

Prospectus For MITIGATION BANKING INSTRUMENT

SWAMP ROAD WETLAND MITIGATION BANK #2



Prepared for
Interagency Review Team

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1.0 INTRODUCTION

The Final Mitigation Banking Instrument (FMBI) for the Swamp Road Wetland Mitigation Bank (SRWMB) was approved by the Interagency Review Team (IRT) on 17 November 2009. Wetlands Reserve, LLC presented a proposed expansion site (Site #2) to the IRT in office meetings in early 2012 and conducted an on-site meeting on 28 August 2012. A follow-up meeting with the Corps (Forrest McDaniel) and TDEC (Mike Lee and Randall Phillips) was conducted on 15 March 2013. The IRT was generally in agreement that the proposed 62.92 acres parcel, located adjacent to the current 39 acre parcel of the SRWMB, was an acceptable site for restoration. It was recommended that a topographic survey be prepared and that additional soil sampling be performed. This work has been performed and will be presented in subsequent sections of this report.

1.1 MITIGATION NEED

The SRWMB currently serves the Middle Tennessee area but has approached the limit of available credits pending a subsequent credit releases. As of 1 February 2013, a total of 24.16 wetland credits have been sold or under contract to sale pending permit issuance. A total of 26.6 wetland credits have been released through 8 November 2012. Wetlands Reserve has verbal inquiries from three permittee's about the potential to need up to 8.22 credits; thus a current shortage of 5.78 credits. According to the FMBI, there is no credit release scheduled for year #4 monitoring so the next potential release of credits will be following year #5 annual monitoring report due by 31 October 2014. Therefore, this site was selected as a prime candidate to fulfill the mitigation need for smaller permitted wetland impacts located within the Middle Tennessee service area, particularly for the Franklin and Nashville areas.

1.2 SITE SELECTION

The Swamp Road, LLC farm is a prime candidate site for wetland restoration and totals 62.92 acres, located off Swamp Road in Eagleville, Rutherford County, Tennessee (Figure 1, Appendix A). This farm and the current SRWMB were contiguous prior to the establishment

of the 38 acre wetland bank and classified by the NRCS as prior converted wetland that was converted to agricultural (crop) use in the early 1900's. The site has historically been drained by surface swales. According to Mike Zeman, the hydrologic manipulation consisted of what is termed "W" ditching, "which is merely creating a shallow parallel ridge/swale pattern in a field so flat and without a deep outlet that this was the way to maximize as much drying of as much ground in the field as possible" (Mike Zeman, personal email dated 8/30/12). This farm is currently being used for sod and soybean production. This system of drain swales combined with hydric soils makes this site an ideal candidate for wetland restoration.

2.0 OBJECTIVE

The Sponsor proposes to develop the expansion to the SRWMB by restoring a highly functional, seasonally saturated forested mineral soil flat wetland within portions of the 62.92 acre tract of prior converted cropland. The restoration would generate mitigation credits which would be used as compensatory mitigation for permitted wetland impacts. The development of the modification to the SRWMP will replace the benefits, services, and values lost due to future impacts thereby satisfying the objective of the Clean Water Act and supporting the "no net loss" goal for wetland acreage and function.

The objective of the proposed project is to restore the chemical, physical, and biological functions of the prior converted site and to return the site to a functional wetland with a lift in available wildlife habitat. Successful restoration will improve the values associated with water quality, water supply, flood control, erosion control, wildlife habitat, and recreation.

3.0 EXISTING CONDITIONS

3.1 SITE DESCRIPTION/HISTORICAL LAND USE

The proposed modification to the SRWMB site is in Rutherford County (Latitude 35.74821; Longitude -86.61057), approximately 3 miles east of Eagleville, 10 miles west of Murfreesboro, and 15 miles southeast of Franklin and is referenced on the Rover USGS

quadrangle map (Figure 1, Appendix A). The 62.92 acre tract lies in an expansive area of prior converted cropland and hydric soils within the upper Harpeth River watershed. The site has been in sod and soybean production for the last 8 years and was in row crops prior to that.

3.2 SOILS

The site is entirely covered with the hydric soils Roellen silty clay loam (Ro), Dowellton silt loam (Do), and Almaville silt loam (Ae) with minor components of Woodmont silt loam (Wo) (Figure 2). The Roellen soil unit is located on relatively flat terrain, in depressions or dips, and is considered a poorly drained soil. The depth to water table ranges from about 0 to 12 inches. The depth to a restrictive feature (i.e. rock) is greater than 80 inches. Roellen soils have a frequent flooding frequency but does not readily pond water due to flat terrain. The available water capacity is high. The land capability (non-irrigated) is 3w, which is considered a very wet soil. The typical profile of Roellen soil is a silty clay loam from 0 to 14 inches and clay from 14 to 72 inches. Test pits revealed a typical soil color of 10YR3/2 (very dark grayish brown). Roellen is classified in the hydrological soil Group D.

The Dowellton soil unit is located on relatively flat terrain of stream terraces and is considered a poorly drained soil. The depth to water table ranges from about 6 to 12 inches. The depth to a restrictive feature (i.e. rock or pan) is 40 to 60 inches. The available water capacity is moderate. The land capability (non-irrigated) is 4w, which is considered a very wet soil. The typical profile of Dowellton soil is a silt loam from 0 to 11 inches, silty clay from 11 to 20 inches, and clay from 20 to 46 inches with unweathered bedrock below 46 inches. On-site test pits revealed a dark grayish brown (10YR4/2) soil color. Dowellton is classified in the hydrological soil Group D.

The Almaville soil unit is located on relatively flat terrain and is considered a poorly drained soil. The depth to water table is about 0 inches. The depth to a restrictive feature (i.e. rock or pan) is 20 to 36 inches. The available water capacity is low. The land capability (non-irrigated) is 4w, which is considered a very wet soil. The typical profile of Almaville soil is a silt loam from 0 to 8 inches, silt loam from 8 to 25 inches, and silty clay loam from 25 to 72

inches. On-site test pits revealed a dark grayish brown (10YR4/3) soil color at the surface and a grayish brown (2.5Y5/2 and 10YR5/2) and dark grayish brown (10YR4/2) immediately below the surface. Almaville is classified in the hydrological soil Group D.

A “prior converted” designation has been obtained from the Rutherford County NRCS (Appendix A) in a letter dated July 1, 2008. Mr. Jason McAfee, District Conservationist, determined the entire farm owned by Southeastern Turf, LLC was prior converted wetlands and is approximately 101 acres.

The Roellen, Dowelton, and Almaville soils are considered hydric by the District Conservationist, making a majority of the property prior converted wetlands. However, it is assumed that the Woodmont soil would not be considered restoration based on topography and soil characteristics. Table 1 depicts some of the major soil component characteristics.

TABLE 1
SOIL PROPERTIES
EXPANSION TO THE SWAMP ROAD WETLAND MITIGATION BANK

	Drainage Class	Depth to Water Table (inches)	Flooding	Hydrologic Soil Group	Ponding	Status
Ae	Poorly drained	0	None	D	Frequent	Hydric-PC
Do	Poorly drained	6-12	None	D	None	Hydric-PC
Ro	Poorly drained	0-12	Frequent	D	None	Hydric-PC
Wo	Somewhat poorly drained	12-24	None	C	None	Hydric inclusions

Group D soils have a very slow infiltration rate when thoroughly wet. These consist of soils with a high shrink-swell potential, soils that have a high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material.

The flooding frequency of the listed soils indicate that Roellen is the only soil that floods; however, based upon personal communication with Southeastern Turf personnel and the topography at the site, the Dowellton and Almaville soil units also readily flood. The Almaville soil is the only listed soil that readily ponds water. Ponding is the standing of water in a closed depression. Water is removed only by deep percolation, transpiration, or evaporation or by a combination of these. Frequent flooding means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50% in any year. The Roellen and Dowellton soils rarely flood due to flatness and lack of closed depressions.

Soil samples were analyzed on 21 January 2013 by digging a small test pit with a sharpshooter shovel. The soils were described according to the 2010 Regional Supplement (Table 2).

TABLE 2
SWAMP ROAD WETLAND MITIGATION BANK
PROPOSED MODIFICATION TO THE MBI
EAGLEVILLE, RUTHERFORD COUNTY, TN

Soil Pit	Depth (in.)	Matrix	Mottles	Mottle Appearance	Classification
SP-8	0-10	10YR5/4			non-Hydric
SP-9	0-2	10YR4/2			Hydric
	2-9	10YR4/2	10YR5/6	distinct	
SP-10	0-6	10YR4/3			Hydric
	6-10	10YR4/2	10YR5/6	distinct	
SR-11	0-3	10YR4/3			Hydric
	3-9	10YR4/2	10YR5/6	distinct	
	9-13	10YR5/2	10YR6/6	distinct	
SP-12	0-2	10YR5/3			non-Hydric
	2-7	10YR5/3	10YR5/6	faint	
	7-12	10YR5/2	10YR5/8	faint	
SP-13	0-5	10YR5/3			non-Hydric
	5-12	10YR6/2	10YR5/8	distinct	
SP-14	0-2	10YR4/2			Hydric
	2-12	10YR5/2	2.5YR3/6 10YR5/6	distinct distinct	
SR-15	0-2	10YR4/3			non-Hydric
	2-9	10YR4/3	10YR5/6	faint	
	9-12	10YR4/3			
SP-16	0-2	10YR4/3			Hydric
	2-10	10YR4/2	10YR5/6	distinct	

SP-17	0-6 6-12	10YR4/3 10YR6/3	10YR5/6 10YR5/8	distinct	non-Hydric	
SP-18	0-2 2-10	10YR4/3 2.5Y5/2	10YR5/6	distinct		
SP-19	0-2 2-12 2-12	10YR4/2 10YR4/1 10YR3/1	5Y4/2	distinct	Hydric	
SP-20	0-2 2-8	10YR3/2 10YR3/2	7.5YR5/8	distinct	Hydric	
SP-21	0-12	2.5Y3/2	10YR5/8	distinct	Hydric	Fe/Mg nod.
SP-22	0-12	10YR4/1	7.5YR5/8	distinct	Hydric	
SP-23	0-12	7.5YR3/2			non-Hydric	

Note: SP-1 through SP-7 was sampled during the IRT field review and was classified by Dave McMillan with NRCS. No soil color data provided just classification.

A follow-up site review meeting was performed on 15 March 2013 to verify the soils mapping. Mike Lee and Randall Phillips of TDEC and Forrest McDaniel of the Corps met on-site with Jeff Duke to review the field mapping. It was concluded that the soils mapped as Alaville silt loam (Ae) located adjacent to the Woodmont silt loam (Wo) mapping unit would be considered a hydric soil if performing a wetland determination for a permit action. Therefore, this mapped area (6a and 7a on Drawing C001) would likely revert to jurisdictional wetland and totals 5.08 acres. This acreage will not be included in the original restoration credit calculation. If this area becomes wetland as documented following the fifth monitoring event then 5.08 credits will be generated.

3.3 HYDROLOGY

The 62.92 acre SRWMB is currently drained by a series of small drainage swales. The historic hydrologic regime of the site would have been a poorly drained mineral soil flat wetland. Based upon observations of other forested wetlands in the vicinity, especially the older growth forested wetlands at the Harpeth Wetland Bank, this site was most likely a moist soil type flat forest wetland, not a ponded or deep water wetland. The source of hydrology for the site is direct precipitation, groundwater input, overland runoff, and flooding from Pond Ditch. Pond Ditch is a man-made feature that was constructed in the early 1900's to drain many of the poorly drained soils of the area to allow for farming. Pond Ditch parallels the western property boundary and is basically a very shallow drainage swale choked with emergent vegetation.

Pond Ditch drains a very large area, so plugging the ditch will likely not be an option due to possible effects on neighboring landowners. However, there is an access road across Pond Ditch that has two 48" cmp culverts that will be partially plugged with stop boards.

3.4 VEGETATION

The vegetation currently on the site is about 50% turf grass sod and 50% soybean crops. The site will be restored to a flat forested wetland. Hardwood species, located in flat forest wetlands in the vicinity on similar poorly drained soils, include willow oak, shumard oak, swamp white oak, shagbark hickory, sweetgum, sycamore, red maple, honey locust, and green ash with a mixture of understory shrubs. Shrubs will be planted to aid in avian habitat and may include false indigo bush, silky dogwood, viburnum, buttonbush, and winterberry.

4.0 RESTORATION APPROACH

The proposed site is ecologically well-suited for wetland restoration. Although the site has been converted to agricultural uses, evidence from soil maps, USGS quad maps, its relative position in the landscape, and the fact that existing flat forest wetlands are present in the area, indicate that the site was once a flat wetland type. As such, a restoration approach that reverses the alterations to the hydrology, soils, and vegetation will allow the site to once again support a diverse forest wetland. The proposed restoration efforts will restore the physical (flood storage, water quality improvement, erosion control, hydrology re-establishment), chemical (nutrient cycling and storage, biogeochemical cycling), and biological (wildlife habitat, re-forestation, amphibian reproduction, bird habitat, etc.) functions and values common to flat forest wetland of the upper Harpeth River watershed.

The hydrologic alteration of the site effectively drained the hydric soils; thereby, modifying the hydrologic functions. The series of drainage swales will be blocked allowing subsurface flow to back up into the site. Agricultural production at the site is only possible through continued maintenance of the surface drainage swales. Restoring the hydrologic function of the prior converted farm will increase subsurface and surface water storage, enhance flood attenuation, help capture and disperse sediment, filter surrounding runoff, and improve infiltration rates through groundwater recharge. The increased frequency of inundation and saturation of the site will restore the important hydrologic functions (water quality, flood storage, soil saturation) that are unique to flat wetlands of the interior basin.

The site is mostly covered by poorly drained hydric soils. The characteristics of these hydric soils improve the biogeochemical cycling and storage function of wetlands. Although manipulation and agricultural production at this site has disturbed the soils, the fundamental properties remain intact. The successful restoration of this site will allow these degraded hydric soils to once again support a diverse, highly functioning wetland replacing lost values and functions.

The site is fairly well isolated in the watershed and any of the restoration activities should not negatively affect any adjoining landowners. Pond ditch will remain open allowing flood flows to continue to flow from the south to the north towards Swamp Road and the Harpeth River. Properties located to the east and west have their own internal drainage systems that will not be affected by this project.

The restoration of a mineral soil flat forested wetland will provide wildlife support, recreation, and aesthetic values associated with wildlife habitat. Wildlife support and valuable wildlife habitat will be returned with the restoration of the area to a flat wetland. A large area of cover and protection will be provided to wildlife in an otherwise expansive area of open farm land. Much needed mast producing trees will be returned to the area benefiting deer, turkey, squirrel, and other wildlife species. Shrubs will be clumped together providing food and cover for avian species. Vegetative restoration of the site will be accomplished through the extensive planting of native hardwood trees, primarily oak species (Table 3) and native wetland shrubs.

**TABLE 3
 PROPOSED REFORESTATION PLAN SWAMP
 ROAD WETLAND MITIGATION BANK**

Species	Common Name	Number
<i>Quercus bicolor</i>	swamp white oak	4,500
<i>Quercus michauxi</i>	swamp chestnut oak	4,500
<i>Quercus palustris</i>	pin oak	4,500
<i>Quercus phellos</i>	willow oak	5,500
<i>Nyssa sylvatica</i>	black gum	2,500
<i>Cephalanthus occidentalis</i>	buttonbush	2,000
<i>Cornus amomum</i>	silky dogwood	1,600
<i>Amorpha fruticosa</i>	false indigobush	2,000
<i>Alnus serrulata</i>	hazel alder	800
TOTAL		27,900

*Other native species may be selected based upon availability.

Native grasses and herbaceous vegetation will be planted once the turf grass sod is removed. Native ground cover will include a mixture of deertongue grass, Virginia wild Rye, and Illinois bundle flower.

5.0 MITIGATION WORK PLAN

The restoration plan was developed by reviewing available aerial photography and field surveys; however, the exact location and extent of minor grading may be field determined to best locate small ponded areas and areas for shrub and tree planting.

The restoration of the site would be accomplished in two phases consisting of the hydrological modifications (i.e. berm construction, isolated pool development, and drainage swale blockage) and reforestation and vegetation establishment. The turf grass sod will be harvested prior to any modifications to the site. Following sod harvesting, small berms will be constructed adjacent to pond ditch along the western boundary and along the northern boundary within existing drainage swales as soon as conditions are dry enough so that areas of emergent wetland habitat can develop. A second interior plow berm will be constructed from south to north about the center of the site to slow the surface water runoff. Another plow berm will be constructed in the northeast corner of the site along one of the drainage swales. The berms will be no higher than 2.0 ft. and will serve to capture surface runoff and provide longer saturation times following rain events. Shallow (less than 18 inches) isolated depression zones (i.e. pools) will be excavated randomly throughout the Woodmont and Almaville soil map area and within the non-hydric field mapped areas to create some additional amphibian habitat zones. The remainder of the emergent amphibian habitat will be located close to each berm.

6.0 MONITORING

Annual monitoring of the BANK vegetation, soils, and hydrology will be performed to document the wetland characteristics of the site. Data will be collected from a minimum of five (5) permanently marked sampling plots and at least four (4) random plots. The success of the restoration will be measured through the interpretation of both hydrologic and vegetative data. Vegetation, soils, and hydrology monitoring will be performed for a minimum of seven years. Permanent sampling plots (0.1 acre. in size) will be established and permanently marked with a metal fence T-post. The center of each plot will be recorded using a GPS unit. All plots will be shown on GIS generated maps. Hydrology, vegetation and soils data will be collected at each of these monitoring plots and at the random plots. Routine wetland determination data forms will be completed at each of the permanent plots during monitoring events. If monitoring reports indicate that it is necessary, the IRT may require the inclusion of additional monitoring plots or the collection of additional data in order to accurately document and assess the ecological development of the BANK.

6.1 HYDROLOGIC MONITORING

The hydrology of the site will be monitored using a total of five (5) continuous water level piezometers and data loggers installed in two-inch diameter wells. One instrument will be located within each quadrant of the property on east side of Pond Ditch and one instrument will be centrally located in the field on the west side of Pond Ditch. Each unit will be programmed to take a minimum of a single water level reading daily. Data will be downloaded to a laptop computer for analysis at the end of each monitoring period.

Indicators of hydrology will also be documented using the routine wetland determination method within each plot (i.e. ponded water, soil saturation, water marks, stained leaves, drift racks, etc.). Growing season dates will be in accordance with the Regional Supplement. Rainfall data will be obtained from a local TVA local weather station in Unionville. This information will be used collectively to evaluate the success of hydrologic restoration efforts.

Achievement of the hydrology performance standards will be measured through a combination of the following:

- Collection of hydrologic data that will provide baseline and post-planting information in the restored wetland to demonstrate that the site is providing appropriate wetland hydrology.
- Shallow groundwater monitoring wells (GPS referenced) with automatic data loggers will be installed in the restoration area as described in the monitoring procedures to measure periods of saturation and inundation in the upper 20 inches of the soil profile. The data loggers will be set to record the water level once daily. The wells will be installed as soon as possible after the MBI approval to maximize the amount of baseline data collected.
- Documentation will be provided for the successful plugging and/or removal of the swales and other hydrologic modifications.
- Each monitoring report will include both the pre-project baseline piezometer data comparing timing, duration, magnitude and frequency of inundation and saturation. This will include documentation that groundwater wells are showing inundation/saturation similar to the reference site and for appropriate durations and hydric functions.

6.2 VEGETATION MONITORING

Five permanent plots will be established to monitor vegetative restorative efforts in conjunction with the hydrology monitors. A minimum of four additional random plots will be established. Annual monitoring events will be conducted to document the survival rate of planted species as well as long-term changes in the hydrophytic plant community. Vegetation monitoring will be conducted in each of the five permanently established monitoring stations. Data to be collected from canopy and subcanopy strata (i.e., planted trees and volunteer seedlings, saplings, and shrubs) will include species composition and average height of the planted and volunteer species. The indicator status assigned to each species (i.e., OBL, FACW, FAC, FACU and UPL) identified in the ground level stratum will be used to assess

relative wetness. At least 4 random monitoring plots will be performed each year and will be relocated each year. Documentation of the vegetative conditions of the restored wetland will be compared to the reference site. An ongoing herbaceous list that shows all species with newer ones from each monitoring year highlighted with indicator status and dominance will be provided.

6.3 SOIL MONITORING

Soil samples will be collected in only years 2, 4, and 7 within each plot and characterized according to soil color and texture. Groundwater monitoring will be used as a positive indicator for the first 5 years, in which case, piezometers must demonstrate free water or saturation within 12 inches of the surface for 14 consecutive days during the growing season.

6.4 PHOTOGRAPHIC DOCUMENTATION

Photographic documentation will be conducted within each sampling plot. These photographs will document the progression of the site and the success of the hydrologic and vegetative restoration effort.

6.5 MONITORING REPORT AND SCHEDULE

Annual monitoring reports will be developed in accordance with the Corps of Engineers Regulatory Guidance Letter No. 08-03. The annual reports will be submitted by October 31 each year to the IRT Chair for distribution to the other members of the IRT. Each annual report will include a summary of the work accomplished at the site during the year. Also included with the cover letter will be an annual ledger of accounts for any debiting of credits from the bank. Monitoring reports will be limited to 10 pages (not inclusive of the photo summary) and will generally include the following:

- ✓ Project Overview (1-page)
- ✓ Requirements (1-page)
- ✓ Summary Data (maximum 4-pages)

- ✓ Maps (maximum 3-pages)
- ✓ Conclusions (1-page)

TABLE 4 MONITORING SCHEDULE	
Activity	Targeted Completion
Baseline Hydrology and Vegetation*	Prior to restoration work
1 st Annual Monitoring Report	1 st growing season following tree planting
2 nd Annual Monitoring Report	2 nd growing season following tree planting
3 rd Annual Monitoring Report	3 rd growing season following tree planting
4 th Annual Monitoring Report	4 th growing season following tree planting
5 th Annual Monitoring Report	5 th growing season following tree planting
7 th Annual Monitoring Report	7 th growing season following tree planting
Subsequent years if needed	Only as needed.

*See Section 3.0 for the baseline soil, hydrology, and vegetation data.

7.0 ECOLOGICAL SUCCESS CRITERIA/PERFORMANCE STANDARDS

Successful restoration should indicate a return of wetland hydrology and hydrophytic vegetation. The site should exhibit all 3 of the basic wetland parameters (hydric soils, wetland hydrology, and hydrophytic vegetation) as defined in the 2010 Regional Supplement. The following performance standards should be met to establish ecological success:

- ✓ Hydrologic monitoring should indicate inundation or saturation of the major part of the root zone (in the upper 12 inches of the soil profile) or ponding upon the surface for a period of time not to exceed 25% of the growing season in order to mimic the hydrological conditions of the reference site. Hydrology monitoring shall indicate inundation or saturation within 12 inches of the surface for 14 consecutive days during the growing season within years of typical precipitation.
- ✓ Vegetative monitoring should indicate the successful restoration of the targeted forested flat wetland, shrub, and herbaceous plant community. Vegetative restoration

success will be met with a minimum of 220 stems/acre of planted species. The target survival density is between 220 and 300 species per acre at the end of the seven year monitoring period. Documentation of herbaceous vegetation occurring throughout the site should be classified as hydrophytic vegetation based on the criteria of the 2012 Regional Supplement.

- ✓ Vegetative monitoring should document that by the end of the monitoring period canopy coverage is greater than 30% (projected to be 85% or greater at maturity) and no more than 1% aerial coverage of invasive species.
- ✓ Vegetation composition measure shall achieve overall composition of a minimum of 6 species per acre in order to achieve a final coverage of 220-300 stems/acre.
- ✓ Vegetation should meet the criteria to be considered “hydrophytic”. More than 50% of the dominant species should be in the OBL, FACW, and FAC categories (wetland vegetation dominance is defined as a vegetation community of species mimicking the reference site, where more than 50% of all dominant species are represented in the reference sites and are facultative (“FAC”) or wetter, using "routine delineation methods" as described in the "Corps of Engineers Wetland Delineation Method," Technical Report 87-1 (“1987 Manual”) and Regional Supplement.
- ✓ Soil samples should be identified as “hydric” in accordance with the 2012 Regional Supplement. Positive indicators of hydric soil formation will be documented within 12 inches of the soil surface. IRIS tubes will be used to supplement hydric soil characteristics and conditions (ERDC TN-WRAP-09-1).
- ✓ Aquatic, wildlife, and avian usage will be documented visually.

8.0 ADAPTIVE MANAGEMENT PLAN

In the event that monitoring indicates that corrective actions are necessary to ensure successful restoration, then the IRT shall provide notice to the BANK Sponsor. The BANK Sponsor shall prepare an analysis of the cause of the failure and determine the appropriate corrective action and a time-frame for implementing the corrective actions. If the BANK Sponsor fails to implement the appropriate corrective actions or the corrective actions are unsuccessful, the IRT may recommend additional corrective actions. If the BANK Sponsor fails to perform the required corrective actions, or the corrective actions continue to be unsuccessful, and the IRT determines that the bank is operating at a deficit, debiting of approved pre-credits and future sales of credits will cease. Following successful remedial actions, sale and withdrawal of credits may be resumed. The Banker will be responsible for financing, developing and implementing such a contingency plan, from the inception of the bank up until closure.

8.1 NATURAL DISASTERS/POST-COMPLETION FAILURES

After BANK closure, the Sponsor is not responsible for BANK failure as a result of natural disasters that the IRT determines are beyond its control to prevent or mitigate.

9.0 PROPOSED SERVICE AREA

The proposed service area is smaller by one watershed from the current approved Swamp Road Wetland Mitigation Bank and includes the following watershed: Harpeth (HUC 05130204), Lower Cumberland River – Cheatham (HUC 05130202), and Stones River (HUC 05130203) (See Figure 2, Appendix A).

10.0 MITIGATION CREDITS

10.1 WETLAND IMPACTS SUITABLE FOR COMPENSATION

All types of unavoidable wetland impacts, including forested, emergent, and open water, may be mitigated at the BANK. The use of credits to mitigate wetland impacts dissimilar to the wetland types existing at the BANK may be allowed on a case-by-case basis after coordination between the appropriate regulatory agencies. Decisions regarding out-of-kind wetland mitigation will consider the availability and practicability of in-kind mitigation as well as the existing condition and landscape function of the impacted and BANK wetlands.

10.2 CREDIT GENERATED

Based upon the field survey and soil mapping, a total of 51.1 acres (credits) would be generated through the successful restoration of the site. An additional 5.08 credits will be restored within the area designated as potentially hydric and appears to be in an area of transition between Almaville and Woodmont soil map units (Areas 6A and 7A). This 5.08 acres/credits will not be factored into the release schedule but will only be granted if at the end 5 years of monitoring these areas prove to meet performance standards for vegetation, soils, and hydrology. The remaining 6.75 acres of the site will not generate any wetland credits. However, the resultant acreage of created vernal pools will be calculated and, as with the transition Areas, credits for this small acreage will not be granted until the end of 5 years of monitoring.

10.3 CREDIT RELEASE SCHEDULE

Upon submittal of all appropriate documentation by the Sponsor after each completed phase of the project, and subsequent approval by the IRT, the IRT Chair will provide in writing the release of Credits for use by the Sponsor or for transfer to a third party in accordance with the following schedule:

1. Ten percent (10%) of the total anticipated credits (5.11 credits) generated by the bank (i.e., restoration credits) will be available for debiting upon implementation of the following:
 - (a) signed approval of this MBI including the Mitigation Plan,
 - (b) proof of property ownership,
 - (c) a copy of the signed, approved and recorded Land Use Restrictions that protects the site in perpetuity is provided to the IRT, and
 - (d) securing of financial assurances in amounts sufficient to complete mitigation activities in the event of bank default (see section 13.2).
2. Twenty percent (20%) of total anticipated credits (10.22 credits) will be available for debiting upon completion of the hydrologic modifications as shown in the Mitigation Plan.
3. Twenty percent (20%) of total anticipated credits (10.22 credits) will be available for debiting upon completion of vegetative plantings.

Remaining credits will be released upon meeting performance criteria (Section 7.0).

4. Ten percent (10%) of total anticipated credits (5.11 credits) will be available for Debiting following successful completion of the second year monitoring survey.
5. Ten percent (10%) of total anticipated credits (5.11 credits) will be available for debiting following successful completion of the third year monitoring survey.
6. Ten percent (10%) of total anticipated credits (5.11 credits) will be available for debiting following successful completion of the fourth year monitoring survey.
7. Ten percent (10%) of total anticipated credits (5.11 credits) will be available for debiting following successful completion of the fifth year monitoring survey.

8. Final release of the last ten percent (10%) of total anticipated credits (5.11 credits) will be available for debiting following successful completion of the seventh year monitoring survey and following a verified successful compliance inspection by the Corps.

Table 5 summarizes the above described credit release schedule.

TABLE 5 CREDIT RELEASE SCHEDULE		
Percent Release	Release Schedule	Credits Released
10%	Upon signature of MBI, filing of land use restrictions, and financial assurances	5.11
20%	Completion of tree planting	10.22
20%	Completion of hydrological modifications	10.22
0%	1 st Annual Monitoring Report	0
10%	2 nd Annual Monitoring Report	5.11
10%	3 rd Annual Monitoring Report	5.11
10%	4 th Annual Monitoring Report	5.11
10%	5 th Annual Monitoring Report	5.11
10%	7 th Annual Monitoring Report	5.11
		51.1 credits

The Sponsor may petition the IRT to approve an early release of credits based upon success of the site and need. Additional credits may be generated in accordance with successful monitoring and restoration as described in Section 10.2.

10.4 DEBITING OF CREDITS

In accordance with Section 404/401 of the Clean Water Act and requirements under Rule 1200-4-7 (Tennessee Aquatic Resource Alterations), most approved projects within the established service area of the BANK shall be mitigated at a minimum 2:1 ratio. Impacts to high quality wetlands within the service area may require a higher mitigation ratio as

determined by the responsible regulatory agency. Projects occurring outside the service area will typically require a higher mitigation ratio as determined by the responsible regulatory agency.

11.0 ADMINISTRATION/OPERATION

11.1 REPORTING OF CREDIT BALANCES

The Sponsor shall be responsible for credit balance accounting and reporting for the BANK. A ledger shall be maintained by the BANK manager. Annual credit balance reports will be submitted to the IRT until all credits are debited. An annual report summarizing all transactions and the site monitoring reports will be submitted to the IRT by October 31 each year. Additionally, information regarding any and/or all transactions must be provided to any IRT member upon written request.

11.2 COMPLETION/CLOSURE

Completion occurs when the IRT determines that all performance standards have been met and the required monitoring period has been completed. The IRT will confirm the final wetland delineation and total credits generated prior to completion and final credit release. Closure occurs when the IRT determines that all credits have been debited from the BANK. The Sponsor will be responsible for all accounting requirements until closure of the BANK.

12.0 AGENCY ROLES AND COORDINATION

12.1 OVERSIGHT

The IRT is comprised of 6 individuals representing four federal agencies and two state agencies. The Corps of Engineers (Corps) representative will serve as the IRT Chair and the TDEC representative will serve as Co-Chair. The primary responsibility of the IRT is to

provide oversight during the development, construction and operation of the BANK. IRT members agree to the following oversight responsibilities as well as all other responsibilities as charged by the 1995 Federal Mitigation Banking Guidance and Part 332—Compensatory Mitigation For Losses of Aquatic Resources (2008):

- The agencies represented on the IRT agree to provide appropriate oversight in carrying out the provisions of this MBI.
- The agencies represented agree to review and provide comments on all project plans, monitoring reports, credit release requests, contingency plans, etc. for the BANK in a timely manner. Comments will be reviewed and transmitted to the Sponsor within 30 calendar days from the date of a complete submittal (except for good cause).
- The agencies represented on the IRT agree to review and confirm reports on the evaluation of success criteria prior to approving credit releases from the BANK.
- The agencies represented on the IRT will conduct compliance inspections, as necessary, as determined by the Corps in consultation with the Sponsor, to verify credits available in the BANK and recommend corrective measures, if any.

The IRT will have full access to the BANK site to perform inspections, provided that reasonable notice is given. Regular inspections should be scheduled, at a minimum following completion of targeted milestones (i.e., tree planting, earthwork, etc.) and before credit releases occur.

IRT members will make a good faith effort, within 30 calendar days (except for good cause), to return comments regarding submitted reports to the IRT Chair(s). In some circumstances, the IRT member may request an extension of the comment period.

When a written request for success determination and/or credit release is submitted, the IRT Chair will make a good faith effort (except for good cause) to either approve the success determination and/or credit release or provide the Sponsor with a written explanation as to why the determination has been denied.

Modification to this agreement may be proposed by the Sponsor or any IRT member. The

proposed modification shall be made in writing and submitted to the IRT. The agreed upon and amended instrument must be signed by the appropriate management official (signatory) for each agency represented on the IRT.

12.2 DECISION MAKING PROCESS

Due to the different authorities and responsibilities of each agency represented on the IRT, there is a benefit in achieving agreement on decisions. Therefore, the IRT will strive to reach a consensus on all its decisions and/or actions. Where a consensus cannot be reached, it will be the responsibility of the IRT Chair(s) to make the final decision.

13.0 RISK MANAGEMENT

13.1 LEGAL RESPONSIBILITIES

The Sponsor is solely responsible for the management, implementation, and monitoring of this MBI. Should the Sponsor fail to meet this or other requirements and responsibilities specified in the MBI, the IRT may require the Sponsor to implement additional measures to ensure success of the BANK.

13.2 FINANCIAL ASSURANCES

This MBI establishes that, should the Sponsor be unwilling or financially unable to meet the responsibilities and requirements set forth herein, ownership of the BANK would be transferred to TWRA, or other entity acceptable to the IRT. As part of the financial assurance, 2.5% of every credit sale will be placed in a separate account for potential adaptive management that may arise. Wetlands Reserve, LLC is fully funded and has cash reserves on hand to purchase the land and perform the initial mitigation work plan. This includes the hydrological modifications and the seedlings purchase and installation. Additional funding from the sale of the pre-credit release will serve to fund future activities of the Bank. Additionally, a Letter of Credit from First Bank in the amount of \$160,000 is included in

Appendix C based upon the cost estimate prepared for the construction of the site. Upon signature of the MBI and prior to the release of any credits, a copy of the filed deed with the Rutherford County Register of Deeds will be provided to the IRT Chair indicating ownership of the property and filing of appropriate land use restrictions.

13.3 ADJACENT LANDOWNERS

Efforts will be made to develop, construct and operate this BANK in recognition of the interests of adjacent landowners. This MBI does not authorize any injury to the property or rights of others. The Sponsor is solely liable for any such injuries or damages caused by the establishment and/or operation of the BANK. The following are the names and addresses of adjacent landowners.

Ronnie Hill
193 Highway 99
Eagleville, TN 37060

Thomas F. Jackson, Sr.
Thomas F. Jackson, Jr.
14345 Highway 99
Eagleville, TN 37060

Headwaters of the Harpeth, LLC
703 Sharon Dr.
Johnson City, TN 37604

14.0 OWNERSHIP AND LONG-TERM MANAGEMENT

14.1 OWNERSHIP

The Sponsor will place land use restrictions on the property, which will protect the property in perpetuity (Appendix B) that were adapted from the Tennessee Department of Environment and Conservation's Notice of Land Use Restrictions with additions as required by the Corps of Engineers. The restrictions will include, but are not limited to: future development, agricultural or silvicultural practices detrimental to the health of the restored wetland as well

as any alteration to or manipulation intended to disrupt or otherwise impound or prolong the restored hydrologic regime of the restored wetland. Only non-invasive, low-impact public recreational purposes such as hiking, wildlife viewing, hunting, or educational uses such as ecological research or outdoor classrooms will be allowed. The Sponsor will transfer the property to an acceptable conservation minded organization, agency (i.e. TWRA), or university (i.e. Middle Tennessee State University Foundation) as approved by the IRT at the completion of the BANK. The BANK will not be closed and released until third party ownership has been established and approved by the IRT.

14.2 LONG-TERM MANAGEMENT

After the required monitoring period has been successfully completed, the site will be transferred to Middle Tennessee State University Foundation, an approved 501(c)(3) organization established to aid MTSU in fundraising, education, and research for ownership. This organization will assume responsibility for the long-term management of the site. Future management goals and objectives for the property would be developed with consideration to the terms and conditions of its restrictive covenant, wildlife habitat, and public use as a passive wetland and wildlife habitat area. A minimum of 2.5% of each credit sale will be placed in a separate account for future transfer of the property.

It has been requested by the IRT Chair that a non-wasting account be provided for the Long-Term Management of the Site. Due to the small size of this Bank and the relatively small amount of interest that will be generated by this Long-Term Management account, it does not seem practical to require such an account. It is requested that the entire account be transferred to the MTSU Foundation for their use as long as they agree to the protection of this site.

15.0 AUTHORIZATION

This agreement shall not undermine or supersede the permit authority of the Corps or TDEC. Nor shall it undermine or supersede the authority of the EPA under the CWA Section 404(c), (i.e., veto authority), elevation procedures under the Memorandum of Agreement between the

USACE and EPA, and the same between the FWS and the Corps [Section 404 (q) of the Clean Water Act, 33 U.S.C. 1344].

The establishment and use of this mitigation bank shall be in accordance with the following applicable statutes, regulations, policies, and any subsequent revisions:

Clean Water Act (33 U.S.C. 1251 et seq.)

Rivers and Harbors Act of 1899 (33 U.S.C. 403)

Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.)

Endangered Species Act (16 U.S.C. 1531 et seq.)

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

Tennessee Water Quality Control Act of 1977

Part 332—Compensatory Mitigation For Losses of Aquatic Resources (2008)

16.0 IMPLEMENTATION

In recognition of well-established mitigation policy, all projects shall occur in a clear sequence of: avoidance of wetland impacts through the evaluation of practicable alternatives, minimization of wetland impacts as the second step in the sequence, and lastly, compensation of unavoidable impacts through restoration, creation, enhancement, preservation, and/or a combination of these, as outlined in the Mitigation MOA between the Corps and EPA.

17.0 OTHER PROVISIONS

17.1 FORCE MAJEURE

Nothing herein shall be construed to authorize proceedings against the Sponsor for any damages to the BANK property caused by acts of Nature such as earthquake, fire, flood, storm, war, civil disturbance or similar causes. In the event of a *force majeure* event, the Sponsor will notify IRT members in writing and work with the IRT members to resolve damages, if any, caused by the event. However, if the acts of Nature do not preclude the

Sponsor from resuming BANK operations without unreasonable expense, then it shall not be relieved of its obligations under this document. Any impact to future credit releases or numbers of credits available for sale shall be discussed and determined by the IRT at that time.

17.2 DISPUTE RESOLUTION

Resolution of disputes regarding the application of this MBI will be accomplished in accordance with those stated in the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 FR. 58605 et seq., November, 1995) and Part 332—Compensatory Mitigation For Losses of Aquatic Resources (2008).

17.3 VALIDITY, MODIFICATION AND TERMINATION OF THE INSTRUMENT

This MBI will become valid upon execution (signature) by the IRT agencies. The initial credit release is authorized following the recordation of the restrictive covenant. This MBI may be amended, altered, released or revoked only by written agreement among all parties hereto or their heirs, assigns or successors-in-interest. Any of the IRT members may terminate their participation upon written notification to all signatory parties. Participation of the IRT members will terminate 30 days after written notification.

17.4 CONTROLLING LANGUAGE

To the extent that specific language in this document changes, modifies or deletes terms and conditions contained in those documents that are incorporated into the MBI by reference, and that are not legally binding, the specific language within the MBI shall be controlling.

18.0 SIGNATURE PAGE

Department of the Army, Corps of Engineers, Nashville District

By: _____
Date _____

Tennessee Department of Environment and Conservation

By: _____
Date _____

Tennessee Wildlife Resources Agency

By: _____
Date _____

U.S. Fish and Wildlife Service

By: _____
Date _____

U.S. Environmental Protection Agency

By: _____
Date _____

U.S. Department of Agriculture, NRCS

By: _____
Date _____

Wetland Reserves, LLC

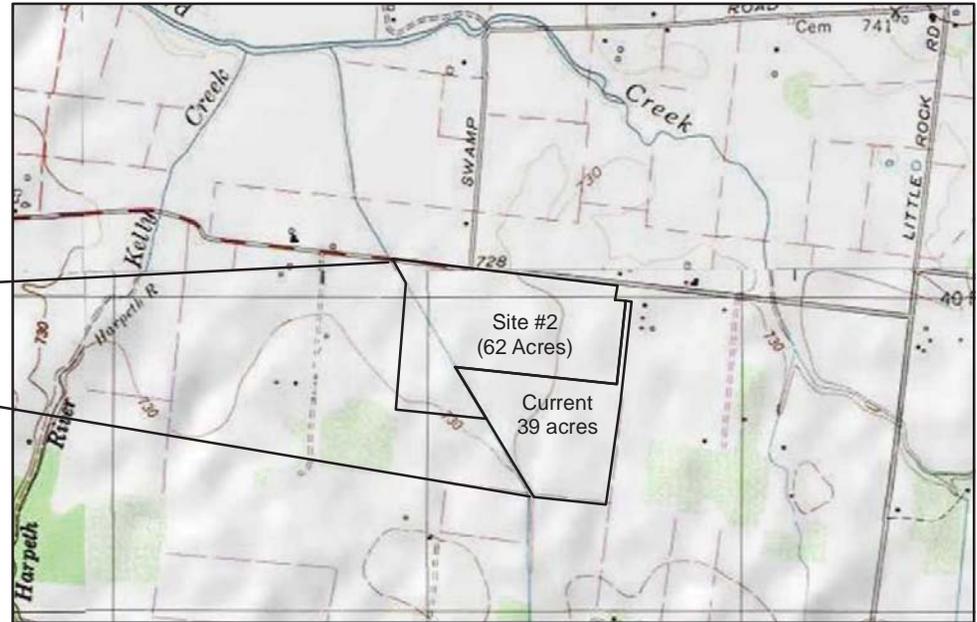
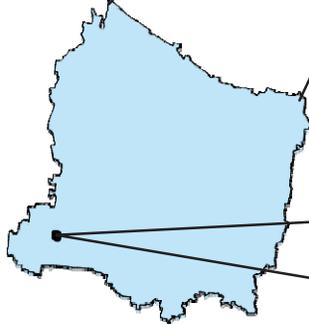
By: _____
Date _____

**APPENDIX A LOCATION MAP,
SERVICE AREA,
SITE TOPOGRAPHIC SURVEY, HYDRIC SOILS MAPPING,
RESTORATION WORK PLAN**



NORTH

SUBMITTAL & REVISION RECORD		
NO	DATE	DESCRIPTION
--	--	--



REFERENCE

USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS](http://gto.arcgis.com/maps/usa_topo_maps)
 , ACCESSED 7/11/2013



Civil & Environmental Consultants, Inc.

405 Duke Drive Ste. 270 Franklin, TN 37067

615-333-7797 • 800-763-2326

www.cecinc.com

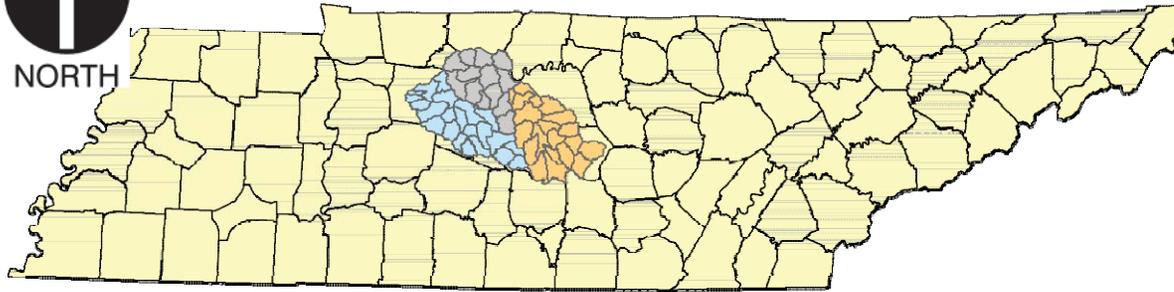
Regional Location Map
 Swamp Road Wetland Mitigation Bank
 Eagleville, Rutherford County, Tennessee

1981 USGS Topographical Map; Rover Quadrangle (71 NE)

DRAWN BY: CEC	CHECKED BY: JTD	APPROVED BY: JTD ^{* Hand signature on file}	FIGURE NO: 1
DATE: 07/11/2013	SCALE: N.T.S	PROJECT NO: 090-873	

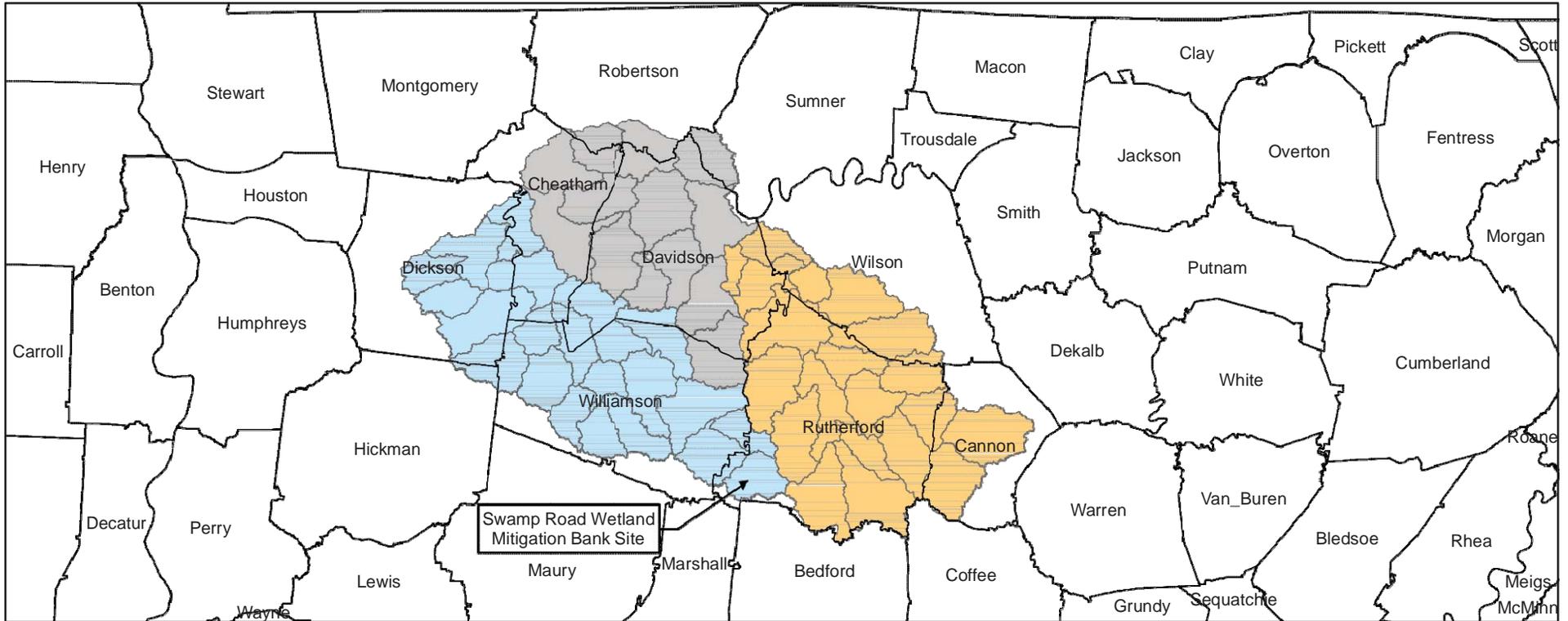


NORTH



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
--	--	--



LEGEND

- Lower Cumberland - 05130202
- Harpeth River - 05130204
- Stones River - 05130203



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 www.cecinc.com

Swamp Road Mitigation Bank
 Site #2 Service Area
 Eagleville, Rutherford County, Tennessee

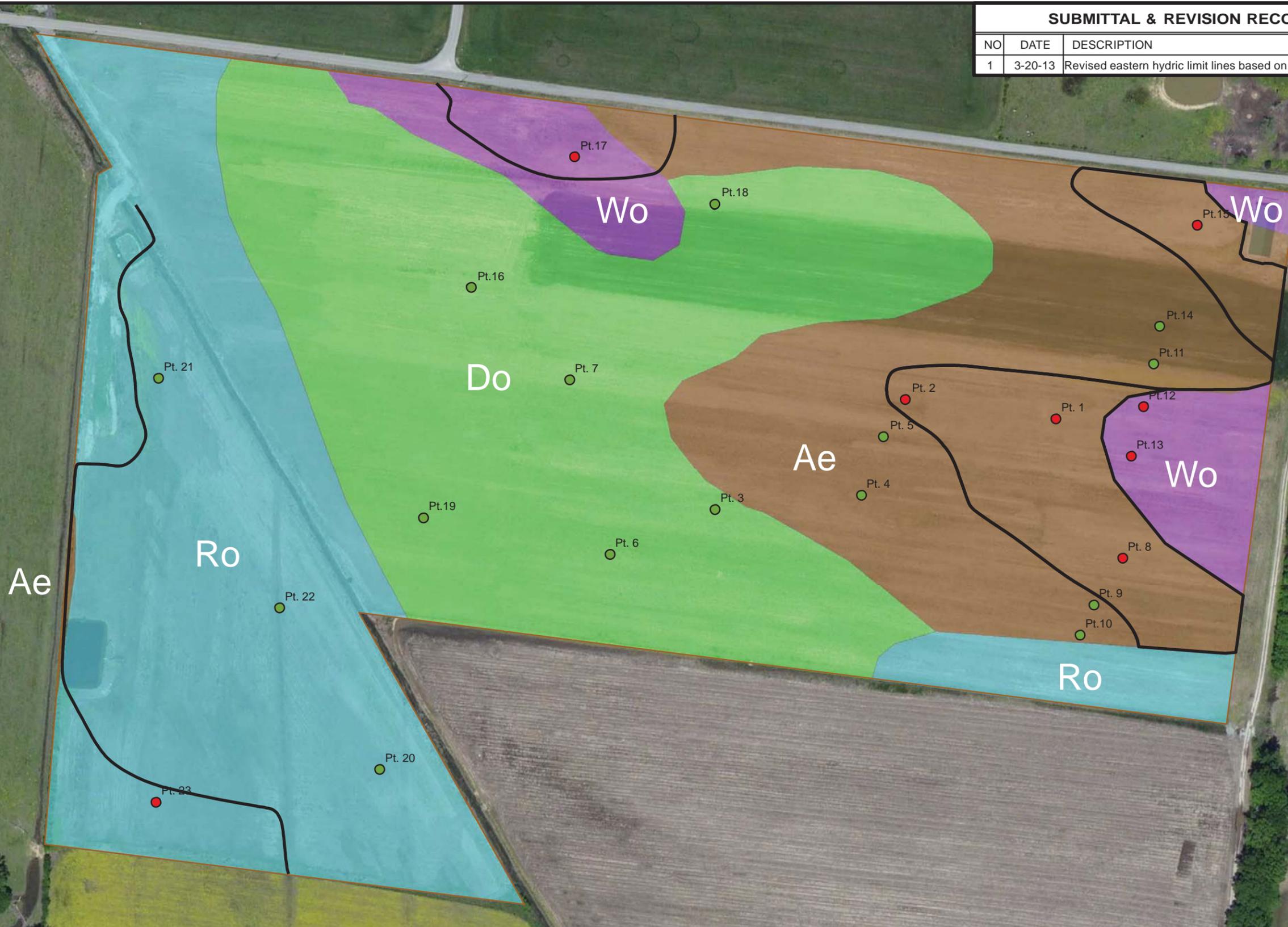
USGS HUC 8 Watershed Boundaries

DRAWN BY: CEC	CHECKED BY: JTD	APPROVED BY: JTD <small>* Hand signature on file</small>	FIGURE NO: 2
DATE: 08/27/2013	SCALE: N.T.S	PROJECT NO: 090-873	



SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
1	3-20-13	Revised eastern hydric limit lines based on Agency review.



LEGEND

- hydric_Limits_export
- Revised_HydricLimit_Polygons

Soil Hydrology

- Hydric
- Non-Hydric
- PropertyLine

Mapped Soil Type

- Ae (16.50 Acres)
- Do (21.73 Acres)
- Ro (20.15 Acres)
- Wo (4.54 Acres)

REFERENCE

BING IMAGERY
 MICROSOFT VIRTUAL EARTH / BING IMAGERY
 PROVIDED BY ESRI, ACCESSED 3/20/2013

SOILS
 U.S.D.A., N.R.C.S
 SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE



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Proposed Swamp Road Wetland
 Mitigation Bank Expansion
 Modification to MBI
 Eagleville, Rutherford County, Tennessee

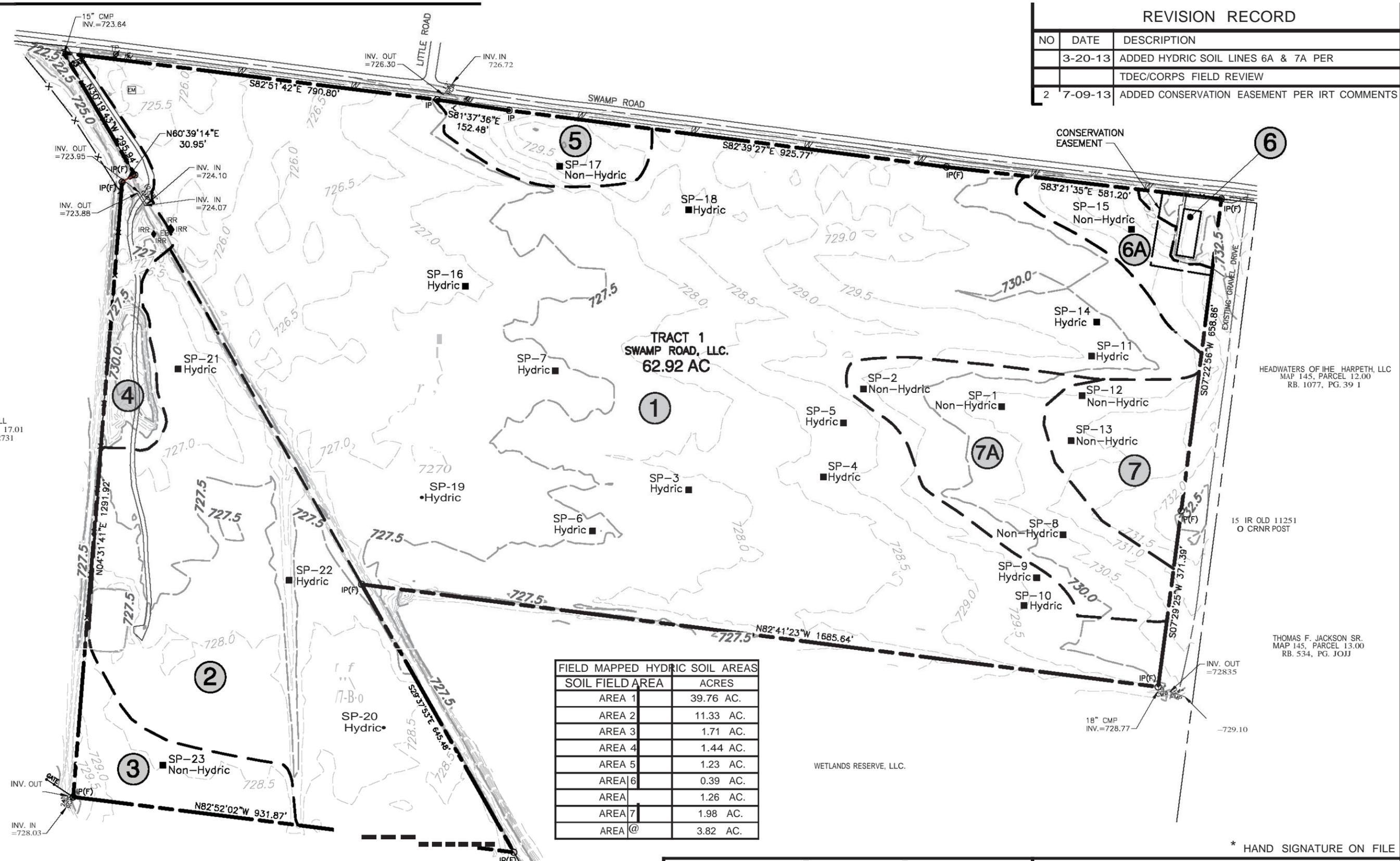
Hydric Soils Mapping
 BING Aerial

DRAWN BY:	CEC	CHECKED BY:	JTD	APPROVED BY:	JTD	FIGURE NO:	1
DATE:	3/20/2013	SCALE:	1" = 200'	PROJECT NO:	090-873.AW00		

I:\svr\mash\Projects\2009\090873\GIS\Waps\2013 Turf Property Soil Pits.mxd



REVISION RECORD		
NO	DATE	DESCRIPTION
	3-20-13	ADDED HYDRIC SOIL LINES 6A & 7A PER TDEC/CORPS FIELD REVIEW
2	7-09-13	ADDED CONSERVATION EASEMENT PER IRT COMMENTS



FIELD MAPPED HYDRIC SOIL AREAS	
SOIL FIELD AREA	ACRES
AREA 1	39.76 AC.
AREA 2	11.33 AC.
AREA 3	1.71 AC.
AREA 4	1.44 AC.
AREA 5	1.23 AC.
AREA 6	0.39 AC.
AREA 7	1.26 AC.
AREA @	3.82 AC.

TURF REV 7-9-13.DWG(SWAMP RD WETLAND COO)LS:(KUNDERWOOD 7/9/2013) LP: 7/9/2013_4:32:37_PM

RONNIE H. HILL
MAP 144, PARCEL 17.01
RB. 146, PG. 2731

HEADWATERS OF THE HARPETH, LLC
MAP 145, PARCEL 12.00
RB. 1077, PG. 39 1

15 IR OLD 11251
O CRNR POST

THOMAS F. JACKSON SR.
MAP 145, PARCEL 13.00
RB. 534, PG. JOJJ

RONNIE H. HILL
MAP 144, PARCEL 17.01
RB. 304, PG. 1422

C&E

Civil & Environmental Consultants, Inc.
405 Duke Drive, Suite 270 - Franklin, TN 37067
615-333-7797 . 800-763-2326
www.cecinc.com

SITE SURVEY AND SOIL SAMPLING
WETLANDS RESERVE, LLC
RUTHERFORD COUNTY, TN.

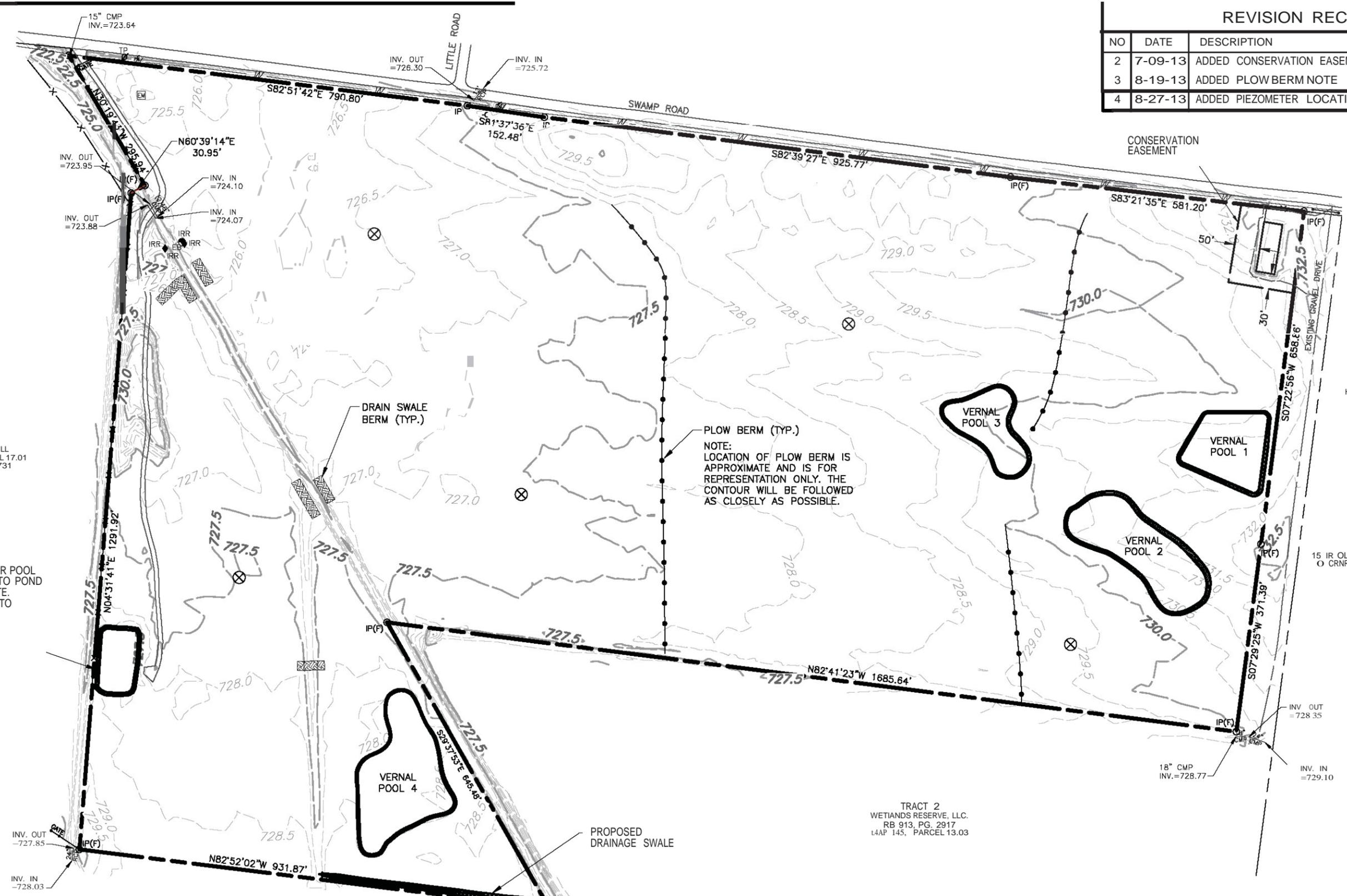
SWAMP ROAD WETLAND BANK #2

SCALE IN FEET

* HAND SIGNATURE ON FILE



REVISION RECORD		
NO	DATE	DESCRIPTION
2	7-09-13	ADDED CONSERVATION EASEMENT PER IRT COMMENTS
3	8-19-13	ADDED PLOW BERM NOTE
4	8-27-13	ADDED PIEZOMETER LOCATION



7-9-13.DWG(SWAMP RD WETLAND COO2)LS:(KUNDERWOOD 8/27/2013) LP: 8/27/2013 4:35:34 PM

RONNIE H. HILL
L4AP 14-4, PARCEL 17.01
RB. 146, PG. 2731

PERMANENT OPEN WATER POOL
PUSH SIDECAST SOIL INTO POND
PERIMETER AND VEGETATE.
FLATTEN POND SLOPES TO
ENCOURAGE VEGETATION
ESTABLISHMENT.

PLOW BERM (TYP.)
NOTE:
LOCATION OF PLOW BERM IS
APPROXIMATE AND IS FOR
REPRESENTATION ONLY. THE
CONTOUR WILL BE FOLLOWED
AS CLOSELY AS POSSIBLE.

HEADWATERS OF THE HARPETH, LLC
L4AP 145, PARCEL 12.00
RB. 1077, PG. 3961

15 IR OLD #1251
O CRNR POST

THOMAS F. JACKSON SR.
L4AP 145, PARCEL 11.00
RB. 534, PG. 3033

TRACT 2
WETLANDS RESERVE, LLC.
RB 913, PG. 2917
L4AP 145, PARCEL 13.03

LEGEND	
	EXI5nNG CONTOURS
	PROPERTY UNE
	ADJOINING PROPERTY UNE
	EXI5nNG GRAVEL DRIVE
	EXI5nNG EDGE OF PAVEMENT
	WOODEN FENCE
	OVERHEAD ELECT.
	PLOW BERM
	DRAINAGE SWALE BERM
	OIP(F) IRON PIN (FOUND)
	GUY WIRE
	FENCE POST
	UTILITY POLY
	ELECTRIC METm
	IRRIGATION VALVE
	TELEPHONE PEDESTAL
	WELL
	APPROX. PIEZOMETER LOCATION

RONNIE H. HILL
L4AP 14-4, PARCEL 17.01
RB. 304, PG. 1422

SCALE IN FEET

• HAND SIGNATURE ON FILE

/1:1:1/

Civil & Environmental Consultants, Inc.
405 Duke Drive, Suite 270 - Franklin, TN 37067
615-333-7797- 800-763-2326
www.cecinc.com

HYDROLOGIC AND RESTORATION PLAN
WETLANDS RESERVE, LLC.
RUTHERFORD COUNTY, TN.
SWAMP ROAD WETLAND BANK #2

APPENDIX B
RESTRICTIVE COVENANTS, PROPERTY DESCRIPTION, TITLE OPINION
LETTER

This instrument was prepared by:

STATE OF TENNESSEE
COUNTY OF _____

**NOTICE OF LAND USE RESTRICTIONS
("[Add Property Name]")**

Notice is hereby given that pursuant to their respective authorities found at Tennessee Code Annotated (T.C.A.) Section 68-212-225 and 33 Code of Federal Regulations (CFR) Section 332.7(a), the Commissioner of the Tennessee Department of Environment and Conservation ("TDEC") and the Nashville District Engineer of the United States Corps of Engineers ("USACE") have determined that land use restrictions are an appropriate remedial action at the below-described property. Pursuant to T.C.A. Section 68-212-225(d) the register of deeds shall record this Notice and index it in the grantor index under the names of the owners of the property.

WITNESSETH:

WHEREAS, _____(Grantor), is the owner of approximately _____ acres of real property described in a Deed of record with the County Tennessee Register of Deeds, Book _____, Page _____, herein after referred to as the "Property"; and,

WHEREAS, the Property is shown on a survey drawn by _____ dated _____, attached hereto as **Exhibit A** and incorporated herein by reference; and,

WHEREAS, the Property possesses natural resources with significant aquatic, ecological and habitat values ("Conservation Values"). These natural resources are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people. These values include Waters of the U.S., as defined in 40 C.F.R § 122.2 (Oct. 1, 2009), including streams, wetlands and the adjacent uplands, and other native vegetation and wildlife. These natural resources are of great importance to both TDEC, the Grantor, and the United States Army Corps of Engineers ("USACE");

WHEREAS, the Property has been approved by USACE for use as mitigation pursuant to and as defined in 33 C.F.R. Part 332 (April 10, 2008);

WHEREAS, the Property has been identified as being occupied by, or as being potential habitat for species of native plants and wildlife which Grantor desires to establish, preserve, protect, restore and enhance;

WHEREAS, on or about _____, the Commissioner of the Department of Environment and Conservation (TDEC) issued Aquatic Resource Alteration Permit (**ARAP**) Number _____ to Grantor; and,

WHEREAS, on or about _____, the Nashville District Engineer of the USACE issued an **Individual Permit (IP) [OR “verified Nationwide Permit (NWP)” or “General Permit (GP)”]** Number _____ pursuant to Section 404 of the Clean Water Act (CWA) to Grantor; and,

WHEREAS, the referenced ARAP and CWA permits and approval of the Property for use as mitigation under 33 C.F.R. Part 332 require that certain uses of the Property be restricted.

WHEREAS, it is the purpose of this Notice to ensure that the Property will be retained forever in an open space condition and to prevent any use of the Property that will impair or interfere with the Conservation Values of the Property. Grantor intends that this Notice (i) will assure that the Property will be used for such activities that are consistent with the purposes of this Notice and (ii) shall be implemented consistently with the referenced ARAP and CWA Permits.

NOW, THEREFORE, in consideration of the foregoing, Grantor hereby declares that the Property should be held, sold, and conveyed subject to the following land use restrictions. Said land use restrictions shall run with the land and shall be binding on all parties having any right, title, or interest in the Property or any part thereof, their heirs, successors, successors-in-title, and assigns, and shall inure to the benefit of each owner thereof and to TDEC and the respective successors and assigns of such parties:

Land Use Restrictions:

- A. **Uses.** There shall be no commercial or industrial activity undertaken or allowed; nor shall any right of passage across or upon the Protected Property be allowed or granted if that right of passage is used in conjunction with commercial or industrial activity.

- B. **Vegetation.** There shall be no removal, destruction, cutting, or spraying with biocides of any vegetation, nor any disturbance or change in the natural habitat in any manner, excepting activities (e.g., invasive species eradication and access road upkeep) that are essential to the maintenance of the Property as a protected natural area. There shall be no planting or introduction of any vegetation except as described in the Aquatic Resource Alteration Permit NRS # _____, the CWA Permit, or in the final mitigation plan attached hereto as **Exhibit B.**

- C. **Topography.** Except as permitted under the referenced ARAP and CWA Permits or as described in the final mitigation plan, there shall be no filling, excavating, dredging, mining, or drilling, no removal of topsoil, sand, gravel, rock, minerals or other materials, nor any dumping of ashes, garbage, or of any other material not required for the Property's maintenance as a protected natural area, and no changing of the topography of the land in any manner, excepting activities (e.g., wetland restoration, restorative stream bank grading) that are essential for the management of the Property as a protected natural area.
- D. **Building.** There shall be no construction or placing of buildings, mobile homes, advertising signs, billboards, or other structures, excepting notice signs as required by the referenced ARAP or CWA Permits.
- E. **Roads.** Except as permitted under the referenced ARAP and CWA Permits there shall be no building of new roads or any other rights of way, nor widening of existing roads, excepting access routes and trails required for the management of the Property as a natural area.
- F. **Waters.** Except as permitted under the referenced ARAP and CWA Permits or as described in the approved mitigation plan, there shall be no draining, ditching, diking, dredging, channelizing, damming, pumping, or impounding; no changing the grade or elevation, impairing or diverting the flow or circulation of waters, or reducing the reach of waters; and no other discharge or activity requiring a permit under applicable clean water or water pollution control laws and regulations, as amended.
- G. **Vehicles.** There shall be no operation of dune buggies, motorcycles, or any recreational all-terrain vehicles, or any other types of motorized vehicles, excepting work vehicles (e.g., tractors, backhoes, work trucks) required to maintain the Property as a protected natural area.
- H. **Non-Native/Exotic Species.** There shall be no introduction of non-native or exotic species to the Property.
- I. **General.** There shall be no use of the Property which may adversely affect the purpose of this Notice.

Other Provisions:

- A. **Entrance and Inspection.** Any owner of a portion of the Property and USACE and TDEC shall have the right to enter and inspect the Property and may enforce this Notice of Land Use Restrictions by means of a civil action.

- B. **Enforcement.** The grantor grants USACE and TDEC, as third party beneficiaries hereof, a discretionary right to enforce these restrictive covenants in a judicial action against any person or other entity violating or attempting to violate these restrictive covenants; provided, however, that no violation of these restrictive covenants shall result in forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to complete restoration for any violation, as well as any other remedy available under law or equity, such as injunctive relief and administrative, civil or criminal penalties. No omission or delay in acting by USACE and/or TDEC shall bar subsequent enforcement rights or constitute a waiver of any enforcement right. These enforcement rights are in addition to, and shall not limit, enforcement rights available under other provisions of law or equity, or under any applicable permit or certification. Nothing herein shall limit the right of the USACE to modify, suspend, or revoke the referenced CWA Permit. Nothing herein shall be construed to authorize the USACE or TDEC to institute proceedings against the owner for changes to the Property due to acts of God, natural disasters, or unauthorized acts of third parties outside the control of the grantor so long as the compensatory mitigation is completed and determined by the USACE and TDEC to be successful in accordance with the Mitigation Plan.
- C. **Term.** This Notice of Land Use Restrictions shall run with and bind the Property in perpetuity unless/until this Declaration shall be made less stringent or canceled as set forth under the paragraph entitled "Amendment and Termination."
- D. **Amendment and Termination.** This Notice of Land Use Restrictions may be waived, amended, modified, or terminated at any time for cause by and upon the agreement of both the Commissioner of TDEC and USACE. No amendment to this Notice of Land Use Restrictions shall be effective until such amendment or instrument terminating this Notice of Land Use Restrictions is recorded in the Register's Office for _____ County, Tennessee.
- E. **Modifications.** Grantor must provide 60 (sixty) days notice to TDEC and USACE prior to any action being taken that serves to void, modify, amend, or terminate this Notice of Land Use Restrictions.. Any permit application, or request for certification or modification, which may affect the Property made to any government entity with authority over wetlands or other waters of the United States, shall expressly reference and include a copy (with the recording stamp) of this Land Use Restriction.

The grantor shall provide the USACE and TDEC with written notice of any legal action affecting this Land Use Restriction, including but not

limited to foreclosure proceedings, tax sales, bankruptcy proceedings, zoning changes, adverse possession, abandonment, condemnation proceedings, and the exercise of the power of eminent domain. For any action that might result in this Land Use Restriction being voided or modified, such notice shall be provided at least 60 days before such action would be taken.

- E. **Severability.** Invalidation of any of these covenants or restrictions by judgment or court order shall in no way affect any other provisions, which shall remain in full force and effect.

- F. **Title.** Grantor represents and warrants that Grantor is lawfully seized of the Property, including the mineral rights thereto, that Grantor has a good right to enter into this Notice of Land Use Restrictions, that the title to the Property is clear and unencumbered, and Grantor will forever warrant and defend the title to the Property to TDEC and USACE against the lawful claims and demands of all persons whomsoever, except as listed on **Exhibit C**, attached hereto and hereby incorporated by reference.

Grantor has identified all other parties that hold any interest (e.g. encumbrances) in the Property and has notified such parties of the Grantor's intent to grant this Land Use Restriction.

- G. **Transfer and Assignment.** The Grantor shall include the following notice on all deeds, mortgages, plats, or any other legal instrument used to convey any interest in the Property:

NOTICE: This Property is subject to a Land Use Restriction dated [*insert date of Declaration*], recorded in the [*insert County name*] County Clerk's Office on [*insert date recorded*] in Deed Book [*insert number*], Page [*insert number*] and enforceable by the U.S. Army Corps of Engineers and Tennessee Department of Environment and Conservation.

The grantor shall provide the USACE and TDEC with written notice of any transfer 60 days prior to such transfer. The notice shall include the name, address, and telephone number of the prospective transferee, a copy of the proposed deed or other documentation evidencing the conveyance, and a survey map that shows the boundaries of the Mitigation Property being transferred. Failure to comply with this paragraph does not impair the validity or enforceability of this Land Use Restriction.

- H. **Notification.** Any notice, request for approval, or other communication require by these restrictive covenants shall be sent by registered mail,

pre-paid postage, to the following addresses (or such addresses as may be hereinafter specified by notice pursuant to this paragraph):

To Grantor Wetlands Reserve, LLC
7379 Old Cox Pike
Bon Aqua, TN 37025

To USACE: United States Army Corps of Engineers
Attention: Chief, Regulatory Branch
3701 Bell Road
Nashville, TN 37214

To TDEC: Tennessee Department of Environment and Conservation
Attention: Commissioner
401 Church Street, L&C Annex 1st Floor
Nashville, TN 37243

IN WITNESS WHEREOF, Grantor has caused this instrument to be executed by its duly authorized representative on this the ____ day of _____, 2013.

Grantor –
By: _____
Name: _____
Title: _____

STATE OF TENNESSEE
County of _____

Personally appeared before me, the undersigned, a Notary Public having authority within the State aforesaid, _____ with whom I am personally acquainted, and who acknowledged that he executed this instrument for the purposes herein contained, and that he is authorized to execute this instrument.

WITNESS my hand, at office, this ____ day of _____, 2009.

Notary Public

My Commission Expires: _____

Exhibits should be on separate pages attached to this document.

EXHIBIT A – SURVEY OF PROPERTY

EXHIBIT B – APPROVED MITIGATION PLAN

EXHIBIT C - TITLE EXCEPTIONS
(Example: property easements, if any)

There are no title exceptions to this parcel.

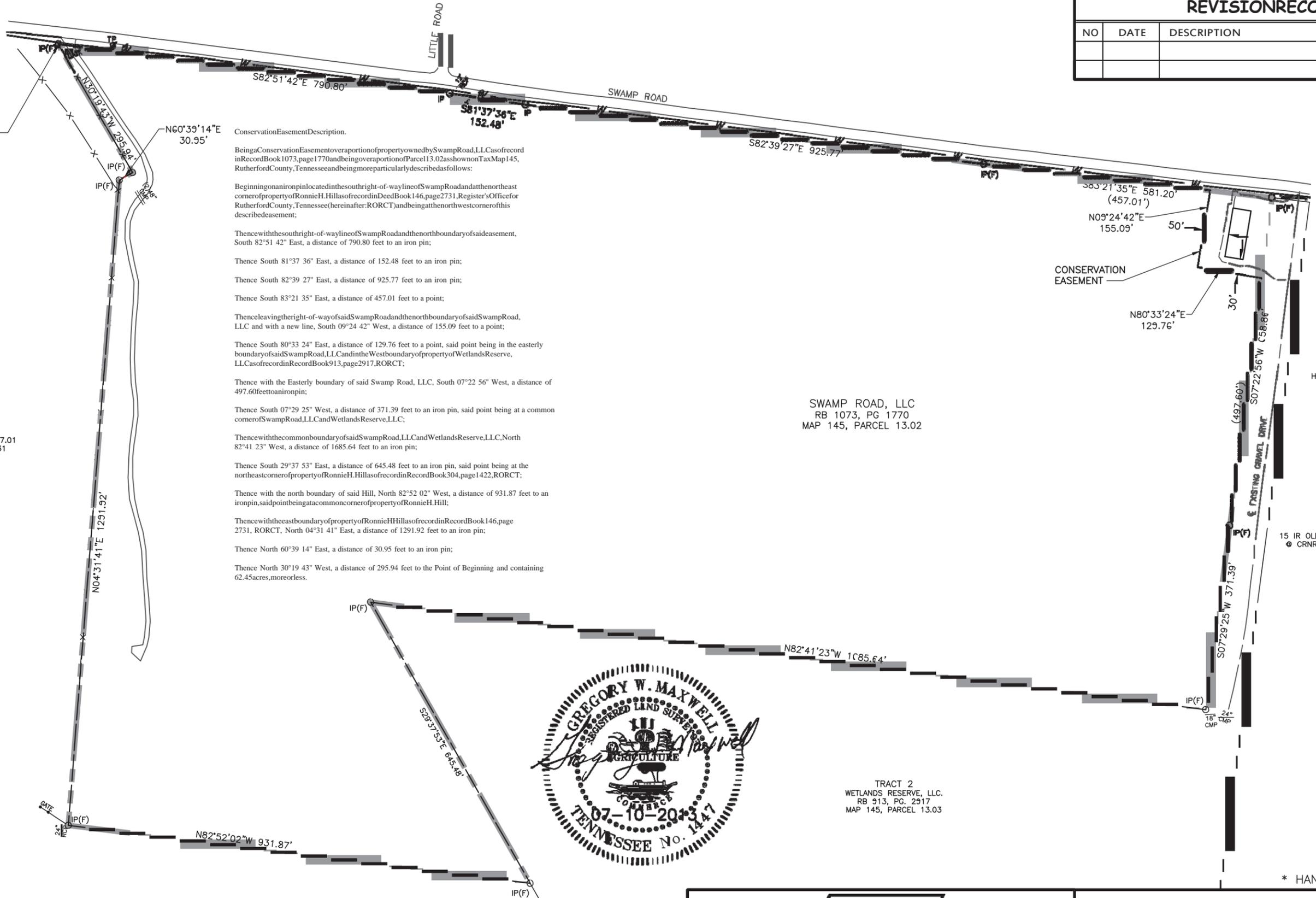


REVISION RECORD

NO	DATE	DESCRIPTION

P:\2009\090-873\CADD\DWG\090-873 CONSERVATION EASEMENT.DWG\CONSERVATION EASEMENT COO\JLS\KUNDERWOOD - 7/15/2013_2.4C.3C_PM

P.O.B.
 RONNIE H. HILL
 MAP 144, PARCEL 17.01
 RB. 146, PG. 2731



Conservation Easement Description.
 Being a Conservation Easement over a portion of property owned by Swamp Road, LLC as of record in Record Book 1073, page 1770 and being over a portion of Parcel 13.02 as shown on Tax Map 145, Rutherford County, Tennessee and being more particularly described as follows:
 Beginning on an iron pin located in the south right-of-way line of Swamp Road and at the northeast corner of property of Ronnie H. Hill as of record in Deed Book 146, page 2731, Register's Office for Rutherford County, Tennessee (hereinafter: RORCT) and being at the northwest corner of this described easement;
 Thence with the south right-of-way line of Swamp Road and the north boundary of said easement, South 82°51'42" East, a distance of 790.80 feet to an iron pin;
 Thence South 81°37'36" East, a distance of 152.48 feet to an iron pin;
 Thence South 82°39'27" East, a distance of 925.77 feet to an iron pin;
 Thence South 83°21'35" East, a distance of 457.01 feet to a point;
 Thence leaving the right-of-way of said Swamp Road and the north boundary of said Swamp Road, LLC and with a new line, South 09°24'42" West, a distance of 155.09 feet to a point;
 Thence South 80°33'24" East, a distance of 129.76 feet to a point, said point being in the easterly boundary of said Swamp Road, LLC and in the West boundary of property of Wetlands Reserve, LLC as of record in Record Book 913, page 2917, RORCT;
 Thence with the Easterly boundary of said Swamp Road, LLC, South 07°22'56" West, a distance of 497.60 feet to an iron pin;
 Thence South 07°29'25" West, a distance of 371.39 feet to an iron pin, said point being at a common corner of Swamp Road, LLC and Wetlands Reserve, LLC;
 Thence with the common boundary of said Swamp Road, LLC and Wetlands Reserve, LLC, North 82°41'23" West, a distance of 1685.64 feet to an iron pin;
 Thence South 29°37'53" East, a distance of 645.48 feet to an iron pin, said point being at the northeast corner of property of Ronnie H. Hill as of record in Record Book 304, page 1422, RORCT;
 Thence with the north boundary of said Hill, North 82°52'02" West, a distance of 931.87 feet to an iron pin, said point being at a common corner of property of Ronnie H. Hill;
 Thence with the east boundary of property of Ronnie H. Hill as of record in Record Book 146, page 2731, RORCT, North 04°31'41" East, a distance of 1291.92 feet to an iron pin;
 Thence North 60°39'14" East, a distance of 30.95 feet to an iron pin;
 Thence North 30°19'43" West, a distance of 295.94 feet to the Point of Beginning and containing 62.45 acres, more or less.

SWAMP ROAD, LLC
 RB 1073, PG 1770
 MAP 145, PARCEL 13.02

HEADWATERS OF THE HARPETH, LLC
 MAP 145, PARCEL 12.00
 RB. 1077, PG. 3961

THOMAS F. JACKSON SR.
 MAP 145, PARCEL 13.00
 RB. 534, PG. 3033

TRACT 2
 WETLANDS RESERVE, LLC.
 RB 913, PG. 2917
 MAP 145, PARCEL 13.03



RONNIE H. HILL
 MAP 144, PARCEL 17.01
 RB. 304, PG. 1422

LEGEND

	PROPERTY LINE		IRON PIN (FOUND)
	CONSERVATION EASEMENT		GUY WIRE
	ADJOINING PROPERTY LINE		FENCE POST
	EXISTING GRAVEL DRIVE		UTILITY POLY
	EXISTING EDGE OF PAVEMENT		TELEPHONE PEDESTAL
	WOODEN FENCE		
	EXISTING WATER		



* HAND SIGNATURE ON FILE

 Civil & Environmental Consultants, Inc. 405 Duke Drive, Suite 270 - Franklin, TN 37067 615-333-7797 · 800-763-2326 www.cecinc.com		CONSERVATION EASEMENT BOUNDARY WETLANDS RESERVE, LLC. RUTHERFORD COUNTY, TN.	
SWAMP ROAD WETLAND BANK 2			
DRAWN BY:	KLU	CHECKED BY:	CC
DATE:	JULY 10, 2013	APPROVED BY:	*JD
DWG SCALE:	1"=200'	PROJECT NO:	090-873.0002
			DRAWING NO.: C003



Conservation Easement Description

Being a Conservation Easement over a portion of property owned by Swamp Road, LLC as of record in Record Book 1073, page 1770 and being over a portion of Parcel 13.02 as shown on Tax Map 145, Rutherford County, Tennessee and being more particularly described as follows:

Beginning on an iron pin located in the south right-of-way line of Swamp Road and at the northeast corner of property of Ronnie H. Hill as of record in Deed Book 146, page 2731, Register's Office for Rutherford County, Tennessee (hereinafter: RORCT) and being at the northwest corner of this described easement;

Thence with the south right-of-way line of Swamp Road and the north boundary of said easement, South 82°51'42" East, a distance of 790.80 feet to an iron pin;

Thence South 81°37'36" East, a distance of 152.48 feet to an iron pin;

Thence South 82°39'27" East, a distance of 925.77 feet to an iron pin;

Thence South 83°21'35" East, a distance of 457.01 feet to a point;

Thence leaving the right-of-way of said Swamp Road and the north boundary of said Swamp Road, LLC and with a new line, South 09°24'42" West, a distance of 155.09 feet to a point;

Thence South 80°33'24" East, a distance of 129.76 feet to a point, said point being in the easterly boundary of said Swamp Road, LLC and in the West boundary of property of Wetlands Reserve, LLC as of record in Record Book 913, page 2917, RORCT;

Thence with the Easterly boundary of said Swamp Road, LLC, South 07°22'56" West, a distance of 497.60 feet to an iron pin;

Thence South 07°29'25" West, a distance of 371.39 feet to an iron pin, said point being at a common corner of Swamp Road, LLC and Wetlands Reserve, LLC;

Thence with the common boundary of said Swamp Road, LLC and Wetlands Reserve, LLC, North 82°41'23" West, a distance of 1685.64 feet to an iron pin;

Thence South 29°37'53" East, a distance of 645.48 feet to an iron pin, said point being at the northeast corner of property of Ronnie H. Hill as of record in Record Book 304, page 1422, RORCT;

Thence with the north boundary of said Hill, North 82°52'02" West, a distance of 931.87 feet to an iron pin, said point being at a common corner of property of Ronnie H. Hill;

Thence with the east boundary of property of Ronnie H Hill as of record in Record Book 146, page 2731, RORCT, North 04°31'41" East, a distance of 1291.92 feet to an iron pin;

Thence North 60°39'14" East, a distance of 30.95 feet to an iron pin;

Thence North 30°19'43" West, a distance of 295.94 feet to the Point of Beginning and containing 62.45 acres, more or less.

Civil & Environmental Consultants, Inc.

Nashville	405 Duke Drive Suite 270 Nashville, Tennessee 37067 Ph: 615/333-7797 / Fx: 615/333-7751 Toll Free: 800/763-2326 nashville@cecinc.com www.cecinc.com	Austin	855/365-2324	Cleveland	866/507-2324	North Central PA	877/321-2324
		Boston	866/312-2024	Columbus	888/598-6808	Phoenix	877/231-2324
		Charlotte	855/859-9932	Detroit	866/380-2324	Pittsburgh	800/365/2324
		Chicago	877/963-6026	Export	800/899-3610	St. Louis	866/250-3679
		Cincinnati	800/759-5614	Indianapolis	877/746-0749	Toledo	888/598-6808

JACK E. GRITTON

Attorney at Law
752 South Church Street
Murfreesboro, TN 37130

Phone: (615) 867-0088

FAX (615) 867-0089

March 28, 2013
7:59AM

Our File No. 12575

RE: Title Opinion Letter
Map/ Parcel-145/13.02
, Murfreesboro, TN

Gentlemen:

This is to certify that I have made an examination of the public records of Rutherford County, Tennessee, as indexed, as same relates to that certain parcel or parcels of real estate situated in the 145/13.02 Civil District of Rutherford County, Tennessee, and being more particularly described as follows, to-wit:

See Exhibit A

This examination covers a period of time forward to March 28, 2013, at 7:59AM. In my opinion, good fee simple title is currently vested in Swamp Road, LLC , by the above referenced deed, subject to the **following matters, to-wit:**

- A. TAXES: -2012 County property taxes are due in the amount of\$ 639.00+Pi \$658.00. [Rec. # 91666]
- B. -2013 property taxes and all subsequent years are a lien not yet due or payable.
- C. MAP/GROUPIPARCEL:145/13.02

B. DEEDS OF TRUST OR LIENS:

(I) None of record.

C. RESTRICTIONS: None of record.

D. EASEMENTS: Greenbelt Rollback Taxes of record in Record Book 501, Page 1307, Book 100, Page 445 and Book 49, Page 209 all in the Register's Office for Rutherford County, Tennessee.

E. Conveyance of 38.99 acres to Wetland Reserve of record in Record Book 913, Page 2917 in the Register's Office for Rutherford County, Tennessee.

F. Conveyance of 20.04 acres to H. Ronnie Hill and wife, Gloria L. Hill of record in Record Book 304, Page 1422 in the Register's Office for Rutherford County, Tennessee.

March 28, 2013, 7:59AM

G. Water line easement of record in Book 140, Page 2838 of the Register's Office for Rutherford County, **Tennessee.**

H. PLAT MATTERS: None of record.

This certification does not make any representation with regard to (a) any parties in possession; (b) deficiencies in quantities of land; (c) boundary line disputes; (d) location of roadways or right-of-way; (e) any unrecorded easements and/or rights-of-way; (f) location of improvements; (g) any unrecorded liens; (h) accuracy of the index books of said Register's Office; (i) any matter not of public record which would be disclosed by an accurate survey or inspection of the premises; (j) any undisclosed heirs; (k) any fraud or forgery in connection with any of the instruments in the chain of title; (l) mental incompetence; (m) confusion with regard to the name or proper identity of parties; (n) improprieties with regard to delivery of deed; (o) marital rights (spouse or former spouse) of present or past owners not revealed in the instrument; (p) any instrument executed by a minor; (q) lack of corporate capacity in the event a corporation is in the chain of title; (r) lack of trustee authorization and power to execute and deliver a deed in the event a church or religious denomination is in the chain of title; (s) lack of fee simple title being vested in remaindermen where termination of preceding estate cannot be determined by the public records; (t) any matter arising prior to the said period covered by the examination of the public records; (u) any defect in title or liens which might be disclosed by an examination of the records of the Clerk and Master of the Chancery Court of Rutherford, Tennessee; (v) any matter created and first appearing in the public records or attaching subsequent to the date hereof but prior to the date the Lender advances loan funds secured by the property; (w) any liens resulting from delinquent spousal and/or child support obligations.

The items listed above are matters which would not be revealed by my examination of the records of the Register's Office and are, therefore, matters which I do not have the means of securing the necessary information upon which to render an opinion.

The matters under (a), (b), (c), (d), (e), and (f) could be protected against by an accurate survey of a qualified licensed surveyor. Item (g) above, unrecorded liens, could be guarded against by an inspection of the premises for new improvements and, if such appear to be present, by the utilization of the Notice of Completion and ten (10) day waiting period in accordance with Tennessee Code Annotated 66-11-143. The remaining items listed above, (h) through (v), may be insured against by the utilization of title insurance, and should you desire more information in that regard, I would be pleased to discuss same with you and, if you so request, to arrange for title insurance to be secured.

Further excluded from this opinion letter are any matters with regard to any law, ordinance or **governmental regulation (including, but not limited to, building and zoning ordinances; restricting, regulating or prohibiting the occupancy or use of the land, or regulating the character, dimensions or locations of any improvements now or hereafter erected on the land; or prohibiting a separation of ownership where reduction of the dimensions of area of the land or with regard to the effect of any violation of any such law, ordinance or governmental regulation, or with regard to the applicable City and/or County Zoning Ordinances now affecting, or as may later affect the realty, and you are requested to check with the Planning Commission for pertinent information with regard thereto.**

Further excluded from this opinion letter are any questions of a security interest or liens under the Commercial Code, or any fact that would be revealed by an examination of the records of the State Courts, Federal District Court and Federal Bankruptcy Court, or to any defect in title which might be disclosed by an examination of the records in the Office of the Circuit Court Clerk or the Office of the Clerk and Master of **Rutherford, Tennessee.**

March 28, 2013, 7:59AM

THIS CERTIFICATE IS HEREBY RENDERED FOR THE EXCLUSIVE USE OF SWAMP ROAD, LLC; NO RESPONSIBILITY IS AFFORDED TO ANY OTHER PERSON RELYING UPON IT FOR ANY OTHER PURPOSE AND LIABILITY OF THE UNDERTAKING IS EXPRESSLY LIMITED TO THE FEE PAID FOR THE SERVICES RENDERED.

Sincerely,

Jack E. Gritton
Attorney-at-Law

EXHIBIT A

The following described tract is bound on the South by Ronnie Hill, Thomas F. Jackson and the Owen Scott Estate, on the West by Ronnie Hill, on the East by Fred R. Hobbs, W. B. Smotherman and Josephine K. Scott, and on the North by Swamp Road.

Beginning at an iron rod found in the South margin of Swamp Road (25 feet from the center), said point being approximately 791 feet East of the center of Little Rock Road, said point being the Northeast corner of Ronnie Hill and the Northwest corner of this tract, THENCE with said line in the following four (4) courses:
South 86° 13' East 790.82 feet to an iron rod set,
South 84° 59' East, 152.48 feet to an iron rod set.
South 86° 00' East, 925.67 feet to an iron rod set.
South 66° 43' East, 656.33 feet to an iron rod set thence with Fred R. Hobbs and generally along a fence South 04° 02' West, 659.68 feet to an iron rod set, thence with W. B. Smotherman and Josephine K. Scott and generally along a fence South 04° 10' West, 1631.87 feet to an iron rod set, thence with the Owen Scott Estate and generally along a fence North 86° 21' West, 747.06 feet to an iron rod set, thence with Thomas F. Jackson and generally along a fence North 85° 33' West, 939.77 feet to an iron rod found; thence with Ronnie Hill and generally along a fence the following seven (7) courses:

North 84° 13' West, 260.28 feet to a post,
North 84° 44' West, 236.48 feet to a post,
North 84° 17' West, 121.81 feet to an iron rod found,
North 00° 23' West, 724.34 feet to an iron rod found,
North 01° 11' East, 1291.99 feet to an iron rod found,
North 57° 42' East, 31.02 feet to an iron rod found,
North 33° 42' East, 296.07 feet to the beginning, containing 121.94 acres more or less.

The above described tract is subject to utility lines and easements. Portions of the above described tract may lie within a designated flood zone.

The above description is taken from survey plat dated April 14, 2003 by me James H. Bingham, Jr. Tennessee, Registered Surveyor. Certificate number 1251110 Second Avenue North, Lewisburg, Tennessee 37091.

Being a portion of the property conveyed to Myrtle R. Hobbs of record in Record Book 96, Page 1383, Register's Office of Lutherford County, Tennessee.

INCLUDED IN THE ABOVE DESCRIBED PROPERTY BUT INTENTIONALLY
EXCLUDED THEREFROM THE FOLLOWING DESCRIBED TRACT:

The following described tract is bounded on the South by Ronnie Hill and Thomas F. Jackson, on the West by Ronnie Hill on the East and North by remaining portions of the tract.

Beginning at an iron rod found in the Southwest corner of the parent tract and the Southwest corner of the following described tract, said point is South 1644' West, 2351.21 feet from the intersection of Samp Road and the center of Little Rock Road, THENCE with Ronnie Hill and generally along a fence North 0023' West, 724.34 feet to an iron rod found, thence with remaining portions of the tract: "the following three (3) calls;

South 86° 13' East, 931.82 feet to an iron rod set,
South 33° 00' East, 75.31 feet to an iron rod set.
South 25° 02' East, 55.6 feet to an iron rod set. thence with Thomas F. Jackson and generally along a fence North 35° 33' West, 87.84 feet to an iron rod found; thence with Ronnie Hill and generally along a fence the following three (3) calls:

North 84° 13' West, 200.28 feet to a post,
North 84° 44' West, 236.48 feet to a post,
North 84° 17' West, 121.81 feet to the beginning, containing 20.04 acres, more or less.

The above described tract is subject to utility lines and easements. Portions of the above described tract may lie within a designated flood zone.

The above description is taken from a survey plat dated July 30, 2003 by me, James H. Bingham, Jr., Tennessee Registered Surveyor, Certificate Number 1251, 110 Second Avenue North, Lewisburg, Tennessee 37091.

Further included in said property but excluded from this conveyance is the 38.99 acre tract transferred to the Wetlands Reserve, LLC by Warranty Deed of record in Record Book 913, page 2917 Register's Office for Rutherford County, TN.

The above property being the same property conveyed to Southeastern Turf, LLC by Warranty Deed recorded in Record Book 484, page 1491 said Register's Office.

APPENDIX C
**CONSTRUCTION ESTIMATES, LONG-TERM MANAGEMENT ACCOUNT,
ADAPTIVE MANAGEMENT ACCOUNT, AND LETTER OF CREDIT**

Page Redacted by USACE at request from Bank Sponsor

Page Redacted by USACE at request from Bank Sponsor

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APPENDIX D
WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 8
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.747593 Long: -86.606976 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 8

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 9
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.747345 Long: -86.607161 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 9

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/2	100					silt loam	
2-9	10YR4/2	60	10YR5/6	40	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 10
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.747185 Long: -86.60725 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 10

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR4/3	100					silt loam	
6-10	10YR4/2	60	10YR5/6	40	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 11
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.748619 Long: -86.606782 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR4/3	100					silt loam	
3-9	10YR4/2	60	10YR5/6	40	RM	M	silt loam	
9-13	10YR5/2	60	10YR5/6	40	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 12
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.748393 Long: -86.606847 Datum: WGS84
 Soil Map Unit Name: Woodmont NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Hydric soil characteristics were present but called non-hydric since in Woodmont map unit and previous NRCS field review.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR5/3	100					silt loam	
2-7	10YR5/3	90	10YR5/6	10	RM	M	silt loam	
7-12	10YR5/2	90	10YR5/8	10	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 13
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.748133 Long: -86.606924 Datum: WGS84
 Soil Map Unit Name: Woodmont NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Soil point located in Woodmont map unit. Appears hydric and has hydric components however, classified as hydric based on map unit and from previous NRCS field review.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR5/3	100					silt loam	
5-12	10YR6/2	70	10YR5/8	30	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 14
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.748819 Long: -86.606745 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/2	100					silt loam	
2-12	10YR5/2	60	10YR5/6	40	RM	M	silt loam	
			2.5YR3/6	40	RM	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 15
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.749353 Long: -86.606505 Datum: WGS84
 Soil Map Unit Name: Almaville NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/3	100					silt loam	
2-9	10YR4/3	90	10YR5/6	10	RM	M	silt loam	
9-12	10YR4/3	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 16
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.749002 Long: -86.611217 Datum: WGS84
 Soil Map Unit Name: Dowellton NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) _____ _____ Water-Stained Leaves (B9) _____ _____ Aquatic Fauna (B13) _____	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u><1"</u> Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	50		n/a	
2. soy bean stubble	50		n/a	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/3	100					silt loam	
2-10	10YR4/2	60	10YR5/6	10	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 17
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.749695 Long: -86.610552 Datum: WGS84
 Soil Map Unit Name: Woodmont NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:	<u>Secondary Indicators (minimum of two required)</u>
Primary Indicators (minimum of one is required; check all that apply)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Thin Muck Surface (C7)
	<input type="checkbox"/> Stunted or Stressed Plants (D1)
	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> Microtopographic Relief (D4)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:	
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. soybean stubble	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/3	100					silt loam	
2-10	10YR6/3	80	10YR5/6	20	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 18
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.749449 Long: -86.60964 Datum: WGS84
 Soil Map Unit Name: Dowellton NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. soybean stubble	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/3	100					silt loam	
2-10	2.5Y5/2	60	10YR5/6	40	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford State: TN Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC Sampling Point: 19
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.747783 Long: -86.611518 Datum: WGS84
 Soil Map Unit Name: Dowellton NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) _____ _____ Water-Stained Leaves (B9) _____ _____ Aquatic Fauna (B13) _____	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u><1"</u> Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>6"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/2	100					silt loam	
2-12	10YR4/1 & 3/1	50	5Y4/2	50	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 20
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.746453 Long: -86.611792 Datum: WGS84
 Soil Map Unit Name: Roellen NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 20

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. soybean stubble	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/2	100					silt loam	
2-8	10YR3/2	60	7.5YR5/8	40	RM	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 21
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.748512 Long: -86.613244 Datum: WGS84
 Soil Map Unit Name: Roellen NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1"</u> Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 21

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: _____ Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. soybean stubble	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 22
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.747303 Long: -86.612449 Datum: WGS84
 Soil Map Unit Name: Roellen NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1"</u> Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Sample point located in drainage swale to determine soil characteristics compared to flat fields.

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: _____ Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. soybean stubble	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Swamp Road Wetland Bank Expansion City/County: Rutherford Sampling Date: 1/21/13
 Applicant/Owner: Wetlands Reserve, LLC State: TN Sampling Point: 23
 Investigator(s): J. Duke, M. Williams Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0.0025
 Subregion (LRR or MLRA): _____ Lat: 35.746272 Long: -86.613243 Datum: WGS84
 Soil Map Unit Name: Roellen NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION (Four Strata) – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is 3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. sod	100		n/a	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
							silt loam	
0-12	7.5YR3/2	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: