



Soil & Environmental Consultants, PA

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sandec.com

July 29, 2015
S&EC Project No.: 9221.W2

To: Sheryl-Mar, LLC
Jim Hodgin
87 Norwood Road
Chapel Hill NC 27516

Re: Wetland Delineation and Stream Evaluation
Brookside
Chatham County, NC

Mr. Hodgin:

On July 22, 2015, S&EC personnel completed the wetland delineation and stream evaluation on the Brookside site in Chatham County, NC. You will find the attached report detailing our findings. Maps that further document the wetland and stream related site characteristics are also attached.

The next step in the wetland and stream verification process is to visit the site with the Army Corps of Engineers' agent for Chatham County.

As you move forward in planning your development, S&EC personnel are available for site plan review and permit consultation services. Please contact S&EC if you have any questions related to wetland and stream regulations or if you need clarification of the attached report.

Sincerely,
SOIL & ENVIRONMENTAL CONSULTANTS, PA

David Gainey

David Gainey

Project Manager

Attachments:

- 1) Wetland Delineation Report
- 2) USGS site vicinity map
- 3) NRCS Soil Survey
- 4) Wetland & Stream Sketch Map
- 5) Agent Authorization Form



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DETAILED WETLAND DELINEATION & STREAM EVALUATION FOR BROOKSIDE

On 7/22/15, S&EC personnel completed a detailed wetland delineation and stream evaluation on Brookside (± 30 acres). The site is located east of Fieldstone Lane in Chatham County, NC. Figure 1 and Figure 2 show the location of the site on a USGS topographic quadrangle and NRCS County Soil Survey, respectively.

EXECUTIVE SUMMARY

We have determined that wetlands and streams generally account for the jurisdictional waters observed on the site. The attached wetland sketch map depicts the approximate locations of streams and wetlands identified during our evaluation. Please refer to the sketch map and the results and recommendations section below for more detailed information.

SCOPE OF WORK

The detailed wetland delineation consisted of traversing the property to examine soils, vegetation, and hydrology across the site in search of areas that meet the criteria for jurisdictional wetlands as described by the procedures set forth in the Corps of Engineers Wetlands Delineation Manual (January 1987 – Final Report). Areas on the site with positive indicators of hydric soils, evidence of wetland hydrology, and presence of hydrophytic vegetation were flagged with sequentially numbered, pink S&EC logo flagging. Proof of wetland hydrology would be the existence of hydric soils with oxidized root channels in the upper 12 inches of the soil profile, water borne deposits, drift lines, scour marks, drainage patterns, regional indicators of soil saturation, etc. Surface waters such as intermittent and perennial stream channels, ponds, and lakes, which are also subject to regulation by the US Army Corps of Engineers (USACE) as waters of the US, were also identified. These surface waters may also be referred to as jurisdictional waters to indicate that they are within the jurisdiction of the USACE. It is important to note that wetlands are also classified as waters of the US and regulated by the USACE under authority of the Clean Water Act (33 USC 1344).

RESULTS & RECOMMENDATIONS

The results of the detailed wetland delineation and stream evaluation are discussed below.

Wetlands and Jurisdictional Waters:

We have determined that jurisdictional waters (i.e., streams and wetlands) exist on the site. Please refer to the attached “Wetland Sketch Map” for specific flag numbers and approximate locations.

One jurisdictional stream was observed during the site evaluation; the approximate location of each is illustrated on the attached wetland sketch map. Streams identified on-site are described below:

- Feature A (Unnamed Tributary -UT to Wilkinson Creek) flows on site from the north and flows off site to the south. This stream will likely be considered important by the USACE.

Surface waters on this site flow into Wilkinson Creek in the Cape Fear River Basin, which has been classified in “Classification and NC DWQ Standards Applicable to Surface Waters and Wetlands of North Carolina” as WS-IV; NSW.

The wetlands onsite were identified as being a Riparian Forest wetland type as outlined in the publication ¹“A Field Guide to North Carolina Wetlands.” This wetland type is common throughout the piedmont region of North Carolina and is found mainly along headwater streams like the one onsite.

Chatham County Stream Buffers:

Local Chatham County stream buffer regulations will apply. A brief description of these buffers can be found in the regulations section of this report. The project engineer or planner should provide input toward the application of these regulations to the site plan during design and review. S&EC can provide reference information and feedback to your engineer regarding stream features observed on-site as needed to determine the appropriate buffer widths and locations as mandated by local authorities.

The following table(s) present the assigned label (i.e. A, B, C, 1,2,3, etc.) for each feature on the site. Information is also presented regarding the classification of each feature on the USGS Topographic Quadrangle and NRCS County Soil Survey. In addition, the most stringent **potential** buffer is presented in contrast to the actual buffer width **S&EC** believes will be applied. The riparian buffer is measured from the top of bank, landward on each side of the stream.

Table 1: Surface water features, classifications, and riparian buffer widths.

Feature	Classification on USGS	Classification on Soil Survey	Classified in Field as	Origin	Possible Buffer Width	Expected Buffer Width
A	Intermittent	Intermittent	Perennial	offsite	50/100'	50/100'

All S&EC flags comprising the wetland and jurisdictional waters delineation should be surveyed and a Wetland Delineation Map generated for use in site planning and USACE approval and permitting. The entire length of each stream feature was not flagged, but will need to be survey located for the Wetland Delineation Map. Stream features may be located either along the centerline (with channel widths noted at each survey point) or at the top-of-bank. The Wetland

¹“A Field Guide To North Carolina Wetlands”; Department of Environment, Health and Natural Resources, January 1996.

Delineation Map should include all of the information listed on the attached **“Obtaining a Jurisdictional Determination – Submitting a Plat for Corps Verification.”** S&EC delineation flag numbers should be shown on the wetland survey. Please have the property owner or contracting buyer complete the attached agent authorization form if you would like S&EC to act on their behalf for requesting approval of the wetland delineation. This form will also be used in preparing a permit application for impacts to wetlands or surface waters when we are provided with a plan showing the proposed impacts. **S&EC cannot conduct correspondence with the USACE unless we have agent authorization (see attached Agent Authorization). This authorization form must be filled out in its entirety and returned to S&EC (a faxed copy is acceptable).**

Regulations

A general list of regulations that apply to jurisdictional wetlands and waters present on the site are discussed below. Please be aware that other local, state, and federal regulations not included in this list may also apply. S&EC personnel are available to discuss these regulations as they apply to your project.

Chatham County Buffers

A minimum thirty (30) foot vegetative buffer for development activities is required along all ephemeral streams, and a minimum fifty (50) foot vegetative buffer for development activities is required along all perennial and intermittent waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies. A minimum one hundred (100) foot vegetative buffer for development activities is required along all rivers. A minimum one hundred (100) foot vegetative buffer for development activities is required along all perennial and intermittent waters within 2,500 feet of rivers. A minimum one hundred (100) foot vegetative buffer is required along all perennial streams for all new development activities that exceed the low density option.

Wetland Permitting:

The current Nationwide Permits were issued by the USACE on March 19, 2012. The USACE Wilmington District issued revised Regional Conditions for the 2012 Nationwide Permits. We recommend you forward a conceptual site plan to our office for review by one of our permitting specialist, who can best advise you of the specific permitting needs as you progress through the planning process.

Generally, wetland impact permits are issued on a per-project basis as determined by the USACE. The USACE has determined that impacts on parcels sub-divided from larger tracts are sometimes considered to be cumulative to existing impacts for the large tract. If this is the case, then thresholds for notification may not apply to your project and impacts to streams/wetlands must be considered in light of existing permits.

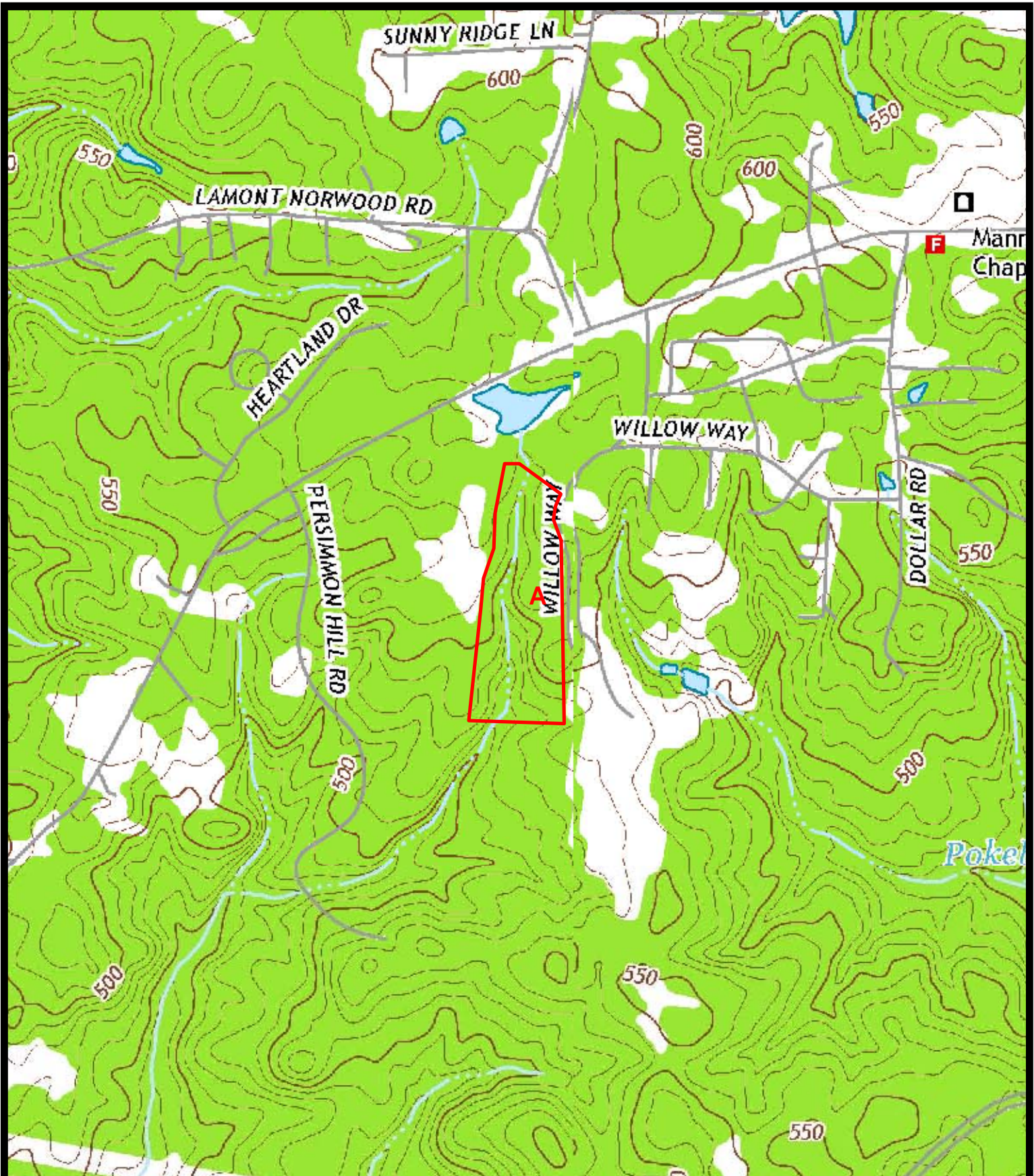
Limitations

Our evaluations, conclusions, and recommendations are based on project and site information available to us at the time of this report and may require modification if there are any changes in

the project or site conditions, or if additional data about the project or site becomes available in the future. This report is intended for use by Sheryl-Mar, LLC on this project. These findings are not intended or recommended to be suitable for reuse on extensions of the project or on any other project. Reuse on extensions of this project or on any other project shall be done only after written verification or adaptation by SOIL & ENVIRONMENTAL CONSULTANTS, PA, for the specific purpose intended.

CONCLUSION

The wetland and stream delineation for the Brookside Property was completed by S&EC on July 22, 2015. This site contains jurisdictional streams and wetland areas that may require preconstruction authorization for impacts, depending on the size and nature of the impact (i.e. road construction, lot fill, stormwater pond construction, etc.). USACE and DWR/WQP verification of our site assessment should be obtained. Following verification meetings with regulatory agencies, the next step in the stream and wetland identification and permitting process is to obtain a field survey of our delineation for formal approval by the USACE. Upon completing the survey, these site constraints may then be integrated into planning for property development.



Project Number: 9221.W2

Project Manager:
DG

Scale:
1" = 1000'

Date:
7/22/15

Map Title:

Figure 1 - USGS Map

Brookside
Chatham County, NC

Source: Chatham County GIS
USGS Farrington & Bynum Quads

0 1,000 2,000
Feet

N



S&EC

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Legend

- Perennial Channel
- Intermittent Channel
- parcel
- Jurisdictional Wetland
- 2' Contours

Detailed Delineation of Waters of the US

Suitable for Preliminary Planning Only

S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.

- 09B TT Culvert

09A TT Culvert

10B TT Culvert

10A TT Culvert

17B TT Ch

16A TT Ch

18B TT Ch

22B TT Ch

17A TT Ch

20A TT Ch

23B TT Ch

21A TT Ch

25B TT Ch

25A TT Ch

26B TT Ch

26A TT Ch

28B TT Ch

28A TT Ch

29B TT Ch

29A TT Ch

31A TT Ch

32B TT Ch

32A TT Ch

33B TT Ch

35B TT Ch

36B TT Ch

41A TT Ch

37B TT Ch

DG01 Start Perennial Ch



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AGENT AUTHORIZATION FORM

All Blanks To Be Filled In By The Current Landowner

Name: _____

Address: _____

Phone: _____

Project Name/Description: _____ S&EC Project # _____

Date: _____

The Department of the Army
U.S. Army Corps of Engineers, Wilmington District
P.O. Box 1890
Wilmington, NC 28402

Attn: _____

Field Office: _____

Re: Wetlands Related Consulting and Permitting

To Whom It May Concern:

I, the current property owner, hereby designate and authorize Soil & Environmental Consultants, PA to act in my behalf as my agent in the processing of permit applications, to furnish upon request supplemental information in support of applications, etc. from this day forward. The _____ day of _____.

This notification supersedes any previous correspondence concerning the agent for this project.

NOTICE: This authorization, for liability and professional courtesy reasons, is valid only for government officials to enter the property when accompanied by S&EC staff. You should call S&EC to arrange a site meeting prior to visiting the site.

Print Property Owner's Name

Property Owner's Signature

cc: Ms. Karen Higgins
NCDENR - DWQ WeSCAPE
Archdale Building
512 N. Salisbury Street, 9th Floor
Raleigh, NC 27604

cc: Mr. David Gainey
Soil & Environmental Consultants, PA