.9	48.9%
HrB	Herndon silt loam, 2 to 6 percent slopes	7.8	15.3%
HwB	Lloyd clay loam, 2 to 6 percent slopes	0.4	0.8%
TaD	Tarrus silt loam, 8 to 15 percent slopes	3.6	7.0%
TaE	Tarrus silt loam, 15 to 25 percent slopes	0.2	0.4%
W	Water	0.6	1.1%
Totals for Area of Interest		50.9	100.0%



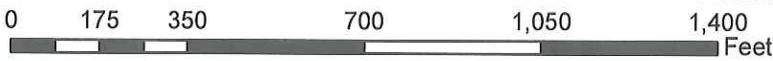


Topographic Map

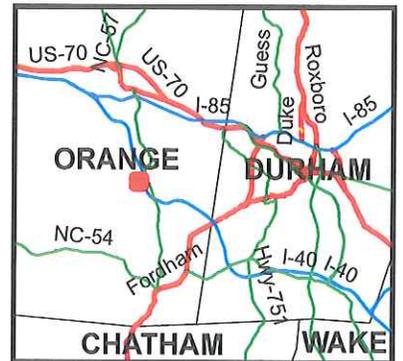
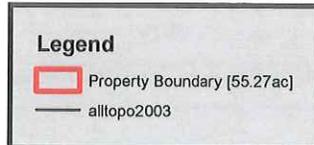
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9871743098; 9871721935
County: Orange
Date: March 26, 2014
Data Source: NC One Map Orthophoto 2010



Schedule of Management Activities

Recommended Date	Area	Acres	Practice Description	Date Completed
2014-2019	ALL	49.23	Begin eradicating invasive species as possible.	
2014	1, 2, 2A, 4	13.1	Hire consulting forester to begin planning your harvest regime.	
2014-2019	ALL	49.23	Maintain and improve walking trails.	
2014-2019	ALL	49.23	Remove hazard trees from entire property. Continue as needed.	
2014-2017	1, 2, 2A, 4	13.1	Clearcut harvest, site prepare, and plant loblolly or shortleaf pine seedlings.	
2024	ALL	49.23	Have property re-examined. Update forest stewardship plan.	

Forest Stewardship Program Resource Elements

The following thirteen (13) natural resource elements are addressed in all Forest Stewardship Management Plans when they are present and/or applicable to the landowner and the management of their property:

Soil & Water	Biological diversity	Aesthetic quality
Recreation	Timber	Fish & wildlife
Threatened & Endangered Species	Forest health	Archeological, cultural & historic sites
Wetlands	Fire	Carbon cycle
Range/Silvopasture/Agroforestry		

This document provides information on the 13 required Forest Stewardship Program natural resource elements. Your Forest Stewardship Plan will likely contain additional details on these resource elements as they relate to your property and management objectives. Your plan may not address one or more of these resource elements if they were not observed on your property or was not identified as one of your management objectives. If you would like more information, contact your Forest Stewardship Program plan writer or local NC Forest Service (NCFS) office. Additional information and brochures may be available through your local NCFS office or at:

<http://www.ncforestservice.gov/publications.htm>

Soil and Water

Soil fertility is of major importance when it comes to forest management. Just as fertile soil is needed to produce high quality agricultural crops, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the “Site Index.” Site index (SI) is the measure of growth in a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract’s soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils and accompanying data can be found on the Natural Resources Conservation Service (NRCS) website:

<http://soils.usda.gov/>

All forestry activities must protect water quality and comply with, among others, the North Carolina Forest Practices Guidelines Related to Water Quality (FPGs). Refer to the following website on FPGs:

<http://ncforestservice.gov/publications/Forestry%20Leaflets/WQ01.pdf> NCFS personnel can perform FPG site inspections upon request.

Additionally, the state and some local governments have also established rules to protect vegetated riparian buffers found along streams, rivers, and reservoirs in various parts of North Carolina. Refer to the following website:

http://ncforestservice.gov/water_quality/buffer_rules.htm

Your Forest Stewardship Plan should draw attention to water bodies located on your property that should be protected during forest management activities. This may include the establishment of streamside management zones (SMZs) which are meant to prevent sedimentation and maintain healthy water temperatures. Proper pre-harvest planning prior to cutting timber can help ensure protection of both soil and water resources. Information on forestry activities and water quality issues can be found on the NCFS website: http://ncforestservice.gov/water_quality/water_quality.htm

Soil and Water on Your Property: The property lies in the Cape Fear River Basin and is subject to the Jordan Lake Buffer Rules. Soil erosion and runoff are discussed extensively in the plan. The landowner is interested in preserving and protecting water quality throughout the property.

Biological Diversity

Biodiversity is the variety of life (including diversity of species, genetic diversity and diversity of ecosystems) and the processes that support it. Landowners can contribute to the conservation of biodiversity by providing a diversity of habitats. It is important to select management options that offer the greatest opportunities for promoting wildlife habitat and conserving biodiversity while fulfilling other land ownership objectives. Some of these options include, but are not limited to, conserving wildlife habitat and biodiversity by:

1. Managing stand-level habitat features.
2. Promoting *aquatic* and riparian areas.
3. Managing landscape features.
4. Conserving rare species and communities.
5. Protecting special features and sites.
6. Developing partnerships with natural resource agencies and conservation organizations.

For more information on managing for biological diversity, refer to the following website: <http://www.fs.fed.us/ecosystemservices/biodiversity.shtml>

(intermediate stand management), or implement a harvest to utilize the mature trees and/or remove the current stand of undesirable trees to start a new stand.

Timber on your property: Several areas need some type of harvest to meet your objectives. This is addressed in the FSP.

Fish and Wildlife

Fish and other aquatic species depend on healthy water quality and quantity. The forest management choices you make have a direct impact on both of these. Proactive and positive things landowners can do include establishing streamside management zones (SMZs), preventing or mitigating sources of sedimentation, and leaving un-mown areas around ponds. Landowners that have water bodies present on their property may contact various natural resource professionals to obtain technical assistance on improvement, aquatic maintenance, and fish stocking. Visit the following website for information on pond management and fishing opportunities:

http://www.ces.ncsu.edu/nreos/wild/fisheries/mgt_guide/chapter1.html

Forestry activities and how they relate to water quality are discussed at:

http://ncforestservice.gov/water_quality/water_quality.htm

An explanation of streamside management zones is located at:

<http://www.woodlandstewardseries.com/landowner-information-for-managing-woodland/documents/ExplainingStreamsideManagementZones.pdf>

Wildlife has four basic requirements: food, cover, water and space. Different wildlife species require different stages of forest growth to meet these needs. For example, quail and partridge feed on seeds of annual and perennial weeds and grasses that occur in young stands of timbers, where sunlight reaches the forest floor. This is early successional habitat. Pileated woodpeckers depend on dead and rotting trees found in mature forests. This is late successional habitat. Still other wildlife prefer mid-successional habitat. Several aspects of your property determine how many species can live and thrive in your forest - plant cover, harvest operations, water resources and topography. Your property may have woodland, streams, swamps, rivers, ponds, and areas that adjoin fields, pastures, roads and other openings. Managing these "edges" of your forest is crucial to abundant populations of some wildlife species. The relationship between vegetation management and wildlife species habitat is well established.

Understanding relationships is the first step in determining how your property can be managed to promote the wildlife species you want to attract. For more information on managing fish and wildlife on your forestland and ponds contact a Forest Stewardship

Biologist at http://ncforestservice.gov/fsandfl/stewardship_contacts.htm or visit the North Carolina Wildlife Resources Commission webpage: <http://www.ncwildlife.org/>

Wildlife on Your Forest: Addressed in FSP.

Threatened and Endangered Species

The North Carolina Natural Heritage Program provides information on state and federal threatened and endangered (T&E) plants and wildlife, habitats of particular conservation concern, and stewardship actions designed to benefit these important natural resources. The site has an online mapping tool, “The Virtual Workroom”, that can provide geographic information on T&E species and natural communities of concern that are within a 2-mile radius of a specified location. A searchable database that can provide county-level and US Geological Survey (USGS) information is also available. The North Carolina Natural Heritage Program lists T&E species information at the following websites:

- <http://www.ncnhp.org/Pages/heritagedata.html>
- <http://www.ncnhp.org/Pages/guide.htm>
- <http://www.ncnhp.org/Images/2010%20Rare%20Animal%20List.pdf>

T& E Species on Your Property: No threatened or endangered species were noted on the property.

Forest Health

A healthy forest is a forest that possesses the ability to sustain the unique species composition and processes that exist within it. The health of our forests must be maintained to ensure the survival of plant and animal species that make the forest their home, and to protect those processes that maintain a healthy environment. A healthy forest must also be able to accommodate the present and future needs of people for a variety of values, products, and services. Forest health protection issues are often directly related to the active management of insects and diseases, invasive plants and wildfire. Yearly inspections for signs of insects, diseases or invasive plant infestations should be completed by the landowner. More forest health information can be found on the following websites:

- www.forestpests.org
- <http://www.fs.fed.us/foresthealth/>
- <http://www.fs.fed.us/r8/foresthealth/>
- http://ncforestservice.gov/forest_health/forest_health.htm

Forest Health on Your Property: A major objective, addressed in FSP.

Archeological, Cultural and Historic Sites

Cultural resources refer to landscapes, structures, archeological artifacts, and vegetation that represent a culture or society. These remains are pieces of history that can provide a glimpse into the technology, culture, and environment of earlier societies and reveal much about our country's origins and development. Make sure you alert your forester or ranger to any such sites as they begin to develop your Forest Stewardship Plan. If you have specific questions about such sites, it may also be possible to work with a trained expert from the North Carolina Cultural Resources staff. It is especially critical to understand where such sites may be located prior to conducting ground disturbing projects. Information concerning Archeological, Cultural and Historic sites can be found at these websites:

- <http://www.ces.ncsu.edu/forestry/resources/publications/documents/won45.pdf>
- North Carolina Cultural Resources (<http://www.ncdcr.gov/>)
- North Carolina Office of Archives and History (<http://www.history.ncdcr.gov/>)

Archeological Cultural and Historical Sites on Your Property: No archeological, cultural, or historical sites were observed on your property.

Wetlands

Wetlands are highly productive areas, whether it be in terms of timber production, water quality protection, wildlife habitat, etc. Due to their wet-natured soils and longer rotation hardwood stands, they are also sensitive ecosystems that need to be managed carefully. Some of the forestry activities done on "high ground" may still be carried out in wetland areas, but others practices may not. It is the responsibility of the landowner to understand the regulations related to forestry before engaging in forestry practices or contracting with a forest management service to work on their land. This can seem a daunting responsibility, especially when it comes to wetland areas, but answers to your forest management questions can be provided if the landowner asks the right questions. The NCFS; private consulting foresters; the NC Forestry Association; and the NC Forestry Extension Program can be good sources of information on allowable forestry practices in wetlands. The two primary agencies that regulate activities in wetlands are the NC Division of Water Quality and the US Corps of Engineers.

More information on North Carolina wetlands, as well as forestry activities that may be carried out in them, can be found at these websites:

- <http://dcm2.enr.state.nc.us/wetlands/brochure.htm>
- http://ncforestservice.gov/publications/WQ0107/BMP_chapter06.pdf

Wetlands on your property: One unclassified stream and one pond with dam breached on property.

Fire

Prescribed fire is the planned use of fire under pre-determined weather and fuel conditions to obtain specific management objectives. This is also known as "controlled" burning, and when done correctly it mimics the frequent burning that used to occur in NC naturally. Prescribed burning is a critical management tool that benefits North Carolina's forests, wildlife and overall environment. It also helps reduce the devastating impacts of uncontrolled wildfire hazards. Prescribed fire is especially important in North Carolina due to the large amount of land lying in the Wildland/Urban Interface (WUI). The N.C. General Assembly recognized the importance of prescribed burning in the NC Prescribed Burning Act, which may be reviewed at the following website:

http://www.ncleg.net/EnactedLegislation/Statutes/PDF/ByArticle/Chapter_106/Article_80.pdf

The NC Forest Service and its partners train, plan and coordinate with local fire services and before a prescribed fire is started in order to ensure that all burning regulations are obeyed. There are also private contract burners that provide this service in various parts of the state.

Additional information on prescribed burning may be found at:

- http://ncforestservice.gov/Managing_your_forest/managing_your_forest.htm
- <http://www.ces.ncsu.edu/forestry/pdf/ag/AG-616.pdf>
- <http://www.ncfirewise.org/>
- http://ncforestservice.gov/fire_control/fc_wui.htm

Prescribed Fire Opportunities on Your Property: Addressed in FSP.

Carbon Cycle

All forest plants and soils “store” carbon, so your management influences the natural cycles of that storage in both living and dead plant material. The removal of carbon from the atmosphere is the process of carbon sequestration. Trees are roughly 50% carbon, based on dry weight. Certain forest management practices can promote more plant growth per acre. Timber harvests can lead to durable wood products that store carbon for long periods of time. You enable the trees on your forest to use and store carbon by maintaining forest health, replanting areas that have been harvested and actively managing a dynamic growing forest.

In recent years, programs dealing with “carbon sequestration”, “carbon credits” and “biomass” have been in the news. While the resulting financial benefit to forest landowners is still in question, this may still be a topic to watch. The amount of carbon

credits on your property can be computed based on a forest inventory cruise of your property. Age, stocking levels, species and site index of the soils are factors that can affect this inventory. Many consulting foresters can complete the base-line inventory for an associated fee. Should you decide to participate in a carbon sequestration market, you should take into consideration the commitment period, contracts, associated fees, market access, inventory methods, aggregators, certification programs, afforestation and silvicultural treatments. More information on this topic can be found at:

http://www.ces.ncsu.edu/forestry/programs/woody_biomass/pubs_and_research.php

Range/Silvopasture/Agroforestry

Silvopasture dates back to when humans first started burning and thinning forests to promote forage for the animals they relied on for food. The practice is increasingly popular in the South as a way to supplement timber income on small pine plantations and some hardwood stands. Trees can provide longer-term returns from sawlogs for lumber, while livestock in a rotational grazing system provides steady annual income. There can be, however, problems with combining the two management schemes if it is not done correctly. Before any new silvopasture system is established, landowners should thoroughly explore the associated economic and environmental considerations along with local land use, zoning, cost-share program, and tax regulations. Forest and agricultural land may have separate zoning and land-use regulations accompanied by different tax assessments. Environmental requirements (ex. planting trees, stream-side protection, and wildlife habitat maintenance) also may vary with land use.

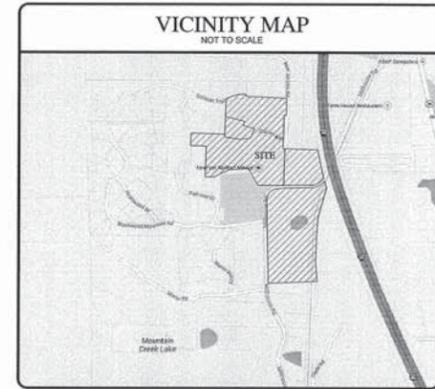
More information on silvopasture may be found at these websites:

- <http://www.srs.fs.usda.gov/compass/issue15/03pastures.html>
- <http://www.srs.fs.usda.gov/compass/issue15/03top.html>
- http://www.silvopasture.org/pdf_content/silvopasture_handbook.pdf
- <http://www.srs.fs.usda.gov/compass/issue15/03what.html>

SHEET INDEX

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TYPE "A" SPECIAL USE PERMIT SUBMITTAL
FOR
EMERSON WALDORF SCHOOL
MASTERPLAN
6211 JERICHO ROAD
CHAPEL HILL, NC 27514



NO.	DATE	BY
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(919) 967-1858 (PHONE)
(919) 967-2732 (FAX)
SBENNETT@EMERSONWALDORF.ORG (STEVE BENNETT)

CIVIL & SITE ENGINEER CONTACT:
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CHAD.ABBOTT@SUMMITDE.NET



SITE LOCATION MAP
NOT TO SCALE

PUBLIC SERVICE CONTACTS :

WELLS	ORANGE COUNTY ENVIRONMENTAL HEALTH 131 W. MARGARET LN, SUITE 100 HILLSBOROUGH, NC 27278 (919)245-2360	TELEPHONE:	CENTURYLINK (800)966-8201
SEPTIC SYSTEMS	ORANGE COUNTY ENVIRONMENTAL HEALTH 131 W. MARGARET LN, SUITE 100 HILLSBOROUGH, NC 27278 (919)245-2360	GAS:	PENC ENERGY BILLY MILLER 66 NORTH CHATHAM PARKWAY CHAPEL HILL, NC 27517 (919)918-3014
EROSION CONTROL:	ORANGE COUNTY PLANNING & INSPECTIONS EROSION CONTROL DIVISION WESLEY POOLE 131 W. MARGARET LN, SUITE 201 HILLSBOROUGH, NC 27278 (919)245-2587	RECYCLING:	ORANGE COUNTY SOLID WASTE MANAGEMENT DEPT - JEFF SCOUTEN PO BOX 17177 CHAPEL HILL NC 27516 (919)966-2889
ROADWAY:	NC DOT - DIV 7 - DIST 1 127 E. CRESCENT SQUARE DR GRAHAM, NC 27253-0766 (336) 570 - 6830	PLANNING/ZONING:	ORANGE COUNTY MICHAEL HARVEY 131 W. MARGARET LANE HILLSBOROUGH, NC 27278 (919) 245-2575
ELECTRIC:	DUKE ENERGY DONNIE CARTER 4412 HILLSBOROUGH RD DURHAM, NC 27706 (919)687-3146	STORMWATER:	ORANGE COUNTY PLANNING & INSPECTIONS EROSION CONTROL DIVISION WESLEY POOLE 131 W. MARGARET LN, SUITE 201 HILLSBOROUGH, NC 27278 (919)245-2587

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TITLE SHEET

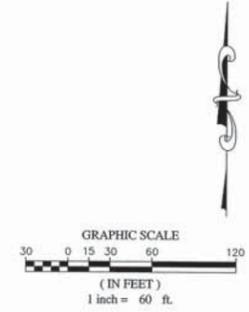
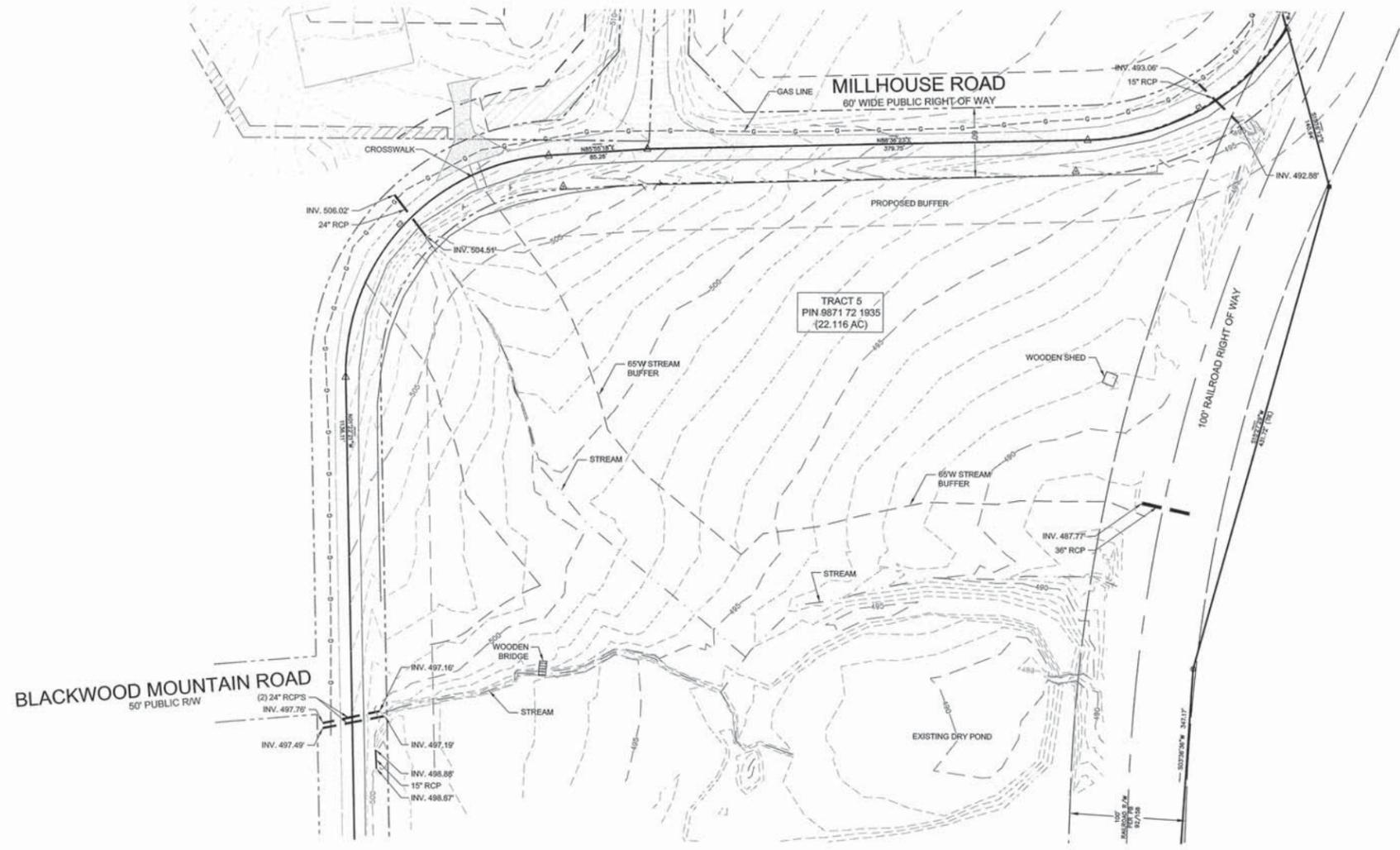
PROJECT NO.
14-0108

DRAWING NAME:
14-0108_TS

SHEET NO.
C-1



Know what's below.
Call before you dig.



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EXISTING CONDITIONS PLAN

PROJECT NO.
14-0108
 DRAWING NAME
 14-0108_XC-2
 SHEET NO.
C-3

SITE INFORMATION

OWNER: THE WALDORF EDUCATIONAL ASSOCIATION OF NORTH CAROLINA

PINS: 9871-65-8140 (TRACT 1) 2.77 AC
 9871-64-7391 (TRACT 2) 22.16 AC
 9871-64-5632 (TRACT 3) 2.60 AC
 9871-74-3098 (TRACT 4) 5.62 AC (SEPTIC SYSTEM LOT)
 9871-72-1955 (TRACT 5) 22.12 AC
 55.27 AC

JURISDICTION: ORANGE COUNTY
 STATE: NORTH CAROLINA
 RIVER BASIN: CAPE FEAR
 WATERSHED: JORDAN LAKE (UNPROTECTED)
 REFERENCE:

TOTAL AREA: 55.27 AC

EXISTING USE: EDUCATION (PRIVATE SCHOOL)
 PROPOSED USE: EDUCATION (PRIVATE SCHOOL)

EXISTING ZONING: RB (RURAL BUFFER)
 PROPOSED ZONING: RB (Special Use Permit)
 ADJACENT ZONING: RB AND PDH#1

PERIMETER SETBACK: 100'

MILL HOUSE ROAD BUFFER: 30'
 NEW JERICO ROAD BUFFER: 30'

MAXIMUM BUILDING HEIGHT: 25'

EXISTING / PROPOSED WATER SUPPLY: *16,500 GPD COMMUNITY WELL
 EXISTING / PROPOSED SEWAGE TREATMENT: *3750 GPD COMM. SEPTIC SYSTEM

EXISTING NOS. STUDENTS (2014): 258
 EXISTING NOS. STAFF (2014): 40
 PROPOSED NOS. STUDENTS (2030): 350
 PROPOSED NOS. STAFF (2030): 55

* POTABLE WATER AND SEPTIC SYSTEM STATE PERMITS SHALL BE UPDATED AS EACH PHASE OF THE MASTER PLAN IS IMPLEMENTED TO ENSURE THAT EXISTING WATER / SEPTIC UTILITIES ARE ADEQUATE TO SERVE NEW BUILDINGS & INCREASED STUDENT CAPACITY.

TRACT 3 NOTE: EARLY CHILDHOOD (KINDERGARTEN & DAYCARE) AREA (CLASSROOMS, OUTDOOR PLAY AREA, PARKING, ETC.) IS A PERMITTED USE OF PROPERTY SUBJECT TO A PREVIOUSLY ISSUED CLASS B SPECIAL USE PERMIT BY THE COUNTY. NOTHING ASSOCIATED WITH THESE PLANS CAN REDUCE REQUIRED PLAY AREA (I.E. 75 SQ. FT. OUTDOOR PLAY AREA PER CHILD) FOR THE PREVIOUSLY APPROVED USE.

ADRIANO & VALLEY MARCUZ
 D.B. 620 PG. 120
 P.B. 40 PG. 36
 T.M. 7.19.1F
 PIN 9871-54-8635

PETER W. HAMPTON and JANET A. HAMPTON
 D.B. 784 PG. 343
 P.B. 40 PG. 38
 T.M. 7.19.1D
 PIN 9871-64-1710

EXIST. 16,500 GPD WELL #3 CONSTRUCTED IN 2001 TO SERVE EXISTING CAMPUS. THIS WELL REPLACED 2 SMALLER CAPACITY WELLS ON CAMPUS. INCLUDES A 3000 GAL. HYDRO-PNEUMATIC TANK, A HYPOCHLORITE FEED SYSTEM FOR LEAD & COPPER CONTROL, & A SODIUM HYDROXIDE FEED FOR PH CONTROL. NCDENR WATER SYSTEM PERMIT # WQ 0096476.

SPENCE, M. DICKINSON
 D.B. 543 PG. 571
 P.B. 75 PG. 7
 T.M. 7.19.28P
 PIN 9871-53-8649

SPENCE, M. DICKINSON
 D.B. 1699 PG. 570
 P.B. 53 PG. 172
 T.M. 7.19B.34
 PIN 9871-53-8649

SPENCE, M. DICKINSON
 D.B. 1270
 P.B. 53 PG. 172
 T.M. 7.19B.35
 PIN 9871-53-1630

SPENCE, M. DICKINSON and wife CAROLYN A. DICKINSON
 D.B. 1139 PG. 272
 P.B. 61 PG. 123
 T.M. 7.19.26A
 PIN 9871-63-4523

TRACT 1
 PIN 9871 65 8140
 (2.77 AC)

TRACT 2
 PIN 9871 64 7391
 (22.16 AC)

TRACT 3
 PIN 9871 64 5632
 (2.6 AC)

BUILDING SCHEDULE

EXISTING BUILDINGS	PROPOSED BUILDINGS
E1 ±1,681 SF EARLY CHILDHOOD - NURSERY	P1 ±1,776 SF CENTER BUILDING (JOIN EAST & WEST WINGS)
E2 ±2,515 SF EARLY CHILDHOOD - KINDERGARTEN	P2 ±1,650 SF 6TH GRADE CLASSROOM
E3 ±2,992 SF LOWER SCHOOL (EAST WING)	P2A ±1,573 SF EURYTHMY (DANCE) (RENOVATION OF EXISTING BUILDING)
E4 ±3,053 SF MIDDLE SCHOOL	P3 ±1,364 SF ADMINISTRATION (WOODLAND SHOP EXPANSION)
E5 ±1,447 SF LOWER/MIDDLE SCHOOL FACULTY & EURYTHMY (DANCE)	P4 ±5,220 SF EARLY CHILDHOOD
E6 ±627 SF ADMINISTRATION	P5 ±6,244 SF HIGH SCHOOL ADDITION
E7 ±682 SF WOODLAND SHOP	A ±1,522 SF - CLASSROOMS
E8 ±6,120 SF HIGH SCHOOL	B ±2,762 SF - ACADEMIC WING (CLASSROOMS, BREAKOUT, MEETING)
E9 ±1,200 SF HANDWORKING (MODULAR NOT SHOWN - TO BE MOVED)	C ±1,960 SF - ADMIN/RESOURCE / LIBRARY
E10 ±960 SF WOODWORKING (MODULAR NOT SHOWN - TO BE MOVED)	D ±400 SF - TRELIS PATH
E11 ±864 SF MUSIC (MODULAR NOT SHOWN - TO BE MOVED)	P6 ±11,800 SF ARTS CENTER (MUSIC, EURYTHMY, HANDWORK, THEATRE)
	P7 ±13,942 SF GYMNASIUM (ACROSS MILLHOUSE ROAD) - SEE SHEET C-5
	P8 ±12,593 SF AUDITORIUM

PARKING SCHEDULE

EXISTING PARKING	PROPOSED SCHOOL PARKING	PROPOSED SPORTS FIELD / GYMNASIUM PARKING (SEE SHEET C-5)	PROPOSED AUDITORIUM PARKING (LAST PHASE) - 300 SEATS
±22 SPACES MAIN PARKING LOT	(REQUIREMENTS: 1 SP4 STUDENTS (350) = 143 SPACES)	161 SPACES TOTAL SPACES (INCLUDING DROP OFF SPACES)	(REQUIREMENTS: 1 SP4 SEATS (OTHER PKG LOTS USED DURING NON-SCHOOL HOURS)
±22 SPACES LOWER / MIDDLE SCHOOL TEACHER PARKING LOT	1 31 SPACES MAIN PARKING LOT (VISITOR PARKING & LOWER SCHOOL DROP OFF)	6 38 SPACES GYMNASIUM PARKING LOT	7 13 SPACES AUDITORIUM PARKING LOT
±44 SPACES EARLY CHILDHOOD PARKING LOT	2 18 SPACES LOWER / MIDDLE SCHOOL TEACHER PARKING LOT	7 17 SPACES HIGH SCHOOL STUDENT PARKING	8 56 SPACES EARLY CHILDHOOD PARKING LOT (INCLUDING DROP OFF SPACES)
±15 SPACES HIGH SCHOOL PARKING LOT	3 51 SPACES EARLY CHILDHOOD PARKING LOT (INCLUDES 5 DROP OFF SPACES)	9 12 SPACES ARTS CENTER PARKING LOT	9 31 SPACES MAIN PARKING LOT
±98 SPACES TOTAL SPACES	4 32 SPACES HIGH SCHOOL TEACHER PARKING LOT	10 12 SPACES ARTS CENTER PARKING	10 12 SPACES ARTS CENTER PARKING
	5 12 SPACES ARTS CENTER PARKING (INCL. 2 HANDICAP PARKING SPACES)	11 12 SPACES ARTS CENTER PARKING	12 129 SPACES TOTAL SPACES
	6 17 SPACES HIGH SCHOOL STUDENT PARKING	12 129 SPACES TOTAL SPACES	
	7 161 SPACES TOTAL SPACES (INCLUDING DROP OFF SPACES)		

NOTES:
 1. THE SCHOOL DOES NOT PROVIDE BUSES OR VANS FOR DAILY STUDENT TRANSPORTATION TO AND FROM SCHOOL.
 2. PROPOSED PARKING SPACES SHALL BE 9'W x 16'L.

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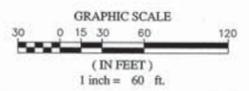
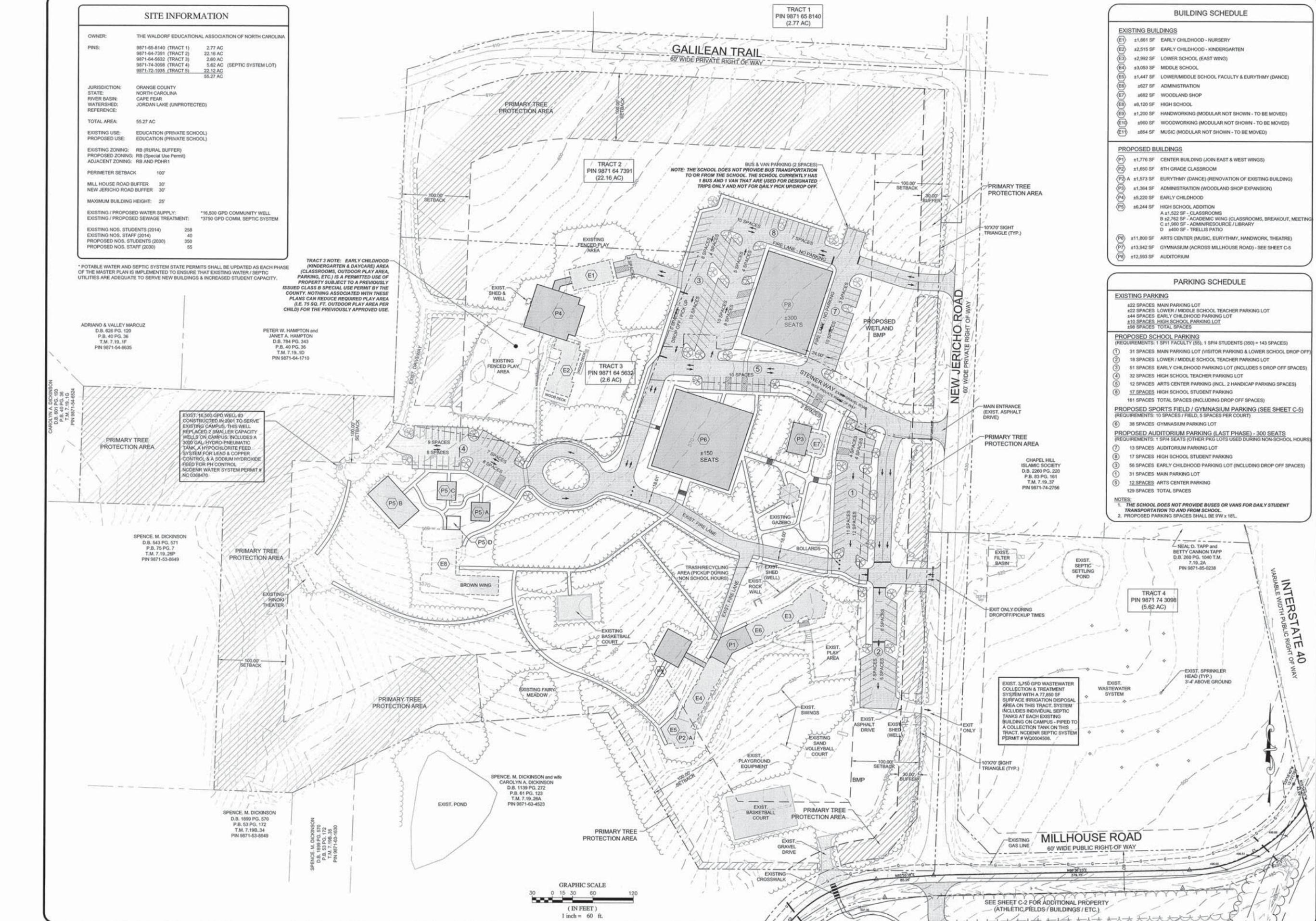
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 6211 NEW JERICO ROAD
 CHAPEL HILL, NC 27516

MASTER SITE PLAN

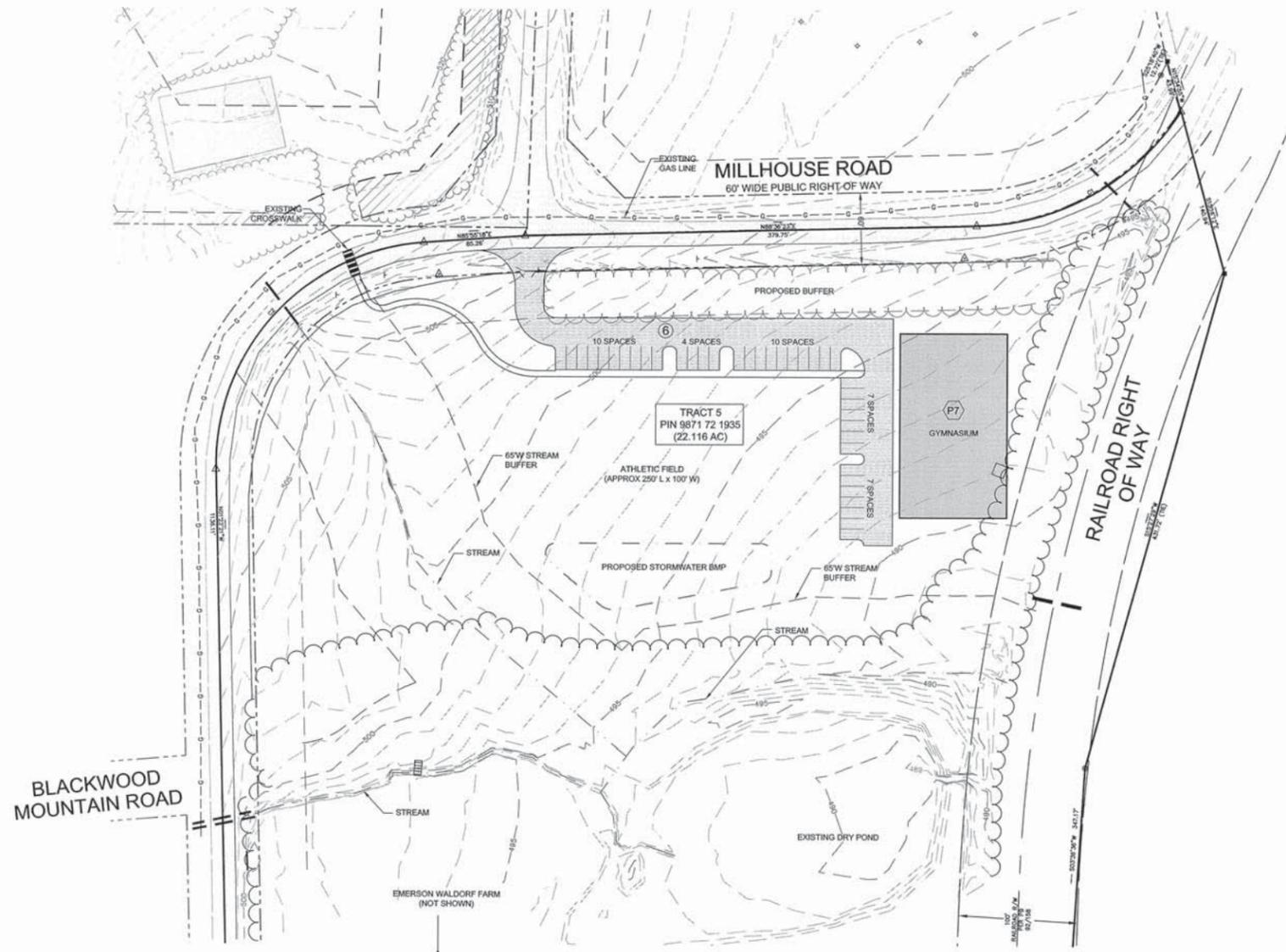
PROJECT NO.
 14-0108

DRAWING NAME
 14-0108_S

SHEET NO.
 C-4



SEE SHEET C-2 FOR ADDITIONAL PROPERTY (ATHLETIC FIELDS / BUILDINGS / ETC.)



PROPOSED DEVELOPED PORTION OF TRACT 5



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 www.summitde.net

TYPE "A" SPECIAL USE PERMIT
EMERSON WALDORF SCHOOL
 6211 NEW JERICO ROAD
 CHAPEL HILL NC 27516
MASTER SITE PLAN

PROJECT NO.
14-0108
 DRAWING NAME:
14-0108_S
 SHEET NO.
C-5

TRACT 1
PIN 9871 65 8140
(2.77 AC)

GALILEAN TRAIL
60' WIDE PRIVATE RIGHT OF WAY

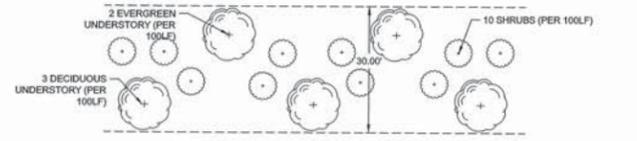
TRACT 2
PIN 9871 64 7391
(22.16 AC)

TRACT 3
PIN 9871 64 5632
(2.6 AC)

TRACT 4
PIN 9871 74 3098
(5.62 AC)

- GENERAL LANDSCAPE AND TREE PROTECTION NOTES:**
- ALL SITE PLANS SUBMITTED TO THE COUNTY PROPOSING DEVELOPMENT OF BUILDINGS, CONSISTENT WITH THIS MASTER PLAN SHALL CONTAIN ALL REQUIRED DOCUMENTATION DEMONSTRATING COMPLIANCE WITH THE SPECIFIC LANDSCAPING AND BUFFER REGULATIONS CONTAINED WITHIN SECTION 6.8 OF THE UDO.
 - ALL DEVELOPMENT REQUIREMENTS ASSOCIATED WITH SECTION 6.8 OF THE UDO SHALL BE COMPLIED WITH.
 - PER SECTION 6.8.4 (A)(1) OF THE UDO, ALL EXISTING TREES LOCATED WITHIN THE PRIMARY TREE PROTECTION AREA AS DEFINED WITHIN THE UDO SHALL BE PROTECTED.
 - PER SECTION 6.8.4 (B)(1) OF THE UDO, EXISTING TREES, REGARDLESS OF SIZE, SHALL NOT BE CUT OR OTHERWISE DIMMED OR DESTROYED WITHIN THE PRIMARY TREE PROTECTION AREA EXCEPT AS SHOWN ON AN APPROVED LANDSCAPE AND TREE PROTECTION PLAN, PLOT PLAN OR SITE PLAN.
 - PER SECTION 6.8.4 (B)(3) OF THE UDO, DURING CONSTRUCTION ACTIVITIES, ADEQUATE PROTECTIVE MEASURES SHALL BE PROVIDED TO MINIMIZE DAMAGE TO EXISTING TREES AND OTHER VEGETATION.
 - PER SECTION 6.8.4 (B)(7) OF THE UDO, SIGNS SHALL BE POSTED AND STATE THAT THE AREA IS NOT TO BE DISTURBED. SUCH PROTECTIVE DEVICES SHALL EFFECTIVELY PROTECT THE CRITICAL ROOT ZONES, TRUNKS AND TOPS OF TREES TO BE RETAINED, AND SHALL BE MAINTAINED UNTIL ALL WORK HAS BEEN COMPLETED.
 - NATIVE, NON-INVASIVE AND DROUGHT TOLERANT SPECIES SHALL BE USED WHERE ADDITIONAL LANDSCAPE AREAS ARE PROPOSED.

- RESOURCE MANAGEMENT PLAN:**
- PROTECTION OF NATURAL RESOURCES (I.E. HABITAT MAINTENANCE, EXISTING VEGETATION, AND MITIGATION OF ENVIRONMENTALLY SENSITIVE AREAS):
 - PROTECTION OF NATURAL RESOURCES IS CORE TO THE MISSION OF THE EMERSON WALDORF SCHOOL. CONNECTION WITH THE NATURAL WORLD PLAYS A CENTRAL ROLE IN WALDORF EDUCATION SO IT HAS ALWAYS BEEN THE PHILOSOPHY AND POLICY THAT THE PHYSICAL CAMPUS SHOULD SUPPORT THAT ROLE. THE 35 ACRE MAIN CAMPUS REMAINS LARGELY WOODED AND IN ITS NATURAL STATE, WHILE THE 20 ACRE FARM PROPERTY RETAINS THE CHARACTER OF THE LAND WHEN IT WAS ACQUIRED IN 2004. PLAYGROUNDS AND PLAY AREAS ARE WELL-INTEGRATED IN THE WOODED ENVIRONMENT WITH LITTLE IMPERVIOUS SURFACE OR SITE DISTURBANCE. THE PLAYING FIELD IS MAINTAINED WITHOUT ANY FERTILIZATION REGIMES OR PEST CONTROL MEASURES. THE GARDEN IS MAINTAINED USING BIO-DYNAMIC AND ORGANIC FARMING PRINCIPLES. AS THE SCHOOL MOVES FORWARD IN ITS GROWTH, THAT COMMITMENT TO RESPONSIBLE AND CONSERVATIVE RESOURCE USE AND MANAGEMENT SHALL REMAIN, AS IT IS CENTRAL TO OUR MISSION AND IDENTITY.
 - OWNERSHIP AND MAINTENANCE OF OPEN SPACES (COMMON OPEN SPACE, PROPOSED CONSERVATION EASEMENTS AND LANDSCAPE BUFFERS):
 - THERE ARE NO DESIGNATED COMMON OPEN SPACES ON CAMPUS. ALL COMMON UNDEVELOPED AREAS ON CAMPUS ARE MAINTAINED BY THE SCHOOL IN THEIR NATURAL STATE.
 - THERE ARE NO EXISTING OR PROPOSED CONSERVATION EASEMENTS ON CAMPUS.
 - LANDSCAPE BUFFERS ALONG THE PERIMETER OF THE CAMPUS ARE OWNED BY THE SCHOOL AND MAINTAINED IN THEIR NATURAL STATE.
 - PROVISION OF SERVICES (SOLID WASTE MANAGEMENT TO INCLUDE RECYCLING, STORM WATER MANAGEMENT (TEMPORARY AND PERMANENT), IRRIGATION SYSTEMS TO INCLUDE THE SOURCE OF WATER):
 - SOLID WASTE AND RECYCLING PICK UP IS LOCATED JUST UP HILL FROM THE EXISTING LOWER SCHOOL BUILDING AT THE FIRE ACCESS ROAD TO THE BUILDING. PICK UP IS ALWAYS OUTSIDE OF SCHOOL HOURS.
 - THERE ARE NO CURRENT ENGINEERED STORMWATER CONTROL MEASURES (SCM) LOCATED ON THE CAMPUS. FUTURE DEVELOPMENT ON CAMPUS OVER A CERTAIN THRESHOLD OF LAND DISTURBANCE WILL REQUIRE SCM TO BE INSTALLED IN APPROPRIATE AREAS ON CAMPUS AND WITHIN MAINTENANCE EASEMENTS THAT ALLOW ACCESS TO COUNTY STAFF FOR INSPECTION AND REPAIR IF REQUIRED.
 - THERE ARE NO EXISTING IRRIGATION SYSTEMS ON CAMPUS.
 - THE HANDLING OF LAND CLEARING DEBRIS:
 - DEBRIS FROM FUTURE LAND CLEARING ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF NEW FACILITIES THAT ARE PART OF THIS MASTERPLAN SHALL BE TAKEN TO AN APPROVED SOLID WASTE FACILITY PER ORANGE COUNTY ORDINANCE.



TYP. ORANGE COUNTY 30' TYPE B BUFFER (OPTION 4)
PLANTING PLAN FOR MILLHOUSE ROAD & NEW JERICO ROAD
SCALE: 1"=20'

CHAPEL HILL ISLAMIC SOCIETY
D.B. 2209 PG. 220
P.B. 83 PG. 161
T.M. 7-19-37
PIN 9871-74-2756

NEAL D. TAPP and
BETTY CANNON TAPP
D.B. 260 PG. 1049
T.M. 7-19-2A
PIN 9871-85-0238

MILLHOUSE ROAD
60' WIDE PUBLIC RIGHT OF WAY

SEE SHEET C-2 FOR ADDITIONAL PROPERTY
(ATHLETIC FIELDS / BUILDINGS / ETC.)

ADRIANO & VALLEY MARCUZ
D.B. 826 PG. 120
P.B. 40 PG. 36
T.M. 7-19-1F
PIN 9871-54-8635

PETER W. HAMPTON and
JANET A. HAMPTON
D.B. 784 PG. 343
P.B. 40 PG. 36
T.M. 7-19-1D
PIN 9871-64-1710

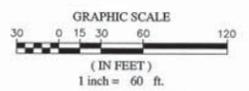
CAROLYN A. DICKINSON
D.B. 101 PG. 350
P.B. 40 PG. 38
T.M. 7-19-1G
PIN 9871-64-8504

SPENCE, M. DICKINSON
D.B. 543 PG. 571
P.B. 75 PG. 7
T.M. 7-19-26P
PIN 9871-53-8649

SPENCE, M. DICKINSON and wife
CAROLYN A. DICKINSON
D.B. 1138 PG. 272
P.B. 61 PG. 123
T.M. 7-19-26A
PIN 9871-63-4523

SPENCE, M. DICKINSON
D.B. 1899 PG. 570
P.B. 53 PG. 172
T.M. 7-19-34
PIN 9871-53-8649

SPENCE, M. DICKINSON
D.B. 53 PG. 172
P.B. 53 PG. 172
T.M. 7-19-34
PIN 9871-53-8649



NO.	REVISIONS	DATE	BY
7			
6			
5			
4			
3			
2			
1			

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TYPE "A" SPECIAL USE PERMIT
EMERSON WALDORF SCHOOL
6211 NEW JERICO ROAD
CHAPEL HILL, NC 27516

LANDSCAPE, TREE PRESERVATION
& NATURAL RESOURCE PLAN

PROJECT NO.
14-0108

DRAWING NAME:
14-0108_S

SHEET NO.
C-6

