# FINAL MITIGATION PLAN ADDENDUM

## WYANT LANDS MITIGATION SITE
## PHASE II – PROJECT EXPANSION

Lincoln County, NC
NCDEQ Contract No. 7244
Wyant Lands DMS ID No. 100067
Phase II – Project Expansion DMS ID No. 100595
Catawba River Basin
HUC 03050102
(03050103 Expanded Service Area)
Wyant Lands USACE Action ID No. SAW-2017-02609
Phase II – Project Expansion Action ID No. SAW-2021-02449
DWR Project No. 2018-0177

**PREPARED FOR:**

**NC Department of Environmental Quality**
**Division of Mitigation Services**
1652 Mail Service Center
Raleigh, NC 27699-1652

**PREPARED BY:**

**Wildlands Engineering, Inc**.
167-B Haywood Rd
Asheville, NC 28806
Phone: (828) 774-5547

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NCDEQ Contract No. 7244
Wyant Lands DMS ID No. 100067
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Phase II – Project Expansion Action ID No. SAW-2021-02449
Catawba River Basin
HUC 0305102
(03050103 Expanded Service Area)
Wyant Lands USACE Action ID No. SAW-2017-02609
DWR Project No. 18-0177

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167-B Haywood Rd
Asheville, NC 28806
Phone: (828) 774-5547

**This Mitigation Plan addendum has been written in conformance with the requirements of the following:**

- Federal rule for compensatory mitigation project sites as described in the Federal Register Title 33 Navigation and Navigable Waters Volume 3 Chapter 2 Section § 332.8 paragraphs (c)(2) through (c)(14).
- NCDEQ Division of Mitigation Services In-Lieu Fee Instrument signed and dated July 28, 2010.

**These documents govern DMS operations and procedures for the delivery of compensatory mitigation.**

**Contributing Addendum Staff:**

Eric Neuhaus, PE, *Project Manager*
Shawn Wilkerson, *Principal in Charge*
Jordan Hessler, *Design and Permitting Lead*
Brandon Romeo*, Lead Scientist*
Emily Reinicker, PE, CFM - *Quality Assurance*

**DEPARTMENT OF THE ARMY**
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY
ATTENTION OF:

January 4, 2022

Regulatory Division

Re: NCIRT Review and USACE Approval of the NCDMS Wyant Lands Phase II Project Expansion / Lincoln County/ SAW-2021-02449/ NCDMS Project # 100595

Paul Wiesner
North Carolina Division of Mitigation Services

Dear Mr. Wiesner:

The purpose of this letter is to provide the North Carolina Division of Mitigation Services (NCDMS) with all comments generated by the North Carolina Interagency Review Team (NCIRT) during the 30-day comment period for the Wyant Lands Phase II Expansion Project Addendum, which closed on December 18, 2021. These comments are in the attached email for your review.

Based on our review of these comments, we have determined that no major concerns have been identified with the proposed Addendum, which is considered approved with this correspondence; however, several minor issues were identified, as described in the attached email, which must be addressed in the Final Addendum.

The Final Addendum is to be submitted with the Preconstruction Notification (PCN) Application for Nationwide permit approval of the project along with a copy of this letter. Issues identified above must be addressed in the Final Addendum. All changes made to the Final Addendum should be summarized in an errata sheet included at the beginning of the document. Please note that this approval does not preclude the inclusion of permit conditions in the permit authorization for the project, particularly if issues mentioned above are not satisfactorily addressed. Additionally, this letter provides initial approval for the Addendum, but this does not guarantee that the project will generate the requested amount of mitigation credit. As you are aware, unforeseen issues may arise during construction or monitoring of the project that may require maintenance or reconstruction that may lead to reduced credit. If you have any questions regarding this letter or the requirements of the Mitigation Rule, please contact me at Kimberly.d.browning@usace.army.mil or (919) 946-5107.

Sincerely,

Kim Browning
Mitigation Project Manager
*for* Tyler Crumbley, Deputy Chief
USACE Regulatory Division

Electronic Copies Furnished:
NCIRT Distribution List, Eric Neuhaus—WEI

REPLY
ATTENTION OF:

**DEPARTMENT OF THE ARMY**
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

January 4, 2022

Regulatory Division/Browning

Re: NCIRT Review of the NCDMS Wyant Lands Phase II Project Expansion / Lincoln County/ SAW-2021-02449/ NCDMS Project # 100595

The Addendum proposes the addition of 231.600 SMUS and 4.513 WMUs. The expansion area assets will be tracked via a separate ledger.

**USACE Addendum Comments, Kim Browning:**

1. The categorical exclusion documents provided pertain to the 404 permit that was issued in July 2020. This will cover UT2 Reach 1, but was the new parcel where the wetlands will be added assessed for ESA and SHPO resources in 2018? I understand that the area is currently in agriculture and likely doesn't contain any resources; however, the entire area of disturbance should be evaluated and documented for the new 404 permit.
2. Section 5.5 should address whether the existing wooded buffer on UT2 R1 will be cleared and replanted, or selective clearing and supplemental planting will be done. At the site visit we discussed removal of black walnut and potentially transplanting mockernut hickory, which was not discussed in the existing conditions section.
3. Table 10 and 11: You may want to consider removing the Pebble Count performance standard.
4. Section 7.0: If you intend on proposing the addendum expansion project for close-out at MY6 to coincide with close-out of the initial Wyant Lands project, pending the project is on a trajectory for success, that should be discussed in this section.
5. Figure 2A: It appears that not all of the existing wetland T will be captured in the addendum area (to the north). Will this pose a problem for the landowner if the field adjacent to the conservation easement becomes too wet?
6. Figure 10.2A: Please show the location of the BMP.

**DWR Addendum Comments, Erin Davis:**

1. Page 7, Section 3.2 – What is the risk of hydrologic trespass along the Addendum wetland area? Is there any concern with current or future land use that may result in ditching near the easement (and wetland credit) boundary?

2. Page 13 – The Table 10 footnote #3 appears inconsistent with the Section 7 monitoring plan schedule/duration. Please clarify the proposed Addendum area's monitoring schedule, as well as, how (if at all) it will be associated with the original project mitigation plan's schedule.

3. Figures – Is it possible to show the existing CE red dashed line over the proposed CE purple line where they share a boundary? It was initially very confusing to see the constructed project area extend into the proposed CE area.

4. Figure 6.1A – Based on the aerial basemap there appear to be ditches onsite (Wetland Q to the area below Open Water 2). Please confirm and add callouts if present. It is also helpful to have any existing ditches located near the proposed project boundaries identified, particularly if they could influence site conditions.

5. Figure 11A – Please show proposed wetland credit types on this figure. It's difficult to tell if any of the veg plots and gauges are located within proposed wetland rehabilitation or creation areas. If not, please shift at least one gauge to a representative creation area and have at least one veg plot in each credit type area. Also, none of the gauges are located near the proposed easement boundary, which can be a zone we're concerned with the hydroperiod meeting the performance standard threshold. Please shift at least one gauge closer to the CE boundary. If it would be helpful, DWR can mark-up a figure with recommended gauge shifts once the credit types have been added.

6. Sheet 2.0 – With the grading proposed outside of the easement, is it expected to result in a loss of any open water and/or wetland areas? It appears the Open Water 2 area will be graded up to elev. 777. Also, what is the minimum ditch plug length being proposed?

7. Sheet 4.0 – DWR would encourage reducing sycamore and river birch percentages within the wetland planting zone in order to enhance habitat diversity.

**USACE Addendum Comments, Casey Haywood:**

1. Please include the October 18, 2021 site visit notes as an appendix.

January 14, 2022

ATTN: CESAW-RG/Browning
Ms. Kim Browning
US Army Corps of Engineers – Wilmington District
69 Darlington Avenue
Wilmington, NC 28403-1343

RE: Wyant Lands Phase II Project Expansion
Lincoln County, NC
Response to NCIRT Review Comments
USACE Action ID No: SAW-2021-02449
NCDMS Project No: 100595

Dear Ms. Browning:

Wildlands Engineering, Inc. (Wildlands) has reviewed USACE's and NCDWR's comments from the Wyant Lands Phase II Project Expansion in Lincoln County, NC. The following Wildlands responses to *USACE's and NCDWR's comments* are noted below.

***USACE Addendum Comments, Kim Browning:***

1. *The categorical exclusion documents provided pertain to the 404 permit that was issued in July 2020. This will cover UT2 Reach 1, but was the new parcel where the wetlands be added assessed for ESA and SHPO resources in 2018? I understand that the area is currently in agriculture and likely doesn't contain any resources; however, the entire area of disturbance should be evaluated and documented for the new 404 permit.*

   **Wildlands Response:** Wildland's personnel assessed the addendum area for ESA and SHPO resources in the field. The proposed mitigation plan addendum area is within the parent tract of the original approved categorical exclusion document submitted in 2018. Based on site observations, aerials, and landowner correspondence, the area has been managed in agriculture since at least 1950 and no additional clearing area is proposed outside of the originally approved project disturbance area. No additional correspondence was provided as part of the project addendum.

2. *Section 5.5 should address whether the existing wooded buffer on UT2 R1 will be cleared and replanted, or selective clearing and supplemental planting will be done. At the site visit, we discussed removal of black walnut and potentially transplanting mockernut hickory, which was not discussed in the existing conditions section.*

   **Wildlands Response:** Wildlands plans to selectively clear where possible during construction of UT2 Reach 1. Wildlands will make every effort to transplant the existing mockernut hickory and will remove identified black walnut within the conservation easement. Existing privet and other identified invasive species will also be removed during construction.

3. *Table 10 and 11: You may want to consider removing the Pebble Count performance standard.*

**Wildlands Response:** Pebble counts are now removed from the performance standards and the monitoring components tables.

4. *Section 7.0: If you intend on proposing the addendum expansion project for close-out at MY6 to coincide with close-out of the initial Wyant Lands project, pending the project is on a trajectory for success, that should be discussed in this section.*

   **Wildlands Response:** The following text was added to Section 7.0 proposing phase II close-out at MY6. "To facilitate project organization, after the as-built and baseline monitoring report is submitted and approved for the addendum area, monitoring reports for phase II will be included with phase I monitoring reports. It is proposed that if the addendum area has met monitoring performance standards three of the prior four monitoring years at closeout of the phase I portion of the project (monitoring year 6 of phase II), the addendum area also be closed as well. If monitoring performance criteria within the phase II addendum area has not met monitoring standards three out of the prior four years, an additional seventh year of monitoring will be performed for the addendum area and the closeout monitoring period will be seven years beyond completion of construction and/or until performance standards have been met."

5. *Figure 2A: It appears that not all of the existing wetland T will be captured in the addendum area (to the north). Will this pose a problem for the landowner if the field adjacent to the conservation easement becomes too wet?*

   **Wildlands Response:** The area of existing Wetland T that is outside the proposed addendum area will be raised in elevation (1 foot max) but is anticipated to remain wet after the project. This area of property is currently wet and the landowner understands it will remain wet post construction. Grades increase quickly as you move north of wetland T towards the property line and spoil material removed from the proposed wetland area will be used to increase elevations in the 100-foot gap between the addendum easement and the property line to ensure an adequate travel path for the landowner. Impacts to Wetland T are listed as temporary within the 401/404 permit submittal for the project.

6. *Figure 10.2A: Please show the location of the BMP.*

   **Wildlands Response:** Figure 10.2A is updated to show the location of the proposed BMP.

***DWR addendum comments, Erin Davis:***

1. *Page 7, Section 3.2 – What is the risk of hydrologic trespass along the Addendum wetland area? Is there any concern with current or future land use that may result in ditching near the easement (and wetland credit) boundary?*

   **Wildlands Response:** Hydrologic trespass risk along the addendum wetland area is minimal. Grades increase quickly north and west of the proposed addendum conservation easement. To the east a natural levy and relic berm, along with the drainage of Pott Creek, decrease the risk for potential hydrologic trespass. Spoil material removed from the proposed wetland area will be used to increase elevations north of the proposed wetland in the 100-foot gap between the addendum easement and the property line to ensure an adequate travel path for the

landowner. The primary use for the land most near the addendum conservation easement, is farm traffic/travel and it is not anticipated that ditching near the easement would be required for current of future land use.

2. *Page 13 – The Table 10 footnote #3 appears inconsistent with the Section 7 monitoring plan schedule/duration. Please clarify the proposed Addendum area's monitoring schedule, as well as, how (if at all) it will be associated with the original project mitigation plan's schedule.*

   **Wildlands Response:** See Wildlands response to comment #4 from Kim Browning above. Text was added to Section 7.0 to clarify the proposed monitoring period for the addendum portion of the project.

3. *Figures: Is it possible to show the existing CE red dashed line over the proposed CE purple line where they share a boundary? It was initially very confusing to see the constructed project area extend into the proposed CE area.*

   **Wildlands Response:** All the maps are now updated with the red dashed line over the purple line to show where the phase I Conservation Easement ends and the phase II conservation easement starts.

4. *Figure 6.1A – Based on the aerial basemap there appears to be ditches onsite (Wetland Q to the area below Open Water 2). Please confirm and add callouts if present. It is also helpful to have any existing ditches located near the proposed project boundaries identified, particularly if they could influence site conditions.*

   **Wildlands Response:** Existing site ditches and ditches to be filled were added to Figures 2A and 6.1A, respectively. All ditches in or near the proposed project boundary are going to filled and plugged. No ditches that will influence site conditions exist adjacent to the addendum conservation easement.

5. *Figure 11A – Please show proposed wetland credit types on this figure. It's difficult to tell if any of the veg plots and gauges are located within proposed wetland rehabilitation or creation areas. If not, please shit at least one gauge to a representative creation area and have at least one veg plot in each credit type area. Also, none of the gauges are located near the proposed easement boundary, which can be a zone we're concerned with the hydroperiod meeting the performance standard threshold. Please shift at least one gauge closer to the CE boundary. If it would be helpful, DWR can mark-up a figure with recommended gauge shifts once the credit types have been added.*

   **Wildlands Response:** The proposed wetland credit types are now included on Figure 11A. Vegetation plots and wetland gages were shifted to have representation in each wetland crediting type. One wetland gage was shifted towards the boundary of the conservation easement, and another shifted towards the edge of the wetland boundary.

6. *Sheet 2.0 – With the grading proposed outside the easement, is it expected to result in a loss of any open water and/or wetland areas? It appears the Open Water 2 area will be graded up to elev. 777. Also, what is the minimum ditch plug length being proposed.*

**Wildlands Response:** Open Water 2 will be permanently impacted and filled. Within the conservation easement, this area will be restored to bottomland forested wetland. See response to comment #5 from Kim Browning above regarding Wetland T. The 401/404 permit submitted for project includes these areas of impact. Minimum ditch plug length is 8 feet, but it should be noted that all ditches are proposed to be filled for their entirety in addition to proposed ditch plugs.

7. *Sheet 4.0 – DWR would encourage reducing sycamore and river birch percentages within the wetland planting zone in order to enhance habitat diversity.*

**Wildlands Response:** Wildlands has reduced the sycamore and river birch percentages within the wetland planting zones. Willow oak, swamp chestnut oak, common button bush, and swamp rose percentages were all increased.

***USACE addendum comments, Casey Haywood:***

1. *Please include the October 18, 2021 site visit notes as an appendix.*

**Wildlands Response:** Meeting Minutes from the October 18, 2021 site visit with the IRT were included in Appendix 13A.

Please contact me at 865-207-8835 if you have any questions.

Sincerely,

Eric Neuhaus, PE
Project Manager
eneuhaus@wildlandseng.com

CC: Erin Davis
Stream/Wetland Mitigation Coordinator
NC Division of Water Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
TIM BAUMGARTNER
Director

NORTH CAROLINA
Environmental Quality

October 22, 2021

Mr. Eric Neuhaus, PE
Wildlands Engineering, Inc.
167-B Haywood Road
Asheville, NC 28806

Subject: Draft As-Built Baseline Monitoring Report (MY0) and Record Drawings & Mitigation Plan Addendum for the
Wyant Lands Mitigation Site
Catawba River Basin – CU# 03050102 – Lincoln County
DMS Project ID No. 100067
Contract # 7244

Mr. Neuhaus:

On October 13, 2021, the NCDEQ – Division of Mitigation Services (DMS) received the Draft As-Built Baseline Monitoring Report (MY0), Record Drawings & Mitigation Plan Addendum for the Wyant Lands Mitigation site from Wildlands Engineering, Inc.

The MY0 report establishes the as-built conditions at the project site. Anticipated mitigation on the site (MY0) includes 6,238 linear feet of stream restoration; 376 linear feet of stream enhancement (Level 1); 926 linear feet of stream enhancement (Level 2); 11.0 acres of wetland re-establishment; and 3.2 acres of wetland rehabilitation for a total of 6,863.700 Stream Mitigation Units (SMUs) & 13.1 Wetland Mitigation Units (WMUs). The following are our comments on the draft documents:

**As-Built Baseline Monitoring Report (MY0)**

**General:** In the report text, please briefly reference and discuss the 404 project permit condition #3 and as-built wetland grading. Please reference Record Drawing sheet 2.1 and any additional sheets necessary to address the USACE issued permit condition in the report text.

**General:** If available, please provide the soil boring profiles for the monitoring well gauges installed on the site. This can be included as a separate report appendix.

**Section 2.4 Wetlands:** Please note that the IRT has indicated that if soil temperature and bud burst data are utilized to amend the start of the growing season, project data will also need to be utilized to adjust the end of the growing season. DMS recommends utilizing the North Carolina WETS table for the project growing season as established in the IRT approved mitigation plan.

**Section 3.1.1 Dimension:** Table 18 (not Table 19) established the # of cross sections in the IRT approved mitigation plan. Please update the text accordingly.

**Section 3.1.4 Photo Reference Points:** Based on IRT concerns**,** feedback and the 10/18/21 IRT site visit, DMS recommends additional photo points at all project crossing areas (upstream and downstream); particularly the crossing beneath Wyant Road. These additional photo points can be added in the MY1 (2021) report.

**5.1.12 Fencing:** In the report text, please also note the type of fencing installed to exclude livestock from the project conservation easement. If multiple fencing types were utilized, please describe in the report text.

**Table 1:** The As-Built acreage for Wetland Rehabilitation appears to be incorrect (typo). The Wetland Rehabilitation acreage should be 3.200 acres. Please review, confirm and update the document accordingly.

**Table 7:** Cross-section #13 is noted as a pool in Table 7 but is noted as a riffle in the cross-section plots. This is also the cross-section that was relocated in August 2021. Please review Table 7 and the cross-section plots and update as necessary to confirm that they are consistent.

**Record Drawings:**

- Sheet 1.1 notes; "Pools have filled with offsite sediment. Expect sediment to clear as channel stabilizes." Please also discuss this in the report text.

**MY0 - Digital Support File Comments:**

- Please include the sealed standalone as-built .DWG file and a .PDF file (Kee Surveying) with the final digital submission.

- Please submit the mobile vegetation plots as polygons rather than points.

- Wetland_Rehabilitation (OID 6), Wetland_Re_Establishment (OID 2), and Wetland_Re_Establishement (OID 4) overlap with one another. Also, Wetland_Rehabilitation (OID 8) and Wetland_Re_Establishement (OID 4) overlap with one another. Please review and correct these wetland asset overlaps.

- Wetland_Rehabilitation (OID 1) and Wetland_Re_Establishment (OID 1) are both outside of the easement. Please exclude these features from the submission.

- UT3_R3_Lower overlaps and extends past the confluence with Wyant_Creek_R2. Please use snapping to correct this issue.

- Please confirm that the feature with Name UT3_R3 is in fact UT2_R3 and update the Name attribute if this is true.

- The Shape_Area of the merged features included in Wetland_Re_Establishment is equal to 11.213 ac, compared to the 11.0 ac reported in the asset table. After correcting the

overlaps outlined above, please revise these features so that they reflect the reported as-built condition.

**Mitigation Plan Addendum:**

- DMS recommends calling the document a Mitigation Plan ***Addendum*** on the cover and remainder of the document and attachments.

- **Executive Summary & Section 1.0**: The addendum notes; "*In March 2021, Wildlands completed construction of the initial Wyant Lands Mitigation Site (Site) which involved the restoration and enhancement of approximately 7,558 existing linear feet (LF) of Wyant Creek and three unnamed tributaries (UT1 – UT3), as well as the re-establishment and rehabilitation of 14.8 acres of wetlands.*" The MY0 report notes a total of 7,540 linear feet (LF) of perennial and intermittent stream a total of 14.2 acres of restored riparian wetlands. Please review and update the addendum so the document is consistent with the MY0 report and record drawings.

- **Section 5.3 Amendment Existing Hydrology:** If available, please provide the soil boring profiles for the four (4) pre-construction monitoring well gauges installed on the site. This can be included as a separate appendix.

- **Table 11:** Recommend updating the "*Mitigation Plan Footage/ Acreage*" cell to "Mitigation Plan Addendum Footage/ Acreage" to avoid confusion.

- **Table 11:** Please QA/QC and update the Total Stream Mitigation Credit cell to 231.600 SMUs. Please QA/QC and update the Total Wetland Mitigation credit cell to 4.563 WMUs. The most recent DMS mitigation plan asset table should be utilized to avoid rounding errors that conflict with the DMS asset database (CRM).

- **Table 12:** Please QA/QC and update the Total Stream Mitigation Credit cell to 7,095.300 SMUs. Please QA/QC and update the Total Wetland Mitigation credit cell to 17.663 WMUs. The most recent DMS mitigation plan asset table should be utilized to avoid rounding errors that conflict with the DMS asset database (CRM).

- Per the recent IRT site visit on 10/18/2021, please be sure to describe the existing and proposed vegetation in the addendum text and tables.

- Per the recent IRT site visit on 10/18/2021, please provide a LIDAR map of the additional wetland area and the initial soil evaluation from the project mitigation plan (S&EC (Kevin Martin; LSS)). These documents should be referenced in the addendum text as necessary.

- Please reference and update the addendum as necessary to reflect IRT conversations and meeting notes from the recent 10/18/2021 site visit.

**Mitigation Plan Addendum - Digital Support File Comments:**

- The Amendment_Proposed_Stream intersects with the previously submitted mitigation plan feature for UT1 Reach 1/2 and moves past the confluence. Please use snapping to connect the endpoint of Ammendment_Proposed_Stream to UT1 Reach 1/2.

- There are multiple overlapping features both within the Ammendment_Proposed_Wetlands shapefile and between the Ammendment_Proposed_Wetlands shapefile and the previously submitted mitigation plan wetland asset features. Please edit to ensure there are no overlaps, and update Table 12 in the Mitigation Plan Amendment document accordingly.

- Combining the previously submitted mitigation plan wetland re-establishment feature with the Ammendment_Proposed_Wetlands features for wetland re-establishment produces a total area of 14.95 ac, compared to 14.42 in Table 12 of the Mitigation Plan Amendment. Once overlapping areas are removed, please verify that the reported areas reflect the combined area of the previously submitted mitigation plan wetland asset features and the proposed amendment features.

- DMS has attached a shapefile with the overlaps for the addendum features referenced in the comments above.

At your earliest convenience, please provide a written response letter addressing the DMS comments provided and the revised/ updated electronic As-Built Baseline Monitoring Report (MY0), Record Drawings & Mitigation Plan Addendum. Please also provide the revised/ updated final digital support files. **The comment response letter should be included in the revised report after the report cover.**

If you have any questions, please contact me at any time at (828) 273-1673 or email me at paul.wiesner@ncdenr.gov

Sincerely,

*Paul Wiesner*

Paul Wiesner
Western Regional Supervisor
NCDEQ – Division of Mitigation Services
5 Ravenscroft Dr., Suite 102
Asheville, NC 28801
(828) 273-1673 Mobile

cc: file

WILDLANDS ENGINEERING

**MEMORANDUM**

TO: Paul Wiesner, NC DMS

FROM: Eric Neuhaus, PE

DATE: November 16, 2021

RE: Wyant Lands Mitigation Site Addendum
Lincoln County, NC
Catawba River Basin 03050102
Response to NCDMS Addendum Comments

This memo documents NCDMS's review comments of the Mitigation Plan Addendum for the Wyant Lands Mitigation Site (*in italics*) received from Paul Wiesner on 8/22/2021, the project team's responses, and where the revisions have been included in the associated reports.

**Mitigation Plan Addendum:**

- General Note: One additional table (Table 9) was added to the mitigation plan addendum based on NCDMS comment. Subsequently, the following revisions were made to the Table numbers:

| Original Addendum Submittal | Revised Addendum Submittal |
|---|---|
| Table 9: Summary of Performance Standards | Table 10: Summary of Performance Standards |
| Table 10: Monitoring Components | Table 11: Monitoring Components |
| Table 11: Amendment Asset Table | Table 12: Addendum Asset Table |
| Table 12: Revised Asset Table for the Amended Wyant Lands Mitigation Site (Original plus Amendment) | Table 13: Revised Asset Table for the Amended Wyant Lands Mitigation Site (Original plus Addendum) |

- *DMS recommends calling the document a Mitigation Plan Addendum on the cover and remainder of the document and attachments.*
  - The language in the mitigation plan and supporting documents was updated to replace amendment with addendum.

- ***Executive Summary & Section 1.0:*** *The addendum notes; "In March 2021, Wildlands completed construction of the initial Wyant Lands Mitigation Site (Site) which involved the restoration and enhancement of approximately 7,558 existing linear feet (LF) of Wyant Creek and three unnamed tributaries (UT1 – UT3), as well as the re-establishment and rehabilitation of 14.8 acres of wetlands." The MY0 report notes a total of 7,540 linear feet (LF) of perennial and intermittent stream a total of 14.2 acres of restored riparian wetlands. Please review and update the addendum so the document is consistent with the MY0 report and record drawings.*

- Linear footages and acreages within the executive summary and introduction within the addendum were revised to be consistent with the MY0 report, record drawings, and revisions to proposed wetland areas to remove overlaps per NCDMS comment.

- ***Section 5.3 Amendment Existing Hydrology:*** *If available, please provide the soil boring profiles for the four (4) pre-construction monitoring well gauges installed on the site. This can be included as a separate appendix.*
    - The four pre-construction monitoring well gage soil boring profiles are provided in Appendix 6A.

- ***Table 11:*** *Recommend updating the "Mitigation Plan Footage/ Acreage" cell to "Mitigation Plan Addendum Footage/ Acreage" to avoid confusion.*
    - Table 11 was updated with the suggested language.

- ***Table 11:*** *Please QA/QC and update the Total Stream Mitigation Credit cell to 231.600 SMUs. Please QA/QC and update the Total Wetland Mitigation credit cell to 4.563 WMUs. The most recent DMS mitigation plan asset table should be utilized to avoid rounding errors that conflict with the DMS asset database (CRM).*
    - Tables 12 and 13 (formerly Tables 11 and 12) were updated to the asset table format published to the NCDMS website on 10/20/2021 within the mitigation plan addendum and within the associated digital submittal files. Stream lengths, wetland acreages, and associated credit values were revised based on as-built data and/or based on the revision to remove overlapping areas from the as-built and proposed wetland re-establishment, rehabilitation, and creation areas based on NCDMS comment.

- ***Table 12:*** *Please QA/QC and update the Total Stream Mitigation Credit cell to 7,095.300 SMUs. Please QA/QC and update the Total Wetland Mitigation credit cell to 17.663 WMUs. The most recent DMS mitigation plan asset table should be utilized to avoid rounding errors that conflict with the DMS asset database (CRM).*
    - Tables 12 and 13 (formerly Tables 11 and 12) were updated to the asset table format published to the NCDMS website on 10/20/2021 within the mitigation plan addendum and within the associated digital submittal files. Stream lengths, wetland acreages, and associated credit values were revised based on as-built data and/or based on the revision to remove overlapping areas from the as-built and proposed wetland re-establishment, rehabilitation, and creation areas based on NCDMS comment.

- *Per the recent IRT site visit on 10/18/2021, please be sure to describe the existing and proposed vegetation in the addendum text and tables.*
    - Section 5.5 – Addendum Vegetation and Planting Plan was added to the mitigation plan addendum. Additionally, Table 9 was added to the mitigation plan addendum with proposed panting.

- *Per the recent IRT site visit on 10/18/2021, please provide a LIDAR map of the additional wetland area and the initial soil evaluation from the project mitigation plan (S&EC (Kevin Martin; LSS)). These documents should be referenced in the addendum text as necessary.*
    - A LiDAR map of the whole site is now provided with the figures in the mitigation plan addendum.

- *Please reference and update the addendum as necessary to reflect IRT conversations and meeting notes from the recent 10/18/2021 site visit.*
    - The mitigation plan addendum was updated based on conversations with the IRT at the 10/18/2021 site visit.
    - A LIDAR map (Figure 13) was added to the mitigation plan addendum per IRT request.
    - All previous Licensed Soil Scientist information was included with the mitigation plan addendum per IRT request.

**Mitigation Plan Addendum - Digital Support File Comments:**

- *The Amendment_Proposed_Stream intersects with the previously submitted mitigation plan feature for UT1 Reach 1/2 and moves past the confluence. Please use snapping to connect the endpoint of Ammendment_Proposed_Stream to UT1 Reach 1/2.*
    - The Amendment_Proposed_Stream shapefile was updated to correct the issues with the proposed and existing features extending beyond confluences.

- *There are multiple overlapping features both within the Ammendment_Proposed_Wetlands shapefile and between the Ammendment_Proposed_Wetlands shapefile and the previously submitted mitigation plan wetland asset features. Please edit to ensure there are no overlaps, and update Table 12 in the Mitigation Plan Amendment document accordingly.*
    - The overlapping features in the addendum mitigation plan wetland asset features were corrected and Table 12 and Table 13 within the mitigation plan addendum were revised to correct overlapping area errors.

- *Combining the previously submitted mitigation plan wetland re-establishment feature with the Ammendment_Proposed_Wetlands features for wetland re-establishment produces a total area 14.95 ac, compared to 14.42 in Table 12 of the Mitigation Plan Amendment. Once overlapping areas are removed, please verify that the reported areas reflect the combined area of the previously submitted mitigation plan wetland asset features and the proposed amendment features.*
    - The overlapping features in the addendum mitigation plan wetland asset features were corrected and Table 12 and Table 13 (formerly Tables 11 and 12) within the mitigation plan addendum were revised to correct overlapping area errors.

- *DMS has attached a shapefile with the overlaps for the addendum features referenced in the comments above.*
    - Wildlands appreciates NCDMS providing the overlapping shapefile. Overlapping features within the digital files were corrected and a revised digital package is included with this comment response memorandum.

## EXECUTIVE SUMMARY

Wildlands Engineering was contracted by the North Carolina Department of Mitigation Services (DMS) to provide stream and wetland credits in the Catawba River Basin HUC 03050103. In March 2021, Wildlands completed construction of the initial Wyant Lands Mitigation Site (Site) which involved the restoration and enhancement of approximately 7,540 linear feet (LF) of Wyant Creek and three unnamed tributaries (UT1 – UT3), as well as the re-establishment and rehabilitation of approximately 14.2 acres of wetlands. Restoration of these streams and adjacent wetlands was proposed to provide 6,863.7 stream credits and 13.1 wetland credits within the approved mitigation plan dated April 2020. Steam and wetland crediting was revised from the approved mitigation plan within the baseline monitoring report based on the as-built stream lengths and wetland areas to 6,859.067 stream credits and 13.095 wetland credits. A contract addendum and revised mitigation approach was proposed by Wildlands and was approved by DMS in July 2021. The addendum proposes to restore approximately 396 LF of UT2 Reach 1 which was proposed as stream enhancement II within the approved mitigation plan. Additionally, the addendum proposes to restore and create an additional 5.741 acres of wetland features at the Site. This mitigation plan addendum is proposing an additional 231.600 SMUs and 4.513 WMUs based on the proposed work at the Site. Upon baseline monitoring report approval, including the updated asset amounts, and addendum approval by the North Carolina Interagency Review Team (IRT), total project assets for the Site will increase to 7,090.667 SMUs and 17.608 WMUs for the project.

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## MITIGATION PLAN ADDENDUM FIGURES



## ADDENDUM APPENDICES

# 1.0 Introduction

Wildlands Engineering Inc., (Wildlands) is proposing an expansion of project assets at the Wyant Lands Mitigation Site (Site). The initial Site mitigation plan received IRT and U.S. Army Corps of Engineers (USACE) approval on December 20, 2019. The original project involved the restoration and enhancement of approximately 7,540 linear feet of Wyant Creek and three unnamed tributaries (UT1 – UT3), as well as the re-establishment and rehabilitation of 14.147 acres of wetlands. Restoration of these streams and adjacent wetlands area were approved to provide 6,863.7 stream credits and 13.1 wetland credits within the Catawba basin in the approved mitigation plan. Steam and wetland crediting was revised from the approved mitigation plan within the baseline monitoring report based on the as-built stream lengths and wetland areas to 6,859.067 stream credits and 13.095 wetland credits. The original Site is protected by a 41.5-acre conservation easement. The proposed mitigation addendum area will include an additional 5.9-acre conservation easement which will abut the existing recorded conservation easement north of the previously restored wetland area (Figure 2A). The amended project area will provide an additional 5.741 acres of wetland re-establishment, rehabilitation, and creation. In addition to the expanded wetland area, this addendum proposes a revision of mitigation approach along UT2 Reach 1 from enhancement II to restoration. Work as part of this mitigation addendum is proposed to provide an additional 231.600 stream credits and 4.513 wetland credits. Upon baseline monitoring report approval, including the updated asset amounts, and addendum approval by the North Carolina Interagency Review Team (IRT), total project assets for the Site will increase to 7,090.667 SMUs and 17.608 WMUs for the project. Project information for the proposed addendum is shown in Table 1.

**Table 1: Project Attribute Table Part 1**

| Amended Project Information | |
|---|---|
| **Project Name** | Wyant Lands Mitigation Site |
| **County** | Lincoln |
| **Project Area (acres)** | 41.5 (original); 6.0 (addendum); 47.5 (total) |
| **Project Coordinates (latitude and longitude)** | 35° 32’ 2.13"N 81° 18' 52.82"W |
| **Planted Acreage (acres of woody stems planted)** | 37.8 (original); 7.2 (addendum); 45.0 (total) |

# 2.0 Addendum Area Baseline and Existing Conditions

## 2.1 Project Description

Construction and planting of the approved mitigation Site assets were completed in spring of 2021 and the as-built and baseline monitoring report was submitted to DMS in October 2021. This mitigation plan addendum includes additional conservation easement area to include additional wetlands in the pasture area north of the original wetland restoration area. Wetlands will be restored and created by removing the crowned field material, removing side cast berms in the agricultural pasture and filling existing ditches within the proposed wetland areas. Additionally, UT2 Reach 1 is proposed for restoration with an appropriate pattern, profile, and dimension. A best management practice (BMP) will be installed along the reach to stabilize a recently developed water quality stressor from the adjacent agricultural pasture. A new conservation easement containing the amended wetland area that abuts the original recorded conservation easement will be acquired as part of the project addendum. UT2 Reach 1 is currently within the existing recorded conservation easement and no additional easement will be required based on the revised stream mitigation approach.

## 2.2 Addendum Existing Conditions - Wetlands

### *2.2.1 Addendum Area Jurisdictional Wetlands*

Wildlands previously delineated wetland waters of the United States within the original project areas and a Preliminary Jurisdictional Determination (PJD) was issued in August 2019. The issued PJD and associated NCDWR Stream Classification Forms and USACE Wetland Determination Data Sheets were included in Appendix 3 of the approved mitigation plan. An addendum to the existing PJD was submitted in August 2021 and included additional assessment area based on this proposed project expansion. Wildlands received approval of the amended PJD on September 15th, 2021. The amended PJD submittal and associated approval is included in Appendix 3A of this mitigation plan addendum. The amended PJD includes an additional four jurisdictional wetland features (Q-T) and one additional open water feature (Open Water 2) documented within the expanded wetland assessment area which can be seen in Figure 6.1A. On-site wetland features exhibit prolonged saturation within the upper 12 inches of the soil profile, hydrophytic vegetation, and a depleted matrix or darkened surface horizons. Common vegetation species present in wetlands include creeping buttercup *(Ranunculus repens)*, marsh dewflower *(Murdannia keisak),* and soft rush *(Juncus effuses)*.

Wetlands L, M, and N are associated with UT1 Reach 1 and discussed in the original mitigation plan. Existing wetlands delineated as part of the project expansion were evaluated using the North Carolina Wetland Assessment Method (NCWAM) to generate function ratings for specific wetland types. Using the NCWAM dichotomous key and best professional judgement, existing wetlands in the addendum area were classified based on the reference wetland type as if the area was not disturbed; therefore, wetlands were classified as bottomland hardwood forests. The NCWAM ratings of wetlands in the addendum area is low. The wetlands scored as low functioning systems when compared to reference conditions as a result of impairments to all three of the primary functions (hydrology, water quality, and habitat). Hydrology and water quality functions generally received low scores due to ditching and berms that reduce surface and subsurface water storage and limit hydrologic connectivity with streams. Habitat quality received low scores due to vegetation composition and structure; most on-site wetlands are poorly connected to adjacent natural habitats and are actively managed for grazing. NCWAM field assessment forms and the rating calculator outputs for additional jurisdictional wetlands within the expanded project area are included in Appendix 4A. Table 2 below outlines the additional jurisdictional wetlands and open water features identified within the proposed project expansion.

**Table 2: Addendum Area Jurisdictional Wetland Features**

| Wetland Summary Information | | | | |
|---|---|---|---|---|
| **Parameter** | **Wetland L** | **Wetland M** | **Wetland N** | **Wetland Q** |
| **Size of Wetland within CE (acres)** | <0.01 | 0.01 | 0.04 | 0.315 |
| **Wetland Type (NCWAM Classification)** | Headwater Forest | Headwater Forest | Headwater Forest | Bottomland Hardwood Forest |
| **Mapped Soil Series** | Pacolet | Pacolet | Pacolet | Chewacla/ Pacolet |
| **Drainage Class** | Well Drained | Well drained | Well drained | Somewhat poorly drained/ Well Drained |
| **Soil Hydric Status** | No | No | No | No |
| **Source of Hydrology** | Groundwater Discharge | Groundwater Discharge | Groundwater Discharge | Groundwater Discharge |
| **Restoration or enhancement method (hydrologic, vegetative, etc.)** | Enhancement | Enhancement | Enhancement | Restoration |

| Wetland Summary Information | | | | |
|---|---|---|---|---|
| **Parameter** | **Wetland R** | **Wetland S** | **Wetland T** | **Open Water 2** |
| **Size of Wetland within CE (acres)** | 0.358 | 0.208 | 0.160 | 0.307 |
| **Wetland Type (NCWAM Classification)** | Bottomland Hardwood Forest | Bottomland Hardwood Forest | Bottomland Hardwood Forest | N/A (Canal) |
| **Mapped Soil Series** | Chewacla | Chewacla | Chewacla | Chewacla |
| **Drainage Class** | Somewhat Poorly Drained | Somewhat Poorly Drained | Somewhat Poorly Drained | Somewhat poorly drained |
| **Soil Hydric Status** | No | No | No | No |
| **Source of Hydrology** | Groundwater Discharge | Groundwater Discharge | Groundwater Discharge | Groundwater Discharge |
| **Restoration or enhancement method (hydrologic, vegetative, etc.)** | Restoration | Restoration | Restoration | Restoration |

## 2.3 Addendum Existing Conditions – Streams

The Site included four perennial streams within the approved mitigation plan (Wyant Creek, UT1, UT2, and UT3) and NC DWR Stream Identification Forms (Version 4.11) were included in previously submitted Appendix 4. During the initial project evaluation, UT2 was determined to be a perennial stream with a total score of 38. No major watershed or hydrologic changes have occurred upstream of the project, so no update was required to the jurisdictional status of UT2. No additional stream resources are included as part of this mitigation plan addendum. The current condition of UT2 Reach 1 is described in detail below. Table 3 provides a summary of the existing stream condition. The existing condition alignment and cross-section data collection locations are illustrated in Figure 6.2A.

### *2.3.1 UT2 Reach 1*


Eroding Outside Bend Along UT2 Reach 1

UT2 Reach 1 is located downstream from an existing farm pond. The farm pond was fenced for cattle exclusion as part of the original project. UT2 Reach 1 flows through a moderately sloped and moderately confined alluvial valley until intersecting with an adjacent parcel owned by Rutherford Electric Membership Cooperation (REMCO). The reach was previously in active cattle pasture with evidence of cattle activity including feces and trampling, as well as some cattle runs and wallow areas. When the stream was initially evaluated in October 2017, the primary stream stressors were invasive vegetation and cattle activity. An assessment of the stream conducted in April 2019 indicated the stream had a moderately stable dimension, moderate bedform diversity, and existing riffle-pool habitat. However, during the period from April 2019 and August 2021, the Site received multiple large rain events, and this reach degraded rapidly. Runoff from an upgradient field initiated a large headcut in the right floodplain which deposited sediment within the stream channel and impacted bedform. Invasive vegetation stems increased within the floodplain and are outcompeting native vegetation. Fine sediment loads increased from active bank erosion and the adjacent floodplain headcut. Common vegetation found throughout the reach include red maple (*Acer rubrum*), black willow (*Salix nigra*), Chinese privet (*Ligustrum sinense*), and chickweed (*Stellaria media*). Table 3 below shows a summary of channel information.

**Table 3: UT2 Reach 1 Existing Stream Summary**

| Parameter | UT2 Reach 1 |
|---|---|
| **Existing Length of Reach (LF)** | 411 |
| **Valley Confinement (confined, moderately confined, unconfined)** | Moderately Confined |
| **Drainage Area (acres)** | 77 |
| **Perennial, Intermittent, Ephemeral** | P |
| **NCDWR Water Quality Classification** | WS-IV |
| **Stream Classification** | C4 |
| **Evolutionary Trend (Simon)** | II/III<br>Downcutting |
| **FEMA Classification** | N/A |

### 2.4 Addendum Area Soils

Soil mapping units are based on the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Lincoln County. Soils within the addendum areas are mapped as Chewacla loam and Pacolet sandy clay loam. These soils are described below in Table 4. A soils map of the addendum areas is provided in Figure 5A.

**Table 4: Addendum Area Soils**

| Soil Name | Description |
|---|---|
| **Chewacla loam** | Chewacla soils are found in Piedmont river valleys. They are somewhat poorly drained alluvial soils with a seasonal high water table of 6-24 inches. This soil unit is frequently flooded or ponded. |
| **Pacolet sandy clay loam** | Pacolet soils are found in hillslopes and ridges with slopes from 0-80%. They are well-drained soils weathered from granite and gneiss. Depth to water table is typically greater than 80 inches. |

Source: Lincoln County Web Soil Survey

## 3.0 Addendum Regulatory Considerations

Table 5, below, is a summary of regulatory considerations for the Site. These considerations are explained in more detail in Sections 6.1-6.2.

**Table 5: Regulatory Considerations**

| Parameters | Applicable? | Resolved? | Supporting Docs? |
|---|---|---|---|
| **Water of the United States - Section 404** | Yes | No | PCN[1] |
| **Water of the United States - Section 401** | Yes | No | PCN[1] |
| **Endangered Species Act** | Yes | Yes | Appendix 5[3] |
| **Historic Preservation Act** | Yes | Yes | Appendix 5[3] |
| **Coastal Zone Management Act** | No | N/A | N/A |
| **FEMA Floodplain Compliance** | Yes | No | N/A |
| **Essential Fisheries Habitat** | No | N/A | N/A |

1. PCN to be amended as part of project addendum upon preliminary mitigation plan addendum approval.
2. An updated floodplain development permit application will be submitted to the local floodplain administrator.
3. See approved mitigation plan

### 3.1 Biological and Cultural Resources

A Categorical Exclusion for the Wyant Lands Mitigation Site was approved by the Federal Highway Administration (FHWA) on October 19, 2018. This document included investigation into the presence of threatened and endangered species on Site protected under The Endangered Species Act of 1973, as well as any historical resources protected under The National Historic Preservation Act of 1966. The conclusion for cultural resources per the Categorical Exclusion research and response by the State Historic Preservation Office is that there are no historic resources that would be affected by this project. The signed Categorical Exclusion checklist is found in Appendix 5 of the approved mitigation plan.

### 3.2 Addendum FEMA Floodplain Compliance and Hydrologic Trespass

A Lincoln County floodplain development permit was obtained for the original portions of the Wyant Lands Mitigation Site in November 2019 in compliance with FEMA floodplain and Lincoln County ordinances. Work in the addendum area also occurs in the Special Flood Hazard Area (Zone AE) of Pott Creek mapped on Lincoln County Flood Insurance Rate Map Panel 3604. An amended floodplain development permit has been requested and a revised hydraulic modeling study has been developed that includes the addendum area grading.

The proposed design associated with the addendum area has limited risk of potential hydrologic trespass. The addendum wetland area is graded to provide positive drainage toward the recorded conservation easement. UT2 Reach 1 has sufficient gradient that the design will not result in backwater effects upstream of the work area.

### 3.3 Addendum 401/404

Wildlands incorporated existing stream and wetland stability and/or function into design approaches for avoidance and minimization measures. Wetlands within the amended conservation easement or limits of disturbance will be denoted in the final construction plans including the Erosion and Sediment Control sheets. Proposed protection including safety fencing of these areas where possible will be shown in the Detail plan sheets as well as specified within the project manual. Floodplain grading will result in temporary impacts to most existing wetlands while channel realignment and filling open waters will result in permanent impacts. Wildlands expects a net gain of wetland area and function as a result of floodplain grading and filling existing open waters. Table 6 estimates the anticipated impacts to wetlands and open waters. The Pre-Construction Notification, including these data, will be provided with the final addendum mitigation plan.

**Table 6: Amended Area Estimated Impacts to Wetlands and Open Waters**

| Jurisdictional Feature | Classification | Acreage | Permanent (P) Impact | | Temporary (T) Impact | |
|---|---|---|---|---|---|---|
| | | | Type of Activity | Impact Area (acres) | Type of Activity | Impact Area (acres) |
| Wetland L | Bottomland Hardwood Forest | 0.010 | - | - | Stabilization | 0.010 |
| Wetland M | Bottomland Hardwood Forest | 0.010 | Conversion to stream resource | 0.005 | Floodplain Grading | 0.005 |
| Wetland N | Bottomland Hardwood Forest | 0.040 | Conversion to stream resource | 0.010 | Floodplain Grading | 0.030 |
| Wetland Q | Headwater Forest | 0.315 | - | - | Wetland Restoration Grading | 0.315 |

| Jurisdictional Feature | Classification | Acreage | Permanent (P) Impact | | Temporary (T) Impact | |
|---|---|---|---|---|---|---|
| | | | Type of Activity | Impact Area (acres) | Type of Activity | Impact Area (acres) |
| Wetland R | Headwater Forest | 0.358 | - | - | Wetland Restoration Grading | 0.358 |
| Wetland S | Headwater Forest | 0.208 | - | - | Wetland Restoration Grading | 0.208 |
| Wetland T | Bottomland Hardwood Forest | 0.160 | - | - | Wetland Restoration Grading | 0.160 |
| Open Water 2 | Canal | 0.307 | Fill | 0.307 | | |
| | | | **Total P Impact** | 0.322 | **Total T Impact** | 1.086 |

## 4.0 Mitigation Site Goals and Objectives

The proposed addendum will improve stream and buffer functions via stream restoration, stabilization of water quality stressors, treatment of invasive species, and riparian buffer re-vegetation. Wetland function will be improved at the Site via a reduction in surface drainage features resulting in hydrologic uplift. The project goals and related objectives and outcomes are described in Table 7. Project goals are desired project outcomes and are verifiable through measurement and/or visual assessment. Objectives are activities that will result in the accomplishment of goals. The project will be monitored after construction to evaluate performance as described in Section 6.0 of this report.

**Table 7: Mitigation Goals and Objectives**

| Goal | Objective | Expected Outcomes |
|---|---|---|
| Exclude livestock from wetland areas. | Install fencing around conservation easements or remove cattle from easements adjacent to cattle pastures. | Reduce and control sediment inputs; Reduce and manage nutrient inputs; Improve agricultural management activities. |
| Improve the stability of stream channels. | Restore UT2 Reach 1 to establish a stable pattern, dimension, and profile. Stabilize stream bed and banks using bank vegetation, bank revetments, and in-stream structures to protect the restored channel. | Reduce and control sediment inputs; Contribute to protection, or improvement, of a Water Supply and Nutrient-Sensitive Water. |
| Improve instream habitat. | Install habitat features such as constructed riffles, cover logs, and brush toes into UT2 Reach 1. Add woody materials to channel bed. Construct pools of varying depth. | Improve aquatic communities in project streams. |
| Restore wetland hydrology, soils, and plant communities. | Restore and enhance riparian wetlands filling existing ditches, removing berm material over relic hydric soils, and planting native wetland species. | Improve terrestrial habitat; Contribute to protection of or improvement of a Water Supply and Nutrient-Sensitive Water. |
| Restore and enhance native floodplain vegetation. | Plant native tree species in riparian zone were currently insufficient. Treat invasive species within the floodplain of UT2 Reach 1. | Reduce and control sediment inputs; Reduce and manage nutrient inputs; Provide a canopy to shade streams and reduce thermal loadings; Contribute to protection, or improvement, of a Water Supply and Nutrient-Sensitive Water. |

| Goal | Objective | Expected Outcomes |
|---|---|---|
| Reduce point source water quality stressors. | Stabilize the active headcut in the right floodplain of UT2 Reach 1. | Reduce and control sediment inputs; Contribute to protection, or improvement, of a Water Supply and Nutrient-Sensitive Water. |
| Permanently protect the project Site from harmful uses. | Establish conservation easements on the Site. | Ensure that development and agricultural uses that would damage the site or reduce the benefits of the project are prevented. |

## 5.0 Design Approach and Mitigation Work Plan

### 5.1 Design Channel Morphological Parameters

Cross-sectional area, pattern, and profile design parameters and selected and width were based on the design discharge, stable bank slopes, and width to depth ratios similar to reference conditions. Key morphological parameters for the UT2 Reach 1 are listed in Table 8. UT2 Reach 1 is proposed for stream restoration and will be constructed as a Priority 1 restoration. The Priority 1 approach will raise the stream bed so that the bank full elevation will concede with the existing floodplain. The cross-section will be constructed to convey the design discharge. UT2 Reach 1 is designed as a Rosgen Bc-type channel that will meander within the existing narrow valley. The reach is actively eroding from bank erosion and a floodplain headcut. Bank grading, the installation of in-stream structures, that of invasive species, and planting to the existing riparian buffer will be performed as part of the proposed restoration.

**Table 8: Summary of Morphological Parameters for UT2**

| Parameter | Existing Parameters | Reference Parameters | | Proposed Parameters |
|---|---|---|---|---|
| | UT2 Reach 1 | Magnolia Tributary | Pilot Mountain Tributary | UT2 Reach 1 |
| **Contributing Drainage Area (sq. mi.)** | 0.2 | 0.31 | 0.27 | 0.2 |
| **Channel/Reach Classification** | C4b | B4c | B4 | C4b |
| **Design Discharge Width (ft)** | 8.3 | 15.6 | 8.6 | 9.3 |
| **Design Discharge Depth (ft)** | 0.6 | 1.0 | 0.7 | 0.7 |
| **Design Discharge Area ($ft^2$)** | 5.0 | 16.0 | 6.0 | 6.8 |
| **Design Discharge Velocity (ft/s)** | 3.4 | 4.0 | 5.3 | 4.0 |
| **Design Discharge (cfs)** | 16.8 | 64.0 | 32.0 | 26.0 |
| **Water Surface Slope (ft/ft)** | 0.0167 | 0.0163 | 0.0378 | 0.019 |
| **Sinuosity** | 1.24 | 1.26 | 1.05 | 1.1 |
| **Width/Depth Ratio** | 13.8 | 15.2 | 12.5 | 13.0 |
| **Bank Height Ratio** | 2.0 | 1.6 | 1.0 | 1.0 – 1.1 |
| **Entrenchment Ratio** | 2.4 | 1.9 | 1.5 | 1.4 – 5.0 |

## 5.2 Addendum Wetland Design

The proposed wetland design includes the re-establishment, rehabilitation, and creation of a Piedmont bottomland forested wetland system. The proposed wetland areas are within the broad floodplain of Pott Creek and are currently managed as agricultural pasture used for cattle grazing and/or hay production. Wildlands evaluated existing conditions within the proposed wetland areas to understand existing and potential hydric soils, current surface drainage features, existing vegetation, and the potential for increases in hydrology based on the proposed Site design.


Proposed wetland areas are currently ditched with three swales and two main perimeter ditches. The fields are currently in pasture grasses and cattle grazing is the intended future use of the fields if they are not added to the mitigation project. Figure 10.1A shows approximate areas of proposed wetland approach including creation, rehabilitation, and re-establishment. Areas proposed for wetland re-habilitation are currently jurisdictional areas which are impaired by agricultural manipulation and drainage. Areas of wetland re-establishment have been floodplain riparian wetlands prior to agricultural manipulation and the installation of drainage features. Similarly, areas of wetland creation are also believed to have been floodplain riparian wetlands prior to agricultural manipulation, however drainage features and field crowning has resulted in deep strata of overburden (typically greater than or equal to 12”) which will be removed as part of the wetland development. Based on the depth of grading these areas and lack of current or relic hydric indicators, these areas are propose wetland creation.

Soils within the northern fields are mapped as Chewacla loam. The soils within this area were evaluated by Wildland personnel in March 2021. Eleven soil borings were taken throughout the proposed wetland mitigation area and soils were evaluated for hydric indicators as well as potential hydric development. Generally, soils within low, wet swales have developed current hydric indicators including low chromas and redox concentrations occurring as pore linings within the top 10” of the soil surface. Soils outside of low, wet swales, and particularly within crowned areas, exhibited higher chroma within the first 12” with lower chroma and/or reduced soil features beyond depths of 12”. Results from Wildlands’ soils investigation are included in Appendix 6A.

The approach within the amended wetland mitigation area will be to remove the current overburden from the crowned fields and fill the existing drainage features to restore a natural wetland hydrologic regime. Pasture grasses will be graded or treated for removal, and the area will be roughened to retain surface water and increase retention times. A conservation easement will be recorded and will connect to the existing conservation easement, expanding the floodplain riparian area being protected in perpetuity. The wetland restoration area will be planted in woody vegetation consistent with a bottomland hardwood forested wetland system. Fencing will be installed around the additional conservation easement or cattle will be removed from the easement to prevent any future cattle access.

## 5.3 Addendum Existing Hydrology

Four groundwater monitoring gauges were installed in the amended wetland area on June 23, 2021 (Appendix 6A). The location of the existing groundwater gauges is shown in Figure 6.1A. The four groundwater gauges were placed in transects to evaluate the groundwater elevations across the existing

agricultural area proposed for wetland crediting. Growing season dates were defined as March 27 to November 6 (224 days) by the Lincolnton 4W North Carolina WETS table for 50% probability of soil temperatures greater than 28 degrees Fahrenheit.

Groundwater gauge 102 malfunctioned and did not collect data during the June 23 to September 15 period. The data collected from the remaining three groundwater gauges suggest the wetland areas are drained by the existing ditch networks. The groundwater levels quickly increase during rain events and rapidly recede after rain events. The gauges continue to slowly receding overtime until the next rain event. The average percent consecutive days above 12-inches of soil saturated was 2% for Ground water gage 101, 103, and 104 the three addendum groundwater gauges located within the proposed re-establishment area. Gauge data supports the design approach of filling existing ditches to raise hydrology within the addendum wetland area.

### 5.4 Proposed Best Management Practices (BMPs)

In addition to the proposed stream design outlined in Section 4.1, one BMP is proposed in the right floodplain of UT2 Reach 1 as shown in Figure 10.2A. The proposed BMP will be designed as a step-pool stormwater conveyance (SPSC) consisting of short riffles, rock steps, and pools designed to stabilize the existing headcut. The BMP is intended to address adjacent water quality stressors and reduce sediment inputs from adjacent agricultural practices. Maintenance is not anticipated for the proposed BMP. A basic detail is shown in Sheet 5.6 of the design plans included in Appendix 8A. Specific design dimensions will be finalized prior to project construction.

### 5.5 Addendum Vegetation and Planting Plan

The riparian buffer and most wetland areas will be planted with bare root seedlings. Species chosen to be planted within wetland areas were selected based on community types as well as their ability to handle wetter ground conditions based on standing water and high groundwater levels observed in wetland areas at the Site. The stream banks will be planted with live stakes and the channel toe will be planted with multiple herbaceous species. Permanent herbaceous seed will be spread on streambanks, floodplain areas, and disturbed areas within the project easement. Bare root seedlings and live stakes will be planted in the dormant season between November 15 and March 15. Figure 10A illustrates the proposed planting zones throughout the site. Species chosen for the planting plan are listed on Table 9 below and on sheet 4.0 of the preliminary plans located in appendix A.

**Table 9: Planting List**

| Species | Common Name | Wetland Indicator |
|---|---|---|
| **Riparian Planting Zone** | | |
| *Alnus serrulata* | Tag Alder | OBL |
| *Carpinus caroliniana* | American Hornbeam | FAC |
| *Liriodendron tulipifera* | Tulip Poplar | FACU |
| *Platanus occidentalis* | Sycamore | FACW |
| *Betula nigra* | River Birch | FACW |
| *Populus deltoides* | Eastern Cottonwood | FAC |
| *Diospyros virginiana* | Persimmon | FAC |
| *Quercus nigra* | Water Oak | FACW |
| *Quercus phellos* | Willow Oak | FAC |
| *Quercus michauxii* | Swamp Chestnut Oak | FACW |

| Wetland Planting Zone | | |
|---|---|---|
| *Plantanus occidentalis* | Sycamore | FACW |
| *Quercus phellos* | Willow Oak | FAC |
| *Betula nigra* | River Birch | FACW |
| *Quercus michauxii* | Swamp Chestnut Oak | FACW |
| *Sambucus canadensis* | Elderberry | FACW |
| *Alnus serrulata* | Tag Alder | OBL |
| *Cephalanthus occidentalis* | Common Buttonbush | OBL |
| *Rosa palustris* | Swamp rose | OBL |
| **Streambank Planting Zone** | | |
| *Cephalanthus occidentalis* | Common Buttonbush | OBL |
| *Salix sericea* | Silky Willow | OBL |
| *Physocarpus opulifolius* | Ninebark | FACW |
| *Sambucus canadensis* | Elderberry | FAC |
| *Juncus effusus* | Common Rush | FACW |
| *Carex crinita* | Fringed Sedge | OBL |
| *Carex lurida* | Lurid Sedge | OBL |
| *Carex alata* | Broadwing sedge | OBL |
| *Scirpus cyperinus* | Woolgrass | FACW |

## 6.0 Addendum Performance Standards

The stream and wetland performance standards for the project will follow approved performance standards presented in the DMS Mitigation Plan Template (Version 2.3, June 2017), the Annual Monitoring Template (June 2017), and the Wilmington District Stream and Wetland Compensatory Mitigation Update issued October 2016 by the USACE and NCIRT. Annual monitoring and routine site visits will be conducted by a qualified scientist to assess the condition of the finished project. Specific performance standards that apply to this project are those described in the 2016 Compensatory Mitigation Update including Vegetation (Section V, B, Items 1 through 3), Stream Channel Stability, and Stream Hydrology Performance Standards (Section VI, B, Items 1 through 7). Performance standards are summarized in 10.

**Table 10: Summary of Performance Standards**

| Parameter | Monitoring Feature | Performance Standard |
|---|---|---|
| **STREAM SPECIFIC PERFOMANCE STANDARDS[1, 2, 3]** | | |
| Dimension | Cross-Section Survey | BHR <1.2; ER >2.2 for Bc channel |
| Pattern and Profile | Visual Assessment | Should indicate stream stability |
| Photo Documentation | • Cross-Section Photos<br>• Photo Points | No excessive erosion or degradation of banks<br>No mid-channel bars, Stable grade control |
| Hydrology | Pressure Transducer | • Streams - Four bankfull events during the 7-year period; in separate years |

| Parameter | Monitoring Feature | Performance Standard |
|---|---|---|
| | | • Wetlands – Free groundwater surface within 12 inches of the ground surface for a minimum of 12% (27 consecutive days) of the growing season. |
| **SITE PERFOMANCE STANDARDS** | | |
| Vegetation | Vegetation Plots | MY3 success criteria: 320 planted stems per acre,<br>MY5 success criteria: 260 planted stems per acre, average of 7 feet in height in each plot<br>MY7 success criteria: 210 planted stems per acre, average of 10 feet in height in each plot |
| Visual Assessment | CCPV | Signs of encroachment, instability, invasive species |

1: BHR = bank height ratio, ER = entrenchment ratio
2: Riffles may fine over the course of monitoring due to the stabilization of contributing watershed sediment sources.
3: The monitoring period will follow the original mitigation plan monitoring schedule. If required by the NCIRT, Wildlands will monitor the addendum portion of the project for an additional year.

## 7.0 Addendum Monitoring Plan

The Site monitoring plan has been developed to ensure that the required performance standards are met, and project goals and objectives are achieved. Annual monitoring data will be reported using the DMS Annual Monitoring Reporting Template (April 2015). The monitoring report shall provide project data chronology that will facilitate an understanding of project status and trends, ease population of DMS databases for analysis and research purposes and assist in close-out decision making.

Using the DMS As-Built Baseline Monitoring Report Template (June 2017), a baseline monitoring document and as-built record drawings of the project will be developed within 60 days of the planting completion and monitoring installation on the restored Site. Monitoring reports will be prepared in the fall of each monitoring year and submitted to DMS by November 30. These reports will be based on the DMS Annual Monitoring Template (April 2015) and Closeout Report Template (June 2017). Full monitoring reports will be submitted to DMS in monitoring years 1, 2, 3, 5, and 7. Abbreviated monitoring reports will be submitted in monitoring years 4 and 6. To facilitate project organization, after the as-built and baseline monitoring report is submitted and approved for the addendum area, monitoring reports for phase II will be included with phase I monitoring reports. It is proposed that if the addendum area has met monitoring performance standards three of the prior four monitoring years at closeout of the phase I portion of the project (monitoring year 6 of phase II), the addendum area also be closed as well. If monitoring performance criteria within the phase II addendum area has not met monitoring standards three out of the prior four years, an additional seventh year of monitoring will be performed for the addendum area and the closeout monitoring period will be seven years beyond completion of construction and/or until performance standards have been met.

### 7.1 Addendum Monitoring Components

Project monitoring components are listed in more detail in Table 11. Approximate locations of the proposed vegetation plots, cross-sections, and stream and groundwater gauge monitoring components are illustrated in Figure 11A.

**Table 11: Monitoring Components**

| Parameter | Monitoring Feature | Quantity/ Length by Reach | | Frequency | Notes |
|---|---|---|---|---|---|
| | | UT2 Reach 1 | | | |
| Dimension | Riffle Cross-Sections | 1 | | Year 1, 2, 3, 5, and 7 | 1 |
| | Pool Cross-Sections | 1 | | | |
| Pattern | Pattern | N/A | | N/A | 2 |
| Profile | Longitudinal Profile | N/A | | N/A | |
| Hydrology | Crest Gauge (CG)/ Flow Gauge (FG) | 1 FG | | Semi- Annual | 3 |
| Vegetation | CVS Level 2 Vegetation Plots | 5 Wetland Area | | Year 1, 2, 3, 5, and 7 | 4 |
| Wetlands | Groundwater Gauges | 4 | | Quarterly | |
| Visual Assessment | | Y | Y | Semi-Annual | |
| Exotic and nuisance vegetation | | | | Semi-Annual | 5 |
| Project Boundary | | | | Semi-Annual | 6 |
| Reference Photos | Photographs | 1 | | Annual | 7 |

1. Cross-sections will be permanently marked with rebar to establish location. Surveys will include points measured at all breaks in slope, including top of bank, bankfull, edge of water, and thalweg.
2. Pattern and profile will be assessed visually during semi-annual site visits. Longitudinal profile will be collected during as-built baseline monitoring survey only unless observations indicate lack of stability and profile survey is warranted in additional years.
3. Crest gauges and/or transducers will be inspected quarterly or semi-annually, evidence of bankfull events will be documented with a photo when possible. Transducers will be set to record stage once every 3 hours. The transducer will be inspected and downloaded semi-annually.
4. One open planting area vegetation plot was installed in the riparian floodplain of UT2 Reach 1. The plot was installed per the original mitigation plan monitoring requirements.
5. Locations of exotic and nuisance vegetation will be mapped.
6. Locations of vegetation damage, boundary encroachments, etc. will be mapped.
7. One photo point was installed on UT2 Reach1. The photo point was installed per the original mitigation plan. UT2 Reach 1 will have a total of 2 photo points.

## 8.0 Long-Term Management Plan

The Site will be transferred to the North Carolina Department of Environmental Quality (NCDEQ) Stewardship Program. This party shall serve as conservation easement holder and long-term steward for the property and will conduct periodic inspection of the Site to ensure that restrictions required in the conservation easement are upheld. Reference Section 11.0 within the approved mitigation plan for further information on long-term management.

## 9.0 Adaptive Management Plan

Adaptive management within the addendum area will follow techniques and protocol outlined in the approved mitigation plan.

## 10.0 Determination of Credits

Proposed addendum stream and wetland credits are listed below in Table 12 and Table 13. Stream restoration along UT2 Reach 1 is credited at a ratio of 1:1. Proposed addendum credits for the reach include additional credits generated as part of the approach change along UT2 Reach 1 less the stream credits generated as part of the original project and approach. Wetland re-establishment, rehabilitation, and creation are credited at a ratio of 1:1, 1.5:1, and 3:1, respectively.

**Table 12: Addendum Asset Table**

| Project Segment | Mitigation Plan Ft/Ac | As-Built Ft/Ac | Mitigation Category | Restoration Level | Mitigation Ratio (X:1) | Credits |
|---|---|---|---|---|---|---|
| **Stream** | | | | | | |
| UT2 Reach 1 | 396.000 | N/A[1] | Warm | R | 1.000 | 231.600[2] |
| | | | | | **Total:** | **231.600[2]** |
| **Wetland** | | | | | | |
| Wetland Group 3 | 3.360 | N/A[1] | R | REE | 1.000 | 3.360 |
| Wetland Group 4 | 1.078 | N/A[1] | R | RH | 1.500 | 0.719 |
| Wetland Group 5 | 1.303 | N/A[1] | R | C | 3.000 | 0.434 |
| | | | | | **Total:** | **4.513** |

1) As-built survey on addendum area not yet performed.
2) 231.600 additional mitigation credits represent the additional 396.000 stream credits that will be generated by restoration along UT2 Reach 1 less the 164.400 stream credits in the approved mitigation plan.

**Table 13: Revised Asset Table for the Amended Wyant Lands Mitigation Site (Original plus Addendum)**

| Project Segment | Mitigation Plan Ft/Ac | As-Built[1] Ft/Ac | Mitigation Category | Restoration Level | Mitigation Ratio (X:1) | Credits | Notes |
|---|---|---|---|---|---|---|---|
| **Stream** | | | | | | | |
| UT1 | 604.000 | 604.000 | Warm | R | 1.000 | 604.000 | |
| UT2 Reach 1 | 396.000 | N/A[2] | Warm | R | 1.000 | 396.000 | |
| UT2 Reach 2 | 515.000 | 515.000 | Warm | EII | 2.500 | 206.000 | |
| UT2 Reach 3 | 1,042.000 | 1,042.000 | Warm | R | 1.000 | 1,042.000 | |
| UT3 Reach 1 | 374.000 | 376.000 | Warm | EI | 1.500 | 250.667 | Reach assets revised per As-Built Survey |
| UT3 Reach 2 | 326.000 | 328.000 | Warm | R | 1.000 | 328.000 | Reach assets revised per As-Built Survey |
| Wyant Creek Reach 1 | 1,482.000 | 1,475.000 | Warm | R | 1.000 | 1,475.000 | Reach assets revised per As-Built Survey |
| Wyant Creek Reach 2 | 523.000 | 523.000 | Warm | R | 1.000 | 523.000 | |
| Wyant Creek Reach 3 | 295.000 | 295.000 | Warm | R | 1.000 | 295.000 | |
| Wyant Creek Reach 4 | 1,972.000 | 1,971.000 | Warm | R | 1.000 | 1,971.000 | Reach assets revised per As-Built Survey |
| | | | | | **Total:** | **7,090.667** | |
| **Wetland** | | | | | | | |
| Wetland Group 1 | 11.000 | 10.992 | R | REE | 1.000 | 10.992 | Area assets revised per As-Built Survey |
| Wetland Group 2 | 3.200 | 3.155 | R | RH | 1.500 | 2.103 | Area assets revised per As-Built Survey |
| Wetland Group 3 | 3.360 | N/A[2] | R | REE | 1.000 | 3.360 | |
| Wetland Group 4 | 1.078 | N/A[2] | R | RH | 1.500 | 0.719 | |
| Wetland Group 5 | 1.303 | N/A[2] | R | C | 3.000 | 0.434 | |
| | | | | | **Total:** | **17.608** | |

1) Asset values were revised to as-built length and areas as part of the project addendum. Credits within the baseline monitoring report totaled 6,859.067 SMUs and 13.095 WMUs.
2) As-built survey on addendum area not yet performed.

**Project Credits**

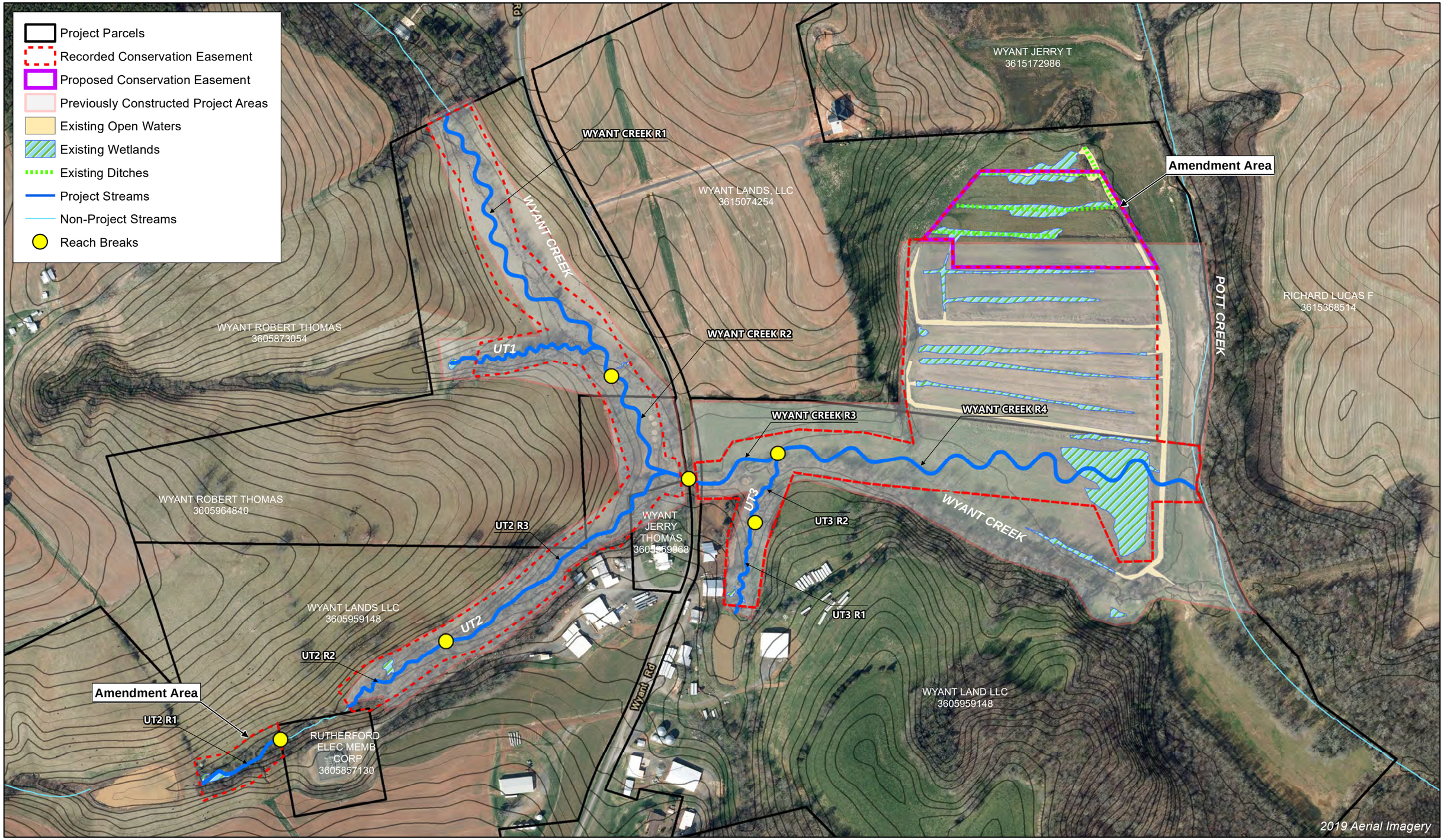
| | Stream | | | Riparian | Non-Rip | Coastal |
|---|---|---|---|---|---|---|
| **Restoration Level** | **Warm** | **Cool** | **Cold** | **Wetland** | **Wetland** | **Marsh** |
| **Restoration** | 6,634.000 | 0.000 | 0.000 | | | |
| **Re-Establishment** | | | | 14.352 | 0.000 | 0.000 |
| **Rehabilitation** | | | | 2.822 | 0.000 | 0.000 |
| **Enhancement** | | | | 0.000 | 0.000 | 0.000 |
| **Enhancement I** | 250.667 | 0.000 | 0.000 | | | |
| **Enhancement II** | 206.000 | 0.000 | 0.000 | | | |
| **Creation** | | | | 0.434 | 0.000 | 0.000 |
| **Preservation** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| **Totals** | **7,090.667** | | | **17.608** | | |

| | |
|---|---|
| **Total Stream Credit** | **7,090.667** |
| **Total Wetland Credit** | **17.608** |

## 11.0 References

Wildlands Engineering, Inc. 2020. Wyant Lands Finial Mitigation Plan, NCDMS, Raleigh, NC.

FIGURES




WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 2A Addendum Site Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

Project Parcels
Recorded Conservation Easement
Proposed Conservation Easement
Previously Constructed Project Areas
Stream Restoration
Stream Enhancement I
Stream Enhancement II
Stream Not For Credit
Proposed Stream Restoration
Non-Project Streams
Reach Breaks
ChA - Chewacla loam, 0 to 2 percent slopes, frequently flooded
LcD - Lloyd loam, 15 to 25 percent slopes
LdB2 - Lloyd sandy clay loam, 2 to 8 percent slopes, moderately eroded
LdC2 - Lloyd sandy clay loam, 8 to 15 percent slopes, moderately eroded
PaD - Pacolet sandy clay loam, 15 to 25 percent slopes
PeC2 - Pacolet sandy clay loam, 8 to 15 percent slopes, moderately eroded
RvA - Riverview loam, 0 to 2 percent slopes, occasionally flooded
WoA - Worsham fine sandy loam, o to 2 percent slopes

WYANT CREEK R1
WYANT CREEK R2
WYANT CREEK R3
WYANT CREEK R4
UT1
UT2
UT2 R1
UT2 R2
UT2 R3
UT3
UT3 R1
UT3 R2
Addendum Area
WYANT CREEK
POTT CREEK
Wyant Rd
PeC2
PaD
ChA
LdC2
RvA
LdB2
LcD
WoA

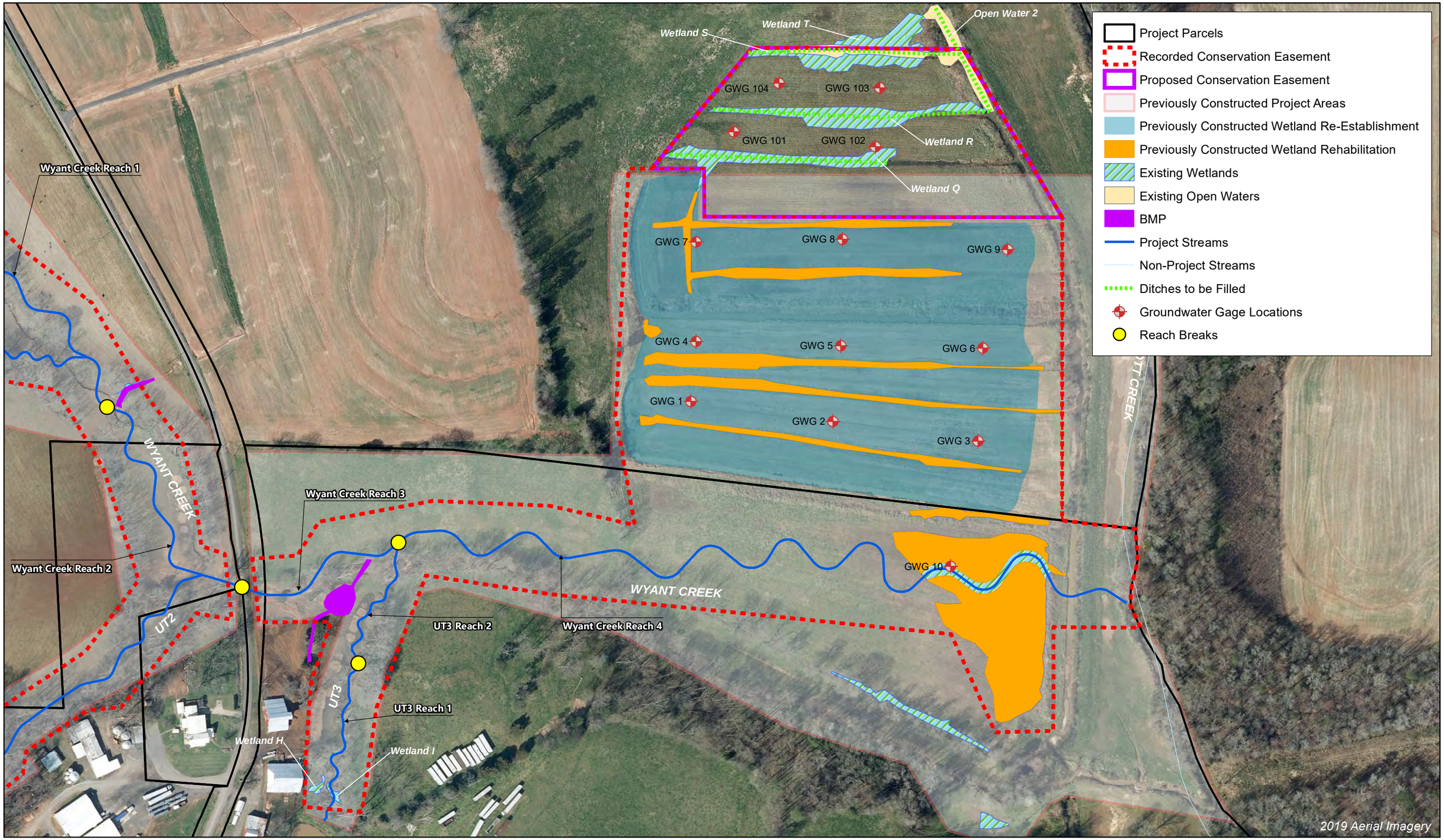
2019 Aerial Imagery

WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 5A Addendum Soils Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

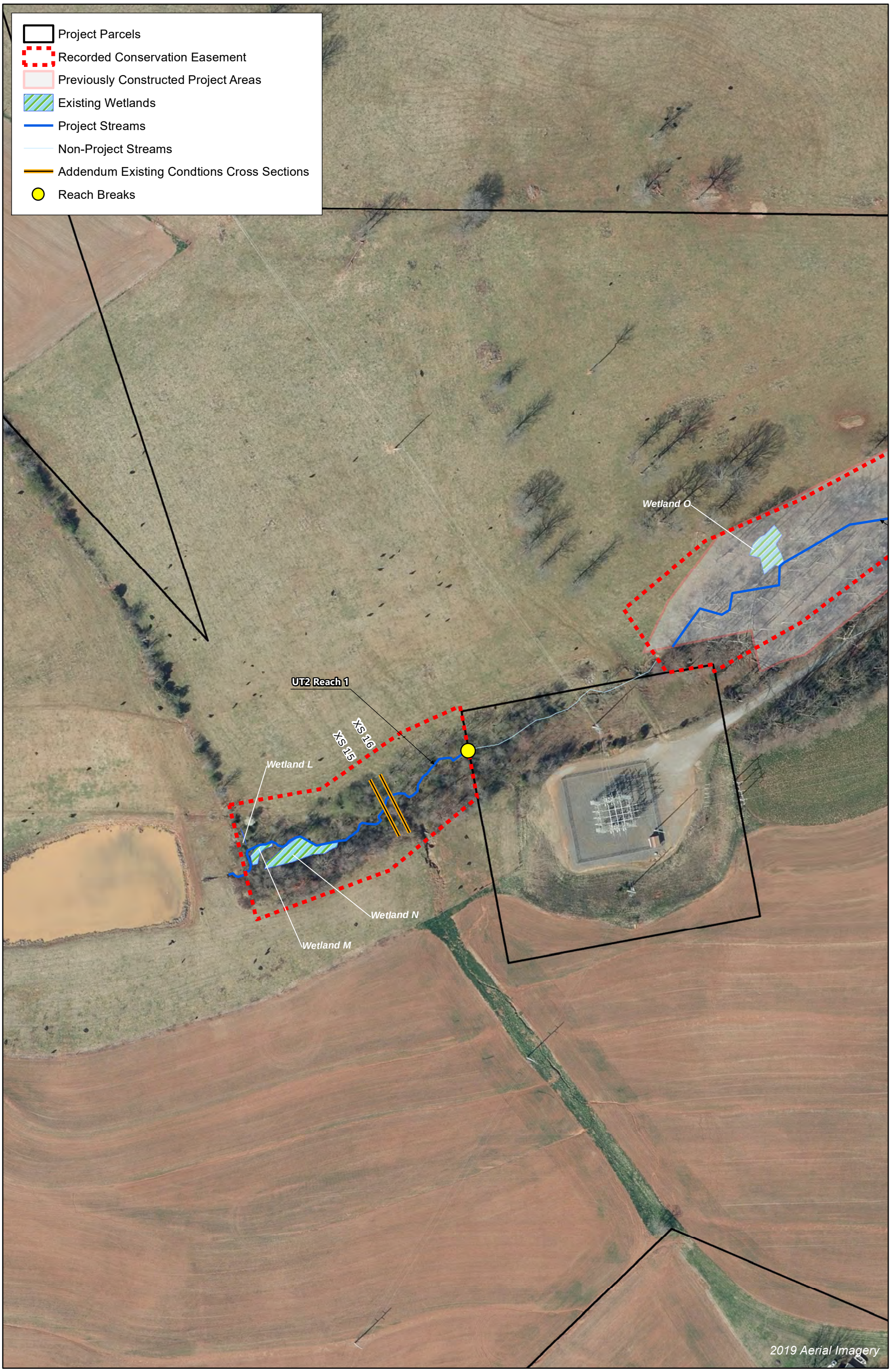



WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 6.1A Addendum Existing Conditions Map - East Side
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*




WILDLANDS ENGINEERING

0 50 100 Feet

N

Figure 6.2A Addendum Existing Conditions Map - West Side
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

Project Parcels
Recorded Conservation Easement
Proposed Conservation Easement

784
782
781
781
780
085
075
066
Pott Creek
ZONE AE
N. WYANT RD (SR 1216)
CORVAIR LN

Lincoln County, NC FIRM Panel 370146, effective on 8-16-2007

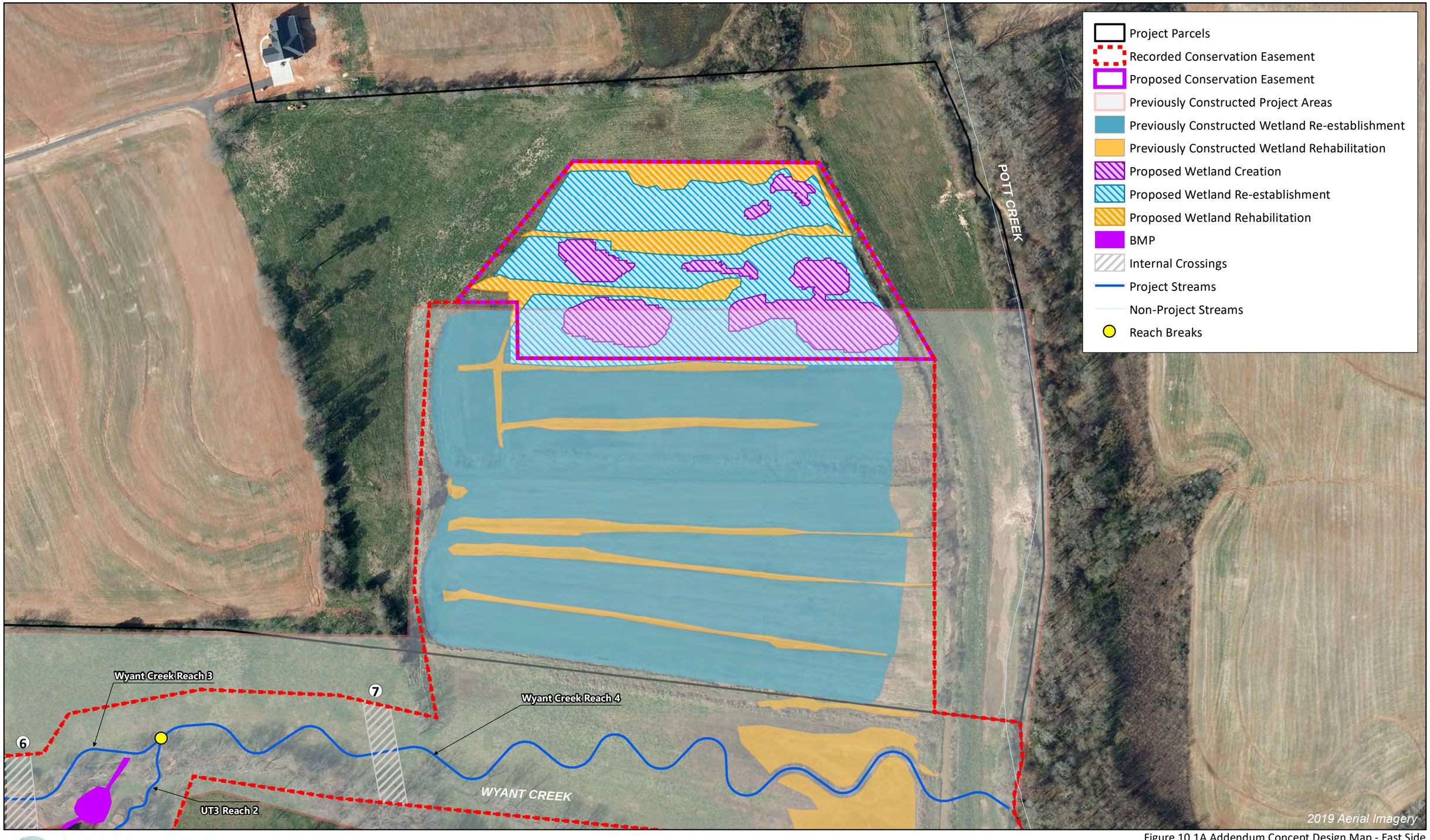
WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 7A Addendum FEMA Floodplain Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102

*Lincoln County, NC*




WILDLANDS ENGINEERING

0 150 300 Feet

N

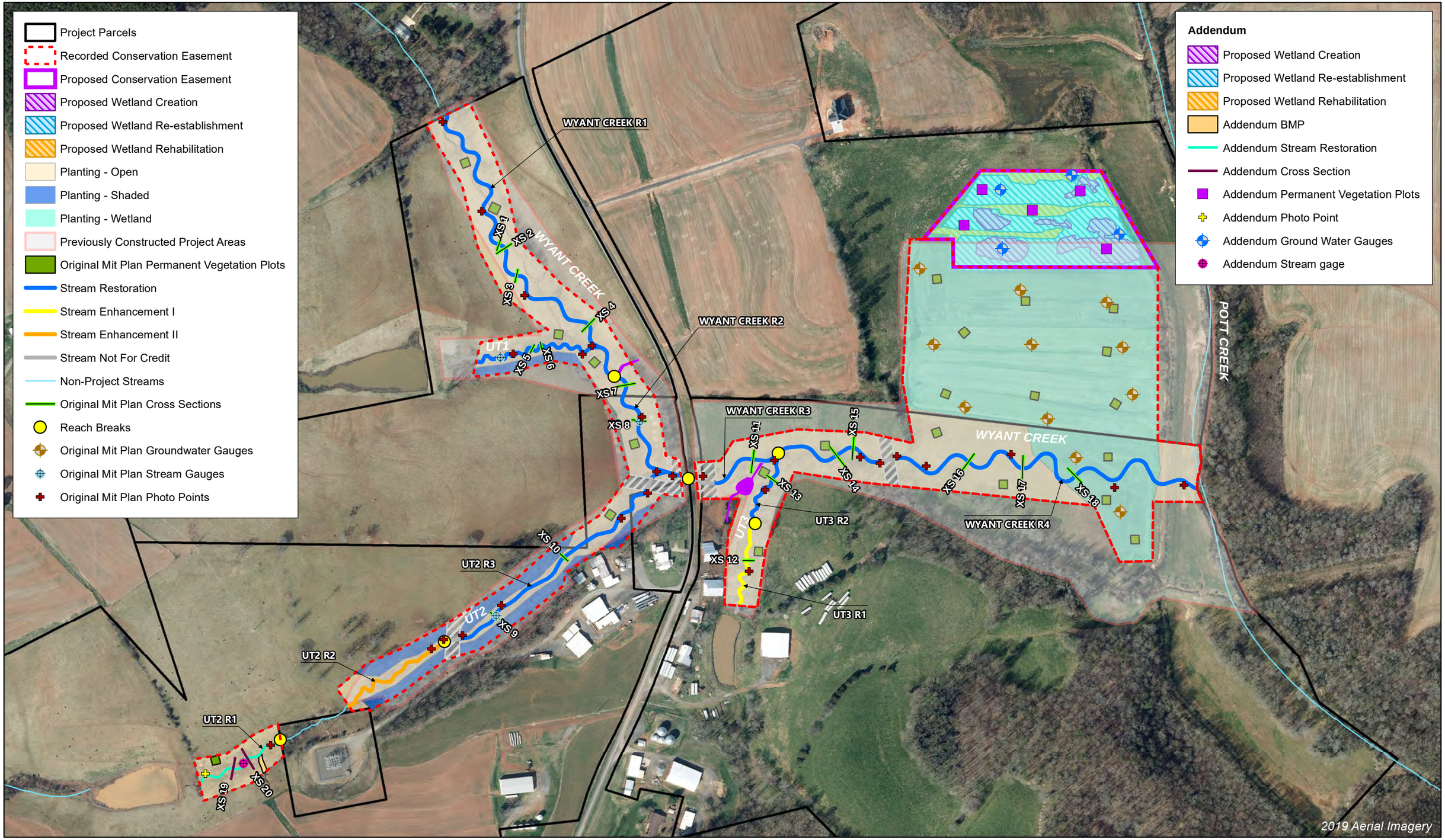
Figure 10.1A Addendum Concept Design Map - East Side
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*


WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 10.2A Addendum Concept Design Map - West Side
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

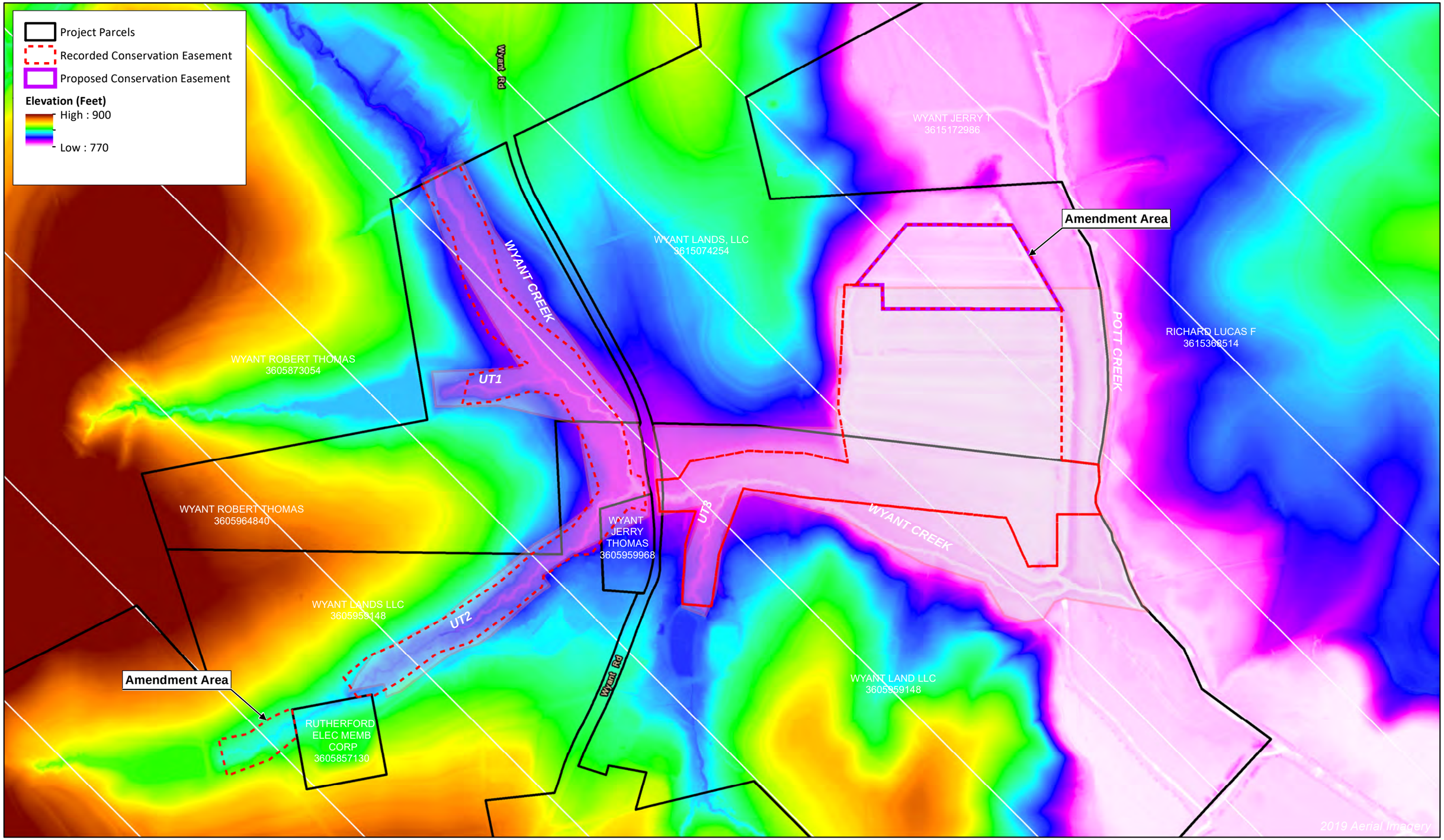



WILDLANDS ENGINEERING

0 150 300 Feet

N

Figure 11A Addendum Monitoring Plan
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*




WILDLANDS ENGINEERING

0 200 400 Feet

N

Figure 13. LiDAR Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

APPENDIX 3A
Amendment Jurisdictional Determination and NCWAM Forms

# U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action ID: **SAW-2017-02609** County: **Lincoln** U.S.G.S. Quad: **Reepsville**

## NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Applicant: **Wildlands Engineering, Inc./ Attn.: Ian Eckardt**
Address: **1430 S. Mint Street, Suite 104**
**Charlotte, NC 28203**
Telephone Number: **704-332-7754**
Email: **ieckardt@wildlandseng.com**

Size (acres): **10.2** Nearest Town: **Vale**
Nearest Waterway: **Pott Creek and UTs Pott Creek** Coordinates: **35.53072, - 81.31928**
River Basin/HUC: **South Fork Catawba (03050102)**

Location description: **The project site is located on a tract of land (PIN 3615-07-4254) at 2847 Wyant Road in Vale, Lincoln County, North Carolina.**

## Indicate Which of the Following Apply:

### A. Preliminary Determination

**X** There are waters, including wetlands, on the above described project area, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The waters, including wetlands, have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.

_ There are wetlands on the above described property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). However, since the waters, including wetlands, have not been properly delineated, this preliminary jurisdiction determination may not be used in the permit evaluation process. Without a verified wetland delineation, this preliminary determination is merely an effective presumption of CWA/RHA jurisdiction over all of the waters, including wetlands, at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the waters of the U.S. on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

### B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are waters of the U.S., including wetlands, on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We recommend you have the waters of the U.S. on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

_ The waters of the U.S., including wetlands, on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to

CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The waters of the U.S., including wetlands, have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described project area which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US, including wetlands, without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). Placement of dredged or fill material, construction or placement of structures, or work within navigable waters of the United States without a Department of the Army permit may constitute a violation of Sections 9 and/or 10 of the Rivers and Harbors Act (33 USC § 401 and/or 403). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **David Brown** at **828-271-7980**, **ext. 4232** or **david.w.brown@usace.army.mil**.

## C. Basis for Determination:

See attached preliminary jurisdictional determination form.

## D. Remarks:

The potential waters of the U.S. at this site were verified by the Corps during a site inspection on September 9, 2021, and are as approximately depicted on the attached Delineation Map, Figures 3.0 and 3.4 submitted by Wildlands Engineering, Inc. This project area covers an additional 10.2 acres that is being added to the existing NCDMS Wyant Lands Mitigation Site project area.

## E. Attention USDA Program Participants

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

## F. Appeals Information for Approved Jurisdiction Determinations **(as indicated in Section B. above)**

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Mr. Philip A. Shannin
Administrative Appeal Review Officer
60 Forsyth Street SW, Floor M9
Atlanta, Georgia 30303-8803
OR
philip.a.shannin@usace.army.mil

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by, N/A (preliminary jurisdictional determination).

**It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.**

Corps Regulatory Official: 

**David Brown**

Issue Date of JD: **September 15, 2021** Expiration Date: N/A preliminary jurisdictional determination

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at https://regulatory.ops.usace.army.mil/customer-service-survey/

Copy Furnished (by email):
None

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL**

| Applicant: **Wildlands Engineering, Inc./ Attn.: Ian Eckardt** | File Number: **SAW-2017-02609** | Date: **September 15, 2021** |
|---|---|---|

| Attached is: | See Section below |
|---|---|
| ☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission) | A |
| ☐ PROFFERED PERMIT (Standard Permit or Letter of permission) | B |
| ☐ PERMIT DENIAL | C |
| ☐ APPROVED JURISDICTIONAL DETERMINATION | D |
| ☒ PRELIMINARY JURISDICTIONAL DETERMINATION | E |

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

| SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT | |
|---|---|
| REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.) | |
| ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record. | |
| POINT OF CONTACT FOR QUESTIONS OR INFORMATION: | |
| If you have questions regarding this decision and/or the appeal process you may contact:<br>**District Engineer, Wilmington Regulatory Division,**<br>**Attn: David Brown**<br>**69 Darlington Avenue**<br>**Wilmington, North Carolina 28403**<br><br>**828-271-7980, ext. 4232**<br>**david.w.brown@usace.army.mil**. | If you only have questions regarding the appeal process you may also contact:<br>**Mr. Philip Shannin, Administrative Appeal Review Officer**<br>**CESAD-PDO**<br>**U.S. Army Corps of Engineers, South Atlantic Division**<br>**60 Forsyth Street, Room 10M15**<br>**Atlanta, Georgia 30303-8801**<br><br>**Phone: (404) 562-5136**<br>**Email: philip.a.shannin@usace.army.mil** |
| RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations. | |
| _____<br>Signature of appellant or agent. | Date: / Telephone number: |

**For appeals on Initial Proffered Permits send this form to:**

**District Engineer, Wilmington Regulatory Division**, **Attn: David Brown, 69 Darlington Avenue, Wilmington, North Carolina 28403**

**For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:**

**Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Phillip Shannin, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801**
**Phone: (404) 562-5136**

**PRELIMINARY JURISDICTIONAL DETERMINATION (JD) FORM**
**U.S. Army Corps of Engineers**

## BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR PRELIMINARY JD: September 15, 2021**

B. **NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**
Wildlands Engineering, Inc./ Attn.: Ian Eckardt
1430 S. Mint Street, Suite 104
Charlotte, NC 28203

C. **DISTRICT OFFICE, FILE NAME, AND NUMBER:**
CESAW-RG-A, SAW-2017-02609, NCDMS Wyant Lands Mitigation Site Addition

D. **PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**
The project site is located on a tract of land (PIN 3615-07-4254) at 2847 Wyant Road in Vale, Lincoln County, North Carolina.

State: **NC** County/parish/borough: **Lincoln** City: **Vale**
Center coordinates of site (lat/long in degree decimal format): **35.53072, - 81.31928**
Universal Transverse Mercator: **N/A**
Name of nearest waterbody: **Pott Creek and UTs Pott Creek**

E. **REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**
☒ Office (Desk) Determination. Date: **September 15, 2021**
☒ Field Determination. Date(s): **September 9, 2021**

**Use the table below to document aquatic resources and/or aquatic resources at different sites**

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION**

| Site Number | Centered Coordinates (decimal degrees) | | Estimated Amount of Aquatic Resource in Review Area (linear feet or acre) | Type of Aquatic Resources | Geographic Authority to Which Aquatic Resource "May Be" Subject |
|---|---|---|---|---|---|
| | Latitude | Longitude | | | |
| Wetland Q | 35.533512 | -81.315231 | 0.315 ac | Wetland | Section 404 |
| Wetland R | 35.533793 | -81.315231 | 0.358 ac | Wetlalad | Section 404 |
| Wetland S | 35.534131 | -81.314803 | 0.208 ac | Wetland | Section 404 |
| Wetland T | 35.534279 | -81.314393 | 0.160 ac | Wetland | Section 404 |
| Open Water 2 | 35.534184 | -81.314218 | 0.307 ac | Non-wetland Waters | Section 404 |

1. The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre- construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA**

**Data reviewed for preliminary JD (check all that apply) -** Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

☒ Maps, plans, plots or plat submitted by or on behalf of preliminary JD requester: **Wildlands Engineering, Inc.**
☒ Data sheets prepared/submitted by or on behalf of preliminary JD requester. **Wildlands Engineering, Inc.**
  ☒ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report. Rational:
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey (USGS) Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ USGS map(s). Cite scale & quad name: **Reepsville.**
☒ Natural Resources Conservation Service (NRCS) Soil Survey.
  Citation: **Lincoln County, NC**
☐ National wetlands inventory (NWI) map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ Federal Emergency Management Agency (FEMA) / Flood Insurance Rate Map (FIRM) maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date):
  ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **The site contains wetlands as determined by the *1987 Corps of Engineers Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Eastern***

***Mountain and Piedmont Region (Version 2.0)*. The site also contains open water (impoundment). The impoundment receives waters and/or flow directly into associated wetlands and/or stream.**

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

**David Brown, September 15, 2021**
**Signature and date of Regulatory staff member completing preliminary JD**

**In File with submitted JD Request**
**Wildlands Engineering, Inc. / Jordan Hessler**
**(signed and dated request preliminary JD per agent authorization)**

***Please sign this Preliminary JD Form. Keep a signed copy for your record and return a signed form to the Asheville Regulatory Field Office by mail or e-mail.***

***US Army Corps of Engineers-Wilmington District***
***Asheville Regulatory Field Office***
***151 Patton Avenue, Room 208***
***Asheville, NC 28801-5006***

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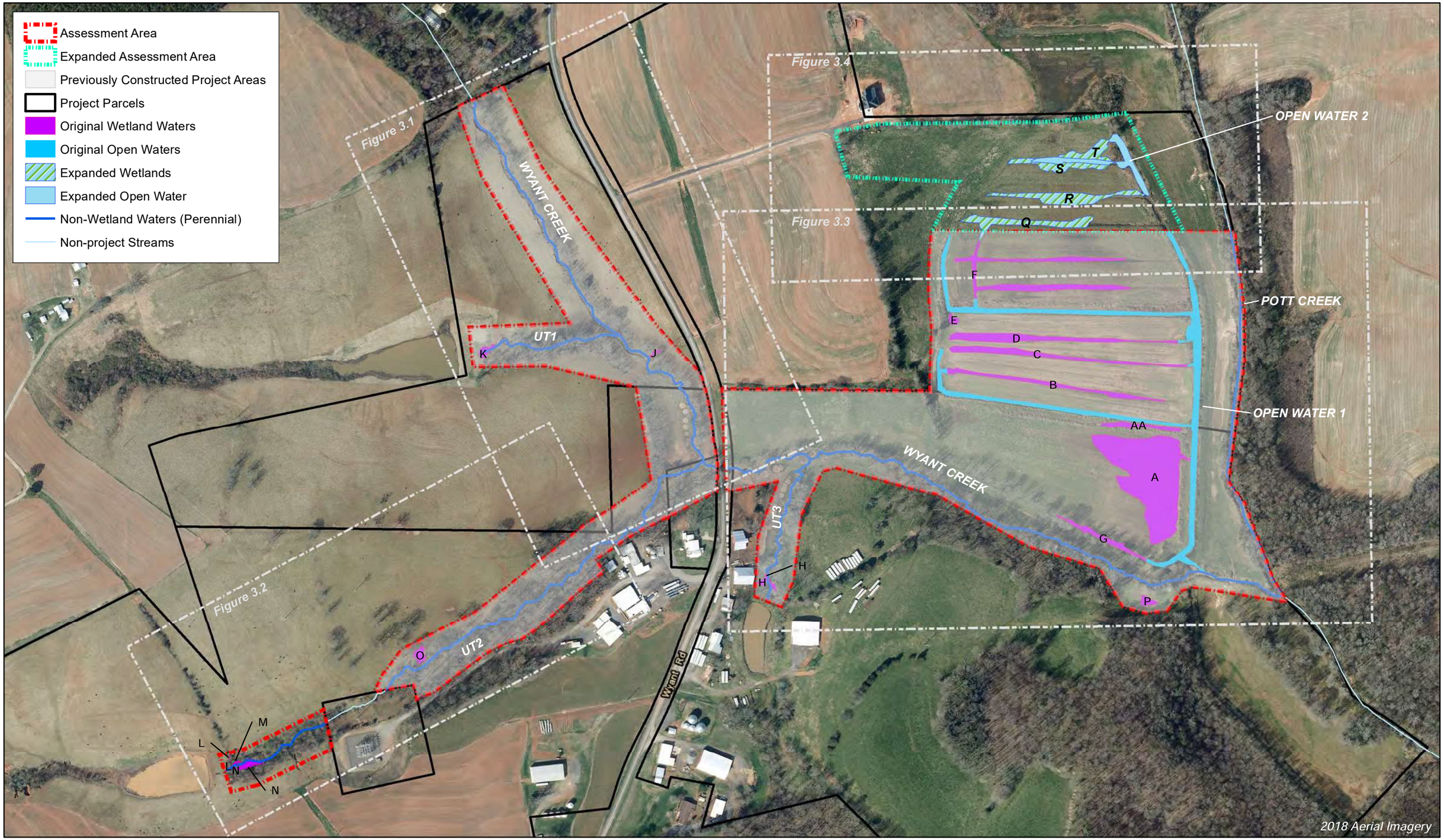
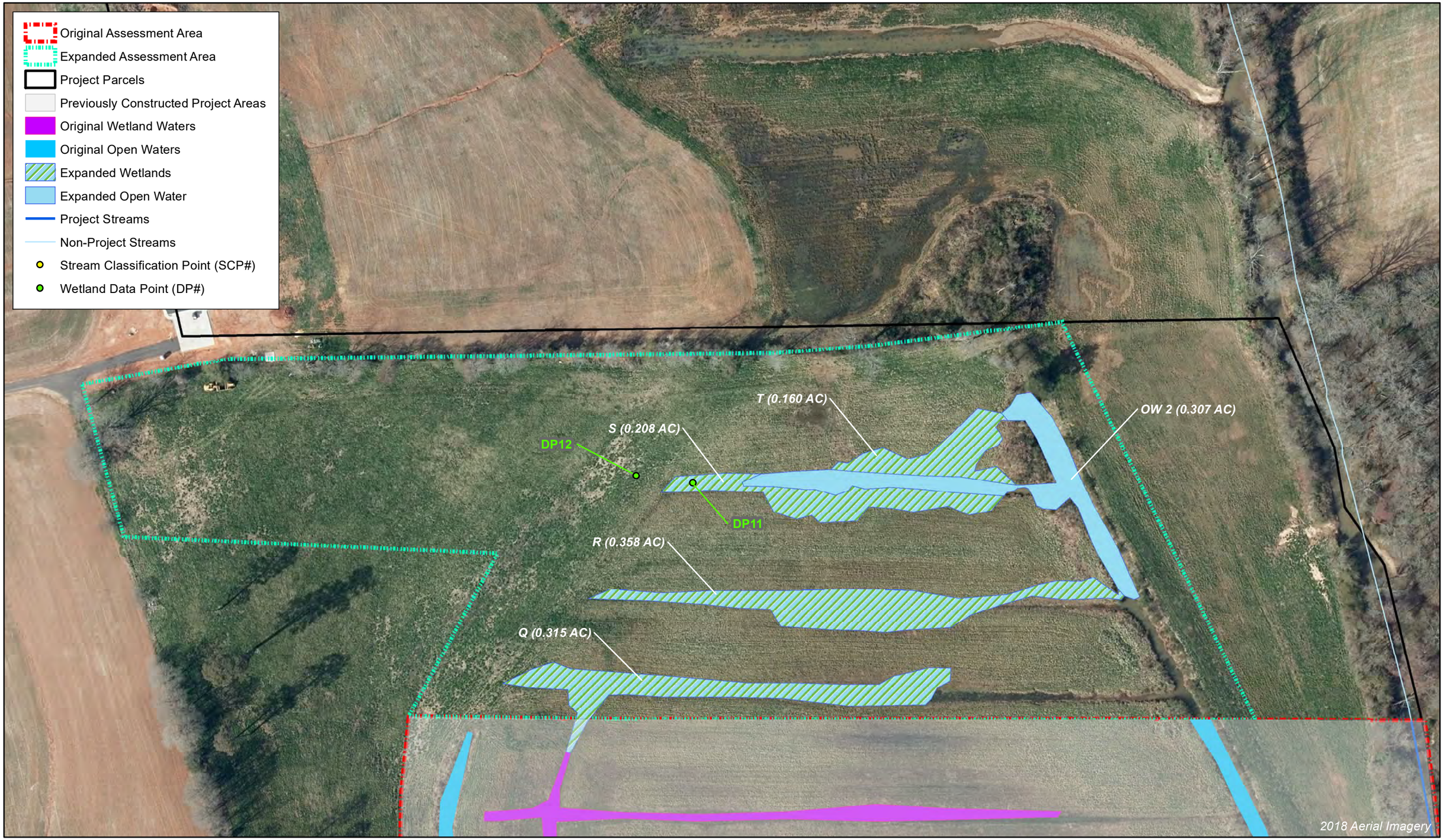
[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.




0 200 400 Feet

Figure 3.0: Delineation Map (Overview)
Wyant Lands Mitigation Site
Catawba River Basin 03050102
Map Created: 7/1/21

*Lincoln County, NC*




WILDLANDS ENGINEERING

0 200 400 Feet

N

Figure 3.4: Delineation Map
Wyant Lands Mitigation Site Expantion
Catawba River Basin 03050102
Map Created: 7/1/21

*Lincoln County, NC*

**NC WAM WETLAND ASSESSMENT FORM**
**Accompanies User Manual Version 5**

USACE AID#: NCDWR #:

Project Name: Wyant Lands Mitigation Site
Date of Evaluation: 6/28/21
Applicant/Owner Name: Wildlands Engineering Inc. (WEI)
Wetland Site Name: Wetland Q,R,S, and T
Wetland Type: Bottomland Hardwood Forest
Assessor Name/Organization: J. Hessler(WEI)
Level III Ecoregion: Piedmont
Nearest Named Water Body: Pott Creek
River Basin: Catawba
USGS 8-Digit Catalogue Unit: 03050102
County: Lincoln
NCDWR Region: Mooresville
○ Yes ◉ No Precipitation within 48 hrs?
Latitude/Longitude (deci-degrees): 35.530996/-81.313685

**Evidence of stressors affecting the assessment area (may not be within the assessment area)**
Please circle and/or make note on last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, approximately within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

**Is the assessment area intensively managed?** ◉ Yes ○ No

**Regulatory Considerations** - Were regulatory considerations evaluated? ◉ Yes ○ No If Yes, check all that apply to the assessment area.

☐ Anadromous fish
☐ Federally protected species or State endangered or threatened species
☐ NCDWR riparian buffer rule in effect
☐ Abuts a Primary Nursery Area (PNA)
☐ Publicly owned property
☐ N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
☐ Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
☐ Designated NCNHP reference community
☐ Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

**What type of natural stream is associated with the wetland, if any? (check all that apply)**

○ Blackwater
◉ Brownwater
☐ Tidal (if tidal, check one of the following boxes) ○ Lunar ○ Wind ○ Both

**Is the assessment area on a coastal island?** ○ Yes ◉ No

**Is the assessment area's surface water storage capacity or duration substantially altered by beaver?** ○ Yes ◉ No

**Does the assessment area experience overbank flooding during normal rainfall conditions?** ◉ Yes ○ No

**1. Ground Surface Condition/Vegetation Condition – assessment area condition metric**
**Check a box in each column.** Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence of an effect.

| GS | VS | |
|---|---|---|
| ○ A | ○ A | Not severely altered |
| ◉ B | ◉ B | Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, less diversity [if appropriate], hydrologic alteration) |

**2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric**
**Check a box in each column.** Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

| Surf | Sub | |
|---|---|---|
| ○ A | ○ A | Water storage capacity and duration are not altered. |
| ○ B | ○ B | Water storage capacity or duration are altered, but not substantially (typically, not sufficient to change vegetation). |
| ◉ C | ◉ C | Water storage capacity or duration are substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines). |

**3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)**
**Check a box in each column for each group below**. Select the appropriate storage for the assessment area (AA) and the wetland type (WT).

| | AA | WT | |
|---|---|---|---|
| 3a. | ○ A | ○ A | Majority of wetland with depressions able to pond water > 1 foot deep |
| | ○ B | ○ B | Majority of wetland with depressions able to pond water 6 inches to 1 foot deep |
| | ○ C | ○ C | Majority of wetland with depressions able to pond water 3 to 6 inches deep |
| | ◉ D | ◉ D | Depressions able to pond water < 3 inches deep |

| | | |
|---|---|---|
| 3b. | ○ A | Evidence that maximum depth of inundation is greater than 2 feet |
| | ○ B | Evidence that maximum depth of inundation is between 1 and 2 feet |
| | ◉ C | Evidence that maximum depth of inundation is less than 1 foot |

**4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)**

**Check a box from each of the three soil property groups below.** Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the 12 inches. Use most recent National Technical Committee for Hydric Soils guidance for regional indicators.

4a.
- ○ A Sandy soil
- ◉ B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)
- ○ C Loamy or clayey soils not exhibiting redoximorphic features
- ○ D Loamy or clayey gleyed soil
- ○ E Histosol or histic epipedon

4b.
- ◉ A Soil ribbon < 1 inch
- ○ B Soil ribbon ≥ 1 inch

4c.
- ◉ A No peat or muck presence
- ○ B A peat or muck presence

**5. Discharge into Wetland – opportunity metric**

**Check a box in each column.** Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

| Surf | Sub | |
|---|---|---|
| ○ A | ◉ A | Little or no evidence of pollutants or discharges entering the assessment area |
| ◉ B | ○ B | Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area |
| ○ C | ○ C | Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor) |

**6. Land Use – opportunity metric (skip for non-riparian wetlands)**

**Check all that apply (at least one box in each column).** Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M). Effective riparian buffers are considered to be 50 feet wide in the Coastal Plain and Piedmont ecoregions and 30 feet wide in the Blue Ridge Mountains ecoregion.

| WS | 5M | 2M | |
|---|---|---|---|
| ☐ A | ☐ A | ☐ A | ≥ 10% impervious surfaces |
| ☐ B | ☐ B | ☐ B | Confined animal operations (or other local, concentrated source of pollutants) |
| ☑ C | ☑ C | ☑ C | ≥ 20% coverage of pasture |
| ☑ D | ☑ D | ☑ D | ≥ 20% coverage of agricultural land (regularly plowed land) |
| ☐ E | ☐ E | ☐ E | ≥ 20% coverage of maintained grass/herb |
| ☐ F | ☐ F | ☐ F | ≥ 20% coverage of clear-cut land |
| ☐ G | ☐ G | ☐ G | Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed or hydrologic alterations that prevent dainage and/or overbank flow from affectio the assessment area. |

**7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)**

7a. Is assessment area within 50 feet of a tributary or other open water?
◉ Yes ○ No If Yes, continue to 7b. If No, skip to Metric 8.

7b. How much of the first 50 feet from the bank is weltand? (Wetland buffer need only be present on one side of the water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)
- ○ A ≥ 50 feet
- ○ B From 30 to < 50 feet
- ◉ C From 15 to < 30 feet
- ○ D From 5 to < 15 feet
- ○ E < 5 feet or buffer bypassed by ditches

7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.
○ ≤ 15-feet wide ○ > 15-feet wide ◉ Other open water (no tributary present)

7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?
◉ Yes ○ No

7e. Is tributary or other open water sheltered or exposed?
- ◉ Sheltered – adjacent open water with width < 2500 feet and no regular boat traffic.
- ○ Exposed – adjacent open water with width ≥ 2500 feet or regular boat traffic.

**8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)**

**Check a box in each column.** Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

| WT | WC | |
|---|---|---|
| ○ A | ○ A | ≥ 100 feet |
| ○ B | ○ B | From 80 to < 100 feet |
| ○ C | ○ C | From 50 to < 80 feet |
| ○ D | ○ D | From 40 to < 50 feet |
| ○ E | ○ E | From 30 to < 40 feet |
| ○ F | ◉ F | From 15 to < 30 feet |
| ○ G | ○ G | From 5 to < 15 feet |
| ○ H | ○ H | < 5 feet |

**9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)**

Answer for assessment area dominant landform.

- ○ A Evidence of short-duration inundation (< 7 consecutive days)
- ○ B Evidence of saturation, without evidence of inundation
- ◉ C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

**10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)**

Consider recent deposition only (no plant growth since deposition).

- ○ A Sediment deposition is not excessive, but at approximately natural levels.
- ◉ B Sediment deposition is excessive, but not overwhelming the wetland.
- ○ C Sediment deposition is excessive and is overwhelming the wetland.

**11. Wetland Size – wetland type/wetland complex condition metric**

**Check a box in each column.** Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

| WT | WC | FW (if applicable) | |
|---|---|---|---|
| ○ A | ○ A | ○ A | ≥ 500 acres |
| ○ B | ○ B | ○ B | From 100 to < 500 acres |
| ○ C | ○ C | ○ C | From 50 to < 100 acres |
| ○ D | ○ D | ○ D | From 25 to < 50 acres |
| ○ E | ○ E | ○ E | From 10 to < 25 acres |
| ○ F | ○ F | ○ F | From 5 to < 10 acres |
| ○ G | ○ G | ○ G | From 1 to < 5 acres |
| ◉ H | ◉ H | ○ H | From 0.5 to < 1 acre |
| ○ I | ○ I | ○ I | From 0.1 to < 0.5 acre |
| ○ J | ○ J | ○ J | From 0.01 to < 0.1 acre |
| ○ K | ○ K | ◉ K | < 0.01 acre or assessment area is clear-cut |

**12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)**

- ○ A Pocosin is the full extent (≥ 90%) of its natural landscape size.
- ○ B Pocosin is < 90% of the full extent of its natural landscape size.

**13. Connectivity to Other Natural Areas – landscape condition metric**

13a. **Check appropriate box(es) (a box may be checked in each column). Involves a GIS effort with field adjustment.** This evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous metric naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, fields (pasture open and agriculture), or water > 300 feet wide.

| Well | Loosely | |
|---|---|---|
| ○ A | ○ A | ≥ 500 acres |
| ○ B | ○ B | From 100 to < 500 acres |
| ○ C | ○ C | From 50 to < 100 acres |
| ○ D | ○ D | From 10 to < 50 acres |
| ◉ E | ◉ E | < 10 acres |
| ○ F | ○ F | Wetland type has a poor or no connection to other natural habitats |

13b. **Evaluate for marshes only**.

○ Yes ○ No Wetland type has a surface hydrology connection to open waters/stream or tidal wetlands.

**14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)**

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directiions? If the assessment area is clear-cut, select option "C."

- ○ A 0
- ○ B 1 to 4
- ◉ C 5 to 8

**15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)**

- ○ A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
- ○ B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
- ◉ C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

**16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)**

- ○ A Vegetation diversity is high and is composed primarily of native species (<10% cover of exotics).
- ○ B Vegetation diversity is low or has > 10% to 50% cover of exotics.
- ○ C Vegetation is dominated by exotic species (>50% cover of exotics).

**17. Vegetative Structure – assessment area/wetland type condition metric**

17a. Is vegetation present?

(•) Yes ( ) No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.

( ) A ≥ 25% coverage of vegetation
( ) B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum**. Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

| | AA | WT | |
|---|---|---|---|
| Canopy | ( ) A | ( ) A | Canopy closed, or nearly closed, with natural gaps associated with natural processes |
| | ( ) B | ( ) B | Canopy present, but opened more than natural gaps |
| | (•) C | (•) C | Canopy sparse or absent |
| Mid-Story | ( ) A | ( ) A | Dense mid-story/sapling layer |
| | ( ) B | ( ) B | Moderate density mid-story/sapling layer |
| | (•) C | (•) C | Mid-story/sapling layer sparse or absent |
| Shrub | ( ) A | ( ) A | Dense shrub layer |
| | ( ) B | ( ) B | Moderate density shrub layer |
| | (•) C | (•) C | Shrub layer sparse or absent |
| Herb | (•) A | (•) A | Dense herb layer |
| | ( ) B | ( ) B | Moderate density herb layer |
| | ( ) C | ( ) C | Herb layer sparse or absent |

**18. Snags – wetland type condition metric (skip for all marshes)**

( ) A Large snags (more than one) are visible (> 12-inches DBH, or large relative to species present and landscape stability).
(•) B Not A

**19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)**

( ) A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.
( ) B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12-inch DBH.
(•) C Majority of canopy trees are < 6 inches DBH or no trees.

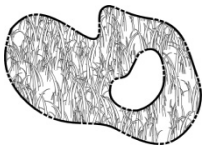
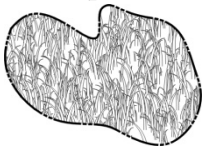
**20. Large Woody Debris – wetland type condition metric (skip for all marshes)**

Include both natural debris and man-placed natural debris.

( ) A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).
(•) B Not A

**21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)**

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.

( ) A 
( ) B 
( ) C 
( ) D 

**22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)**

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.

( ) A Overbank and overland flow are not severely altered in the assessment area.
( ) B Overbank flow is severely altered in the assessment area.
( ) C Overland flow is severely altered in the assessment area.
(•) D Both overbank and overland flow are severely altered in the assessment area.

---

Notes

Wetland classification is based on the reference wetland type that on-site wetlands would become if not maintained.

**NC WAM Wetland Rating Sheet**
**Accompanies User Manual Version 5.0**

| | | | |
|---|---|---|---|
| Wetland Site Name | Wetland Q,R,S, and T | Date | 6/28/21 |
| Wetland Type | Bottomland Hardwood Forest | Assessor Name/Organization | J. Hessler(WEI) |

| | |
|---|---|
| Notes on Field Assessment Form (Y/N) | YES |
| Presence of regulatory considerations (Y/N) | NO |
| Wetland is intensively managed (Y/N) | YES |
| Assessment area is located within 50 feet of a natural tributary or other open water (Y/N) | YES |
| Assessment area is substantially altered by beaver (Y/N) | NO |
| Assessment area experiences overbank flooding during normal rainfall conditions (Y/N) | YES |
| Assessment area is on a coastal island (Y/N) | NO |

**Sub-function Rating Summary**

| Function | Sub-function | Metrics | Rating |
|---|---|---|---|
| Hydrology | Surface Storage and Retention | Condition | **LOW** |
| | Sub-Surface Storage and Retention | Condition | **MEDIUM** |
| Water Quality | Pathogen Change | Condition | **LOW** |
| | | Condition/Opportunity | **LOW** |
| | | Opportunity Presence? (Y/N) | **NO** |
| | Particulate Change | Condition | **LOW** |
| | | Condition/Opportunity | **LOW** |
| | | Opportunity Presence? (Y/N) | **NO** |
| | Soluble Change | Condition | **LOW** |
| | | Condition/Opportunity | **LOW** |
| | | Opportunity Presence? (Y/N) | **NO** |
| | Physical Change | Condition | **LOW** |
| | | Condition/Opportunity | **LOW** |
| | | Opportunity Presence? (Y/N) | **NO** |
| | Pollution Change | Condition | NA |
| | | Condition/Opportunity | NA |
| | | Opportunity Presence? (Y/N) | NA |
| Habitat | Physical Structure | Condition | **LOW** |
| | Landscape Patch Structure | Condition | **LOW** |
| | Vegetation Composition | Condition | **LOW** |

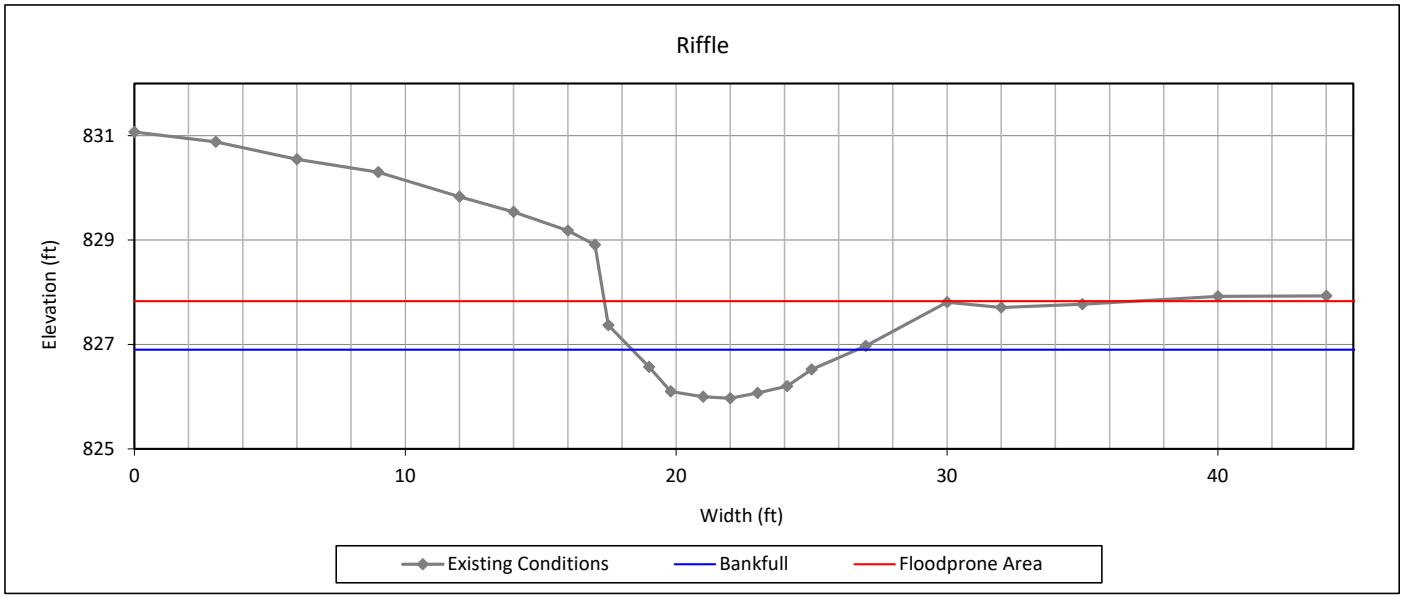
**Function Rating Summary**

| Function | Metrics/Notes | Rating |
|---|---|---|
| Hydrology | Condition | **LOW** |
| Water Quality | Condition | **LOW** |
| | Condition/Opportunity | **LOW** |
| | Opportunity Presence? (Y/N) | **NO** |
| Habitat | Condition | **LOW** |

**Overall Wetland Rating** **LOW**

APPENDIX 6 A
Amendment Supplementary Design Info

**Cross Section 15, UT2 Reach 1**

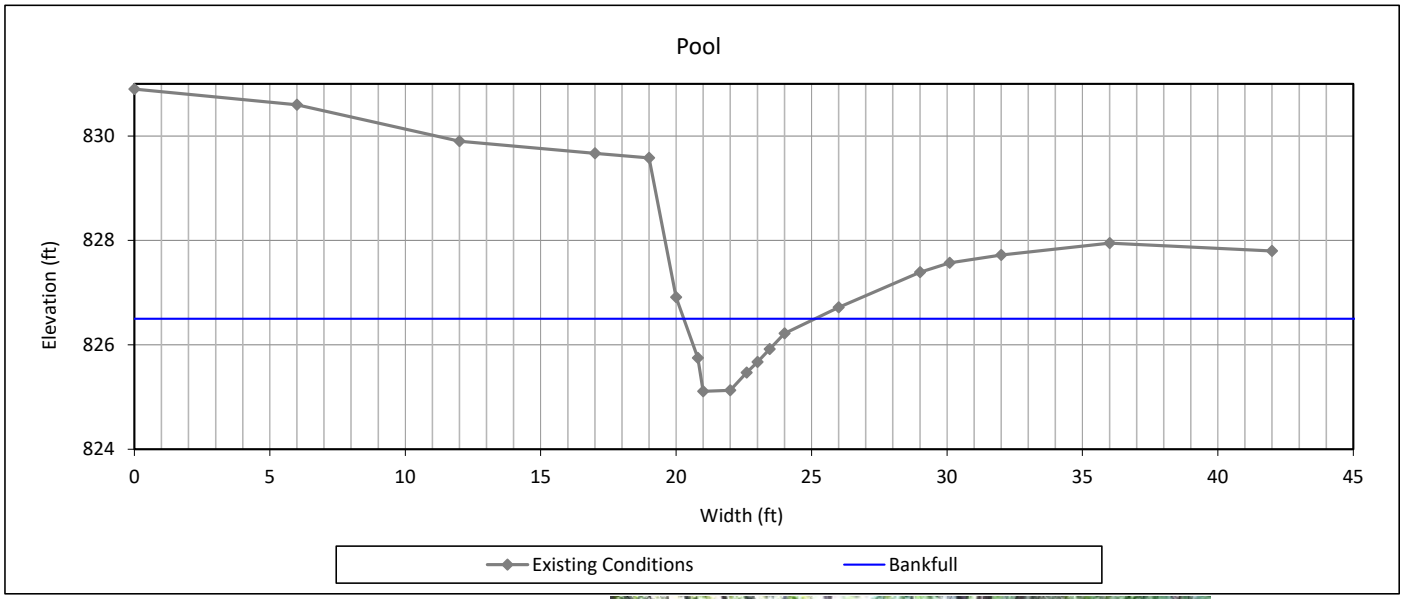



| Bankfull Dimensions | |
|---|---|
| 5.0 | x-section area (ft.sq.) |
| 8.3 | width (ft) |
| 0.6 | mean depth (ft) |
| 0.9 | max depth (ft) |
| 8.6 | wetted perimeter (ft) |
| 0.6 | hyd radi (ft) |
| 13.8 | width-depth ratio |
| 19.6 | W flood prone area (ft) |
| 2.4 | entrenchment ratio |
| 2.0 | low bank height ratio |

Survey Date: September 2021
Field Crew: Wildlands Engineering

View Upstream

**Cross Section 16 Pool, UT2 Reach 1**




| Bankfull Dimensions | |
|---|---|
| 3.6 | x-section area (ft.sq.) |
| 4.8 | width (ft) |
| 0.7 | mean depth (ft) |
| 1.4 | max depth (ft) |
| 6.0 | wetted perimeter (ft) |
| 0.6 | hyd radi (ft) |
| 6.5 | width-depth ratio |
| 1.8 | low bank height ratio |

Survey Date: September 2021
Field Crew: Wildlands Engineering

View Downstream

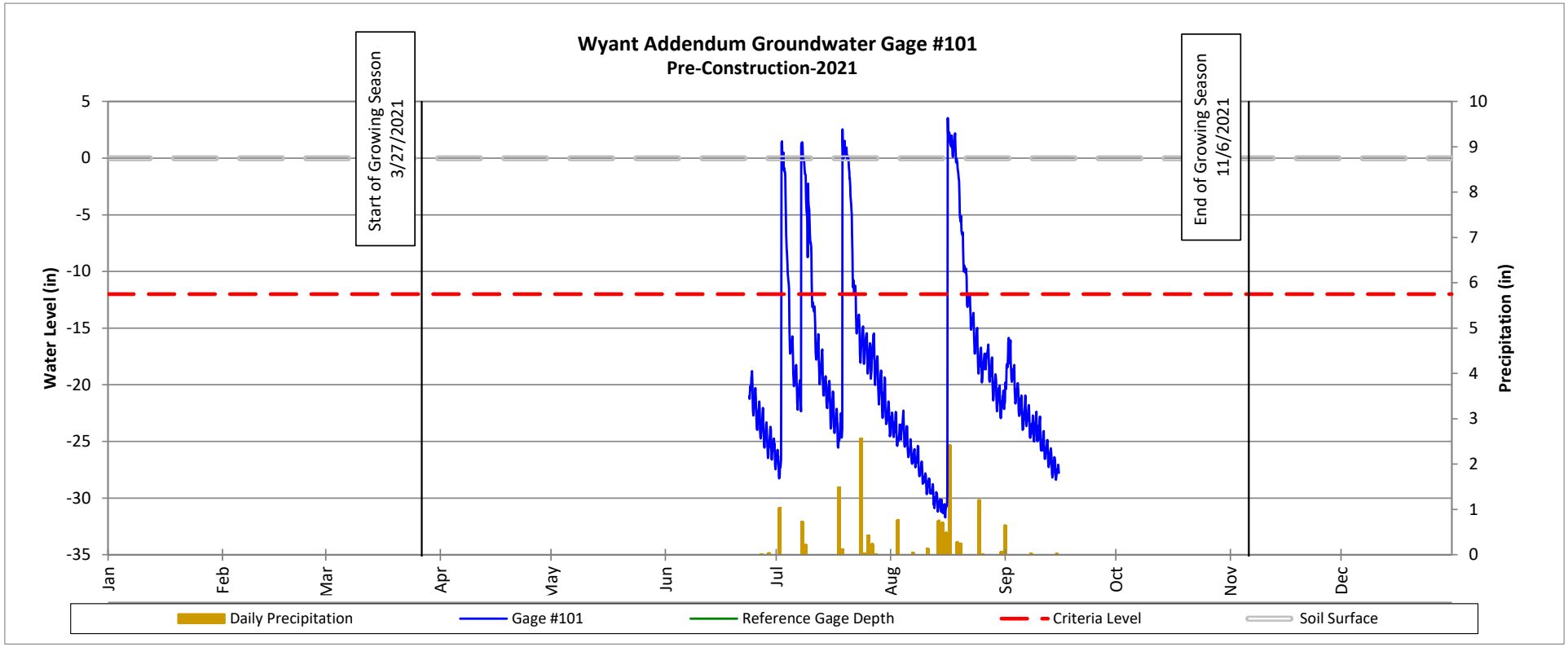
## Groundwater Gage Plots

Wyant Land Mitigation Site Additional Wetland Credit Area

DMS Project No. 100595

**Pre-Construction-2021**

Addendum



**MONITORING GAUGE INSTALLATION DATA SHEET**

| | |
|---|---|
| Project Name: | Wyant Addendum |
| Project Location: | Wyant Lands Mitigation Site |
| Purpose of Gauge: | Water Table Monitoring |

**Gauge Description:**

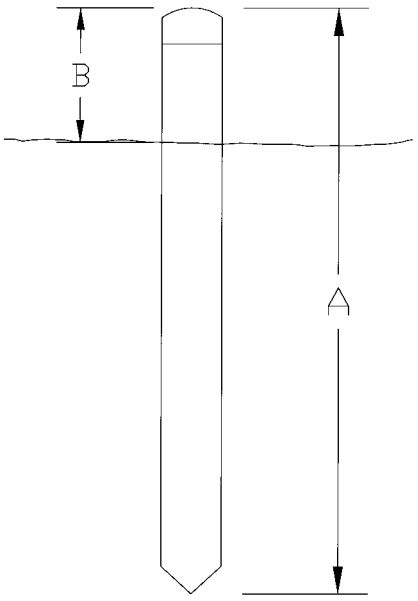
| | |
|---|---|
| Gauge ID: | 101 |
| Serial Number: | 831065 |
| Total Well Casing Length (A): | N/A |
| Well Casing Height Above Ground (B): | 1.84' |
| Distance From Eye Bolt To Probe Sensor | 6.87 |
| Material: | 2" PVC Well Screen |
| Type of Measurement: | Pressure, Temperature, & Depth |
| Type of Logger: | In-Situ Level Troll 100 |
| Gauge Location: | Addendum Wetalnd |

Notes:

Free water 1.8'

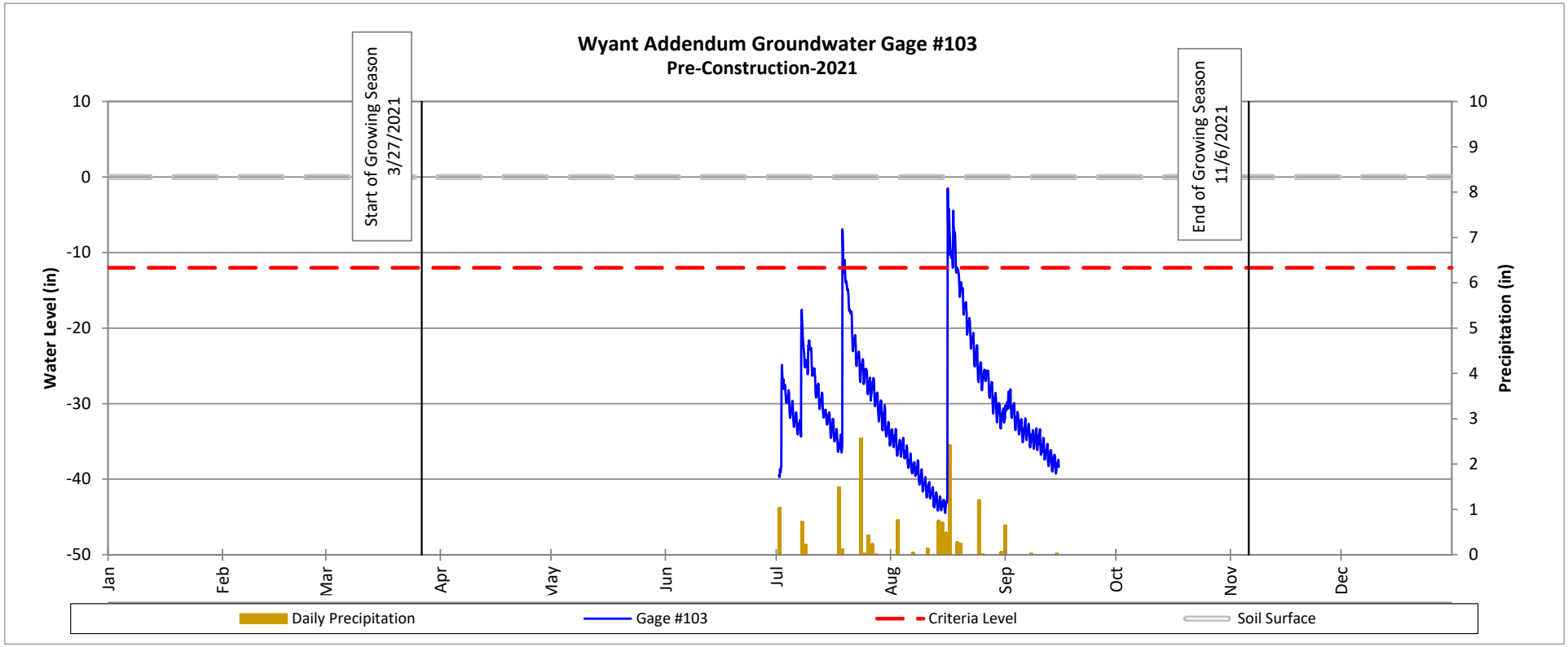
**Soil Profile Description at Location of Well:**

| Depth Range (in.) | Color | Redox | Texture | Notes |
|---|---|---|---|---|
| 0-1.1' | 7.5YR 4/6 | | Silt Loam | Oxidized rhizomes |
| 1.1'-2.2' | 10YR 3/1 - 80% | 5YR 7/8 - 20% | Clay Loam | |
| 2.2-3.7' | 10YR 5/1 - 55% | 10YR 5/8 - 45% | Clay | |
| 3.7'-4.5' | 10YR 5/6 - 60% | 10YR 5/1 - 40% | Sandy Clay | |
| 4.5"-5.0' | Gley 1 5/10Y - 95% | 5YR 5/8 - 5% | Sandy Clay | |
| | | | | |
| | | | | |
| | | | | |



## Groundwater Gage Plots

Wyant Land Mitigation Site Additional Wetland Credit Area
DMS Project No. 100595
**Pre-Construction-2021**
Addendum



**MONITORING GAUGE INSTALLATION DATA SHEET**

| | |
|---|---|
| Project Name: | Wyant Addendum |
| Project Location: | Wyant Lands Mitigation Site |
| Purpose of Gauge: | Water Table Monitoring |

**Gauge Description:**

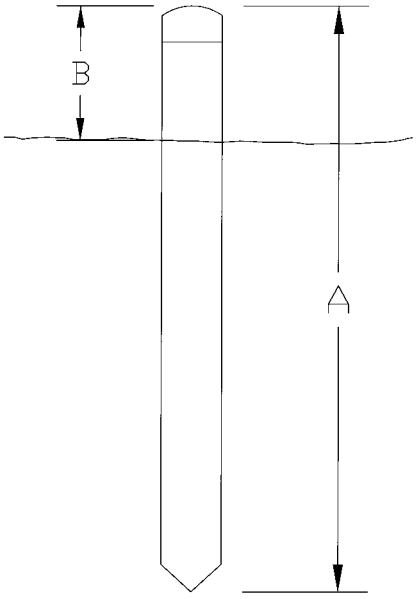
| | |
|---|---|
| Gauge ID: | 103 |
| Serial Number: | - |
| Total Well Casing Length (A): | N/A |
| Well Casing Height Above Ground (B): | 1.73 |
| Distance From Eye Bolt To Probe Sensor | - |
| Material: | 2" PVC Well Screen |
| Type of Measurement: | Pressure, Temperature, & Depth |
| Type of Logger: | In-Situ Level Troll 100 |
| Gauge Location: | Addendum Wetalnd |

Notes:

Free water 3.9'

**Soil Profile Description at Location of Well:**

| Depth Range (in.) | Color | Redox | Texture | Notes |
|---|---|---|---|---|
| 0-1.95' | 7.5YR 5/4 | | Silt Loam | |
| 1.95'-2.6' | 10YR 5/1 - 90% | 2.5YR 4/8 - 10% | Clay Sand | |
| 2.6'-3.5' | 7.5YR 5/1 - 70% | 10YR 6/8 - 30% | Sandy Clay | |
| 3.5'-4.2' | Gley 1 4/N - 60% | 5YR 4/6 - 40% | Sandy Clay | |
| 4.2'-5.2' | 10YR 6/8 - 70% | Gley 1 6/N - 30% | Clay | |
| | | | | |
| | | | | |
| | | | | |



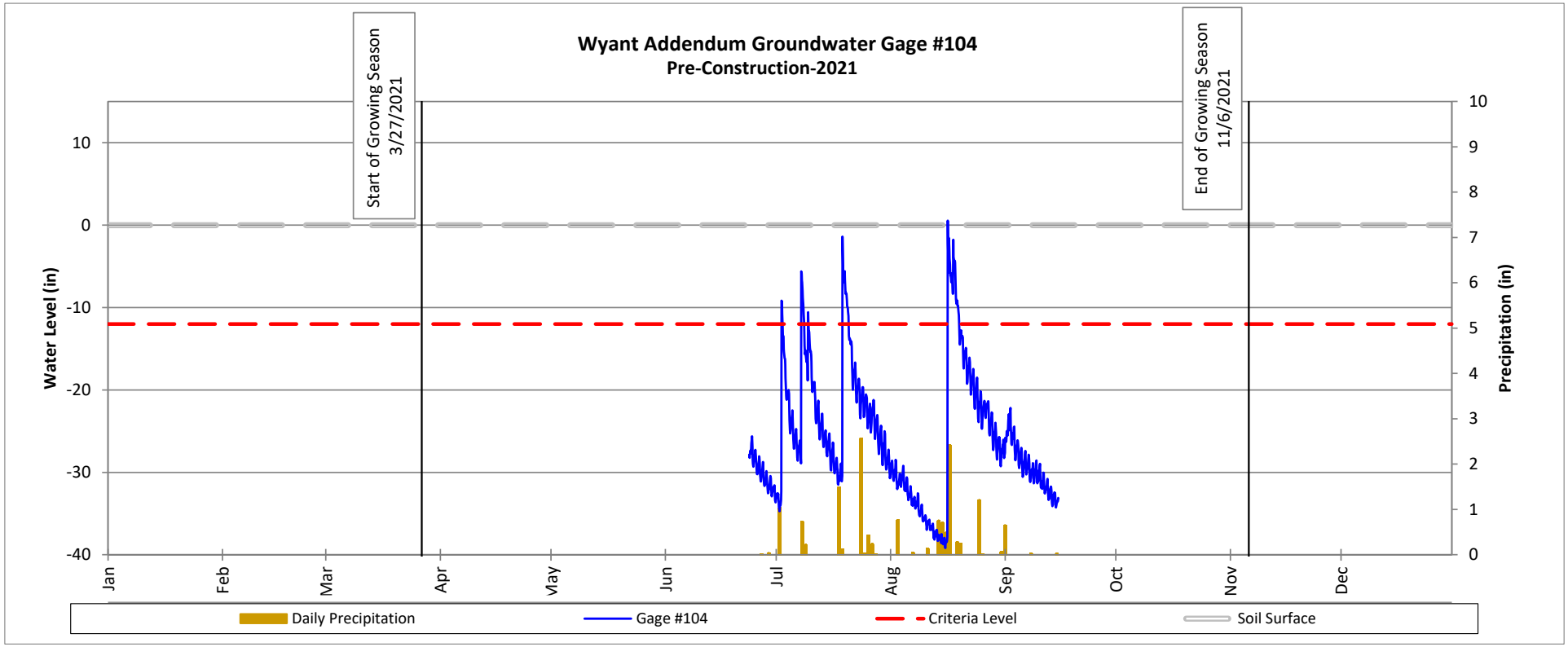
## Groundwater Gage Plots

Wyant Land Mitigation Site Additional Wetland Credit Area

DMS Project No. 100595

**Pre-Construction-2021**

Addendum



**MONITORING GAUGE INSTALLATION DATA SHEET**

| | |
|---|---|
| Project Name: | Wyant Addendum |
| Project Location: | Wyant Lands Mitigation Site |
| Purpose of Gauge: | Water Table Monitoring |

**Gauge Description:**

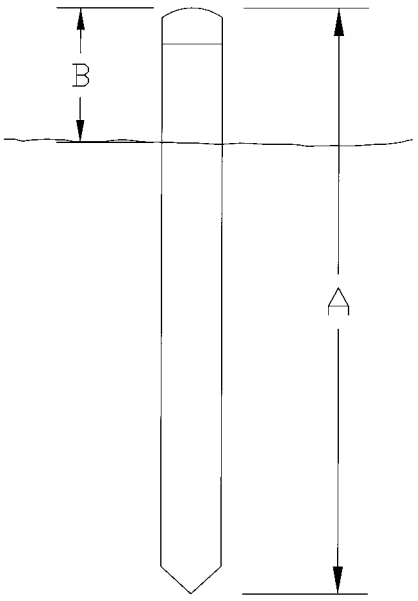
| | |
|---|---|
| Gauge ID: | 104 |
| Serial Number: | 831570 |
| Total Well Casing Length (A): | N/A |
| Well Casing Height Above Ground (B): | 1.73 |
| Distance From Eye Bolt To Probe Sensor | 6.75 |
| Material: | 2" PVC Well Screen |
| Type of Measurement: | Pressure, Temperature, & Depth |
| Type of Logger: | In-Situ Level Troll 100 |
| Gauge Location: | Addendum Wetalnd |

Notes:

Free water 2.8'

**Soil Profile Description at Location of Well:**

| Depth Range (in.) | Color | Redox | Texture | Notes |
|---|---|---|---|---|
| 0-1.3' | 5YR 5/6 | | Silt Loam | |
| 1.3'-2.0' | 10YR 5/3 - 85% | 2.5YR 6/8 - 15% | Clay Loam | |
| 2.0'-2.7' | 2.5Y 6/3 - 55% | 10YR 6/8 - 45% | Silt Clay | |
| 2.7-5.0 | Gley 1 5/10Y - 50% | 7.5YR 7/8 - 50% | Clay | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



**MONITORING GAUGE INSTALLATION DATA SHEET**

| | |
|---|---|
| Project Name: | Wyant Addendum |
| Project Location: | Wyant Lands Mitigation Site |
| Purpose of Gauge: | Water Table Monitoring |

**Gauge Description:**

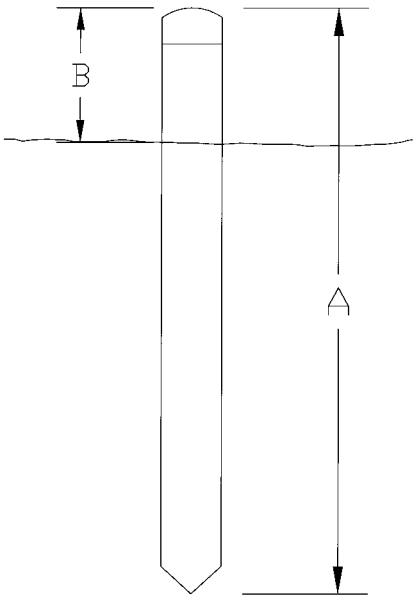
| | |
|---|---|
| Gauge ID: | 102 |
| Serial Number: | - |
| Total Well Casing Length (A): | N/A |
| Well Casing Height Above Ground (B): | 1.94' |
| Distance From Eye Bolt To Probe Sensor | - |
| Material: | 2" PVC Well Screen |
| Type of Measurement: | Pressure, Temperature, & Depth |
| Type of Logger: | In-Situ Level Troll 100 |
| Gauge Location: | Addendum Wetalnd |

Notes:

Free water 4.0'

**Soil Profile Description at Location of Well:**

| Depth Range (in.) | Color | Redox | Texture | Notes |
|---|---|---|---|---|
| 0-1.9' | 5Y 4/4 | | Clay Loam | |
| 1.9'-2.8' | 5Y 2.5/1 90% | 7.5YR - 10% | Clay Loam | |
| 2.8'-3.5' | 10YR 4/1 - 60% | 7.5YR 6/8 - 40% | Clay | |
| 3.5'-5.0' | 10YR 3/2 - 55% | 10YR 5/8 - 45% | Clay | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |




WILDLANDS ENGINEERING

0 150 300 Feet

N

Wyant Lands Proposed Contract Amendment
Exhibit B - Soil Boring Map
Wyant Lands Mitigation Site
Catawba River Basin 03050102
(03050103 Expanded Service Area)
*Lincoln County, NC*

WILDLANDS ENGINEERING

## Wyant Lands Potential Expansion Limited Hydric Soils Investigation

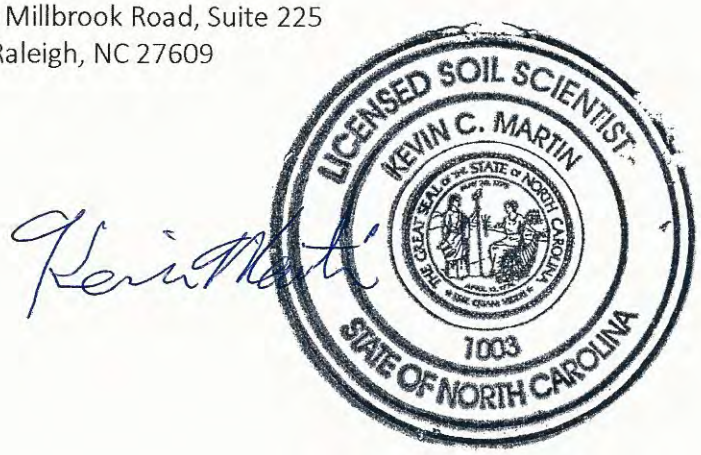
| Boring | Description | Anticipated Grading Depth to Hydric |
|---|---|---|
| BH1 | 0 to 0.5' Chroma 3 or less, Likely hydric<br>0.5 to 1.0' 10YR 4/5, 15% gleyed inclusions<br>1.2'+ Fully Gleyed, Reduced, Hydric | 0" |
| BH2 | 0 to 2' NH<br>2'+ Hydric Gleyed Layer | 14" |
| BH3 | 0 to 1.5' NH<br>1.6'+ Hydric Gleyed Layer | 8" |
| BH4 | 0 to 0.5' Chroma 3 or less, Likely hydric<br>0.5 to 1.0' 10YR 4/5, 15% gleyed inclusions<br>1.5'+ Borderline Hydric, Light Brown non-gleyed lots of mottling | 0" |
| BH5 | 0.3' Hydric | 0" |
| BH6 | 0.3' Hydric | 0" |
| BH7 | 0 to 0.5' Hydric/Borderline Hydric<br>0.5 to 1.8' Borderline, Silty Clay Loam<br>1.8'+ Hydric, Light Brown non-gleyed lots of mottling, Fat Clay | 11.5" |
| BH8 | 0 to 0.5' Chroma 3 or less, Likely hydric<br>0.5 to 1.5' Borderline, Silty Clay Loam<br>1.5'+ Borderline Hydric, Light Brown non-gleyed lots of mottling | 8" |
| BH9 | 0 to 0.5' Chroma 3 or less, Likely hydric<br>0.5 to 2.3' Borderline, Silty Clay Loam<br>2.3'+ Hydric, Light Brown non-gleyed lots of mottling | 0" |
| BH10 | 0 to 0.5' Chroma 3 or less, Likely hydric<br>0.5 to 2.3' Borderline, Silty Clay Loam<br>2.3'+ Hydric, Light Brown non-gleyed lots of mottling | 0" |
| BH11 | 0 to 0.5' Chroma 3<br>0.5 to 1.7' Borderline, Silty Clay Loam<br>1.7'+ Borderline Hydric, Light Brown non-gleyed lots of mottling | 0" |

S&EC
Soil & Environmental Consultants, PA
11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

# PRELIMINARY HYDRIC SOIL INVESTIGATION

Wyant Project Site
2847 Wyant Rd., Vale, NC
Piedmont
Catawba River Basin
Catawba County, North Carolina

Prepared for:
Mr. Eric Neuhaus
Wildlands
312 West Millbrook Road, Suite 225
Raleigh, NC 27609




**November 18th, 2017**

## INTRODUCTION

Soil & Environmental Consultants, PA (S&EC, PA) was retained to perform a preliminary evaluation to assess the presence and extent of hydric soils onsite. There are a number of field ditches that dissect the site. Most of the area evaluated is currently planted in soybeans but some of the area is in pasture.

## METHODOLOGY

On November 13th, 2017 Kevin Martin (LSS, PWS) of S&EC, PA performed a soil evaluation at the site. Hand auger borings were advanced on the property at locations as appropriate to approximately estimate the location and extent of hydric soils within the project area (see attached Approximate Hydric Soil Locations Map). Each soil boring was evaluated to assess the presence or absence of hydric soil indicators. Hydric soil indicators were identified utilizing the *NRCS Field Indicators of Hydric Soils in the Unities States - A Guide for Identifying and Delineating Hydric Soils (Version 7.0, 2010).*
All areas evaluated are mapped as the Chewacla soil series (Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts) by NRCS. Most hydric soils observed onsite were fine loamy or clayey and are most like the Wehadkee (Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts) soil series.

## RESULTS

Numerous soil borings were performed within the study area. Soil characteristics were evaluated and all areas identified as containing hydric soils met the hydric soil criteria described below. An X" on the map indicates soil boring location and depth to hydric soil indicators, except in H2 area where the " indicate thickness of the depleted layer from the surface downward.

U- are non hydric soil areas

H- are hydric soils areas containing a depleted matrix.

C- are buried hydric soils due to "crowning" of the fields. Crowned material ranges from 12" to 18" thick in most areas. A depleted matrix is present beneath the material used to crown the field.

H2- areas have hydric soil indicators (a depleted matrix) but only in the top 2 to 4" of the soil profile. This area may have been a natural depression in the floodplain or may have been created over time by manipulation of the area and by ponding caused in part by a man made levee adjacent to a ditch.

Indicator F3: Depleted Matrix

Technical Description: A layer that has a depleted matrix with 60 percent

or more chroma of 2 or less and that has a minimum thickness of either:

(a) 2 in. (5 cm) if the 2 in. (5 cm) is entirely within the upper 6 in. (15 cm)

of the soil, or

(b) 6 in. (15 cm) starting within 10 in. (25 cm) of the soil surface.

Wetland Hydrology Indicators:
While all of the borings performed within areas identified as hydric soils on the attached map exhibited hydric soil indicators, many areas containing hydric soils did not exhibit Primary Wetland Hydrology or Secondary Wetland Hydrology Indicators. Except that part of the evaluation area was flooded at the time of the evaluation.

Project Location

Proposed Conservation Easement (37.8 Acres)

Temporary Construction Easement

Topographic Contour 5'

Existing Ditch

**Soils Investigation**

C - Buried Hydric (2.9 Acres)

H - Hydric (8.6 Acres)

U - Not Hydic (1.7 Acres)

H2 - Shallow Hydric (1.5 Acres)

Soil Study Borings

19" 15" >30" 0" 15" 9" 10" 8" 2" 4" 12" 0" 16" 2" 4" 16" 30" 9" 15" 23" 4" 2" 2"

WYANT CREEK REACH 4

UT3
REACH 2

*2015 Aerial Imagery*

WILDLANDS ENGINEERING

0 50 100 200 300 400 Feet

N

Soils Study Exhibit
Wyant Lands Mitigation Site
Catawba River Basin (03050102)
Cat 03 Extended Service Area - Warm NonTLW
*Lincoln County, NC*

S&EC
Soil & Environmental Consultants, PA
11010 Raven Ridge Road • Raleigh, North Carolina 27614 • Phone: (919) 846-5900 • Fax: (919) 846-9467
www.SandEC.com

# DETAILED HYDRIC SOIL INVESTIGATION

Wyant Project Site
2847 Wyant Rd., Vale, NC
Piedmont
Catawba River Basin
Catawba County, North Carolina

Prepared for:
Mr. Eric Neuhaus
Wildlands
312 West Millbrook Road, Suite 225
Raleigh, NC 27609



**March 11th, 2019**

# INTRODUCTION

Soil & Environmental Consultants, PA (S&EC, PA) was retained to perform a detailed evaluation to assess the presence and extent of hydric soils onsite. There are a number of field ditches that dissect the site. Most of the area evaluated was not planted but some of the area is in pasture.

# METHODOLOGY

On February 7th, 2019 Kevin Martin (LSS, PWS) of S&EC, PA performed a soil evaluation at the site. Eighty five hand auger borings were advanced on the property at locations as appropriate to approximately estimate the location and extent of hydric soils within the project area (see attached Soil Study Exhibit). Each soil boring was evaluated to assess the presence or absence of hydric soil indicators. Hydric soil indicators were identified utilizing the *NRCS Field Indicators of Hydric Soils in the Unities States - A Guide for Identifying and Delineating Hydric Soils (Version 8.1, 2017).*

All areas evaluated are mapped as the Chewacla soil series (Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts) by NRCS. Most hydric soils observed onsite were fine loamy or clayey and are most like the Wehadkee (Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts) soil series.

# RESULTS

Eighty five soil borings were performed within the study area. Soil characteristics were evaluated and all areas identified as containing hydric soils met the hydric soil criteria described below. An "X" with a circle around it on the map indicates soil boring location and the depth below current land surface to hydric soil indicators.

U- are non hydric soil areas (most like Congaree Series)

H- are hydric soils areas containing a depleted matrix (F3 indicator). Most Like Wehadkee Series)

C- are buried hydric soils due to "crowning" of the fields. Crowned material ranges from 12" to 18" thick in most areas. A depleted matrix is present beneath the material used to crown the field. (Most like Chewacla Series)

H2- areas have hydric soil indicator F3 (a depleted matrix) but only in the top 2" to 4" of the soil profile. This area may have been a natural depression in the floodplain or may have been created over time by manipulation of the area and by ponding caused in part by a man made levee adjacent to a ditch. (most like Mullers Series).

Indicator F3: Depleted Matrix

Technical Description: A layer that has a depleted matrix with 60 percent

or more chroma of 2 or less and that has a minimum thickness of either:

(a) 2 in. (5 cm) if the 2 in. (5 cm) is entirely within the upper 6 in. (15 cm)

of the soil, or

(b) 6 in. (15 cm) starting within 10 in. (25 cm) of the soil surface.

Wetland Hydrology Indicators:
While all of the borings performed within areas identified as hydric soils on the attached map exhibited hydric soil indicators, most areas containing hydric soils did not exhibit Primary Wetland or Secondary Wetland Hydrology Indicators.

# Typical Soil Profiles
# WEHADKEE SERIES
## (Actual Location B7 in a H soil area)

The Wehadkee series consists of very deep, poorly drained and very poorly drained soils on flood plains along streams that drain from the mountains and piedmont.

**TAXONOMIC CLASS:** Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts

**A**--0 to 14 inches; dark grayish brown (10YR 4/2) with 20% reddish brown (5YR 4/4) redox concentrations occurring as Fe masses, clay loam.

# Most Like Mullers SERIES
(Mullers is not mapped in NC but is found in SC, no NC soil series really fits the description)
## (Actual Location B75 in a H2 soil area)

**TAXONOMIC CLASS:** Fine, kaolinitic, acid, thermic Fluventic Endoaquept

**Ap**--0 to 3 inches; very dark grayish brown (10YR 4/2). 2 to 5% oxidized rhizospheres and/or pore linings 7.5YR 4/6, sandy clay loam
**Bw1**--3 to 16 inches; brown (10YR 5/3), strong brown (7.5YR 4/6) & reddish brown (5YR 4/4), sandy clay loam
**Bw2g**—16 to 24+ inches—dark gray (5Y 4/1), 10% strong brown (7.5YR 4/6), clay loam

# Most Like Chewacla SERIES
## (Actual Location B8 in a C soil area)

**TAXONOMIC CLASS:** Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts

**A**--0 to 15 inches; Brown (10YR 5/3), 30% brown (7.5YR 4/4) clay loam.
**Ab**--15 to 21+ inches; dark grayish brown (10YR 4/2) with 20% reddish brown (5YR 4/4) redox concentrations occurring as Fe masses, clay loam.

Project Location
Proposed Conservation Easement (37.8 Acres)
Temporary Construction Easement
Topographic Contour 5'
Existing Ditch
C - Buried Hydric (3.0 Acres)
H - Hydric (16.7 Acres)
U - Not Hydric (1.7 Acres)
H2 - Shallow Hydric (1.5 Acres)
Soil Study Borings

B2-12"
B1-8"
B0-0"
B10-4"
B11-18"
B3-0"
B9-0"
B12-22"
B21-1"
B22-4"
B28-10"
B18-2"
B8-15"
B20-16"
B23-24"
B29-20"
B4-0"
B13-4"
B19-6"
B17-10"
B24-8"
B27-14"
B30-12"
B7-0"
B16-8"
B5-0"
B6-0"
B14-2"
B15-2"
B25-10"
B26-10"
B31-14"
B33-0"
B32-0"
B34-4"
B41-6"
B42-20"
B52-2"
B53-6"
B54-4"
B63-32"
B43-0"
B51-2"
B35-4"
B40-0"
B44-8"
B50-4"
B55-0"
B62-18"
B64-22"
B49-4"
B56-10"
B36-0"
B39-4"
B45-6"
B61-16"
B65-12"
B48-18"
B37-0"
B38-0"
B46-10"
B57-18"
B60-22"
B66-14"
B47-8"
B73-6"
B58-18"
B72-22"
B59-18"
B67-21"
B71-22"
B70-15"
B68-30"
B69-1"
B74-0"
B75-0"
B76-0"
B77-0"
B85-0"
B84-0"
B78-0"
B82-0"
B83-0"
B81-0"
B79-0"
B80-0"

WYANT CREEK REACH 4
UT3
REACH 2

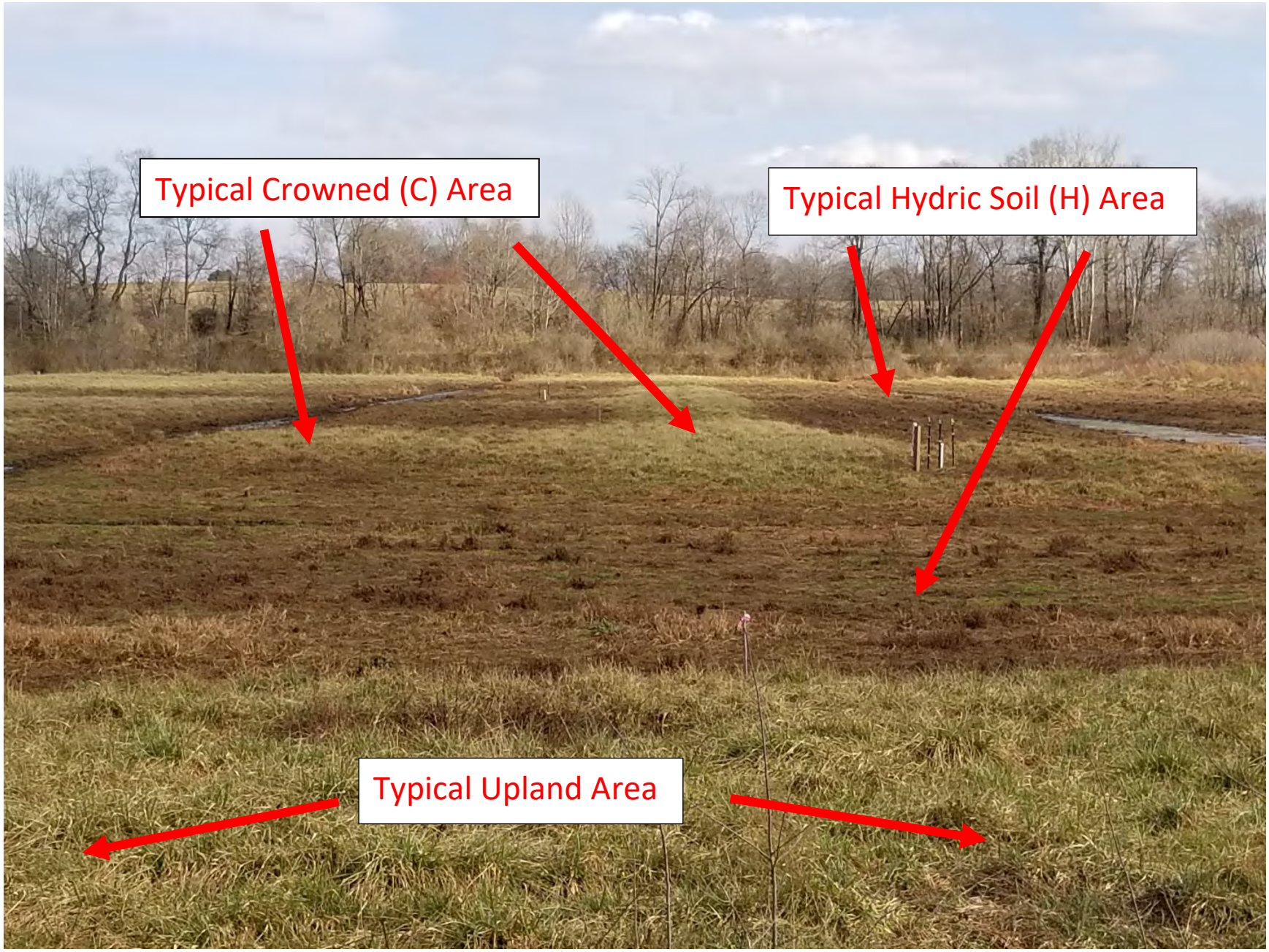
2015 Aerial Imagery

WILDLANDS ENGINEERING

0 50 100 200 300 400 Feet

N

Soils Study Exhibit
Wyant Lands Mitigation Site
Catawba River Basin (03050102)
Cat 03 Extended Service Area - Warm NonTLW
*Lincoln County, NC*

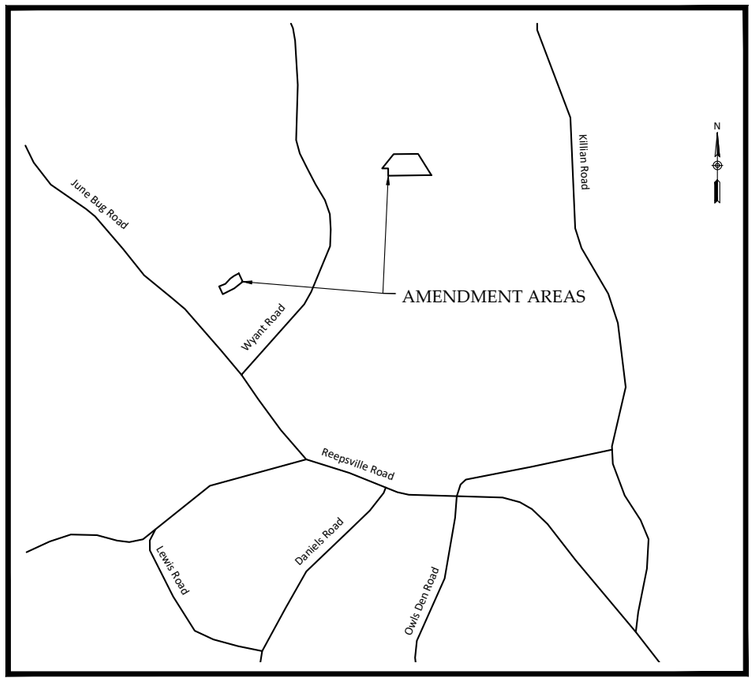

Typical Crowned (C) Area
Typical Hydric Soil (H) Area
Typical Upland Area

APPENDIX 8A
Amendment Preliminary Design Plans

November 10, 202

# Wyant Lands Mitigation Site
# Addendum

## Lincoln County, North Carolina
## for
## NCDEQ
## Division of Mitigation Services




Vicinity Map
Not to Scale

BEFORE YOU DIG!
CALL 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW!

PRELIMINARY PLANS
ISSUED October 11, 2021

### Sheet Index



### Project Directory


Engineering:
Wildlands Engineering, Inc
License No. F-0831
167-B Haywood Road
Asheville, NC 28806
Eric Neuhaus, PE
828-774-5547

Owner:
NCDEQ
Division of Mitigation Services
1652 Mail Service Center
Raleigh, NC 27699-1652
Paul Wiesner
828-273-1673

Surveying:
Kee Mapping and Surveying, PA
111 Central Avenue
Asheville, NC 28801
Brad Kee, PLS
828-575-9021


USACE Action ID No. SAW-2017-02609
NCDWR No. 20180177


WILDLANDS ENGINEERING
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Fax: 704.332.3305
Firm License No. F-0831


PRELIMINARY
DO NOT
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Wyant Lands Mitigation Site Addendum
Lincoln County, North Carolina
Title Sheet

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EFN
Drawn By: JTH
Checked By: JDW

Sheet 0.1

X:\Shared\Projects\005-02171 Wyant Lands Mitigation Site\Civil\Revision\02171_Cover.dwg

November 10, 2021

JERRY THOMAS WYANT
PIN: 3605-98-8648
DB: 755 PG: 535

MATTHEW W. RAZAI
PIN: 3605-97-0726
DB: 2500 PG: 80

DAVID J. WYANT & WIFE
BRANDI F. WYANT
PIN: 3615-07-7619
DB: 2586 PG: 738
PB: 16 PG: 350

WYANT LANDS, LLC
PIN: 3615-17-3928
DB: 2436 PG: 938

LUCAS F. RICHARD
PIN: 3615-38-1627
DB: 2291 PG: 60 &
DB: 2292 PG: 584

SHEET 2.0

ADDENDUM WETLAND
MITIGATION AREA

WYANT ROAD

ROBERT THOMAS WYANT
PIN: 3605-87-3054
DB: 1933 PG: 169

WYANT LANDS, LLC
PIN: 3615-07-4254
DB: 2436 PG: 926

WYANT LANDS, LLC
PIN: 3605-76-0937
DB: 2436 PG: 929

PREVIOUSLY CONSTRUCTED
PROJECT AREAS

CATAWBA LANDS CONSERVANCY
PIN: 3615-25-6566
DB: 1721 PG: 343
PB: 13 PG: 271

UT1

ROBERT THOMAS WYANT
PIN: 3605-96-4840
DB: 2000 PG: 406

ROBERT THOMAS WYANT
PIN: 3605-96-4840
DB: 2000 PG: 406

WYANT CREEK

WYANT LANDS, LLC
PIN: 3605-76-0937
DB: 2436 PG: 929

WYANT LANDS, LLC
PIN: 3605-65-7869
DB: 2702 PG: 691

WYANT LANDS, LLC
PIN: 3605-95-9148
DB: 2339 PG: 182
(TRACT 1)

UT3

WYANT LANDS, LLC
PIN: 3605-95-9148
DB: 2339 PG: 182
(TRACT 1)

UT2

JERRY THOMAS WYANT
& WIFE LINDA WYANT
PIN: 3605-95-9968
DB: 585 PG: 191

SHEET 1.0

WYANT LANDS, LLC
PIN: 3605-95-9148
DB: 2339 PG: 182
(TRACT 1)

RUTHERFORD ELECTRIC
MEMBERSHIP COOPERATION
PIN: 3605-85-7130
DB: 711 PG: 666
PB: F PG: 268 & 269

ADDENDUM STREAM
RESTORATION AREA

N

0' 200' 400' 800'
(HORIZONTAL)

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WILDLANDS ENGINEERING
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# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina
### Project Overview

Revisions:

Date: 10-11-2021
Job Number: 005-0217
Project Engineer: EHN
Drawn By: JTH
Checked By: JDW

Sheet 0.2

November 10, 202

## Existing Features

- Existing Thalweg
- Existing Adjoiner Line
- Existing Property Line
- Existing Major Contour (100)
- Existing Minor Contour
- Recorded Conservation Easement (CE)
- Existing Overhead Utility Easement (OHE)
- Existing Overhead Electric (OW)
- Existing Power Pole
- Existing Fence (X)
- Existing Storm Pipe
- Existing Farm Road
- Existing Wetland
- Existing Tree
- Existing Spring Head
- Existing Bedrock
- Existing Asphalt Road
- Existing Debris To Be Removed From Conservation Easement
- Existing Riprap
- Existing Farm Pond

## Proposed Features

- Proposed Thalweg Alignment (10+00)
- Proposed Bankfull
- Proposed Conservation Easement (CE)
- Proposed Internal Crossing (CE-IX)
- Proposed Major Contour (100)
- Proposed Minor Contour
- Proposed Limits of Disturbance (LOD)
- Proposed Temporary Construction Eeasement (TCE)
- Proposed Fencing

## Proposed Structures

- Proposed Constructed Riffles Per Plans See Detail 1-3. Sheet 5.1
- Proposed Brush Toe See Detail 2 , Sheet 5.3
- Proposed SPSC See Detail 1, Sheet 5.6
- Proposed Wetland Ditch Plug See Detail 4, Sheet 5.5
- Proposed Log Sill See Detail 4, Sheet 5.1
- Proposed Rock Sill See Detail 1, Sheet 5.2
- Wetland Rehabilitation
- Wetland Reestablishment
- Wetland Creation

## Erosion Control Features

- Proposed Silt Fence See Detail 1, 5.3
- Proposed LOD
- Proposed Straw Wattle See Detail 3 Sheet 5.2
- Proposed Haul Road
- Proposed Temporary Rock Sediment Dam See Detail 4, Sheet 5.4
- Proposed Temporary Stream Crossing Timber Mat See Detail 1, Sheet 5.9
- Proposed Construction Entrance See Detail 1, Sheet 5.9
- Proposed Silt Fence Gravel Outlet See Detail 3, Sheet 5.9

PROJECT NOTES:

1. Topographic data provided by North Carolina Spatial Data Download. QL1 Lidar data from September 2016.
2. Lidar data supplemented by topographic survey provided by Kee Mapping and Surveying dated March 2019 and August 2021.
3. Riffle selection may vary based on available materials at the Engineers' discretion. Field coordination will be required.
4. All existing fencing and debris are to be removed from the proposed conservation easement.

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# Wyant Lands Mitigation Site Addendum
## Lincoln County, North Carolina
### General Notes and Symbols

Revisions:

| | |
|---|---|
| Date: | 10-11-2021 |
| Job Number: | 065-02171 |
| Project Engineer: | EPN |
| Drawn By: | JPH |
| Checked By: | JDW |

Sheet 0.3

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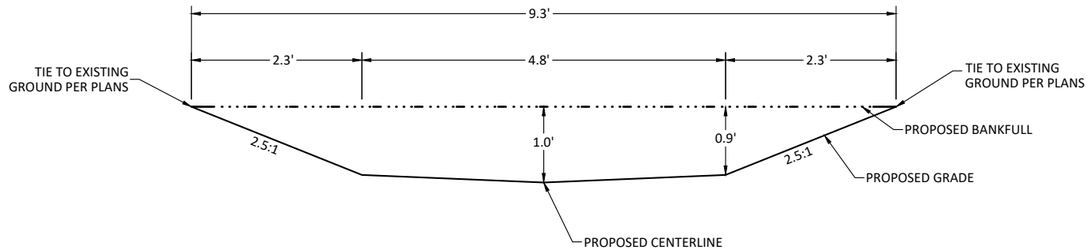


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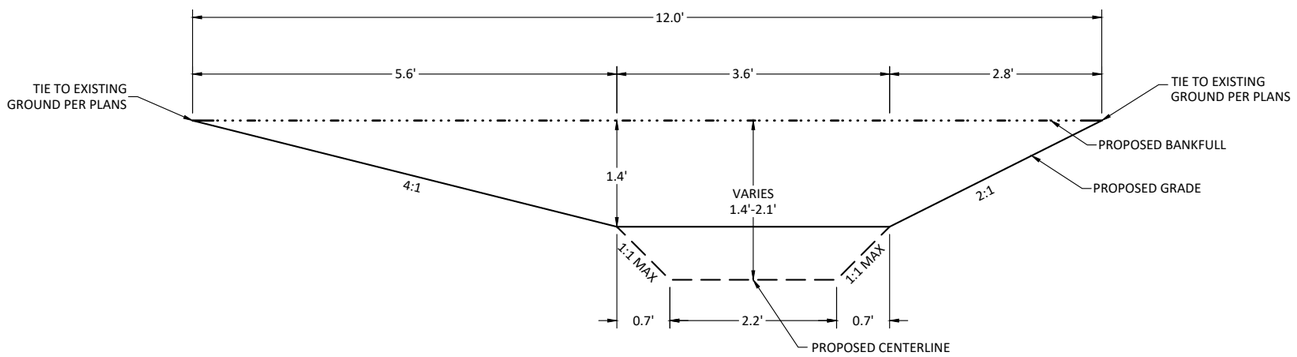


UT2 Reach 1 - Meander Pool
STA: 0+00 - 4+06

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Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina

UT2 Reach 1
Typical Sections

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EPN
Drawn By: JTH
Checked By: EPN

Sheet 0.4

November 10, 202

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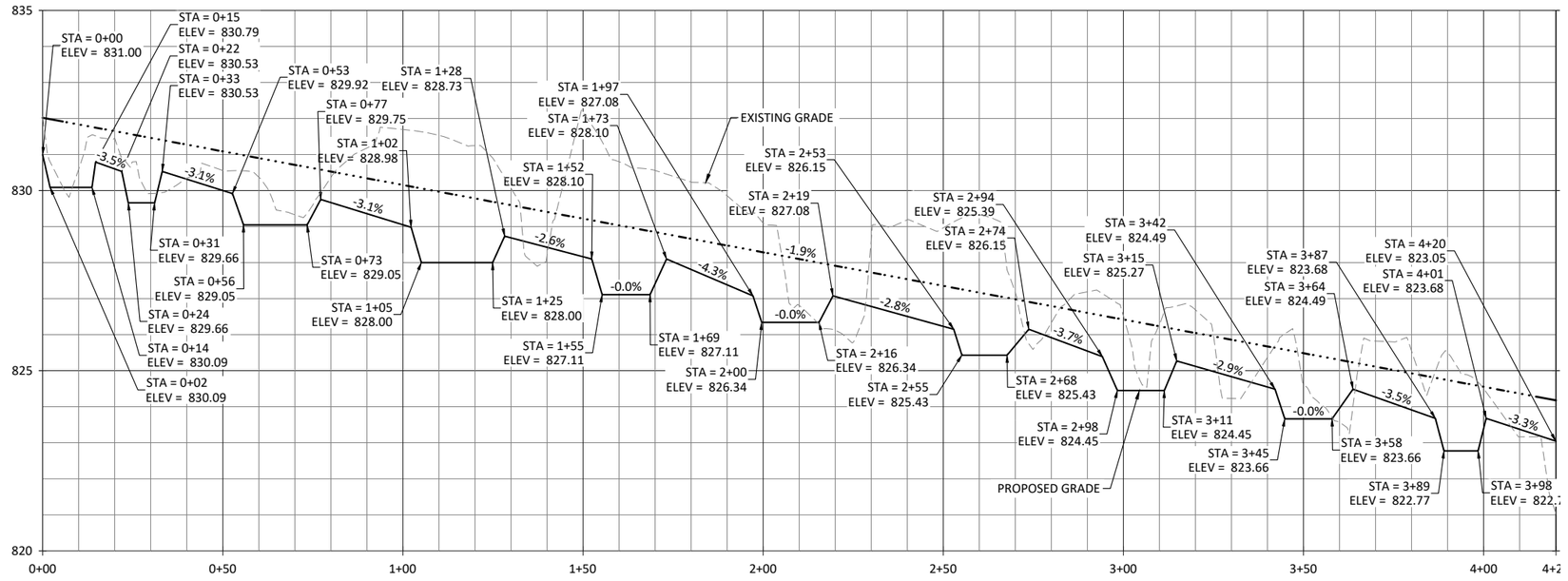
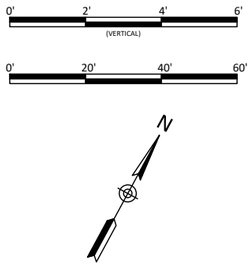
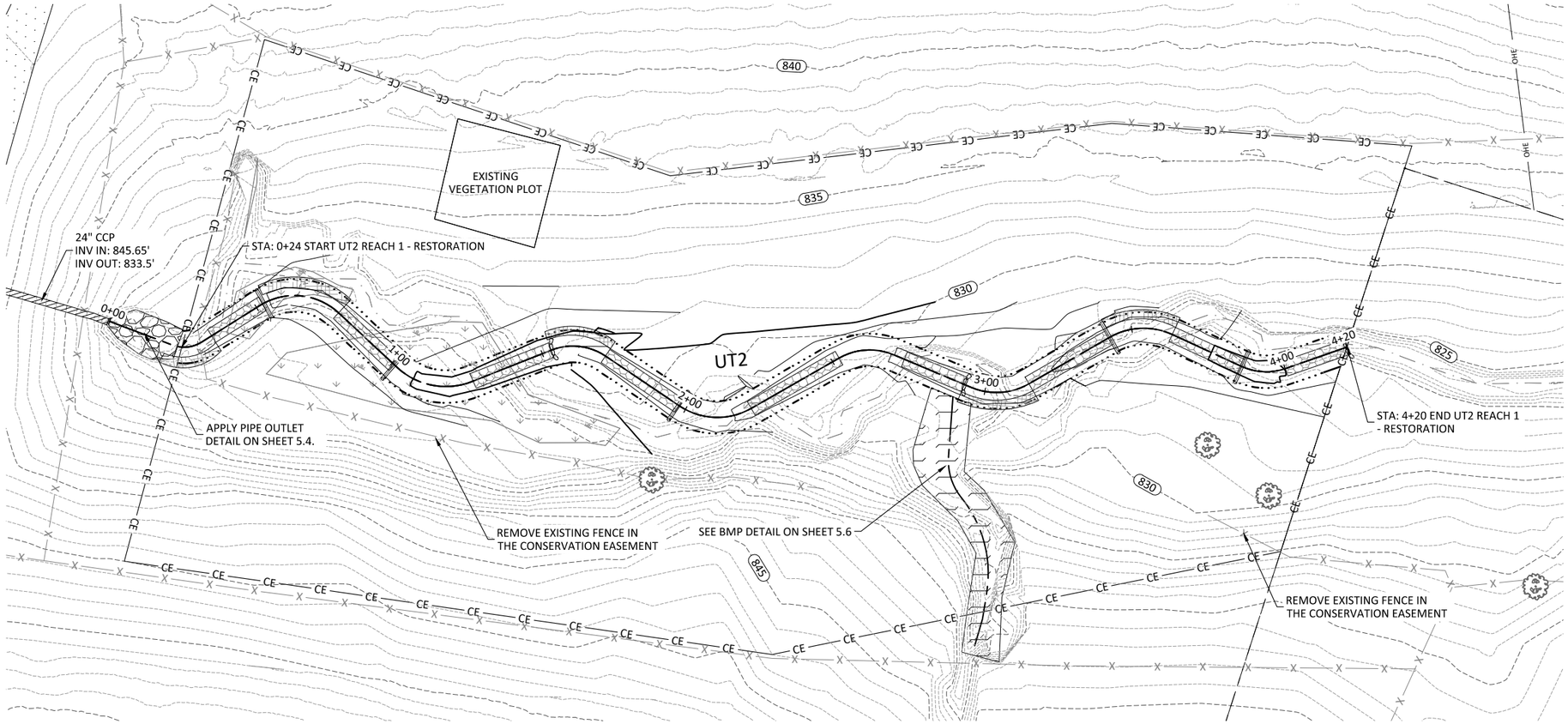
November 10, 20





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# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina

UT2 Reach 1
Stream Plan and Profile

Revisions:

| | |
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| Date: | 10-11-2021 |
| Job Number: | 005-02171 |
| Project Engineer: | EPN |
| Drawn By: | JTH |
| Checked By: | EPN |

Sheet 1.0

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| | |
|---|---|
| Date: | 10-11-2021 |
| Job Number: | 005-02171 |
| Project Engineer: | EPN |
| Drawn By: | JPH |
| Checked By: | EPN |

2.0
Sheet

Revisions:

# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina

Wetland Grading Overview

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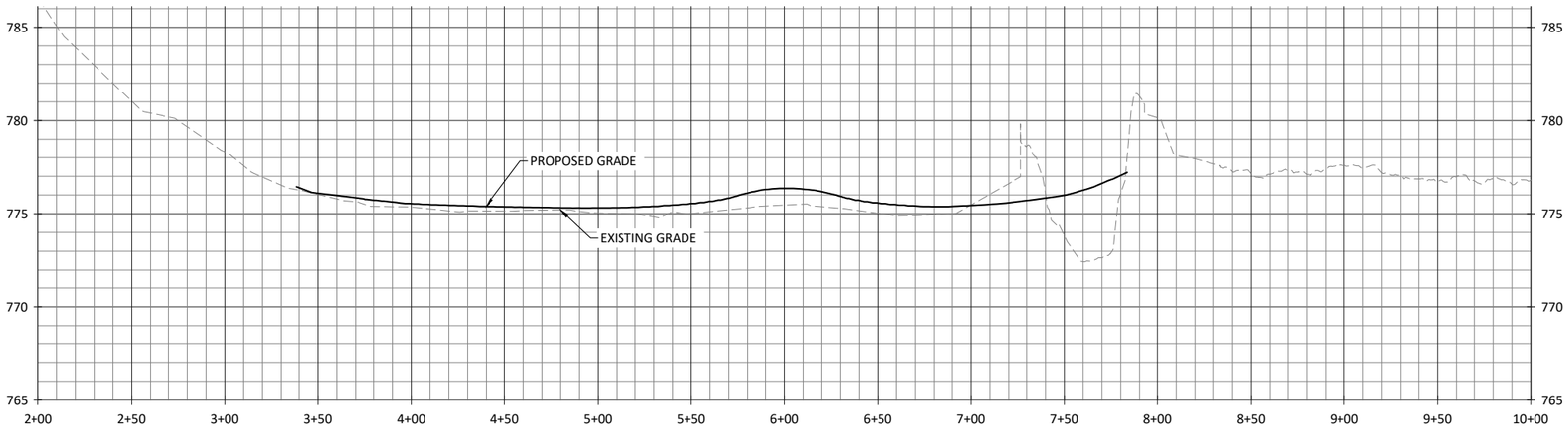
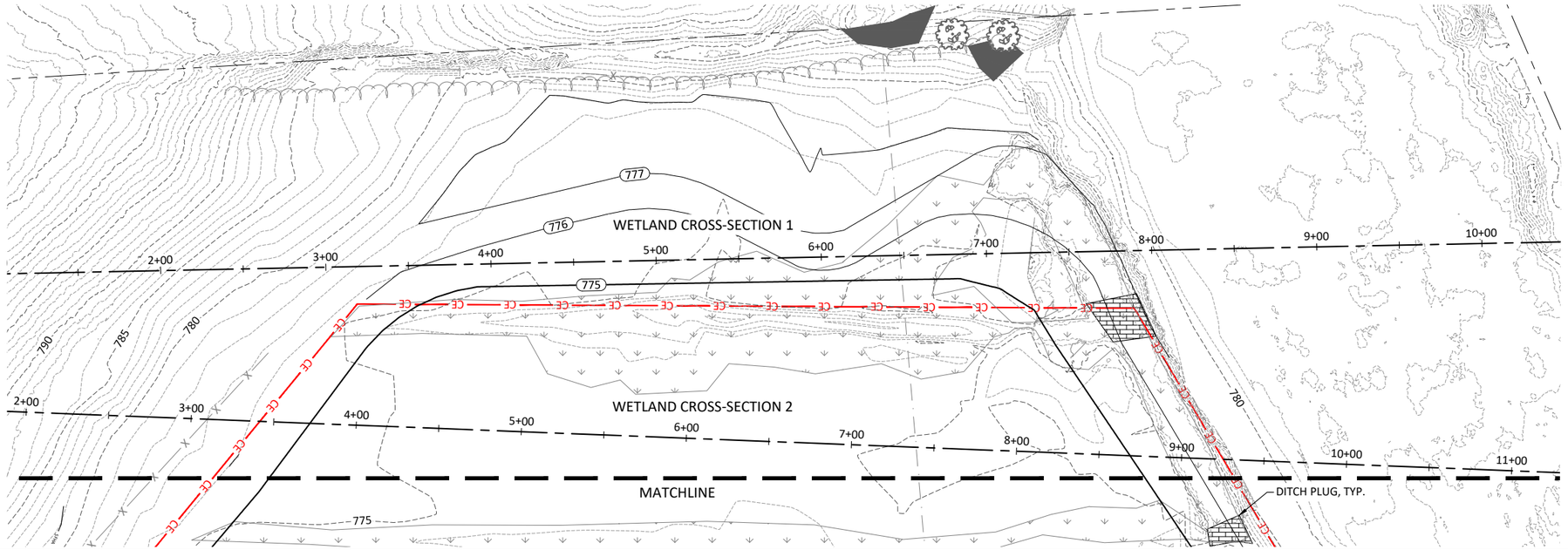
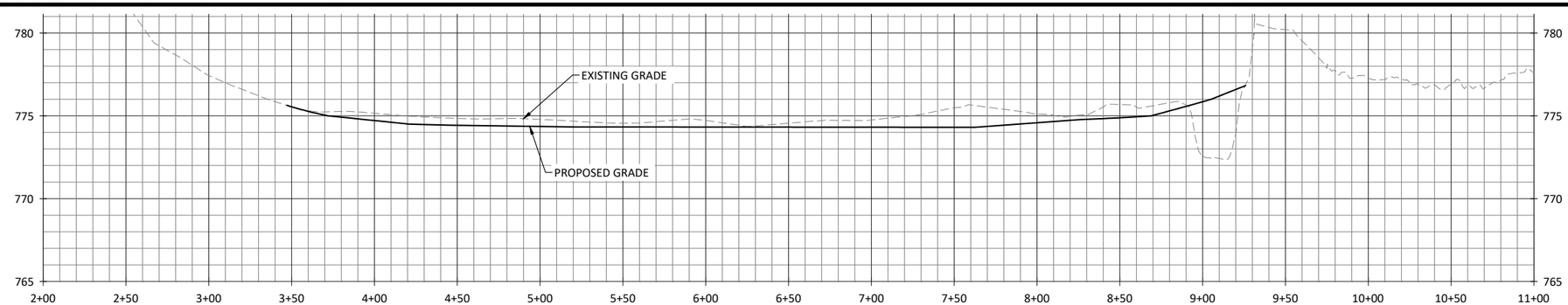
November 10, 20




WETLAND CROSS-SECTION 1

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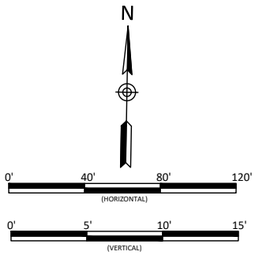


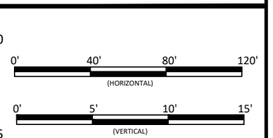



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# Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina

Wetland Grading

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Date: 10-11-2021
Job Number: 005-02171
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Drawn By: JTH
Checked By: EPN

Sheet 2.1

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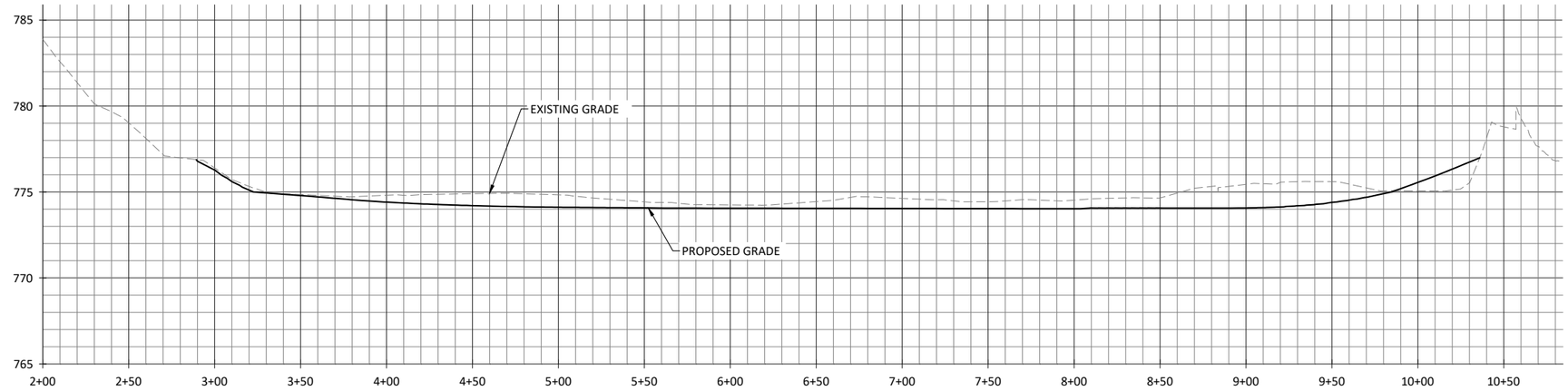


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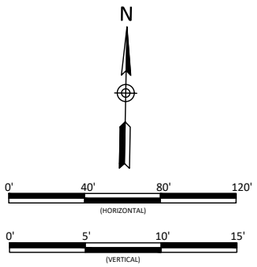


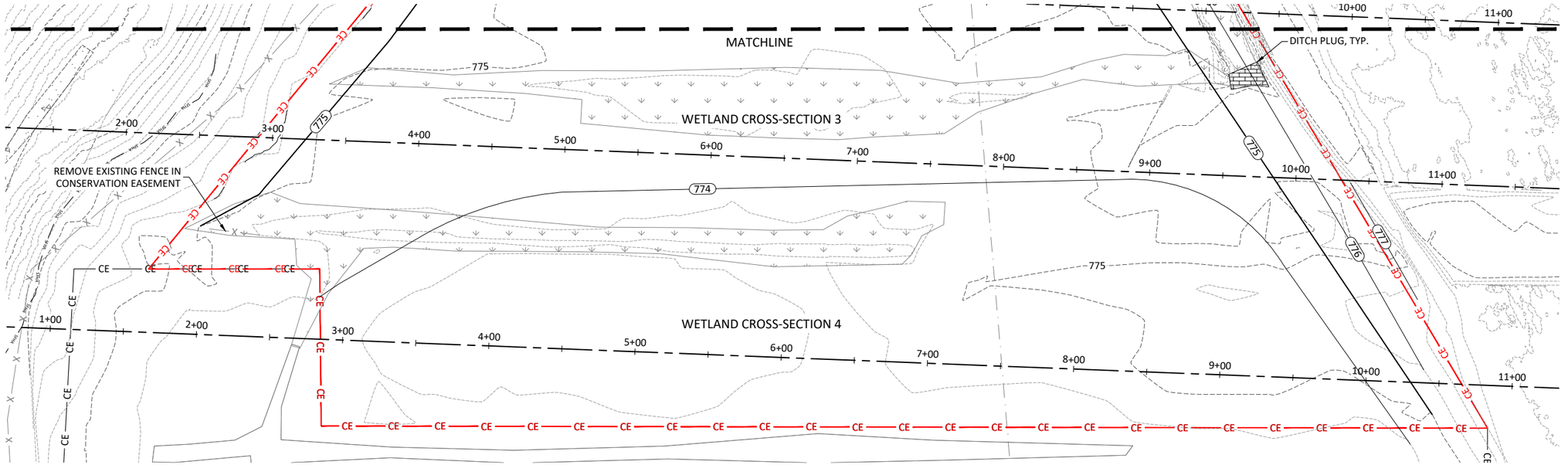


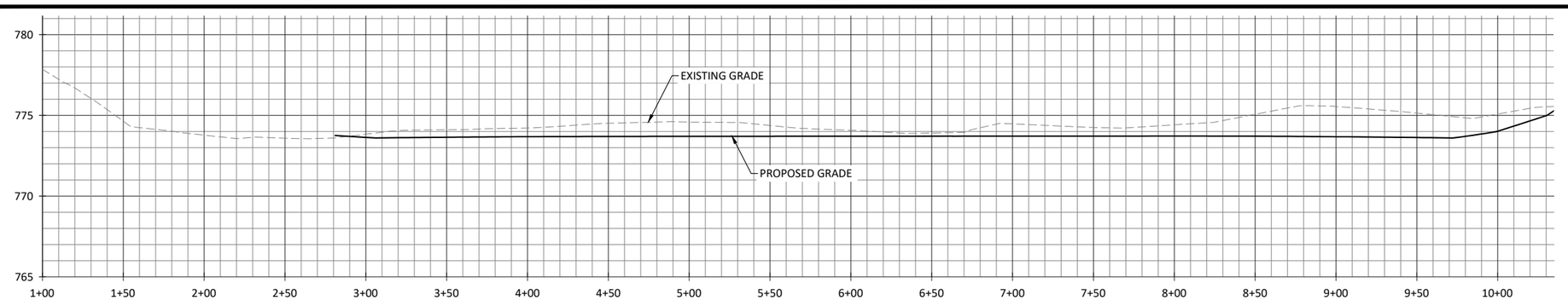


WETLAND CROSS-SECTION 4


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# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina

Wetland Grading

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EPN
Drawn By: JTH
Checked By: EPN

Sheet 2.2

November 10, 20

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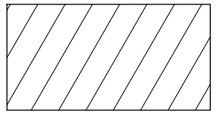
January 13, 2022



| RIPARIAN ZONE | | | | |
|---|---|---|---|---|
| **Species** | **Common Name** | **Spacing** | **Min. Caliper** | **Percentage** |
| *Alnus serrulata* | Tag Alder | 12ft x 6ft | 0.25" | 5% |
| *Carpinus caroliniana* | American Hornbeam | 12ft x 6ft | 0.25" | 10% |
| *Liriodendron tulipifera* | Tulip Poplar | 12ft x 6ft | 0.25" | 5% |
| *Platanus occidentalis* | Sycamore | 12ft x 6ft | 0.25" | 20% |
| *Betula nigra* | River Birch | 12ft x 6ft | 0.25" | 15% |
| *Populus deltoides* | Eastern Cottonwood | 12ft x 6ft | 0.25" | 10% |
| *Diospyros virginiana* | Persimmon | 12ft x 6ft | 0.25" | 10% |
| *Quercus nigra* | Water Oak | 12ft x 6ft | 0.25" | 5% |
| *Quercus phellos* | Willow Oak | 12ft x 6ft | 0.25" | 10% |
| *Quercus michauxii* | Swamp Chestnut Oak | 12ft x 6ft | 0.25" | 10% |

| Stabilization Seeding | | |
|---|---|---|
| **Scientific Name** | **Common Name** | **lb/acre** |
| *Festuca arundinacea* | Tall Fescue | 80 |

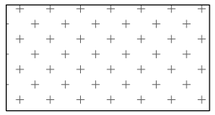
NOTE:
1. "STABLIZATION SEEDING" IS FOR AREAS OF DISTURBANCE OUTSIDE CONSERVATION EASEMENT.

See Detail 3, Sheet 5.3 for
Live Staking instructions on streambanks.

| STREAM BANK PLANTING ZONE - Live Stakes | | | | |
|---|---|---|---|---|
| **Species** | **Common Name** | **Indiv. Spacing** | **Min. Caliper** | **Percentage** |
| *Cephalanthus occidentalis* | Common Buttonbush | 3-5 ft | 0.5" | 20% |
| *Salix sericea* | Silky Willow | 3-5 ft | 0.5" | 40% |
| *Physocarpus opulifolius* | Ninebark | 3-5 ft | 0.5" | 20% |
| *Sambucus canadensis* | Elderberry | 3-5 ft | 0.5" | 20% |

| STREAM BANK ZONE - Herbaceous Plugs | | | |
|---|---|---|---|
| **Species** | **Common Name** | **Indiv. Spacing** | **Percentage** |
| *Juncus effusus* | Common Rush | 4 ft | 40% |
| *Carex alata* | Broadwing Sedge | 4 ft | 20% |
| *Carex lurida* | Lurid Sedge | 4 ft | 15% |
| *Scirpus cyperinus* | Woolgrass | 4 ft | 15% |
| *Carex crinita* | Fringed Sedge | 4 ft | 10% |

NOTE:
1. TOP SOIL TO BE STOCK PILED AND REAPPLIED TO ALL AREAS.
2. SOIL TEST MAY BE REQUIRED TO DETERMINE FERTILIZER APPLICATION RATE IF INADEQUATE GROWTH IS VISIBLE.
3. LIVE STAKES ARE TO BE INSTALLED IN A SINGLE ROW. SPACING SHALL BE 5 FEET IN TANGENT SECTIONS (BOTH BANKS) AND 3 FEET IN BENDS (OUTSIDE BANK ONLY).



| WETLAND PLANTING ZONE | | | | |
|---|---|---|---|---|
| **Species** | **Common Name** | **Spacing** | **Min. Caliper** | **Percentage** |
| *Platanus occidentalis* | Sycamore | 12ft x 12ft | 0.25" | 11% |
| *Quercus phellos* | Willow Oak | 12ft x 12ft | 0.25" | 17% |
| *Betula nigra* | River Birch | 12ft x 12ft | 0.25" | 11% |
| *Quercus michauxii* | Swamp Chestnut Oak | 12ft x 12ft | 0.25" | 17% |
| *Sambucus canadensis* | Elderberry | 12ft x 12ft | 0.25" | 10% |
| *Alnus serrulata* | Tag Alder | 12ft x 12ft | 0.25" | 10% |
| *Cephalanthus occidentalis* | Common Buttonbush | 12ft x 12ft | 0.25" | 12% |
| *Rosa palustris* | Swamp rose | 12ft x 12ft | 0.25" | 12% |

| Permanent Riparian Seeding | | | | |
|---|---|---|---|---|
| Pure Live Seed (22 lbs/acre mix) | | | | |
| **Approved Date** | **Species Name** | **Common Name** | **Stratum** | **Density (lbs/acre)** |
| All Year | *Schizachyrium scoparium* | Little Bluestem | Herb | 4.0 |
| All Year | *Rudbeckia hirta* | Blackeyed Susan | Herb | 1.0 |
| All Year | *Carex vulpinoidea* | Fox Sedge | Herb | 1.0 |
| All Year | *Panicum clandestinum* | Deertongue | Herb | 3.0 |
| All Year | *Elymus virginicus* | Virginia Wild Rye | Herb | 3.0 |
| All Year | *Sorghastrum nutans* | Indiangrass | Herb | 3.0 |
| All Year | *Coreopsis lanceolata* | Lanceleaf coreopsis | Herb | 1.0 |
| All Year | *Bidens aristosa* | Bur-marigold | Herb | 1.0 |
| All Year | *Panicum rigidulum* | Redtop Panicgrass | Herb | 1.0 |
| All Year | *Helianthus angustifolia* | Narrowleaf sunflower | Herb | 1.0 |
| All Year | *Coreopsis tinctoria* | Plains coreopsis | Herb | 1.0 |
| All Year | *Panicum virgatum* | Switchgrass | Herb | 2.0 |

NOTE:
1. PERMANENT RIPARIAN SEEDING IN ALL DISTURBED AREAS WITHIN CONSERVATION EASEMENT

| TEMPORARY SEEDING | | |
|---|---|---|
| **APPROVED DATE** | **TYPE** | **PLANTING RATE (lbs/acre)** |
| Jan 1 – May 1 | Rye Grain (Secale Cereale) | 120 |
| | Ground Agricultural Limestone | 2,000 |
| | 10-10-10 Fertilizer | 750 |
| | Straw Mulch | 4,000 |
| May 1 – Aug 15 | German Millet (Setaria italica) | 40 |
| | Ground Agricultural Limestone | 2,000 |
| | 10-10-10 Fertilizer | 750 |
| | Straw Mulch | 4,000 |
| Aug 15 – Dec 31 | Rye Grain (Secale Cereale) | 120 |
| | Ground Agricultural Limestone | 2,000 |
| | 10-10-10 Fertilizer | 1,000 |
| | Straw Mulch | 4,000 |

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Lincoln, North Carolina

Planting List
Planting Plan

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EPN
Drawn By: JTH
Checked By: EPN

Sheet 4.0

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| | |
|---|---|
| Date: | 10-11-2021 |
| Job Number: | 005-02171 |
| Project Engineer: | EPN |
| Drawn By: | JPH |
| Checked By: | EPN |

4.1
Sheet

Revisions:

# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina

Wetland Planting
Planting Plan

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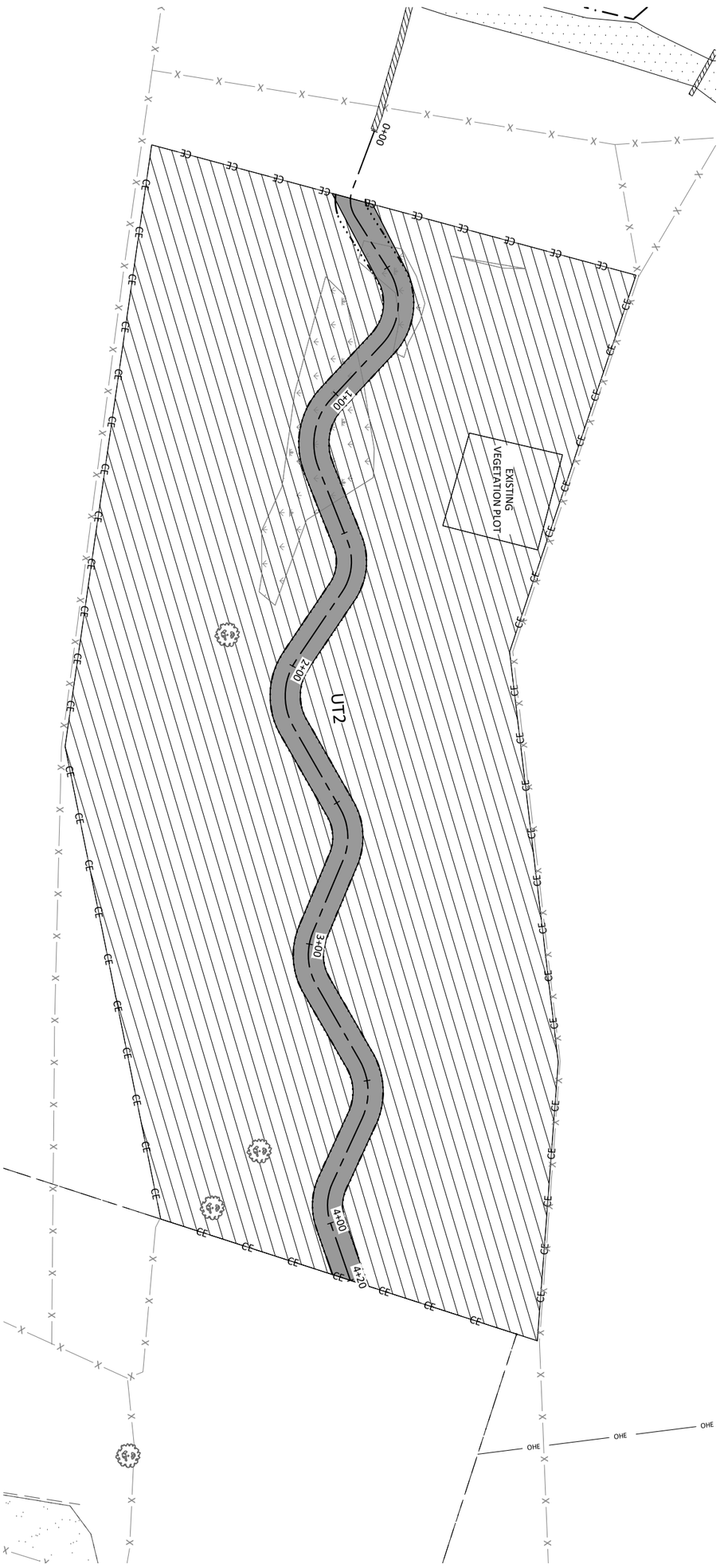


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|---|---|
| Date: | 10-11-2021 |
| Job Number: | 005-02171 |
| Project Engineer: | EPN |
| Drawn By: | JPH |
| Checked By: | EPN |

4.2
Sheet

Revisions:

# Wyant Lands Mitigation Site Addendum
## Lincoln, North Carolina

UT2 Reach 1 Planting
Planting Plan

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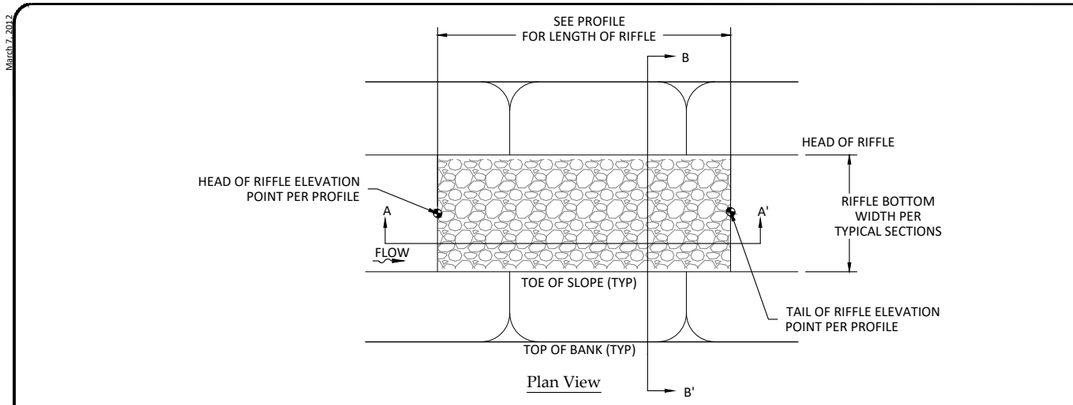
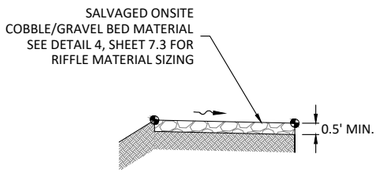
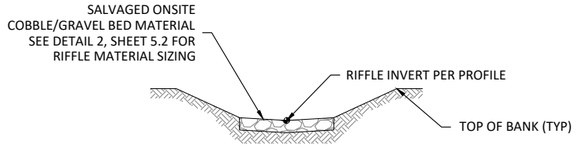
March 7, 2012




Plan View

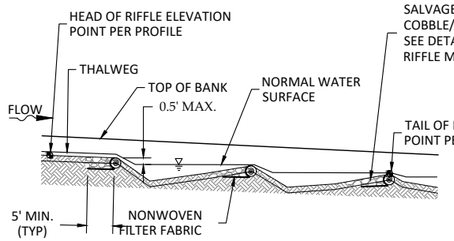



Profile A-A'

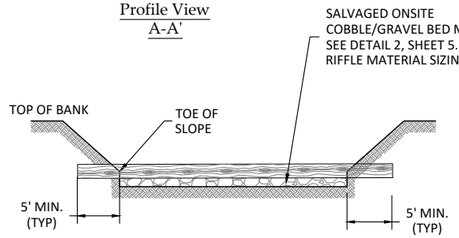



Section B-B'

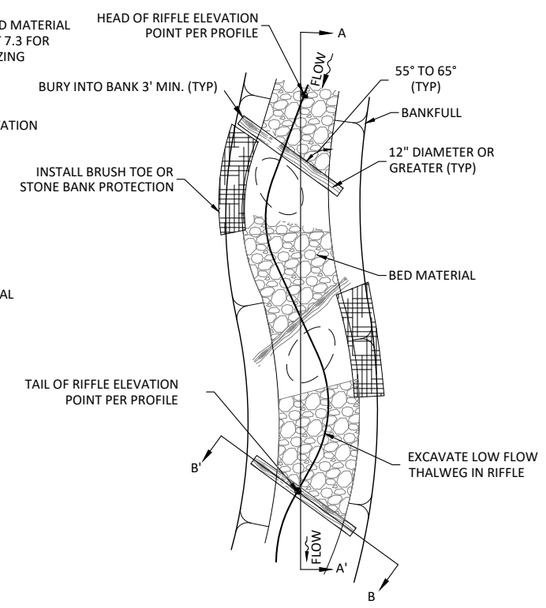
1 / 5.1 Constructed Riffle
Not to Scale




Profile View
A-A'




Log Section B-B'

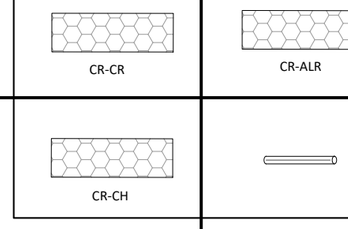


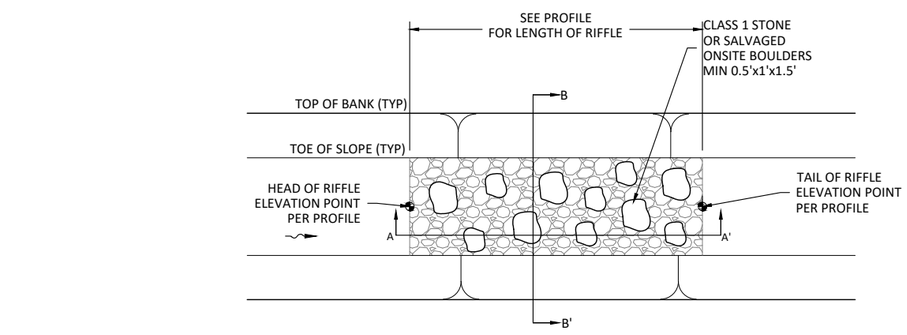

Plan View

2 / 5.1 Angled Log Riffle
Not to Scale

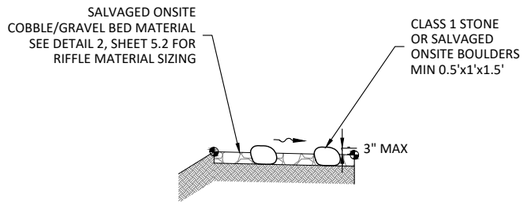
NOTE:

1. BOULDER MATERIAL CAN BE SUBSTITUTED IN PLACE OF ANGLED LOGS WITH APPROVAL OF ENGINEER.

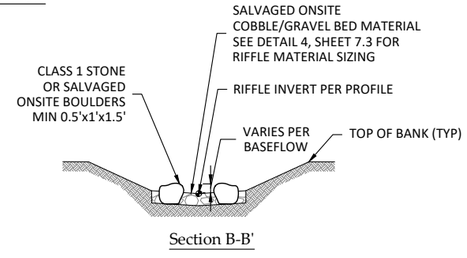



Plan View

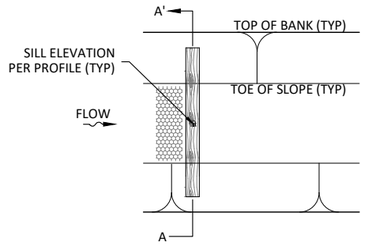



Section A-A'

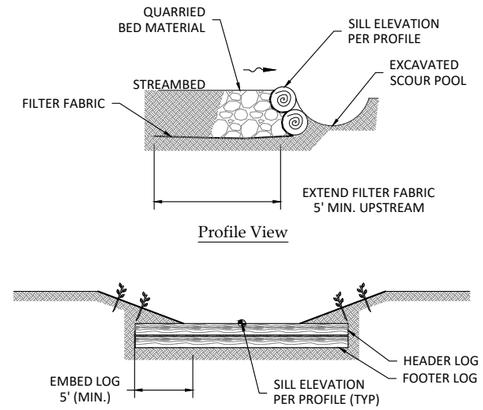



Section B-B'

3 / 5.1 Chunky Riffle
Not to Scale




Plan View




Profile View

Section A - A'

4 / 5.1 Log Sill
Not to Scale

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Lincoln, North Carolina
Details

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Checked By: JDW

Sheet 5.1

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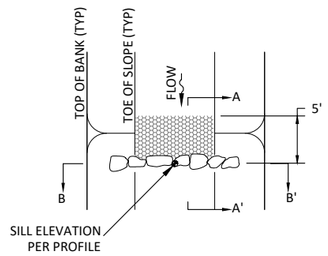
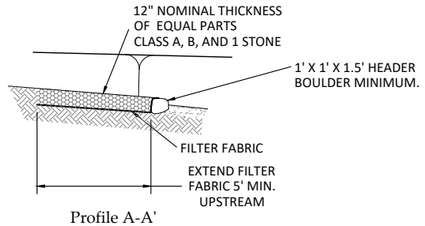
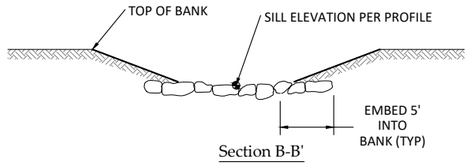
March 7, 2012




Plan View




Profile A-A'

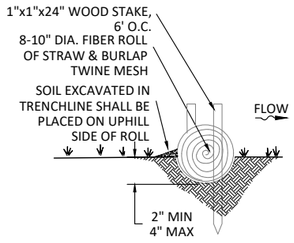



Section B-B'

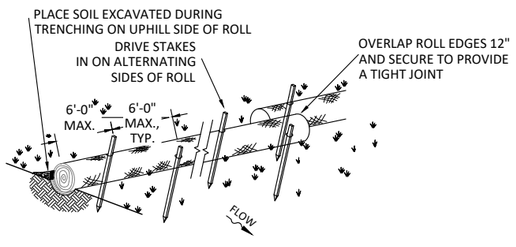
1/5.2 Rock Sill
Not to Scale

| Riffle Materials Table | | |
|---|---|---|
| Reach | Riffle Thickness (in) | Riffle Material Stone Size (% of Matrix) |
| UT2 Reach 1 | 12 | Class A (50%), Class B (50%) |

2/5.2 Structure Dimensions
Not to Scale

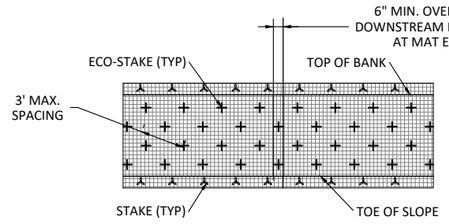



Section View

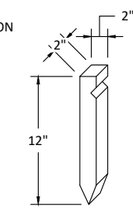



3/5.2 Straw Wattle
Not to Scale

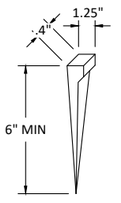
NOTES:
1. FIBER ROLLS MAY BE PLACED AT LOCATIONS AS DIRECTED BY THE DESIGNER
2. INSTALL FIBER ROLL ALONG CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.



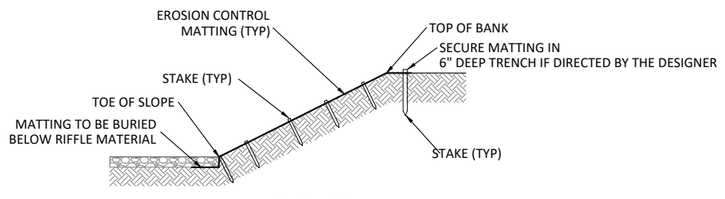

Plan View




Typical Stake




Eco-Stake




Section View

4/5.2 Erosion Control Matting
Not to Scale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Revisions:

Date: 10-11-2021
Job Number: 006-02171
Project Engineer: EPN
Drawn By: JTH
Checked By: JDW

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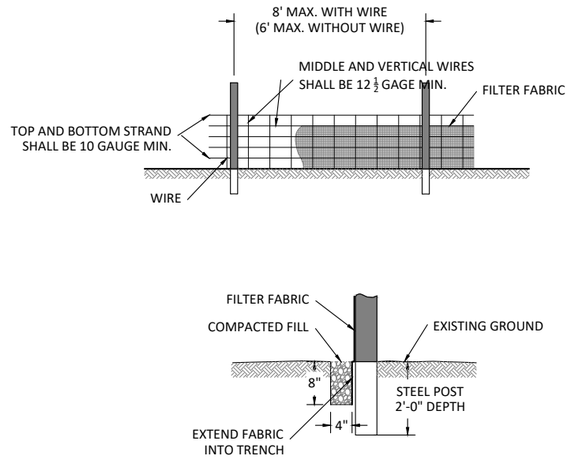
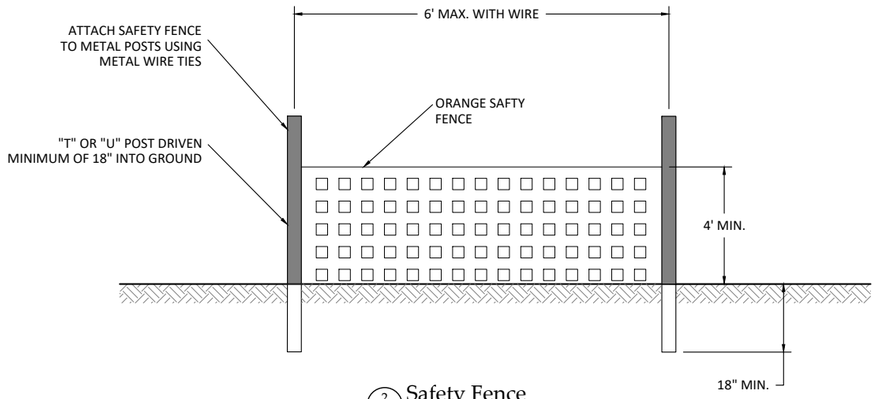



NOTES:

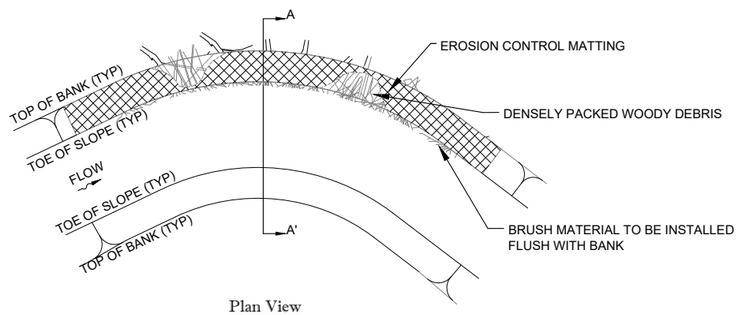
1. USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINES OF WIRES WITH 12" STAY SPACING.
2. USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRES AS DIRECTED BY THE ENGINEER.
3. PROVIDE 5' STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.
4. SEE DETAIL 4, SHEET 7.17 FOR SILT FENCE GRAVEL OUTLET

1/5.3 Temporary Silt Fence
Not to Scale

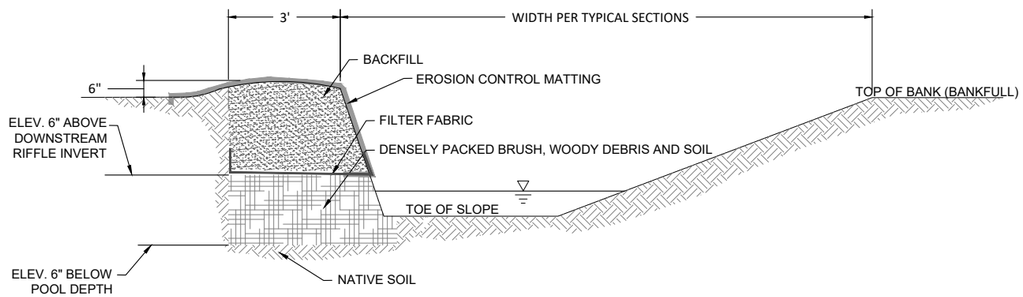
| MATERIAL SPECIFICATIONS | | |
|---|---|---|
| PHYSICAL PROPERTY | TESTS | REQUIREMENTS |
| MATERIAL | N/A | POLYETHYLENE |
| RECOMENDED COLOR | N/A | "INTERNATIONAL ORANGE" |
| TENSILE YIELD | ASTM D638 | AVE. 2000 LBS. PER 4' WIDE |
| ULTIMATE TENSILE STRENGTH | ASTM D638 | AVE. 2900 LBS. PER 4' WIDE |
| ELONGATION AT BREAK (%) | ASTM D638 | GREATER THAN 1000% |
| CHEMICAL RESISTANCE | N/A | INERT TO MOST CHEMICALS AND ACIDS |




2/5.3 Safety Fence
Not to Scale




Plan View




Section A-A'

2/5.3 Brush Toe - UT2
Not to Scale

NOTES:

1. OVEREXCAVATE 3' OUTSIDE OF TOP OF BANK (BANKFULL).
2. INSTALL A DENSE LAYER OF BRUSH/WOODY DEBRIS, WHICH SHALL CONSIST OF SMALL BRANCHES AND ROOTS COLLECTED ON-SITE AND SOIL TO FILL ANY VOID SPACE. LIGHTLY COMPACT BRUSH/WOODY DEBRIS LAYER.
3. BRUSH SHOULD BE ALIGNED SO STEMS ARE ROUGHLY PARALLEL AND IS INSTALLED POINTING SLIGHTLY UPSTREAM.
4. INSTALL FILTER FABRIC OVER BRUSH/WOODY DEBRIS.
5. INSTALL EARTH BACKFILL OVER BRUSH/WOODY LAYER ACCORDING TO TYPICAL SECTION DIMENSIONS.
6. SEED, MULCH AND INSTALL EROSION CONTROL MATTING AND BANK STABILIZATION PER PLANS.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Sheet 5.3

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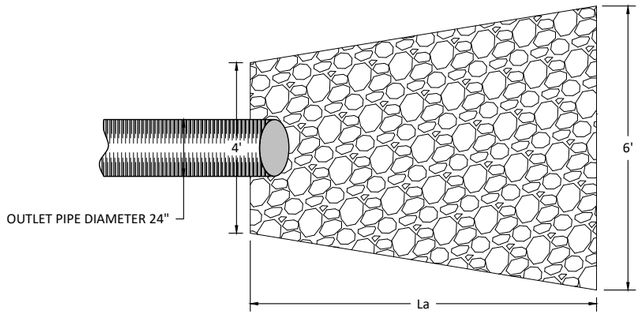
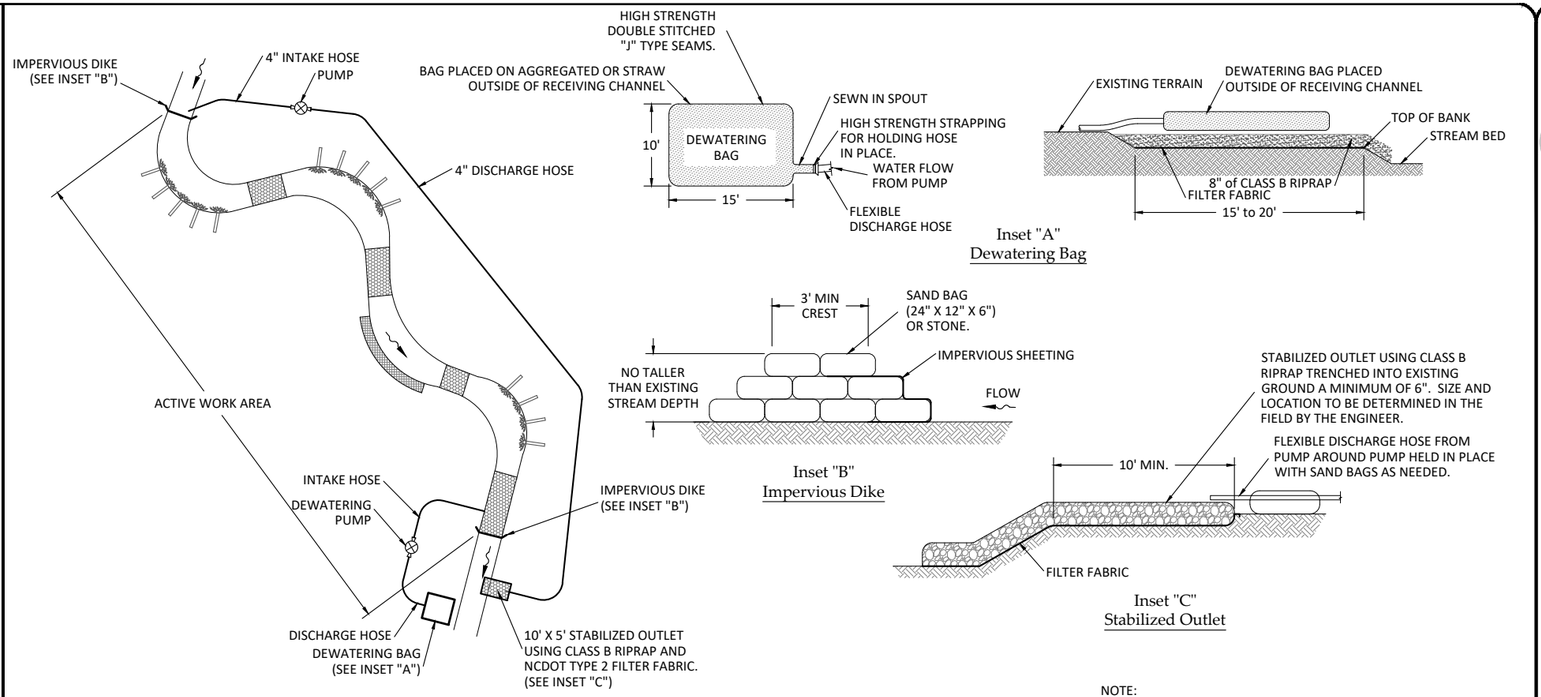



1 5.4 Outlet Protection
Not to Scale




Plan View

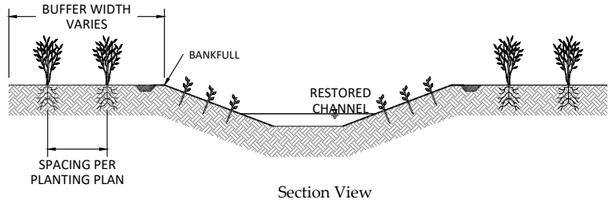
Inset "A"
Dewatering Bag

Inset "B"
Impervious Dike

Inset "C"
Stabilized Outlet

2 5.4 Pump Around System
Not to Scale

NOTE:
1. CONTRACTOR SHALL PERFORM ALL STREAM WORK IN THE DRY, UTILIZING PUMP AROUND SYSTEMS.
2. 4" PUMP SIZE PROPOSED. CONTRACTOR AND ENGINEER TO FIELD VERIFY SIZE AND ADJUST AS NEEDED BASED ON FIELD CONDITIONS.
3. PROVIDE STABILIZED OUTLET TO STREAMBED.



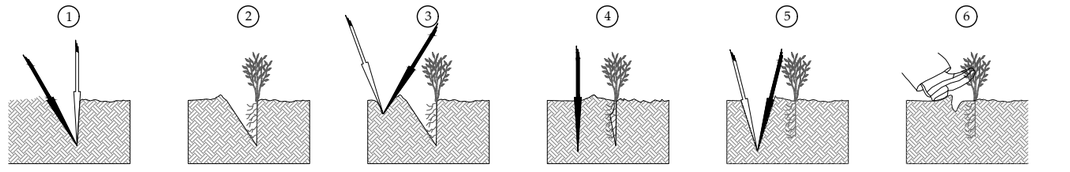

Section View

DIBBLE BAR

PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS-SECTION, AND SHALL BE 12 INCHES LONG, 4 INCHES WIDE AND 1 INCH THICK AT CENTER.

ROOTING PRUNING

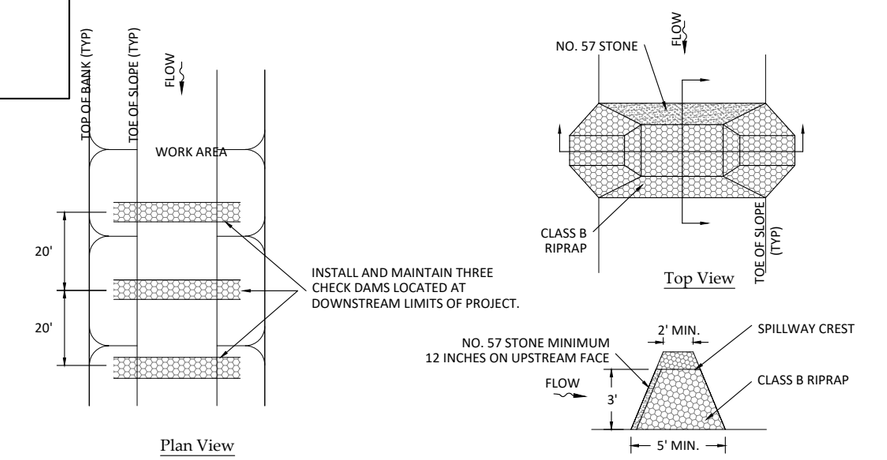
ALL ROOTS SHALL BE PRUNED TO AN APPORIATE LENGTH TO PREVENT J-ROOTING.




1. INSERT THE DIBBLE, OR SHOVEL, STRAIGHT DOWN INTO THE SOIL TO THE FULL DEPTH OF THE BLADE AND PULL BACK ON THE HANDLE TO OPEN THE PLANTING HOLE. (DO NOT ROCK THE SHOVEL BACK AND FORTH AS THIS CAUSES SOIL IN THE PLANTING HOLE TO BE COMPACTED, INHIBITING ROOT GROWTH.
2. REMOVE THE DIBBLE, OR SHOVEL, AND PUSH THE SEEDLING ROOTS DEEP INTO THE PLANTING HOLE. PULL THE SEEDLING BACK UP TO THE CORRECT PLANTING DEPTH (THE ROOT COLLAR SHOULD BE 1 TO 3 INCHES BELOW THE SOIL SURFACE). GENTLY SHAKE THE SEEDLING TO ALLOW THE ROOTS TO STRAIGHTEN OUT. DO NOT TWIST OR SPIN THE SEEDLING OR LEAVE THE ROOTS J-ROOTED.
3. INSERT THE DIBBLE, OR SHOVEL, SEVERAL INCHES IN FRONT OF THE SEEDLING AND PUSH THE BLADE HALFWAY INTO THE SOIL. TWIST AND PUSH THE HANDLE FORWARD TO CLOSE THE TOP OF THE SLIT TO HOLD THE SEEDLING IN PLACE.
4. PUSH THE DIBBLE, OR SHOVEL, DOWN TO THE FULL DEPTH OF THE BLADE.
5. PULL BACK ON THE HANDLE TO CLOSE THE BOTTOM OF THE PLANTING HOLD. THEN PUSH FORWARD TO CLOSE THE TOP, ELIMINATING AIR POCKETS AROUND THE ROOT.
6. REMOVE THE DIBBLE, OR SHOVEL, AND CLOSE AND FIRM UP THE OPENING WITH YOUR HEEL. BE CAREFUL TO AVOID DAMAGING THE SEEDLING.

NOTES:
1. ALL SOILS WITHIN THE BUFFER PLANTING AREA SHALL BE DISKED, AS REQUIRED, PRIOR TO PLANTING.
2. ALL PLANTS SHALL BE PROPERLY HANDLED PRIOR TO INSTALLATION TO INSURE SURVIVAL.

3 5.4 Bare Root Planting
Not to Scale




Plan View

Top View

Section A-A'

Profile View

Section B-B'

4 5.4 Temporary Rock Sediment Dam
Not to Scale

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5.4
Sheet

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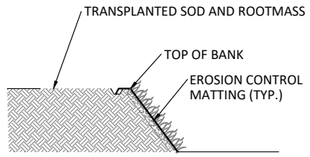
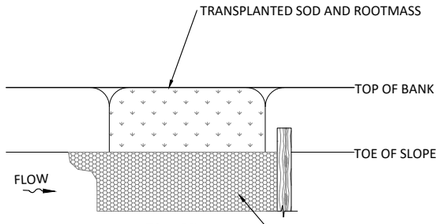



Section View
Riffle Installation

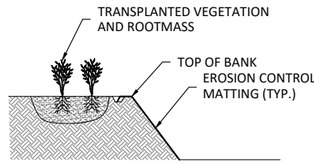



Plan View
Riffle Installation

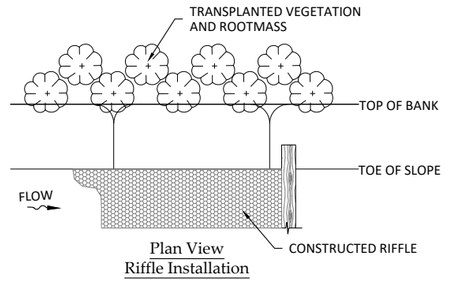
NOTES:

1. PREPARE THE BANK WHERE THE SOD MAT WILL BE TRANSPLANTED BY RAKING & FERTILIZING.
2. EXCAVATE TRANSPLANT SOD MATS WITH A WIDE BUCKET AND AS MUCH ADDITIONAL SOIL MATERIAL AS POSSIBLE.
3. PLACE TRANSPLANT ON THE BANK TO BE STABILIZED.
4. SECURE WITH SOD STAPLES.
5. FILL IN ANY HOLES AROUND THE TRANSPLANT AND COMPACT.
6. ANY LOOSE SOIL LEFT IN THE STREAM SHOULD BE REMOVED.
7. PLACE MULTIPLE TRANSPLANTS CLOSE TOGETHER SUCH THAT THEY TOUCH.
8. INSTALL EROSION CONTROL MATTING ABOVE TRANSPLANTED SOD MATS.

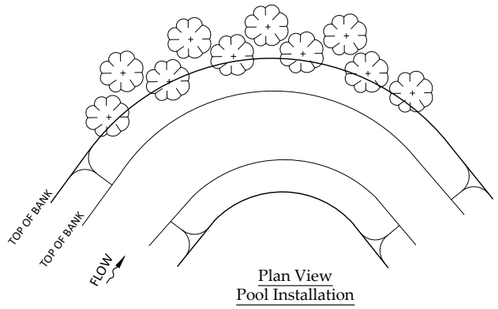
1/5.5 Transplanted Sod Mats
Not to Scale



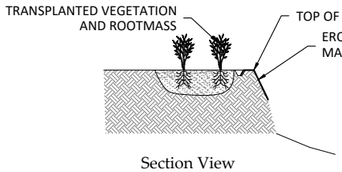

Section View
Riffle Installation




Plan View
Riffle Installation




Plan View
Pool Installation

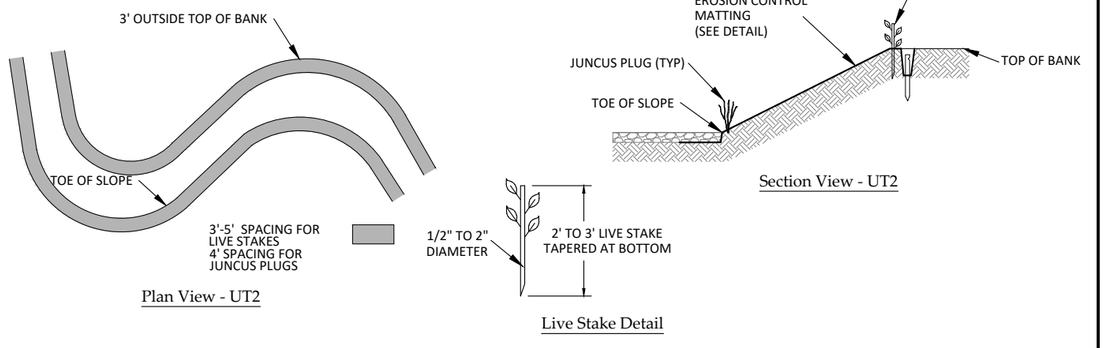



Section View
Pool Installation

NOTES:

1. BANK TO BE STABILIZED THAT WILL ACCOMMODATE THE SIZE OF TRANSPLANT TO BE PLACED.
2. EXCAVATE TRANSPLANT. EXCAVATE THE ENTIRE ROOT MASS AND AS MUCH ADDITIONAL SOIL MATERIAL AS POSSIBLE. IF ENTIRE ROOT MASS CANNOT BE EXCAVATED IN ONE BUCKET LOAD, THE TRANSPLANT IS TOO LARGE AND ANOTHER SHOULD BE SELECTED.
3. PLACE TRANSPLANT IN THE BANK TO BE STABILIZED SO THAT VEGETATION IS ORIENTATED VERTICALLY.
4. FILL IN ANY HOLES AROUND THE TRANSPLANT AND COMPACT.
5. ANY LOOSE SOIL LEFT IN THE STREAM SHOULD BE REMOVED.
6. PLACE MULTIPLE TRANSPLANTS CLOSE TOGETHER SUCH THAT THEY TOUCH.

2/5.5 Transplanted Vegetation
Not to Scale




Plan View - UT2

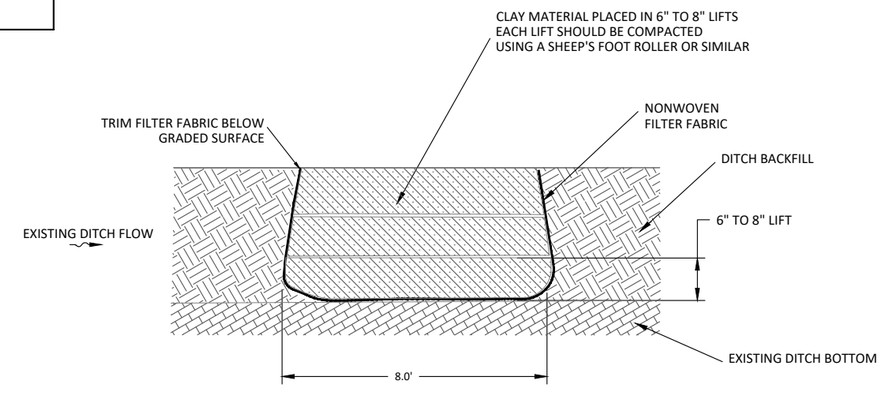
Live Stake Detail

Section View - UT2

3/5.5 Live Staking & Juncus Plugs
Not to Scale

NOTE:

1. LIVE STAKES TO BE PLANTED IN AREAS AS SHOWN ON PLANS AND DIRECTED BY THE ENGINEER.




Profile View

NOTES:

- CLAY MATERIAL TO BE APPROVED BY ENGINEER OR ON-SITE INSPECTOR.
- ALL WOODY AND HERBACEOUS VEGETATION MUST BE REMOVED FROM AREA TO BE PLUGGED PRIOR TO INSTALLATION
- PLUG SHOULD EXTEND FROM TOP OF DITCH TO TOP OF DITCH WITHIN THE DITCH CROSS SECTION

4/5.5 Wetland Ditch Plug
Not to Scale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PRELIMINARY
DO NOT
USE FOR
CONSTRUCTION

Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina
Details

Revisions:

| | |
|---|---|
| Date: | 10-11-2021 |
| Job Number: | 006-02171 |
| Project Engineer: | DPN |
| Drawn By: | JTH |
| Checked By: | JDW |

Sheet 5.5

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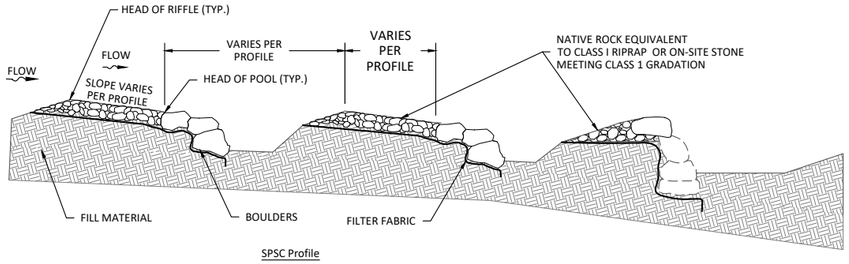
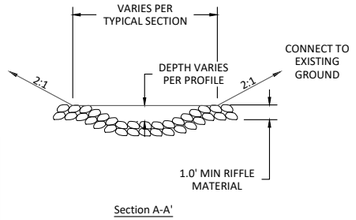
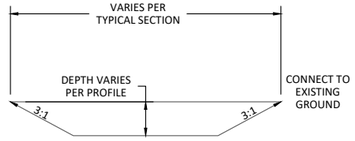
March 7, 2012



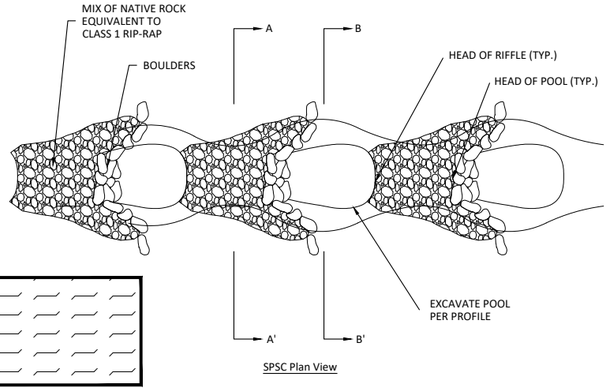

SPSC Profile




Section A-A'




Section B-B'

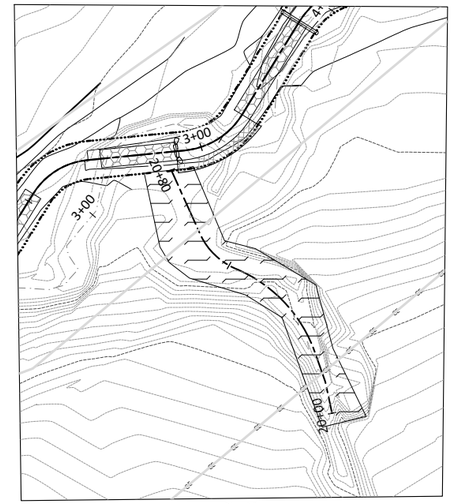



SPSC Plan View

1 / 5.6 Step-Pool Stormwater Conveyance (SPSC)
Not to Scale

PROFILE TO BE PROVIDED WITH FINIAL CONSTRUCTION PLANS

Profile View




Plan View

NOTES:

1. IF NATIVE ROCK IS NOT AVAILABLE, QUARRIED ROCK MAY BE SUBSTITUTED IN THE SAME SIZES.

2. ALL ROCK SHALL BE HETEROGENEOUS AND WELL MIXED.

3. BOULDERS SHOULD HAVE A MINIMUM DIMENSION OF 2' x 2' x 1'.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PRELIMINARY DO NOT USE FOR CONSTRUCTION

Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina
Details

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EHN
Drawn By: JJH
Checked By: JDW

Sheet 5.6

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March 7, 2012

## GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

## SECTION E: GROUND STABILIZATION

**Required Ground Stabilization Timeframes**

| Site Area Description | Stabilize within this many calendar days after ceasing land disturbance | Timeframe variations |
|---|---|---|
| (a) Perimeter dikes, swales, ditches, and perimeter slopes | 7 | None |
| (b) High Quality Water (HQW) Zones | 7 | None |
| (c) Slopes steeper than 3:1 | 7 | If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed |
| (d) Slopes 3:1 to 4:1 | 14 | -7 days for slopes greater than 50' in length and with slopes steeper than 4:1<br>-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed |
| (e) Areas with slopes flatter than 4:1 | 14 | -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed unless there is zero slope |

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

## GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

| Temporary Stabilization | Permanent Stabilization |
|---|---|
| • Temporary grass seed covered with straw or other mulches and tackifiers<br>• Hydroseeding<br>• Rolled erosion control products with or without temporary grass seed<br>• Appropriately applied straw or other mulch<br>• Plastic sheeting | • Permanent grass seed covered with straw or other mulches and tackifiers<br>• Geotextile fabrics such as permanent soil reinforcement matting<br>• Hydroseeding<br>• Shrubs or other permanent plantings covered with mulch<br>• Uniform and evenly distributed ground cover sufficient to restrain erosion<br>• Structural methods such as concrete, asphalt or retaining walls<br>• Rolled erosion control products with grass seed |

## POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

## EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

## LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

## PAINT AND OTHER LIQUID WASTE

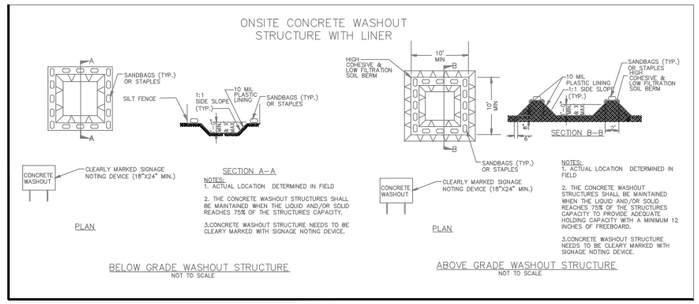
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

## PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

## EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.




## CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

## HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

## HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

# NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19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Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina
NCG01

Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EPN
Drawn By: JTH
Checked By: JDW

Sheet 5.7

March 7, 2012

## PART III
## SELF-INSPECTION, RECORDKEEPING AND REPORTING

### SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

| Inspect | Frequency (during normal business hours) | Inspection records must include: |
|---|---|---|
| (1) Rain gauge maintained in good working order | Daily | Daily rainfall amounts.<br>If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division. |
| (2) E&SC Measures | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | 1. Identification of the measures inspected,<br>2. Date and time of the inspection,<br>3. Name of the person performing the inspection,<br>4. Indication of whether the measures were operating properly,<br>5. Description of maintenance needs for the measure,<br>6. Description, evidence, and date of corrective actions taken. |
| (3) Stormwater discharge outfalls (SDOs) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | 1. Identification of the discharge outfalls inspected,<br>2. Date and time of the inspection,<br>3. Name of the person performing the inspection,<br>4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration,<br>5. Indication of visible sediment leaving the site,<br>6. Description, evidence, and date of corrective actions taken. |
| (4) Perimeter of site | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | If visible sedimentation is found outside site limits, then a record of the following shall be made:<br>1. Actions taken to clean up or stabilize the sediment that has left the site limits,<br>2. Description, evidence, and date of corrective actions taken, and<br>3. An explanation as to the actions taken to control future releases. |
| (5) Streams or wetlands onsite or offsite (where accessible) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours | If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made:<br>1. Description, evidence and date of corrective actions taken, and<br>2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit. |
| (6) Ground stabilization measures | After each phase of grading | 1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover).<br>2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible. |

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

## PART III
## SELF-INSPECTION, RECORDKEEPING AND REPORTING

### SECTION B: RECORDKEEPING

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

| Item to Document | Documentation Requirements |
|---|---|
| (a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan. | Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation. |
| (b) A phase of grading has been completed. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase. |
| (c) Ground cover is located and installed in accordance with the approved E&SC plan. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications. |
| (d) The maintenance and repair requirements for all E&SC measures have been performed. | Complete, date and sign an inspection report. |
| (e) Corrective actions have been taken to E&SC measures. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action. |

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

## PART III
## SELF-INSPECTION, RECORDKEEPING AND REPORTING

### SECTION C: REPORTING

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

| Occurrence | Reporting Timeframes (After Discovery) and Other Requirements |
|---|---|
| (a) Visible sediment deposition in a stream or wetland | • ***Within 24 hours***, an oral or electronic notification.<br>• ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.<br>• If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. |
| (b) Oil spills and release of hazardous substances per Item 1(b)-(c) above | • ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. |
| (c) Anticipated bypasses [40 CFR 122.41(m)(3)] | • ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass. |
| (d) Unanticipated bypasses [40 CFR 122.41(m)(3)] | • ***Within 24 hours***, an oral or electronic notification.<br>• ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass. |
| (e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)] | • ***Within 24 hours***, an oral or electronic notification.<br>• ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).<br>• Division staff may waive the requirement for a written report on a case-by-case basis. |

## PART II, SECTION G, ITEM (4)
## DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

# NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

WILDLANDS ENGINEERING
167-B Haywood Road
Asheville, NC 28806
Tel: 865.207.8835
Fax: 704.332.3305
Firm License No. F-0831

PRELIMINARY DO NOT USE FOR CONSTRUCTION

Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina
NCG01

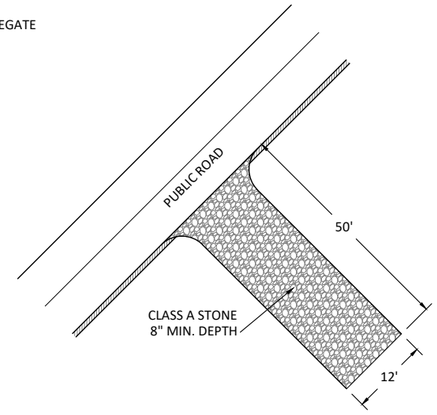
Revisions:

Date: 10-11-2021
Job Number: 005-02171
Project Engineer: EPN
Drawn By: JPH
Checked By: JDW

Sheet 5.8

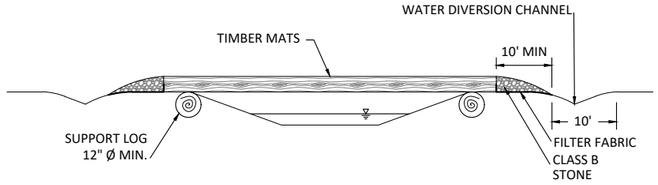
March 7, 2012

NOTES:
1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
5. LOCATE CONSTRUCTION ENTRANCE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. PROVIDE FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE.
6. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOP DRESSING WITH STONE WILL BE NECESSARY.
7. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED IMMEDIATELY.
8. USE CLASS A STONE OR OTHER COARSE AGGREGATE APPROVED BY THE ENGINEER.
9. PLACE FILTER FABRIC BENEATH STONE.

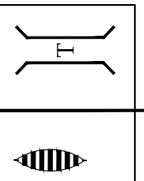


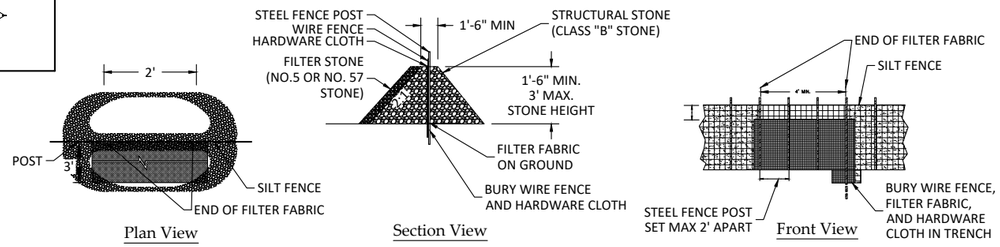

1/5.9 Construction Entrance
Not to Scale

NOTES:
1. CONSTRUCT STREAM CROSSING WHEN FLOW IS AT NORMAL BASEFLOW.
2. MINIMIZE CLEARING AND EXCAVATION OF STREAMBANKS. DO NOT EXCAVATE CHANNEL BOTTOM.
3. INSTALL STREAM CROSSING PERPENDICULAR TO THE FLOW.
4. MAINTAIN CROSSING SO THAT RUNOFF IN THE CONSTRUCTION ROAD DOES NOT ENTER EXISTING CHANNEL.
5. STABILIZE AN ACCESS RAMP OF CLASS B STONE TO THE EDGE OF THE MUD MAT.
6. CONTRACTOR SHALL DETERMINE AN APPROPRIATE RAMP ANGLE ACCORDING TO EQUIPMENT UTILIZED.




2/5.9 Temporary Stream Crossing - Timber Mat
Not to Scale






INSTALLATION:
REFER TO THE PLANS FOR LOCATIONS AND SPECIFICATIONS. DURING INSTALLATION OF THE SILT BARRIER OR SILT FENCE, INSPECT THE INSTALLATION TO DETERMINE IF OUTLETS ARE NEEDED ACCORDING TO THE CRITERIA SET FORTH IN THE SPECIFICATIONS FOR THE BARRIER AND FENCE. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER, ARCHITECT, OR RESPONSIBLE PERSONNEL ON THE SITE FOR ASSISTANCE. EROSION CONTROL PERSONNEL HAVE COPIES OF INSTRUCTIONS AND MAY HAVE PHOTOGRAPHS OF PROPERLY INSTALLED OUTLETS AS AN AID TO INSTALLATION.
IF THE SILT FENCE OUTLET IS NOT INSTALLED CORRECTLY THE FIRST TIME, IT WILL HAVE TO BE REBUILT.
DETERMINE THE EXACT LOCATION ON THE GROUND BEFORE COMPLETING INSTALLATION OF THE SILT FENCE, TAKING INTO CONSIDERATION:
INSTALL THE OUTLET AT THE LOWEST POINT (S) IN THE BARRIER OR FENCE WHERE WATER WILL POND.
INSTALL THE OUTLET WHERE IT IS ACCESSIBLE FOR INSTALLATION, MAINTENANCE, AND REMOVAL.
ALLOW AT LEAST:
15 FEET BETWEEN THE BARRIER OR FENCE AND SINGLE-STORY BUILDINGS.
25 FEET FOR FORK LIFTS BETWEEN THE BARRIER OR FENCE AND MULTIPLE-STORY BUILDINGS.
10 FEET BETWEEN THE BARRIER OR FENCE AND THE TOE OF FILL SLOPES.
PLACE THE OUTLET SO THAT WATER FLOWING THROUGH IT WILL NOT CREATE AN EROSION HAZARD BELOW: AVOID STEEP SLOPES BELOW THE OUTLET AND AREAS WITHOUT PROTECTIVE VEGETATION. USE SLOPE DRAINS IF NECESSARY.
DETERMINE THE LOCATION OF THE OUTLET: FOR A SILT BARRIER, WHEN THE TRENCH IS DUG TO BURY THE BOTTOM OF THE FABRIC BECAUSE THE BARRIER WILL BE OMITTED AT THE OUTLET; FOR A SILT FENCE, WHEN THE WIRE FENCE IS IN PLACE BECAUSE THE FILTER FABRIC WILL BE OMITTED AT THE OUTLET.
REFER TO THE ILLUSTRATIONS OF THE OUTLET IN THE PLAN.
CLEAR STUMPS AND ROOTS FROM THE LOCATION OF THE OUTLET. CLEAR ADEQUATE ACCESS FOR THE EQUIPMENT NEEDED FOR INSTALLATION, MAINTENANCE, AND REMOVAL.

SILT FENCE OUTLET:
JUST BELOW THE GAP IN THE BARRIER, PLACE A LAYER OF FILTER FABRIC ON THE GROUND TO PROTECT THE SOIL FROM EROSION BY OUTFLOW FROM THE OUTLET; STRUCTURAL STONE WILL HOLD IN PLACE.
ALONG THE GAP WHERE THE OUTLET WILL GO, PLACE ADDITIONAL STEEL FENCE POSTS FOR STRENGTH. THE POSTS MUST BE A MAXIMUM OF 2 FEET APART AND DRIVEN INTO SOLID GROUND AT LEAST 18 INCHES.
PLACE HARDWARE CLOTH (WELDED GALVANIZED SCREEN WITH SQUARE 1/4 - 1/2-INCH HOLES) ON THE UPHILL SIDE OF THE POSTS TO HOLD THE WASHED STONE IN PLACE. PUT 6 INCHES OF THE BOTTOM OF THE CLOTH IN THE TRENCH AND FASTEN IT TO THE POSTS WITH LENGTHS OF WIRE.
BURY THE BOTTOM OF THE HARDWARE CLOTH, THE UPPER EDGE OF THE FILTER FABRIC BELOW THE OUTLET, AND THE WIRE FENCE IN THE TRENCH AND COMPACT THE FILL.
PLACE CLASS "B" STRUCTURAL STONE ON THE UPHILL SIDE AND DOWNHILL SIDE OF THE OUTLET FENCE.
PLACE NO. 5 OR NO. 57 FILTER STONE ON TOP OF THE UPHILL STRUCTURAL STONE.

3/5.9 Temporary Silt Fence Gravel Outlet
Not to Scale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Wyant Lands Mitigation Site Addendum
Lincoln, North Carolina
Details

Revisions:
7/27/20 per Erosion and Sediment Control Comments
9/11/20 Erosion and Sediment Control Amendment

Date: 10-11-2021
Job Number: 006-02177
Project Engineer: DPN
Drawn By: JPH
Checked By: JDW

5.9
Sheet

APPENDIX 13A
Addendum and As-built/Baseline
Monitoring IRT Site Walk Meeting
Minutes

WILDLANDS
ENGINEERING

# MEETING MINUTES

MEETING: AB/Baseline IRT Site Walk
**WYANT LANDS MITIGATION SITE**
Catawba River Basin 03050102(03050103 Expanded Service Area)
Lincoln County, NC
NCDEQ Contract No. 7244
DMS Project No. 100067
USACE Action ID No. SAW-2017-02609
DWR No. 2018-0177

DATE: *Meeting:* Monday, October 18, 2021
*Minutes Distributed:* Tuesday, November 16, 2021

LOCATION: Wyant Road
Vale, NC

**Attendees**
Kim Browning, USACE
Casey Haywood, USACE
Erin Davis, Department of Environmental Quality (NC DEQ)
Olivia Munzer, NC Wildlife Resources Commission (NC WRC)
Paul Wiesner, NC Division of Mitigation Services (NCDMS)
Shawn Wilkerson, Wildlands Engineering
Eric Neuhaus, Wildlands Engineering
Kristi Suggs, Wildlands Engineering
Ed Blevins, Wildlands Engineering

**Materials – DRAFTS for DMS Review**
- As-Built and Baseline Monitoring Report dated 10/13/2021
- Proposed Mitigation Plan Addendum dated 10/13/2021
- Drafts of documents listed above were provided to the IRT on 10/15/2021 via the DMS/ IRT SharePoint site and were not fully reviewed by DMS or the IRT prior to the site visit.

**Meeting Notes**
1. Wildlands gave a general overview of the project construction and general project assets as well as the proposed mitigation plan addendum.
2. The IRT noted that As-Built Baseline Monitoring Reports need to be submitted to the IRT within 90 Days of construction completion. Construction completion was defined as all work completed including planting, fencing, and associated site appurtenances. Wildlands estimates construction completion including fencing for the Wyant Lands Mitigation Site was 7/1/2021 and understands the need to be more prompt with submittals in the future.

3. Wildlands outlined that they hope to have approvals of the addendum in time to build the additional work starting in **February 2022**, finishing earthwork with time to plant before **April 15, 2022**.
4. The Baseline Monitoring submittal for the proposed addendum work will be submitted within 90 days of construction completion of the proposed addendum work. Wildlands has proposed that the addendum work be monitored in concurrence with the original project. If after 6 years, it is determined that the additional areas of the Site are meeting expected performance criteria, then Wildlands will propose the Site for closeout. Wildlands understands the IRT may require an additional year of monitoring on the expanded portion of the project.
5. The IRT asked, when possible, to send any plant substitutions prior to the planting stage for NCIRT review.
6. The IRT requested LIDAR maps for project mitigation plans and proposals. Wildlands is including a LIDAR map with the project addendum submittal.
7. NC WRC requested photos of the UT2 crossing, which have been included with these minutes.
8. The IRT asked if upstream and downstream photos of each crossing were included in the Baseline Report's photo log. Wildlands responded that they were inadvertently left out but would be included in the Final Baseline As-built Monitoring Report.
9. UT1 Reach 1 was observed in the field. The project addendum and approach were introduced, and Wildlands noted that they will restore the reach within the conservation easement and install 1 proposed BMP (step pool conveyance). The approach was generally agreed upon by the group.
10. The NCIRT noted to save or transplant mockernut hickory *(Carya tomentosa)* along UT2 Reach 1 if feasible and that it would be a good species to use as a substitution planting.
11. The IRT requested the removal of black walnut (*Juglans nigra*) from the riparian buffer.
12. The proposed wetland addendum area was observed in the field. It was requested that all previous LSS information be included in the mitigation plan addendum, but generally the IRT agreed with the proposed approach.
13. The DRAFT monitoring year 1 report for Phase 1 of the project will need to be submitted to NCDMS by February 1, 2022. The final MY1 report will need to be reviewed by DMS and finalized by Wildlands before the March 1, 2022 IRT submittal deadline. Baseline monitoring for the addendum area will be delivered 90 days post construction.
14. Please note that NCDMS will need to utilize two (2) project credit ledgers for the different "Phases" of the project. Based on a brief discussion with USACE, a new 404 permit and Action ID # are required for Phase II of the project due to the additional ledger. Based on DMS discussions, neither the USACE nor DWR thought that additional time would be required for the 404/401 permitting effort due to the separate ledgers. It was noted that the 401/404 amendment for the mitigation plan addendum (Phase II) must be submitted through LaserFische digitally.
15. The IRT requested additional stabilization on the ford crossing just upstream of Wyant Road to minimize bank degradation from cattle during pasture rotation.
16. The IRT inquired if the strip of land between Potts Creek and the wetland mitigation area on the left bank of Wyant Creek was included in the conservation easement for the addendum. Wildlands responded that it was not included as part of the original project or the addendum per the request of the property owner.

UT2 Culvert Photos: