Project Submittal Interim Form

Updated September 4, 2020

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Project Type: *

- ○ For the Record Only (Courtesy Copy)
- ○ New Project
- ◉ Modification/New Project with Existing ID
- ○ More Information Response
- ○ Other Agency Comments
- ○ Pre-Application Submittal
- ○ Re-Issuance\Renewal Request
- ○ Stream or Buffer Appeal

Pre-Filing Meeting Information

Before submitting this form please ensure you have submitted the Pre-Filing Meeting Request Form as we will not be able to accept your application without this important first step. The Pre-Filing Meeting Request Form is used in accordance with 40 C.F.R. Section 121.4(a) “At least 30 days prior to submitting a certification request, the project proponent shall request a pre-filing meeting with the certifying agency” and in accordance with 40 C.F.R. Section 121.5(b)(7), and (c)(5) all certification requests shall include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request. Click **here** to read more information on when this form is needed prior to application submission or **here** to view the form.

Attach documentation of Pre-Filing Meeting Request here: * I-5986A 4… 165.…

Date for Meeting Request * 5/13/2020

ID# 20190214 **Version** 2

Project Contact Information

Name: Deanna Riffey
Who is submitting the information?

Email Address: * driffey@ncdot.gov

Project Information

Existing ID #: *
20190214
20170001 (no dashes)

Existing Version: *
2
1

Project Name: * Widening of I-95 to Eight lanes from South of SR 1832 (Murphy Road – Exit 56) to South of SR 1811 (Bud Hawkins Road – Exit 70)

Is this a public transportation project? *
- (●) Yes
- ( ) No

Is this a DOT project? *
- (●) Yes
- ( ) No

Is the project located within a NC DCM Area of Environmental Concern (AEC)? *
( ) Yes (●) No ( ) Unknown

TIP#:
I-5986A

WBS#:
47532.3.2
(Applies to DOT projects only)

County (ies) *
Cumberland

Please upload all files that need to be submited.
Click the upload button or drag and drop files here to attach document
I-5986A Individual Modification October 19 2021 … 12.85MB
Only pdf or kmz files are accepted.

Describe the attachments or add comments:
Permit modification request (cover letter, DMS acceptance, revised permit drawings)

* [x] By checking the box and signing box below, I certify that:

- I, the project proponent, hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.
- I, the project proponent, hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I agree that submission of this online form is a “transaction” subject to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the online form.

Signature: *

Mack C Riverbank, III

Submittal Date: 10/19/2021

Is filled in automatically once submitted.

I-5986A 4C Interagency Concurrence Point Meeting Minutes

Date: May 13, 2020
Meeting Minutes: May 27, 2020
Location: Virtual conference held via GoTo Meeting: https://global.gotomeeting.com/join/850316941
Time: 8:00 AM
Attendees:

Liz Hair – USACE
Robert Patterson – NCDWR
Paul Atkinson – NCDOT Hydraulics
Chris Rivenbark – NCDOT EAU
Wes Cartner – NCDOT EAU
Michael Penney – NCDOT DBU
Kristy Alford – NCDOT SMU
Rusty Marsh – NCDOT Div. 6
Scott Pridgen – NCDOT Div. 6
Jason Salisbury – NCDOT Div. 6
Jay Twisdale – TGS Engineers
Andy Barry – ST Wooten
Tony Houser – RK&K
Brent Huskey – RK&K
Michael Wood – Three Oaks
Joanne Steenhuis – NCDWR
Loretta Barren – FHWA
Matthew York – NCDOT Hydraulics
Deanna Riffey – NDOT EAU
Mark Staley – NCDOT REU
Glen Mumford – NCDOT DBU
Mike Sanderson – NCDOT EPU
Jim Rerko – NCDOT Div. 6
Greg Price – NCDOT Div. 6
Donna Jackson – NCDOT Alternative Delivery
Jonathan Bivens – ST Wooten
Mike Merritt – RK&K
Matthew Cook – RK&K
Alexis Burke – RK&K
Nancy Oberle – Three Oaks

An interagency concurrence point meeting was held in order to reach agreement on concurrence point 4C for the I-5986A I-95 widening project in Cumberland County. The following items were discussed and conclusions reached:

Matthew Cook introduced the DB Team for the project. The project is broken up in to three design segments, 1, 2, and 3. This is a design build (DB) project that was awarded August 2019 to the team of ST Wooten (contractor) and RK&K (prime engineer). The project is approximately 15.4 miles from north of the NC 24 / I-95 interchange to south of the Harnett / Cumberland County line. He stated that the DB Team was also awarded I-5877, however the team was given fully designed signed and sealed plans with a permit. This 4C meeting is only to discuss I-5986A, not I-5877. The right of way roadway plans for the project have been accepted by NCDOT as well as the hydraulics design.

This project currently has an approved corridor permit. The DB Team will be submitting a permit modification request in the near future.

Mr. Cook stated that the DB Team has requested additional jurisdictional feature coverage for the area around the Murphy Road interchange and asked about the status of that information. Greg Price stated that the information was still being worked on by NCDOT and will be provided at a later date.

Mr. Cook stated that the impact summary table had been revised since it was submitted to the agencies two weeks prior to the 4C meeting. Most of the permit impact sites now have a single line in the table showing the associated impacts. This was done to streamline the impacts and provide a consistent table. Deanna Riffey asked that every jurisdictional feature have its own permit site number and line in the table. Joanna Steenhuis and Liz Hair said they preferred it as it was now shown. The impacts are also shown to the thousandths decimal position which the Merger Team agreed was preferred.

The group then began reviewing the permit drawings.

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- **Site 1:** Stream DC. Impacts due to proposed pipe outfall.

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- **Site 2:** Stream SV-1, SV-2; wetland WCB. Impacts due to proposed 66" WS pipe (inlet end) and 66" RCP (outlet end). The existing RCBC will be retained, and the new pipe will be used as an overflow pipe (not buried). Impacts at the ends of welded steel pipes installed by bore and jack methods throughout the project (as this one will be) used a standard 50' x 30' bore pit area to determine impacts. This area was used on both the bore end and receiving end. This is because the contractor is unsure at this time which end will be the best for the boring end. Jim Rerko asked that the temporarily impacted bore pit locations be restored to natural conditions when construction is complete.
- **Site 3:** Reese Creek-1; wetland WA. Impacts due to existing pipe cleanout. See additional notes for permit drawing 16.

Permit drawing 16 of 163

- **Site 3:** Reese Creek-2; wetland WA. Impacts due to 18" RCP and roadway fill.
  This location was listed in the contract documents as an area that the DB Team should analyze more closely and offer construction alternatives to NCDOT following award of the project. The DB Team has provided NCDOT with three options:
  - Replace the RCBC under I-95 with a bridge for ultimate buildout for future lanes along with replacing the downstream RCBC under Murphy Rd. with a bridge.
  - Replace the RCBC under I-95 with a bridge for current proposed construction along with replacing the downstream RCBC under Murphy Rd. with a bridge.
  - Replace the RCBC under I-95 with an RCBC along with replacing the downstream RCBC under Murphy Rd. with a bridge.

  NCDOT agreed with the DB Team assessment that a bridge on I-95 with a bridge at Murphy Rd. is the best option. The supplemental for this work is currently under review by NCDOT. The DB Team will show impacts that are required given the most current roadway plans at the time the permit modification will be submitted. If decisions by NCDOT necessitate the plans to change, a permit modification for this area will be submitted.
- **Site 4:** Stream SA; wetlands WA, WC. Impacts due to proposed 30" WS pipe. This pipe will not be buried since the jurisdictional stream does not continue downstream of the pipe.
- **Site 5:** Wetland WB: Impacts due to proposed 66" WS pipe. Ms. Steenhuis asked if impacts due to the control access fence will be included. Chris Rivenbark said that those impacts are generally not included since they are minor in nature and only minimal clearing would occur for them. Jonathan Bivens said that the equipment used to install the fence generally did not create a large disturbance.
- **Site 6:** Wetlands WB, WD. Impacts due to proposed 36" WS pipe.

Permit drawing 20 of 163

- **Site 7:** Wetland WH. Impacts due to proposed roadway fill. This will be a total take.
- **Site 8:** Wetland WE: Stream impacts due to proposed 2 @ 36" RCP. Wetland impacts due to proposed roadway fill and ditch. This will be a total take.

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- **Site 7 (continued):** Wetland WH. Impacts due to proposed roadway fill. This will be a total take.
- **Site 9:** Stream SB; wetland WF: Impacts due to proposed roadway fill and ditch. This will be a total take.

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- **Site 10:** Wetland WI. Impacts due to proposed roadway fill. This will be a total take.

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- **Site 11:** Wetland WJ. Impacts due to proposed roadway fill. This will be a total take. The slope stakes have been revised since the production of the 4C drawings. Wetland WK will no longer be impacted.
- **Site 12:** Wetland WL. Impacts due to proposed roadway fill and ditches. Michael Penney stated that NCDOT is currently reviewing this location and several other locations for the possibility of including shoulder berm gutter and

its associated drainage. The DB Team has not been given the notice to proceed with this option. The drawings will be updated accordingly if necessary following NCDOT's decision.

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- **Site 11 (continued):** Wetland WJ. Impacts due to proposed roadway fill. This will be a total take.

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- **Site 13:** Wetland WR. Impacts due to proposed roadway fill.
- **Site 14:** Wetland WR. Impacts due to proposed roadway fill and ditch.
- **Site 15:** Wetland WO. Impacts due to proposed roadway fill and 54" WS pipe. The 54" WS pipe will be installed 1' higher than the invert of the existing 42" RCP at this location to serve as an overflow pipe. Stream Baker Swamp-2 is impacted by a 66" RCP (not buried), at this site as well but is reflected on drawing 43.
- **Site 16:** Stream Baker Swamp-1; wetland WN. Impacts due to proposed 54" WS pipe. The 54" WS pipe will be installed 1' higher than the invert of the existing 42" RCP at this location to serve as an overflow pipe.

A general conversation was held at this point in the meeting regarding geotextile fabric under riprap. It was decided by the NCDOT Division and Merger Team that fabric would not be used under riprap in jurisdictional streams, including the banks and stream bottom. It will continue to be used in non-jurisdictional channels and for bank stabilization. Paul Atkinson noted that the approved Culvert Survey Reports did not need to be revised based on this comment, only the plans.

Also discussed was how to call out impacts due to riprap in jurisdictional channels. If riprap is used in the base of a channel as a stabilization measure, and the channel has not been realigned, the length of the riprap pad will be called out as "Structure Stabilization" on the impact summary. If riprap is on the banks only, and the channel has not been realigned, it will be called out as "Bank Stabilization" on the impact summary. Neither "Structure Stabilization" or "Bank Stabilization" will require mitigation.

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- **Site 15:** See notes from drawing 36.
- **Site 17:** Wetland WQ: Impacts due to proposed roadway fill and ditch.
- **Site 18:** Stream Baker Swamp-3; wetland WP: Impacts due to proposed roadway fill, 60" RCP (not buried), and 66" RCP (not buried). The 60" RCP Is not buried since it is part of a median system and is not jurisdictional upstream. The 66" RCP will not be buried since the short jurisdictional stream section downstream will be completely impacted by a riprap pad, and the upstream section is located completely inside an interchange gore area.
- **Site 19:** Wetland WCG. Impacts due to proposed roadway fill. A 36" RCP equalizer will be used at this location. This wetland will be considered a total take on the impact summary. However, the wetland will not be hatched outside of the interchange along -Y5LPD- LT. A note on the impact summary will state what is actually impacted by the project.
- **Site 20:** Wetland WX. Impacts due to proposed roadway fill.
- **Site 21:** Wetland WV. Impacts due to proposed roadway fill.
- **Site 22:** Wetland WW. Impacts due to proposed roadway fill. The remaining non-impacted wetland area inside -Y5LPD- will be considered impacted on the impact summary, however it will not be hatched. A note on the impact summary will state what is actually impacted by the project.

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- **Site 23:** See notes from drawing 54.

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- **Site 23:** Stream SC-1, SC-2. Impacts due to proposed 2 @ 8'x8' RCBC and channel ties. The RCBC is buried 1.0' with a 1' sill in the right cell.

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- **Site 24:** Stream SD-1, SD-2; wetlands WY and WZ. Impacts due to proposed 3 @ 10'x8' RCBC, channel ties, and ditches. The RCBC is buried 1.0'. The impacts have been revised since the production of the 4C drawings to exhibit excavation where the new RCBC channel ties through the wetlands. The permanent stream impact overall length is based on a perpendicular length to the roadway alignment from the ends of the existing RCBC to the new channel

ties. Mike Wood stated that during their field research the stream boundaries along this site should more accurately be classified as wetlands. Ms. Hair and Ms. Steenhuis agreed that Three Oaks could reevaluate this site to better represent the channel in the RCBC area and wetlands beyond the channel. The GPS coordinates for the wetlands will be provided to RK&K to determine the jurisdictional impacts.

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- **Site 25:** Stream SE-1, SE-2; wetland WAB. Impacts due to proposed 10'x7' RCBC, channel ties, and ditch. The RCBC is buried 1.0' with a 1' sill 5' in length. The fill in wetland impact under the RCBC channel will be changed to excavation. A note for the sill will be added to the pipe profile on drawing 62.
- **Site 27:** Wetland WAF. Impacts due to roadway fill. This is a total take.

From this point forward, Brent Huskey led the discussion on each plan sheet.

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- **Site 26:** Wetland WAC. Impacts due proposed roadway fill, 15" RCP and 30" RCP.
- **Site 27:** Wetland WAF. Impacts due to roadway fill. This is a total take.

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- **Site 27 (continued):** Wetland WAF. Impacts due to roadway fill. This is a total take.
- **Site 28:** Wetland WAG. Impacts due to roadway fill and proposed 30" RCP outlet.

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- **Site 29:** Wetland WAH: Impacts due to proposed 2 @ 48" RCPs and ditch. Mr. Huskey explained that the Team tried to minimize the amount of ditch required through the wetland as much as possible by designing it extremely flat while still providing positive flow. Further downstream from the 2 @ 48" RCPs, an existing overgrown pipe will be replaced with a 48" RCP. After field research the DB Team determined that this is the largest pipe that can physically fit in the channel. The impacts will be due to the installation of the pipe. There will be no impacts to wetlands where the existing pipe currently lays; impacts will be temporary wetland impacts beyond the ends to the existing pipe.
- **Site 57:** Wetland WAG. Impacts due to pipe plug construction. **This site will be renumbered to Site 48.**

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- **Site 30:** Stream SF; wetlands WAI and WAK. Impacts due to proposed 12'x6' RCBC, channel ties, and ditches. The RCBC is not buried since the crossing is not jurisdictional east of I-95. The impacts have been revised since the production of the 4C drawings to exhibit excavation where the new RCBC channel ties through the wetlands. Robert Patterson pointed out that the median trunkline ran through several sheets and asked if it could possibly outlet to the outside earlier. Mr. Huskey said that they tried to do so, but the elevations of the system required extending it to the RCBC at -L- 423+50.

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- **Site 30 (continued):** Wetlands WAI and WAK. Impacts due to roadway fill.

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- **Site 31:** Wetland WAM. Impacts due to roadway fill.

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- **Site 32:** Wetland WAN. Impacts due to roadway fill and ditch. The impacts have been revised since production of the 4C drawings due to the ability to tighten up the slope stakes. The pipe profile (drawing 90) and label on the plan view will note that the RCBC is buried 1.0'.

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- **Site 33:** Stream SG-1, SG-2, SG-3; wetlands WAP and WAQ. Impacts due to proposed 8'x8' RCBC, channel ties, and ditch. The RCBC is buried 1.0'. The temporary impacts along the service road near the existing 2 @ 66" RCPs have been extended due to construction of the pipe plugs.

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- **Site 34:** Stream SH-1, SH-2; wetland WAS. Impacts due to proposed 10'x7' RCBC and channel ties. The RCBC is buried 1.0'.

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- **Site 35:** Wetland WAT. Impacts due to proposed roadway fill and ditch.

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- **Site 35 (continued):** Wetland WAT. Impacts due to proposed roadway fill.

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- **Site 37:** Stream SI-1, SI-2; wetlands WAV and WAW. Impacts due to proposed 72" RCP, buried 1.0', proposed roadway fill and ditches. Mr. Cook asked if the same structural stabilization call-outs should be used on the inlet end of crossings like this one. It is a large 72" headwall. Ms. Hair said the inlet end should not use the structural stabilization call-out.

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- **Site 38:** Wetland WAX. Impacts due to ditch.

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- **Site 39:** Stream SJ-1, SJ-2. Impacts due to proposed 7'x7' RCBC and channel ties. The RCBC is buried 1.0'.

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- **Site 40:** Wetland WAY. Impacts due to 2 @ 30" RCPs (not buried).
- **Site 41:** Wetland WAZ. Impacts due to ditch.

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- **Site 42:** Stream Black River; wetland WAZ. Impacts due to proposed bridge, roadway fill, and 15" RCP outlet. A permanent surface water linear impact will be included where the fill slope extends into the water. The bridge pier square footage impacts will be listed as a note on the impact summary sheet. Mr. Wood stated that during their field research the stream boundaries along this site should more accurately be classified as wetlands. Ms. Hair asked if there was standing water in those areas. Mr. Wood said they were wooded. Ms. Hair and Ms. Steenhuis agreed that Three Oaks could reevaluate this site to better represent the channel in the RCBC area and wetlands beyond the channel. The GPS coordinates for the wetlands will be provided to RK&K to determine the jurisdictional impacts. An example is along -L- 676+50 RT. Jay Twisdale asked that the temporary causeway depiction on the bridge profile on drawing 118 be updated to show the causeway extending to the proposed piles.

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- **Site 42 (continued):** Wetland WAZ. Impacts due to proposed roadway fill.
- **Site 43:** Wetland WAZ. Impacts due to proposed roadway fill.

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- **Site 43 (continued):** Wetland WAZ. Impacts due to proposed roadway fill.
- **Site 44:** Wetland WAZ. Impacts due to proposed ditch.

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- **Site 45:** Wetland WBB: Impacts due to proposed roadway cut (cut is outside wetland, only mechanized clearing impact).

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- **Site 46:** Wetland WBC. Impacts due to proposed roadway fill and ditch tie to existing ditch running through the wetland.

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- **Site 47:** Stream SK-1, SK-2. Impacts due to proposed 72" RCP, buried 1.0'.

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- **Site 48:** Wetland WCK. These impacts will be removed. This site will be removed from the set.
- **Site 49:** Stream SY-2. Impacts due to extension of existing 2 @ 8'x8' RCBC on upstream (-Y5- LT) end.

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- **Site 50:** Wetland WCJ. Impacts due to proposed roadway fill, 15" CMP outlet.
- **Site 51:** Wetland WCI. Impacts due to proposed roadway fill, 15" CMP outlet.

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- **Site 51 (continued):** Wetland WCI. Impacts due to proposed roadway fill, ditch.
- **Site 52:** Wetland WT. Impacts due to proposed roadway fill.
- **Site 53:** Wetland WU. Impacts due proposed roadway fill, 24" WS pipe, and 24" RCP.

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- **Site 54:** Wetland WS: Impacts due to existing pipe cleanouts.

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- **Site 15 (continued):** Wetland WO. Impacts due to proposed roadway fill.
- **Site 16 (continued):** Wetland WN. Impacts due to roadway fill and ditch.
- **Site 55:** Wetland WCE. Impacts due to proposed roadway fill.
- **Site 56:** Wetland WCE. Impacts due to proposed roadway fill.

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- **Site 56:** Wetland WCE. Impacts due to proposed roadway fill.

After completing the review of the plans, Mr. Cook asked if anyone was interested in a field visit to see the sites and project. No one felt it necessary to review the project in person.

Ms. Riffey asked if there were any jurisdictional impacts due to utilities. Mr. Cook stated that they did not have any at this time. The design and coordination are still ongoing. Mr. Bivens stated that the Team is working together to ensure avoidance and minimization measures are being incorporated into the utility design to the maximum extent practicable. If any impacts are deemed required for construction, and if they are not incorporated prior to submittal of the permit modification for the agencies' approval, a separate permit modification request will be submitted at a later date.

The meeting adjourned.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

October 19, 2021

U.S. Army Corps of Engineers
Regulatory Field Office
69 Darlington Avenue
Wilmington, NC 28403

Attn: Liz Hair
Regulatory Project Manager

Subject: Modification Request for Section 404 Individual Permit, Section 401 Water Quality Certification and Neuse Riparian Buffer Authorization for the Widening of I-95 to Eight lanes from South of SR 1832 (Murphy Road – Exit 56) to South of SR 1811 (Bud Hawkins Road – Exit 70), in Cumberland County, STIP No. I-5986A. Debit $575 from WBS 47532.3.2.

References: USACE Section 404 Authorization SAW-2018-02276, Corps Modification #1, issued November 24, 2020
NCDWR Water Quality Certification Number 20190214 V2 and Neuse River Riparian Buffer Authorization, issued November 6, 2020

Dear Ms. Hair:

As you are aware, the North Carolina Department of Transportation (NCDOT) is constructing the Subject Project in accordance with referenced federal and state permits. As noted in the September 2, 2020, Permit Modification request and as referenced in the Permit Drawings Review Meeting (Merger 4C) on May 13, 2020, the final design for replacing the reinforced concrete box culvert (RCBC) conveying Reese Creek under I-95 and Murphy Road with bridges was not complete and would subsequently require a permit modification.

An approximate construction footprint and the associated jurisdictional impacts were included in the original application. However, as the bridge design has progressed, the center line alignment had to slightly increase to provide additional clearance, which resulted in changes in the surrounding alignments and more impacts than anticipated. In addition, the jurisdictional delineations were not complete along Murphy Road during the initial modification request submittal, resulting in impacts that were heretofore unknown (new impact Site 57). The impact types are detailed in the provided summary tables and the overall changes at each site are provided below. There are no changes in impacts due to utilities.

The right-of-way (ROW) was adjusted from the time of the original application that has resulted in surface water impacts to two ponds, PH and PI. There were no previous impacts to these ponds, so they have been incorporated into Site 30 and summarized below.

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

TELEPHONE: 919-707-6000
FAX: 919-250-4224
WEBSITE: NCDOT.GOV

LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC, 27610-4328

Site 1.

- 0.001 acre decrease in temporary surface water impacts

Site 2.

- 0.101 acre increase in permanent fill in wetlands.
- 0.001 acre decrease in temporary fill in wetlands
- 0.068 acre increase in mechanized clearing in wetlands
- 62 linear feet increase in permanent stream impacts
- 37 linear feet decrease in temporary stream impacts

Site 3.

- 0.071 acre increase in permanent fill in wetlands.
- 0.050 acre increase in temporary fill in wetlands
- 0.096 acre increase in mechanized clearing in wetlands
- 48 linear feet increase in temporary stream impacts

Site 4.

- 0.003 acre increase in permanent fill in wetlands.
- 0.002 acre decrease in temporary fill in wetlands
- 1 linear foot increase in temporary stream impacts

Site 30. These impacts are due to ROW adjustment

- 0.139 acre increase in permanent fill in surface waters (ponds)
- 0.104 acre increase in temporary fill in surface waters (ponds)

Site 57. This is a new impact site associated with the Reese Creek redesign.

- 0.226 acre in permanent fill in wetlands.
- 0.066 acre in temporary fill in wetlands
- 0.139 acre in mechanized clearing in wetlands
- 78 linear feet in temporary stream impacts

Summary of Impacts

The summary tables provided in the September 2, 2020, application package have been updated with the additional impacts below. Impact numbers that have changed are in bold. The surface water impacts to the ponds are included in the permit drawing impact tables only.

Revised Table 1. Summary of Water Resources Impacted

Section	Design Stage	Proposed LET	Total # of Wetlands Impacted**	Total # of Streams Impacted**	Buffer Rule Impact (Y/N)
I-5986B - Section 1 (I-5877)	Final	FY 2019	6	8	No
I-5986B - Section 2 (I-5878)	Preliminary*	FY 2021	3	4	No
I-5986B - Section 3 (I-5883)	Preliminary*	FY 2021	8	9	No
I-5986B - Section 4 (Johnston County)	Preliminary*	FY 2021	6	6	Yes
I-5986A (Cumberland County)	Final	FY 2019	51	16	No
		Totals:	**74**	43	

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Features may be impacted at more than one Permit Site

Revised Table 2. I-5986 Summary of Wetland Impacts

Section	Design Stage	Total Wetland Impact Area (ac)	Impacts Requiring Mitigation (ac)
I-5986B - Section 1 (I-5877)	Final	1.351	1.351
I-5986B - Section 2 (I-5878)	Preliminary*	1.811	1.811
I-5986B - Section 3 (I-5883)	Preliminary*	0.915	0.915
I-5986B - Section 4 (Johnston County)	Preliminary*	2.444	2.444
I-5986A (Cumberland County)	Final**	**13.138**	**13.138**
	Totals:	**19.659**	**19.659**

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Permanent impact total only (fill, excavation, and mechanized clearing)

Revised Table 3. I-5986 Summary of Stream Impacts

Section	Design Stage	Total Stream Impact (lf)	Impacts Requiring Mitigation (lf)
I-5986B - Section 1 (I-5877)	Final	1,465	1,208
I-5986B - Section 2 (I-5878)	Preliminary*	641	606
I-5986B - Section 3 (I-5883)	Preliminary*	1,539	1,433
I-5986B - Section 4 (Johnston County)	Preliminary*	923	859
I-5986A (Cumberland County)	Final**	**1,799**	**1,380**
	Totals:	**6,367**	**5,486**

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Permanent impact total only (fill, structure/bank stabilization)

Revised Tables 19 and 20 summarize the updated impacts to jurisdictional water resources based on this requested modification to I-5986A. Site numbers for each table correspond with the site numbers shown on the permit drawings included with this modification request. The stream and wetland labels correspond to the NRTRs as noted in the tables. As new Site 57 falls within the Black River Subbasin, it has been added to the end of those impact sites (after Site 34).

Also included in Revised Table 19 are impacts to jurisdictional resources due to utility relocations. The utility impacts are limited to hand clearing in wetlands associated with relocating aerial power lines at six sites. These sites are noted with asterisks in Revised Table 19.

Revised Table 19. I-5986A Wetland Impacts

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
Subbasin Upper Cape Fear (HUC 03030004)						
2	WCB	Riparian	Fill, 66” WSP	**0.103**	**0.028**	Yes
2	WCB	Riparian	Mechanized Clearing	**0.068**		
2	WCC	Riparian	Fill, 66” RCP	0.001	0.009	Yes
3	WA	Riparian	Pipe Clean Out		**0.003**	No
3	WA	Riparian	Pipe Clean Out/ Roadway Fill	0.001	**0.003**	Yes
3	WA	Riparian	Mechanized Clearing	**0.048**		Yes
3	WB	Riparian	Roadway Fill	**0.067**		Yes
3	WB	Riparian	Mechanized Clearing	**0.066**		Yes
3	WA/WB	Riparian	RCBC Removal	**0.003**	**0.044**	
3	WA	Riparian	Fill, 42" RCP	**0.001**	**0.012**	Yes
4	WA	Riparian	Fill, 36" WSP	**0.005**	**0.025**	Yes
4	WC	Riparian	Fill, 36" WSP	0.001	0.033	Yes
5	WB	Riparian	Fill, 66" WSP	0.009	0.034	Yes
6	WD	Non-Riparian	Fill, 30" WSP	0.001	0.039	Yes
6	WB	Riparian	Fill, 30" WSP	0.004	0.050	Yes
7	WH	Non-Riparian	Fill	0.231		Yes
8	WE	Non-Riparian	Excavation	0.024		Yes
9	WF	Non-Riparian	Fill	0.135		Yes
9	WF	Non-Riparian	Excavation	0.021		Yes
10	WI	Non-Riparian	Fill	0.076		Yes
11	WJ	Non-Riparian	Fill	0.531		Yes
11	WJ	Non-Riparian	Mechanized Clearing	0.045		Yes
12	WL	Riparian	Fill	0.204	0.066	Yes
12	WL	Riparian	Excavation	0.020		Yes
12	WL	Riparian	Mechanized Clearing	0.143		Yes
13	WR	Non-Riparian	Fill	0.020		Yes
13	WR	Non-Riparian	Mechanized Clearing	0.013		Yes
14	WR	Non-Riparian	Mechanized Clearing	0.001		Yes
14	WR	Non-Riparian	Fill		0.021	No
15	WO	Riparian	Fill, 42" RCP	0.004		Yes
15	WO	Riparian	Mechanized Clearing	0.006		Yes
15	WO	Riparian	Fill	0.001		Yes

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
15	WO	Riparian	Mechanized Clearing	0.006		Yes
15	WO	Riparian	Fill, 66" RCP	0.136	0.034	Yes
15	WO	Riparian	Mechanized Clearing	0.165		Yes
15	WO	Riparian	Fill, 54" WSP	0.001	0.037	Yes
15	WO	Riparian	Fill	0.019		Yes
15	WO	Riparian	Mechanized Clearing	0.053		Yes
16	WN	Riparian	Fill, 54" WSP	0.006	0.025	Yes
16	WN	Riparian	Fill	0.035		
16	WN	Riparian	Mechanized Clearing	0.042		Yes
16*	WN	Riparian	Hand Clearing		0.373	No
17	WQ	Non-Riparian	Fill	0.057		Yes
17	WQ	Non-Riparian	Mechanized Clearing	0.072		Yes
17	WQ	Non-Riparian	Fill	0.002	0.009	Yes
18	WP	Riparian	Fill, 60" RCP, 66" RCP	0.106	0.002	Yes
18	WP	Riparian	Mechanized Clearing	0.066		Yes
18	WP	Riparian	Fill, 66" WSP	0.001	0.004	Yes
19	WCG	Non-Riparian	Fill	0.857		Yes
20	WX	Riparian	Fill	0.402		Yes
20	WX	Riparian	Mechanized Clearing	0.034		Yes
21	WV	Riparian	Fill	0.225		Yes
21	WV	Riparian	Mechanized Clearing	0.020		Yes
21*	WV	Riparian	Hand Clearing		0.072	No
22	WW	Riparian	Fill	2.663		Yes
22	WW	Riparian	Mechanized Clearing	0.176		Yes
22*	WW	Riparian	Hand Clearing		0.204	No
24	WZ/WY	Riparian	Fill, 3@10'X8' RCBC	0.056	0.047	Yes
24	WZ/WY	Riparian	Excavation	0.089		Yes
24	WZ/WY	Riparian	Mechanized Clearing	0.080		Yes
24	WY	Riparian	Fill		0.004	Yes
24	WY	Riparian	Mechanized Clearing	0.002		Yes
24	WZ	Riparian	Fill		0.010	No
24	WY	Riparian	Fill		0.005	No
25	WAB	Non-Riparian	Excavation, Fill, 10'X7' RCBC	0.003	0.002	Yes

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
25	WAB	Non-Riparian	Fill		0.008	No
26	WAC	Non-Riparian	Fill	0.654	0.017	Yes
26	WAC	Non-Riparian	Mechanized Clearing	0.151		Yes
27	WAF	Non-Riparian	Fill	0.284		Yes
28	WAG	Non-Riparian	Fill	0.047	0.005	Yes
28	WAG	Non-Riparian	Mechanized Clearing	0.039		Yes
28*	WAG	Non-Riparian	Hand Clearing		0.224	No
29	WAH	Non-Riparian	Fill, 2@ 48" RCP		0.009	No
29	WAH	Non-Riparian	Excavation	0.027		Yes
30	WAK/WAI	Riparian	Fill, 12'X6' RCBC	0.008	0.074	Yes
30	WAK/WAI	Riparian	Excavation	0.090		Yes
30	WAI	Riparian	Fill	0.488		Yes
30	WAI	Riparian	Excavation	0.012		Yes
30	WAI	Riparian	Mechanized Clearing	0.037		Yes
30	WAK	Riparian	Fill	0.624		Yes
30	WAK	Riparian	Mechanized Clearing	0.015		Yes
30	WAK	Riparian	Fill		0.014	No
30*	WAK	Riparian	Hand Clearing		0.058	No
30*	WAL	Non-Riparian	Hand Clearing		0.196	No
31	WAM	Non-Riparian	Fill	0.042		Yes
31	WAM	Non-Riparian	Mechanized Clearing	0.019		Yes
32	WAN	Non-Riparian	Fill	0.081		Yes
32	WAN	Non-Riparian	Mechanized Clearing	0.080		Yes
33	WAP/WAQ	Riparian	Fill, 8'x8' Culvert		0.010	No
34	WAS	Riparian	Fill, 10'X7' RCBC		0.025	No
34	WAS	Riparian	Mechanized Clearing	0.002		Yes
57	WA/WCC	Riparian	Fill	**0.226**	**0.066**	
57	WA/WCC	Riparian	Mechanized Clearing	**0.139**		Yes
Totals HUC 03030004		Total Riparian		**6.779**	**1.371**	
		Total Non-Riparian		3.513	0.530	
		Grand Total		**10.292**	**1.901**	

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
Subbasin Black River (HUC 03030006)						
35	WAT	Non-Riparian	Fill	0.016	0.005	Yes
35	WAT	Non-Riparian	Mechanized Clearing	0.044		Yes
36	WAU	Non-Riparian	Mechanized Clearing	0.007		Yes
37	WAW	Riparian	Fill, 72" RCP	0.225	0.029	Yes
37	WAW	Riparian	Mechanized Clearing	0.137		Yes
38	WAX	Riparian	Fill		0.006	No
40	WAY	Non-Riparian	Fill, 2@30" RCP	0.001	0.001	Yes
41	WAZ	Riparian	Fill		0.011	No
42	WAZ	Riparian	Fill, Bridge	0.385	0.020	Yes
42	WAZ	Riparian	Excavation	0.043		Yes
42	WAZ	Riparian	Mechanized Clearing	0.207		Yes
42	WAZ	Riparian	Hand Clearing		0.038	No
43	WAZ	Riparian	Fill	0.090		Yes
43	WAZ	Riparian	Mechanized Clearing	0.053		Yes
44	WAZ	Riparian	Fill		0.006	No
45	WBB	Non-Riparian	Mechanized Clearing	0.017		Yes
46	WBC	Non-Riparian	Fill, 2@ 42" RCP	0.004		Yes
46	WBC	Non-Riparian	Excavation	0.002		Yes
46	WBC	Non-Riparian	Mechanized Clearing	0.028		Yes
47*	WBD	Riparian	Hand Clearing		0.092	No
47*	WBE	Riparian	Hand Clearing		0.048	No
48	WCK	Riparian	Fill, Plug Exist 18" RCP		0.002	No
50	WCJ	Riparian	Fill	0.011		Yes
50	WCJ	Riparian	Mechanized Clearing	0.043		Yes
51	WCI	Non-Riparian	Fill	0.114		Yes
51	WCI	Non-Riparian	Mechanized Clearing	0.109		Yes
52	WT	Riparian	Fill	0.002	0.006	Yes
53	WU	Non-Riparian	Fill	0.267		Yes
53	WU	Non-Riparian	Mechanized Clearing	0.108		Yes
54A	WS	Riparian	Pipe Clean Out		0.008	No
54B	WS	Riparian	Pipe Clean Out		0.005	No
54C	WS	Riparian	Pipe Clean Out		0.005	No
55	WCE	Non-Riparian	Fill	0.635		Yes

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
55	WCE	Non-Riparian	Mechanized Clearing	0.220		Yes
56	WCE	Non-Riparian	Fill	0.013		Yes
56	WCE	Non-Riparian	Mechanized Clearing	0.065		Yes
Totals HUC 03030006		Total Riparian		1.196	0.276	
		Total Non-Riparian		1.650	0.006	
		Grand Total		2.846	0.282	
I-5986A Section Totals		Total Riparian		**7.975**	**1.635**	
		Total Non-Riparian		5.163	0.536	
		Grand Total		**13.138**	**2.171**	

* Impacts due to utility relocation.

Impact numbers that have changed are in bold

Revised Table 20. I-5986A Stream Impacts

Permit Drawing Site Number	Impact Type	NRTR Label	Classification (from NRTR)	Permanent (ac)	Temporary (ac)	Permanent (lf)	Temporary (lf)	Mitigation Required
Cape Fear River Basin – Subbasin Upper Cape Fear (HUC 03030004)								
1	Bank Stabilization	DC	Perennial	0.001	**0.001**	8	20	No
2	Headwall, 66" WSP	SV-2	Perennial	**0.006**	**0.001**	**35**	**10**	Yes
2	Headwall, 66" WSP	SV-1	Perennial	**0.022**	**0.003**	**52**	**13**	Yes
3	Removal of RCBC	Reese Creek	Perennial		**0.048**		**48**	No
4	30" WSP	SA	Perennial	0.004	0.003	18	**24**	Yes
9	2@36" RCP	SB	Intermittent	0.011	0.001	63	10	No
15	Roadway Fill, 66" RCP	Baker Swamp	Perennial	0.018		60		Yes
16	54” WSP Structure Stabilization	Baker Swamp	Perennial	0.004	0.013	15	34	No
18	Roadway Fill, 60" RCP, 66" RCP	Baker Swamp	Perennial	0.010	0.006	23	13	Yes
18	66" WSP Structure Stabilization	Baker Swamp	Perennial	0.007	0.012	22	28	No
23	2@ 8'x8' RCBC	SC	Perennial	0.063	0.006	270	38	Yes
24	3@ 10'x8' RCBC, Roadway Fill	SD	Perennial	0.128	0.058	197	26	Yes
25	10'x7' RCBC	SE	Intermittent	0.017	0.003	135	25	No
30	12'x6' RCBC	SF	Perennial	0.030	0.003	103	8	Yes
33	8'x8' Culvert	SG	Perennial	0.051	0.011	211	99	Yes
34	10'x7' RCBC	SH	Perennial	0.031	0.004	174	30	Yes
57	Roadway Fill	Reese Creek	Perennial		**0.045**		**78**	No

Subbasin Black River (HUC 03030006)								
37	72" RCP, Roadway Fill	SI	Perennial	0.003	0.003	26	20	Yes
37	Structure Stabilization	SI	Perennial	0.003		25		No
39	7'x7' RCBC	SJ	Intermittent	0.025	0.008	101	40	No
42	Bridge Construction	Black River	Perennial	0.003	0.266	16	246	Yes
47	72" RCP	SK	Intermittent	0.063	0.007	180	24	Yes
49	2@8'x8' RCBC Ext	SY	Perennial	0.009		15		Yes
49	Bank Stabilization	SY	Perennial	0.029	0.005	50	8	No
Totals HUC 03030004	Total Stream Impact			**0.403**	**0.218**	**1386**	**504**	
	Total Perennial Stream Impact			**0.375**	**0.215**	**1188**	**469**	
	Total Intermittent Stream Impact			0.028	0.004	198	35	
	Total Bank/Structure Stabilization Impacts			0.020	0.037	**45**	**82**	
	Total Perennial Mitigatable			**0.341**	-	**1143**	-	
	Total Intermittent Mitigable			-	-	-	-	
	Total Mitigable			**0.341**	-	**1143**	-	
Totals HUC 03030006	Total Stream Impact			0.135	0.289	413	338	
	Total Perennial Stream Impact			0.047	0.274	132	274	
	Total Intermittent Stream Impact			0.088	0.015	281	64	
	Total Bank/Structure Stabilization Impacts			0.032	0.005	75	8	
	Total Perennial Mitigable			0.015	-	57	-	
	Total Intermittent Mitigable			0.063	-	180	-	
	Total Mitigable			0.078	-	237	-	
I-5986A Section Totals	Total Stream Impact			**0.538**	**0.508**	**1799**	**842**	
	Total Perennial Stream Impact			**0.422**	**0.488**	**1320**	**743**	
	Total Intermittent Stream Impact			0.116	0.019	479	99	
	Total Bank/Structure Stabilization Impacts			**0.045**	**0.035**	**120**	**90**	
	Total Perennial Mitigable			**0.356**	**-**	**1200**	**-**	
	Total Intermittent Mitigable			0.063	-	180	**-**	
	Total Mitigable			**0.419**	**-**	**1380**	**-**	

Impact numbers that have changed are in bold

Compensatory Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. Compensatory mitigation requirements for I-5986A jurisdictional features are summarized below in Revised Table 24. The unavoidable impacts to Waters of the U.S. will be offset by compensatory mitigation provided by NCDMS at ratios of 2:1 for wetland and stream impacts. There will be no mitigation required for permanent impacts to streams impacted by bank stabilization.

A revised NCDMS acceptance letter, dated October 6, 2021, has been received and is included with this permit modification request for I-5986A. Table 24 has been revised to reflect the changes requested in this modification letter. The change in mitigation is indicted in parentheses.

Revised Table 24. I-5986A (Final Design) Jurisdictional Feature Mitigation Summary

HUC Location	Stream (lf)	Wetlands (ac)	
		Riparian	Non-Riparian
03030004	**1,143** (+ 81)	**6.779** (+ 0.704)	3.513
03030006	237	1.196	1.650
Total	**1,380** (+ 81)	**7.975** (+ 0.704)	5.163
Grand Total	**1,380** (+ 81)	**13.138** (+0.704)	

REGULATORY APPROVALS

Section 404: NCDOT requests modification to the USACE Individual 404 Permit for the project as required for the above-described activities.

Section 401: We are also requesting modification of the Section 401 Individual Water Quality Certification only, there are no changes in the Neuse Riparian Buffer Authorization. We are providing this request to NCDWR for their approval.

A copy of the permit modification request and its distribution list will be posted at https://xfer.services.ncdot.gov/pdea/PermApps/.

If you have any questions or need additional information, please contact Deanna Riffey, driffey@ncdot.gov, 919-707-6151.

Sincerely,

DocuSigned by:
Mack C. Rivenbark III
AAAD1248B309416...

for Philip S. Harris, III, P.E., C.P.M.
Environment Analysis Unit Head

cc: NCDOT Permit Application Standard Distribution List

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary

NORTH CAROLINA
Environmental Quality

October 6, 2021

Mr. Philip S. Harris, P.E., CPM
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: DMS Mitigation Acceptance Letter:

I-5986A, I-95 Improvements, Cumberland County

References: USACE 404 Individual Permit issued November 25, 2020 (USACE Action ID 2018-02276)

NCDWR 401 Water Quality Certification issued November 6, 2020 (NCDWR ID 2019-0214)

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the additional compensatory mitigation for the subject project. Based on the information supplied by you on October 4, 2021, the additional impacts are located in CU 03030004 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Table 1 – Additional Impacts (feet / acres)

Cape Fear 03030004 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	81.000	0	0.704	0	0	0

*NOTE: Some of the stream impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This additional impact and associated mitigation needs were not projected by the NCDOT in the 2021 impact data. DMS is currently providing stream and wetland mitigation for the impacts associated with this project located in cataloging units 03030004 and 03030006 of the Cape Fear River basin as required by the 404 and 401 permits issued in November 2020, as shown in the below table (in mitigation credits)

Table 2 – Current Permitted Impacts and Associated Mitigation Requirements provided by DMS (based on issued permits) and Revised Anticipated Impacts (based on mitigation request)

Impact Service Area	Impact Type	Total Permitted Impacts (feet / acre / sq ft)	Mitigation Provided by DMS per Issued Permits (Credits)	Additional Impact (for approval)	Revised Total Impacts*
Cape Fear 03030004	Stream	1,062.000	2,124.000	81.000	1,143.000
	Riparian Wetland	6.075	12.150	0.704	6.779
	Non-Riparian Wetland	3.513	7.026	0.000	3.513
Cape Fear 03030006	Stream	237.000	474.000	0.000	237.000
	Riparian Wetland	1.196	2.392	0.000	1.196
	Non-Riparian Wetland	1.650	3.300	0.000	1.650

*Some of the additional stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details. DMS will provide the amount of mitigation as determined by the regulatory agencies.

DMS commits to implementing additional sufficient compensatory stream and wetland mitigation credits to offset the additional impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

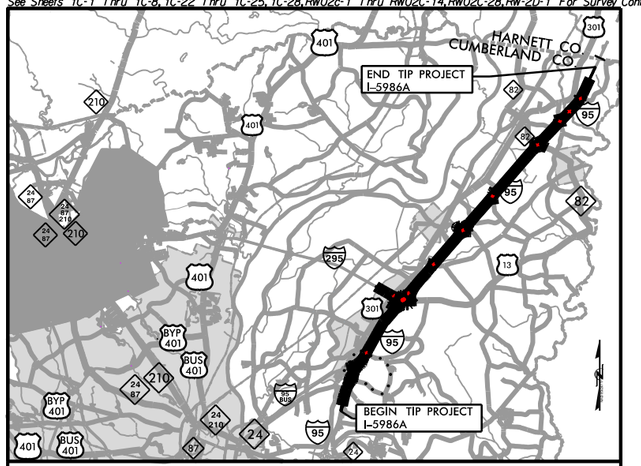
Elizabeth Harmon

James B. Stanfill
Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Resources, Wetlands/401 Unit
File: I-5986A Mod

CONTRACT: C204283 TIP PROJECT: I-5986A

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28, RW02c-1 Thru RW02C-14, RW02C-28, RW-20-1 For Survey Control Sheets

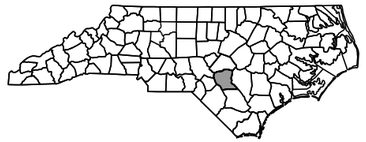


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.



LOCATION: *I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD– EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD–EXIT 70)*

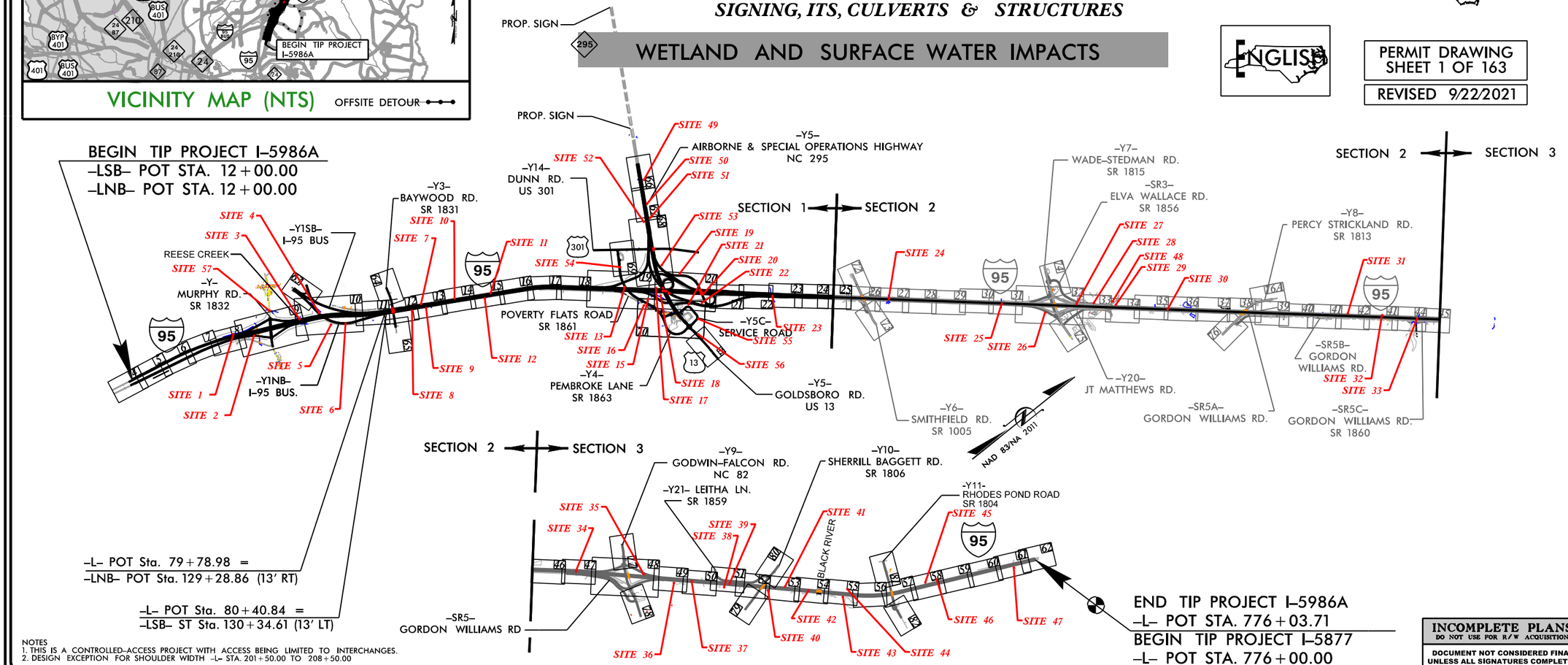
TYPE OF WORK: *GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES*

ENGLISH

PERMIT DRAWING SHEET 1 OF 163

REVISED 9/22/2021

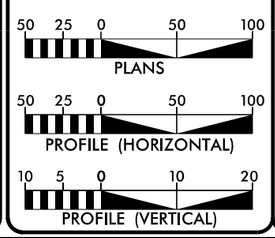
WETLAND AND SURFACE WATER IMPACTS



NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
2. DESIGN EXCEPTION FOR SHOULDER WIDTH –L– STA. 201+50.00 TO 208+50.00

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.372 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.044 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.416 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER – DESIGN-BUILD UNIT

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE: AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 18494 ENGINEER ANTHONY A. HOUSER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

9/22/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Reese Creek\I-5986A_Hyd_tsh_Secl_Reese_Creek.dgn
FKeys

09/08/09

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-1 - Reese
	HYDRAULICS DESIGN ENGINEER

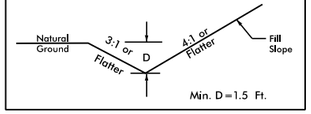
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGLISH

PERMIT DRAWING
SHEET 3A OF 163

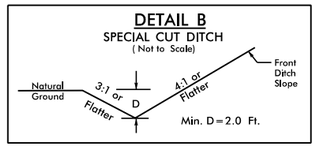
REVISED 9/22/2021

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



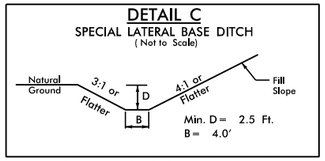
–YRPAREV– STA. 17+94 TO STA. 20+00 RT
–Y1NB– STA. 44+50 TO STA. 46+50 RT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



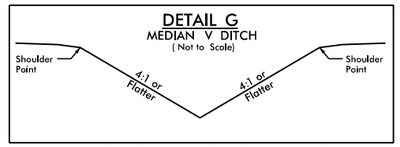
–LNBREV– STA. 50+73 TO STA. 54+69 LT
–YRPCREV– STA. 13+30 TO STA. 18+87 RT
–LNBREV– STA. 69+17 TO STA. 76+67 RT
–LSBREV– STA. 68+50 TO STA. 77+50 LT
–LNBREV– STA. 79+17 TO STA. 80+67 RT
–YRPAREV– STA. 15+74 TO STA. 17+30 RT
–LSBREV– STA. 79+50 TO STA. 82+15 LT
–Y1NB– STA. 46+50 TO STA. 59+00 RT
–Y1NB– STA. 45+20 TO STA. 48+00 LT

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



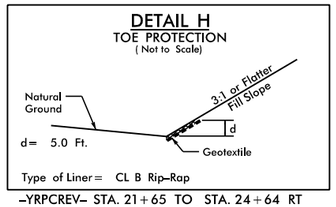
–LSBREV– STA. 112+50 TO STA. 128+50 LT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



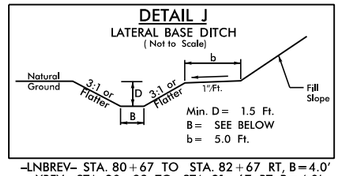
–LNBREV– STA. 54+69 TO STA. 62+16 LT
–LNBREV– STA. 82+67 TO STA. 84+17 RT
–LSBREV– STA. 82+15 TO STA. 83+00 LT
–LSBREV– STA. 103+00 TO STA. 112+50 RT

DETAIL H
TOE PROTECTION
(Not to Scale)



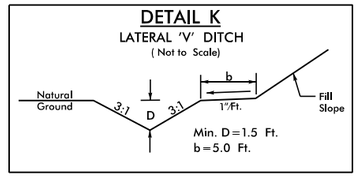
–YRPCREV– STA. 21+65 TO STA. 24+64 RT
–YREV– STA. 24+38 TO STA. 26+57 RT

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



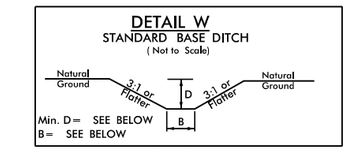
–LNBREV– STA. 80+67 TO STA. 82+67 RT, B=4.0'
–YREV– STA. 20+38 TO STA. 21+67 RT, B=4.0'

DETAIL K
LATERAL 'V' DITCH
(Not to Scale)



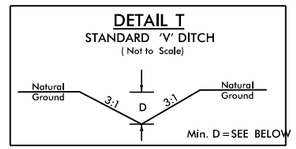
–YRPDREV– STA. 15+68 TO STA. 18+50 RT

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



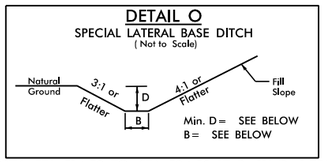
–LNBREV– STA. 107+10 TO STA. 107+71 RT, B=4', D=1.25'
BEG. ELEV=113.08, END ELEV=112.90, S=0.3%, M=3.0
–LNBREV– STA. 107+71 TO STA. 108+52 RT, B=4', D=1.0'
BEG. ELEV=112.90, END ELEV=115.18, S=2.9%, M=3.0

DETAIL T
STANDARD 'V' DITCH
(Not to Scale)



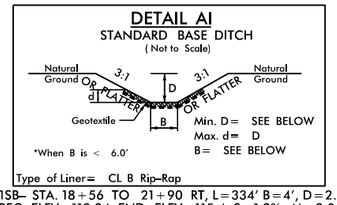
–Y1NB– STA. 44+50, L=53', S=0.8%, D=1.5'
BEG. ELEV=119.98, END ELEV=119.56, M=3.5

DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



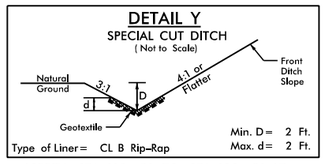
–LSBREV– STA. 51+50 TO STA. 53+50 LT, B=11', D=1.75'

DETAIL AI
STANDARD BASE DITCH
(Not to Scale)



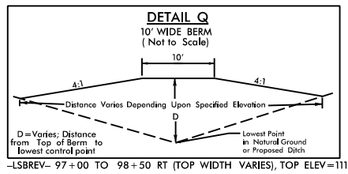
–Y1SB– STA. 18+56 TO 21+90 RT, L=334' B=4', D=2.5'
BEG. ELEV=119.34 END ELEV=115.4, S=1.2% M=3.0

DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



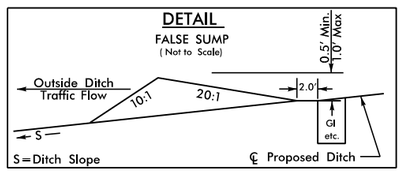
–LSBREV– STA. 128+50 TO STA. 129+50 LT

DETAIL Q
10' WIDE BERM
(Not to Scale)

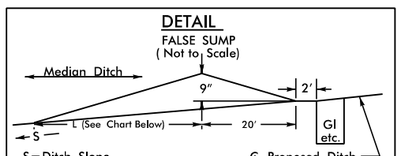


–LSBREV– 97+00 TO 98+50 RT (TOP WIDTH VARIES), TOP ELEV=111.0'

DETAIL
FALSE SUMP
(Not to Scale)

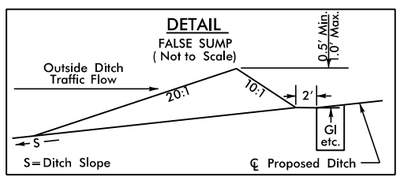


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8_Reese
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 8 OF 163

REVISED 9/22/2021

INSET A

NAD 83/NA 2011

RETAIN EXISTING C/A FENCE

PROP. NOISE WALL NW1B

EXISTING R/W

SITE 1

DC

6 TONS CL B RIPRAP W/14 SY GEOTEXTILE ON BANKS ONLY

SEE INSET A

SPECIAL LATERAL 11' BASE DITCH SEE DETAIL O

MATCHLINE -LSBREV- STA. 53+00.00 SEE SHEET 7_Reese

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 9_Reese

VAR BST

I-95 SBL VAR BST

I-95 NBL 38' BST

10' BST

55+00

60+00

65+00

N 24° 59' 11.0" E

N 26° 19' 48.2" E

-BL- 96

-BL- 97

MEDIAN V DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL B

REMOVE DI CONC

PLUG EXIST. DI & FILL W/CONCRETE

24" RCP CL IV

2GID-WSS

FS

RETAIN EXISTING C/A FENCE

EXISTING R/W

R/W MON

CITY OF EASTOVER

BILLBOARD

NON-IMPACTED BILLBOARD
-LNB- STATION 55+62 RT
MILEMARKER 54.1

SR 1832 SANDEROSA RD 27' BST

24" C&G

FOR -LNBREV- PROFILE SEE SHT. 86_Reese
FOR -LSBREV- PROFILE SEE SHT. 86_Reese
FOR -YRPBREV- PROFILE SEE SHT. 145A_Reese
FOR -YRPCREV- PROFILE SEE SHT. 145B_Reese

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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Plans

Submitted 10/19/2021

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8_Reese

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 9 OF 163

REVISED 9/22/2021

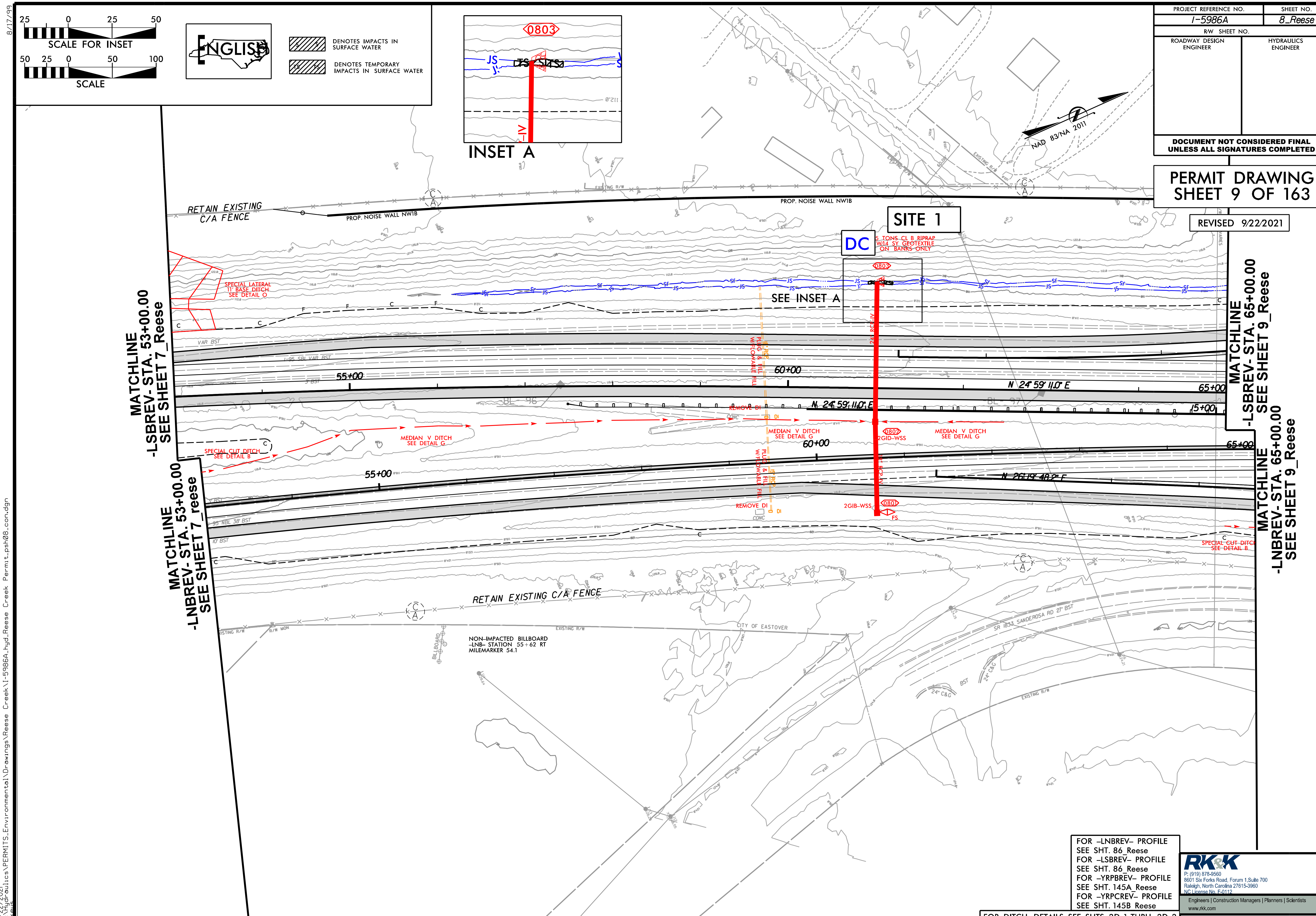
SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



FOR -LNBREV- PROFILE SEE SHT. 86_Reese
FOR -LSBREV- PROFILE SEE SHT. 86_Reese
FOR -YRPBREV- PROFILE SEE SHT. 145A_Reese
FOR -YRPCREV- PROFILE SEE SHT. 145B_Reese

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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9/22/2021
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REVISIONS

PROJECT REFERENCE NO. T-2986A | SHEET NO. 9_Reese
R/W SHEET NO. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 10 OF 163

REVISED 9/22/2021

INSET A

CLASS I RIP RAP

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET B

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET C

INSET D

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 63A REESE

END PROPOSED GRADE
BEGIN OVERLAY –YREV– POC Sta. 28+00.00

END CONSTRUCTION
END OVERLAY
–YREV– POC Sta. 39+00.00

MATCHLINE -LSBREV- STA. 55+00.00 SEE SHEET 8_Reese

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 8_Reese

MATCHLINE -LSBREV- STA. 85+75.00 SEE SHEET 10_Reese

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 10_Reese

SITE 2
SITE 57
SITE 3

SV–1
SV–2
SV–3

WCC
WCA
WCB
WA
WB

RETAIN EXISTING C/A FENCE

SEE INSET A
SEE INSET B
SEE INSET C
SEE INSET D

B
A
C
D

MCGEHEE RD

AUTRY, MARGARET MURPHY & HEIRS
DB 2493 PG 59
PB 138 PG 172

ORMAN, MARY J.
DB 2836 PG 8687

50 25 0 50 100
SCALE FOR INSET

100 50 0 100 200
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING

RKK

REVISIONS

INSET A

CLASS I RIP RAP

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET B

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET C

INSET D

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 63A REESE

END PROPOSED GRADE
BEGIN OVERLAY -YREV- POC Sta. 28+00.00

END CONSTRUCTION
END OVERLAY
-YREV- POC Sta. 39+00.00

MATCHLINE -LNBREV- STA. 55+00.00 SEE SHEET 8_Reese

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 8_Reese

MATCHLINE -LNBREV- STA. 85+75.00 SEE SHEET 10_Reese

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 10_Reese

SITE 2 SV-1 WCC

SITE 57 WCC

SITE 3 WA

SITE 2 SV-2 WCB

SV-3 WCA

WB

RETAIN EXISTING C/A FENCE

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

B

A

C

D

SCALE FOR INSET
50 25 0 50 100

SCALE
100 50 0 100 200

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

AUTRY, MARGARET MURPHY & HEIRS
DB 2493 PG 99
PB 138 PG 172

MURPHY RD

PROJECT REFERENCE NO. 17-2986A
SHEET NO. 9_Reese
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

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SHEET 11 OF 163

REVISED 9/22/2021

RKK

Submitted 10/19/2021

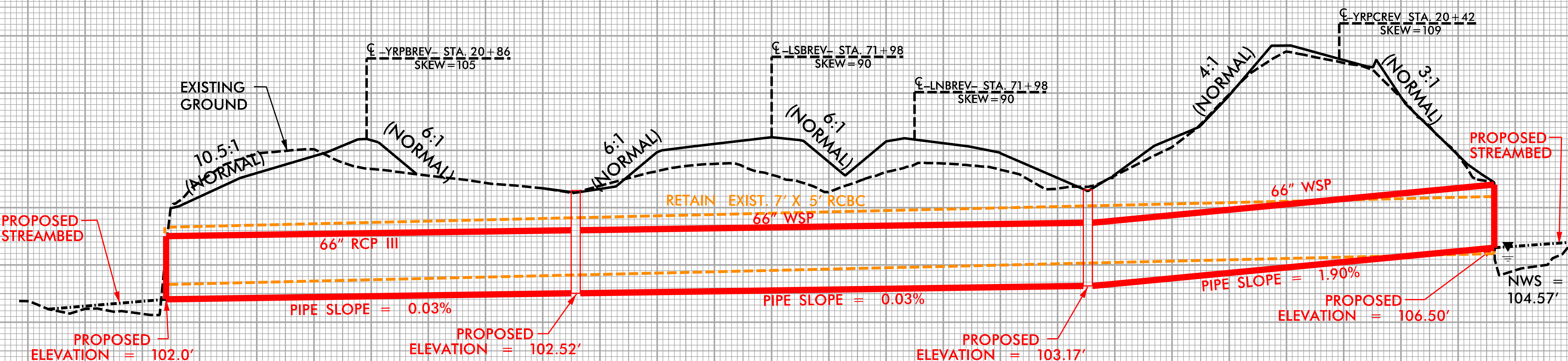
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 2
-LSBREV- STA. 71+98

PERMIT DRAWING
SHEET 12 OF 163

REVISED 9/22/2021

ENGLISH



TRENCHLESS INSTALLATION 66" WELDED STEEL AND 66" RCP–III
(not buried)
(length=569')

5/14/99

9/22/2021
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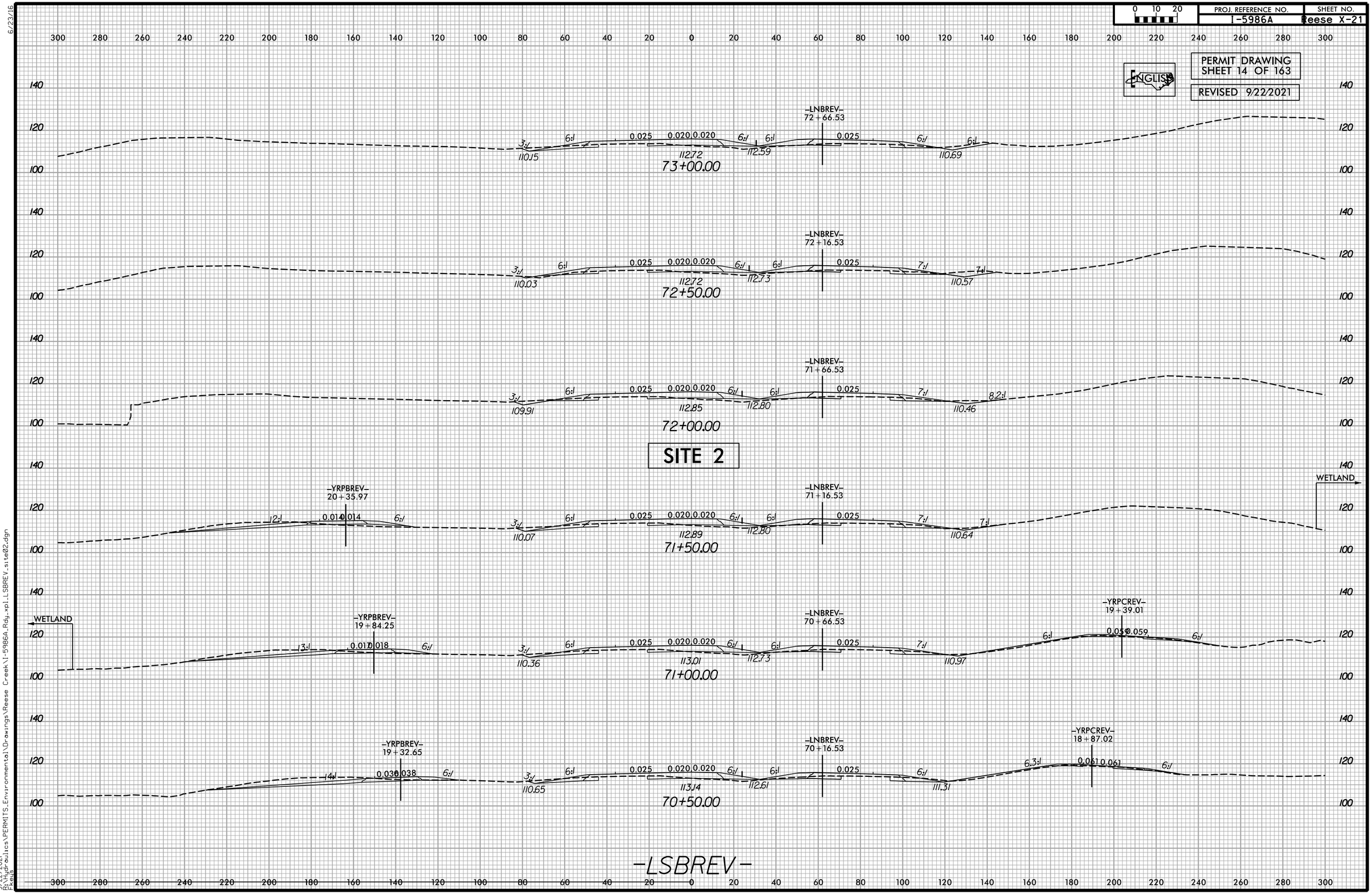
6/23/16

0 10 20

PROJ. REFERENCE NO.	SHEET NO.
I-5986A	Reese X-21

PERMIT DRAWING
SHEET 14 OF 163

REVISED 9/22/2021



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FKeys

Submitted 10/19/2021

6/23/16

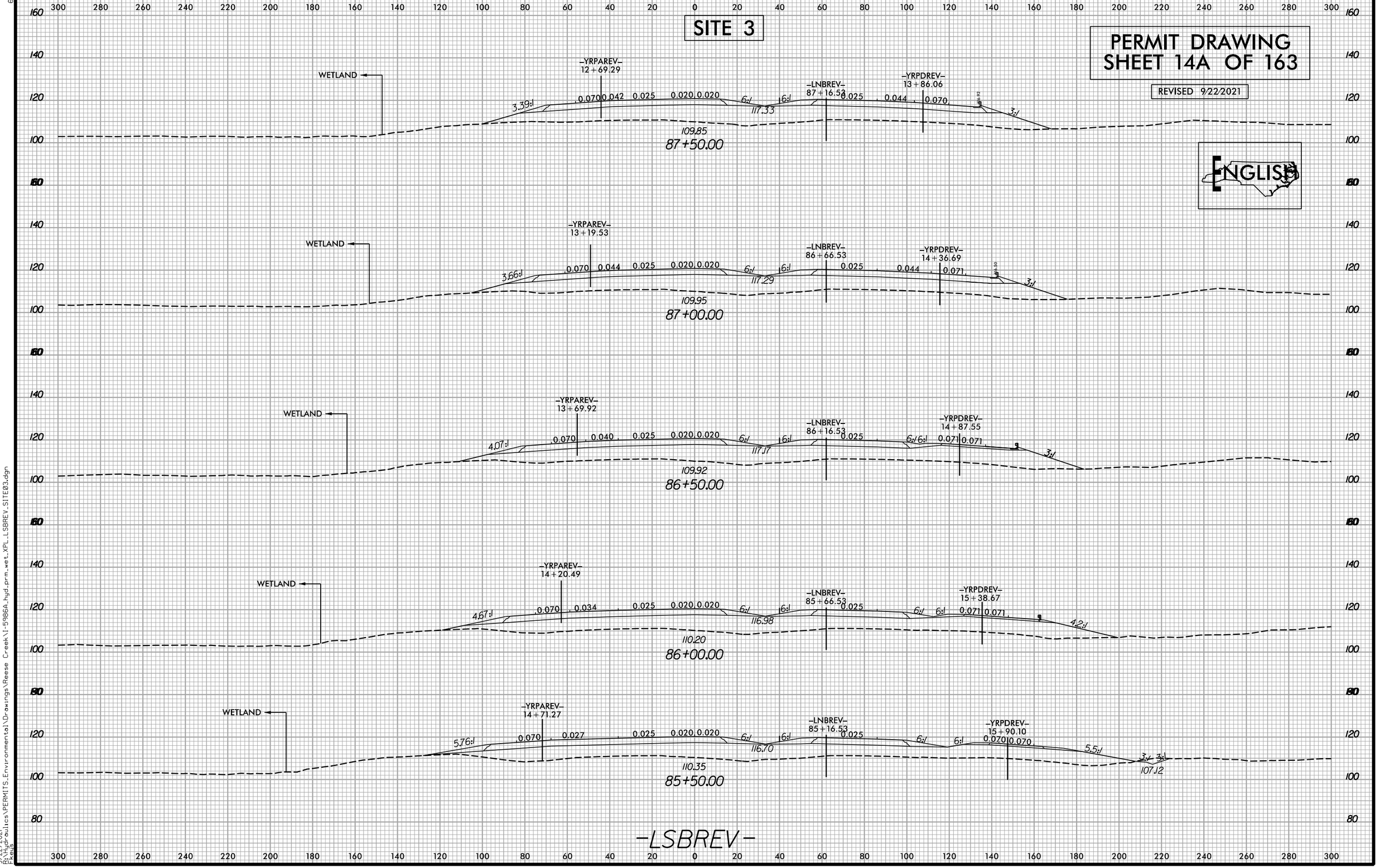
0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	Reese X-26

SITE 3

PERMIT DRAWING
SHEET 14A OF 163

REVISED 9/22/2021

ENGLISH



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FKeris

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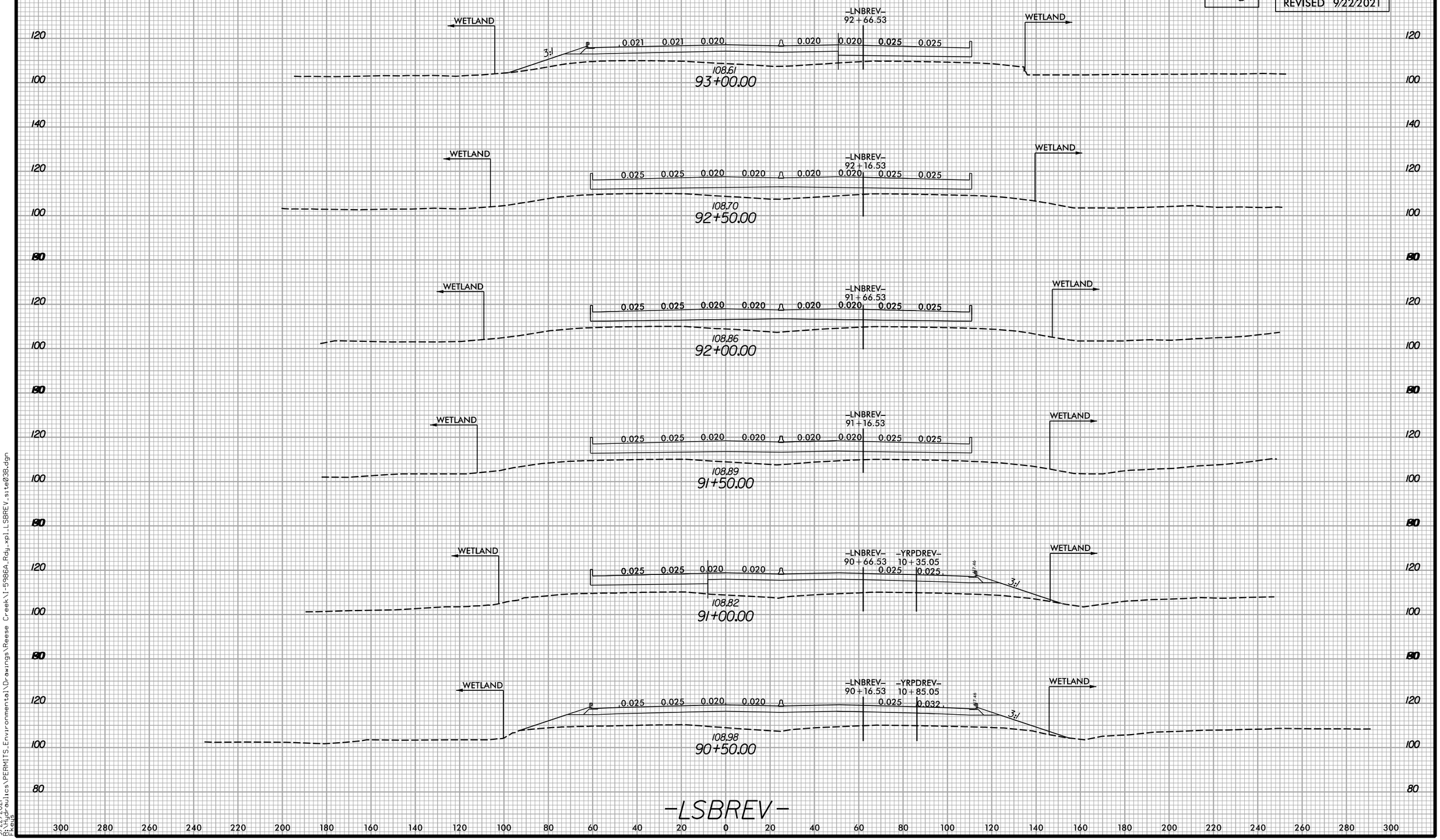
6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	Reese X-28

SITE 3

PERMIT DRAWING
SHEET 15 OF 163

REVISED 9/22/2021



9/22/2021
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tkelly

Submitted 10/19/2021

REVISIONS

INSET A

INSET B

INSET C

INSET D

INSET E

INSET H

INSET F

INSET G

MATCHLINE -Y1SB- STA. 35+00.00 SEE SHEET 63

MATCHLINE -Y1NB- STA. 20+00.00 SEE SHEET 63

SCALE FOR INSET: 50 25 0 50 100

SCALE: 100 50 0 100 200

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. I-75954 | SHEET NO. 10 Reese

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 16 OF 163

REVISED 9/22/2021

NAD 83/96 (2011)

Reese Creek–1

Reese Creek–2

SITE 3

SITE 4

SITE 5

SITE 6

WA

WB

WC

WD

SA

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

SEE INSET E

SEE INSET F

SEE INSET G

SEE INSET H

RETAIN EXISTING C/A FENCE

I–95 BUS

MATCHLINE -LSBREV- 89+75.00 SEE SHEET 9 Reese

MATCHLINE -LNBREV- 90+00.00 SEE SHEET 9 Reese

MATCHLINE -LSBREV- 117+50.00 SEE SHEET 11_Reese

MATCHLINE -LNBREV- 116+00.00 SEE SHEET 11_Reese

MATCHLINE -Y1NB- 45+00.00 SEE SHEET 11_Reese

TRAFFIC DIAGRAM ADT 2018 ADT 2040

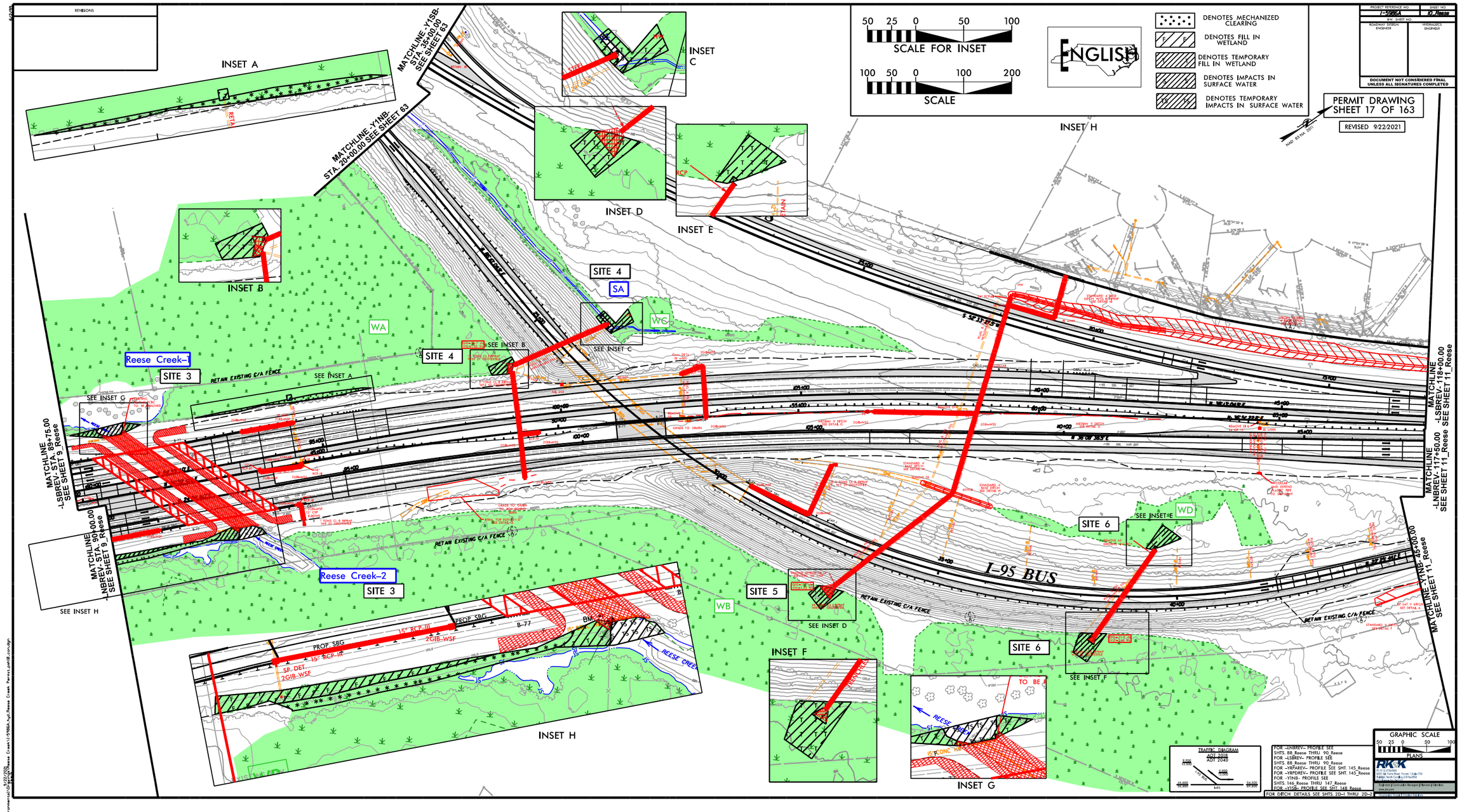
GRAPHIC SCALE 50 25 0 50 100

PLANS

FOR –LNBREV– PROFILE SEE SHTS. 88_Reese THRU 90_Reese
FOR –LSBREV– PROFILE SEE SHTS. 88_Reese THRU 90_Reese
FOR –WRAREV– PROFILE SEE SHT. 145_Reese
FOR –YRDREV– PROFILE SEE SHT. 145_Reese
FOR –Y1NB– PROFILE SEE SHTS. 146_Reese THRU 147_Reese
FOR –Y1SB– PROFILE SEE SHT. 148_Reese

FOR DITCH DETAILS SEE SHTS 2D-1 THRU 2D-2

R:\Highways\Projects\PERMITS_Environmental\Reese Creek\I-75954_hyd_Reese_Creek_Permit_plan.dgn



PROJECT REFERENCE NO.	SHEET NO.
I-5986A	88_Reese
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGLISH

PERMIT DRAWING
SHEET 17A OF 163

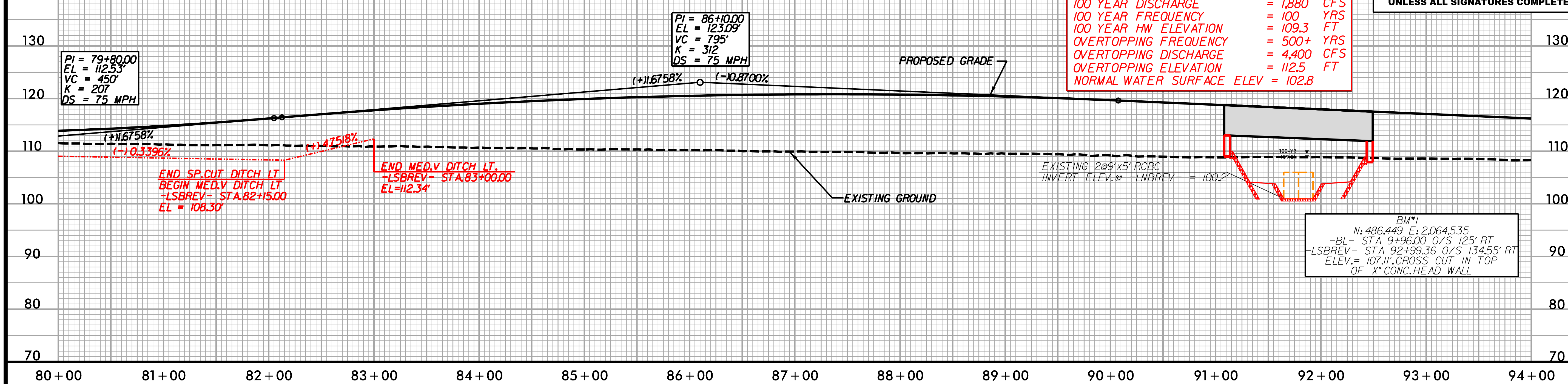
REVISED 9/22/2021

SITE 03

-LSBREV-

BRIDGE HYDRAULIC DATA
Sta.91+75 -LSBREV-

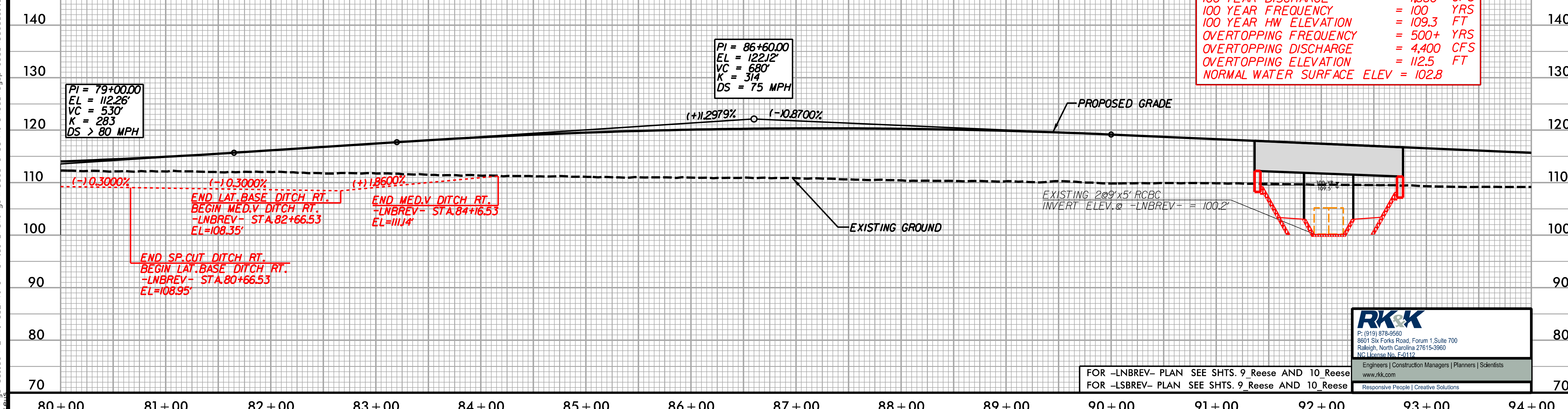
DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	1,880	CFS
DESIGN HW ELEVATION	=	109.3	FT
100 YEAR DISCHARGE	=	1,880	CFS
100 YEAR FREQUENCY	=	100	YRS
100 YEAR HW ELEVATION	=	109.3	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	4,400	CFS
OVERTOPPING ELEVATION	=	112.5	FT
NORMAL WATER SURFACE ELEV	=	102.8	



-LNBREV-

BRIDGE HYDRAULIC DATA
Sta.92+05 -LNBREV-

DESIGN FREQUENCY	=	100	YRS
DESIGN DISCHARGE	=	1,880	CFS
DESIGN HW ELEVATION	=	109.3	FT
100 YEAR DISCHARGE	=	1,880	CFS
100 YEAR FREQUENCY	=	100	YRS
100 YEAR HW ELEVATION	=	109.3	FT
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING DISCHARGE	=	4,400	CFS
OVERTOPPING ELEVATION	=	112.5	FT
NORMAL WATER SURFACE ELEV	=	102.8	



FOR -LNBREV- PLAN SEE SHTS. 9_Reese AND 10_Reese
FOR -LSBREV- PLAN SEE SHTS. 9_Reese AND 10_Reese

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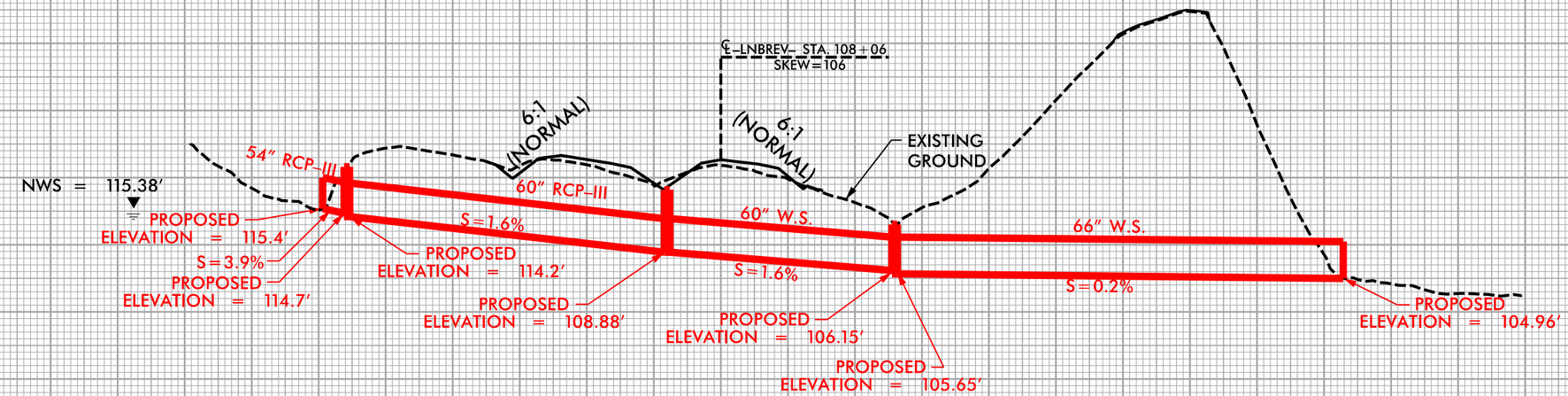
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 5
–LNBREV– STA. 108+06

PERMIT DRAWING
SHEET 18 OF 163

REVISED 9/22/2021

ENGLISH



54" RCP–III, 60" RCP–III, TRENCHLESS INSTALLATION 60" WELDED STEEL, & TRENCHLESS INSTALLATION 66" WELDED STEEL
(not buried)
(length = 744')

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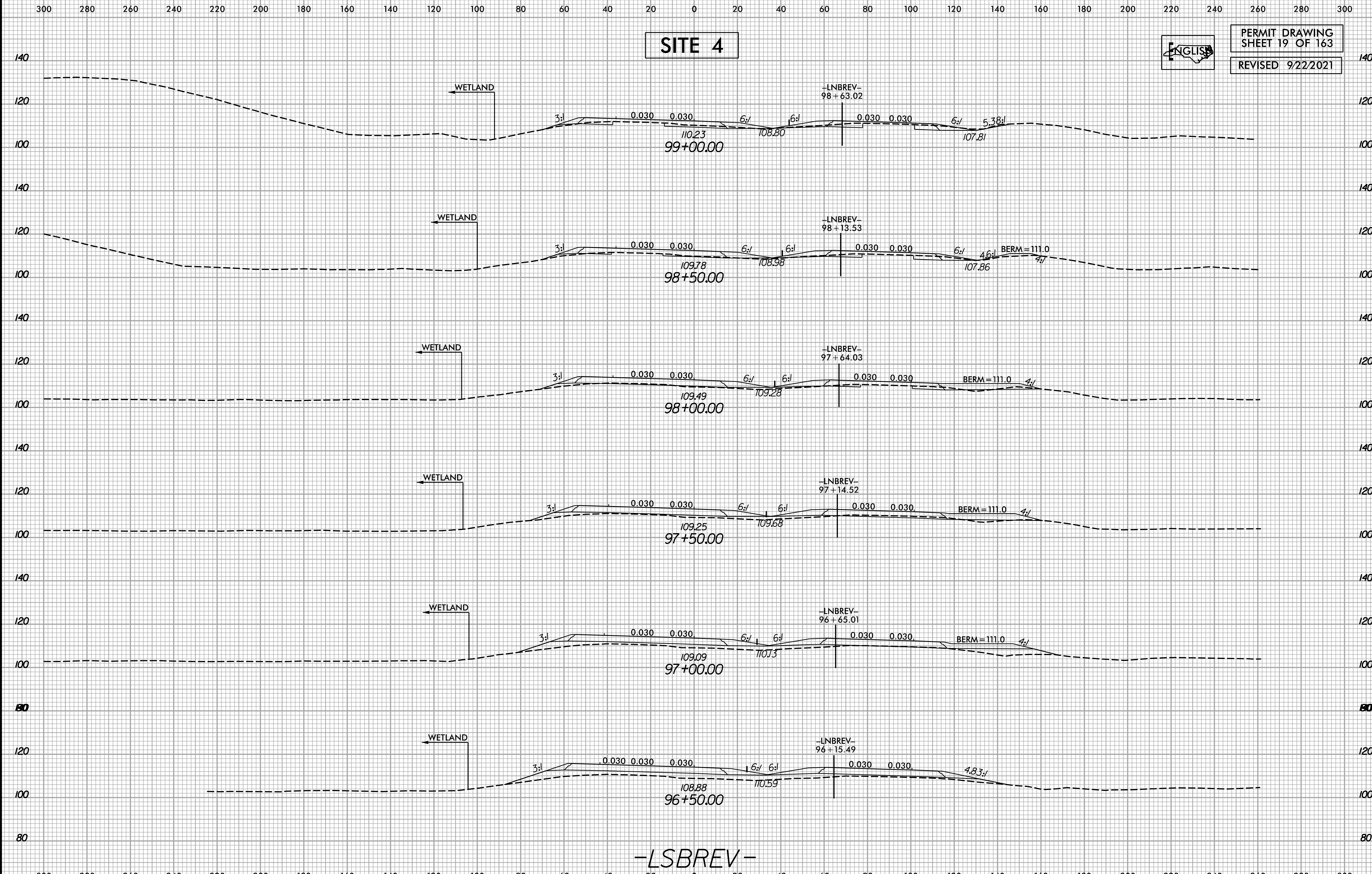
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	Reese X-30

PERMIT DRAWING
SHEET 19 OF 163

REVISED 9/22/2021

SITE 4



6/23/16

9/22/2021
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8/17/99

50 25 0 50 100
SCALE

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

P P DENOTES IMPACTS IN SURFACE WATER (POND)

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 79 OF 163

REVISED 9/22/2021

NAD 83/NA 2011

MATCHLINE -L- STA. 428+00.00 SEE SHEET 35

MATCHLINE -L- STA. 442+00.00 SEE SHEET 37

SITE 30

WAL

PROP. WOVEN WIRE FENCE

SP. LAT BASE DITCH SEE DETAIL C

PH

ROCK FILL IN POND SEE DETAIL AN

POND

SP. CUT BASE DITCH SEE DETAIL F

WAK

REMOVE EXISTING FENCE

PLUG & FILL W/FLOWABLE FILL

REMOVE 10' OF 24" RCP

REMOVE 10' OF 18" RCP

24" RCP–IV

18" RCP–IV

15" RCP–IV

CONC PAVED DITCH

REMOVE DI

2GIA–WSF

2GIB–WSF

430+00

435+00

N 40° 50' 03.2" E

440+00

I–95 SBL 37' BST

I–95 NBL 37' BST

FES

SP. CUT BASE DITCH SEE DETAIL Z

WAJ

ROCK PROTECTION SEE DETAIL H

WAI

SITE 30

SITE 30

Q10 = 33.8 cfs
V10 = 2.00 ft/s

FOR –LLT_SEC2– PROFILE SEE SHTS. 117 THRU 118
FOR –LRT_SEC2– PROFILE SEE SHTS. 117 THRU 118

FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 80 OF 163

REVISED 9/22/2021

SCALE: 50 25 0 50 100

ENGLISH

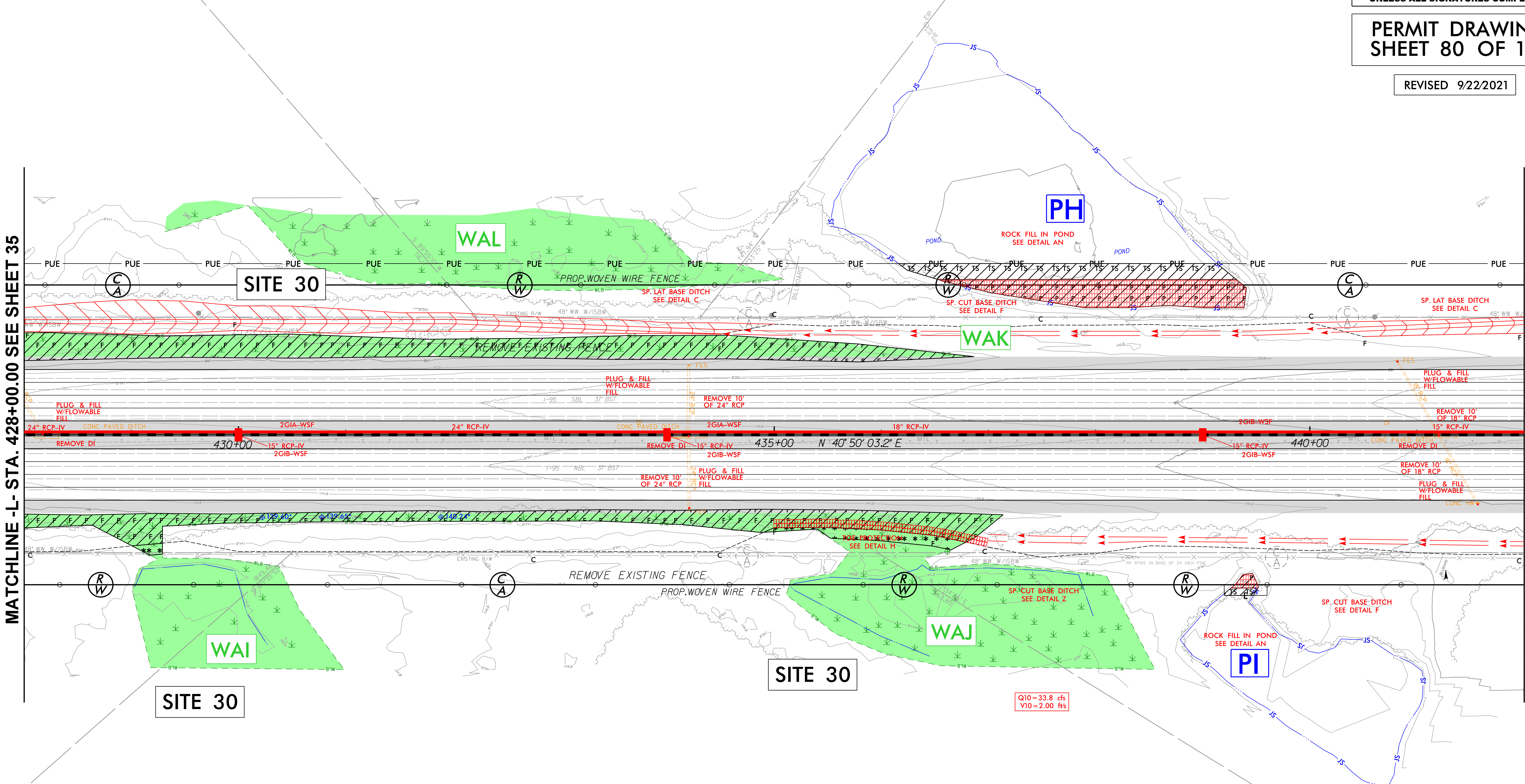
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NA 2011



FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	63A_Reese
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

ENGLISH

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 134A OF 163

REVISED 9/22/2021

NAD 83/NA 2011

RANK DEV INC
DB 9845 PG 703
PB 122 PG 193

BREWER, RANDY V
DB 10254 PG 388
PB 137 PG 112

INSET A

SR 1838 DUNN RD VAR BST

SR 1832 MURPHY RD VAR BST

2GIB-NSF

500' MEDIAN TAPER

WA

SITE 57

SEE INSET A

+00.00

RETAIN EXISTING C/A FENCE

1 TONS CL B RIPRAP W/5 SY GEOFAB

15" RCP-III

GREU TL-3

15+00

20+00

25+00

S 55°16'09"E

18" RCP

REMOVE

RETAIN

15" CSP
2 ELBOWS

2 TONS CL B RIPRAP
W/7 SY GEOFAB

LATERAL 4' BASE DITCH
SEE DETAIL J

Q10=7.94 cfs
V10=1.82 fps

Q10=10.30 cfs
V10=0.82 fps

SEE INSET B

EXISTING
2@9'x5' RCBC
TO BE REMOVED

1 TON CL B RIPRAP
W/5 SY GEOFAB

WCC

SITE 57

EARTH PETROLEUM CORP
DB 6258 PG 173
PB 113 PG 11

BIJU, MINI; PATEL, MAMTA
DB 10032 PG 849
PB 130 PG 190

BIJU, MINI; PATEL, MAMTA
DB 8972 PG 661
PB 130 PG 190

MWMP INVESTMENTS LLC
DB 5038 PG 486

INSET B

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 9_Reese

FOR -YREV- PROFILE SEE SHTS. 144_Reese

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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Reese

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	63A_Reese
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NA 2011

PERMIT DRAWING SHEET 134B OF 163

REVISED 9/22/2021

RANK DEV INC
DB 9845 PG 703
PB 122 PG 193

BREWER, RANDY V
DB 10254 PG 388
PB 137 PG 112

INSET A

500' MEDIAN TAPER

WA

SITE 57

SEE INSET A

1 TONS CL B RIPRAP W/5 SY GEOFAB

2GIB-NSF (3A0)

15" RCP-III

GREU TL-3

15+00

20+00

25+00

SR 1832 MURPHY RD VAR RST

REMOVE

RETAIN

15" CSP 2 ELBOWS

2 TONS CL B RIPRAP W/7 SY GEOFAB

LATERAL 4' BASE DITCH SEE DETAIL J

Q10=7.94 cfs
V10=1.82 ft/s

Q10=10.30 cfs
V10=0.82 ft/s

SEE INSET B

EXISTING 2@9'x5' RCBC TO BE REMOVED

1 TON CL B RIPRAP W/5 SY GEOFAB

RETAIN EXISTING C/A FENCE

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 9_Reese

WCC

SITE 57

MWMP INVESTMENTS LLC
DB 5038 PG 486

EARTH PETROLEUM CORP
DB 6258 PG 173
PB 113 PG 11

BIJU, MINI; PATEL, MAMTA
DB 10032 PG 849
PB 130 PG 190

BIJU, MINI; PATEL, MAMTA
DB 8972 PG 661
PB 130 PG 190

INSET B

94 cfs
82 ft/s

15" CSP
2 ELBOWS

Q10=10.30 cfs
V10=0.82 ft/s

SEE DETAIL H

FOR –YREV– PROFILE SEE SHTS. 144_Reese

FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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Submitted 10/19/2021

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	144_Reese

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-YREV-

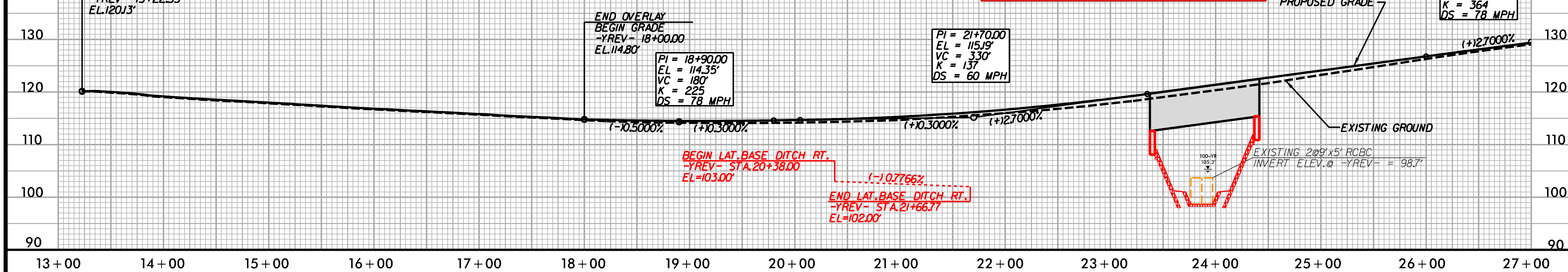
PERMIT DRAWING
SHEET 134C OF 163

REVISED 9/22/2021

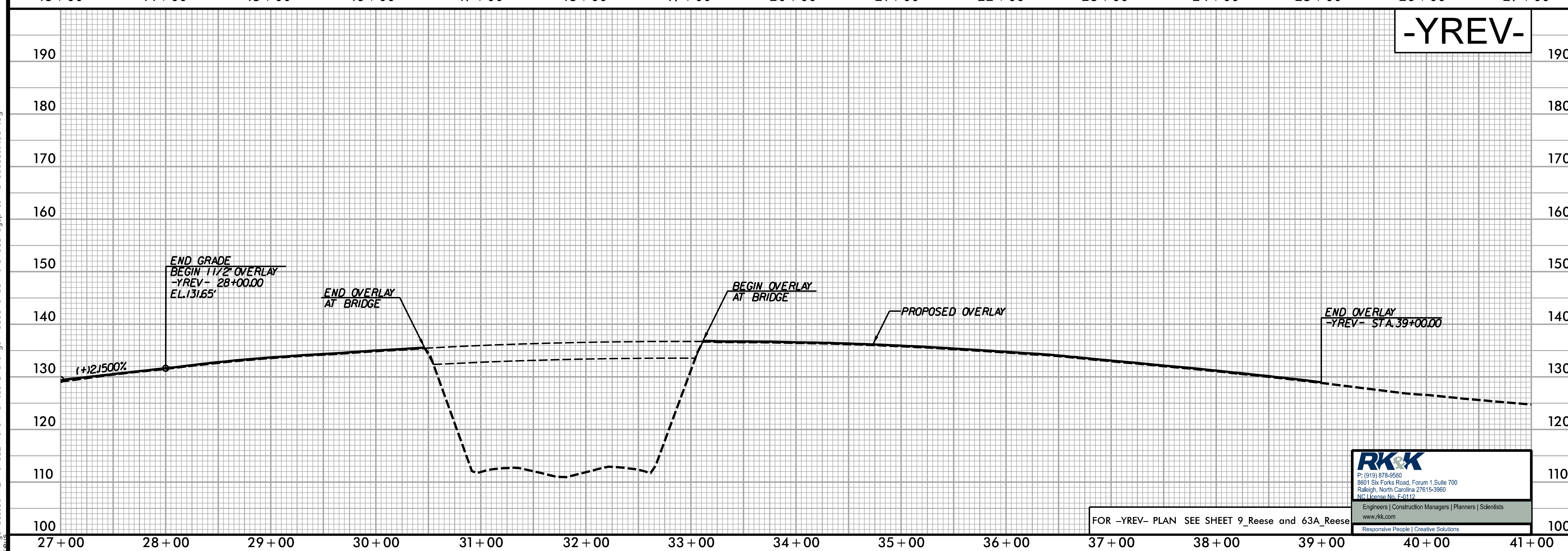
SITE 57

BRIDGE HYDRAULIC DATA
Sta.23+89.5 -YREV-

DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 1,880	CFS
DESIGN HW ELEVATION	= 107.0	FT
100 YEAR DISCHARGE	= 1,880	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 107.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 9,200	CFS
OVERTOPPING ELEVATION	= 114.5	FT
NORMAL WATER SURFACE ELEV	= 99.8	



-YREV-



FOR -YREV- PLAN SEE SHEET 9_Reese and 63A_Reese

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6/23/16

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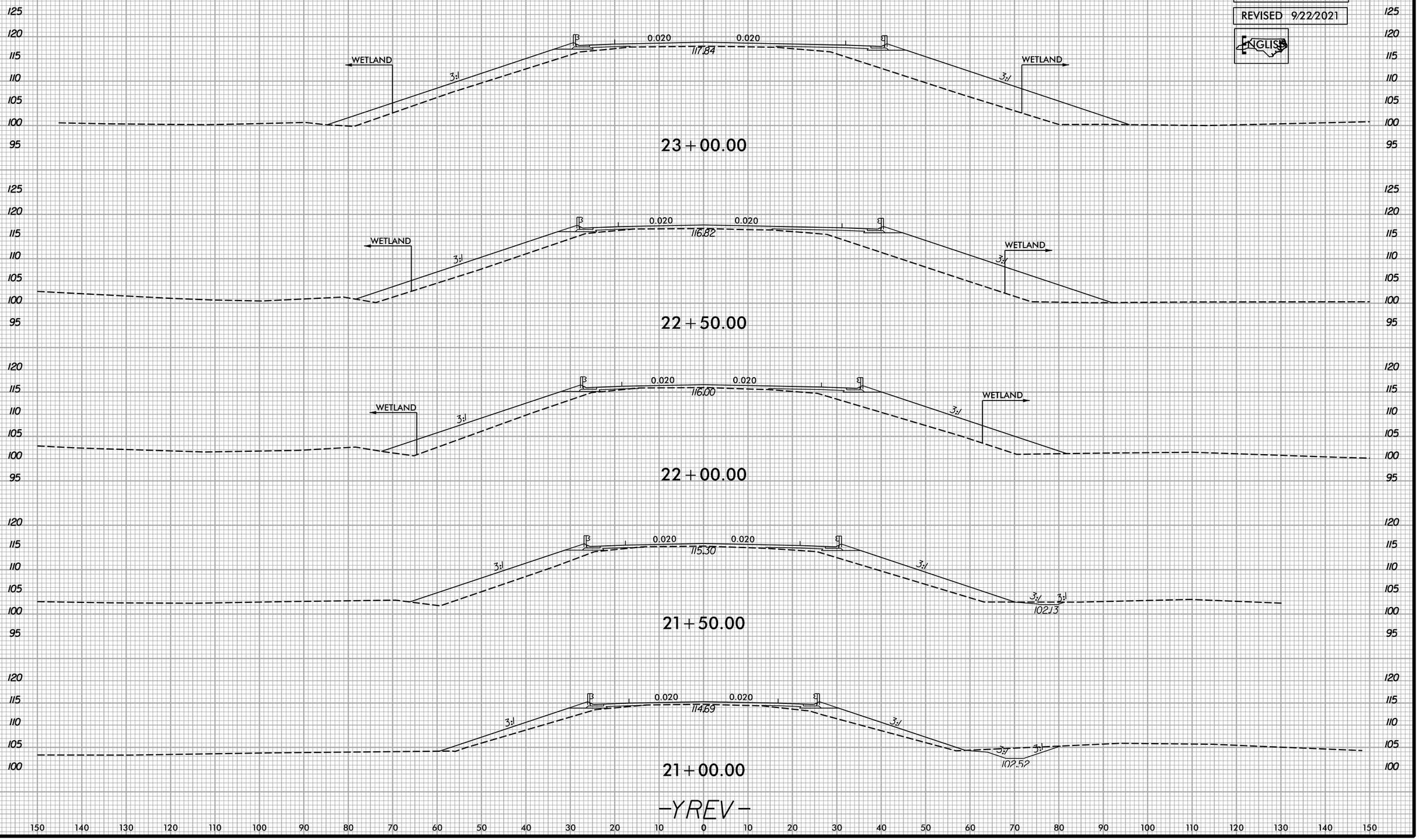
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	Reese X-43

SITE 57

PERMIT DRAWING
SHEET 134D OF 163

REVISED 9/22/2021

ENGLISH



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Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-LSBREV- 61+00 LT	Bank Stabilization: DC						0.001	0.001	8	20	
2	-LSBREV- 71+80 LT	Headwall, 66" RCP: SV-1, WCC	0.001	0.009				0.022	0.003	52	13	
	-LNBREV- 71+47 RT	Headwall, 66" WSP: SV-2, WCB	0.017	0.028				0.006	0.001	35	10	
	-YRPCREV- 22+50 RT	Roadway Fill: WCB	0.086			0.068						
3	-LSBREV- 89+48 LT	Pipe clean out: WA		0.003								
	-LSBREV- 94+48 LT	Pipe clean out, Roadway Fill: WA	0.001	0.003		0.048						
	-LNBREV- 90+00 RT	Roadway Fill: WB	0.067			0.066						
	-LSBREV- 90+77 LT/RT	RCBC Removal: WA, WB, Reese Creek	0.003	0.044					0.048		48	
	-LSBREV- 85+48 LT	42" RCP: WA	0.001	0.012								
4	-LSBREV- 99+00 LT	36" WSP: WA	0.005	0.025								
	-LSBREV- 101+10 LT	36" WSP: WC, SA	0.001	0.033				0.004	0.003	18	24	
5	-YINB- 33+00 RT	66" WSP: WB	0.009	0.034								
6	-YINB- 39+39 LT	30" WSP: WD	0.001	0.039								
	-YINB- 38+02 RT	30" WSP: WB	0.004	0.050								
7	-L- 92+02 - 100+05 LT	Roadway Fill: WH	0.231									
8	-L- 90+87 - 91+10 RT	Ditch: WE			0.024							
TOTALS:			**0.427**	**0.280**	**0.024**	**0.182**	**0.000**	**0.033**	**0.056**	**113**	**115**	**0**

REVISED 9/3/2021, 9/22/2021

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
9	-L- 94+37 - 100+20 RT	Roadway Fill, Ditch: WF	0.135		0.021							
	-L- 100+28 RT	2 @ 36" RCP: SB						0.011	0.001	63	10	
10	-L- 108+26 - 114+34 LT	Roadway Fill: WI	0.076									
11	-L- 118+98 - 133+53 LT	Roadway Fill: WJ	0.531			0.045						
12	-L- 121+32 - 127+67 RT	Roadway Fill, Ditches: WL	0.204	0.066	0.020	0.143						
13	-L- 186+79 - 187+53 LT	Roadway Fill: WR	0.020			0.013						
14	-L- 192+15 - 193+26 LT	Ditch: WR		0.021		0.001						
15	-L- 190+05 RT	42" RCP: WO	0.004			0.006						
	-L- 192+05 RT	Roadway Fill: WO	0.001			0.006						
	-Y5RPC- 13+02 - 21+32 RT	Roadway Fill, 66" RCP: Baker Swamp 2, WO	0.136	0.034		0.165		0.018		60		
	-Y4- 37+50 LT	54" WSP: WO	0.001	0.037								
	-Y4- 40+69 to 43+01 LT	Prop Roadway Fill: WO	0.019			0.053						
TOTALS:			**1.127**	**0.158**	**0.041**	**0.432**	**0.000**	**0.029**	**0.001**	**123**	**10**	**0**

NOTES:

REVISED 9/22/2021

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
16	-Y4- 36+25 RT	54" WSP: Baker Swamp 1, WN Structure Stabilization	0.006	0.025				0.004	0.013	15	34	
	-Y4- 40+32 to 42+06 RT	Roadway Fill: WN	0.035			0.042						
17	-L- 199+16 - 200+49 LT	Prop Roadway Fill - WQ	0.057			0.072						
	-L- 201+67 LT	Rip Rap Outlet Pad - WQ	0.002	0.009								
18	-L- 198+56 - 203+59 RT	Roadway Fill, 60" RCP, 66" RCP: Baker Swamp 3, WP	0.106	0.002		0.066		0.010	0.006	23	13	
	-Y5- 99+16 LT	66" WSP: Baker Swamp 3, WP Structure Stabilization	0.001	0.004				0.007	0.012	22	28	
19	-Y5LPD- 37+73 - 40+14 LT & RT	Roadway Fill: WCG*	0.857									
20	-Y5LPD- 22+86 - 24+53 LT & RT	Roadway Fill: WX	0.402			0.034						
21	-Y5RPD- 14+97 - 18+86 RT	Roadway Fill: WV	0.225			0.020						
22	-Y5FLY- 57+08 - 62+55 LT & RT & -Y5LPD- 18+96 - 21+42 LT & RT	Roadway Fill: WW**	2.663			0.176						
23	-L- 252+34	2 @ 8'x8' RCBC: SC-1, SC-2						0.063	0.006	270	38	
TOTALS:			**4.354**	**0.040**	**0.000**	**0.410**	**0.000**	**0.084**	**0.037**	**330**	**113**	**0**

NOTES:
* Site 19: Area shown in impact table is a total take. Actual impact area is 0.772 acres.
** Site 22: Area shown in impact table is a total take inside -Y5LPD-. Actual impact area is 2.610 acres.

REVISED 9/22/2021

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
24	-L- 304+15	3 @ 10'x8' RCBC, Roadway Fill, Ditch: SD-1, SD-2, WZ, WY	0.056	0.047	0.089	0.080		0.128	0.058	197	26	
	-L- 302+20 RT	Roadway Fill, Ditch: WY		0.004		0.002						
	-L- 306+80 LT	Ditch: WZ		0.010								
	-L- 307+30 RT	Ditch: WY		0.005								
25	-L- 355+00	10'x7' RCBC: SE-1, SE-2, WAB		0.002	0.003			0.017	0.003	135	25	
	-L- 357+75 RT	Ditch: WAB		0.008								
26	-Y7RPC- 17+51 - 24+28 Lt & RT	Roadway Fill: WAC	0.654	0.017		0.151						
27	-Y7RPA 16+97 RT - -L- 392+99 LT	Roadway Fill: WAF	0.284									
28	-SR3 - 34+13 - 35+87 LT	Roadway Fill: WAG	0.047	0.005		0.039						
29	-L- 405+65 LT	2 @ 48" RCP, Ditch: WAH		0.009	0.027							
30	-L- 422+50	12'x6' RCBC: SF, WAK, WAI	0.008	0.074	0.090			0.030	0.003	103	8	
	-L- 422+46 - 437+14 RT	Roadway Fill, Ditch: WAI	0.488		0.012	0.037						
	-L- 422+85 - 436+87 LT	Roadway Fill: WAK	0.624			0.015						
	-L- 425+50 LT	Ditch: WAK		0.014								
	-L- 436+72 - 439+41 LT	Rock Fill: PH						0.134	0.100			
	-L- 439+44 RT	Rock Fill: PI						0.005	0.004			
TOTALS:			**2.161**	**0.195**	**0.221**	**0.324**	**0.000**	**0.314**	**0.168**	**435**	**59**	**0**

REVISED 9/3/2021, 9/22/2021

NOTES:

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8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
31	-L- 508+50 - 509+37 LT	Roadway Fill: WAM	0.042			0.019						
32	-L- 522+79 - 528+68 LT	Roadway Fill: WAN	0.081			0.080						
33	-L- 540+45	8'x8' Culvert: SG-1, SG-2, SG-3, WAP, WAQ		0.010				0.051	0.011	211	99	
34	-L- 574+64	10'x7' RCBC: SH-1, SH-2		0.025		0.002		0.031	0.004	174	30	
35	-L- 602+70 - 606+71 LT	Prop Roadway Fill: WAT	0.016			0.044						
	-Y9RPA- 15+85 RT	Ditch: WAT		0.005								
36	-L- 618+01 - 618+41 RT	Ditch: WAU				0.007						
37	-L- 622+64 to 626+94 LT	72" RCP, Roadway Fill: SI-1, SI-2, WAW, WAV	0.225	0.029		0.137		0.003	0.003	26	20	
		Structure Stabilization: SI-1						0.003		25		
38	-L- 640+26 to 640+69 RT	Ditch: WAX		0.006								
TOTALS:			**0.364**	**0.075**	**0.000**	**0.289**	**0.000**	**0.088**	**0.018**	**436**	**149**	**0**

NOTES:

REVISED 9/22/2021

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
39	-L- 642+88	7'x7' RCBC: SJ-1, SJ-2						0.025	0.008	101	40	
40	-L- 660+20 RT	2 @ 30" RCP: WAY	0.001	0.001								
41	-L- 667+00 LT	Ditch: WAZ		0.011								
42	-L- 669+88 - 684+49 LT & RT	Bridge: Black River, WAZ *	0.385	0.020	0.043	0.207	0.038	0.003	0.266	16	246	
43	-L- 692+28 - 694+59 RT	Roadway Fill: WAZ	0.090			0.053						
44	-L- 695+05 LT	Ditch: WAZ		0.006								
45	-L- 731+00 LT	Roadway Cut: WBB				0.017						
46	-L- 735+80 LT	2 @ 42" RCP: WBC	0.004		0.002	0.028						
47	-L- 766+40	72" RCP: SK-1, SK-2						0.063	0.007	180	24	
48	-L- 403+25 LT	Plug & Fill Exist. 18" RCP: WAG		0.002								
TOTALS:			**0.480**	**0.040**	**0.045**	**0.305**	**0.038**	**0.091**	**0.281**	**297**	**310**	**0**

NOTES:
* Black River bridge bents
  - 2 sets of interior bents in the water
  - 23 piles per bent
  - 20" diameter piles= 2.2sqft permanent surface water impact per pile
  - **Total: 101.2sqft permanent surface water impact (included in the Site 42 number above)**

REVISED 9/22/2021

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Revised 2018 Feb

Submitted 10/19/2021

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
49	-Y5- 45+24 LT	2 @ 8'x8' RCBC Ext: SY-2						0.009		15		
		Bank Stabilization						0.029	0.005	50	8	
50	-Y5- 51+81 - 56+63 LT	Roadway Fill: WCJ	0.011			0.043						
51	-Y5- 60+52 - 65+24 LT	Roadway Fill: WCI	0.114			0.109						
52	-Y5- 64+45 RT	Ditch: WT	0.002	0.006								
53	-Y5RPA- 44+43 - 54+38 LT	Roadway Fill: WU	0.267			0.108						
54A	-Y4- 16+88 LT	Pipe clean out: WS		0.008								
54B	-Y4- 19+00 LT	Pipe clean out: WS		0.005								
54C	-Y4- 21+67 LT	Pipe clean out: WS		0.005								
55	-Y5C- 12+74 - 17+83 LT & RT	Roadway Fill: WCE	0.635			0.220						
56	-Y5B- 12+86 - 16+54 LT	Roadway Fill: WCE	0.013			0.065						
57	-YREV- 24+05 LT/RT	Roadway Fill: WA, WCC, Reese Creek	0.226	0.066		0.139			0.045		78	
TOTALS:			**1.268**	**0.090**	**0.000**	**0.684**	**0.000**	**0.038**	**0.050**	**65**	**86**	**0**

NOTES:

REVISED 9/22/2021

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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
TOTALS for 156:			**0.427**	**0.280**	**0.024**	**0.182**	**0.000**	**0.033**	**0.056**	**113**	**115**	**0**
TOTALS for 157:			**1.127**	**0.158**	**0.041**	**0.432**	**0.000**	**0.029**	**0.001**	**123**	**10**	**0**
TOTALS for 158:			**4.354**	**0.040**	**0.000**	**0.410**	**0.000**	**0.084**	**0.037**	**330**	**113**	**0**
TOTALS for 159:			**2.161**	**0.195**	**0.221**	**0.324**	**0.000**	**0.314**	**0.168**	**435**	**59**	**0**
TOTALS for 160:			**0.364**	**0.075**	**0.000**	**0.289**	**0.000**	**0.088**	**0.018**	**436**	**149**	**0**
TOTALS for 161:			**0.480**	**0.040**	**0.045**	**0.305**	**0.038**	**0.091**	**0.281**	**297**	**310**	**0**
TOTALS for 162:			**1.268**	**0.090**	**0.000**	**0.684**	**0.000**	**0.038**	**0.050**	**65**	**86**	**0**
GRAND TOTAL FOR PROJECT:			**10.181**	**0.878**	**0.331**	**2.626**	**0.038**	**0.677**	**0.611**	**1799**	**842**	**0**

NOTES:

REVISED 9/3/2021, 9/22/2021

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