STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

DATE: January 27, 2022

MEMORANDUM TO: Mr. H.L. Cox, P.E.
Division 6 Engineer

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

FROM: for Philip S. Harris, III, P.E., Unit Head
Environmental Analysis Unit

SUBJECT: Environmental Permits for the widening of SR 1102 (Gillis Hill Road) from US 401 (Raeford Road) to SR 1418 (Lindsay Road), Cumberland and Hoke Counties. WBS 44369.1.2, **TIP Nos. U-5798A and U-5798B**.

Attached are the U.S. Army Corps of Engineers Individual Permit and N.C. Division of Water Resources (NCDWR) Individual Water Quality Certification. All environmental permits have been received for the construction of U-5798A.

A copy of this permit package will be posted on the NCDOT website at:
https://xfer.services.ncdot.gov/pdea/PermIssued/

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

Mr. Ron Davenport, P.E. State Contract Officer
Mr. Greg Price, Division 6 Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mrs. Jennifer Evans, P.E. Project Management Unit
Mr. Byron Sanders, Jr., P.E., Utilities
Mr. Stephen Morgan, P.E., Hydraulics
Mr. Brian Hanks, P.E., Structures Management
Mr. Mark Staley, Roadside Environmental
Mr. Lamar Sylvester, P.E., State Construction Engineer
Mrs. Beth Harmon, NCDMS

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL 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:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

PROJECT COMMITMENTS

T.I.P. Project No U-5798
SR 1102 (Gillis Hill Road) Widening
Cumberland and Hoke Counties
W.B.S. No. 44369.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

NCDOT Project Management Unit (PMU):
NCDOT will coordinate with the City of Fayetteville, Hoke County and FAMPO concerning cost-share and maintenance agreements for sidewalk construction and any other requested betterments.

NCDOT Project Management Unit (PMU) and Roadway Design:
The proposed design will accommodate the proposed greenway along Little Rockfish Creek. NCDOT will continue coordination with City of Fayetteville and FAMPO.

NCDOT Roadway Design Unit:
NCDOT Roadway Design will coordinate the design of this project with U-6072A, the widening of SR 1112 (Stoney Point Road/Rockfish Road) from SR 1102 (Gillis Hill Road) to SR 1103 (Camden Road).

NCDOT Environmental Analysis Unit (EAU):
A field survey for the Red-cockaded woodpecker will be completed prior to permitting.
Survey for red-cockaded woodpecker was updated and completed on 6/4/2021.

NCDOT Environmental Analysis Unit/Cultural Resources:
Archaeological Resources – Data recovery will be undertaken at this site prior to construction. The data recovery efforts will be facilitated by a Memorandum of Agreement (MOA). NCDOT will coordinate the MOA and data recovery.
Data recovery has concluded, and an End of Fieldwork Management Summary has been issued by SHPO for the project on 7/12/2021.

NCDOT Division 6:
This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

NCDOT Hydraulics Unit:
The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT's Memorandum of

Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

COMMITMENTS FROM PERMITTING

NCDOT Environmental Analysis Unit (EAU)/ NCDOT Division 6:

The Section 404 and 401 permits only authorize work on U-5798 A. Construction of U-5798 B shall not commence until all the following occur: (a) final design has been completed for that section and submitted to the U.S. Army Corps of Engineers and the N.C. Division of Water Resources (agencies); (b) the Permittee has minimized impacts to waters and wetlands to the maximum extent practicable and the agencies concurs with this assessment; (c) any modification to the plans have been approved by the agencies in writing; and (d) a final compensatory mitigation plan has been submitted by the Permittee and approved by the agencies.

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

January 26, 2022

Regulatory Division

Action ID. SAW-2020-00079

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

Dear Mr. Harris,

In accordance with the written request of July 29, 2021, and the ensuing administrative record, enclosed is a permit to discharge dredged or fill material into waters of the U.S. in association with construction activities related to the road widening and bridge replacement project located along Gillis Hill Road, in Cumberland and Hoke Counties, near Fayetteville, North Carolina. **STIP: U-5798**.

Any deviation in the authorized work will likely require modification of this permit. If any change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified.

Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant general conditions require that:

a. You must complete construction before December 31, 2027.

b. You must notify this office in advance as to when you intend to commence and complete work.

c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

You should address all questions regarding this authorization to Ms. Liz Hair at the Wilmington Regulatory Field Office, telephone 910-251-4049.

FOR THE CHIEF REGULATORY DIVISION

Monte Matthews

Date: 2022.01.26 14:00:07 -05'00'

Monte Matthews
Lead Project Manager
Wilmington District

Enclosures:

Copies Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
1315 East-west Highway, Room 7316
Silver Spring, Maryland 20910-3282

Electronic Copies Furnished with Special Conditions and Plans:

U. S. Fish and Wildlife Enhancement
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Dr. Pace Wilber
National Marine Fisheries Service
101 Pivers Island Road
Beaufort, North Carolina 28516

Mr. Todd Bowers
Wetlands and Marine Regulatory Section
Water Protection Division – Region IV
U. S. Environmental Protection Agency
61 Forsyth St. SW
Atlanta, Georgia 30303-8931

Mr. Jonathan Howell
Division of Coastal Management
North Carolina Department of
Environmental Quality
400 Commerce Avenue
Morehead City, North Carolina 28557

Ms. Amy Chapman
Transportation Permitting Unit
Division of Water Resources
Department of Environmental Quality

1617 Mail Service Center
Raleigh, North Carolina 27699

DEPARTMENT OF THE ARMY PERMIT

Permittee: **North Carolina Department of Transportation**
ATTN: Mr. Philip S. Harris III, P.E., C.P.M.

Permit No.: **SAW-2020-00079, STIP U-5798**

Issuing Office: **CESAW-RG-L**

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

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

Project Description: The North Carolina Department of Transportation (NCDOT) proposes to widen 1.8 miles of SR 1102 (Gillis Hill Road) from US 401 (Raeford Road) to SR 1418 (Lindsay Road) and replace the structurally deficient bridge over Little Rockfish Creek.

Proposed total impacts associated with the overall U-5798 project include permanent impacts to 1,047 linear feet of streams and 1.47 acres of wetlands, temporary impacts to 26 linear feet of streams and 0.31 acre of hand clearing to wetlands.

Project Location: The proposed project is located along existing SR 1102 (Gillis Hill Road), from US Highway 401 (Raeford Road) to SR 1418 (Lindsay Road), in Fayetteville, in Cumberland and Hoke Counties, North Carolina.

THIS IS A PHASED PERMIT AUTHORIZATION: This permit only authorizes work on Section U-5798A (Phase 1 for permitting) of the STIP U-5798 project. Construction on the remaining section of STIP U-5798 (i.e., U-5798B) shall not commence until final design has been completed for that section; the permittee has minimized impacts to waters and wetlands to the maximum extent practicable, and; any modifications to the plans, and the compensatory mitigation plans, have been approved by the US Army Corps of Engineers (the Corps).

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2027**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal

and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

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

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

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

Carla Dagnino
for _____ January 26, 2022

(PERMITTEE) **Mr. Philip Harris** *(DATE)*

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

FOR THE DISTRICT COMMANDER

Monte Matthews Date: 2022.01.26 14:14:09 -05'00'

_____ _____

(DISTRICT ENGINEER) **Benjamin A. Bennett, Colonel, U.S. Army** *(DATE)*
District Commander

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

_____ _____

(TRANSFEREE) *(DATE)*

*U.S. GOVERNMENT PRINTING OFFICE: 1986 - 717-425

SPECIAL CONDITIONS
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WORK LIMITS / NOTIFICATION

1. **Work Limits:** All work authorized by this permit shall be performed in strict compliance with the attached permit plans entitled Wetland and Surface Water Impacts-U-5798 and the Wetland and Surface Water Impacts Summary Tables dated July 12, 2021. The Permittees shall ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any modification to the attached permit plans must be approved by the U.S. Army Corps of Engineers (Corps) prior to any active construction in waters or wetlands.

    a. This permit only authorizes work on Section A TIP: U-5798. Construction on Section B of TIP: U-5798 shall not commence until all the following occur: (a) final design has been completed for those sections and submitted to the U.S. Army Corps of Engineers (Corps); (b) the Permittee has minimized impacts to waters and wetlands to the maximum extent practicable and the Corps concurs with this assessment; (c) any modification to the plans have been approved by the Corps in writing; and (d) a final compensatory mitigation plan has been submitted by the Permittee and approved by the Corps.

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

3. **Permit Distribution:** The Permittees shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions and drawings shall be available at the project site during construction and maintenance of this project.

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4. **Preconstruction Meeting:** The Permittee shall schedule and attend a preconstruction meeting between its representatives, the contractor's representatives, and the Corps, Wilmington Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all the terms and conditions contained with this Department of Army Permit. The Permittee shall provide the Corps, Wilmington Field Office, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The Permittee shall schedule the preconstruction meeting for a time frame when the Corps and North Carolina Division of Water Resources (NCDWR) Project Managers can attend. The Permittee shall invite the Corps and NCDWR Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting. The thirty (30) day requirement can be waived with the concurrence of the Corps.

5. **Notification of Construction Commencement and Completion:** The Permittees shall notify the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

6. **Reporting Address:** All reports, documentation, and correspondence required by the conditions of this permit shall be submitted to the following: U.S. Army Corps of Engineers, Wilmington District Wilmington Field Office, Attn: Liz Hair at 910-251-4049 / sarah.e.hair@usace.army.mil. The Permittees shall reference the following permit number, SAW-2008-01509, on all submittals.

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

8. **Reporting Violations:** Violation of these permit conditions or violation of Section 404 of the Clean Water Act shall be reported to the Corps in writing and by telephone at: 910-251-4049 / sarah.e.hair@usace.army.mil within 24 hours of the Permittee's discovery of the violation.

9. **Endangered Species Act:** The Permittees shall implement all necessary measures to ensure the authorized activity does not kill, injure, capture, harass, or otherwise harm any federally-listed threatened or endangered species. While accomplishing the authorized work, if the Permittees discover or observe an injured or dead threatened or endangered species, the U.S. Army Corps of Engineers, Wilmington District Wilmington Field Office, Attn: Liz Hair at 910-251-4049/ sarah.e.hair@usace.army.mil will be immediately notified to initiate the required Federal coordination.

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10. The U.S. Fish and Wildlife Service's (USFWS's) Programmatic Biological Opinion (PBO) titled, "NCDOT Program Effects on the Northern Long-eared Bat in Divisions 1-8", dated November 6, 2020, contains agreed upon conservation measures for the NLEB. As noted in the PBO, applicability of these conservation measures varies depending on the location of the project. Your authorization under this Department of the Army permit is conditional upon your compliance with all applicable agreed upon conservation measures in the PBO, which are incorporated by reference in this permit. Failure to comply with the applicable these conservation measures would constitute non-compliance with your Department of the Army permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.

11. **National Historic Preservation Act:** While accomplishing the authorized work, if the Permittees discover any previously unknown cultural resources, the District Engineer will be immediately notified so that required coordination can be initiated with the North Carolina Division of Natural and Cultural Resources.

    a. NCDOT shall abide by all stipulations identified in the Memorandum of Agreement between the U.S. Army Corps of Engineers and the North Carolina State Historic Preservation Officer, executed on March 30, 2020, copy attached and identified as Exhibit A.

12. **Culverts:**

    a. Unless otherwise requested in the application and depicted on the approved permit plans, culverts greater than 48 inches in diameter shall be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter and less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain existing channel slope. The bottom of the culvert shall be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Culverts shall be designed and constructed in a manner that minimizes destabilization and head cutting.

    b. Measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gauge data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

c. The Permittee shall implement all reasonable and practicable measures to ensure that equipment, structures, fill pads, work, and operations associated with this project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, flooding, and/or stream bank erosion. The Permittee shall routinely monitor for these effects, cease all work when detected, take initial corrective measures to correct actively eroding areas, and notify this office immediately. Permanent corrective measures may require additional authorization by the Corps.

d. Culverts placed within wetlands must be installed in a manner that does not restrict the flows and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water shall not be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

13. **Maintain Flows and Circulation Patterns of Waters:** Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters and/or wetlands.

14. **Sediment and Erosion Control:**

a. During the clearing phase of the project, heavy equipment shall not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

b. No fill or excavation impacts for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless the impacts are included on the plan drawings and specifically authorized by this permit. This includes, but is not limited to, sediment control fences and other barriers intended to catch sediment losses.

c. The Permittees shall remove all sediment and erosion control measures placed in waters and/or wetlands, and shall restore natural grades on those areas, prior to project completion.

d. The Permittees shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the “North Carolina

Sediment and Erosion Control Planning and Design Manual" to ensure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to ensure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project shall remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4). Adequate sedimentation and erosion control measures shall be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures shall be inspected and maintained regularly, especially following rainfall events. All fill material shall be adequately stabilized at the earliest practicable date to prevent sediment from entering adjacent waters or wetlands.

15. **Clean Fill:** The Permittees shall use only clean fill material for this project. The fill material shall be free of items such as trash, construction debris, metal and plastic products, and concrete block with exposed metal reinforcement bars. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act. Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source.

16. **Temporary Fills:** Within thirty (30) days of the date of completing the authorized work, the Permittee shall remove all temporary fills in waters of the United States and restore the affected areas to pre-construction contours and elevations. The affected areas shall be re-vegetated with native, non-invasive vegetation as necessary to minimize erosion and ensure site stability.

17. **Borrow and Waste:** To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the Permittee shall require its contractors and/or agents to identify all areas to be used as borrow and/or waste sites associated with this project. The Permittee shall provide the Corps with appropriate maps indicating the locations of proposed borrow and/or waste sites as soon as such information is available. The Permittee shall submit to the Corps site-specific information needed to ensure that borrow and/or waste sites comply with all applicable Federal requirements, to include compliance with the Endangered Species Act and the National Historic Preservation Act, such as surveys or correspondence with agencies (e.g., the USFWS, the NC-HPO, etc.). The required information shall also include the location of all aquatic features, if any, out to a distance of 400 feet beyond the nearest boundary of the site. The Permittee shall not approve any borrow and/or waste sites before

receiving written confirmation from the Corps that the proposed site meets all Federal requirements, whether or not waters of the U.S., including wetlands, are located in the proposed borrow and/or waste site. All delineations of aquatic sites on borrow and/or waste sites shall be verified by the Corps and shown on the approved reclamation plans. The Permittee shall ensure that all borrow and/or waste sites comply with Special Condition 2 of this permit. Additionally, the Permittee shall produce and maintain documentation of all borrow and waste sites associated with this project. This documentation will include data regarding soils, vegetation, hydrology, any delineation(s) of aquatic sites, and any jurisdictional determinations made by the Corps to clearly demonstrate compliance with Special Condition 2. All information will be available to the Corps upon request. The Permittee shall require its contractors to complete and execute reclamation plans for each borrow and/or waste site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps within 30 days of the completion of the reclamation work.

18. **Water Contamination:** All mechanized equipment shall be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the Permittees shall immediately report it to the N.C. Division of Water Resources at (919) 733-3300 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act shall be followed.

AQUATIC LIFE

19. **Aquatic Life Movement:** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. All discharges of dredged or fill material within waters of the United States shall be designed and constructed, except as authorized as indirect impacts, to maintain low flows to sustain the movement of aquatic species.

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

COMPENSATORY MITIGATION

21. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form,

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including any special conditions listed on the form, are hereby incorporated as special conditions of this permit.

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
S. DANIEL SMITH
Director

NORTH CAROLINA
Environmental Quality

September 22, 2021

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS 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 U-5798A and U-5798B.
NCDWR Project No. 20210307

Dear Mr. Harris:

Attached hereto is a copy of Certification No. WQC004465 issued to The North Carolina Department of Transportation (NCDOT) dated September 22, 2021.

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

Sincerely,

DocuSigned by:
Amy Chapman
9C9886312DCD474...

S. Daniel Smith, Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Liz Hair, US Army Corps of Engineers, Wilmington Regulatory Field Office
Jim Rerko, Division 6 Environmental Officer
Chris Rivenbark, NC Department of Transportation
Beth Harmon, Division of Mitigation Services
Hannah Sprinkle, NC Division of Water Resources Wilmington Regional Office
File Copy

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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 2.54 acres of jurisdictional wetlands, and 1,073 linear feet of jurisdictional streams in Cumberland and Hoke County. The project shall be constructed pursuant to the application dated received July 29, 2021. The authorized impacts are as described below:

Stream Impacts in the Cape Fear River Basin

Site	Type	Permanent (linear feet)	Temporary (linear feer)	Total Stream Impacts (linear ft)	Stream impacts requiring mitigation (linear ft)
Section A Impacts					
1	P	232	26	258	n/a
Section A Total:		232	26	258	n/a
Section B Impacts					
1	P	660	----	660	660
4	P	155	----	155	n/a
Section B Total:		815	----	815	660
Total Project Impacts					
Project Total:		1047	26	1073	660

Total Stream Impact for Project: 1073 linear feet
n/a = < 300 lf of impact, no mitigation required

Wetland Impacts in the Cape Fear River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Permanent Wetland Impact (ac)	Total Wetland Impact (ac)
Impacts Section A							
1	0.41	----	<0.01	0.05	0.30	0.46	0.76
2	0.09	----	----	0.04	0.01	0.13	0.14
Total	0.50	----	<0.01	0.09	0.31	0.59	0.90
Utilities 1	<0.01	----	----	----	0.10	<0.01	0.11
2	0.03	----	----	<0.01	0.03	0.03	0.06
Total	0.04	----	----	<0.01	0.13	0.04	0.17
Section A Total:	0.54	----	<0.01	0.09	0.44	**0.63**	1.07
Impacts Section B							
1	**----**	**----**	**----**	**----**	**----**	**----**	**----**
2	0.63	----	0.06	----	----	0.69	0.69
3	0.15	----	----	----	----	0.15	0.15
4	----	----	----	----	----	----	----
Section B Total:	0.78	----	0.06	----	----	**0.84**	0.84
Total Project Impacts							
Project Total:	1.32	----	0.06	0.09	0.44	**1.47**	2.54

Total Wetland Impact for Project: 2.54 acres; 1.47 acres requiring mitigation.

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

This approval is only valid for the purpose and design that you submitted in your application dated received July 29, 2021. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this

project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7).

For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

Project Specific Conditions

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. *[15A NCAC 02H.0506(b)(2) and (b)(3)]*

2. Compensatory mitigation for **660 linear feet** of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in letters dated July 28, 2021 and July 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.

3. Compensatory mitigation for impacts to **1.47 acres** wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in letter dated July 28, 2021 and July 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.

4. When final design plans are completed for U-5798 Section B, a modification to the 401 Water Quality Certification shall be submitted along with appropriate fees to the NC Division of Water Resources. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, surface waters, or buffers located in U-5798 Section B shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Resources.

5. Channel relocations shall be completed and stabilized, and approved on site by NCDWR staff, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills. *[15A NCAC 02H .0506(b)(3)]*

General Conditions

6. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

7. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. *[15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]*

8. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. *[15A NCAC 02B.0506(b)(2)]*

9. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. *[15A NCAC 02H.0501 and .0502]*

10. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. *[15A NCAC 02H.0506(b)(2)]*

11. NCDOT shall be in compliance with the NCS000250 issued to the NCDOT, including the applicable requirements of the NCG010000. Please note the extra protections for the sensitive watersheds.

12. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. *[15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]*

13. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. *[15A NCAC 02H.0506(b)(2)]*

14. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. *[15A NCAC 02H .0506(b)(3)]*

15. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. *[15A NCAC 02H.0506(b)(2)]*

16. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. *[15A NCAC 02H .0506(b)(3)]*

17. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. *[15A NCAC 02H .0506(b)(3)]*

18. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. *[15A NCAC 02B.0200]*

19. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. *[15A NCAC 02H.0506(b)(2)]*

20. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. *[15A NCAC 02H.0506(b)(2)]*

21. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. *[15A NCAC 02H.0506(b)(2)]*

22. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. *[15A NCAC 02H.0506(b)(3) and (c)(3)]*
23. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. *[15A NCAC 02H.0506(b)(3)]*

24. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. *[15A NCAC 02H.0506(b)(3)]*

25. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. *[15A NCAC 02H.0506(b)(3)]*

26. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. *[15A NCAC 02H.0506(b)(3)]*

27. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. *[15A NCAC 02B.0200]*

28. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. *[15A NCAC 02H.0506(b)(2)]*

29. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. *[15A NCAC 02H.0506(b)(2)]*

30. Pipes and culverts used exclusively to maintain equilibrium in wetlands, where aquatic life passage is not a concern, shall not be buried. These pipes shall be installed at natural ground elevation.

31. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. *[15A NCAC 02B.0506(b)(2)]*

32. Tall fescue shall not be used in the establishment of temporary or permanent groundcover within riparian areas. For the establishment of permanent herbaceous cover, erosion control matting shall be used in conjunction with an appropriate native seed mix on disturbed soils within the riparian area and on disturbed steep slopes with the following exception. Erosion control matting is not necessary if the area is contained

by perimeter erosion control devices such as silt fence, temporary sediment ditches, basins, etc. Matting should be secured in place with staples, stakes, or wherever possible, live stakes of native trees. Erosion control matting placed in riparian areas shall not contain a nylon mesh grid, which can impinge and entrap small animals. For the establishment of temporary groundcover within riparian areas, hydroseeding along with wood or cellulose based hydro mulch applied from a fertilizer- and limestone-free tank is allowable at the appropriate rate in conjunction with the erosion control measures. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters in prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.

33. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards *[15A NCAC 02H.0506(b)(3) and (c)(3)]*:

    a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
    b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
    c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
    d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

34. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of bank, without prior approval from DWR. *[15A NCAC 02H.0506(b)(3) and (c)(3)]*

35. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. *[15A NCAC 02H.0506(b)(3) and (c)(3)]*

36. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. *[15A NCAC 02H.0502(f)]*

37. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. *[15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]*

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

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

Administrative Hearings.

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

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

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

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 22nd day of September, 2021

DIVISION OF WATER RESOURCES

DocuSigned by:
Amy Chapman
9C9886312DCD474...

S. Daniel Smith, Director

WQC No. WQC004465

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
S. DANIEL SMITH
Director

NORTH CAROLINA
Environmental Quality

October 20, 2021

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: Correction to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS 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 U-5798A and U-5798B.
NCDWR Project No. 20210307

Dear Mr. Harris:

An error was made in the stream mitigation requirements for the aforementioned project. The amount of stream mitigation required for the project was incorrectly listed in Condition 2 of the 401 Water Quality Certification dated September 22, 2021 as **660 linear ft**. This amount of stream mitigation required should have been **815 linear ft**.

Please attach a copy of this letter with any copies of the original Water Quality Certification. All other conditions of the original Water Quality Certification dated September 22, 2021 still apply except where superseded by this correction. We apologize for any inconvenience this may have caused. If you have any questions, please contact Hannah Sprinkle at (910) 796-7306.

Sincerely,
DocuSigned by:
Amy Chapman
9C9886312DCD474...
S. Daniel Smith, Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Liz Hair, US Army Corps of Engineers, Wilmington Regulatory Field Office
Jim Rerko, Division 6 Environmental Officer
Chris Rivenbark, NC Department of Transportation
Beth Harmon, Division of Mitigation Services
Hannah Sprinkle, NC Division of Water Resources Wilmington Regional Office
File Copy

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)			

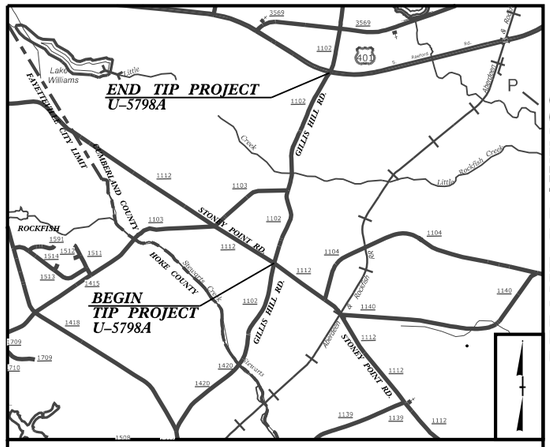
Submitted 7/29/2021

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	

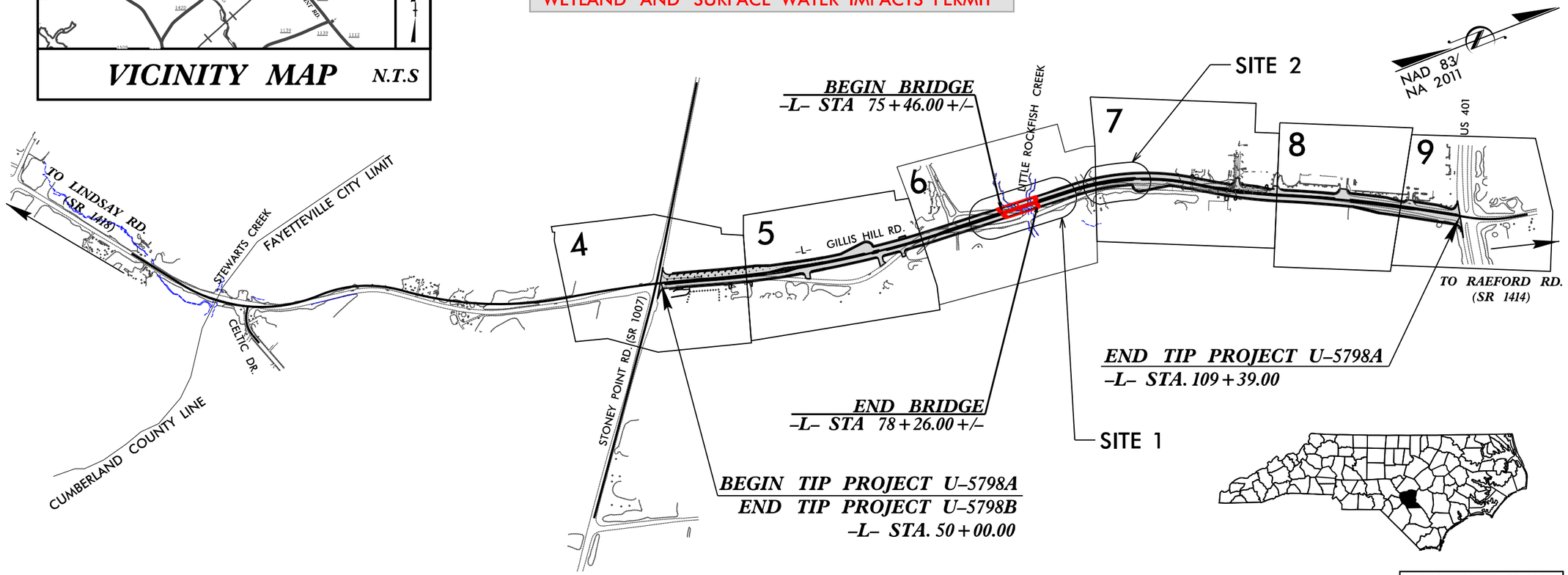
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44369.1.2	N/A	PE

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

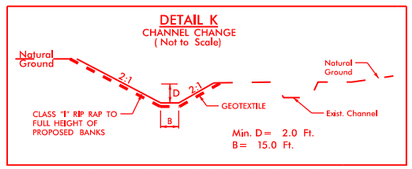
SITE 2

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

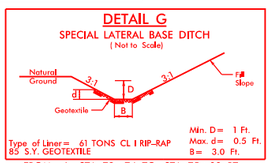
STANDARD BASE DITCH SEE DETAIL H

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)

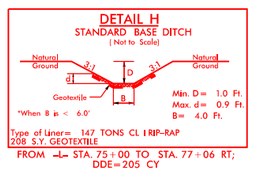


Min. D= 1 Ft.
Max. d= 0.5 Ft.
B= 3.0 Ft.

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

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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

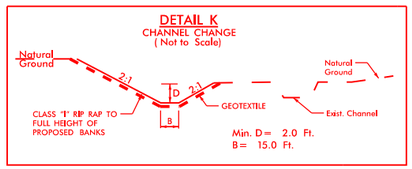
EST 7 TON CL I RIP RAP
EST 15 SY GEOTEXTILE

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
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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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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 5 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 (#5395)

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

19 JOHN D GILLIS

18 WEST FAYETTEVILLE BAPTIST CHURCH TRUSTEES

NOTE:
UNABLE TO LOCATE EXISTING RCP DURING FIELD INVESTIGATION.

DETAIL I
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground — 2:1 — Front Ditch Slope — D — 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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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

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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

REVISIONS 5/28/99

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+08 RT
EL = 148.00'

PI = 77+00.000
EL = 148.47'
(-)7.8333%

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

169.30

EXISTING BRIDGE

NATURAL GROUND ALONG -EL-

(-)17.0000%

ONLY LT. BRIDGE SHOWN FOR CLARITY

PROPOSED GRADE

EXISTING GROUND

(+)5.8530%

PI = 87+80.00
EL = 188.65'
VC = 320'
K = 102
DS = 53

BEGIN SPECIAL CUT DITCH GRADE
-L- STA.90+10.00 LT
EL = 194.39'

(+)12.7222%

(+)2.4302%

(+)1.1770%

197.44

PI = 90+50.00
EL = 196.00'
VC = 220'
K = 1388
DS > 80

PI =90+50.000
EL = 195.36'

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

(+)12.8807%

(+)11.1295%

(+)12.8807%

(+)2.7700%

(+)1.1770%

PI =91+50.000
EL = 197.73'

END SPECIAL CUT DITCH GRADE
-L- STA.92+50.00 LT
EL = 199.90'

197.44

(+)2.5400%

BEGIN SPECIAL CUT DITCH GRADE
-L- STA.93+50.00 LT
EL = 202.46'

PI =94+50.000
EL = 205.00'

(+)2.0000%

END SPECIAL CUT DITCH GRADE
-L- STA.95+00.00 LT
EL = 206.00'

EXISTING GROUND

PROPOSED GRADE

(+)11.0667%

(+)2.3200%

PI =97+00.000
EL = 209.64'

(+)0.3200%

PI =97+50.000
EL = 209.80'

BEGIN SPECIAL LATERAL 'V' DITCH GRADE
-L- STA.96+50.00 LT
EL = 208.48'

PI =99+00.000
EL = 211.40'

(+)0.0600%

PI =99+50.000
EL = 211.70'

(+)2.8200%

END SPECIAL LATERAL 'V' DITCH GRADE
-L- STA.100+00.00 LT
EL = 213.11'

PI = 104+00.00
EL = 219.39'
VC = 160'
K = 225
DS = 68

(+)11.1295%

(+)10.4169%

219.83

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

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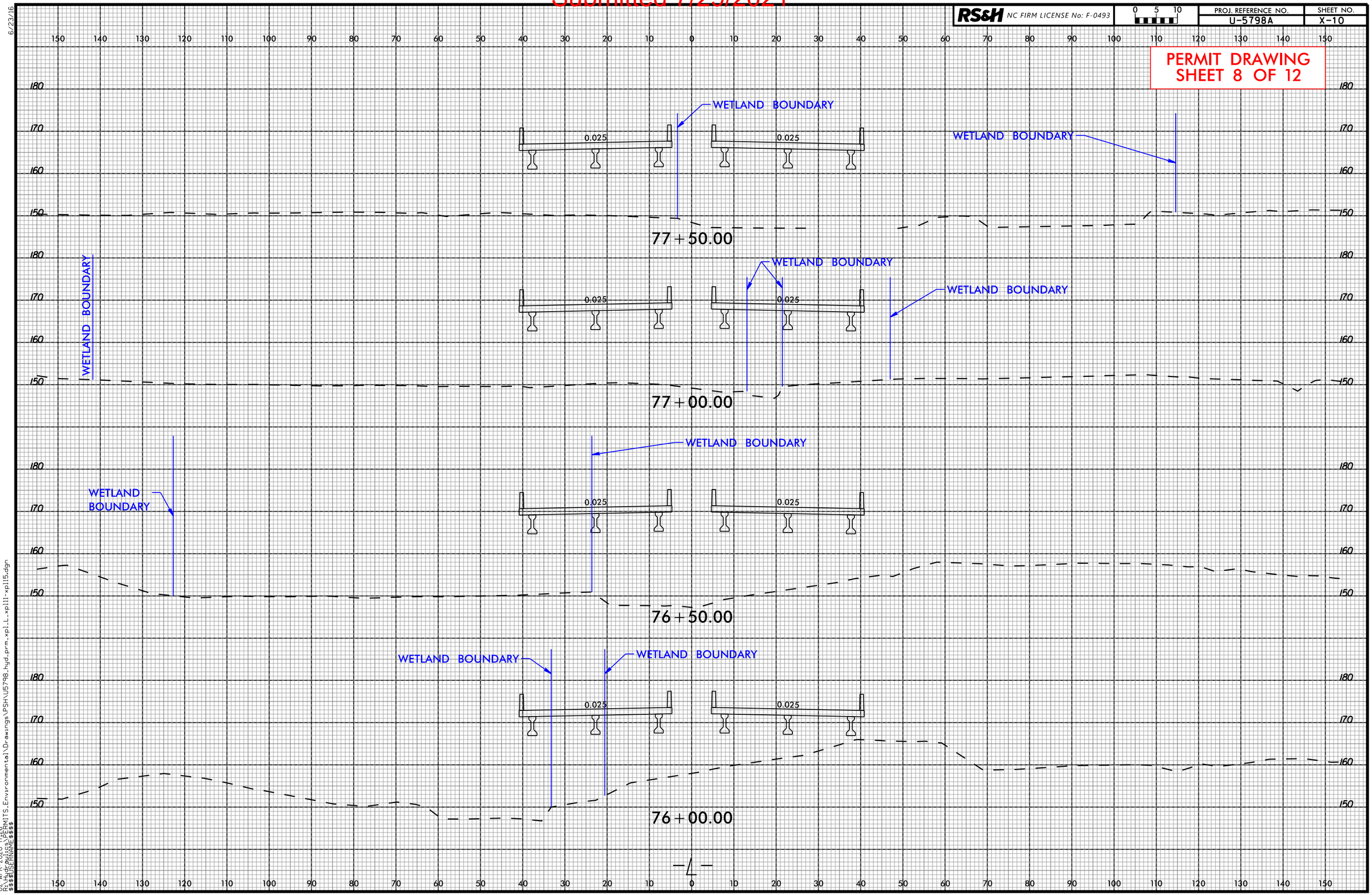
PROJ. REFERENCE NO.	SHEET NO.
U-5798A	X-10

PERMIT DRAWING
SHEET 8 OF 12



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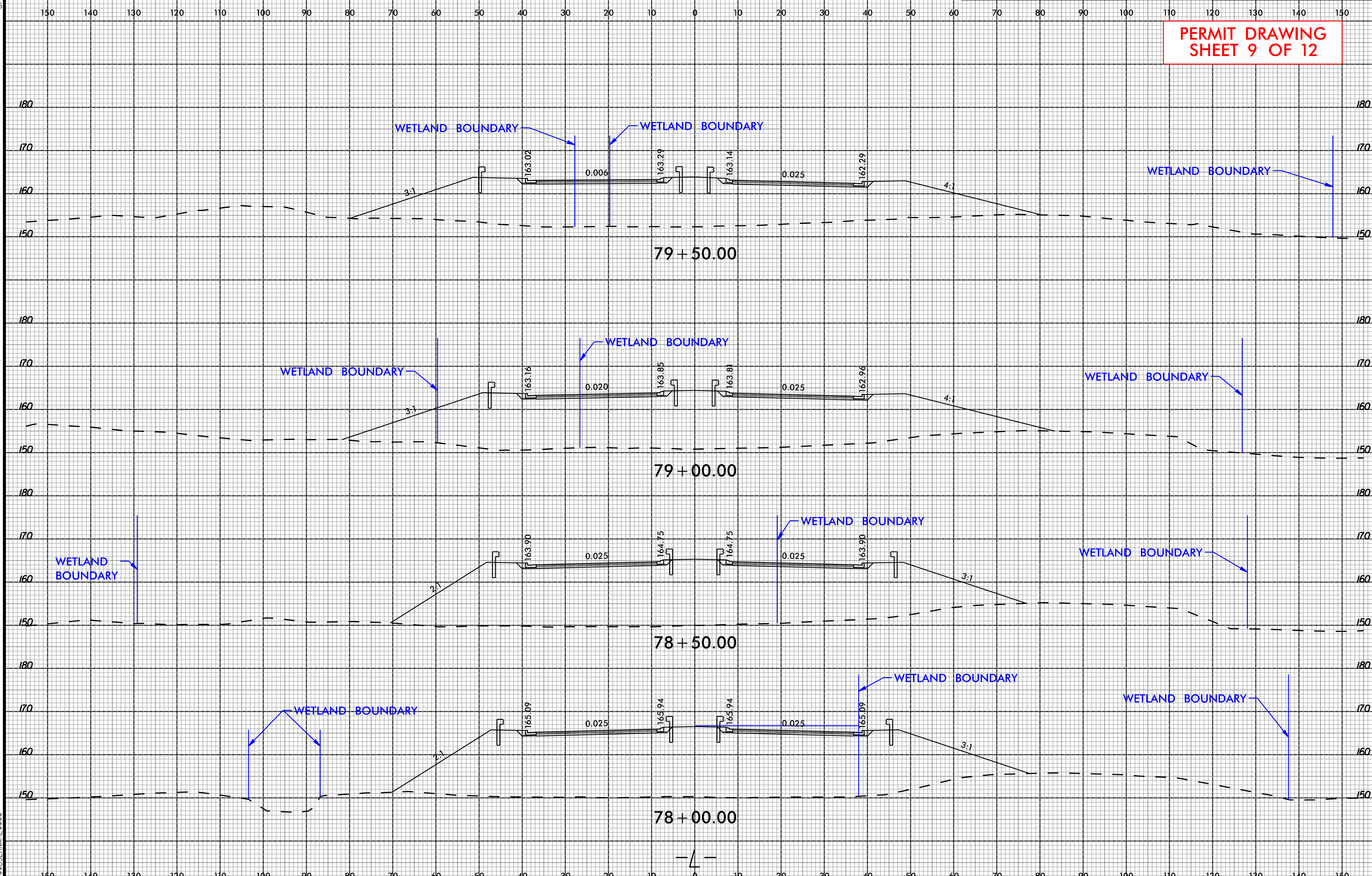
Submitted 7/29/2021

RS&H NC FIRM LICENSE No: F-0493

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

PERMIT DRAWING
SHEET 9 OF 12



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Submitted 7/29/2021

6/23/16

RS&H NC FIRM LICENSE No: F-0493

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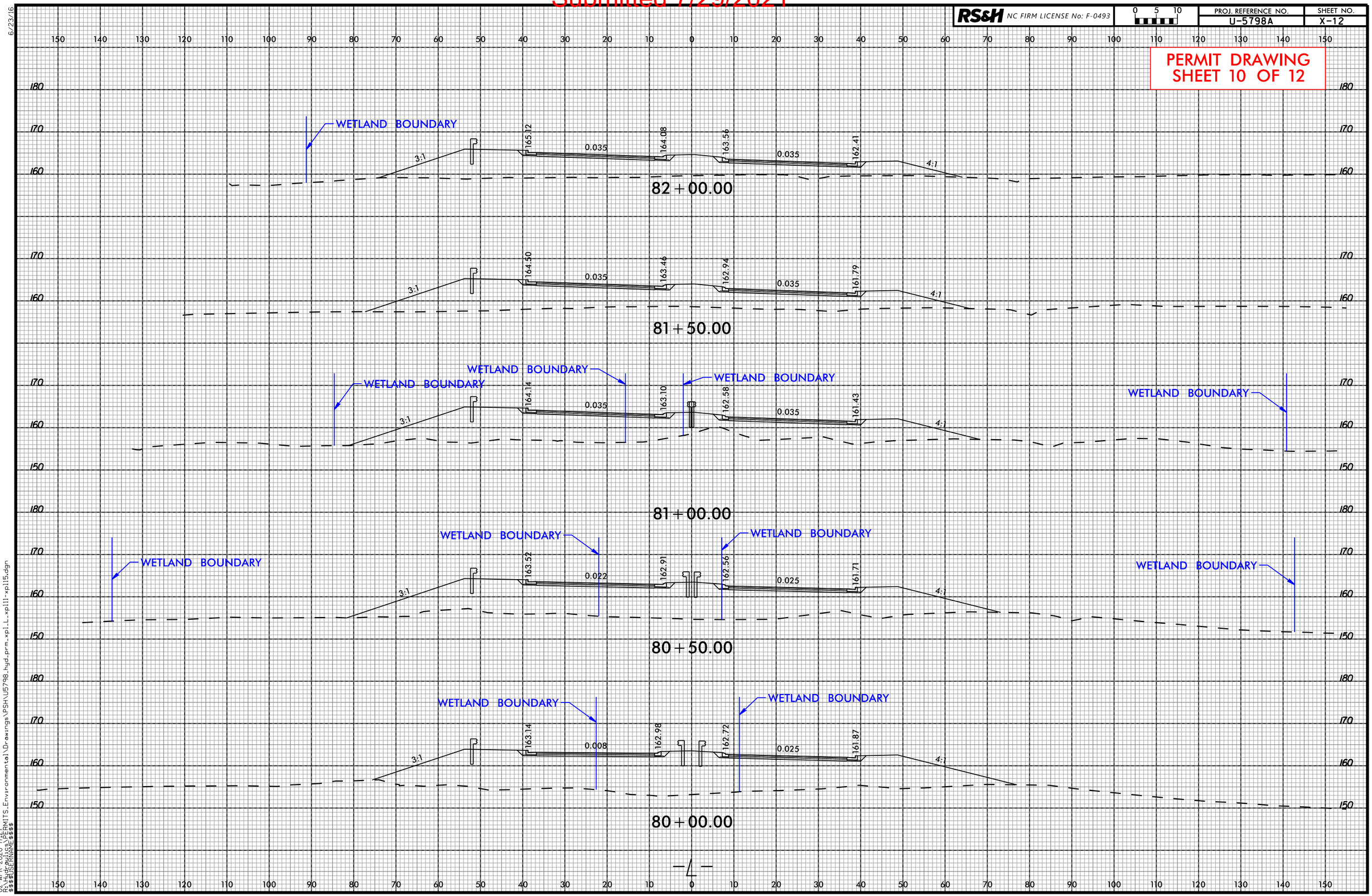
PROJ. REFERENCE NO.	SHEET NO.
U-5798A	X-12

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-

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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

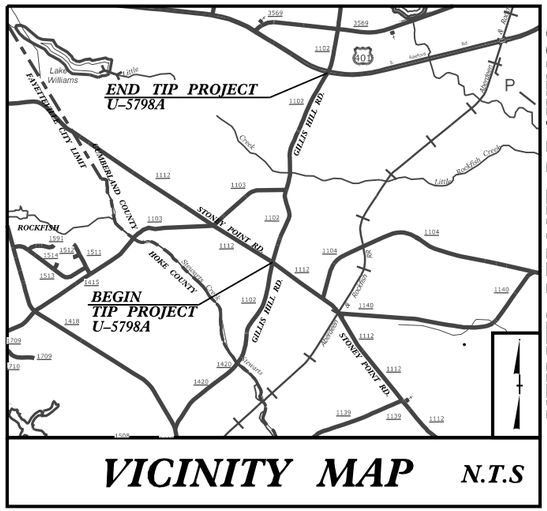
TIP PROJECT: U-5798A

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.

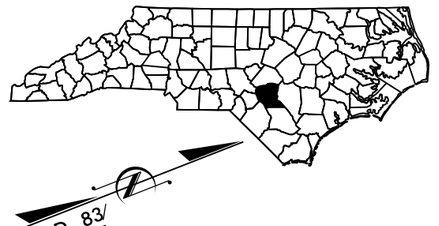


VICINITY MAP N.T.S

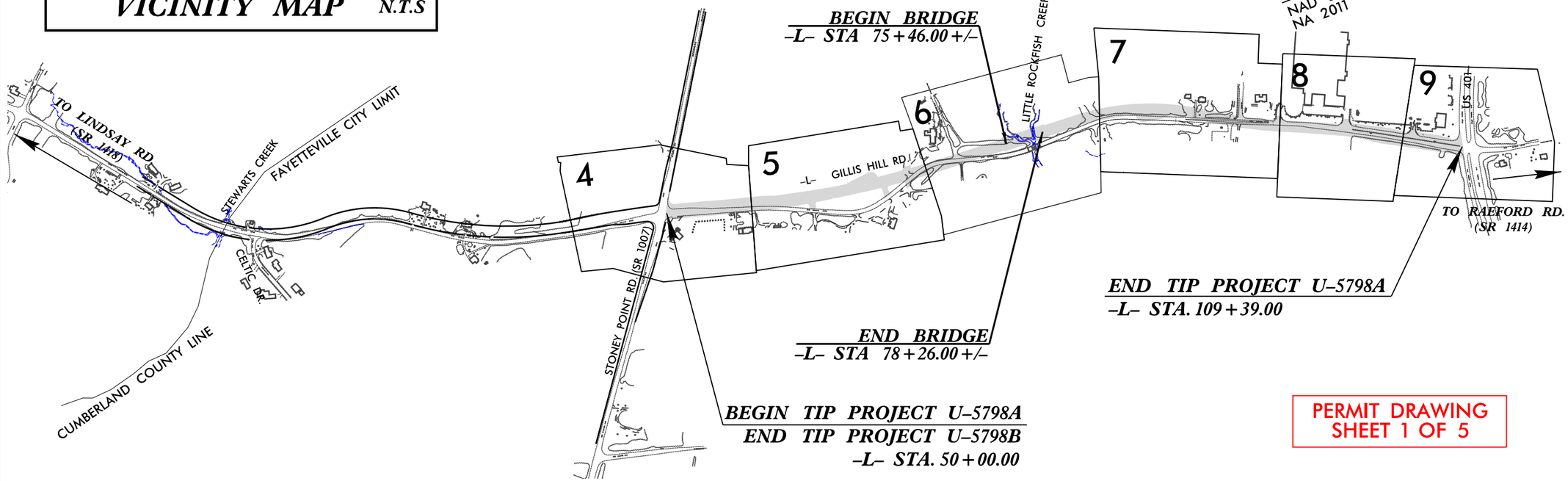
UTILITY PERMIT DRAWINGS

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

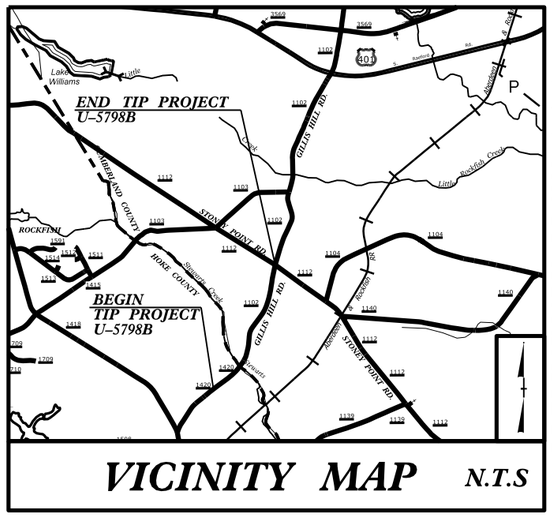
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing 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

4/22/2020
mjyork
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$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$
$$$$USERNAME$$$$

09/08/99

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

HOKE AND CUMBERLAND COUNTIES

VICINITY MAP N.T.S

PRELIMINARY PLANS (25%)

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
-YI- 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
SIGNATURE: ____ P.E.

ROADWAY DESIGN
ENGINEER
SIGNATURE: ____ P.E.

Submitted 7/29/2021

PERMIT DRAWING
SHEET 2 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

REVISIONS
8/17/99

-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

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

-L- PC Sta. 14+31.98

END 1'-6" C&G
-L- +25.98

BEGIN 2'-9" C&G
-L- +35.98

-L- N 52°54'09" E

MATCHLINE SHEET 5 -L- STA. 16+00.00

SEE NOTES SURVEY REPORT

Site 1

Site 2

Site 3

WADDELL HARVEY

JACQUELINE S. MCMILLAN
NORMAN MCMILLAN

JOSEPH P RIDDLE, III

RAYMOND ANDERSON

DONALD L. THIEL
JUDITH M THIEL

GILLIS DEVELOPMENT CORP

JAMES W THOMAS & WIFE DEBBIE S

BRIAN VERGES
KATIE J VERGES

WADE K WAHL

R & D THIEL INC
ATTN: TERRY SMITH

ALBERT L HALEY
THERESA HALEY

ELIZABETH HALEY

GILLIS HILL RD

GILLIS HILL ROAD SR 1420

10' UTILITY, DRAINAGE AND SERVICE EASEMENT DB 793 PG 170

20' DRAINAGE EASEMENT PB 3063 PG 3

10' NO ACCESS EASEMENT PB 3063 PG 3

WOODS

ISFD

GREU TL-3

E E DENOTES EXCAVATION IN WETLAND

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

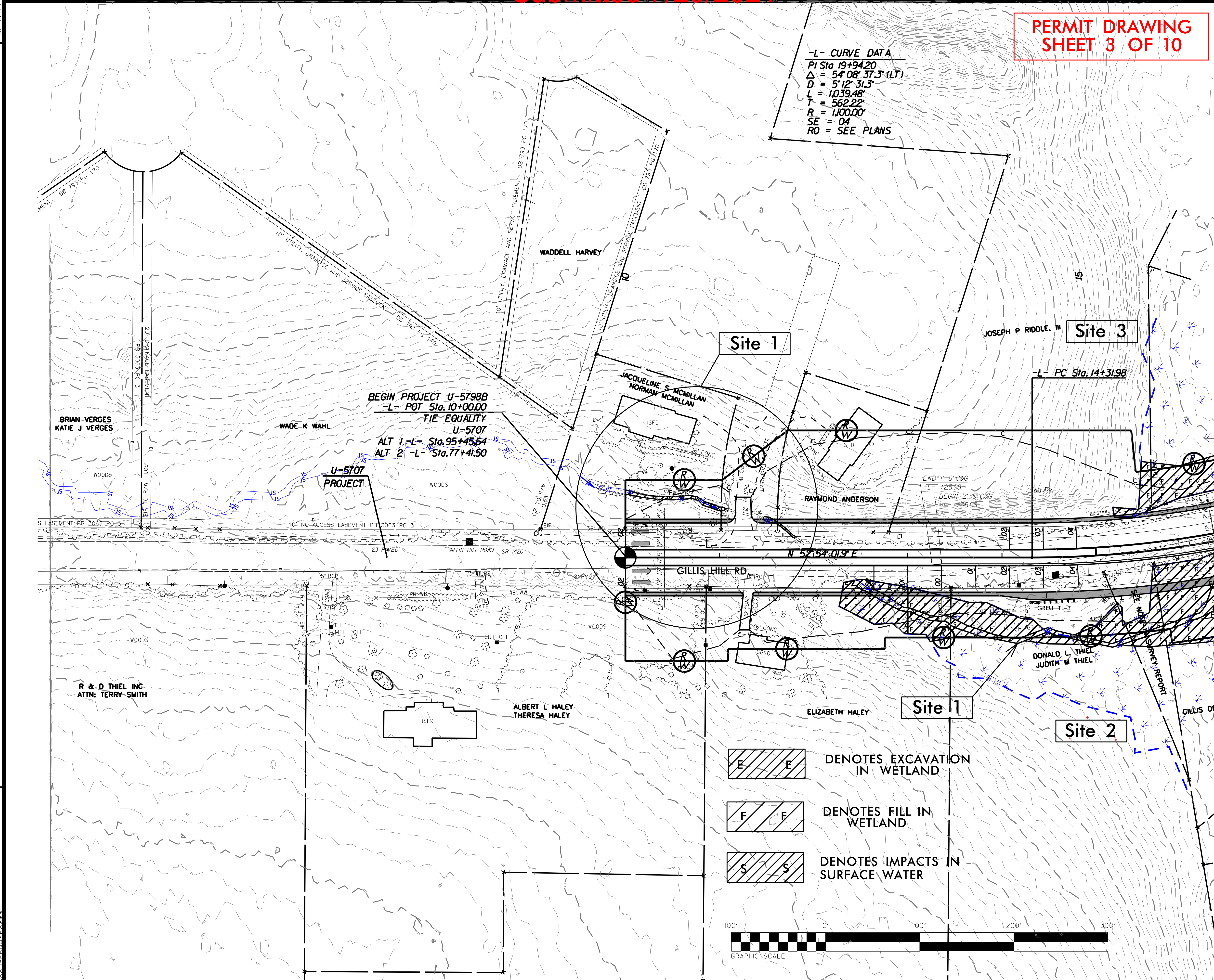
NAD 83/
NA 2011

4/22/2020
RPyrdaulaks\PERMITS_Environmental\Drawings\U-5798B_HYD_prm_pth_4.dgn
$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

Submitted 7/29/2021

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

PERMIT DRAWING
SHEET 3 OF 10



-L- CURVE DATA
PI Sta 19+94.20
Δ = 54°08' 37.3" (LT)
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R = 1,100.00'
SE = .04
RO = SEE PLANS
Site 1
Site 2
Site 3
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
-L- PC Sta. 14+31.98
GILLIS HILL RD
N 52°54'01.9" E
WADDELL HARVEY
JOSEPH P RIDDLE, III
JACQUELINE S MCMILLAN
NORMAN MCMILLAN
RAYMOND ANDERSON
BRIAN VERGES
KATIE J VERGES
WADE K WAHL
R & D THIEL INC
ATTN: TERRY SMITH
ALBERT L HALEY
THERESA HALEY
ELIZABETH HALEY
DONALD L THIEL
JUDITH M THIEL
GILLIS DEVELOPMENT CORP
JAMES W THOMAS &
WIFE DEBBIE S
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

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

FOR -L- PROFILE, SEE SHEET NO. 10

REVISIONS

Submitted 7/29/2021

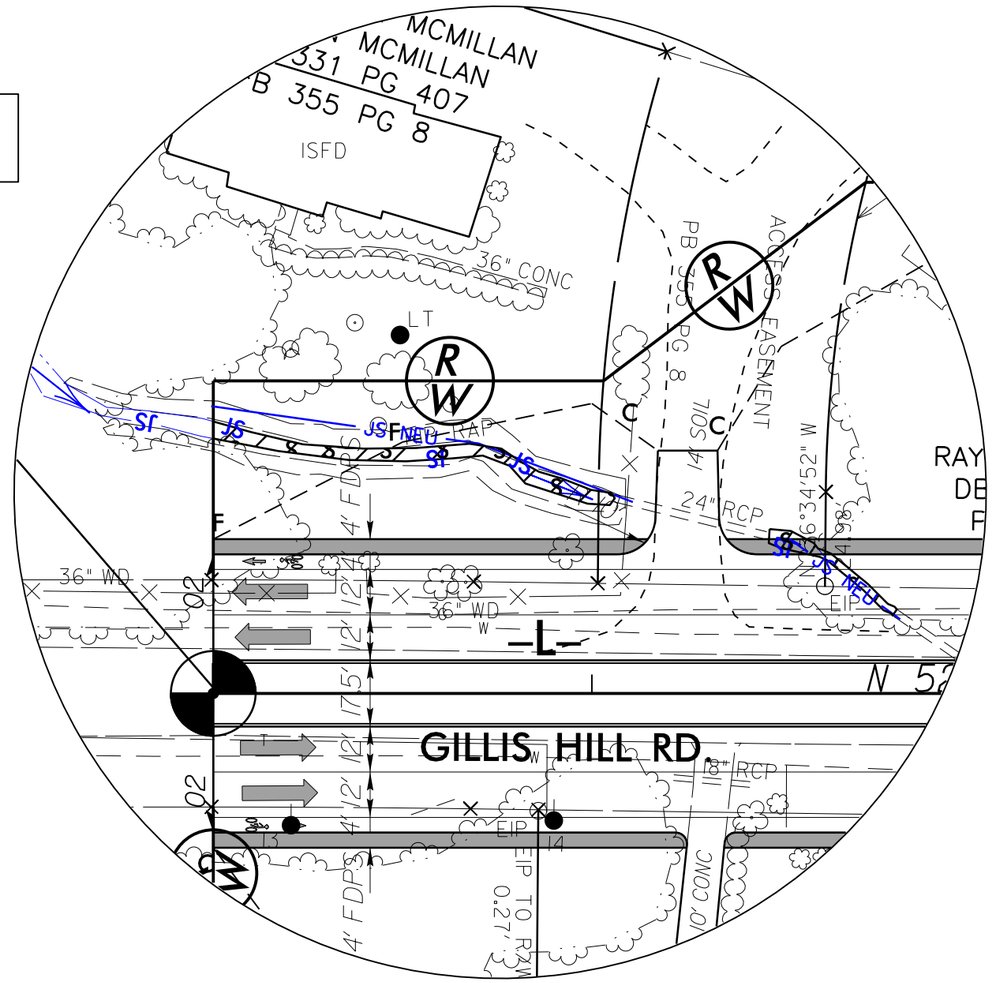
PROJECT REFERENCE NO.	SHEET NO.
U-5798B	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

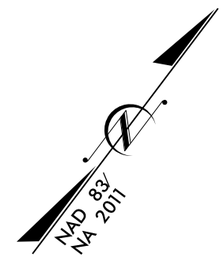
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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
R:\Hydraulics\PERMITS_Environmental\Drawings\U-5798B_HYD_prm_psh_4_Enlargement_Hyd_PSH.dgn
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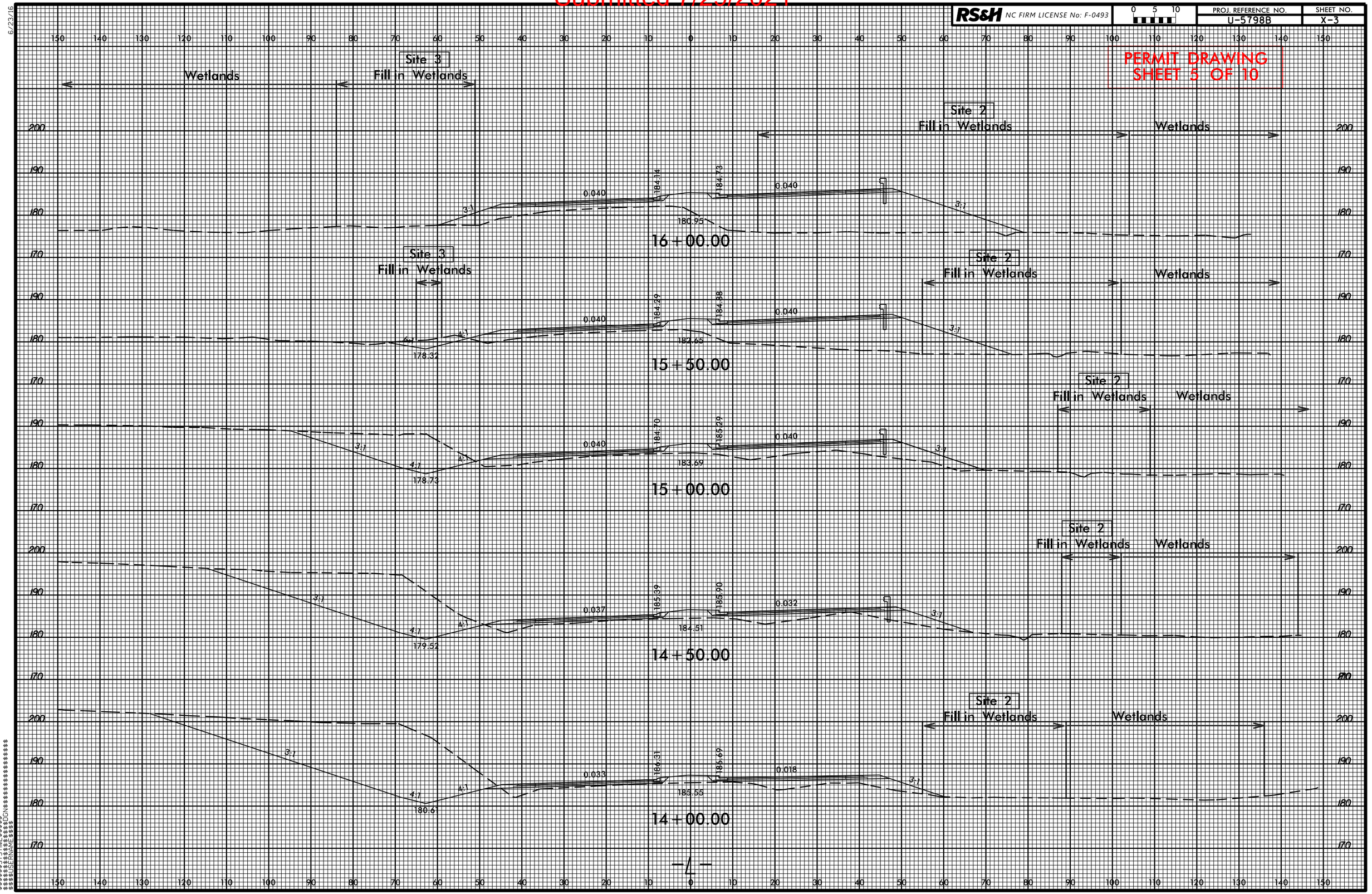
$$$$$$$$USERNAME$$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

Submitted 7/29/2021

RS&H NC FIRM LICENSE No: F-0493

PROJ. REFERENCE NO.	SHEET NO.
U-5798B	X-3

PERMIT DRAWING
SHEET 5 OF 10



-4-

6/23/16

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

PERMIT DRAWING
SHEET 6 OF 10

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

8/17/99
REVISIONS

-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

PI Sta 27+94.02
Δ = 38° 24' 36.4" (RT)
D = 6° 11' 14.8"
L = 620.77'
T = 322.56'
R = 926.00'
SE = 04
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

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

HOKE COUNTY

Site 3

MATCHLINE SHEET 4 -L- STA. 16+60.00

STEWART CREEK

BEGIN 1'-6" C&G
-L- +01.00

END 2'-9" C&G
-L- +91.00

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

S 55° 53' 07.9" E

GILLIS DEVELOPMENT CORP.

Site 1

Site 4

Site 2

JAMES W THOMAS & WIFE DEBBIE S

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

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

END 1'-6" C&G
-L- +61.46

36' (TYP.)

C 100' BW TAPER

STORAGE

GILLIS HILL RD.

SR 1102 GILLIS HILL RD

26' PAVED

WOODS

EXISTING R/W

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

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

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

JOE A JOHNSON WIFE PATRICIA P DB 4510 PG 0268 PIN 9596-16-1116

-Y1- PC Sta. 10+38.08
L,5SBKD

-Y1- PT Sta. 12+25.44

ERNEST W JONES & WIFE CYNTHIA M

N 70° 26' 29.4" E

-Y2- POT Sta. 12+96.93
L,5SBKD

WILLIAM RONALD LEE

TO SCOTTISH DR.

CELTIC DR.

MATCHLINE SHEET 6 -L- STA. 30+20.00

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
mlynk
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$$$$$$$LEVELNAME$$$$$$

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

PI Sta 27+94.02
Δ = 38° 24' 36.4" (RT)
D = 6° 11' 14.8"
L = 620.77'
T = 322.56'
R = 926.00'
SE = 04
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
N 457077 ELEVATION = 220.53'
BL STATION 42+19.51 E 1982421
BENCHTIE IN 10" PINE 172.84' LEFT

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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$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

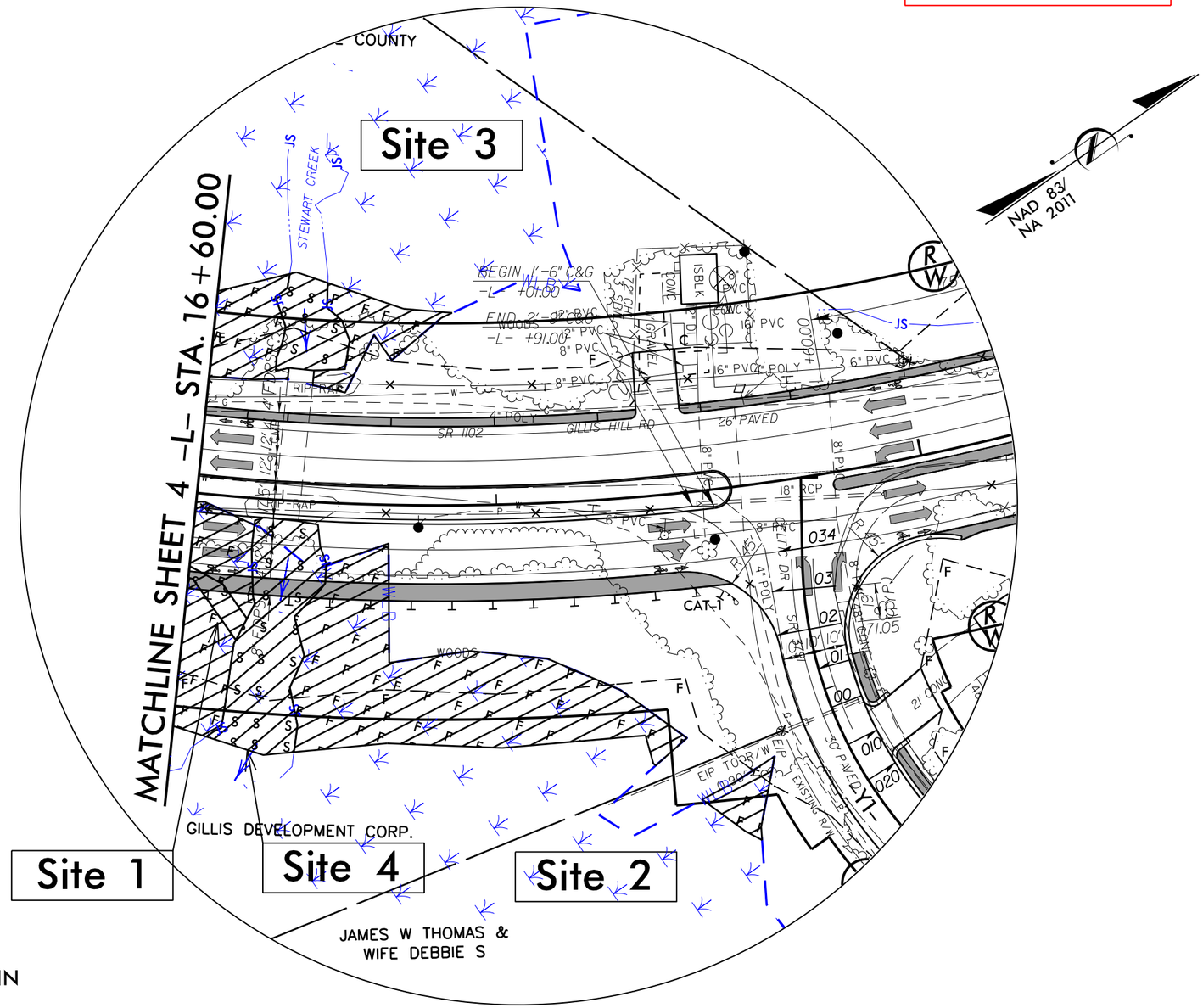
Submitted 7/29/2021

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

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4/22/2020
miyork
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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

09/08/99

TIP PROJECT: U-5798A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

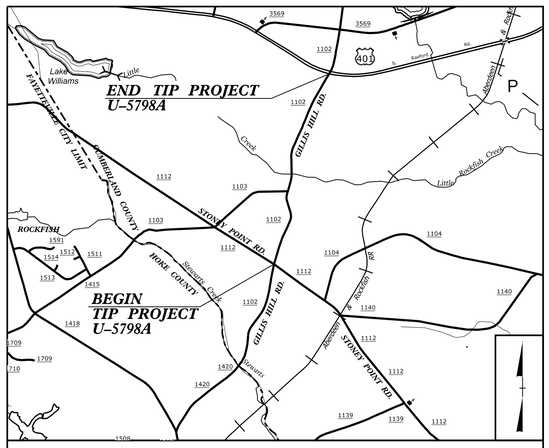
CUMBERLAND COUNTY

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.

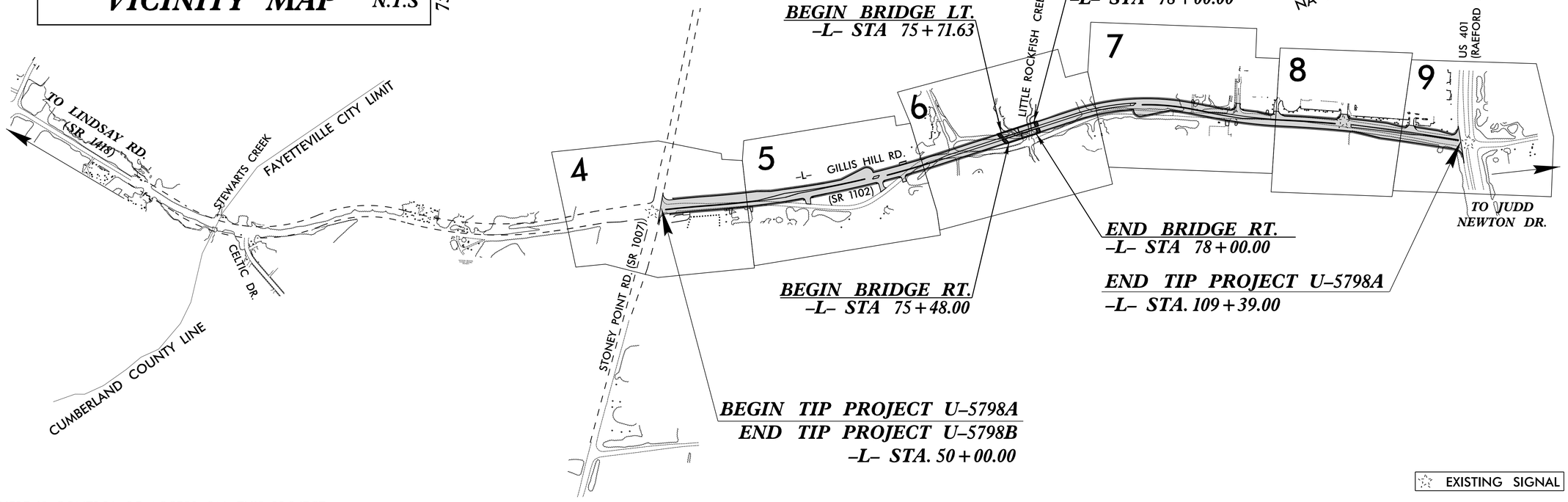
LOCATION: *WIDEN SR 1102 (GILLIS HILL ROAD) TO MULTI-LANES FROM US 401 (RAEFORD ROAD) TO SR 1007 (STONEY POINT ROAD)*

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

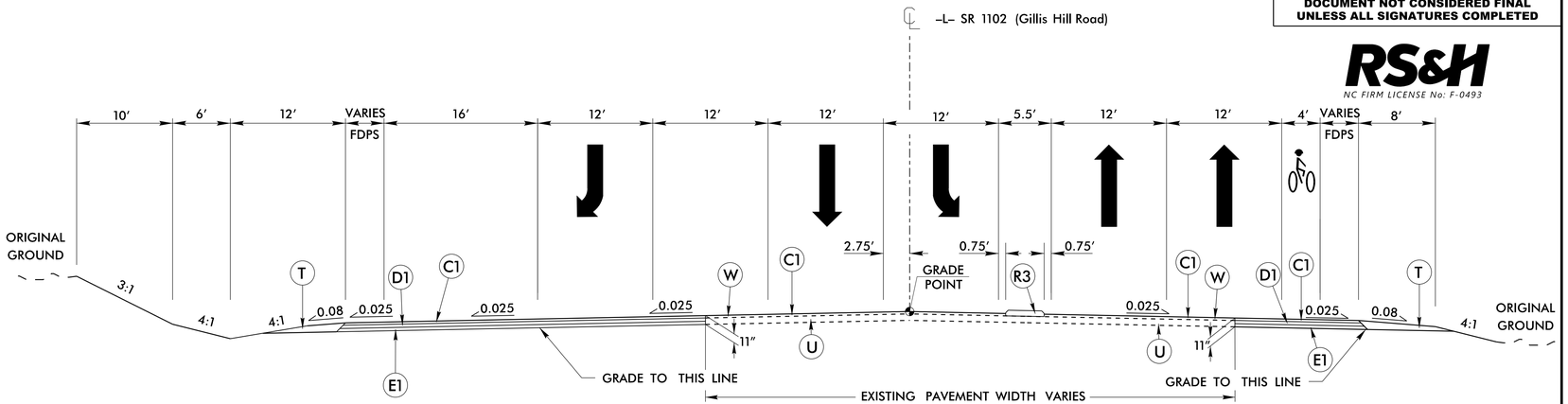
	FINAL PAVEMENT SCHEDULE
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS 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

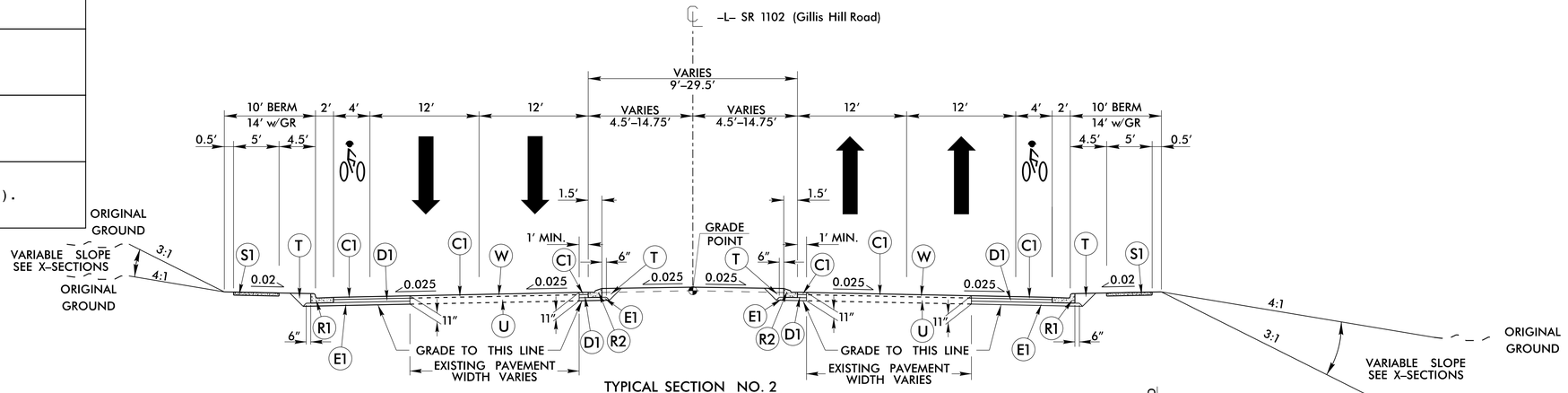
RS&H
NC FIRM LICENSE No: F-0493



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.

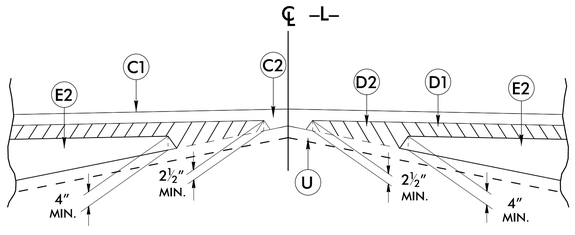


TYPICAL SECTION NO. 2

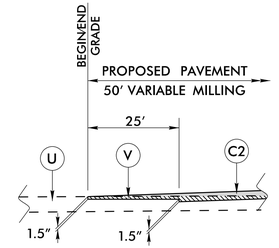
–L– STA. 51+00.00 TO 53+05.00
–L– STA. 67+75.00 TO 70+00.00
–L– STA. 92+00.00 TO 94+00.00
–L– STA. 101+00.00 TO 109+39.00

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

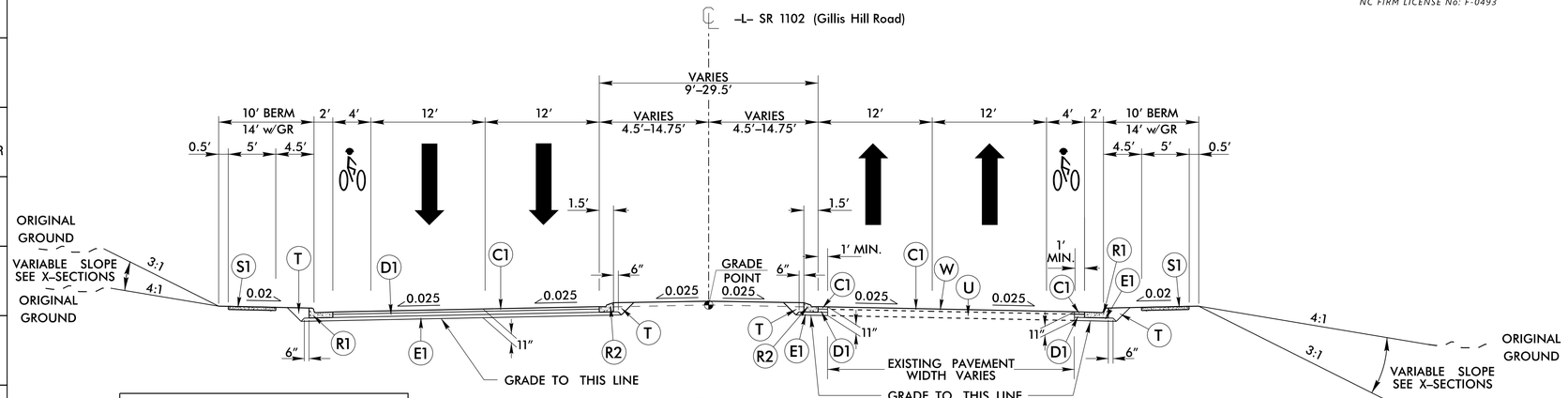
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ IN DEPTH 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

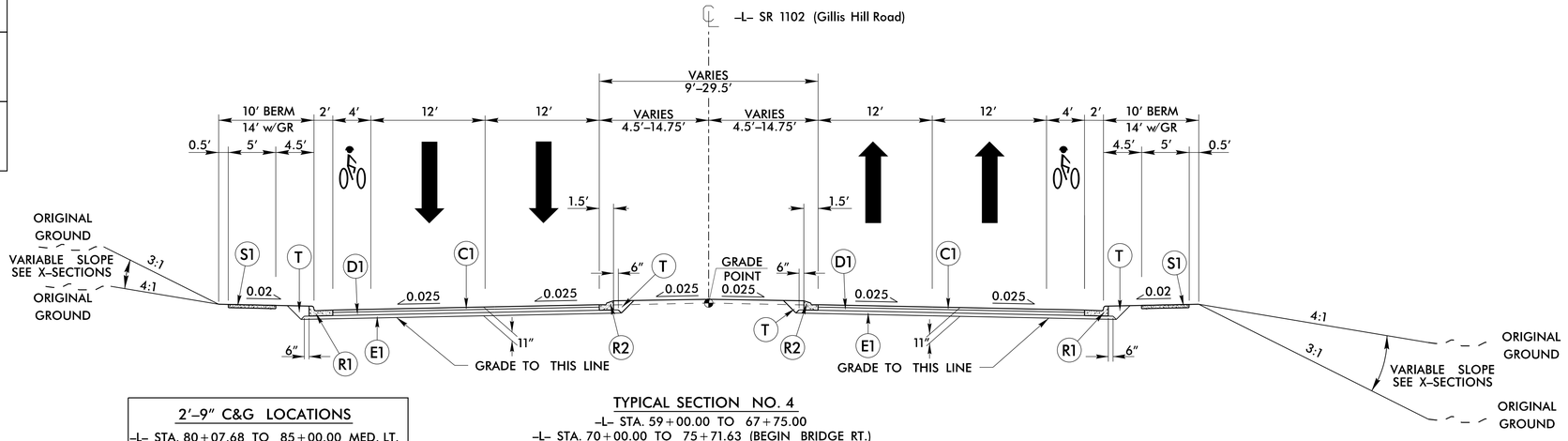
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

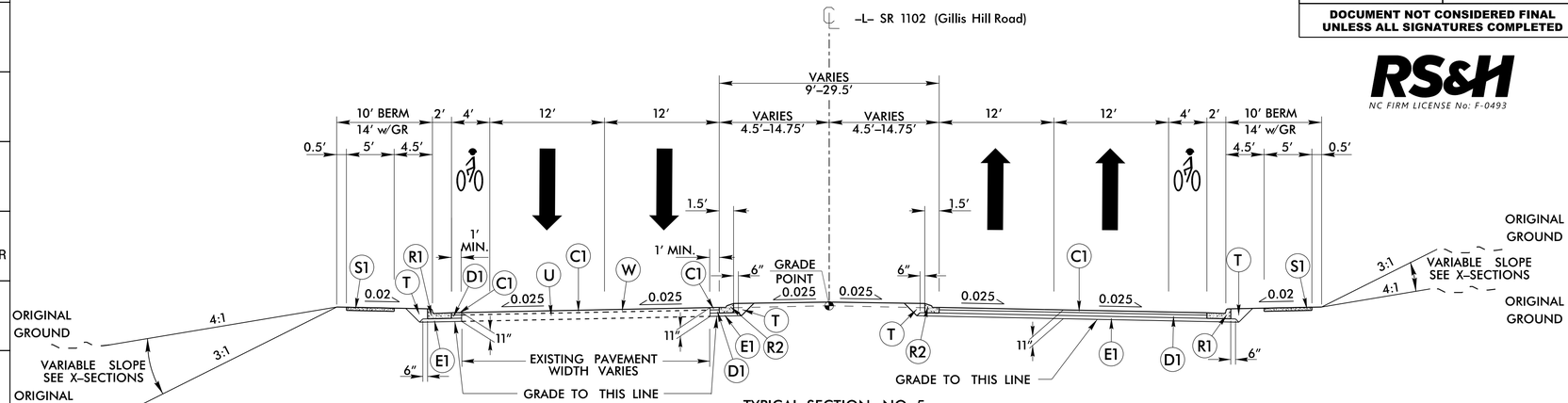
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1.0″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ IN DEPTH 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.
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-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

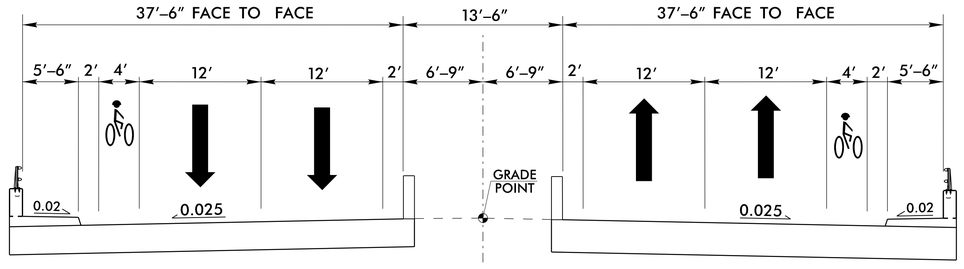
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

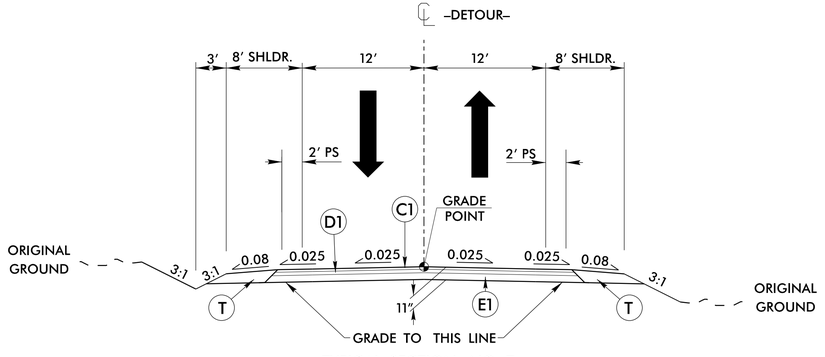


2′–9″ C&G LOCATIONS
–L– STA. 94+00.00 TO 94+30.00 MED. RT.

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–)

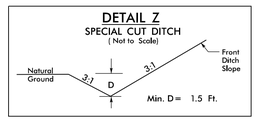
–DETOUR– POT Sta. 10+00.00

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.

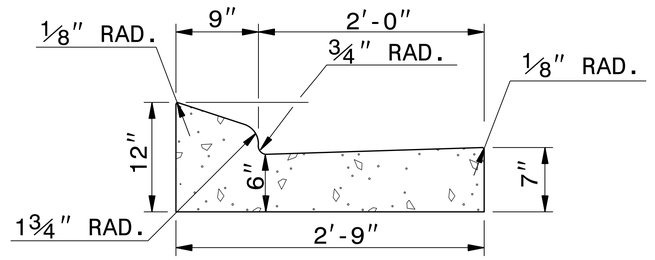
ENGLISH DETAIL DRAWING FOR

2′-9″ CONCRETE CURB & GUTTER

SHEET 1 OF 1

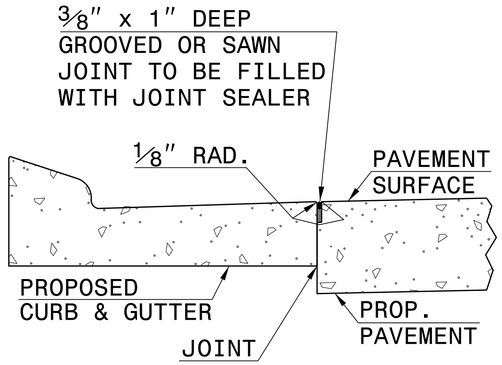
846D01

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)

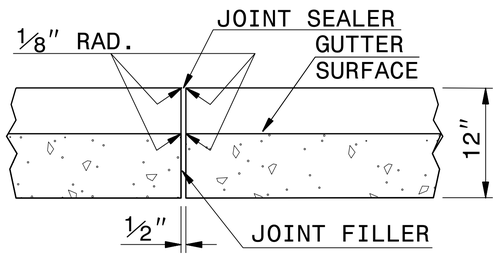


2′-9″ CURB AND GUTTER

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

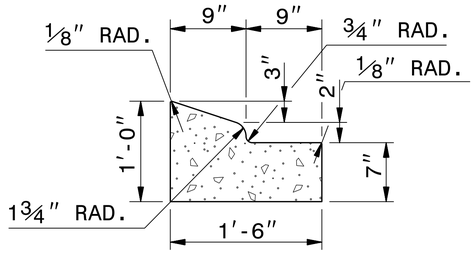
SEE PLATE FOR TITLE

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

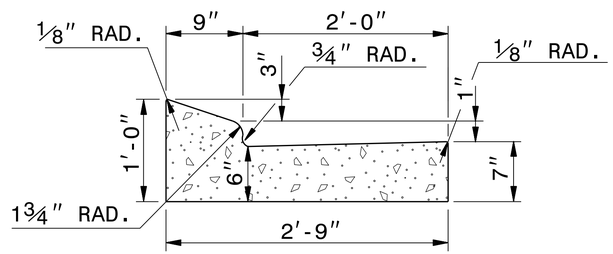
10-AUG-2017 11:46
S:\Contracts\Contracts\Special Details\erieward\usr\details\stand\c&g2'-9.dgn
jhowerton AT CSD-292595

5/14/99

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



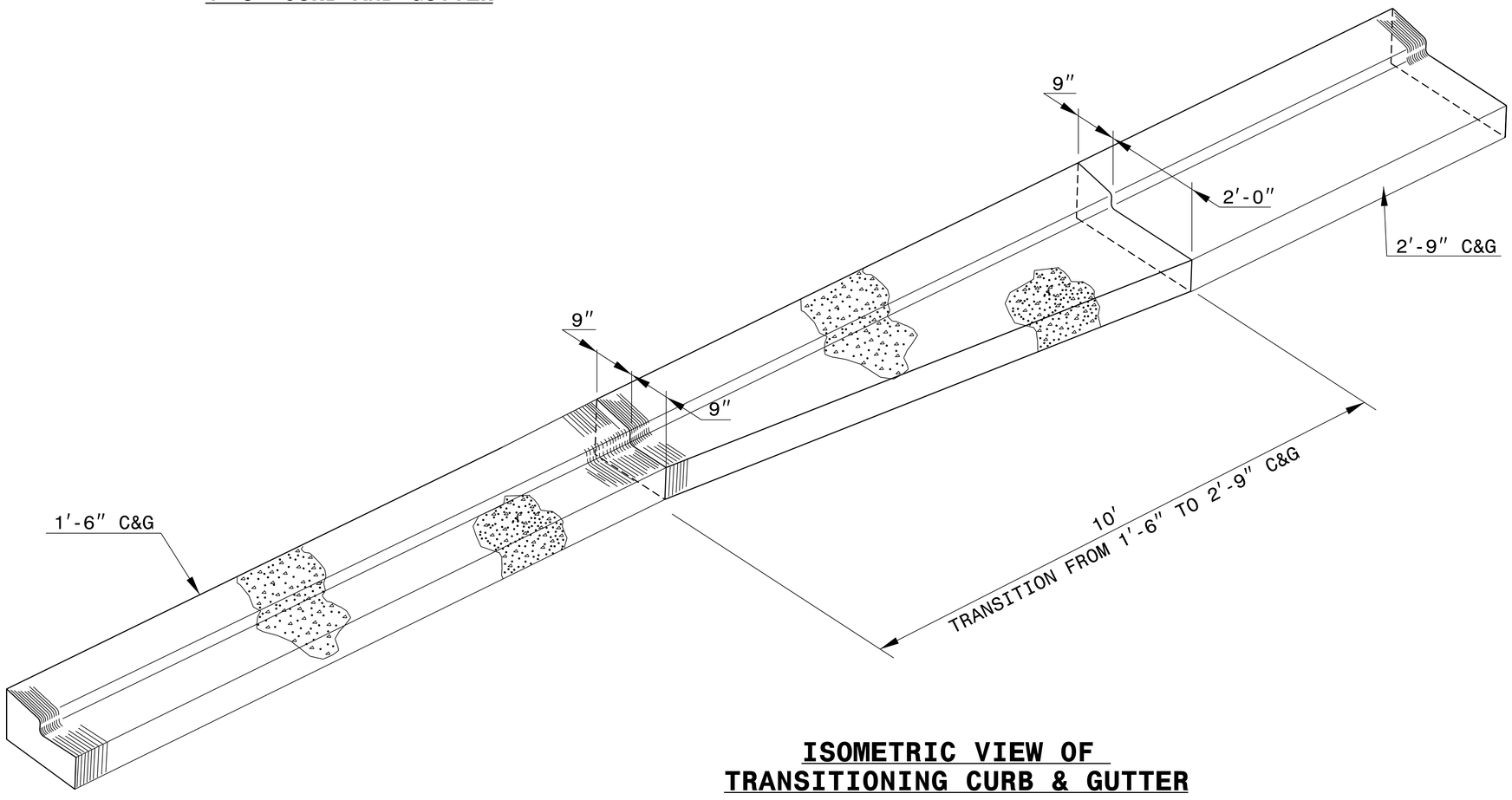
1′-6″ CURB AND GUTTER



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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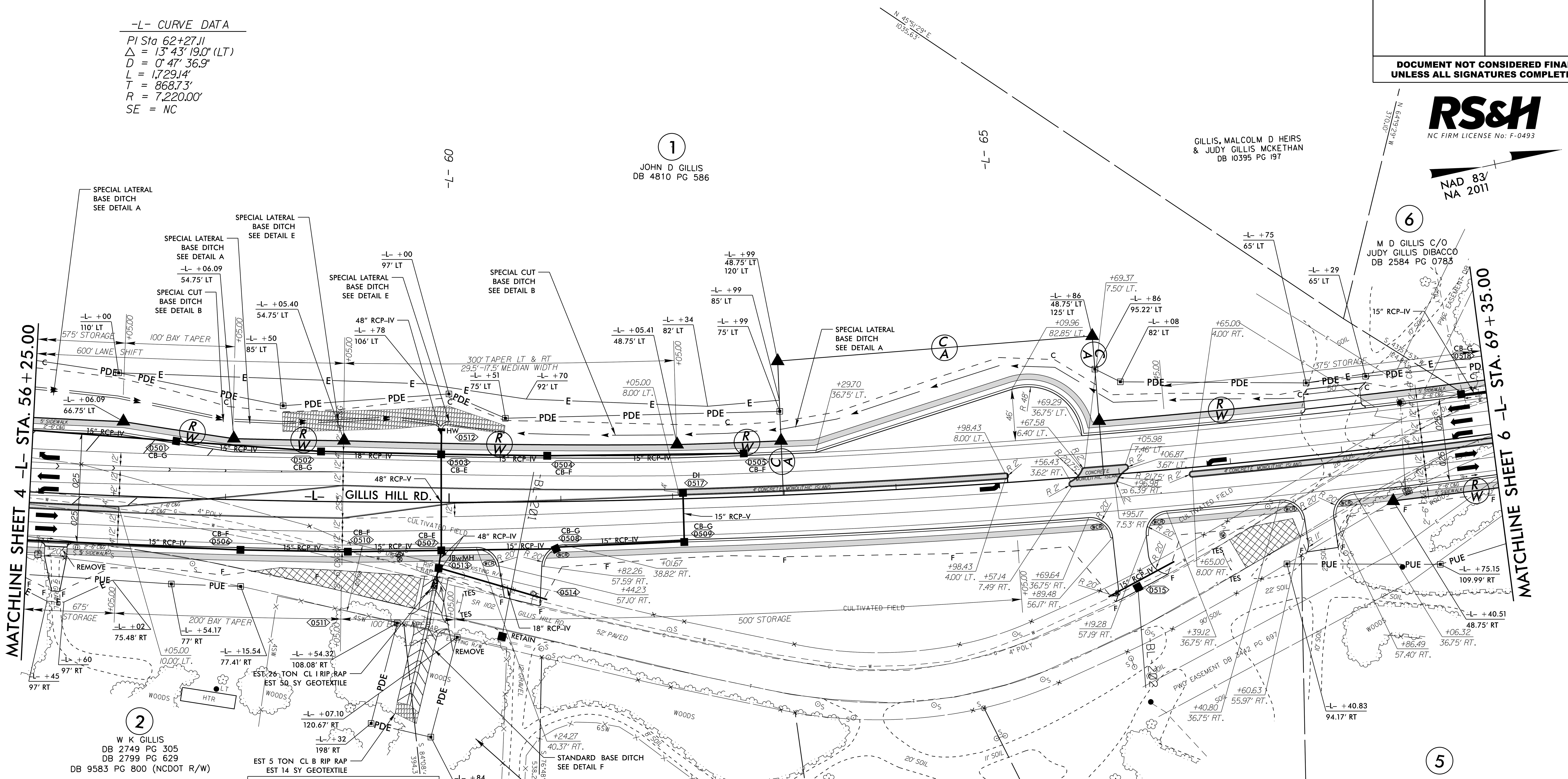
PROJECT REFERENCE NO.	SHEET NO.
U-5798A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

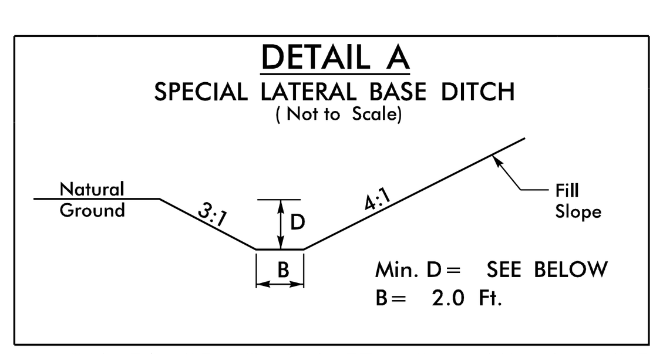
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

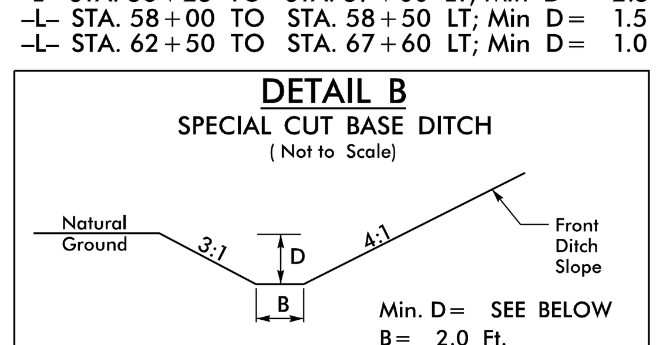
NAD 83/ NA 2011

-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

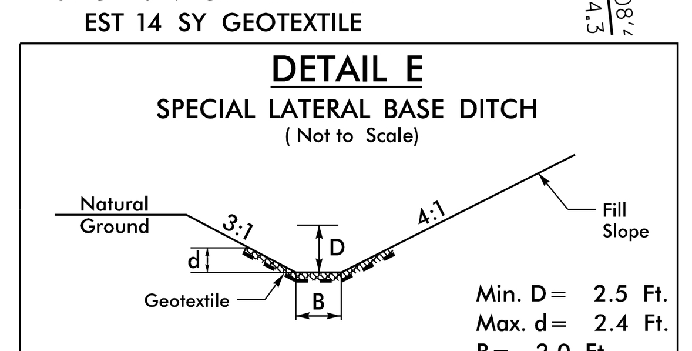




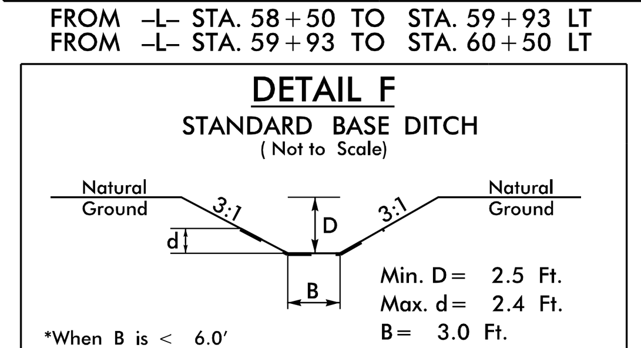
FROM -L- STA. 56+25 TO STA. 57+00 LT; Min D= 2.5 Ft.
FROM -L- STA. 58+00 TO STA. 58+50 LT; Min D= 1.5 Ft.
FROM -L- STA. 62+50 TO STA. 67+60 LT; Min D= 1.0 Ft.



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.



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



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

REVISIONS

8/17/99

27-MAR-2020 14:48
R:\Roadway\Proj\U-5798A\U-5798A_Rdy_psh_5.dgn
$$$$USERNAME$$$$

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

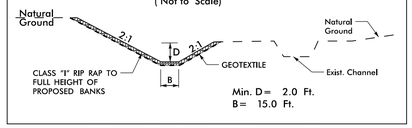
REVISIONS

-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

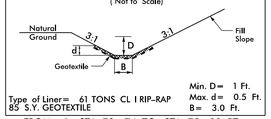
CLASS "I" RIP RAP (TYP.) TO A MINIMUM 10' OFF PROPOSED COLUMNS

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)

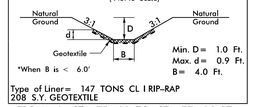


Min. D= 1 Ft.
Max. d= 0.5 Ft.
B= 3.0 Ft.

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

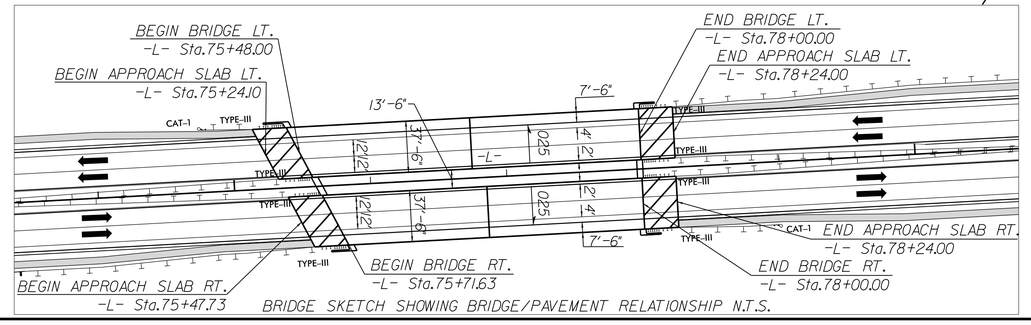
FROM -L- STA. 75+00 TO STA. 77+06 RT;
DDE=205 CY

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

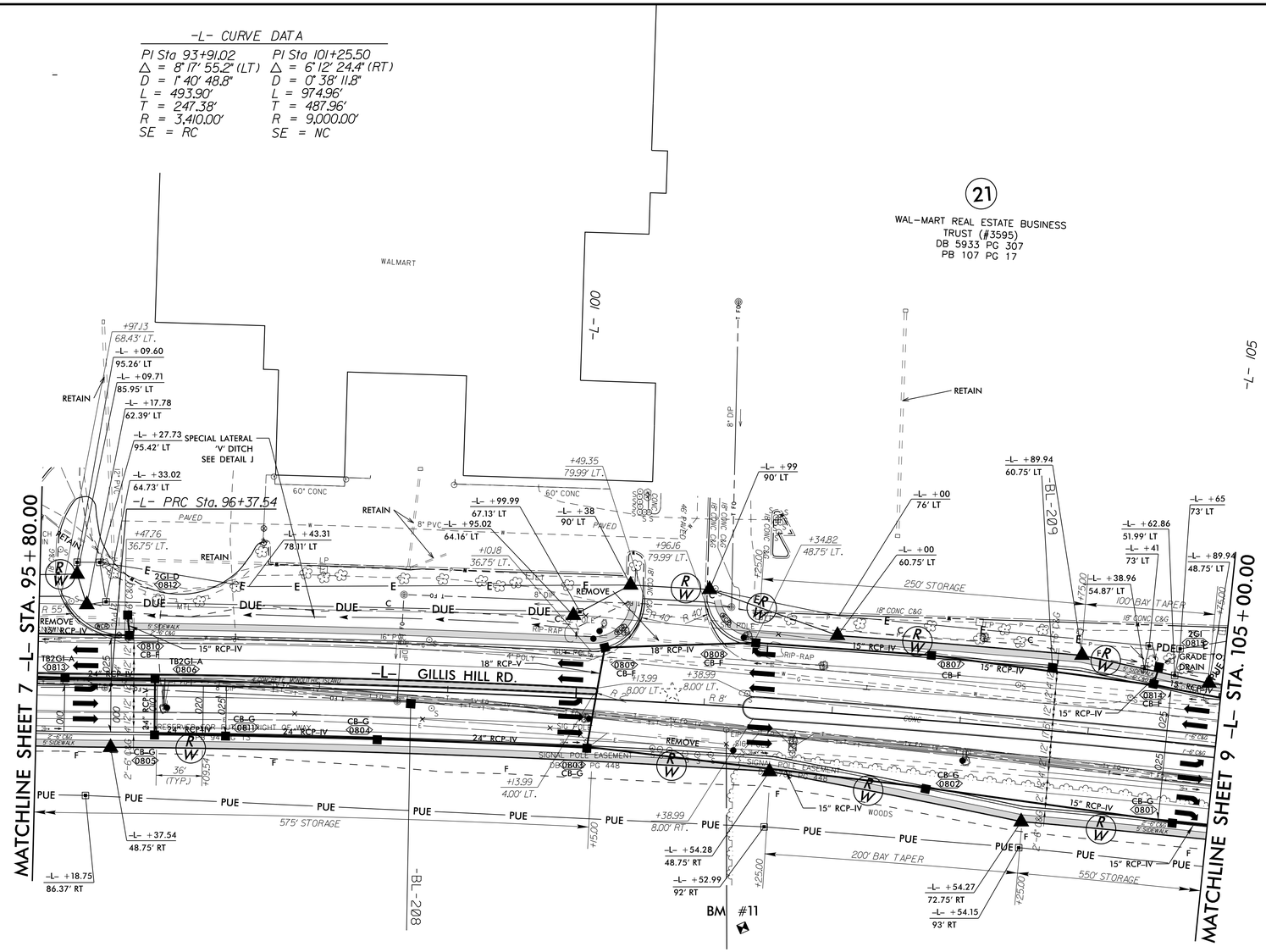
NAD 83
NA 2011

8/17/99

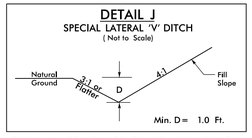
REVISIONS

-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

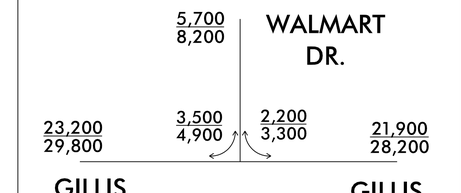


DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



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

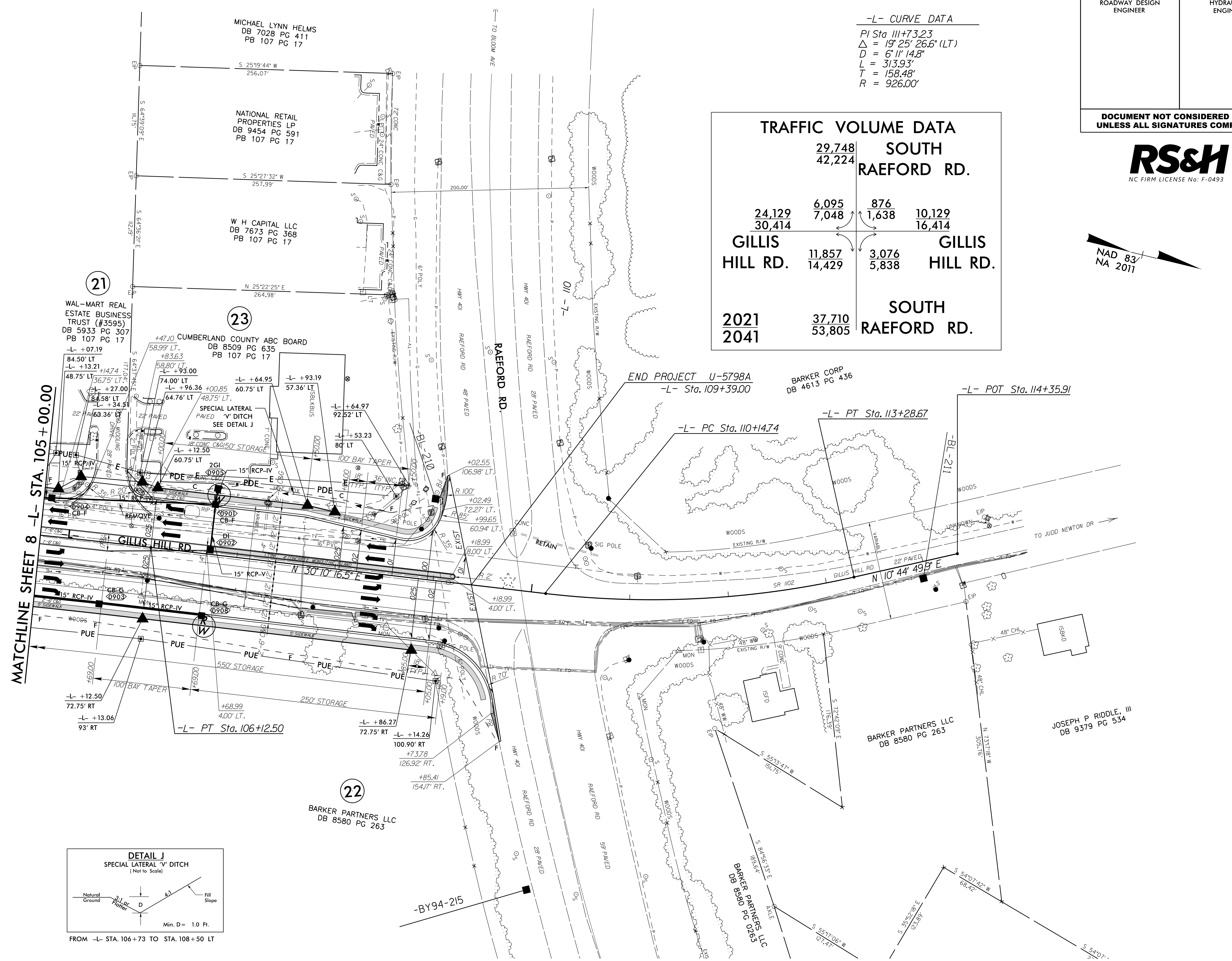
R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H
NC FIRM LICENSE No: F-0493

REVISIONS



-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
SOUTH RAEFORD RD. 29,748 / 42,224
GILLIS HILL RD. 24,129 / 30,414
6,095 / 7,048
876 / 1,638
10,129 / 16,414 GILLIS HILL RD.
11,857 / 14,429
3,076 / 5,838
2021 / 2041
37,710 / 53,805 SOUTH RAEFORD RD.
NAD 83/ NA 2011
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
22
BARKER PARTNERS LLC DB 8580 PG 263
BARKER CORP DB 4613 PG 436
BARKER PARTNERS LLC DB 8580 PG 263
BARKER PARTNERS LLC DB 8580 PG 0263
JOSEPH P RIDDLE, III DB 9379 PG 534
MATCHLINE SHEET 8 -L- STA. 105+00.00
GILLIS HILL RD.
N 30° 10' 16.5" E
N 10° 44' 49.9" E
RAEFORD RD.
HWY 401
-L-
-BL-210
-BL-211
-BY94-215
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
SPECIAL LATERAL PAVED 'V' DITCH SEE DETAIL J
100' BAY TAPER
550' STORAGE
250' STORAGE
150' STORAGE
TO JUDD NEWTON DR
TO BLOOM AVE
WOODS
SIG POLE
RETAIN
DETAIL J
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
FROM -L- STA. 106+73 TO STA. 108+50 LT

EXISTING SIGNAL

FOR -L- PROFILE, SEE SHEETS NO. 12

8/17/99

27-MAR-2020 15:01
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