




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

March 3, 2015

MEMORANDUM TO: Mr. Tim Little, P.E.
Division 4 Engineer

FROM: *for* Philip S. Harris, III, P.E., Manager
Natural Environment Section
Project Development and Environmental Analysis Unit 

SUBJECT: Nash County; Replacement of Bridge Nos. 85, 141, 151, and Culvert
C70 over Swift Creek and Culvert C161 over Lane Swamp on US 301;
Federal Aid Project No. BRSTP-0301(25); WBS 42270.1.1;
TIP B-5124.

Attached are the US Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Resources (NC DWR) Water Quality Certification and Tar-Pamlico River Buffer Authorization. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:

<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>

Quick Links>Permit Documents> Issued Permits.

cc: w/o attachment (see website for attachments):

Mr. Randy Garris, P.E. State Contract Officer
Mr. Chad Coggins, Division Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mr. Clarence Coleman, P.E., Federal Highway Administration
Mr. Roger Thomas, P.E., Roadway Design
Mr. Robert Memory, Utilities Unit
Mr. Jay Twisdale, P.E., Hydraulics
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Mr. Rob Hanson, P.E., PDEA Eastern Section
Ms. Beth Harmon, NC Ecosystem Enhancement Program
Mr. Phillip Ayscue, Office of Inspector General
Ms. LeiLani Paugh, ICI/On-Site Mitigation

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.GOV

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

PROJECT COMMITMENTS

T.I.P. No. B-5124

Replacement of Bridge Nos. 85, 141, 151 and Culvert No. C70 over Swift Creek and
Culvert No. C161 over Lane Swamp on US 301

Nash County

Federal Aid Project No. BRSTP-0301(25)

W.B.S. No. 42270.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 4 Construction

In order to have time to adequately reroute school busses, Nash County Schools will be contacted at (252) 459-5220 at least one month prior to road closure.

Nash County Emergency Services will be contacted at (252) 459-1352 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

Division 4 Construction

Swift Creek supports anadromous fish in the study area. A moratorium prohibiting in-water work will be in place from February 15 – June 15 for Bridge Nos. 141 and 151. This moratorium does not apply to Bridge No. 85 (Lane Swamp) nor Culverts 70 and 161.

Hydraulics Unit

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division 4 Construction

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Hydraulics Unit, Natural Environment Section

The Tar-Pamlico Riparian Buffer Rules apply to this project.

Roadside Environmental Unit, Division 4 Resident Engineer

Design standards for sensitive watersheds apply to this project.

COMMITMENTS FROM PERMITTING

Division 4 Construction

A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank. This condition can be waived with prior approval from the NCDWR.



IN REPLY REFER TO

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

Washington Regulatory Field Office
2407 West 5th Street
Washington, North Carolina 27889

April 22, 2015

Regulatory Division

Action ID No. SAW-2014-01802

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Hancock:

Reference the Department of the Army (DA) individual permit (IP) issued to you on February 6, 2015, to impact approximately 4.17 acres of Department of the Army (DA) jurisdictional wetlands and 108 linear feet of surface waters associated with NCDOT TIP No. B-5124; replacement of Bridge Nos. 85, 141, 151 and Culvert C70 on US 301 over Swift Creek and Culvert C161 on US 301 over Lane Swamp approximately 0.50 miles north of Battleboro, Nash County, North Carolina.

This office received permit modifications dated April 9, 2015, affecting areas of the above referenced project. The modification request is detailed as follows:

1). The southern portion of the project area has been extended to accommodate a roadway transition between existing and new location construction. Mechanized clearing impacts to riparian wetlands will increase by 0.09 acre to a total of 1.84 acres and permanent fill to riparian wetlands will increase by 0.02 acre to 2.38 acres.

This modification request was discussed and coordinated with the appropriate State and Federal agencies and the coordination revealed no objections to this modification request. The proposed modifications for B-5124 as detailed above are hereby modified in accordance with the specific work activities described and depicted on the plan sheets, drawings and descriptions enclosed with the permit modification request package dated April 9, 2015. A revised wetland permit impact summary sheet is attached and noted as Permit Drawing Sheet 2 and 4 of 51 and dated April 7, 2015.

It is understood that all conditions of the original permit and applicable modifications remain valid. In addition, the permittee will comply with the additional special permit conditions as follows:

a.) All work authorized by this permit modification must be performed in strict compliance with the submitted work plans, which are part of this permit. Any modification to the permit plans

must be approved by US Army Corps of Engineers (Corps) prior to implementation.

b.) The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.

Questions regarding this correspondence may be directed to Tom Steffens, NCDOT Coordinator/Regulatory Project Manager at the Washington Regulatory Field Office, telephone (910) 251-4615.

Sincerely,

STEFFENS.THOMAS.ANCRUM.1284706273

2015.04.22 07:59:56 -04'00'

Tom Steffens
Regulatory Project Manager
Washington Regulatory Field Office

E-Copies furnished :

John Merrit/NCDOT
Chad Coggins/NCDOT
Rob Ridings/NCDWR
Dr. Cynthia Van Der Wiele/USEPA
Travis Wilson/NCWRC
Gary Jordan/USFWS



IN REPLY REFER TO

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

Washington Regulatory Field Office
2407 W 5th Street
Washington, North Carolina 27889

February 23, 2015

Regulatory Division

Action ID. SAW- 2014 - 01802

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Hancock:

In accordance with your written request of November 2, 2014 and the ensuing administrative record, enclosed are two copies of a permit to impact approximately 4.17 acres of Department of the Army (DA) jurisdictional wetlands and 108 linear feet of surface waters associated with the replacement of Bridge Nos. 85, 141, 151 and Culvert C70 on US 301 over Swift Creek and Culvert C161 on US 301 over Lane Swamp approximately 0.50 miles north of Battleboro, Nash County, North Carolina.

You should acknowledge that you accept the terms and conditions of the enclosed permit by signing and dating each copy in the spaces provided ("Permittee" on page 3). Your signature, as permittee, indicates that, as consideration for the issuance of this permit, you voluntarily accept and agree to comply with all of the terms and conditions of this permit. All pages of both copies of the signed permit with drawings should then be returned to this office for final authorization. A self-addressed envelope is enclosed for your convenience.

This correspondence contains a proffered permit for the above described site. If you object to this decision, 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 decision you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn: Mr. Thomas Steffens
2407 West 5th Street
Washington, North Carolina 27889

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 April 23, 2015.

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

After the permit is authorized in this office, the original copy will be returned to you; the duplicate copy will be permanently retained in this office. If you have questions, please contact Tom Steffens at the Washington Regulatory Field Office, telephone 910-251-4615.

Thank you in advance for completing our Customer Survey Form. This can be accomplished by visiting our web site at <http://per2.nwp.usace.army.mil/survey.html> and completing the survey on-line. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office. If you have any questions, please call Tom Steffens at telephone 910-251-4615.

Sincerely,

BIDDLECOME.WILLIAM.JR.1228726504

William J. Biddlecome
Chief, Washington Regulatory Field Office

Digitally signed by
BIDDLECOME.WILLIAM.JR.1228726504
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USA,
cn=BIDDLECOME.WILLIAM.JR.1228726504
Date: 2015.02.23 13:20:44 -05'00'

Enclosures
Blind Copies Furnished:

CESAW-RG-W

DEPARTMENT OF THE ARMY PERMIT

Permittee Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Permit No. SAW-2014-01802

Issuing Office **CESAW-RG-Washington**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The applicant proposes to impact approximately 4.17 acres of DA jurisdictional wetlands and 108 linear feet of surface waters associated with the replacement of Bridge Nos. 85, 141, 151 and Culvert C70 on US 301 over Swift Creek and Culvert C161 on US 301 over Lane Swamp in Nash County, North Carolina.

Project Location: The project site location is located on US 301; approximately 0.5 miles north of Battleboro, Nash County, North Carolina.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2020**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:


1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
 5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

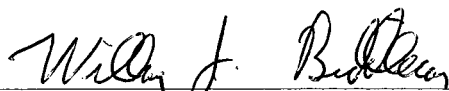
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit, Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


 for Mr. Richard W. Hancock, P.E., Manager PDEA-NCDOT 3-2-2015
 (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


 for Kevin P. Landers Sr., Colonel, US Army, District Commander 4/3/15
 (DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

 (TRANSFeree) (DATE)

SPECIAL CONDITIONS

SAW-2014-01802

NCDOT TIP#: B-5124 Bridges 85,141 and 151; extension of Culvert 70 over Swift Creek and Culvert 161 over Lane Swamp, Nash County, North Carolina

WORK LIMITS

1. CONSTRUCTION PLANS: All work authorized by this permit must be performed in strict compliance with the attached plans dated September 19, 2014, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.

2. UNAUTHORIZED DREDGE OR FILL: Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.

3. MAINTAIN CIRCULATION AND FLOW OF WATERS: Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.

4. DEVIATION FROM PERMITTED PLANS: Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

5. BORROW AND WASTE: To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of dredged, fill or waste material. The permittee shall provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The

permittee shall ensure that all such areas comply with Special Condition 4 of this permit and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with Special Condition 4. All information will be available to the Corps of Engineers upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

6. PRECONSTRUCTION MEETING: The permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the Corps of Engineers, Washington Regulatory Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all the terms and conditions contained with this Department of Army Permit. The permittee shall provide the USACE, Washington Regulatory Field Office, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the preconstruction meeting for a time frame when the Corps and NCDWQ Project Managers can attend. The permittee shall provide the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedules and participate in the required meeting.

RELATED LAWS

7. SEDIMENTATION/EROSION CONTROL PLAN:

- a.) During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.
- b.) No fill or excavation impacts for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless the impacts are included on the plan drawings and specifically authorized by this permit.
- c.) The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades on those areas, prior to project completion.
- d.) The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution

Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4). Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

8. WATER CONTAMINATION: All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Resources at (919) 707-8787 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

PROJECT MAINTENANCE

9. NOTIFICATION OF CONSTRUCTION COMMENCEMENT AND COMPLETION:

The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

a.) Prior to construction within any jurisdictional areas, the permittee must correctly install silt fencing (with or without safety fencing) parallel with the construction corridor, on both sides of the jurisdictional crossing. This barrier is to serve both as an erosion control measure and a visual identifier of the limits of construction within any jurisdictional area. The permittee must maintain the fencing, at minimum, until the wetlands have re-vegetated and stabilized.

10. CLEAN FILL: Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act.

11. PERMIT DISTRIBUTION: The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.

12. SILT-FENCING: The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

13. PERMIT REVOCATION: The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

14. EROSION CONTROL MEASURES IN WETLANDS: The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

15. TEMPORARY DISCHARGES: Temporary discharge of excavated or fill material into wetlands and waters of the United States will be for the absolute minimum period of time necessary to accomplish the work. All authorized temporary wetland, stream, and tributary impacts will be returned to pre-disturbance grade and contour, and re-vegetated.

ENFORCEMENT

16. REPORTING ADDRESS: All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Washington Regulatory Field Office, c/o Mr. Thomas Steffens 2407 West 5th Street, Washington , North Carolina 27889, and by telephone at: 910-251-4615. The Permittee shall reference the following permit number, SAW-2010-01219 on all submittals.

17. REPORTING VIOLATIONS OF THE CLEAN WATER ACT AND RIVERS AND HARBORS ACT: Violation of these conditions or violation of Section 404 of the Clean Water Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the discovery of the violation.

18. COMPLIANCE INSPECTION: A representative of the Corps of Engineers will periodically and randomly inspect the work for compliance with these conditions. Deviations from these procedures may result in an administrative financial penalty and/or directive to cease work until the problem is resolved to the satisfaction of the Corps.

COMPENSATORY MITIGATION

19. North Carolina Ecosystem Enhancement Program (NCEEP) In-Lieu Fee program:

In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

20. CONCRETE CONDITION: The permittee shall take measures to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with any water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with concrete shall only be returned to waters of the United States when it no longer poses a threat to aquatic organisms (concrete is set and cured).

21. CULVERTS: For construction of culverts, measures will be included in the construction that will promote the safe passage of fish and other aquatic organisms. For all culvert construction activities, the dimension, pattern, and profile of the stream, (above and below a pipe or culvert), should not be modified by widening the stream channel or by reducing the depth of the stream. Culvert inverts will be buried at least one foot below the bed of the stream for culverts greater than 48 inches in diameter. For culverts 48 inches in diameter or smaller, culverts must be buried below the bed of the stream to a depth equal to or greater than 20 percent

of the diameter of the culvert.

22. NOTE: All utility work performed under a non-reporting Nationwide Permit 12 (NWP 12 - Utility Lines) associated with this project is subject to all applicable terms and conditions of the NWP 12 and Wilmington District Regional Conditions.

Failure to institute and carry out the details of special conditions 1-22, may result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with TIP No. B-5124 or such other remedy as the District Engineer or his authorized representatives may seek.

U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: Mr. Richard W. Hancock, P.E. NCDOT/PDEA
Project Name: TIP B-5124

Action ID: SAW-2014-01802
County: Nash

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Ecosystem Enhancement Program (NCEEP), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements:

| Permitted Impacts Requiring Mitigation* | | | 8-digit HUC and Basin: 03020101, Tar-Pamlico River Basin | | | |
|---|------|------|--|-----------------------|--------------|---------|
| Stream Impacts (linear feet) | | | Wetland Impacts (acres) | | | |
| Warm | Cool | Cold | Riparian Riverine | Riparian Non-Riverine | Non-Riparian | Coastal |
| | | | 4.17 | | | |

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

| Compensatory Mitigation Requirements: | | | 8-digit HUC and Basin: 03020103, Tar-Pamlico River Basin | | | |
|---------------------------------------|------|------|--|-----------------------|--------------|---------|
| Stream Mitigation (credits) | | | Wetland Mitigation (credits) | | | |
| Warm | Cool | Cold | Riparian Riverine | Riparian Non-Riverine | Non-Riparian | Coastal |
| | | | 8.34 | | | |

Mitigation Site Debited: NCEEP/Grimesland (Phase II)

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCEEP, list NCEEP. If the NCEEP acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCEEP), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

**USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

This form is not valid unless signed below by the USACE Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 11405 Falls of Neuse Road, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil).*** Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: Tom Steffens
USACE Field Office: Washington Regulatory Field Office
US Army Corps of Engineers
2407 West Fifth Street
Washington, NC 27889
Email: thomas.a.steffens@usace.army.mil

STEFFENS.THOMAS.ANCRUM.1284706273

2015.02.23 12:50:57 -05'00'

USACE Project Manager Signature

Click here to enter a date.

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

April 15, 2015

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: MODIFICATION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, with ADDITIONAL CONDITIONS for Proposed replacements of Bridges and Culverts on US 301 in Nash County, Federal Aid Project No. BRSTP-0301(25), State Project No. 42270.1.1, TIP # B-5124. NCDWR Project No. 20140998 ver 2.

Dear Mr. Hancock:

Attached hereto is a Modification to Certification No. 4011 issued to The North Carolina Department of Transportation (NCDOT) originally dated January 6, 2015.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Tom Steffens, US Army Corps of Engineers, Washington Field Office
Chad Coggins, Division 4 Environmental Officer
Colin Mellor, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Beth Harmon, Division of Mitigation Services
File Copy

**Modification to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act,
with ADDITIONAL CONDITIONS**

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B.0259. This certification authorizes the NCDOT to impact 4.21 acres of jurisdictional wetlands, 335 linear feet of jurisdictional streams and 23951 square feet of protected riparian buffers in Nash County. The project shall be constructed pursuant to the application received September 22, 2014 and modification request dated April 9, 2015. The authorized additional impacts are as described below:

Additional Wetland Impacts in the Tar-Pamlico River Basin

| Site | Permanent Fill (ac) | Mechanized Clearing (ac) | Total Additional Wetland Impact (ac) | Additional Wetland Impact Requiring Mitigation (ac) |
|-------------------|----------------------------|---------------------------------|---|--|
| Culvert 70 | 0.02 | 0.09 | 0.11 | 0.11 |
| Total | 0.02 | 0.09 | 0.11 | 0.11 |

Total Additional Wetland Impact for Project: 0.11 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the Tar-Pamlico River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application received September 22, 2014 and modification dated April 9, 2015. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0260(9). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. Compensatory mitigation for impacts to an additional 0.11 acres of riparian wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated April 9, 2015 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010. [15A NCAC 2H.0506(h)]
2. All other Conditions in the original Water Quality Certification issued January 7, 2015, still apply.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. Sam M. Hayes, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This the 15th day of April 2015

DIVISION OF WATER RESOURCES

A handwritten signature in cursive script, appearing to read "S. Jay Zimmerman", with a small mark at the end of the signature.

S. Jay Zimmerman, Director
Division of Water Resources

WQC No. 4011



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

January 7, 2015

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and TAR-PAMLICO BUFFER RULES, with ADDITIONAL CONDITIONS for Proposed replacements of Bridges and Culverts on US 301 in Nash County, Federal Aid Project No. BRSTP-0301(25), State Project No. 42270.1.1, TIP # B-5124.
NCDWR Project No. 20140998.

Dear Mr. Hancock:

Attached hereto is Certification No. 4011 issued to The North Carolina Department of Transportation (NCDOT) dated January 6, 2015.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Thomas A. Reeder, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Tom Steffens, US Army Corps of Engineers, Washington Field Office
Chad Coggins, Division 4 Environmental Officer
Colin Mellor, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Ecosystem Enhancement Program
File Copy

401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and TAR-PAMLICO BUFFER RULES, with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B.0259. This certification authorizes the NCDOT to impact 4.21 acres of jurisdictional wetlands, 335 linear feet of jurisdictional streams and 23951 square feet of protected riparian buffers in Nash County. The project shall be constructed pursuant to the application received September 22, 2014. The authorized impacts are as described below:

Stream Impacts in the Tar-Pamlico River Basin

| Site | Permanent Fill in Perennial Stream (linear ft) | Riprap Stabilization to Perennial Stream (linear ft) | Temporary Fill in Perennial Stream (linear ft) | Total Stream Impact (linear ft) |
|--------------|--|--|--|---------------------------------|
| Culvert 70 | 18 | 20 | 32 | 70 |
| Bridge 85 | 0 | 0 | 56 | 56 |
| Bridge 141 | 5 | 0 | 12 | 17 |
| Bridge 151 | 0 | 0 | 73 | 73 |
| Culvert 161 | 19 | 46 | 54 | 119 |
| Total | 42 | 66 | 227 | 335 |

Total Stream Impact for Project: 335 linear feet

Wetland Impacts in the Tar-Pamlico River Basin

| Site | Permanent Fill (ac) | Temporary Fill (ac) | Excavation (ac) | Mechanized Clearing (ac) | Total Wetland Impact (ac) | Wetland Impact Requiring Mitigation (ac) |
|--------------|---------------------|---------------------|-----------------|--------------------------|---------------------------|--|
| Culvert 70 | 0.25 | 0 | 0.02 | 0.12 | 0.39 | 0.39 |
| Bridge 85 | 0.60 | 0.02 | <0.01 | 0.50 | 1.10 | 1.10 |
| Bridge 141 | 0.75 | 0.01 | <0.01 | 0.47 | 1.24 | 1.23 |
| Bridge 151 | 0.40 | 0.01 | <0.01 | 0.35 | 0.76 | 0.75 |
| Culvert 161 | 0.37 | 0 | <0.01 | 0.32 | 0.70 | 0.70 |
| Total | 2.37 | 0.04 | 0.04 | 1.76 | 4.21 | 4.17 |

Total Wetland Impact for Project: 4.21 acres.

Tar-Pamlico Riparian Buffer Impacts

| Site | Zone 1 Impact (sq ft) | Zone 1 Buffer Mitigation Required (using 3:1 ratio) | Zone 2 Impact (sq ft) | Zone 2 Buffer Mitigation Required (using 1.5:1 ratio) |
|---------------|-----------------------|---|-----------------------|---|
| Bridge 141 | 4681 | N/A | 2791 | N/A |
| Bridge 151 | 5698 | N/A | 2938 | N/A |
| Culvert 161 | 4623 | N/A | 3220 | N/A |
| Totals | 15002 | 0 | 8949 | 0 |

Total Buffer Impact for Project: 23,951 square feet.

* N/A = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

The application provides adequate assurance that the discharge of fill material into the waters of the Tar-Pamlico River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application received September 22, 2014. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0260(9). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. Compensatory mitigation for impacts to 4.17 acres of riparian wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated October 22, 2014 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with EEP's Mitigation Banking Instrument signed July 28, 2010. [15A NCAC 2H.0506(h)]
2. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]
3. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
4. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
5. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]

6. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]
7. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)]
8. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
9. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]
10. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]
11. For all streams being temporarily impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H.0506(b)(2)]
12. The permittee will need to adhere to all appropriate in-water work moratoria (including the use of pile driving or vibration techniques) prescribed by the NC Wildlife Resources Commission. No in-water work is permitted between February 15 and June 15 of any year, without prior approval from the NC Division of Water Resources and the NC Wildlife Resources Commission for Bridges 141 and 151, only. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times. [15A NCAC 02H.0506(b)(2) and 15A NCAC 04B. 0125]
13. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
14. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
15. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
16. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
17. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
18. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]
19. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

20. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
21. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
22. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
23. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
24. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
25. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
26. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
27. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
28. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
29. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
30. Native riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction.[15A NCAC 02B.0XXX(10)]
31. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.[15A NCAC 02H.0506(b)(3) and (c)(3)]
32. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3):
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.

- c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

33. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. John Evans, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This the 7th day of January 2015

DIVISION OF WATER RESOURCES



Thomas A. Reeder, Director
Division of Water Resources



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald van der Vaart
Secretary

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

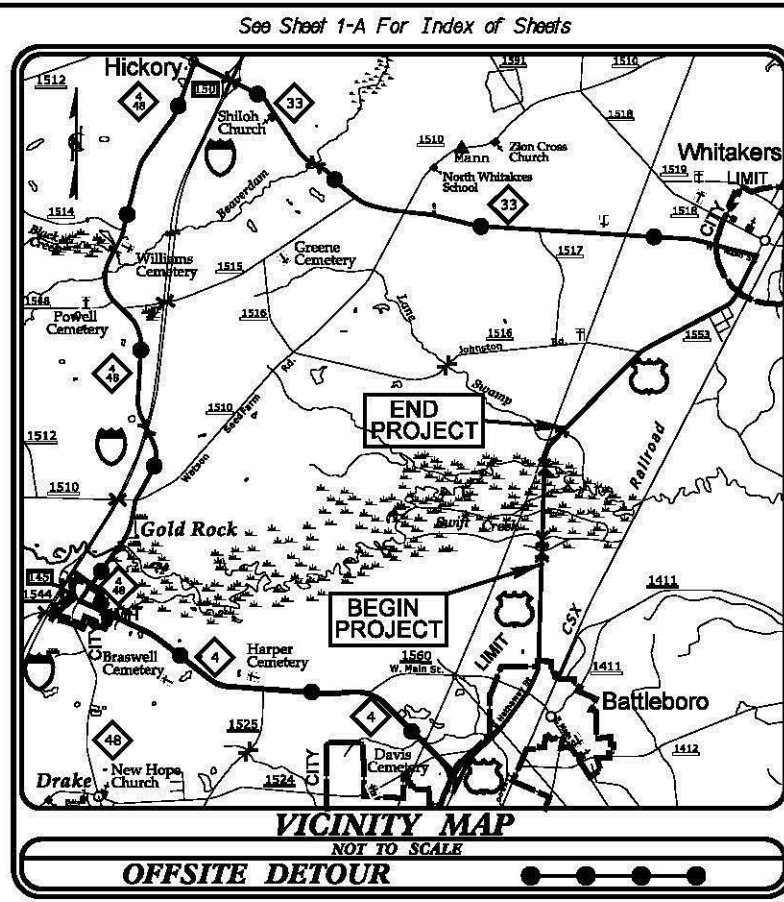
_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____ Date _____

09/08/09

TIP PROJECT: B-5124



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

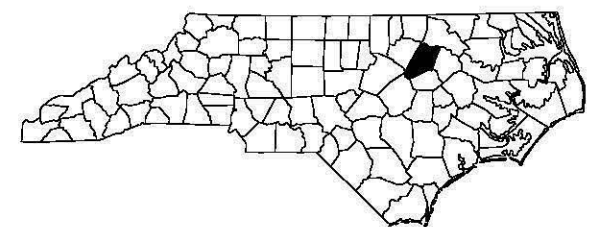
NASH COUNTY

LOCATION: REPLACE BRIDGES NO. 85, 141, AND 151 OVER SWIFT CREEK ON US-301

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND CULVERTS.



WETLAND AND SURFACE WATER IMPACTS PERMIT



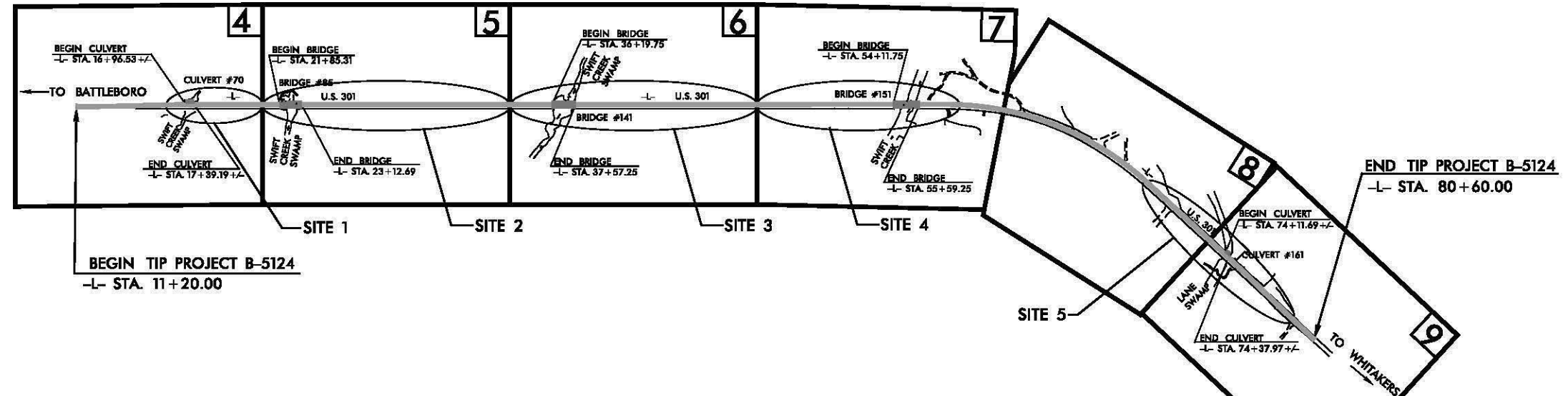
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---------------|-----------------------------|-------------|--------------|
| N.C. | B-5124 | 1 | |
| STATE PROJECT | S.A. PROJECT | DESCRIPTION | |
| 42270.1.1 | BRSTP-0301(25) | P.E. | |
| 42270.2.1 | BRSTP-0301(25) | R/W & UTL. | |
| | | | |
| | | | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY

PROJECT: 42270.1.1 (B-5124)
REPLACE BRIDGES NO. 85,
141, AND 151 OVER
SWIFT CREEK ON US-301

SHEET OF
PERMIT DRAWING
SHEET 1 OF 51

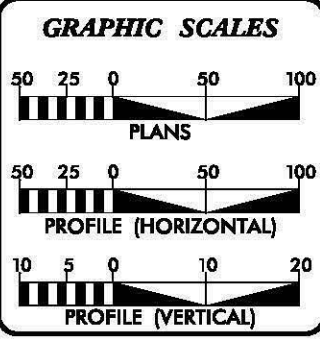
ENGLISH



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

| | |
|-----------------------|--------|
| ADT 2015 = | 8,800 |
| ADT 2035 = | 11,200 |
| K = | 10 % |
| D = | 60 % |
| T = | 7 % * |
| V = | 60 MPH |
| *(TTST = 3% DUALS 4%) | |
| FUNC CLASS = | |
| MINOR ARTERIAL | |
| STATEWIDE TIER | |

PROJECT LENGTH

| | |
|---------------------------------------|-------------|
| LENGTH ROADWAY TIP PROJECT B-5124 = | 1.223 MILES |
| LENGTH STRUCTURE TIP PROJECT B-5124 = | 0.091 MILES |
| TOTAL LENGTH OF TIP PROJECT B-5124 = | 1.314 MILES |

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

| | |
|---|---|
| 2012 STANDARD SPECIFICATIONS | |
| RIGHT OF WAY DATE: FEBRUARY 28, 2014 | GARY LOVERING, PE PROJECT ENGINEER |
| LETTING DATE: APRIL 21, 2015 | CHRISTOPHER H. LEE PROJECT DESIGN ENGINEER |

HYDRAULICS ENGINEER

| | |
|--|-------------------------|
| | P.E. |
| | ROADWAY DESIGN ENGINEER |
| | P.E. |



4/22/2014 ICA ENGINEERING, INC.
R:\Hydraulics\PERMITS_Environmental\Drawings\B5124_hyd_perm_wet_tsh.dgn

WETLAND AND SURFACE WATER IMPACTS PERMIT

NAD 83/NSRS 2007

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY

PROJECT: 42270.1.1 (B-5124)

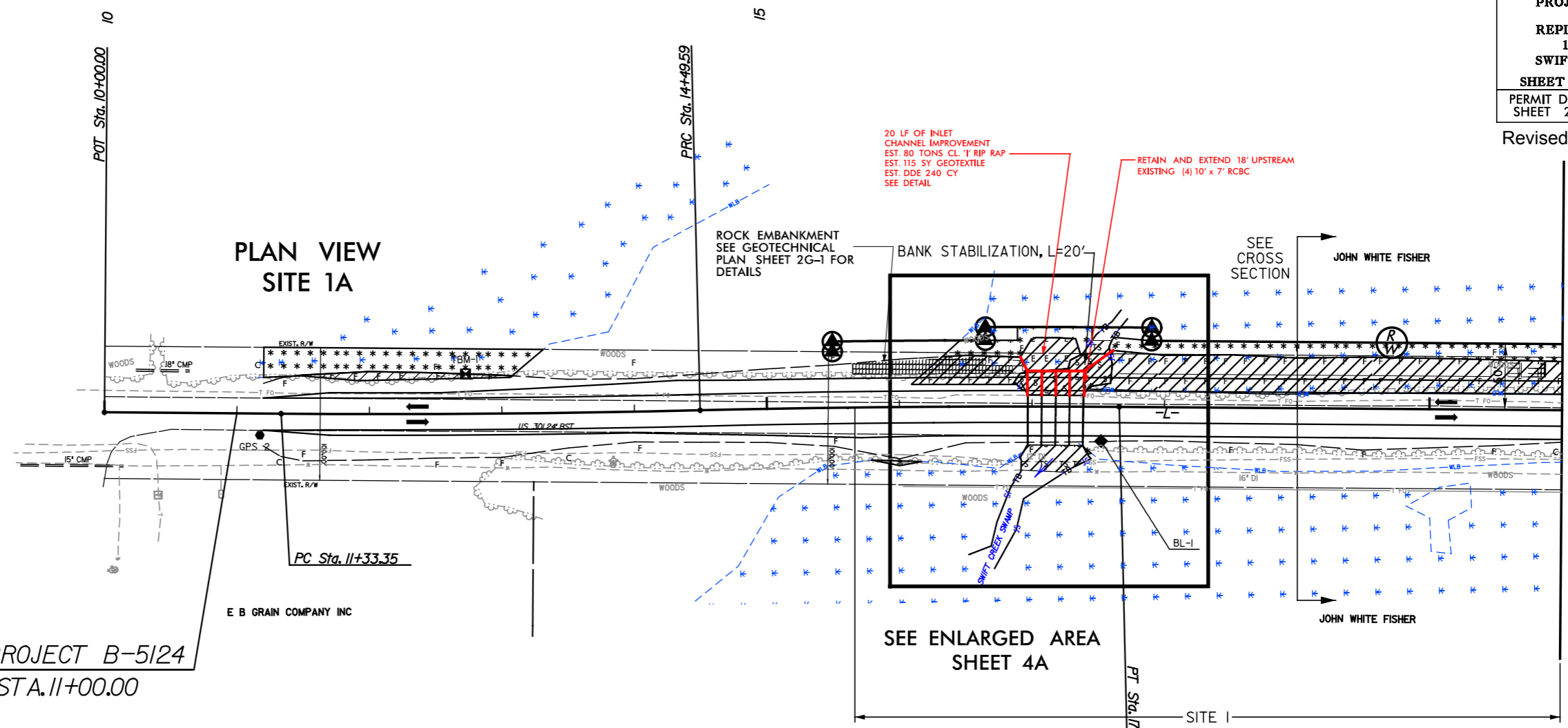
REPLACE BRIDGES NO. 85,
141, AND 151 OVER
SWIFT CREEK ON US-301

SHEET OF
PERMIT DRAWING
SHEET 2 OF 51

Revised 4/7/15



REVISIONS



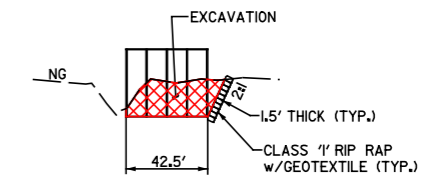
BEGIN TIP PROJECT B-5124
-L- POT STA. 11+00.00

MATCH LINE SEE SHEET 5 -L- STA. 21+00.00

LEGEND

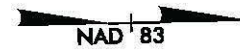
- WLB -- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT
- DENOTES MECHANIZED CLEARING

PLAN VIEW SITE 1

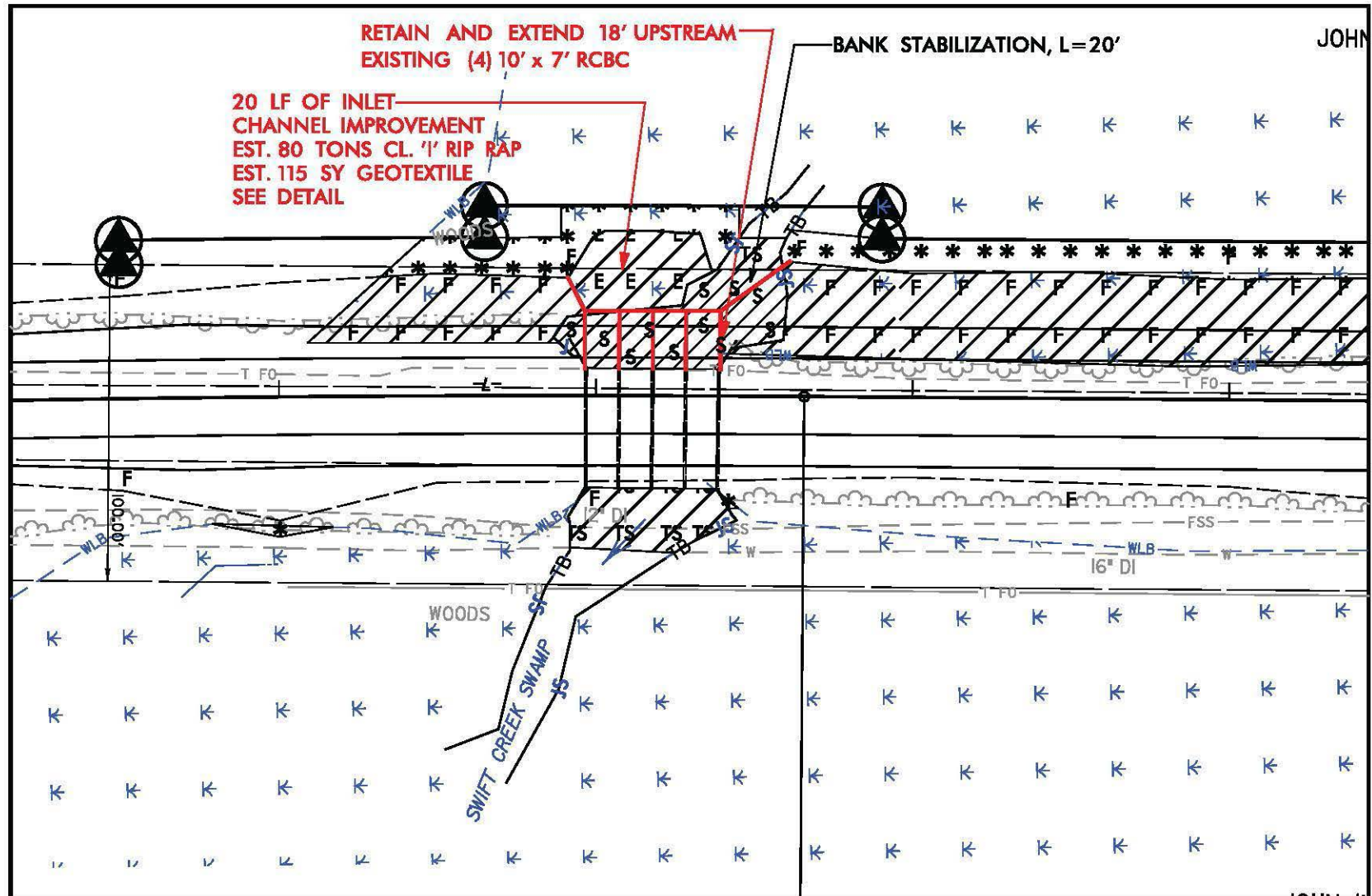


CULVERT 70 INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)

WETLAND AND SURFACE WATER IMPACTS PERMIT



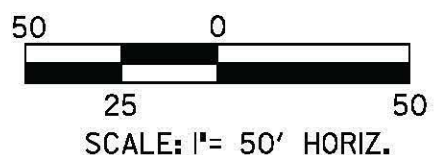
| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 4A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 88, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 3 OF 51 | |



**ENLARGED
PLAN VIEW
SITE 1**

LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT
- DENOTES MECHANIZED CLEARING



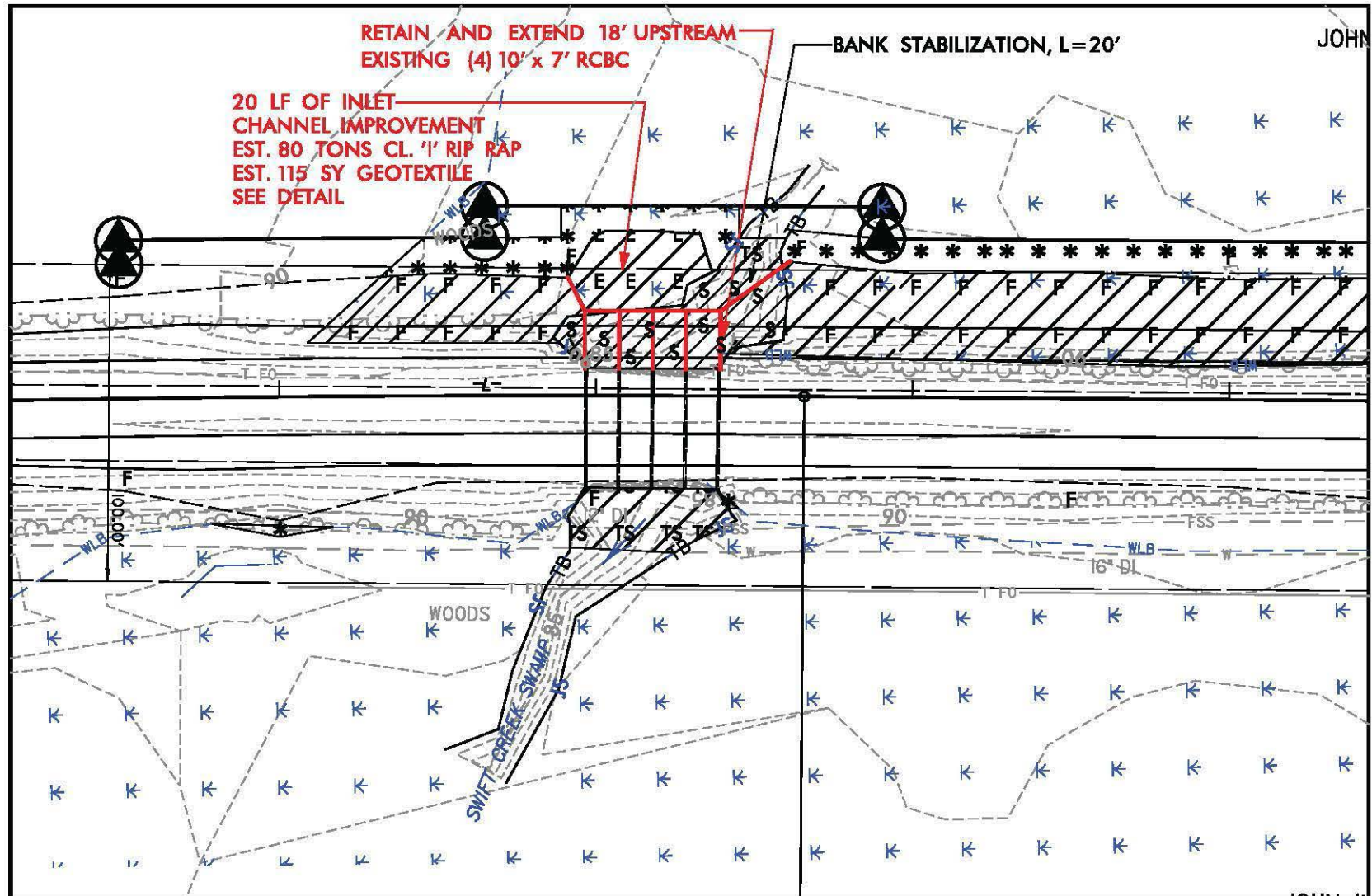
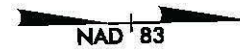
REVISIONS

4/20/14 ICA ENGINEERING, INC. r:\Hydraulics\PERMITS_Environmental\Drawings\B0124_hyd_perm_wet_jph4.dgn

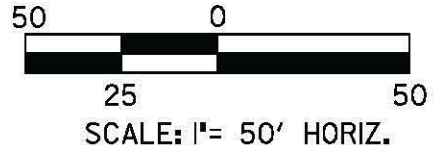
B-17/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 4A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 5 OF 51 | |



**ENLARGED
PLAN VIEW
SITE 1**



- LEGEND**
- DENOTES WETLAND BOUNDARY
 - DENOTES EXCAVATION IN WETLAND
 - DENOTES FILL IN WETLAND
 - DENOTES TEMPORARY SURFACE WATER IMPACT
 - DENOTES PERMANENT SURFACE WATER IMPACT
 - DENOTES MECHANIZED CLEARING

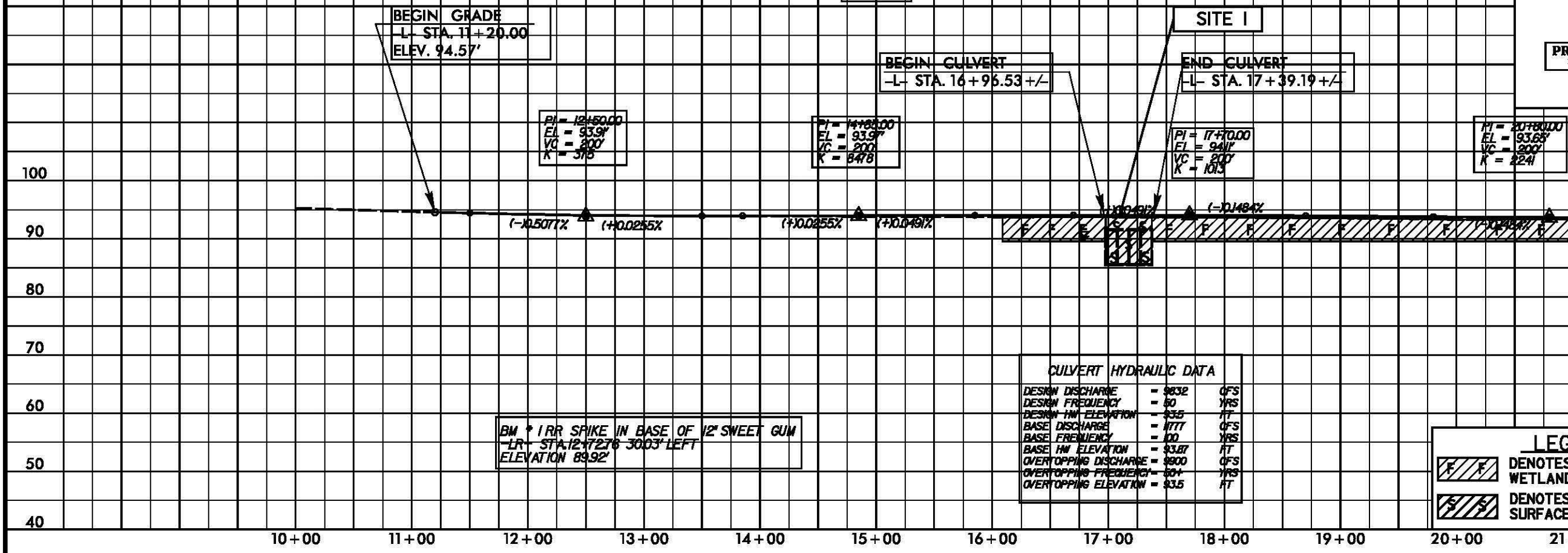
REVISIONS

4/20/14 ICA ENGINEERING, INC. r:\Hydraulics\PERMITS_Environmental\Drawings\B0124_hyd_perm_wet_jph40.dgn

B-17/99



5/26/99



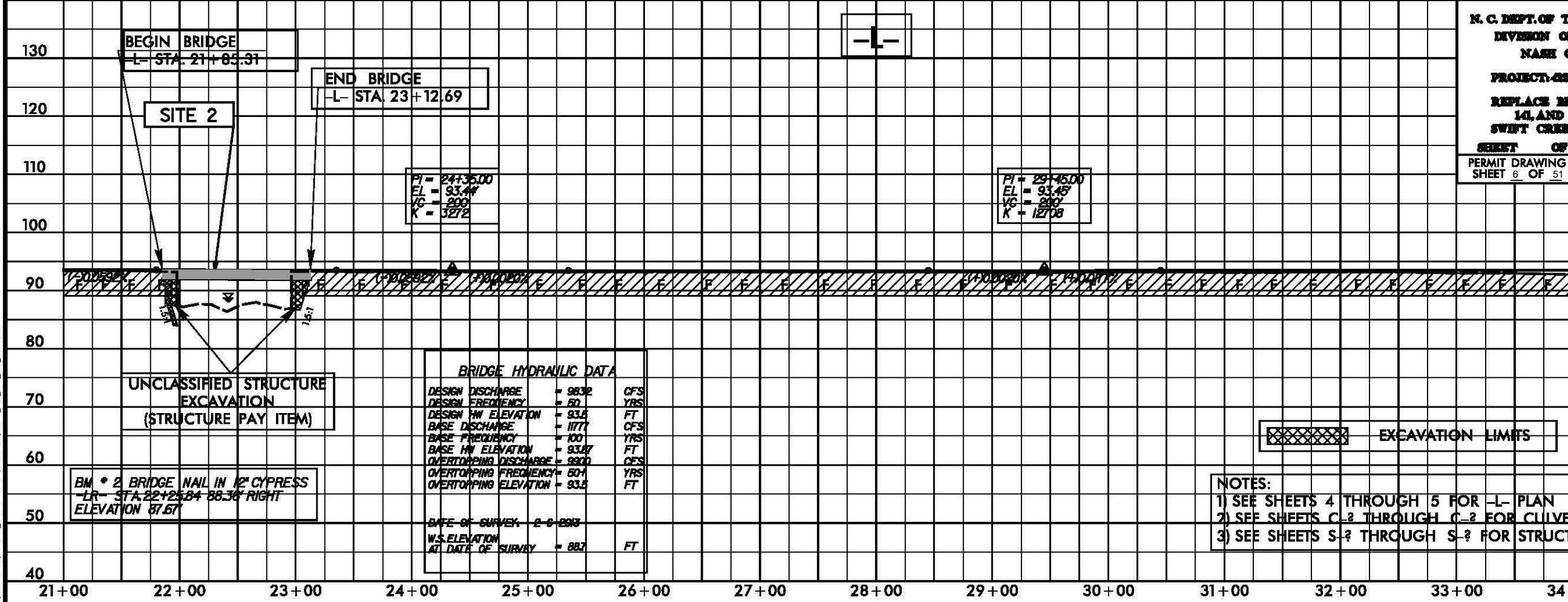
BM * IRR SPIKE IN BASE OF 12" SWEET GUM
 LR STA 12+7276 3003' LEFT
 ELEVATION 89.92'

| CULVERT HYDRAULIC DATA | | |
|------------------------|---------|-----|
| DESIGN DISCHARGE | = 9832 | CFS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 93.5 | FT |
| BASE DISCHARGE | = 1177 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 93.87 | FT |
| OVERTOPPING DISCHARGE | = 990 | CFS |
| OVERTOPPING FREQUENCY | = 50+ | YRS |
| OVERTOPPING ELEVATION | = 93.5 | FT |

| LEGEND | |
|--------|--|
| | DENOTES FILL IN WETLAND |
| | DENOTES PERMANENT SURFACE WATER IMPACT |

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 NASH COUNTY
 PROJECT: BRILLI G-6140
 REPLACE BRIDGES NO. 88,
 141, AND 151 OVER
 SWIFT CREEK ON US-91

SHEET OF
 PERMIT DRAWING
 SHEET 6 OF 51



BM * 2 BRIDGE NAIL IN 12" CYPRESS
 LR STA 22+2584 88.36' RIGHT
 ELEVATION 87.67'

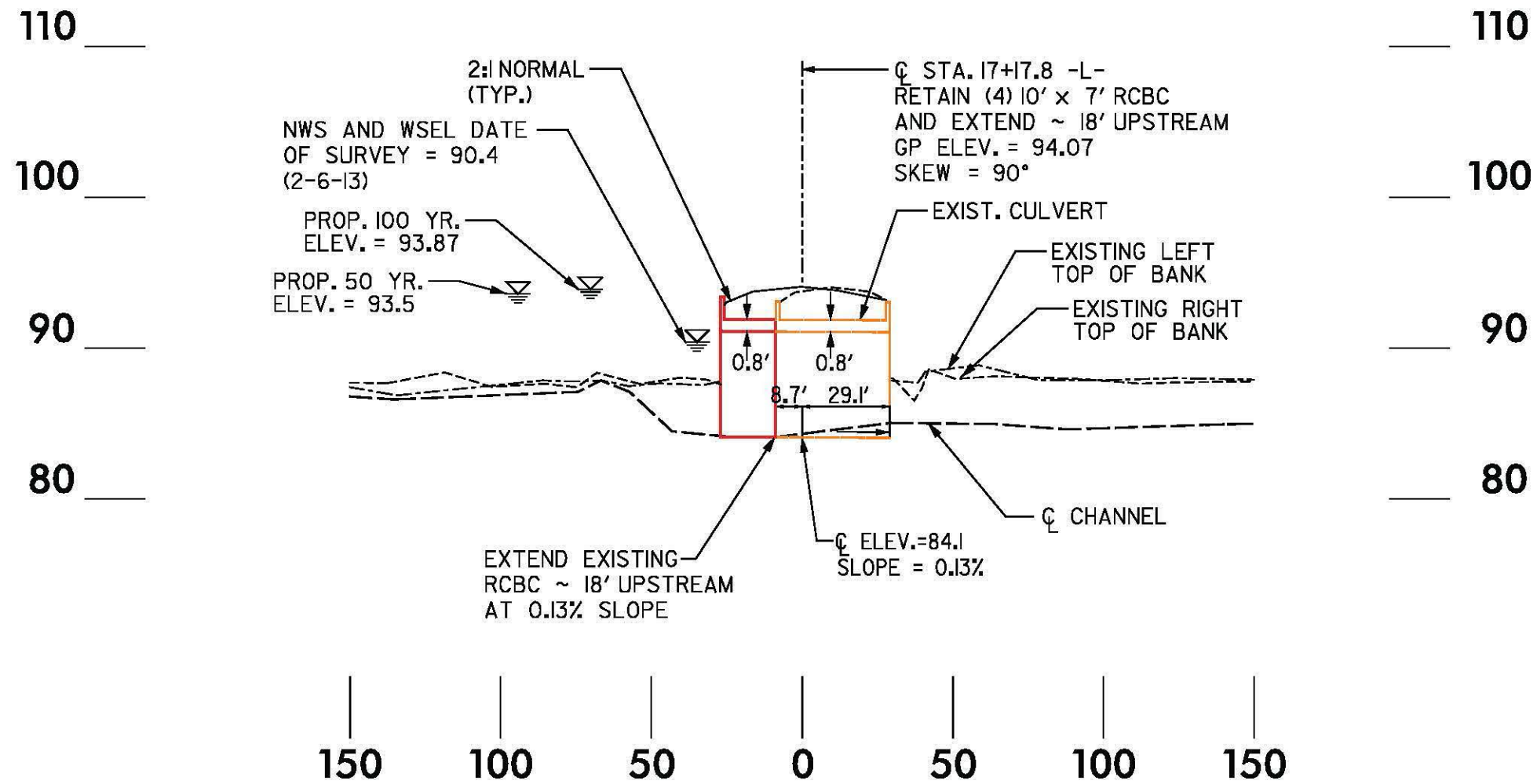
| BRIDGE HYDRAULIC DATA | | |
|-----------------------|---------|-----|
| DESIGN DISCHARGE | = 9832 | CFS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 93.5 | FT |
| BASE DISCHARGE | = 1177 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 93.87 | FT |
| OVERTOPPING DISCHARGE | = 990 | CFS |
| OVERTOPPING FREQUENCY | = 50+ | YRS |
| OVERTOPPING ELEVATION | = 93.5 | FT |

DATE OF SURVEY = 2-6-2003
 W.S. ELEVATION AT DATE OF SURVEY = 88.7 FT

- NOTES:
 1) SEE SHEETS 4 THROUGH 5 FOR -L- PLAN
 2) SEE SHEETS C-2 THROUGH C-2 FOR CULVERT
 3) SEE SHEETS S-? THROUGH S-? FOR STRUCTURE PLANS

9/4/2014 ICA ENGINEERING, INC. Environmental Drawings\B5124_hyd_prm_wel_profile.dgn

WETLAND AND SURFACE WATER IMPACTS PERMIT



SITE 1
PROFILE ALONG STRUCTURE
STA 17+17.8 -L-

| | |
|--|----------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. PAS-S1 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> | |
| <p>N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY</p> <p>PROJECT: 2270.11 (B-5124)</p> <p>REPLACE BRIDGES NO. 85, 141, AND 161 OVER SWIFT CREEK ON US-301</p> <p>SHEET 7 OF 51</p> | |
| | |

PHASE 1 CONSTRUCTION SEQUENCE

PHASE 1 CONSTRUCTION SEQUENCE (STA. 17+17.8 -L-)

(ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. CONSTRUCT TWO SPECIAL STILLING BASINS FOR PUMPED EFFLUENT (40' X 25') FROM DEWATERED SITE.
2. INSTALL IMPERVIOUS DIKES WHILE MAINTAINING FLOW THROUGH NORTHERN TWO BARRELS.
3. DEWATER WORK AREA.
4. EXTEND CULVERT BARRELS (2) AND INSTALL HEADWALLS, BACKFILL CULVERT.
5. INSTALL 20 LF OF INLET CHANNEL IMPROVEMENT.
6. STABILIZE THE CHANNEL BANK.
7. REMOVE IMPERVIOUS DIKES.



PHASE 2 CONSTRUCTION SEQUENCE

PHASE 2 CONSTRUCTION SEQUENCE (STA. 17+17.8 -L-)

(ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. INSTALL IMPERVIOUS DIKES WHILE MAINTAINING FLOW THROUGH SOUTHERN TWO BARRELS.
2. DEWATER WORK AREA.
3. EXTEND CULVERT BARRELS (2) AND INSTALL HEADWALLS, BACKFILL CULVERT.
4. STABILIZE THE CHANNEL BANK.
5. REMOVE IMPERVIOUS DIKES, SPECIAL STILLING BASINS, AND DEWATERING PUMP.
6. COMPLETE ROADWAY.




| | |
|---|----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. CONST.4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR A/CQUISITION | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY

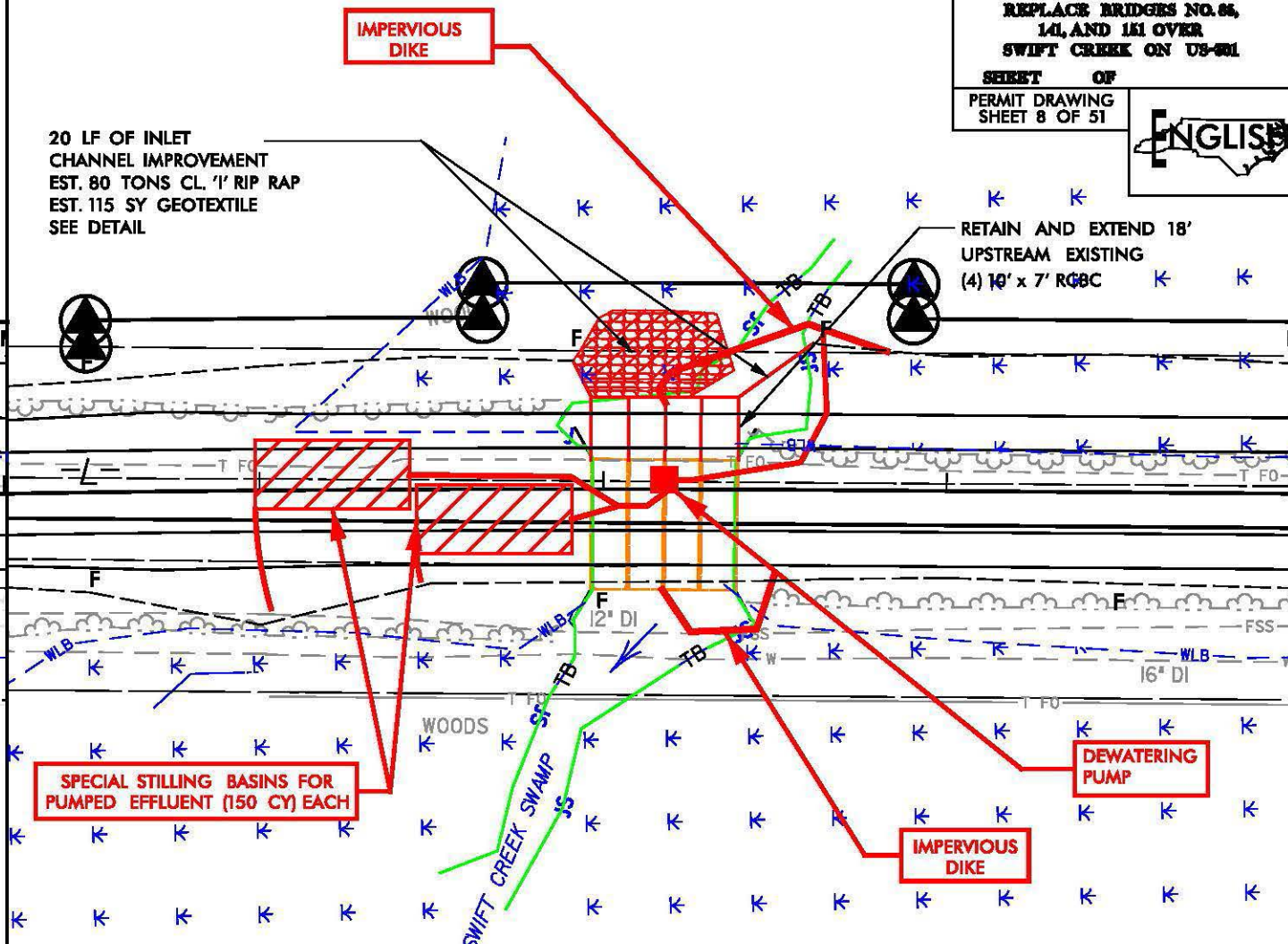
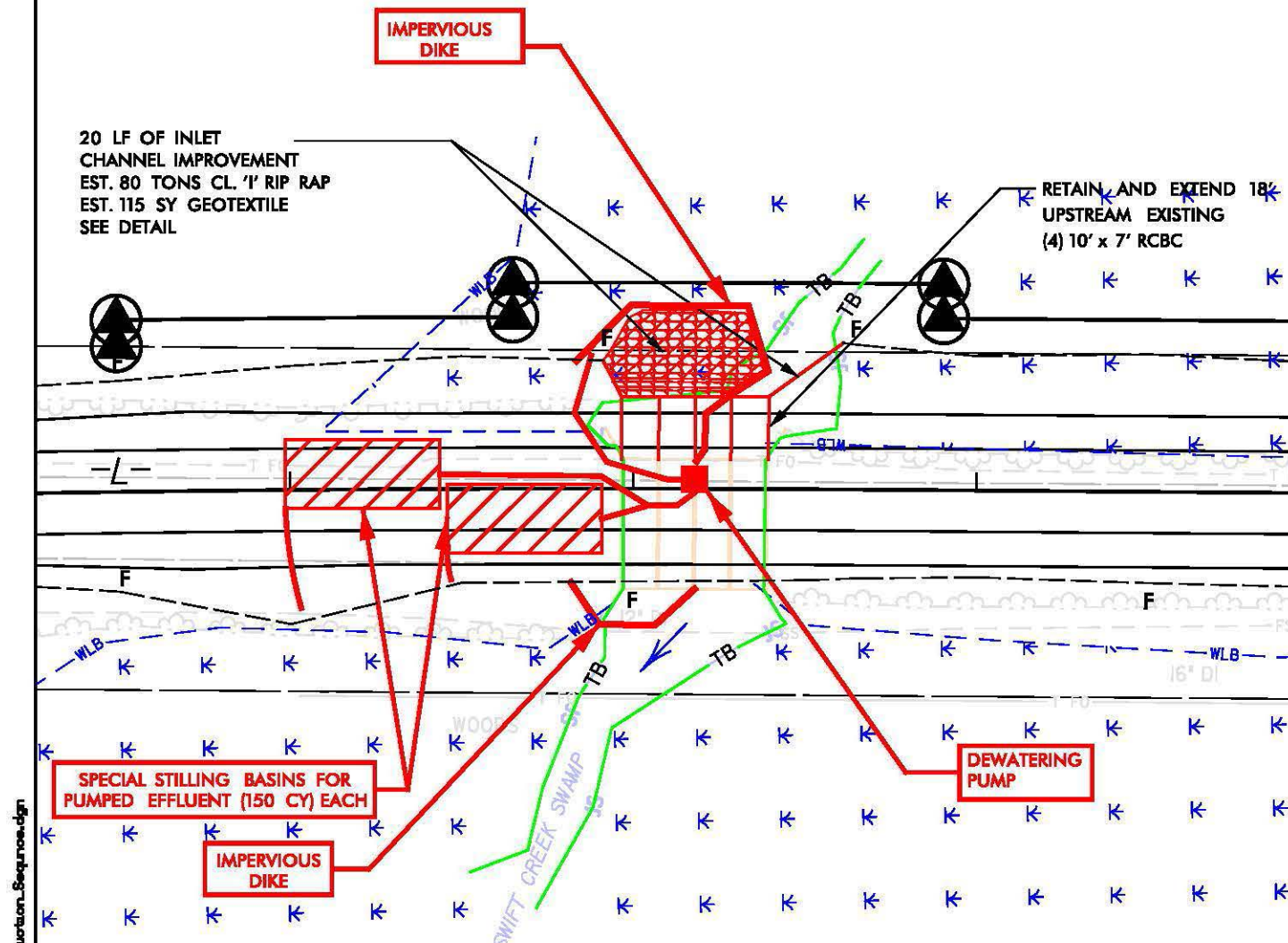
PROJECT: 427411 G-1190

REPLACE BRIDGES NO. 86, 141, AND 141 OVER SWIFT CREEK ON US-401

SHEET OF
PERMIT DRAWING SHEET 8 OF 51



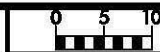
REVISIONS



- NOTES:**
1. CULVERT CONSTRUCTION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
 2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS NECESSARY.
 3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
 4. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES POLYETHYLENE SHEETING, PUMPS AND HOSES.
 5. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.
 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.

427411 G-1190 Control\Roads\B-5124_LR_0814_Construction_Sequence.dgn

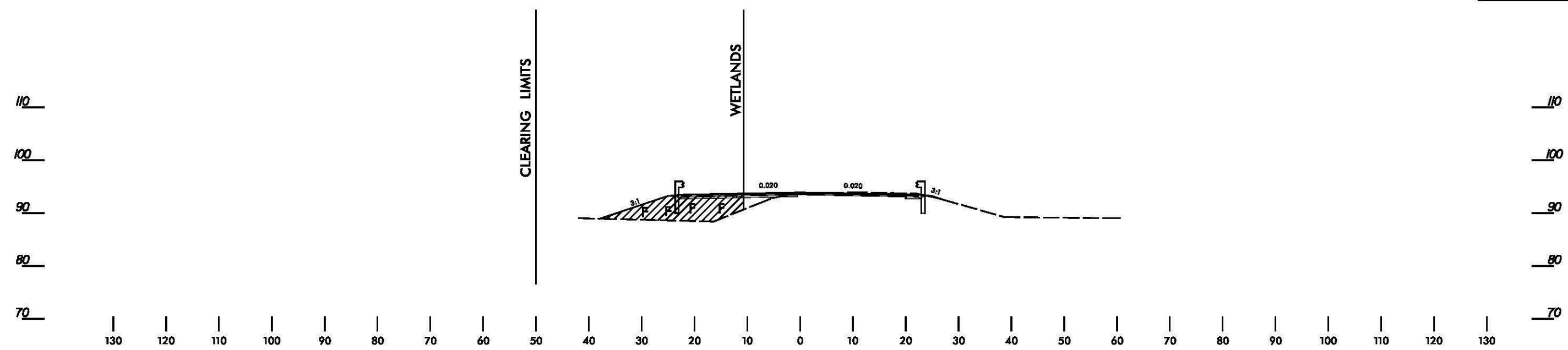
WETLAND AND SURFACE WATER IMPACTS PERMIT



| | |
|--------------------------------------|--------------------------------|
| PROJ. REFERENCE NO. B-5124 | SHEET NO. XSC SITE 1 |
|--------------------------------------|--------------------------------|

| | |
|---|------------------------|
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> </div> | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 42270.1.1 (B-5124)
REPLACE BRIDGES NO. 88,
141, AND 151 OVER
SWIFT CREEK ON US-301
SHEET OF
PERMIT DRAWING
SHEET 9 OF 51



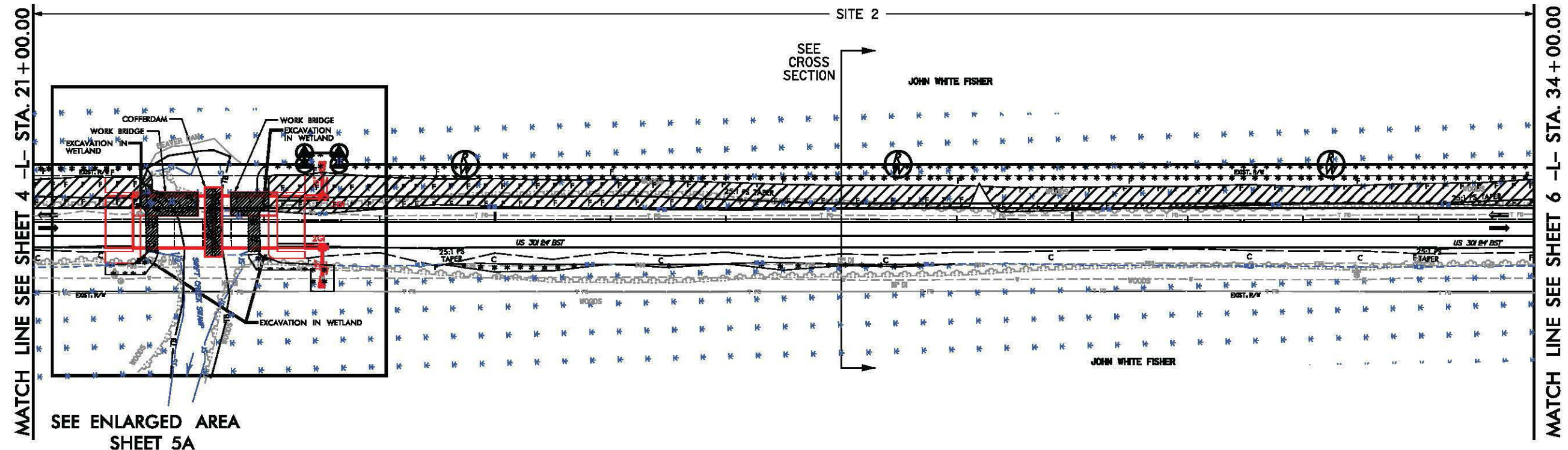
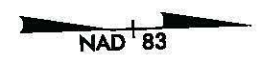
SITE I
X-SECTION
STA 19+00 -L-

LEGEND

| | |
|--|-------------------------|
| | DENOTES FILL IN WETLAND |
|--|-------------------------|

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|--|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 5 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> </div> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY PROJECT: 42270.11 (B-5124) REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 10 OF 51 | |



**PLAN VIEW
SITE 2**

LEGEND

- WLB--- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

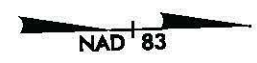
REVISIONS

7/22/2014
 ICA ENGINEERING, INC.
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B-17/99

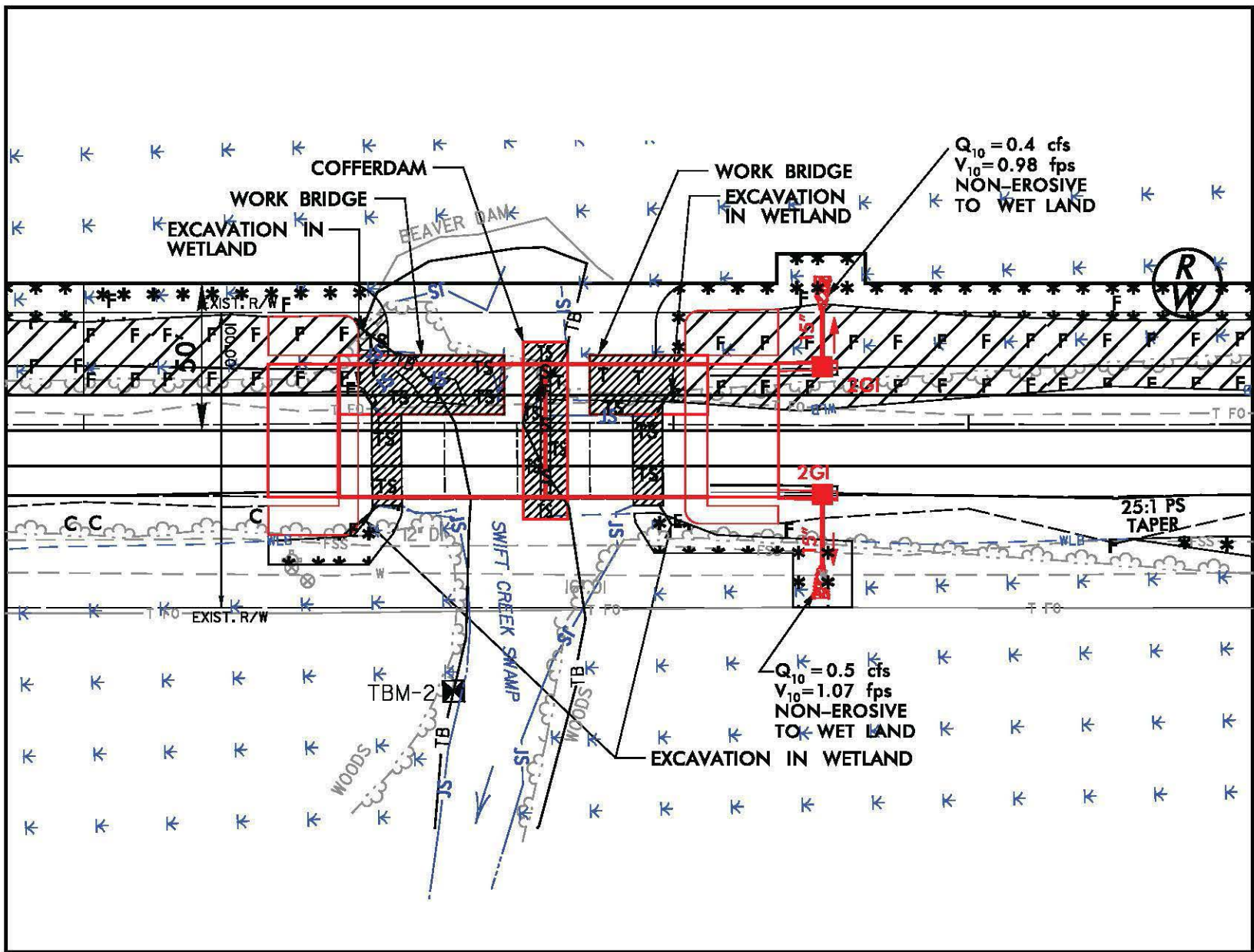
B/17/99

WETLAND AND SURFACE WATER IMPACTS PERMIT



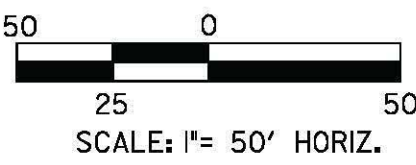
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|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 5A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 88, 141, AND 151 OVER SWIFT CREEK ON US-301 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 11 OF 51 | |

REVISIONS



LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

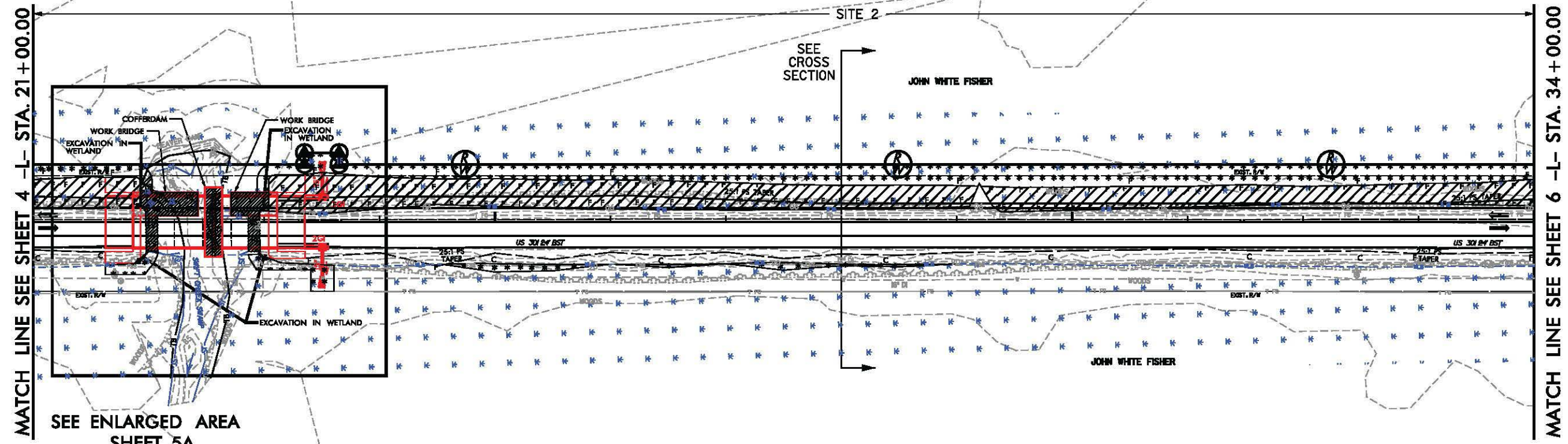


ENLARGED PLAN VIEW SITE 2

7/22/04 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS_Environmental\Drawings\B0124_hyd_perm_wet_per5a.dgn

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 5 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 12 OF 51 | |



MATCH LINE SEE SHEET 4 -L- STA. 21+00.00

MATCH LINE SEE SHEET 6 -L- STA. 34+00.00

SEE ENLARGED AREA
SHEET 5A

LEGEND

- WLB--- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

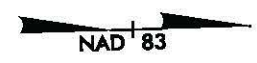
**PLAN VIEW
SITE 2**

REVISIONS

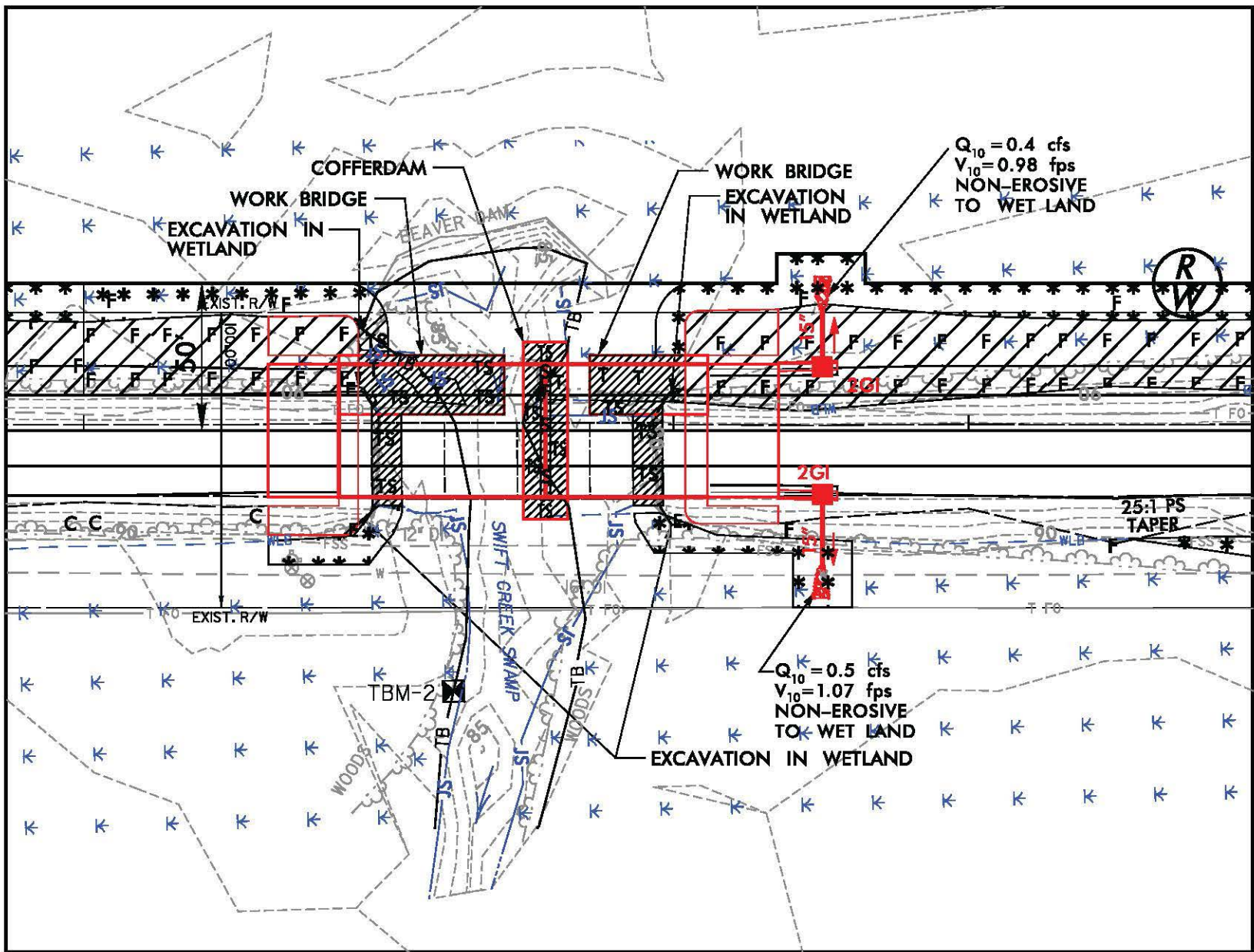
B-17/99

B/17/99

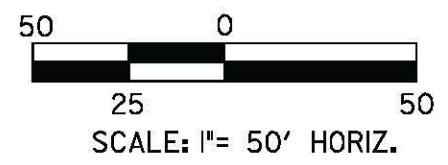
WETLAND AND SURFACE WATER IMPACTS PERMIT



| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 5A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 88, 141, AND 151 OVER SWIFT CREEK ON US-301 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 13 OF 51 | |



REVISIONS



**ENLARGED
PLAN VIEW
SITE 2**

LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

7/22/2014 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS_Environmental\Drawings\B0124_hyd_perm_wet_per50.dgn

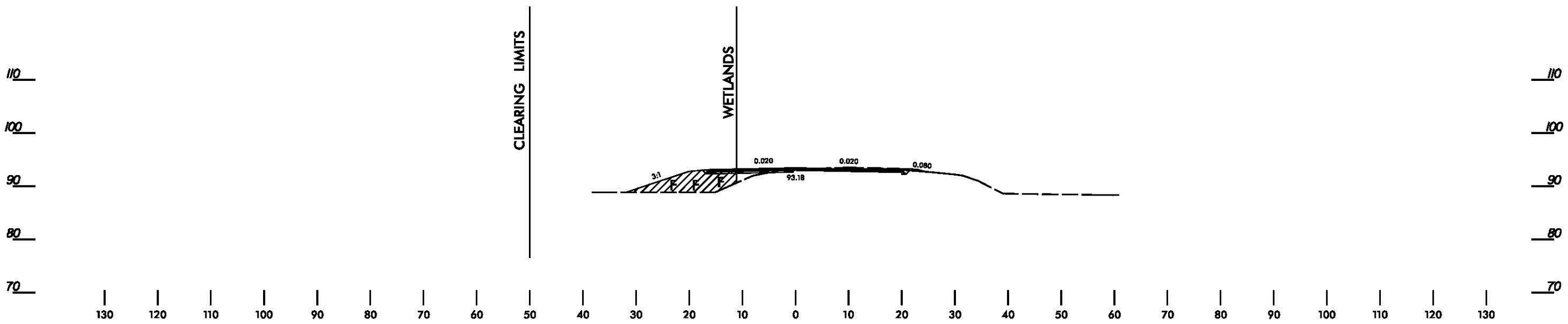
WETLAND AND SURFACE WATER IMPACTS PERMIT



| | |
|--------------------------------------|--------------------------------|
| PROJ. REFERENCE NO. B-5124 | SHEET NO. XSC SITE 2 |
|--------------------------------------|--------------------------------|

| | |
|---|------------------------|
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> </div> | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 42270.1.1 (B-5124)
REPLACE BRIDGES NO. 88,
141, AND 151 OVER
SWIFT CREEK ON US-301
SHEET OF
PERMIT DRAWING
SHEET 14 OF 51

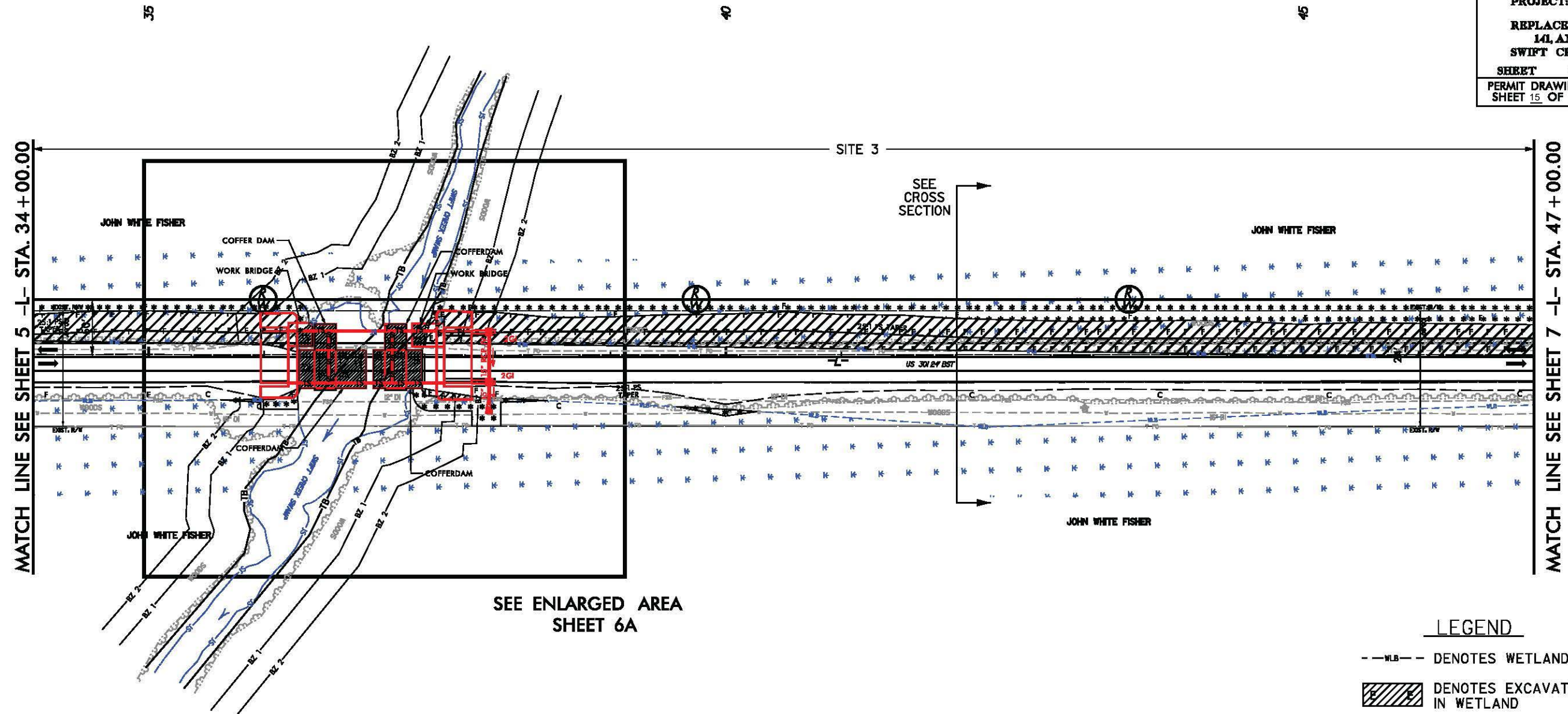


SITE 2
X-SECTION
STA 28+00 -L-

| LEGEND | |
|--------|----------------------------|
| | DENOTES FILL IN WETLAND |

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 15 OF 51 | |



MATCH LINE SEE SHEET 5 -L- STA. 34+00.00

MATCH LINE SEE SHEET 7 -L- STA. 47+00.00

SEE ENLARGED AREA
SHEET 6A

**PLAN VIEW
SITE 3**

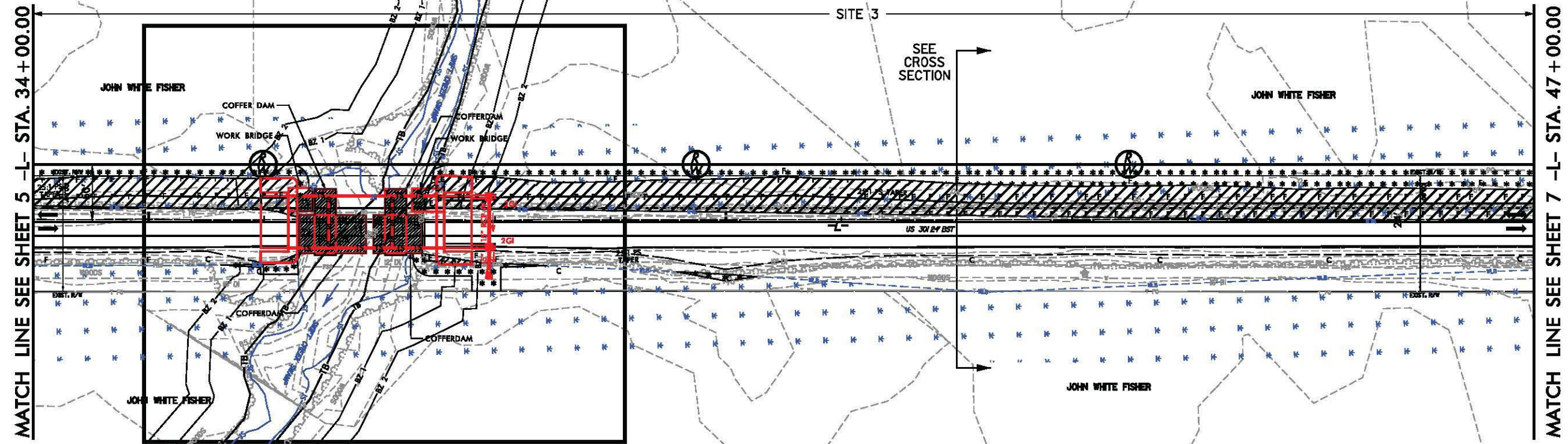
LEGEND

- W.L.B. --- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT



WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF PERMIT DRAWING SHEET 17 OF 51 | |



SEE ENLARGED AREA
SHEET 6A

PLAN VIEW
SITE 3

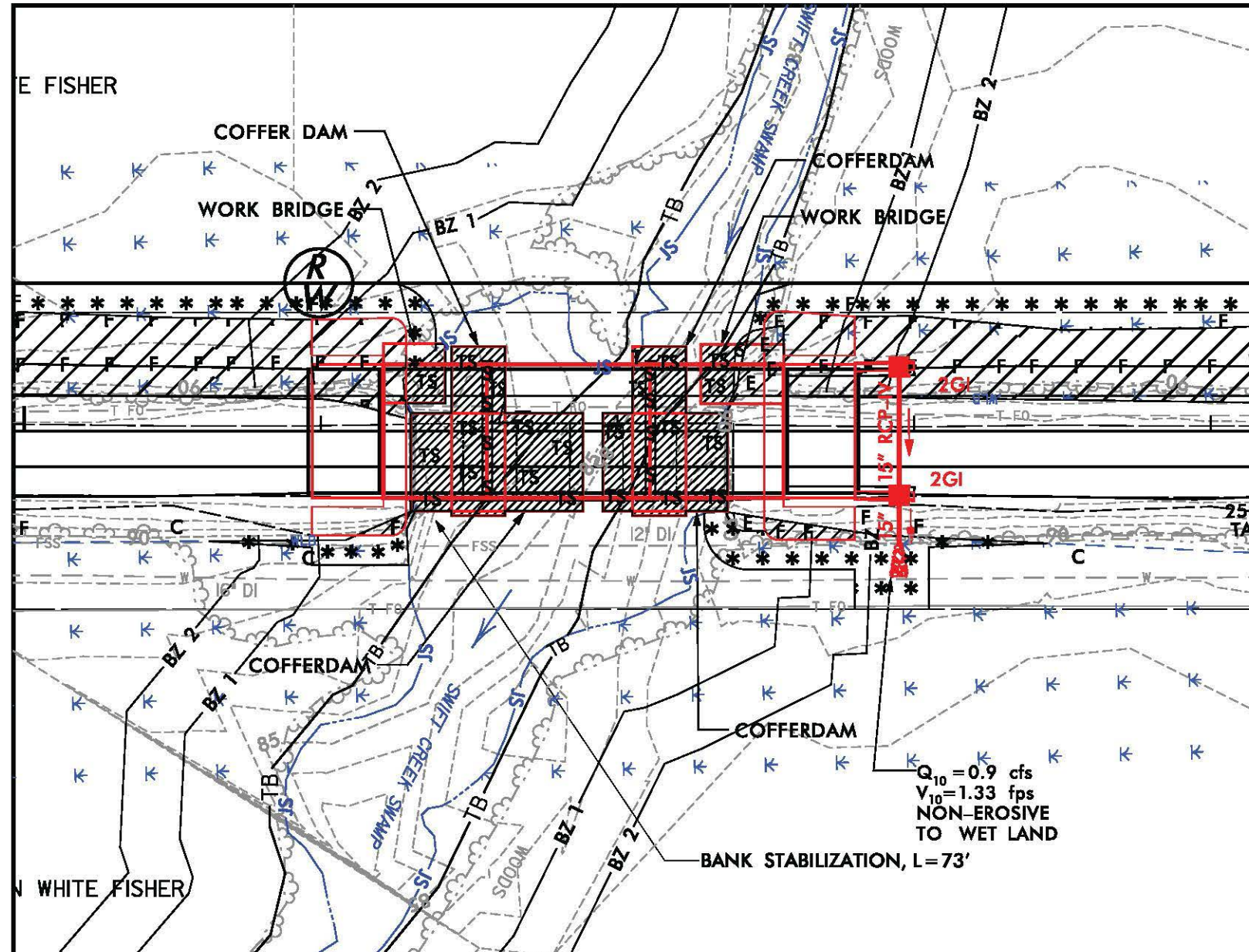
LEGEND

- W.L.B. -- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

WETLAND AND SURFACE WATER IMPACTS PERMIT

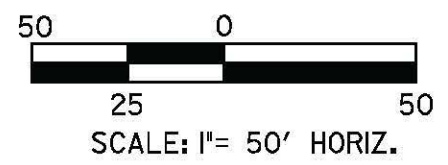


| | |
|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 18 OF 51 | |



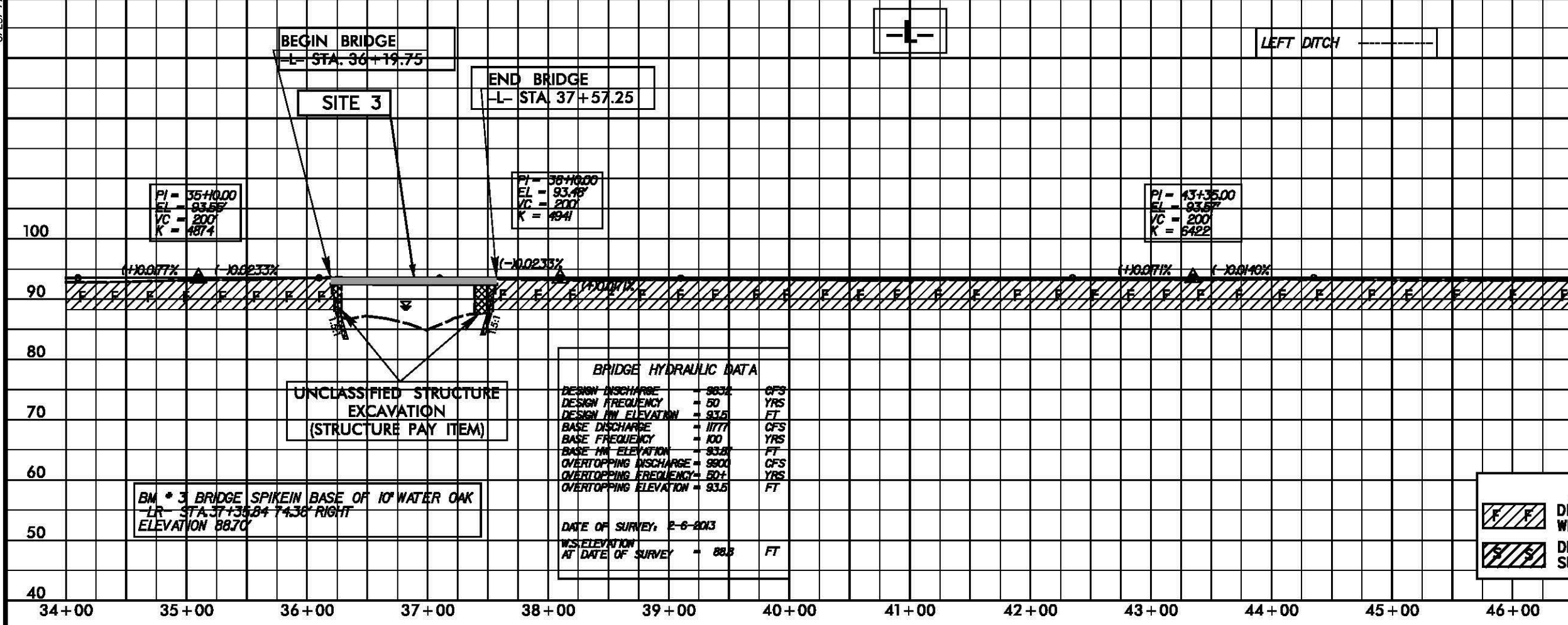
LEGEND

- WB-- DENOTES WETLAND BOUNDARY
- [Hatched pattern] DENOTES EXCAVATION IN WETLAND
- [Asterisks] DENOTES MECHANIZED CLEARING
- [Hatched pattern] DENOTES FILL IN WETLAND
- [Hatched pattern] DENOTES TEMPORARY FILL IN WETLAND
- [Hatched pattern] DENOTES TEMPORARY SURFACE WATER IMPACT
- [Hatched pattern] DENOTES PERMANENT SURFACE WATER IMPACT



**ENLARGED
PLAN VIEW
SITE 3**

5/26/99



BEGIN BRIDGE
L- STA. 36+19.75

END BRIDGE
L- STA. 37+57.25

SITE 3

LEFT DITCH

PI = 35+10.00
EL = 93.57
VC = 200
K = 4874

PI = 38+10.00
EL = 93.48
VC = 200
K = 494

PI = 43+35.00
EL = 93.57
VC = 200
K = 5422

BRIDGE HYDRAULIC DATA

| | | |
|-----------------------|--------|-----|
| DESIGN DISCHARGE | = 8832 | CFS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 93.5 | FT |
| BASE DISCHARGE | = 1177 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 93.8 | FT |
| OVERTOPPING DISCHARGE | = 9800 | CFS |
| OVERTOPPING FREQUENCY | = 50+ | YRS |
| OVERTOPPING ELEVATION | = 93.5 | FT |

DATE OF SURVEY: 2-6-2013
W.S. ELEVATION AT DATE OF SURVEY = 88.8 FT

UNCLASSIFIED STRUCTURE
EXCAVATION
(STRUCTURE PAY ITEM)

BM * 3 BRIDGE SPIKE IN BASE OF 10" WATER OAK
LR - STA. 37+35.84 T+4.38 RIGHT
ELEVATION 88.70

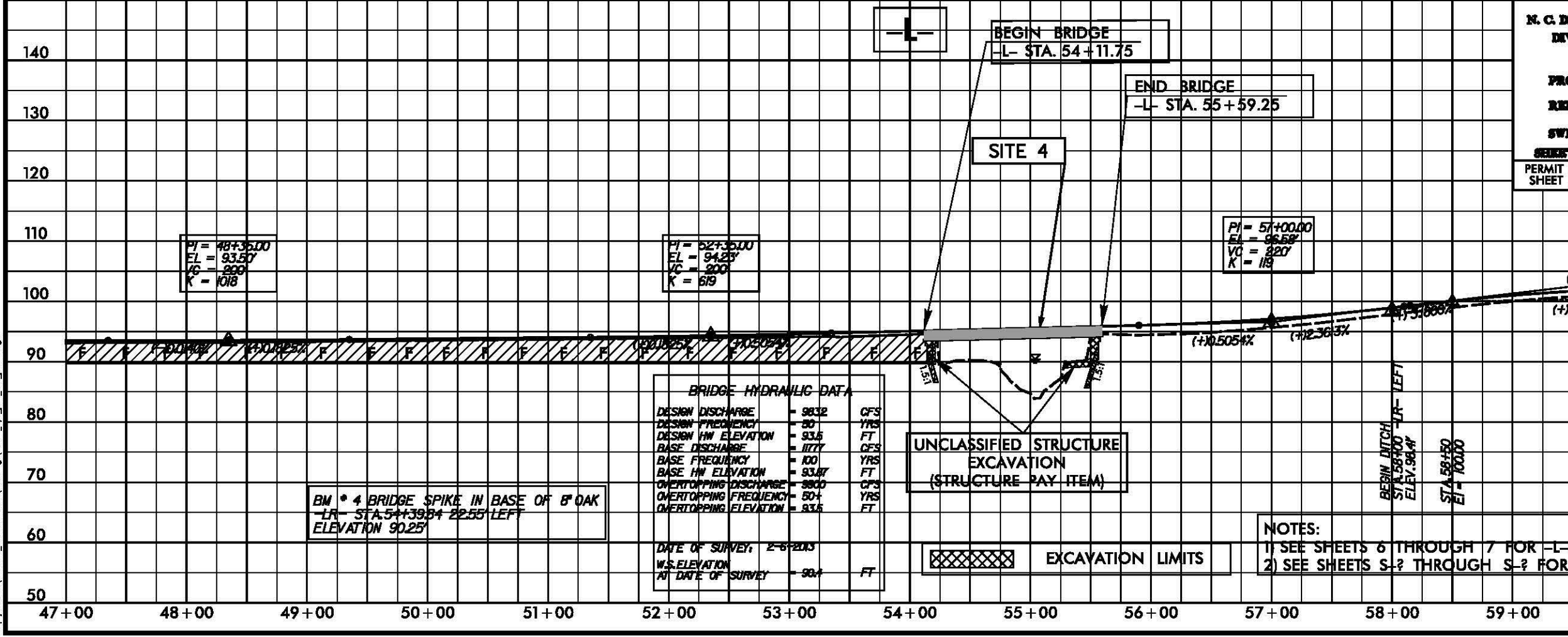
LEGEND

DENOTES FILL IN WETLAND

DENOTES PERMANENT SURFACE WATER IMPACT

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 07/11 0-6130
REPLACE BRIDGES NO. 88,
141, AND 151 OVER
SWIFT CREEK ON US-68

SHEET OF
PERMIT DRAWING
SHEET 19 OF 51



BEGIN BRIDGE
L- STA. 54+11.75

END BRIDGE
L- STA. 55+59.25

SITE 4

PI = 48+35.00
EL = 93.57
VC = 200
K = 1018

PI = 52+35.00
EL = 94.25
VC = 200
K = 619

PI = 57+100.00
EL = 96.58
VC = 220
K = 119

BRIDGE HYDRAULIC DATA

| | | |
|-----------------------|--------|-----|
| DESIGN DISCHARGE | = 9832 | CFS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 93.5 | FT |
| BASE DISCHARGE | = 1177 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 93.8 | FT |
| OVERTOPPING DISCHARGE | = 9800 | CFS |
| OVERTOPPING FREQUENCY | = 50+ | YRS |
| OVERTOPPING ELEVATION | = 93.5 | FT |

DATE OF SURVEY: 2-6-2013
W.S. ELEVATION AT DATE OF SURVEY = 98.4 FT

UNCLASSIFIED STRUCTURE
EXCAVATION
(STRUCTURE PAY ITEM)

BM * 4 BRIDGE SPIKE IN BASE OF 8" OAK
LR - STA. 54+39.84 T+2.55 LEFT
ELEVATION 90.25

NOTES:

1) SEE SHEETS 6 THROUGH 7 FOR L-L PLAN

2) SEE SHEETS S-? THROUGH S-? FOR STRUCTURE PLANS

EXCAVATION LIMITS

3/14/2014
 ICA ENGINEERING, INC.
 R:\Hydraulics\PERMITS_Environmental\Drawings\05124_hyd_perm_wet_profile.dgn

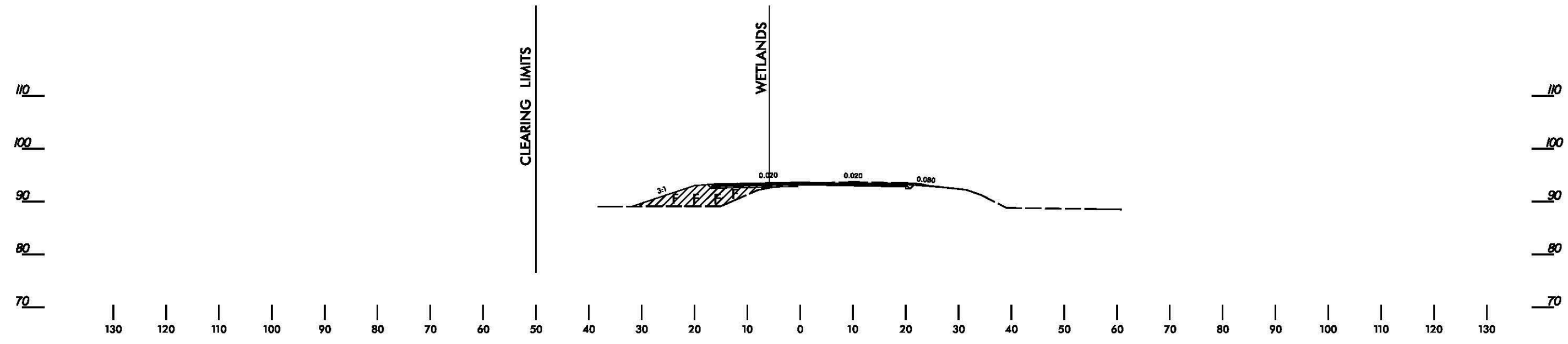
WETLAND AND SURFACE WATER IMPACTS PERMIT



PROJ. REFERENCE NO. **B-5124** SHEET NO. **XSC SITE 3**

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 NASH COUNTY
 PROJECT: 42270.1.1 (B-5124)
 REPLACE BRIDGES NO. 88,
 141, AND 151 OVER
 SWIFT CREEK ON US-301
 SHEET OF
 PERMIT DRAWING
 SHEET 20 OF 51



SITE 3
X-SECTION
STA 42+00 -L-

LEGEND
 DENOTES FILL IN WETLAND

WETLAND AND SURFACE WATER IMPACTS PERMIT

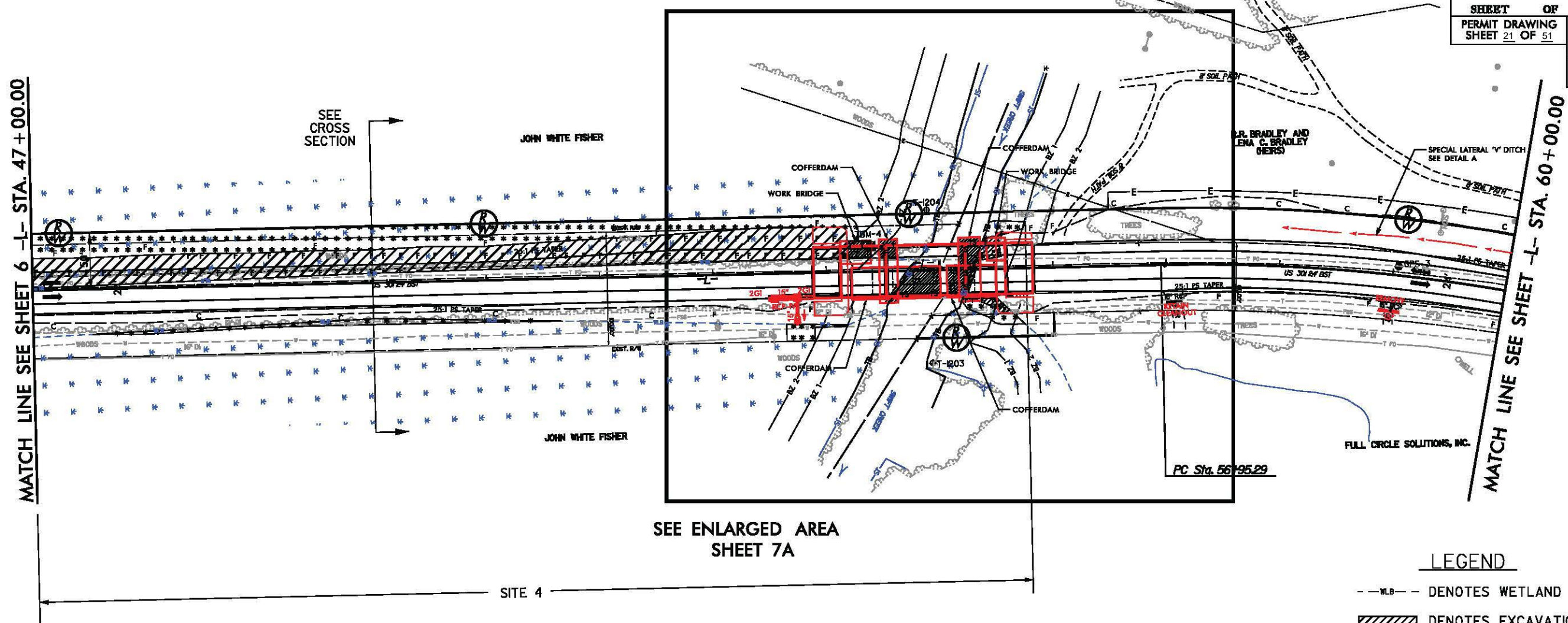
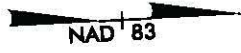
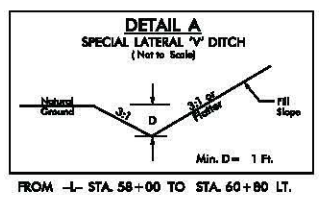
| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY

PROJECT: 42270.11 (B-5124)

REPLACE BRIDGES NO. 86,
141, AND 151 OVER
SWIFT CREEK ON US-401

SHEET OF
PERMIT DRAWING
SHEET 21 OF 51



LEGEND

- W.B. -- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

**PLAN VIEW
SITE 4**

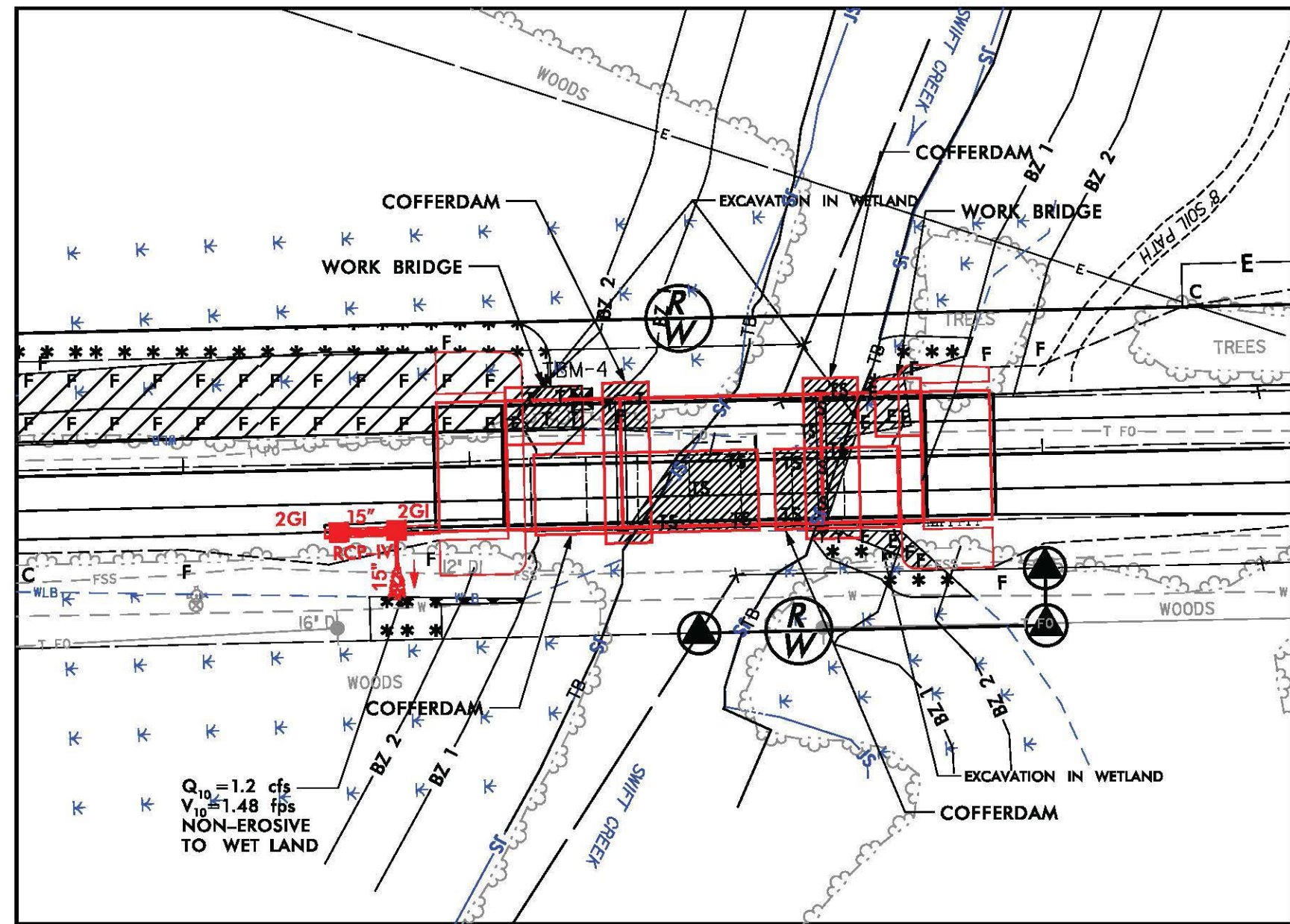
REVISIONS
RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA 58+50 TO 63+65 LT. PER

7/22/2014
ICA ENGINEERING, INC.
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B/17/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

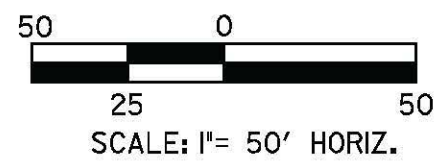
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|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7A |
| RW SHEET NO. | HYDRAULICS ENGINEER |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 22 OF 51 | |



$V_{10} = 1.2$ cfs
 $V_{10} = 1.48$ fps
 NON-EROSIVE
 TO WET LAND

LEGEND

| | | |
|--------------------|-----|--|
| --- | WLB | DENOTES WETLAND BOUNDARY |
| [Hatched] | | DENOTES EXCAVATION IN WETLAND |
| [Asterisks] | | DENOTES MECHANIZED CLEARING |
| [Diagonal Hatched] | | DENOTES FILL IN WETLAND |
| [Cross-hatched] | | DENOTES TEMPORARY FILL IN WETLAND |
| [Diagonal Hatched] | | DENOTES TEMPORARY SURFACE WATER IMPACT |
| [Diagonal Hatched] | | DENOTES PERMANENT SURFACE WATER IMPACT |



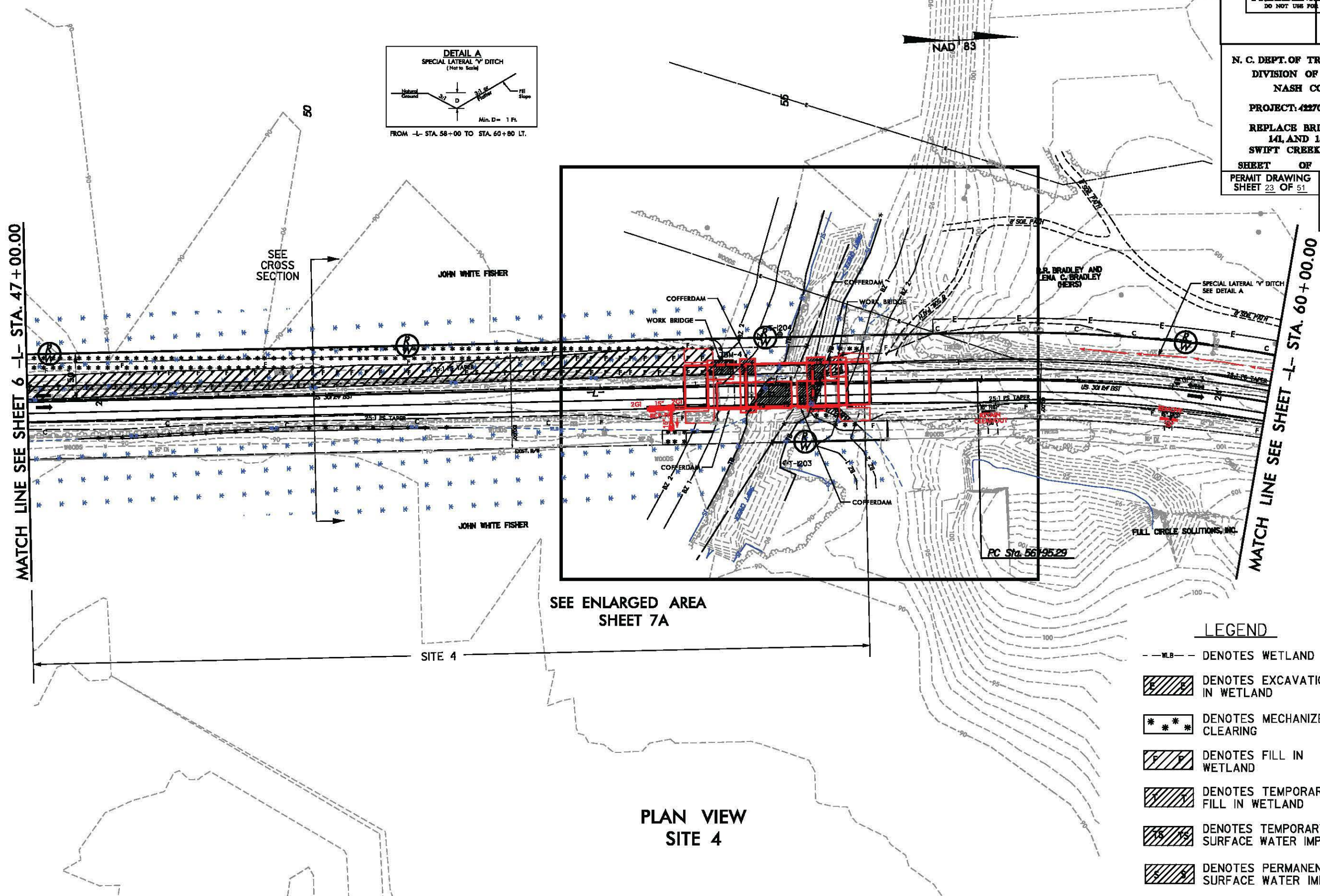
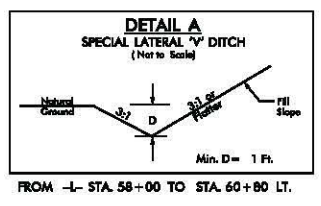
**ENLARGED
PLAN VIEW
SITE 4**

7/22/2014
 TCA ENGINEERING, INC.
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WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 42270.11 (B-5124)
REPLACE BRIDGES NO. 86,
141, AND 151 OVER
SWIFT CREEK ON US-401
 SHEET OF
 PERMIT DRAWING
 SHEET 23 OF 51



SEE ENLARGED AREA
SHEET 7A

LEGEND

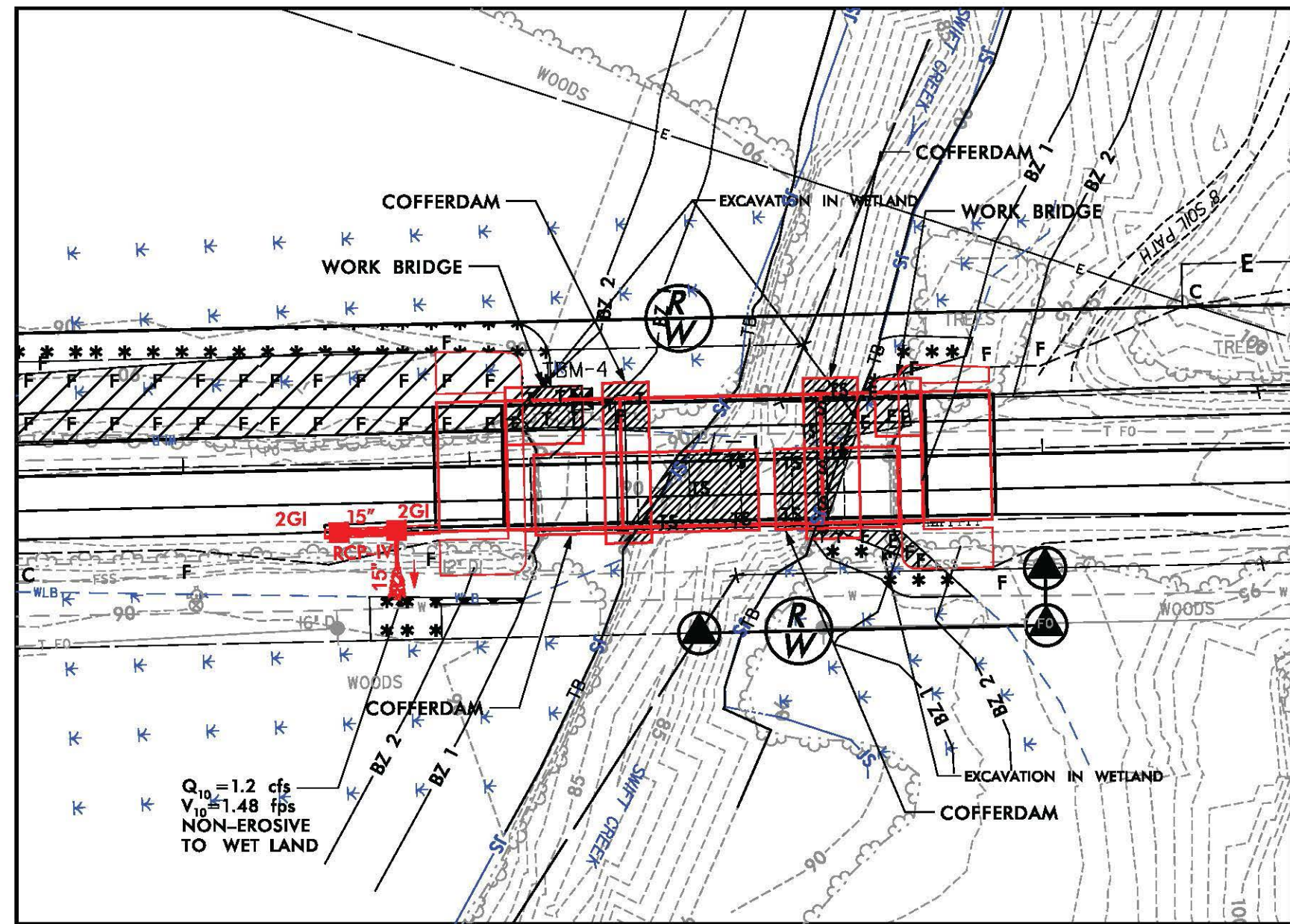
- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES PERMANENT SURFACE WATER IMPACT

**PLAN VIEW
SITE 4**

REVISIONS
 RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA 58+50 TO 63+65 LT. PER

WETLAND AND SURFACE WATER IMPACTS PERMIT

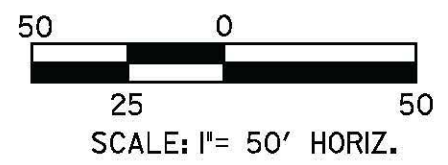
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|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7A |
| RW SHEET NO. | HYDRAULICS ENGINEER |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 88, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 24 OF 51 | |



$V_{10} = 1.2$ cfs
 $V_{10} = 1.48$ fps
 NON-EROSIVE
 TO WET LAND

LEGEND

| | | |
|-----|-----|--|
| --- | WLB | DENOTES WETLAND BOUNDARY |
| ▨ | | DENOTES EXCAVATION IN WETLAND |
| *** | | DENOTES MECHANIZED CLEARING |
| ▨ | | DENOTES FILL IN WETLAND |
| ▨ | | DENOTES TEMPORARY FILL IN WETLAND |
| ▨ | | DENOTES TEMPORARY SURFACE WATER IMPACT |
| ▨ | | DENOTES PERMANENT SURFACE WATER IMPACT |



**ENLARGED
PLAN VIEW
SITE 4**

7/22/2014
 ICA ENGINEERING, INC.
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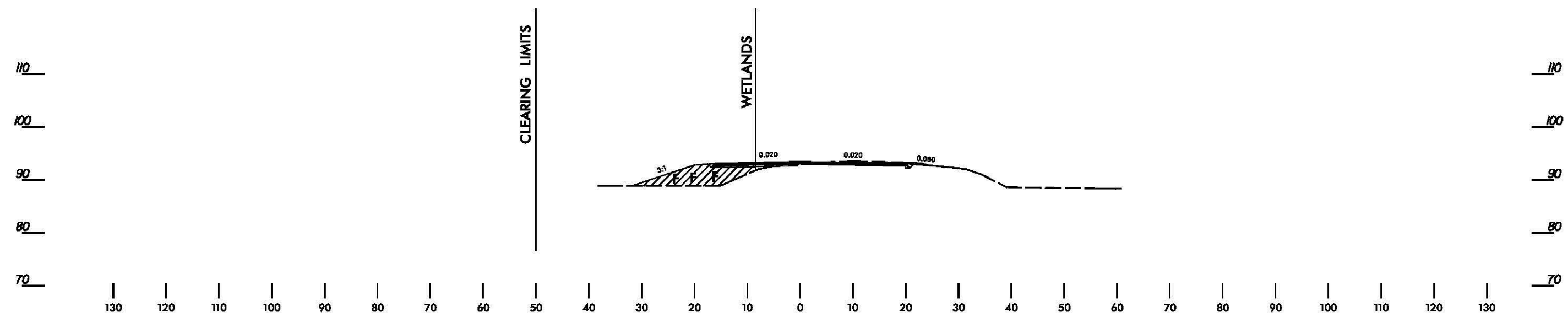
WETLAND AND SURFACE WATER IMPACTS PERMIT



| | |
|--------------------------------------|--------------------------------|
| PROJ. REFERENCE NO. B-5124 | SHEET NO. XSC SITE 4 |
|--------------------------------------|--------------------------------|

| | |
|---|------------------------|
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> </div> | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 42270.1.1 (B-5124)
REPLACE BRIDGES NO. 88,
141, AND 151 OVER
SWIFT CREEK ON US-301
SHEET OF
PERMIT DRAWING
SHEET 25 OF 51



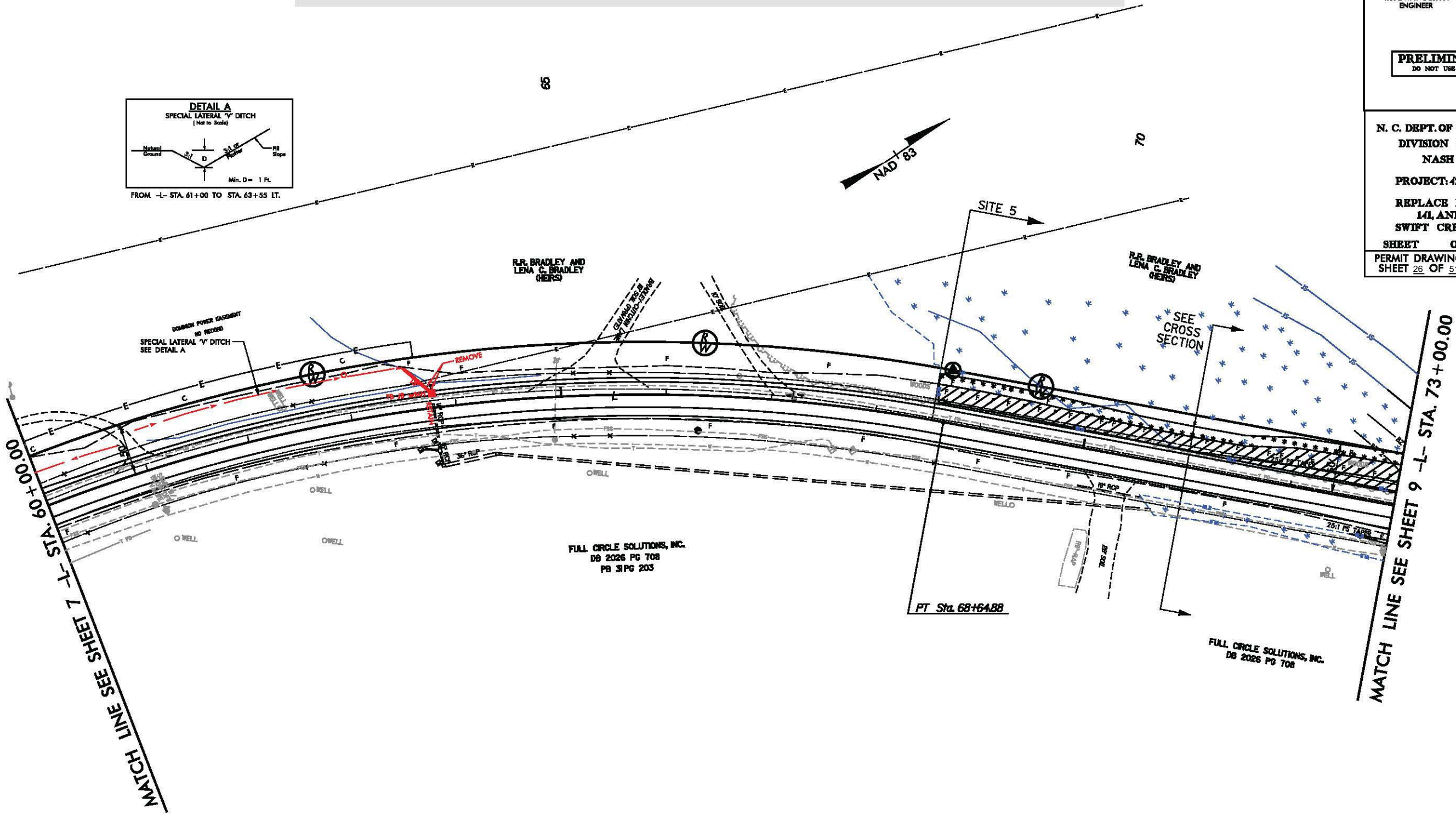
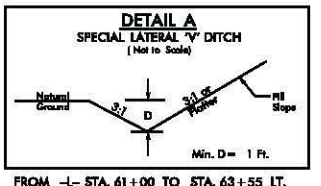
SITE 4
X-SECTION
STA 50+00 -L-

LEGEND

| | |
|--|----------------------------|
| | DENOTES FILL IN WETLAND |
|--|----------------------------|

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 8 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 26 OF 51 | |



LEGEND

| | |
|--|-----------------------------|
| | DENOTES WETLAND BOUNDARY |
| | DENOTES MECHANIZED CLEARING |
| | DENOTES FILL IN WETLAND |

PLAN VIEW
SITE 5

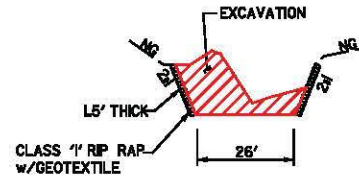
REVISIONS
RWY REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA. 58+50 TO 63+65 LT. hcn

4/2/2014
ICA ENGINEERING, INC.
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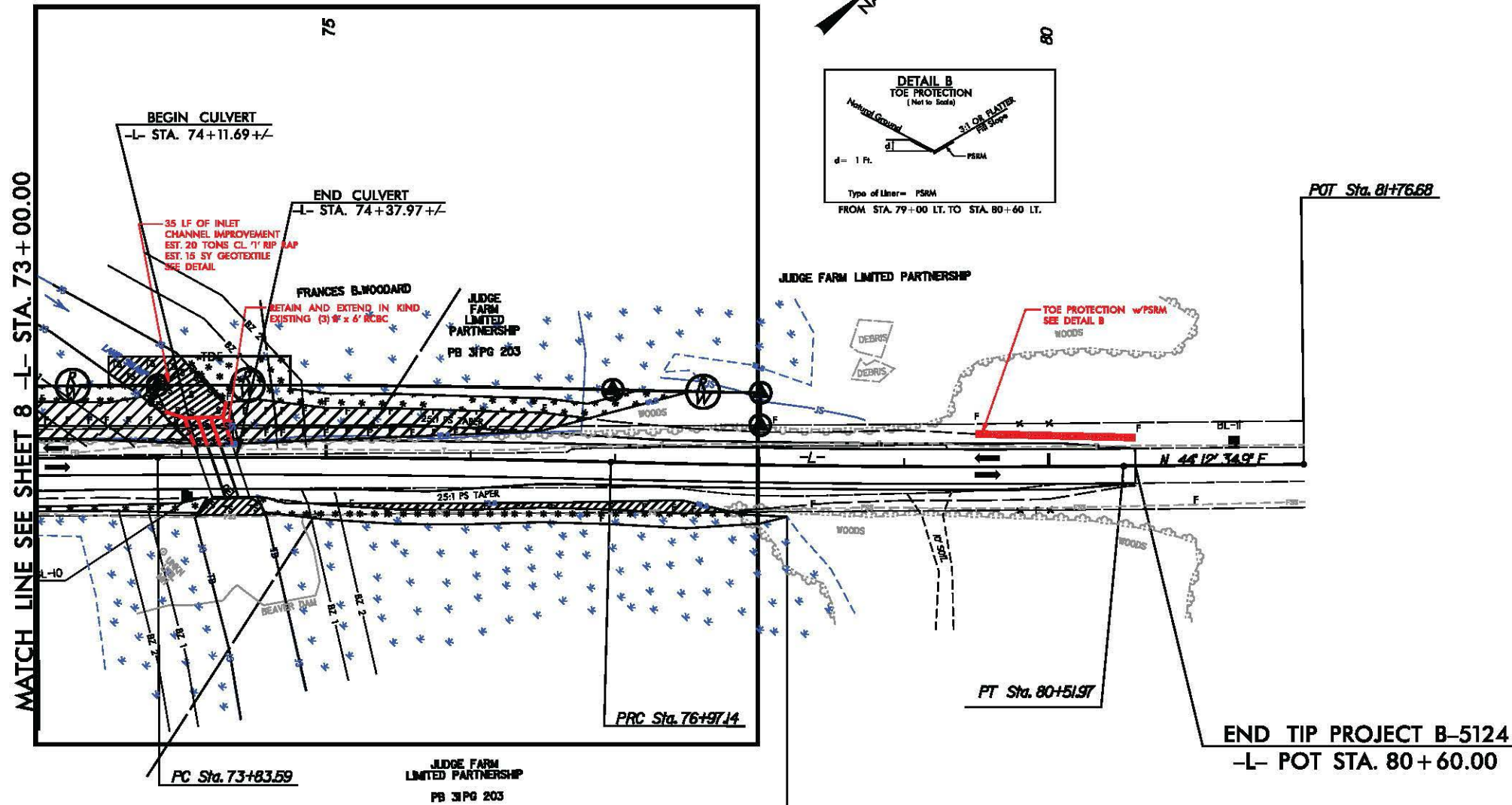
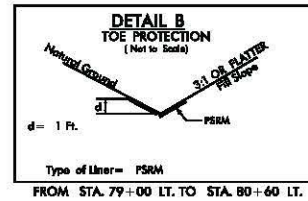
B-17/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 27 OF 51 | ENGLISH |



CULVERT 161 INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



SEE ENLARGED AREA
SHEET 9A

PLAN VIEW
SITE 5

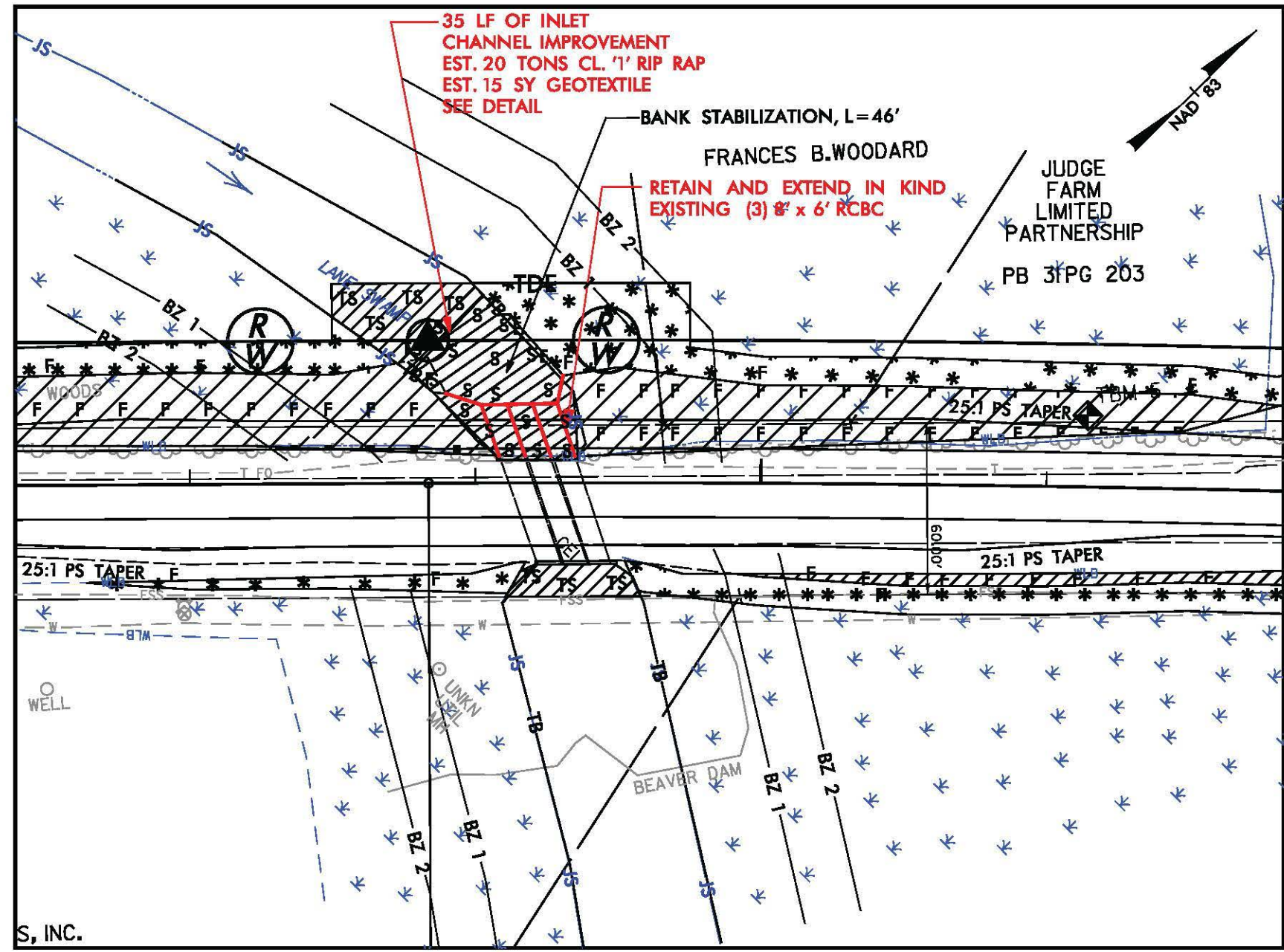
LEGEND

- WLB -- DENOTES WETLAND BOUNDARY
- [Diagonal Hatching] DENOTES EXCAVATION IN WETLAND
- [Cross-hatching] DENOTES FILL IN WETLAND
- [Diagonal Hatching] DENOTES PERMANENT SURFACE WATER IMPACT
- [Cross-hatching] DENOTES TEMPORARY SURFACE WATER IMPACT
- [Dotted Pattern] DENOTES MECHANIZED CLEARING

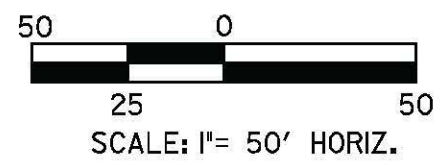
REVISIONS

WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| B-5124 | 9A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 2px; font-weight: bold; font-size: 10px;">PRELIMINARY PLANS</div> <small>DO NOT USE FOR CONSTRUCTION</small> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY PROJECT: 42270.11 (B-5124) REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 SHEET OF PERMIT DRAWING SHEET 28 OF 51 | |



REVISIONS



**ENLARGED
PLAN VIEW
SITE 5**

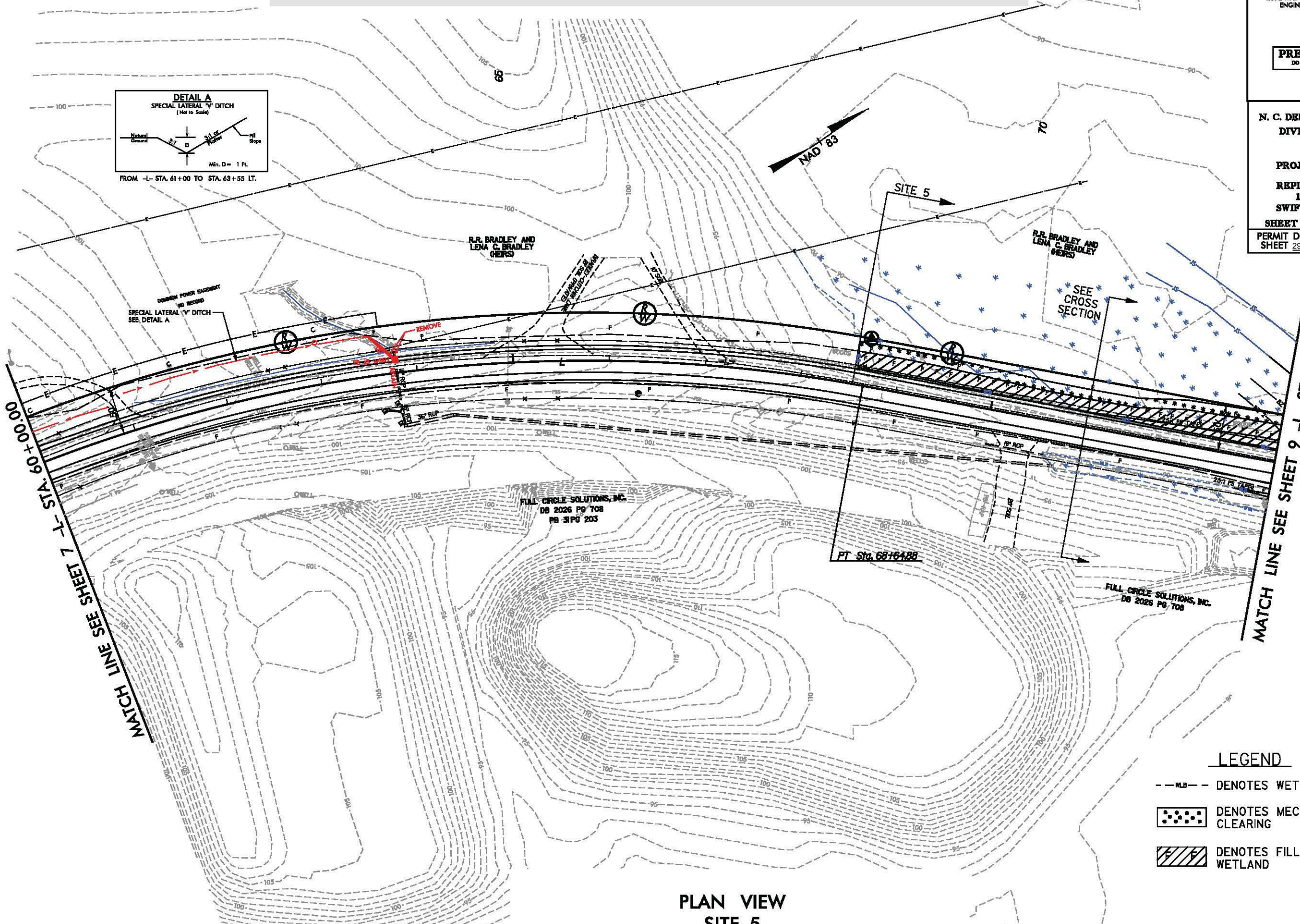
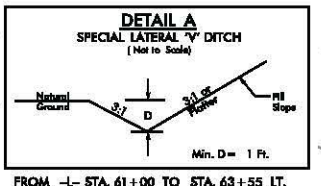
LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES PERMANENT SURFACE WATER IMPACT
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES MECHANIZED CLEARING

4/2/2014
 ICA ENGINEERING, INC.
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WETLAND AND SURFACE WATER IMPACTS PERMIT

| | | | |
|---|---------------------|-----------|---|
| PROJECT REFERENCE NO. | B-5124 | SHEET NO. | 8 |
| R/W SHEET NO. | | | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER | | |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | | | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | | | |
| PROJECT: 42270.11 (B-5124) | | | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | | | |
| SHEET OF PERMIT DRAWING SHEET 29 OF 51 | | | |



LEGEND

| | | |
|--|-------------|-----------------------------|
| | --- WLB --- | DENOTES WETLAND BOUNDARY |
| | | DENOTES MECHANIZED CLEARING |
| | | DENOTES FILL IN WETLAND |

**PLAN VIEW
SITE 5**

REVISIONS
 R/W REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA. 58+50 TO 63+65 LT. (H)

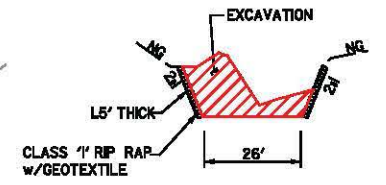
4/2/2014
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B-17/99

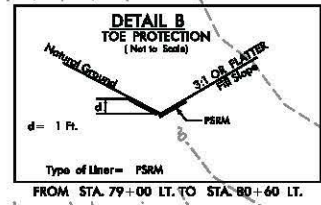


WETLAND AND SURFACE WATER IMPACTS PERMIT

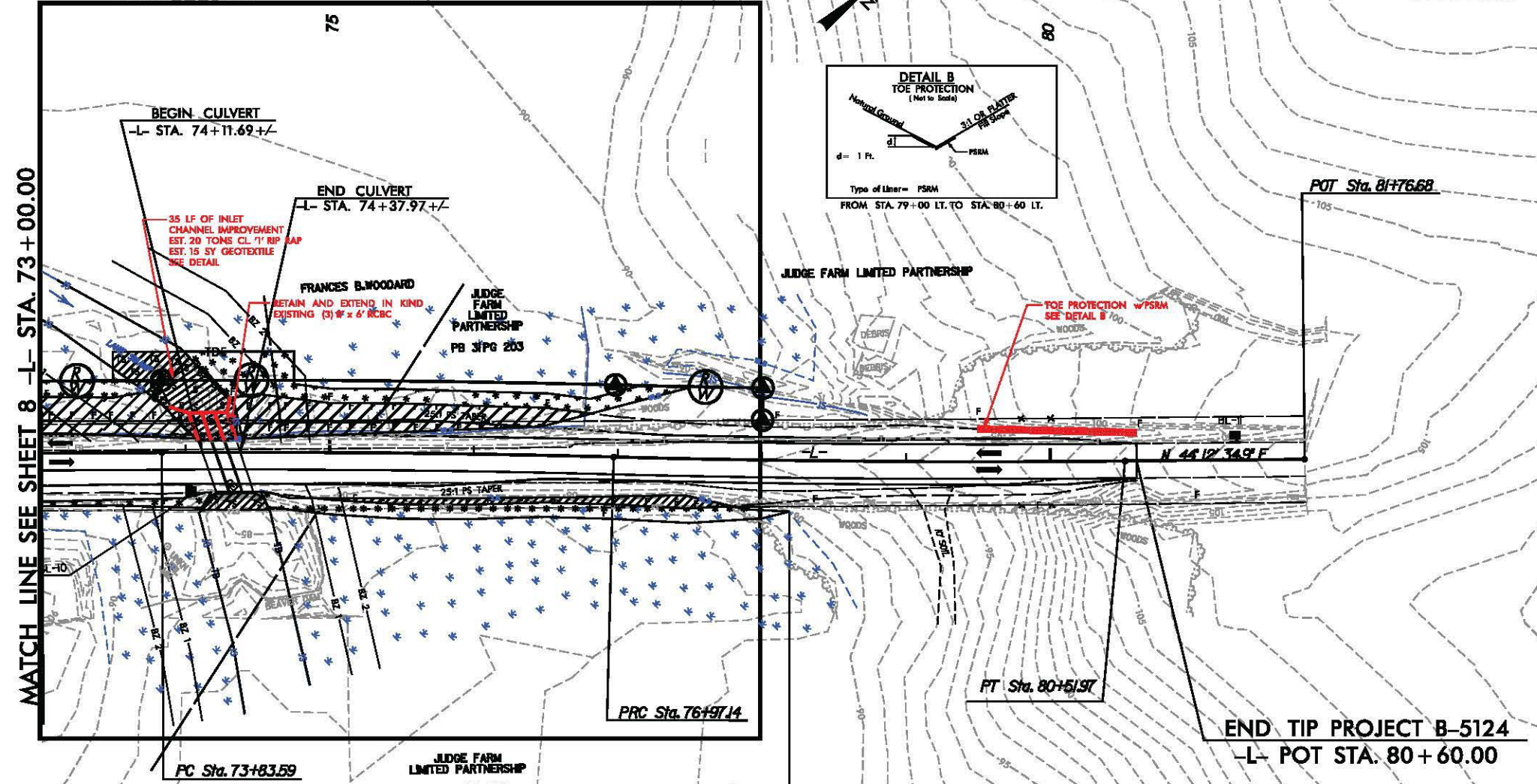
| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| PERMIT DRAWING SHEET 30 OF 51 | |



CULVERT 161 INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



DETAIL B TOE PROTECTION
(Not to Scale)
Type of Liner = PSRM
FROM STA. 79+00 LT. TO STA. 80+60 LT.



MATCH LINE SEE SHEET 8 - L- STA. 73+00.00

SEE ENLARGED AREA
SHEET 9A

**PLAN VIEW
SITE 5**

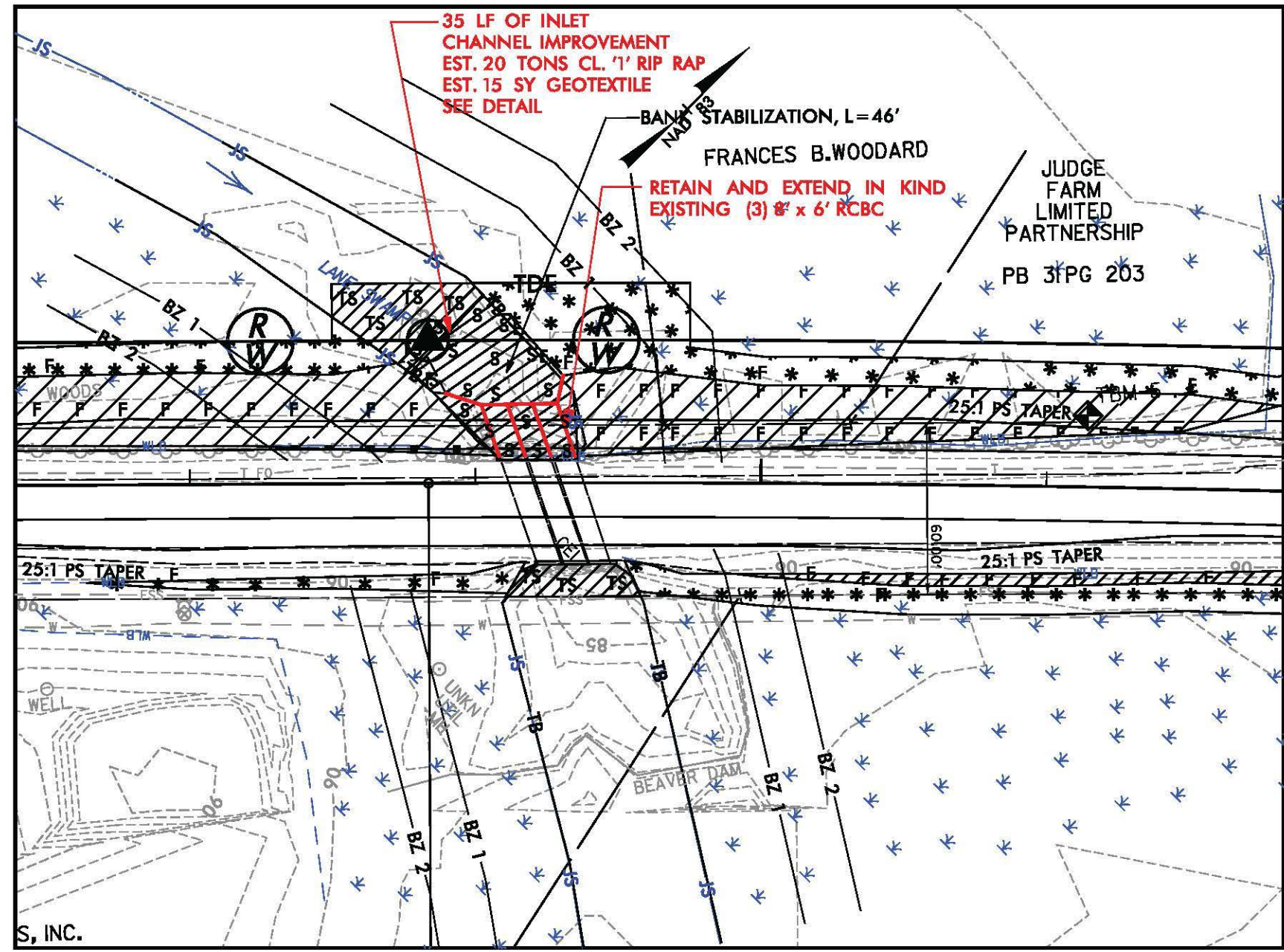
LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES PERMANENT SURFACE WATER IMPACT
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES MECHANIZED CLEARING

REVISIONS

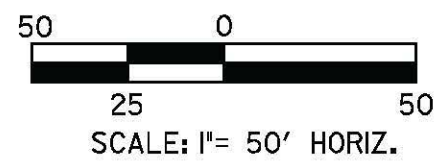
WETLAND AND SURFACE WATER IMPACTS PERMIT

| | |
|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY PROJECT: 42270.11 (B-5124) REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 SHEET OF PERMIT DRAWING SHEET 31 OF 51 | |



REVISIONS

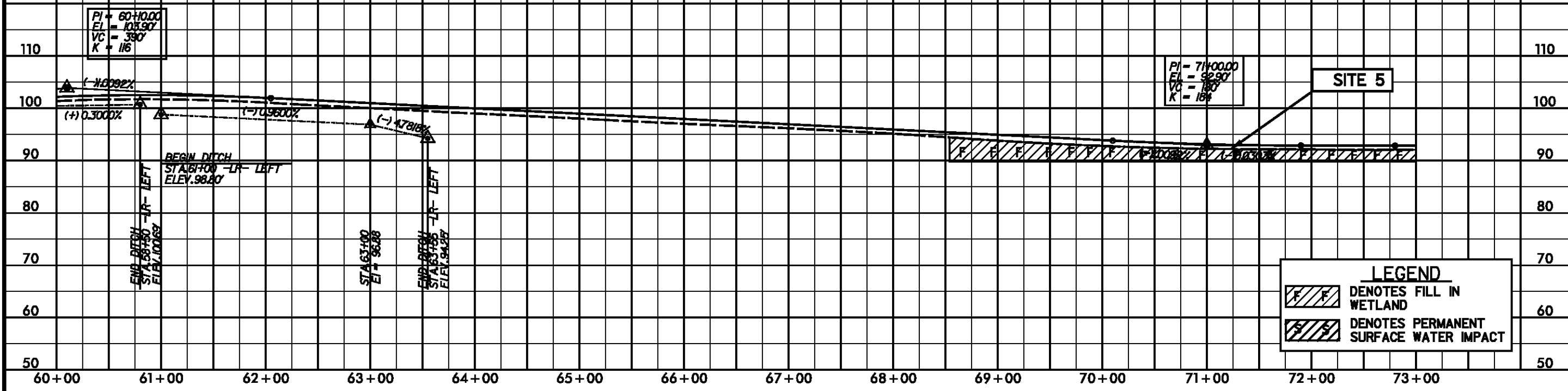
4/2/2014 ICA ENGINEERING, INC. C:\Hydraulics\PERMITS_Environmental\Drawings\B0124_hyd_perm_wet_per09a.dgn



**ENLARGED
PLAN VIEW
SITE 5**

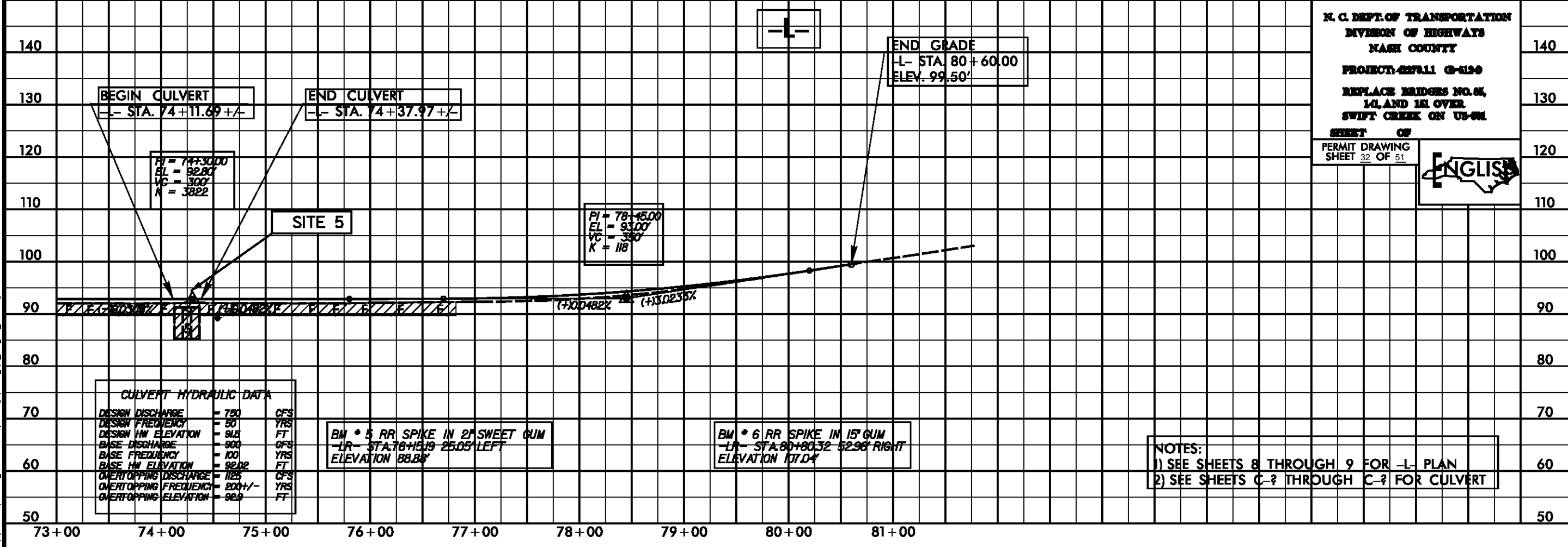
LEGEND

- DENOTES WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES PERMANENT SURFACE WATER IMPACT
- DENOTES TEMPORARY SURFACE WATER IMPACT
- DENOTES MECHANIZED CLEARING



LEGEND

- DENOTES FILL IN WETLAND
- DENOTES PERMANENT SURFACE WATER IMPACT



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT 27711 G-5124
REPLACE BRIDGES NO. 66,
14, AND 151 OVER
SWIFT CREEK ON US-91

SHEET OF
PERMIT DRAWING
SHEET 32 OF 51



CULVERT HYDRAULIC DATA

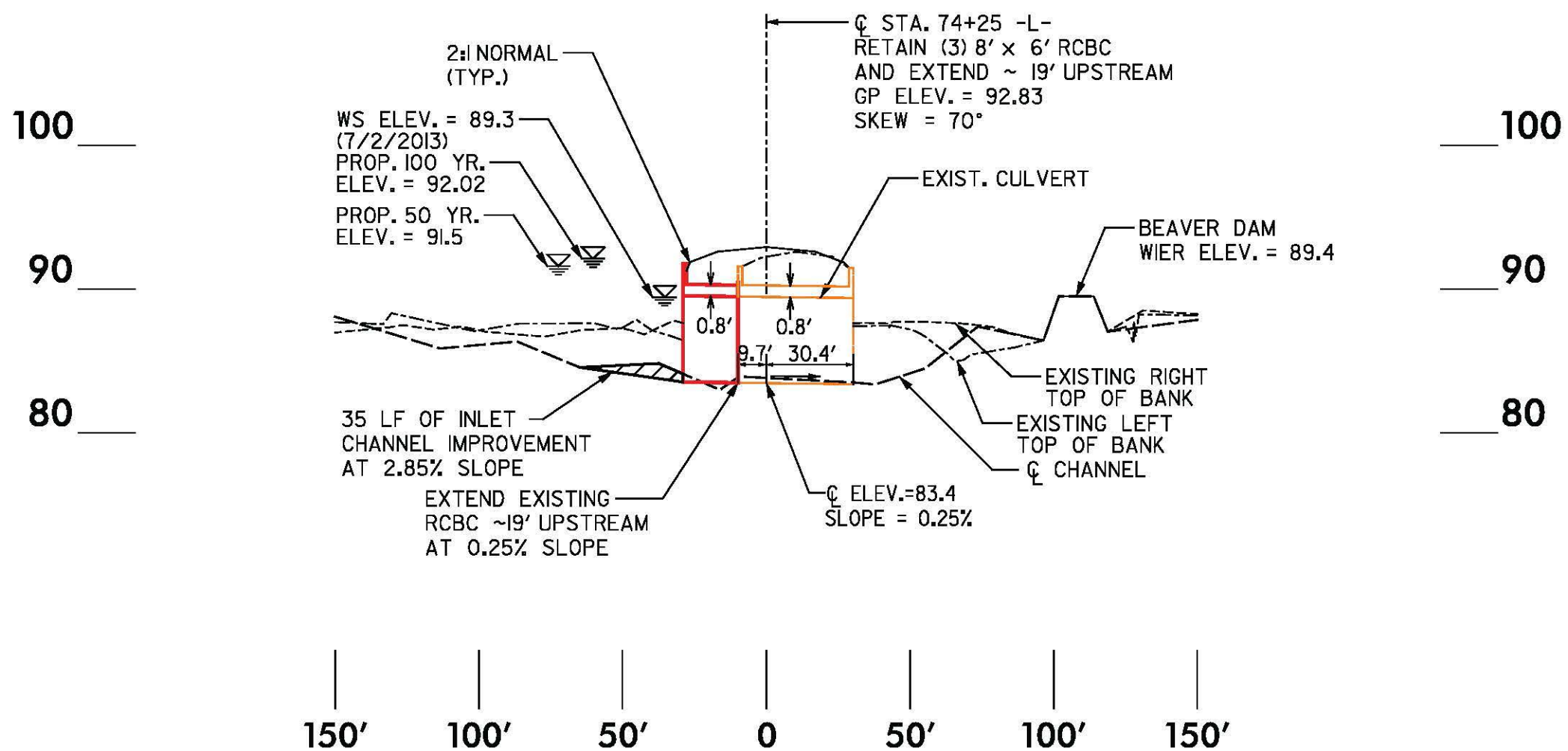
| | | |
|-----------------------|-----------|-----|
| DESIGN DISCHARGE | = 750 | CFS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 91.5 | FT |
| BASE DISCHARGE | = 900 | CFS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 92.02 | FT |
| OVERTOPPING DISCHARGE | = 1125 | CFS |
| OVERTOPPING FREQUENCY | = 200 +/- | YRS |
| OVERTOPPING ELEVATION | = 92.9 | FT |

BM * 5 RR SPIKE IN 2" SWEET GUM
-L- STA. 76+15.19 25.05' LEFT
ELEVATION 88.88'

BM * 6 RR SPIKE IN 15' GUM
-L- STA. 80+32.52 52.96' RIGHT
ELEVATION 107.04'

NOTES:
1) SEE SHEETS 8 THROUGH 9 FOR -L- PLAN
2) SEE SHEETS C-? THROUGH C-? FOR CULVERT

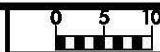
WETLAND AND SURFACE WATER IMPACTS PERMIT



SITE 5
PROFILE ALONG STRUCTURE
STA 74+25 -L-

| | |
|---|----------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. PAS-S5 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY PROJECT: 0270.11 (B-5124) REPLACE BRIDGES NO. 85, 141, AND 161 OVER SWIFT CREEK ON US-301 | |
| SHEET 33 OF 51 | |
| PERMIT DRAWING | |
| | |

WETLAND AND SURFACE WATER IMPACTS PERMIT



| | |
|-------------------------------|-------------------------|
| PROJ. REFERENCE NO. B-5124 | SHEET NO. XSC SITE 5 |
|-------------------------------|-------------------------|

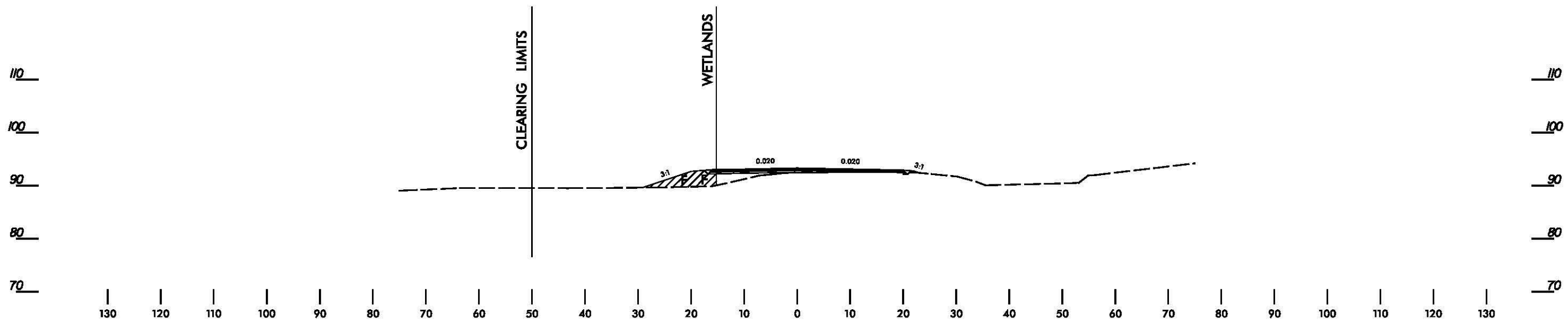
| | |
|---|------------------------|
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY

PROJECT: 42270.1.1 (B-5124)

REPLACE BRIDGES NO. 88,
141, AND 151 OVER
SWIFT CREEK ON US-301

SHEET OF
PERMIT DRAWING
SHEET 35 OF 51



SITE 5
X-SECTION
STA 71+00 -L-

LEGEND

 DENOTES FILL IN WETLAND

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | |
|-----------------|--------------------|---|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|---|-------------------------------------|----------------------------|
| | | | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 1A | -L- 11+20 TO 13+31 | EXTEND EX. 4@10'x7' RCBC | 0.02 | | | 0.09 | | | | | | |
| 1 | -L- 16+08 TO 21+00 | EXTEND EX. 4@10'x7' RCBC | 0.25 | | 0.02 | 0.12 | | 0.03 | 0.02 | 18 | 32 | |
| 1 | -L- 17+10 TO 17+59 | BANK STABILIZATION | | | | | | < 0.01 | | 20 | | |
| 2 | -L- 21+00 TO 34+00 | 24" PCCS BRIDGE, 1@70', 1@55' | 0.60 | 0.02 | < 0.01 | 0.50 | | < 0.01 | 0.05 | | 56 | |
| 3 | -L- 34+00 TO 47+00 | 21" PCCS BRIDGE, 1@35', 1@55', 1@45' | 0.75 | < 0.01 | < 0.01 | 0.47 | | < 0.01 | 0.10 | 5 | 12 | |
| 4 | -L- 47+00 TO 55+76 | 1@40' (21" PCCS), 1@70'(24" PCCS), 1@35' (21" PCCS) | 0.40 | 0.01 | < 0.01 | 0.35 | | < 0.01 | < 0.01 | | 73 | |
| 5 | -L- 68+54 TO 78+20 | EXTEND EX. 3@8'x6' RCBC | 0.37 | | < 0.01 | 0.32 | | 0.02 | 0.03 | 19 | 54 | |
| 5 | -L- 73+77 TO 74+30 | BANK STABILIZATION | | | | | | 0.03 | | 46 | | |
| TOTALS*: | | | 2.38 | 0.03 | 0.04 | 1.85 | | 0.09 | 0.21 | 108 | 227 | 0 |

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 B-5124, NASH COUNTY
 REPLACE BRIDGES NO. 85, 141, AND 151
 OVER SWIFT CREEK ON US-301
 Revised 4/07/2015
 SHEET 36 OF 51

09/06/15

See Sheet 1-A For Index of Sheets

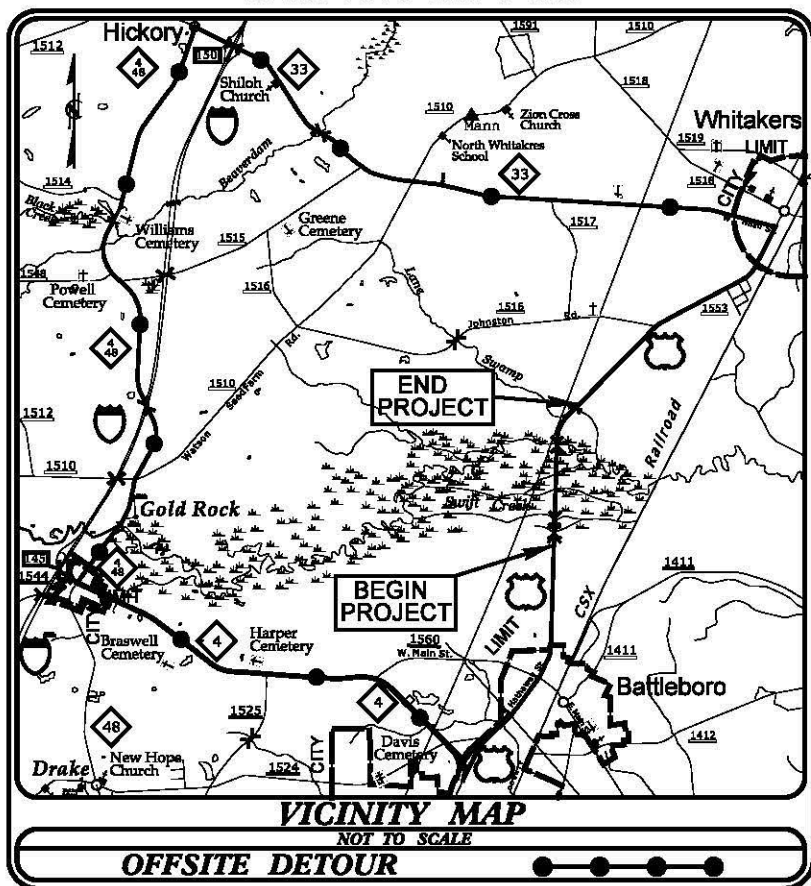
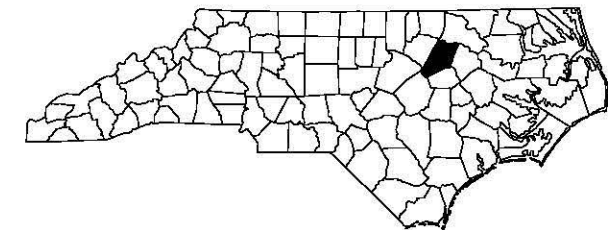
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

LOCATION: REPLACE BRIDGES NO. 85, 141, AND 151 OVER SWIFT CREEK ON US-301

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND CULVERTS.

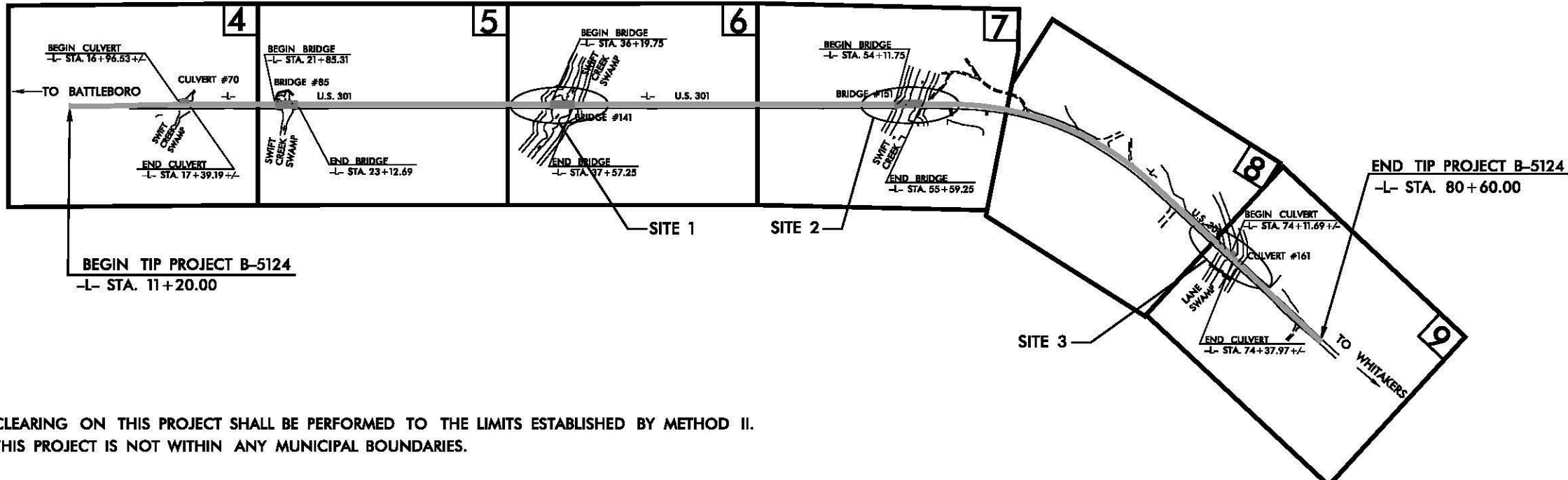
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | B-5124 | 1 | |
| STATE PROJ. NO. | P.A. PROJ. NO. | DESCRIPTION | |
| 42270.1.1 | BRSTP-0301(25) | P.E. | |
| 42270.2.1 | BRSTP-0301(25) | RW & UTL. | |
| | | | |
| | | | |
| | | | |



BUFFER IMPACTS PERMIT

ENGLISH

BUFFER DRAWING SHEET 37 OF 51
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 42270.1.1 B-5124
REPLACE BRIDGES NO. 85, 141, AND 151 OVER SWIFT CREEK ON US-301
SHEET OF

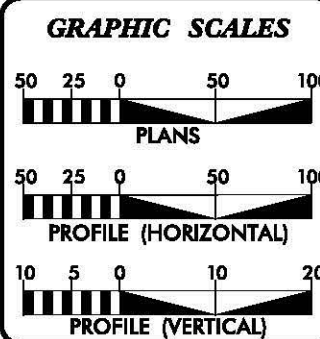


CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-5124

CONTRACT:



DESIGN DATA

| | |
|-----------------------|----------------|
| ADT 2015 = | 8,800 |
| ADT 2035 = | 11,200 |
| K = | 10 % |
| D = | 60 % |
| T = | 7 % * |
| V = | 60 MPH |
| *(TTST = 3% DUALS 4%) | |
| FUNC CLASS = | MINOR ARTERIAL |
| | STATEWIDE TIER |

PROJECT LENGTH

| | |
|---------------------------------------|-------------|
| LENGTH ROADWAY TIP PROJECT B-5124 = | 1.223 MILES |
| LENGTH STRUCTURE TIP PROJECT B-5124 = | 0.091 MILES |
| TOTAL LENGTH OF TIP PROJECT B-5124 = | 1.314 MILES |

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2014

LETTING DATE:
APRIL 21, 2015

GARY LOVERING, PE
PROJECT ENGINEER

CHRISTOPHER H. LEE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.



4/2/2014 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS_Environmental\Drawings\B5124_hyd_prm_buffer_1sh.dgn

BUFFER IMPACTS IMPACTS

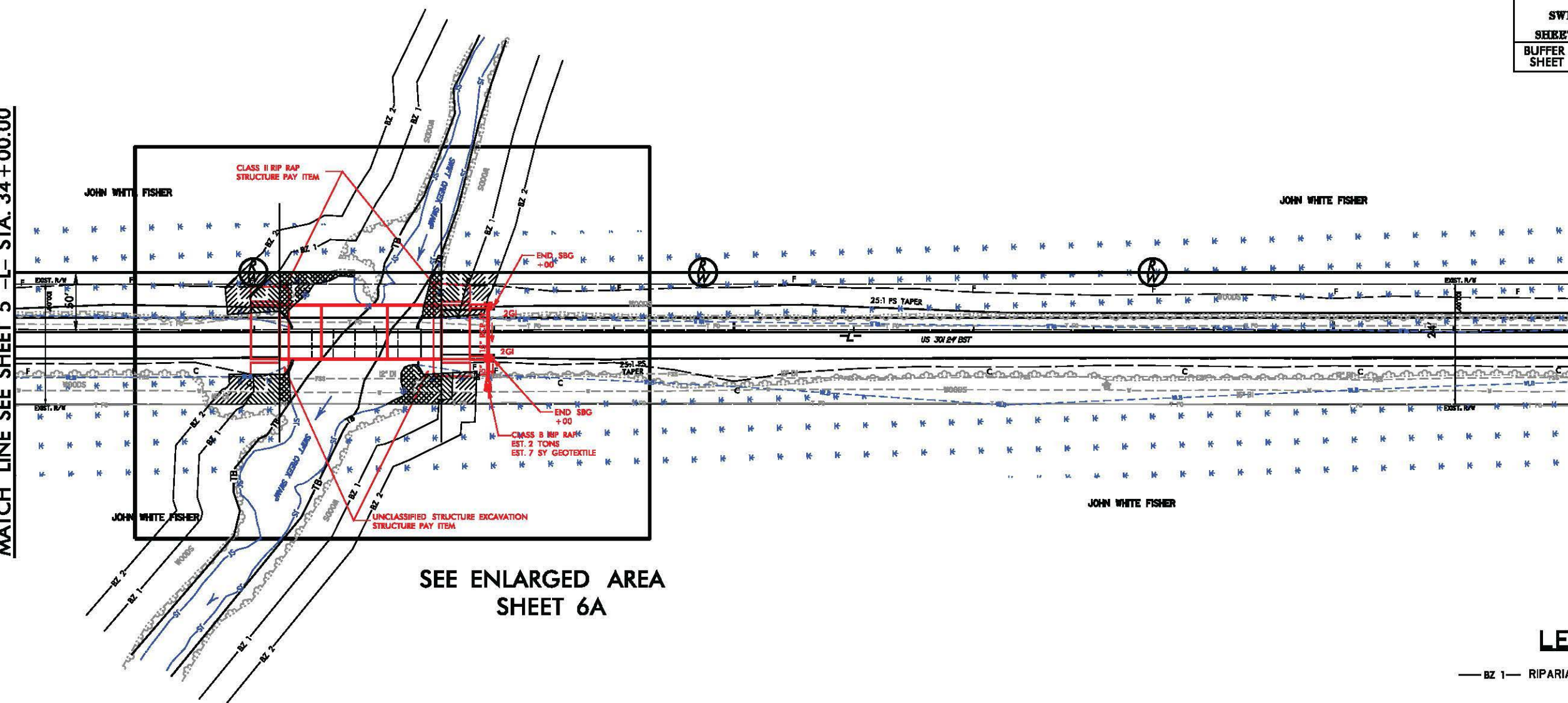


| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6 |
| RW SHEET NO. ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF BUFFER DRAWING SHEET 38 OF 51 | |



MATCH LINE SEE SHEET 5 -L- STA. 34+00.00

MATCH LINE SEE SHEET 7 -L- STA. 47+00.00



SEE ENLARGED AREA
SHEET 6A

**PLAN VIEW
SITE 1**

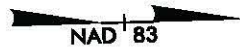
LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)

B/17/99

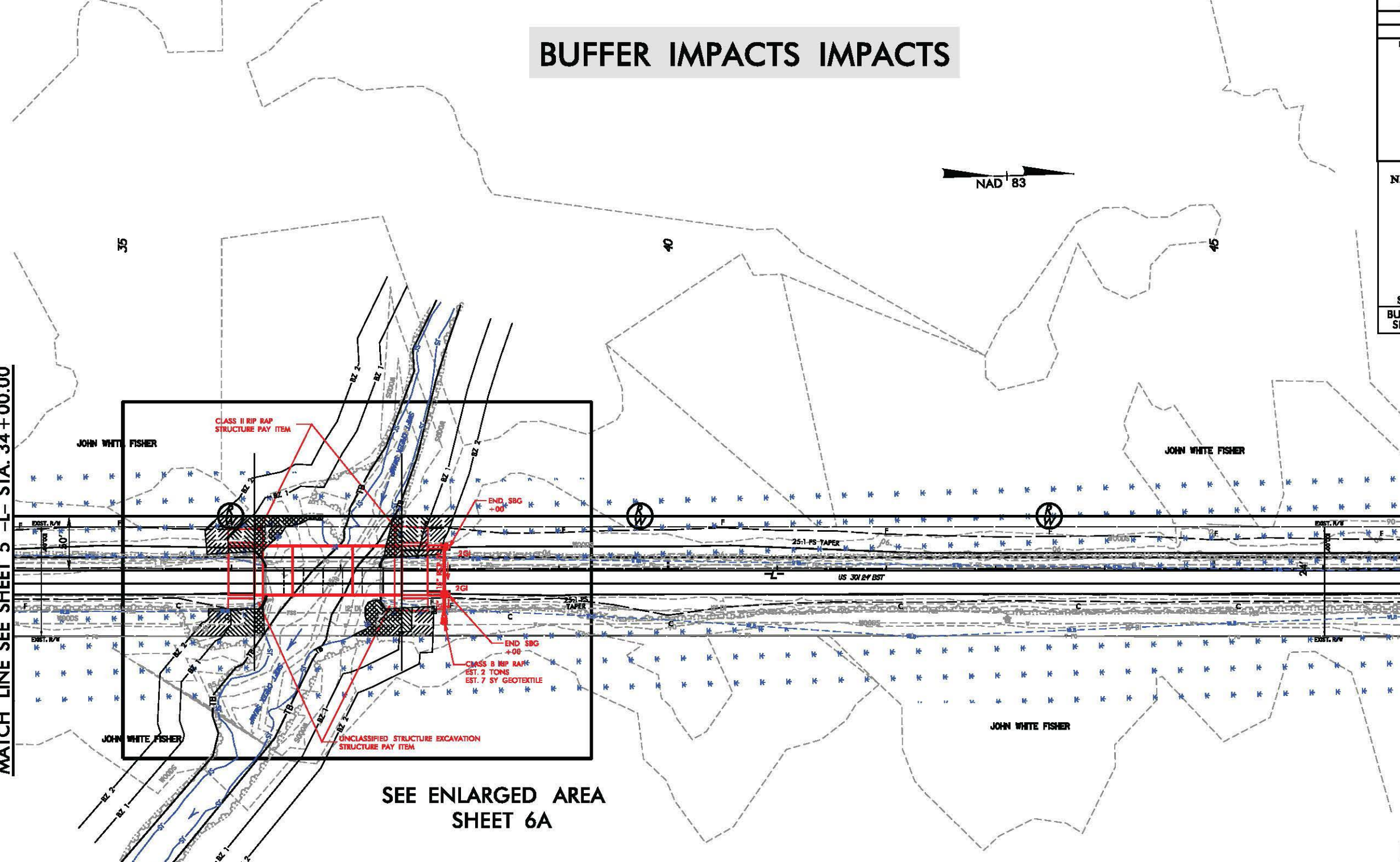
BUFFER IMPACTS IMPACTS

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 40 OF 51 | |



MATCH LINE SEE SHEET 5 -L- STA. 34+00.00

MATCH LINE SEE SHEET 7 -L- STA. 47+00.00



SEE ENLARGED AREA
SHEET 6A

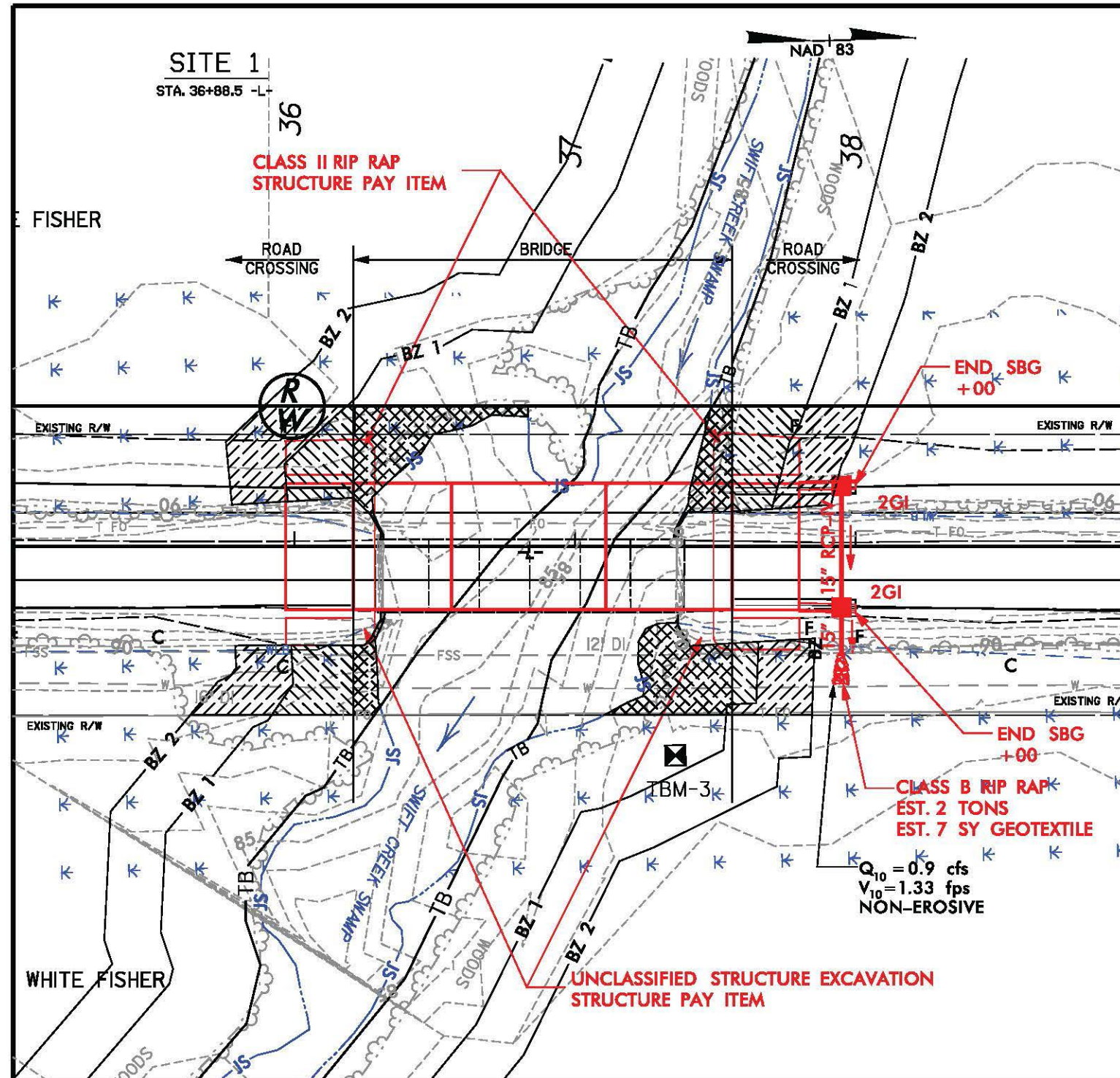
PLAN VIEW
SITE 1

LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)

BUFFER IMPACTS IMPACTS

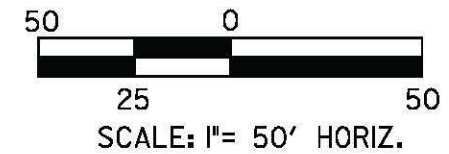
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|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 6A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 41 OF 51 | |



LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)

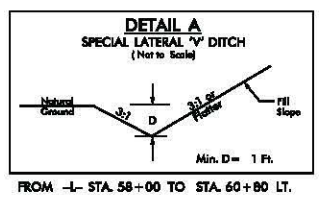
ENLARGED
PLAN VIEW
SITE 1



BUFFER IMPACTS IMPACTS

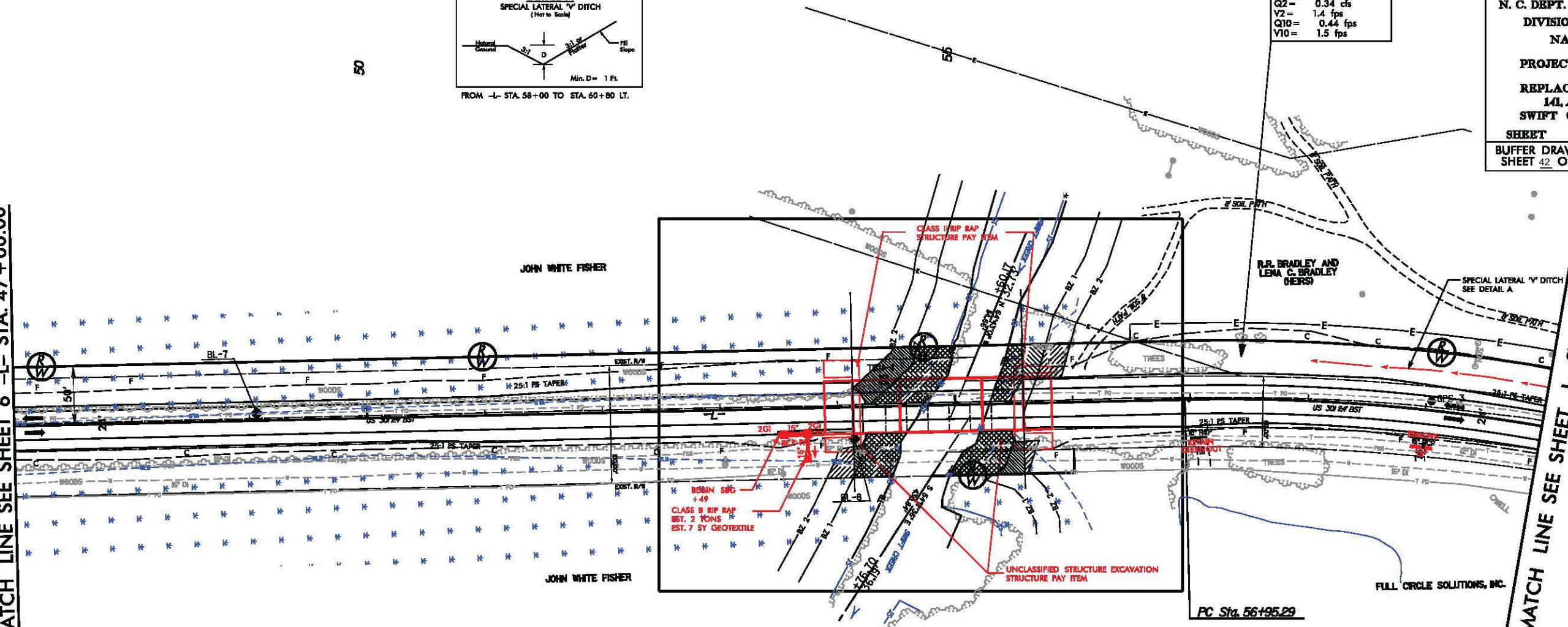
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|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF BUFFER DRAWING SHEET 42 OF 51 | |

| GRASS SWALE DATA | |
|------------------|-----------|
| DA = | 0.26 AC |
| SLOPE = | 0.023 |
| SIDE SLOPE = | 3:1 & 4:1 |
| L REQ. = | 26' |
| L PRO. = | 430' |
| Q2 = | 0.34 cfs |
| V2 = | 1.4 fps |
| Q10 = | 0.44 cfs |
| V10 = | 1.5 fps |



MATCH LINE SEE SHEET 6 -L- STA. 47+00.00

MATCH LINE SEE SHEET -L- STA. 60+00.00



SEE ENLARGED AREA
SHEET 7A

PLAN VIEW
SITE 2

LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)

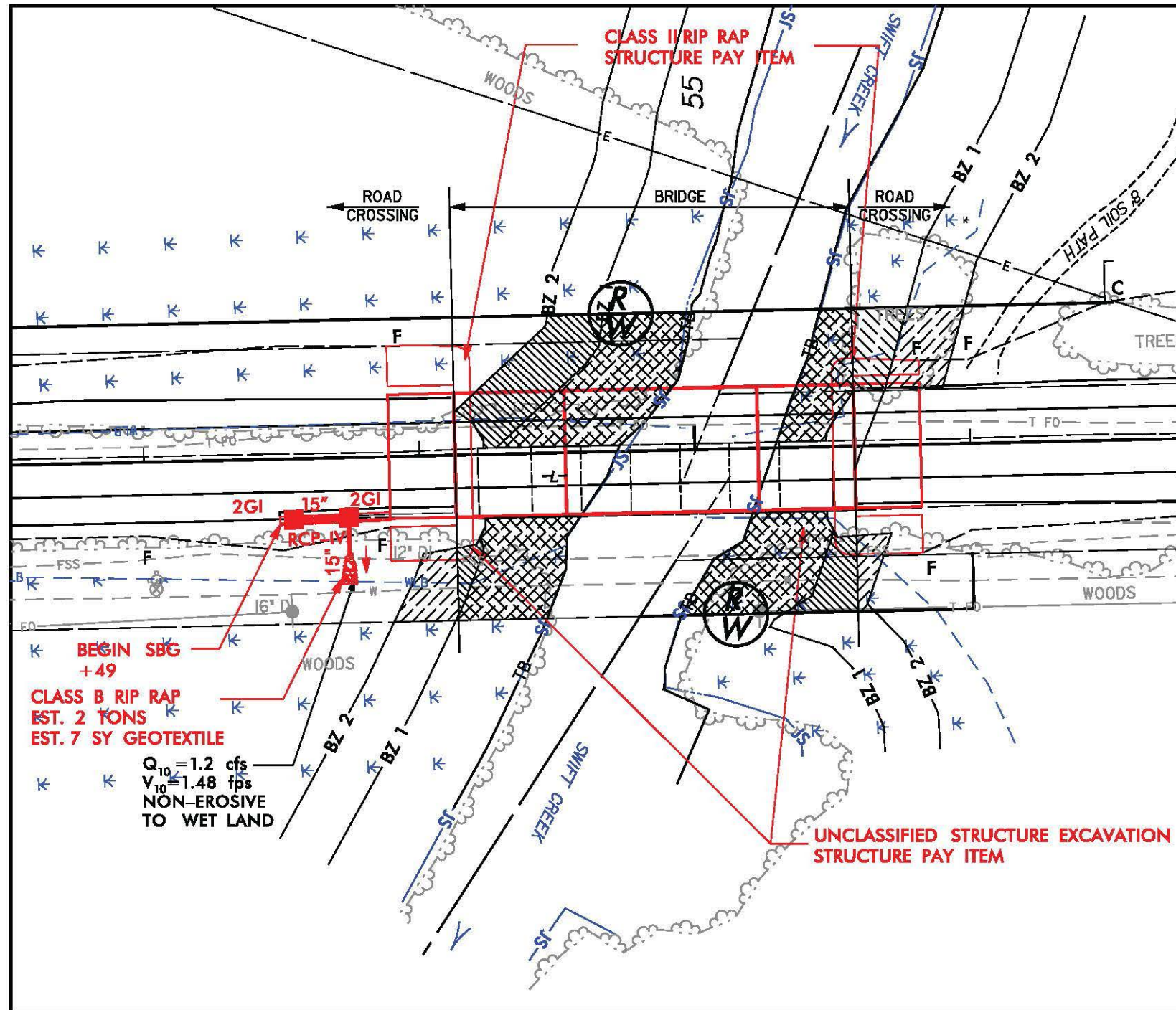
REVISIONS
RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA 58+50 TO 63+65 LT. hcn

4/2/2014
ICA ENGINEERING, INC.
C:\Hydraulics\PRELIMS_Environmentals\Drawings\B0124_hyd_perm_buifly_sht7.dgn

B/17/99

BUFFER IMPACTS IMPACTS

| | |
|--|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> </div> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY PROJECT: 42270.11 (B-5124) REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF BUFFER DRAWING SHEET 43 OF 51 | |

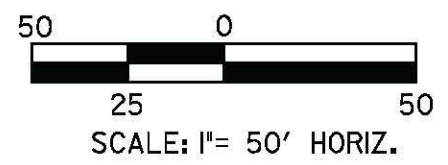


BEGIN SBG
+49
CLASS B RIP RAP
EST. 2 TONS
EST. 7 SY GEOTEXTILE
 $Q_{10} = 1.2 \text{ cfs}$
 $V_{10} = 1.48 \text{ fps}$
NON-EROSIVE
TO WET LAND

UNCLASSIFIED STRUCTURE EXCAVATION
STRUCTURE PAY ITEM

LEGEND

- BZ 1— RIPARIAN BUFFER ZONE 1 (30')
- BZ 2— RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)



**ENLARGED
PLAN VIEW
SITE 2**

REVISIONS
 RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM STA 58+50 TO 63+65 LT. HCN

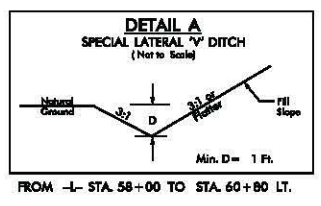
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B/17/99

BUFFER IMPACTS IMPACTS

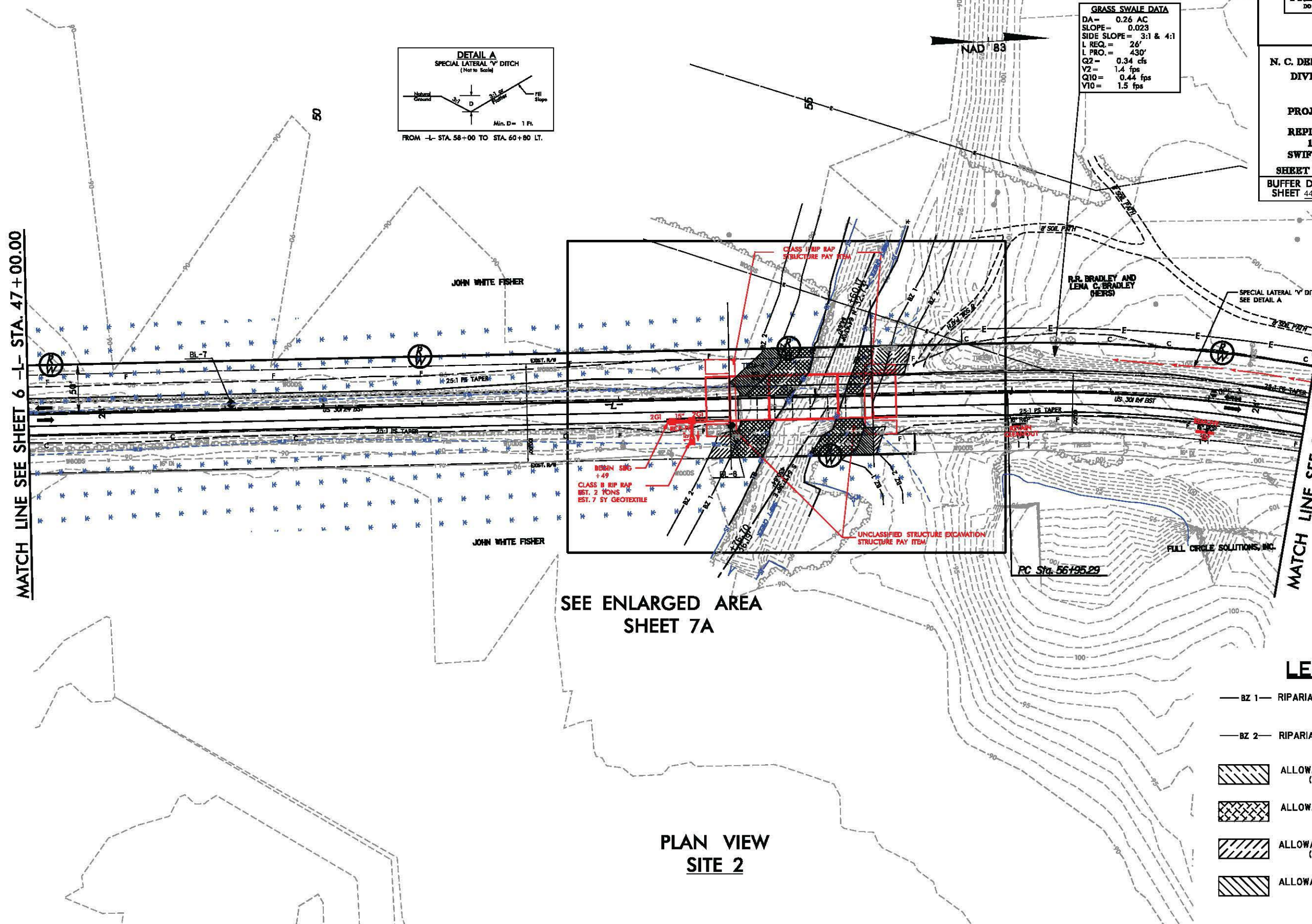
| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF BUFFER DRAWING SHEET 44 OF 51 | |

| GRASS SWALE DATA | |
|------------------|-----------|
| DA = | 0.26 AC |
| SLOPE = | 0.023 |
| SIDE SLOPE = | 3:1 & 4:1 |
| L REQ. = | 26' |
| L PRO. = | 430' |
| Q2 = | 0.34 cfs |
| V2 = | 1.4 fps |
| Q10 = | 0.44 fps |
| V10 = | 1.5 fps |



MATCH LINE SEE SHEET 6 -L- STA. 47+00.00

MATCH LINE SEE SHEET -L- STA. 60+00.00



SEE ENLARGED AREA
SHEET 7A

PLAN VIEW
SITE 2

LEGEND

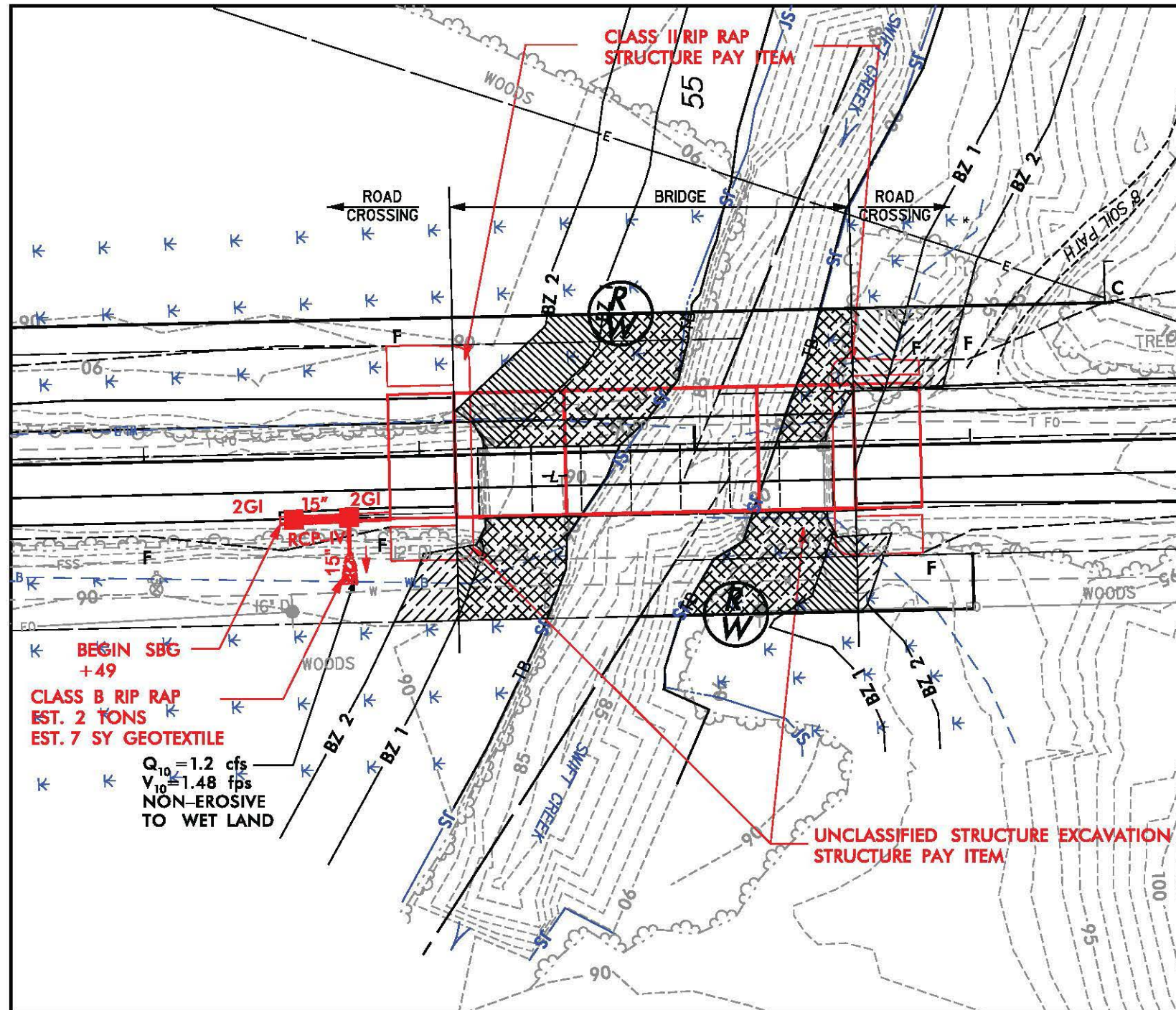
- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)

REVISIONS
RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM -L- STA 58+50 TO 63+65 LT. (see 8/17/99)

4/2/2014
ICA ENGINEERING, INC.
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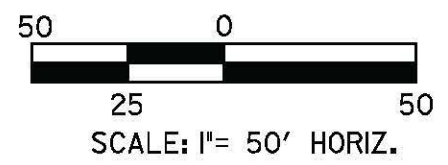
BUFFER IMPACTS IMPACTS

| | |
|---|---------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 7A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 45 OF 51 | |



LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 1 (BRIDGE)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (BRIDGE)



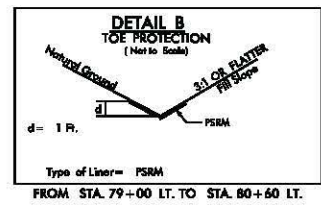
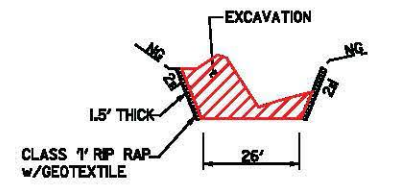
ENLARGED
PLAN VIEW
SITE 2

REVISIONS
 RW REVISION (APRIL 1, 2014): CONSTRUCTION EASEMENT ADDED TO PARCEL 2 FROM STA 58+50 TO 63+65 LT. HCN

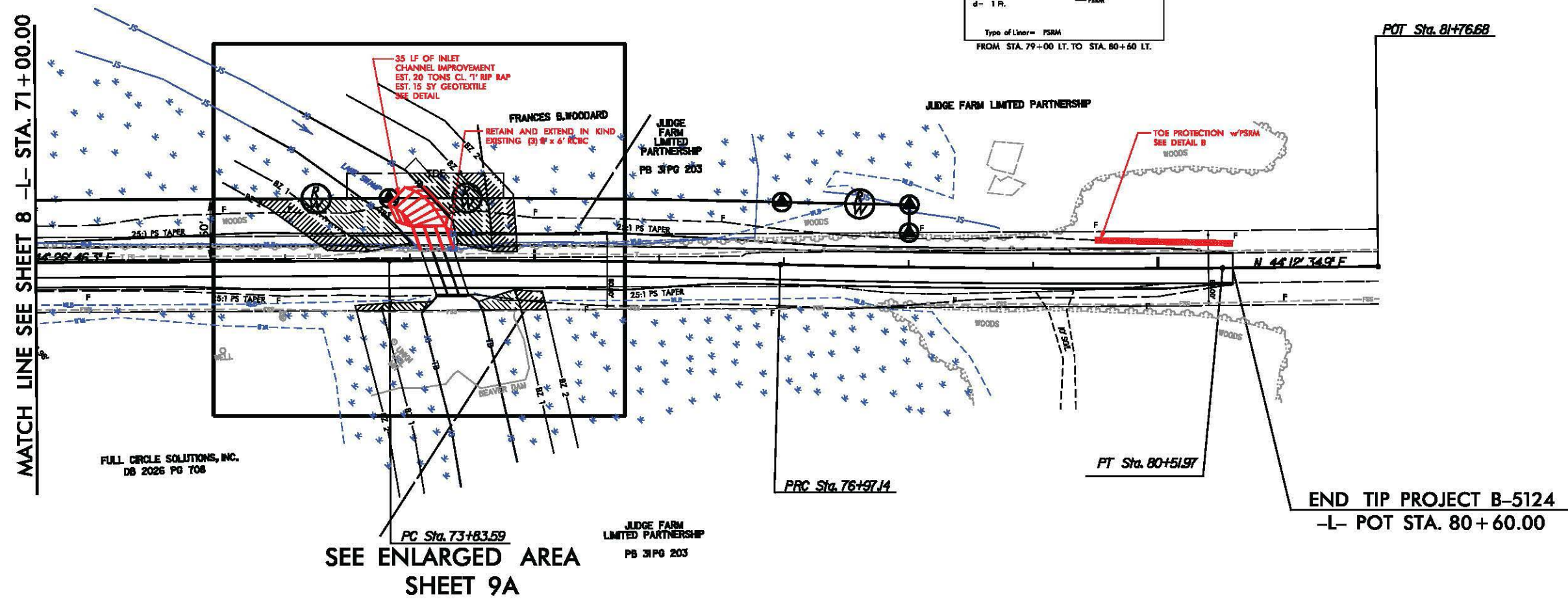
4/2/2014
 ICA ENGINEERING, INC.
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| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 46 OF 51 | |

BUFFER IMPACTS



MATCH LINE SEE SHEET 8 -L- STA. 71+00.00



SEE ENLARGED AREA
SHEET 9A

LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)

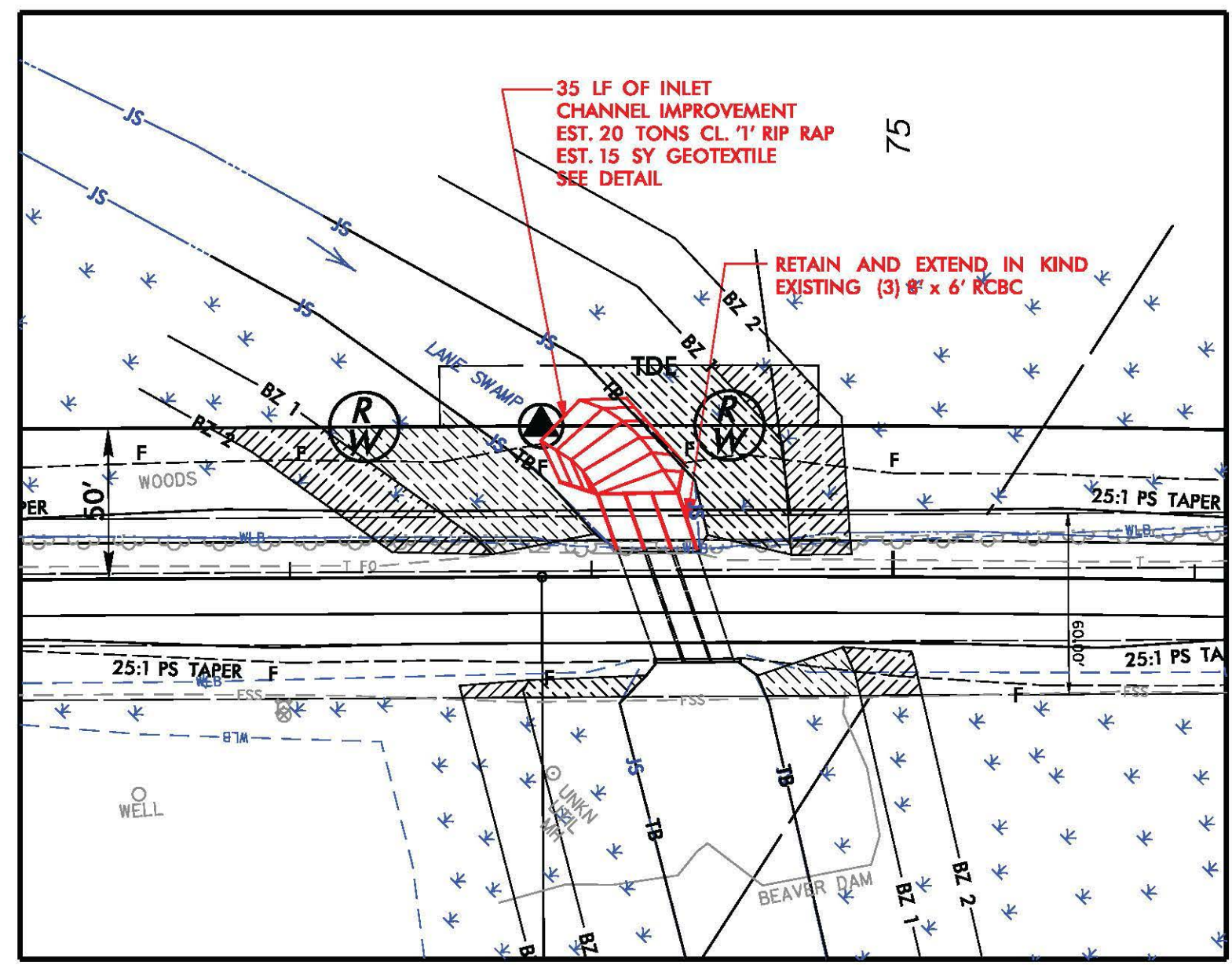
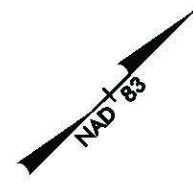
PLAN VIEW
SITE 3

REVISIONS

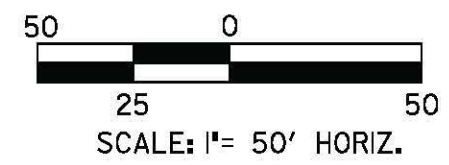
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B-17/99

BUFFER IMPACTS IMPACTS



**ENLARGED
PLAN VIEW
SITE 3**



| | |
|---|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9A |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 47 OF 51 | |



LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)

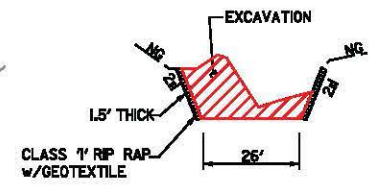
REVISIONS

4/2/2014
ICA ENGINEERING, INC.
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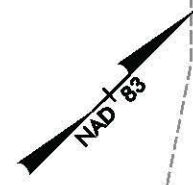
B/17/99

| | |
|---|-----------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF | |
| BUFFER DRAWING SHEET 48 OF 51 | |

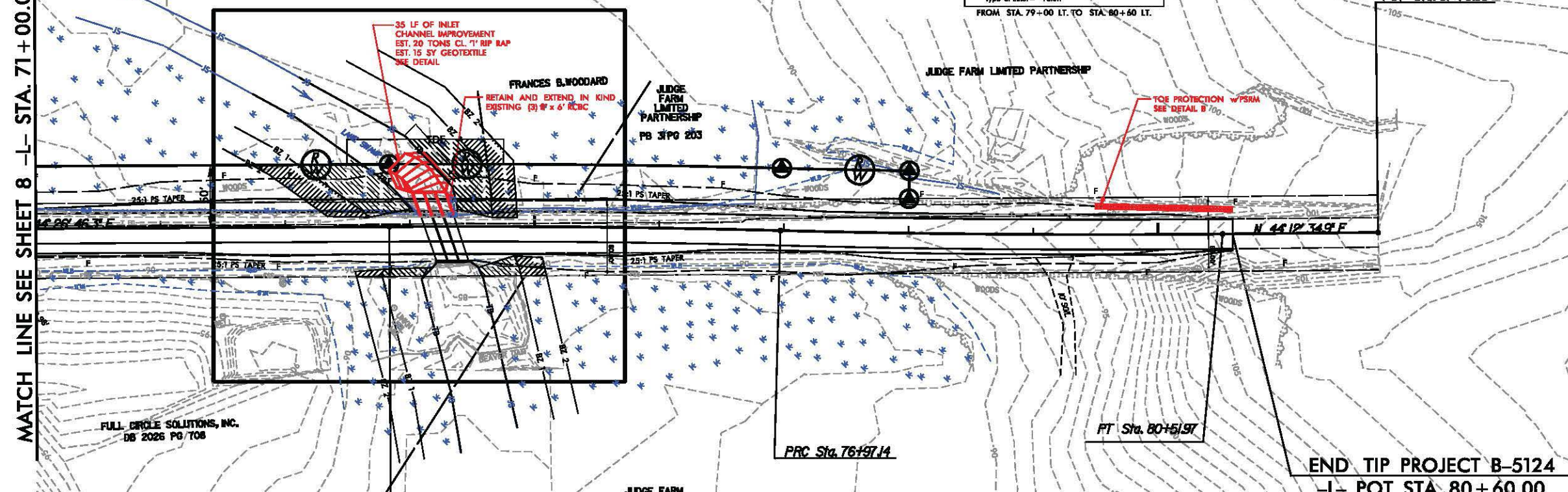
BUFFER IMPACTS



CULVERT 161 INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



MATCH LINE SEE SHEET 8 -L- STA. 71+00.00



SEE ENLARGED AREA
SHEET 9A

PLAN VIEW
SITE 3

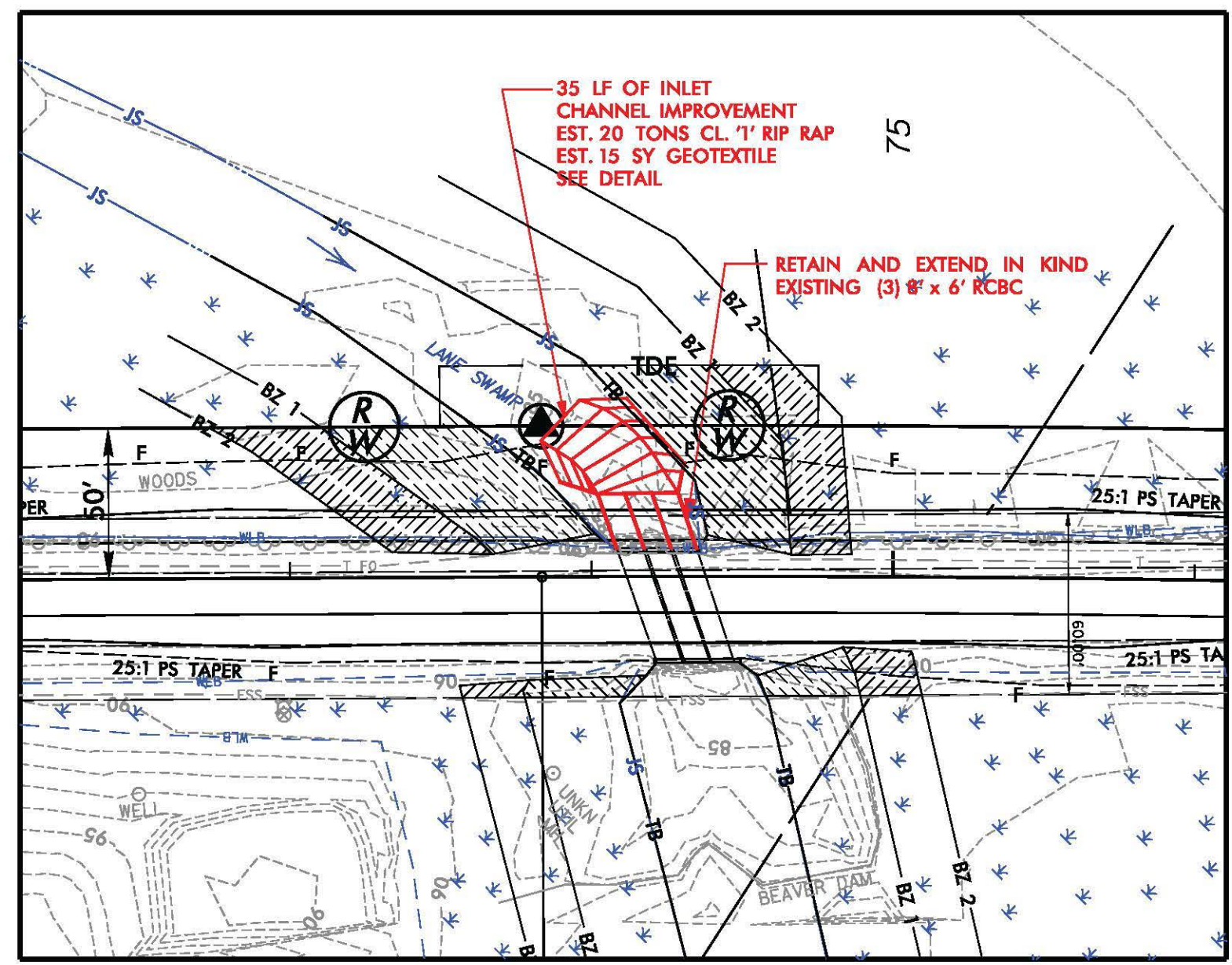
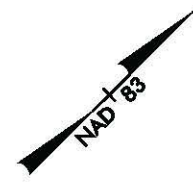
LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)

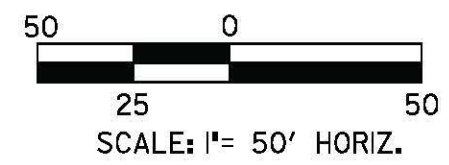
REVISIONS

BUFFER IMPACTS IMPACTS

| | |
|--|------------------------|
| PROJECT REFERENCE NO. B-5124 | SHEET NO. 9A |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small> | |
| N. C. DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS NASH COUNTY | |
| PROJECT: 42270.11 (B-5124) | |
| REPLACE BRIDGES NO. 86, 141, AND 151 OVER SWIFT CREEK ON US-401 | |
| SHEET OF BUFFER DRAWING SHEET 49 OF 51 | |



**ENLARGED
PLAN VIEW
SITE 3**



LEGEND

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- ALLOWABLE IMPACTS ZONE 1 (ROAD CROSSING)
- ALLOWABLE IMPACTS ZONE 2 (ROAD CROSSING)

REVISIONS

4/2/2014
 ICA ENGINEERING, INC.
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B-17/99

