1. Call To Order

2. Roll Call
   Fredrick Davis
   Regina deLacy, Chair
   Phillip Harris, Jr.
   Ian Kipp
   Michael Kriston
   Chad Meadows
   Alisa Thomas
   Chris Burnham, Alternate
   Michael Retchless, Alternate
   Jacob Rogers, Designated Alternate

3. Adjustments To Agenda

4. Swearing-In Of Witnesses

5. Hearing And Determination Of Cases - Planning Staff

   A. **Case B1800032** - County: A request for a minor special use permit for an elementary educational facility in a residential district. The site is located at 5510 Barbee Chapel Road; is zoned Residential Rural (RR) and Falls Jordan District B Watershed Overlay (F/J-B); and in the Suburban Tier.

   B. **Case B1900006** - City: A variance from the required 20-foot maximum street yard, with the longest building façade not parallel to or located within the maximum street yard, and the building occupying less than 60% of the total street frontage. The site is located at 805 S Briggs Avenue; is zoned industrial Light (IL) and Industrial (I); and in the Urban Tier.

   C. **Case B1900017** - City: A variance from the 50-foot riparian buffer and 10-foot no-build setback requirements for the construction of additional residential square footage. The site is located at 7 Edgestone Place; is zoned Residential Suburban-10 (RS-10) and Falls Jordan District B Watershed Overlay (F/J-B); and in the Suburban Tier.

Documents:

   - B1800032 COMBINED.PDF
   - B1900006.PDF
   - B1900017 COMBINED.PDF

6. Approval Of Minutes - April 23, 2019

7. Approval Of Orders
   A. Case B1800032
   B. Case B1900006
   C. Case B1900017

8. Old Business

9. New Business

10. Adjournment
Call To Order
Roll Call
Fredrick Davis
Regina deLacy, Chair
Phillip Harris, Jr.
Ian Kipp
Michael Kriston
Chad Meadows
Alisa Thomas
Chris Burnham, Alternate
Michael Retchless, Alternate
Jacob Rogers, Designated Alternate

Adjustments To Agenda
Swearing In Of Witnesses

Hearing And Determination Of Cases

Planning Staff

A. Case B1800032
   - County: A request for a minor special use permit for an elementary educational facility in a residential district. The site is located at 5510 Barbee Chapel Road; is zoned Residential Rural (RR) and Falls Jordan District B Watershed Overlay (F/J-B); and in the Suburban Tier.

B. Case B1900006
   - City: A variance from the required 20-foot maximum street yard, with the longest building façade not parallel to or located within the maximum street yard, and the building occupying less than 60% of the total street frontage. The site is located at 805 S Briggs Avenue; is zoned industrial Light (IL) and Industrial (I); and in the Urban Tier.

C. Case B1900017
   - City: A variance from the 50-foot riparian buffer and 10-foot no-build setback requirements for the construction of additional residential square footage. The site is located at 7 Edgestone Place; is zoned Residential Suburban-10 (RS-10) and Falls Jordan District B Watershed Overlay (F/J-B); and in the Suburban Tier.

Approval Of Minutes - April 23, 2019

Approval Of Orders
A. Case B1800032
B. Case B1900006
C. Case B1900017

Old Business

New Business

Adjournment

1.
2.
3.
4.
5.

Documents:
6.
7.
8.
9.
10.
Meeting Date: May 28, 2019

Reference Name | 5510 Barbee Chapel Road Educational Facility (B1800032) | Jurisdiction | County
--- | --- | --- | ---
Request | A minor special use permit for an elementary educational facility in a residential district. |  |
Site Characteristics |  |
| Tier: | Suburban |  |
| Use: | Place of Worship |  |
| Zoning: | Residential Rural (RR) |  |
| Overlays: | Falls Jordan District B Watershed Overlay (F/J-B) |  |
| Size: | 37.60 acres |  |
Applicant | International Montessori School, Inc. | Submittal Date | October 10, 2018
Location | 5510 Barbee Chapel Road |  |
PID(s) | 143138 |  |
Staff Recommendation | Staff will make a recommendation following the hearing. |  |

A. Summary

Mr. Robert Pratt with Surface 678, on behalf of International Montessori School, Inc., requests a minor special use permit (mSUP) to construct an elementary educational facility in a residential district. The subject site is located at 5510 Barbee Chapel Road, is zoned Residential Rural (RR) and Falls Jordan District B Watershed Overlay (F/J-B), and is located in the Suburban Tier. The subject site is currently being utilized as a place of worship.

Pursuant to the use table in Unified Development Ordinance (UDO) Section 5.1.2, an educational facility is allowed within a residential zoning district provided that a minor special use permit is granted by the Durham Board of Adjustment. The applicant is proposing to develop six one-story buildings totaling approximately 32,330 square feet of floor area. Another area of the site is being proposed as an athletic soccer complex which previously received mSUP approval as a club/lodge use to allow such facilities (Case B1200022). Existing parking facilities are being modified with new facilities being proposed, and two stormwater management areas are also proposed to serve the proposed uses. An associated site plan (Case D1800241) is currently under review for the educational facility and modification to the approved site plan for the soccer complex, and is clear of substantial comments. (See Attachment 4, Site plan and elevations - D1800241).
B. **Summary of the Issues**

No issues have been identified at the time of the writing of this report.

**Recommended Conditions of Approval**

1. The improvements shall be substantially consistent with the plans and information submitted to the Board as part of the application.

2. The maximum student enrollment shall not exceed 72 students for grades 1-6 and 141 students for toddler-kindergarten.

C. **UDO Section 3.9.8: Criteria for Approval**

**UDO Section 3.9.8A General Findings**

Applications for major or minor special use permits shall be approved only if the approving authority finds that the use as proposed, or the use as proposed with conditions, is:

1. **In harmony with the area and not substantially injurious to the value of properties in the general vicinity;**

2. **In conformance with all special requirements applicable to the use;**

3. **Will not adversely affect the health or safety of the public; and**

4. **Will adequately address the review factors identified below.**

If the Board of Adjustment fails to find conformance with the conditions listed above, or makes findings which are inconsistent with those conditions listed above, then the proposed permit must be denied.

The Board should consider the information provided in the staff analysis and conclusions for the following review factors when making determinations on the general findings.

The applicant has provided responses to the general findings and review factors in Attachment 3, Application – B1800032.

**UDO Section 3.9.8B Review Factors**

UDO Section 3.9.8B requires consideration of the review factors shown below:

**Circulation**

*Number and location of access points to the property and the proposed structures and uses with particular reference to automotive, bicycle, mass transit and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.*

**Staff Analysis.** The subject site fronts along Barbee Chapel Road and is proposed with access through existing ingress/egress points along Barbee Chapel Road. (See Attachment 4, Sheet L006). These ingress/egress points will provide access to the educational facilities, soccer complex, and the associated vehicle use areas. The west
driveway will be converted to access only, while the east driveway will be converted into an exit only driveway, with designated left and right turn lanes.

A traffic impact analysis (TIA) was required for the proposed development and analyzed by the City of Durham’s Transportation Department and the Municipal and School Transportation Assistance (MSTA) group, within the North Carolina Department of Transportation (NCDOT), as the proposed use exceeds 150 peak-hour vehicle trips as estimated by the Institute of Transportation Engineers (ITE) Manual. The proposed use is expected to serve 72 students for grades 1-6, and 141 students for toddler-kindergarten. As such, the uses are expected to generate 1,118 trips per day, with 236 trips in the a.m. peak-hour (141 entering, 95 exiting) and 281 trips in the school p.m. peak-hour (130 entering, 151 exiting). Based on the TIA findings, roadway improvements are required to be met (See Attachment 5, NCDOT Traffic Memo). The following shall be met for the educational facility:

a. The western access shall be ingress only.
b. The eastern driveway shall be egress only, with a dedicated left and right turn lane with 100 feet of northbound storage.
c. A dedicated left turn lane off Barbee Chapel Road into the western access is required with 100 feet of storage.
d. 333 feet of average queue length and 100 feet high demand queue length, for a total queue of 433 feet, shall be provided for 72 students.
e. The following items should be included on the site plan:
   • Designate short term visitor parking just past the Parent Loading Zone. Eight to ten parking spaces should be identified by installing “Visitor Parking” signs and/or pavement markings at the spaces to be assigned. These spaces are for parents requiring extended periods of time to load. If a parent stops in the loading zone, to wait to load their student, a loading assistant should direct that parent to the Visitor Parking
   • Identify handicap parking at proposed location.
   • Identify parent driveway entrance and exit paths.
   • Address pedestrian safety: The parking lots should have pedestrian sidewalks, crosswalks and associated traffic islands along parking spaces to provide safe pedestrian walking paths out of the vehicle travel lanes to the school building. ADA approved curb cuts and crosswalks should be installed at appropriate locations where they will be convenient to pedestrians and be expected by drivers. Implementing these design elements will greatly improve pedestrian safety while reducing vehicle delay.

f. Access driveway #1 (the west site access) on SR 1110 (Barbee Chapel Rd) was modeled in Synchro/Sim Traffic with and without the proposed WB turn lane. It was determined that with the proposed minimal increase in volume from the school this driveway will function with an acceptable delay during the AM and
PM peak. For this reason, NCDOT will not be recommending a turn lane at this location.
g. A traffic signal for Access driveway #2 (the east site access) on SR 1110 (Barbee Chapel Rd) is not warranted. As per the email dated 11/23/2018, all students are scheduled to be picked up by 3:15pm and soccer games do not begin until 4:30pm so, therefore, the number of trips for the soccer park should not be included in the AM or PM total. The minimal increase in volume from the school alone does not warrant a traffic signal at this location. This driveway will function with an acceptable delay during the AM and PM peak school traffic.
h. Additional comments:
   • Designate Access #1 and front “horseshoe” driveway as a one-way only. This includes one-way arrows and “Do Not Enter” signs.
   • Install a northbound driveway exit turn lane as per the TIA. The original TIA recommended a 100 feet turn lane and the revised TIA recommends a 175 feet turn lane. As per the criteria in the NCDOT Policy on Street and Driveway Access to North Carolina Highways 100 feet of internal storage may be more appropriate. However, this is at the school's discretion since this is on their property.
   • A Traffic Management Plan (TMP) should be devised to include:
     i. The location of parent loading zone.
     ii. Daycare pickup should not be in the school queue line. Advise parents of procedures and times to pick up these children.
     iii. Parents should be notified that all students should be picked up prior to 3:15pm. The parent queue line must be cleared prior to soccer game traffic beginning.
   • Designate SR 1110 (Barbee Chapel Rd) in front of the school as a school zone. An existing 35-mph speed zone is approximately 100 feet west of Access #1. District should consider extending this speed zone along the frontage of the school's property.

The TIA and also UDO Section 10.5.1A require that minimum queue length for vehicular stacking requirements be met through the NCDOT’s Municipal School Transportation Assistance (MSTA) calculator. Based on the required number of students, staff, and anticipated peak-hour vehicles, the high demand queue length for stacking is required to be 433 total linear feet on-site. The applicant is proposing to exceed the queueing requirement by providing 480 linear feet of queueing and an additional 100 feet of parent drop off/loading zone queueing, which equates to 29, 20-foot long vehicular stacking spaces. (See Attachment 4, Sheet L006)

Presently, there is no direct pedestrian access to the subject site. The applicant proposes to install a sidewalk from the buildings and parking to the public right-of-way. Public sidewalk along the Barbee Chapel Road right-of-way frontage is being proposed, per the UDO. Public transportation does not serve this site.
Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

**Parking and Loading**

*Location of off-street parking and loading areas.*

**Staff Analysis.** The educational facility use is required to provide one space per classroom, plus one space per 300 square feet of floor area for administrative office space. The applicant proposes thirteen classrooms and 2,662 square feet of administrative office floor area, which requires 22 vehicular parking spaces. The club/lodge use for the soccer complex requires one vehicular parking space per 100 square feet of floor area. The indoor soccer building for the club/lodge use proposes a total of 41,075 square feet, requiring a total of 411 vehicular parking spaces. Both combined uses require a total of 433 vehicular parking spaces.

The provisions in UDO Section 10.3.1B.9a allow for vehicular parking reductions up to 20% for shared uses provided that a parking generation analysis developed by a registered engineer with transportation expertise documents that (1) the peak hours for each use do not overlap; and (2) the proposed amount of parking is sufficient to accommodate the anticipated demands for each of the uses at peak hour. The applicant developed a parking generation study to determine the necessary required quantity of vehicular parking spaces based on the proposed shared uses. (See Attachment 6, Parking Generation Study). The study determined that the maximum quantity of parking stalls estimated to be utilized at any one time is 286 stalls at overlapping peak hour usage. Therefore, the study recommended a minimum of 286 parking stalls to be shared between the educational facility and the club/lodge (soccer complex) uses. The applicant is proposing a total of 364 vehicular parking spaces to satisfy both uses on site for a total parking reduction of 86 vehicular spaces (15.93%). This parking generation study was reviewed and approved by the City of Durham’s Transportation Department for compliance with the Ordinance standards.

Thirteen bicycle parking spaces are required for the educational facilities, pursuant to UDO Section 10.3.1A.4 and 14, are being proposed, while nine bicycle racks are required for the club/lodge use and 10 spaces are being proposed. There are 24 total bicycle parking spaces being proposed for the combined uses.

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

c. **Service Entrances and Areas**

*Locations of refuse and service areas with particular reference to ingress and egress of service vehicles.*

**Staff Analysis.** Refuse is proposed to be collected from two enclosed areas, one located along the northwestern portion of the proposed vehicle use area, and another
located in the central western vehicular use area as seen on the attached site plan. (See Attachment 4, Sheet L001).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

d. Lighting

Locations of exterior lighting with reference to glare, traffic safety, economic effect, and compatibility with other properties in the area.

Staff Analysis. The applicant proposes pole and building mounted lighting along the driveways within the vehicle use areas and at building entrances as required pursuant to UDO Section 7.4, Outdoor Lighting.

Refer to Attachment 3, Application – B1800032, for applicant response to this review factor.

Signs

Appropriateness of signs considering location, color, height, size, and design within the context of other properties in the area.

Staff Analysis. No signs requiring permits are indicated on the associated site plan (Attachment 4). Any and all signage must adhere to the requirements of UDO Section 11, Signs, and must be submitted under separate permit.

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

Utilities

Location and availability of utilities.

Staff Analysis. The site will be served by City water and sewer service as seen on the attached site plan. (See Attachment 4, Sheet C-3.0).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

Open Spaces

Location of required yards and other open spaces, and preservation of existing trees and other natural features.

Staff Analysis. Under current Ordinance standards, the required yards that apply are as follows:

<table>
<thead>
<tr>
<th>Yard</th>
<th>Required Setback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street</td>
<td>25 feet minimum</td>
</tr>
<tr>
<td>Side</td>
<td>10 foot single, 24 feet total</td>
</tr>
</tbody>
</table>
Nonresidential development in residential districts within the Suburban tier require 10% of the site to be preserved as open space pursuant to the dimensional standards in UDO Section 6.9.1A. The applicant is proposing 10.90% open space, which exceeds open space requirements. (See Attachment 4, Sheet L002).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

**Environmental Protection**

Preservation of tree cover, Durham Inventory Sites, floodplain, stream buffers, wetlands, steep slopes, open space and other natural features, and protection of water quality.

**Staff Analysis.** The applicant is required to preserve a minimum of 10% of the disturbed area of the site to meet tree coverage provisions. The applicant proposes to preserve 10.02% of trees to meet this provision. (See Attachment 4, Sheet L002).

Two existing intermittent stream branches exist within the site. As this site is located within the F/J-B Watershed Protection Overlay District and impervious surfaces are proposed to exceed 24%, the streams require 100-foot wide riparian buffers pursuant to UDO Section 8.5.4B.1 and additional 10-foot wide no-build setbacks pursuant to UDO Section 8.5.9C. The applicant is proposing to impact one of the riparian buffers located along the western parcel boundary to 1) modify a stormwater retention device to remove it from the buffer; and 2) to install a temporary erosion control sedimentation basin, as allowed through a No Practical Alternatives Application (NPAA) approval issued by the North Carolina Division of Water Resources (NCDWR) pursuant to UDO Section 8.5. The impacted areas of the riparian buffer will be revegetated. (See Attachment 4, Sheets L151 and L161). This NPAA approval will be required prior to issuance of any construction drawing approvals.

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

**Screening, Buffering and Landscaping**

Installation of screening, buffering, fencing, and landscaping where necessary to protect adjacent property.

**Staff Analysis.** The site is bordered to the east by vacant RR-zoned parcels, to the southeast by a developed RR-zoned parcel utilized for single-family, to the south by a vacant RR-zoned parcel used for forestry, and to the west by a Planned Development Residential (PDR) 2.000-zoned development.
Per UDO Section 9.4.3C.2, nonresidential development proposed in a residential district to be adjacent to residential districts or residential developments (except for upper-story residential or with any intervening street or railroad right-of-way) on other properties that would not otherwise require a buffer, shall provide buffers in accordance with the provisions of the CN District in determining buffer requirements.

Where the proposed development is adjacent to vacant RR-zoned property, the applicant proposes to meet the buffer standards by utilizing 40% opacity/20-foot-wide constructed and 40% opacity/25-foot-wide natural project boundary buffers. Where the proposed development is adjacent to developed RR-zoned property, the applicant proposes to meet the buffer standards by utilizing 60% opacity/30-foot-wide natural project boundary buffers. Where the proposed development is adjacent to the PDR-zoned property, the applicant proposes to meet the buffer requirements for RR-zoned property adjacent to PDR zoned property by utilizing 20% opacity/10-foot-wide constructed and 20% opacity/25-foot-wide natural project boundary buffers. In accordance with UDO 9.4.2.A, project boundary buffers are not required along right-of-ways that are greater than 60 feet. As such, a project boundary buffer is not required along the Barbee Chapel Road right-of-way frontage. Staff finds that the screening and buffering requirements have been met for this proposal as seen on the site plan. (See Attachment 4, Sheets L002 and L162).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

**Effect on Adjacent Property**

*Effects of the proposed use on nearby properties, including, but not limited to, the effects of noise, odor, lighting, and traffic.*

**Staff Analysis.** The table below notes the surrounding uses and zoning districts:

<table>
<thead>
<tr>
<th>Surrounding Uses and Zoning Districts</th>
<th>Use</th>
<th>Zoning District</th>
<th>Overlay</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North (across Barbee Chapel Road)</strong></td>
<td>Vacant and Developed Single Family Residential</td>
<td>RS-20</td>
<td>F/J-B</td>
<td>Suburban</td>
</tr>
<tr>
<td><strong>South</strong></td>
<td>Vacant Forestry</td>
<td>RR</td>
<td>F/J-B</td>
<td>Suburban</td>
</tr>
<tr>
<td><strong>East</strong></td>
<td>Vacant Single Family Residential</td>
<td>RR</td>
<td>F/J-B</td>
<td>Suburban</td>
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<tr>
<td><strong>Southeast</strong></td>
<td>Single Family Residential</td>
<td>RR</td>
<td>F/J-B</td>
<td>Suburban</td>
</tr>
<tr>
<td><strong>West</strong></td>
<td>Single Family Residential</td>
<td>PDR 2.000</td>
<td>F/J-B</td>
<td>Suburban</td>
</tr>
</tbody>
</table>

Staff does not expect any negative effects from noise, odor, or lighting at the subject site. Staff does expect an increase in traffic during peak hour use (educational hours). The increase in traffic does prompt a requirement for roadway improvements to mitigate the increase in traffic. As stated previously in the review
factor concerning circulation, a TIA was required based on the proposed use exceeding 150 peak-hour vehicle trips as estimated by the ITE Manual, and a subsequent NCDOT memo was generated based on the projected student and staff population for the proposed educational use. This report resulted in a requirement to provide various traffic improvements for the site and SR 1110 (Barbee Chapel Rd). (See Attachment 5, NCDOT Traffic Memo).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

Compatibility
The level of general compatibility with nearby properties and impacted neighborhoods, including, but not limited to, the appropriateness of the scale, design, and use in relationship to other properties.

Staff Analysis. The subject site is surrounded by vacant and developed residential uses in the immediate vicinity. Buildings are proposed to be developed with maximum heights of approximately 31 feet and utilize gable roof styles. (See Attachment 4, Sheets A2 and A3). The site requires vegetative buffers located along all parcel boundaries to aid in screening from neighboring uses except for the Barbee Chapel Road frontage. Much of the existing vegetation is proposed to be retained along the parcel frontage and the closest building is proposed to be set back approximately 270 linear feet from the front parcel line. (See Attachment 4, Sheet L152).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.

Consistency with Policy
Consistency with the Durham Comprehensive Plan and applicable development tier guidelines, overlay purposes, and zoning district intent statements in Article 4, Zoning Districts.

UDO Section 4.1.2A.2 Suburban Tier Intent Statement
The Suburban Tier – That area not included within the Downtown, Compact, Urban, or Rural Tiers in which urban services are expected to be provided with development at traditional suburban densities and patterns. This area is anticipated to absorb the majority of Durham’s population growth and its attendant demands for housing, employment, and goods and services, including opportunities for affordable housing and recreation.

UDO Section 4.2.1 Residential Rural District (RR)
The RR District is established to provide for agricultural activities and residential development on lots of one acre or greater and in conservation subdivisions. Commercial and industrial development is generally prohibited.
This district is used to implement the Comprehensive Plan within those areas shown as the Rural Tier. Lands within other Tiers that have existing RR zoning are acknowledged; however, such lands may be rezoned to more intensive zoning districts consistent with the Comprehensive Plan. The regulations of the district are designed to discourage the development of urban services and to encourage the maintenance of an open and rural character.

Development guidelines for this district may be found in UDO Section 6.2, Residential Rural (RR) Development Intensity.

**UDO Section 4.11 Watershed Protection Overlay**

The purpose of the Watershed Protection Overlay is to preserve the quality of the region's drinking water supplies through application of the development standards in Article 8, Environmental Protection. In general, water supply protection will be accomplished by establishing and maintaining low intensity land use and development on land near the region's water supply rivers and reservoirs. Where high density development is desired, water supply protection will be accomplished through the use of engineered stormwater controls. The overall objective is to:

1. Reduce the risk of pollution from stormwater running off of paved and other impervious surfaces; and

2. Reduce the risk of discharges of hazardous and toxic materials into the natural drainage system tributary to drinking water supplies.

**Staff Analysis.** The proposed development is located in a RR zoning district within the Suburban Tier.

The Ordinance recognizes that certain uses, such as schools, daycares, and places of worship, are appropriate and should be allowed in residential districts on a case by case basis with the issuance of a minor special use permit. The Future Land Use Map lists the site to be designated for very low density residential use. An educational facility is a permitted use within a residential zoning district provided an mSUP is approved by the Board of Adjustment.

The site is located within the F/J-B watershed protection overlay district, which allows up to 70% impervious surface area to be developed provided that engineered stormwater controls are implemented to minimize the risk of water pollution pursuant to UDO Section 8.7.2B.1. The applicant is proposing a total of 36% impervious surface area on site and all surface water will be routed to two on-site stormwater control facilities. Staff finds that the proposed development is in harmony with the intent and goals of the Durham Comprehensive Plan and the Future Land Use Map.

Refer to Attachment 3, Application – B1800032, for applicant’s response to this review factor.
Other Factors

Any other review factors which the approving authority considers to be appropriate to the property in question.

Staff Analysis. The limited use standard in UDO Section 5.3.3K.1 states that use permits for public schools shall not be limited as to number of students. Notwithstanding any conditions on existing use permits, public schools may enroll the number of students that they are legally entitled to enroll under State building codes and other applicable State laws. However, the proposed development is for a private educational facility. Therefore, the requested use permit can be restricted to the number of student enrollment if the Board finds reason that the property in question should restrict such enrollment. The findings from NCDOT’s traffic memo are based on the enrollment being limited to a maximum of 72 students for grades 1-6, and 141 students for toddler-kindergarten. (See Attachment 5, NCDOT Traffic Memo). Due to these findings, the enrollment should be restricted to a maximum of 72 students for grades 1-6, and 141 students for toddler-kindergarten as a condition of the minor special use permit.

The limited use standard in UDO Section 5.3.3K.4 states that in residential districts, parking located between the structure and the street shall be set back from the right-of-way beyond the minimum or maximum street yard, as applicable. The proposed development illustrates that parking is located beyond the required street yard and will meet the limited use standard as seen on the attached site plan. (See Attachment 4, Sheet L132).

Refer to Attachment 3, Application – B1800032, for applicant’s response to this other review factor.

D. Notification

Staff certifies that newspaper advertisements, letters to property owners within 600 feet of the site and the posting of signage on the property has been carried out in accordance UDO Section 3.2.5. In addition, email notice was provided per the Durham Planning Public Notification Service.

E. Staff Contact

Danny Cultra, 919-560-4137 ext. 28238, or Danny.Cultra@durhamnc.gov

F. Attachments

1. Context map
2. Durham GIS aerial photo
3. Application - B1800032
4. Site plan and elevations - D1800241
5. NCDOT traffic memo
6. Parking Generation Study
MINOR AND MAJOR
SPECIAL USE PERMIT (SUP) APPLICATION
(A Pre-submittal conference must be held prior to submission)

Tracking Information (Staff Only)

Case Number: B1300032  Date/Time rec’d: 10/10/18 11:30  Rec’d by: TDC

About this Application

ONLY COMPLETE APPLICATIONS CAN BE ACCEPTED

Minor special use permits are heard by the Board of Adjustment as a quasi-judicial public hearing. Major special use permits are heard by the Governing Body (City Council if City, Board of Commissioners if County) as a quasi-judicial public hearing.

Submittal: Applications are accepted by appointment only. Deadlines are discussed at the pre-submittal meeting and are available online at http://durhamnc.gov/340/Applications-Application-Materials. Applications should be submitted in-person, and fees are due at time of submittal.

The application is a form of written testimony, and used both to show how Ordinance considerations are addressed and to provide evidence that the required findings for approval can be made. In addition to the application materials, the applicant may provide any other written, drawn or photographed material to support his/her request and as permitted by the Board of Adjustment or Governing Body, as applicable. Any such additional material submitted will become part of the application, and as such cannot be returned.

Attendance at the hearing is required. Applicants may represent themselves or may be represented by someone appropriate for quasi-judicial public hearings. The applicant has the burden of proof and must provide sufficient evidence in order for the required findings to be made. The public hearing will allow the applicant, proponents, opponents and anyone else the opportunity to testify in regards to the request. An application may be approved, approved with conditions, continued for more information, or denied. Decisions can be appealed to Superior Court within 30 days.

Contact Information: If you have any questions, please contact the City-County Planning Department at 560-4137 between 8:00 a.m. and 5:00 p.m. on weekdays.

Application Requirements

<table>
<thead>
<tr>
<th>Application Requirement</th>
<th>Applicant Initial</th>
<th>Staff Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of the pre-submittal meeting (copies provided at the meeting)</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Fee</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Completed application and responses: ORIGINAL signatures required</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Submitted Site Plan (Digital and 11x17), if required, or Plot Plan</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Responses to general findings and review factors: Section 3.9.8A and B of the UDO</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Responses to Additional Findings and/or Review Factors, as applicable</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Responses to Limited Use Standards, as applicable</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Floorplan, as applicable</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
<tr>
<td>Elevations, as applicable</td>
<td>[Signature]</td>
<td>TDC</td>
</tr>
</tbody>
</table>

Note: Additional supporting documents may also be submitted
### Property Information

<table>
<thead>
<tr>
<th>Site Address: 5510 Barbee Chapel Road</th>
<th>PID(s): 143138</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoning District(s): RR</td>
<td>PIN(s): 9797-01-97-9744</td>
</tr>
<tr>
<td>Overlay District(s): FJ-B</td>
<td>SUP Type: Minor (msup) Major (MSUP)</td>
</tr>
<tr>
<td>Current Use: Place of Worship (Community Service)</td>
<td>Jurisdiction: City County Both</td>
</tr>
</tbody>
</table>

### Property Owner

<table>
<thead>
<tr>
<th>Name(s) (Print): Triangle Church of Christ</th>
<th>Telephone: 919-291-4944</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person: Ronald Cox</td>
<td>Email: <a href="mailto:RONCOX11C@gmail.com">RONCOX11C@gmail.com</a></td>
</tr>
</tbody>
</table>

Owner Signature [Signature] Date 10/9/18

### Applicant

<table>
<thead>
<tr>
<th>Name(s): International Montessori School, Inc.</th>
<th>Telephone: 919-401-4343</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person: Angela Bailey</td>
<td>Fax: 919-287-2436</td>
</tr>
<tr>
<td>Address: 3001 Academy Rd Ste 300</td>
<td>Email: <a href="mailto:abaily@imsnc.org">abaily@imsnc.org</a></td>
</tr>
<tr>
<td>City/State/ZIP: Durham NC 27707</td>
<td></td>
</tr>
</tbody>
</table>

I certify that all of the information presented by me in this application is accurate to the best of my knowledge, information, and belief. 

Applicant Signature [Signature] Date 10/9/18

### Agent (if different than applicant)

<table>
<thead>
<tr>
<th>Name: Surface 678</th>
<th>Telephone: 919-419-1199</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person: Robert Pratt</td>
<td>Fax: 919-419-1669</td>
</tr>
<tr>
<td>Address: 215 Morris Street</td>
<td>Email: <a href="mailto:rpratt@surface678.com">rpratt@surface678.com</a></td>
</tr>
<tr>
<td>City/State/ZIP: Durham NC 27701</td>
<td></td>
</tr>
</tbody>
</table>
Complete and respond to the following with an attachment (suggested), or in the space provided:

Applicant's Name: I, Angela Bailey for Int'l Montessori School do hereby petition the City of Durham/County of Durham for a Special Use Permit to allow the following:

Section 3.9.8 of the UDO: Criteria for Approval of Major and Minor Special Use Permits

A. General Findings
Applications for minor or major special use permits shall be approved only if the Board of Adjustment or Governing Body, as applicable, finds that the use as proposed, or the use as proposed with conditions, is:

1. In harmony with the area and not substantially injurious to the value of properties in the general vicinity;
   Applicant’s Response:
   SEE ATTACHED

2. In conformance with all special requirements applicable to the use;
   Applicant’s Response:
   SEE ATTACHED

3. Will not adversely affect the health or safety of the public; and
   Applicant’s Response:
   SEE ATTACHED
4. Will adequately address the review factors identified below.
   Applicant's Response:
   SEE ATTACHED

B. Review Factors
   The applicant shall demonstrate that the review factors listed below have been adequately addressed.

1. Circulation
   Number and location of access points to the property and the proposed structures and uses, with particular reference to automotive, bicycle, mass transit and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.
   Applicant's Response:
   SEE ATTACHED

2. Parking and Loading
   Location of off-street parking and loading areas.
   Applicant's Response:
   SEE ATTACHED

3. Service Entrances and Areas
   Locations of refuse and service areas with particular reference to ingress and egress of service vehicles.
   Applicant's Response:
   SEE ATTACHED
4. Lighting
Locations of exterior lighting with reference to glare, traffic safety, economic effect and compatibility with other property in the area.
*Applicant’s Response:*

SEE ATTACHED

5. Signs
Appropriateness of signs considering location, color, height, size, and design within the context of other property in the area.
*Applicant’s Response:*

SEE ATTACHED

6. Utilities
Location and availability of utilities.
*Applicant’s Response:*

SEE ATTACHED

7. Open Spaces
Location of required yards and other open spaces and preservation of existing trees and other natural features.
*Applicant’s Response:*

SEE ATTACHED
8. Environmental Protection
Preservation of tree cover, Durham Inventory Sites, floodplain, stream buffers, wetlands, steep slopes, open space and other natural features, and protection of water quality.
Applicant's Response:

SEE ATTACHED

9. Screening, Buffering and Landscaping
Installation of screening, buffering, fencing and landscaping where necessary to protect adjacent property.
Applicant's Response:

SEE ATTACHED

10. Effect on Adjacent Property
Effects of the proposed use on nearby properties, including, but not limited to, the effects of noise, odor, lighting, and traffic.
Applicant's Response:

SEE ATTACHED

11. Compatibility
The level of general compatibility with nearby properties and impacted neighborhoods, including but not limited to the appropriateness of the scale, design, and use in relationship to other properties.
Applicant's Response:

SEE ATTACHED
12. Consistency with Policy
Consistency with the Comprehensive Plan and applicable development tier guidelines, overlay purposes, and zoning district intent statements in Article 4, Zoning Districts.
Applicant's Response:

SEE ATTACHED

13. Other Factors
Any other review factors which the approving authority considers to be appropriate to the property in question.

SEE ATTACHED

NOTE: Please address the requirements of any applicable “Limited Use Standards” or other special requirements of the use as an attachment of the application.

Read and sign below:

In granting a Minor or Major Use Permit, conditions may be placed to assure that adequate mitigation measures are associated with the use. The conditions shall become part of the special use permit approval. Violations of any of the conditions shall be treated in the same manner as other violations of the Ordinance. Furthermore, Special Use Permits shall become null and void in any of the following cases (Section 3.9.13 of the UDO):

A. If a site plan is not approved within 12 months of the date of permit approval.

B. If an approved site plan or building permit expires.

C. If a building permit is not issued within two years of the date of approval, in cases where a site plan is not required.

D. If a substantial violation of the conditions of the permit, as determined by the Planning Director or designee occurs. The addition of language to the special use permit regarding such voiding shall not be required.

Applicant Signature: [Signature]

Date: Oct. 9, 2018
Attachment to Minor Special Use Permit Application for  
5510 Barbee Chapel Road       PID 143138       PIN: 9797-01-97-9744

Date: October 9, 2018

Applicant’s Name: I, Angela Bailey on behalf of International Montessori School Inc., do hereby petition the City of Durham/County of Durham for a Special Use Permit to allow the following:

This minor Special Use request is to allow the construction and operation of an elementary school on a RR zoned property per UDO sections 5.1.1.A.3 and 5.1.2. The school will also meet the limited use requirements of UDO section 5.3.3.K.

Section 3.9.8 of the UDO: Criteria for Approval of Major and Minor Special Use Permits

A. General Findings

Applications for minor or major special use permits shall be approved only if the Board of Adjustment or Governing Body, as applicable, finds that the use as proposed, or the use as proposed with conditions, is:

1. In harmony with the area and not substantially injurious to the value of properties in the general vicinity;

Applicant’s Response:

The proposed International Montessori School site is located within 5 miles of Durham Public School Creekside Elementary, Montessori Community School, two Chapel-Hill Carrboro public schools: Rashkis Elementary and Glenwood Elementary Schools, and St. Thomas More School. These schools fall within the 27707 and 27517 zipcodes, each of which had an increase in median home values from the last 12 months and a forecast of an increase in the next twelve months (based on the Zillow Zestimate Home Value Index). In addition, research conducted by Realtor.com of 1000 participants showed that 91 percent included school boundaries in their home buying process; it is notable that not all participants had school aged children. In 2013, a study conducted by National Association of Realtors showed that 22% of participants listed proximity to schools as part of the buying decision. In the 27517 zipcode, there are no Durham Public Schools, and limited private and charter school options. In nearby 27713, there are 5 elementary Durham Public School options and no charter or private options (as opposed to 17 elementary schools serving 27707). Given that in Durham County’s area of 27517 and in 27713 there are fewer schools and increasing new construction, additional educational options are very likely to improve demand and home values based on the data on home purchasing trends. The school provides an additional educational option to the residents in the south Durham and surrounding areas.
2. In conformance with all special requirements applicable to the use;

Applicant's Response:

There are no special requirements and all applicable Limited Use Standards are addressed in attached documents. International Montessori School, Inc. is requesting a change in current use from a Place of Worship to an Educational Facility – School, elementary.

3. Will not adversely affect the health or safety of the public; and

Applicant's Response:

International Montessori School, Inc. as proposed meets all applicable health and safety codes.

4. Will adequately address the review factors identified below.

Applicant's Response:

See responses to 'Review Factors' below.

B. Review Factors
The applicant shall demonstrate that the review factors listed below have been adequate addressed.

1. Circulation
Number and location of access points to the property and the proposed structures and uses, with particular reference to automotive, bicycle, mass transit and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.

Applicant's Response:

There are currently two driveways onto Barbee Chapel Road and the locations of these will not change. The new school will generate more traffic and to mitigate this, a left turn lane with storage and a traffic signal are proposed. A Traffic Impact Analysis has been submitted do the City of Durham and NCDOT for review. A revised parking lot with pedestrian walkways and sidewalks along with bicycle racks is proposed.
2. Parking and Loading
Location of off-street parking and loading areas.

Applicant’s Response:

The proposed International Montessori School, Inc. has three (3) areas dedicated to parking. The following areas are designated:

Area A – Standard Parking Spaces 72, Accessible Parking Spaces 2, Total Spaces 74
Located south of Barbee Chapel Road

Area B – Standard Parking Spaces 20
Located along entry drive on east side

The following parking is associated with the Soccer Facility previously approved Special Use Permit

Area C – 109 Standard Parking Spaces
Located west of the entry drive

Area D – 201 Standard Parking Spaces, Accessible Parking Spaces 9, Total Spaces 210
Located on the southwest portion of the site

Area E – Standard Parking Spaces 43, Accessible Parking Spaces 2, Total Spaces 45
Located south and east of the Soccer Facility

Loading Areas are not required and are not shown for the proposed International Montessori School. Note the Educational Facility does have one proposed drop-off location for students located off of the main entry drive, south of the educational facilities, approximately 730 linear feet from Barbee Chapel Road.

3. Service Entrances and Areas
Locations of refuse and service areas with particular reference to ingress and egress of service vehicles.

Applicant’s Response:

Service vehicles will use the existing driveways to access the new dumpster locations. The new locations have been placed for ease of access and maneuverability. Fire truck turnarounds have also been added for safety and emergency access.

4. Lighting
Locations of exterior lighting with reference to glare, traffic safety, economic effect and compatibility with other property in the area.

Applicant’s Response:

The proposed International Montessori School, Inc. will provide two types of pedestrian pole light fixtures. The streetlight will provide site lighting for the entry drive and parking areas. The pole light fixture height is not to exceed 30’ and will be an LED fixture. The walkway light will provide pathway and sidewalk lighting throughout the site. The walkway light height is not to exceed 15’ and will be an LED fixture.
5. Signs
Appropriateness of signs considering location, color, height, size, and design within the context of other property in the area.

Applicant's Response:

Signage Permit will be submitted separately and will meet all UDO requirements.

6. Utilities
Location and availability of utilities.

Applicant's Response:

There are existing water and sewer services on the site. These will be brought further into the site to serve the new buildings and provide fire protection. New water meters and backflow preventers are proposed per City of Durham requirements. There are currently no proposed utility taps with the public right-of-way.

7. Open Spaces
Location of required yards and other open spaces and preservation of existing trees and other natural features.

Applicant's Response:

The location of the required yards have been labeled and identified on the Site Plan documents for the International Montessori School. Tree coverage requirements are met and provided on the site plan submission. The project has been graded in a way to minimize disturbance to existing vegetation and to maintain the most existing buffers as possible. The site's natural features including streams and wetlands have been preserved based on current UDO standards. The site's streams listed on the Stream Buffers: 50 foot wide undisturbed stream buffer, measured from top of bank, each side of stream. No clearing or grading other than selective thinning and ordinary maintenance of existing vegetation permitted.

8. Environmental Protection
Preservation of tree cover, Durham Inventory Sites, floodplain, stream buffers, wetlands, steep slopes, open space and other natural features, and protection of water quality.

Applicant's Response:

This site is in the Jordan watershed and due to the impervious areas stream buffers are increased from 50' to 100'. Stormwater will be controlled by two new constructed wetlands to provide peak flow attenuation as well as nutrient treatment. This is to protect water quality in the overall watershed and to comply with the City/County and State regulations. The clearing limits have been set so that only the minimum disturbance necessary is proposed, and also utilizing existing cleared space as much as possible for new construction, thus allowing natural buffers around the perimeter of the property to remain.
9. **Screening, Buffering and Landscaping**
Installation of screening, buffering, fencing and landscaping where necessary to protect adjacent property.

**Applicant’s Response:**

*International Montessori School, Inc. has provided code compliant screening, buffering and landscaping. The project is providing the required Street Trees and Vehicular Use Area Landscaping. The project provides landscape within V.U.A. and from V.U.A. visible from streets.*

10. **Effect on Adjacent Property**
Effects of the proposed use on nearby properties, including, but not limited to, the effects of noise, odor, lighting, and traffic.

**Applicant’s Response:**

*Standard school operating hours are consistent with standard working hours. Noise associated with the school is primarily associated with children's outdoor play for recess and physical education. No issues around odor are anticipated with the proposed location of the service areas and the lack of food service facilities. Proposed lighting is limited to lighting required for safety along walkways, in parking lots, and along roadways within the campus as proposed in section B.4. All lighting will be limited in its height and field to minimize glare to surrounding properties. A traffic study was completed, and the proposed plan is consistent with NCDOT and Durham's recommendations. Increased traffic is expected during the school year at morning arrival and afternoon departure times. The impact is mitigated by the proposals referenced in B.1. and B.2.*

11. **Compatibility**
The level of general compatibility with nearby properties and impacted neighborhoods, including but not limited to the appropriateness of the scale, design, and use in relationship to other properties.

**Applicant’s Response:**

*The proposed International Montessori School, Inc. is compatible with adjacent and nearby properties and impacted neighborhoods. The proposed Educational Facility and renovation of the existing structures meets the scale and design in relationship with adjacent neighborhoods and communities.*
12. Consistency with Policy
Consistency with the Comprehensive Plan and applicable development tier guidelines, overlay purposes, and zoning district intent statements in Article 4, Zoning Districts.

Applicant’s Response:

The proposed International Montessori School, Inc. is consistent with the Comprehensive Plan and applicable tier guidelines, overlay purposes and zoning district intent statements in Article 4, Zoning Districts. The project site is located within the Suburban Development Tier and Zoning District of RR as follows the guidelines and requirements set forth in the UDO.

13. Other Factors
Any other review factors which the approving authority considers to be appropriate to the property in question.

Section 5.3.3.K specifies the following limited use standards applicable to this proposal:

Schools shall be permitted in accordance with the use table in Sec. 5.1, Use Table, subject to the following:

1. Use permits for public schools shall not be limited as to number of students. Notwithstanding any conditions on existing use permits, public schools may enroll the number of students that they are legally entitled to enroll under State building codes and other applicable State laws.

2. Following the initial approval of schools through the special use permit process, expansions of up to 20% of the area originally approved through the special use permit process pursuant to Sec. 3.9, Special Use Permit, may be approved administratively.

3. Administrative approvals of expansions of schools shall not waive any conditions of approval of the special use permit.

4. In residential districts, parking located between the structure and the street shall be set back from the right-of-way, beyond the minimum or maximum street yard, as applicable.

Applicant’s response:

As this proposed facility is a private school and not a public school, it could be subject to a limit on the quantity of student enrollment as a condition of the use permit approval. Based on our Traffic Impact Analysis, we are designating a maximum student enrollment of 72 1st through 6th grade students and 141 toddler through kindergarten age students. Should the student enrollment exceed these numbers in the future, IMS will coordinate with Durham City County Planning Department to determine the appropriate approval process.
The parking located between the educational buildings and Barbee Chapel Road is in excess of the 30’ setback required, in compliance with Section 5.3.3.K.4.
TREE SAVE PLAN

TREE COVERAGE REQUIREMENT:
PROPERTY ACREAGE = 37.60 ACRE
REQUIRED OPEN SPACE = 3.76 AC
PROVIDED OPEN SPACE = 4.10 AC

PROPOSED SIGHT TRIANGLES

JULY 10, 2018

SCALE: 1" = 120'-0"

SHEET TITLE: TREE COVERAGE CALCULATIONS

DRAWN: CHECKED:

PROPOSED PARKING

1 STORY
BARBEE CHAPEL ROAD (SR 1110)
EXISTING PUBLIC R/W

S31°22'20"W 371.25'
S00°37'10"W 212.46'
S00°40'36"W 257.11'
S00°44'39"E 250.92'

EXISTING WETLAND; REFER TO NOTE R ON C-1.0

EXISTING BUILDING ELEMENTARY CLASSROOM

14,855 GSF
720.15'
N15°58'13"E

EXISTING BUILDING ELEMENTARY CLASSROOM & GYMNASIUM & CLASSROOM BUILDING

744.50'
N15°58'13"E

EXISTING WETLAND; REFER TO NOTE R ON C-1.0

PRIMARY PLAYGROUND

212.46' 18" PINE
671.38' 16" PINE
716.25' 10" PINE

PROPERTY LINE 1255.82'

CATCH BASIN RIM: 293.12 INV OUT: 288.78
CATCH BASIN RIM: 292.73 BOTTOM INV: 288.04

SEWER MANHOLE BENCHMARK RIM: 287.84 INV IN: 277.31
SEWER MANHOLE BENCHMARK RIM: 294.26 INV IN: 287.95
SEWER MANHOLE BENCHMARK RIM: 287.83 INV OUT: 287.83

SAMPLE AREA #1 SAMPLE AREA #2 SAMPLE AREA #3

SAMPLE #1 SAMPLE #4

ARCHITECT:

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

ARCHITECT:

CHAPEL HILL, NC 27514
744 CHAPEL HILL RD.

ARCHITECT:

DURHAM, NC 27707
3001 ACADEMY RD, BLDG 300

PROJECT TEAM

SUD ASSOCIATES
Raleigh, NC 27605
1025 Wade Avenue

Surface
1813 Chapel Hill Rd.
Durham, NC 27701
Suite 150

GEOLOGICAL CORP.
1500 BONMAR ST.
Raleigh, NC 27610

SUD ASSOCIATES
DURHAM, NC 27707
2121 Chapel Hill Rd.

SEPI ENGINEERING & CONSTRUCTION
112 S ESTES DR, #105
CHAPEL HILL, NC 27516

MEP ENGINEER

DURHAM, NC 27707
1813 Chapel Hill Rd.

SURFACE ENVIRONMENTAL
3510 BARBEE CHAPEL ROAD
DURHAM, NC 27713

LANDSCAPE ARCHITECT

DURHAM, NC 27707
1813 Chapel Hill Rd.

SURFACE STREET PLANNING
Raleigh, NC 27605
1025 Wade Avenue

LANDSCAPE ARCHITECT

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

ARCHITECT

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

SURFACE STREET PLANNING
Raleigh, NC 27605
1025 Wade Avenue

Reg.
ARCHITECT

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

MEP ENGINEER

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

SURFACE STREET PLANNING
Raleigh, NC 27605
1025 Wade Avenue

ARCHITECT

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

LANDSCAPE ARCHITECT

DURHAM, NC 27713
1255 BARBEE CHAPEL ROAD

ATTACHMENT 4
TRAFFIC/PARKING NOTES

1. STAFF AND PRE-K PARKING WILL BE IN THE FRONT PARKING LOT NEAREST BARBEE CHAPEL ROAD.

2. THE IMS SCHOOL DAY WILL END AT 3:00 WITH STUDENT PICKUP TO END BY 3:15 PM.

3. "DO NOT ENTER" (MUTCD R5-1) SIGNAGE; ALL SIGNS AND TRAFFIC CONTROL SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD, NCDOT, AND CITY OF DURHAM STANDARDS AND SPECIFICATIONS.

4. "ONE-WAY" SIGNAGE.

5. "SCHOOL ZONE" SIGNAGE IS TO BE INSTALLED WEST OF ENTRY DRIVE AND EAST OF A."
1. SITE PLAN NOTATIONS - APPLY TO ALL (LOOK) SHEETS

2. GENERAL NOTES - APPLY TO ALL LANDSCAPE (LOOK) SHEETS

3. ANY EXISTING ITEMS THAT HAVE BEEN IDENTIFIED FOR REUSE SUCH AS BUT NOT LIMITED TO; SIGNS, BENCHES, AND BIKE RACKS SHALL BE SHOWN ON THE DRAWINGS.

4. UNLESS NOTED ON THE DRAWINGS ALL BUFFERS, WETLANDS, STREAM CHANNELS, SETBACKS AND TREE PROTECTION AREAS SHALL BE PROTECTED WITH NO CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR USING A DIGITAL (CAD) FILE PROVIDED THROUGH THE CONSTRUCTION ACCESS, STORAGE OR USE OF ANY KIND. THE CONTRACTOR SHALL KEEP CONSTRUCTION ACTIVITIES WITHIN THE "PROJECT LIMITS" SHOWN IMMEDIATELY TO THE LANDSCAPE ARCHITECT.

5. ALL DIMENSIONS INDICATING "VERIFY" SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION - REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.

6. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR USING A DIGITAL (CAD) FILE PROVIDED THROUGH THE CONSTRUCTION ACCESS, STORAGE OR USE OF ANY KIND. THE CONTRACTOR SHALL KEEP CONSTRUCTION ACTIVITIES WITHIN THE "PROJECT LIMITS" SHOWN IMMEDIATELY TO THE LANDSCAPE ARCHITECT.

7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR ADHERENCE TO ORDINANCES, REGULATIONS, LAWS AND CODES HAVING LIMIT OF DISTURBANCE.

8. UNLESS OTHERWISE NOTED, CONCRETE SCORE AND EXPANSION JOINTS SHALL BE ALIGNED WITH BUILDING FEATURES AND WITH CORNERS OF PAVEMENT.

9. ALL DIMENSIONS LABELED "EQ" ARE TO INDICATE EQUAL MEASUREMENTS BETWEEN THE DIMENSIONS END POINTS ON THE DRAWING.

10. ANY EXISTING ITEMS WITH THE OWNER'S REPRESENTATIVE.

11. MATERIALS PLAN

12. ANY EXISTING ITEMS THAT HAVE BEEN IDENTIFIED FOR REUSE SUCH AS BUT NOT LIMITED TO; SIGNS, BENCHES, AND BIKE RACKS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR POSSIBLE CLARIFICATION OR RECONCILIATION.

13. SEE CIVIL SHEET FOR UTILITY AND UNDERGROUND STORM DRAINAGE INFORMATION.

14. DATE: JULY 10, 2018

15. SCALE: 1" = 10' 0"
**TOTAL AREA**
37.61 acres

**REFERS TO ALL GRADING PLANS**

**SYMBOLS LEGEND**
- BC - BOTTOM OF CURB
- FFE - FINISH FLOOR ELEVATION
- BR - BOTTOM OF RAMP FINISH GRADE
- BC - BOTTOM OF CURB
- TR - TOP OF RAMP FINISH GRADE
- TC - TOP OF CURB

**SPOT GRADE LEGEND**
- FLUSH TRANSITION
- +
- ++

**GRADING NOTES**

1. **EXISTING UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD PRIOR TO BEGINNING WORK.**
2. **MATCH NEW CONSTRUCTION TO SURROUNDING ESTABLISHED GRADES. REPORT DISCREPANCIES TO THE LANDSCAPE ARCHITECT.**
3. **UNLESS OTHERWISE NOTED, SPOT GRADES REFER TO BOTTOM OF CURB AT THE JUNCTION BOXES.**
4. **THE FRAMES, GRATES, CLEAN OUTS, VALVE COVERS AND OTHER SURFACE UTILITY INDICATED FOR TOP OF GRATE AND TOP OF COVER FOR MANHOLES OR CURBS OR OTHER SURFACE DESIGN ELEMENTS OR AS SHOWN ON THE DRAWINGS.**
5. **THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAINAGE THAT PROVIDES ALIGNMENT WITH EXISTING SWALES, PIPES AND STRUCTURES. THE CONTRACTOR SHALL WORK AROUND EXISTING UTILITIES TO REMAIN.**
6. **ALL STORM DRAINAGE GRATES AND COVERS WITHIN ACCESSIBLE ROUTES THAT PROVIDE BICYCLE WHEEL SAFE.**
7. **ALL DRAINAGE GRATES WITHIN PEDESTRIAN PAVING AND BIKE LAINES SHALL BE VERIFIED IN THE FIELD PRIOR TO BEGINNING WORK.**
8. **THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAINAGE THAT PROVIDES ALIGNMENT WITH EXISTING SWALES, PIPES AND STRUCTURES. THE CONTRACTOR SHALL WORK AROUND EXISTING UTILITIES TO REMAIN.**
9. **THE CONTRACTOR SHALL WORK AROUND EXISTING UTILITIES TO REMAIN.**

**DATE**
JULY 10, 2018

**DEVELOPMENT**

**SPOS DESIGN ARCHITECTS**
250 Mark St.
Durham, NC 27713

**SURFACE STS, PA LANDSCAPE ARCHITECT**
121 S Estes Dr., #105
Durham, NC 27707

**SUD ENGINEERING & CONSTRUCTION**
1407 South Bloodworth St.
Raleigh, NC, 27610

**SURVEYOR**

**PROJECT ADDRESS**

5510 Barbee Chapel Road
Durham, NC 27713
Total trees = 267 (104 used for VUA credit)

9. The planting layout within planting beds should be shifted to minimize conflicts with existing planting plan.

7. Do not plant in storm water conveyance swales or provide fine grading that disrupts establishment.

5. All trees shall be obtained from the nursery with exposed root crowns. B&B material, seed, sod or landscape beds.

1. The planting location within planting beds shall be restored with turf sod; unless otherwise noted.

Please refer to L505 for all planting details.

Sheet Title: Site Plan

Surface Engineering & Construction

International Montessori School
160 Academy Blvd., Suite 300
Durham, NC 27707

Triangle United Soccer
121 E. Centre Dr., Suite 150
Chapel Hill, NC 27514

Project No: 1610

Date: July 10, 2018

Appendix A

PLANTING NOTES

1. Planting plan is intended to accommodate the needs of interested parties. The planting plan shall be modified as indicated by the landscape architect.

2. Plant List is provided for convenience only. In the case of discrepancies between the plan and plant list quantities, the landscape plan shall take precedence.

3. All tree plantings within planting beds shall be restored with turf sod; unless otherwise noted.

4. Temporary erosion control devices, silts, rip rap and temporary stone staging areas for construction.

5. Contractor shall notify landscape architect of plant substitutions in any measure or kind.

6. Contractor shall provide all planting information to the landscape architect.

7. Site plan is not intended to be used as a substitute for planting notes.

8. Planting location within planting beds shall be restored with turf sod; unless otherwise noted.

9. Property line.


11. Storm BMP.

12. Storm water conveyance swale.

13. Existing wetland; refer to note R on C-1.0.

14. Existing wetland; refer to note C-1.0.
DATE: JULY 10, 2018

WEST ADJACENT PARCEL: 111 S ESTES DR, #105

Sewer Manholer:
IM: 287.47 (A)  INV IN: 277.52 (B)  INV OUT: 277.49

Boundaries Buffer Area "B" (10' Width .2 Opacity)

Primary Classroom

REGISTERED LANDSC.

Storm BMP

Soccer

CATCH BASIN

STORM ARCHITECTURAL CORP.

BOUNDARY BUFFER AREA "E" (10' WIDTH .2 OPAUCITY)

INTERNATIONAL MONTESSORI SCHOOL
3001 ACADEMY RD, BLDG 300
CHAPEL HILL, NC 27514

TRIANGLE UNITED SOCCER
121 S ESTES DR, #105
CHAPEL HILL, NC 27514

PROJECT ADDRESS

SITE PLAN

VEHICULAR USE AREA LANDSCAPING

PLANTING PLAN

L162
VAN ACCESSIBLE RESERVED PARKING

MAXIMUM PENALTY $250.00

MAXIMUM PENALTY $250.00

MAXIMUM PENALTY $250.00

1'-0" 1'-6" 9"

1'-0" 6" 1'-6" 9"

1'-3" 3'-0" 6"

2'-0" 8" 2'-0" 8"

TOP OF CONCRETE FOOTING 3" BELOW FINISH GRADE 6"X 12" CONCRETE FOOTING FINISHED GRADE

RESERVED PARKING

MAXIMUM PENALTY $250.00

MAXIMUM PENALTY $250.00

MAXIMUM PENALTY $250.00

*NOTE:
* FOR BUILDING MOUNTING INSTALLATION REFER TO ARCH DRAWINGS

CAST IN PLACE AMPHITHEATER SEATING

CONTACT TO SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION

FIRE LANE TURNAROUND

* PER CITY OF DURHAM REQUIREMENT, FIRE LANE EDGE REQUIREMENTS

* WOOD POSTS EDGE MAY BE REMOVED AFTER ADJACENT PLANTS HAS GROWN TO AT LEAST 3' TALL. CHECK AND APPROVED BY FIRE MARSHAL BEFORE REMOVAL

BLACK METAL CAP

HYDROGROW SAND AND GRAVEL BASE COURSE 6 IN TO 12 IN COMPACTED SUB-GRADE

GRASSPAVE 2 - 1 IN SAND FILL

GRASS, HYDRO SEEDED OR SODDED (THIN)

3001 ACADEMY RD, BLDG 300
DURHAM, NC 27707
INTERNATIONAL MONTESSORI SCHOOL

5510 BARBEE CHAPEL ROAD
DURHAM, NC 27713

TRIANGLE UNITED SOCCER
121 CITY DISTRICT, RDU
CHAPEL HILL, NC 27516

SEPI ENGINEERING & CONSTRUCTION
1813 Chapel Hill Rd.
Durham, NC 27707

SUD ASSOCIATES
1025 Wade Avenue
Raleigh, NC 27605

LOGO

121 S ESTES DR, #105
CHAPEL HILL, NC 27514

TRIANGLE UNITED
SOCCER
REGISTRED LANDSCAPE ARCHITECT

1747 NORTH CAROLINA ROBERT J. PRATT
REGISTERED LANDSCAPE ARCHITECT CORP.
C-098 NORTH CAROLINA SURFACE 678, P.A.

PRELIMINARY FOR REVIEW ONLY

1 SITE PLAN RESUBMISSION 10-9-18

2 SITE PLAN RESUBMISSION 11-20-18

DATE: JULY 10, 2018
DRAWN: RB, KB,YL
CHECKED: ED, RP

SHEET TITLE: L502

DETAILS
1. All step treads shall have ADA contrasting color, full width.
2. Contractor shall provide mockup of tread nosing condition with concrete approval prior to full application.
3. Contractor shall submit railing shop drawings for review & approval by landscape architect.
1) INSTALL RACK ACCORDING TO MANUFACTURER'S RECOMMENDATION; REFER CURB FACES, PAVEMENT EDGES OR OTHER OBSTRUCTIONS

*NOTE:*

2) BIKE RACKS WILL BE INSTALLED AT A MINIMUM OF 24" AWAY FROM WALLS,

3) BIKE RACKS WILL BE SPREAD AT 3'-0" CENTER TO CENTER TO SPECS AND MANUFACTURER DETAILS FOR DIMENSIONS OF BICYCLE RACK

---

**Evergreen Tree Planting**

1. WARNING SIGNS TO BE MADE OF DURABLE WEATHERPROOF MATERIAL.

2. LETTERS TO BE 3" HIGH MIN. CLEARLY LEGIBLE AND SPACED AS DETAILED.

3. SIGNS SHALL BE PLACED AT 50' MAX. INTERVALS.

4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.

5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.

6. ATTACH SIGNS SECURELY TO FENCE POST AND FABRIC.

7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

8. TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

9. MIN. 12-1/2 GA. LINE WIRES

10. MIN. 10 GA. INTERMEDIATE TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

---

**LOW-VOLTAGE PROGRAMMABLE LIGHTING**

1. WARNING SIGNS TO BE MADE OF DURABLE WEATHERPROOF MATERIAL.

2. LETTERS TO BE 3" HIGH MIN. CLEARLY LEGIBLE AND SPACED AS DETAILED.

3. SIGNS SHALL BE PLACED AT 50' MAX. INTERVALS.

4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.

5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.

6. ATTACH SIGNS SECURELY TO FENCE POST AND FABRIC.

7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

8. TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

9. MIN. 12-1/2 GA. LINE WIRES

10. MIN. 10 GA. INTERMEDIATE TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

---

**Root Protection**

1. PRIOR TO BEGINNING DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL ERECT TREE PROTECTION FENCING AROUND ALL TREES DESIGNED TO REMAIN. THE PROTECTED GROUND AREA SHALL BE INDICATED ON THE PLANS.

2. ATTACH SIGNS SECURELY TO FENCE POST AND FABRIC.

3. SIGNS SHALL BE PLACED AT 50' MAX. INTERVALS.

4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.

5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.

6. ATTACH SIGNS SECURELY TO FENCE POST AND FABRIC.

7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

8. TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.

9. MIN. 12-1/2 GA. LINE WIRES

10. MIN. 10 GA. INTERMEDIATE TREE PROTECTION FENCING SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.
GENERAL UTILITY NOTES

1. The sanitary sewer shall be designed and constructed of ferrous pipe and shall be pressure tested at 150-PSI to assure water tightness prior to backfilling, or materials approved by the city of Durham for use in water main construction.

2. Either the water main or the sanitary sewer line may be encased in a watertight carrier pipe, which extends the outside of the water main and the outside of the sanitary sewer. The crossing shall be arranged so that the installation of said hydrant(s).

3. Backflow preventer permit required for project. Backflow preventer installer must contact Durham cross-connection control, department of water management at (919) 560-4194 to obtain permit and installation appurtenances. Permit for installation of private fire hydrant(s) must be issued by fire plans examiner prior to installation of said hydrant(s).

4. Contact the utility company to relocate any existing utility poles. All existing utilities which conflict with the project shall be relocated. The city of Durham may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviations on may allow the installation of the sanitary sewer closer to a water main, provided that the water main is at least 10 feet horizontally from any existing or proposed water main. The elevation so the bottom of the water main is at least 18 inches above the top of the sewer.

WATER, SANITARY SEWER AND STORM SEWER SEPARATION NOTES

1. No sanitary sewer shall be laid within 10-feet horizontally from any existing or proposed water main. The distance between storm sewer mains and water mains shall be at least 15 feet horizontally and 12 inches vertically.

2. Either the water main or the sanitary sewer line may be encased in a watertight carrier pipe, which extends the outside of the water main and the outside of the sanitary sewer. The crossing shall be arranged so that the installation of said hydrant(s).

3. A 12-inch vertical separation shall be provided between storm sewer and water mains.

4. A 12-inch vertical separation is not maintained at a crossing between storm sewer and water mains (or storm sewer and fire hydrant), the sanitary sewer shall be designed and constructed of ferrous pipe and shall be pressure tested at 150-PSI to assure water tightness prior to backfilling, or materials approved by the city of Durham for use in water main construction.

5. Backflow preventer permit required for project. Backflow preventer installer must contact Durham cross-connection control, department of water management at (919) 560-4194 to obtain permit and installation appurtenances. Permit for installation of private fire hydrant(s) must be issued by fire plans examiner prior to installation of said hydrant(s).

6. Landscaping and hardscaping layout must be arranged to allow clear visibility of all fire equipment upon approach.

7. Fire department connections must be oriented 45° toward grade.

8. Irrigation meter

9. Domestic waterline pipe with no joints or couplings (min. cover = 3')

10. Domestic water meter

11. Gate valve

12. Sanitary sewer main @ 1.0% min.

13. PVC drainage detail

14. SANITARY SEWER MANHOLE SPACED AT 400' MAXIMUM INTERVALS

PROJECT TEAM

INTERNATIONAL MONTESSORI SCHOOL
3601 ACADEMY RD, BUDDY 305
DURHAM, NC 27707

TRIANGLE UNITED SOCCER
121 S ESTES DR, #105
CHAPEL HILL, NC 27514

SITE PLAN RESUBMISSION 1 10-9-18
JULY 10, 2018

PROJECT NO: 1615
DATE: JULY 10, 2018
DRAFN: LS, NC
CHECKED: AN

SHEET TITLE: OVERALL UTILITY PLAN

C-3.0
March 7, 2019

Ms. Lisa Lundeen  
SEPI Engineering & Construction  
1025 Wade Avenue  
Raleigh, NC 27605

SUBJECT: Updated Traffic Impact Analysis for International Montessori School

Dear Ms. Lundeen:

The NCDOT has completed its review of the Updated Traffic Impact Analysis (TIA) for International Montessori School sealed on February 27, 2019. Based on the update, the following improvements and/or restrictions are required.

**International Montessori School (Maximum of 72 Students, Grades K-6)**

- Municipal and School Transportation Assistance (MSTA) has determined that no roadway improvements including signalization is required for this use.
- The western access shall be ingress only.
- The eastern driveway shall be egress only with a dedicated left and right turn lane with 100ft of NB storage.
- Advisory comment: MSTA recommendations dated December 14, 2018 shall be considered a requirement of this use. As of March 5, 2019 all comments have been addressed.

**International Montessori School (141 Pre-Kindergarten Students) and Triangle United Soccer (4 Soccer fields)**

- The traffic analysis shows a higher PM peak demand for these uses. A dedicated left turn lane off Barbee Chapel Road into the western access is required with 100ft of storage. This improvement will not be reimbursable under NCGS 136-18(29a).
- The western access shall be ingress only.
- The eastern driveway shall be egress only with a dedicated left and right turn lane with 100ft of NB storage.

If you have questions or need additional information, please feel free to contact me at (919) 220-4750.

Sincerely,

Jason Watson  
Assistant District Engineer

Ec: Earlene W. Thomas, PE, City of Durham Transportation  
Clarence Bunting, PE, Congestion Management
December 14, 2018

MEMORANDUM

TO:
Jason L. Watson - District Engineer
John H. Sandor, PE - Division Traffic Engineer
John H. Grant, PE - Regional Traffic Engineer
David B. Phipps, PE – Central Regional Field Operations Engineer
Doumit Y. Ishak – Congestion Management Regional Engineer

FROM:
Tammy A Germiller- Municipal and School Transportation Project Engineer

SUBJECT: International Montessori School in Chapel Hill, Durham County

The Municipal and School Transportation Assistance (MSTA) group has reviewed the Traffic Impact Analysis (TIA) prepared by Sepi Engineering and the Site Plan by Somos Design Architect and Surface 678, PA. This new school and Soccer Park facilities will be located at the existing Triangle Church of Christ at 5510 Barbee Chapel Rd. It is the responsibility of the local school officials to contain all school generated traffic on their campus and to maintain a safe and efficient parent loading operations. This review consists of the school campus and school driveway.

The key dates regarding this development are as follows:

<table>
<thead>
<tr>
<th>Received TIA</th>
<th>Date of sealed Site plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/24/2018</td>
<td>07/11/2018</td>
</tr>
</tbody>
</table>

Received Revised TIA 11/14/2018

- ✓ The calculated queue distance from the MSTA School calculator for 72 students with 333 feet average queue and 100 feet high demand queue for a total queue of 433 feet is correct.

- X The school Site plan did not show required items from the MSTA calculator checklist such as: Defining the parent driveway paths entrance and exit, short term parking, internal pedestrian accommodations, etc. These items are required as per our submittal documentation.

- X The Synchro and SimTraffic files did not simulate on-campus traffic operation and vehicle platooning in accordance with NCDOT Requirements for School Traffic Operations Studies procedures. This includes; modeling the school driveway, adjusting the PHF’s and speeds and setting the parent driveway and loading zone to platoon for five vehicles. These items are required as per our submittal documentation.

- X A westbound left turn lane on Barbee Chapel Rd is not required for Access #1 and a signal is not warranted at Access #2.
This review is based on a maximum of 72 elementary students grades K-6 with an estimated 38 staff members. If the school is projected to accommodate a higher number of students than shown, then further review will be required.

MSTA has the following recommendations regarding this design; additional comments are on Figure 1.

1. The following items should be included on the site plan:
   - Designate short term visitor parking just past the Parent Loading Zone. 8 to 10 parking spaces should be identified by installing “Visitor Parking” signs and/or pavement markings at the spaces to be assigned. These spaces are for parents requiring extended periods of time to load. If a parent stops in the loading zone, to wait to load their student, a loading assistant should direct that parent to the Visitor Parking.
   - Identify handicap parking at proposed location.
   - Identify parent driveway entrance and exit paths.
   - Address pedestrian safety: The parking lots should have pedestrian sidewalks, crosswalks and associated traffic islands along parking spaces to provide safe pedestrian walking paths out of the vehicle travel lanes to the school building. ADA approved curb cuts and crosswalks should be installed at appropriate locations where they will be convenient to pedestrians and be expected by drivers. Implementing these design elements will greatly improve pedestrian safety while reducing vehicle delay.

2. Access driveway #1 (the west site access) on SR 1110 (Barbee Chapel Rd) was modeled in Synchro/SImTraffic with and without the proposed WB turn lane. It was determined that with the proposed minimal increase in volume from the school this driveway will function with an acceptable delay during the AM and PM peak. For this reason, NCDOT will not be recommending a turn lane at this location.

3. A traffic signal for Access driveway #2 (the east site access) on SR 1110 (Barbee Chapel Rd) is not warranted. As per the email dated 11/23/2018, all students are scheduled to be picked up by 3:15pm and soccer games do not begin until 4:30pm so therefore the number of trips for the soccer park should not be included in the AM or PM total. The minimal increase in volume from the school alone does not warrant a traffic signal at this location. This driveway will function with an acceptable delay during the AM and PM peak school traffic.

Additional comments:

- Designate Access #1 and front “horseshoe” driveway as a one-way only. This includes one-way arrows and “Do Not Enter” sign.
- Install a NB driveway exit turn lane as per the TIA. The original TIA recommended a 100 feet turn lane and the revised TIA recommends a 175 feet turn lane. As per the criteria in the NCDOT Policy on Street and Driveway Access to North Carolina Highways 100 feet of internal storage may be more appropriate. However, this is at the school’s discretion since this is on their property.
- A Traffic Management Plan (TMP) should be devised to include:
  - The location of parent loading zone.
  - Daycare pickup should not be in the school queue line. Advise parents of procedures and times to pick up these children.
  - Parents should be notified that all students should to be picked up prior to 3:15pm. The parent queue line must be cleared prior to soccer game traffic beginning.
- Designate SR 1110 (Barbee Chapel Rd) in front of the school as a school zone. An existing 35-mph speed zone is approximately 100 feet west of Access #1. District should consider extending this speed zone along the frontage of the school’s property.

We appreciate the opportunity to serve the International Montessori Schools and hope you find our services helpful as together we continue to provide "Safe Roads to Safe Schools".

cc. Kevin J. Lacy, PE, CPM
Joseph E. Hummer, PhD, PE
Designate as one-way only
Access #1 - West access WB left turn lane not required
Identify Handicap parking
Address pedestrian safety
Designate as a school speed zone
Install a driveway exit turn lane
Access #2 - East access Signal not warranted

Your School
72 Student Population
333 Feet Average Queue
100 Feet 30% High Demand
433 Feet Total Desired Queue
This Design Provides
1,060 Feet Total Queue

LEGEND
- TIA Recommendations
- MSTA Recommendations
- Entering Parent Traffic
- Exit Parent Traffic
October 30, 2018

Memorandum to: Mike Strand, Executive Director
Triangle United Soccer
PO Box 2321
Chapel Hill, NC 27514

From: Lisa Lundeen, PE
Project Engineer

Triangle United and International Montessori School Parking Generation Study

Introduction
SEPI Engineering & Construction, Inc. (SEPI) has completed a parking generation study for Triangle United Soccer to assess the amount of parking needed for the Triangle United soccer complex and the International Montessori School. The purpose of this study is to determine the amount of parking that would be used at a particular time and place. It is a critical factor in evaluating parking solutions. Parking demand is affected by various factors such as type of use, trip rates, time of day, parking duration and geographic location. In this report, parking requirements are reviewed and determined by:

1. The Institute of Transportation Engineers (ITE) Parking Generation Manual (3rd and 4th Editions), and
2. The school and soccer schedules provided by the International Montessori School and Triangle United.

Project Description
The project site is located at 5510 Barbee Chapel Rd in Durham County, NC and is currently developed as a church and a soccer complex. This location has planned to develop into an International Montessori School consisting of 213 students and 38 staff by 2025, as well as a soccer complex with 3 fields and a 43,575 square foot athletic club. The current site plan is provided in the Attachments.

The purpose of this analysis is to establish the parking requirements so there is sufficient parking to adequately service the school and soccer complex parking demand. This memorandum provides analysis and recommendations for shared parking between the soccer complex and the school.

Parking Analysis
1. ITE Parking Generation Manual
Table 1 provides the land use descriptions used in this analysis, based on the ITE Parking Generation Manual, 3rd and 4th Editions.
Table 1: ITE Land Use Descriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>ITE Land Use</th>
<th>Land Use Code</th>
<th>Units</th>
<th>Expected Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Montessori School*</td>
<td>Elementary School*</td>
<td>520 Students</td>
<td>Students</td>
<td>181</td>
</tr>
<tr>
<td>Extended Care (Students)</td>
<td>Day Care Center</td>
<td>565 Students</td>
<td>Students</td>
<td>32</td>
</tr>
<tr>
<td>Extended Care (Staff)</td>
<td>Day Care Center</td>
<td>565 Employees</td>
<td>Employees</td>
<td>6</td>
</tr>
<tr>
<td>Outdoor Soccer Fields</td>
<td>Soccer Complex</td>
<td>488 Fields</td>
<td>Fields</td>
<td>3</td>
</tr>
<tr>
<td>Indoor Soccer Building</td>
<td>Athletic Club</td>
<td>493 KSF</td>
<td>KSF</td>
<td>43,575</td>
</tr>
</tbody>
</table>

*ITE Parking Generation, 3rd Edition was used

The 4th Edition of the ITE Parking Generation added several institutional land use codes, including Private Schools, K-12. However, this land use code only included one sample of data, and therefore is considered unreliable. Because of the addition of the private school land use code, the elementary school land use code in the 4th edition only includes public schools. The 3rd edition of the ITE Parking Generation Manual includes both public and private schools in the elementary school land use code, and therefore the 3rd edition was used for the most accurate results.

The International Montessori School was analyzed as an elementary school with 181 students. 32 students were subtracted from the projected total (213 students), because the extended care was factored in and treated as a day care center to better estimate the parking demand. The soccer complex was analyzed based on 3 outdoor fields and a 43,575 square foot athletic club.

The minimum number of parking spaces for the school, extended care and soccer complex based on specific land use codes is determined following the procedures and land use descriptions of the ITE Parking Generation Manual, 3rd and 4th Editions. Table 2 provides the total number of stalls projected to be occupied during the peak period. All parking stall calculations have been rounded to the nearest whole stall.

Table 2: Parking Generation Rates

<table>
<thead>
<tr>
<th>Land Use</th>
<th>ITE Parking Generation Rates</th>
<th>Total Stalls Occupied in Peak Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Montessori School</td>
<td>0.28 Stalls/Student</td>
<td>51</td>
</tr>
<tr>
<td>Extended Care (Students)</td>
<td>0.24 stalls/Student</td>
<td>8</td>
</tr>
<tr>
<td>Extended Care (Employees)</td>
<td>1.38 Stalls/Employee</td>
<td>8</td>
</tr>
<tr>
<td>Outdoor Soccer Fields</td>
<td>38.3 Stalls/Field</td>
<td>115</td>
</tr>
<tr>
<td>Indoor Soccer Building</td>
<td>3.55 Stalls/KSF</td>
<td>155</td>
</tr>
</tbody>
</table>

The average peak period parking demand for weekday conditions used was 0.28 stalls per student for the school, 0.24 stalls per student for the extended care program, 1.38 stalls per extended care employee, 38.3 stalls per field for the outdoor soccer fields, and 3.55 stalls per KSF for the indoor soccer building.
2. International Montessori School and Soccer Schedules

The second method used in the parking study was comparing and analyzing the schedules provided by Triangle United and International Montessori School, found in the Attachments. Table 3 provides the given number of school staff at any given time throughout the day, based on their schedule.

### Table 3: School Staff Projections and Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Full Time Staff</th>
<th>Part Time Staff (Morning)</th>
<th>Part Time Staff (Afternoon)</th>
<th>Administrative Staff</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM</td>
<td>17</td>
<td>4</td>
<td>-</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>17</td>
<td>4</td>
<td>-</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>17</td>
<td>4</td>
<td>-</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>17</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>17</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>17</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>17</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>17</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>17</td>
<td>-</td>
<td>4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
</tbody>
</table>

By observation, assuming one stall is needed per staff member, this schedule shows the maximum number of parking spaces needed for school staff is 38. Based on the schedule, it is not possible to determine the number of additional parking spaces needed to account for the students. The most reliable way to calculate additional spaces needed for each student is to use the parking generation rates provided by ITE.

Table 4 provides the soccer schedule and approximate number of participants and staff at any given time throughout the day.

### Table 4: Soccer Complex Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Staff</th>
<th>Participants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>14</td>
<td>24</td>
<td>38</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>4</td>
<td>126</td>
<td>130</td>
</tr>
<tr>
<td>6:00 PM</td>
<td>4</td>
<td>126</td>
<td>130</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>4</td>
<td>119</td>
<td>123</td>
</tr>
<tr>
<td>8:00 PM</td>
<td>4</td>
<td>122</td>
<td>126</td>
</tr>
<tr>
<td>9:00 PM</td>
<td>4</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>10:00 PM</td>
<td>4</td>
<td>20</td>
<td>24</td>
</tr>
</tbody>
</table>
By observation, assuming one stall is needed per staff and per participant, this schedule shows the maximum number of parking spaces needed for the soccer complex at any given time is 130.

**Evaluation of Peak Hours**
The peak period of parking demand is the hour (or hours) of the day during which the highest parking demand ratio occurs. The following sections compare the peak periods between the ITE Parking Generation Manual and the provided schedules.

1. **ITE Parking Generation Manual**

   According to the ITE Trip Generation Manual, the peak period demand for an elementary school occurs between 3-4pm, day care center between 4-6pm, and a soccer complex is between 5-8pm. Table 5 presents the ITE parking generation rates at the peak periods and the total number of parking stalls that are projected to be occupied during each period.

   **Table 5: ITE Parking Generation Total Parking Generated During Peak Periods**

<table>
<thead>
<tr>
<th>Time</th>
<th>School</th>
<th>Extended Care (Students)</th>
<th>Extended Care (Employees)</th>
<th>Outdoor Soccer Fields</th>
<th>Indoor Soccer Field</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00</td>
<td>51</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>51</td>
</tr>
<tr>
<td>4:00</td>
<td>-</td>
<td>8</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>5:00</td>
<td>-</td>
<td>8</td>
<td>8</td>
<td>115</td>
<td>155</td>
<td>286</td>
</tr>
<tr>
<td>6:00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>115</td>
<td>155</td>
<td>270</td>
</tr>
<tr>
<td>7:00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>115</td>
<td>155</td>
<td>270</td>
</tr>
<tr>
<td>8:00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>115</td>
<td>155</td>
<td>270</td>
</tr>
<tr>
<td>9:00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>115</td>
<td>155</td>
<td>270</td>
</tr>
</tbody>
</table>

   Based on the ITE Parking Generation Manual, the maximum number of parking stalls projected to be utilized at any one time is 286.

2. **International Montessori School and Soccer Schedules**

   By utilizing the schedules provided by Triangle United and the International Montessori School, the peak period demand for the school is observed to be 2-4pm, 5-6pm for extended care, and 5-8pm for the soccer complex.

   According to the school schedules provided, a maximum of 6 extended day staff will be utilizing parking spaces at 5pm, with a maximum of 32 students. According to the soccer complex schedule provided, a maximum of 130 soccer participants and staff will be utilizing parking spaces at 5pm. Although very unlikely, assuming the worst-case scenario of one parking space per person, a maximum of 168 parking stalls would be utilized at 5pm between the extended care and soccer complex. Table 6 shows the results in tabular form.
Table 6: Peak Period (5pm) Parking Stalls Required Based on School and Soccer Schedules

<table>
<thead>
<tr>
<th>Use</th>
<th>Parking Stalls Required (at 5pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soccer Complex (Indoor and Outdoor)</td>
<td>130</td>
</tr>
<tr>
<td>Extended Care</td>
<td>38</td>
</tr>
<tr>
<td>Shared</td>
<td>168</td>
</tr>
</tbody>
</table>

**Recommendations**

Based on the two methods used to observe and gather data, the ITE Parking Generation Manual is the most reliable and conservative information to use. The International Montessori School requires a minimum of 51 parking stalls with 16 stalls required for the extended care, and the soccer complex requires a minimum of 115 parking stalls for the outdoor soccer fields and 155 parking stalls for the indoor soccer building.

The peak period for the International Montessori School and the Triangle United Soccer Complex do not overlap, however, the peak periods of the soccer complex and the extended care do overlap at 5pm. Therefore, it is recommended to provide a minimum of 286 parking stalls to be shared between the soccer complex and the extended care program.

If you have questions or require additional information, please contact me at 919.747.5847 or llundeen@sepiengineering.com.

Cc w/ Attachments:   Tina Govan, AIA, Tina Govan Architect
<table>
<thead>
<tr>
<th></th>
<th>Current Campus</th>
<th>New Campus - Phase 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toddler Total</td>
<td>12 12</td>
<td>12 16 16 16 16</td>
</tr>
<tr>
<td>Primary Total</td>
<td>75 75</td>
<td>85 97 111 125 125</td>
</tr>
<tr>
<td>Spanish</td>
<td>25 25</td>
<td>30 36 43 50 50</td>
</tr>
<tr>
<td>Chinese</td>
<td>25 25</td>
<td>30 36 43 50 50</td>
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<tr>
<td>French Subtotal</td>
<td>25</td>
<td>41 51 53 54</td>
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<td>12</td>
<td>14 15 16 16</td>
</tr>
<tr>
<td>Chinese Subtotal</td>
<td>12</td>
<td>17 19 19 19</td>
</tr>
<tr>
<td>Elementary Total</td>
<td>29 42</td>
<td>56 64 69 71 72</td>
</tr>
<tr>
<td>French Subtotal</td>
<td>8 9</td>
<td>12 13 14 15 16</td>
</tr>
<tr>
<td>Spanish Subtotal</td>
<td>10 12</td>
<td>14 16 18 19 19</td>
</tr>
<tr>
<td>Chinese Subtotal</td>
<td>7 12</td>
<td>15 17 19 19 19</td>
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<tr>
<td>Upper El Subtotal</td>
<td>4 9</td>
<td>15 18 18 18 18</td>
</tr>
<tr>
<td>French Subtotal</td>
<td>1 4</td>
<td>6 6 6 6 6</td>
</tr>
<tr>
<td>Spanish Subtotal</td>
<td>3 5</td>
<td>7 6 6 6 6</td>
</tr>
<tr>
<td>Chinese Subtotal</td>
<td>0 0</td>
<td>2 6 6 6 6</td>
</tr>
<tr>
<td>Total Students</td>
<td>116 129</td>
<td>153 177 196 212 213</td>
</tr>
</tbody>
</table>

Early Drop Off
Parents parking
7:45 - 8:00

<p>| | |</p>
<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total Parking AM &amp; PM</td>
<td>17 19 23 27 29 32 32</td>
</tr>
</tbody>
</table>

Worst Case
Assumes 1 child per car

Total Car Line AM
8:05 - 8:15

<p>| | |</p>
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<tr>
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<tbody>
<tr>
<td>Total Car Line AM</td>
<td>25 36 48 54 59 60</td>
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</table>

Total Car Line AM
8:15 - 8:25

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>Total Car Line PM</td>
<td>23 23 26 29 33 38</td>
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Total Car Line PM
3:00 - 3:15

<p>| | |</p>
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<tr>
<td>Total Parking PM</td>
<td>48 59 74 83 92 98</td>
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Total Parking PM
5:00 - 5:30

<p>| | |</p>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>17 19 23 27 29 32</td>
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Extended Day All Ages
<table>
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<th>New Campus - Phase 1</th>
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<tbody>
<tr>
<td><strong>Toddler Full time</strong></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Part time 7:30 - 2:00</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Part time 11:00 - 3:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Primary Total</strong></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>French Full Time 7:30 - 4:30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Spanish Full Time 7:30 - 4:30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Chinese Full Time 7:30 - 4:30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Part time 7:30 - 2:00</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Part time 11:00 - 3:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Extended Day 2:30 -5:30</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Elementary Total</strong></td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td><strong>Lower El Subtotal</strong></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>French Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spanish Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chinese Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Upper El Subtotal</strong></td>
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<td>3</td>
</tr>
<tr>
<td>French Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spanish Full Time 7:30 - 4:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Chinese Full Time 7:30 - 4:30</td>
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</tr>
<tr>
<td>Part time 7:30 - 2:00</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Part time 11:00 - 3:30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Extended Day 2:30 -5:30</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Head of School</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Office Administrator</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Director of Programs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Business Manager</td>
<td>0</td>
<td>0.5</td>
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<tr>
<td>Admissions</td>
<td>0</td>
<td>0.25</td>
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<tr>
<td>Communications</td>
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<td>0.25</td>
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<tr>
<td>Facilities &amp; Maintenance</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Staff</strong></td>
<td>24</td>
<td>26</td>
</tr>
</tbody>
</table>
Proposed Schedule of Usage for Soccer Facility

**Recreation/Office Bldg**

Mid August-Mid May (Outdoor training takes a three week break during the public school holiday in mid/late December-early January)

9:00-5:00  (Monday-Friday)

Soccer office staff- 5-7 people depending on day of the week
Sports Therapy Group 1-3 people
* spring break camp during public school break would have 50-100 campers during week
* holiday camp during school break would have 50-100 campers for (one)week long camp

4:30-11:00 Indoor Recreation Space (Monday-Thursday)

Soccer staff- 3-4 people
4:30-5:30 approx. 24 participants per day
5:30-6:45 approx 24 participants per day
6:45-8:00 approx. 17 participants per day
8:00-9:00 approx. 20 participants per day
9:00-10:00 approx. 20 participants per day
10:00-11:00 approx. 20 participants per day

**Championship turf soccer field**

Mid August-Mid May (Monday-Thursday)

5:00-6:15 approx 34 participants per day
6:15-7:30 approx 34 participants per day
7:30-9:00 approx 34 participants per day

**Large lower turf soccer field (Monday-Thursday)**

5:00-6:00 approx. 34 participants per day
6:00-7:15 approx. 34 participants per day
7:15-8:30 approx 34 participants per day

**Small lower turf soccer field (Monday-Thursday)**

5:30-6:30 approx. 34 participants per day
6:30-7:45 approx. 34 participants per day
7:45-9:00 approx. 34 participants per day

Friday evenings would see limited game use on site (approx 100 cars between 5:00 and 9:00)

Summer season (Mid May-Mid Aug would see limited training on fields, but camps at various times)
Office staffing and hours during the summer season would remain the same as the Mid Aug-Mid May timeframe.
Meeting Date: May 28, 2019

<table>
<thead>
<tr>
<th>Reference Name</th>
<th>Jurisdiction</th>
<th>City</th>
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<tr>
<td>805 S Briggs Avenue Scannell Properties Variance (Case B1900006)</td>
<td></td>
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<table>
<thead>
<tr>
<th>Request</th>
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<tbody>
<tr>
<td>Variance from the required 20-foot maximum street yard, with the longest building façade not parallel to or located within the maximum street yard, and the building occupying less than 60% of the total street frontage.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Site Characteristics</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Tier</td>
<td>Urban</td>
</tr>
<tr>
<td>Zoning District</td>
<td>Industrial Light (IL), Industrial (I)</td>
</tr>
<tr>
<td>Overlays</td>
<td>None</td>
</tr>
<tr>
<td>Site Acreage</td>
<td>35.149 acres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Location</th>
<th>PID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morningstar Law Group</td>
<td>805 S Briggs Avenue</td>
<td>156727</td>
</tr>
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<table>
<thead>
<tr>
<th>Submittal Date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>January 23, 2019</td>
<td></td>
</tr>
</tbody>
</table>

A. Summary

Patrick Byker with Morningstar Law Group, representing Scannell Properties #320, LLC, requests a variance to the Unified Development Ordinance (UDO) to construct a building located greater than the maximum 20-foot street yard, with the longest building façade not parallel to, or located within the maximum street yard, and the building occupying less than 60% of the total street frontage. The subject site is zoned Industrial Light (IL) and Industrial (I), and is located in the Urban Tier.

Pursuant to the dimensional standards in UDO Section 6.10.1.C.3 for IL zoning districts within the Urban Tier, primary structures require a maximum street yard of 20 feet. Additionally, pursuant to UDO Section 6.10.1.C.3a (1) and (2), the structure must be located such that the longest building façade is parallel to and within the maximum street yard, or the street-facing building façade must occupy at least 60% of the total street frontage for the development. The applicant proposes to develop in the IL-zoned portion of the site with the buildings oriented perpendicular to and placed further back than allowed by the street yard standard. There are jurisdictional streams requiring 50-foot wide riparian buffers and 100-year flood hazard areas located within the northern portion of the site. (See Attachment 4, Site plan – D1800267, Sheet C4).
B. Summary of Issues

Staff has not identified any issues.

Recommended Conditions of Approval

1. The improvements shall be substantially consistent with all documents submitted to the Board as part of the application.

C. UDO Section 3.14 Variance

The Board of Adjustment may vary certain requirements of this Ordinance, in harmony with the general purpose of these regulations, where special conditions applicable to the property in question would make the strict enforcement of the regulations impractical or result in a hardship in making reasonable use of the property.

UDO Section 3.14.8 establishes the findings listed below that the Board of Adjustment must make in granting any variance.

1. Unnecessary hardship would result from the strict application of the Ordinance. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property.

   Staff Analysis. Strict application of the Ordinance would require the applicant to place the building at or within 20 feet of the public right-of-way, with the building oriented parallel along Briggs Avenue. The applicant proposes to develop the site with the buildings oriented perpendicular to and placed further back than allowed by the street yard standard to accommodate the proposed development. (See Attachment 4, Site plan – D1800267, Sheet C4).

   Refer to Attachment 3, Application, for applicant’s response to this finding.

2. The hardship results from conditions that are peculiar to the property, such as location, size, or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance.

   Staff Analysis. The applicant states that the topography of the site and environmental features in the northern section of the site limits the placement and orientation of the building.

   See Attachment 3, Application, for the applicant’s response to this finding.

3. The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify granting a variance shall not be regarded as a self-created hardship.
Staff Analysis. The applicant states that the existing environmental and topographic features are not due to actions of the property owner.

See Attachment 3, Application, for the applicant’s response to this finding.

4. The requested variance is consistent with the spirit, purpose, and intent of the Ordinance, such that public safety is secured, and substantial justice achieved.

Staff Analysis. The applicant states that developing the property as proposed will result in less site grading and fewer negative impacts to environmentally sensitive site features (100-year flood hazard areas and riparian stream buffers).

See Attachment 3, Application, for the applicant’s response to this finding.

D. Notification

Staff certifies that newspaper advertisements, letters to property owners within 600 feet of the site and the posting of signage on the property has been carried out in accordance UDO Section 3.2.5. In addition, email notice was provided per the Durham Planning Public Notification Service.

E. Staff Contact

Danny Cultra, Senior Planner, 919-560-4137 ext. 28238, or danny.cultra@durhamnc.gov

F. Attachments

1. Context map
2. Durham GIS aerial photo
3. Application - B1900006
4. Site plan – D1800267
B1900006 805 S. Briggs Avenue Building Frontage Variance
Aerial Map

Legend:
- Case Area
- Parcel Lines

Durham City-County Planning Department, 4/10/2019
Attachment 3

Durham City-County Planning Department

VARIANCE APPLICATION
(A Pre-submittal conference must be held prior to submission)

Tracking Information (Staff Only)

Case Number: B1900006  Date/Time rec’d: 1/23/19 11:06 AM  Rec’d by: Eliza Monroe

About this Application

ONLY COMPLETE APPLICATIONS CAN BE ACCEPTED

Variances are heard by the Board of Adjustment as a quasi-judicial public hearing.

Submittal: Applications are due by noon on the submittal deadline date. Deadlines are discussed at the pre-submittal meeting and are available online at http://durhamnc.gov/lch/cb/ccpd/Pages/Board-of-Adjustment.aspx.
Applications should be submitted in-person, and fees are due at time of submittal.

The application is a form of written testimony, and used to provide evidence that the required findings for approval can be made. In addition to the application materials, the applicant may provide any other written, drawn or photographed material to support his/her request and as permitted by the Board of Adjustment. Any such additional material submitted will become part of the application, and as such cannot be returned.

Attendance at the hearing is required. Applicants may represent themselves or may be represented by someone appropriate for quasi-judicial public hearings. The applicant has the burden of proof and must provide sufficient evidence in order for the required findings to be made. The public hearing will allow the applicant, proponents, opponents and anyone else the opportunity to speak and ask questions in regards to the request. An application may be approved, approved with conditions, continued for more information, or denied. Decisions can be appealed to Superior Court within 30 days.

Contact Information: If you have any questions, please contact the City-County Planning Department at 919-560-4137 between 8:00 a.m. and 5:00 p.m. on weekdays.

Required Application Attachments

<table>
<thead>
<tr>
<th>Required Attachment</th>
<th>Applicant Initial</th>
<th>Staff Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of the pre-submittal meeting (copies provided at the meeting)</td>
<td>PB</td>
<td>EM</td>
</tr>
<tr>
<td>Fee</td>
<td>PB</td>
<td>EM</td>
</tr>
<tr>
<td>Completed application and responses: ORIGINAL signatures required</td>
<td>PB</td>
<td>EM</td>
</tr>
<tr>
<td>SITE PLAN (full size and 11x17) or PLOT PLAN, as determined at pre-</td>
<td>PB</td>
<td>EM</td>
</tr>
<tr>
<td>submittal meeting</td>
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<td></td>
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<tr>
<td>Responses to general findings: Section 3.14.8 of the UDO</td>
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<td>EM</td>
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<tr>
<td>Responses to Additional Findings and/or Review Factors, as applicable</td>
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<td>EM</td>
</tr>
<tr>
<td>Floor plan, as applicable</td>
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<tr>
<td>Elevations, as applicable</td>
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<td>EM</td>
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<tr>
<td>Note: Additional supporting documents may also be submitted</td>
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4825-5154-5477, v. 1
## Property Information

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<th>PIN(s): 0830-08-78-2841</th>
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<tbody>
<tr>
<td>Zoning District(s): IL &amp; I</td>
<td>Overlay District(s): None</td>
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<tr>
<td>Current Use(s): Vacant</td>
<td>PID(s): 156727</td>
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- ☑ City  □ County  □ Both

## Property Owner

<table>
<thead>
<tr>
<th>Name(s) (Print): Scannell Properties #320, LLC</th>
<th>Telephone: 317-218-1664</th>
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<tbody>
<tr>
<td>Contact Person: Joel Scannell</td>
<td>Email: <a href="mailto:joel@scannellproperties.com">joel@scannellproperties.com</a></td>
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Owner Signature: [Signature]  Date: 1/9/19

## Applicant

<table>
<thead>
<tr>
<th>Name(s): Morningstar Law Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person: Patrick Byker</td>
</tr>
<tr>
<td>Telephone: 919-590-0384</td>
</tr>
<tr>
<td>Address: 112 W Main St</td>
</tr>
<tr>
<td>Fax: 919-882-8690</td>
</tr>
<tr>
<td>City/State/ZIP: Durham, NC 27701</td>
</tr>
<tr>
<td>Email: <a href="mailto:pbyker@morningstarlawgroup.com">pbyker@morningstarlawgroup.com</a></td>
</tr>
</tbody>
</table>

I certify that all of the information presented by me in this application is accurate to the best of my knowledge, information, and belief.  

Applicant Signature: [Signature]  Date: 1-17-2019

## Agent (if different than applicant)

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Person:</td>
</tr>
<tr>
<td>Telephone:</td>
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<tr>
<td>Address:</td>
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<tr>
<td>Fax:</td>
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<tr>
<td>City/State/ZIP:</td>
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<td>Email:</td>
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</tbody>
</table>
Complete and respond to the following with an attachment (suggested), or in the space provided:

Burden of Proof: The applicant seeking the variance shall have the burden of presenting evidence sufficient to allow the Board of Adjustment to reach the conclusions set forth below, as well as the burden of persuasion on those issues.

Ordinance provision(s) from which a variance is requested:

Section 6.10.1C.3 and Section 6.10.1C.3.a

This is what I want to do:

Construct a building which is more than 20-ft from the street with a street-facing building façade which occupies less than 60% of the developments frontage and is not the longest building façade.

Ordinance provisions require:

Section 6.10.1C.3 – which sets a maximum Street Yard setback of 20'
Section 6.10.1C.3.a – which requires either: (1) the longest building façade to be parallel to and within the maximum street yard; or (2) the street-facing building façade occupy at least 60% of the total street frontage for the development.

I, _______ Patrick Byker ___________, hereby petition the Durham Board of Adjustment for a Variance from the literal provisions cited above to allow use of the property as described on this form and in material submitted with this request.

Section 3.14.8 of the Unified Development Ordinance (UDO) calls out the following "Findings" which the Board of Adjustment must make in granting any variance:

1. Unnecessary hardship would result from the strict application of the Ordinance. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property.

Applicant's Response:

Strict application of the Ordinance in this case would require the orientation of the building to be rotated 90 degrees and the building to be moved closer to Briggs Avenue. This would result in an unnecessary hardship due to the topography of the parcel near Briggs Avenue and the existence of floodplain and environmentally sensitive areas towards the north side of the property. In the 100-ft west of the Briggs Avenue right-of-way, the elevation of the property increases by approximately 30-ft. Setting the building back further than 20' from the right-of-way as proposed avoids a significant amount of grading that otherwise would be required. Moreover, the longest façade of the proposed building is approximately 1000-ft long. There are floodplain areas less than 700-ft north of the southern property line. Turning the building to meet the UDO requirement would have a significant negative impact on environmentally sensitive areas which can be avoided entirely through the proposed orientation as shown on our site plan. Strict application of the Ordinance results not only in a hardship to the applicant, but also has adverse effects on to the general public because of the negative environmental impacts that the strict application of
the Ordinance would mandate.

2. The hardship results from conditions that are peculiar to the property, such as location, size, or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance.

Applicant’s Response:

As mentioned, the hardship in this case results from the existing topography along Briggs Avenue and the floodplain and environmentally sensitive areas on the property. Placing any building 20-ft or less from the existing right-of-way for Briggs Avenue would require a significant amount of grading due to the topography of the site. As proposed, the building takes advantage of an existing access way abutting the southern property line to avoid impacting the steep slope along the property’s Briggs frontage. Under the proposed design, the only development along Briggs Avenue would be for the required sidewalk. Moreover, the proposed design does not impact the floodplain, stream, or other environmentally sensitive areas on the property.

3. The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify granting a variance shall not be regarded as a self-create hardship.

Applicant’s Response:

The existence of floodplain and the topography of the site are not the result of any actions taken by the property owner or applicant.

4. The requested variance is consistent with the spirit, purpose, and intent of the Ordinance, such that public safety is secured, and substantial justice achieved.

Applicant’s Response:

As previously explained, granting the requested variances will allow the site to be developed without unnecessary additional grading and without negatively impacting the floodplain or stream buffer areas. The result of granting these variances therefore is a development which has fewer negative external impacts than would be the case under strict application of the Ordinance. The applicant submits that the requested variances therefore are consistent with the spirit, purpose, and intent of the Ordinance.
LANDSCAPE NOTES

1. CANOPY TREES SHALL BE PLANTED AT LEAST 18 FEET APART.
2. DECIDUOUS UNDERSTORY TREES SHALL BE PLANTED AT LEAST 12 FEET APART.
3. THE SPACING BETWEEN CANOPY AND DECIDUOUS UNDERSTORY TREES SHALL BE AT LEAST 6 FEET.
4. TREE PLANTING AND SITE LIGHTING SHALL BE SEPARATED BY A MINIMUM OF 10 FEET.
5. SPECIMEN TREES (AS DEFINED IN PARAGRAPH 8.3.5 SPECIMEN TREES, OF THE UDO) LOCATED WITHIN REQUIRED PROJECT BOUNDARIES MUST BE RETAINED PER UDO SECTION 9.4.5E.

SEE SHEET C5B FOR PLANT SCHEDULE & CALCULATIONS
TYPICAL 100' SECTION 5' & 10' WIDE CONSTRUCTED BUFFER (OPACITY 0.2)

ALTERNATIVE 1: MIXED EVERGREEN

100' 5' OR 10'

TYPICAL 100' SECTION 5' WIDE CONSTRUCTED BUFFER (OPACITY 0.4)

ALTERNATIVE 1: MIXED EVERGREEN

LANDSCAPE CALCULATIONS

EAST: 121 LF SHEDDED BY LOADING AREA SCREENING PLANTING

EAST: 110 LF MECHANICAL EQUIPMENT SCREENING

DUMPSTER

LOADING/TRAILER PARKING

LOADING AREA & DUMPSTER SCREENING

LANDSCAPING WITHIN VUA OR ADJOINING PROPERTY LINES. PLANT MATERIAL SHALL CONSIST OF UPRIGHT SHRUBS AT LEAST 2/3 THE HEIGHT OF THE EQUIPMENT AT PER 40LF ALONG R/W WITH A 100' MAXIMUM SEPARATION BETWEEN TREES

SOUTH: N/A - SCREENED BY PROJECT BOUNDARY BUFFER

5' WIDE (0.2 OPACITY) CONSTRUCTED BUFFER ADJACENT TO VACANT PARCELS - 865.4 LF

SOUTH BRIGGS AVE - 820 LF (TO NO BUILD SETBACK)

STREET TREE REQUIREMENTS TIME OF INSTALLATION: BE PLANTED 2.5' O.C.; REACH THE REQUIRED HEIGHT WITHIN THREE YEARS OF PLANTING.

WEST: SCREENED BY LOADING AREA SCREENING PLANTING

WEST: 180 LF VEHICLE USE AREA VISIBLE FROM ADJACENT PROPERTIES

VEHICULAR USE AREA VISIBLE FROM STREET

ANY GROUND MOUNTED MECHANICAL EQUIPMENT SHALL BE SCREENED WITH EVERGREEN SHRUBS BETWEEN THE EQUIPMENT AND THE R/W

VEHICULAR USE AREA (VUA) REQUIREMENTS

EVERGREEN SHRUBS PROVIDED: 31

EVERGREEN UNDERSTORY TREES & (94) SHRUBS

EVERGREEN SHRUBS REQUIRED: 31 (1 PER 4 LF OF VISIBLE PARKING AREA)

REQUIRED = (21) DECIDUOUS CANOPY TREES, (11) EVERGREEN CANOPY TREES, (21) DECIDUOUS UNDERSTORY TREES, (32) EVERGREEN UNDERSTORY TREES, & (26) SHRUBS

PLANTING REQUIREMENT PER 100LF (ALTERNATIVE 1 - MIXED EVERGREEN)

EVERGREEN UNDERSTORY TREES PROVIDED: 44

EVERGREEN UNDERSTORY TREES REQUIRED: 44 (40 PER 100 LF)

REQUIRED = (1) DECIDUOUS CANOPY TREE, (1) EVERGREEN CANOPY TREE, (1) DECIDUOUS UNDERSTORY TREE, (1) EVERGREEN UNDERSTORY TREE, & (3) SHRUBS

PLANTING REQUIREMENT PER 100LF (ALTERNATIVE 1 - MIXED EVERGREEN)

R/W IS 60' OR GREATER WHICH DOES NOT REQUIRE A BUFFER

PROVIDED = 21 EXISTING CANOPY TREES

REQUIRED = 21 CANOPY TREES

N/A - VUA IS NOT WITHIN 50' OF R/W

LANDSCAPE AREA PROVIDED: 18,126 SF

LANDSCAPE AREA REQUIRED: 12,970.35 SF (15%)

CANOPY TREES PROVIDED: 5

CANOPY TREES REQUIRED: 5 (1 PER 25 LF OF VISIBLE PARKING AREA)

TREES PROVIDED: 44

TREES REQUIRED: 44 (1 PER 2,000 SF OF VUA)

SHRUBS PROVIDED: 346

SHRUBS REQUIRED: 346 (1 PER 250 SF OF VUA)

PROPERTIES

PROPERTIES

PROPERTIES

PROPERTIES

PROPERTIES

PROPERTIES

PROPERTIES

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PROPERTIES

PROPERTIES
Meeting Date: May 28th, 2019

<table>
<thead>
<tr>
<th>Reference Name</th>
<th>7 Edgestone Place Stream Buffer Variance (Case B1900017)</th>
<th>Jurisdiction</th>
<th>City</th>
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<tbody>
<tr>
<td>Request</td>
<td>A variance from the 50-foot riparian buffer and 10-foot no-build setback requirements for the construction of additional residential square footage.</td>
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<td>Site Characteristics</td>
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<td>Suburban</td>
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<td>Zoning District</td>
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<td>Overlays</td>
<td>F/J-B</td>
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<td></td>
<td>Site Acreage</td>
<td>0.661 acres</td>
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<tr>
<td>Applicant</td>
<td>Beth and John Dunn</td>
<td>Submittal Date</td>
<td>3/27/2019</td>
</tr>
<tr>
<td>Location</td>
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<td></td>
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</tr>
<tr>
<td>PID(s)</td>
<td>142315</td>
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A. Summary

Beth and John Dunn, the property owners and applicants, request a variance from two (2) Unified Development Ordinance (UDO) standards for a proposed addition to an existing single-family dwelling located at 7 Edgestone Place. The subject site is zoned RS-10 and is located in the Suburban Tier.

Mr. and Mrs. Dunn requests a variance from the following sections:

1. UDO Section 8.5.4B.1 (50-foot riparian stream buffer)
2. UDO Section 8.5.9C (10-foot no-build setback from stream buffer)

The existing house was built in 1984 and is located within the F/J-B watershed protection overlay district and the Cape Fear River Basin. Changes to the environmental protection sections of the Ordinance since the original construction of the single-family dwelling have resulted in the home encroaching within a required stream buffer. The UDO requires, per Sections 8.5.4B.1 and 8.7.2E, a 50-foot buffer for an intermittent stream. An additional 10-foot no-build setback is also required for all stream buffers per UDO Section 8.5.9C.

The plat provided by the applicant, showing the house with the proposed additions, indicates that the structure itself encroaches approximately six feet into the buffer and completely beyond the no-build setback. The proposed porch would encroach an additional six feet into the buffer.

The existing house is a nonconforming structure as defined by UDO Section 14.1.2C. The request to add an addition to the dining room and office as well as a porch, onto a house...
already located within the 10-foot no-build setback and stream buffer, results in an increase in the degree or extent of the nonconformity, and thus requires a variance. The total impact into the stream buffer will be about 100 square feet. The request does not exceed the impervious surface limits of the F/J-B watershed protection overlay district, since the property receives credit for impervious surface constructed prior to 1994 and the request is less than the 24% impervious surface total allowed for the parcel, per UDO Section 8.7.3B.

B. Summary of Issues

Mitigation will be required as a part of the variance in accordance with the standards listed in UDO Section 8.5.11.

C. UDO Section 8.5.12 Variances

The Board of Adjustment may vary certain requirements of this Ordinance, in harmony with the general purpose of these regulations, where special conditions applicable to the property in question would make the strict enforcement of the regulations impractical or result in a hardship in making reasonable use of the property.

The City or County shall make the following three findings of fact in order to determine that the variance requirements are met:

A. There are practical difficulties or unnecessary hardships that prevent compliance with the riparian buffer protection requirements. The following criteria must all be met in order to make such finding:

(1) If the applicant complies with the provisions of this section, he/she can secure no reasonable return from, nor make reasonable use of, his/her property. Merely proving that the variance would permit a greater profit from the property shall not be considered adequate justification for a variance. Moreover, the variance shall be the minimum possible deviation from the terms of this Ordinance that shall make reasonable use of the property possible;

Staff Analysis: Unnecessary hardship would result from the strict application of the ordinance as there is an existing required stream buffer and 10-foot no-build setback located through the center of this property where the house currently exist. Strict application would render the applicant unable to build the desired additions to their house.

(2) The hardship results from application of this section to the property rather than from other factors such as deed restrictions or other hardship;

Staff Analysis: The pre-existing nonconformity is not a result of the applicant’s actions or those of their contractor as the house was constructed prior to 1994 and the passing of pertinent environmental regulations. Strict application of the Ordinance limits the
applicant’s ability to make the desired additions.

(3) The hardship is due to the physical nature of the applicant’s property, such as its size, shape, or topography, such that compliance with provisions of this section would not allow reasonable use of the property;

**Staff Analysis:** The hardships at this site are caused by conditions peculiar to the property. The intermittent stream runs along the north side of the property, rendering much of the property undevelopable given the required stream buffer and no-build setback.

(4) The applicant did not cause the hardship by knowingly or unknowingly violating this Ordinance;

**Staff Analysis:** The existing house was built in 1984, prior to the stream buffer being in place. The house currently lies within the 10-foot no-build setback and within the outer 20 feet of the stream buffer. The creation of the buffer requirements in 1994 has rendered the front and side of the lot undevelopable.

(5) The applicant did not purchase the property after the effective date of this Ordinance, and then request a variance; and

**Staff Analysis:** The existing house was built in 1984 and the applicant purchased the property in 1994, prior to the environmental regulations of the current Ordinance.

(6) The hardship is rare or unique to the applicant’s property.

**Staff Analysis:** The hardships at this site are from conditions unique to the property. The intermittent stream runs along the north side of the property, rendering approximately half of the property undevelopable. The lot is a hexagon with a very narrow entrance and long sides. Given that the stream buffer was put in place after the house was built, the environmental conditions and existing nonconformity are peculiar to 7 Edgestone Place.

**B. The requested variance is in harmony with the general purpose, spirit and intent of the state riparian buffer protection requirements and/or this section; and**

**Staff Analysis:** Mitigation will be required as a part of the variance in accordance with the Unified Development Ordinance standards in Section 8.5.11. The North Carolina Department of Environmental Quality will determine how mitigation will be carried out. The aim of mitigation is to offset the intrusion done onsite by further assisting a stream within a similar environmental context.
C. **In granting the variance, the public safety and welfare have been assured, water quality has been protected, and substantial justice has been done**

**Staff Analysis:** The variance does not compromise public safety and allows for the family to continue to age in place over time. Through mitigation efforts, the proposed intrusion into the outer 20 feet of the buffer will be offset and environmental balance will be ensured. The existing home was built prior to the installation of the 1994 buffer regulations and the proposed additions to the home, if approved, would provide substantial justice in allowing them to make the desired modifications to their home.

D. **Notification**
Staff certifies that newspaper advertisements, letters to property owners within 600 feet of the site and the posting of a sign on the property has been carried out in accordance with UDO Section 3.2.5 of the UDO. In addition, email notice was provided per the Durham Planning Public Notification Service.

E. **Staff Contact**
Eliza Monroe, 919-560-4137 ext. 28245, or Eliza.Monroe@durhamnc.gov

A. **Attachments**
1. Context Map
2. Durham GIS Aerial Photo
3. Application – B1900017
4. Plat
5. Stream Buffer Evaluation
6. Floor Plans
B1900017 7 Edgestone Place Stream Buffer Variance
Aerial Map

Legend:
- Case Area
- Parcel Lines

Durham City-County Planning Department, 4/10/2019
Durham City-County Planning Department

VARIANCE APPLICATION
(A Pre-submittal conference must be held prior to submission)

Tracking Information (Staff Only)

Case Number: B19 80017  Date/Time rec'd: 3/27/19 @ 10:00AM
Rec'd by: Eliza Monroe

About this Application

**ONLY COMPLETE APPLICATIONS CAN BE ACCEPTED**

VARIANCES are heard by the Board of Adjustment as a quasi-judicial public hearing.

**Submittal:** Applications are due by noon on the submittal deadline date. Deadlines are discussed at the pre-submittal meeting and are available online at [http://durhamnc.gov/ich/cb/ccpd/Pages/Board-of-Adjustment.aspx](http://durhamnc.gov/ich/cb/ccpd/Pages/Board-of-Adjustment.aspx)

Applications should be submitted in-person, and fees are due at time of submittal.

The application is a form of written testimony, and used to provide evidence that the required findings for approval can be made. In addition to the application materials, the applicant may provide any other written, drawn or photographed material to support his/her request and as permitted by the Board of Adjustment. Any such additional material submitted will become part of the application, and as such cannot be returned.

Attendance at the hearing is required. Applicants may represent themselves or may be represented by someone appropriate for quasi-judicial public hearings. The applicant has the burden of proof and must provide sufficient evidence in order for the required findings to be made. The public hearing will allow the applicant, proponents, opponents and anyone else the opportunity to speak and ask questions in regards to the request. An application may be approved, approved with conditions, continued for more information, or denied. Decisions can be appealed to Superior Court within 30 days.

**Contact Information:** If you have any questions, please contact the City-County Planning Department at 919-560-4137 between 8:00 a.m. and 5:00 p.m. on weekdays.

<table>
<thead>
<tr>
<th>Required Application Attachments</th>
<th>Applicant Initial</th>
<th>Staff Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record of the pre-submittal meeting (copies provided at the meeting)</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Fee</td>
<td>5</td>
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<tr>
<td>Completed application and responses: ORIGINAL signatures required</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SITE PLAN (full size and 11x17) or PLOT PLAN, as determined at pre-submittal meeting</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Responses to general findings: Section 3.14.8 of the UDO</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Responses to Additional Findings and/or Review Factors, as applicable</td>
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<td>5</td>
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<tr>
<td>Floorplan, as applicable</td>
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<td>5</td>
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<tr>
<td>Elevations, as applicable</td>
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<tr>
<td>Note: Additional supporting documents may also be submitted</td>
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</tbody>
</table>
## Property Information

| Site Address: | 7 Edgestone Place | PIN(s): | 0708-03-32-9547 |
| Zoning District(s): | 7 Edgestone Place | PID(s): | 142315 |
| Overlay District(s): | Single Family Home |  |  |
| Current Use(s): |  | City |  | County |  | Both |  |

## Property Owner

| Name(s) (Print): | John and Beth Gunn | Telephone: | 919-225-2500 |
| Contact Person: | Beth Gunn | Email: | BethL Gunn@Aol.com |

Owner Signature: [Signature] 2-18-19

## Applicant

| Name(s): | John and Beth Gunn | Telephone: | 919-225-2500 |
| Contact Person: | Beth Gunn | Fax: | 919-932-5820 |
| Address: | 7 Edgestone Place | Email: | BethL Gunn@Aol.com |
| City/State/ZIP: | Chapel Hill, NC 27517 |

I certify that all of the information presented by me in this application is accurate to the best of my knowledge, information, and belief.

[Signature] 2-18-19

## Agent (if different than applicant)

| Name: |  |
| Contact Person: |  |
| Address: |  |
| City/State/ZIP: |  |
Complete and respond to the following with an attachment (suggested), or in the space provided:

**Burden of Proof:** The applicant seeking the variance shall have the burden of presenting evidence sufficient to allow the Board of Adjustment to reach the conclusions set forth below, as well as the burden of persuasion on those issues.

Ordinance provision(s) from which a variance is requested:

50 Foot Riparian Buffer.

This is what I want to do: Enlarge Dining room and add a new Front porch, add new office.

Ordinance provisions require:

No building within 50 feet of creeks but I need to put the corner of a new front porch inside the buffer.

I, Beth Flynn, hereby petition the Durham Board of Adjustment for a Variance from the literal provisions cited above to allow use of the property as described on this form and in material submitted with this request.

**Section 3.14.8 of the Unified Development Ordinance (UDO) calls out the following “Findings” which the Board of Adjustment must make in granting any variance:**

1. Unnecessary hardship would result from the strict application of the Ordinance. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property.

**Applicant’s Response:**

An unnecessary hardship would result for the strict application of the Ordinance because we would be unable to increase the size of our dining room to fit our entire family. Due to the fact that the front corner of the home is already inside the riparian buffer we would be unable to attach a front porch or steps to get inside the front door of our home after enlarging the dining room.
2. The hardship results from conditions that are peculiar to the property, such as location, size, or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance.

*Applicant’s Response:*

When we first purchased this property in 1994, the riparian buffer did not exist. We have a large family with five children. Our oldest is now married and we cannot all fit into the dining room for a meal together. We have always planned on enlarging the dining room to fit our family but when we got the survey done it showed the riparian buffer on the left side of the house. A portion of our current house is within the buffer, further illustrating that it was not there when we purchased the home. We would like to enlarge the dining room which is in the center of our lot and not inside the buffer. However, to do this, we need pull out the front entrance of the home, also not inside the buffer. After extending the dining room and the entrance we will need to add a new front porch and entry steps, the corner of which will be inside the edge of the riparian buffer and attached to the existing house. We are not adding any living space inside the buffer only the corner of an open front porch. This porch is very high off the ground. This buffer takes up a large portion of our lot making it very hard to enlarge the dining room of this four bedroom home to make it suitable. If we cannot enlarge the dining room we will have to move so that our family can eat together.

3. The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify granting a variance shall not be regarded as a self-create hardship.

*Applicant’s Response:*

The hardship did not result for our actions. We had always planned to enlarge the dining room when we had the funds but were unaware of the new riparian buffer and the fact that it would limit our ability to construct a suitable size dining room.
4. The requested variance is consistent with the spirit, purpose, and intent of the Ordinance, such that public safety is secured, and substantial justice achieved.

*Applicant’s Response:*

This request is consistent with the spirit, purpose and intent of the Ordinance because we are not building any living area inside the buffer. It is just one corner of an open porch. Because the front corner of our existing home is inside the buffer, it is impossible to add a front porch or steps to the front door without them being inside the buffer as well. The small creek is much, much lower in elevation from the bottom of the porch where the pier would be located. We have lived in this home for almost 25 years and there has never been flooding near our existing front porch, or the area that we would like to construct the new front porch. It will in no way affect public safety.
Purpose

The purpose of this evaluation is to provide information to Durham County for use in making decisions on the applicability of stream buffer protection standards for the property at 7 Edgestone Place. Stream buffer protection standards have been adopted by the City of Durham and Durham County to protect and maintain existing riparian areas.

Under Section 8.5 of the Durham City-County Unified Development Ordinance (Stream Buffer Protection Standards), for proposed developments outside of the Neuse River Basin, no proposed developments shall be approved which are within a minimum of the first 50 feet adjacent to a waterbody shown on the most recent United States Geologic Survey (USGS) 7.5-minute quadrangle topographic map (topo map) and/or the U.S. Department of Agriculture (USDA) Soil Survey of Durham County (county soil survey) applicable to the proposed site. This buffer may be increased according to Section 8.7 of this Ordinance if a proposed site falls within any of the established Watershed Overlay Districts. In order to properly apply the appropriate stream buffers, City/County of Durham will review waterbodies depicted on the USGS topographic map or the county soil survey that an applicant does not believe are intermittent or perennial streams, or ponds or lakes that are manmade and are located outside of natural drainageways.

This evaluation is a review of the property at 7 Edgestone Place in Durham County and the Cape Fear River Basin. One intermittent stream channel is depicted on the county soil survey and/or the USGS topographic map and was evaluated on the site for the applicability of stream buffer protection standards. For these types of evaluations, only personnel that have completed the N.C. Division of Environment and Natural Resources (NCDENR) Surface Water Identification Training and Certification Course (or an approved equivalent) and who have passed both the written and field exams for the course can perform a stream and surface water determination. These evaluators must also have completed the most current refresher course if a new method has been approved since the original Surface Water Identification Training Certification was obtained. If information gathered by these personnel determines that the drainage feature or depicted surface water is not subject to the buffer protection standards, and is subsequently approved by the NCDWR, then the proposed development may encroach within the first 50 feet adjacent to the waterbody depicted on the soil survey and/or the USGS topographic map.

Project Description

The 7 Edgestone Place property is located on the east side of Edgestone Place Street at the cul-de-sac at the southern end (Figure 1 in Appendix A). The project site is approximately 0.7 acres in size.
Methodology

Environmental Services, Inc., (ESI) was contracted by Beth L. Gunn, the property owner, to undertake an evaluation of the subject property. ESI was provided with site mapping by the applicant that depicts the property boundaries. One (1) drainage feature (S1) was identified on the property to be reviewed by ESI for the applicability of stream buffer protection standards. ESI's evaluation consisted of a review of applicable mapping and a field investigation.

Mapping resources reviewed included the most recent Southwest Durham, NC, USGS 7.5-minute topographic quadrangle (1987) and the published Soil Survey of Durham County, North Carolina (1972). Project boundary data was overlaid on USGS topographic base and the county soil survey (Figures 1 and 2 in Appendix A) to confirm the depicted location and extent of the drainage features on the property. The results of this review determined the maximum extent of streams that would be considered subject to stream buffer protection standards for S1.

ESI conducted the field review on October 10, 2018. For the field determination, the feature in question was evaluated to determine if it meets the criteria to be considered at least an intermittent stream or surface water. The feature identified on either the USGS topo map and/or the county soil survey was walked and assessed following guidelines developed by the N.C. Division of Water Resources (NCDWR) [formerly the N.C. Division of Water Quality (NCDWQ)] for determining the uppermost point of intermittent streams. Representative photographs were taken for S1. Photographs are included as Appendix B.

The NCDWQ Stream Identification Form Version 4.11 served as the basis for determining the origin point (if applicable) and classification of the drainage feature evaluated on the property. Using this form, the feature was evaluated based on three characteristics: geomorphology, hydrology, and biology. The identification of stream type was accomplished by evaluating 26 different attributes of each feature and assigning a numeric score to each attribute. These attributes are defined in the NCDWQ Identification Methods for the Origins of Intermittent and Perennial Streams (Version 4.11). Using this form, streams are determined to be ephemeral, intermittent, or perennial. According to these methods, a stream segment that scores between 0 and <19 is considered an ephemeral stream, a stream segment that scores between ≥19 and <30 is considered an intermittent stream, and a stream segment that scores ≥30 is considered a perennial stream. The stream form that was completed for the drainage feature reviewed by ESI is included in Appendix C.

Qualifications

The key team member involved in this investigation was Kevin Murphrey. Mr. Murphrey is a project scientist with a B.S. in Natural Resources from the N.C. State University. Mr. Murphrey has 5 years of professional experience and has completed the “Stream and Surface Water Identification for Riparian Buffer Rule Applications in North Carolina” class administered by NCDWR.
USGS and NRCS Stream Mapping

The USGS topographic map (Figure 1) does not depict any tributaries within the project study area boundary.

The NRCS map (Figure 2) depicts one (1) unnamed tributary to Little Creek (S1) within the project study area boundary.

Results

One drainage feature was reviewed to determine the applicability of City of Durham stream buffer protection standards. The approximate location of this evaluated feature is depicted and numbered on Figure 3 in Appendix A. This feature is labeled as S1. The features appears to be located within the F/J-B Watershed Overlay District.

The following table includes the rating on the NCDWQ Stream Identification Form (Version 4.11) for the reviewed drainage feature and its classifications. The Stream Identification Form is included in Appendix C.

<table>
<thead>
<tr>
<th>Feature #</th>
<th>NCDWQ Rating</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>22</td>
<td>Intermittent</td>
</tr>
</tbody>
</table>

S1 is depicted as an intermittent stream on the county soil survey, however it is not present on the USGS topographical map. S1, occurring inside the study area, scored 22 on the NCDWQ Stream Identification Form. Therefore, this portion of S1 inside the study area is considered an intermittent stream based on current NCDWR standards. Based on the City of Durham Buffer Rules, S1, as depicted on Figure 3, is subject to a 50-foot riparian buffer per the City of Durham stream buffer protection standards.

Summary

It is ESI’s professional opinion, based on these findings, that mapped stream feature S1, inside the study area, is intermittent and should be subject to a 50-foot buffer pursuant to the City of Durham stream buffer protection standards.
Appendix A

Figures
Soil Mapping Units

WsC  White Store sandy loam, 6-10% slopes
WsE  White Store sandy loam, 10-25% slopes

*Location and extent is approximate.

*Disclaimer: The information depicted on this map is for informational purposes only and was prepared and/or compiled using methods and sources that are considered to be accurate and reliable. The map is not a substitute for professional services provided by governmental agencies and land surveyors. It is not intended for regulatory or legal purposes. Use only by permission of Environmental Services Inc.
Appendix B

S1 facing upstream

S1 facing downstream
### NC DWQ Stream Identification Form Version 4.11

**Date:** 10/10/18  
**Project/Site:** Edgewater Place  
**Latitude:** 35.9039  
**Evaluator:** ESI - K. Murphy  
**County:** Durham  
**Longitude:** -78.98701

**Total Points:**  
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30  
**Stream Determination (circle one):** Ephemeral, Intermittent, Perennial

**Other:** SW Durham, NC

### A. Geomorphology (Subtotal = 10.5)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Absent</th>
<th>Weak</th>
<th>Moderate</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continuity of channel bed and bank</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>(3)</td>
</tr>
<tr>
<td>2. Sinuosity of channel along thalweg</td>
<td>0</td>
<td>1</td>
<td>(2)</td>
<td>3</td>
</tr>
<tr>
<td>3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</td>
<td>0</td>
<td>(1)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Particle size of stream substrate</td>
<td>0</td>
<td>(1)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Active/relict floodplain</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Depositional bars or benches</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Recent alluvial deposits</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Headcuts</td>
<td>0</td>
<td>(0.5)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>9. Grade control</td>
<td>0</td>
<td>(0.5)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>10. Natural valley</td>
<td>0</td>
<td>0.5</td>
<td>(1)</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Yes = 3**

### B. Hydrology (Subtotal = 6.5)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Absent</th>
<th>Weak</th>
<th>Moderate</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Presence of Baseflow</td>
<td>0</td>
<td>(1)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. Iron oxidizing bacteria</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. Leaf litter</td>
<td>1.5</td>
<td>(1)</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>15. Sediment on plants or debris</td>
<td>0</td>
<td>(0.5)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>16. Organic debris lines or piles</td>
<td>0</td>
<td>0.5</td>
<td>(1)</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**No = 0**  
**Yes = 3**

### C. Biology (Subtotal = 5)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Absent</th>
<th>Weak</th>
<th>Moderate</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Fibrous roots in streambed</td>
<td>3</td>
<td>(2)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>19. Rooted upland plants in streambed</td>
<td>(3)</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>20. Macrobenthos (note diversity and abundance)</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Aquatic Mollusks</td>
<td>(0)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. Fish</td>
<td>(0)</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>23. Crayfish</td>
<td>(0)</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>24. Amphibians</td>
<td>(0)</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>25. Algae</td>
<td>(0)</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**FACW = 0.75, OBL = 1.5 Other = 0**

### Notes:

Sketch:
Division of Water Resources
Certificate of Training

Kevin Murphrey

Has successfully demonstrated capability and proficiency to determine the presence of surface waters that require the application of rules adopted by the N.C. Environmental Management Commission for the protection of riparian buffers as determined by 15A NCAC 02B.0200.

Name, Director
Division of Water Resources

June 24, 2015
Date

839T-0615
Certification Number