STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 29, 2021

US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28402-1890

Attention: Ms. Liz Hair
NCDOT Coordinator

Subject: **Application for a Phased Section 404 Individual Permit and Section 401 Water Quality Certification** for the proposed widening of SR 1102 (Gillis Hill Road) from US 401 (Raeford Road) to SR 1418 (Lindsay Road), Cumberland and Hoke Counties. TIP No. U-5798A and U-5798B. Debit $570 from WBS 44369.1.2

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes improve 1.8 miles of SR 1102 (Gillis Hill Road) from US 401 (Raeford Road) to SR 1418 (Lindsay Road) in Cumberland and Hoke Counties (U-5798A & B).

The purpose of this letter is to request approval for a Phased Section 404 Individual Permit and Section 401 Water Quality Certification. In addition to this cover letter, this application package includes the following for U-5798: ENG Form 4345, stormwater management plan, final permit drawings for Section A, preliminary permit drawings for Section B, roadway plans for Section A, DMS acceptance letters for both sections are included.

Purpose and Need

The purpose and need for the proposed action is to reduce congestion on SR 1102 (Gillis Hill Road) and in the vicinity of the Rockfish community. The project will also replace the structurally deficient and functionally obsolete Bridge No. 250075 over Little Rockfish Creek.

Project Description

STIP Project U-5798 proposes to widen SR 1102 (Gillis Hill Road) in Cumberland and Hoke Counties. The existing two-lane road is proposed to be widened to a four-lane, median-divided facility. U-5798 will be divided into two sections, U-5798A and U-5798B:

• U-5798A – Section A proposes to widen SR 1102 (Gillis Hill Road) to a curb and gutter facility with four 12-foot lanes and a 17.5' raised median from north of SR 1112 (Stoney Point Road) to US 401 (Raeford Road). This section of the project will also include the replacement of the existing Bridge No. 250075 over Little Rockfish Creek. Section A proposes to include 4-foot bike lanes and 5-foot sidewalks on each side of the roadway.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENT ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

• U-5798B – Section B proposes to widen SR 1102 (Gillis Hill Road) to a graded shoulder section with four 12-foot lanes and a 17.5' raised median with a 4-foot paved shoulder. The project will begin at SR 1418 (Lindsay Road) and end at North of SR 1112 (Stoney Point Road).

Summary of Impacts

Section A (Final)

Proposed permanent impacts to jurisdictional areas total 232 linear feet of impact to jurisdictional streams. There is a proposed 0.63 acre of permanent impact to riparian wetlands. Of this impact 0.50 acre is permanent fill, 0.09 acre mechanized clearing and <0.01 acre of excavation. Additionally, 0.31 acre of hand clearing is proposed. Utility relocation will result in 0.04 acre of permanent wetland impact (0.04 ac. fill and <0.01 mechanized clearing) and 0.13 acre of hand clearing.

Section B (Preliminary)

Proposed preliminary impacts to jurisdictional areas total 0.84 acre to riparian wetlands and 815 linear feet to jurisdictional steams. Potential impacts due to utility relocation are not available at this time. Any impacts attributed to utilities will be addressed prior to Letting of Section B.

Summary of Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. The Department has acquired the compensatory mitigation for these unavoidable impacts from the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS) for both the A section and the preliminary impacts presented for Section B.

Project Schedule

Currently, U-5798A is scheduled to Let March 15, 2022, however this project may be accelerated. U-5798B is scheduled to Let on February 18, 2025.

NEPA Document Status

A Minimum Criteria Design Checklist (MCDC) was completed and approved in October 2019. This document is available at https://xfer.services.ncdot.gov/pdea/EnvironmentalDocs/Documents/.

NEPA Merger Process

A merger screening meeting was held at the on March 5, 2019. From this meeting it was deemed that due to the limited nature of the project, the NEPA 404 Merger Process was not necessary.

Resource Status

The project is located in the Cape Fear River Basin and lies within Hydrologic Unit 03030004. This is within the southern inner coastal plain physiographic region.

A preliminary jurisdictional determination (SAW-2020-00079) was received from USACE on February 13, 2020.

Impacts to Jurisdictional Resources

Wetlands

Wetland impacts occur in the Cape Fear River Basin in HUC 03030004. Wetland impacts due to construction for U-5798(All Sections) total 1.32 acre. Table 1 lists the impacts to wetlands for this project. Impacts are based upon final design for U-5798A and preliminary impacts for U-5798B.

Table 1. U-5798 Wetland Impacts

Permit Drawing Site Number	JD Map Label	Type	Permanent Impacts (ac.)
Section A (Final)			
1	WB/WC/WE/ WF/WG/WH	Riparian	0.46 (0.41 ac. perm. fill, <0.01 ac. excavation, 0.05 ac. mech. clearing)
2	WA	Riparian	0.12 (0.09 ac. perm. fill, 0.03 ac. mech. clearing)
Section A Total: (Final)		**0.58**	
Section B (Preliminary)			
2	WI	Riparian	0.69 (0.63 ac. perm. fill, 0.06 excavation)
3	WJ	Riparian	0.15 (0.15 ac. perm. fill)
Section B Total: (Preliminary)		**0.74**	
Total: (All Sections)			**1.32***

***Does not include utility impacts**

An additional 0.31 acre of hand clearing will occur in wetlands in the A section. Hand clearing impacts have not been calculated for Section B at this time and will be addressed prior to the Section B Letting.

Table 2. U-5798A Utility Wetland Impacts

Permit Drawing Site Number	JD Map Label	Type	Permanent Impacts (ac.)
Section A (Final)			
1	WC	Riparian	<0.01 (<0.01 ac. perm. fill)
2	WA	Riparian	0.04 (0.03 ac. perm. fill, 0.01 ac. mech. clearing)
Section A Total: (Final)		**0.04**	

Utility impacts to riparian wetlands for Section A totals 0.04 acre. This is for the relocation of overhead powerlines, encasement of the sanitary sewer line and relocation of a water line. An additional 0.13 acre of hand clearing will occur due to utilities. Potential impacts due to utility relocation for Section B are not available at this time. Any impacts attributed to utilities in this section will be addressed prior to Letting of Section B.

Streams

Surface water impacts occur in the Cape Fear River Basin in HUC 03030004. Permanent stream impacts for U-5798 (All Sections) totals 1,047 linear feet. Tables 3-4 list the site number, reference number, stream name and amount of impact.

The Little Rockfish Creek, Stewarts Creek and their tributaries have a best usage classification of C within the project area. No streams impacted are listed in the Final 2018 303(d) report.

Table 3. U-5798 Streams Impacted and Description (Final)

Permit Drawing Site Number	JD Map Label	Stream Name	Perennial/Intermittent
Section A (Final)			
1*	Little Rockfish Creek/SA	Little Rockfish Creek	Perennial
Section B (Preliminary)			
1	SC	UT to Stewarts Creek	Perennial
4	Stewarts Creek	Stewarts Creek	Perennial

*Little Rockfish Creek is a braided channel on the upstream side of Bridge 75.

Table 4. U-5798 Stream Impacts

Permit Drawing Site Number	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)
Section A (Final)			
1	Channel Relocation/ Bridge	232	26
Section A Total: (Final)		**232**	**26**
Section B (Preliminary)			
1	Cross Pipe	660	0
4	Cross Pipe	155	0
Section B Total: (Preliminary)		**815**	**0**
Total: (All Sections)		**1,047**	**26**

There are no proposed impacts to jurisdictional streams due to utilities for Section A. Utility impacts for Section B have not been calculated at this time and will be addressed prior to that section Let.

Open Water

There are no permanent open water impacts associated with U-5798. Impacts from Table 4 are also provided in acreage format on the included Wetland And Surface Water Impacts Summary.

Protected Species

As of July 17, 2020, the United State Fish and Wildlife Service (USFWS) lists eight (8) federally protected species for Cumberland and Hoke Counties (Table 5).

Table 5. Federally protected species listed for Cumberland and Hoke Counties

Common Name	Scientific Name	Status	County	Habitat Present	Biological Conclusion
American alligator	*Alligator mississippiensis*	T(S/A)	C, H	No	Not Required
American chaffseed	*Schwalbea americana*	E	C, H	No	No Effect
Cape Fear shiner	*Notropis mekistocholas*	E	C	No	No Effect
Michaux's sumac	*Rhus michauxii*	E	C, H	Yes	No Effect
Pondberry	*Lindera melissifolia*	E	C	Yes	No Effect
Red-cockaded woodpecker	*Picoides borealis*	E	C, H	Yes	No Effect
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	C, H	Yes	No Effect
Saint Francis' satyr butterfly	*Neonympha mitchelli francisci*	T	C, H	No	No Effect

T-Threatened, T (S/A)-Threatened due to similarity of appearance, E-Endangered. C-Cumberland, H-Hoke

Suitable habitat was deemed present for pondberry, Michaux's sumac, rough-leaved loosestrife and red-cockaded woodpecker within the study area during surveys conducted in 2019. Updated surveys for these species was conducted on June 4, 2021. No specimens were found.

Northern long-eared bat

The US Fish and Wildlife Service has revised the previous programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. Although this programmatic covers Divisions 1-8, NLEBs are currently only known in 19 counties, but may potentially occur in 11 additional counties within Divisions 1-8. NCDOT, FHWA, and USACE have agreed to two conservation measures which will avoid/minimize mortality of NLEBs. These conservation measures only apply to the 30 current known/potential counties shown on Figure 2 of the PBO at this time. The programmatic determination for NLEB for the NCDOT program is **May Affect, Likely to Adversely Affect**. The PBO will ensure compliance with Section 7 of the Endangered Species Act for ten years (effective through December 31, 2030) for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Cumberland and Hoke Counties, where U-5798 is located.

Bald and Golden Eagle Protection Act (BGPA)

A desktop-GIS assessment of the project study area, as well as the area within a 1.0-mile radius of the project limits, was performed on April 25, 2019 using 2017 color aerials. Several water bodies large enough or sufficiently open to be considered potential feeding sources were identified. A survey of the project study area and the area within 660 feet of the project limits was conducted on May 14, 2019. No individuals or nests were observed. The GIS assessment was reviewed to identify any changes from the 2019 analysis, but none were found. The previously established areas were re-surveyed on June 4, 2021 and no individuals or nests were observed. Additionally, a review of the NHP records on July 12, 2021 revealed no known occurrences of this species within 1.0 mile of the project study area. Due to the lack of observed presence and recorded occurrences, and the minimal impact anticipated for this project, it has been determined that this project will not affect this species.

Moratoria

There are no construction moratoria associated with this project.

Cultural Resources

Historic Architecture

A Historic Structures Survey Report was completed for potentially eligible resources within or in proximity to the project study area. The Gillis Farmstead and the McInnis House were Determined Eligible for the National Register of Historic Places (NRHP). The State Historic Preservation Office made a determination of No Adverse Effects to the Historic Resources on October 8, 2019.

Archeological Resources

An archaeological survey and evaluation of the Area of Potential Effects (APE) was conducted from February 28 to April 19, 2019 by AECOM Technical Services of North Carolina, Inc. (AECOM) under contract to the NCDOT. Site 31CD2209 represents a mill complex shown on mid-nineteenth century maps. Multiple elements of the mill complex retain integrity, including the mill dam, foundations of two mill buildings, and an historic road trace. 31CD2209 has been determined eligible for listing on the NRHP. Since avoidance of this historic resource is not feasible, mitigation in the form of data recovery was warranted. Recovery efforts

have concluded and the State Historic Preservation Office issued an End of Fieldwork Management Summary on July 12, 2021.

FEMA Compliance

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

Mitigation Options

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for U-5798. Using these features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- Proposed bridge replacements will contain no deck drains
- The bridges will have two catch basins located at the end of the approach slab to collect deck drainage with an outlet on the downstream side, into a proposed ditch.
- Riprap pads will be used at the outlets to reduce velocities into wetlands

Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to wetlands will be offset by compensatory mitigation provided by the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS). An acceptance letter from DMS is attached.

Indirect and Cumulative Effects

An Indirect and Cumulative Effects (ICE) screening was completed and concluded that no further study is warranted.

Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities.

Section 401: We are requesting a Section 401 Water Quality Certification from NCDWR. We are providing this application to NCDEQ, for their approval. Authorization to debit the $570 Permit Application Fee from WBS Element 44369.1.2 is hereby given.

A copy of this permit request and its distribution list will be posted on the NCDOT website at: https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jason Dilday at jldilday@ncdot.gov or (919) 707-6111.

Sincerely,

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

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

cc:

NCDOT Permit Application Standard Distribution List

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

(33 CFR 325)

OMB APPROVAL NO. 0710-0003
EXPIRES: 31 AUGUST 2012

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Philip Middle - S. Last - Harris	First - Middle - Last -
Company - NCDOT-EAU	Company -
E-mail Address -	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address-	Address-
City - State - Zip - Country -	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business 919-707-6111 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
U-5798

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Little Rockfish Creek and UTs, Stewarts Creek and UTs	Address
15. LOCATION OF PROJECT Latitude: ◦N 35.011581 Longitude: ◦W -79.055723	City - State- Zip-

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section - Township - Range -

17. DIRECTIONS TO THE SITE

Please see attached vicinity map and cover letter.

18. Nature of Activity (Description of project, include all features)

STIP Project U-5798 proposes to widen SR 1102 (Gillis Hill Road) in Cumberland and Hoke Counties. The existing two-lane road is proposed to be widened to a four-lane, median-divided facility. U-5798 will be divided into two sections, U-5798A and U-5798B:

• U-5798A – Section A proposes to widen SR 1102 (Gillis Hill Road) to a curb and gutter facility with four 12-foot lanes and a 17.5' raised median from north of SR 1112 (Stoney Point Road) to US 401 (Raeford Road). This section of the project will also include the replacement of the existing Bridge No. 250075 over Little Rockfish Creek. Section A proposes to include 4-foot bike lanes and 5-foot sidewalks on each side of the roadway.
• U-5798B – Section B proposes to widen SR 1102 (Gillis Hill Road) to a graded shoulder section with four 12-foot lanes and a 17.5' raised median with a 4-foot paved shoulder. The project will begin at SR 1418 (Lindsay Road) and end at North of SR 1112 (Stoney Point

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose and need for the proposed action is to reduce congestion on SR 1102 (Gillis Hill Road) and in the vicinity of the Rockfish community. The project will also replace the structurally deficient and functionally obsolete Bridge No. 250075 over Little Rockfish Creek.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Impacts will result from widening the roadway and shoulders.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
See attached cover letter.		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See attached cover letter.

or

Linear Feet See attached cover letter.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See attached cover letter.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

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

for Philip S. Harris, III, P.E., C.P.M.

SIGNATURE OF APPLICANT — 7/29/2021 DATE — SIGNATURE OF AGENT — DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
TIM BAUMGARTNER
Director

NORTH CAROLINA
Environmental Quality

July 28, 2021

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

U-5798A, Widening of SR 1102 (Gillis Hill Road) from North of SR 1112 (Stoney Point Road) to US 401 (Raeford Road) and Replace Bridge 250075 over Little Rockfish Creek, Cumberland County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on July 16, 2021, the 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:

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	232.000	0.630	0	0	0	0

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

The impacts and associated mitigation needs were under projected by the NCDOT in the 2021 impact data. DMS will commit to implement sufficient compensatory mitigation credits to offset the 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 Beth Harmon at 919-707-8420.

Sincerely,

Elizabeth Harmon

James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: U-5798A

ROY COOPER
Governor
ELIZABETH S. BISER
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TIM BAUMGARTNER
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NORTH CAROLINA
Environmental Quality

July 29, 2021

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

U-5798B, Widening of SR 1102 (Gillis Hill Road) from SR 1418 (Lindsay Road) to North of SR 1112 (Stoney Point Road), Cumberland and Hoke Counties

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on July 16, 2021, the 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:

Cape Fear 03030004 SICP	Stream (Feet)			Wetlands (Acres)			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Proposed Impacts	0	0	815.000	0.840	0	0	0	0

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

The impacts and associated mitigation needs were under projected by the NCDOT in the 2021 impact data. DMS will commit to implement sufficient compensatory mitigation credits to offset the 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 Beth Harmon at 919-707-8420.

Sincerely,

Elizabeth Harmon

James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: U-5798B

Submitted 7/29/2021

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.06; Released June 2016)

WBS Element: 44369.1.2 **TIP No.:** U-5798A **County(ies):** Cumberland

General Project Information

WBS Element:	44369.1.2	**TIP Number:**	U-5798A	**Project Type:**	Roadway Widening
Date:	4/17/2020				
NCDOT Contact:	Paul Atkinson	**Contractor / Designer:**	Richard Bollinger, PE		
Address:	1000 Birch Ridge Rd. Raleigh, NC 27610	**Address:**	8521 Six Forks Rd. Suite 400 Raleigh NC 27615		
Phone:	919-707-6707	**Phone:**	919-926-4105		
Email:	patkinson@ncdot.gov	**Email:**	Richard.Bollinger@rsandh.com		
City/Town:	Fayetteville	**County(ies):**	Cumberland		
River Basin(s):	Cape Fear	**CAMA County?**	No		
Wetlands within Project Limits?	Yes				

Project Description

Project Length (lin. miles or feet):	1.072 mi.	**Surrounding Land Use:**	Agriculture, Woods, Light Residential and Commercial

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	15.1 ac.	5.3 ac.
Typical Cross Section Description:	Four 12-foot lanes with curb and gutter and 4-foot bike lanes. 5-foot sidewalks on each side of the roadway.	Two 12-foot lanes with 1' paved shoulder section on both sides.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 30400 Year: 2041	Existing: 16700 Year: 2017

General Project Narrative: (Description of Minimization of Water Quality Impacts)

Section A of U-5798 proposes to widen SR 1102 (Gillis Hill Road) to four 12-foot lanes with a median from the north side of Stoney Point Road (SR 1112) to US 401 and will include construction of two parallel bridges over Little Rockfish Creek to replace the existing structurally deficient, functionally obsolete bridge. The proposed bridges will be built to the west (upstream) of the existing structure. The left bridge (southbound) is 1@127' and 1@115', with 63" FIBS with cap of varying depth. The right bridge (northbound) is 1@113' and 1@115' with 54" FIBS with cap of verying depth. The proposed bridges will not require deck drains. The bridges will have two catch basins located at the end of the approach slab to collect deck drainage with an outlet to the downstream side of the bridge into a proposed ditch. Rip rap pads will be used at all outlets to reduce velocities into wetlands.

Waterbody Information

Surface Water Body (1):	Little Rockfish Creek	**NCDWR Stream Index No.:**	18-34-24-(1)
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C
		Supplemental Classification:	None
Other Stream Classification:	None		
Impairments:	None		
Aquatic T&E Species?	Yes	Comments:	American Alligator (Not Required), Cape Fear Shiner (No Effect, Michaux's Sumac (No Effect), Pondberry (No Effect), Red-cockaded Woodpecker (No Effect), Rough-leaved Loosestrife (No Effect), Saint Francis' Satyr Butterfly (No Effect), Northern long-eared bat (May Affect, Likely to Adversely Affect)
NRTR Stream ID:	Little Rockfish Creek	**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)	(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
(If yes, provide justification in the General Project Narrative)			

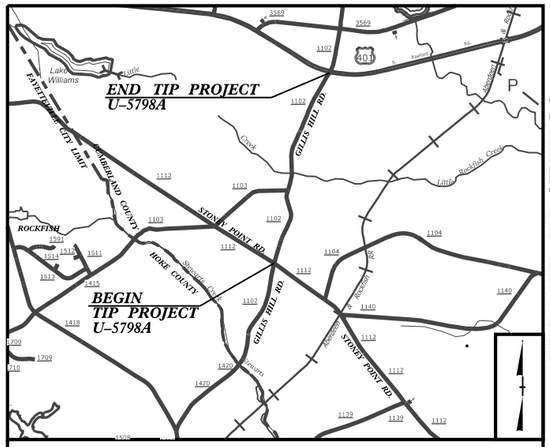
Submitted 7/29/2021

09/08/99

TIP PROJECT: U-5798A

CONTRACT:

PERMIT DRAWINGS



VICINITY MAP N.T.S

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5798A	1	

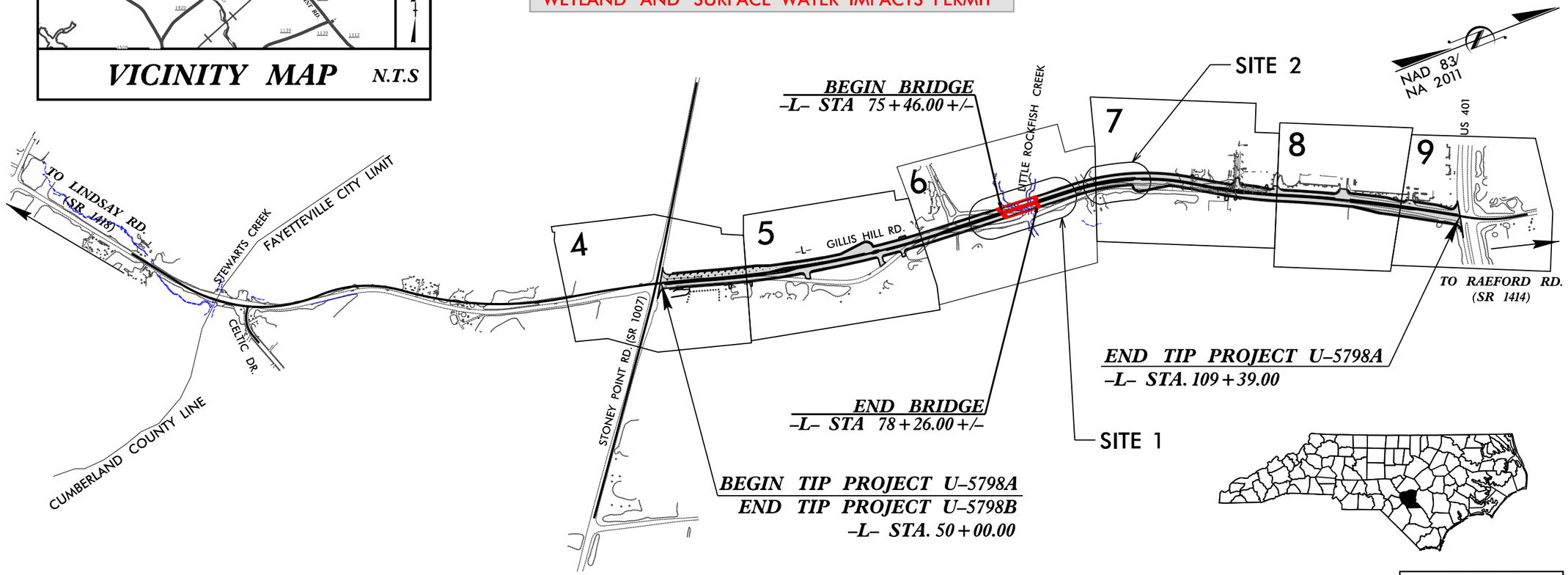
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44369.1.2	N/A	PE

LOCATION: WIDEN SR 1102 (GILLIS HILL ROAD) TO MULTI-LANES FROM FROM US 401 (RAEFORD ROAD) TO SR 1007 (STONEY POINT ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE, SIGNING, STRUCTURES AND SIGNALS.

PERMIT DRAWING SHEET 1 OF 12

WETLAND AND SURFACE WATER IMPACTS PERMIT



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

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2021 = 24,700
ADT 2041 = 30,400
K = 8 %
D = 60 %
T = 3 % *
V = 50 MPH
*(TTST=1 + DUAL=2)
FUNC CLASS =
MINOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5798A	=	1.125	MILES
LENGTH STRUCTURE TIP PROJECT U-5798A	=	0.053	MILES
TOTAL LENGTH TIP PROJECT U-5798A	=	1.072	MILES

PREPARED IN THE OFFICE OF:
RS&H
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 3/20/2020

LETTING DATE: 3/15/2022

CHARLES YOUNG, PE
PROJECT ENGINEER

ERIC BUSH, EI
PROJECT DESIGN ENGINEER

NICOLE HACKLER, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

REG. STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

14-JUL-2021 10:09
R:\Hydraulics_PERMITS_Environmental\Standard Permit\Drawings\PSH\U-5798A_hyd_prm_01_tsh.dgn
$$$$USERNAME$$$$

Submitted 7/29/2021

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 2 OF 12

SITE 1

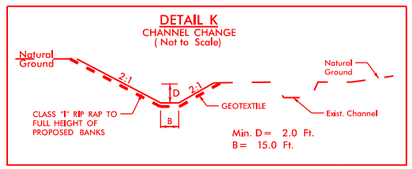
SITE 2

HAND CLEARING
MECHANIZED CLEARING
EXCAVATION IN WETLAND

MECHANIZED CLEARING
FILL IN WETLAND

SEE INSET A

DETAIL K
CHANNEL CHANGE
(Not to Scale)



Min. D= 2.0 Ft.
B= 15.0 Ft.

FROM –L– STA. 76+47 LT TO STA. 77+25 RT
EST. 456 TONS CL "I" RIP RAP
EST. 643 SY GEOTEXTILE
EST. 910 CY DDE

NAD 83/ NA 2011

6 M D GILLIS C/O JUDY GILLIS DIBACCO

7 M D GILLIS C/O JUDY GILLIS DIBACCO

8 MALCOLM D GILLIS HEIRS JUDY GILLIS MCKETHAN

9 JOHN MCN GILLIS JR ET AL

10 JOHN MCN GILLIS JR ET AL

11 DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS

5 JOHN D GILLIS

MATCHLINE SHEET 5 –L– STA. 69+35.00

MATCHLINE SHEET 7 –L– STA. 82+60.00

–L– 70

–L– 75

–L– 80

RUN OF LITTLE ROCKFISH CREEK IS PROPERTY LINE

CLASS "I" RIP RAP FILL TO A MINIMUM 10' OFF PROPOSED COLUMNS

CHANNEL BLOCK SEE SHEET 2D–1

REMOVE EXISTING BRIDGE

CHANNEL CHANGE SEE DETAIL K

SPECIAL LATERAL BASE DITCH SEE DETAIL G

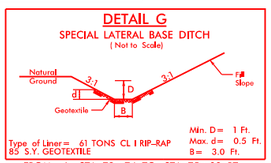
STANDARD BASE DITCH SEE DETAIL H

EST 7 TON CL I RIP RAP
EST 15 SY GEOTEXTILE

EST 15 TON CL I RIP RAP
EST 30 SY GEOTEXTILE

ADDITIONAL WETLAND IMPACTS ARE ACCOUNTED FOR IN THE UTILITY PERMIT DRAWINGS

DETAIL G
SPECIAL LATERAL BASE DITCH
(Not to Scale)

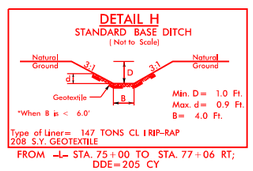


Min. D= 1 Ft.
Max. d= 0.5 Ft.
B= 3.0 Ft.

Type of Liner= 61 TONS CL I RIP-RAP
85 S.Y. GEOTEXTILE

FROM –L– STA. 73+74 TO STA. 75+00 RT

DETAIL H
STANDARD BASE DITCH
(Not to Scale)



"When B is < 6.0'

Min. D= 1.0 Ft.
Max. d= 0.9 Ft.
B= 4.0 Ft.

Type of Liner= 147 TONS CL I RIP-RAP
208 S.Y. GEOTEXTILE

FROM –L– STA. 75+00 TO STA. 77+06 RT;
DDE=205 CY

E E DENOTES EXCAVATION IN WETLAND

HC HC DENOTES HAND CLEARING

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'

EXCAVATION IN WETLAND

INSET A

FOR –L– PROFILE, SEE SHEETS NO. 9, 10

12-JUL-2021 (2:40)
K:\TIP\U-5798A\PERMITS_Environmental\Standard Permit\Drawings\PSH\U-5798A_hyd_prm_02_psh_06.dgn
$$$$USERNAME$$$$

Submitted 7/29/2021

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 3 OF 12

RS&H
NC FIRM LICENSE No: F-0493

SITE 1

SITE 2

HAND CLEARING
MECHANIZED CLEARING
EXCAVATION IN WETLAND

MECHANIZED CLEARING
FILL IN WETLAND

SEE INSET A

6 M D GILLIS C/O JUDY GILLIS DIBACCO

8 MALCOLM D GILLIS HEIRS JUDY GILLIS MCKETHAN

9 JOHN MCN GILLIS JR ET AL

10 JOHN MCN GILLIS JR ET AL

11 DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS

5 JOHN D GILLIS

7 M D GILLIS C/O JUDY GILLIS DIBACCO

NAD 83/ NA 2011

RUN OF LITTLE ROCKFISH CREEK IS PROPERTY LINE

MATCHLINE SHEET 5 –L– STA. 69+35.00

MATCHLINE SHEET 7 –L– STA. 82+60.00

MATCHLINE SHEET 8 –L– STA. 80+00

CLASS "I" RIP RAP FILL TO A MINIMUM 18" OFF PROPOSED COLUMNS

CHANNEL BLOCK SEE SHEET 20

CHANNEL CHANGE SEE DETAIL K

REMOVE EXISTING BRIDGE

SPECIAL LATERAL BASE DITCH SEE DETAIL G

STANDARD BASE DITCH SEE DETAIL H

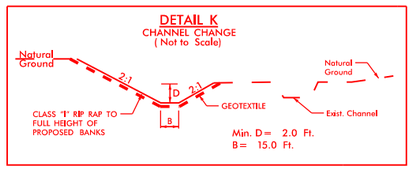
EST 7 TON CL I RIP RAP
EST 15 SY GEOTEXTILE

EST 15 TON CL I RIP RAP
EST 30 SY GEOTEXTILE

ADDITIONAL WETLAND IMPACTS ARE ACCOUNTED FOR IN THE UTILITY PERMIT DRAWINGS

FOR –L– PROFILE, SEE SHEETS NO. 9, 10

DETAIL K
CHANNEL CHANGE
(Not to Scale)



Min. D= 2.0 Ft.
B= 15.0 Ft.

FROM –L– STA. 76+47 LT TO STA. 77+25 RT
EST. 456 TONS CL "I" RIP RAP
EST. 643 SY GEOTEXTILE
EST. 910 CY DDE

DETAIL G
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Min. D= 1 Ft.
Max. d= 0.5 Ft.
B= 3.0 Ft.

Type of Liner= 61 TONS CL I RIP-RAP
85 S.Y. GEOTEXTILE

FROM –L– STA. 73+74 TO STA. 75+00 RT

DETAIL H
STANDARD BASE DITCH
(Not to Scale)

"When B is < 6.0'

Min. D= 1.0 Ft.
Max. d= 0.9 Ft.
B= 4.0 Ft.

Type of Liner= 147 TONS CL I RIP-RAP
208 S.Y. GEOTEXTILE

FROM –L– STA. 75+00 TO STA. 77+06 RT;
DDE=205 CY

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

HC HC DENOTES HAND CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'

EXCAVATION IN WETLAND

INSET A

I2_JUL_2021U55
K:\TIP\U-5798A\PERMITS_Environmental\Standard Permit\Drawings\PSH\U-5798A_hyd_prm_03_psh_06_con.dgn
$$$$USERNAME$$$$

Submitted 7/29/2021

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 4 OF 12

RS&H
NC FIRM LICENSE No: F-0493

SITE 2

MECHANIZED CLEARING
HAND CLEARING

ADDITIONAL WETLAND IMPACTS ARE ACCOUNTED FOR IN THE UTILITY PERMIT DRAWINGS

NAD 83/
NA 2011

MATCHLINE SHEET 6 –L– STA. 82+60.00

MATCHLINE SHEET 8 –L– STA. 95+80.00

9 JOHN MCN GILLIS JR ET AL

13 JOHN MCN GILLIS JR ET AL

15 GILBERT LINDSAY & WIFE LAURA

16 LEWIS LINDSEY & WIFE LAURIE

20 GT RECREATION

21 WAL-MART REAL ESTATE BUSINESS TRUST (#3595)

10 JOHN MCN GILLIS JR ET AL

12 JOHN MCN GILLIS JR ET AL

11 DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS

14 KATHRYN GILLIS MILLER & HUSBAND DOUGLAS KEITH

18 WEST FAYETTEVILLE BAPTIST CHURCH TRUSTEES

19 JOHN D GILLIS

NOTE:
UNABLE TO LOCATE EXISTING RCP DURING FIELD INVESTIGATION.

DETAIL I
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 3:1 — Front Ditch Slope

Min. D = 1.0 Ft.

FROM –L– STA. 90+10 TO STA. 92+50 LT
FROM –L– STA. 93+50 TO STA. 95+00 LT

HC HC DENOTES HAND CLEARING

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50′ 0′ 50′ 100′ 150′

FOR –L– PROFILE, SEE SHEET NO. 10

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$$$$USERNAME$$$$

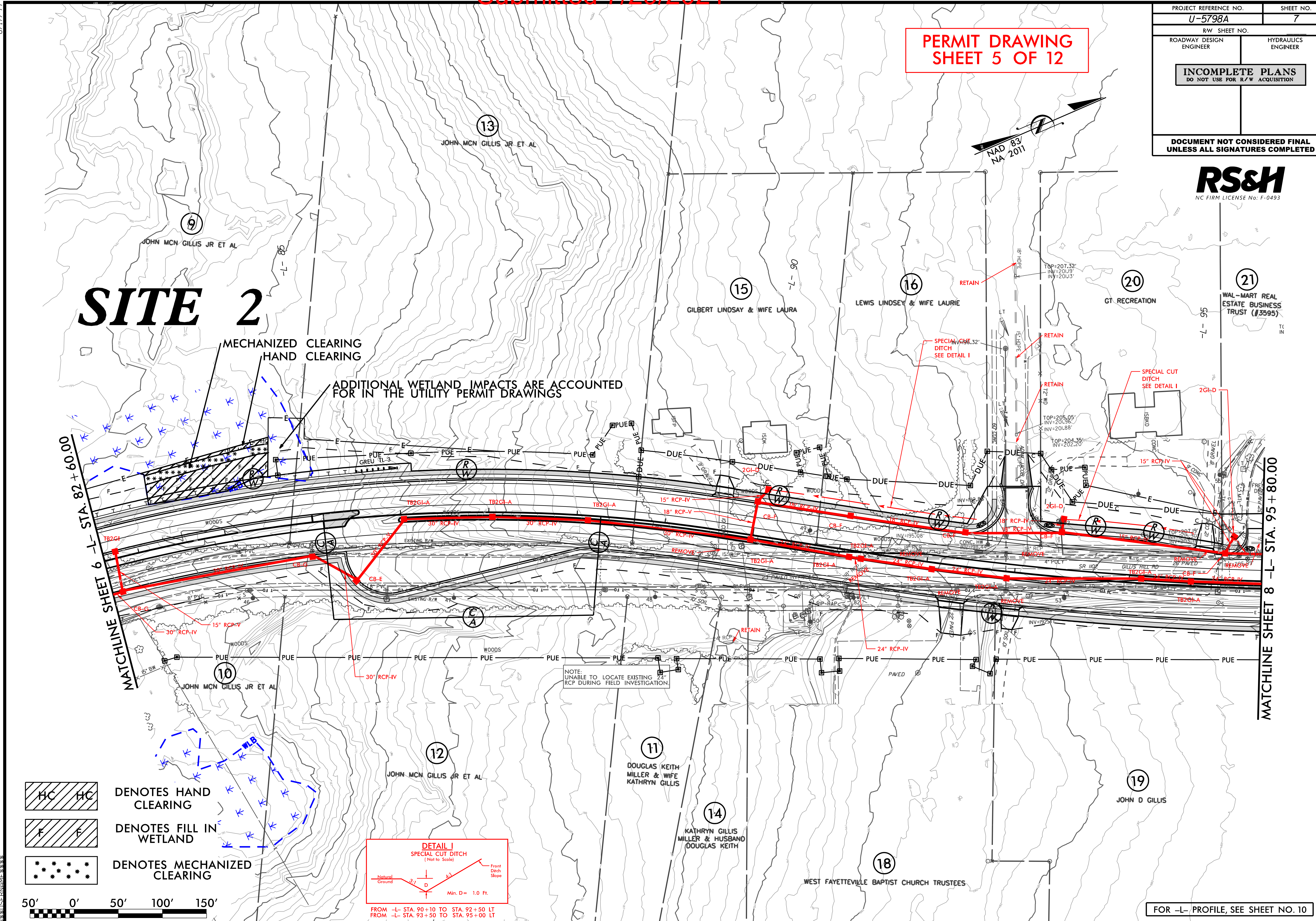
Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 5 OF 12



RS&H
NC FIRM LICENSE No: F-0493
NAD 83/NA 2011
SITE 2
MECHANIZED CLEARING
HAND CLEARING
ADDITIONAL WETLAND IMPACTS ARE ACCOUNTED FOR IN THE UTILITY PERMIT DRAWINGS
JOHN MCN GILLIS JR ET AL
GILBERT LINDSAY & WIFE LAURA
LEWIS LINDSEY & WIFE LAURIE
GT RECREATION
WAL-MART REAL ESTATE BUSINESS TRUST (#3595)
DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS
KATHRYN GILLIS MILLER & HUSBAND DOUGLAS KEITH
WEST FAYETTEVILLE BAPTIST CHURCH TRUSTEES
JOHN D GILLIS
MATCHLINE SHEET 6 -L- STA. 82+60.00
MATCHLINE SHEET 8 -L- STA. 95+80.00
SPECIAL CUT DITCH SEE DETAIL I
RETAIN
REMOVE
NOTE: UNABLE TO LOCATE EXISTING 24" RCP DURING FIELD INVESTIGATION.

DENOTES HAND CLEARING

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'

DETAIL I
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= 1.0 Ft.

FROM -L- STA. 90+10 TO STA. 92+50 LT
FROM -L- STA. 93+50 TO STA. 95+00 LT

FOR -L- PROFILE, SEE SHEET NO. 10

Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 6 OF 12

BM#7 @ "BENCHTIE" IN 16" OAK
ELEV. = 225.50'
-L- STA. 43+84.76 136.37' LEFT

BM#8 @ "BENCHTIE" IN 36" S. GUM
ELEV. = 216.02'
-L- STA. 62+60.67 320.46' RIGHT

FOR -L- ALIGNMENT, SEE SHEETS 4.5

-L-

PIPE HYDRAULIC DATA
-L- Sta. 59+93

DRAINAGE AREA	= 76.0	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 67.0	CFS
DESIGN HW ELEVATION	= 214.7	FT
100 YEAR DISCHARGE	= 79.0	CFS
100 YEAR HW ELEVATION	= 215.1	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 142.0	CFS
OVERTOPPING ELEVATION	= 217.9	FT

BEGIN GRADE U-5798A
-L- STA. 50+00.00
ELEV. = 224.08'

PI = 51+00.00
EL = 223.78'
VC = 150'
K = 250
DS = 84

PI = 55+35.00
EL = 225.08'
VC = 300'
K = 127
DS = 57

PI = 59+60.00
EL = 216.35'
VC = 360'
K = 104
DS = 52

(-)0.3000% (+)0.3000% (+)0.3000% (-)12.0545% (-)0.3015% (-)12.0545% (±)1.4177% (-)12.4731% (+)1.5000%

PROPOSED GRADE
EXISTING GROUND
PROPOSED 48" RCP
221.17
(+)1.6491%

BEGIN SPECIAL LATERAL
BASE DITCH GRADE
-L- STA. 50+50 LT
EL = 217.70'

END SPECIAL LATERAL
BASE DITCH GRADE
BEGIN SPECIAL CUT
BASE DITCH GRADE
-L- STA. 57+00 LT
EL = 215.74'

END SPECIAL CUT
BASE DITCH GRADE
BEGIN SPECIAL LATERAL
BASE DITCH GRADE
-L- STA. 58+00 LT
EL = 215.44'

(-)0.3000% (-)1.2900% PI = 58+50.000 EL = 214.80' (-)1.2400% PI = 59+00.000 EL = 213.60' PI = 59+93.000 EL = 211.50'

END SPECIAL LATERAL
BASE DITCH GRADE
BEGIN SPECIAL CUT
BASE DITCH GRADE
-L- STA. 60+50 LT
EL = 215.00'

END SPECIAL CUT
BASE DITCH GRADE
BEGIN SPECIAL LATERAL
BASE DITCH GRADE
-L- STA. 62+50 LT
EL = 218.00'

(+)1.0500%

LEFT DITCH

HIGH POINT
-L- Sta. 65+49.58
Elev. 223.86'

PI = 67+85.00
EL = 228.05'
VC = 710'
K = 84
DS = 50

221.17
(+)11.4177%
(+)0.5000% (+)0.3133% (+)0.3000% (+)0.8600% (-)17.0000%

PI = 64+50.000 EL = 219.00'
PI = 66+00.000 EL = 219.47'
PI = 67+50.000 EL = 219.52'

END SPECIAL LATERAL
BASE DITCH GRADE
-L- STA. 67+60 LT
EL = 220.00'

PROPOSED GRADE
EXISTING GROUND

BEGIN BRIDGE RT.
-L- STA. 75+71.63
ELEV. = 174.25'

BEGIN BRIDGE LT.
-L- STA. 75+48.00
ELEV. = 175.47'

EXISTING BRIDGE

NATURAL GROUND ALONG -EL-

BEGIN SPECIAL LATERAL
BASE DITCH GRADE
-L- STA. 73+74 RT
EL = 178.00'

(-)9.3846% PI = 74+00.000 EL = 175.56' (-)11.2400% PI = 74+50.000 EL = 169.69' (-)18.8600% (-)1.9022% PI = 75+65.550 EL = 161.06' (-)1.6716% (-)18.9400% (-)9.0600% PI = 76+00.000 EL = 157.47' PI = 76+50.000 EL = 153.00' PI = 77+00.000 EL = 148.47' 169.30

BRIDGE HYDRAULIC DATA

DRAINAGE AREA	= 16.1	SQ.MI.
DESIGN DISCHARGE	= 710	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 152.1	FT
BASE DISCHARGE	= 970	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 153.6	FT
OVERTOPPING DISCHARGE	= 1300+	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 163.4	FT

BM#9 @ "BENCHTIE" IN 12" TREE
ELEV. = 163.00'
-L- STA. 75+66 240' RIGHT

ONLY LT. BRIDGE SHOWN FOR CLARITY

FOR -L- ALIGNMENT, SEE SHEETS 5.6

RIGHT DITCH
LEFT DITCH

END SPECIAL LATERAL
BASE DITCH GRADE
BEGIN STANDARD
BASE DITCH GRADE
-L- STA. 75+00 RT
EL = 165.26'

REVISIONS 5/28/99

17-APR-2020 16:18
R:\Projects\PERMITS_Environmental\Standard Permit\Drawings\PSHNU-5798A_hyd_prm_06_of_11_10.dgn
$$$$USERNAME$$$$

Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	11

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

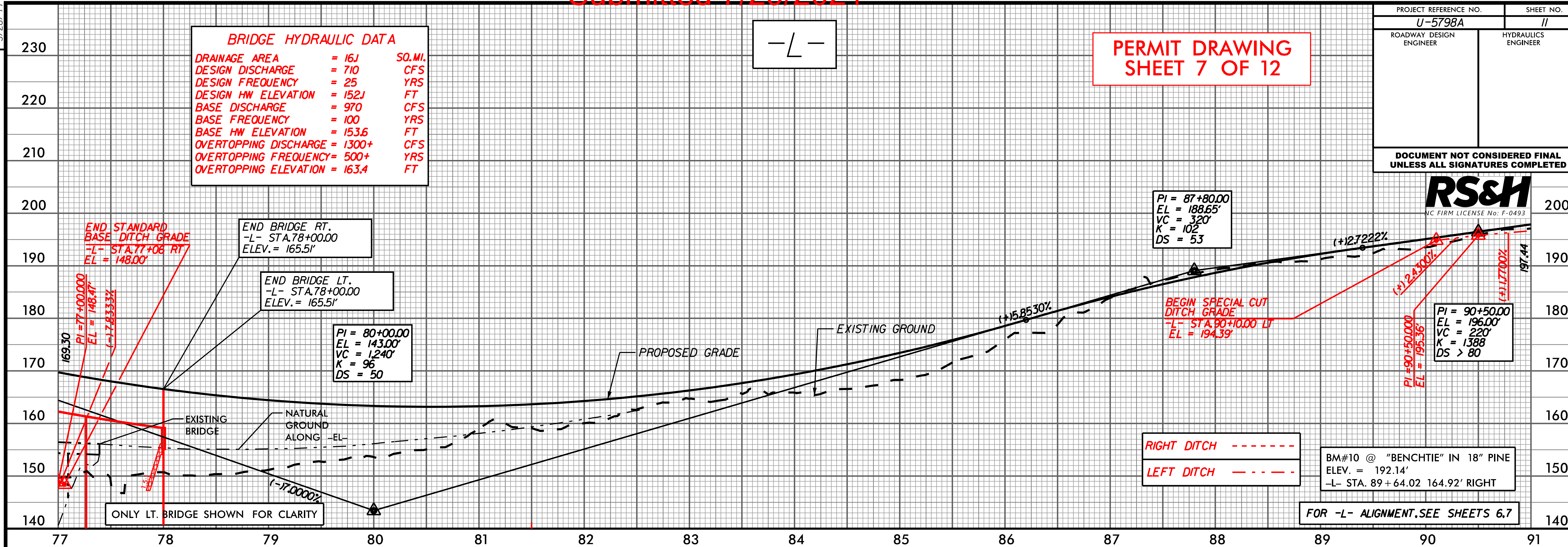
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H NC FIRM LICENSE No: F-0493

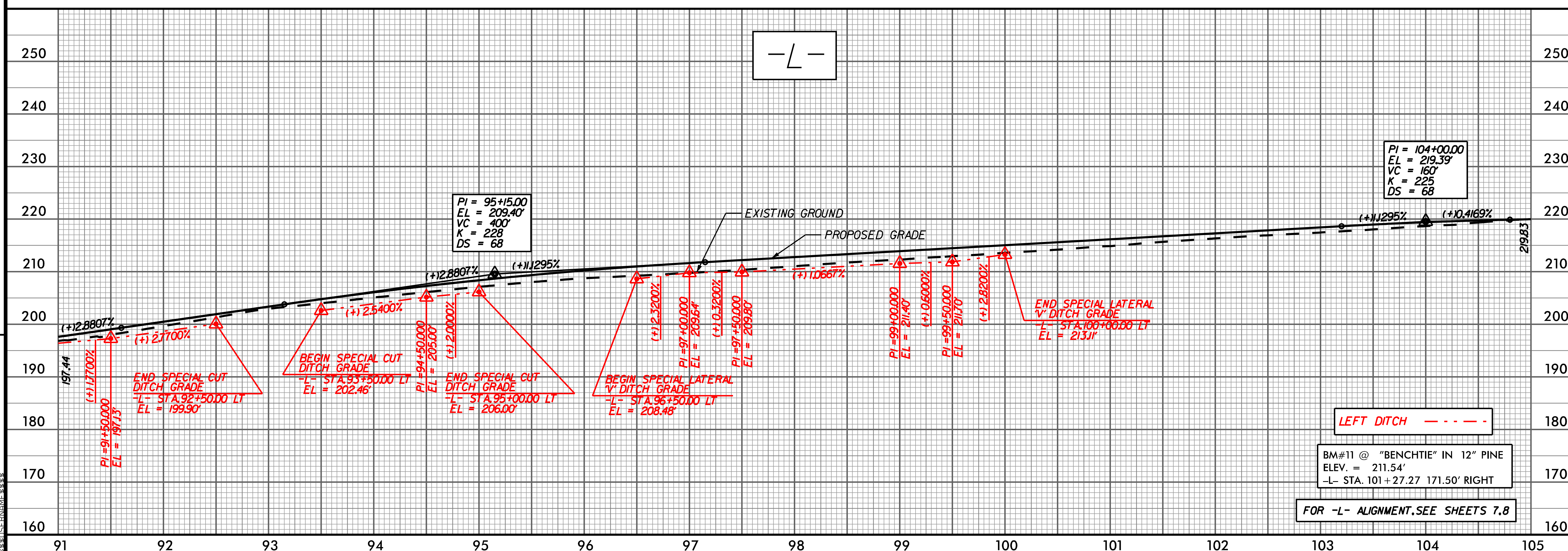
PERMIT DRAWING SHEET 7 OF 12

BRIDGE HYDRAULIC DATA

DRAINAGE AREA	=	16.1	SQ.MI.
DESIGN DISCHARGE	=	710	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	152.1	FT
BASE DISCHARGE	=	970	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	153.6	FT
OVERTOPPING DISCHARGE	=	1300+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	163.4	FT



-L-
END STANDARD BASE DITCH GRADE -L- STA.77+06 RT EL = 148.00'
END BRIDGE RT. -L- STA.78+00.00 ELEV.= 165.51'
END BRIDGE LT. -L- STA.78+00.00 ELEV.= 165.51'
PI = 80+00.00 EL = 143.00' VC = 1,240' K = 96 DS = 50
PI = 87+80.00 EL = 188.65' VC = 320' K = 102 DS = 53
PI = 90+50.00 EL = 196.00' VC = 220' K = 1388 DS > 80
BEGIN SPECIAL CUT DITCH GRADE -L- STA.90+10.00 LT EL = 194.39'
EXISTING GROUND
PROPOSED GRADE
EXISTING BRIDGE
NATURAL GROUND ALONG -EL-
ONLY LT. BRIDGE SHOWN FOR CLARITY
(-)17.0000%
(+)5.8530%
(+)2.7222%
RIGHT DITCH
LEFT DITCH
BM#10 @ "BENCHTIE" IN 18" PINE ELEV. = 192.14' -L- STA. 89+64.02 164.92' RIGHT
FOR -L- ALIGNMENT, SEE SHEETS 6,7



-L-
PI = 95+15.00 EL = 209.40' VC = 400' K = 228 DS = 68
PI = 104+00.00 EL = 219.39' VC = 160' K = 225 DS = 68
EXISTING GROUND
PROPOSED GRADE
(+)2.8807%
(+)1.1295%
(+)0.4169%
END SPECIAL CUT DITCH GRADE -L- STA.92+50.00 LT EL = 199.90'
BEGIN SPECIAL CUT DITCH GRADE -L- STA.93+50.00 LT EL = 202.46'
END SPECIAL CUT DITCH GRADE -L- STA.95+00.00 LT EL = 206.00'
BEGIN SPECIAL LATERAL 'V' DITCH GRADE -L- STA.96+50.00 LT EL = 208.48'
END SPECIAL LATERAL 'V' DITCH GRADE -L- STA.100+00.00 LT EL = 213.11'
LEFT DITCH
BM#11 @ "BENCHTIE" IN 12" PINE ELEV. = 211.54' -L- STA. 101+27.27 171.50' RIGHT
FOR -L- ALIGNMENT, SEE SHEETS 7,8

Submitted 7/29/2021

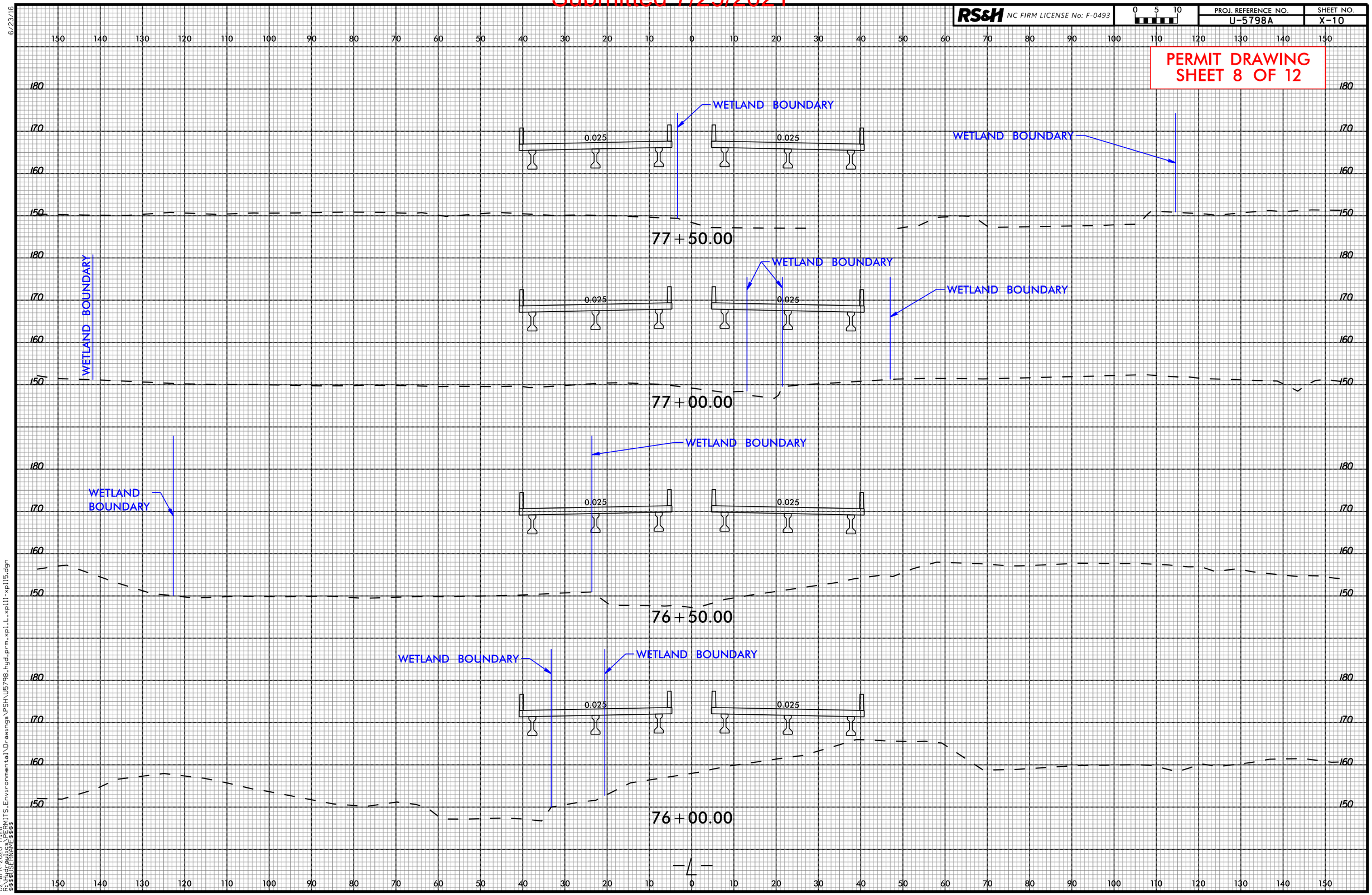
6/23/16

RS&H NC FIRM LICENSE No: F-0493

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-5798A	X-10

PERMIT DRAWING
SHEET 8 OF 12



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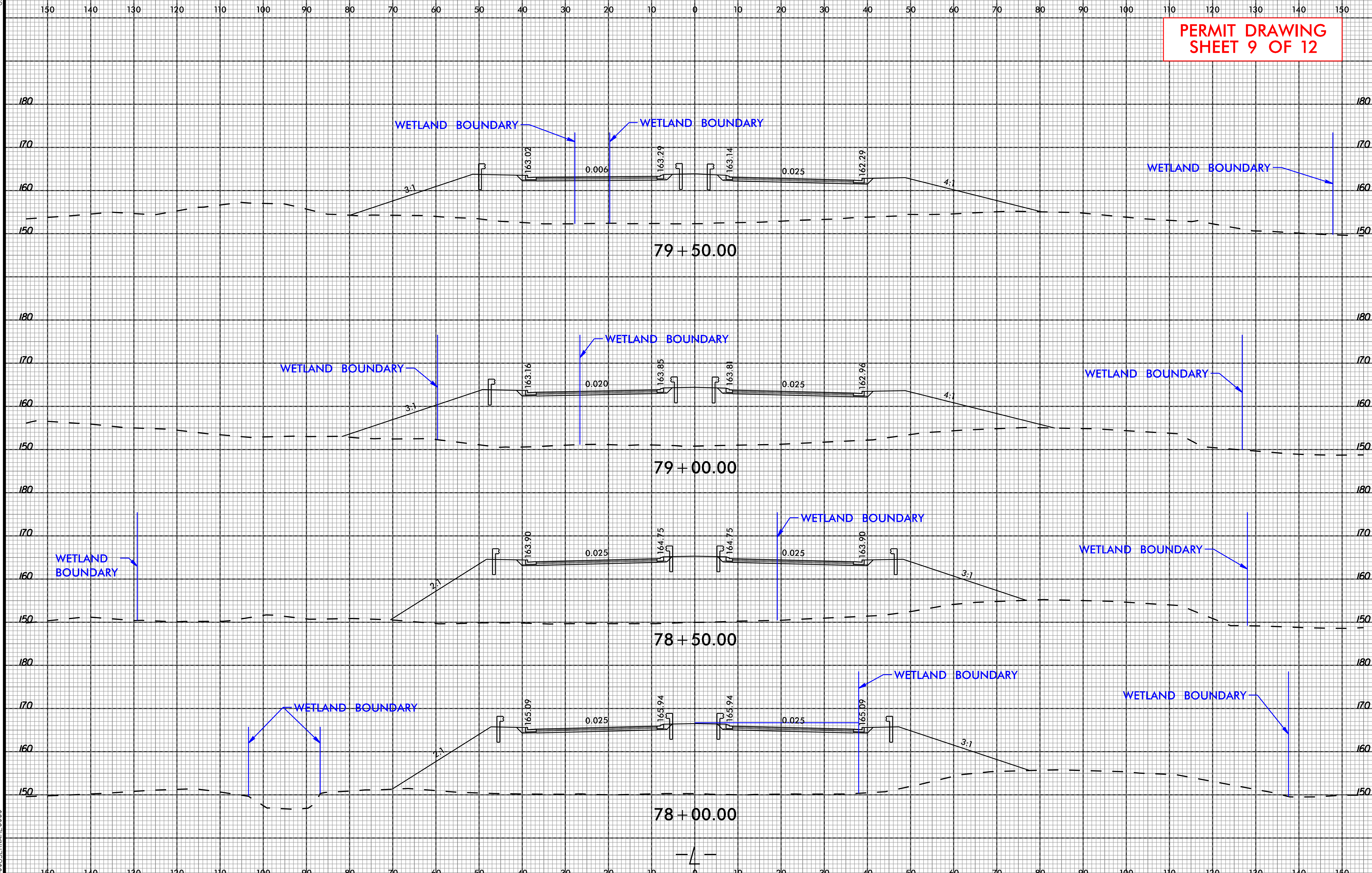
Submitted 7/29/2021

RS&H NC FIRM LICENSE No: F-0493

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-5798A	X-11

PERMIT DRAWING
SHEET 9 OF 12



6/23/16

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Submitted 7/29/2021

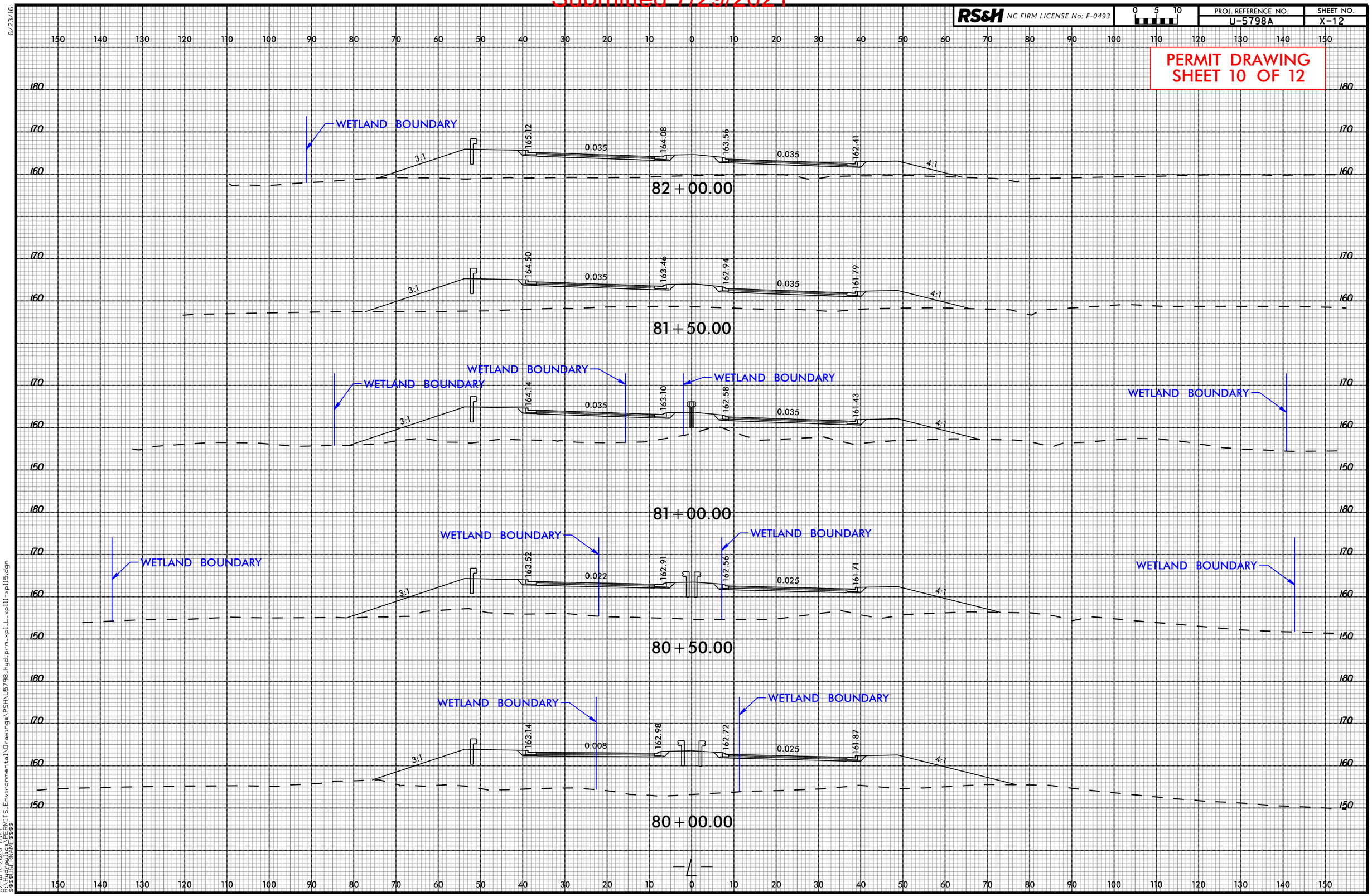
6/23/16

RS&H NC FIRM LICENSE No: F-0493

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-5798A	X-12

PERMIT DRAWING
SHEET 10 OF 12



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Submitted 7/29/2021

6/23/16

RS&H NC FIRM LICENSE No: F-0493 | 0 5 10 | PROJ. REFERENCE NO. U-5798A | SHEET NO. X-13

PERMIT DRAWING
SHEET 11 OF 12

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

180 170 160

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

174.28 173.24 172.73 171.57

85+00.00

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

172.11 171.07 170.55 169.40

84+50.00

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

170.19 169.15 168.64 167.48

84+00.00

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

168.54 167.50 166.98 165.82

83+50.00

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

167.14 166.10 165.58 164.43

83+00.00

WETLAND BOUNDARY

3:1 0.035 0.035 4:1

166.00 164.96 164.44 163.29

82+50.00

-4-

02-APR-2020 17:27
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$$$$USERNAME$$$$

Submitted 7/29/2021

WETLAND AND SURFACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	-L- Sta. 75+78 LT	Prop. Bridge Excavation Limits			< 0.01	< 0.01	< 0.01					
1	-L- Sta. 76+34 to Sta. 77+40 LT/RT	Channel Relocation/Proposed Bridge						0.03	< 0.01	115	15	
1	-L- Sta. 77+42 RT	Channel Relocation/Proposed Bridge						0.08	< 0.01	117	11	
1	-L- Sta. 76+70 RT	Channel Relocation			< 0.01							
1	-L- Sta. 76+75 LT	Interior Bent Armoring	0.04				0.23					
1	-L- Sta. 76+85 RT	Interior Bent Armoring	0.01				0.02					
1	-L- Sta. 77+85 to Sta. 81+19 LT/RT	Proposed Bridge / Roadway	0.36			0.04	0.04					
2	-L- Sta. 82+21 LT	Proposed Fill Slope	< 0.01			< 0.01						
2	-L- Sta. 83+23 to Sta. 85+06 LT	Proposed Fill Slope	0.09			0.03	0.01					
TOTALS*:			0.50		< 0.01	0.09	0.31	0.12	0.02	232	26	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/12/21
Cumberland County
U-5798A
44369.1.2
SHEET 12 OF 12

UO SHEETS 10/29/19
ADDED HYD CRN 12/3/19
ADDED PSNS 01/16/20
ADDED PWC PUE NEEDS 01/16/20
ADDED SEGRA DESIGNS 01/20/20
ADDED CHARTER DESIGNS 01/21/20
ADDED PWC ELECTRIC DESIGN 2/24/20
UPDATED PUE 3/24/20
UPDATED PUE 2/25/21
UPDATED PNG & PWC WATER/SEWER DESIGNS 2/26/21

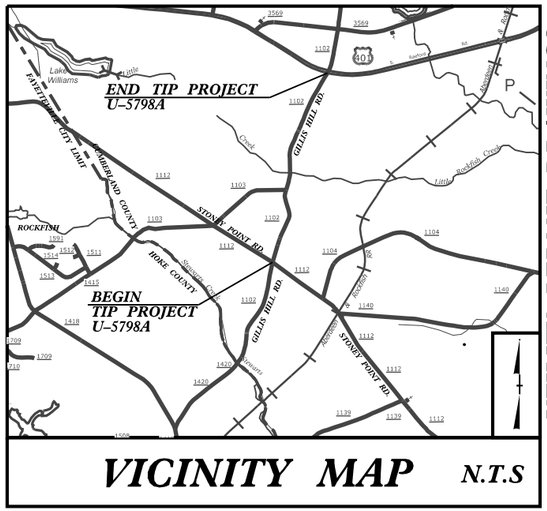
TIP PROJECT: U-5798A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES ENVIRONMENTAL PERMIT PLANS CUMBERLAND COUNTY

T.I.P. NO.	SHEET NO.
U-5798A	UE-1

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

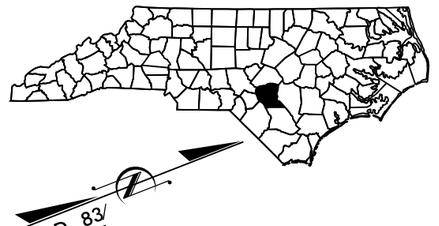


VICINITY MAP N.T.S

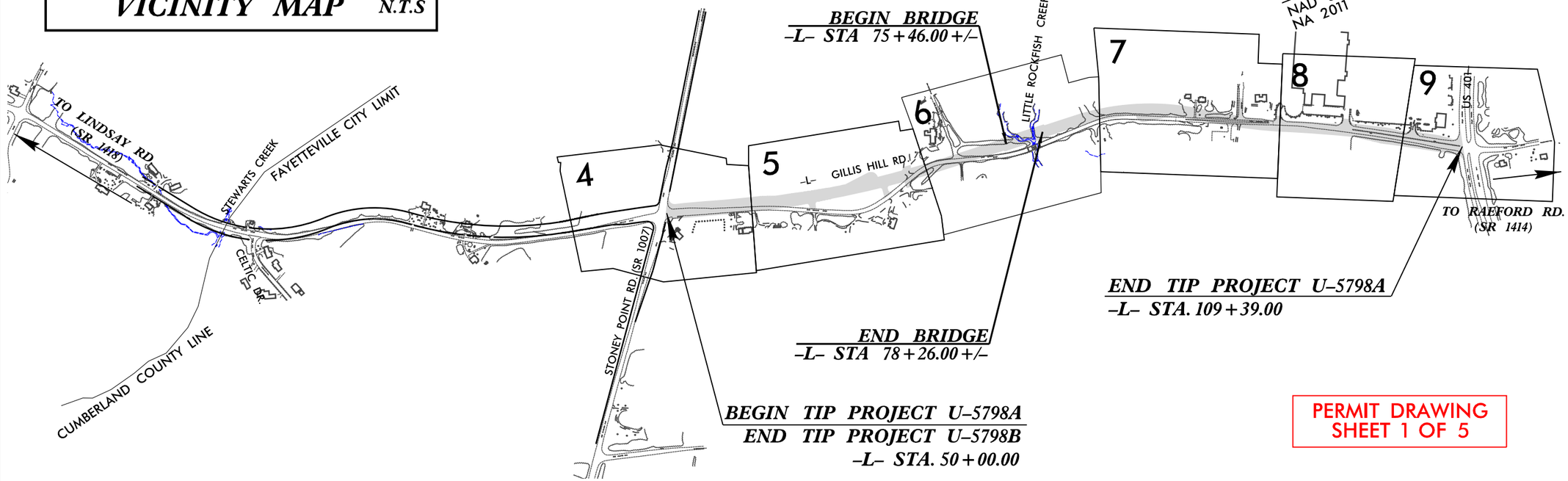
UTILITY PERMIT DRAWINGS

LOCATION: WIDEN SR 1102 (GILLIS HILL RD) TO MULTI-LANES FROM US 401 (RAEFORD RD) TO SR 1007 (STONEY POINT RD)

TYPE OF WORK: AERIAL POWER, TELEPHONE & CATV
BURIED WATER, SEWER, FIBER & GAS



NAD 83/
NA 2011



PERMIT DRAWING
SHEET 1 OF 5

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UE-1	TITLE SHEET
UE-2 THRU UE-3	UE PLAN SHEETS
UE-4 THRU UE-5	UE PROFILE SHEETS
UE-6	IMPACT SUMMARY SHEET

UTILITY OWNERS WITH CONFLICTS

(A) POWER - DUKE ENERGY
(B) POWER - FAYETTEVILLE PWC
(C) POWER - LUMBEE RIVER EMC
(D) TELECOMMUNICATIONS - CENTURYLINK
(E) CATV - CHARTER COMMUNICATIONS
(F) CATV - SEGRA
(G) NATURAL GAS - PIEDMONT NATURAL GAS

UTILITIES SHOWN ON UC PLANS
(H) WATER & SEWER - FAYETTEVILLE PWC

PREPARED IN THE OFFICE OF:
V&M Vaughn & Melton
Consulting Engineers
3509 Haworth Drive
Raleigh, NC 27609
(919) 977-9455

Nick Asaro, P.L.S. PROJECT UTILITY MANAGER
Will Matthews PROJECT UTILITY COORDINATOR

DIVISION OF HIGHWAYS
UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
1020 BIRCH RIDGE DRIVE
RALEIGH, NC 27610
PHONE (919) 707-6690
FAX (919) 250-4151

Nicole Hackler, PE SENIOR PROJECT MANAGER
Kelvin Martin, EI SENIOR UTILITIES ENGINEER
Larry James, Jr SENIOR UTILITIES COORDINATOR

NC\UTILITY\31930-21\UTILITIES\UTILITY COORDINATION\U5798A_UTL_PSHL_U01.DGN

Submitted 7/29/2021

UO SHEETS 10/29/19
ADDED HYD_DRN 12/3/19
ADDED PNG DESIGNS 01/10/20
ADDED PWC PUE NEEDS 01/15/20
ADDED SEGRA DESIGNS 01/20/20
ADDED CENTURYLINK DESIGNS 01/22/20
ADDED UPDATED PUE 2/24/20
ADDED PWC ELECTRIC DESIGN 3/3/20
UPDATED PUE 3/24/20
UPDATED PUE 2/25/21
UPDATED PNG & PWC WATER/SEWER DESIGNS 2/26/21

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UE-2

THIS SHEET CORRESPONDS TO RDY-6

PERMIT DRAWING
SHEET 2 OF 5

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 2

RS&H
NC FIRM LICENSE No: F-0493

NAD 83/
NA 2011

CENTURYLINK TO TIE INTO EXISTING BURIED CABLE

NEW PWC ELECTRIC ANCHOR POLE WITH 25' GUY

CENTURYLINK TO INSTALL NEW UG LINE AT BACK OF EXIST ROW

PWC WILL INSTALL NEW POLE AND REROUTE OVERHEAD LINES

NEW PWC ANCHOR POLE WITH 30' ANCHOR GUY

HAND CLEARING

MECHANIZED CLEARING

END HDD (APPROX.)

BEGIN HDD (APPROX.)

BEGIN HDD (APPROX.)

PNG TO INSTALL NEW GAS LINE TOWARDS BACK OF PROP ROW

NEW PWC ELECTRIC POLE

NEW PWC ELECTRIC POLE WITH OVERHEAD SPAN GUY

CENTURYLINK TO INSTALL NEW UG LINE 1' FROM BACK OF PROP PUE

PWC TO INSTALL NEW WATER LINE SEE UC PLANS FOR DETAILS

NEW PWC ELECTRIC POLE WITH 30' GUY

NEW PWC ELECTRIC POLE

NEW PWC ELECTRIC POLE

NEW PWC ELECTRIC POLE WITH OVERHEAD SPAN GUY

NEW PWC ELECTRIC POLE WITH 30' GUY

SEE INSET A

END HDD (APPROX.)

INSET A

FILL IN WETLAND

MATCHLINE SHEET 5 –L– STA. 69+35.00

MATCHLINE SHEET 7 –L– STA. 82+60.00

6 M D GILLIS C/O JUDY GILLIS DIBACCO

7 M D GILLIS C/O JUDY GILLIS DIBACCO

8 MALCOLM D GILLIS HEIRS JUDY GILLIS MCKETHAN

9 JOHN MCN GILLIS JR ET AL

5 JOHN D GILLIS

10 JOHN MCN GILLIS JR ET AL

RUN OF LITTLE ROCKFISH CREEK IS PROPERTY LINE

WORST CASE IMPACTS BETWEEN UTILITY RELOCATIONS AND ROADWAY CONSTRUCTION ARE ACCOUNTED FOR IN THESE DRAWINGS. THESE IMPACTS WILL NOT APPEAR IN THE STANDARD PERMIT DRAWINGS.

HC HC DENOTES HAND CLEARING

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50' 100' 150'

FOR –L– PROFILE, SEE SHEETS NO. 11

SITE 1

NC_UTILITY_31930-21_U5798A_UTILITIES_UTILITY_COORDINATION_U5798A_UTIL_PSHT_U06.DGN

Submitted 7/29/2021

UPDATED PNG & PWC WATER/SEWER DESIGNS 2/26/21
UPDATED PUE 2/25/21
UPDATED PUE 3/24/20
UPDATED PUE 3/3/20
ADDED PWC ELECTRIC DESIGN 2/24/20
ADDED UPDATED PUE 2/21/20
ADDED CHARTER DESIGNS 01/20/20
ADDED SEGRA DESIGNS 01/20/20
ADDED PWC PUE NEEDS 01/15/20
ADDED PNG DESIGNS 01/10/20
ADDED HYD_DRN 12/3/19
UO SHEETS 10/29/19

SITE 2

PERMIT DRAWING
SHEET 3 OF 5

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UE-3
THIS SHEET CORRESPONDS TO RDY-7	

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RS&H
NC FIRM LICENSE No: F-0493

NAD 83/
NA 2011

(9) JOHN MCN GILLIS JR ET AL
DB 2899 PG 463

(10) JOHN MCN GILLIS JR ET AL
DB 2899 PG 463
PB 114 PG 3

JOHN MCN GILLIS JR ET AL
DB 2899 PG 463
PB 114 PG 3

(15) GILBERT LINDSAY & WIFE LAURA
DB 2190 PG 619

(16) LEWIS LINDSEY & WIFE LAURIE
DB 2710 PG 121

(17) WEST FAYETTEVILLE PLACE ASSOCIATES
LIMITED PARTNERSHIP
DB 10045 PG 260

(20) GT RECREATION
DB 10124 PG 689

(21) WAL-MART REAL ESTATE BUSINESS TRUST (#3595)
DB 5933 PG 307
PB 107 PG 17

-L- STA. 82+60.00

MATCHLINE SHEET 6 -L- STA. 82+60.00

MATCHLINE SHEET 8 -L- STA. 95+80.00

-L- STA. 85

-L- STA. 90

-L- STA. 95

NEW PWC ELECTRIC POLE WITH 30' ANCHOR GUY

PWC TO INSTALL NEW SEWER LINE SEE UC PLANS FOR DETAILS

CENTURYLINK TO INSTALL NEW UG LINE AT BACK OF PROP DUE

NEW PWC ELECTRIC POLE WITH 30' ANCHOR GUY

CHARTER TO TIE INTO EXISTING UG FIBER

NEW PWC ELECTRIC POLE WITH 25' GUY

CHARTER TO ATTACH TO PROP PWC POLE

CHARTER TO INSTALL NEW UG FIBER TO BACK OF PROP PDE

CHARTER TO TIE INTO EXISTING UG FIBER

NEW PWC ELECTRIC POLES

PNG TO INSTALL NEW GAS LINE INSIDE PROPOSED PUE

PWC TO INSTALL NEW WATER LINE SEE UC PLANS FOR DETAILS

NEW PWC ELECTRIC POLE WITH 20' ANCHOR GUY

NEW PWC ELECTRIC POLE WITH 30' ANCHOR GUY

NEW PWC ELECTRIC BURIED POWER CABLE

CENTURYLINK TO INSTALL NEW UG LINE 1' FROM BACK OF PROP PUE

CHARTER TO ATTACH TO PROP PWC POLES

NEW PWC ELECTRIC POLE

SEGRA TO TIE INTO EXISTING UG FIBER

NEW PWC ELECTRIC POLE WITH 20' GUY ANCHOR

NEW PWC ELECTRIC POLE WITH 25' GUY ANCHOR

SEGRA TO INSTALL NEW UG FIBER AT BACK OF EXIST ROW

REM

CHARTER TO ABANDON

PNG TO ABANDON

CENTURYLINK TO ABANDON

(10) JOHN MCN GILLIS JR ET AL
DB 2899 PG 463

(12) JOHN MCN GILLIS JR ET AL
DB 2899 PG 463
PB 114 PG 3

(11) DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS
DB 4227 PG 487

(14) KATHRYN GILLIS MILLER & HUSBAND DOUGLAS KEITH
DB 9268 PG 320

(18) WEST FAYETTEVILLE BAPTIST CHURCH TRUSTEES
DB 9240 PG 512
PB 132 PG 190

(19) JOHN D GILLIS
DB 5280 PG 386
PB 94 PG 13

WORST CASE IMPACTS BETWEEN UTILITY RELOCATIONS AND ROADWAY CONSTRUCTION ARE ACCOUNTED FOR IN THESE DRAWINGS. THESE IMPACTS WILL NOT APPEAR IN THE STANDARD PERMIT DRAWINGS.

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

HC HC DENOTES HAND CLEARING

50' 0' 50' 100' 150'

FOR -L- PROFILE, SEE SHEET NO. 11

Submitted 7/29/2021

PERMIT DRAWING
SHEET 4 OF 5

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	PROFILE
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: ___	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROP UG GAS
APPROX LOCATION OF DIRECTIONAL DRILL ENTRY LOCATION
PROPOSED ARV
15°
404 LF
EXISTING GRADE ALONG PROPOSED WATER LINE
PROPOSED GRADE ALONG PROPOSED WATER LINE
TOP OF BANK
TOP OF BANK
PROP 16"x 24" REDUCER -WL-2- STA 8+34.45
APPROX LOCATION OF DIRECTIONAL DRILL EXIT LOCATION
PROPOSED 16" RJ BEVELED GEAR GATE VALVE -WL-2- STA 13+34.13
EXIST PROPO
EX UG TELE
10°
PROP 541 LF OF 16" RJ DIP
PROPOSED 45° VERTICAL RJ BEND -WL-2- STA 15+83
PROPOSED 16" 22.5° RJ -WL-2- STA 14+56.04
PROP 16"x 24" REDUCER -WL-2- STA 12+38.03
PROPOSED 16" 22.5° RJ BEND -WL-2- STA 13+90.51
APPROXIMATE HDD PATH FOR 4" PROPOSED GAS
PROP 409 LF OF 24" RJ (O.D.) HDPE DR9

SEE SHEET UC-6 FOR PLAN
-WL-2-

200 195 190 185 180 175 170 165 160 155 150 145 140 135 130 125 120 115 110 105 100

5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00 15+50 16+00 16+50 17+00

Submitted 7/29/2021

WETLAND AND SURFACE WATER IMPACTS SUMMARY

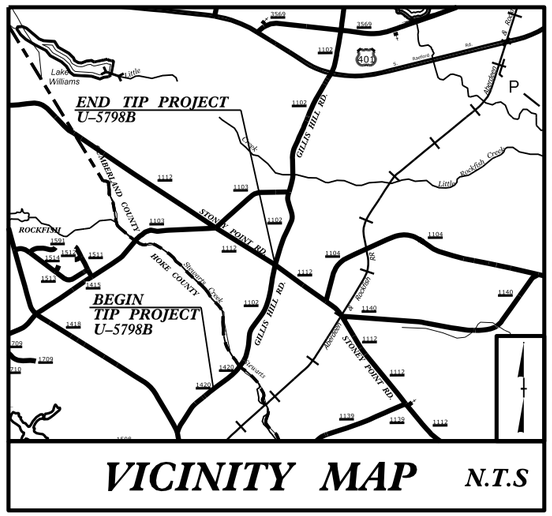
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- Sta. 77+37 to Sta. 80+89 RT	Proposed Overhead Powerline Construction					0.10					
1	-L- Sta. 78+17 RT	Proposed Electric Pole Construction	< 0.01									
2	-L- Sta. 81+02 LT	Proposed Anchor Pole Construction				< 0.01	0.01					
2	-L- Sta. 84+57 to Sta. 85+06 LT	Proposed Water Line Relocation	0.03			< 0.01	0.02					
TOTALS*:			0.04			< 0.01	0.13			0	0	0

*Rounded totals are sum of actual impacts

NOTES:
Impacts between utility relocations and roadway construction are accounted for in the Utility Permit Drawings. These impacts will not appear in the standard permit drawings.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/12/2021
Cumberland County
U-5798A
44369.1.2
SHEET 5 OF 5

Revised 2018 Feb



Submitted 7/29/2021

09/08/99

4/22/2020
miyork
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$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$

TIP PROJECT: U-5798B

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 10

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5798B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44369.1.1	N/A	PE

VICINITY MAP N.T.S

PRELIMINARY PLANS (25%)

HOKE AND CUMBERLAND COUNTIES

LOCATION: *WIDEN SR 1102 (GILLIS HILL ROAD) TO MULIT-LANES FROM*
FROM SR 1007 (STONEY POINT ROAD) TO SR 1418 (LINDSAY ROAD)

TYPE OF WORK: *PAVING, GRADING, DRAINAGE, SIGNING, AND SIGNALS.*

WETLAND AND SURFACE WATER IMPACTS PERMIT

END CONSTRUCTION
-Y2- STA 37+66.00

END CONSTRUCTION
-Y1- STA 12+30.00

END TIP PROJECT U-5798B
-L- STA. 50+20.00

BEGIN CONSTRUCTION
-Y2- STA 17+80.00

BEGIN TIP PROJECT U-5798B
-L- STA. 10+00.00

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD __.

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 17,500
ADT 2042 = 30,700
K = 8 %
D = 60 %
T = 3 % *
V = 50 MPH
*(TTST=1 + DUAL=2)
FUNC CLASS =
MINOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5798 = 0.761 MILES

PREPARED IN THE OFFICE OF:

RS&H

8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 2020

LETTING DATE:
OCTOBER 2022

CHARLES YOUNG, PE
PROJECT ENGINEER

ERIC BUSH, EI
PROJECT DESIGN ENGINEER

APRIL ANNIS
NCDOT CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN
ENGINEER

P.E.
SIGNATURE:

Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	4

RW SHEET NO.

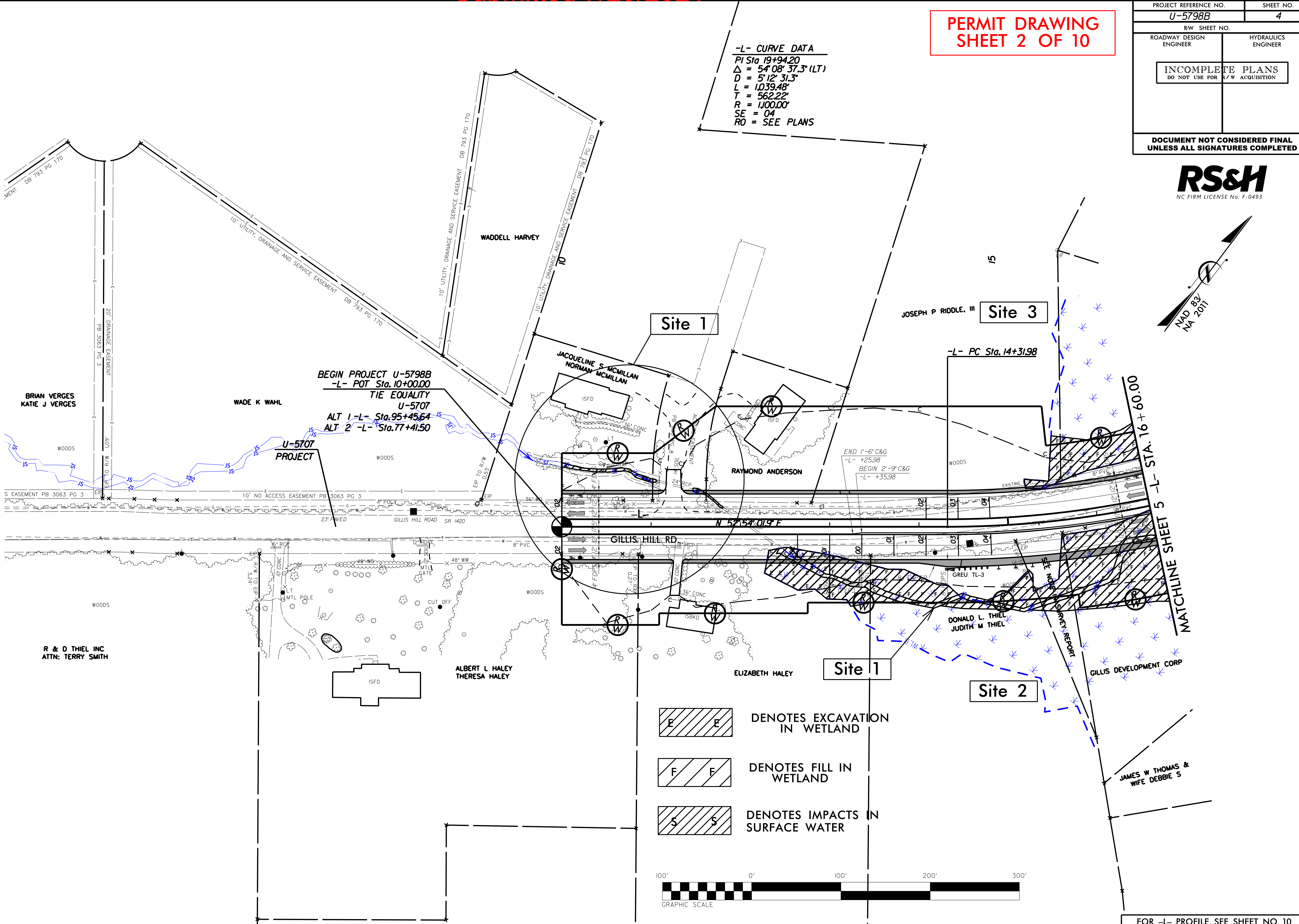
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

PERMIT DRAWING
SHEET 2 OF 10



-L- CURVE DATA
PI Sta 19+94.20
Δ = 54° 08' 37.3" (LT)
D = 5° 12' 31.3"
L = 1,039.48'
T = 562.22'
R = 1,100.00'
SE = .04
RO = SEE PLANS
WADDELL HARVEY
JOSEPH P RIDDLE, III
Site 3
Site 1
Site 2
-L- PC Sta. 14+31.98
JACQUELINE S. MCMILLAN
NORMAN MCMILLAN
BEGIN PROJECT U-5798B
-L- POT Sta. 10+00.00
TIE EQUALITY
U-5707
ALT 1 -L- Sta. 95+45.64
ALT 2 -L- Sta. 77+41.50
U-5707
PROJECT
BRIAN VERGES
KATIE J VERGES
WADE K WAHL
RAYMOND ANDERSON
END 1'-6" C&G
BEGIN 2'-9" C&G
GILLIS HILL RD
GILLIS HILL ROAD SR 1420
N 52°54'01.9" E
MATCHLINE SHEET 5 -L- STA. 16+00.00
DONALD L. THIEL
JUDITH M THIEL
GILLIS DEVELOPMENT CORP
JAMES W THOMAS & WIFE DEBBIE S
R & D THIEL INC
ATTN: TERRY SMITH
ALBERT L HALEY
THERESA HALEY
ELIZABETH HALEY
NAD 83/NA 2011
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
100' 0' 100' 200' 300'

FOR -L- PROFILE, SEE SHEET NO. 10

Submitted 7/29/2021

PERMIT DRAWING
SHEET 3 OF 10

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	4

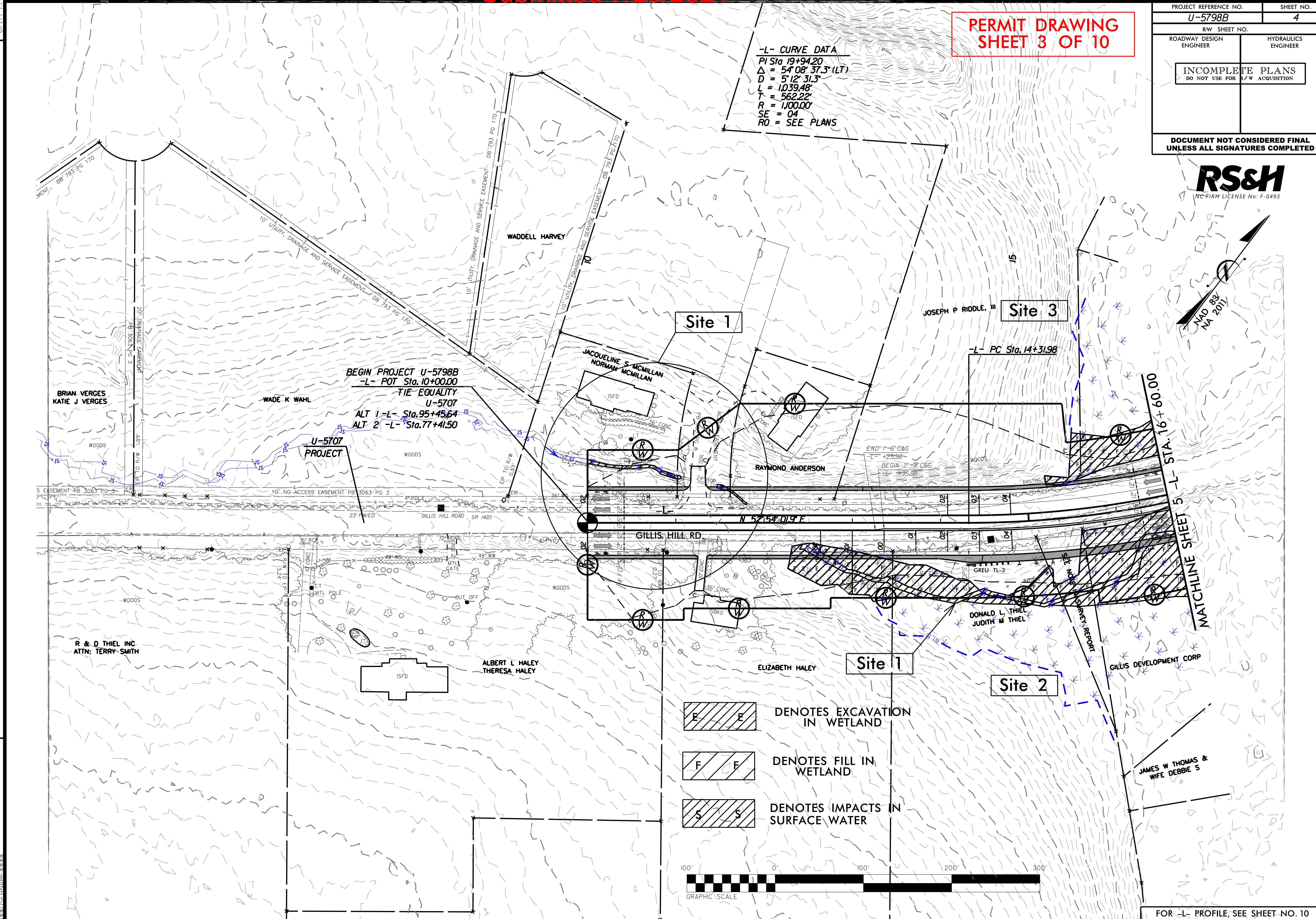
RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493



-L- CURVE DATA
PI Sta 19+94.20
Δ = 54° 08' 37.3" (LT)
D = 5° 12' 31.3"
L = 1,039.48'
T = 562.22'
R = 1,100.00'
SE = .04
RO = SEE PLANS
WADDELL HARVEY
JOSEPH P RIDDLE, III
Site 3
Site 1
Site 2
-L- PC Sta. 14+31.98
JACQUELINE S MCMILLAN
NORMAN MCMILLAN
BEGIN PROJECT U-5798B
-L- POT Sta. 10+00.00
TIE EQUALITY
U-5707
ALT 1 -L- Sta. 95+45.64
ALT 2 -L- Sta. 77+41.50
U-5707
PROJECT
BRIAN VERGES
KATIE J VERGES
WADE K WAHL
RAYMOND ANDERSON
GILLIS HILL RD
N 52°54'01.9" E
GILLIS HILL ROAD SR 1420
DONALD L THIEL
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MATCHLINE SHEET 5 -L- STA. 16+60.00
NAD 83/ NA 2011
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE
FOR -L- PROFILE, SEE SHEET NO. 10

Submitted 7/29/2021

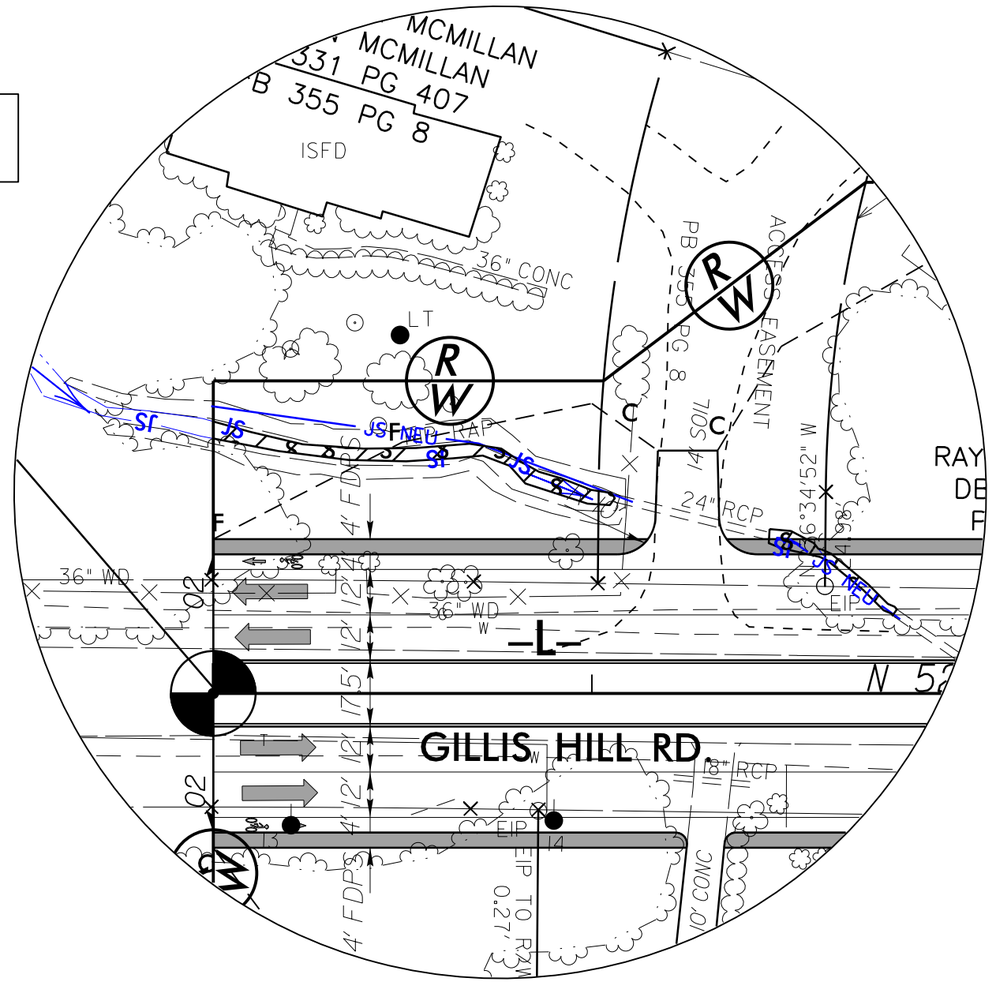
PROJECT REFERENCE NO.	SHEET NO.
U-5798B	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

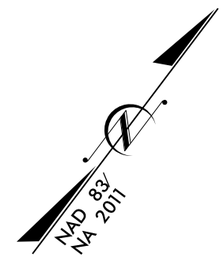
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 4 OF 10

Site 1





S S DENOTES IMPACTS IN SURFACE WATER

50′ 0′ 50′ 100′ 150′
GRAPHIC SCALE

REVISIONS 8/17/99

4/22/2020
mjyork
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$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

Submitted 7/29/2021

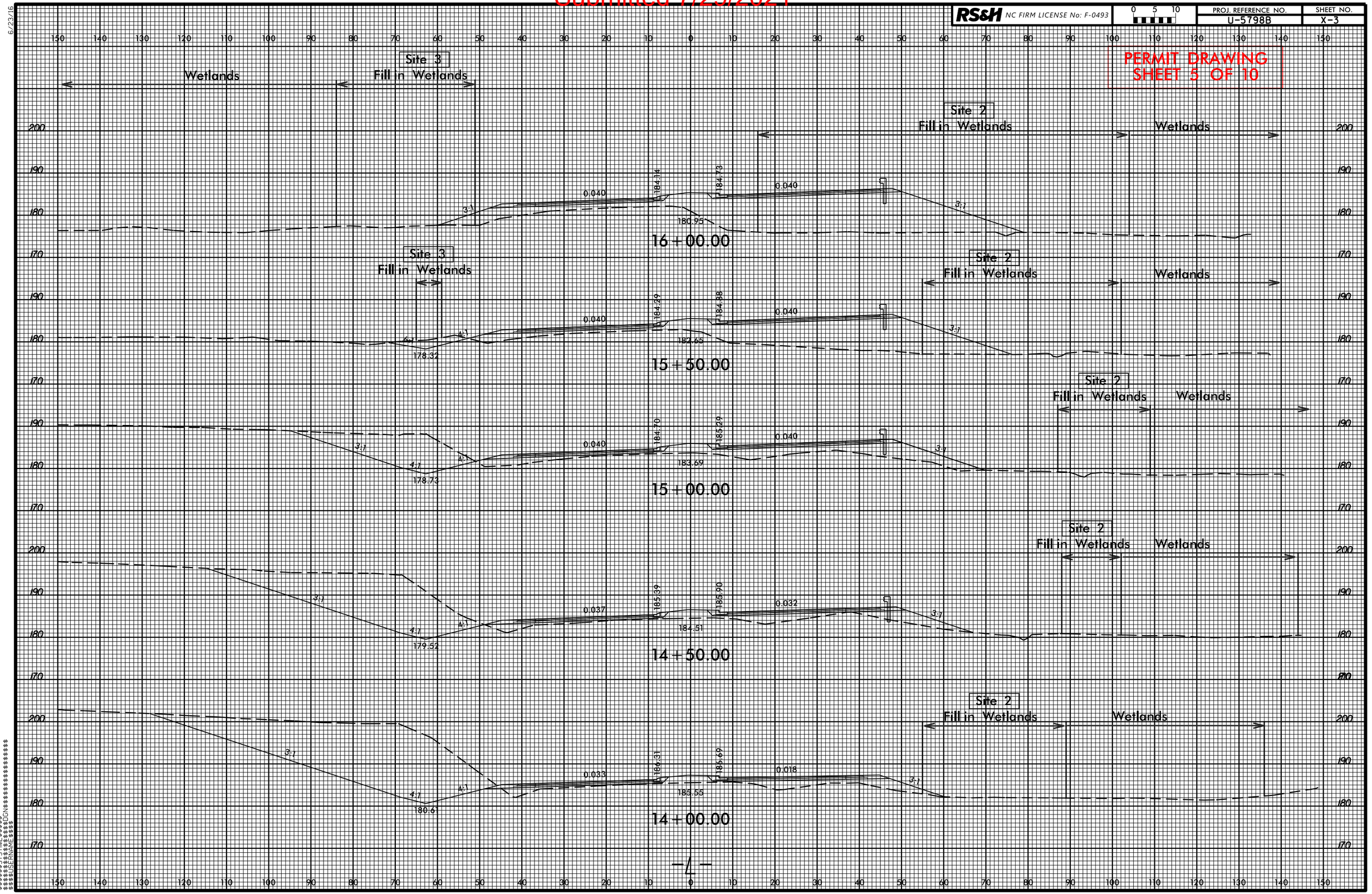
6/23/16

RS&H NC FIRM LICENSE No: F-0493

PROJ. REFERENCE NO. U-5798B

SHEET NO. X-3

PERMIT DRAWING
SHEET 5 OF 10



1/27/2020
bpwilliamson1
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$$$$$$$$$$DGN$$$$$$$$$$$$$$
$$$$USERNAME$$$$

Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	5

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

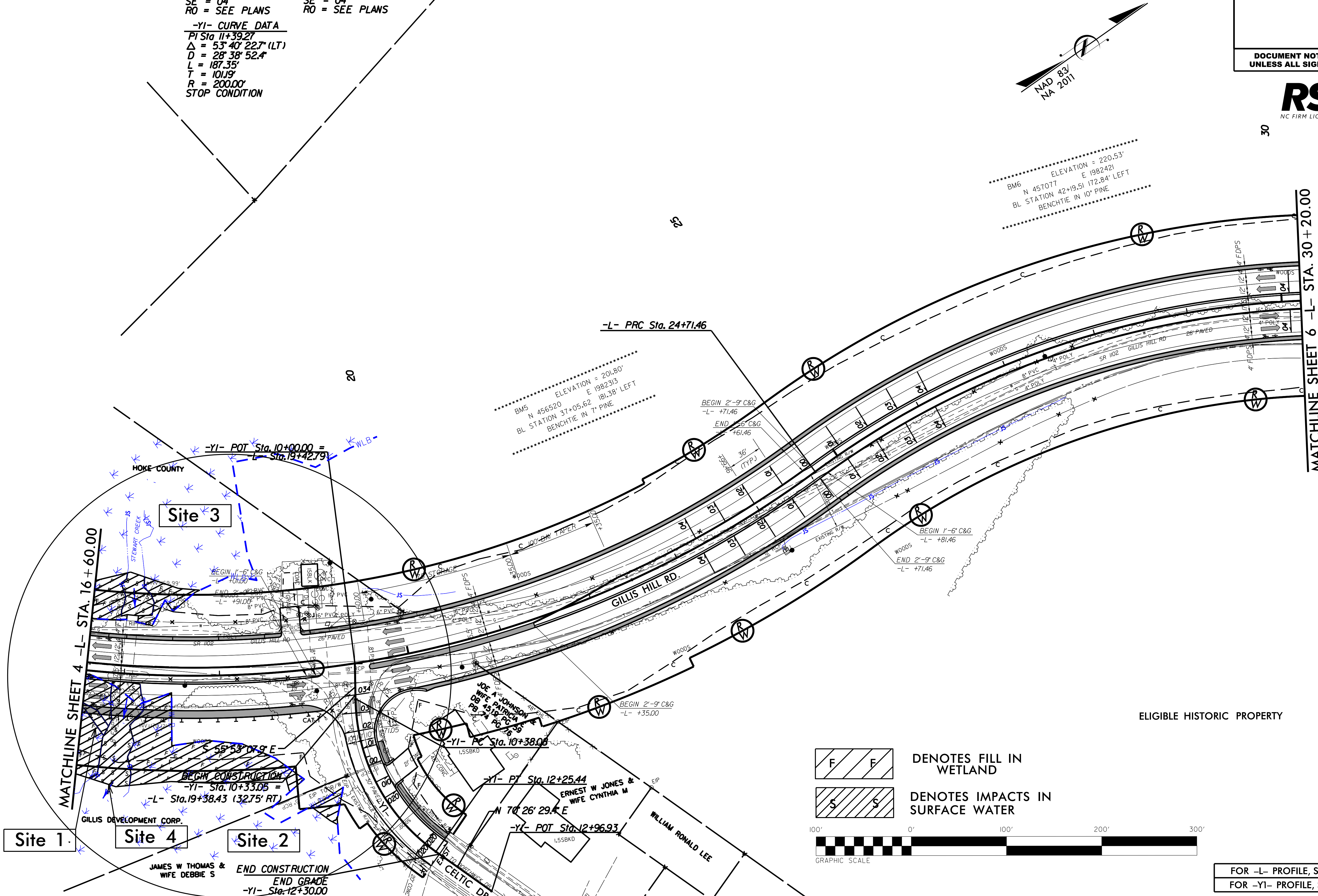
PERMIT DRAWING
SHEET 6 OF 10

-L- CURVE DATA

PI Sta 19+94.20	PI Sta 27+94.02
Δ = 54° 08' 37.3" (LT)	Δ = 38° 24' 36.4" (RT)
D = 5° 12' 31.3"	D = 6° 11' 14.8"
L = 1,039.48'	L = 620.77'
T = 562.22'	T = 322.56'
R = 1,100.00'	R = 926.00'
SE = .04	SE = .04
RO = SEE PLANS	RO = SEE PLANS

-Y1- CURVE DATA

PI Sta 11+39.27
Δ = 53° 40' 22.7" (LT)
D = 28° 38' 52.4"
L = 187.35'
T = 101.19'
R = 200.00'
STOP CONDITION



NAD 83/
NA 2011
BM6 ELEVATION = 220.53'
N 457077 E 1982421
BL STATION 42+19.51 172.84' LEFT
BENCHTIE IN 10" PINE
BM5 ELEVATION = 201.80'
N 456520 E 1982313
BL STATION 37+05.62 181.38' LEFT
BENCHTIE IN 7" PINE
-L- PRC Sta. 24+71.46
BEGIN 2'-9" C&G -L- +71.46
END 1'-6" C&G -L- +61.46
BEGIN 1'-6" C&G -L- +81.46
END 2'-9" C&G -L- +71.46
BEGIN 2'-9" C&G -L- +35.00
GILLIS HILL RD.
SR 1102
WOODS
-Y1- POT Sta. 10+00.00 = -L- Sta. 19+42.79
HOKE COUNTY
Site 3
Site 1
Site 4
Site 2
STEWART CREEK
BEGIN 1'-6" C&G
END 2'-9" C&G -L- +91.00
S 55° 53' 07.9" E
BEGIN CONSTRUCTION -Y1- Sta. 10+33.05 = -L- Sta. 19+38.43 (32.75' RT)
GILLIS DEVELOPMENT CORP.
JAMES W THOMAS & WIFE DEBBIE S
END CONSTRUCTION
END GRADE -Y1- Sta. 12+30.00
JOE A. JOHNSON WIFE PATRICIA DB 4519 PG 56 PB 74 PG 16
-Y1- PC Sta. 10+38.08
-Y1- PI Sta. 12+25.44
ERNEST W JONES & WIFE CYNTHIA M
N 70° 26' 29.4" E
-Y1- POT Sta. 12+96.93
WILLIAM RONALD LEE
CELTIC DR.
MATCHLINE SHEET 4 -L- STA. 16+60.00
MATCHLINE SHEET 6 -L- STA. 30+20.00
ELIGIBLE HISTORIC PROPERTY
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
GRAPHIC SCALE

FOR -L- PROFILE, SEE SHEET NO. 10
FOR -Y1- PROFILE, SEE SHEET NO. 11

Submitted 7/29/2021

PERMIT DRAWING
SHEET 7 OF 10

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	5
RW SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

REVISIONS
8/17/99

-L- CURVE DATA

PI Sta 19+94.20
Δ = 54° 08' 37.3" (LT)
D = 5° 12' 31.3"
L = 1039.48'
T = 562.22'
R = 1100.00'
SE = 04
RO = SEE PLANS

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Δ = 38° 24' 36.4" (RT)
D = 6° 11' 14.8"
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RO = SEE PLANS

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BM5
N 456520 ELEVATION = 201.80'
BL STATION 37+05.62 E 1982513
BENCHTIE IN 7" PINE 181.38' LEFT

-L- PRC Sta. 24+71.46

-Y1- POT Sta. 10+00.00 =
-L- Sta.19+42.79

MATCHLINE SHEET 4 -L- STA. 16+60.00

MATCHLINE SHEET 6 -L- STA. 30+20.00

HOKE COUNTY

Site 1

Site 2

Site 3

Site 4

GILLIS DEVELOPMENT CORP.

JAMES W THOMAS & WIFE DEBBIE S

JOE A JOHNSON & WIFE PATRICIA P DB 2454 PG 265 DB 2454 PG 265

ERNEST W JONES & WIFE CYNTHIA M

WILLIAM RONALD LEE

GILLIS HILL RD.

SR 1102 GILLIS HILL RD

STEWART CREEK

BEGIN CONSTRUCTION
-Y1- Sta. 10+33.05 =
-L- Sta.19+38.43 (32.75' RT)

END CONSTRUCTION
END GRADE
-Y1- Sta. 12+30.00

-Y1- PC Sta. 10+38.05

-Y1- PT Sta. 12+25.44

-Y1- POT Sta. 12+96.93

N 70° 26' 29.4" E

S 55° 53' 07.9" E

BEGIN 2'-9" C&G
-L- +71.46

END 1'-6" C&G
+61.46

BEGIN 1'-6" C&G
-L- +81.46

END 2'-9" C&G
-L- +71.46

BEGIN 2'-9" C&G
-L- +35.00

ELIGIBLE HISTORIC PROPERTY

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

100' 0' 100' 200' 300'
GRAPHIC SCALE

FOR -L- PROFILE, SEE SHEET NO. 10
FOR -Y1- PROFILE, SEE SHEET NO. 11

4/22/2020
mjyork
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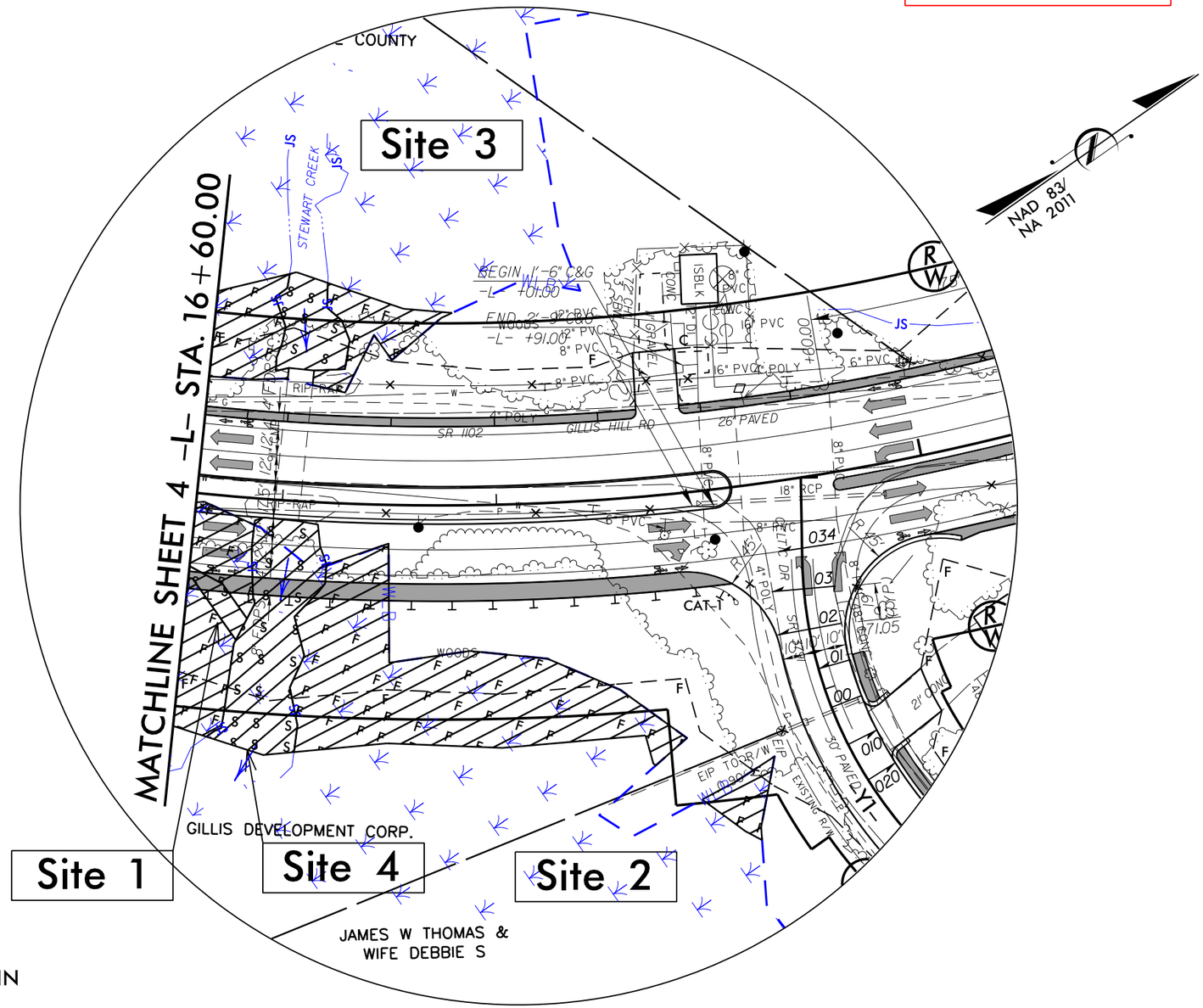
Submitted 7/29/2021

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 8 OF 10



F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
GRAPHIC SCALE

REVISIONS 8/17/99

\ITS_Environmental\Drawings\U-5798B_HYD_prm_psh_5_Enlargement_Hyd_PSH.dgn

4/22/2020
miyork
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$$$$$$$$DGNS$$$$$$$$$$$$$$$$

Submitted 7/29/2021

RS&H NC FIRM LICENSE No: F-0493

PROJ. REFERENCE NO.	SHEET NO.
U-5798B	X-4

PERMIT DRAWING
SHEET 9 OF 10

6/23/16

1/27/2020
bpwilliamson1
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$$$$$$$$$$$DGN$$$$$$$$$$$$$
$$$$USERNAME$$$$

Submitted 7/29/2021

WETLAND AND SURFACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1	10+00 to 16+95 L/R -L-	Prop Cross Pipe						0.08		660		
2	12+35 to 18+79 R of -L-	N/A	0.63		0.06							
3	16+69 to 17+73 L of -L-	N/A	0.15									
4	16+95 to 17+07 L/R of -L-	Prop Cross Pipe						0.10		155		
TOTALS*:			0.78		0.06			0.18		815	0	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4/22/2020
Hoke
U-5798B
44369.1.1
SHEET 10 OF 10

Revised 2018 Feb

09/08/99

TIP PROJECT: U-5798A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

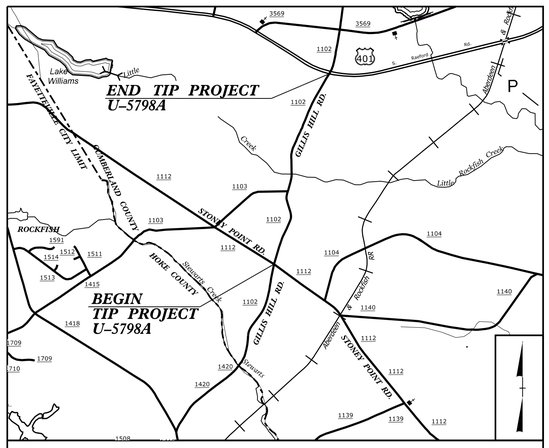
CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5798A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44369.1.2	N/A	PE
44369.2.1	N/A	ROW/UTL.

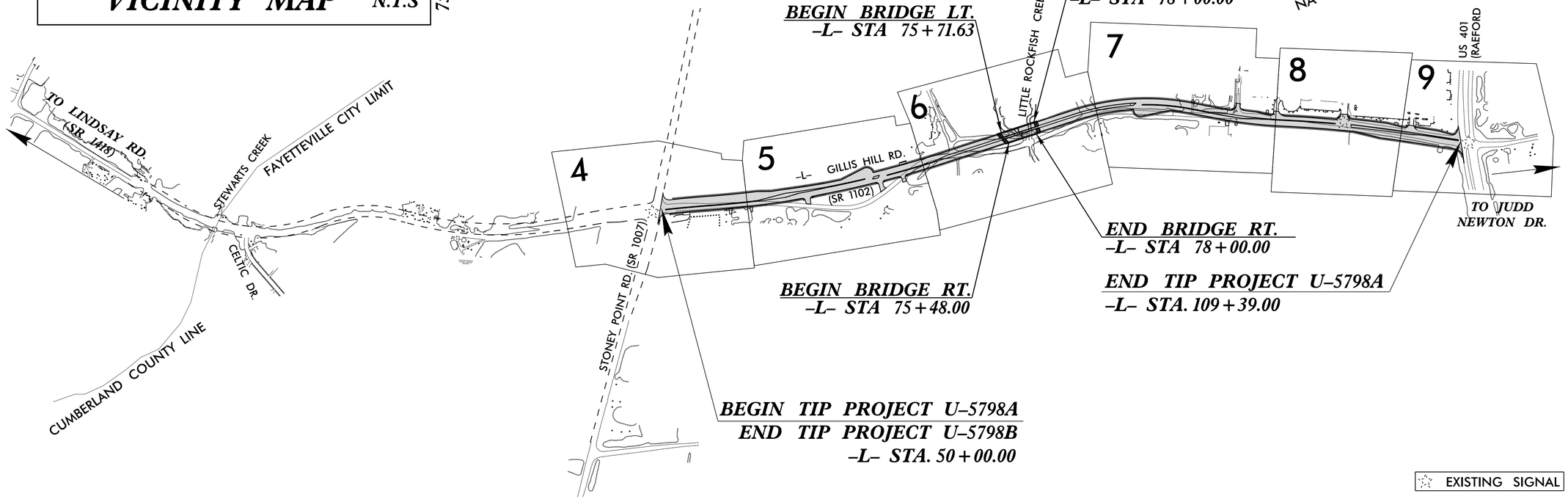
LOCATION: *WIDEN SR 1102 (GILLIS HILL ROAD) TO MULTI-LANES FROM US 401 (RAEFORD ROAD) TO SR 1007 (STONEY POINT ROAD)*

TYPE OF WORK: *PAVING, GRADING, DRAINAGE, STRUCTURES, AND SIGNALS.*



VICINITY MAP N.T.S

NAD 83/
NA 2011



☆ EXISTING SIGNAL

THERE IS CONTROL OF ACCESS ON THIS PROJECT.

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2021 = 24,700
ADT 2041 = 30,400
K = 8 %
D = 60 %
T = 3 % *
V = 50 MPH
*(TTST=1 + DUAL=2)

FUNC CLASS =
MINOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5798A = 1.085 MILES
LENGTH STRUCTURE TIP PROJECT U-5798A = 0.040 MILES
TOTAL LENGTH TIP PROJECT U-5798A = 1.125 MILES

PREPARED IN THE OFFICE OF:

RS&H

8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 30, 2020

LETTING DATE:
MARCH 16, 2021

CHARLES YOUNG, PE
PROJECT ENGINEER

ERIC BUSH, EI
PROJECT DESIGN ENGINEER

NICOLE M. HACKLER, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

19-MAR-2020 08:45
R:\Roadway\Proj\U-5798A\U-5798A_Rdy_tsh.dgn
$$$$USERNAME$$$$

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

8/17/99

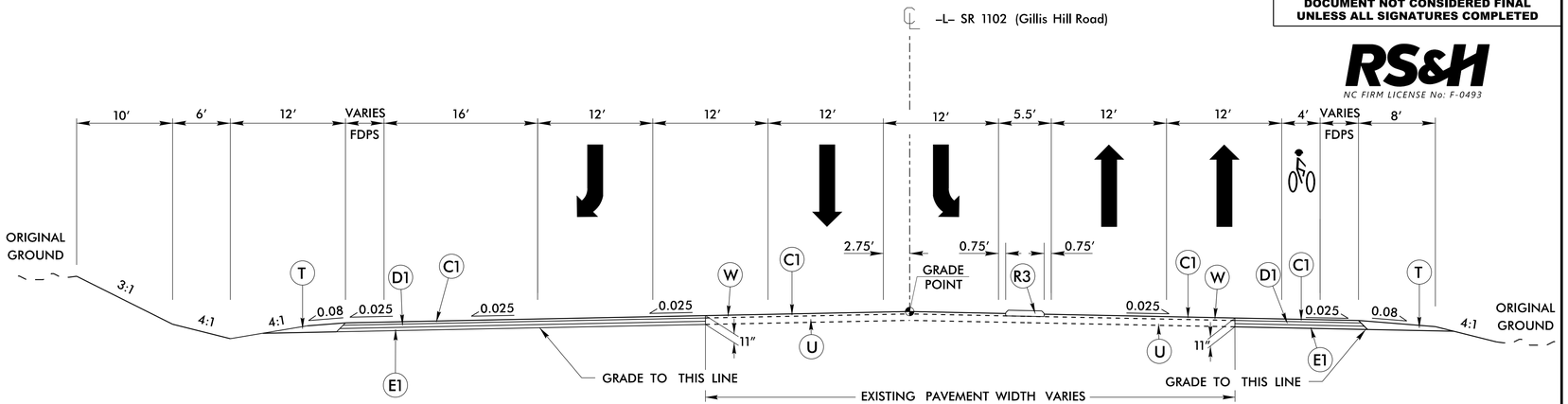
	FINAL PAVEMENT SCHEDULE
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ IN DEPTH OR GREATER THAN 2.0″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4.0″ IN DEPTH OR GREATER THAN 5.5″ IN DEPTH.
R1	2′-6″ CONCRETE CURB AND GUTTER.
R2	1′-6″ CONCRETE CURB AND GUTTER.
R3	5″ MONOLITHIC CONCRETE ISLAND (KEYED-IN).
S1	4″ CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	3″ MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

NOTE: PAVEMENT EDGES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

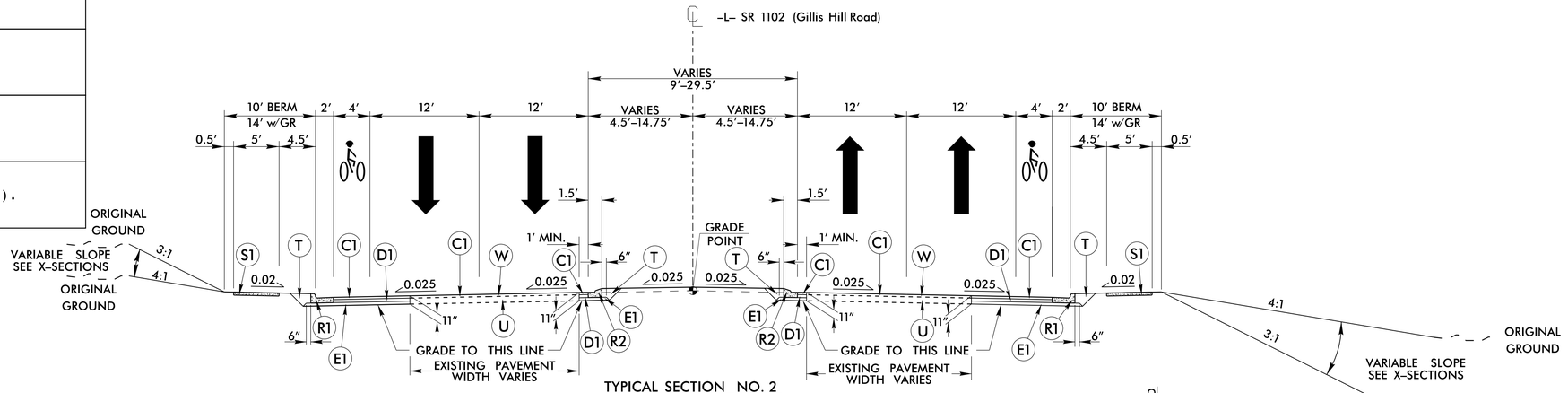
RS&H
NC FIRM LICENSE No: F-0493



TYPICAL SECTION NO. 1

–L– STA. 50+00.00 TO 51+00.00

NOTE:
TRANSITION RIGHT SHOULDER SECTION TO C&G SECTION AT –L– STA. 50+53.84.
TRANSITION LEFT SHOULDER SECTION TO C&G SECTION AT –L– STA. 50+87.13.

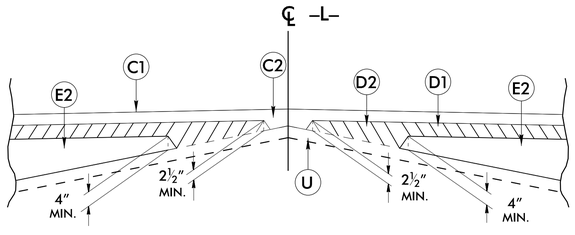


TYPICAL SECTION NO. 2

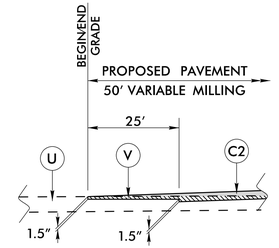
–L– STA. 51+00.00 TO 53+05.00
–L– STA. 67+75.00 TO 70+00.00
–L– STA. 92+00.00 TO 94+00.00
–L– STA. 101+00.00 TO 109+39.00

2′–9″ C&G LOCATIONS

–L– STA. 92+10.00 TO 94+00.00 MED. RT.



Detail Showing Method of Wedging



DETAIL OF MILLING AT PAVEMENT TIE–INS

–L– STA. 50+00.00 TO 50+50.00
–L– STA. 108+89.00 TO 109+39.00

8/17/99

FINAL PAVEMENT SCHEDULE

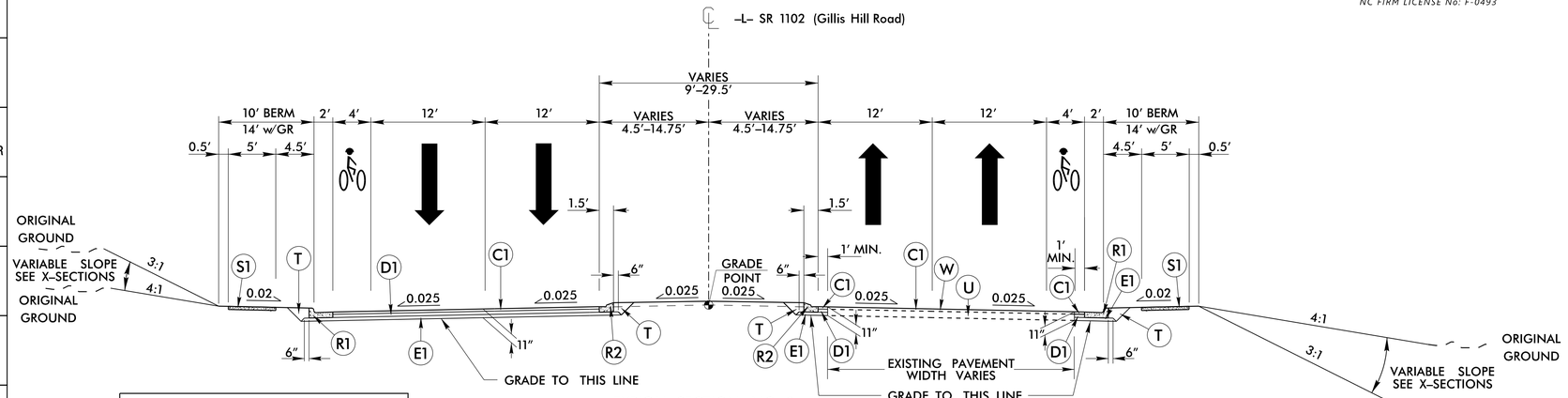
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ IN DEPTH OR GREATER THAN 2.0″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4.0″ IN DEPTH OR GREATER THAN 5.5″ IN DEPTH.
R1	2′-6″ CONCRETE CURB AND GUTTER.
R2	1′-6″ CONCRETE CURB AND GUTTER.
R3	5″ MONOLITHIC CONCRETE ISLAND (KEYED-IN).
S1	4″ CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	3″ MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

NOTE: PAVEMENT EDGES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

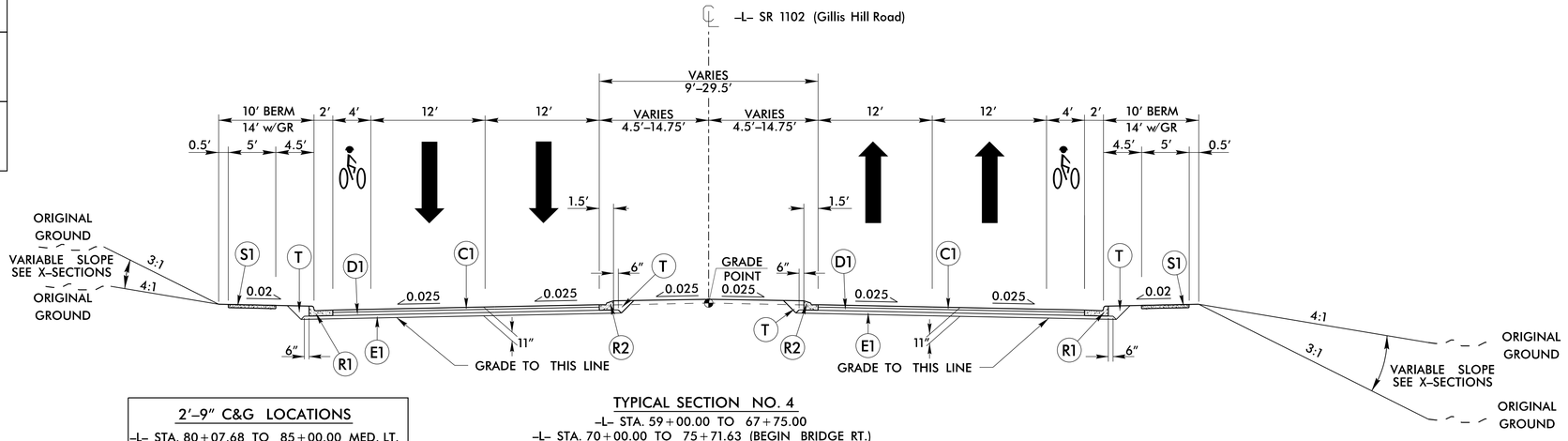
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493



2′–9″ C&G LOCATIONS
–L– STA. 85+00.00 TO 85+40.82 MED. LT.

TYPICAL SECTION NO. 3
–L– STA. 53+05.00 TO 59+00.00
–L– STA. 85+00.00 TO 87+00.00



2′–9″ C&G LOCATIONS
–L– STA. 80+07.68 TO 85+00.00 MED. LT.
–L– STA. 91+10.00 TO 92+00.00 MED. RT.

TYPICAL SECTION NO. 4
–L– STA. 59+00.00 TO 67+75.00
–L– STA. 70+00.00 TO 75+71.63 (BEGIN BRIDGE RT.)
–L– STA. 70+00.00 TO 75+48.00 (BEGIN BRIDGE LT.)
–L– STA. 78+00.00 (END BRIDGE LT. & RT.) TO 85+00.00
–L– STA. 87+00.00 TO 92+00.00

8/17/99

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ IN DEPTH OR GREATER THAN 2.0″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4.0″ IN DEPTH OR GREATER THAN 5.5″ IN DEPTH.
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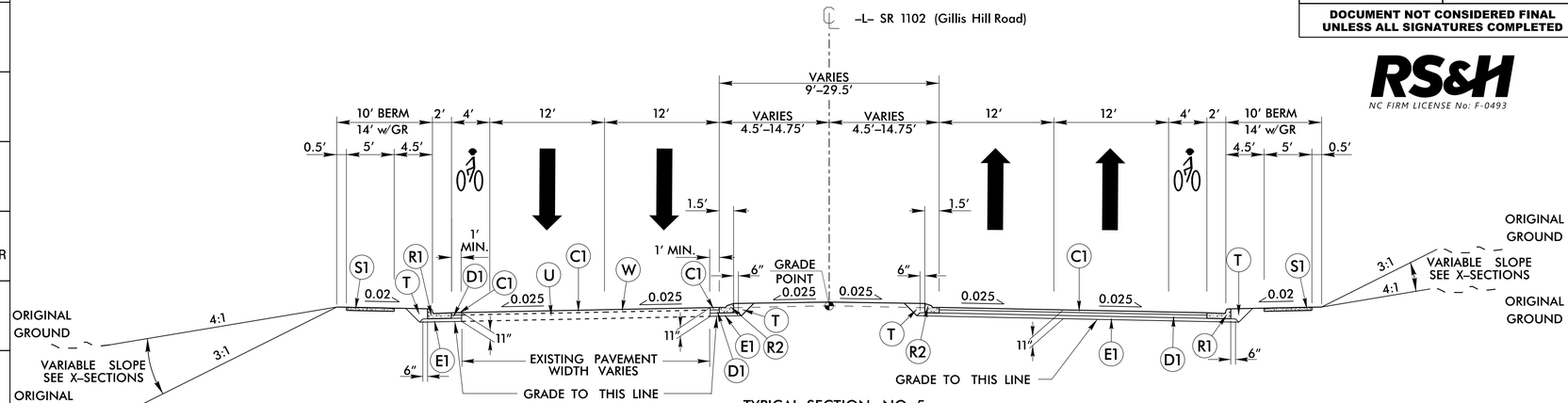
R3	5″ MONOLITHIC CONCRETE ISLAND (KEYED-IN).
S1	4″ CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	3″ MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

NOTE: PAVEMENT EDGES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

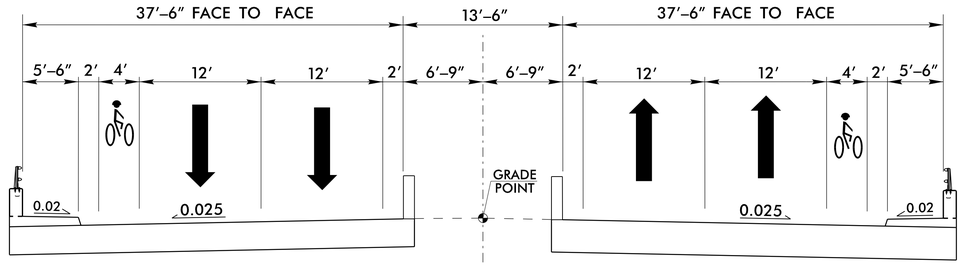
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

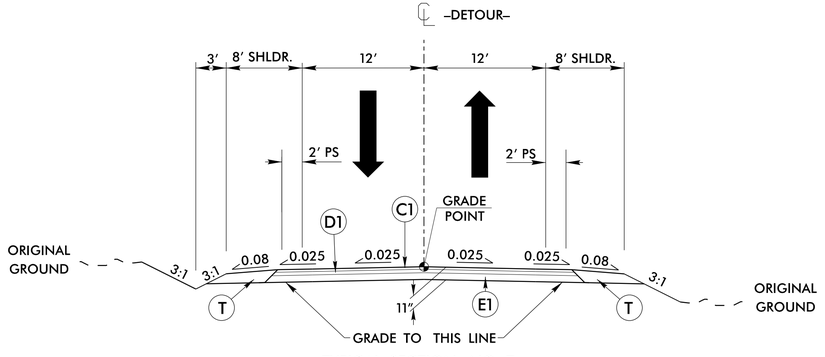


2′–9″ C&G LOCATIONS
–L– STA. 94+00.00 TO 94+30.00 MED. RT.

TYPICAL SECTION NO. 5
–L– STA. 94+00.00 TO 101+00.00



TYPICAL SECTION NO. 6
–L– STA. 75+71.63 TO 78+00.00 RT.
–L– STA. 75+48.00 TO 78+00.00 LT.



TYPICAL SECTION NO. 7
–DETOUR– STA. 10+05.00 TO 17+80.00

8/17/99

–DETOUR– DETAIL

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

–DETOUR– CURVE DATA

PI Sta 11+09.46	PI Sta 15+46.31
△ = 21° 55' 41.3" (RT)	△ = 11° 26' 50.2" (RT)
D = 15° 26' 37.0"	D = 3° 15' 19.6"
L = 141.99'	L = 351.64'
T = 71.87'	T = 176.40'
R = 371.00'	R = 1,760.00'
SE = 04	SE = 025
RO = SEE PLANS	RO = SEE PLANS

GILLIS, MALCOLM D HEIRS & JUDY GILLIS MCKETHAN DB 10395 PG 197

6 M D GILLIS C/O JUDY GILLIS DIBACCO DB 2584 PG 0783

8 MALCOLM D GILLIS HEIRS JUDY GILLIS MCKETHAN DB 451 PG 548

NAD 83/NA 2011

70 (–L–)

75 (–L–)

10 (–DETOUR–)

15 (–DETOUR–)

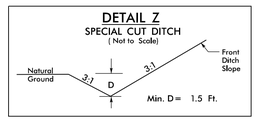
–DETOUR– POT Sta. 10+00.00

BEGIN GRADE
–DETOUR– POT Sta. 10+05.00 =
–L– Sta.67+09.23.(75.90' RT.)

N 18° 36' 35.8" W

FILL IN EXISTING DITCH TO MATCH ELEVATION OF DRIVEWAY

DETAIL Z
SPECIAL CUT DITCH
(Not to Scale)



FROM –DETOUR– STA. 11+00 TO STA. 17+80 RT

–DETOUR– PC Sta. 10+37.59

SPECIAL CUT DITCH SEE DETAIL Z

N 3° 19' 05.4" E

–DETOUR– PT Sta. 11+79.57

7 M D GILLIS C/O JUDY GILLIS DIBACCO DB 2584 PG 0783

–L– PT Sta. 70+87.52

–DETOUR– PC Sta. 13+69.90

COLLAR AND EXTEND 24" RCP

–DETOUR–

–DETOUR– POT Sta. 17+84.02

COLLAR AND EXTEND 24" RCP

N 3° 19' 05.4" E

SPECIAL CUT DITCH SEE DETAIL Z

–DETOUR– PT Sta. 17+21.54

END GRADE
–DETOUR– POT Sta. 17+80.00 =
–L– Sta.74+11.13 (73.49' RT.)

N 14° 45' 55.7" E

FOR –L– PLAN VIEW, SEE SHEETS NO. 5,6

FOR –L– PROFILE VIEW, SEE SHEET NO. 10

–DETOUR–

PI = 11+85.00
EL = 219.85'
VC = 360'
K = 52
DS = 42 MPH

(–)0.5100%

(–)7.4644%

PI =11+50.000
El = 214.34
(–)1.2140%

PI =12+00.000
El = 213.77
(–)5.5600%

PI =12+50.000
El = 210.99
(–)1.6160%

PI =13+00.000
El = 207.91
(+)7.8200%

PI =13+50.000
El = 204.00

(–)8.4034%

BEGIN SPECIAL CUT DITCH GRADE
–DETOUR– STA.11+00 RT
EL = 216.84'

BEGIN GRADE
–DETOUR– STA.10+05.00
ELEV.= 220.77'

PI = 16+00.00
EL = 188.88'
VC = 360'
K = 155
DS = 60 MPH

(–)7.4644%

(–)9.7956%

PI =15+88.000
El = 184.00
(–)4.6700%

PI =16+00.000
El = 183.44
(–)4.6800%

PI =16+50.000
El = 181.10
(–)8.6000%

PI =17+00.000
El = 176.80
(–)10.1000%

PI =17+50.000
El = 171.75
(–)13.0000%

END GRADE
–DETOUR– STA.17+80.00
ELEV.= 171.25'

END SPECIAL CUT DITCH GRADE
–DETOUR– STA.17+80 RT
EL = 167.85'

RIGHT DITCH ----------

10 11 12 13 14 15 16 17 18

05-MAR-2020 12:07
R:\STIPROJ\U-5798\U-5798A_Rdy_dtl_DETOUR.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2C-1

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

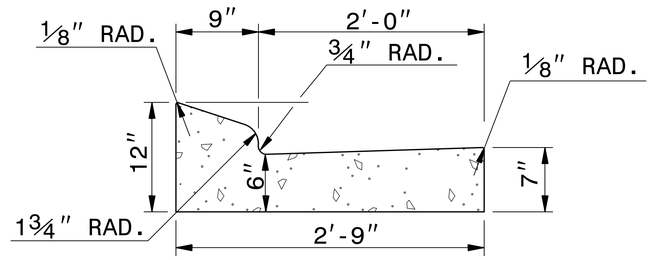
ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

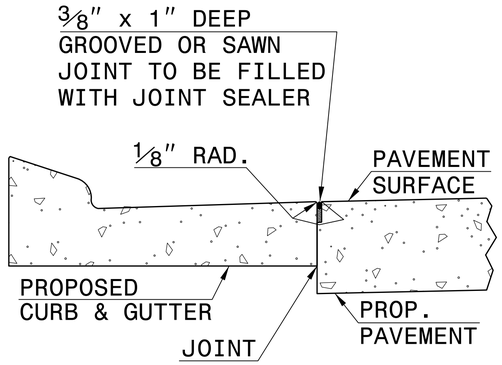
846D01

GENERAL NOTES:
- -PLACE CONTRACTION JOINTS AT 10′ INTERVALS, EXCEPT THAT A 15′ SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10′ INTERVALS.
- -JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- -CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½″ DEEP.
- -FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
- -SPACE EXPANSION JOINTS AT 90′ INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
- -SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2′-6″ CURB AND GUTTER RATES)

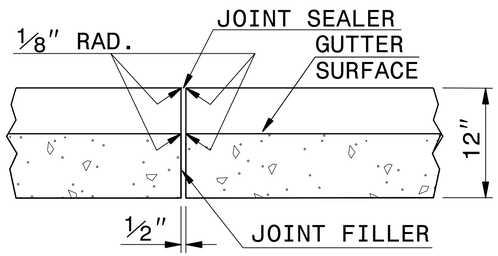


2′-9″ CURB AND GUTTER

SECTION VIEW OF CURB AND GUTTER



LONGITUDINAL JOINT



TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

SECTION VIEW OF JOINTS

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

846D01

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

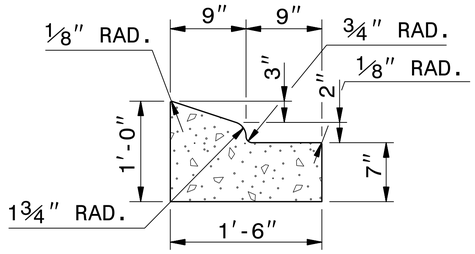
SEE PLATE FOR TITLE

ORIGINAL BY: STD. 846.01 DATE:
MODIFIED BY: E.E. WARD DATE: 8-15-00
CHECKED BY: DATE:
FILE SPEC.: /usr/details/stand/c&g2'-9".dgn

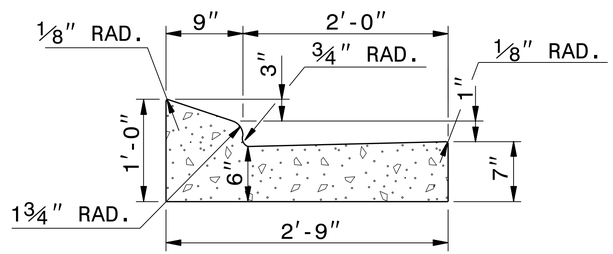
10-AUG-2017 11:46
S:\Contracts\Contracts\Special Details\erieward\usr\details\stand\c&g2'-9.dgn
jhowerton AT CSD-292595

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	2C-2



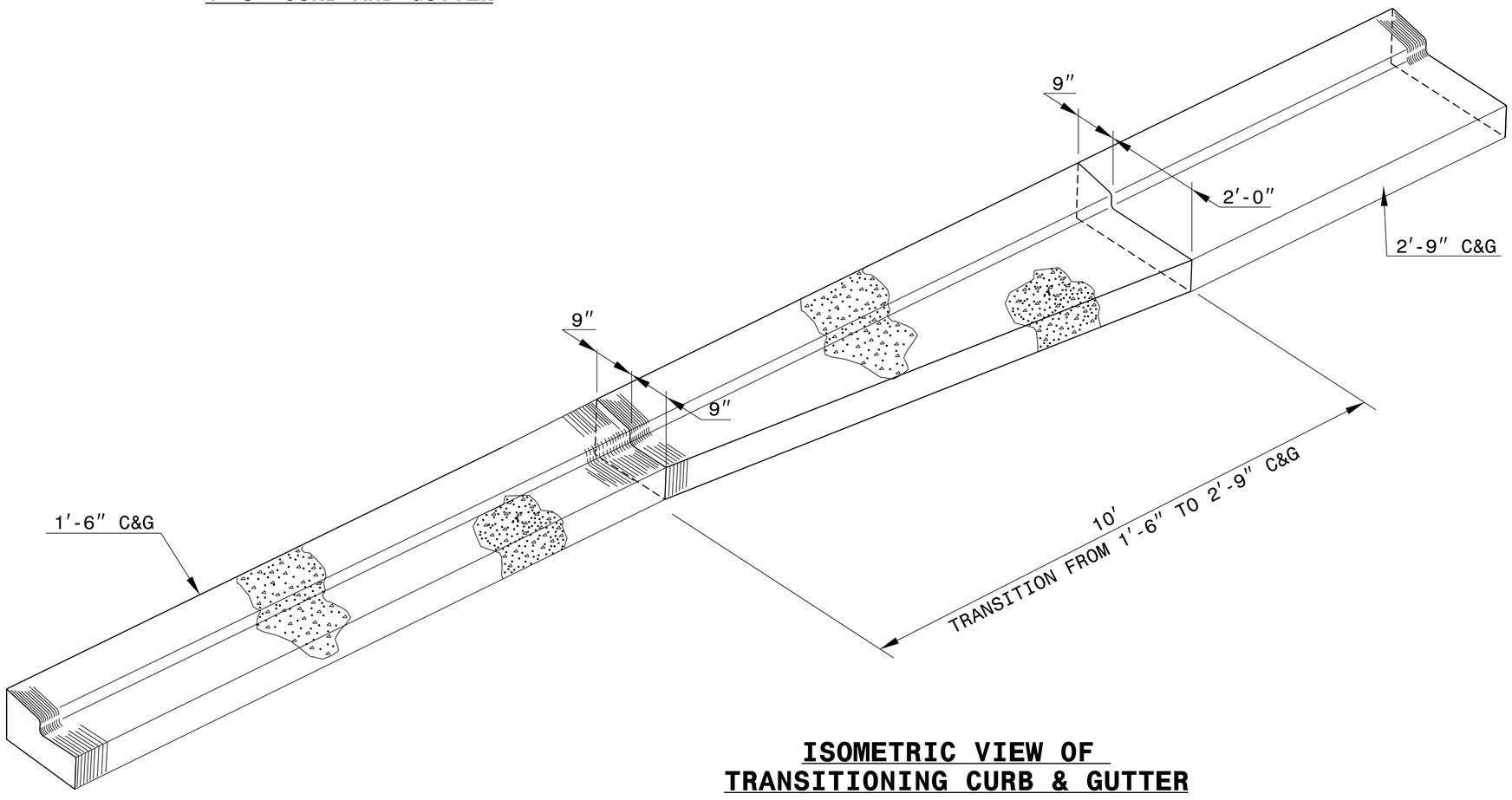
1′-6″ CURB AND GUTTER



2′-9″ CURB AND GUTTER

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.



ISOMETRIC VIEW OF TRANSITIONING CURB & GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL OF 1′-6″ TO 2′-9″ CURB & GUTTER TRANSITION SECTION

ORIGINAL BY: T.S.SPELL DATE: NOV. 26, 2001
MODIFIED BY: T.S.SPELL DATE: JAN. 23, 2007
CHECKED BY: DATE:
FILE SPEC.: DS174:/usr/details/stand/cgtransit.dgn

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4,5	JOHN D GILLIS
2	4,5	W K GILLIS
3	5	ROBERT LEWIS GILLIS & WIFE JUNE MONTGOMERY
4	5	DAVID MILLER GILLIS & JOHN DAVIS II
5	5,6	JOHN D GILLIS
6	5,6	M D GILLIS C/O, JUDY GILLIS DIBACCO
7	6	M D GILLIS C/O, JUDY GILLIS DIBACCO
8	6	MALCOM D GILLIS HEIRS, JUDY GILLIS MCKETHAN
9	6,7	JOHN MCN GILLIS JR ET AL
10	6,7	JOHN MCN GILLIS JR ET AL
11	6,7	DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS
12	7	JOHN MCN GILLIS JR ET AL
13	7	JOHN MCN GILLIS JR ET AL
14	7	KATHRYN GILLIS MILLER & HUSBAND DOUGLAS KEITH
15	7	GILBERT LINDSAY & WIFE LAURA
16	7	LEWIS LINDSEY & WIFE LAURIE
17	7	WEST FAYETTEVILLE PLACE ASSOCIATES
18	7	WEST BAPTIST CHURCH TRUSTEES
19	7,8	JOHN D GILLIS
20	7	GT RECREATION
21	7,8,9	WAL-MART REAL ESTATE BUSINESS
22	8,9	BARKER PARTNERS LLC
23	9	CUMBERLAND COUNTY ABC BOARD

PARCEL No.	SHEET No.	PROPERTY OWNER NAME

PROJECT REFERENCE NO.	SHEET NO.
U-5798A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

8/17/99

REVISIONS

-L- CURVE DATA

PI Sta 48+37.98
△ = 7° 01' 28.2" (RT)
D = 0° 40' 26.6"
L = 1,042.10'
T = 521.71'
R = 8,500.00'
SE = NC

PI Sta 62+27.11
△ = 13° 43' 19.0" (LT)
D = 0° 47' 36.9"
L = 1,729.14'
T = 868.73'
R = 7,220.00'
SE = NC

BM7 ELEVATION = 225.50'
N 458479 E 1983029
BL STATION 58+07.56 196.67' LEFT
BENCHTIE IN 16" OAK

BM #7

JOHN MCNATT GILLIS, MARY ALMA GILLIS
MALCOLM D GILLIS HEIRS ET AL
MALCOLM GILLIS HEIRS
JUDY GILLIS MCKETHAN
DB 4093 PG 287 (TRACT 6C)

JOHN MCNATT GILLIS, MARY ALMA GILLIS
MALCOLM D GILLIS HEIRS ET AL
MALCOLM GILLIS HEIRS
JUDY GILLIS MCKETHAN
DB 4093 PG 287 (TRACT 6C)

1
JOHN D GILLIS
DB 4810 PG 586

2
W K GILLIS
DB 2749 PG 305
DB 2799 PG 629
DB 9583 PG 800 (NCDOT R/W)

NAD 83/NA 2011

-L- STA. 56+25.00

MATCHLINE SHEET 5 -L- STA. 50+00.00

U-5798B FUTURE WORK TO BE DONE BY OTHERS

BEGIN PROJECT U-5798A
END PROJECT U-5798B
-L- Sta. 50+00.00

-L- PRC Sta. 53+58.38

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 4:1, Fill Slope, B
Min. D= 2.5 Ft.
B= 2.0 Ft.

FROM -L- STA. 50+50 TO STA. 56+25 LT
S 17°21'44" W
561.45'

TRAFFIC VOLUME DATA

		6,476 / 11,238 STONEY POINT RD.		
13,176 / 15,938	748 / 1,224		2,110 / 4,205	23,829 / 30,114
GILLIS HILL RD.	210 / 305		9,500 / 11,500	GILLIS HILL RD.
		13,329 / 17,614 STONEY POINT RD.		

2021 / 2041

EXISTING SIGNAL

FOR -L- PROFILE, SEE SHEET NO. 10

27-MAR-2020 14:46
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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

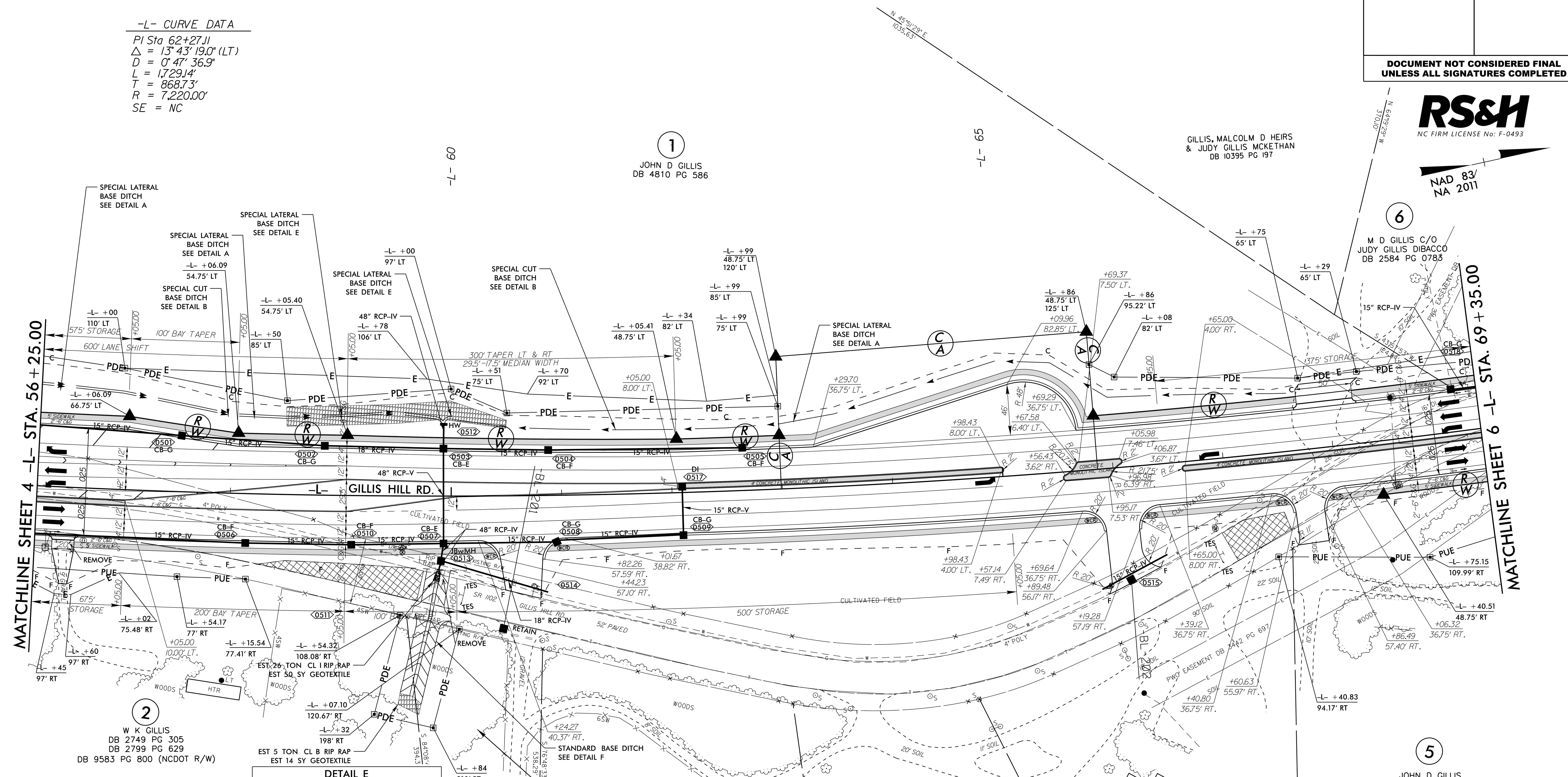
RS&H
NC FIRM LICENSE No: F-0493

REVISIONS

8/17/99

-L- CURVE DATA

PI Sta 62+27.11
△ = 13° 43' 19.0" (LT)
D = 0° 47' 36.9"
L = 1,729.14'
T = 868.73'
R = 7,220.00'
SE = NC



DETAIL A
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D= SEE BELOW
B= 2.0 Ft.

FROM -L- STA. 56+25 TO STA. 57+00 LT; Min D= 2.5 Ft.
FROM -L- STA. 58+00 TO STA. 58+50 LT; Min D= 1.5 Ft.
FROM -L- STA. 62+50 TO STA. 67+60 LT; Min D= 1.0 Ft.

DETAIL B
SPECIAL CUT BASE DITCH (Not to Scale)
Min. D= SEE BELOW
B= 2.0 Ft.

FROM -L- STA. 57+00 TO STA. 58+00 LT; Min D= 2.5 Ft.
FROM -L- STA. 60+50 TO STA. 62+50 LT; Min D= 1.0 Ft.

DETAIL E
SPECIAL LATERAL BASE DITCH (Not to Scale)
Min. D= 2.5 Ft.
Max. d= 2.4 Ft.
B= 2.0 Ft.
Type of Liner= 233 TONS CL I RIP-RAP
327 S.Y. GEOTEXTILE

FROM -L- STA. 58+50 TO STA. 59+93 LT
FROM -L- STA. 59+93 TO STA. 60+50 LT

DETAIL F
STANDARD BASE DITCH (Not to Scale)
Min. D= 2.5 Ft.
Max. d= 2.4 Ft.
B= 3.0 Ft.
*When B is < 6.0'
Type of Liner= MATTING /VEGETATION TYPE C
-L- STA. 59+85 RT
L=115'; Slope=1.04%; DDE=150 CY

FOR -L- PROFILE, SEE SHEETS NO. 10

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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

8/17/99

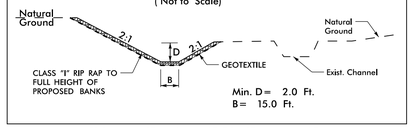
REVISIONS

-L- CURVE DATA

PI Sta 62+27.11
△ = 13° 43' 19.0" (LT)
D = 0° 47' 36.9"
L = 1,729.14'
T = 868.73'
R = 7,220.00'
SE = NC

PI Sta 85+35.62
△ = 28° 56' 41.9" (RT)
D = 3° 19' 52.1"
L = 868.92'
T = 443.94'
R = 1,720.00'
SE = 035
RO = 126

DETAIL K
CHANNEL CHANGE
(Not to Scale)



Min. D= 2.0 Ft.
B= 15.0 Ft.

FROM -L- STA. 76+47 LT TO STA. 77+25 RT
EST. 456 TONS CL "I" RIP RAP
EST. 643 SY GEOTEXTILE
EST. 910 CY DDE

NAD 83/
NA 2011

9
JOHN MCN GILLIS JR ET AL
DB 2899 PG 463

6
M D GILLIS C/O
JUDY GILLIS DIBACCO
DB 2584 PG 0783

8
MALCOLM D GILLIS HEIRS
JUDY GILLIS MCKETHAN
DB 451 PG 548

5
JOHN D GILLIS
DB 5280 PG 386
PB 51 PG 32

7
M D GILLIS C/O
JUDY GILLIS DIBACCO
DB 2584 PG 0783

10
JOHN MCN GILLIS JR ET AL
DB 2899 PG 463

11
DOUGLAS KEITH MILLER & WIFE
KATHRYN GILLIS
DB 4227 PG 487

ENVIRONMENTALLY SENSITIVE AREA

RUN OF LITTLE ROCKFISH CREEK IS PROPERTY LINE

GILLIS HILL RD.

-L- PT Sta. 70+87.52

-L- PC Sta. 80+91.68

BM #9

CHANNEL CHANGE SEE DETAIL K

CHANNEL BLOCK SEE SHEET 2D-1

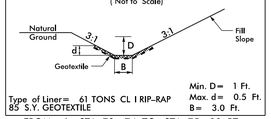
CLASS "I" RIP RAP (TYP.) TO A MINIMUM 10' OFF PROPOSED COLUMNS

REMOVE EXISTING BRIDGE

MATCHLINE SHEET 5 -L- STA. 69+35.00

MATCHLINE SHEET 7 -L- STA. 82+60.00

DETAIL G
SPECIAL LATERAL BASE DITCH
(Not to Scale)

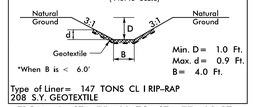


Min. D= 1 Ft.
Max. d= 0.5 Ft.
B= 3.0 Ft.

Type of Liner= 61 TONS CL I RIP-RAP
85 S.Y. GEOTEXTILE

FROM -L- STA. 73+74 TO STA. 75+00 RT

DETAIL H
STANDARD BASE DITCH
(Not to Scale)



*When B is < 6.0'

Min. D= 1.0 Ft.
Max. d= 0.9 Ft.
B= 4.0 Ft.

Type of Liner= 147 TONS CL I RIP-RAP
208 S.Y. GEOTEXTILE

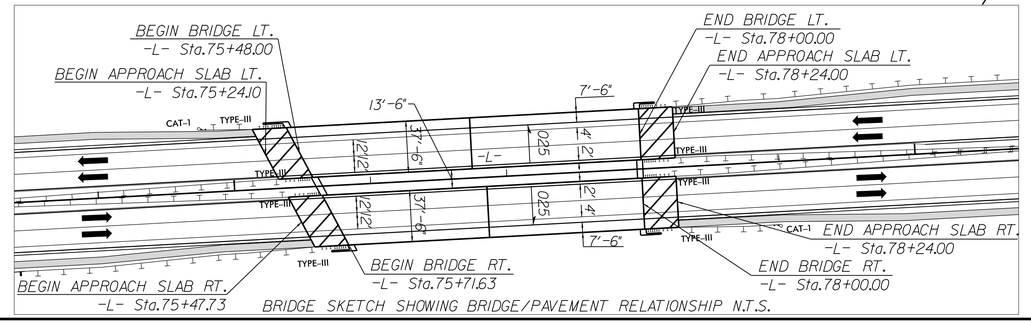
FROM -L- STA. 75+00 TO STA. 77+06 RT;
DDE=205 CY

EST 7 TON CL I RIP RAP
EST 15 SY GEOTEXTILE

STANDARD BASE DITCH
SEE DETAIL H

SPECIAL LATERAL BASE DITCH SEE DETAIL G

EST 15 TON CL I RIP RAP
EST 30 SY GEOTEXTILE



BRIDGE SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP N.T.S.

APPROACH SLAB

PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEETS NO. 10, 11

27-MAR-2020 14:56
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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

REVISIONS
8/17/99

-L- CURVE DATA

PI Sta 85+35.62
△ = 28° 56' 41.9" (RT)
D = 3° 19' 52.1"
L = 868.92'
T = 443.94'
R = 1,720.00'
SE = 035
RO = 126

PI Sta 93+91.02
△ = 8° 17' 55.2" (LT)
D = 1° 40' 48.8"
L = 493.90'
T = 247.38'
R = 3,410.00'
SE = RC

9 JOHN MCN GILLIS JR ET AL DB 2899 PG 463

13 JOHN MCN GILLIS JR ET AL DB 2899 PG 463 PB 114 PG 3

17 WEST FAYETTEVILLE PLACE ASSOCIATES LIMITED PARTNERSHIP DB 10045 PG 260

15 GILBERT LINDSAY & WIFE LAURA DB 2190 PG 619

16 LEWIS LINDSEY & WIFE LAURIE DB 2710 PG 121

20 GT RECREATION DB 10124 PG 689

21 WAL-MART REAL ESTATE BUSINESS TRUST (#3595) DB 5933 PG 307 PB 107 PG 17

10 JOHN MCN GILLIS JR ET AL DB 2899 PG 463

12 JOHN MCN GILLIS JR ET AL DB 2899 PG 463 PB 114 PG 3

11 DOUGLAS KEITH MILLER & WIFE KATHRYN GILLIS DB 4227 PG 487

14 KATHRYN GILLIS MILLER & HUSBAND DOUGLAS KEITH DB 9268 PG 320

18 WEST FAYETTEVILLE BAPTIST CHURCH TRUSTEES DB 9240 PG 512 PB 132 PG 190

19 JOHN D GILLIS DB 5280 PG 386 PB 94 PG 13

-L- PC Sta. 91+43.64

-L- PT Sta. 89+60.59

BM #10

MATCHLINE SHEET 6 -L- STA. 82+60.00

MATCHLINE SHEET 8 -L- STA. 95+80.00

GILLIS HILL RD. SR 1102

DETAIL I
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1, Front Ditch Slope
Min. D= 1.0 Ft.

FROM -L- STA. 90+10 TO STA. 92+50 LT
FROM -L- STA. 93+50 TO STA. 95+00 LT

PAVEMENT REMOVAL
FOR -L- PROFILE, SEE SHEET NO. 11

27-MAR-2020 14:58
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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

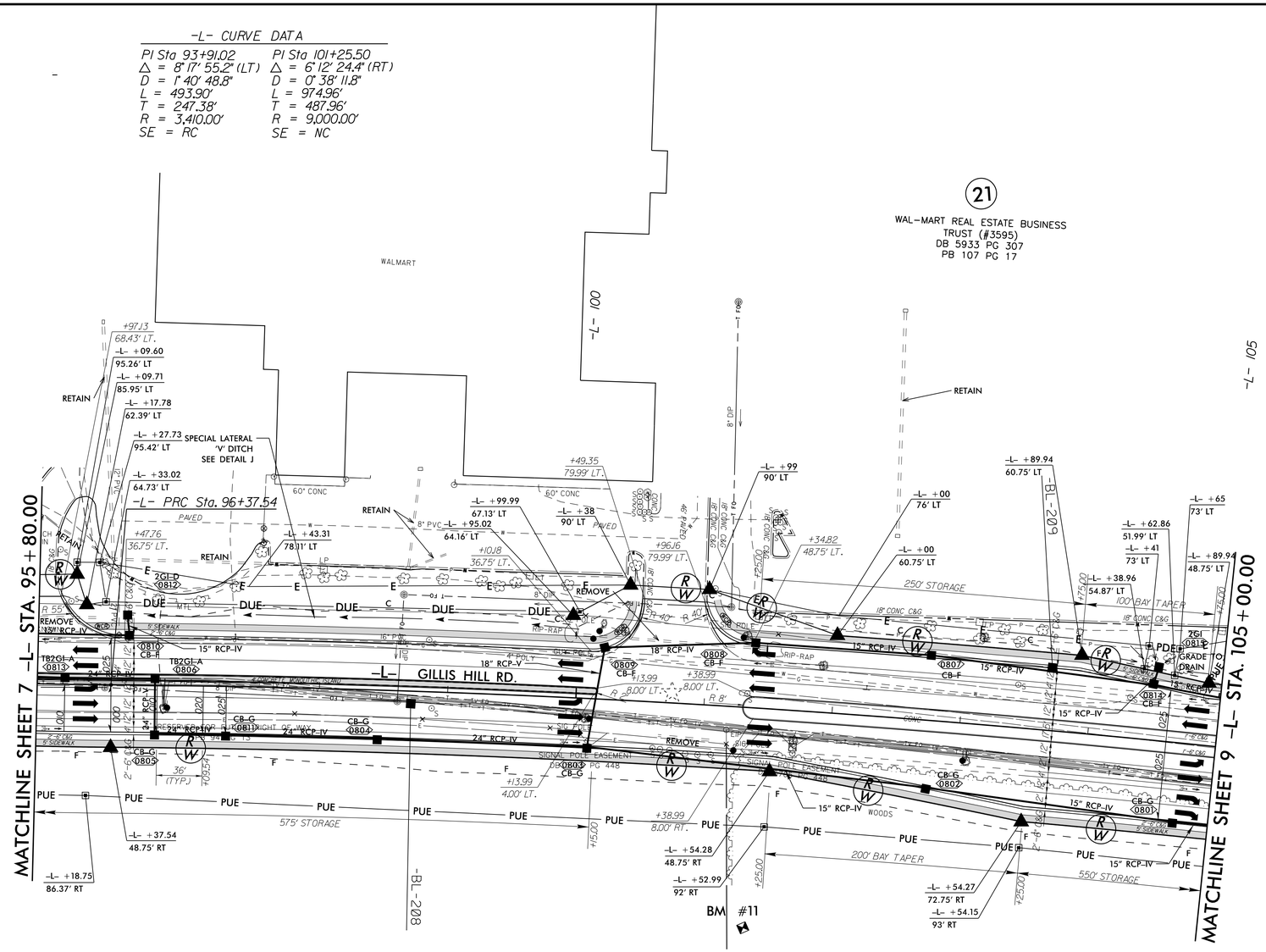
NAD 83
NA 2011

8/17/99

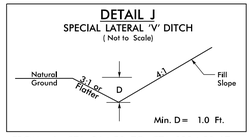
REVISIONS

-L- CURVE DATA

PI Sta 93+91.02	PI Sta 101+25.50
Δ = 8° 17' 55.2" (LT)	Δ = 6° 12' 24.4" (RT)
D = 1° 40' 48.8"	D = 0° 38' 11.8"
L = 493.90'	L = 974.96'
T = 247.38'	T = 487.96'
R = 3,410.00'	R = 9,000.00'
SE = RC	SE = NC

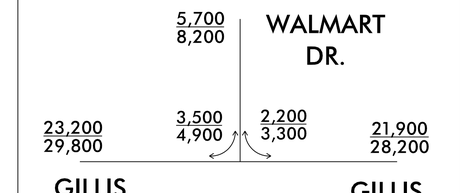


DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA. 96+50 TO STA. 100+00 LT

TRAFFIC VOLUME DATA



EXISTING SIGNAL

FOR -L- PROFILE, SEE SHEETS NO. 11

27-MAR-2020 15:00
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PROJECT REFERENCE NO.	SHEET NO.
U-5798A	9

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

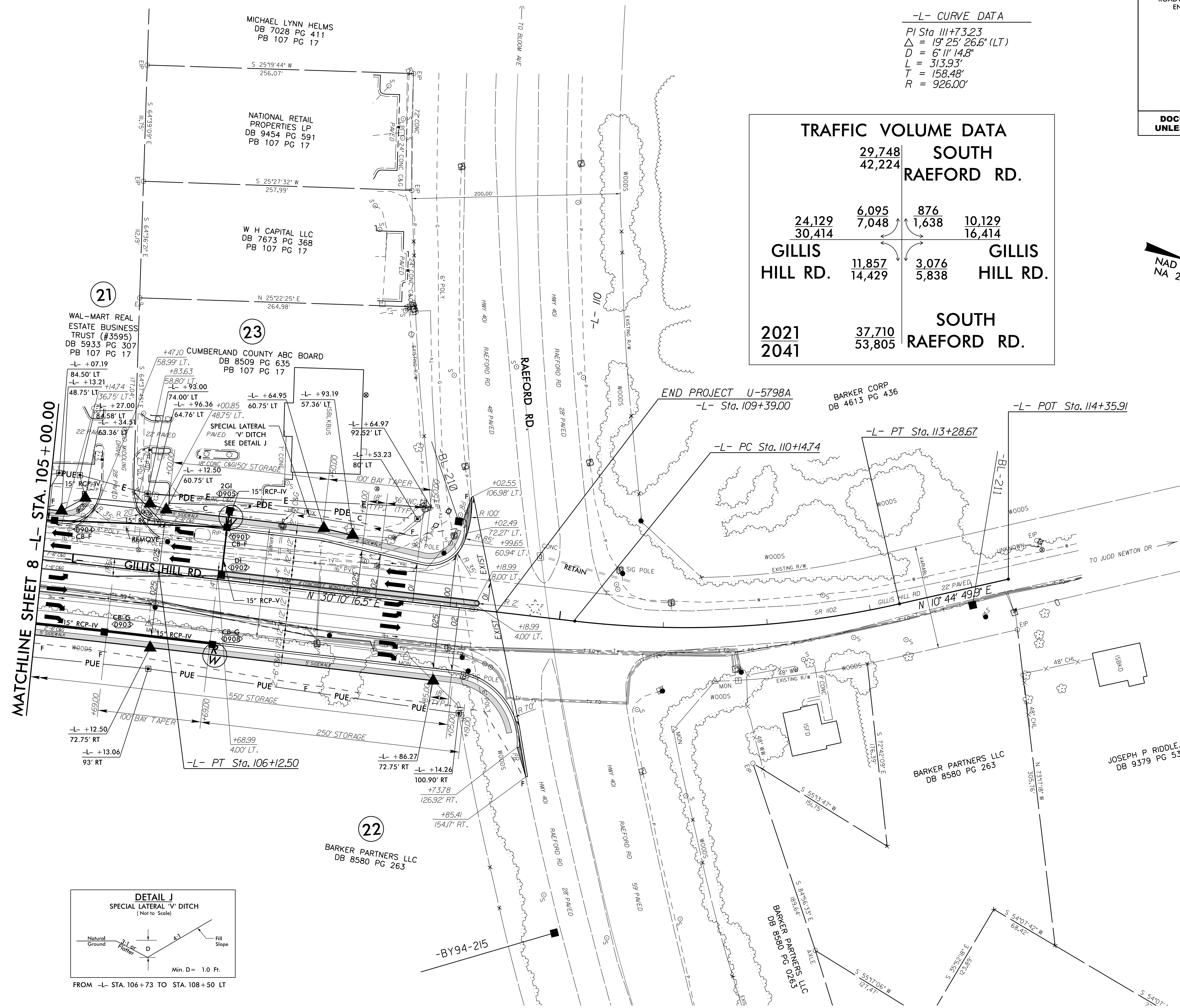
-L- CURVE DATA

PI Sta 111+73.23
Δ = 19° 25' 26.6" (LT)
D = 6° 11' 14.8"
L = 313.93'
T = 158.48'
R = 926.00'

TRAFFIC VOLUME DATA

Approach / Movement	2021	2041
South Raeford Rd. (north leg)	29,748	42,224
Gillis Hill Rd. (west leg)	24,129	30,414
Movement	6,095	7,048
Movement	876	1,638
Gillis Hill Rd. (east leg)	10,129	16,414
Movement	11,857	14,429
Movement	3,076	5,838
South Raeford Rd. (south leg)	37,710	53,805

NAD 83 / NA 2011



MATCHLINE SHEET 8 -L- STA. 105+00.00
MICHAEL LYNN HELMS
DB 7028 PG 411
PB 107 PG 17
NATIONAL RETAIL PROPERTIES LP
DB 9454 PG 591
PB 107 PG 17
W H CAPITAL LLC
DB 7673 PG 368
PB 107 PG 17
21
WAL-MART REAL ESTATE BUSINESS TRUST (#3595)
DB 5933 PG 307
PB 107 PG 17
23
CUMBERLAND COUNTY ABC BOARD
DB 8509 PG 635
PB 107 PG 17
SPECIAL LATERAL PAVED 'V' DITCH SEE DETAIL J
GILLIS HILL RD.
N 30° 10' 16.5" E
RAEFORD RD.
-BL-210
-BL-211
END PROJECT U-5798A
-L- Sta. 109+39.00
-L- PC Sta. 110+14.74
-L- PT Sta. 113+28.67
-L- POT Sta. 114+35.91
-L- PT Sta. 106+12.50
BARKER CORP
DB 4613 PG 436
N 10° 44' 49.9" E
TO JUDD NEWTON DR
BARKER PARTNERS LLC
DB 8580 PG 263
JOSEPH P RIDDLE, III
DB 9379 PG 534
22
BARKER PARTNERS LLC
DB 8580 PG 263
BARKER PARTNERS LLC
DB 8580 PG 0263
-BY94-215
550' STORAGE
250' STORAGE
100' BAY TAPER
DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
D
Min. D= 1.0 Ft.

FROM -L- STA. 106+73 TO STA. 108+50 LT

REVISIONS

8/17/99

27-MAR-2020 15:01
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☆ EXISTING SIGNAL

FOR -L- PROFILE, SEE SHEETS NO. 12