

July 21, 2016

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Years Properties
17 Granville Oaks Court
Greensboro, NC 27408

Mr. Chuck Truby
CPT Engineering & Surveying, Inc.
4400 Tynning Street
High point, NC 27265

Reference: Stream Identification; Strader Road; Project #16.460

Messrs., Years and Truby,

On July 12, 2016, Peter DeVries Project Geologist with Geoscience & Technology, P.A (GeoSci) visited the site at 7508 Strader Road in Summerfield, NC at your request. The purpose of the visit was to determine the status of drainage features in the west and east-central portions of the site. Prior to the site visit, Mr. DeVries reviewed: 1) the Guilford County GIS map of the location to determine the topography, the hydrology and soil characteristics of the site; 2) the USGS map of the subject site to determine if streams were mapped on the site; 3) the North Carolina Department of Environmental Quality (NC DEQ) Division of Water Resources (DWR) map of the Randleman Lake Watershed to determine if Randleman Lake buffers apply to this site, and; 4) a sketch plan prepared by CPT Engineering (CPT) of the proposed development. The status of the drainage features within the study site was determined using the DWR Stream Identification Manual: "Methodology for Identification of Intermittent and Perennial Streams and Their Origins", Version 4.11 Effective Date: September 1, 2010. The stream identification was scored according to the DWR Stream Identification Form Version 4.11.

Map and Site Plan Review

The features investigated at this site drain from north to south and join in the south-central portion of the property and continue as one drainage to an unnamed tributary of Mears Creek at the eastern edge of the property. The westernmost drainage is designated as Reach 'W' for purposes of this report. Reach W is further divided into two reaches for stream identification purposes as W-1, the northernmost, and W-2, the southernmost. The

eastern reach is designated as Reach 'E' and is divided into five distinct reaches, E-1 through E-5 from north to south. The attached figure is a portion of the Guilford County GIS map and 2010 aerial photograph of the site that indicates the stream reaches and the unnamed tributary. Based on Mr. DeVries' review of the maps and sketch plan it appears that the eastern drainage contains a 'blue' line on the Guilford County GIS map; however, the USGS map does not indicate a stream in either feature. The soil types indicated within the subject property are not soils typically known to be hydric. This site is not within the Randleman Lake watershed.

Field Observations and Stream Identification

Protocol in the DWR Stream ID Manual indicates that stream identification should be performed at least 48 hours after a significant rain event. According to climate data from the Piedmont Triad International Airport (PTIA), the most recent significant rainfall prior to July 12th was on July 8th. Therefore, it appears that the stream identification performed at the study site is within the protocol parameters.

Based on Mr. DeVries' observations, the only reach that scored over the threshold of 19 points for intermittent streams was E-5, which joins the unnamed tributary in the southeast corner of the property. E-5 scored 35.5 points, which means it is classified as 'perennial'. Therefore, with the exception of Reach E-5, the remaining drainage features appear to be 'ephemeral'. The attached Table 1 summarizes the stream ID scores and observations. Copies of the Stream ID forms completed for the drainages within the study site are available upon request.

With the exception of Reach E-5, there were no hydric, or 'wetland' soils observed within the study areas.

Conclusions and Regulatory Recommendations

Based on the findings above, it appears that only Reach E-5 falls within the jurisdiction of DWR and the US Army Corps of Engineers (US ACoE) and the site is not subject to Randleman Lake buffer restrictions.

Qualifications

This stream identification was developed in general accordance with national standards for good commercial and customary practice as defined by the American Society for Testing and Materials. This assessment is based on information provided by municipal, state and federal agencies, from plans submitted by the client and from on-site observations. In preparing this report, GeoSci may have reviewed and interpreted data provided to it by third parties. GeoSci did not conduct an independent review of the accuracy or completeness of all such information.

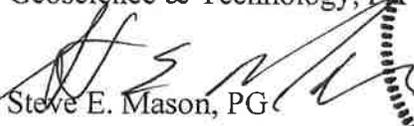
Due to the limited nature of the investigation, GeoSci cannot warrant that all areas within the study site are of the same quality as that inferred from conditions observed at the surface, nor that future conditions (i.e., after the period in which the assessment was performed) will remain the same as those observed during the performance of this assessment. In the event that GeoSci or others perform further environmental investigations, we reserve the right to revise our opinion as to the status of the stream identified in this report. Conditions noted at the site represent observations for July 12, 2016.

This report was prepared for the sole use of Mr. Bill Yearn (Yearn Properties) and Mr. Chuck Truby (CPT Engineering) and their assignees. Use of the report by third parties is at their sole risk; GeoSci disclaims any liability for third party use or reliance.

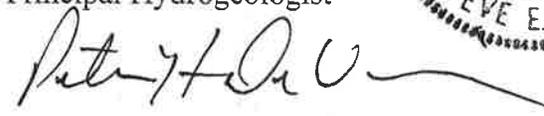
Please call if you have any questions.

Thank you for allowing us to be of service.

Sincerely,
Geoscience & Technology, P


Steve E. Mason, PG
Principal Hydrogeologist

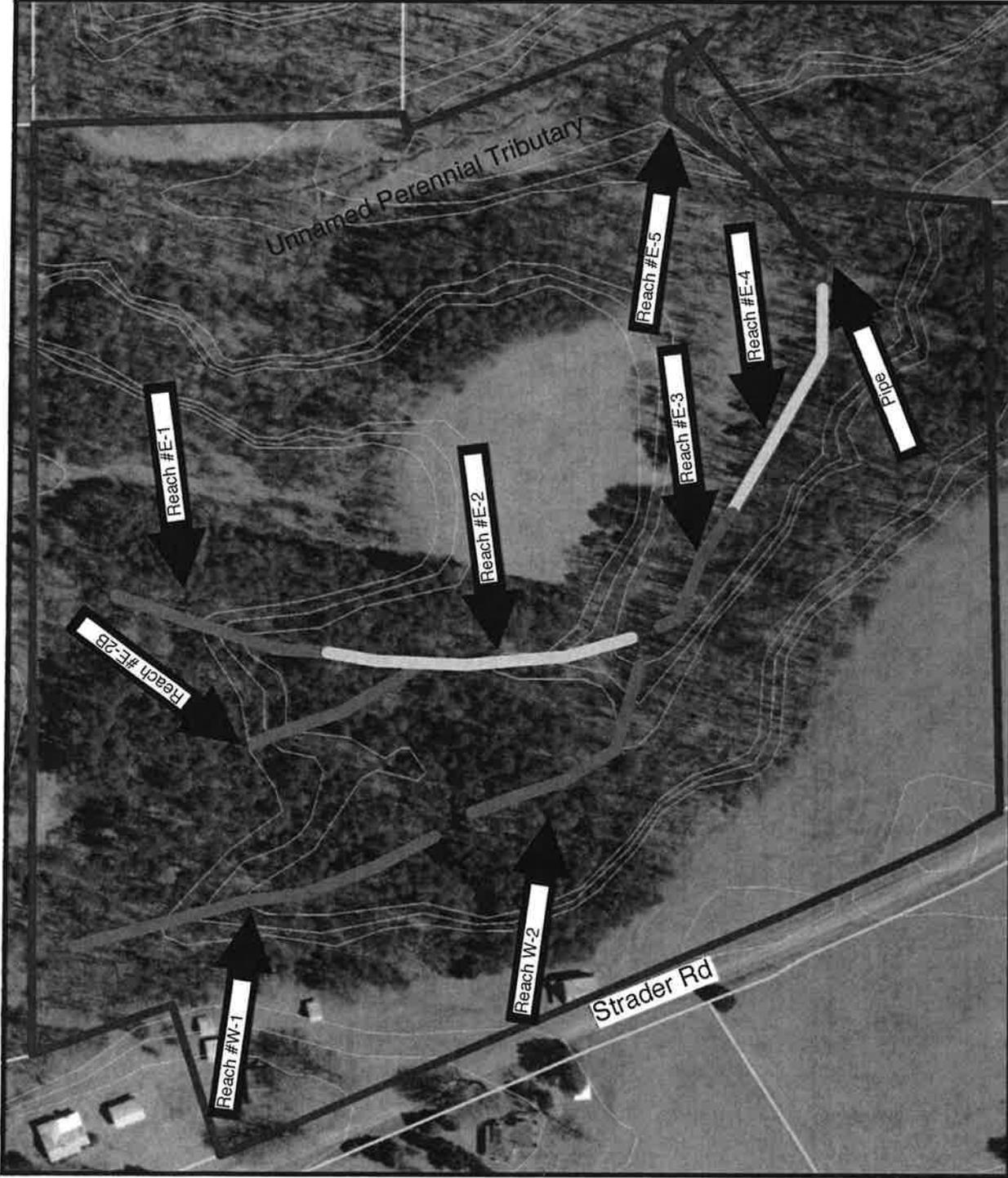
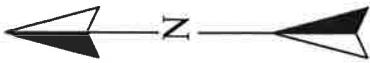



Peter H. DeVries
Project Geologist

Yeans Properties: Strader Road Stream ID

Table 1: Stream ID

Reach ID	Score	Determination	Location	Comments
W1	13	Ephemeral	Beginning at first headcut in northwest corner of property to approximately halfway down drainage where the channel disappears.	Channel mostly well developed and incised; no water in channel; no hydric soil in channel; moss, ferns and upland plants in channel.
W2	7.5	Ephemeral	Beginning where channel starts again below W-1 in west-central portion of property almost to confluence with eastern drainage. Channel disappears before confluence.	Channel less developed and incised than W1; no water in channel; no hydric soil in channel; moss, ferns and upland plants in channel.
E1	11	Ephemeral	Beginning at first headcut midway along northern property line. Continues to approximate location of line between lots 18 and 19 on site plan.	Channel well developed and deeply incised; no water in channel; no hydric soil in channel; lots of leaf litter in channel.
E2	13.5	Ephemeral	Beginning at headcut at approximate location of line between lots 18 and 19 on site plan to a break in the channel near the confluence of the east and west drainages.	Channel fairly well developed but not as deeply incised as upgradient reach; no water in channel; no hydric soil in channel; lots of leaf litter in channel.
E2B	11	Ephemeral	Beginning approximately at survey pin #465; this channel splits to the northwest from Reach E2 and continues upgradient to the approximate location of the cul-de-sac indicated on the site plan.	Channel well developed and moderately incised; no water in channel; no hydric soil in channel; lots of leaf litter in channel.
E3	10.5	Ephemeral	Beginning at the downgradient end of the channel break in E2 running approximately 200-LF to just inside the woodline adjacent to the field in the southeast corner of the property.	Channel well developed and incised; no water in channel; no hydric soil in channel; lots of leaf litter and upland plants in channel.
E4	3	Ephemeral	Beginning at the downgradient end of E3 to the culvert under the farm road in the southeast corner of the property. This appears to be a drainage ditch parallel to the field.	Channel well developed but filled with debris and grass, overgrown in places; not as incised as the up or downgradient reaches; no water in channel; no hydric soil in channel.
E5	35.5	Perennial	Beginning at the downgradient end of the culvert under the farm road in the southeast corner of the property and continuing to confluence with perennial tributary along eastern edge of property. There is a large headcut approximately 50-LF below the culvert where perennial stream starts; however, DEQ will probably claim everything from the pipe to the tributary due to the presence of hydric soil.	Channel well developed, deeply incised and is the only reach that contained running water.



Title:

Site Detail Map
2010 Guilford County
Aerial Photograph

Project:

Yeans Properties
Strader Road

Job No.:

16.460

Location:

Summerfield, NC

Approx. Scale:

1" = 200'

Figure No.:

1

Date:

7/18/16

Revision No.:

0

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ENVIRONMENTAL INVENTORY

FOR

30.24 ACRES LOCATED AT 7508 STRADER RD.

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I. Introduction

This Environmental Inventory is being submitted in accordance with the Town of Summerfield's development ordinance to demonstrate the ability of this property to accommodate the proposed residential development.

II. Site location and Description

Strader Rd. is generally rural and agricultural. This site consists of 30.24 acres - approximately 20% being open pasture land, and 80% being mature hardwoods and pines. There is a barn and shed on the property, neither of which are historically significant. There are several drainage features on the property and several areas where slopes exceed 15%.

III. Proposed Project Description

The proposed project consists of a total of 30.24 acres and will become a residential subdivision, accessed by public streets, built to the standards of the NC DOT. The density and amount of common area will be determined by the current zoning guidelines.

IV. Existing Site Environmental Characteristics

A. Primary Conservation Areas

1. Jurisdictional Waters of the United States

There is a jurisdictional stream on the property.

2. Floodplains

There are no floodplains on the property.

3. Topography and Soils

The property is composed of gentle slopes and some steep slopes >15%. There are suitable soils for conventional septic systems - See attached soils report.

4. Protected Natural Areas and Wildlife Habitats

There are no Protected Natural Areas on the property, however, since 80% of the property is in mature woodland, wildlife is certainly present on the property. The impact upon the wildlife will be mitigated by virtue of the fact that 50% of the tract will be preserved as open space.

5. Archeological and Historic Sites

There are no historic structures on the property.

B. Secondary Conservation Areas

1. Agricultural Lands (farmlands and woodlands)

Most of the property is woodland, however, there are a few areas where farming has occurred over the years, but none recently.

2. Public Lands or Recreational Areas

There are no public or recreational areas on or adjacent to the properties.

V. Rural Characteristics Preservation

The site will be developed in accordance with the open-space requirements per the zoning classification applied for. The stream will be buffered in accordance with all applicable ordinances, and impact on the slopes greater than 15% will be kept at a minimum. The required 50% open space will be strategically placed, minimizing any impact on wildlife and drainage features.

VI. Potential Environmental Impacts

A. Proposed Development

The proposed development will be a single-family neighborhood accessed by a public street built to NC DOT standards and ultimately taken over for maintenance by the NC DOT. Water requirements will be met with individual wells at each home-site, and traditional wastewater disposal systems will be used for septic needs.

B. Jurisdictional Waters of the United States

The environmental impact on the jurisdictional waters will be mitigated by compliance with all regulations required by Guilford County Erosion Control, the Corps of Engineers, and any other governmental agency that may be involved.

C. Water Resources (Floodplains)

There are no floodplains on the property.

D. Topography and Soils

Impacts to topography will be limited to areas graded for roadways, access to home-sites, and any erosion control devices that may be necessary.

Direct impact to soil conditions will occur within the property through the construction of roads, storm water control features, utilities and septic systems. Temporary disturbance of the soils is unavoidable during construction. The loss of soils from erosion will be limited by the design and implementation of erosion control devices, which will adhere to the standards set forth in the North Carolina Erosion and Sediment Control Planning and Design Manual.

SUMMARY

Residential growth in Summerfield is both necessary and inevitable, however, given Summerfield's rural and agricultural roots, and the "charm" that sprouts from those roots, it behooves all concerned to make efforts to protect and foster that "charm".

This property has the challenges of dealing with jurisdictional waters and with several slopes of greater than 15%. That said, its highest and best use is for the development of a well thought-out and designed residential subdivision. It's been in the same family for 56 years. No one has lived in the house on the property for

the past 5-6 years and the heirs no longer live in Guilford County. They want to sell it for it's highest and best use.

The use of the Open Space Residential District zoning classification is perfect for a property such as this, because it allows the least impact on the drainage features, the topography, the wildlife, the mature trees - thus fostering the rural aesthetics of Summerfield that we all want to preserve.

The construction of any residential development will naturally affect the environment upon which it is established. Permanent and temporary impacts to the property are the unavoidable result of road construction, house construction and septic fields installation. However, with zoning and erosion control guidelines in place, and with the inspection of such guidelines by the various governmental agencies to ensure that they are upheld, said impacts to the environment are minimized.