



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

December 14, 2022

MEMORANDUM TO: Division 7 Environmental and Construction Units

FROM: *MAT* Michael A. Turchy, ECAP Group Leader
Environmental Analysis Unit

SUBJECT: Environmental Permits for the Replacement of Bridge 168 on NC 14/87
over Smith River in Rockingham County, Division 7, **TIP: BR-0044.**

Please find enclosed the following permits for this project:

Agency	Permit Type	Permit Expiration
US Army Corps of Engineers Section 404 Clean Water Act Permit	Regional General Permit 50	May 25, 2025
NC Division of Water Resources Section 401 Water Quality Certification	General Certification No. 4135 [RGP50]	May 25, 2025

Work is authorized by the above referenced permit provided it is accomplished in strict accordance with the permitted plans.

The Environmental Coordination and Permitting Group or the Division Environmental Office must be consulted if any deviation from the permit(s) is required.

The General Conditions and Certifications for Nationwide and Regional Permits can be referenced at:
https://xfer.services.ncdot.gov/pdea/PermIssued/_General_Conditions_and_Certifications/

PROJECT COMMITMENTS

Rockingham County
Bridge No. 780168 over Smith River
W.B.S. No. 67044.1.1
Project No. BR-0044

COMMITMENTS FROM PROJECT DESIGN

Division 7 Construction

Northern Long Eared Bat

Project requirement for PBO compliance: After project completion, the contract administrator for construction must submit the actual amount of tree clearing reported in tenths of acres. This information should be submitted to the NCDOT-Environmental Analysis Unit-Biological Surveys Group.

Roanoke logperch and James spiny mussel

Aquatic surveys for the Roanoke logperch and James spiny mussel will be completed prior to construction, and if any individuals are located NCDOT will initiate coordination with US Fish and Wildlife Service (USFWS) to obtain concurrence on biological conclusions for the species before construction can begin.

From USFWS Concurrence Letter dated October 31, 2019: *Based on the information contained in the Biological Assessment and other available information, the Service concurs with your conclusion that the proposed action may affect but is not likely to adversely affect the Roanoke Logperch and James River Spiny mussel. We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied.*

Commercial Property east of bridge

Driveway to property will remain open during construction. Division will coordinate with property owner east of bridge about access to their driveway during construction.

Division 7 /Hydraulics Unit

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.

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 PROJECT PERMITTING

Division 7 Construction

Special Conditions from the 404 permit issued November 19, 2019:

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

2. This USACE permit does not authorize you to take a threatened or endangered species, in particular, the Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., a Biological Opinion (BO) under the ESA, Section 7, with “incidental take” provisions with which you must comply). The U.S. Fish and Wildlife Service’s (USFWS’s) Programmatic BO titled "Northern Long-eared Bat (NLEB) Programmatic Biological Opinion for North Carolina Department of Transportation (NCDOT) Activities in Eastern North Carolina (Divisions 1-8)," dated March 25, 2015, and adopted on May 4, 2015, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that are specified in the BO. Your authorization under this USACE permit is conditioned upon your compliance with all the mandatory terms and conditions (incorporated by reference into this permit) associated with incidental take of the BO. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and would also constitute non-compliance with your USACE permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

3. Per the “Conservation Measures” proposed in the “Biological Assessment For Replacement of Bridge No. 168 on NC 14/87 Over the Smith River, Rockingham County, North Carolina”, dated 9/27/2019, NCDOT shall adhere to the following conditions:

a. Clearing and Grubbing: In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation;

b. Grading: Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications;

c. Seeding and Mulching: Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall

be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas;

d. Stage Seeding: The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above;

e. All applicable practices from the following documents will be used during project design and construction: Erosion and Sediment Control Design and Construction Manual (NCDOT 2015); Stormwater Best Management Practices Toolbox (NCDOT 2014); and Best Management Practices for Construction and Maintenance Activities (NCDOT 2003);

f. No direct discharge of deck drains over water will be allowed. Discharge from the deck drains will be directed to dissipator pads located between the toe of the rip rap stabilization and the water's edge.

**U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

Action Id. SAW-2018-01859 County: Rockingham County U.S.G.S. Quad: Northwest Eden

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: Michael Turchy
NCDOT Environmental Analysis Unit
Address: 1598 Mail Service Center
Raleigh NC, 27699-1598
Telephone Number: (919) 707-6126 (Jeff Hemphill)

Size (acres) ~7 Nearest Town Eden
Nearest Waterway Smith River River Basin Roanoke
USGS HUC 03010103 Coordinates Latitude: 36.5280; Longitude: -79.7678
Location description: The BR-0044 project site is located on NC Highway 14/87 over the Smith River at NCDOT Bridge 168 near Eden, Rockingham County, North Carolina.

Description of projects area and activity: TIP BR-0044; This verification authorizes the discharge of clean fill material associated with replacing an existing bridge, known as BR-0044. The project includes permanent impacts to 80 linear feet (0.01 acre) of stream channel for a culvert extension, 10 linear feet (0.01 acre) of stream channel for rip rap bank stabilization, and an additional 0.003 acre of stream impacts for bridge piers, as well as temporary impacts to a total of 290 linear feet (0.48 acre) of stream channel for construction access including workpad/causeways and dewatering. Note: This verification, including the attached special conditions, replaces the previous RGP 50 verification for this project dated 11/19/19. The compensatory mitigation requirement has not changed.

Applicable Law: Section 404 (Clean Water Act, 33 USC 1344);
 Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number: GP 50 - NCDOT - Bridge, Road Widening and Interchanges

SEE ATTACHED RGP GENERAL, REGIONAL AND/OR SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated November 13, 2022. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide and/or regional general permit authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide and/or regional general permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide and/or regional general permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide and/or regional general permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide and/or regional general permit's

expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Eric Alsmeyer at (919) 817-1570 or Eric.C.Alsmeyer@usace.army.mil.**

Corps Regulatory Official: Tyler Crumbley Tyler Crumbley
2022.11.28 08:24:39
-05'00' Date: **November 28, 2022**
Expiration Date of Verification: **May 28, 2025**

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

Copy furnished by email: Jeff Hemphill, NEU;

SPECIAL CONDITIONS

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

2.. Per the "Conservation Measures" proposed in the "Biological Assessment For Replacement of Bridge No. 168 on NC 14/87 Over the Smith River, Rockingham County, North Carolina", date 9/27/2019, NCDOT shall adhere to the following conditions:

a. Clearing and Grubbing: In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the Standard Specifications. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation;

b. Grading: Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the Standard Specifications;

c. Seeding and Mulching: Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment. Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas;

d. Stage Seeding: The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above;

e. All applicable practices from the following documents will be used during project design and construction: Erosion and Sediment Control Design and Construction Manual (NCDOT 2015); Stormwater Best Management Practices Toolbox (NCDOT 2014); and Best Management Practices for Construction and Maintenance Activities (NCDOT 2003);

f. No direct discharge of deck drains over water will be allowed. Discharge from the deck drains will be directed to dissipator pads located between the toe of the rip rap stabilization and the water's edge.

Action ID Number: SAW-2018-01859

County: Rockingham County

Permittee: Michael Turchy
NCDOT Environmental Analysis Unit

Project Name: NCDOT / BR-0044 / Bridge 168 / NC 14/87 / Eden / Rockingham County /
transportation

Date Verification Issued: November 25, 2022

Project Manager: Eric Alsmeyer

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Eric Alsmeyer
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587
919.554.4884, Ext. 23

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date



NORTH CAROLINA
Environmental Quality

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director

December 13, 2022
Rockingham County
NCDWR Project No. 20191466.V2
NCDOT TIP Project: BR-0044
Replace Bridge #168 on NC14/87
WBS# 49077.1.1

APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS

Mr. Michael Turchy – Environmental Coordination and Permitting (ECAP) Group Leader
North Carolina Department of Transportation
1000 Birch Ridge Drive
Raleigh, North Carolina 27610

Dear Mr. Turchy:

You have our approval, in accordance with the conditions listed below, for the following impacts to replace Bridge No. 168 on NC 14/87 over Smith River in Rockingham County.

Stream Impacts in the Roanoke River Basin

Site	Temporary Impacts in Perennial Stream due to Dewatering (linear ft)	Temporary Fill in Perennial Stream due to Workpad/Causeway (linear ft)	Permanent Fill in Perennial Stream due to Pipe (linear ft)	Permanent Fill in Perennial Stream due to Bank Stabilization (linear ft)	Total Stream Impact (linear ft)
S1	10	-	80	10	100
S2	-	280	-	-	280
Totals	10	280	80	10	380

Total Stream Impacts: 380 linear feet

The project shall be constructed in accordance with your renewal application dated November 13, 2022. A previous application was submitted for this project on October 29, 2019, and 401 Approval was issued by the Division on November 20, 2019. At this time, there have been no design changes to the project and the original permit drawings are still valid. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 4135. This certification corresponds to the General Permit 50 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit. No other impacts are approved, including incidental impacts. [15A NCAC 02H .0506(b)] The permittee shall report to DWR any noncompliance with, or any violation of, stream or wetland standards [15A NCAC 02B .0200] including but not limited to sediment impacts to streams or wetlands. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the permittee became aware of the non-compliance circumstances.

Should your project change, you must 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to perennial streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the General Certification 4135, and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]
2. 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)]
3. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS0000250, please refer to the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
4. 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)]
5. 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)]
6. 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)].
7. 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)]
8. 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)]
9. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H.0506(b)(2)]



10. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]
11. NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000. Please note the extra protections for the sensitive watersheds. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]

General Conditions

1. 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]
2. 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)]
3. 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)]
4. 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)]
5. 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)]
6. 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)]
7. 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)]
8. 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)]
9. 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)]
10. Discharging hydroseed mixtures and washing out hydro seeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
11. 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]
12. 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)]



13. 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)]
14. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
15. 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.
16. 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)]
17. Upon completion of the project (including any impacts at associated borrow or waste sites), NCDOT project engineer (or appointee) shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
18. 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)]
19. 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.
20. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)].
21. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 {b)(3) and (c)(3) and 15A NCAC 02B.0200]
22. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated



with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

23. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

This approval and its conditions are final and binding unless contested [G.S. 143-215.5]. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.

This Certification can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) within sixty (60) calendar days. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at <http://www.ncoah.com/> or by calling the OAH Clerk's Office at (919) 431-3000.

A party filing a Petition must serve a copy of the Petition on:
William F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

If the party filing the Petition is not the permittee, then the party must also serve the recipient of the Certification in accordance with N.C.G.S 150B-23(a).

This letter completes the review of the Division under section 401 of the Clean Water Act and 15A NCAC 02H .0500. If you have any questions, please contact Ryan Conchilla at ryan.conchilla@ncdenr.gov.

Sincerely,

DocuSigned by:


Richard E. Rogers, Jr. Director
Division of Water Resources

Electronic copy only distribution:

David Bailey, US Army Corps of Engineers, Raleigh Field Office
Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Michael Turchy, NCDOT, EAU
Jeffery Hemphill, NCDOT, EAU
Jerry Parker, DOT Division 7 Environmental Officer





North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: 67044.1.1 TIP No.: BR-0044 County(ies): Rockingham Page 1 of 2

General Project Information

WBS Element:	67044.1.1	TIP Number:	BR-0044	Project Type:	Bridge Replacement	Date:	6/14/2019
NCDOT Contact:	David Stutts, PE (Structures Mgmt Unit)		Contractor / Designer:	AECOM/Gregory Cols, PE			
Address:	NCDOT Century Center 1000 Birch Ridge Dr Raleigh NC 27610		Address:	701 Corporate Center Drive Raleigh, NC 27607 Suite 475			
	Phone: 919-707-6442			Phone: 9198546200			
	Email: dstutts@ncdot.gov			Email: gregory.cols@aecom.com			
City/Town:	Eden		County(ies):	Rockingham			
River Basin(s):	Roanoke		CAMA County?	No			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.427 mi	Surrounding Land Use:	Wooded, Rural					
	Proposed Project			Existing Site				
Project Built-Up Area (ac.)	1.7	ac.			1.7	ac.		
Typical Cross Section Description:	2 lanes of undivided highway with 12' lanes. Shoulder Berm Gutter with storm systems and roadside ditches.			2 lanes of undivided highway with 12' lanes. All shoulder section. Roadside ditches.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	8400	Year:	2040	Existing:	8080	Year:	2020

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

The existing 7 span (7@75') bridge on N Van Buren rd (NC 14/87) spans Smith River. The existing bridge was constructed in 1966 and consists of a reinforced concrete deck on steel I-beams. Several of the existing beams have considerable section loss as well as overall deterioration of various components of the bridge. The status of the bridge is observed to be structurally deficient with a sufficiency rating of 69.06/100. The replacement bridge to be constructed slightly more north, is a 5 span (1@106', 3@113', 1@75') prestressed concrete girder bridge with 4' deep end bent caps. The proposed bridge deck drainage is collected by 6" diameter deck drains @ 12' spacings over the floodplain. No deck drains discharge directly over Smith River. Roadway drainage on the east and west sides of the bridge is collected by a system of TB 2GI's discharging into a riprap pad, which then dissipates into Smith River floodplain. Away from the bridge, surface runoff is collected in grass and rip-rap lined ditches and conveyed to natural outfalls. Construction of the bridge will be accomplished using causeways, as no other practical option exists to minimize disturbance to the river. Causeways will be constructed in phases to minimize the total concurrent impact to the river and limit total blockage of channel to 50% maximum. A shallow rockline precludes the use of temporary work bridges.

One unnamed tributary to the Smith River crosses the project to the west of the bridge. This UT is currently piped under the existing roadway. The pipe will be extended to accommodate the relocated roadway with wider shoulders. Maximum steepest slopes are proposed to limit the amount of fill.

Wetlands exist within the project limits but are not disturbed by construction activities.

Waterbody Information

Surface Water Body (1):	Smith River		NCDWR Stream Index No.:	22-40-(1)			
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)				
	Supplemental Classification:		None				
Other Stream Classification:							
Impairments:	Benthos						
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area					
NRTR Stream ID:	Smith River			Buffer Rules in Effect:	N/A		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A		
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)							



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: 67044.1.1 TIP No.: BR-0044 County(ies): Rockingham Page 2 of 2

Additional Waterbody Information

Surface Water Body (2):	UT to Smith River		NCDWR Stream Index No.:	22-40-(1)	
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply IV (WS-IV)			
	Supplemental Classification:	None			
Other Stream Classification:					
Impairments:	Benthos				
Aquatic T&E Species?	Yes	Comments: Roanoke logperch is an endangered freshwater fish found in the Smith River within the study area			
NRTR Stream ID:	SA		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	Yes	(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)					

09.08/99

TIP PROJECT: BR-0044

CONTRACT: C204393

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

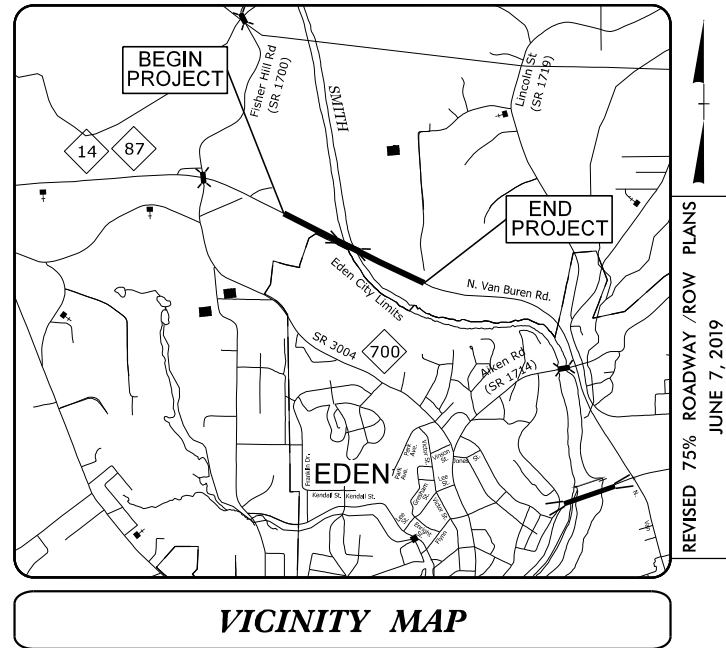
ROCKINGHAM COUNTY

LOCATION: BRIDGE NO. 168 ON NC 14/NC 87
(N. VAN BUREN RD) OVER
SMITH RIVER

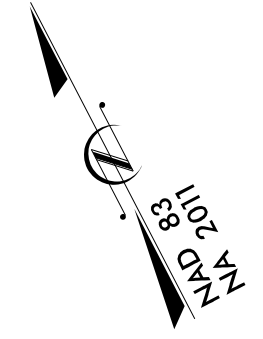
TYPE OF WORK: GRADING, DRAINAGE, PAVING,
AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0044	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
67044.1.1		PE	

PERMIT DRAWING
SHEET 01 OF 15

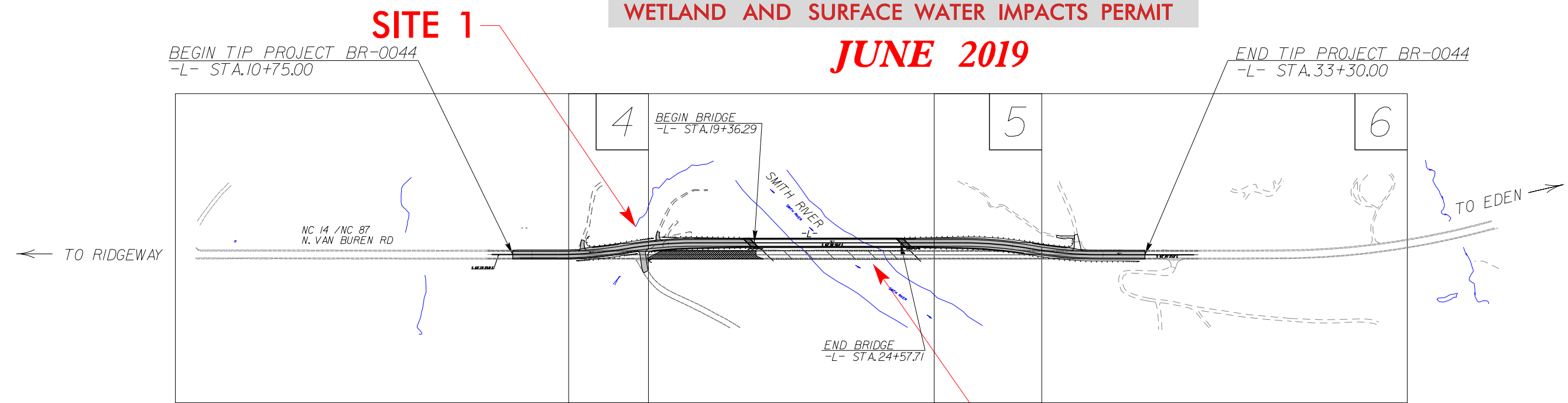


See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



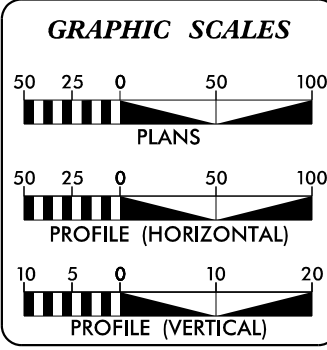
WETLAND AND SURFACE WATER IMPACTS PERMIT

JUNE 2019



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
CLEARING ON THE PROJECT SHALL BE TO THE LIMITS
ESTABLISHED USING METHOD II
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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



DESIGN DATA

ADT 2020 =	8,080
ADT 2040 =	8,400
K =	9 %
D =	55 %
T =	12 % *
V =	60 MPH

* (TTST 10%+DUAL 2%)
FUNC CLASS=PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0044 =	0.328 MI
LENGTH STRUCTURE TIP PROJECT BR-0044 =	0.099 MI
TOTAL LENGTH TIP PROJECT BR-0044 =	0.427 MI

AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 14, 2019

LETTING DATE:
JANUARY 21, 2020

NEIL J. DEAN, P.E.
PROJECT ENGINEER

RADHA ATTALURI, P.E.
PROJECT DESIGN ENGINEER

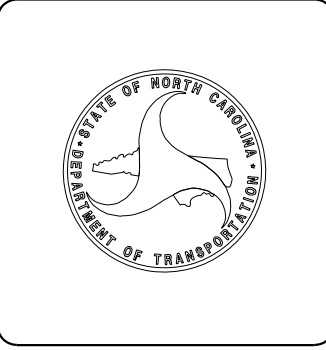
DAVID STUTTS, P.E.
NCDOT PROJECT MANAGER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

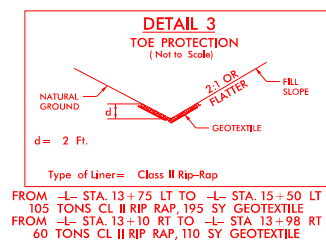
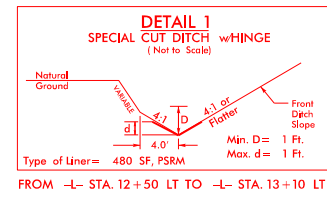
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6/27/2019 R:\Hydraulics\PERMITS_Environmental\Drawings\BR-0044_Hyd-prm_wet_TSH.dgn catterm

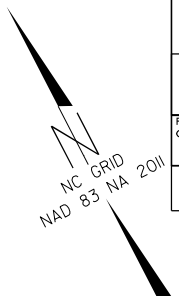
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Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 03 OF 15

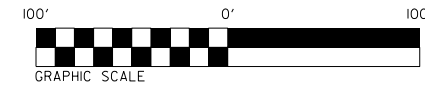
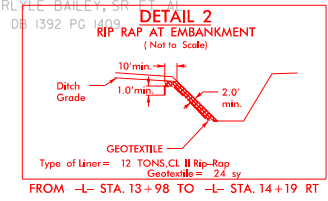
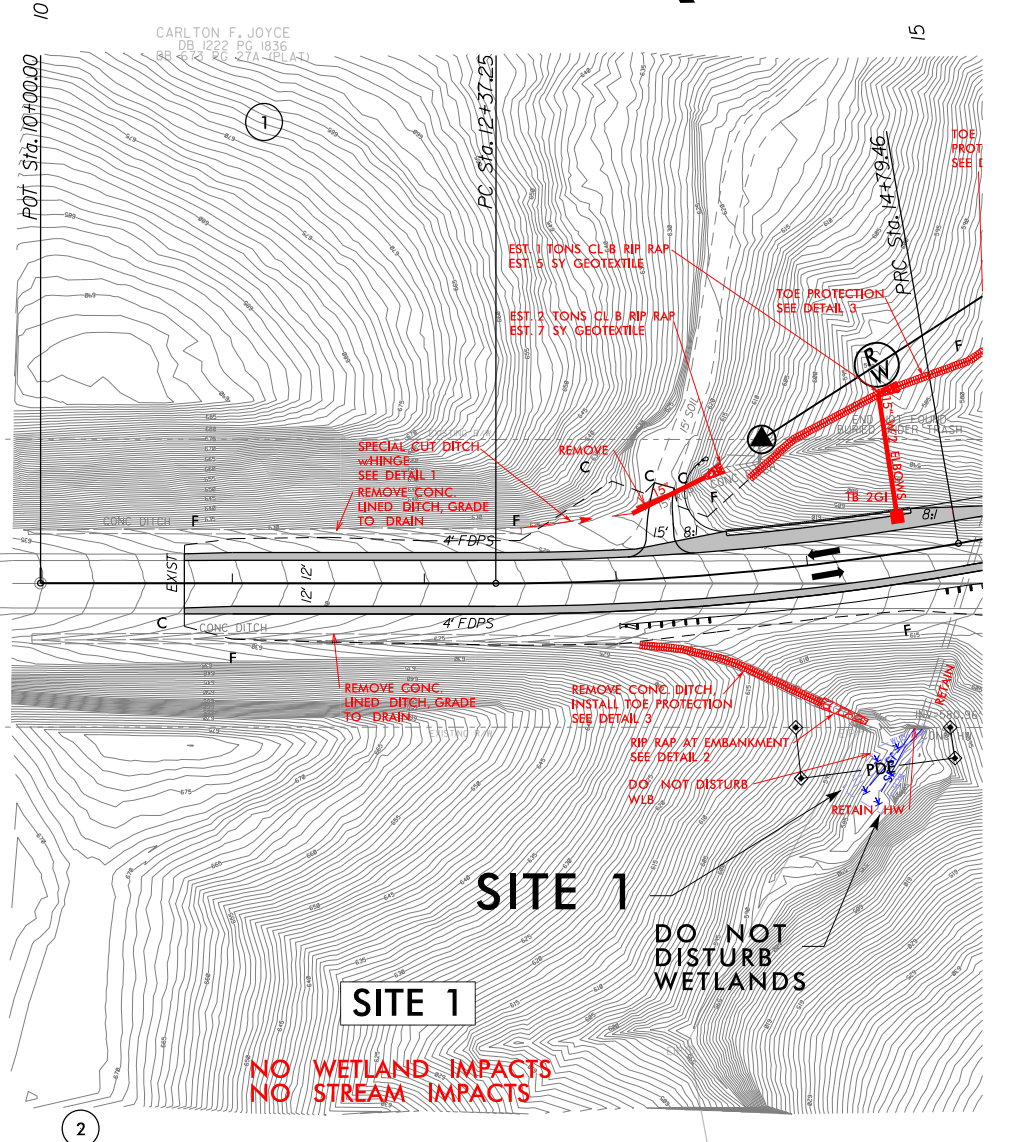
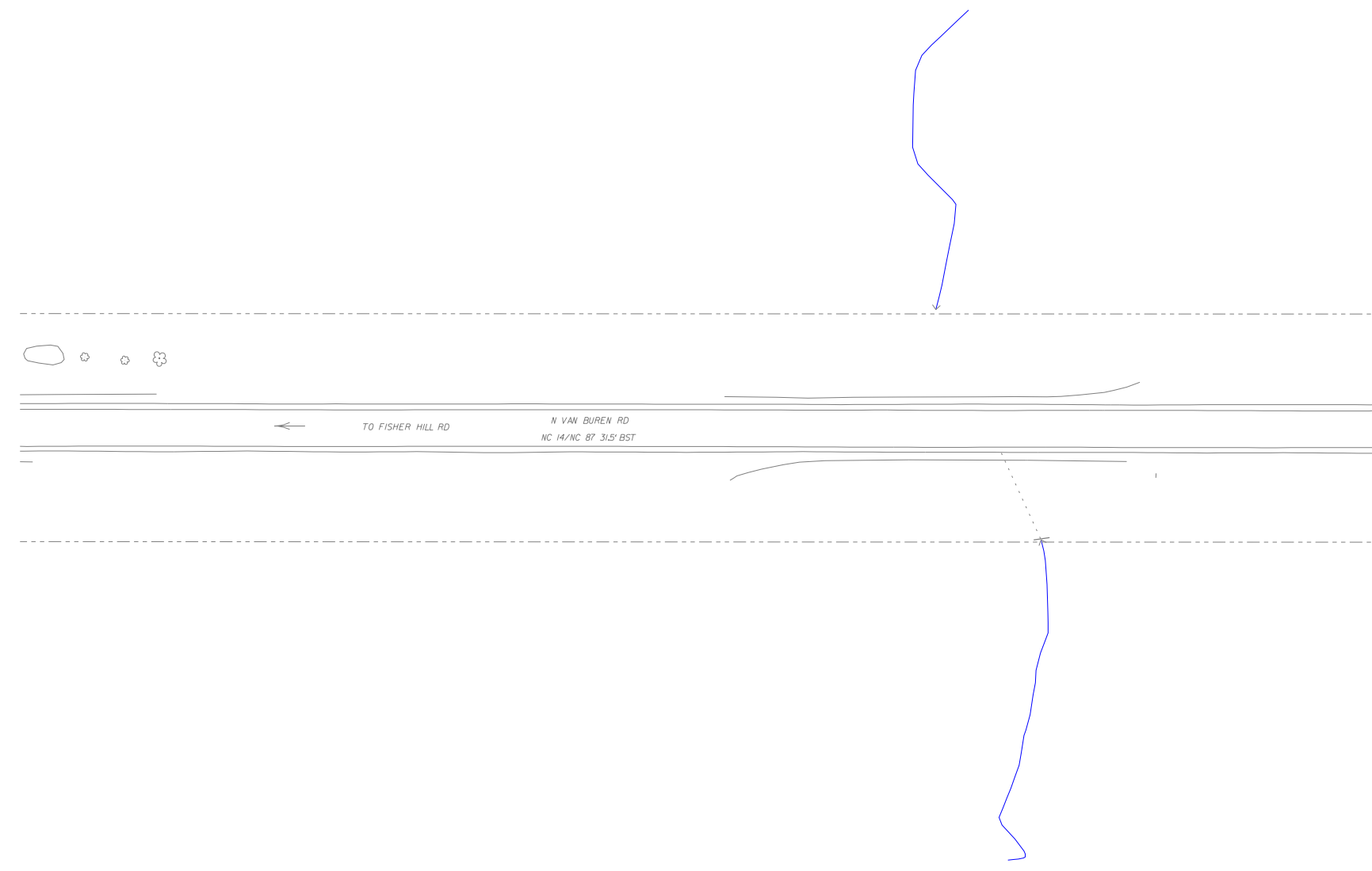


-L-

<i>PI Sta 13+58.66</i> $\Delta = 9^{\circ} 54' 44.5" (LT)$ $D = 4' 05" 33.2"$ $L = 242.20'$ $T = 121.41'$ $R = 1,400.00'$ $e = 0.06 FT/FT$ $R.O. = 162.00'$	<i>PI Sta 16+00.61</i> $\Delta = 9^{\circ} 53' 29.9" (RT)$ $D = 4' 05" 33.2"$ $L = 241.70'$ $T = 121.5'$ $R = 1,400.00'$ $e = 0.06 FT/FT$ $R.O. = 162.00'$
--	---



REVISIONS



NORMAN L. NANCE
BRADLEY B. & SHEILA B. NANCE
DB 1189 PG 814
PB 74 PG 3

RALPH CARL LE BAILEY, SR.
DB 1392 PG 1163

5/14/99
6/27/2009
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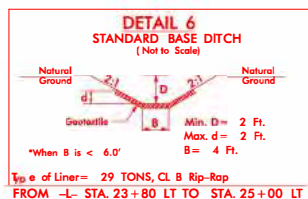
5/14/2019

REVISIONS

6/27/2019 Environmental Drawings BR-0044_Hyd.prm_wet.Ste 1 (and 2-A) Phases.dgn

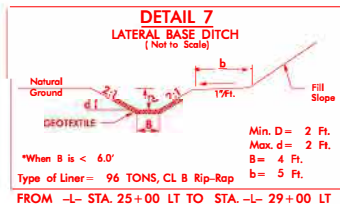
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PI Sta 16+00.61	PI Sta 28+02.44
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$L = 241.70'$	$L = 243.72'$
$T = 121.15'$	$T = 122.17'$
$R = 1,400.00'$	$R = 1,400.00'$
$e = 0.06$ FT/FT	$e = 0.06$ FT/FT
$R.O. = 162.00'$	$R.O. = 162.00'$



5

JONATHAN D. HALL
DB 1068 PG 16(PER GIS)
THIS DEED DOES NOT
DESCRIBE THIS PARCEL



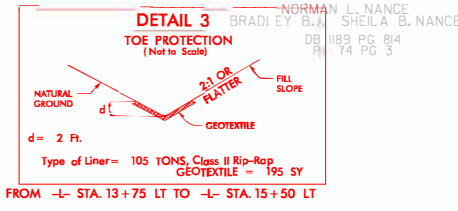
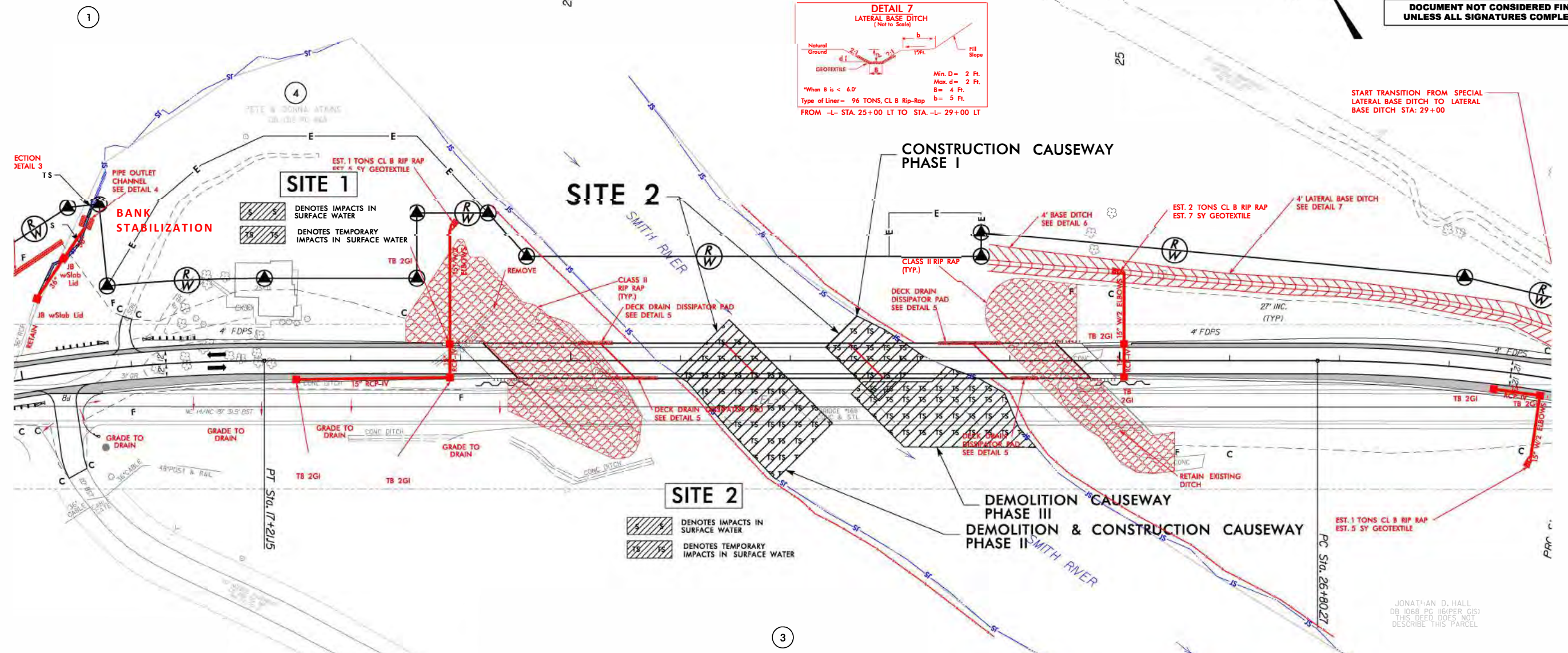
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GREATLAND RETRIEVERS, L.L.C.
DB 1523 PG 2994

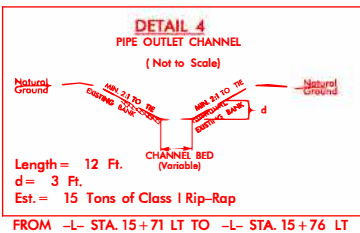
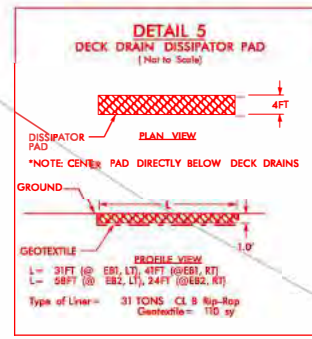
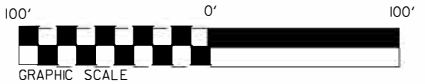


**PERMIT DRAWING
SHEET 04 OF 15**
Revised 11/18/2019

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No. F-0342 70 Corporate Center Drive, Suite 475 Raleigh, NC 27617 (919) 854-6200 • (919) 854-6298 FAX</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



***NOTE: CAUSEWAY WILL ONLY BLOCK 12 OF THE STREAM PER PHASE**



JONATHAN D. HALL
DB 1068 PG 16(PER GIS)
THIS DEED DOES NOT
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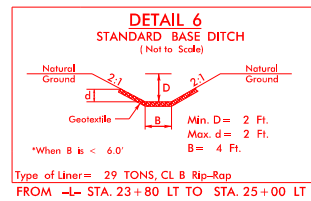
5/14/99

PERMIT DRAWING SHEET 05 OF 15 Revised 11/18/2019

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX	
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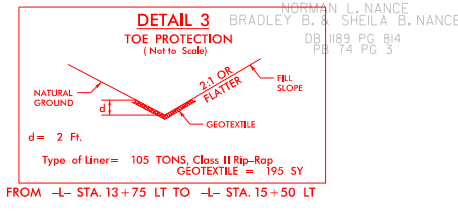
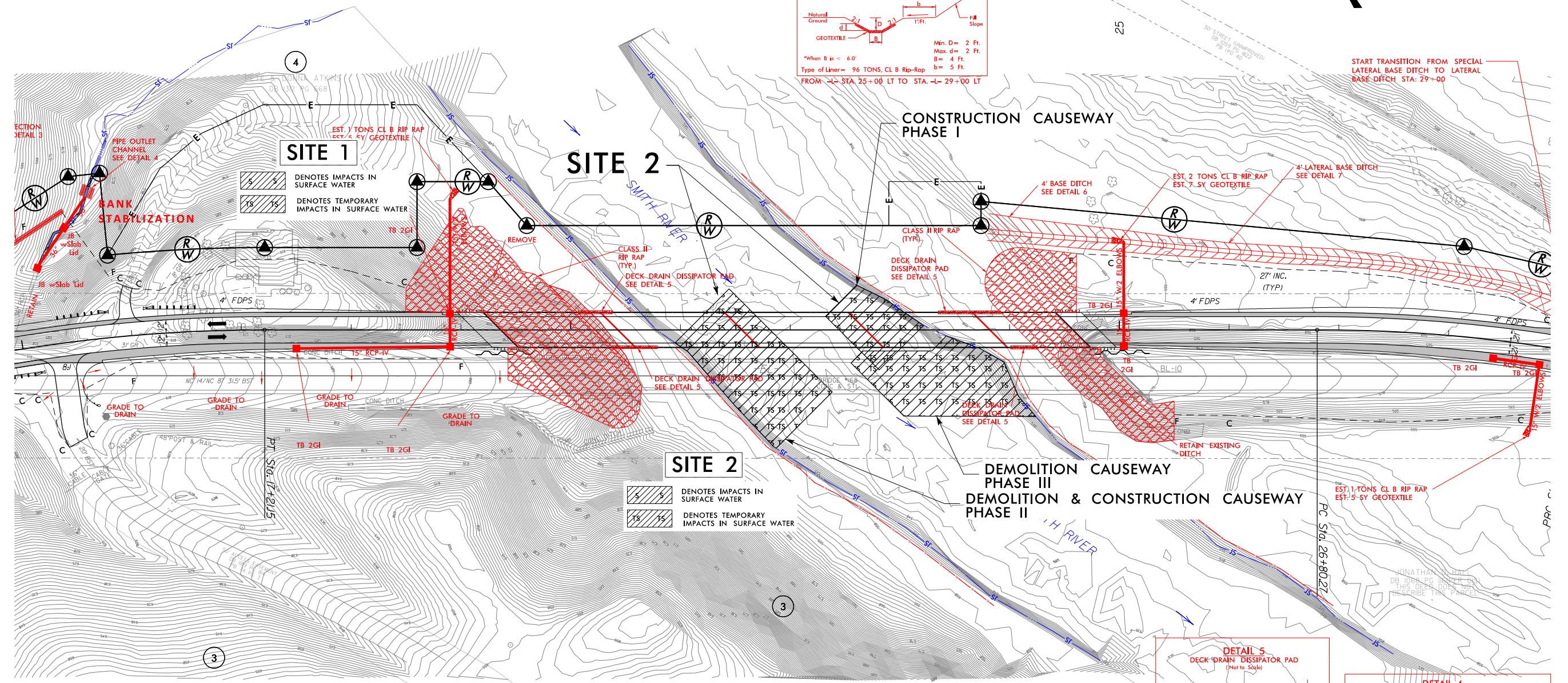
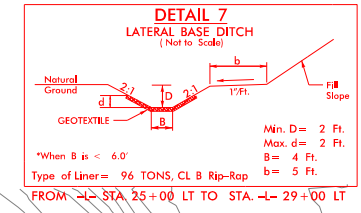
-L-

PI Sta 16+00.61 Δ = 9° 53' 29.9" (RT) D = 4' 05" 33.2" L = 241.70' T = 121.15' R = 1,400.00' e = 0.06 FT/FT R.O. = 162.00'	PI Sta 28+02.44 Δ = 9° 58' 27.2" (RT) D = 4' 05" 33.2" L = 243.72' T = 122.17' R = 1,400.00' e = 0.06 FT/FT R.O. = 162.00'
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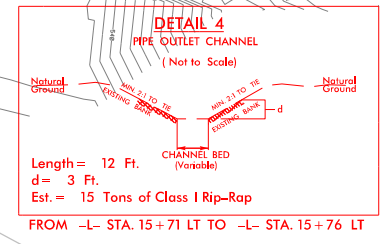
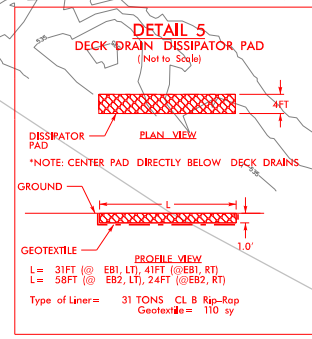
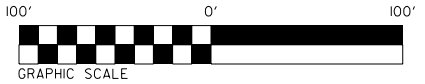


5
JONATHAN D. HALL
DB 1068 PG 16(PER GIS)
THIS DEED DOES NOT
DESCRIBE THIS PARCEL

6
GREATLAND RETRIEVERS, LLC
DB 1523 PG 2994



***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**



REVISIONS

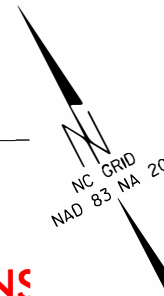
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PERMIT DRAWING
SHEET 06 OF 15

Revised 11/18/2019



DB 1312 PG 668



PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM <small>NC FIRM LICENSE No. F-0342 10 Corporate Center Drive, Suite 475 1991 854-6200 • 1991 854-6298 FAX</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

TOE PROTECTION
SEE DETAIL 3

PIPE OUTLET CHANNEL
SEE DETAIL 4

EST. 1 TONS
EST. 5 SY C

SITE 1

BANK STABILIZATION



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 1

LINE - L - SHEET 5
STATION 15+00.00
SEE SHEET 5

JB w/Slab Lid

JB w/Slab Lid

TB 2GI

CONC DITCH 15" RCP-IV

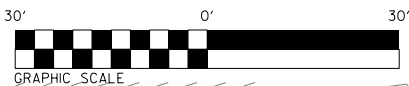
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6/27/2019 10:45:00 AM I:\Projects\BR-0044_Hyd_prm_wet.Stp_1_zoom_ST1.dgn

REVISIONS

PERMIT DRAWING
SHEET 07 OF 15

Revised 11/18/2019



DB 1312 PG 668



PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM	
<small>NC FIRM LICENSE No: F-0342 701 Corporate Center Dr., Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX1</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

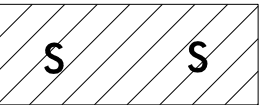
TOE PROTECTION
SEE DETAIL 3

PIPE OUTLET CHANNEL
SEE DETAIL 4

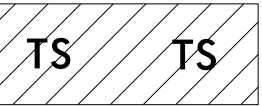
EST. 1 TONS
EST 5 SY C

SITE 1

BANK STABILIZATION



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 1



LINE 1 - SHEET 5
SEE SHEET 5
STA 15+00.00

JB wSlab Lid

JB wSlab Lid

TB 2GI

CONC DITCH 15" RCP-IV

NC 14/NC 8' 31.5' BS

5/14/99

REVISIONS

6/27/2019
C:\Users\br-0044\Hyd-prm-wet-Site 1\geom-contour-ST1.dgn

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM	
<small>NC FIRM LICENSE No F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 (FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**

SMITH RIVER

R
W

SITE 2

CLASS II
RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

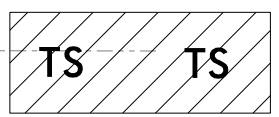
CLASS II RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

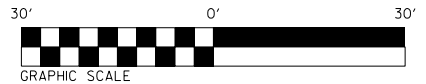
SITE 2



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

BRIDGE #168
CONC & STL

CONSTRUCTION CAUSEWAY
PHASE I



PERMIT DRAWING
SHEET 08 OF 15
Revised 11/18/2019

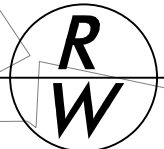
REVISIONS

6/27/2018 Drawings\BR-0044_Hyd_prm_wet_Site 2_zoom_ST1.dgn

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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<small>NC FIRM LICENSE No. F-0342 701 Corporate Center Dr., Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**

SMITH RIVER



SITE 2

CLASS II RIP RAP (TYP.)

DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

CLASS II RIP RAP (TYP.)

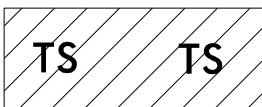
DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

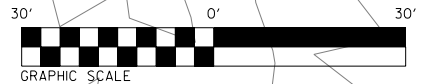
DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

CONSTRUCTION CAUSEWAY PHASE I

SITE 2



TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PERMIT DRAWING SHEET 09 OF 15
Revised 11/18/2019

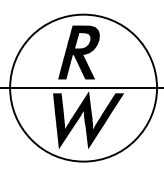
REVISIONS

6/27/2019 Environment\Drawings\BR-0044_Hyd.prm_wet.Site 2_room.contour_S11.dgn

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM	
<small>NC FIRM LICENSE No: F-0342 70 Corporate Center Dr., Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SMITH RIVER

***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**



SITE 2

CLASS II RIP RAP (TYP.)



CLASS II RIP RAP (TYP.)

DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

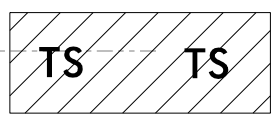
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DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD SEE DETAIL 5

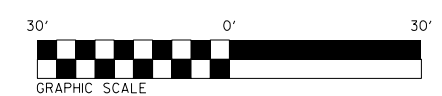
SITE 2

DEMOLITION & CONSTRUCTION CAUSEWAY PHASE II



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

BRIDGE #168
CONC & STL



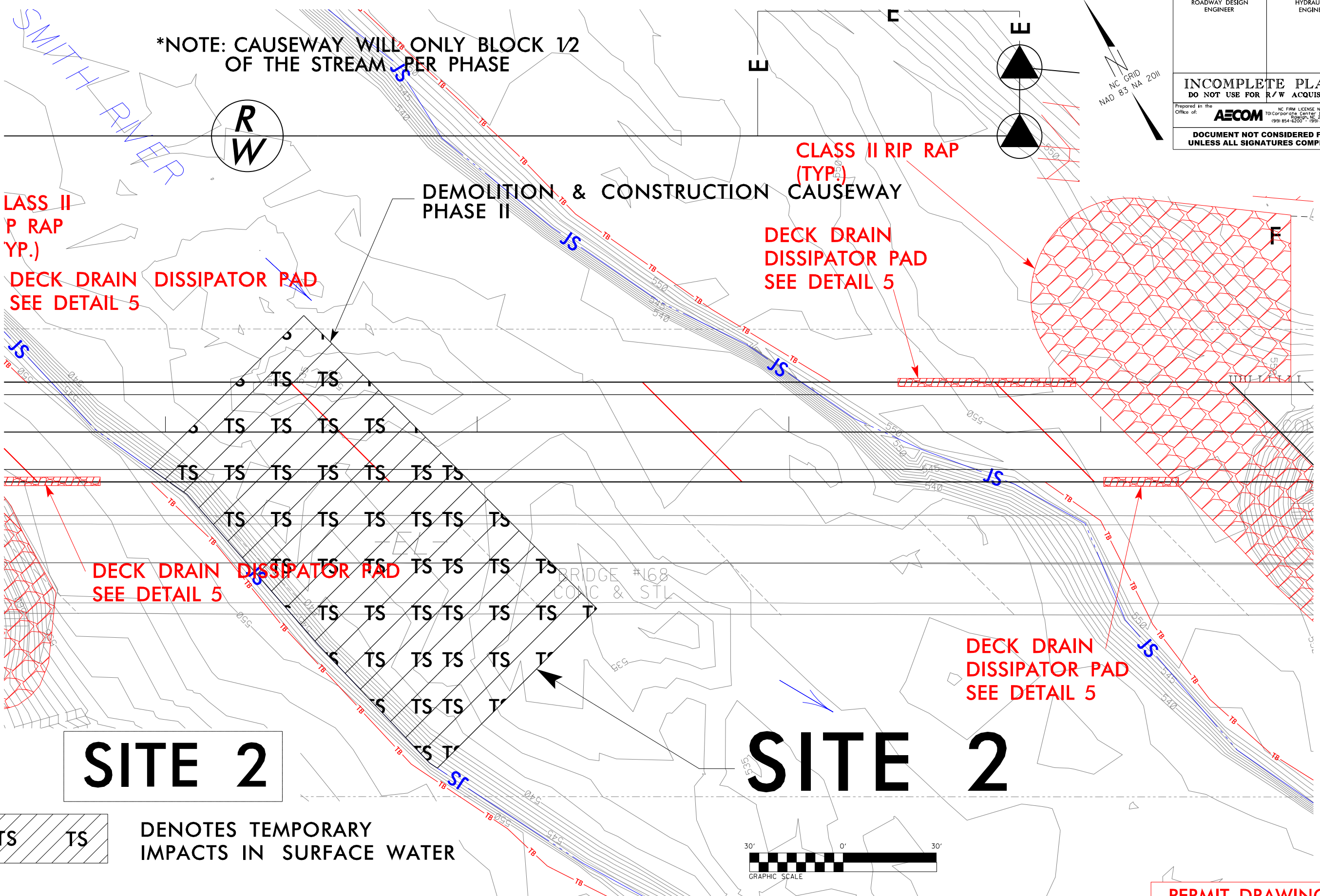
PERMIT DRAWING SHEET 10 OF 15
Revised 11/18/2019

REVISIONS

5/14/99
 6/27/2019
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PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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CLASS II
RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DEMOLITION & CONSTRUCTION CAUSEWAY
PHASE II

CLASS II RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

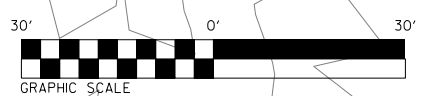
DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

SITE 2

SITE 2

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PERMIT DRAWING
SHEET 11 OF 15
Revised 11/18/2019

REVISIONS

6/27/2019
C:\Users\jgallagher\Documents\BR-0044_Hyd.prm_wet.Site 2_zoom.contour_ST2.dgn

5/14/99

PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**

SMITH RIVER

R
W

SITE 2

CLASS II
RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

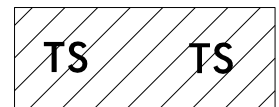
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DISSIPATOR PAD
SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

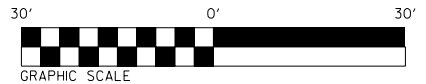
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CONC & STL

DEMOLITION CAUSEWAY
PHASE III

SITE 2



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

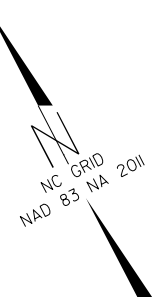


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SHEET 12 OF 15
Revised 11/18/2019

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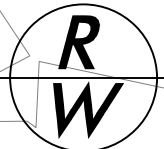
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PROJECT REFERENCE NO. BR-0044	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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***NOTE: CAUSEWAY WILL ONLY BLOCK 1/2 OF THE STREAM PER PHASE**

SMITH RIVER



SITE 2

CLASS II
RIP RAP
(TYP.)

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

CLASS II RIP RAP
(TYP.)

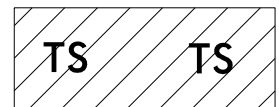
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SEE DETAIL 5

DECK DRAIN DISSIPATOR PAD
SEE DETAIL 5

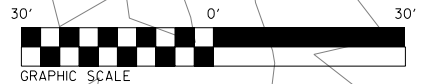
BRIDGE #168
CONC & STL

DEMOLITION CAUSEWAY
PHASE III

SITE 2



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PERMIT DRAWING
SHEET 13 OF 15
Revised 11/18/2019

REVISIONS

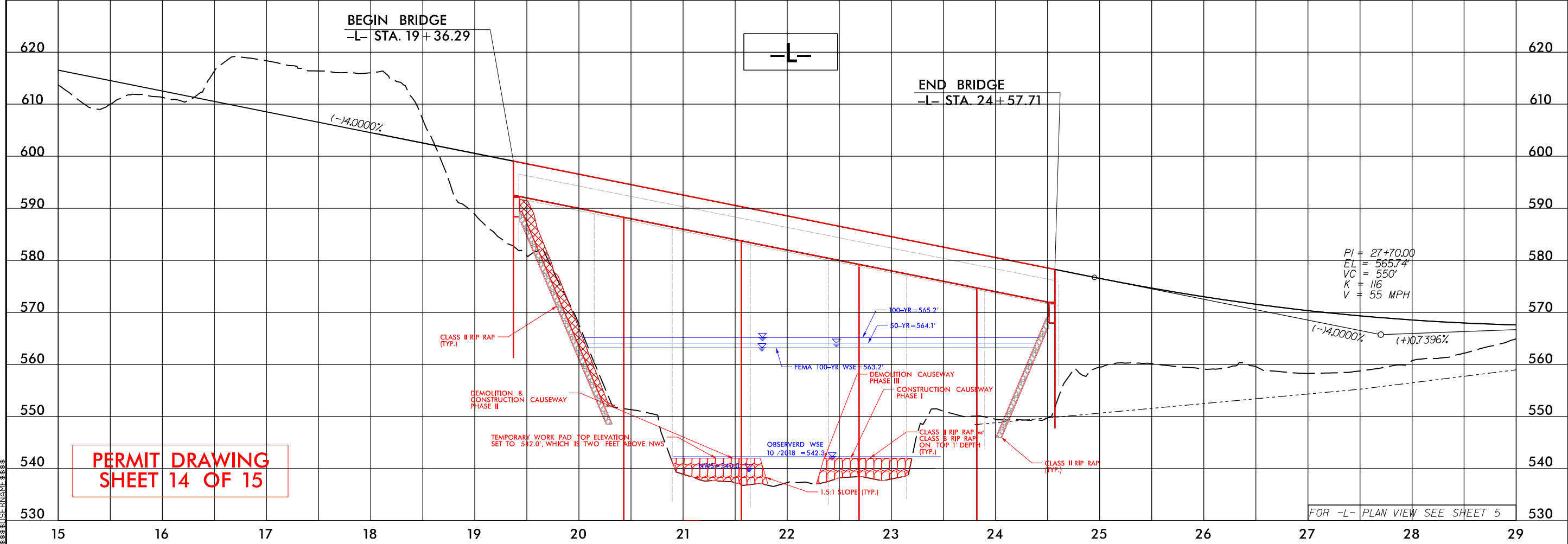
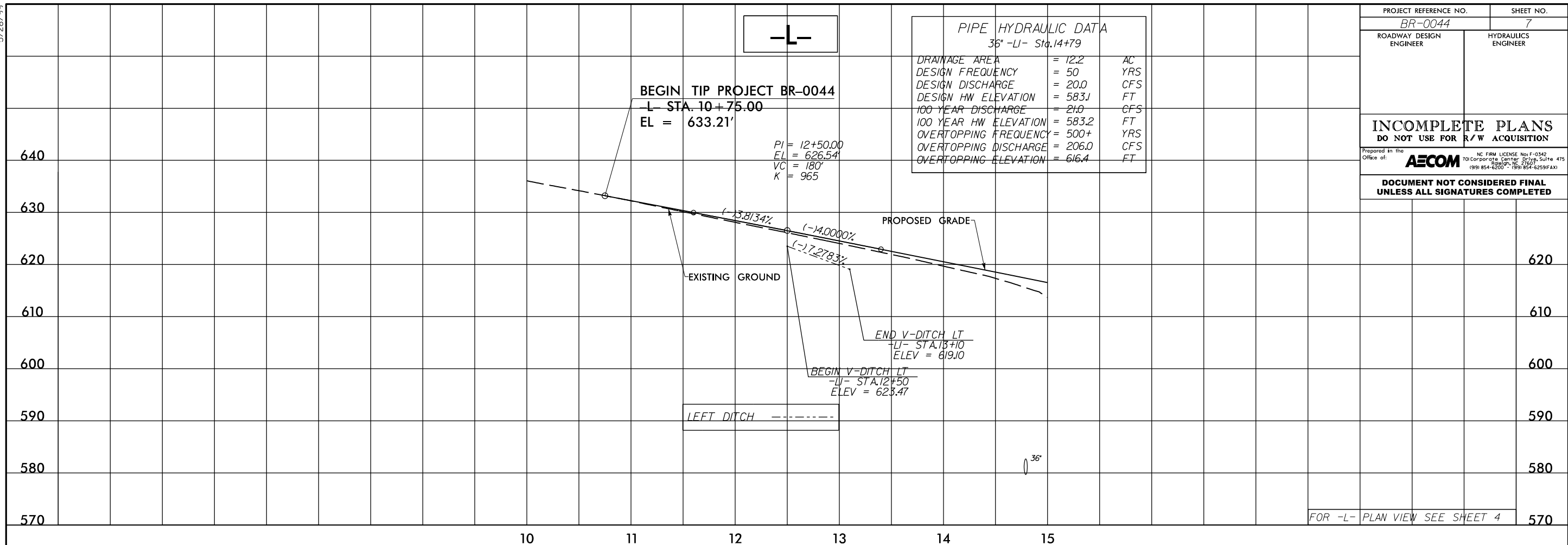
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5/14/99

5/28/99

PROJECT REFERENCE NO. BR-0044	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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<small>Prepared in the Office of:</small> AECOM	
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PIPE HYDRAULIC DATA	
36" -LI- Sta. 14+79	
DRAINAGE AREA	= 12.2 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 20.0 CFS
DESIGN HW ELEVATION	= 583.1 FT
100 YEAR DISCHARGE	= 21.0 CFS
100 YEAR HW ELEVATION	= 583.2 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 206.0 CFS
OVERTOPPING ELEVATION	= 616.4 FT



5/28/99

PERMIT DRAWING SHEET 14 OF 15

FOR -L- PLAN VIEW SEE SHEET 4

FOR -L- PLAN VIEW SEE SHEET 5

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS						
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Stabilization Channel Impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Stabilization (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 15+24 to 15+73	36" ALT Pipe						< 0.01		< 0.01	80		10	
1	-L- 15+73 to 15+80	Bank Stabilization							< 0.01			10		
2	-L- 20+93 to 24+00	Bridge (all phases)								0.47			280	
TOTALS*:								< 0.01	< 0.01	0.47	80	10	290	0

*Rounded totals are sum of actual impacts

NOTES:
Stream Temporary impacts due to causeways are the net total when all 3 phases are considered together.

Bridge Pier Permanent Impact Area (Not included in above quantities) = 118sf (Three 60" dia piers x 2 bents)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/14/2019
ROCKINGHAM COUNTY
BR-0044
67044.1.1

Revised 11/18/2019