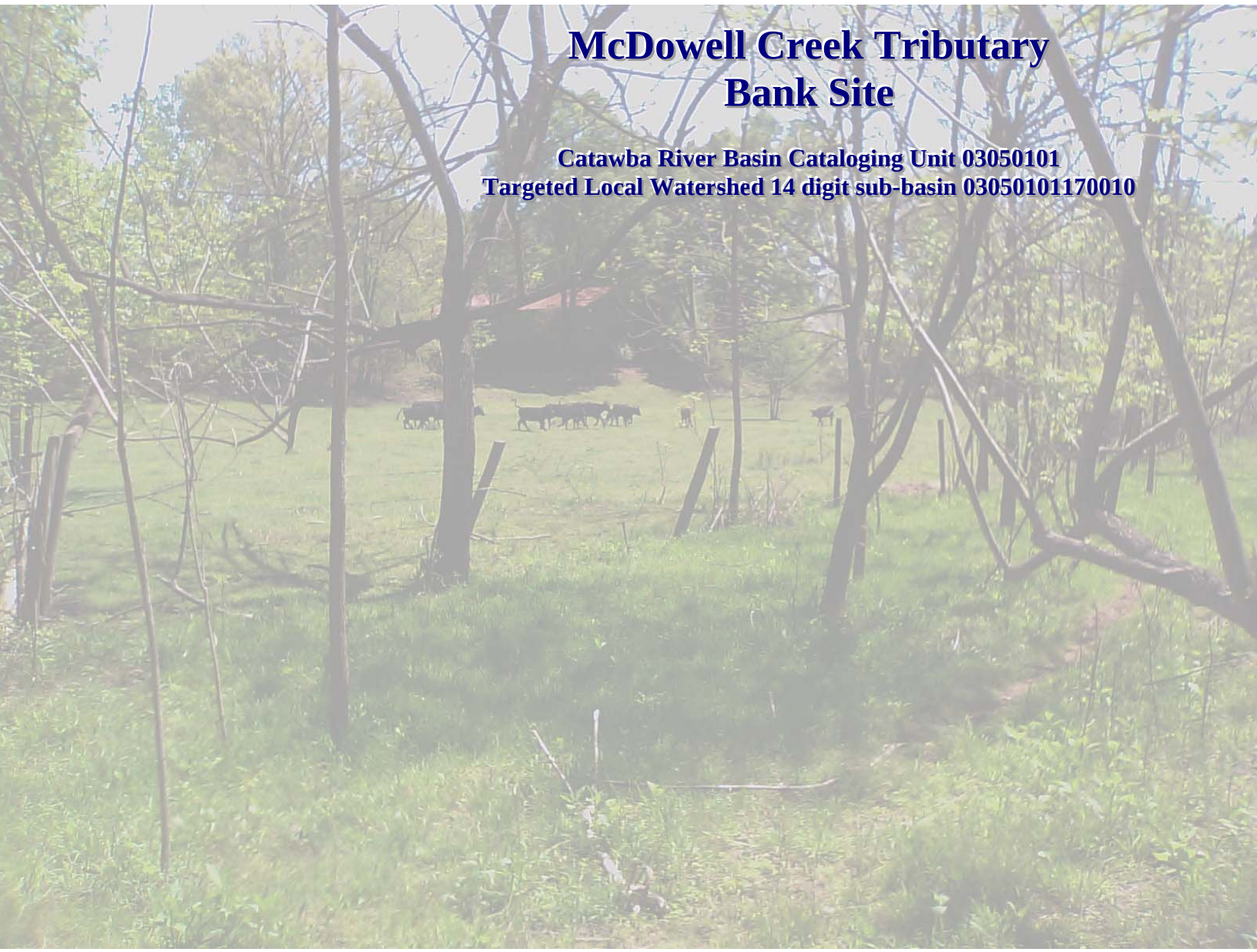
Prospectus

Catawba River Wetland and Stream Umbrella Mitigation Bank



McDowell Creek Tributary Bank Site

Catawba River Basin Cataloging Unit 03050101
Targeted Local Watershed 14 digit sub-basin 03050101170010

Estes Design Inc.
Environmental Design & Consulting

August 31, 2009

Mid-Atlantic Mitigation, LLC
AN EARTHMARK COMPANY

CATAWBA UMBRELLA MITIGATION BANK PROSPECTUS

CATAWBA UMBRELLA MITIGATION BANK PROSPECTUS

I. INTRODUCTION

This is a Prospectus for the proposed **Catawba River Wetland and Stream Umbrella Mitigation Bank** (Catawba Umbrella Mitigation Bank).

The Sponsor of the Catawba Umbrella Mitigation Bank is Mid-Atlantic Mitigation, LLC.

Mid-Atlantic Mitigation, LLC
1960 Derita Road
Concord, NC 28027
Attn: Mr. Rich Mogensen
RichMogensen@EarthMark.US
Office: 704-782-4133
Fax: 704-782-4148

Mid-Atlantic Mitigation is a division of EarthMark Mitigation Services, LLC.

EarthMark Mitigation Services, LLC
12800 University Drive, Suite 400
Ft. Myers, FL 33907
Attn: Mr. Doug Cordello
Office: 239-415-6238
Fax: 239-415-6243

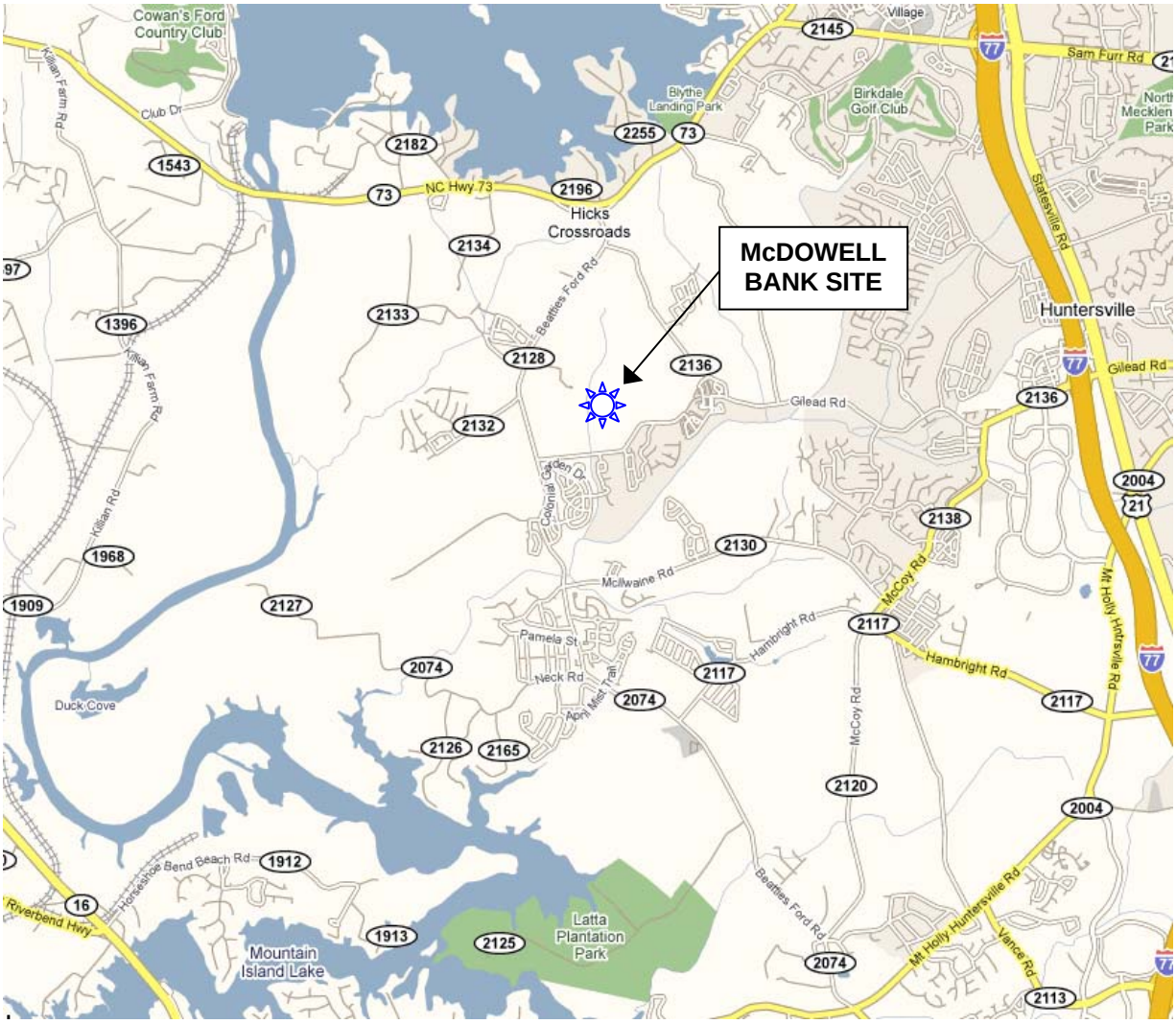
To initiate the Catawba Umbrella Mitigation Bank, Mid-Atlantic Mitigation will establish the **McDowell Creek Tributary Bank Site** (McDowell Bank Site), a stream and wetland mitigation site, to be located on an unnamed tributary to McDowell Creek in the Town of Huntersville in Mecklenburg County, North Carolina (*refer to the map below and Exhibit A*).

The Designer for the McDowell Bank Site is Estes Design, Inc.

Estes Design, Inc.
P.O. Box 79133
Charlotte, NC 28271
Attn: Mr. Chris Estes
Chris@EstesDesign.com
Office: 704-841-1779
Fax: 704-841-1842

This Prospectus addresses both the establishment of the Catawba Umbrella Mitigation Bank and the initial project at the McDowell Bank Site. It was prepared in accordance with the *Final Rule on Compensatory Mitigation for Losses of Aquatic Resources* (Federal Register, Volume 73, Number 70, April 10, 2008). The Prospectus is submitted to the Interagency Review Team (IRT) to formally initiate the agency review and planning process.

McDowell Bank Site Location:



In the attached Exhibits, the Ecological Suitability and Baseline Conditions Report describes the existing conditions of the McDowell Bank Site (*refer to Exhibit B*). The Conceptual Design Report describes and depicts the plan to improve the ecological functions and services of the site (*refer to Exhibit C*). The proposed Geographical Service Area is the North Carolina portion of the Catawba River Basin (*refer to Exhibit D*).

The McDowell Bank Site is the first phase of an umbrella mitigation bank. The Catawba Umbrella Mitigation Bank will allow additional sites to be approved and inserted under the Terms and Conditions contained in this Prospectus and the associated Umbrella Mitigation Banking Instrument (UMBI).

II. BANK OBJECTIVES

Purpose

The purpose of the Catawba Umbrella Mitigation Bank is to provide compensatory stream and wetland mitigation for unavoidable impacts to Waters of the US resulting from activities authorized in the North Carolina portions of the Catawba River Basin under Sections 404 and 401 of the Clean Water Act, provided such activities have met all applicable requirements.

The Catawba Umbrella Mitigation Bank will provide environmentally responsible, economical, efficient, and flexible off-site compensatory mitigation opportunities for those seeking to develop land in accordance with the relevant Federal, State, and local regulations. The Catawba Umbrella Mitigation Bank will be established to compensate for losses of aquatic resources from authorized development within the Catawba Umbrella Mitigation Bank's Geographical Service Area in a manner that contributes to improvements in the long-term ecological function of McDowell Creek, Mountain Island Lake, and the Catawba River.

Objective

The objective of the McDowell Bank Site is to convert the existing altered and unstable stream corridor and flood-prone area to its natural stable condition, considering recent and future watershed conditions. The streams and wetlands will be protected with a perpetual conservation easement, and fences will be constructed at the limits of the easement to exclude cattle.

Six stream reaches will be restored to their appropriate geomorphic dimension, pattern, and profile based on a reference condition/reach for their valley type, so that they are capable of moving the flows and sediment provided by their watersheds, in order to achieve dynamic equilibrium. The upper portions of two reaches will be enhanced to correct incision and unstable banks by reestablishing their appropriate geometry and profile.

The McDowell Bank Site will establish Riparian buffers and replace invasive species with native vegetation. Two Riparian wetland areas (Palustrine Bottomland Hardwood Forest) will also be restored. The restored and enhanced streams and restored wetlands will improve Riparian habitat and species diversity, improve water quality, and provide increased flood storage capacity, which will provide a net ecological uplift to the McDowell Bank Site and the McDowell Creek watershed.

The immediate goal of the McDowell Bank Site is to provide high-quality compensatory mitigation to comply with the "no net loss" of aquatic resources requirement. The long-term goal is a net gain of stable stream and wetland functions and services. The McDowell Bank Site will establish stable, natural streams with Riparian buffers and Riparian wetland areas on the site to provide a positive contribution to water quality, native plant and animal habitat, and erosion control. The McDowell Bank Site will establish approximately 9,600 linear feet (lf) of restored streams, approximately 1,000 lf of stream enhancement, and approximately 4 acres of Riparian wetlands, with approximately 25 acres of Riparian buffers, to be protected within a permanent conservation easement.

III. BANK ESTABLISHMENT

To establish the Catawba Umbrella Mitigation Bank, the Bank Sponsor, Mid-Atlantic Mitigation, LLC, will initially restore approximately 9,600 lf and enhance approximately 1,000 lf of degraded stream using natural stream design principles, and also restore approximately 4 acres of Riparian wetlands at the McDowell Bank Site, then protect, and maintain these reaches in perpetuity. The work will be performed in accordance with the provisions of the associated Umbrella Mitigation Banking Instrument (UMBI) and regulatory permits (to be reviewed and approved by the U.S. Army Corps of Engineers (Corps), U.S. Fish and Wildlife Service, and the North Carolina Department of Environment and Natural Resources Division of Water Quality (DWQ).

The Bank Sponsor will improve aquatic functions and services (water quality, flood storage, and wildlife habitat), including re-establishing and improving hydrologic flow, creating stable meandering channels, and replacing invasive species with a diversity of native plants with improved wildlife value. These restored and enhanced streams, wetlands, and Riparian buffers will provide habitat for a wide variety of water-dependent and terrestrial wildlife species. The stream banks, buffers, and wetlands will be vegetated with native plant species.

The Bank Sponsor will maintain the McDowell Bank Site in accordance with the "Maintenance and Monitoring" and "Bank Closure" provisions of the UMBI and regulatory permits to be approved by the Corps and DWQ. The McDowell Bank Site will be closed at the end of its operational life, which is five years (streams) to seven years (forested wetlands) from the date of the completion of grading and planting tasks, successful completion of all performance standards as documented by approved monitoring reports, and/or until the sale of all credits, whichever comes last.

After closure, the McDowell Bank Site will be maintained by an approved third-party non-profit or governmental entity qualified to hold conservation easements, in accordance with the Long-Term Management provisions of the UMBI. The McDowell Bank Site will be protected in perpetuity by a recorded Conservation Easement restriction on the properties. A minimum 50-foot buffer on either side of streams will be protected.

A. IMPLEMENTATION

The Bank Sponsor will perform all necessary work at the McDowell Bank Site, in accordance with the provisions of the UMBI and federal and state permits, to establish and protect approximately 9,600 lf of restored and approximately 1,000 lf of enhanced 1st and 2nd order perennial Piedmont streams, including approximately 25 acres of Riparian buffer, and approximately 4 acres of Riparian wetlands. Construction is anticipated in the summer of 2010, with vegetative planting in fall 2010.

The Bank Sponsor will maintain this restored ecosystem until it is demonstrated to the satisfaction of the Corps and DWQ that the project complies with all requirements, or until all credits are sold, whichever is later. The exact credit quantities will be determined once the site survey and design are completed by the Bank Sponsor and approved by the IRT within the UMBI.

B. ENVIRONMENTAL DOCUMENTATION

The Bank Sponsor will obtain all appropriate environmental documentation, permits and other authorizations needed to establish and maintain the McDowell Bank Site. This Prospectus does not fulfill or substitute for such authorization.

C. FINANCIAL ASSURANCE

The Bank Sponsor will provide the IRT financial assurances, as established by the Corps and DWQ, to ensure a high level of confidence that the McDowell Bank Site (and subsequent additions to the Catawba Umbrella Mitigation Bank) will be successfully completed and maintained in perpetuity. The details of these financial assurances will be provided in the UMBI.

The Bank Sponsor will secure sufficient funds and financial assurances to cover contingency actions in the event that the Bank Sponsor fails to comply with the terms of the UMBI, or to rectify any unforeseen events, as determined by the IRT. The financial assurances shall be in the form of casualty insurance or performance bonds. The financial assurances shall be reduced once each mitigation project has met incremental success criteria throughout the monitoring period, during years 1, 3, and 5.

If casualty insurance is utilized, the initial value will be the full amount of the design and construction cost. The insured amount shall be reduced to 30% of the initial value once construction is complete, and reduced to 10% of the initial value once year 3 success criteria have been met. After final approvals are received and the monitoring period is complete, the insurance will be withdrawn.

If a performance bond is required, one will be posted for the full amount of the design and construction cost until construction is complete. Once the construction has been successfully completed, this bond will be retired and replaced with a maintenance bond in the amount of 30 percent of the cost of construction for the 1st through 3rd monitoring periods, and later reduced to 10 percent once year 3 success criteria have been met. After final approvals are received and the monitoring period is complete, the maintenance bond will be retired.

D. REVIEW TEAM

The Interagency Review Team will consist of:

- U.S. Army Corps of Engineers, Wilmington District, Asheville Field Office (Corps), Chair
- U.S. Environmental Protection Agency, Wetland Section - Region IV (EPA)
- U.S. Fish and Wildlife Service (FWS)
- North Carolina Wildlife Resources Commission (NCWRC)
- North Carolina Department of Environment and Natural Resources, Division of Water Quality (DWQ)

IV. BANK OPERATION

The Bank Sponsor will operate the Catawba Umbrella Mitigation Bank in accordance with the terms of the approved Umbrella Mitigation Banking Instrument. The UMBI will define the area and work that will be the basis for the stream and wetland mitigation credits, as well as the procedure to allow additional sites to be approved and inserted into the Catawba Umbrella Mitigation Bank. The mitigation credits will become available in accordance with the credit release schedule specified in the UMBI.

A. ESTABLISHMENT & USE OF CREDITS

The exact number of credits that will be provided by the McDowell Bank Site will be determined once the site survey, design, and functional assessments are completed by the Bank Sponsor and approved by the IRT. The credits will be sold to interested permittees, provided they have met all applicable regulatory requirements, including avoidance and minimization, and use has been authorized by the appropriate agencies. The Catawba Umbrella Mitigation Bank credits will not be released for debiting until specific milestones associated with the McDowell Bank Site's protection and development are achieved. Use of credits will be approved by the Corps and DWQ.

The anticipated credit release schedule, according to Corps mitigation guidance, is:

	Stream Credits	Wetland Credits
• Completion of Initial Approvals	15% of Credits	15% of Credits
• Approval of As-Built Conditions	15% of Credits	15% of Credits
• Approval of 1st Year Monitoring	20% of Credits	5% of Credits
• Approval of 2nd Year Monitoring	10% of Credits	10% of Credits
• Approval of 3rd Year Monitoring	10% of Credits	10% of Credits
• Approval of 4th Year Monitoring	10% of Credits	10% of Credits
• Approval of 5th Year Monitoring	20% of Credits	10% of Credits
• Approval of 6th Year Monitoring		10% of Credits
• Approval of 7th Year Monitoring		15% of Credits
	100% of Credits	100% of Credits

If the success criteria for the wetlands have been clearly met after five years, the remaining credits may be released without further monitoring.

B. ASSESSMENT METHODOLOGY

The credits and debits for the Catawba Umbrella Mitigation Bank will be determined by the Corps and DWQ, in consultation with the IRT if necessary, on a project-by-project basis, using the assessment methodologies determined to be appropriate. Assessment methodologies will likely include the North Carolina Wetland Assessment Methodology (NCWAM), the North Carolina Stream Assessment Methodology (NCSAM, when implemented), the North Carolina Stream Mitigation Guidelines (April 2003), and the North Carolina Stream Quality Assessment Worksheet.

The available credits from the McDowell Bank Site will reflect the difference between before and after McDowell Bank Site establishment conditions, as determined by the approved functional assessment and as approved by the IRT.

C. SUCCESS CRITERIA

The Bank Sponsor shall be responsible for assuring the success of the McDowell Bank Site establishment activities and goals described above and in Exhibit C. The success of the McDowell Bank Site will be measured by performance standards approved by the IRT, as set forth in the Corps and DWQ permits and the UMBI. The performance standards define the conditions under which the McDowell Bank Site would be considered successful, and provide monitoring and maintenance requirements to recognize and correct deficiencies.

The McDowell Bank Site will be considered successful if the Bank Sponsor demonstrates to the Corps and DWQ that the appropriate areas have been restored, enhanced, and/or preserved and that the goals of the McDowell Bank Site have been met. After successful completion of each planning, construction, and monitoring task, the Bank Sponsor shall notify the Corps and DWQ in writing, requesting the associated credit release. In addition to the written notice, the Bank Sponsor will submit photographs of the completed project task along with a photo location map. The Corps and DWQ, in consultation with the IRT, will confirm whether the tasks are successfully completed for the purpose of releasing credits.

D. CONDITIONS ON DEBITING

Compensatory mitigation for wetland and stream impacts will be available to qualified permittees at a ratio determined by the Corps and DWQ on a project-by-project basis. Typically, 1 wetland credit will equal 1 acre of wetland impact, and 1 stream credit will equal 1 linear foot of stream impact. Projects proposed for utilization of credits will be submitted to the Corps and DWQ for consideration in conjunction with the permitting for such projects. It is understood that the Corps and DWQ reserve the right to require a higher compensation ratio, depending on the project and type of impact.

E. MONITORING PROVISIONS

The Bank Sponsor agrees to perform all necessary work to monitor the McDowell Bank Site to demonstrate compliance with the success criteria established in the UMBI and any regulatory permits for a period of five years for the restored and enhanced streams and seven years for the Riparian wetlands, or until success criteria are met, whichever is later. If the success criteria for the wetlands have been clearly met after five years, the remaining credits may be released without further monitoring.

Monitoring devices will include crest-stage gages, permanent cross-sections, vegetation plots, and groundwater monitoring gages. The monitoring will begin at the end of the first full growing season following completion of grading and planting (i.e., if the streambank planting is completed in fall/winter 2010, the first monitoring event would occur in fall 2011).

The Bank Sponsor shall provide annual monitoring reports by December 31st of each year to the Corps, DWQ, and the IRT on the long term success of the McDowell Bank Site and to identify any problems requiring corrective action. Any such corrective action shall be taken in accordance with the Maintenance Provisions described below in Section F.

F. MAINTENANCE PROVISIONS

The McDowell Bank Site will be designed to be self-sustaining over time. However, some adaptive management and maintenance is anticipated to ensure the long-term viability and sustainability of the McDowell Bank Site.

The Bank Sponsor agrees to perform all necessary work to maintain the McDowell Bank Site consistent with the maintenance criteria established in the UMBI. The Bank Sponsor shall continue with such maintenance activities until closure of the McDowell Bank Site.

Upon closure of the McDowell Bank Site, the approved third-party long-term land steward will be responsible for the management requirements established in the Closure Plan and Long-Term Management Plan, as outlined in the UMBI. Deviation from the approved maintenance plan will be subject to review and written approval by the Corps and DWQ, following consultation with the IRT.

G. REPORTING

The Bank Sponsor will submit to the Corps and DWQ, for distribution to the IRT, as-built grading and planting drawings of the McDowell Bank Site establishment activities and a post-construction report within 60 days after the date of completion of grading and planting activities. The as-built drawings and report shall include all aspects of the final grading elevations and planting arrangements of the McDowell Bank Site.

The Bank Sponsor will submit to the Corps and DWQ, for distribution to the IRT, eight hard-copies of each annual report on the status of the McDowell Bank Site establishment activities, prepared during the growing season, no later than December 31st of each of the five years following completion of grading and planting activities, in accordance with the permits. Two copies of each report shall be provided directly to DWQ.

H. ACCOUNTING

The Bank Sponsor shall submit a Ledger Statement to the Corps and DWQ each time credits are debited or additional credits are approved for release. If requested, the Corps may distribute the Ledger Statement to other members of the IRT or the public. In addition, the Bank Sponsor shall submit an Annual Ledger Statement to the Corps and DWQ for distribution to all members of the IRT, showing all transactions at the Catawba Umbrella Mitigation Bank for the previous year.

I. CONTINGENCY PLANS & CORRECTIVE ACTIONS

Should any report submitted by the Bank Sponsor to the Corps and DWQ note conditions requiring corrective action, the Bank Sponsor shall determine the cause of the condition, in consultation with the Corps and DWQ. If the Bank Sponsor, Corps, or DWQ determines that the problem is due to design, construction, or maintenance deficiencies, then the Bank Sponsor shall be responsible for corrective action.

Prior to commencing corrective actions, the Bank Sponsor shall submit a detailed proposal for such a corrective action to the Corps and DWQ for review and approval within 60 days of a determination by the Corps and DWQ, in consultation with the IRT, that corrective measures are warranted. Once approved by the Corps and DWQ, in consultation with the IRT, the Bank Sponsor shall undertake such corrective action and shall, upon completion, submit to the Corps and DWQ a summary of the work performed.

V. SERVICE AREA

The Catawba Umbrella Mitigation Bank will be established to provide effective off-site compensatory mitigation for unavoidable impacts to stream and wetland resources associated with regulated activities occurring within portions of the North Carolina Catawba River Basin. This Geographical Service Area includes all of the North Carolina portions of the Upper Catawba (03050101), the South Fork Catawba (03050102) and the Lower Catawba (03050103) Hydrologic Units (*refer to Exhibit D*).

The McDowell Bank Site is located in the Catawba-01 HUC. For the McDowell Bank Site, impacts located in Catawba-01 will typically use a 1:1 compensation ratio. Impacts located in Catawba-03 may be required to use a higher compensation ratio. Mitigation for impacts occurring within Catawba-02 may use the McDowell Bank Site if specified by the Corps in a separate memorandum, agreement, or permit condition.

VI. NEED FOR A BANK

The Catawba Umbrella Mitigation Bank's Geographical Service Area of the Catawba River Basin (*refer to Exhibit D*) includes the Charlotte region of North Carolina. According to the US Census Bureau, this region had a population growth of 312% from 1960 to 2006 (148% from 1990 to 2006).

Charlotte's position as a financial center and a city of many corporate headquarters indicates that continued development can be anticipated in the region. Along with this development, additional transportation and infrastructure needs will be required to support the growth in population.

The Charlotte region also includes the municipalities of Gastonia, Huntersville, Davidson, Mooresville, Statesville, and Hickory, all of which are experiencing rapid growth. According to the North Carolina State Data Center, the population in the 11 counties in the Catawba River Basin is projected to increase 48% from 2006 to 2030, from 1,829,946 to 2,702,017 people.

Already, the region has an acute need for mitigation for impacts to aquatic resources. The following proposed projects would potentially have mitigation needs:

- Charlotte Douglas Airport is adding an additional 9,000-ft runway and making improvements to surrounding roadways and commercial areas.
- Portions of NCDOT Divisions 10 and 12 are located within Catawba-01. The State Transportation Improvement Plan shows several projects proposed within the Catawba-01 watershed, including completing the I-485 loop from I-85 to I-77.
- The Town of Huntersville currently has approximately 40 proposed developments before their planning board.
- The Town of Huntersville has several plans/studies for roadway improvements and new roadway projects.
- The Town of Cornelius currently has 21 proposed developments before their planning board. The largest site is Augustalee (The Village at Lake Norman), a 105 acre development that includes widening approximately six miles of I-77, the addition of an interchange, and several road realignments and new alignments.

According to the EEP's Lower Catawba River Basin Restoration Priorities 2007 report:

> *"Land in the Charlotte area is heavily developed, making it challenging to find stream and wetland resources where there are landowners willing to participate in projects that meet EEP's criteria for restoration or preservation. Additionally, land scarcity and demand has appreciated the cost of completing projects. The result of these circumstances in the CU is that EEP has experienced difficulty finding mitigation sites that meet its criteria for project cost and size located where there are landowners willing to partner with EEP."*

In the EEP's 2006-2007 Annual Report, a discussion of in lieu fees for mitigation compensation indicates that:

> *"In order to preserve the program's fiscal stability, EEP is carefully considering each mitigation request submitted and will not accept mitigation requirements that cannot be met within existing fees."*

These factors indicate a substantial need for additional mitigation options in the Catawba River Basin of North Carolina.

VII. TECHNICAL FEASIBILITY

The McDowell Bank Site is currently primarily under agricultural use for livestock production. The combined streams that flow through the McDowell Bank Site are tributaries to McDowell Creek. These tributaries drain a total area of 604 acres of predominantly agricultural and single family land uses.

Trends in the Charlotte region indicate that Huntersville is a rapidly-developing area. Within the past ten years, two residential subdivisions were developed just south of the McDowell Bank Site. Although development has been delayed by recent economic conditions, the town of Huntersville has approved two subdivision plans for tracts of land adjacent to the McDowell Bank Site, to the east and to the north, as well as several other tracts nearby.

It is likely that developmental pressures will also eventually lead to residential subdivision development on the parcels that make up the McDowell Bank Site. However, as early as 2003, Huntersville adopted proactive stormwater regulations. Huntersville is also a community that is affected by the EPA NPDES Phase II Storm Water Quality regulations. New developments are required to provide storm water management plans, including water quality BMPs. These measures, along with the buffers provided by the Conservation Easement, will help lessen the effect of future development on the health of the restored and enhanced stream reaches in the McDowell Bank Site.

Currently, the majority of the McDowell Bank Site is open pasture with easy access and few constraints. Cattle will be excluded from the conservation easement by constructing fencing. Existing constraints consist of property boundaries and a single power easement (aerial on poles). The utility easement will not be co-located within the conservation easement. The proposed restoration areas for the McDowell Bank Site include portions of five parcels. Approximately 80% of the proposed stream restoration reaches are located on one parcel (Barnette), and 100% of the proposed wetland restoration areas are also located on the same single parcel.

The existing streams are severely degraded and currently accessed by livestock. The region is becoming increasingly urbanized, with anticipated rapid development in the near future, as outlined in the Town of Huntersville's Beaties Ford Road Corridor Small Area Plan 2007.

Because of the proximity to the primary source of drinking water for Charlotte-Mecklenburg, Mountain Island Lake, McDowell Creek is classified as WS- IV (Protected Area), a Water Supply stream. Since 2000, McDowell Creek has been a 303(d) listed stream, currently

categorized as having "Overall Impaired Biological Integrity." As early as 2002, the North Carolina Wetlands Restoration Program identified McDowell Creek (03050101170010) as a Targeted Local Watershed, noting a downward trend in water quality.

Through a cooperative program, in 2007 the EPA and DWQ designated McDowell Creek as a "Restoration Watershed," indicating that it has a high priority for restoration efforts and is eligible for restoration grant funding. Mecklenburg County has developed a Management Plan for the McDowell Creek Watershed. In their March, 2008 report, the sub-basin where the McDowell Bank Site is located is identified as having "Very Unstable" banks, with high erosion rates.

Considering the lack of physical constraints, the ease of access, the poor state of the existing streams, the critical watershed characteristics, the anticipated future development pressure of the region, and the willingness of the property owners, the McDowell Bank Site is ideal for the proposed restoration work. The current economic conditions have provided a temporary respite from the rapid pace of development in the area, allowing an opportunity to establish the McDowell Bank Site.

A. WATER RIGHTS

Sufficient water rights exist to support the long-term sustainability of the McDowell Bank Site. These streams are near the headwaters of a natural drainage system. The streams will be restored and enhanced to improve interaction with the floodplain, which will help to sustain vegetation in the Riparian buffers. No disturbance to the upstream watershed which would negatively affect or divert flow in these streams is anticipated.

B. ECOLOGICAL SUITABILITY & BASELINE CONDITIONS

Information collected thus far documenting the baseline conditions for the McDowell Bank Site, including existing topography, hydrology, soil, vegetation, wetlands, and wildlife conditions, are presented in the Ecological Suitability and Baseline Conditions Report, Exhibit B.

VIII. LOCATION & OWNERSHIP

The proposed McDowell Bank Site is located on an unnamed tributary to McDowell Creek in northern Mecklenburg County. The McDowell Bank Site involves portions of five parcels:

- Parcel ID# 01502113 (Barnette) 129.415 acres
- Parcel ID# 01502124 (Freeney) 16.180 acres
- Parcel ID# 01502128 (Quan) 8.234 acres
- Parcel ID# 01540104 (Gordon-Nassar) 12.903 acres
- Parcel ID# 01540102 (Gordon-Nassar) 51.957 acres

The current property owners have agreed, through the sale of a perpetual conservation easement, to convey the right to develop a mitigation bank to the Bank Sponsor, Mid-Atlantic Mitigation, LLC. The total area of the parcels is 218.689 acres. The property

owners will retain fee-simple ownership of the land, but the conservation easement will eventually be turned over to an approved land steward, according to the terms of the UMBI.

The total area of the perpetual conservation easement for the restored and enhanced streams, wetland areas, and Riparian buffers will be approximately 25 acres. Upon closure of the McDowell Bank Site, the perpetual conservation easement will be transferred to the long-term land steward, such as the Catawba Land Conservancy.

IX. LONG-TERM MANAGEMENT

As described above, the Bank Sponsor shall conduct maintenance and monitoring of the McDowell Bank Site for its operational life. The McDowell Bank Site will be closed at the end of its operational life, which is five years (streams) to seven years (forested wetlands) from the date of the completion of the grading and planting tasks, successful completion of all performance standards, or until the sale of all credits, whichever comes last.

After that, land stewardship and management of the easement will become the responsibility of the approved third-party long-term land steward. The UMBI will include a Long-Term Management Plan that describes the long-term management activities to be conducted by the approved third-party long-term land steward. The long-term land steward will be identified and approved by the IRT prior to closure of the McDowell Bank Site. A possible land steward is the Catawba Lands Conservancy.

Endowment funds will be provided to the approved long-term land steward. The amount of funds provided will be determined based on an estimate for maintenance activities contained in the Long-Term Management Plan and administration costs. This will be an agreement between the Bank Sponsor and the Land Steward.

The McDowell Bank Site will be protected in perpetuity by the recorded Conservation Restriction.

X. BANK SPONSOR QUALIFICATIONS

The Bank Sponsor, Mid-Atlantic Mitigation, LLC (Mid-Atlantic), is a wetland and stream mitigation provider that delivers quality turnkey mitigation and mitigation banks for various clients within both the public and private sector throughout the eastern seaboard. The company is a consolidation of third and fourth generation professionals with more than 200 years of combined successes. Mid-Atlantic staff have established an unparalleled track record for successfully permitting mitigation banks and efficiently transferring credits to satisfy permit-related mitigation requirements.

Mid-Atlantic is located in Concord, North Carolina, and is a subsidiary of EarthMark Mitigation Services, LLC based in Fort Myers, Florida. The North Carolina office provides expert "full delivery" wetland and stream restoration and enhancement projects for the NCEEP and private clients. The EarthMark family of companies has over twenty years of combined wetland consulting experience. The Mid-Atlantic Team is led by Richard Mogensen (Point of Contact).

Representative Projects

The Pott Creek Mitigation Bank in Catawba County, NC, is a 75-acre bottomland hardwood and stream restoration site built for the NCDOT by principals now with Mid-Atlantic. The project included the restoration of floodplain wetlands previously channeled and drained for pastureland associated with a cattle operation. A natural stream channel was re-established through the previously ditched area. Construction was completed in the spring of 2002.

Mid-Atlantic completed the adjacent Pott Creek II restoration project for the NCEEP in 2005. The project includes approximately 94 acres in Catawba County, NC. Over 10,000 linear feet of stream was restored to offset future road and development projects in the Catawba River Watershed, making it the largest successfully undertaken restoration of its kind in the region. Original land use at the site was primarily associated with cattle operations, allowing for direct livestock access to the main branch and tributaries of Pott Creek. In addition, Pott Creek had previously been dredged and channelized. Stream banks were actively eroding throughout Pott Creek and its tributaries. As part of reconstruction efforts, new channels were added via natural channel design methodologies, Riparian buffers were established throughout the floodplain areas, and existing wetlands were preserved.

The Tarlton Creek restoration project is an approximately 17-acre site in Fayetteville, Cumberland County, NC. The project restored 3,800 linear feet of stream and 8 riverine wetland mitigation units for the NCEEP. Several dam failures of the historical residential lake had been neglected, which led to an unsightly, stagnant impoundment area. The project removed the remnants of the old dam failures (including a beaver dam) and removed the beaver from the area. A natural stream channel and associated wetlands were restored, allowing the area to once again function in its pre-impoundment condition. Natural stream channel design and wetland vegetative plantings re-established a fully functioning stream and wetland complex ecosystem. These functions include flood storage, water-quality improvements, and wildlife and fish habitat. Construction was completed in 2006

The Stricker Branch project is approximately 8 acres near downtown Concord in Cabarrus County, NC. The project will restored 3,000 linear feet of stream along Stricker Branch, a tributary to Irish Buffalo Creek, for the NCEEP. Stricker Branch was historically dammed to create a mill pond for use by the adjacent textile mill. The redevelopment of the textile mill site utilizes the Stricker Branch easement as an open space amenity. Construction was completed in 2007.

The Reeds Creek project is a 14-acre site in Iredell County, near Mooresville, NC, immediately adjacent to Lake Norman. The project combined enhancement and restoration to provide 5.3 riverine wetland mitigation credits to the NCEEP, as well as several acres of preservation. The site had seen many uses, including goat grazing and sand dreading in Reeds Creek, which runs along the northern border of the project. This project provided protected open space and buffer to Lake Norman and the Catawba River Lake System, including Mountain Island Lake, which provides drinking water for the Charlotte Metro Area. Restoration activities included re-establishing micro-topography for tree and shrub planting, and minimizing grading to facilitate more natural over bank flooding. Construction was completed in 2007.

The Forrest Creek Mitigation Bank project, located near Hillsborough, NC, was originally proposed as a "Full-Delivery" stream restoration project to the NCEEP. Located on an active diary farm, the project restored approximately 10,000 linear feet of second and third order streams with associated buffers in the Neuse 01 HUC. The restoration work provided close to 8,000 SMUs and 15 acres of BMUs. Construction was completed in June 2008.

EXHIBIT A

PROJECT LOCATION

(source: Google Maps)

Estes Design Inc.
Environmental Design & Consulting
PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

VICINITY MAP

(source: Google Maps)

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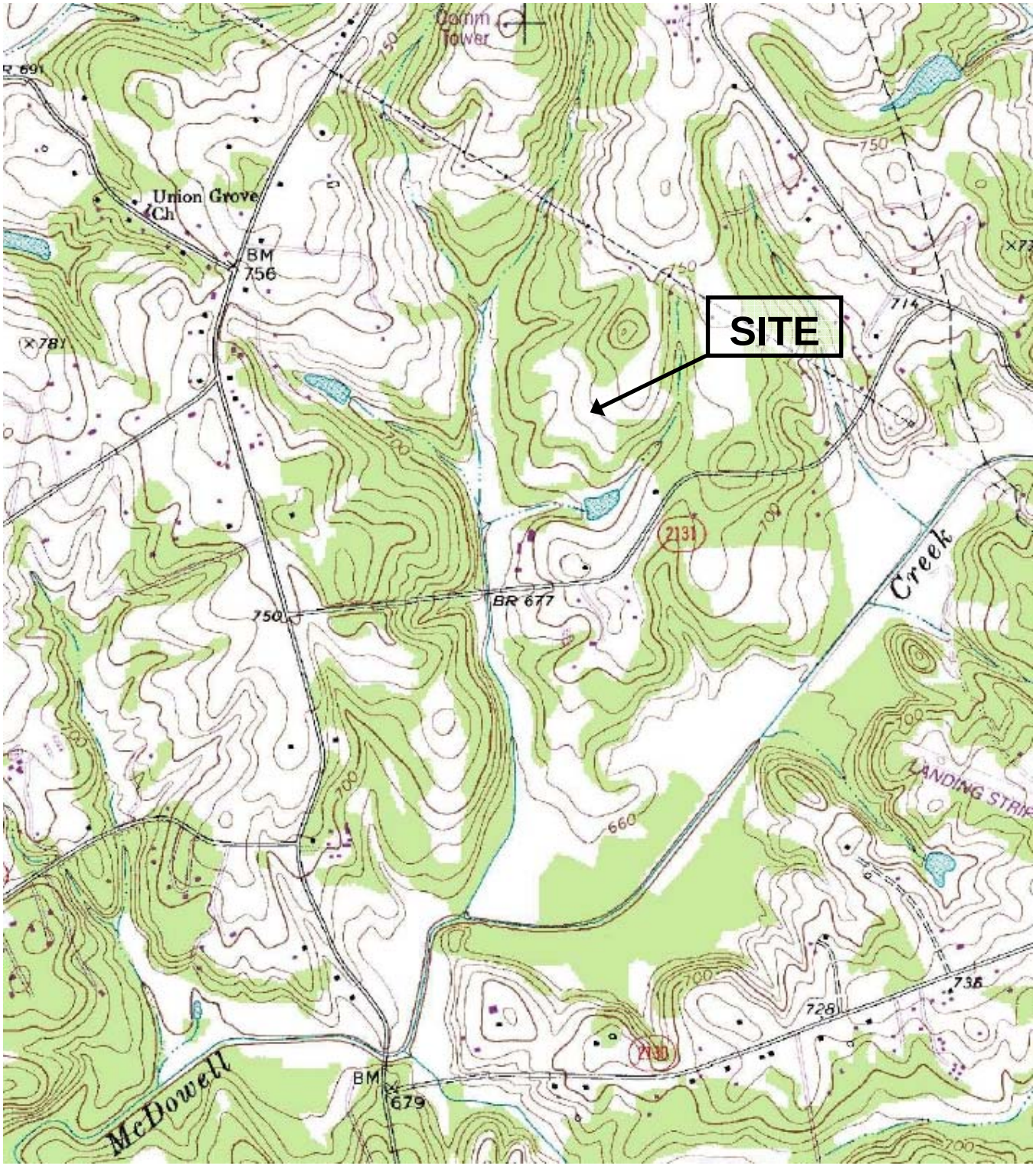
Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

VICINITY MAP



(source: USGS Lake Norman South 7.5 Minute Quadrangle, 1993)

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PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

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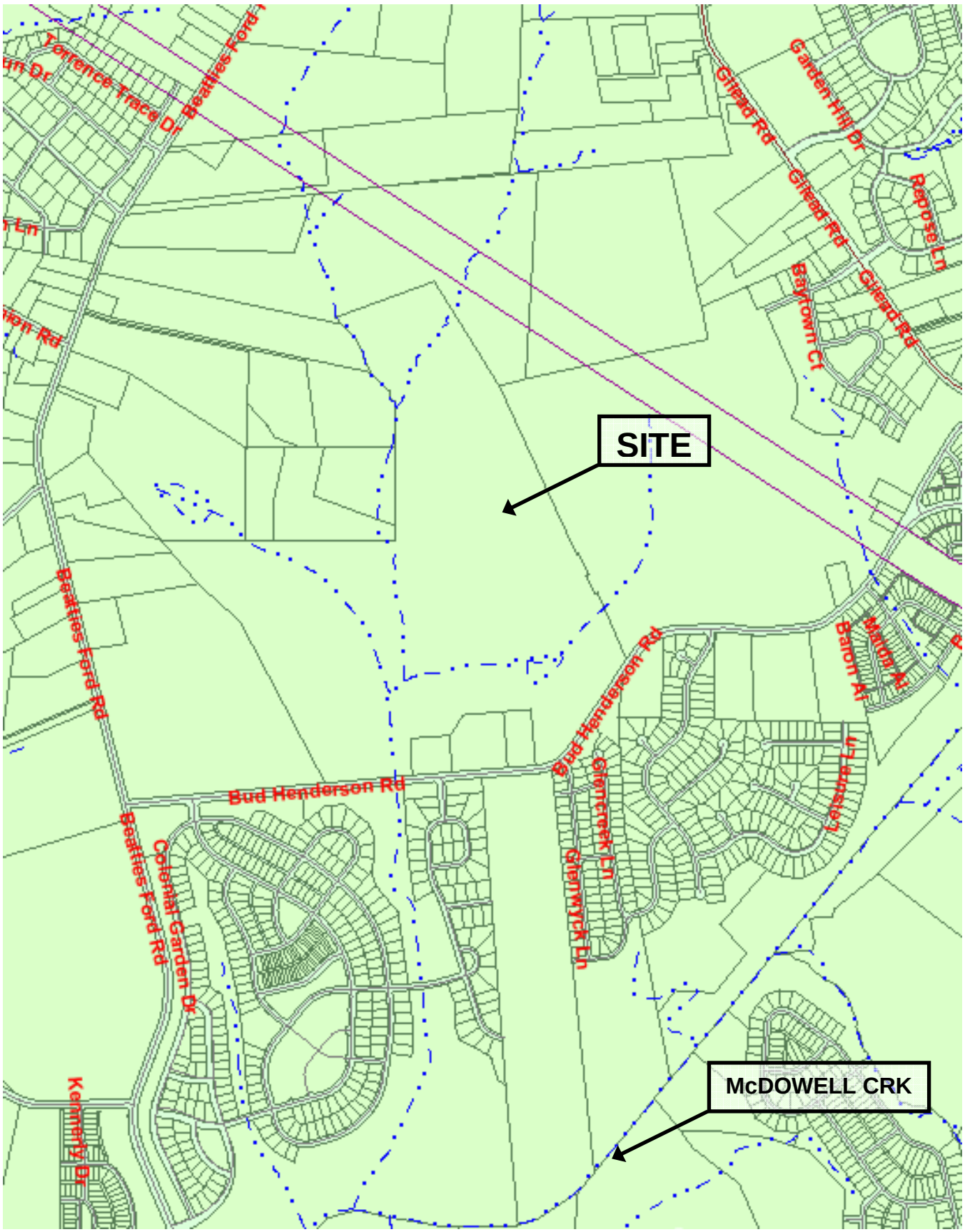
USGS TOPOGRAPHIC MAP



(source: Mecklenburg County POLARIS)

Estes Design Inc.
Environmental Design & Consulting
PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

MECKLENBURG POLARIS GIS MAP

EXHIBIT B

ECOLOGICAL SUITABILITY
&
BASELINE CONDITIONS

ECOLOGICAL SUITABILITY & BASELINE CONDITIONS

The McDowell Creek Tributary Site of the Catawba River Wetland and Stream Umbrella Mitigation Bank (McDowell Bank Site) is located in the Catawba River Basin (Upper Catawba, HUC 03050101) on an unnamed tributary to McDowell Creek, in the Town of Huntersville in Mecklenburg County, North Carolina. Exhibit A includes vicinity maps, as well as an annotated USGS 7.5-minute quadrangle map excerpt, showing the site location, local topography, surface water, and cultural features.

McDowell Creek is classified by DWQ as a Water Supply stream (WS- IV, Protected Area). McDowell Creek has been a 303(d) listed stream since 2000. It is currently categorized as having "Overall Impaired Biological Integrity." In 2002, the North Carolina Wetlands Restoration Program (now the EEP) first identified McDowell Creek as a Targeted Local Watershed (14-digit HU 03050101170010).

Even earlier, in 1948, the Kelly Farm, which included portions of Reaches 1, 3 and 5 of the McDowell Bank Site, was noted as the "most eroded and run-down farm in the county," and was selected for extensive revamping on "Miracle Farm Day." According to an article in the Mecklenburg Gazette, "over a half-million dollars worth of farm equipment, manned by some 300 men" worked all day on October 14, 1948 to accomplish a farm improvement plan. The plan, developed by the head of the Mecklenburg County Soil Conservation Department, focused on terraced crops. The Department lists "Miracle Farm Day" as their first historical highlight on their web page.

The McDowell Bank Site is still being used agriculturally, primarily for livestock production. Four streams come together on the tract before leaving the site by crossing under Bud Henderson Road. The channels in Reaches 1, 2, 3, 5 and 6 are within the Rosgen Gc classification range. According to the Stream Channel Succession model reported by Schumm, et al. (1984) and Simon and Hupp (1986), the existing channels are in the early succession stages of degradation. The upstream portion of Reach 4, above the proposed project, is also within the G classification range. Reach 4 has been spared the same level of incision due to the construction of the existing pond.

The project streams have also been degraded by cattle actively accessing the creeks, as evidenced by cattle carcasses in the streams and deeply incised cattle crossings. Cattle will be excluded from the conservation easement, as part of the plan.

An existing 1 acre agricultural pond is located along the eastern tributary, Reach 4. This pond is also being actively accessed by cattle. In addition, between the confluence of Reach 3 and Reach 5, an approximately 3 acre area exhibits limited wetland hydrology. This area was previously drained for agriculture, as evidenced by an existing agricultural ditch. Hydric soil indicators are present in this area.

As noted above, the site and surrounding area has been historically used for crop and livestock production. The remaining properties that surround this site are rapidly urbanizing as Huntersville development moves west from I-77.

The Bank Sponsor, Mid-Atlantic Mitigation, LLC, proposes to restore natural stream and wetland hydrology to support a thriving riparian ecosystem. Existing information has been reviewed and utilized as much as possible to assist in assessing the ecological suitability of the site and developing the conceptual design for the McDowell Bank Site.

Numerous articles and reports, including the EEP's Catawba River Basin Watershed Restoration Plan, the Guide to the NCWRP's Watershed Restoration Planning Strategy, the 2004 Catawba River Basinwide Water Quality Plan, and Mecklenburg County's McDowell Creek Watershed Management Plan, were consulted.

The Catawba River Basinwide Water Quality Plan was especially useful. It describes a non-regulatory, watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. This report identifies water quality problems for restoration, high value resource waters, and unimpaired waters for protection. The McDowell Creek Watershed Management Plan also details the need for restoration in the watershed.

The baseline conditions, topographic mapping, current site conditions, and restoration strategy will all be utilized to develop the Final Mitigation Plan that will be included in the Umbrella Mitigation Banking Instrument (UMBI).

1. PHYSICAL CHARACTERISTICS

1.1 TOPOGRAPHY

Topographic elevations at the McDowell Bank Site range from 726 to 777 feet above mean sea level, according to the 2007 Mecklenburg County LIDAR. The site is composed of mostly moderate to steep sloping terrain. The site is dissected by six stream reaches that come together to form an unnamed tributary to McDowell Creek.

The Bank Sponsor will subcontract with a NC Licensed Land Surveyor to conduct on-site ground survey. Topographic mapping for the site and surrounding area will be completed to accurately map proposed restoration areas. All planimetric features including, but not limited to, roads, berms, swales, structures and utilities will be located. All water features will be surveyed. Several channel cross-sections will be measured. A surface topography map with 1 foot contours will be compiled and used as the basis of the design plans.

1.2 HYDROLOGY AND HYDRAULICS

Data has been collected and studied on the hydrology, hydraulics, and physical dimension of the streams. However, to ensure a complete understanding of proposed wetland hydrology, the McDowell Bank Site Team (Mid-Atlantic Mitigation, LLC and Estes Design, Inc.) installed several Infinity self-reading groundwater gauges on the site to accurately assess the existing and proposed hydrology of the proposed wetland areas. The gauges were surveyed and will be monitored for subsequent data analysis. Additional groundwater gauges will be placed in the drained pond once construction is complete.

The groundwater gauges will be monitored for several months during the growing season. A hydrologic and hydraulic analysis will be performed, including a water budget simulation of the proposed riparian wetland design, incorporating the groundwater level monitoring program. The target restoration hydrology for the riparian wetland is currently envisioned to be a forested wetland system.

The McDowell Bank Site Team will study discharges for the bankfull, 1-year, 2-year, and 100-year storm events for the proposed streams of the McDowell Bank Site. An additional sequence of discharges will be calculated based on fully developed conditions within the watershed. This ultimate development discharge will serve as the baseline for analyzing proposed capacity above existing bankfull, and for studying long term stability.

1.3 SOILS AND GEOTECHNICAL CHARACTERISTICS

Mapped soils on the McDowell Bank Site include Cecil, Enon, Mecklenburg, Monacan and small areas of Pacolet. All of the land area where proposed restoration activities will take place is composed of the mapped soil unit Monacan.

According to the Natural Resources Conservation Service (NRCS), Monacan soils are classified as fine-loamy, mixed thermic Fluvaquentic Eutrochrepts. The Monacan series consists of somewhat poorly drained, moderately permeable soils that formed from recent alluvium. The organic content is low in the surface layer of this Lignum soil. The permeability is slow and runoff is medium. The water table is below 5 feet with the exception of a perched water table at 1 to 2.5 feet during wet seasons (Apparent Water Table, November-May). The depth to bedrock ranges from 48 to 72 inches (Soils Survey of Mecklenburg County 1980). This Monacan series is listed on the Hydric Soils of North Carolina list (NRCS, 1995)

The McDowell Bank Site Team has assessed the soils and is currently assessing the water table on the Site. Based on our subsurface investigations, it appears that former hydric soils exist in the areas proposed for wetland restoration. The McDowell Bank Site Team is conducting laboratory testing to further evaluate the soils types within the Site and assess constructability. Based on review of soil boring logs and physical testing data gathered from the subsurface investigations, subsurface soil mapping will be prepared to aid in excavation planning and wetland design. Information obtained will be used to identify the physical characteristics of the material to be excavated and to identify any special construction concerns.

2. CHEMICAL CHARACTERISTICS

2.1 WATER QUALITY

Surface waters on and in the immediate vicinity of the McDowell Bank Site have an NCDENR biological classification of poor. The entire length of McDowell Creek is on the State's Impaired 303(d) list.

In 1991 and 1992, a decrease in water quality in the McDowell Creek arm of Mountain Island Lake, downstream of the McDowell Creek Waste Water Treatment Plant (WWTP), was observed by the Mecklenburg County Department of Environmental Protection (MCDEP). In response to concerns regarding the decrease in water quality in the McDowell Creek arm of Mountain Island Lake and at the request of MCDEP, DWQ conducted a joint study with MCDEP in 1994 to address nutrient contributions from the McDowell Creek WWTP.

Mecklenburg County and DWQ performed a study to monitor and document nutrient loading throughout the McDowell Creek watershed and the impact of nutrients on the McDowell Creek Arm of Mountain Island Lake for the 1995 basin-wide plan. The study was designed to address nutrient contributions by the McDowell Creek WWTP, operated by Charlotte-Mecklenburg Utilities (CMUD). Sampling stations were located above and below the WWTP discharge. This study indicated that the CMUD McDowell Creek WWTP was the largest contributor of nutrients to the McDowell Creek Arm of Mountain Island Lake.

The basin-wide plan also identified other lesser sources of nutrient contributions upstream of the facility: cattle, dairy and row crop agriculture, along with land clearing activities associated with residential and commercial development.

Although high nutrient levels were found in McDowell Creek due to the discharge from the McDowell Creek WWTP, problematic algal bloom conditions were not generally found in the McDowell Creek arm of Mountain Island Lake. The NPDES Permit sets nutrient limits of 10 mg/l total nitrogen and 1 mg/l total phosphorus effective upon expansion above 3.5 MGD. The WWTP facility expanded in 1999 and is now subject to nutrient limits. These process changes should result in significant reductions in nutrient loading.

McDowell Creek may be suitable for local actions under the Mecklenburg County Surface Water Improvement and Management (SWIM) program to address the nonpoint source contributions to degradation.

According to the McDowell Creek Basin-Wide Management Plan, “Given the highly urbanized nature of the watershed, it will be challenging and costly to conduct enough mitigative activities in the watershed to result in measurable improvements. DWQ will work in cooperation with Mecklenburg County, where possible, to develop management strategies for stream restoration.”

The McDowell Bank Site is currently a significant source of nutrients due to livestock production. This project will help improve the water quality in McDowell Creek.

3. BIOLOGICAL CHARACTERISTICS

3.1 BASELINE PLANT AND WILDLIFE SURVEYS

The McDowell Bank Site Team understands that plant and wildlife resources in the vicinity of the McDowell Bank Site have been assessed in the past. Also,

Mecklenburg County has a water quality monitoring station in this tributary downstream of the McDowell Bank Site and above the confluence with McDowell Creek. This existing data will be used to document the nature of existing biological resources at the site. Supplemental biological studies of the Site will be conducted to establish baseline conditions for regulatory approval.

3.2 WETLANDS AND WATERS OF THE U.S.

McDowell Creek is the nearest named surface water body, flowing south of the Site. The Site is located within the McDowell Creek Drainage Basin, which is an EEP Targeted Local Watershed (14-digit HU 03050101170010), which drains 38 square miles of land (EEP Lower Catawba River Basin Restoration Priorities 2007).

The US Fish and Wildlife Service Digital Mapper does not indicate any mapped wetlands on the Site. The Site consists primarily of pasture land with fragmented forest. While streams and wetlands on the property have been delineated previously, Estes Design has delineated the wetland boundary on the site to reflect current conditions and will submit a Jurisdictional Determination request to the Corps. The delineation determined the presence of wetlands within the project limits pursuant to the Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory 1987). Wetland boundaries were flagged in the field for survey. The McDowell Bank Site Team will meet with Corps personnel at the site to review the wetland line and delineation methods.

3.3 THREATENED AND ENDANGERED SPECIES

The North Carolina Natural Heritage Database and U.S. Fish & Wildlife Service have been contacted for information regarding potential threatened and endangered species and essential fish habitat occurring within the project area.

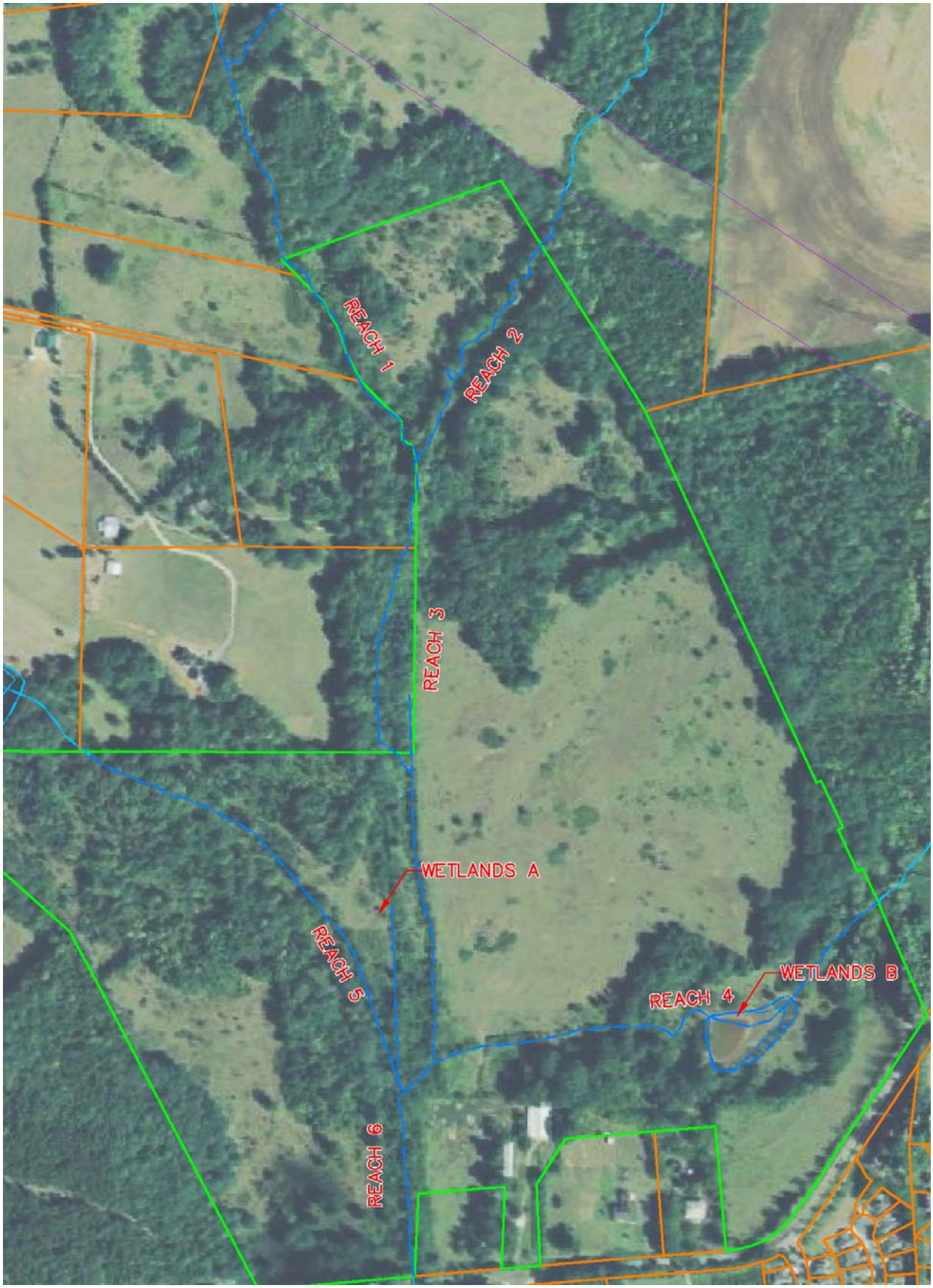
Estes Design personnel have not discovered any indication of endangered or threatened species during multiple site visits and surveys.

4. CULTURAL RESOURCES

Cultural resources on the McDowell Bank Site have been reviewed and the State Historic Preservation Office (SHPO) has been contacted regarding the site.

5. CONCLUSIONS

All information collected to date indicates that the site is ecologically suited to be established as a stream & wetland mitigation bank.

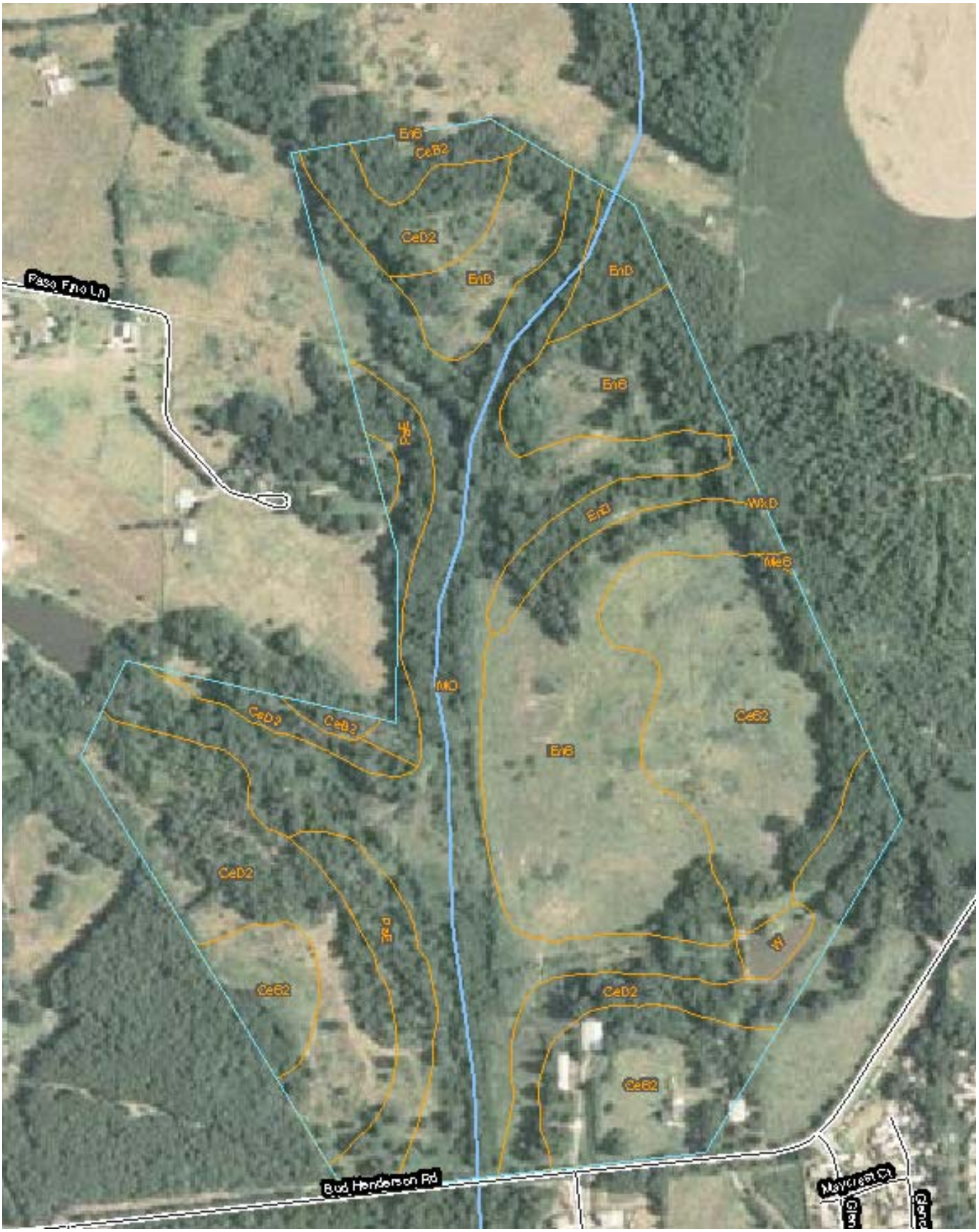


(source: Mecklenburg County POLARIS)

Estes Design Inc.
Environmental Design & Consulting
PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

AERIAL MAP



(source: USDA Web Soils Survey)

Estes Design Inc.
Environmental Design & Consulting
PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

SOILS MAP

EXHIBIT C

CONCEPTUAL DESIGN PLAN

CONCEPTUAL DESIGN

Overview

The McDowell Bank Site Team has developed a preliminary Conceptual Design Plan for the Site, which is described below. A copy of the Conceptual Design Plan is included at the end of this Exhibit, along with preliminary representative cross sections. The design plan will be further developed once detailed site topography, soils, hydrology, vegetation, and other studies are completed. This report is not intended to substitute for the Restoration Plan, and preliminary concepts presented here are not intended to represent the final design criteria.

Livestock Management

Currently, the McDowell Bank Site is primarily used for cattle grazing. In some areas, soils are compacted and vegetation is absent due to cattle foraging. The design will include livestock fencing at the perimeter of the conservation easement, to preclude open access to the restored areas. In conjunction with site construction and planting, a livestock management plan will also be implemented.

Conceptual Design Approach

The objective of the stream and wetland restoration at the McDowell Bank Site is to restore approximately 9,600 linear feet (lf) of streams, enhance approximately 1,000 lf of streams, and restore approximately 4 acres of wetlands. These areas will then be preserved in a perpetual conservation easement (*refer to the Conceptual Design Plan at the end of this Exhibit*).

Specifically, the intent is to restore stable channel morphology to approximately 9,600 lf of steam utilizing a Priority 1 level of restorative design, to improve channel geometry, stability and vegetative diversity for approximately 1,000 lf of streams through Enhancement Level 1, and to restore approximately 3 acres of bottomland forested wetlands (located between Reaches 3 & 5). An additional 1 acre wetlands area will be established by restoring an old agricultural pond to a bottomland forested wetland. The pond is partially breached and currently being accessed by cattle.

Several considerations were taken into account in the preliminary channel design, including:

- Location in a rapidly urbanizing watershed
- High nutrient load from current agricultural practices
- Site history and conditions, such as constructed agricultural drainage ditches and straightening of channels, and patches of mature forest
- Constraints from adjacent residents, utility corridors and property boundaries
- Future greenway trail plans

The restoration design approach is described in the **Streams** and **Wetlands** sections below.

To achieve the objectives of the McDowell Bank Site, the following specific goals must be met:

- Reduce water quality impacts resulting from existing non-point sources, stream bank erosion and bed degradation
- Reduce the potential for future water quality impacts resulting from a rapidly urbanizing watershed
- Reduce existing and future high nutrient load and erosion by effectively managing existing livestock
- Design for maximum avoidance of adjacent utility conflicts
- Improve the aquatic habitat diversity through the enhancement of stream riffle-pool bed variability with the use of in-stream structures and connection to floodplain wetlands
- Improve terrestrial and aquatic habitat biodiversity by restoring vegetative riparian buffers and vegetated channel banks utilizing native plant species
- Improve the aesthetics and values for the current property owners
- Create the opportunity for long term public education

The Center for Watershed Protection developed a system (Schueler, 1995) for analyzing imperviousness (development) effects on streams. This system categorizes sensitive streams *(easily thrown out of equilibrium)* as those in watersheds with less than ten percent impervious surfaces. Even small changes in impervious area within these watersheds that currently have less than ten percent impervious surfaces can quickly lead to severe erosion problems in the receiving streams. Given the current conditions at the McDowell Bank Site and the surrounding area, the stage is set for rapid and long term degradation of these streams.

The goals of the McDowell Bank Site project are targeted to address the specific problems of urbanization, nutrient loading, and deforestation associated with this sub-basin. The goals take into consideration that, within a few years, the project watershed will be built out to almost 40 % impervious area.

Streams

The existing project streams on the McDowell Bank Site are 1st and 2nd order streams that contribute to McDowell Creek. McDowell Creek is an Impaired 303(d) stream, with a biological classification of "Poor," due to nutrient and sediment loading. Six Stream Reaches are included in the McDowell Bank Site.

Project Reaches 1 and 2 exhibit severe incision and mass wasting of the banks due to historic agricultural practices. Reaches 3, 4, 5 and 6 are incised and severely degraded channels that show signs of down-valley meander migration and mass wasting of their banks.

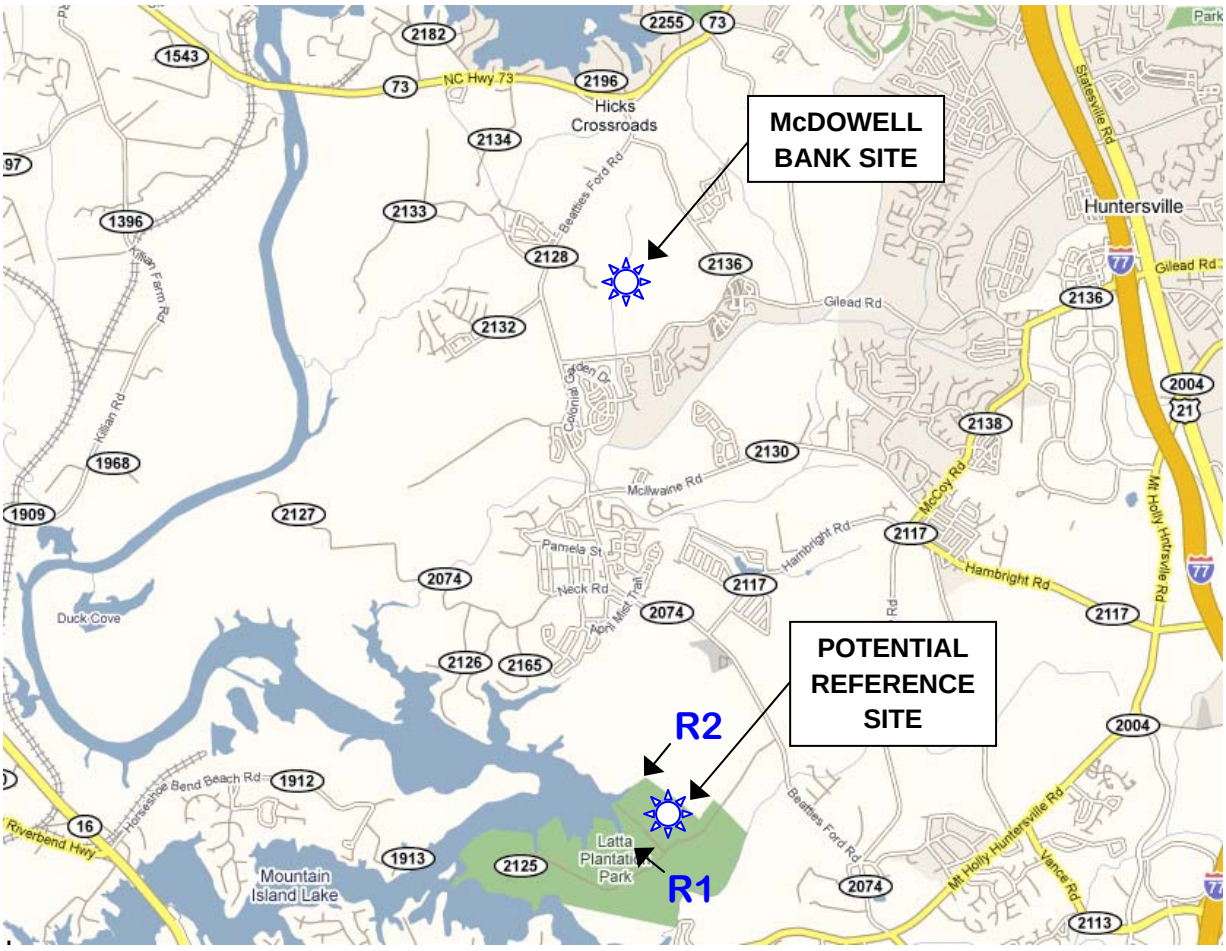
The lack of riparian vegetation and grazing along portions of the streams has resulted in the entire stream corridor being highly susceptible to continued erosion. Mecklenburg County's McDowell Creek Watershed Management Plan identified the McDowell Bank Site sub-basin as having the greatest erosion rate in the McDowell Creek watershed.

A targeted Priority I restoration approach is proposed for Reaches 3, 4, 5 and 6, and for portions of Reaches 1 and 2 above their confluence. These reaches will be restored to their appropriate geomorphic dimension, pattern, and profile, so that they are capable of moving the flows and sediment provided by their watersheds, in order to achieve dynamic equilibrium.

With careful consideration of the existing patches of mature forest, the channels will be realigned to maximize their connection to the floodplain. The restored channels will be designed such that over bank flow events dissipate energy and improve and maintain a healthy hydrology for the existing and restored wetlands.

In the upper portions of Reaches 1 and 2, Enhancement Level 1 is proposed to correct incision and unstable banks by re-establishing their appropriate geometry and profile.

A Reference Reach will be used to guide the stream restoration design. Two potential reference reaches have been identified, both within the Latta Plantation Park and Nature Preserve, nearby. These reaches are both unnamed tributaries to Mountain Island Lake.



Reference Stream 1 has a drainage area of 24 acres, bankfull width of 6.5 ft, and bankfull depth of 0.9 ft (w/d=7.2). Reference Stream 2 has a drainage area of 141 acres, bankfull width of 7.0 ft, and bankfull depth of 1.3 ft (w/d=5.4). Each reach will be surveyed further to verify its suitability as a Reference Reach, with consultation with the Corps and the IRT.

The anticipated design is a stable Rosgen-E to Bc channel with a minimal width-to-depth ratio. Natural stone riffles, consisting of mixed river stone to increase benthic habitat, are proposed for this design. The channel geometry will be designed to promote the appropriate sediment transport regime and over bank flow. Structures such as rock vanes, rock cross-vanes, and root wads will be incorporated into the design where necessary to assure stability and to restore aquatic habitat to the channel (*refer to the Conceptual Design Plan at the end of this Exhibit*).

Although the rapid growth in surrounding areas increases developmental pressures in this subbasin, the Town of Huntersville has adopted stringent stormwater runoff regulations. For this reason, the impact of future development will be lessened by requirements for Water Quality BMPs. With this in mind, a two-stage cross section for the restored stream reaches is anticipated, where the first stage will be designed for bankfull events based on existing conditions, and the second stage will be sized to handle channel-forming flows for built-out conditions. A representative section is included with the Conceptual Design Plan.

Wetlands

Two areas of restored wetlands are proposed for the McDowell Bank Site. The overall wetland goals are to maximize wetland functions and services and develop native vegetation and habitat.

A previously drained 3 acre wetland (proposed Wetland A) exists at the confluence of Stream Reaches 3 and 5. Soils and vegetation indicate former hydric conditions which have been reduced by the existing agricultural ditch, shown in Exhibit B.

The existing agricultural pond (proposed Wetland B) is located in the south east corner of the McDowell Bank Site. The pond is partially breeched and accessed by cattle.

The intended hydrologic regime for forested wetlands is a seasonally saturated condition capable of supporting a forested wetland system. For a seasonally saturated wetland, a seasonally high water table must be within the root zone (i.e., approximately 12 inches from the ground surface) for a minimum of 5% to 12% of the days during the growing season. The design will provide for a minimum of 14 days of continuous soil saturation within the root zone (upper 12 inches) during the growing season for a normal precipitation year.

Groundwater monitoring gauges have been installed within the site to monitor groundwater elevations through the early spring to support the development of a water budget. In conjunction with the stream restoration plans, the water budget will be used to verify appropriate grades that will provide the appropriate wetland hydrology criteria during a normal to wet year. Hydrologic input to the wetland mitigation site will consist of groundwater, direct precipitation, and surface runoff from the adjacent watershed and

overbank flow from the proposed stream restoration. A detailed water budget will be developed for each wetland restoration area.

For Wetland A, the specific goals are to restore the hydrology by closing the existing agricultural ditch, to establish a more natural hydrologic connection to the restored streams, and to eliminate the open access by cattle. This restored wetland will be a key component in establishing vegetated riparian buffers along the new channel alignment. The hydrology will be re-established by bankfull flooding and the existing seasonally high water table. The wetland design will be refined based on the groundwater data. It is proposed to be designed as Palustrine Bottomland Forested Wetland with a seasonally saturated water regime (Bottomland Hardwood Forest, per NCWAM or PFO1A, using the Cowardin System).

For Wetland B, the specific goals are to eliminate access by cattle, and to allow stream flow and aquatic passage by removing the current hydraulic barrier of the old dam. The stream will be restored on the south side of the pond to allow floodplain connectivity. The wetland currently receives stream flow and will be designed as Palustrine Bottomland Forested Wetland with a seasonally saturated water regime (Bottomland Hardwood Forest, per NCWAM or PFO1A, using the Cowardin Classification System).

Both wetland restoration areas will be hydrologically enhanced by the stream restoration work and will be planted with native species.

Planting and Seeding

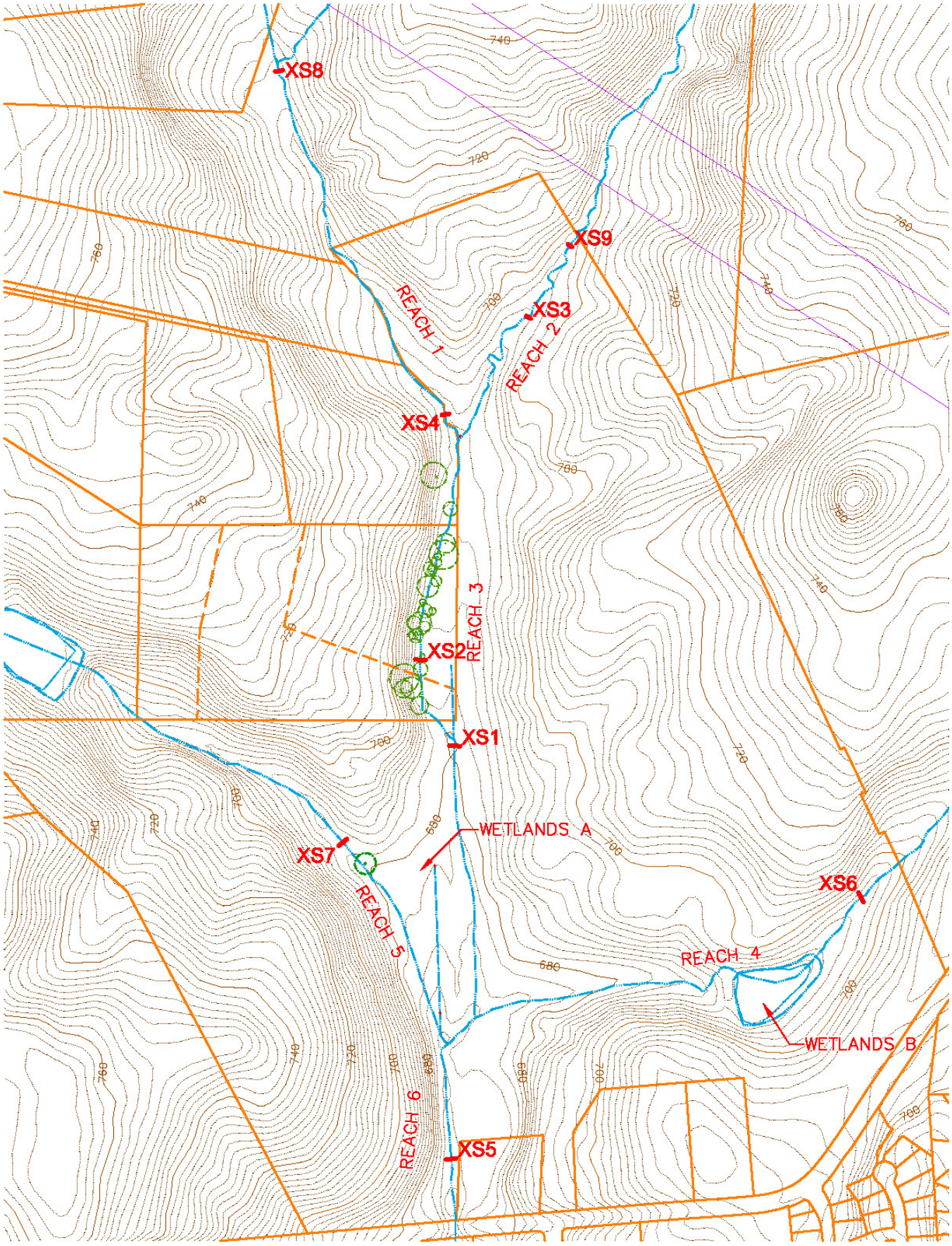
The planting and seeding plan for the riparian areas and forested wetland areas will be similar. A reference area will be used to determine specific species, densities and planting zones for both stream and wetland areas.

The plant material will be installed in a naturalized pattern to provide a relatively even distribution of each species across the planting areas at the specified densities. The plant material will consist of a mix of hardwood trees and shrubs. The entire area will be seeded with a mix of native grasses, rushes, sedges, and forbs to reduce erosion and encouragement rapid cover of exposed soils.

Invasive Species

Based on conditions within the McDowell Bank Site boundary, it is expected that Elaeagnus (*Elaeagnus pungens)* will be the primary invasive species of concern. Other species of concern include, but are not limited to, Multiflora Rose (*Rosa multiflora*), and Chinese Privet (*Ligustrum sinense*).

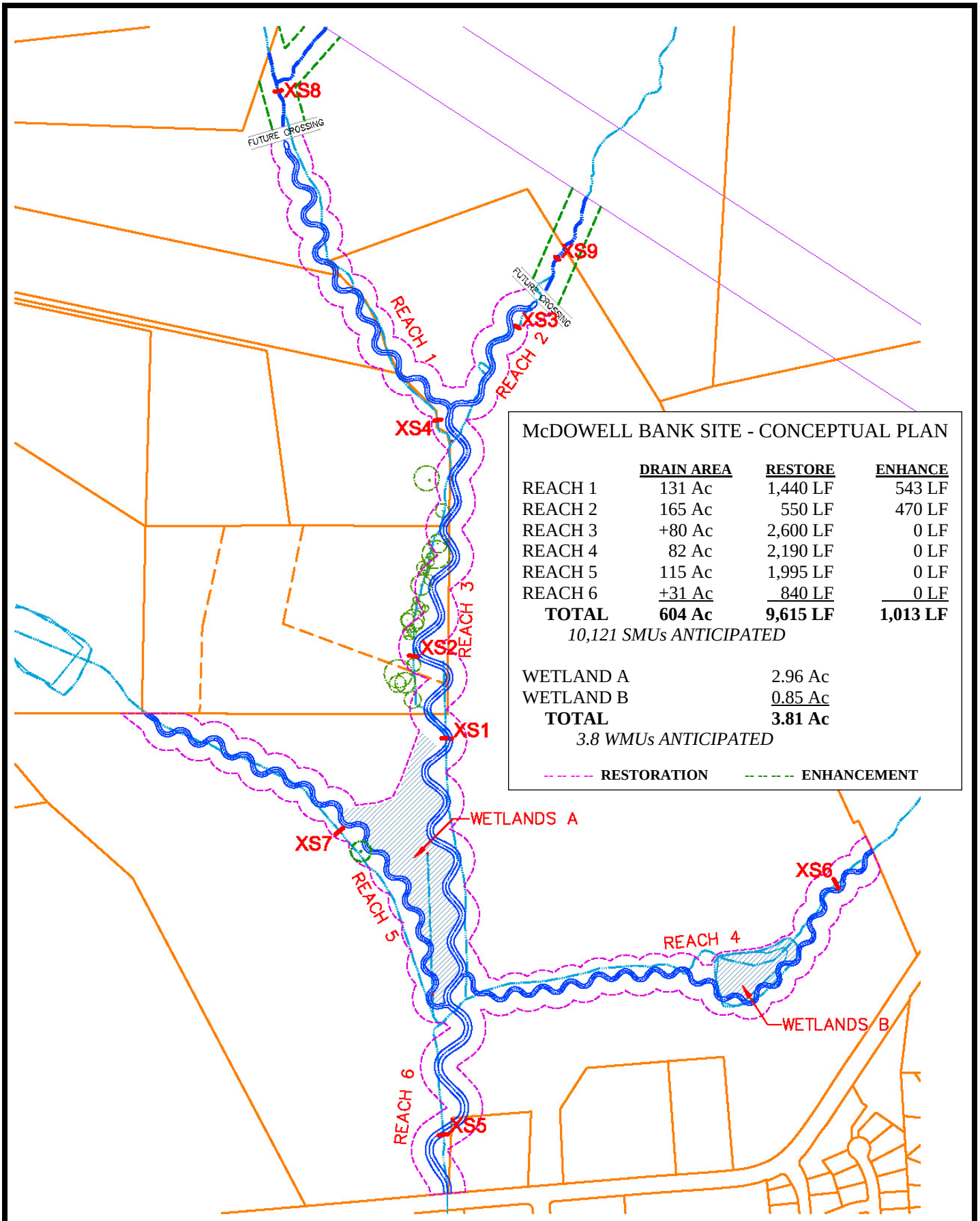
The McDowell Bank Site Team proposes to treat invasive species within the Site prior to construction, to employ design considerations that minimize re-establishment of invasive species after construction, to subsequently monitor vegetation within the McDowell Bank Site, and to routinely control undesirable non-native species.



Estes Design Inc.
Environmental Design & Consulting
PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

EXISTING CONDITIONS



McDOWELL BANK SITE - CONCEPTUAL PLAN

	DRAIN AREA	RESTORE	ENHANCE
REACH 1	131 Ac	1,440 LF	543 LF
REACH 2	165 Ac	550 LF	470 LF
REACH 3	+80 Ac	2,600 LF	0 LF
REACH 4	82 Ac	2,190 LF	0 LF
REACH 5	115 Ac	1,995 LF	0 LF
REACH 6	+31 Ac	840 LF	0 LF
TOTAL	**604 Ac**	**9,615 LF**	**1,013 LF**

10,121 SMUs ANTICIPATED

WETLAND A	2.96 Ac
WETLAND B	0.85 Ac
TOTAL	**3.81 Ac**

3.8 WMUs ANTICIPATED

RESTORATION **ENHANCEMENT**

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PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
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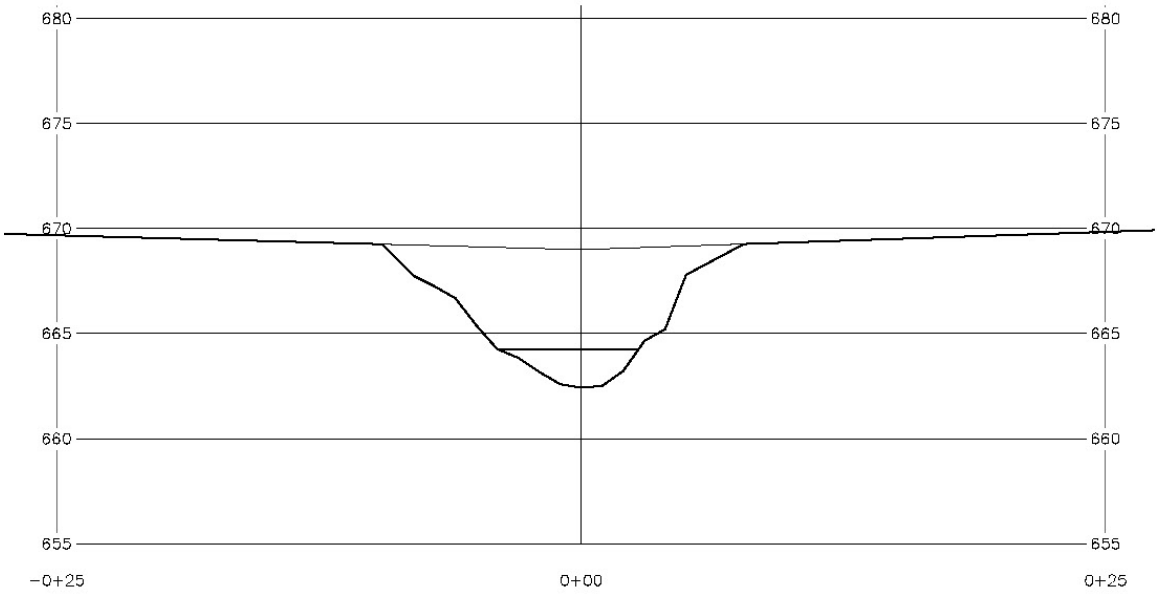
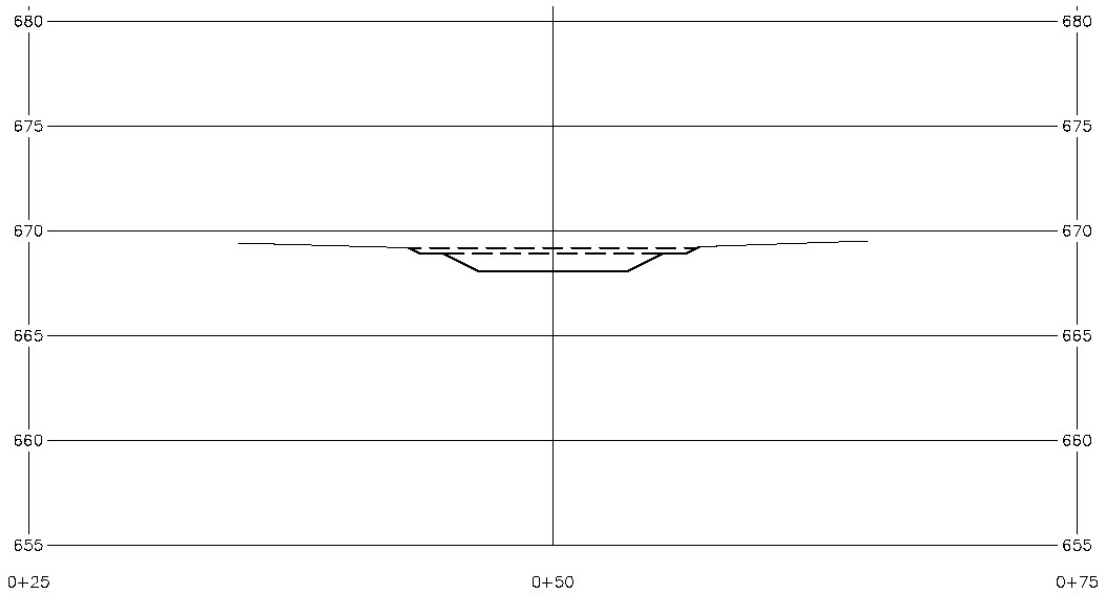
CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



REACH 1, CROSS SECTION 3 (EXISTING)



REACH 1, CROSS SECTION 3 (CONCEPTUAL)

Reach 1 – Drainage Area 131 Acres

PROPOSED TWO-STAGE CROSS-SECTION (TYP.)
TO ACCOMMODATE FUTURE DEVELOPMENT

Estes Design Inc.
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PO Box 79133 Charlotte NC, 29271
Office 704.841.1779 Fax 704.841.1842

Catawba Umbrella Mitigation Bank
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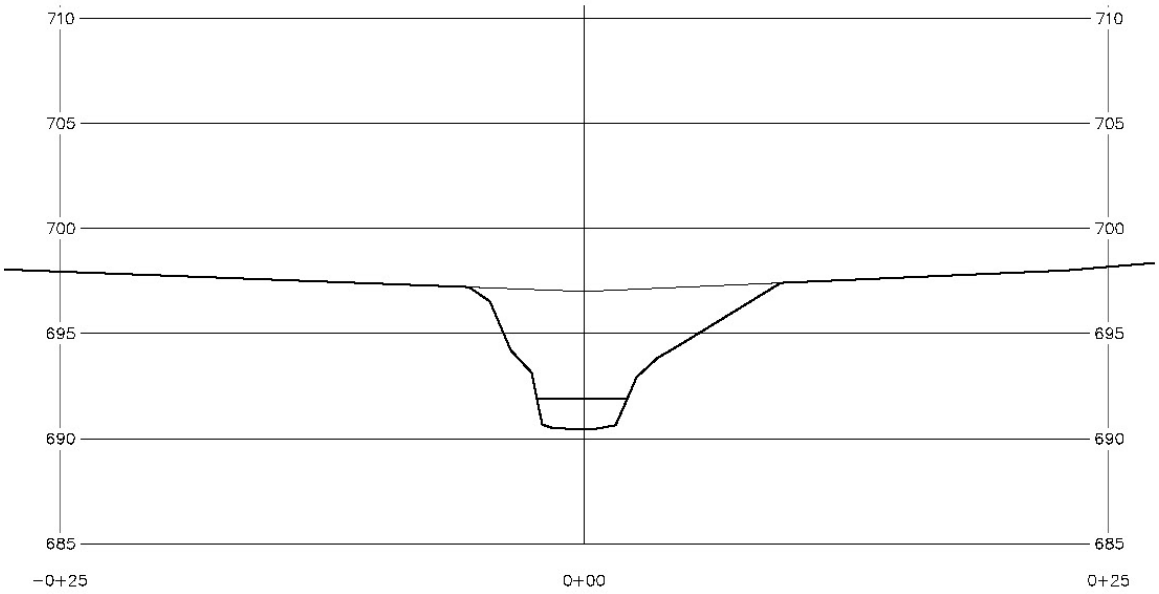
CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



REACH 2, CROSS SECTION 4 (EXISTING)

REACH 2, CROSS SECTION 4 (CONCEPTUAL)

Reach 2 – Drainage Area 165 Acres

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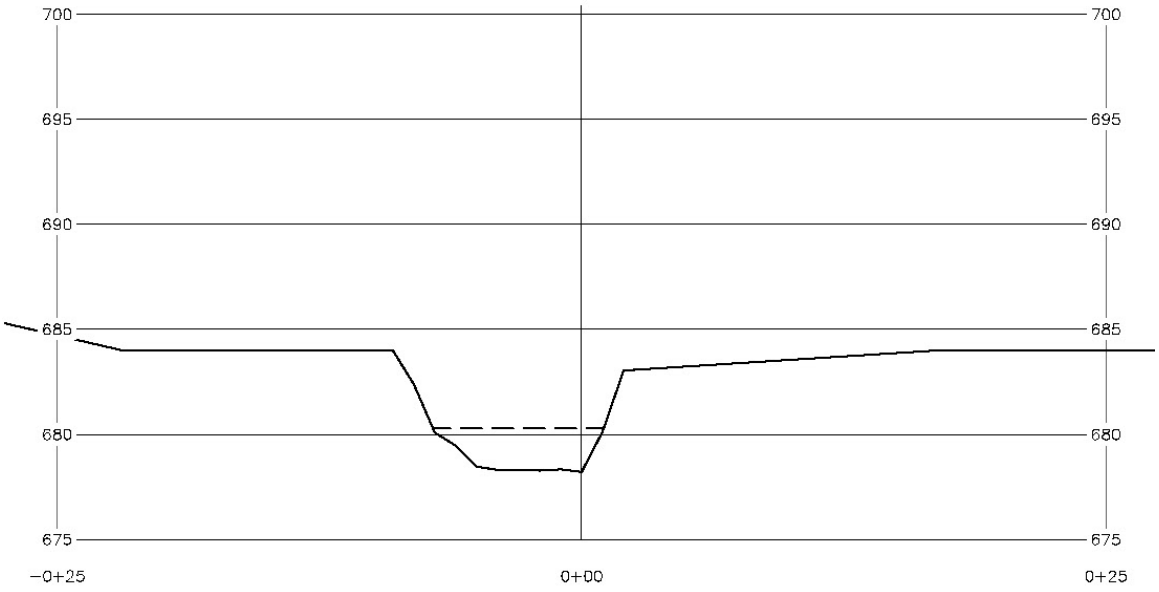
Catawba Umbrella Mitigation Bank
McDowell Bank Site - Huntersville, North Carolina

CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



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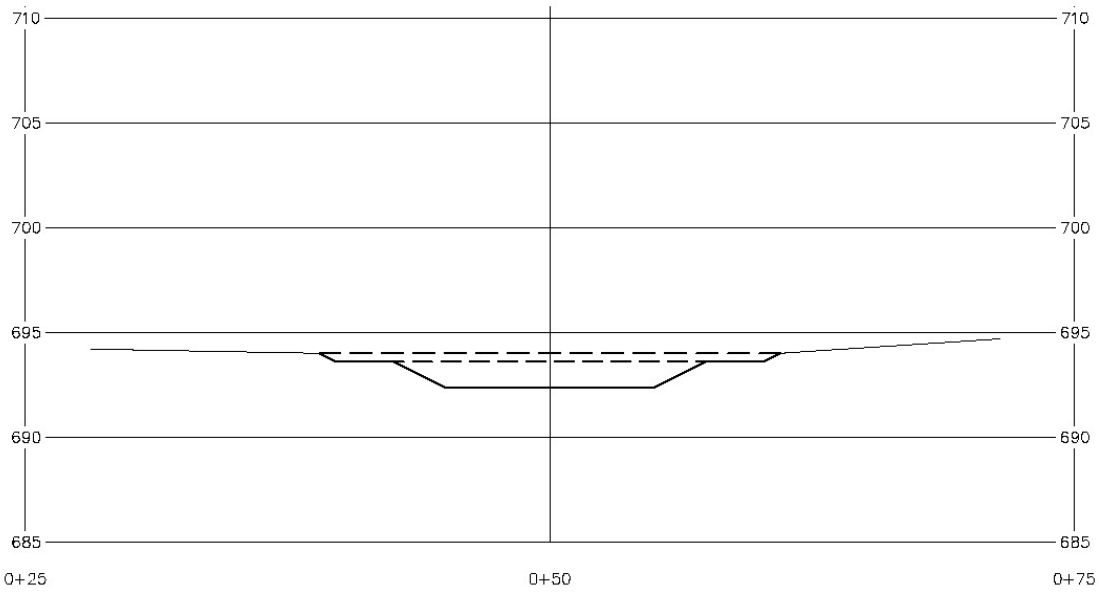

REACH 3, CROSS SECTION 2 (CONCEPTUAL)

Reach 3 – Drainage Area 375 Acres

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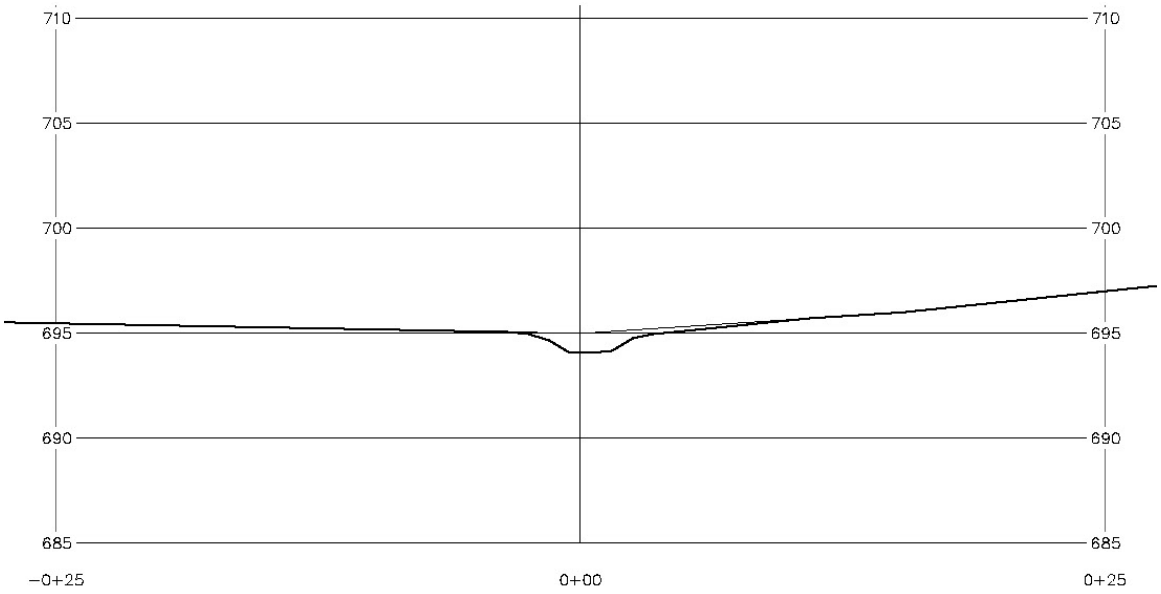
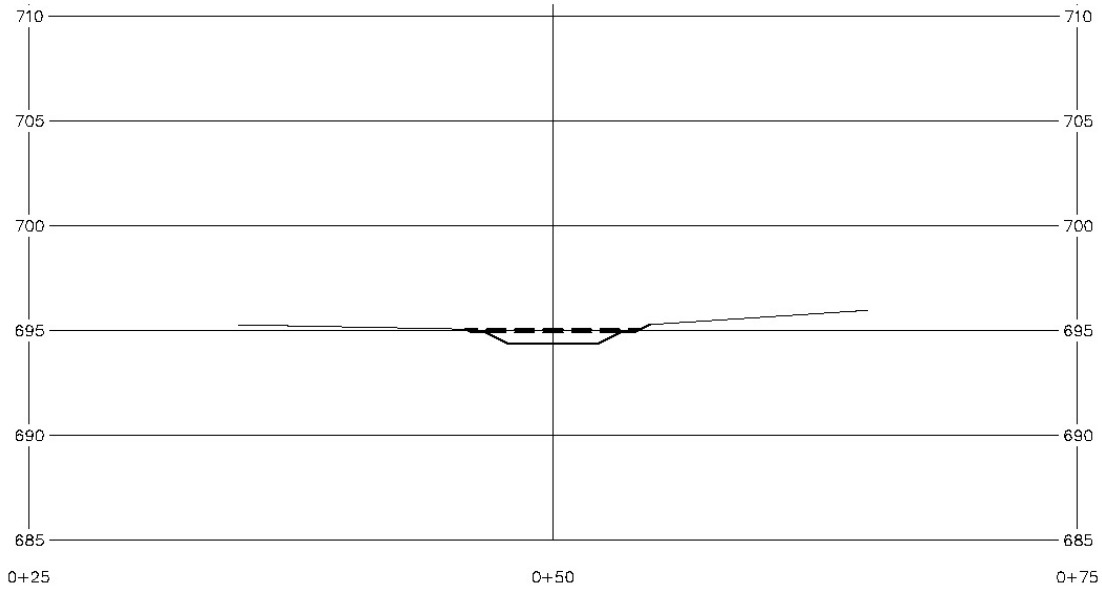
CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



REACH 4, CROSS SECTION 6 (EXISTING)



REACH 4, CROSS SECTION 6 (CONCEPTUAL)

Reach 4 – Drainage Area 82 Acres

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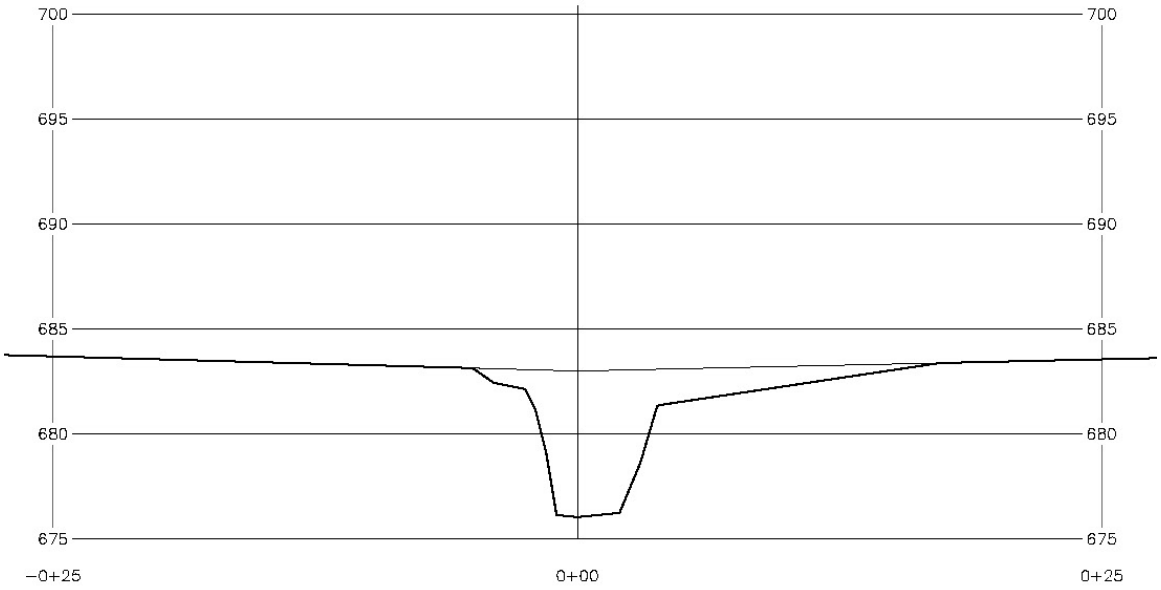
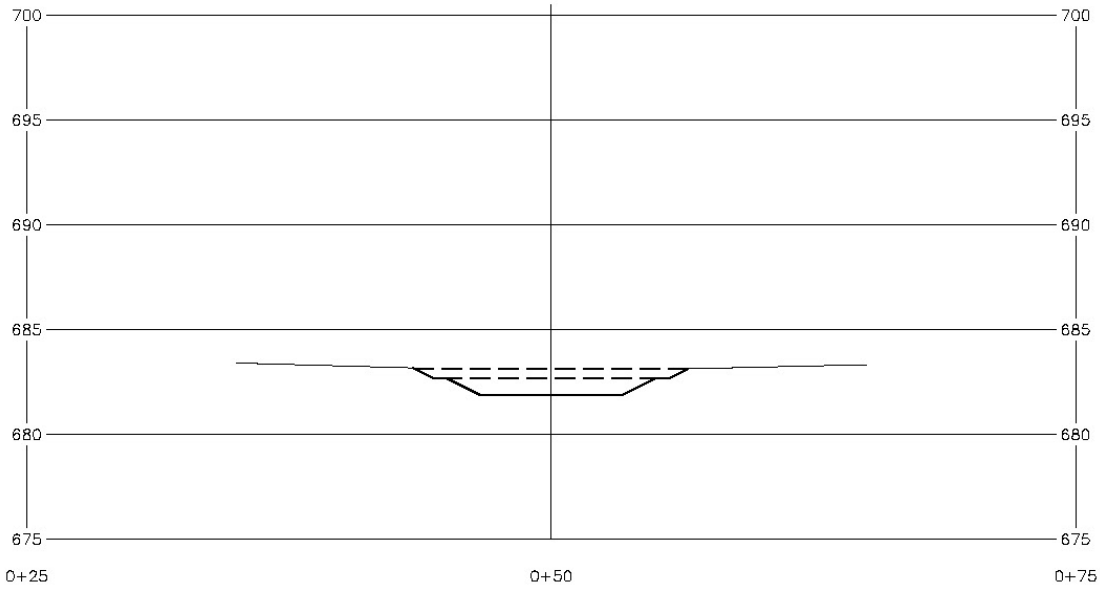
CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



REACH 5, CROSS SECTION 7 (EXISTING)



REACH 5, CROSS SECTION 7 (CONCEPTUAL)

Reach 5 – Drainage Area 115 Acres

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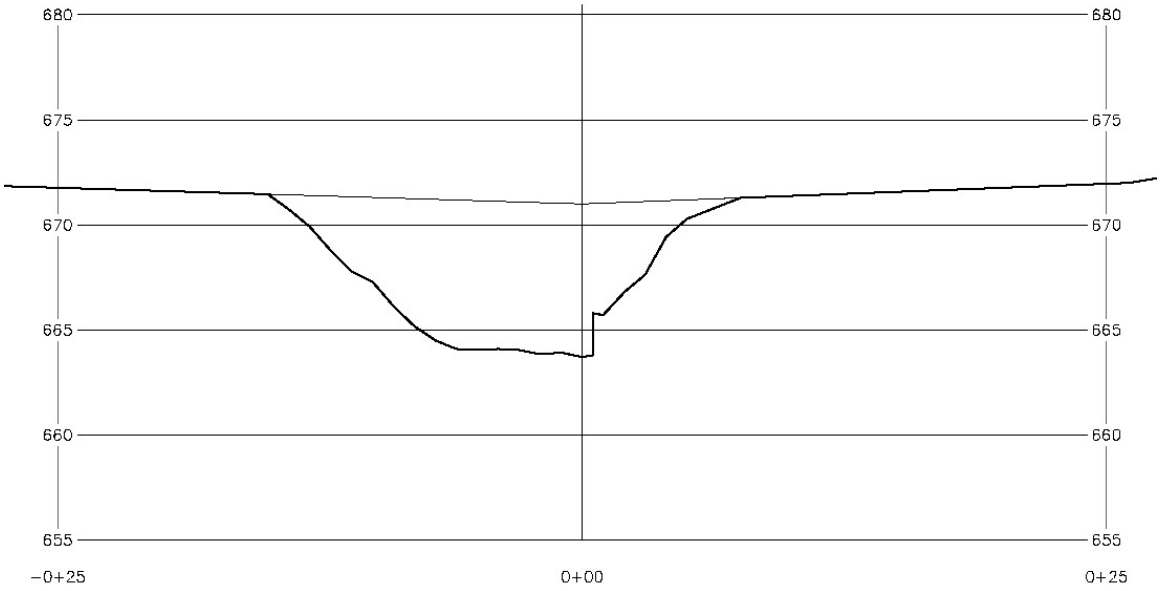
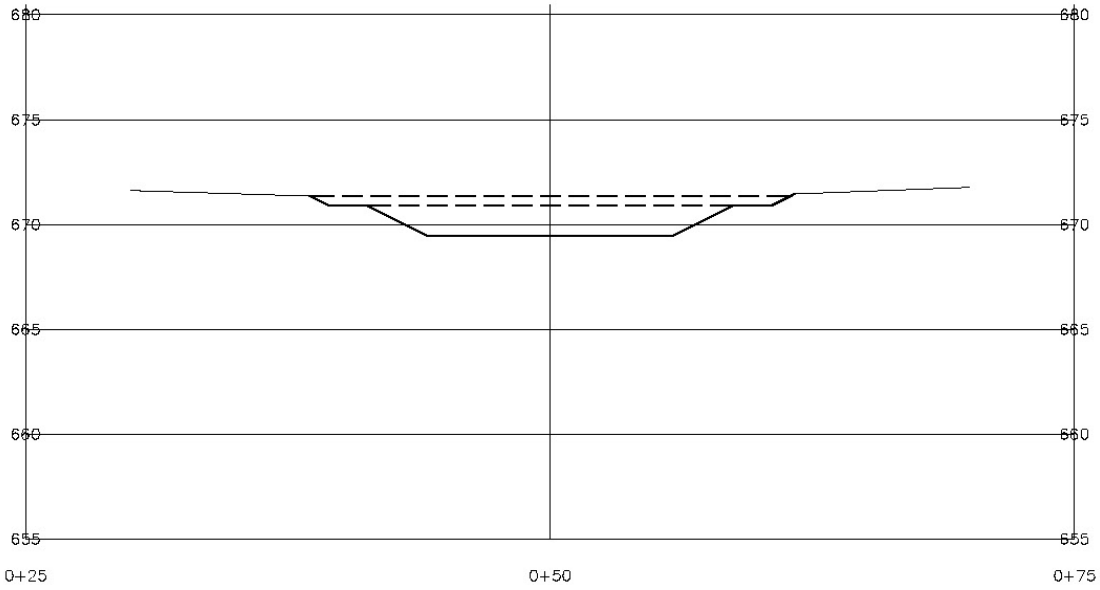
REPRESENTATIVE SECTIONS



REACH 6, CROSS SECTION 5 (EXISTING)



REACH 6, CROSS SECTION 5 (CONCEPTUAL)

Reach 6 – Drainage Area 604 Acres

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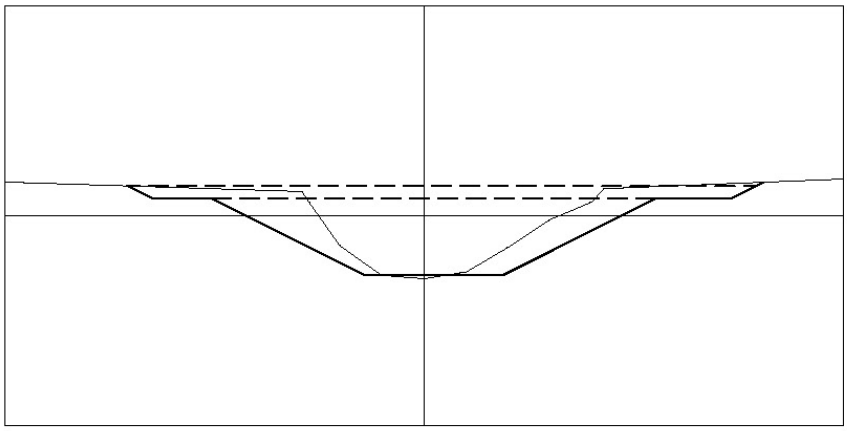
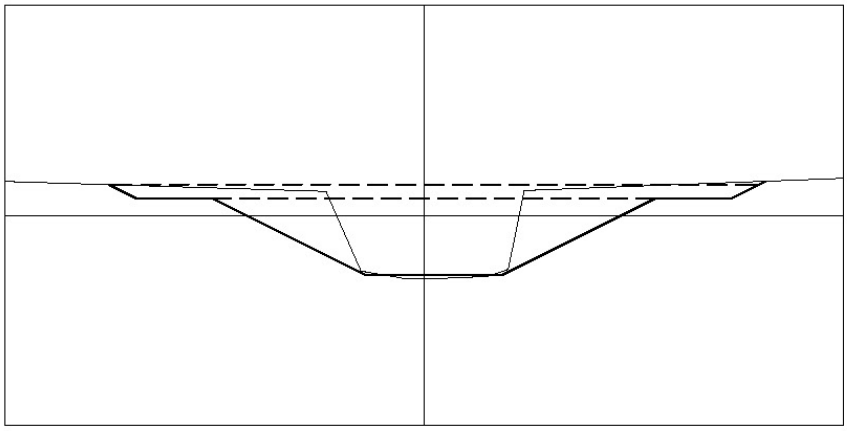
CONCEPTUAL DESIGN PLAN

REPRESENTATIVE SECTIONS



0+40 0+60

REACH 1, CROSS SECTION 8 (ENHANCEMENT)



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REACH 2, CROSS SECTION 9 (ENHANCEMENT)

ENHANCEMENT REACHES

FOCUS IS ON BANK STABILITY AND PROVISIONS TO ACCOMMODATE FUTURE DEVELOPMENT

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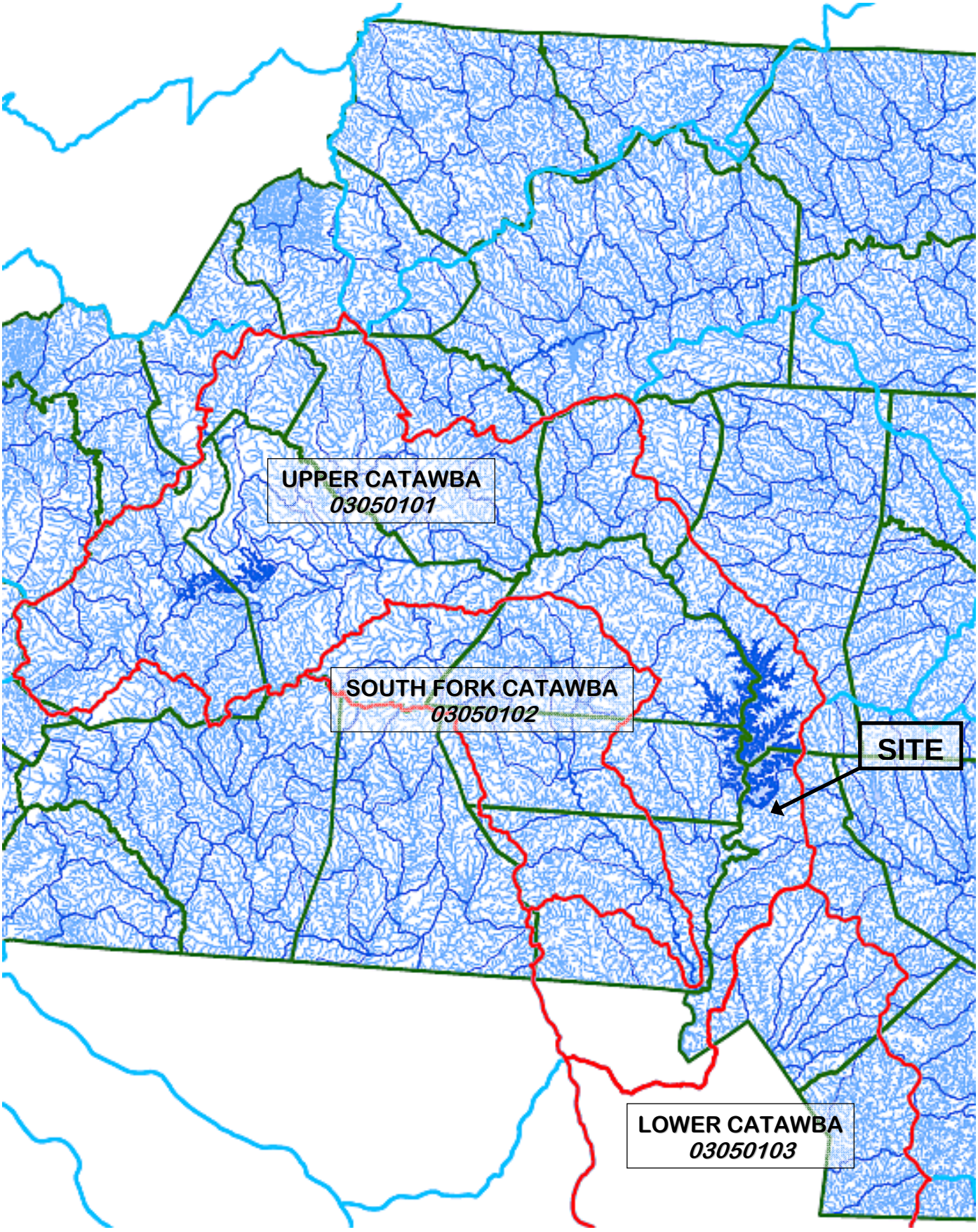
CONCEPTUAL DESIGN PLAN

EXHIBIT D

BANK SERVICE AREA MAP



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BANK GEOGRAPHICAL SERVICE AREA