



PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

December 21, 2016

MEMORANDUM TO: Mr. Joey Hopkins, P.E.
Division 5 Engineer

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

SUBJECT: Wake/Franklin Counties; US 401 (Rolesville Bypass) from NC
96 to SR 1103; Federal Aid No. STP-401(249);
WBS # 34506.1.1; **TIP R-2814C.**

A handwritten signature in blue ink, appearing to be 'PHS', is written over the 'FROM' line of the memorandum.

Attached are the modified US Army Corps of Engineers Individual Permit, N.C. Division of Water Resources (NCDWR) Water Quality Certification, and Neuse & Tar Pamlico Buffer Authorization. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>
Quick Links>Permit Documents> Issued Permits.

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

Mr. Randy Garris, P.E. State Contract Officer
Mr. Chris Murray, Division Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Ms. Brenda Moore, P.E., Roadway Design
Mr. Robert Memory, Utilities Unit
Mr. Jay Twisdale, P.E., Hydraulics
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Kevin G. Bowen, P.E., State Bridge Construction Engineer
Mr. Jay McInnis, P.E., PDEA
Mr. Phillip Ayscue, Office of Inspector General
Ms. LeiLani Paugh, ICI/Onsite Mitigation



PROJECT COMMITMENTS

US 401 (Rolesville Bypass) from NC 96
To SR 1103
Wake/Franklin Counties
Federal-Aid Project STP-401(249)
State Project 8.1403001
WBS Element 34506.1.1
TIP Project R-2814C

Current status, changes or additions to the project commitments as shown in the environmental document for the project are printed in *italics*.

Commitments Developed Through Project Development and Design (All Sections)

PD&EA-Human Environment Unit/Air And Noise Section

Along the bypass portion of the proposed project, new building permits are being issued almost weekly and development is steadily occurring. Noise impacts will be reevaluated during the preparation of the final design plans to determine which homes would be eligible based on the date of public knowledge.

Noise impacts were reevaluated in August 2008 to determine which homes would be eligible for noise abatement based on the date of public knowledge. It was determined from the date of public knowledge and the remaining receptors that the final traffic noise analysis showed no impacts. Therefore no noise abatement is recommended.

Hydraulics Unit

The Hydraulics Unit in conjunction with the Project Development and Environmental Analysis Branch will coordinate with the Army Corps of Engineers and the North Carolina Wildlife Resources Commission during final hydraulic design to facilitate the permitting process and to ensure that all environmental concerns are appropriately addressed.

The Hydraulics Unit has coordinated with the Army Corps of Engineers and the North Carolina Wildlife Resources Commission during the final hydraulic design to ensure that all environmental concerns are appropriately addressed. A concurrence point 4B (Hydraulic Design Review) meeting was held on June 18, 2007 with both the USACE and NCWRC present. A concurrence point 4C (permit drawing review) meeting will be held prior to submitting the final permit drawings to allow further agency input.

Division 5 Construction/Roadside Environmental Unit

The mid-portion of the project, from SR 1003 in Wake County to SR 1100 in Franklin County, is located within a water supply watershed and a high quality water

zone. Due to the presence of high quality waters, sedimentation and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds

A noise wall is recommended for the proposed project. The preliminary design of an optimized concrete noise wall, recommends constructing a wall approximately 1245 feet long and with an exposed height of 13 feet starting at Station 10+43 (Y-10) Lowell Ridge Road and ends at Station 21+20(L Line).

This condition concerns previous sections of the project and does not pertain to Section C.

Bridge Maintenance and Structure Design

For all drainage structures recommended to be retained, it is further recommended that a detailed assessment of structural integrity be obtained from the Bridge Maintenance and Structures Design Unit.

An eight by eight feet double box culvert will be retained for this project. The culvert was reviewed in the field prior to the decision to retain and it was noted that it was not perched and did not have any scour or slope problems. A more thorough assessment by bridge maintenance is still needed.

Human Environment Unit-Archeology Section

Archaeological surveys are currently being scheduled for the widening of US 401 to include the bypass of Rolesville. The State Historic Preservation Office has reviewed the scope of work proposed to complete the archeological surveys and agrees that the outlined scope of work will satisfy Section 106 coordination.

Archeological surveys have been completed for the entirety of the project and Section 106 has been satisfied.

Natural Environmental Unit

Because of the presence of potentially suitable habitat and the presence of extant populations in the two counties for Michaux's sumac, surveys should be conducted along the widening portion every two years. This is a standard protocol and surveys will be conducted until permits are received for each section of the project

A survey for Michaux's sumac was conducted in September 2008. Michaux's sumac was not observed within the project footprint. As such, the biological conclusion of no effect is still valid. Updated surveys for Michaux's sumac were conducted in the C section on September 22, 2016. The biological conclusion remains No Effect.

Roadside Environmental Unit and Roadway Design

The National Registered Rogers-Whitaker-Haywood house is located along Section A. Construction of the proposed project will have no adverse effect on this property. This is contingent upon no right of way acquisition from the property by NCDOT, landscape protection measures along the property's right of way, and reasonable access to SR 2049 after construction of the proposed project.

No right of way will be acquired from the Rogers-Whitaker-Haywood House along Section A. Additional commitments regarding the Rogers-Whitaker-Haywood House will be addressed during construction.

The National Register-eligible Timberlake Historic District and the Perry Fuller House are located in Section D. There will be no adverse effect to these properties. The effect is contingent upon the commitment that NCDOT will not obtain any right of way from the property, landscape protection measures will be provide along the right of way and reasonable access will be provided after construction.

No right of way will be acquired from the Timberlake Historic District. Additional commitments regarding this property will be address during final design.

Commitments Developed Through Permitting (Previous Sections)

Natural Environment Unit and Division 5 and Roadside Environmental Unit

NCDOT shall implement the nine conservation measures listed in NCDOT's December 5, 2005 Biological Assessment for this project, and shall reinitiate consultation with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act for Sections C and D when they are scheduled for construction. These conditions are attached.

Section 7 issues with USFWS for the C section have been resolved. Updated surveys for dwarf wedgemussel and tar spiny mussel were conducted on September 2014 and November 2016. Findings from these surveys result in no change in the current concurrence from the USFWS.

Natural Environment Unit

NCDOT shall provide compensatory mitigation for the unavoidable impacts to wetlands and streams, associated with Sections C and D of TIP R-2814, no later than 5 years in advance of the anticipated construction let date for each section. Specific mitigation information for each of these sections will be provided when NCDOT submits their request to modify the existing permit to allow construction of these later phases once final design has been completed, and the District Commander has made a

determination that minimization of impacts has been achieved to the maximum extent practicable.

Unavoidable impacts to wetlands and streams for Section C will be mitigated for by the use of the North Carolina Division of Mitigation Services detailed in the acceptance letter dated November 18, 2016.

Natural Environment Unit, Division 5, Hydraulics Unit and Roadway Design Unit

When final design plans are completed of R-2814 Sections C & D, a modification to the 401 Water Quality Certification and the Neuse River Riparian Buffer Certification shall be submitted with five copies and fees to the NC Division of Water Quality. 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 waters, streams, surface waters, or buffers located in R-2814 Section C and D shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification and the Neuse River Riparian Buffer Authorization from the NC Division of Water Quality.

Final design has been submitted and approved for the C Section of the project.

Commitments Developed Through Permitting (Section C)

In areas draining to HQW waters, 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 should 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 is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank. [15A NCAC 028.0224 and 0225]

When final design plans are completed for R-2814 Section D, a modification to the Section 404 Individual Permit, Section 401 Water Quality Certification and the Riparian Buffer Certification shall be submitted with 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 R-2814 Section D shall begin until after the permittee applies for, and receives a written modification of the Section 404 Individual Permit, Section 401 Water Quality Certification and the Riparian Buffer Authorization from the NC Division of Water Resources.



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

December 06, 2016

Regulatory Division/1200A

Action ID: SAW-2008-01316

Phil S. Harris, III, P.E., CPM
North Carolina Department of Transportation (NCDOT)
Project Development and Environmental Analysis Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Harris:

Reference the Department of the Army permit issued to the North Carolina Department of Transportation (NCDOT) on July 14, 2009, to authorize the discharge of fill material into waters of the United States for construction of Section A - D of the US 401 improvements (TIP No. R-2814), from SR 2044 (Ligon Mill Road) in Wake County to SR 1700 (Fox Park Road) in Franklin County, North Carolina. In addition, reference the subsequent modifications dated June 25, 2010, December 20, 2010, and November 4, 2014. Authorization for Section C was based on preliminary design. Also, please reference your October 12, 2016 letter, requesting modification of the permit to reflect the final design for Section C of this project, and the subsequent design revision submitted by e-mail on November 7, 2016. The final design results in the following changes to impacts:

- i. an additional 1,008 linear feet of permanent stream impacts;
- ii. an additional 271 linear feet of temporary stream impacts;
- iii. an additional 0.42 acre of wetland impacts; and
- iv. an additional 0.28 acre of pond impacts.

The increased impacts are necessary because of several factors related to the addition of two stream impacts that were not included in the preliminary design impact, underestimation of slope fill impacts, and not accounting for stream impacts due to bank stabilization, or wetland impacts due to utility line relocation, in the preliminary design.

We have asked for public comment on this modification by public notice dated October 27, 2016. In addition, we have reviewed the requested modification and have determined that it is appropriate and reasonable. Therefore, the permit is hereby modified to include the changes listed and shown in the modified drawings in the November 7, 2016 revision submittal. This Section C modification includes a net increase in permanent wetland impacts of 0.42 acres, in permanent stream impacts of 1,008 linear feet, in temporary stream impacts of 271 linear feet,

and in open water of 0.28 acre. Therefore, the current permit modification request for Section C includes permanent impacts to 1,686 linear feet of stream, 2.37 acres of wetlands, and 0.28 acre of ponds, and temporary impacts to 271 linear feet of stream, and 0.24 acre of wetlands.

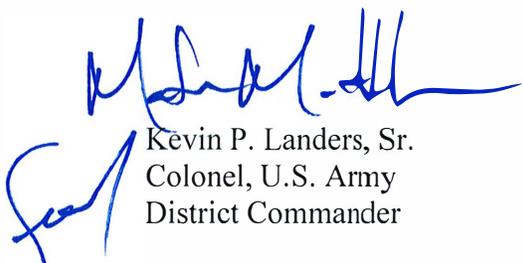
Since the project will have permanent impacts to a total of 2.37 acres of wetlands and 1,676 linear feet of streams with more than minimal aquatic function, additional compensatory mitigation is required; therefore, Special Condition s) is added as follows:

Special Condition s) - 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.

All other conditions of the permit, including the permit expiration date of December 31, 2020, and the other mitigation requirements, remain applicable.

Should you have any questions, please call Eric Alsmeyer at (919) 554-4884, extension 23.

Sincerely,



Kevin P. Landers, Sr.
Colonel, U.S. Army
District Commander

Enclosures

Copies Furnished:

Ms. Amy Chapman
Division of Water Quality
North Carolina Department of
Environment and Natural Resources
1617 Mail Service Center
Raleigh, NC 27699

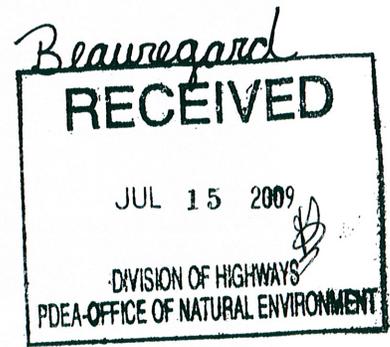
Mr. Clarence Coleman
Federal Highway Administration
310 New Bern Ave., Rm 410
Raleigh, North Carolina 27601-1442

Mr. Jason Dilday
North Carolina Department of Transportation
Division of Highways
1598 Mail Service Center
Raleigh, North Carolina 27699-1598



REPLY TO
ATTENTION OF:

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



July 14, 2009

Regulatory Division

Action ID SAW-2008-01316; TIP No. R-2814 (US 401 Widening and Rolesville Bypass)

Mr. Gregory Thorpe, PhD
Environmental Manager Director
Project Development and Environmental Analysis Branch
N.C. Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Thorpe:

Enclosed is a Department of the Army permit to authorize placement of fill material impacting 5,036 linear feet of streams, 10.08 acres of ponds, and 7.68 acres of wetlands (including isolated wetlands), for construction of the US 401 Widening and Rolesville Bypass (TIP R-2814), crossing Harris, Cedar Fork, Perry, Brandy, Crooked and Cedar Creeks, Wolfpen Branch, the Little River, and unnamed tributaries. An 18.5 mile corridor along and to the east of existing US 401, from SR 2044 (Ligon Mill Road) southeast of Rolesville, in Wake County, to SR 1700 (Fox Park Road) southeast of Louisburg, in Franklin County, North Carolina.

Any deviation in the authorized work will likely require modification of this permit. If a 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.

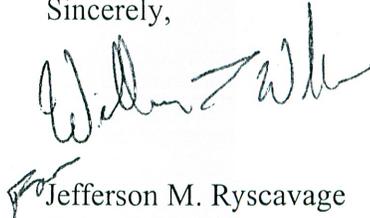
Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:

- a. You must complete construction before December 31, 2014.
- b. 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 must notify this office in advance as to when you intend to commence and complete work.

You should address all questions regarding this authorization to Eric Alsmeyer of my Raleigh Regulatory Field Office regulatory staff at (919) 554-4844, extension 23.

Sincerely,



Jefferson M. Ryscavage
Colonel, U.S. Army
District Commander

Enclosures

Copy Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
ATTN: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, Maryland 20910-3282

Copies Furnished (with special conditions and plans):

Mr. Ronald J. Mikulak, Chief
Wetlands Regulatory Section
61 Forsyth Street
Atlanta, Georgia 30303

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

Mr. Ron Sechler
National Marine Fisheries Service
Pivers Island
Beaufort, North Carolina 28516

Mr. Doug Huggett
Division of Coastal Management
N.C. Department of Environment
and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557

Mr. David Rackley
National Marine Fisheries Service
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

DEPARTMENT OF THE ARMY PERMIT

Permittee: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RECEIVED

JUL 09 2009

REGULATORY
WILM.FLD.OFC.

Permit No: 200801316

Issuing Office: USAED, WILMINGTON

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 the office acting under the authority of the commanding officer.

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

Project Description: Place fill material impacting 5,036 linear feet of streams, 10.08 acres of ponds, and 7.68 acres of wetlands (including isolated wetlands), for construction of the US 401 Widening and Rolesville Bypass (TIP R-2814), crossing Harris, Cedar Fork, Perry, Brandy, Crooked and Cedar Creeks, Wolfpen Branch, the Little River, and unnamed tributaries.

Project Location: An 18.5 mile corridor along and to the east of existing US 401, from SR 2044 (Ligon Mill Road) southeast of Rolesville, in Wake County, to SR 1700 (Fox Park Road) southeast of Louisburg, in Franklin County, North Carolina.

Permit Conditions:

General Conditions:

1. The time Limit for completing the work authorized ends on December 31, 2014 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 Conditions 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 eligible for listing in the National Register of Historic Places.

4. If you sell the property associate 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).

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 33CFR 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 measure 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.

E. L. Lepek for Gregory J. Thorpe, PhD June 30, 2009
(PERMITTEE) NORTH CAROLINA DEPARTMENT OF (DATE)
TRANSPORTATION

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

[Signature] 7/14/09
(DISTRICT Commander) JEFFERSON M. RYSCAVAGE, (DATE)
COLONEL, U. S. ARMY
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)

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

Work Limits

- a) All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
- b) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- c) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.

Related Laws

- d) All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-5083, Ext. 526 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

Project Maintenance

- e) The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- f) Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.
- g) The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

- h) The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- i) The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.
- j)

Enforcement

- k) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.

Mitigation

- l) NCDOT shall provide compensatory mitigation for the unavoidable impacts to 0.75 acre of wooded wetlands, and 3.64 acres of non-wooded wetlands, associated with Sections A and B of TIP R-2814, by debiting 2.62 acres of riverine and 1.77 acres of non-riverine wetland restoration, and 3.75 acres of riverine wetland preservation, from the Jeffreys Warehouse Mitigation Site (aka JALO), described in the September 17, 2004 "Jeffreys Warehouse Conceptual Mitigation Plan, Wayne County, North Carolina".
- m) NCDOT shall provide compensatory mitigation for the unavoidable impacts to 3,141 linear feet of warm-water streams, associated with Sections A and B of TIP R-2814, as follows:
 - 1. By debiting 3,141 linear feet of stream restoration from the Marks Creek, Phase II, Mitigation Site (AID 2008-02072), described in the September 2001 "Stream and Wetland Mitigation Plan, Marks Creek, Phase II, Wake County, North Carolina".
 - 2. Compensatory mitigation shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated September 20, 2005 from William D. Gilmore, EEP Director; pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 3,141 linear feet of warm-water restoration equivalent stream mitigation, in the Upper Neuse River basin (Hydrologic Cataloging Unit 03020201) by one year of the date of this permit. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

- n) NCDOT shall provide compensatory mitigation for the unavoidable impacts to wetlands and streams, associated with Sections C and D of TIP R-2814, no later than 5 years in advance of the anticipated construction let date for each section. Specific mitigation information for each of these sections will be provided when NCDOT submits their request to modify the existing permit to allow construction of these later phases once final design has been completed, and the District Commander has made a determination that minimization of impacts has been achieved to the maximum extent practicable.

Threatened and Endangered Species

- o) NCDOT shall implement the ^{nine as 8/7/2009} eight conservation measures listed in NCDOT's December 5, 2005 Biological Assessment for this project, and shall reinitiate consultation with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act for Sections C and D when they are scheduled for construction.

Historic Properties

- o) NCDOT shall comply with its commitments regarding the following historic properties: Timberlake Historic District, Perry-Fuller House, Jeffreys-Ellington Farm, Rogers-Whitaker-Haywood House, and Cascine Plantation. Specifically, NCDOT shall not acquire any right-of-way or easements from these historic properties, and shall use landscaping measures along the properties' right-of-ways (with the exception of the Cascine Plantation), shall provide reasonable access to the property owners.

Culverts

- p) All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent headcutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream unless burial would be impractical and the Corps of Engineers has waived this requirement. For culverts 48 inches in diameter or smaller, the bottom of the pipe must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to, upstream or downstream of the structures. In order to allow for the continued movement of bed load and aquatic organisms, existing stream channel widths and depths will be maintained at the inlet and outlet ends of culverts. Riprap armoring of streams at culvert inlets and outlets shall be minimized above the ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted, woody plants.

SPECIAL CONDITIONS - Action ID. 2008-01316; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION/TIP R-2814)

Preconstruction Meeting

- q) The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office, Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall provide the USACE, Raleigh Regulatory Field Office, with a copy of the final 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 when the USACE and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

Borrow And Waste

- r) To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands. All jurisdictional wetland lines on borrow and waste sites shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with Condition b) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the Condition b). All information will be available to the USACE upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

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

Permittee: NCDOT
Project Name: TIP R-2814C; US 401 Widening

Action ID: SAW-2013-00668
County: Franklin

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

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

Permitted Impacts and Compensatory Mitigation Requirements:

Permitted Impacts Requiring Mitigation* **8-digit HUC and Basin:** 03020101, Tar-Pamlico River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1021				0.33		

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

Compensatory Mitigation Requirements: **8-digit HUC and Basin:** 03020101, Tar-Pamlico River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1710				0.59		

Mitigation Site Debited: NCDMS

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

Section to be completed by the Mitigation Sponsor

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

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

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

Conditions for Transfer of Compensatory Mitigation Credit:

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

Comments/Additional Conditions:

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

USACE Project Manager: Eric Alsmeyer
USACE Field Office: Raleigh Regulatory Field Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
Email: eric.c.alsmeyer@usace.army.mil

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ou=USA, cn=ALSMEYER.ERIC.C.1087624486
Date: 2016.12.05 11:40:50 -05'00'

USACE Project Manager Signature

**December 5, 2016
Date of Signature**

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

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

Permittee: NCDOT
Project Name: TIP R-2814C; US 401 Widening

Action ID: SAW-2013-00668
County: Wake

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

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

Permitted Impacts and Compensatory Mitigation Requirements:

Permitted Impacts Requiring Mitigation*

8-digit HUC and Basin: 03020201, Neuse River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
655				2.04		

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

Compensatory Mitigation Requirements:

8-digit HUC and Basin: 03020201, Neuse River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1,010				3.55		

Mitigation Site Debited: NCDMS

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

Section to be completed by the Mitigation Sponsor

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

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

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

Conditions for Transfer of Compensatory Mitigation Credit:

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- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

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

USACE Project Manager: Eric Alsmeyer
USACE Field Office: Raleigh Regulatory Field Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
Email: eric.c.alsmeyer@usace.army.mil



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ou=USA, cn=ALSMEYER, ERIC.C.1087624486
Date: 2016.12.05 11:47:24 -05'00'

USACE Project Manager Signature

**December 5, 2016
Date of Signature**

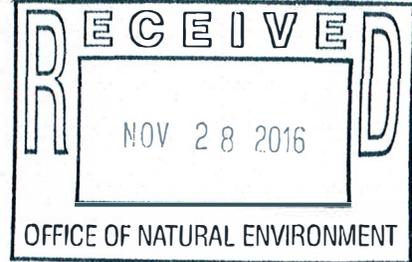
Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



Environmental Quality

PAT MCCRORY
Governor
DONALD R. VAN DER VAART
Secretary
JAY ZIMMERMAN
DWR Director

November 18, 2016



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: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, NEUSE & TAR-PAMLICO BUFFER RULES, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS for Proposed improvements to US 401 in Wake & Franklin Counties, Federal Aid Project No. STP-401 (249), State Project No. 81403001, TIP R-2814 NCDWR Project No. 20090104 ver. 5

Dear Mr. Harris:

Attached hereto is a modification of Certification No. 3790 issued to The North Carolina Department of Transportation (NCDOT) originally dated June 16, 2009. (Modifications issued May 26, 2010; November 29, 2010; and June 20, 2014.)

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

Sincerely,

S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

- Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
- Chris Murray, Division 5 Environmental Officer
- Chris Rivenbark, NC Department of Transportation
- Beth Harmon, Division of Mitigation Services
- File Copy



**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act,
NEUSE & TAR-PAMLICO BUFFER RULES, and ISOLATED WETLANDS PERMIT Pursuant to
IWGP100000 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, 15A NCAC 2B.0233, 15A NCAC 2B.0259, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000. This certification authorizes the NCDOT to impact an additional 2.36 acres of jurisdictional wetlands, 1972 linear feet of jurisdictional streams and 233,082 square feet of protected riparian buffers in Wake & Franklin Counties for **R-2814 Section C**. The project shall be constructed pursuant to the modification dated received October 12, 2016 and additional information received November 14, 2016. The authorized impacts are as described below:

Section C Stream Impacts in the Neuse River Basin

Site	Permanent Impact to Intermittent Stream (linear ft)	Temporary Impact to Intermittent Stream (linear ft)	Permanent Impact to Perennial Stream (linear ft)	Temporary Impact to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
3	10	10	0	0	20	0
5 / 5A	0	0	259	70	329	259
6	0	0	108	33	141	108
8 / 8A	0	0	288	59	347	288
Total	10	10	655	162	837	655

Total Neuse Basin Stream Impact for Section C: 837 linear feet

Section C Stream Impacts in the Tar-Pamlico River Basin

Site	Permanent Impact to Intermittent Stream (linear ft)	Temporary Impact to Intermittent Stream (linear ft)	Permanent Impact to Perennial Stream (linear ft)	Temporary Impact to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
11 / 11A	0	0	145	12	160	0
12	0	0	212	31	243	212
13	0	0	247	21	268	247
13A	0	0	153	0	153	153
14	0	0	258	32	290	258
15	0	0	8	10	18	0
Total	0	0	1026	106	1135	870

Total Tar-Pamlico Basin Stream Impact for Section C: 1135 linear feet

Section C Wetland Impacts in the Neuse River Basin

Site	Permanent Fill (ac)	Temporary Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)	Wetland Impacts Requiring Mitigation (ac)
1	0.04	0	0	0.01	0.05	0.05
1A	0	0	0.03	0	0.03	0.03
2	0.04	0	0	0.01	0.05	0.05
3	0	0	0	0.01	0.01	0.01
4	0.37	0.09	0	0.10	0.56	0.47
5	0.42	0.06	0.02	0.07	0.57	0.51
5A	0.06	0.02	<0.01	0.07	0.16	0.14
6	0.04	0.03	0.01	0.03	0.11	0.08
7	0.04	0	0	0.03	0.07	0.07
8	0.19	0.01	0.04	0.10	0.34	0.33
8A	< 0.01	0	0.01	0.05	0.07	0.06
9	0.17	0	0	0	0.17	0.17
10	0.01	0	0	0.05	0.06	0.06
Total	1.390	0.21	0.12	0.54	2.25	2.04

Total Neuse Basin Wetland Impact for Section C: 2.25 acres.

Section C Wetland Impacts in the Tar-Pamlico River Basin

Site	Permanent Fill (ac)	Temporary Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)	Wetland Impacts Requiring Mitigation (ac)
11A	0.20	0	< 0.01	0.03	0.24	0.23
14	0.06	0.04	0	0.04	0.14	0.10
Total	0.26	0.04	0.01	0.07	0.38	0.33

Total Tar-Pamlico Basin Wetland Impact for Section C: 0.38 acres.

Section C Open Water (Ponds) Impacts in the Neuse River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
3	0.28	0	0.28
Total	0.28	0	0.28

Total Open Water Impact for Section C: 0.28 acres.

Section C Neuse Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	<i>minus</i> Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	<i>minus</i> Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	20346	289	20057	60171	12410	0	12410	18615
2	9087	4620	4467	13401	5422	2972	2450	3675
3	15170	12958	2212	6636	9506	7299	2207	3311
4	7518	2661	4857	N/A	3300	527	2773	N/A
5	2001	786	1215	N/A	876	0	876	N/A
6	17507	12827	4680	14040	9823	3693	6130	9195
Totals	71629	34141	37488	94248	41337	14491	26846	34796

Total Buffer Impact for Section C: 112966 square feet.

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

Section C Tar-Pamlico Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	<i>minus</i> Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	<i>minus</i> Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
7	9750	4090	5660	16980	8540	3432	5108	7662
8	11339	0	11339	34017	7396	0	7396	11094
9	18942	0	18942	56826	8927	0	8927	13390
9A	10615	0	10615	31845	6758	0	6758	10137
9B	1438	0	1438	N/A	2231	0	2231	N/A
9C	1181	0	1181	N/A	79	0	79	N/A
10	15391	2258	13133	39399	8982	1371	7611	11417
10A	0	0	0	N/A	1038	0	1038	N/A
11	3327	0	3327	N/A	4182	0	4182	N/A
Totals	71983	6348	65635	179067	48133	4803	43330	53700

Total Buffer Impact for Section C: 120116 square feet.

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

UTILITY IMPACTS:

Wetlands: 0.45 acres Mechanized Clearing

Neuse Buffers: 5825 sqft Zone 1; 5493 sqft Zone 2.

Tar-Pamlico Buffers: 6477 sqft Zone 1; 4883 sqft Zone 2.

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

This approval is only valid for the purpose and design that you submitted in your modified application dated received October 12, 2016 and additional information received November 14, 2016. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated June 19, 2009 (and modifications issued May 26, 2010; November 29, 2010; and June 20, 2014), still apply except where superceded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0233 and 15A NCAC 2B.0259. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. Compensatory mitigation for 655 linear feet of impact to Neuse Basin streams and 870 linear feet of impact to Tar-Pamlico Basin 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) and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated November 18, 2016 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.
2. Compensatory mitigation for impacts to 2.04 acres of Neuse Basin wetlands and 0.33 acres of Tar-Pamlico Basin 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), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated November 18, 2016 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.
3. Compensatory mitigation for impacts to 31416 square feet of protected Neuse riparian buffers in Zone 1 and 23197 square feet of protected Neuse riparian buffers in Zone 2 shall be required. Also, compensatory mitigation for impacts to 59689 square feet of protected Tar-Pamlico riparian buffers in Zone 1 and 35800 square feet of protected Tar-Pamlico riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS). Mitigation for unavoidable impacts to Neuse and Tar-Pamlico Riparian Buffers shall be provided in the respective river basins and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated November 18, 2016 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016.
4. When final design plans are completed for R-2814 Section D, a modification to the 401 Water Quality Certification and the Riparian Buffer Certification shall be submitted with 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 R-2814 Section shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification and the Riparian Buffer Authorization from the NC Division of Water Resources.

5. A copy of the final construction drawings shall be furnished to the NCDWR Central Office prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application and modifications. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Resources.
6. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species. [15A NCAC 2H.0506(b)(3)]
7. For impact sites in waters classified by the NC Environmental Management Commission as High Quality Waters (HQW) stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged. The HQW impact sites for this project are stream/wetland sites 1 through 10, (Riparian Buffer sites 1 through 6).
8. The permittee shall use *Design Standards in Sensitive Watersheds* (15A NCAC 4B.0124[a]-[e]) in areas draining to WS-II, HQW waters. However, due to the size of the project, the NCDOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
9. 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.
10. In areas draining to HQW waters, 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 is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank. [15A NCAC 02B.0224 and 0225]
11. 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)]
12. 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)]
13. 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)]
14. 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)]

15. 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)]
16. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. [15A NCAC 2B.0233 and 0259]
17. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. [15A NCAC 2B.0233 and 0259]
18. Pursuant to 15A NCAC 2B.0233(6) and 0259(6) sediment and erosion control devices shall not be placed in Zone 1 of any Neuse or Tar-Pamlico Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.
19. 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]
20. 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)]
21. 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)]
22. 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)]
23. 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)]
24. 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)]
25. 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)]
26. 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)]
27. 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)]
28. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
29. 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]

30. 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)]

31. 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)]

32. 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]

33. 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.

34. 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)]

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

36. Native riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0506(b)(2)]

37. 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)]

38. 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.

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

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

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

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

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

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

Mr. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 18th day of November 2016

DIVISION OF WATER RESOURCES



S. Jay Zimmerman, Director



PAT MCCRORY
Governor
DONALD R. VAN DER VAART
Secretary
JAY ZIMMERMAN
DWR Director

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

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

Signature _____ Registration No. _____ Date _____



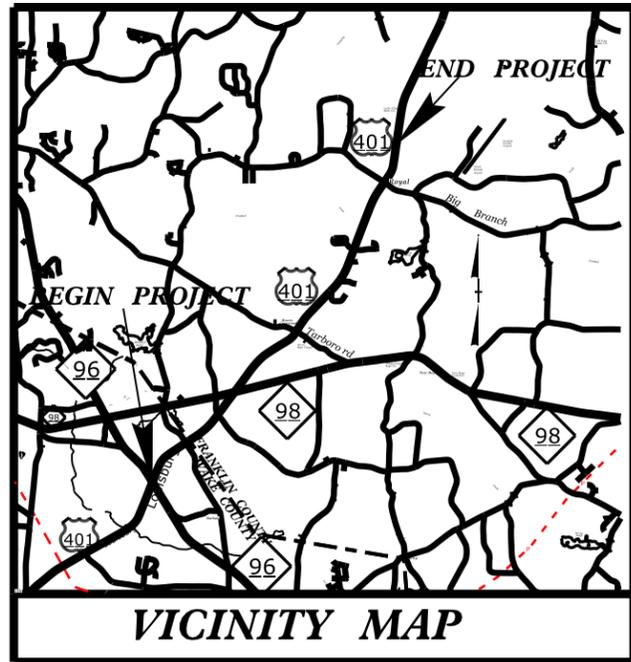
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 61

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2814C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34506.1.4	STP-401(249)	PE	
34506.2.FR7	STP-401(249)	R/W	
34506.2.FRU7	STP-401(249)	UTILITIES	

TIP PROJECT: R-2814C



WAKE/FRANKLIN COUNTY

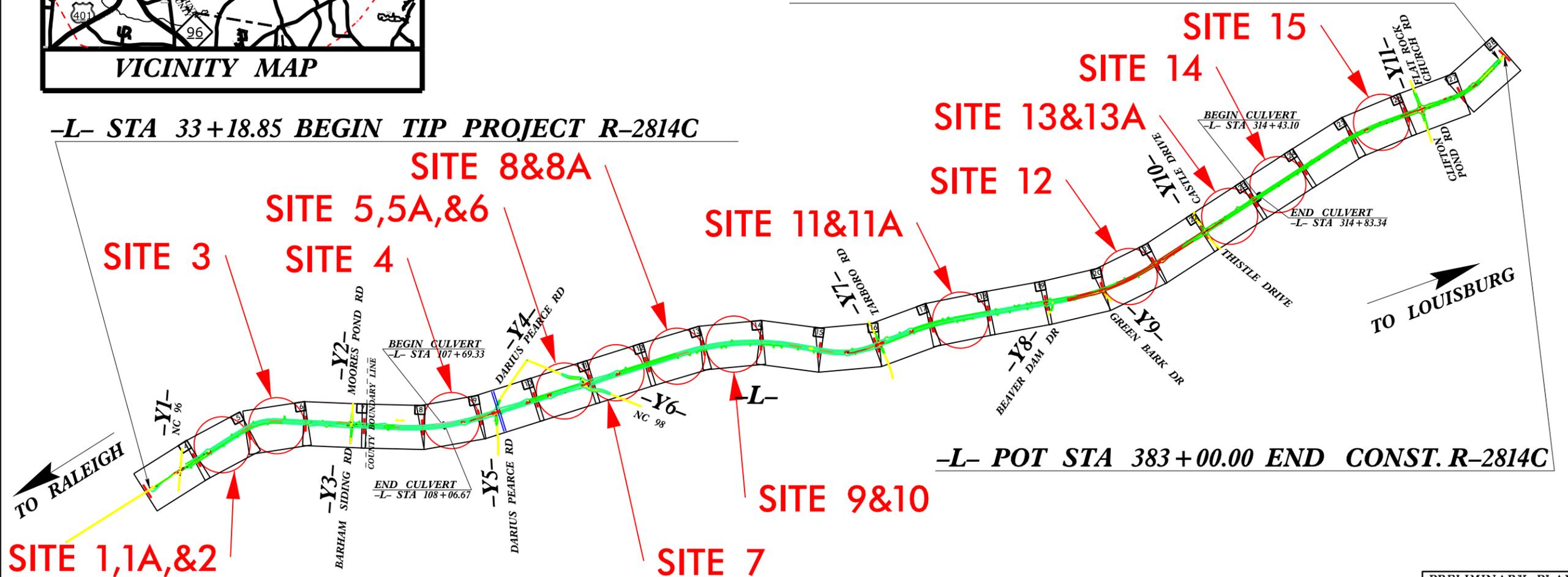
LOCATION: US 401 FROM NC 96 TO NORTH OF SR 1103 (FLAT ROCK CHURCH RD/CLIFTON POND RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB AND GUTTER, CULVERTS, AND SIGNALS

WETLAND AND STREAM IMPACTS

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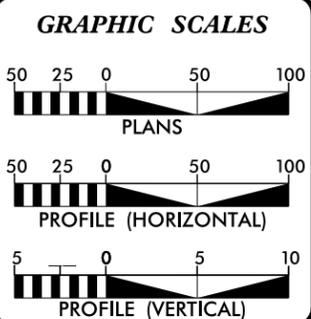
-L- STA 33+18.85 BEGIN TIP PROJECT R-2814C



THIS IS A FULL AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS POINTS SHOWN ON THE PLANS.
THIS PROJECT IS NOT WITHIN THE LIMITS OF MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2016 =	10,892
ADT 2036 =	15,848
K =	10 %
D =	65 %
T =	6 % *
V =	60 MPH
* TTST =	2% DUAL = 4%
FUNC CLASS =	MAJOR COLLECTOR
STATEWIDE TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-2814C	= 6.580 MILES
LENGTH STRUCTURES TIP PROJECT R-2814C	= 0.015 MILES
TOTAL LENGTH OF TIP PROJECT R-2814C	= 6.595 MILES

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

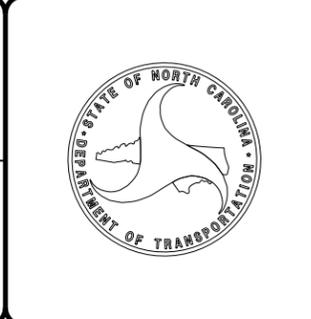
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	JANUARY 28, 2015
LETTING DATE:	PY
	KEVIN E. MOORE, PE PROJECT ENGINEER
	NATHAN N. ADIMA, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

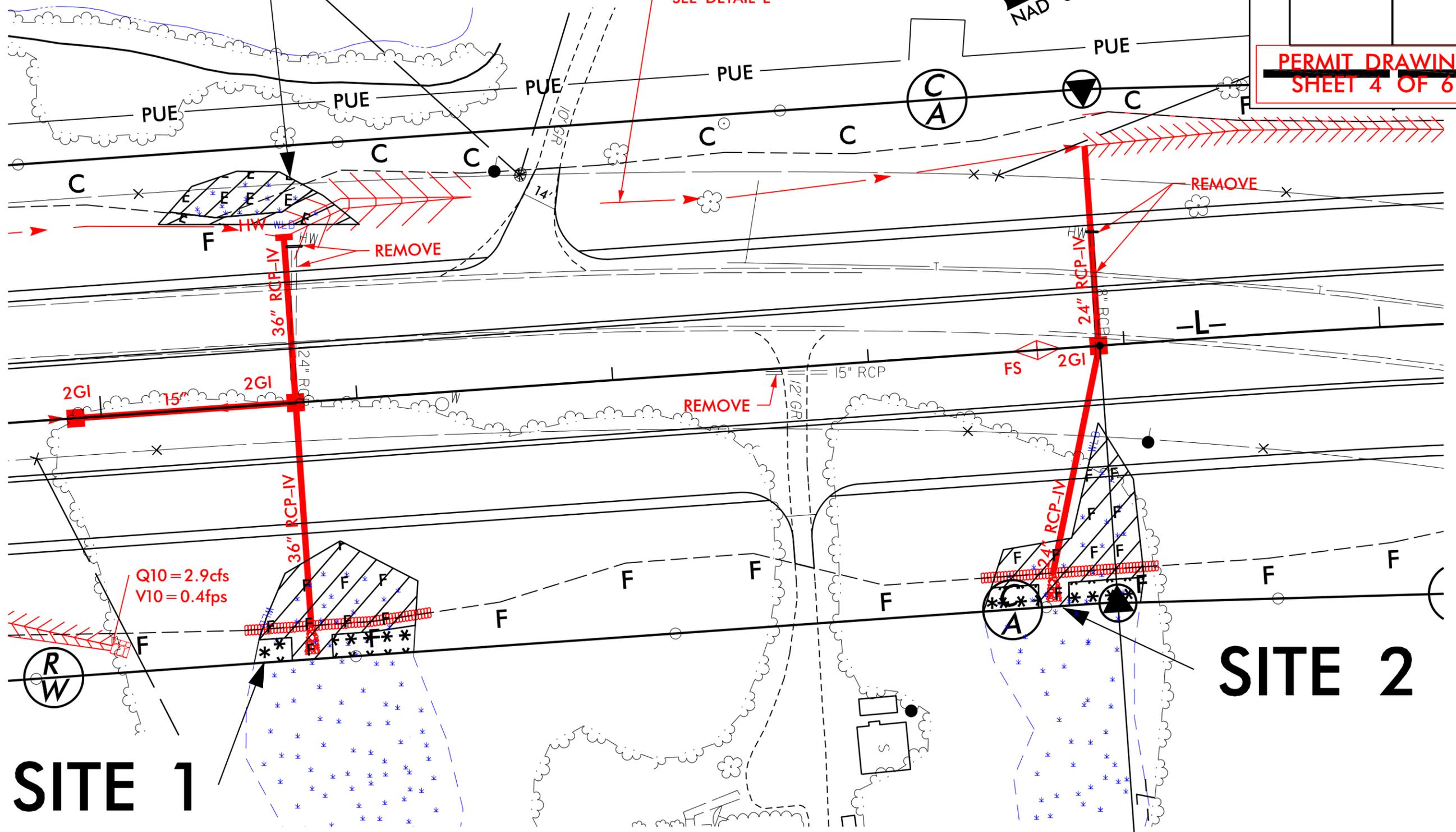
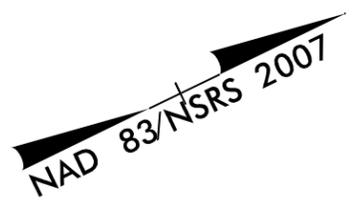


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PROJECT REFERENCE NO. R-2814C	SHEET NO. 5A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 4 OF 61

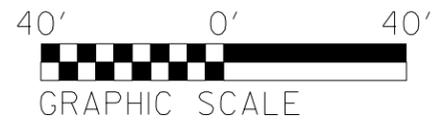
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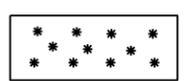
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SITE 1

SITE 2



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES EXCAVATION IN WETLAND

REVISIONS

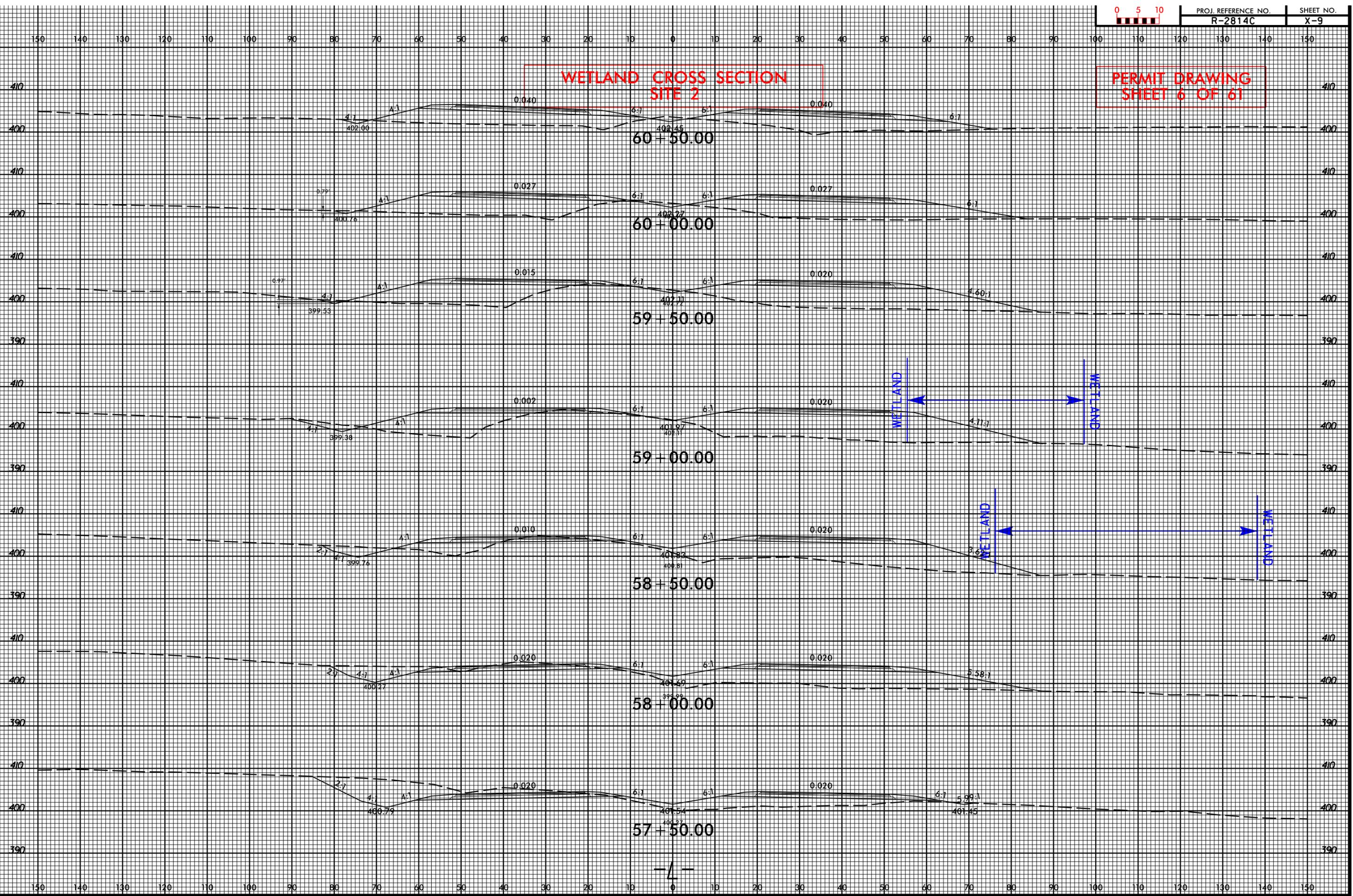
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WETLAND CROSS SECTION SITE 2

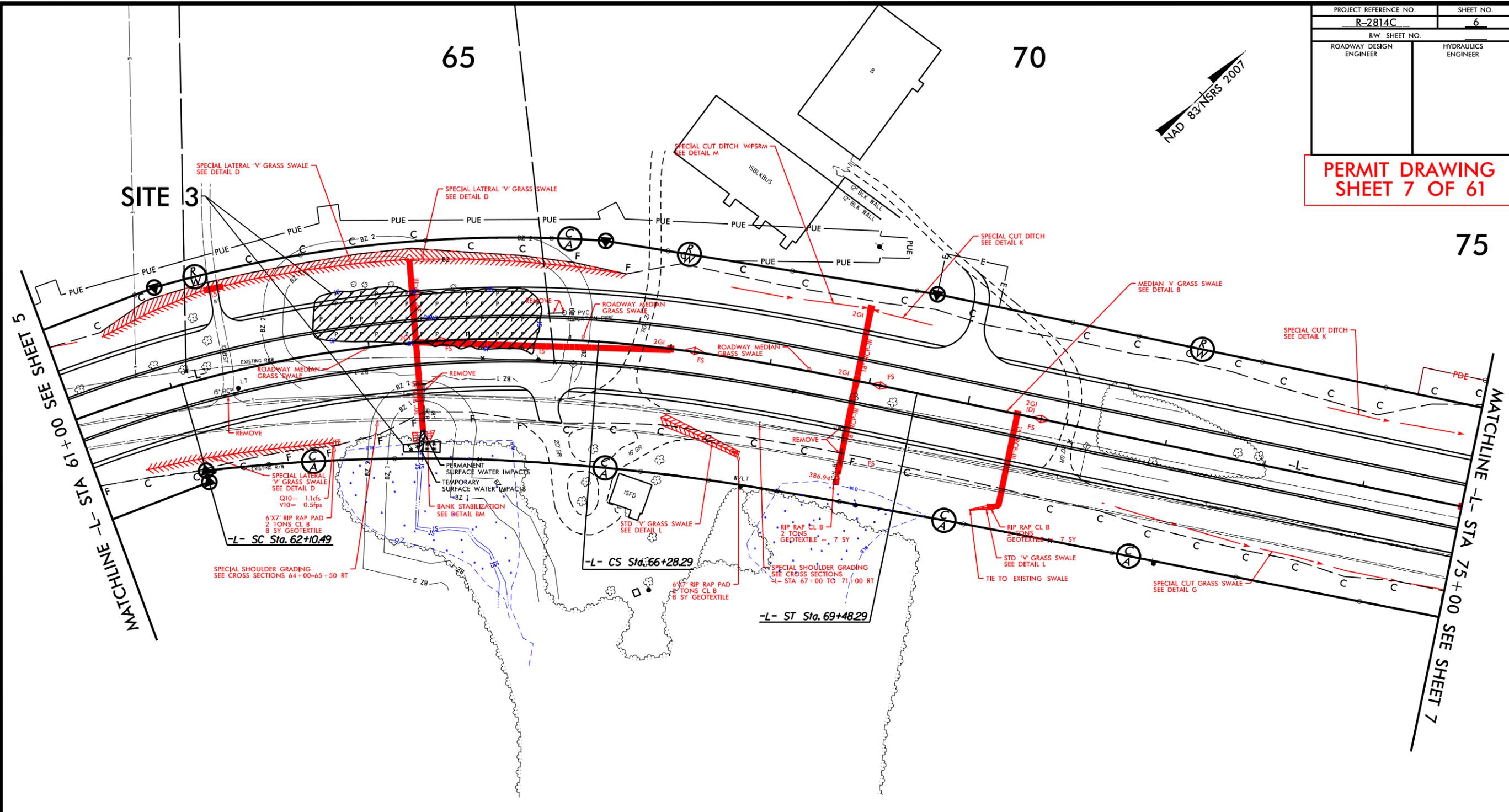
PERMIT DRAWING SHEET 6 OF 61



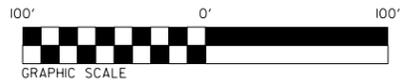
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Environmental
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 7 OF 61**



REVISIONS
 RIGHT OF WAY REVISION:
 REVISION TO ROW CHORD AND ADJUSTED OFFSET LABEL ON PARCEL 12. BDK 02-12-2015.
 TIED PUE TO ROW CHORD AND ADJUSTED OFFSET LABEL ON PARCEL 12. BDK 02-12-2015.

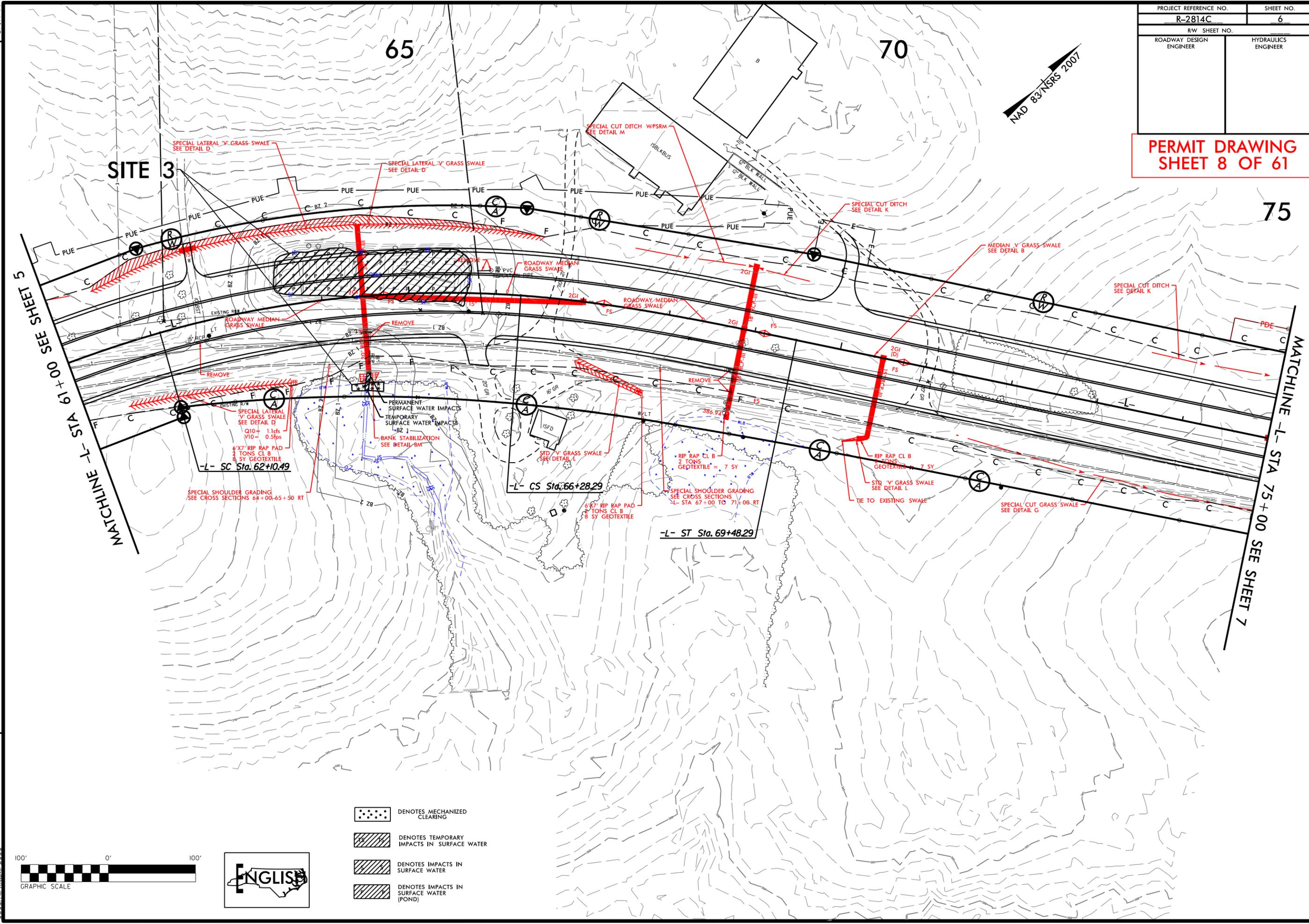


- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER (POND)

5/1/2015
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

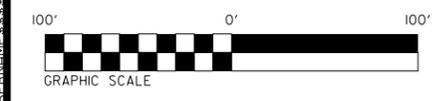
**PERMIT DRAWING
SHEET 8 OF 61**



8/17/95

RIGHT OF WAY REVISION:
 REVERSE CHORD TO A CHORD ON PARCEL 12, BDK 02-12-2015.
 TIED TO ROW CHORD AND ADJUSTED OFFSET LABEL ON PARCEL 12, BDK 02-12-2015.

REVISIONS



-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER (POND)

MATCHLINE -L- STA 75+00 SEE SHEET 7

MATCHLINE -L- STA 61+00 SEE SHEET 5

PERMIT DRAWING
SHEET 9 OF 61

SPECIAL LATERAL 'V' GRASS SWALE
SEE DETAIL D

SITE 3

SPECIAL LATERAL 'V' GRASS SWALE
SEE DETAIL D

ROADWAY MEDIAN GRASS SWALE

ROADWAY MEDIAN GRASS SWALE

SPECIAL LATERAL 'V' GRASS SWALE
SEE DETAIL D

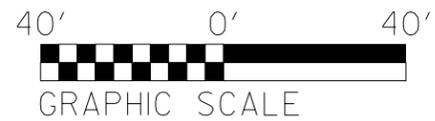
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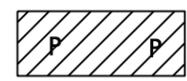
PERMANENT SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

BANK STABILIZATION
SEE DETAIL BM



DENOTES MECHANIZED CLEARING



DENOTES IMPACTS IN SURFACE WATER (POND)



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN SURFACE WATER

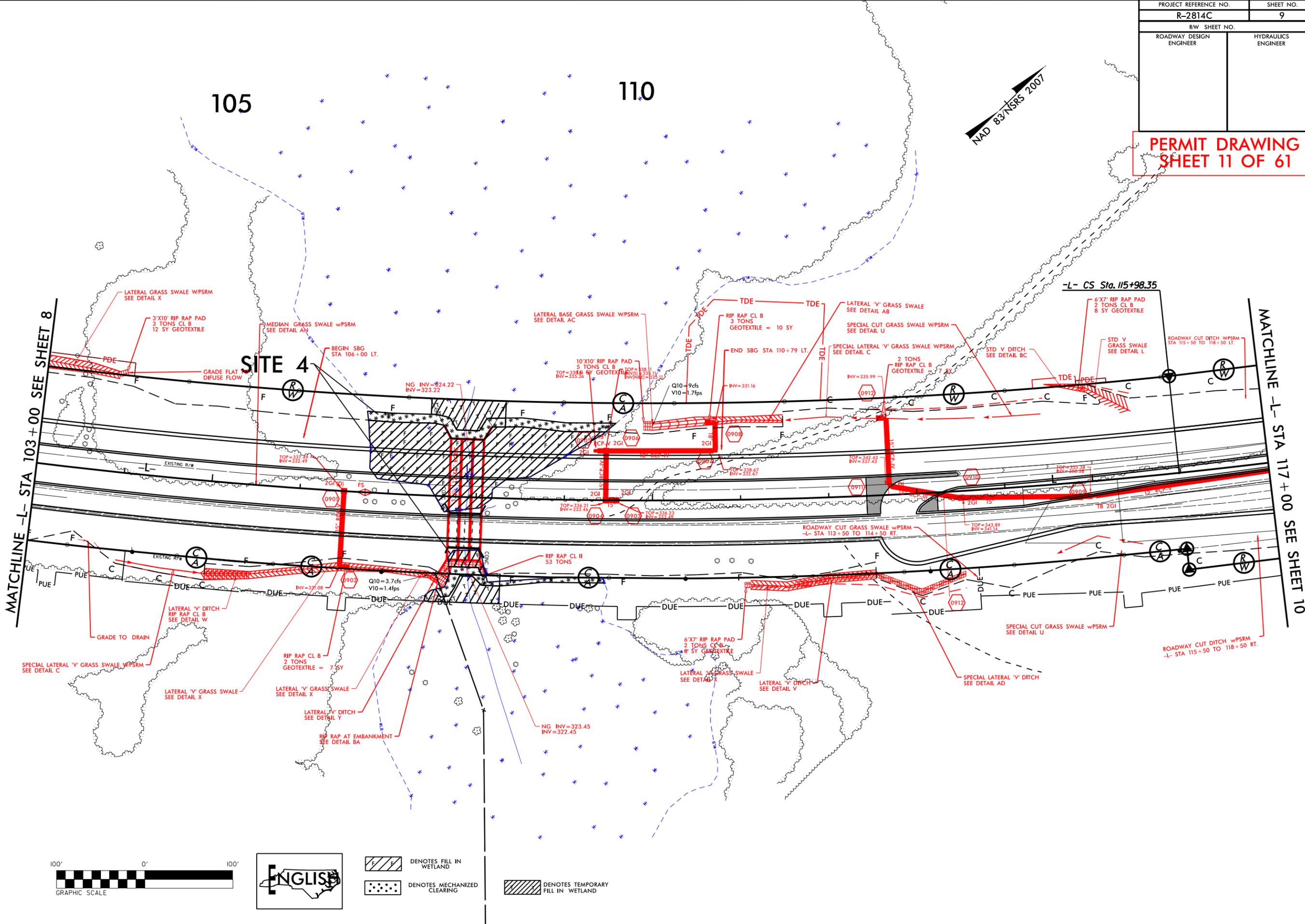
REVISIONS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

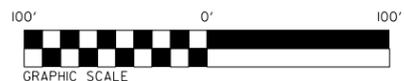
**PERMIT DRAWING
SHEET 11 OF 61**



REVISIONS

MATCHLINE -L- STA 103+00 SEE SHEET 8

MATCHLINE -L- STA 117+00 SEE SHEET 10



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY FILL IN WETLAND

10/2/2016
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 9A
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

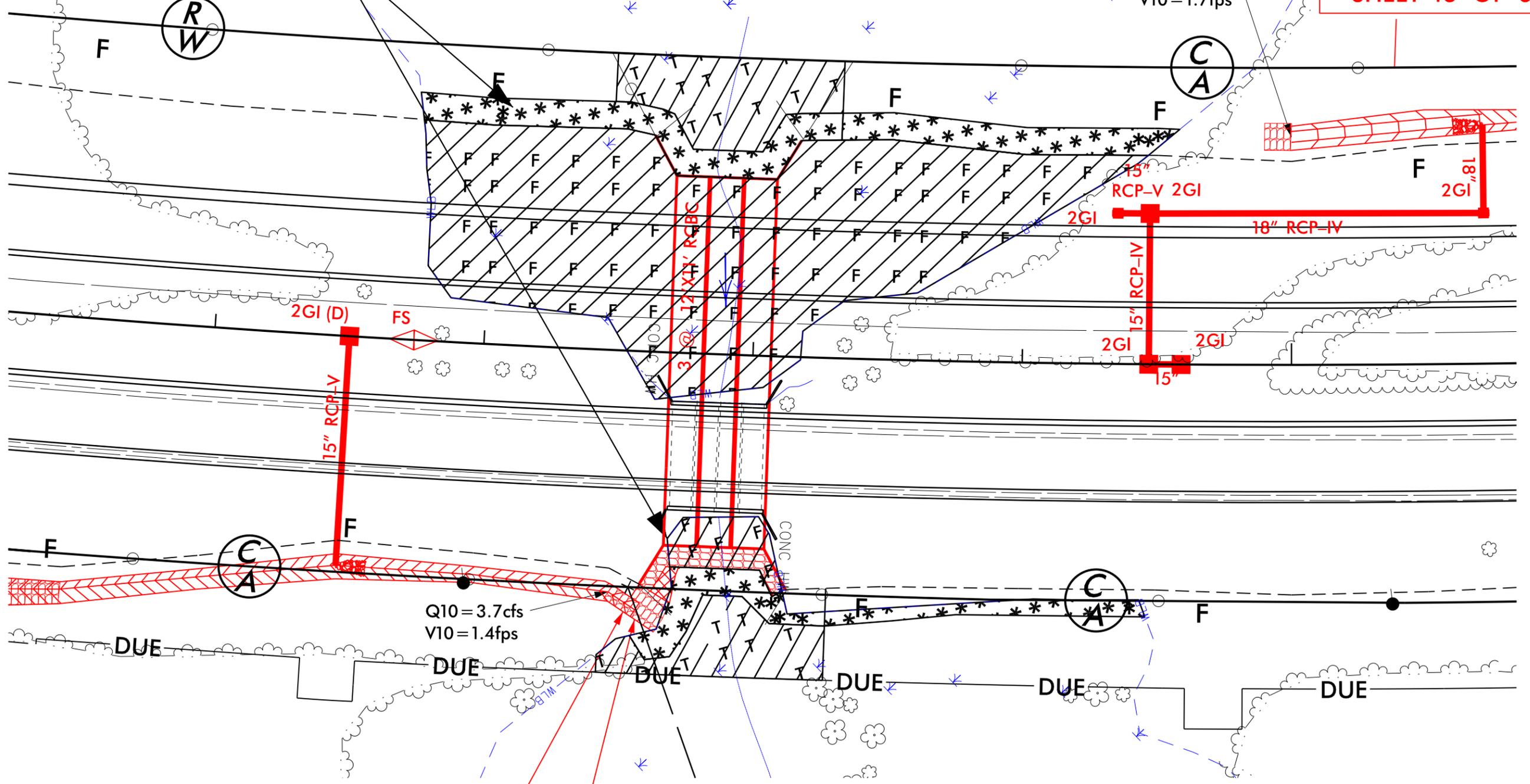
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AT TO
OW

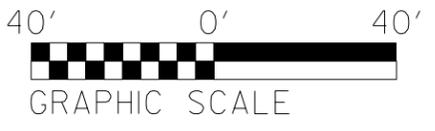


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**PERMIT DRAWING
SHEET 13 OF 61**



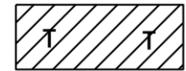
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DENOTES MECHANIZED CLEARING



DENOTES FILL IN WETLAND



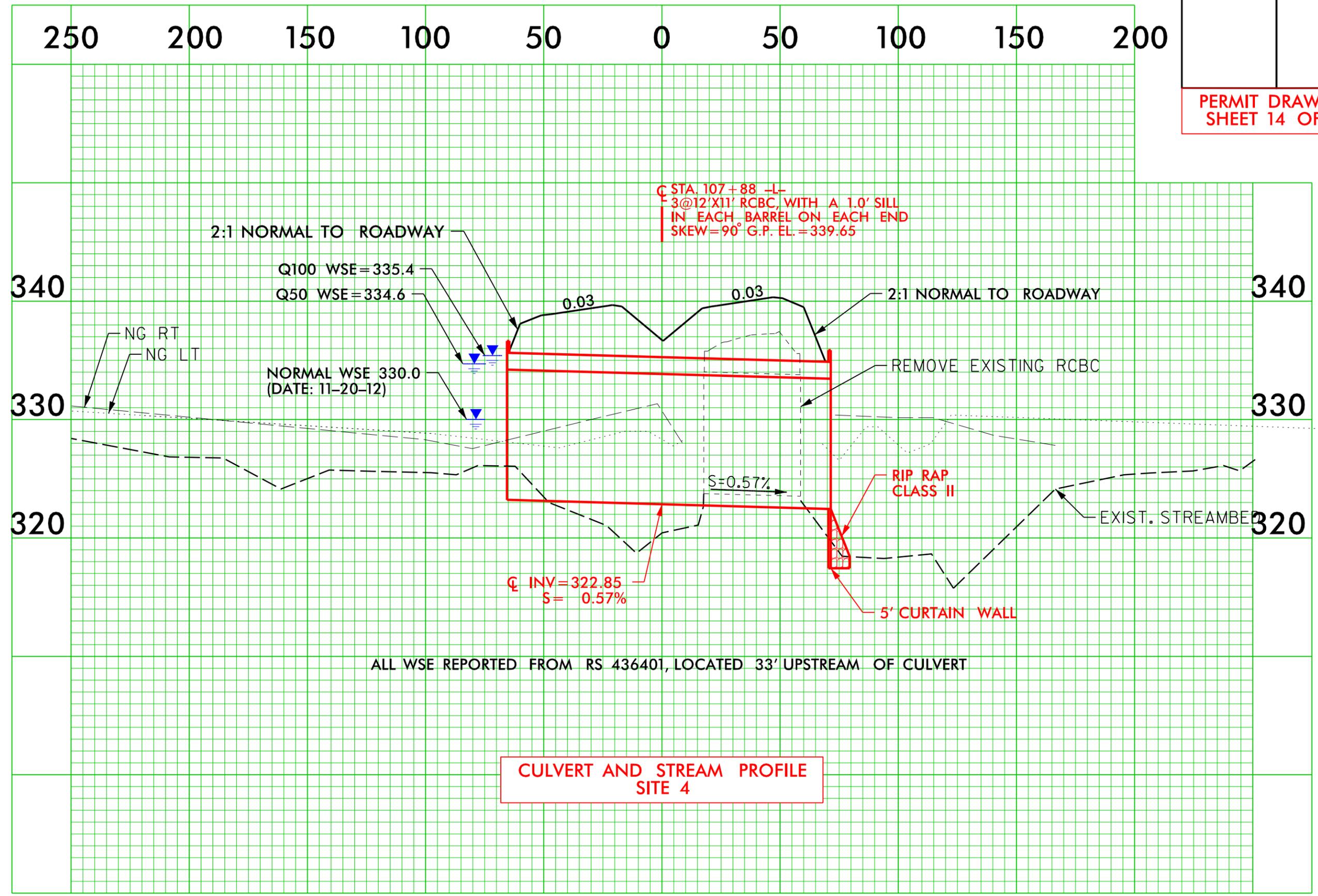
DENOTES TEMPORARY FILL IN WETLAND

REVISIONS

10/6/2016
mkelly
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 14 OF 61**



**C STA. 107+88 -L-
3@12'X11' RCBC, WITH A 1.0' SILL
IN EACH BARREL ON EACH END
SKEW=90° G.P. EL.=339.65**

2:1 NORMAL TO ROADWAY

Q100 WSE=335.4

Q50 WSE=334.6

NORMAL WSE 330.0
(DATE: 11-20-12)

2:1 NORMAL TO ROADWAY

REMOVE EXISTING RCBC

**RIP RAP
CLASS II**

5' CURTAIN WALL

S=0.57%

**Q INV=322.85
S= 0.57%**

ALL WSE REPORTED FROM RS 436401, LOCATED 33' UPSTREAM OF CULVERT

**CULVERT AND STREAM PROFILE
SITE 4**

REVISIONS

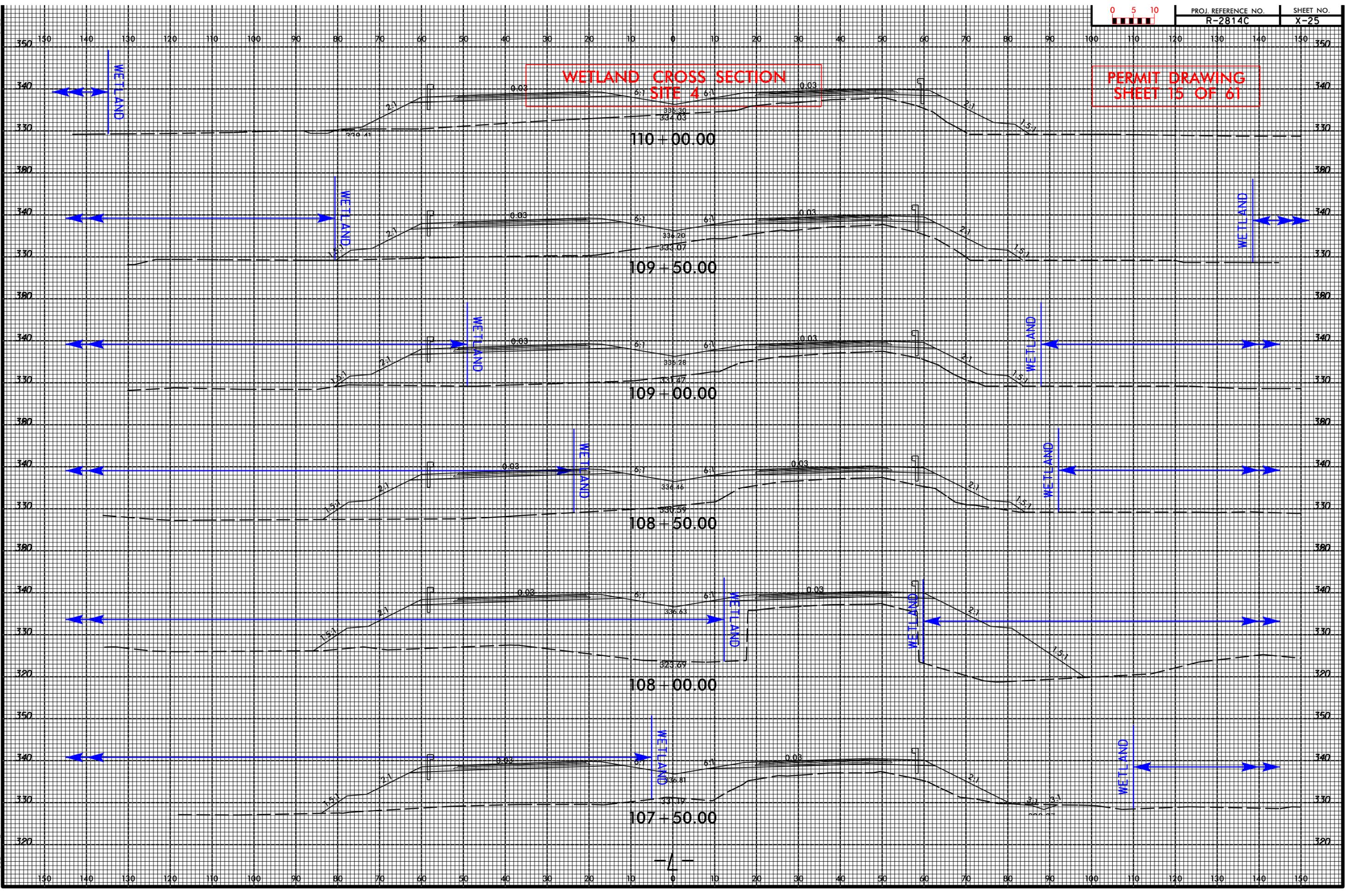
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8/17/99

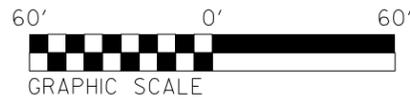


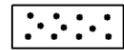
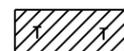
**WETLAND CROSS SECTION
SITE 4**

**PERMIT DRAWING
SHEET 15 OF 61**



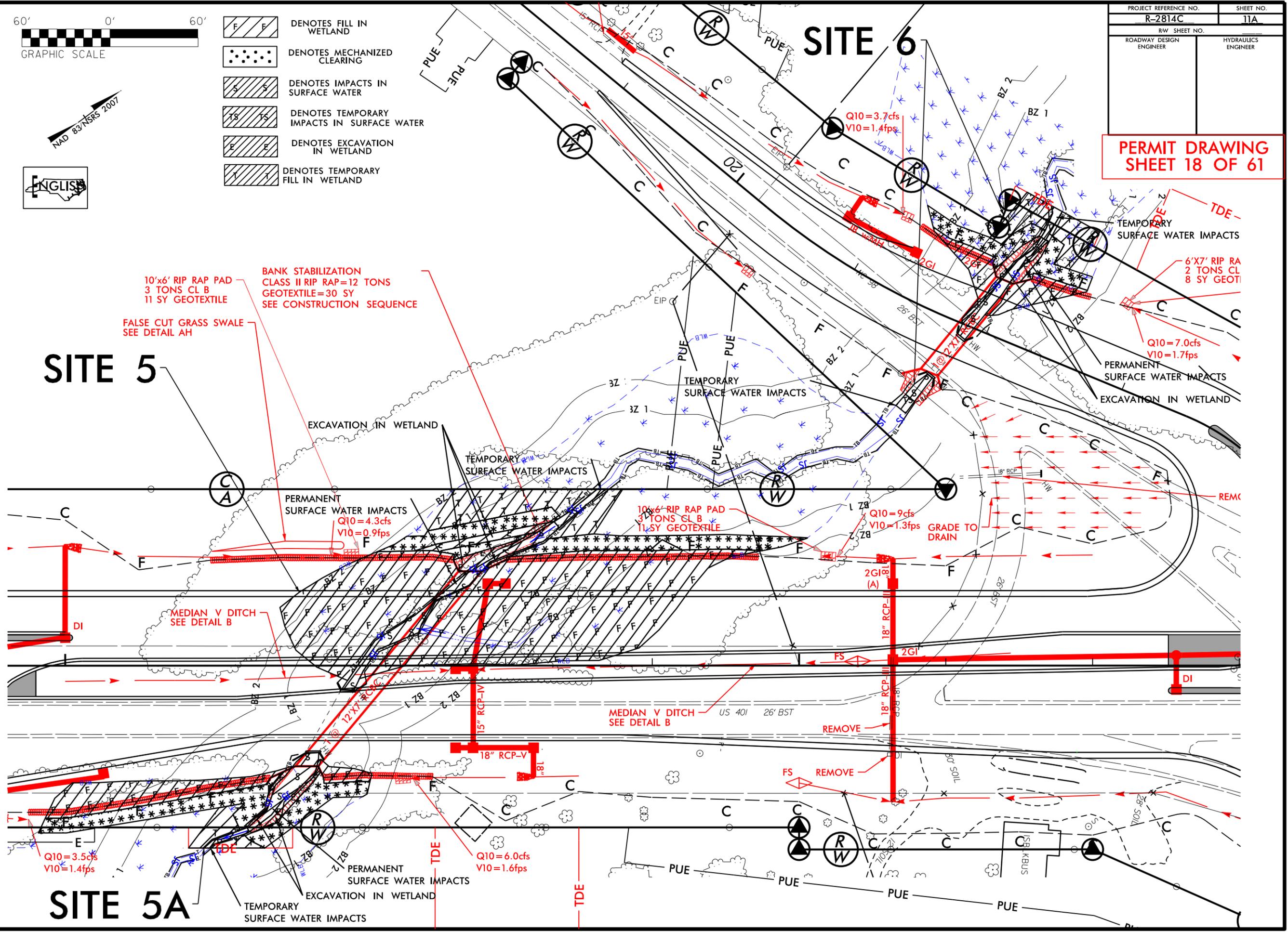
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-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO. R-2814C	SHEET NO. 11A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 18 OF 61**

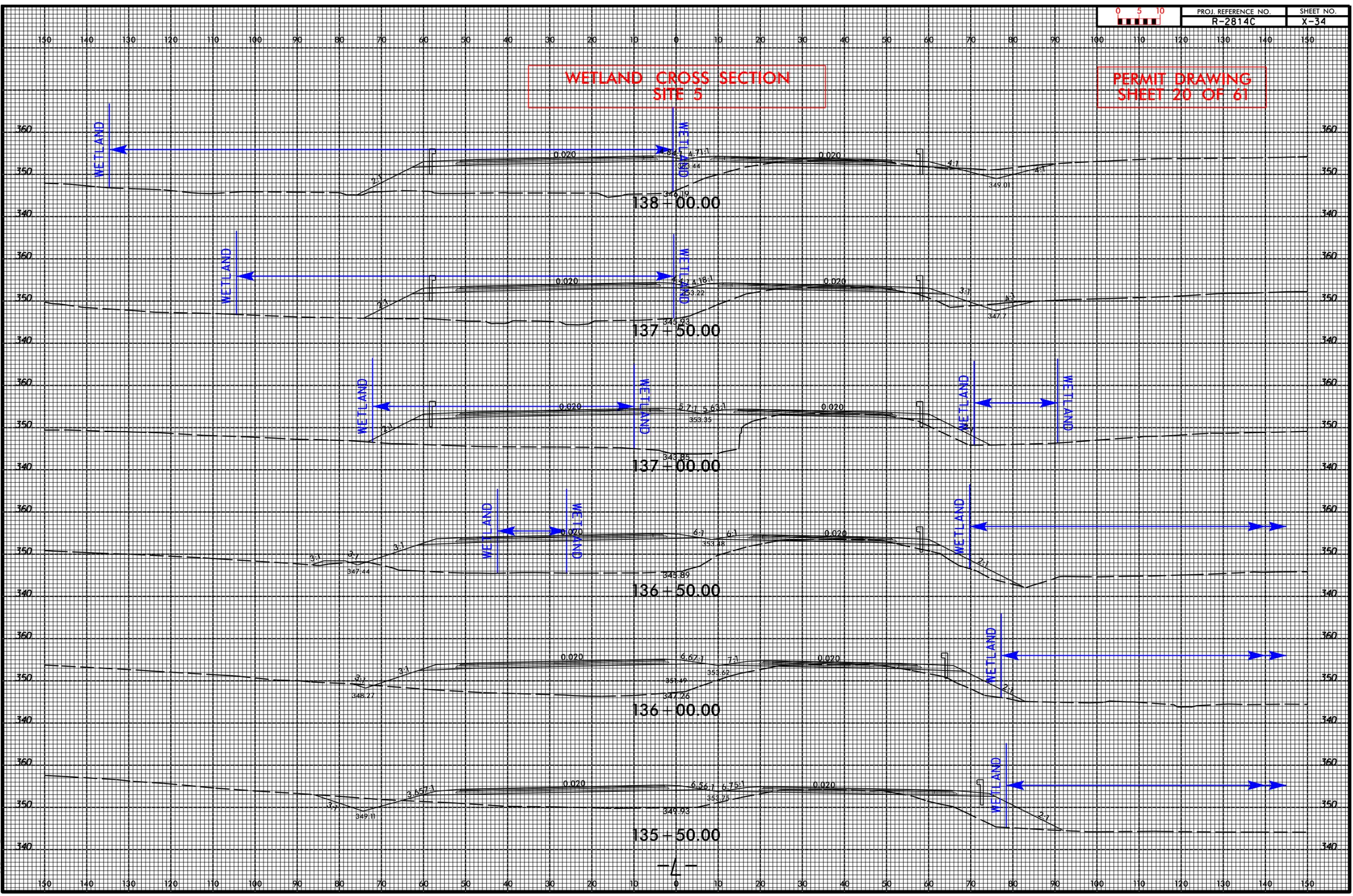


REVISIONS

5/1/2015
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**WETLAND CROSS SECTION
SITE 5**

**PERMIT DRAWING
SHEET 20 OF 61**



5/11/2015
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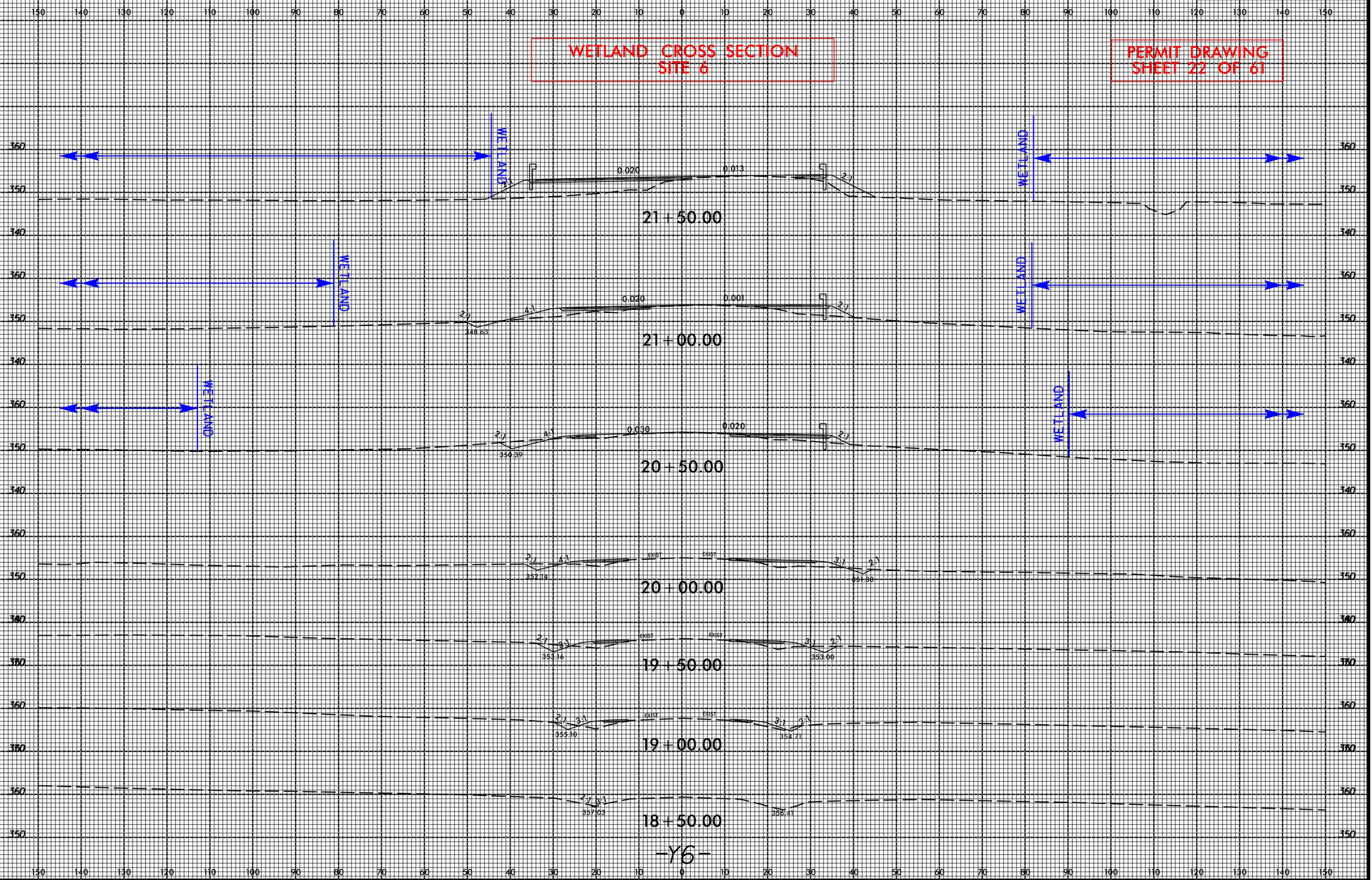
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PROJ. REFERENCE NO.
R-2814C

SHEET NO.
X-1

WETLAND CROSS SECTION
SITE 6

PERMIT DRAWING
SHEET 22 OF 61

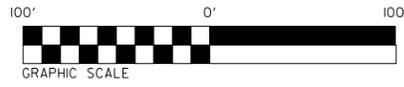


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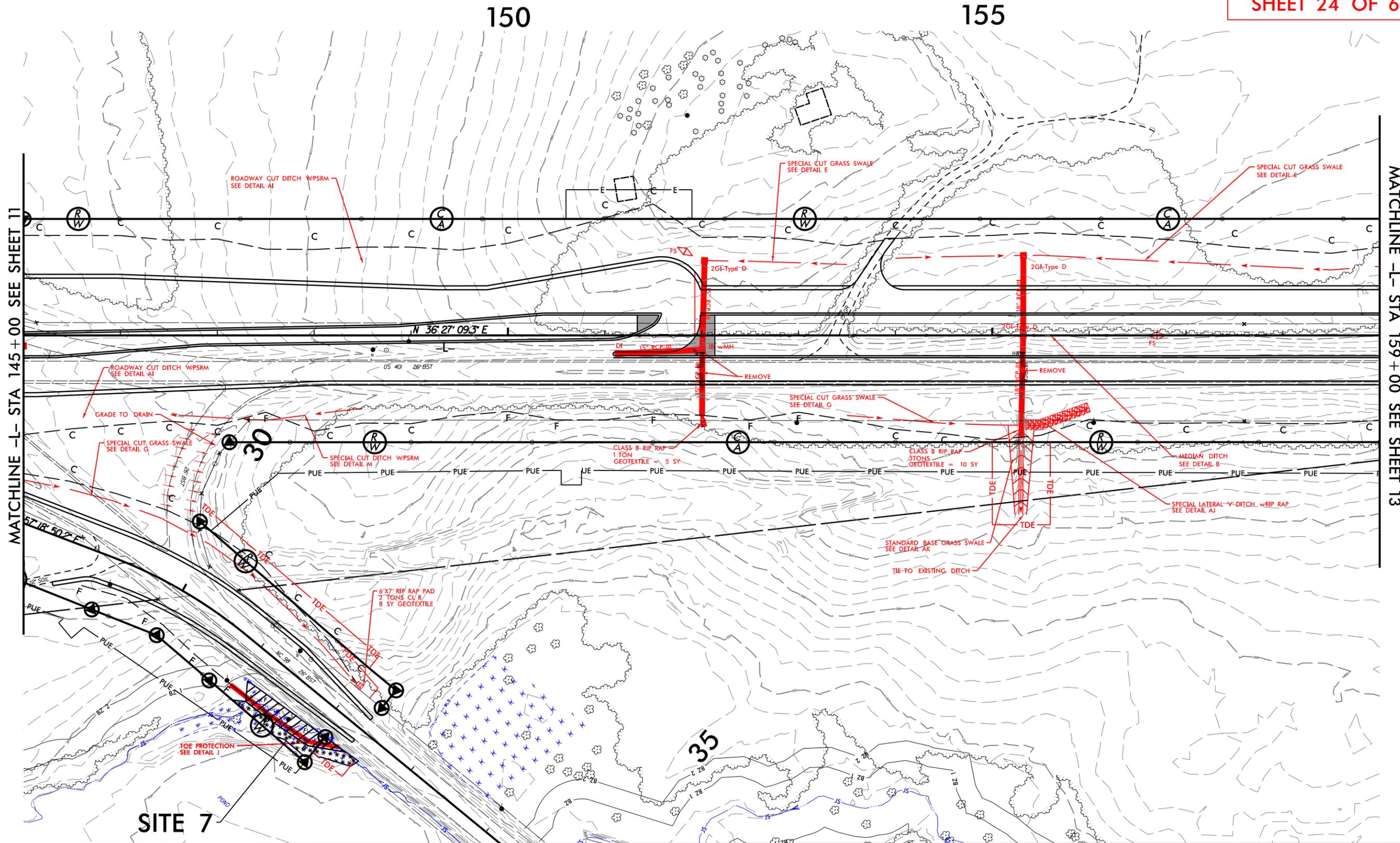
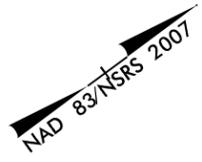
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 24 OF 61**



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING



MATCHLINE -L- STA 145 + 00 SEE SHEET 11

MATCHLINE -L- STA 159 + 00 SEE SHEET 13

SITE 7

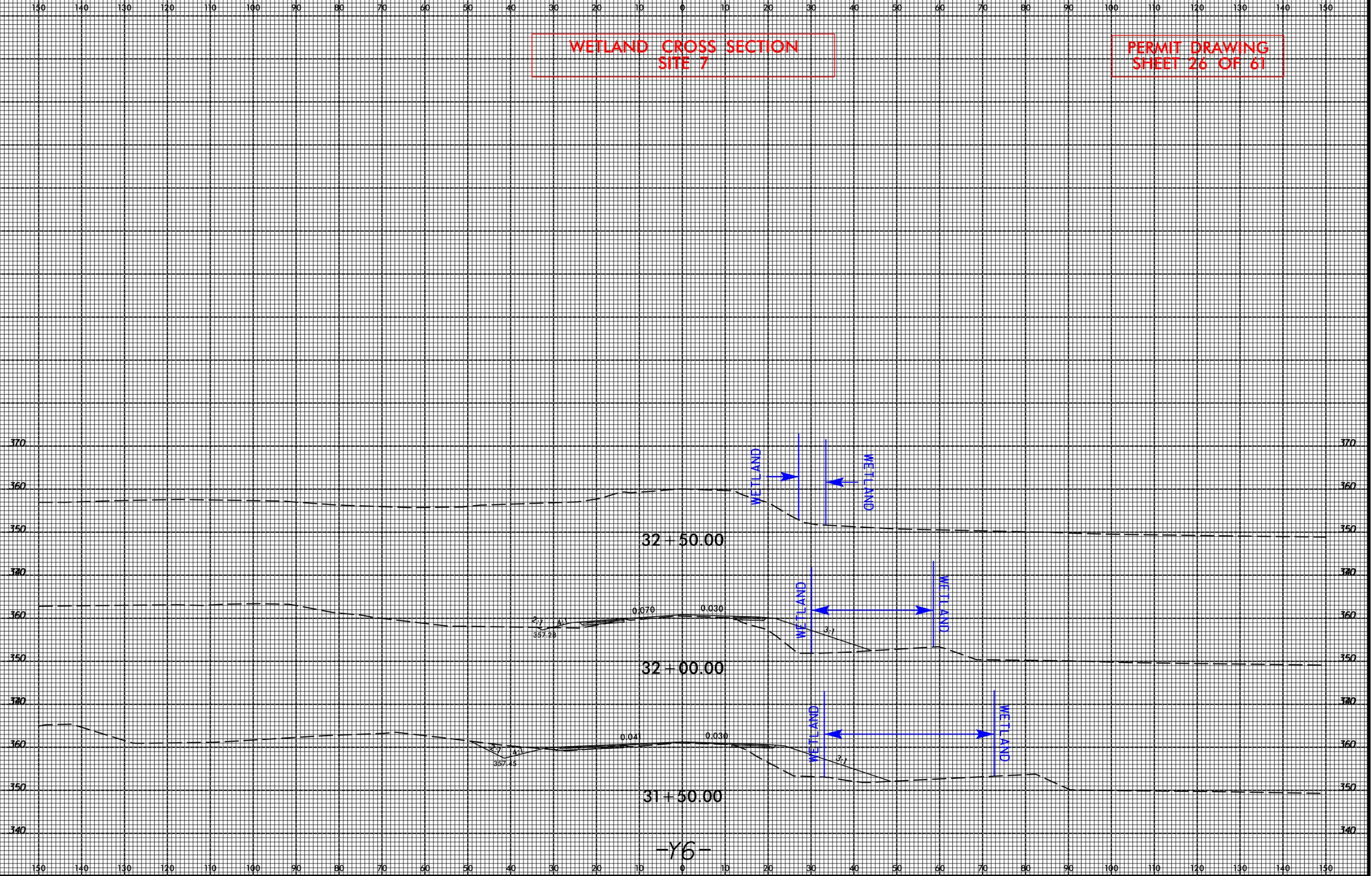
REVISIONS

5/17/2015
 Hydraulic Permit, Environmental R2814C PERMIT 2015 drawings, Surface
 Water & Wetland - TP R2814C_Hyd_perm_wet_psh12.dgn



WETLAND CROSS SECTION
SITE 7

PERMIT DRAWING
SHEET 26 OF 61



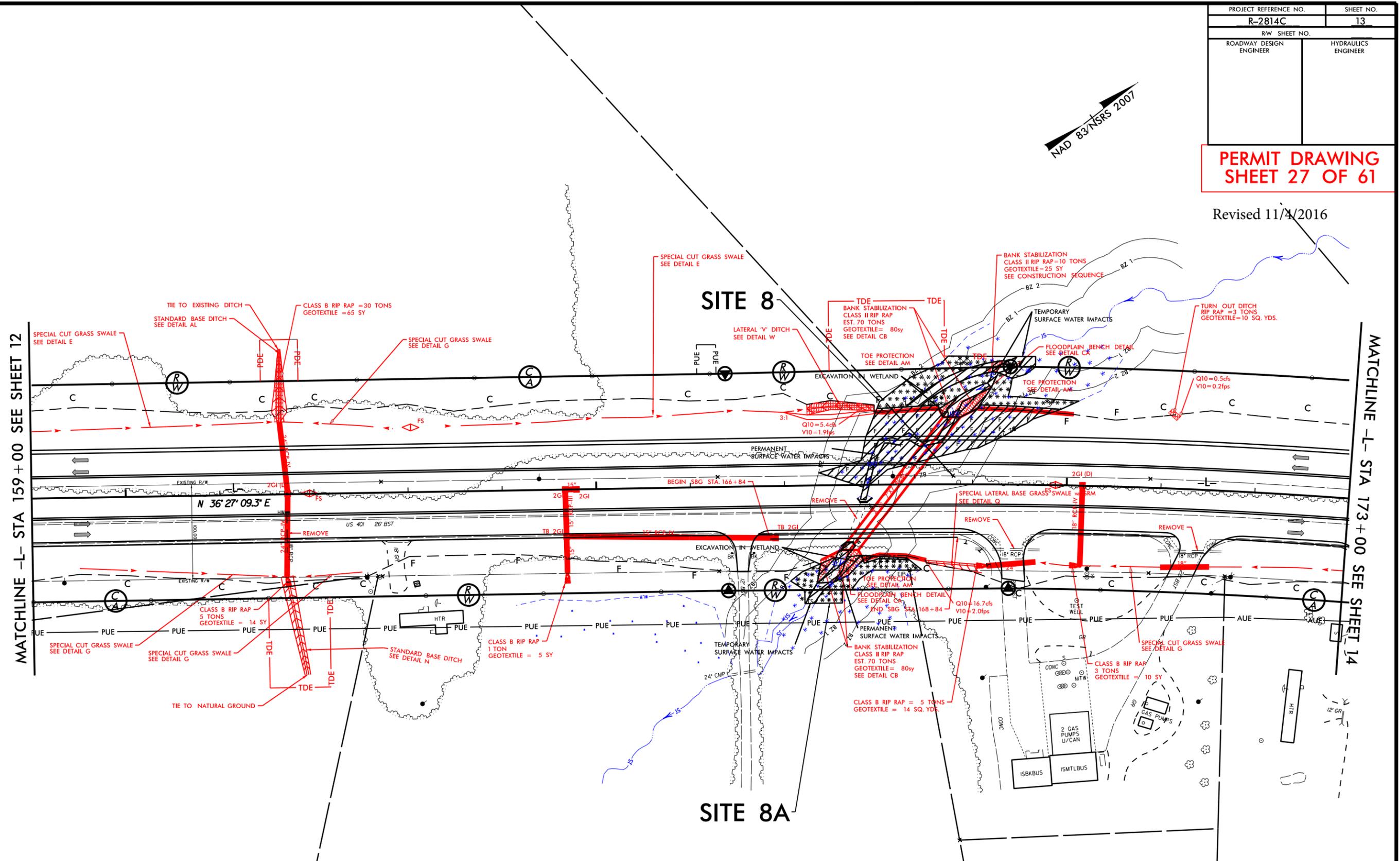
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 27 OF 61**

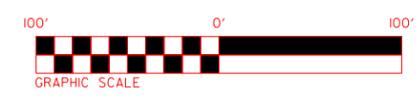
Revised 11/4/2016



REVISIONS

MATCHLINE -L- STA 159 + 00 SEE SHEET 12

MATCHLINE -L- STA 173 + 00 SEE SHEET 14



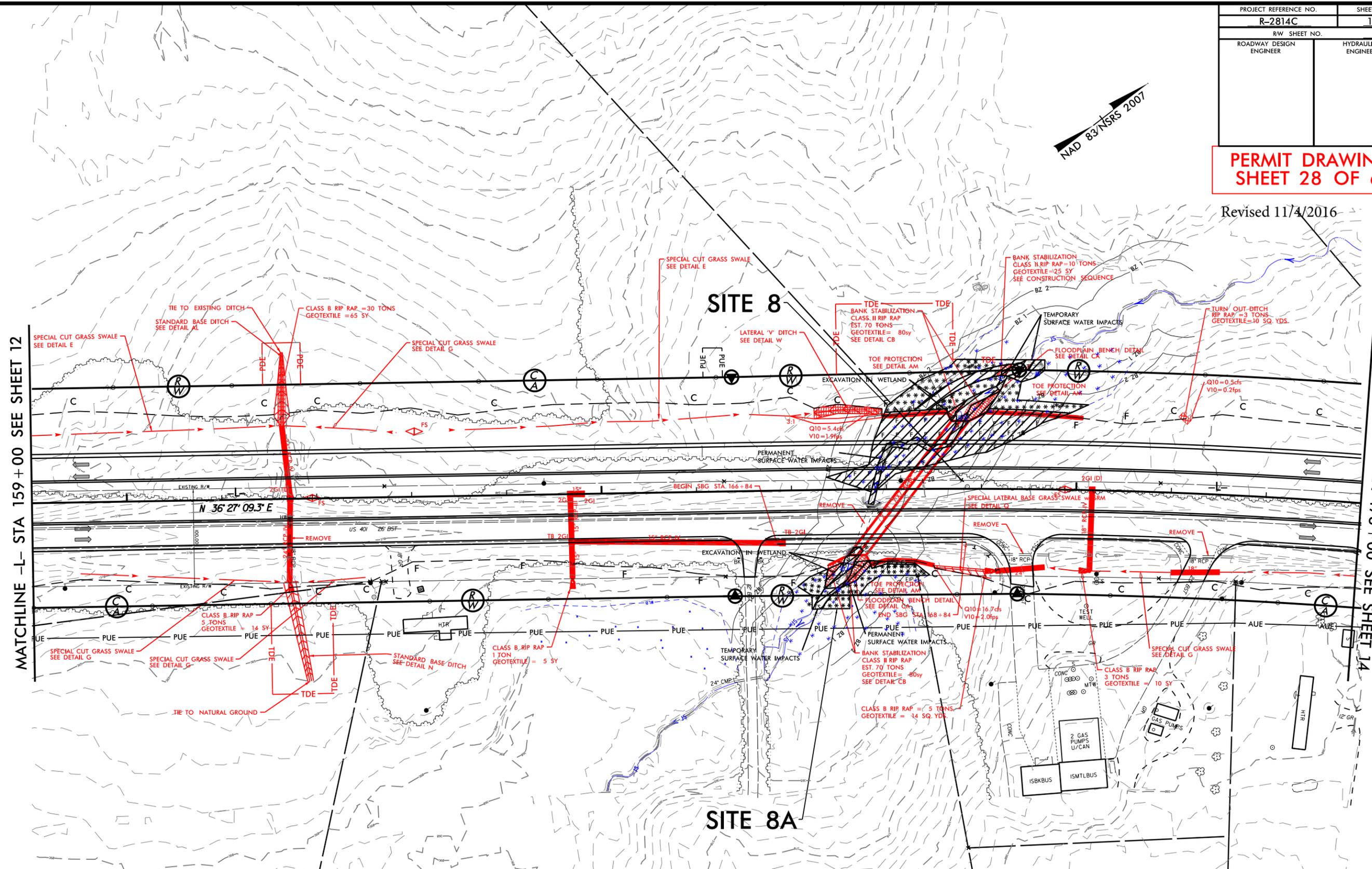
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

11/4/2016
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

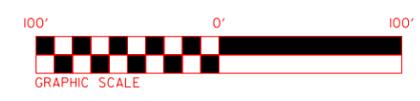
**PERMIT DRAWING
SHEET 28 OF 61**

Revised 11/4/2016



REVISIONS

11/4/2016
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\$\$\$\$DESIGN\$\$\$\$
\$\$\$\$DATE\$\$\$\$



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

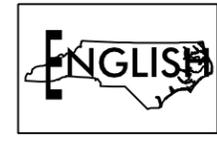
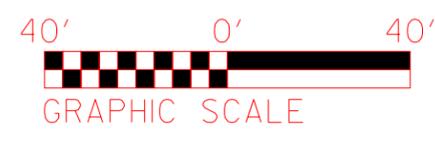
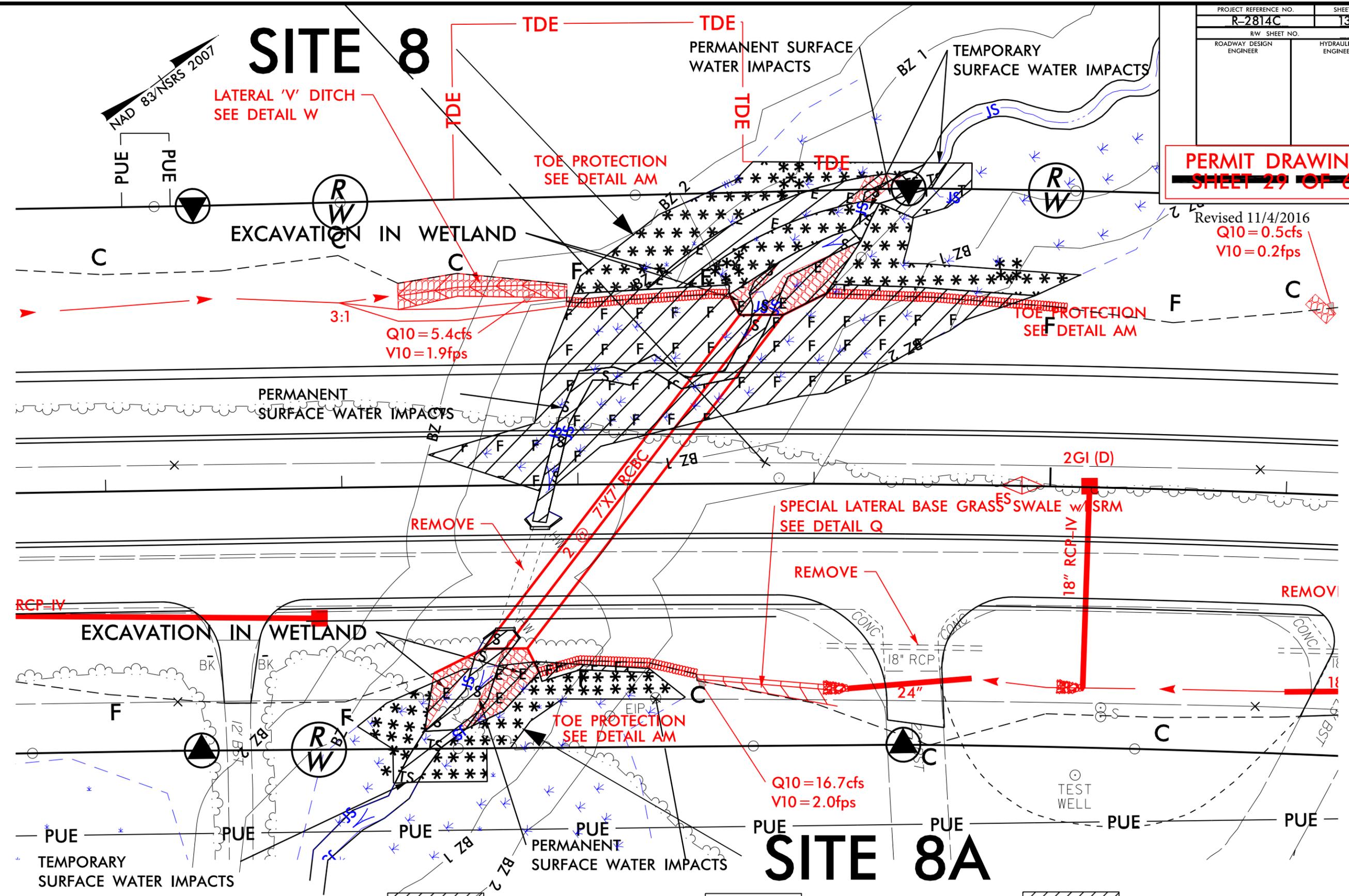
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 29 OF 61**

Revised 11/4/2016
Q10 = 0.5cfs
V10 = 0.2fps

SITE 8

SITE 8A



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

REVISIONS
 11/4/2016
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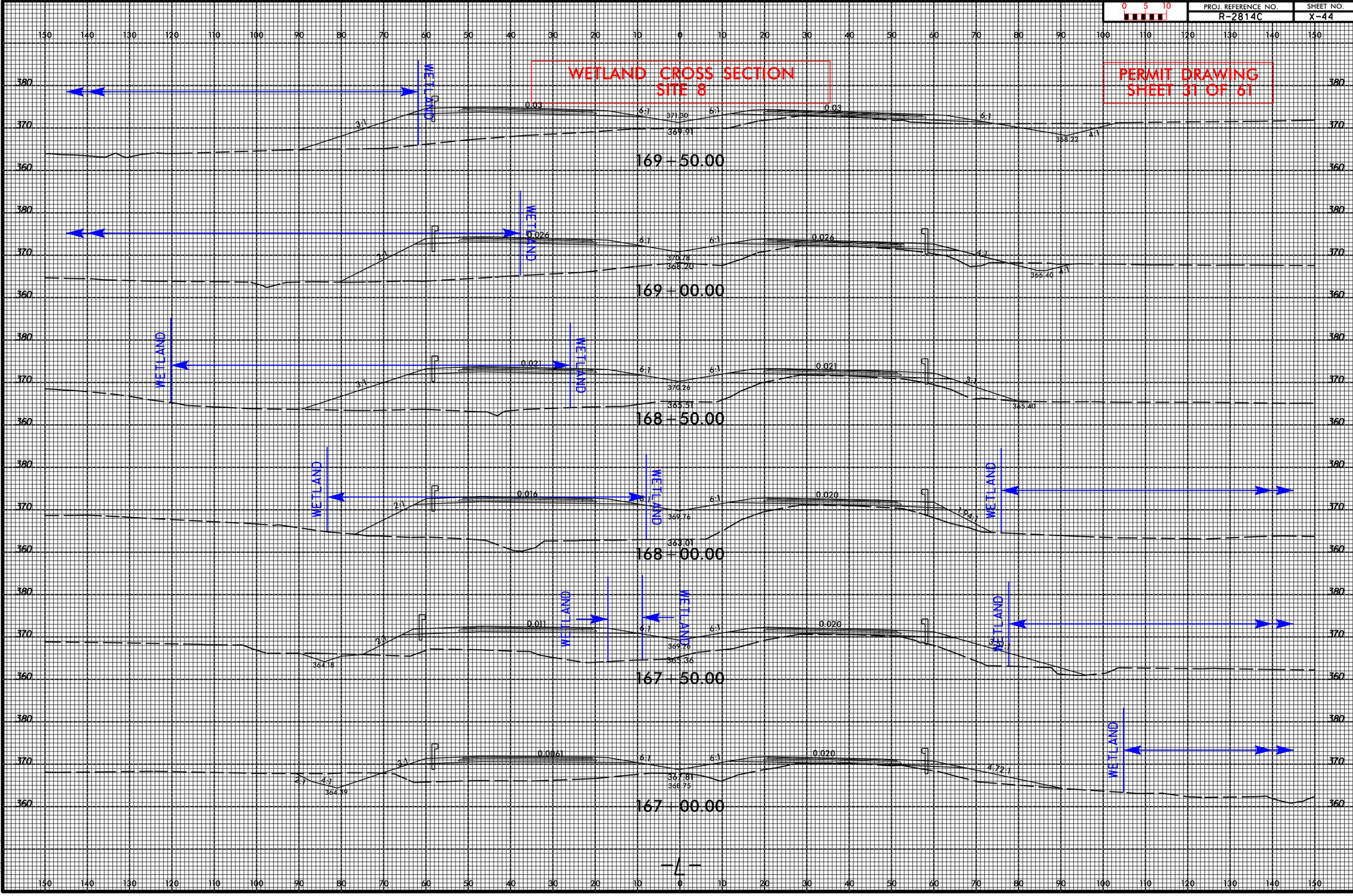
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PROJ. REFERENCE NO.
R-2814C

SHEET NO.
X-44

WETLAND CROSS SECTION
SITE 8

PERMIT DRAWING
SHEET 31 OF 61



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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 32 OF 61**



175

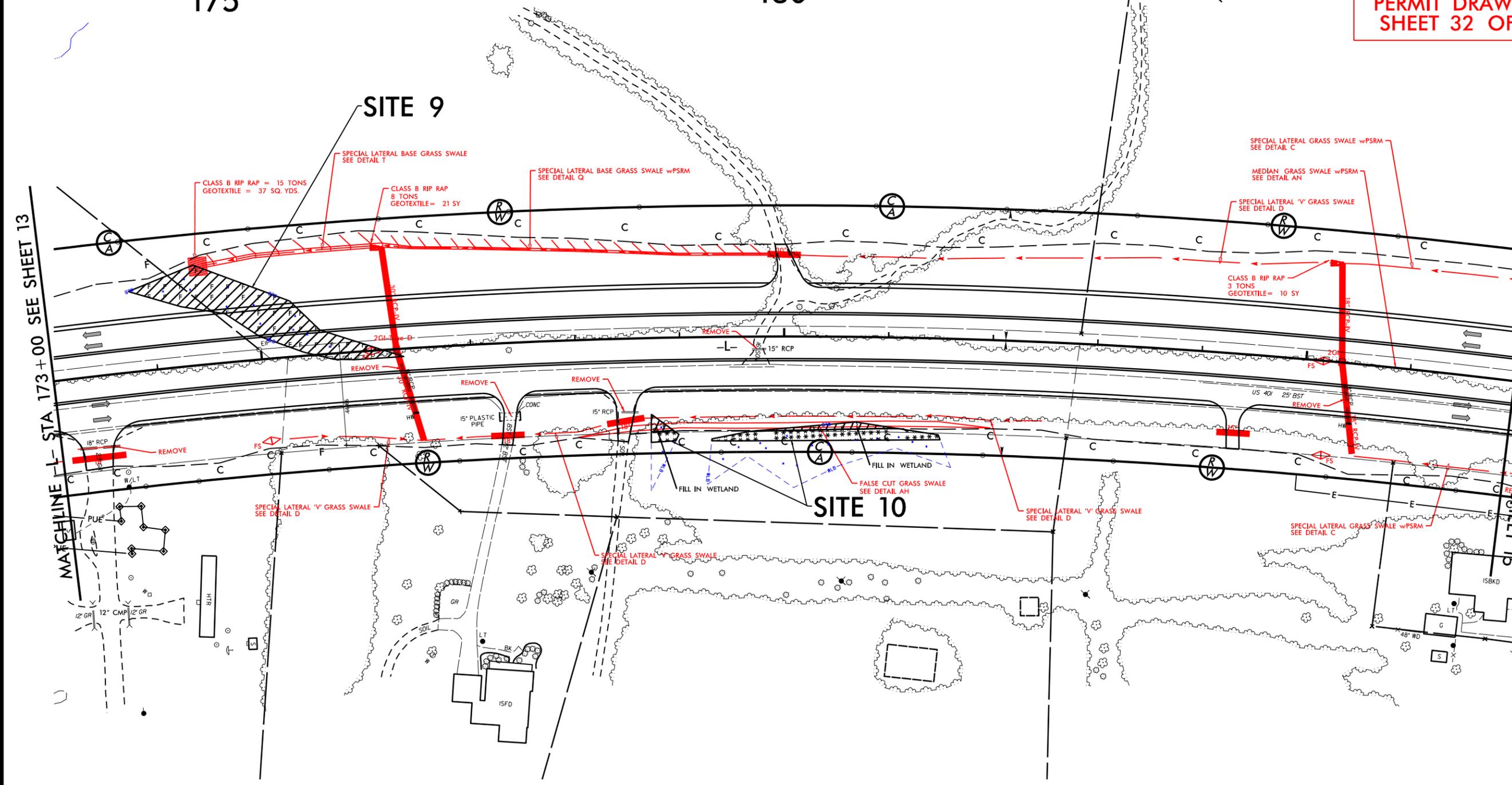
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SITE 9

SITE 10

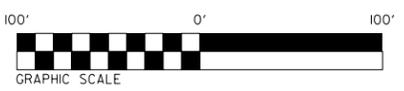
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MATCHLINE -L- STA 187+00 SEE SHEET 15



REVISIONS

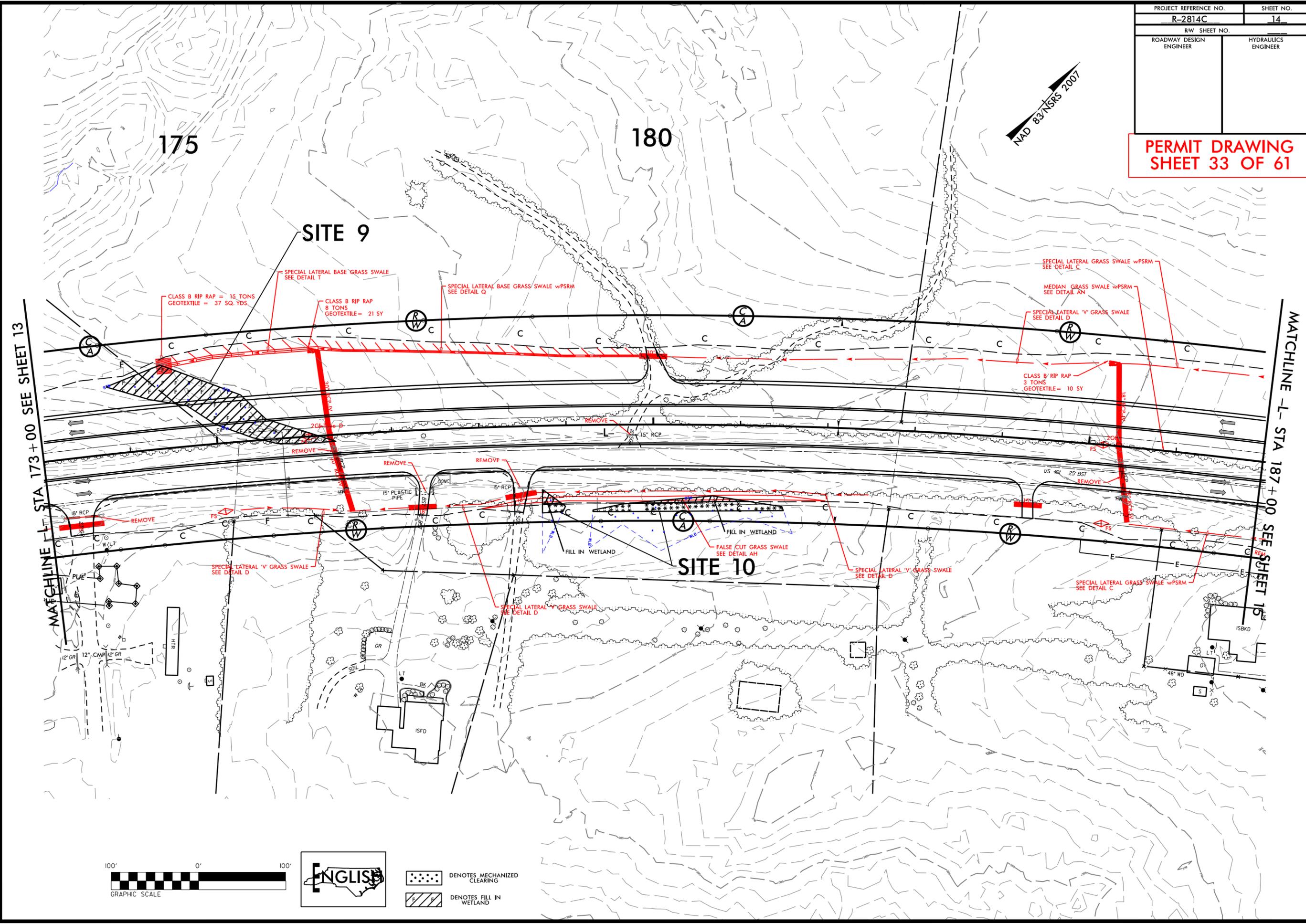
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\$\$\$\$\$PERM\$\$\$\$\$



-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 33 OF 61**



MATCHLINE -L- STA 173 + 00 SEE SHEET 13

MATCHLINE -L- STA 187 + 00 SEE SHEET 15

REVISIONS

5/12/2015
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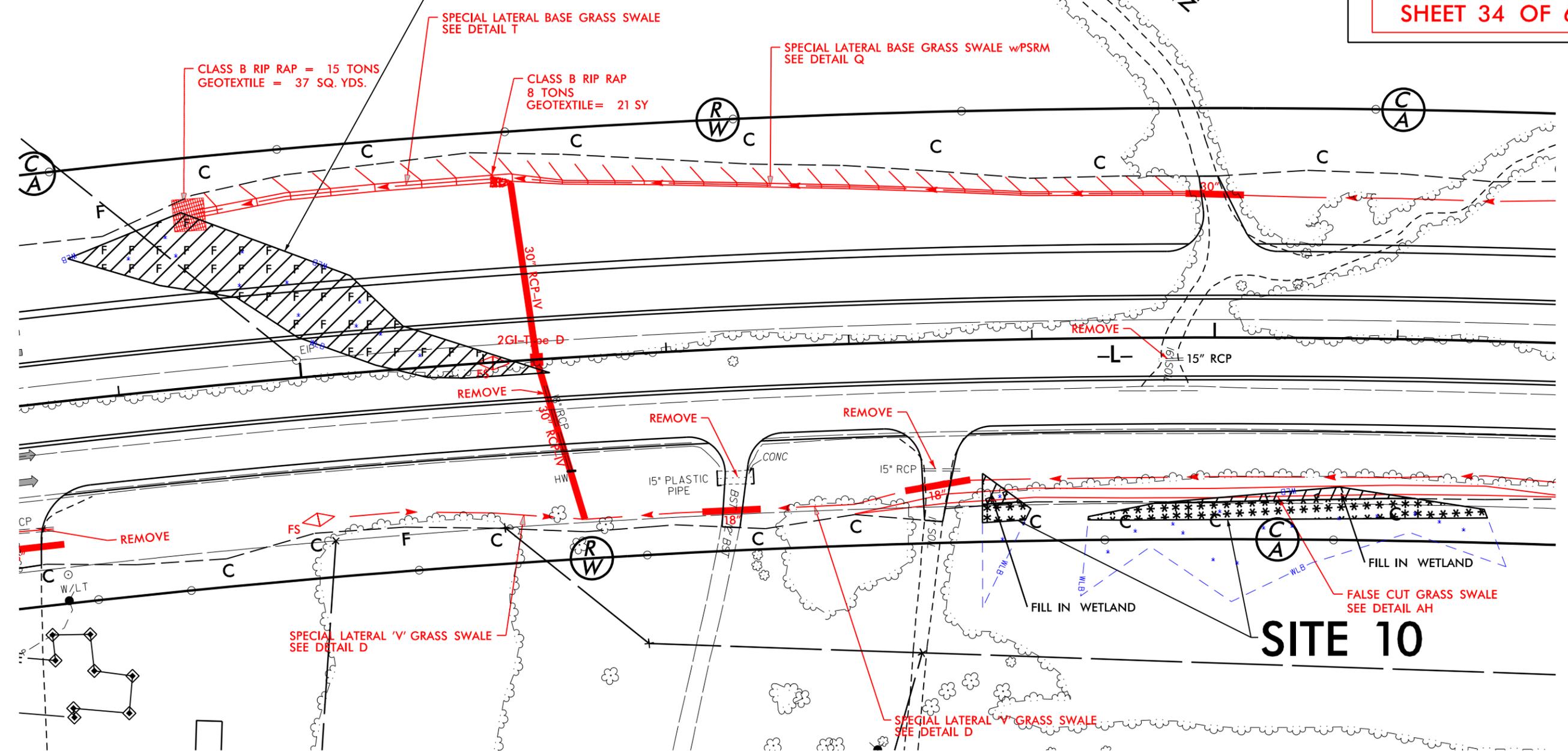
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	14A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

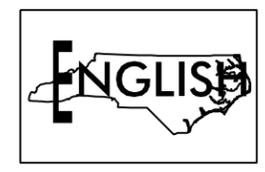
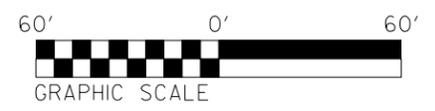
**PERMIT DRAWING
SHEET 34 OF 61**

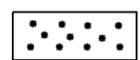
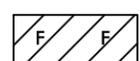
NAD 83/NSRS 2007

SITE 9



SITE 10



-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND

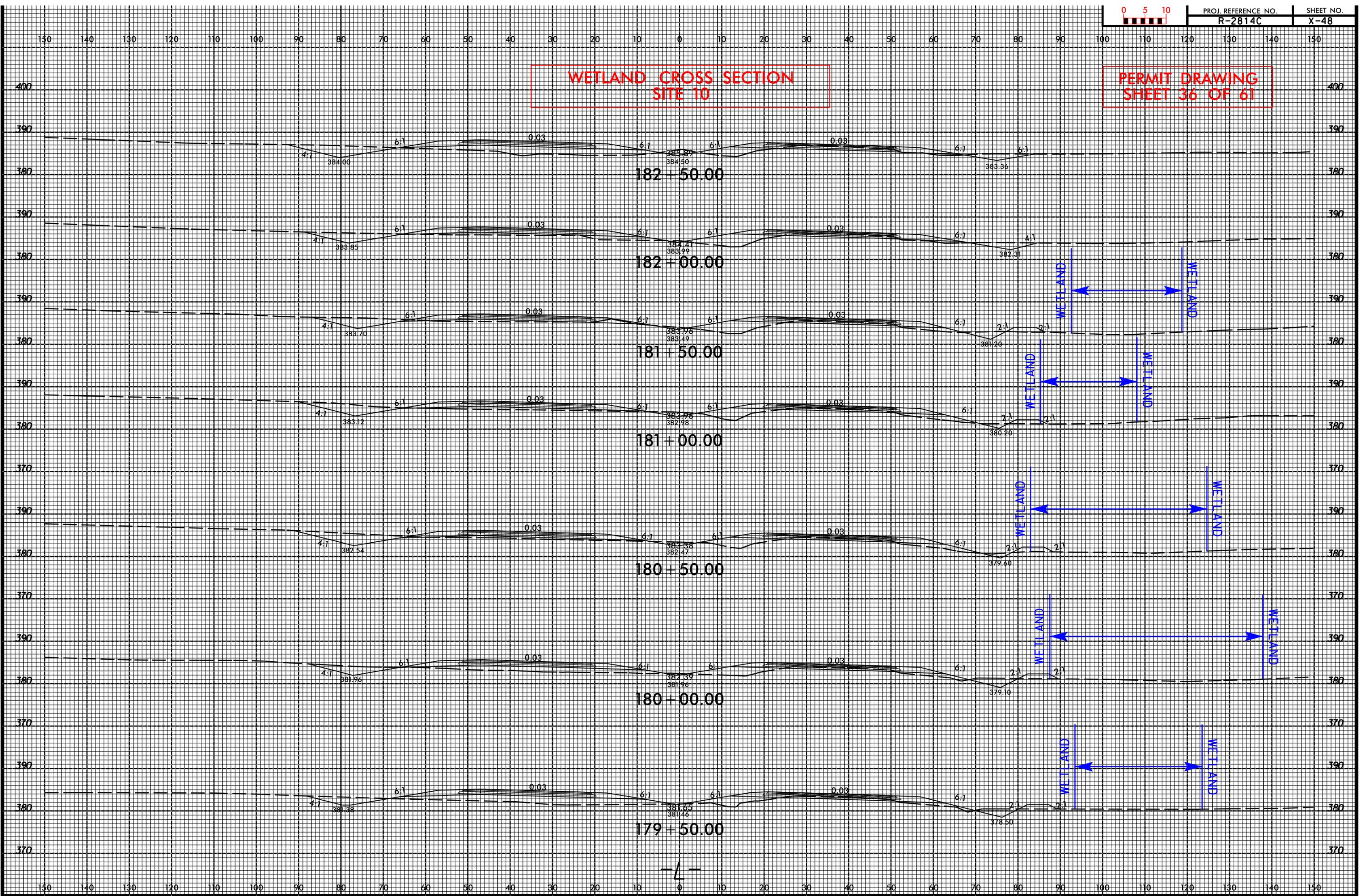
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REVISIONS



WETLAND CROSS SECTION
SITE 10

PERMIT DRAWING
SHEET 36 OF 61

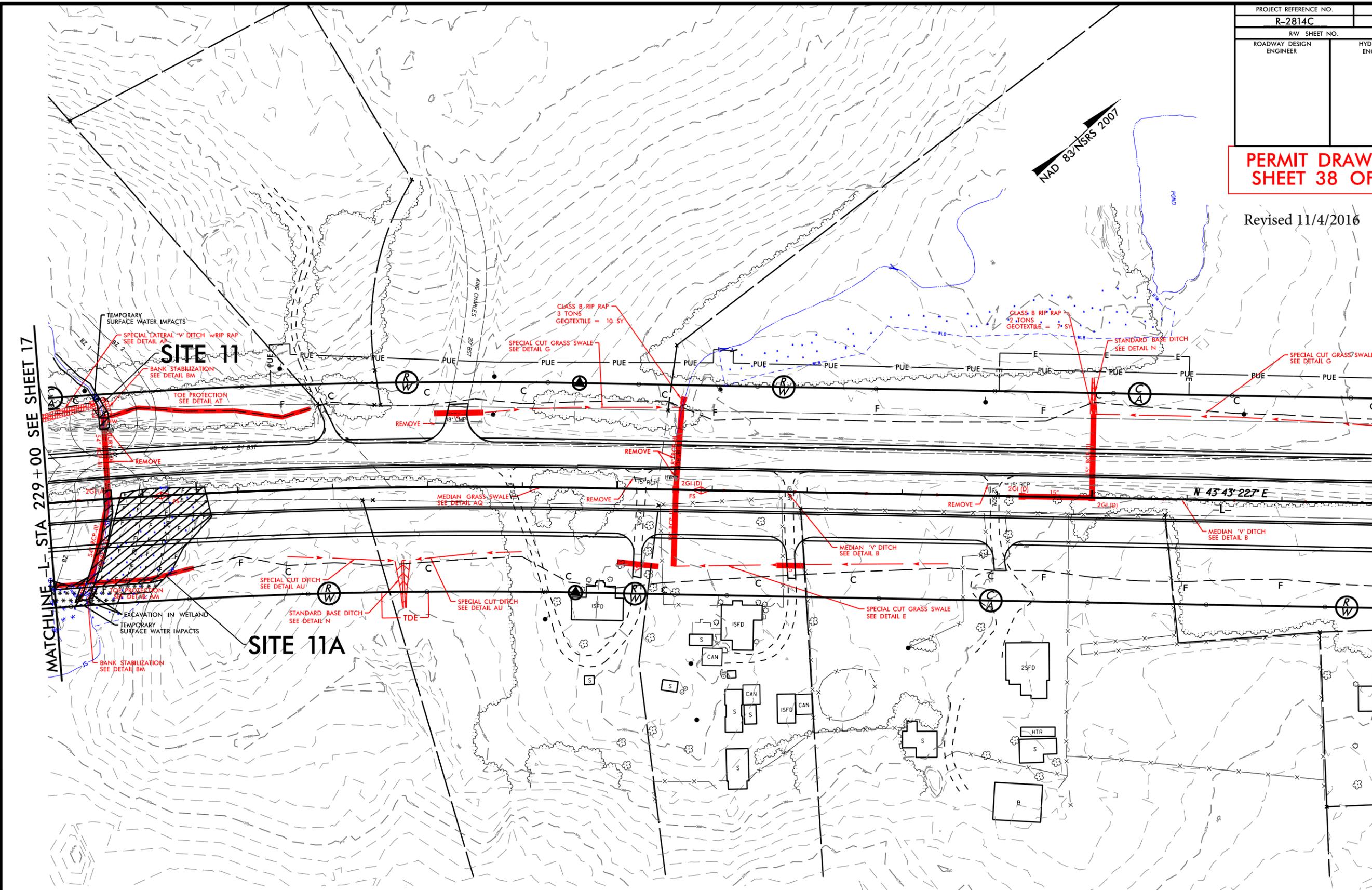


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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 38 OF 61**

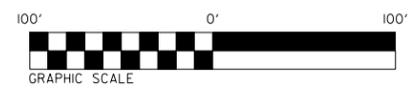
Revised 11/4/2016



MATCHLINE -L- STA 229 + 00 SEE SHEET 17

MATCHLINE -L- STA 243 + 00 SEE SHEET 19

REVISIONS



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

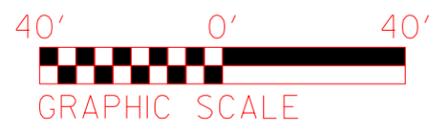
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8/17/99

PROJECT REFERENCE NO. R-2814C	SHEET NO. 18A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 39 OF 61

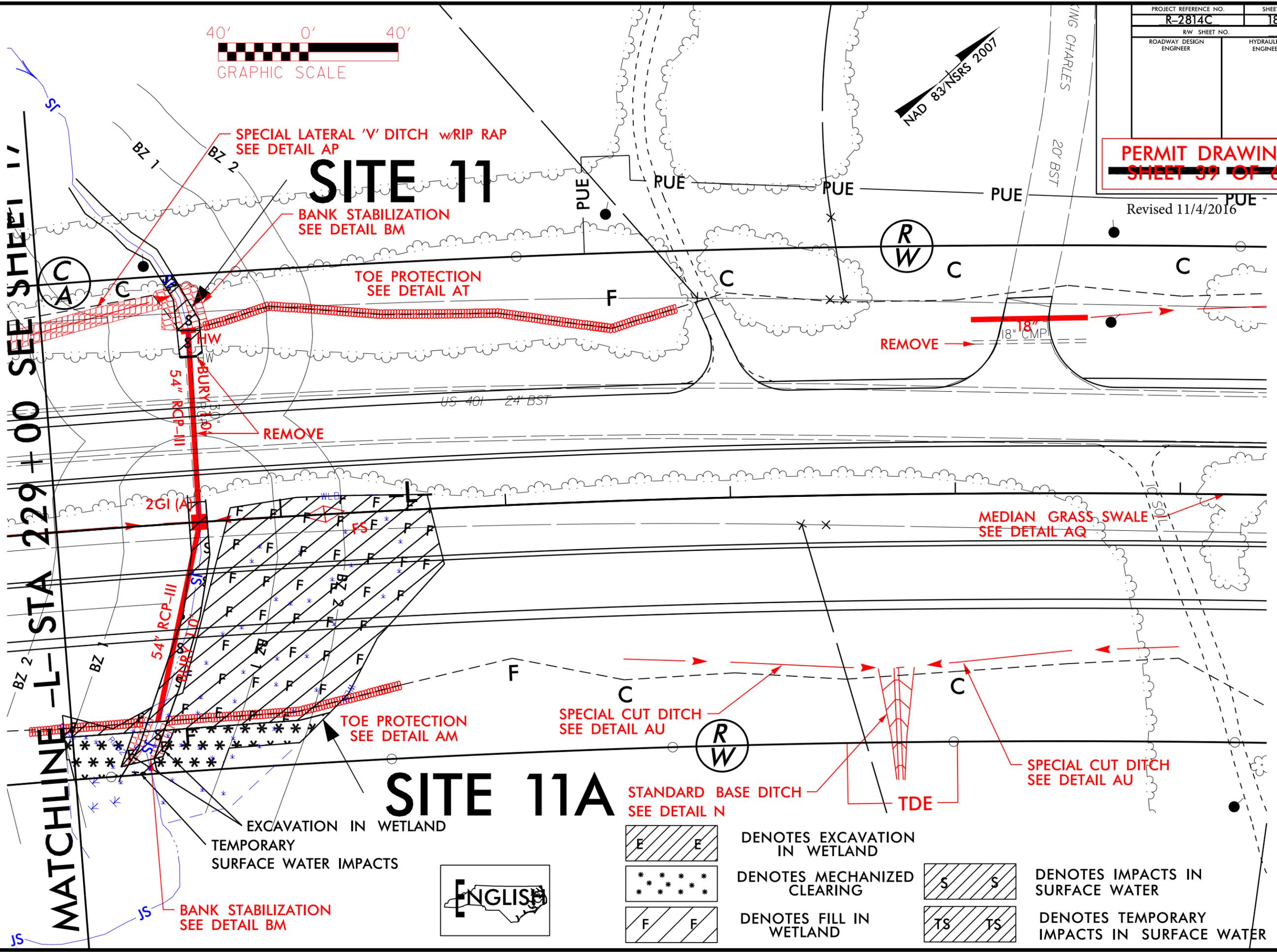
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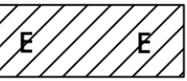
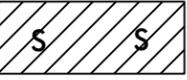
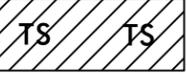


MATCHLINE -L- STA 229+00 SEE SHEET 17
 MATCHLINE -R- STA 229+00 SEE SHEET 18

SITE 11

SITE 11A



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

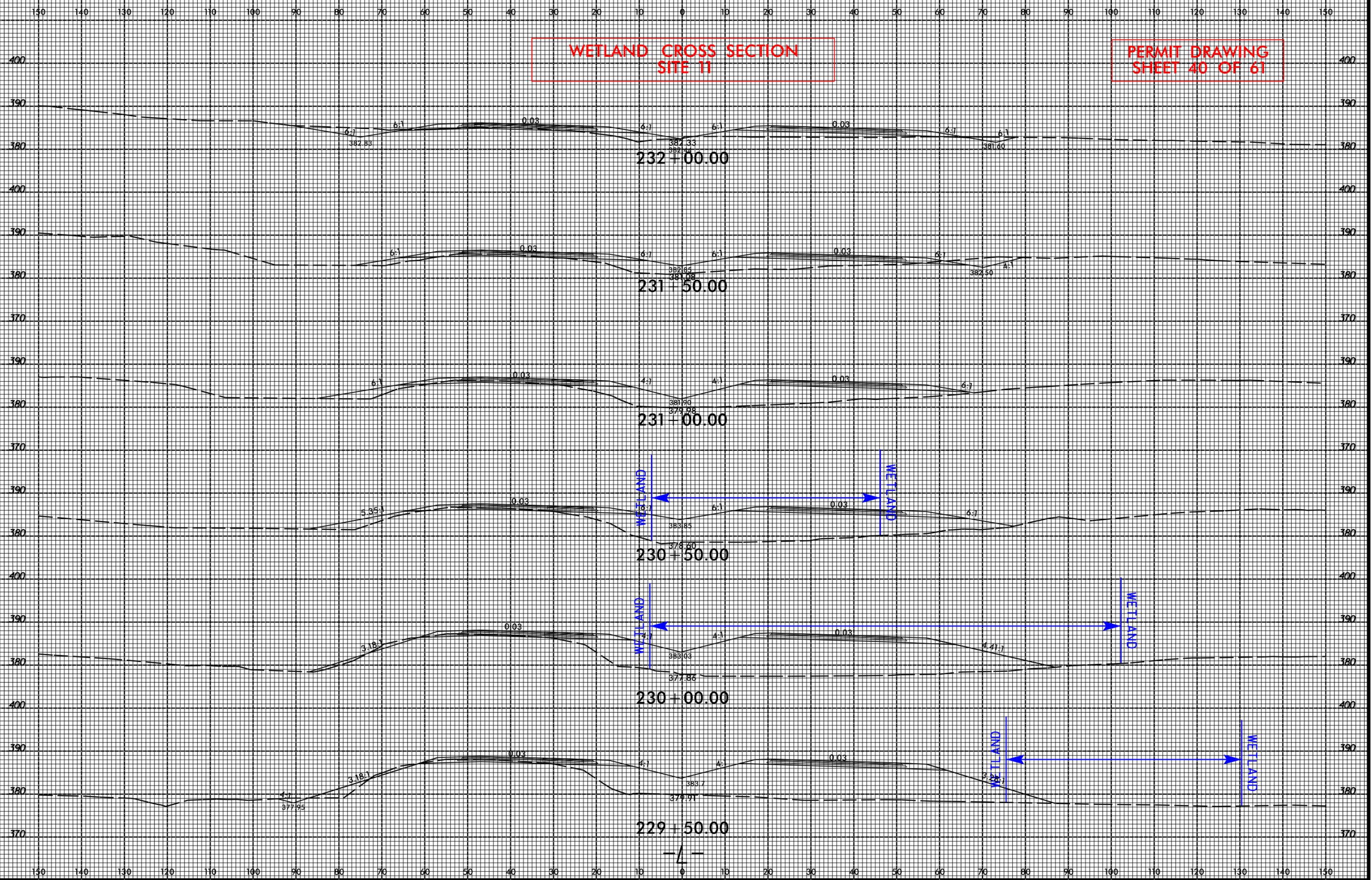


REVISIONS

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WETLAND CROSS SECTION
SITE II

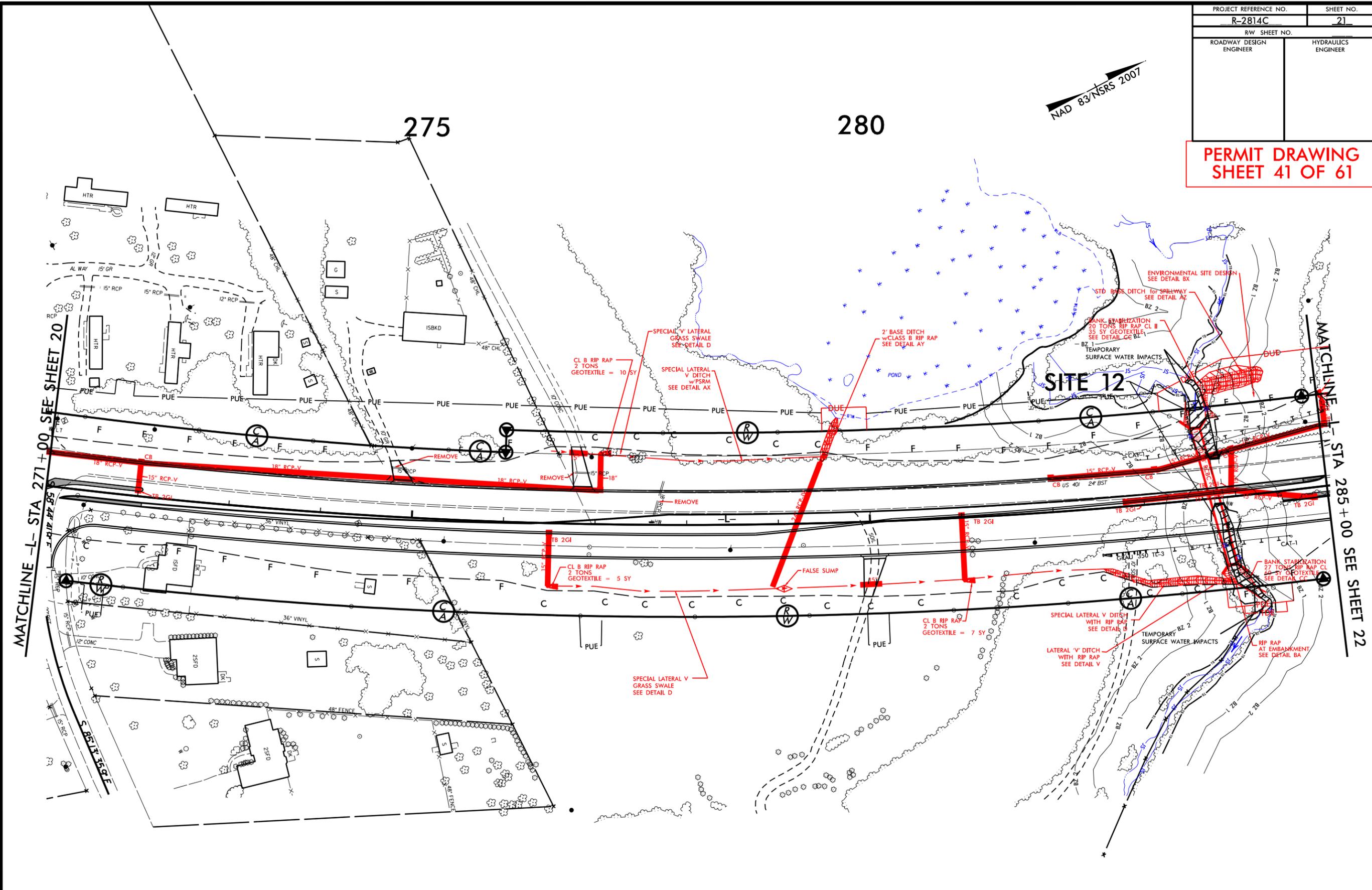
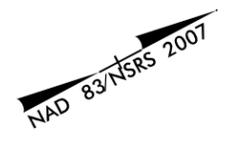
PERMIT DRAWING
SHEET 40 OF 61



5/11/2015
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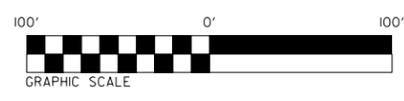
PROJECT REFERENCE NO.	SHEET NO.
R-2814C	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 41 OF 61**



REVISIONS

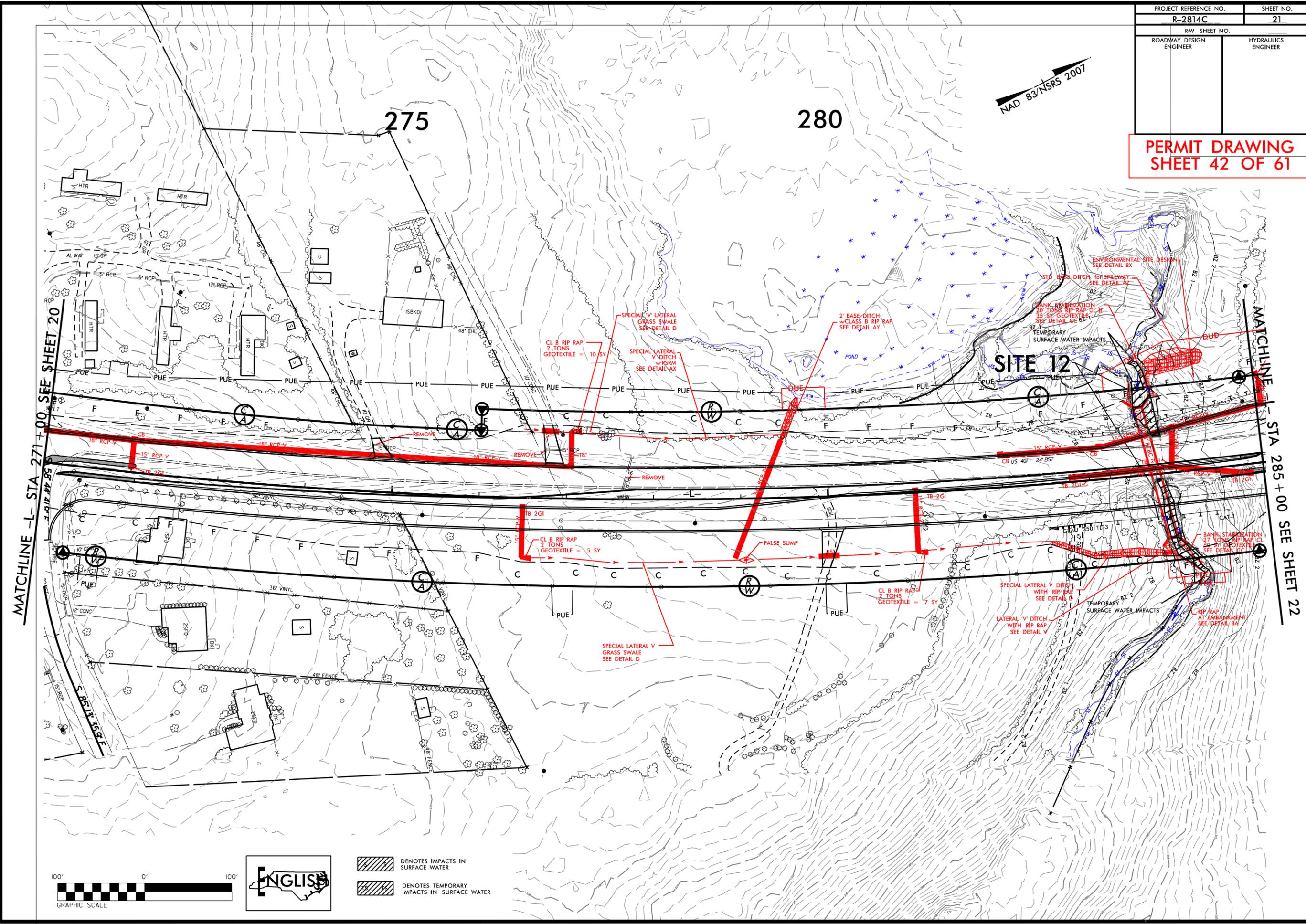
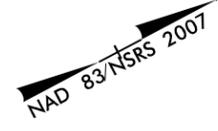
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- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 42 OF 61**

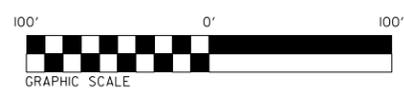


MATCHLINE -L- STA 271+00 SEE SHEET 20

MATCHLINE -R- STA 285+00 SEE SHEET 22

REVISIONS

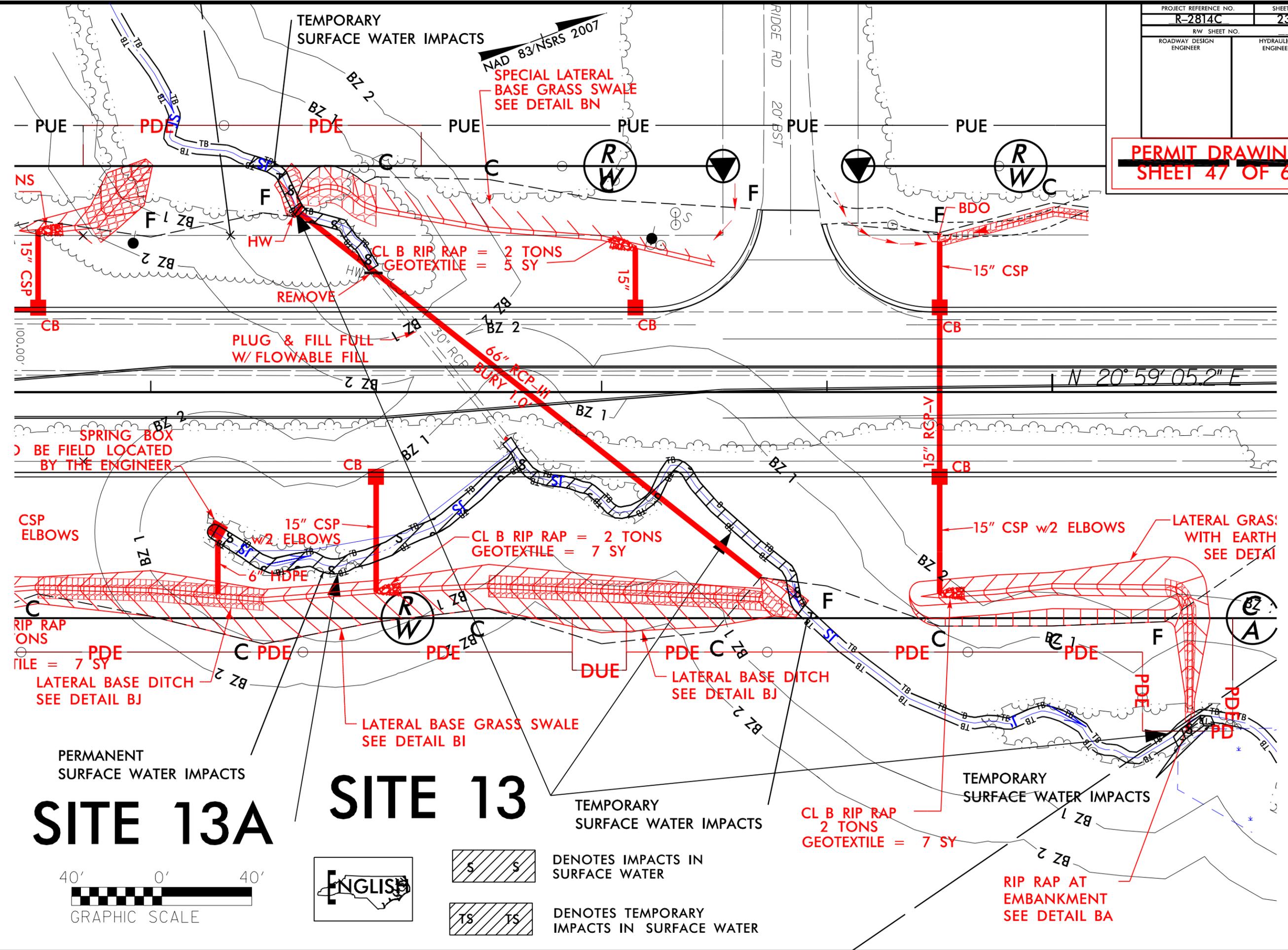
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- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

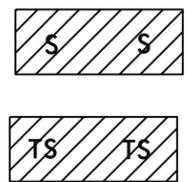
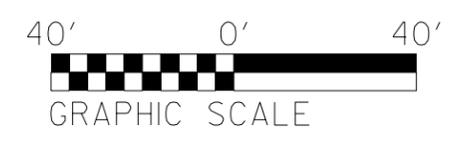
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 47 OF 61



PERMANENT SURFACE WATER IMPACTS
SITE 13A

SITE 13

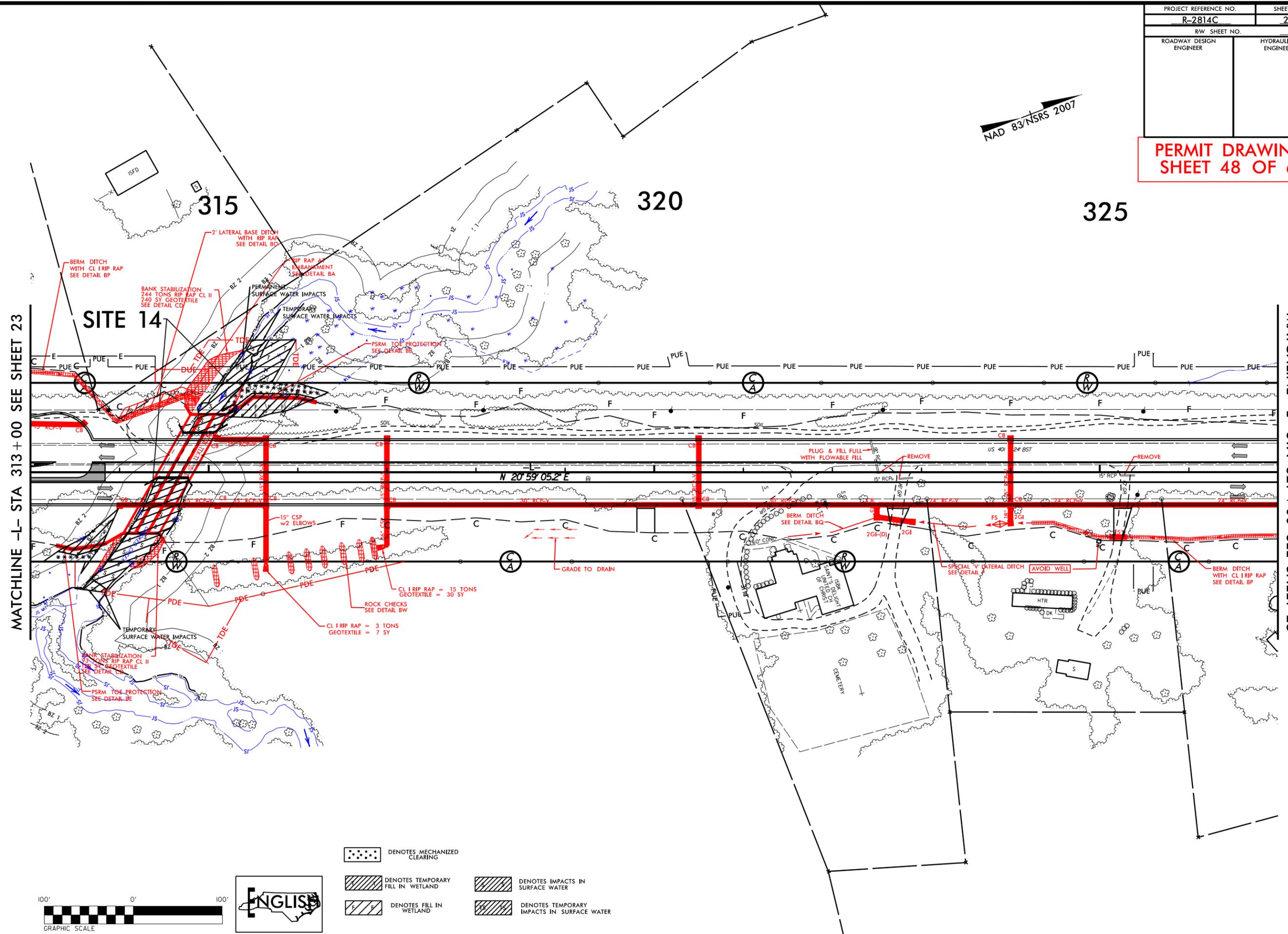


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R-2814C	24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

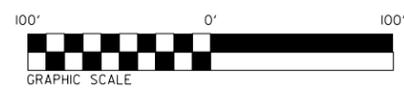
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SHEET 48 OF 61**



MATCHLINE -L- STA 313 + 00 SEE SHEET 23

MATCHLINE -L- STA 327 + 00 SEE SHEET 25

REVISIONS



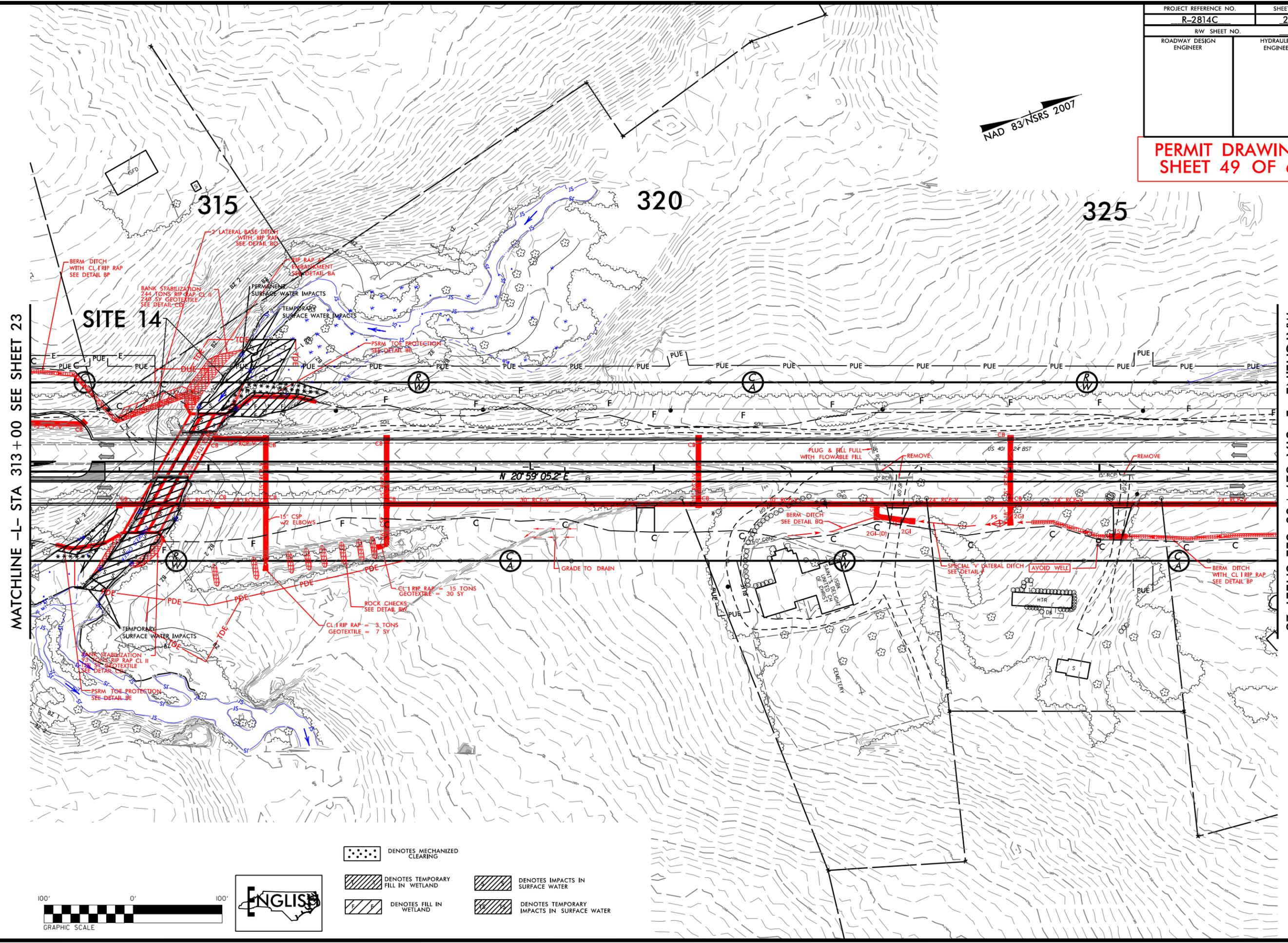
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

5/12/2015
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R-2814C	24
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

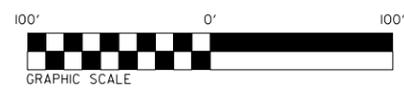
**PERMIT DRAWING
SHEET 49 OF 61**



REVISIONS

MATCHLINE -L- STA 313+00 SEE SHEET 23

MATCHLINE -L- STA 327+00 SEE SHEET 25



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

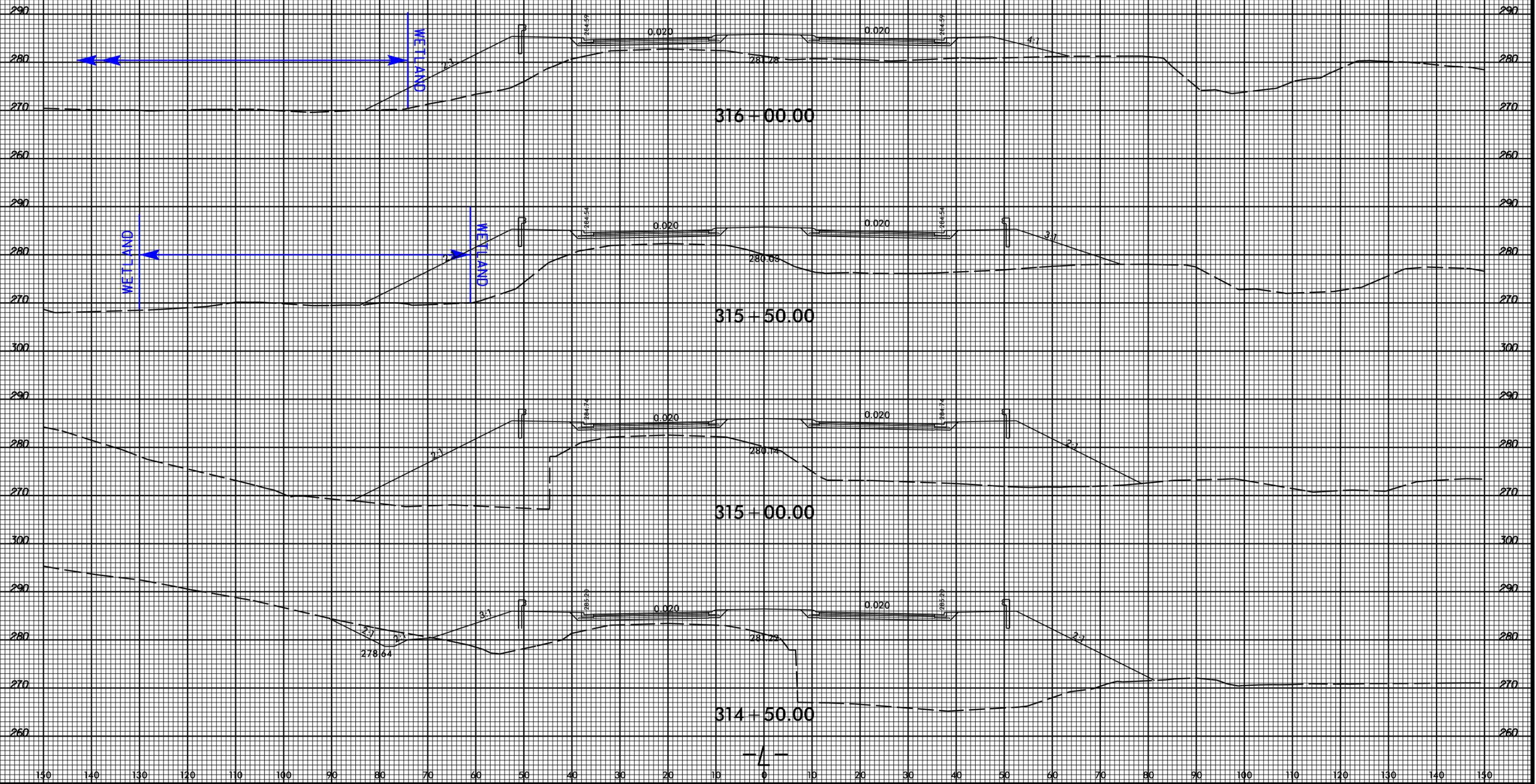
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8/23/99



WETLAND CROSS SECTION SITE 14

PERMIT DRAWING SHEET 53 OF 61



5/1/2015
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 26A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 56 OF 61**

SITE 15

**STD 2' BASE DITCH
w/CL 1 RIP RAP
SEE DETAIL BR**

TEMPORARY
SURFACE WATER IMPACTS

**PLUG & FILL
PIPE FULL WITH
FLOWABLE FILL**

**CL B RIP RAP = 3 TONS
GEOTEXTILE = 10 SY**

**CL B RIP RAP
2 TONS
GEOTEXTILE = 7 SY**

**BERM DITCH
SEE DETAIL BQ**

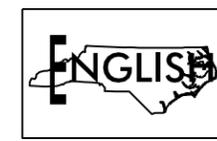
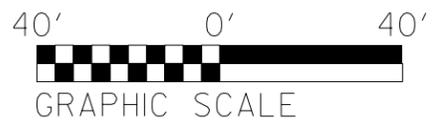
**SPECIAL LATERAL
BASE DITCH
SEE DETAIL BS**

**SPECIAL LATERAL
GRASS SWALE
SEE DETAIL BN**

**SPECIAL LATERAL
GRASS SWALE
SEE DETAIL BN**

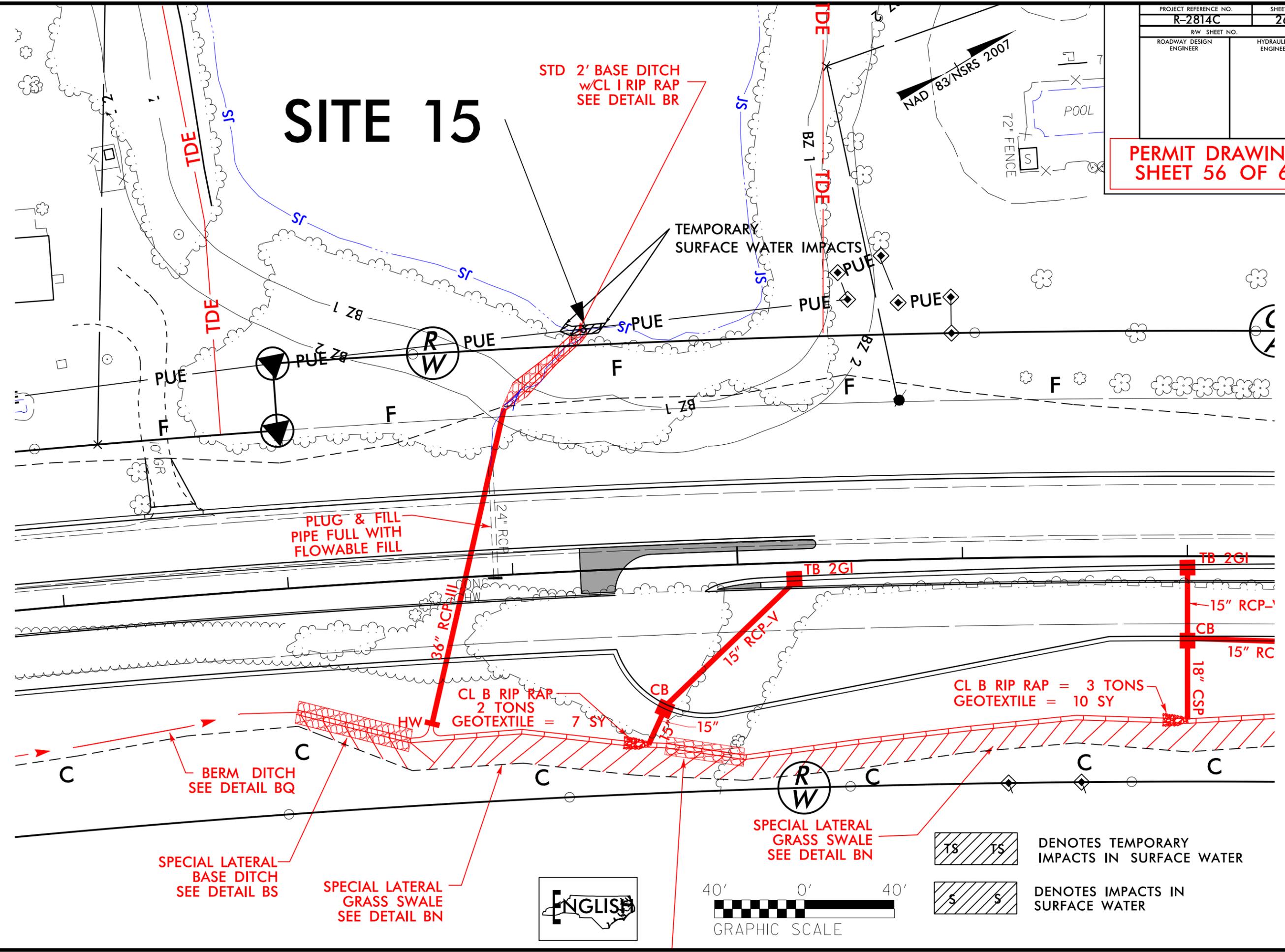
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

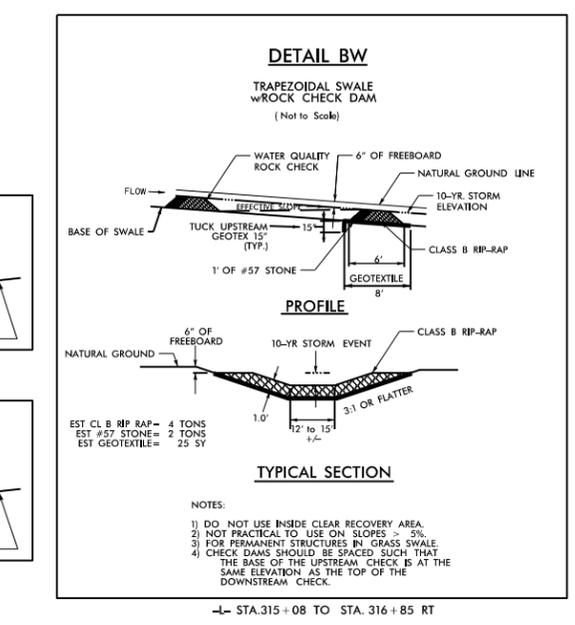
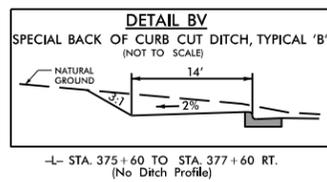
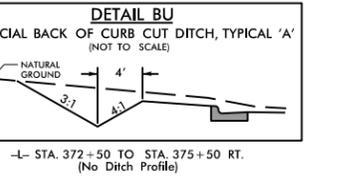
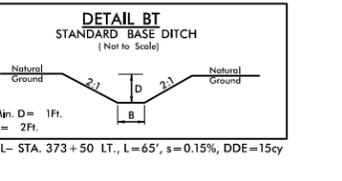
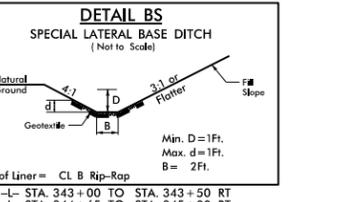
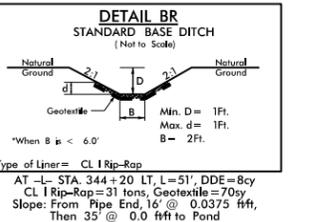
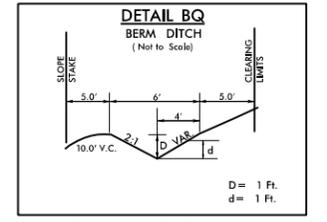
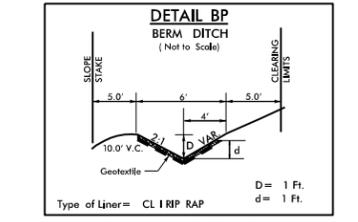
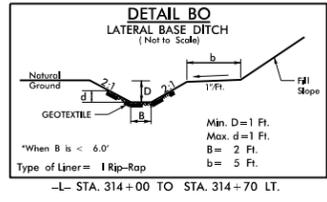
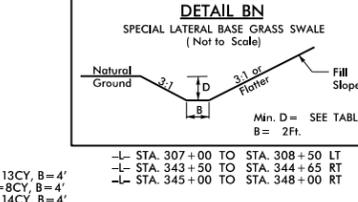
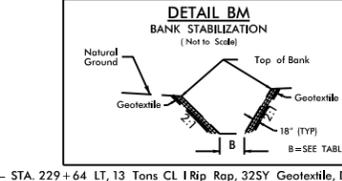
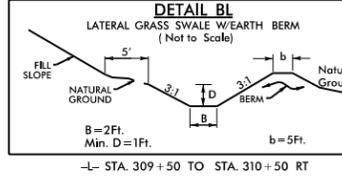
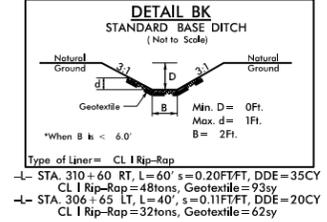
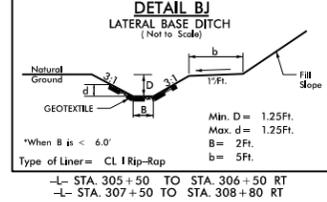
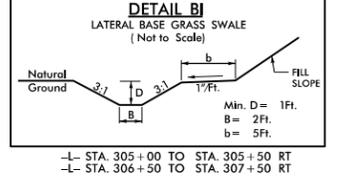
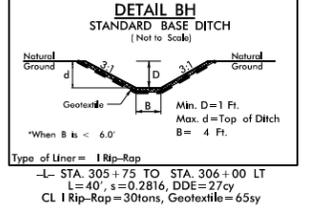
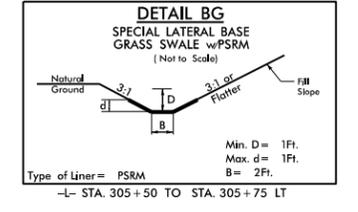
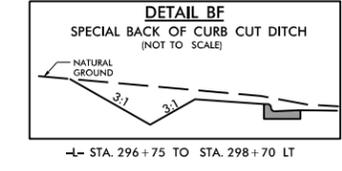
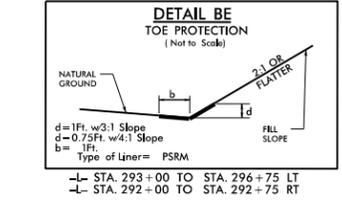
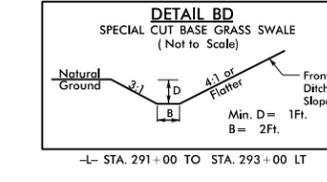
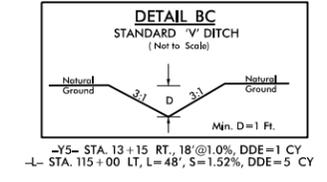
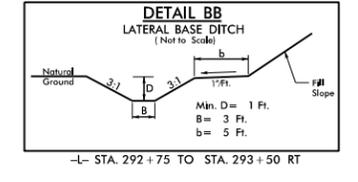
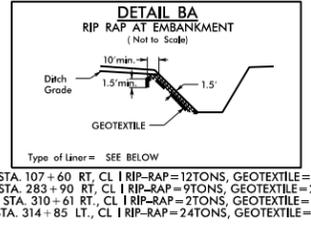
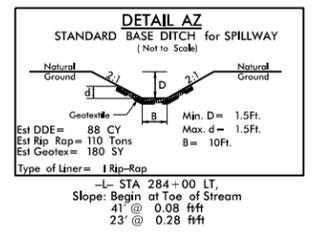
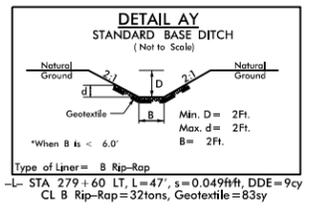
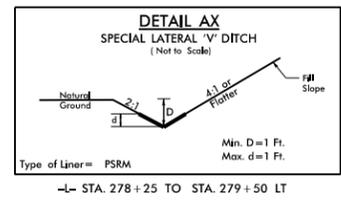
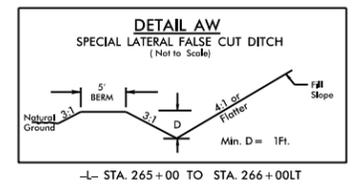
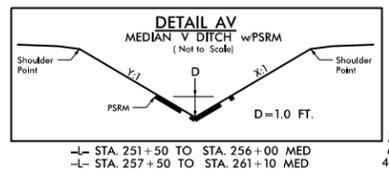
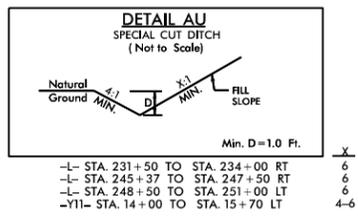
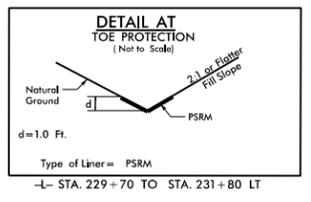
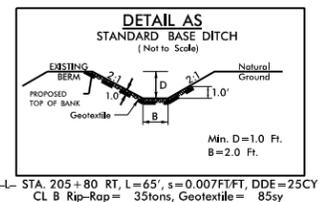
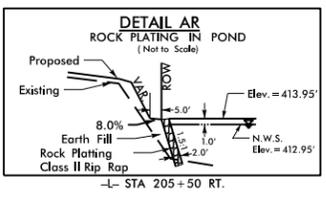
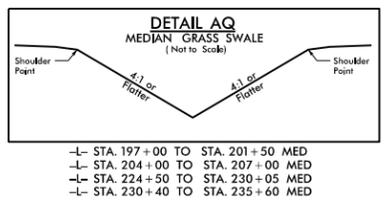
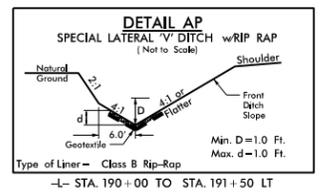
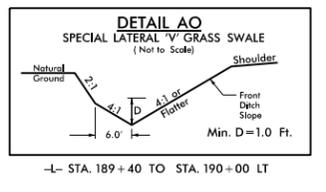
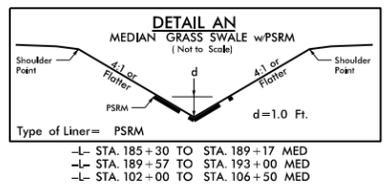
DENOTES IMPACTS IN
SURFACE WATER



REVISIONS

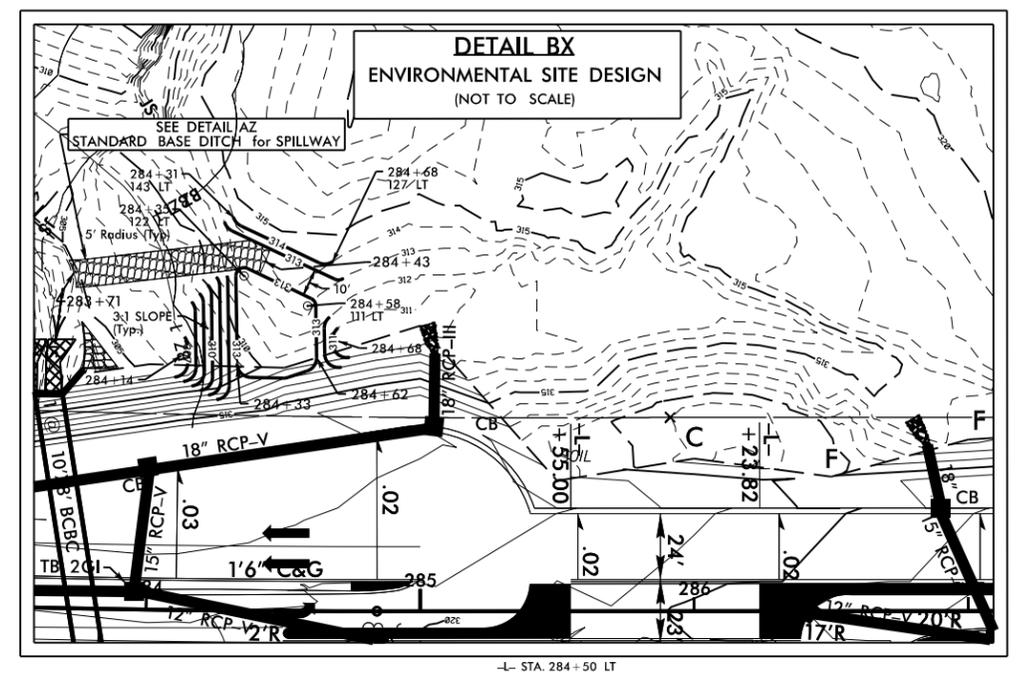
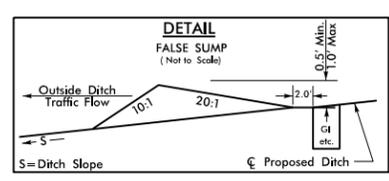
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DETAIL
 FALSE SUMP
 (Not to Scale)

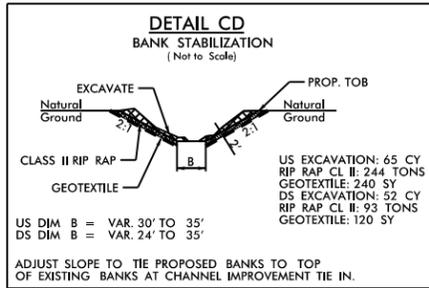
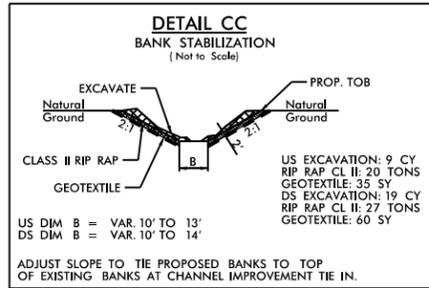
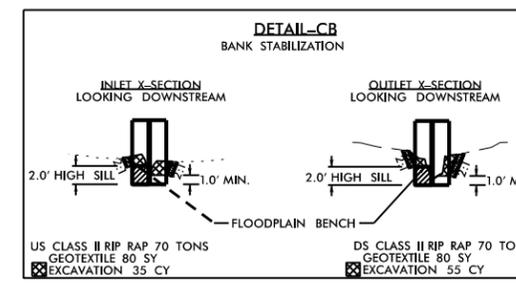
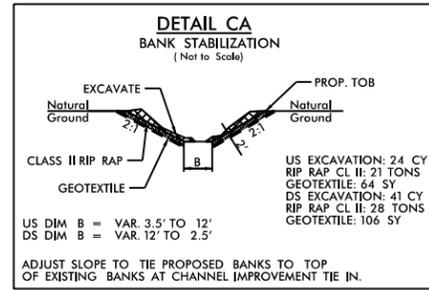
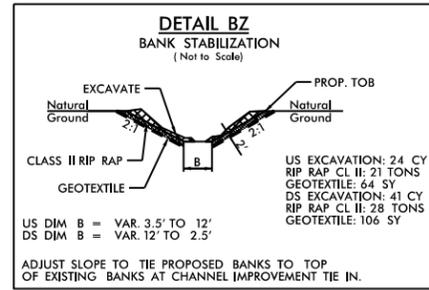
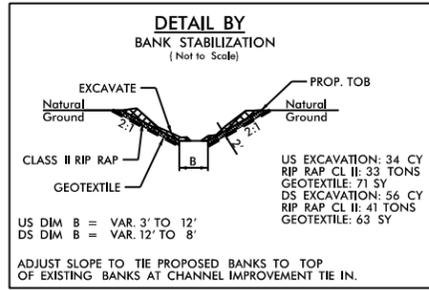
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



8/17/99
 REVISIONS
 5/12/05
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REVISIONS

5/12/2015
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	2D-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 59 OF 61	

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 55+75 RT	36" RCP	0.04			< 0.01						
1A	-L- 55+75 LT	36" RCP			0.03							
2	-L- 58+80 RT	24" RCP	0.04			0.01						
3	-L- 67+45 LT	Pond						0.28				
3	-L- 67+45 RT	Bank Stabilization				< 0.01		< 0.01	< 0.01	10	10	
4	-L- 107+88 RT<	3@12'X11' RCBC	0.37	0.09		0.10						
5	-L- 137+22 LT	1@12'X7' RCBC	0.42	0.06	0.02	0.07		0.02		123		
5	-L- 137+22 LT	Bank Stabilization						< 0.01	< 0.01	64	39	
5A	-L- 137+22 RT	1@12'X7' RCBC	0.06	0.02	< 0.01	0.07		< 0.01		12		
5A	-L- 137+22 RT	Bank Stabilization						0.01	< 0.01	60	31	
6	-Y6- 21+86 RT	1@12'X7' RCBC	0.04	0.03	0.01	0.03		< 0.01		49		
6	-Y6- 21+86 RT	Bank Stabilization						< 0.01	< 0.01	59	33	
7	-Y6- 31+75 RT	Road/Toe Protection	0.04			0.03						
8 **	-L- 168+21 LT	2@7'X7' RCBC	0.19	< 0.01	0.04	0.10		0.02		161		
8	-L- 168+21 LT	Bank Stabilization						0.01	< 0.01	75	31	
8A	-L- 168+21 RT	2@7'X7' RCBC	< 0.01		0.01	0.05		< 0.01		10		
8A	-L- 168+21 RT	Bank Stabilization						0.01	< 0.01	42	28	
9	-L- 175+00 LT	Roadway Fill	0.17									
10	-L- 180+25 RT	"False cut" Ditch fill	0.01			0.05						
11	-L- 229+60 LT	54" RCP						< 0.01		11		
11 ***	-L- 229+60 LT	Bank Stabilization						< 0.01	< 0.01	21	6	
11A	-L- 229+60 RT	54" RCP	0.20		< 0.01	0.03		0.02		100		
11A	-L- 229+60 RT	Bank Stabilization						< 0.01	< 0.01	19	6	
SHEET SUBTOTALS*:			1.58	0.20	0.11	0.56		0.40	0.02	816	184	

*Rounded totals are sum of actual impacts

NOTES:

** Rev 11-2-16 Site 8: Fill slope adjusted. Permanent Fill in Wetlands was 0.20 ac and is now 0.19ac. Mech. Clearing in Wetlands was 0.11 ac and is now 0.10 ac.

*** Rev 11-4-16 Site 11 Ditch alignment adjustment. Increased Permanent Surface Water Impacts (Bank Stabilization) by 3', reduced Temporary Surface Water Impacts by 3'.

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 September 1, 2016, Revised November 4, 2016
 Wake/Franklin
 R-2814C
 34506.1.4
 SHEET 60 OF 61

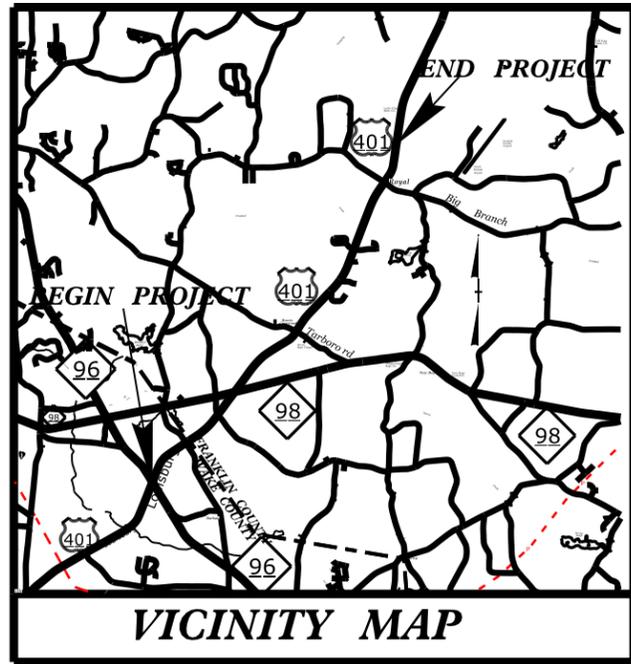
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 23

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2814C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34506.1.4	STP-401(249)	PE	
34506.2.FR7	STP-401(249)	R/W	
34506.2.FRU7	STP-401(249)	UTILITIES	

TIP PROJECT: R-2814C



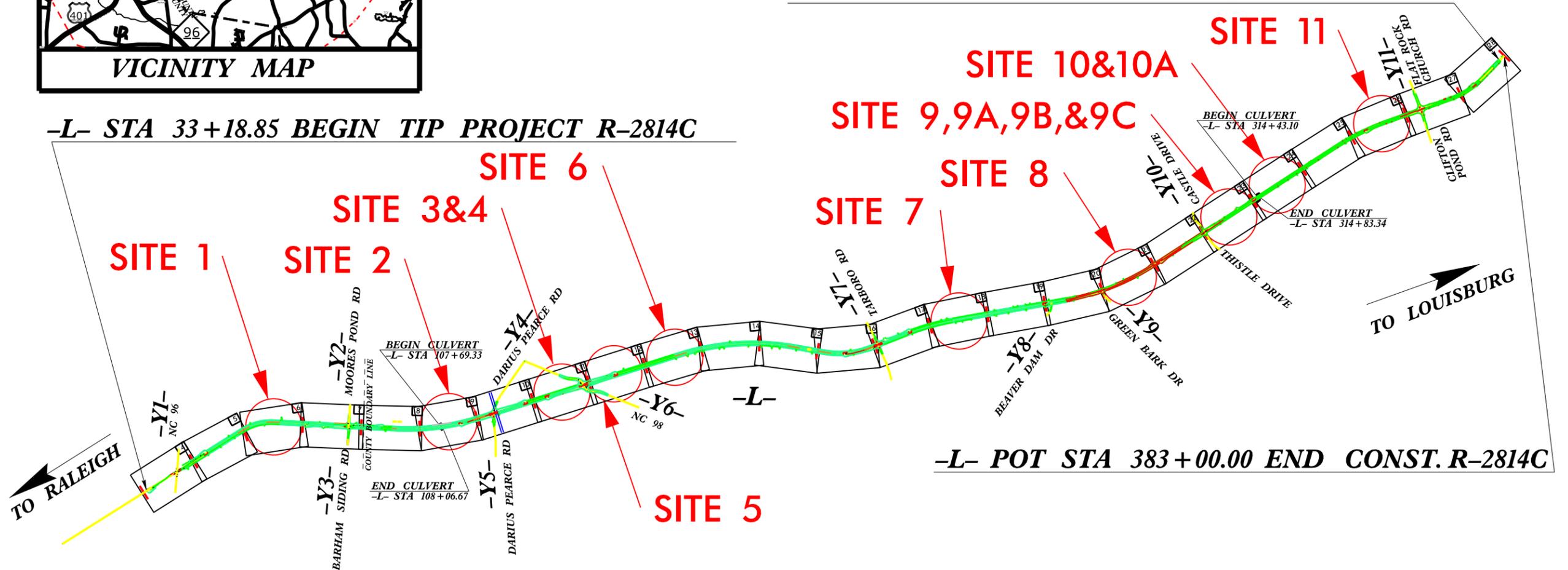
WAKE/FRANKLIN COUNTY

LOCATION: US 401 FROM NC 96 TO NORTH OF SR 1103 (FLAT ROCK CHURCH RD/CLIFTON POND RD.)
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB AND GUTTER, CULVERTS, AND SIGNALS

BUFFER IMPACTS

-L- STA 381+40.55 END TIP PROJECT R-2814C

-L- STA 33+18.85 BEGIN TIP PROJECT R-2814C

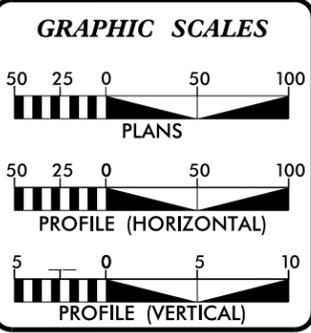


-L- POT STA 383+00.00 END CONST. R-2814C

THIS IS A FULL AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS POINTS SHOWN ON THE PLANS.
THIS PROJECT IS NOT WITHIN THE LIMITS OF MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2016 =	10,892
ADT 2036 =	15,848
K =	10 %
D =	65 %
T =	6 % *
V =	60 MPH
* TTST =	2% DUAL = 4%
FUNC CLASS =	MAJOR COLLECTOR
	STATEWIDE TIER

PROJECT LENGTH

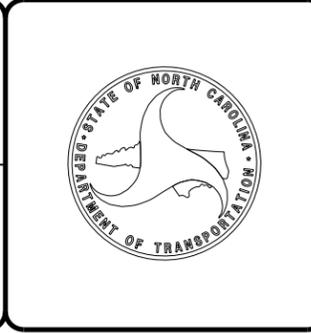
LENGTH OF ROADWAY TIP PROJECT R-2814C	=	6.580 MILES
LENGTH STRUCTURES TIP PROJECT R-2814C	=	0.015 MILES
TOTAL LENGTH OF TIP PROJECT R-2814C	=	6.595 MILES

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	JANUARY 28, 2015
LETTING DATE:	PY
	KEVIN E. MOORE, PE PROJECT ENGINEER
	NATHAN N. ADIMA, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

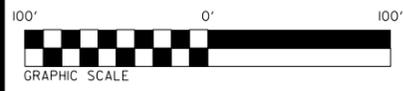
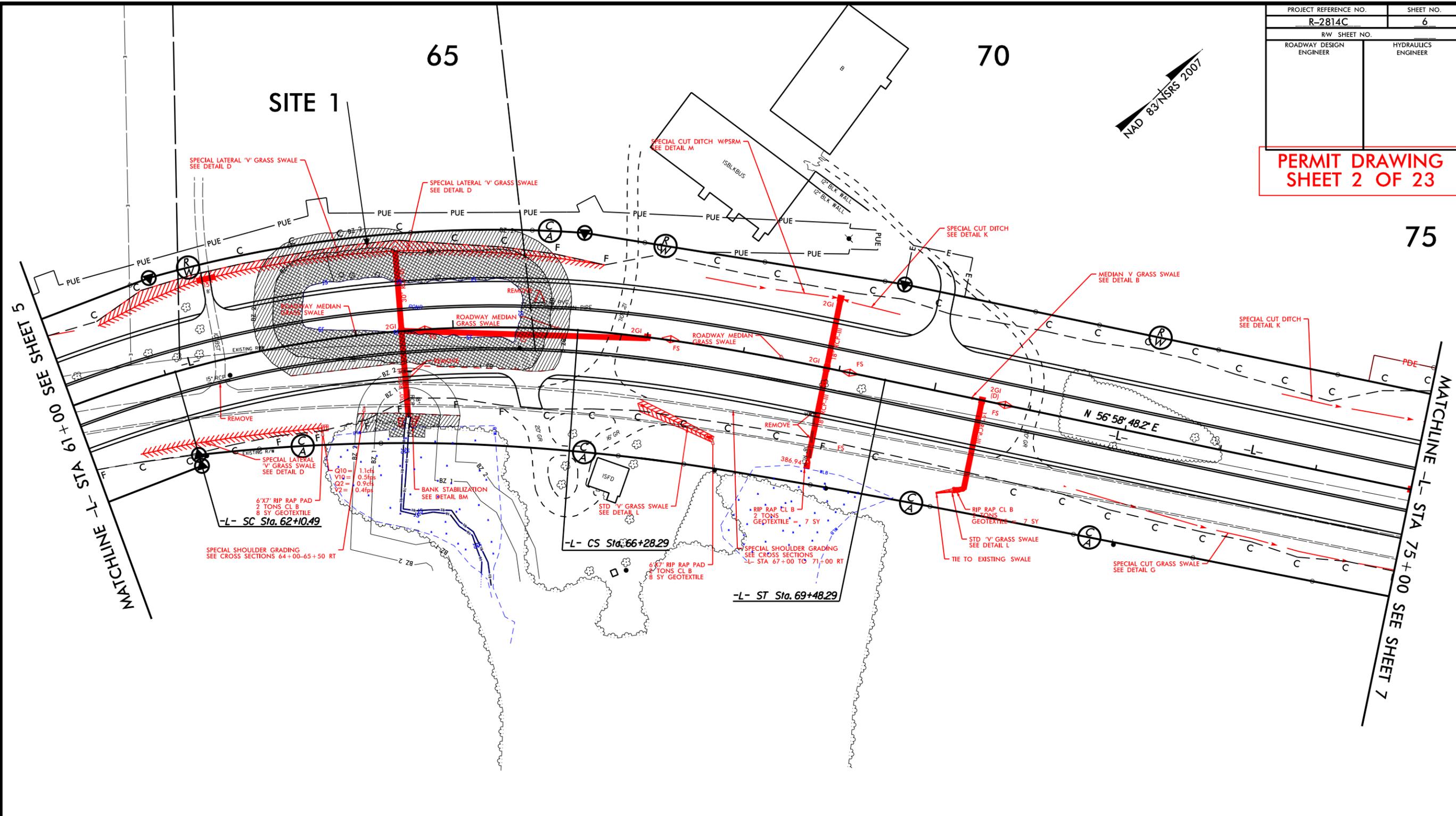
SIGNATURE:	P.E.
	ROADWAY DESIGN ENGINEER
SIGNATURE:	P.E.



7/16/2015 c:\ee R:\Hydraulics\Permits Environmental\R2814C_Hyd_tsh_buf.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 2 OF 23**



- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

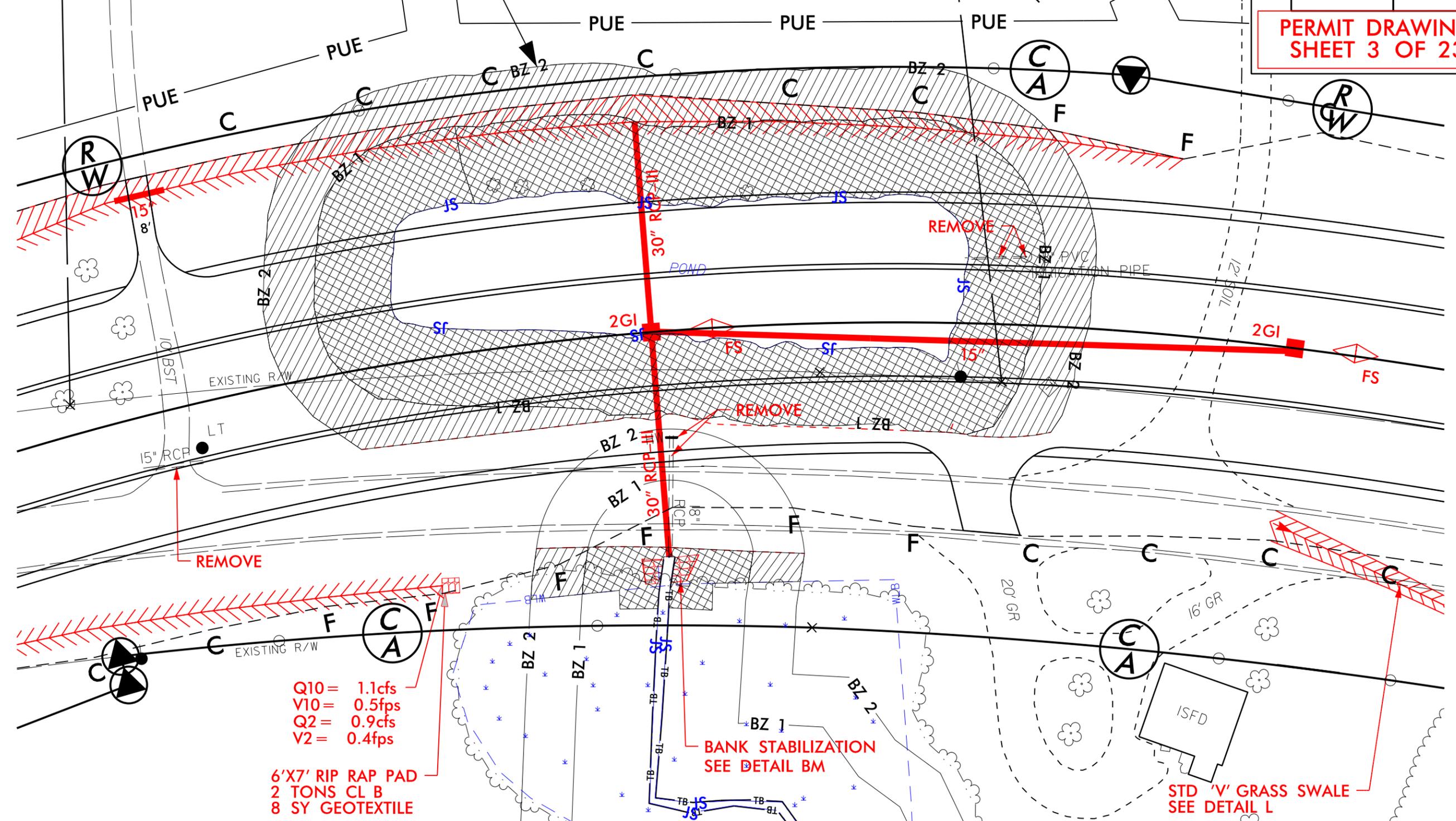
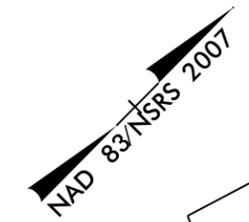
REVISIONS
 RIGHT OF WAY REVISION:
 CHORD ON PARCEL 12. BDK 02-12-2015.
 TIED PUE TO ROW CHORD AND ADJUSTED OFFSET LABEL ON PARCEL 12. BDK 02-12-2015.

4/20/2015
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 \$\$\$\$\$\$DATE\$\$\$\$\$\$

SITE 1

PROJECT REFERENCE NO. R-2814C	SHEET NO. 6A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 3 OF 23**

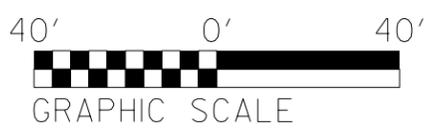


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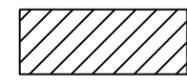
6'X7' RIP RAP PAD
2 TONS CL B
8 SY GEOTEXTILE

BANK STABILIZATION
SEE DETAIL BM

STD 'V' GRASS SWALE
SEE DETAIL L



MITIGABLE IMPACTS ZONE 1



MITIGABLE IMPACTS ZONE 2

REVISIONS

4/30/2015
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\$\$\$\$SYTIME\$\$\$\$

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 4 OF 23**



105

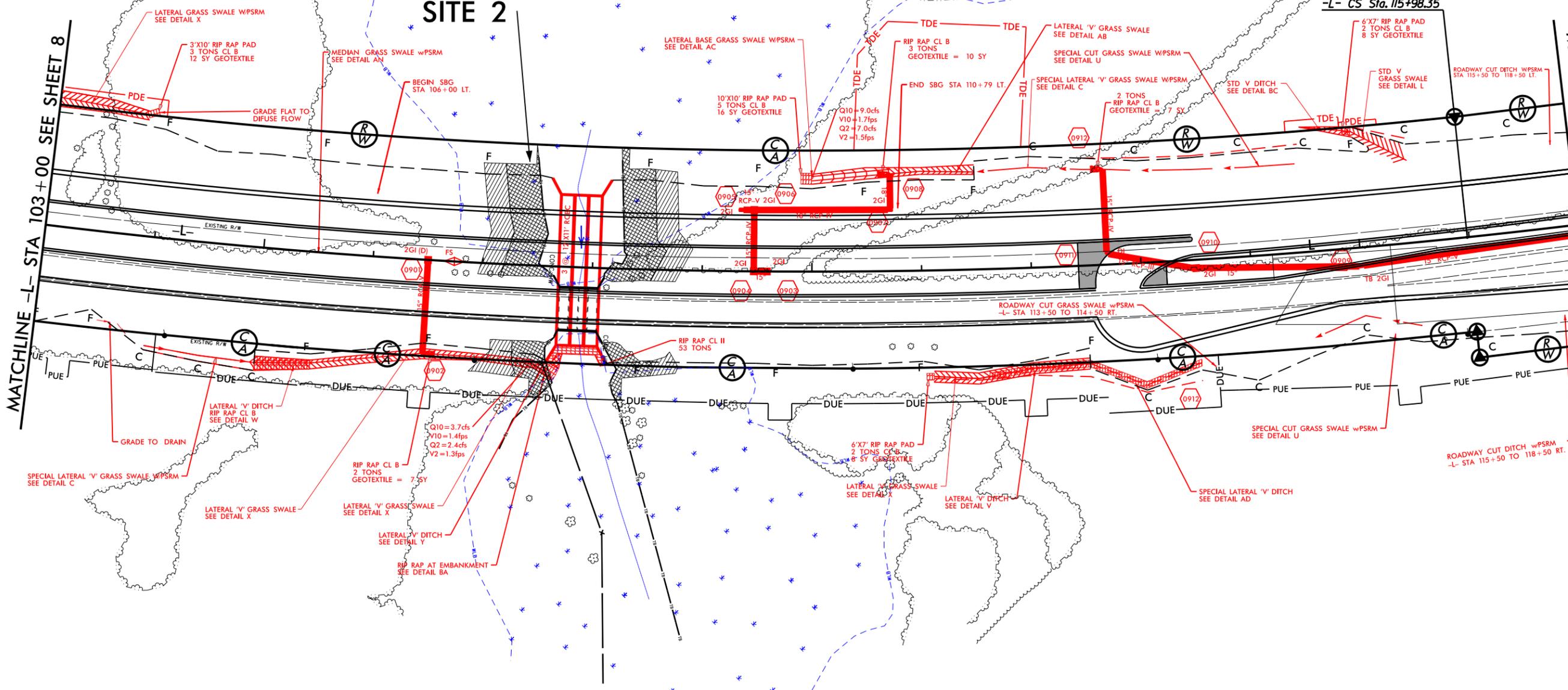
110

115

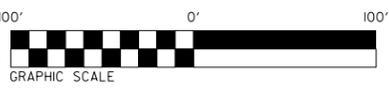
SITE 2

MATCHLINE -L- STA 103+00 SEE SHEET 8

MATCHLINE -L- STA 117+00 SEE SHEET 10



REVISIONS



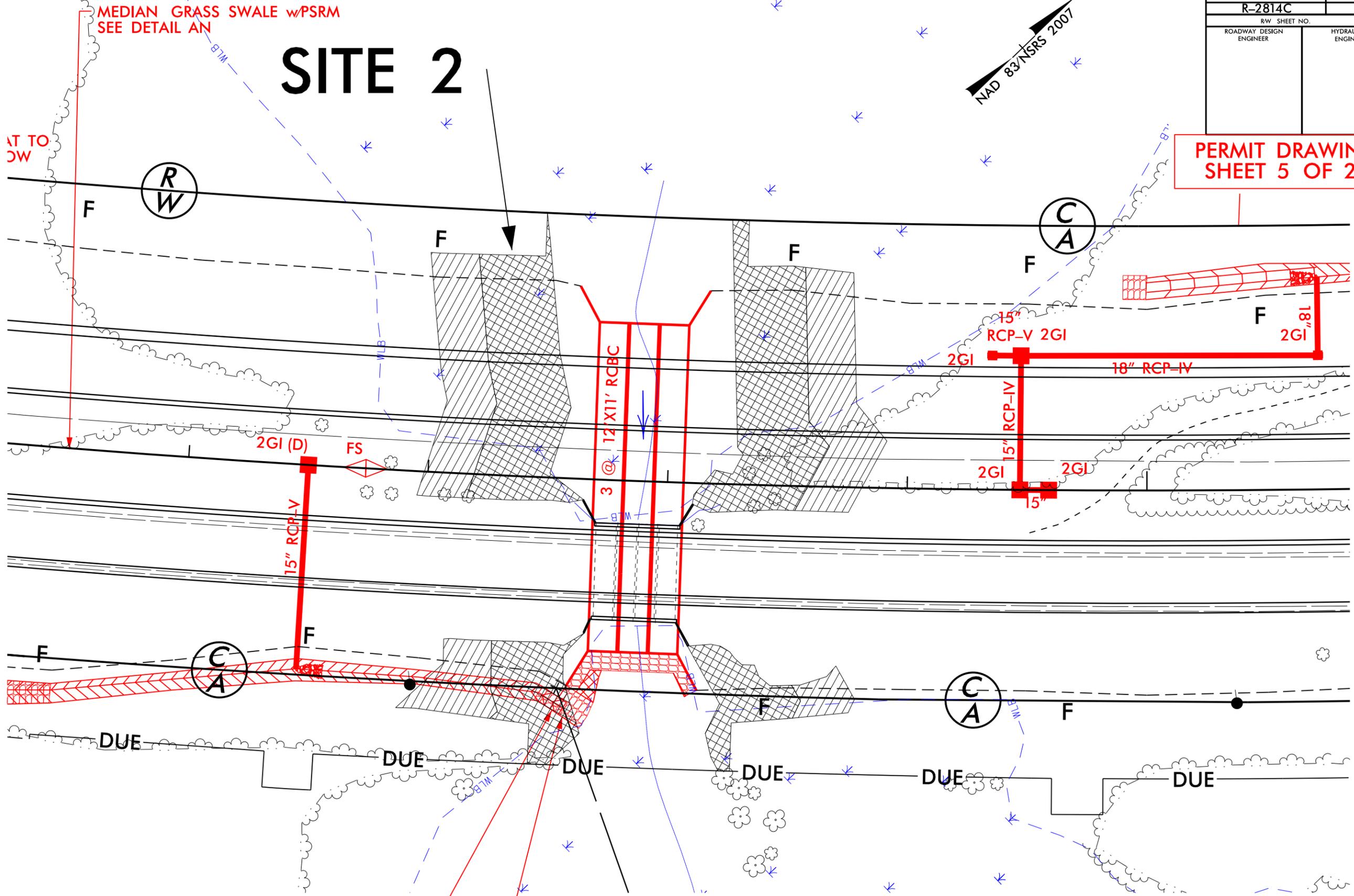
- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

10/2/2016
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 9A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 5 OF 23**

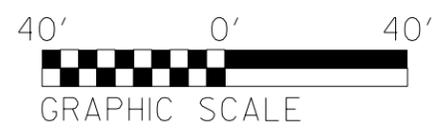
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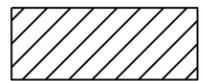
**MEDIAN GRASS SWALE w/PSRM
SEE DETAIL AN**

**AT TO
DW**

NAD 83/NSRS 2007



MITIGABLE IMPACTS ZONE 1



MITIGABLE IMPACTS ZONE 2

REVISIONS

10/6/2016
mkelly
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PROJECT REFERENCE NO. R-2814C	SHEET NO. 11A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**PERMIT DRAWING
SHEET 7 OF 23**

NAD 83/NSRS 2007

SITE 4

SITE 3

10'x6' RIP RAP PAD
3 TONS CL B
11 SY GEOTEXTILE

BANK STABILIZATION
CLASS II RIP RAP=12 TONS
GEOTEXTILE=30 SY
SEE CONSTRUCTION SEQUENCE

FALSE CUT GRASS SWALE
SEE DETAIL AH

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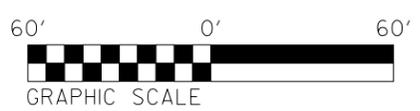
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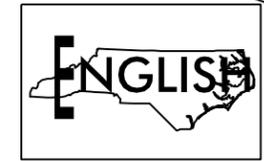
10'x6' RIP RAP PAD
3 TONS CL B
11 SY GEOTEXTILE

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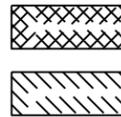
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- ALLOWABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

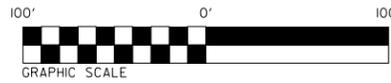


REVISIONS
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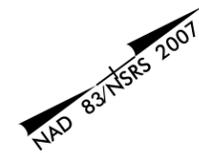
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ALLOWABLE IMPACTS ZONE 2



150

155



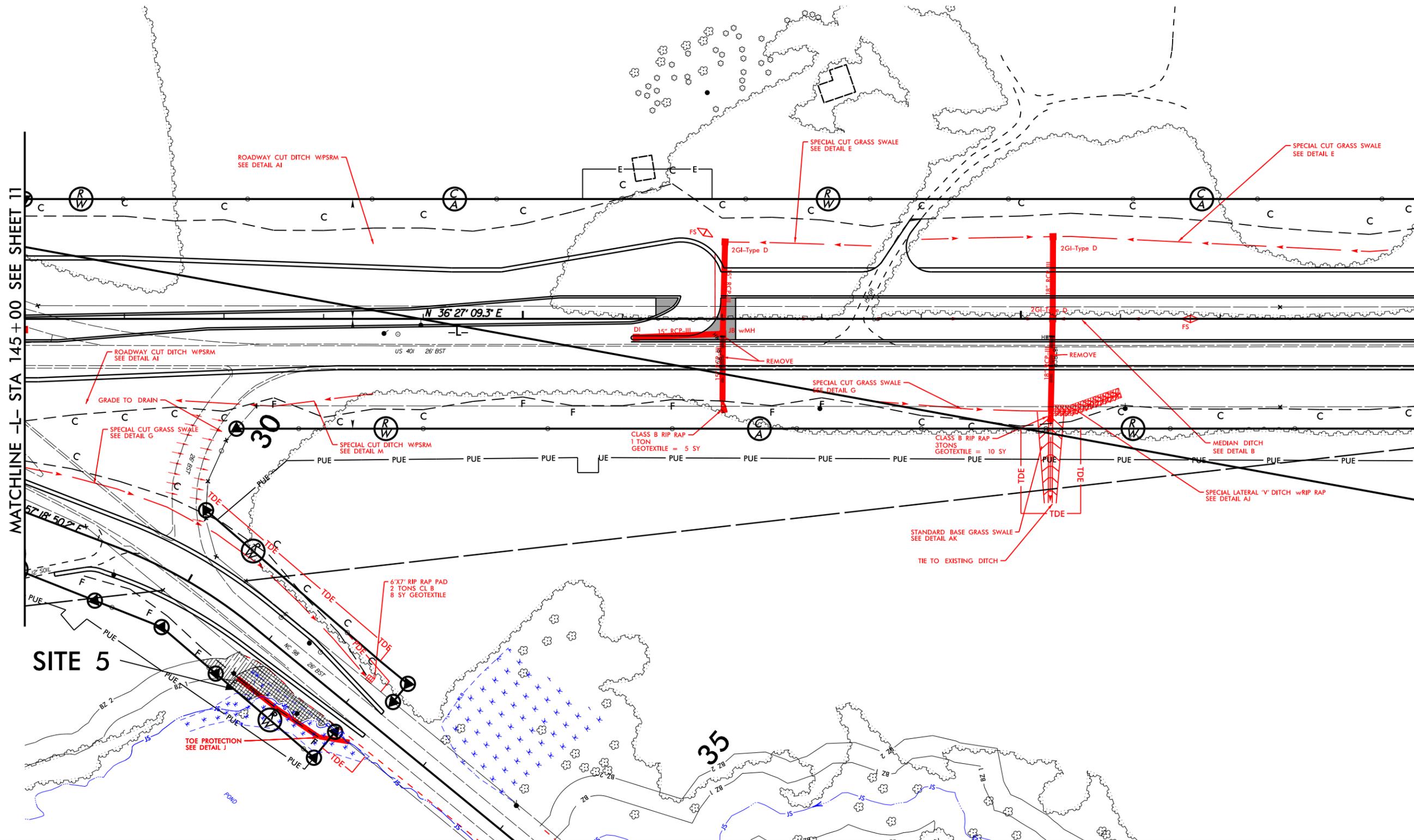
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 8 OF 23**

REVISIONS

MATCHLINE -L- STA 145 + 00 SEE SHEET 11

MATCHLINE -L- STA 159 + 00 SEE SHEET 13



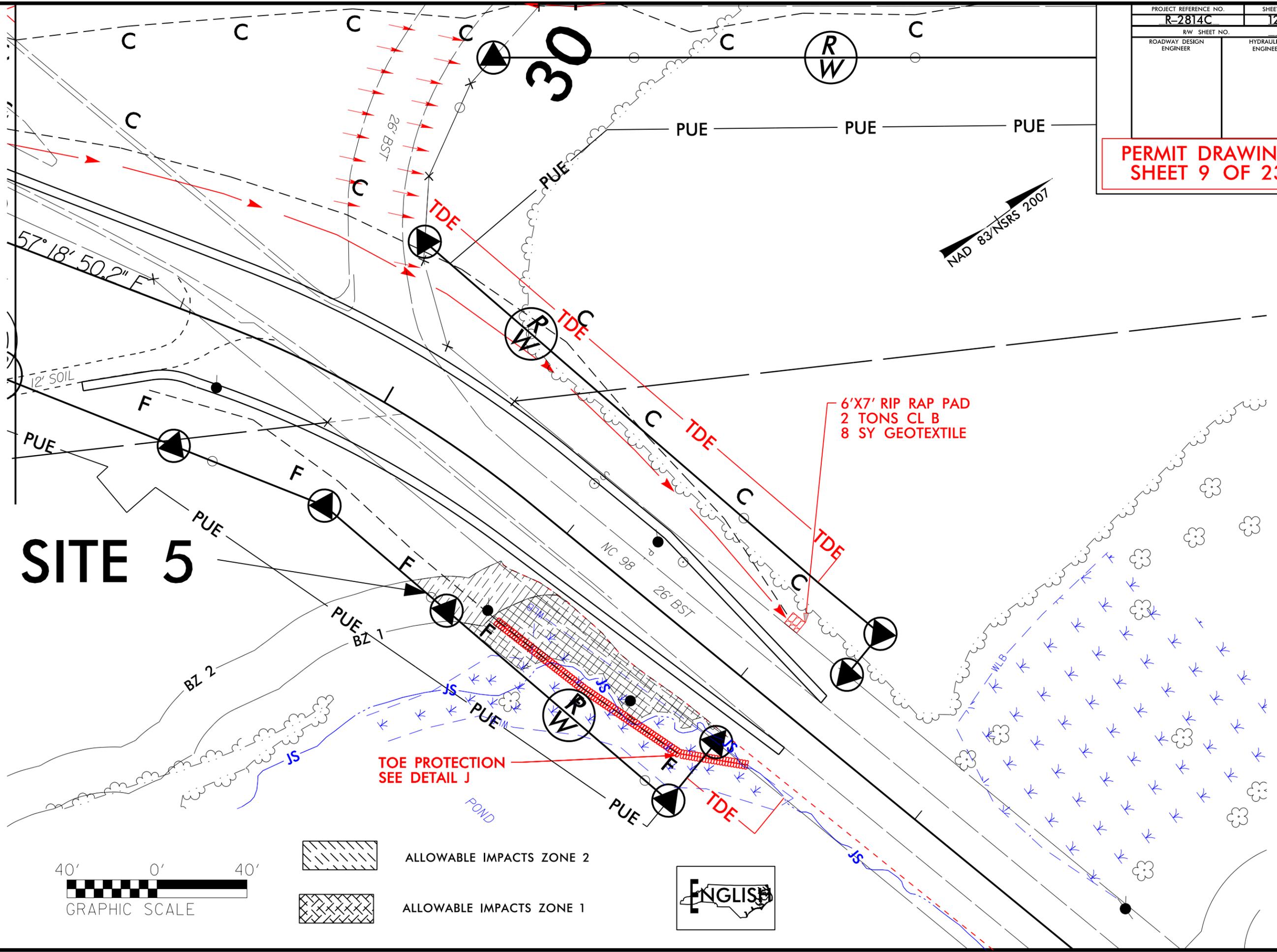
SITE 5

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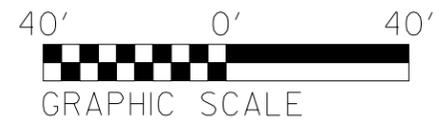
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	12A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 9 OF 23**



SITE 5



-  ALLOWABLE IMPACTS ZONE 2
-  ALLOWABLE IMPACTS ZONE 1



REVISIONS

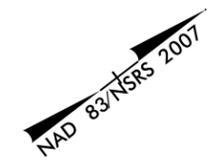
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8/17/99

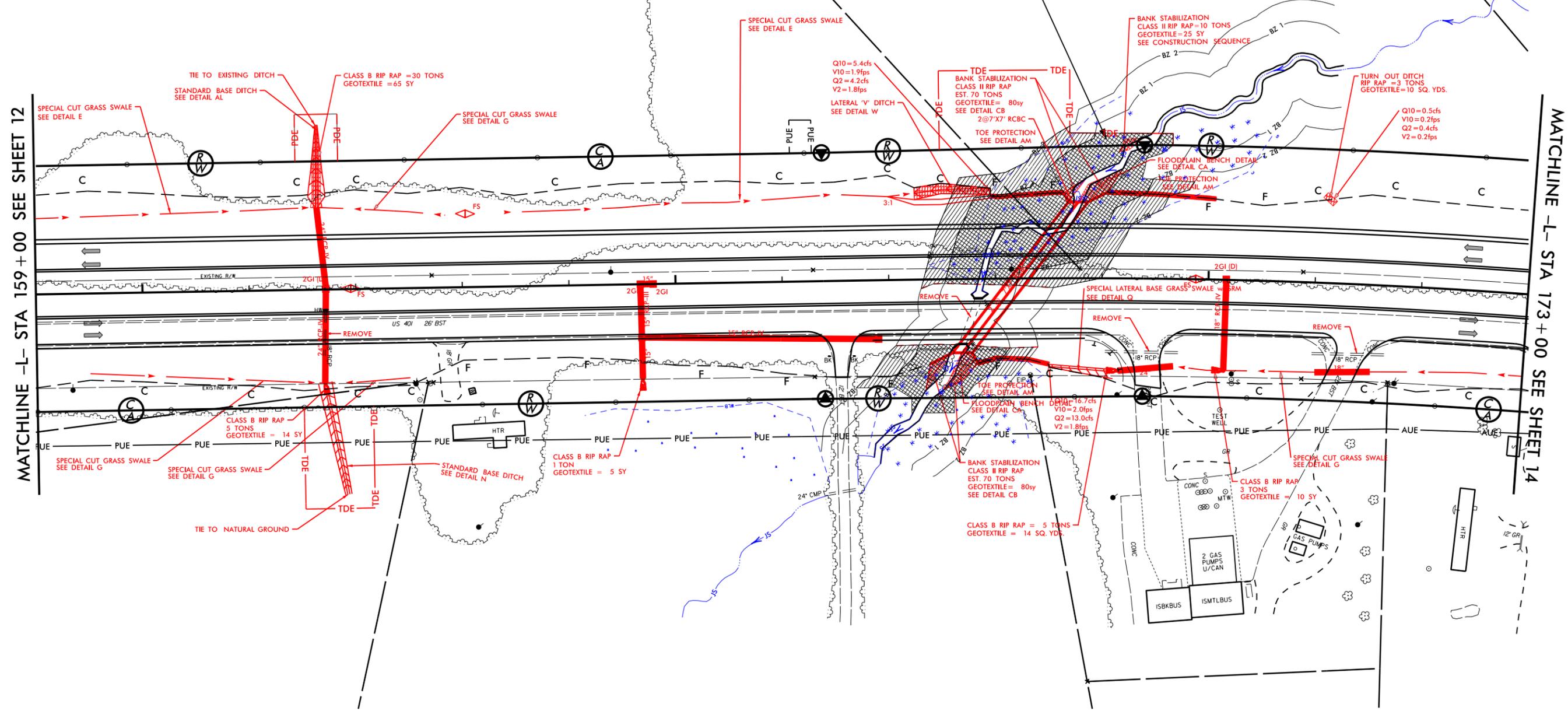
PROJECT REFERENCE NO. R-2814C	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 10 OF 23**

Revised 11/4/2016



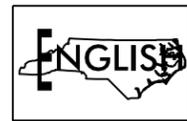
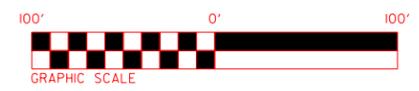
SITE 6



REVISIONS

MATCHLINE -L- STA 159+00 SEE SHEET 12

MATCHLINE -L- STA 173+00 SEE SHEET 14



- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

11/4/2016
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	13A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 11 OF 23

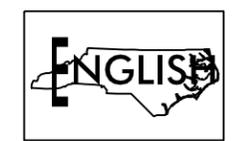
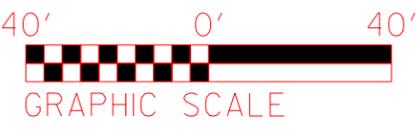
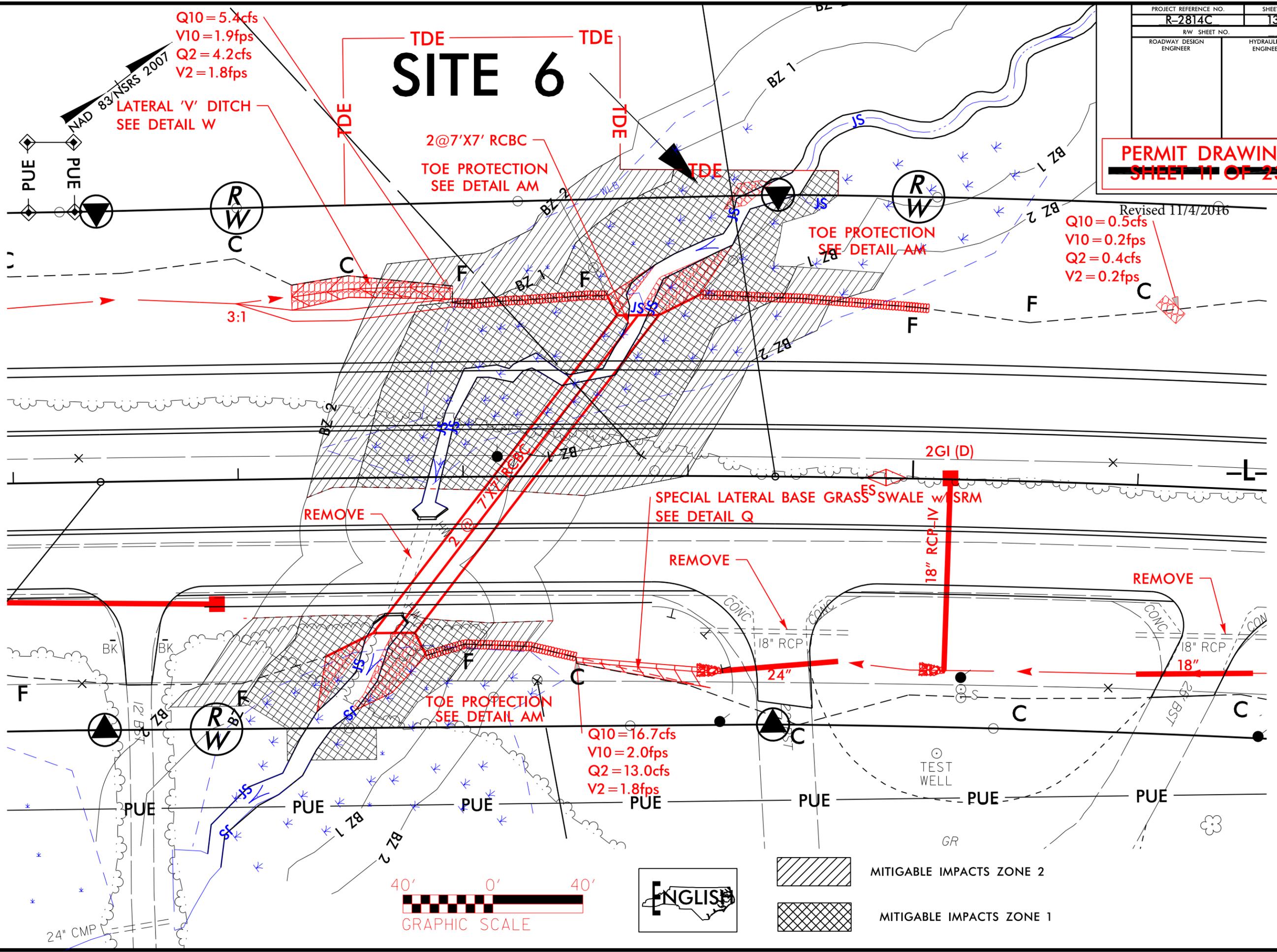
Revised 11/4/2016

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SITE 6



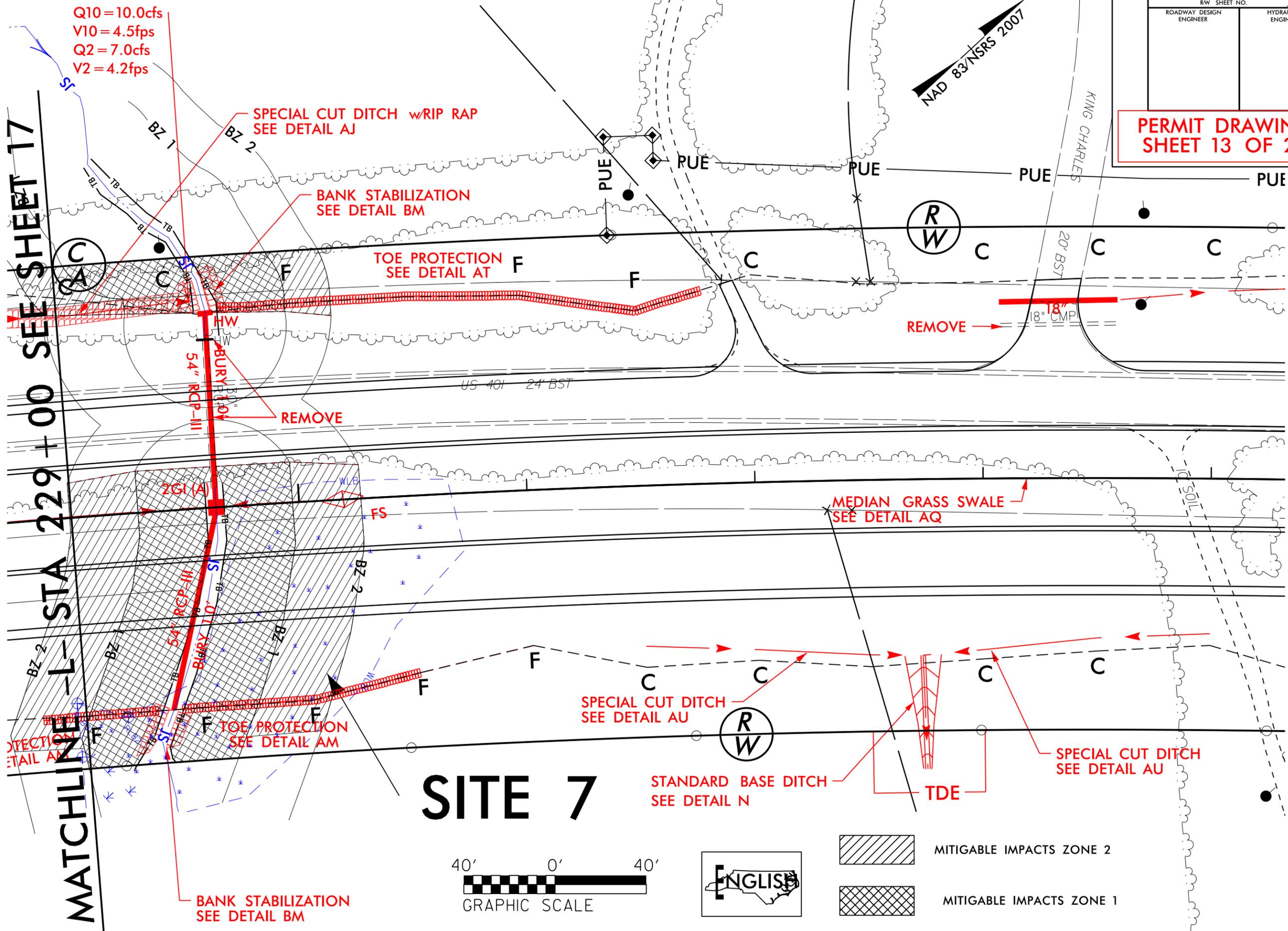
-  MITIGABLE IMPACTS ZONE 2
-  MITIGABLE IMPACTS ZONE 1

REVISIONS

11/4/2016
Imjohns
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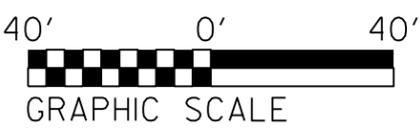
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RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 13 OF 23**



MATCHLINE -L- STA 229 + 00 SEE SHEET 17

SITE 7



- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

REVISIONS

7/16/2015
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SPECIAL CUT DITCH w/ RIP RAP
SEE DETAIL AJ

BANK STABILIZATION
SEE DETAIL BM

TOE PROTECTION
SEE DETAIL AT

REMOVE → 18" CMP

REMOVE

MEDIAN GRASS SWALE
SEE DETAIL AQ

SPECIAL CUT DITCH
SEE DETAIL AU

STANDARD BASE DITCH
SEE DETAIL N

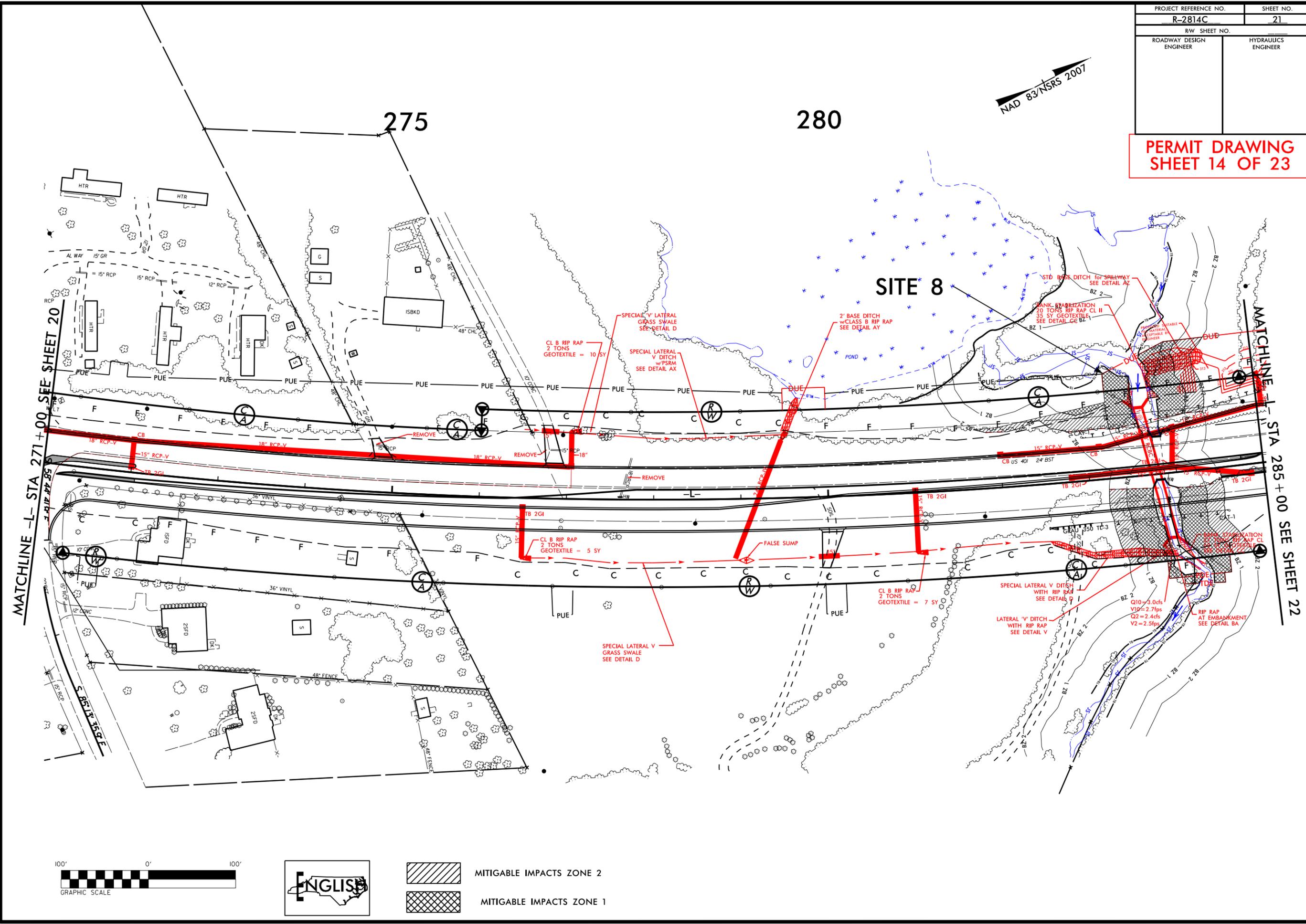
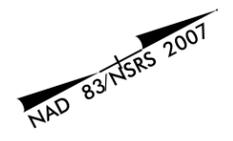
SPECIAL CUT DITCH
SEE DETAIL AU

BANK STABILIZATION
SEE DETAIL BM

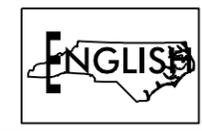
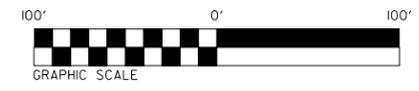
TOE PROTECTION
SEE DETAIL AM

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 14 OF 23**



REVISIONS

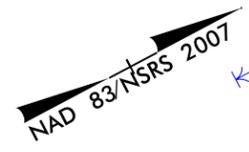
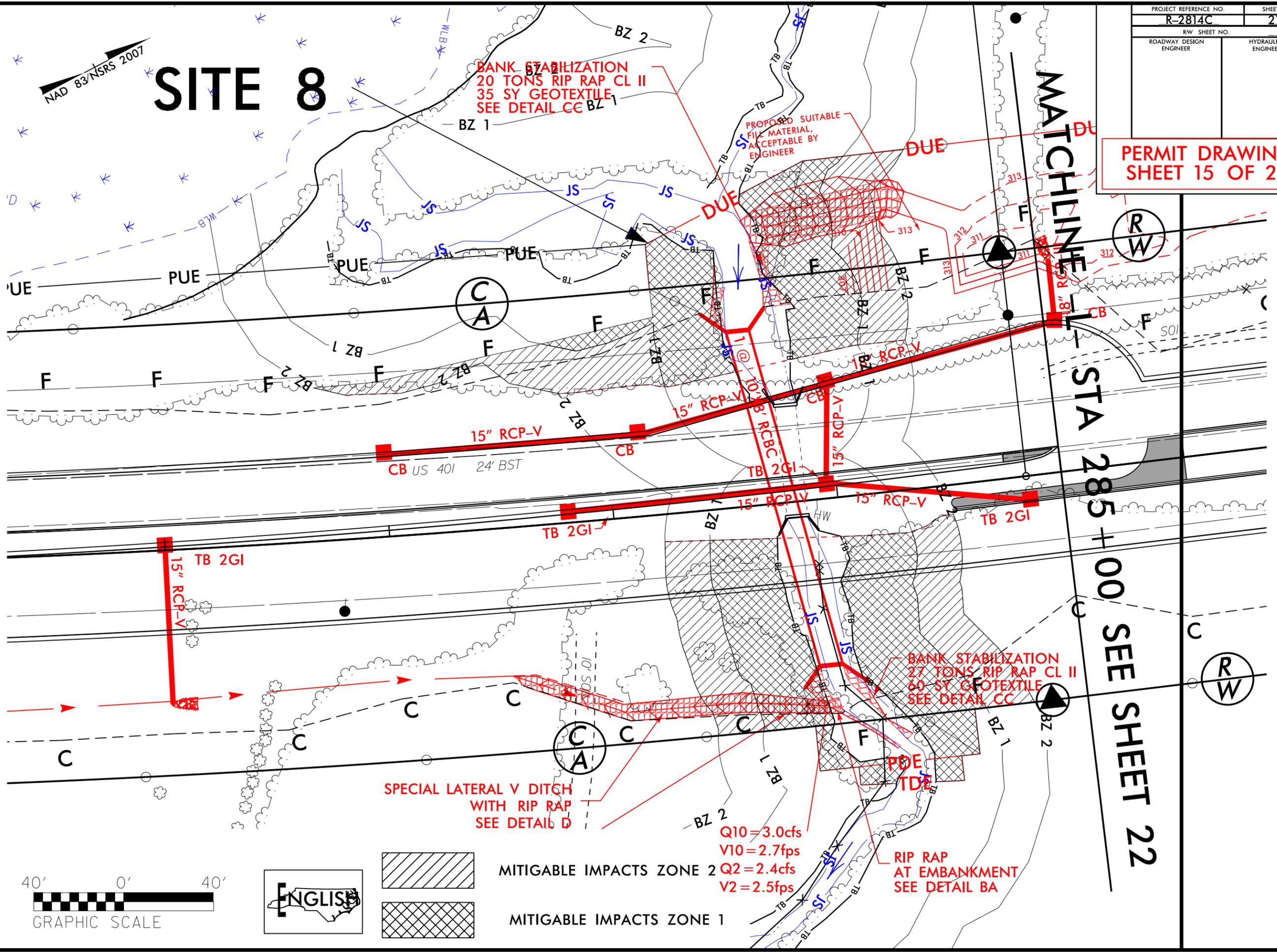


- MITIGABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

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 \$\$\$\$\$\$DATE\$\$\$\$\$\$

PROJECT REFERENCE NO. R-2814C	SHEET NO. 21A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**PERMIT DRAWING
SHEET 15 OF 23**



SITE 8

MATCHLINE
STA 285 + 00 SEE SHEET 22

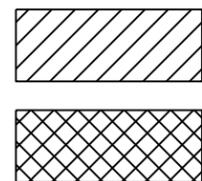
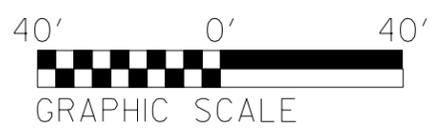
BANK STABILIZATION
20 TONS RIP RAP CL II
35 SY GEOTEXTILE
SEE DETAIL CC BZ 1

BANK STABILIZATION
27 TONS RIP RAP CL II
60 SY GEOTEXTILE
SEE DETAIL CC

SPECIAL LATERAL V DITCH
WITH RIP RAP
SEE DETAIL D

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V10 = 2.7fps
Q2 = 2.4cfs
V2 = 2.5fps

RIP RAP
AT EMBANKMENT
SEE DETAIL BA



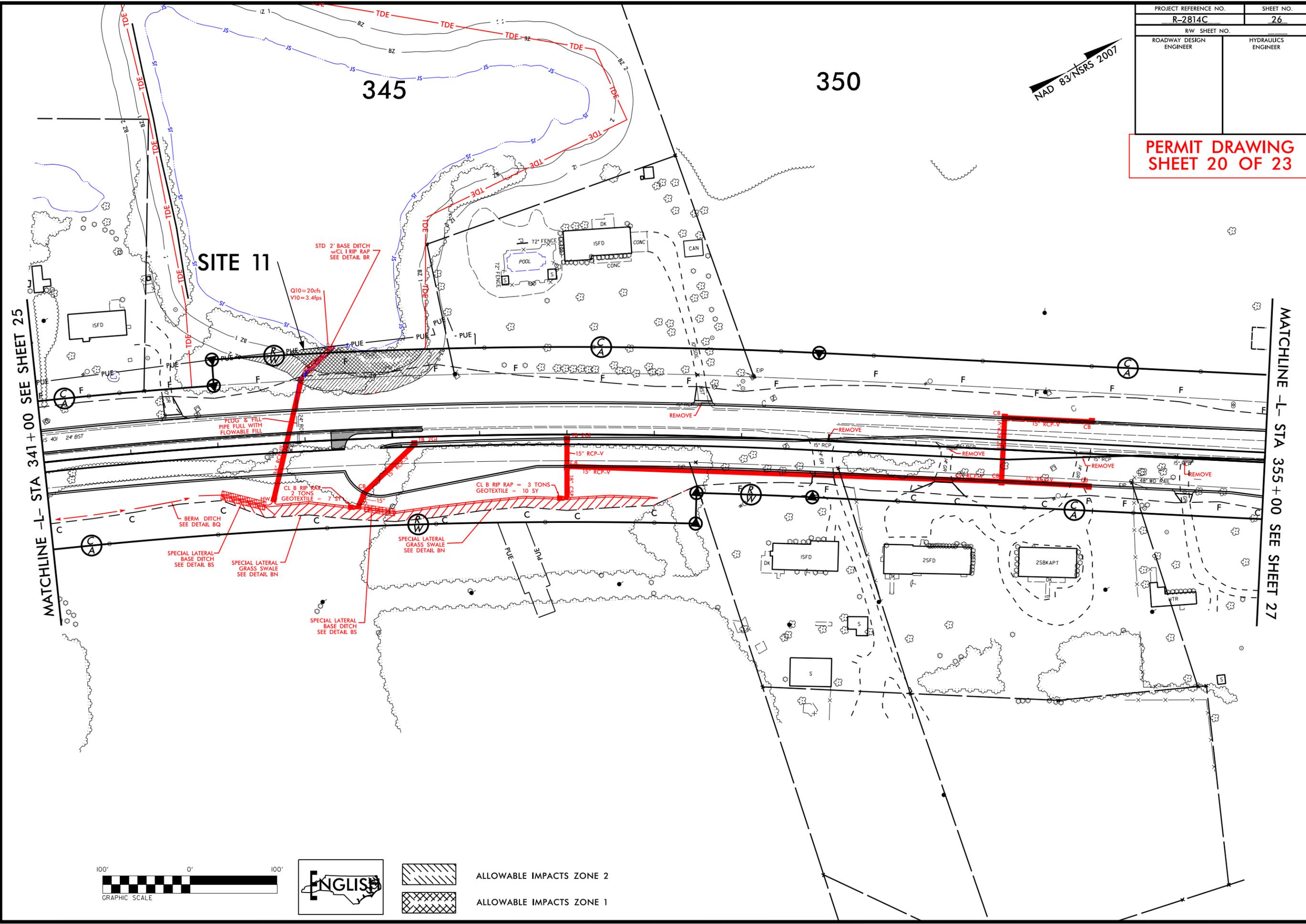
MITIGABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1

REVISIONS

5/6/2015
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PROJECT REFERENCE NO.	SHEET NO.
R-2814C	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

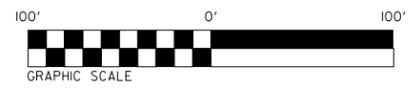
**PERMIT DRAWING
SHEET 20 OF 23**



MATCHLINE -L- STA 341+00 SEE SHEET 25

MATCHLINE -L- STA 355+00 SEE SHEET 27

REVISIONS



- ALLOWABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1

5/6/2015
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 \$\$\$\$DATE\$\$\$\$\$\$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2814C	26A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**PERMIT DRAWING
SHEET 21 OF 23**

SITE 11

STD 2' BASE DITCH
w/CL 1 RIP RAP
SEE DETAIL BR

Q10 = 20cfs
V10 = 3.4fps

PLUG & FILL
PIPE FULL WITH
FLOWABLE FILL

CL B RIP RAP = 3 TONS
GEOTEXTILE = 10 SY

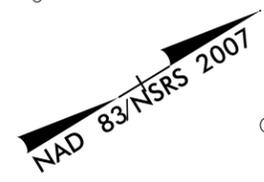
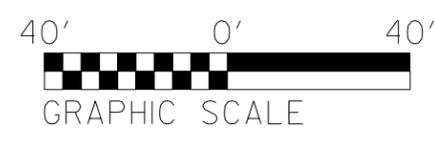
BERM DITCH
SEE DETAIL BQ

SPECIAL LATERAL
GRASS SWALE
SEE DETAIL BN

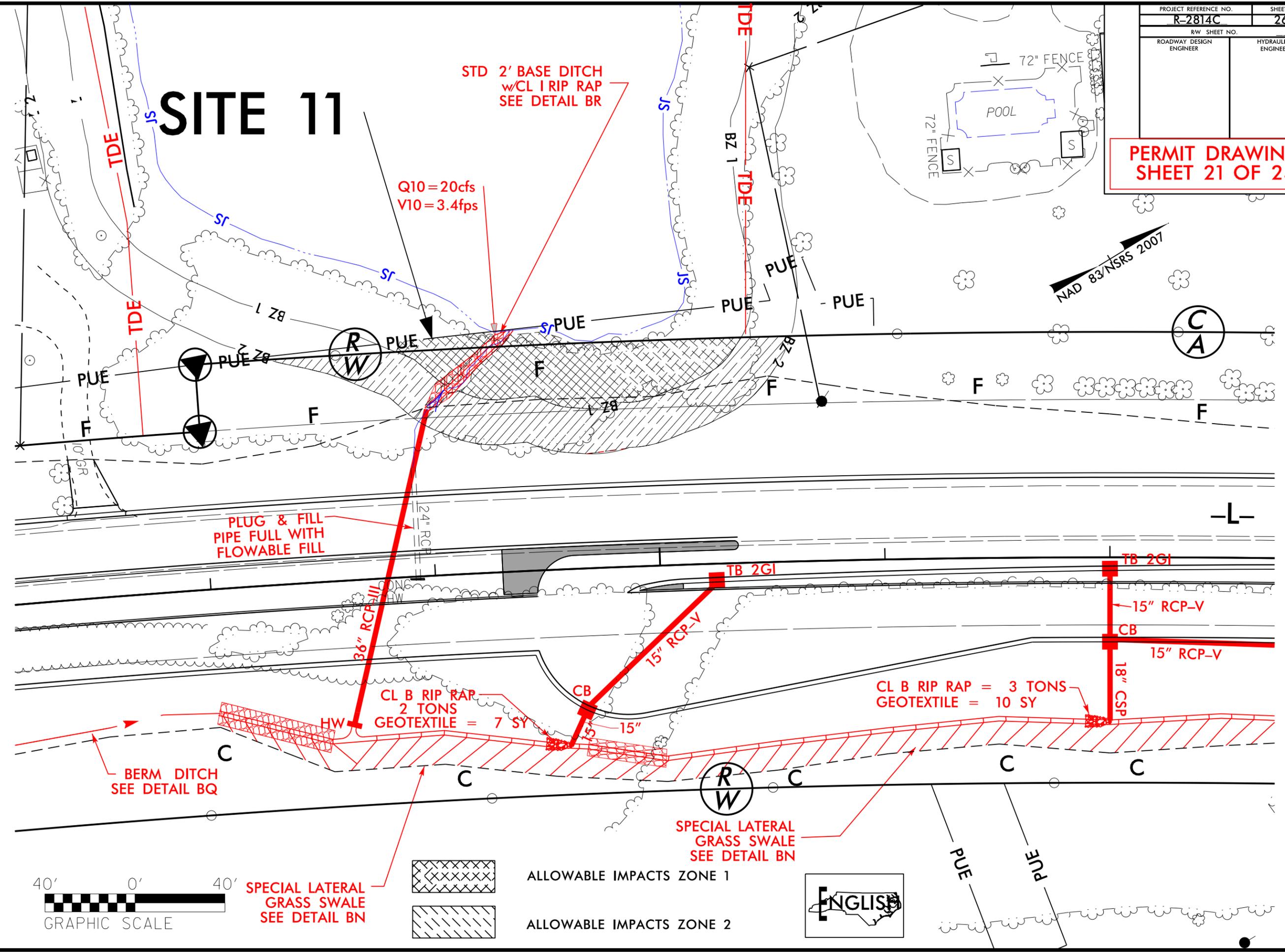
SPECIAL LATERAL
GRASS SWALE
SEE DETAIL BN

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2



REVISIONS
 5/6/2015
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09/08/99

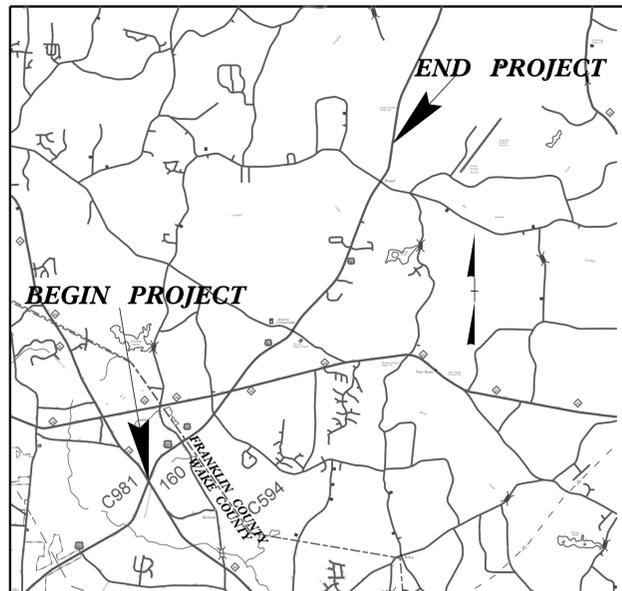
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2814C	UE-10

PERMIT DRAWING
SHEET 1 OF 7
UTILITIES

TIP PROJECT: R-2814C



VICINITY MAP

UTILITY PERMIT DRAWINGS WAKE /FRANKLIN COUNTY

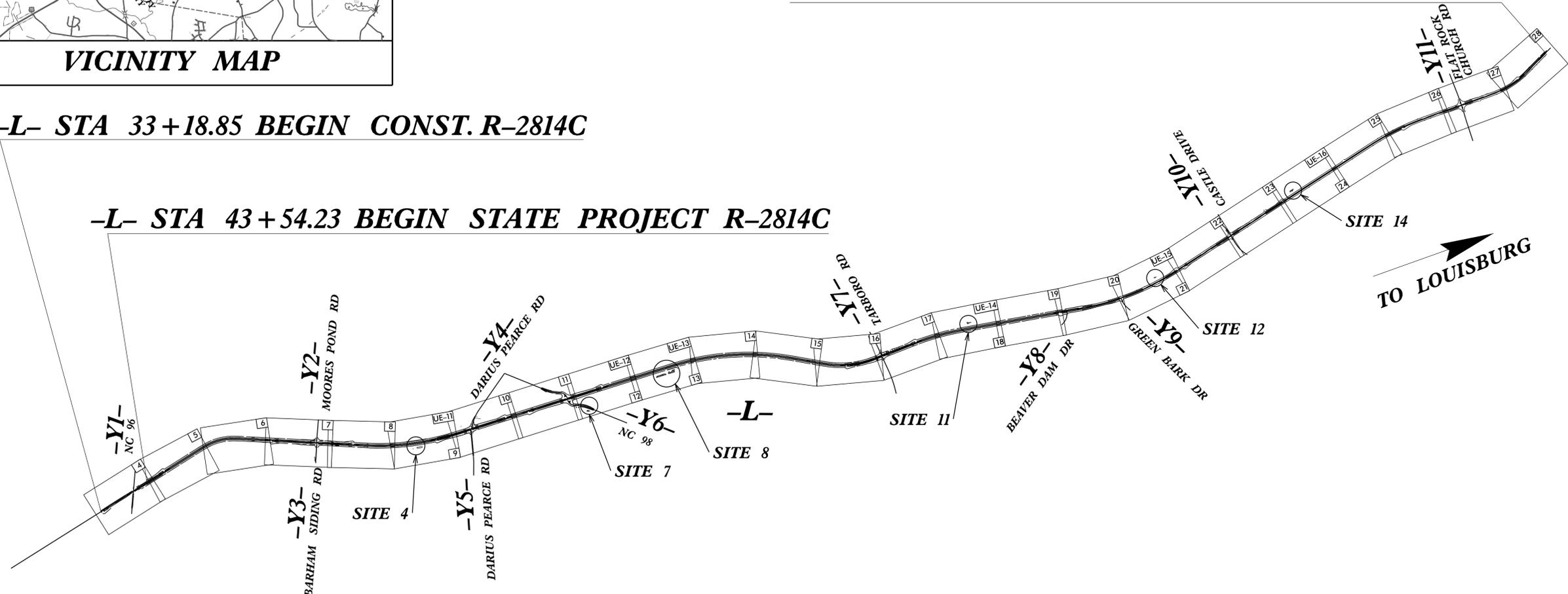
LOCATION: US 401 FROM NC 96 TO SR 1103

WETLAND IMPACTS

-L- STA 381+40.55 END STATE PROJECT R-2814C

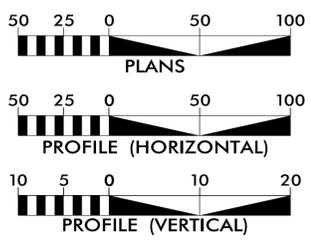
-L- STA 33+18.85 BEGIN CONST. R-2814C

-L- STA 43+54.23 BEGIN STATE PROJECT R-2814C



THIS IS A PARTIALLY CONTROLLED ACCESS PROJECT WITH ACCESS POINTS SHOWN ON THE PLANS.
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CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UE-1	BUFFER IMPACTS TITLE SHEET
UE-2 THRU UE-9	UTILITY BUFFER IMPACTS
UE-10	WETLAND IMPACTS TITLE SHEET
UE-11 THRU UE-16	UTILITY WETLAND IMPACTS

UTILITY OWNERS WITH CONFLICTS

- (A) POWER DISTRIBUTION - WAKE EMC
- (B) POWER DISTRIBUTION - DUKE ENERGY
- (C) CATV - TIME WARNER CABLE
- (D) WATER - AQUA NC, INC
- (E) TELEPHONE - CENTURYLINK

PREPARED IN THE OFFICE OF:

1223 Jones Franklin Road
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

John D. Schriener, PLS PROJECT UTILITY COORDINATOR

**DIVISION OF HIGHWAYS
UTILITIES UNIT**
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Donna Jackson, PE UTILITIES REGIONAL ENGINEER
Donald Proper UTILITIES ENGINEER
Ed Reams, Jr. UTILITIES AREA COORDINATOR
Ed Reams, Jr. UTILITIES COORDINATOR

\$\$\$\$\$ SYSTEMS \$\$\$
\$\$\$\$\$ DGN \$\$\$
\$\$\$\$\$ USERNAME \$\$\$

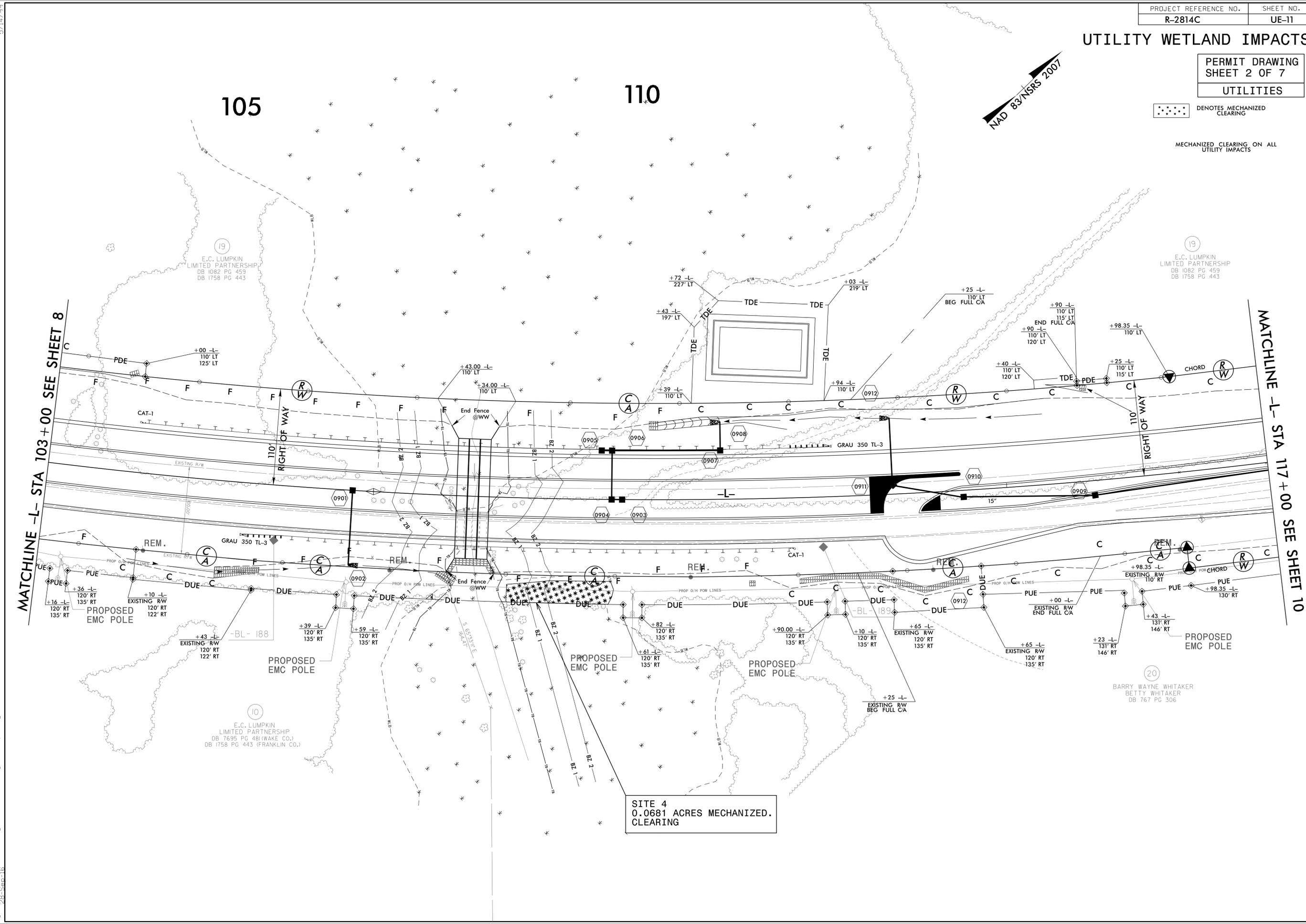
UTILITY WETLAND IMPACTS

PERMIT DRAWING
SHEET 2 OF 7
UTILITIES



..... DENOTES MECHANIZED CLEARING

MECHANIZED CLEARING ON ALL UTILITY IMPACTS



105

110

19
E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 1082 PG 459
DB 1758 PG 443

19
E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 1082 PG 459
DB 1758 PG 443

10
E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 7695 PG 481 (WAKE CO.)
DB 1758 PG 443 (FRANKLIN CO.)

20
BARRY WAYNE WHITAKER
BETTY WHITAKER
DB 767 PG 306

SITE 4
0.0681 ACRES MECHANIZED CLEARING

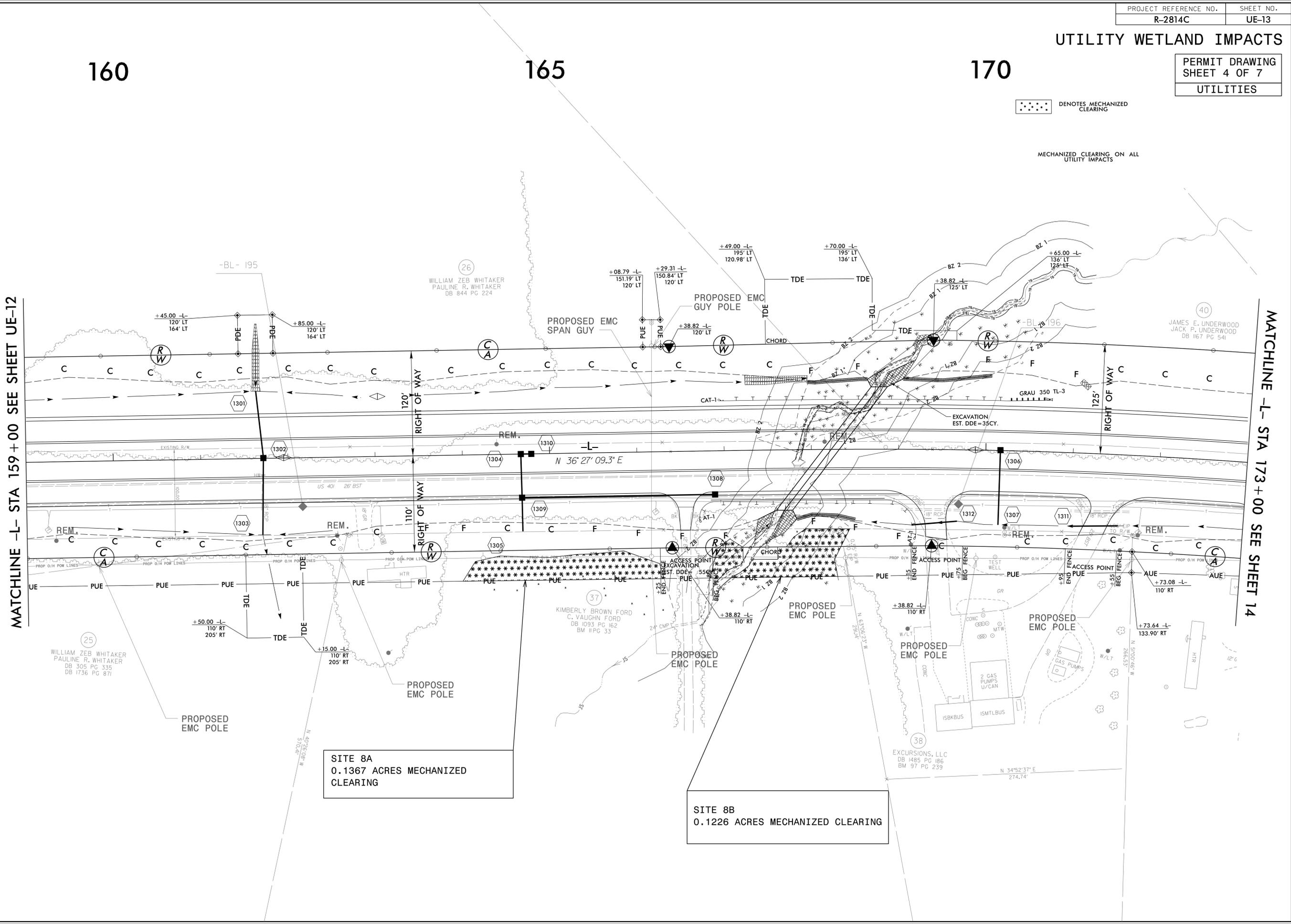
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UTILITY WETLAND IMPACTS

PERMIT DRAWING
SHEET 4 OF 7
UTILITIES

..... DENOTES MECHANIZED CLEARING

MECHANIZED CLEARING ON ALL UTILITY IMPACTS



REVISIONS

5/14/99

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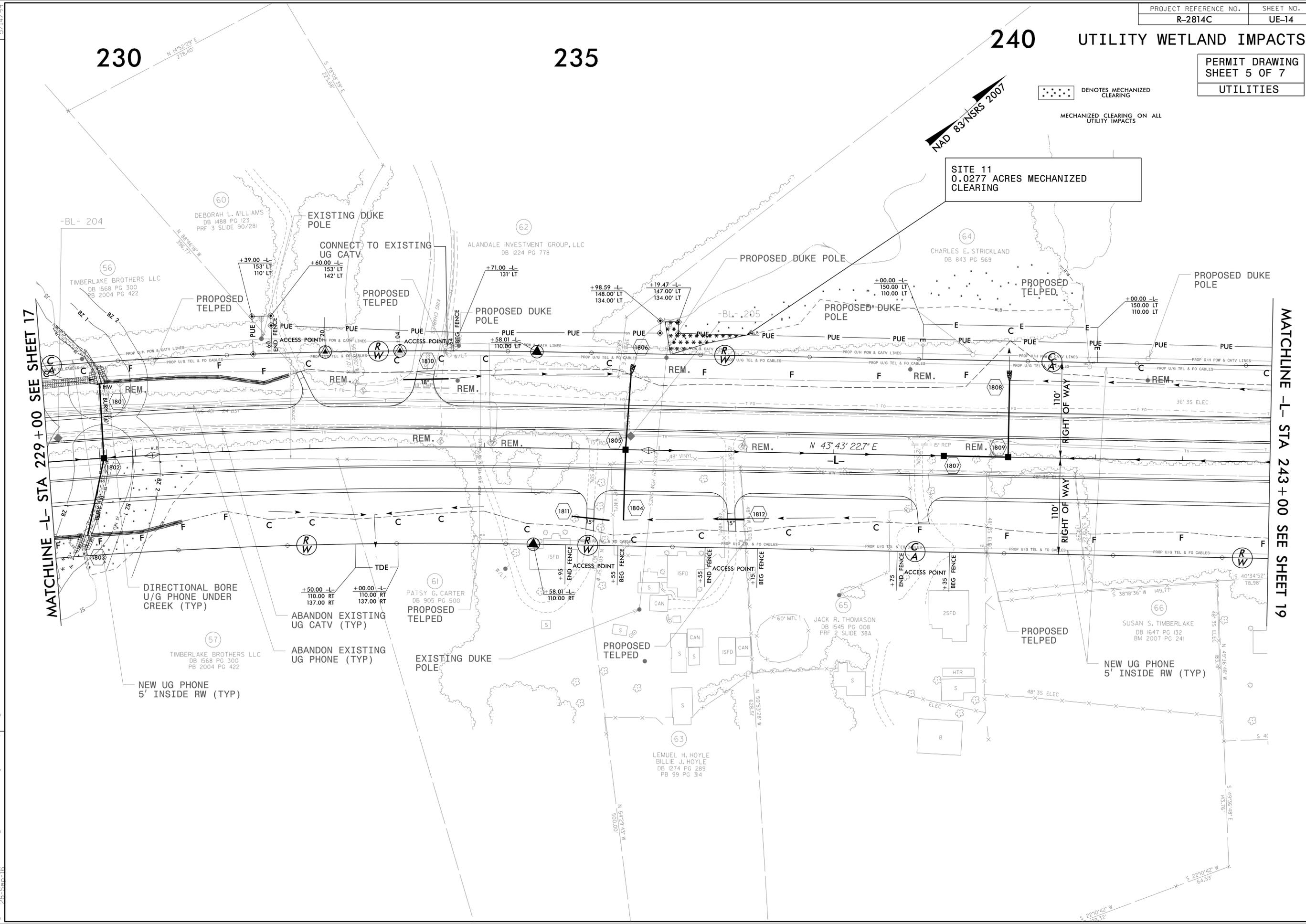
UTILITY WETLAND IMPACTS

PERMIT DRAWING
SHEET 5 OF 7
UTILITIES

..... DENOTES MECHANIZED CLEARING
MECHANIZED CLEARING ON ALL UTILITY IMPACTS



SITE 11
0.0277 ACRES MECHANIZED CLEARING



MATCHLINE -L- STA 229+00 SEE SHEET 17

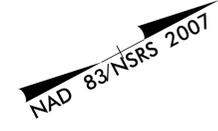
MATCHLINE -L- STA 243+00 SEE SHEET 19

REVISIONS

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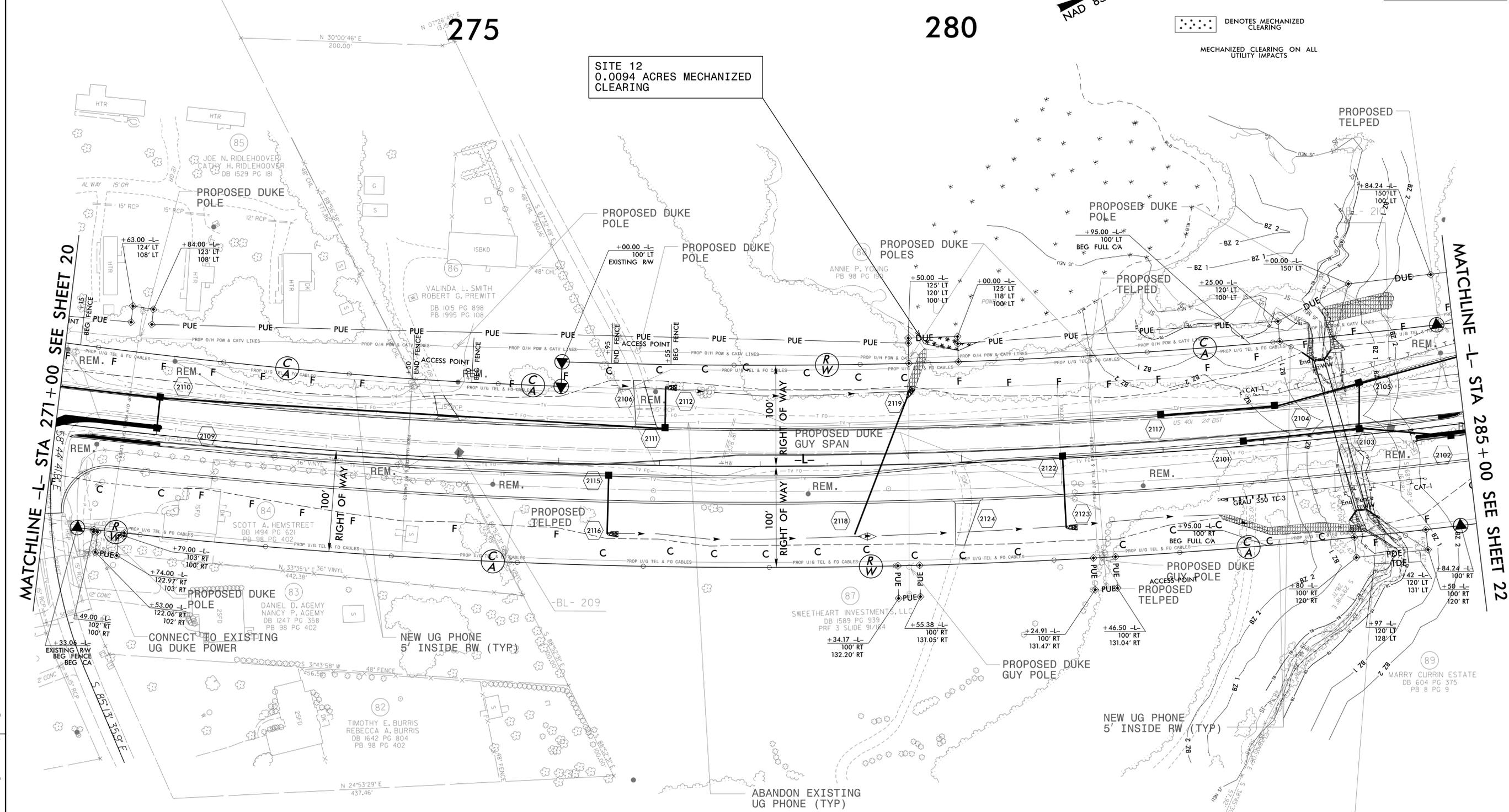
UTILITY WETLAND IMPACTS

PERMIT DRAWING
SHEET 6 OF 7
UTILITIES



••••• DENOTES MECHANIZED CLEARING
MECHANIZED CLEARING ON ALL UTILITY IMPACTS

SITE 12
0.0094 ACRES MECHANIZED CLEARING



MATCHLINE -L- STA 271+00 SEE SHEET 20

MATCHLINE -L- STA 285+00 SEE SHEET 22

REVISIONS

5/14/99
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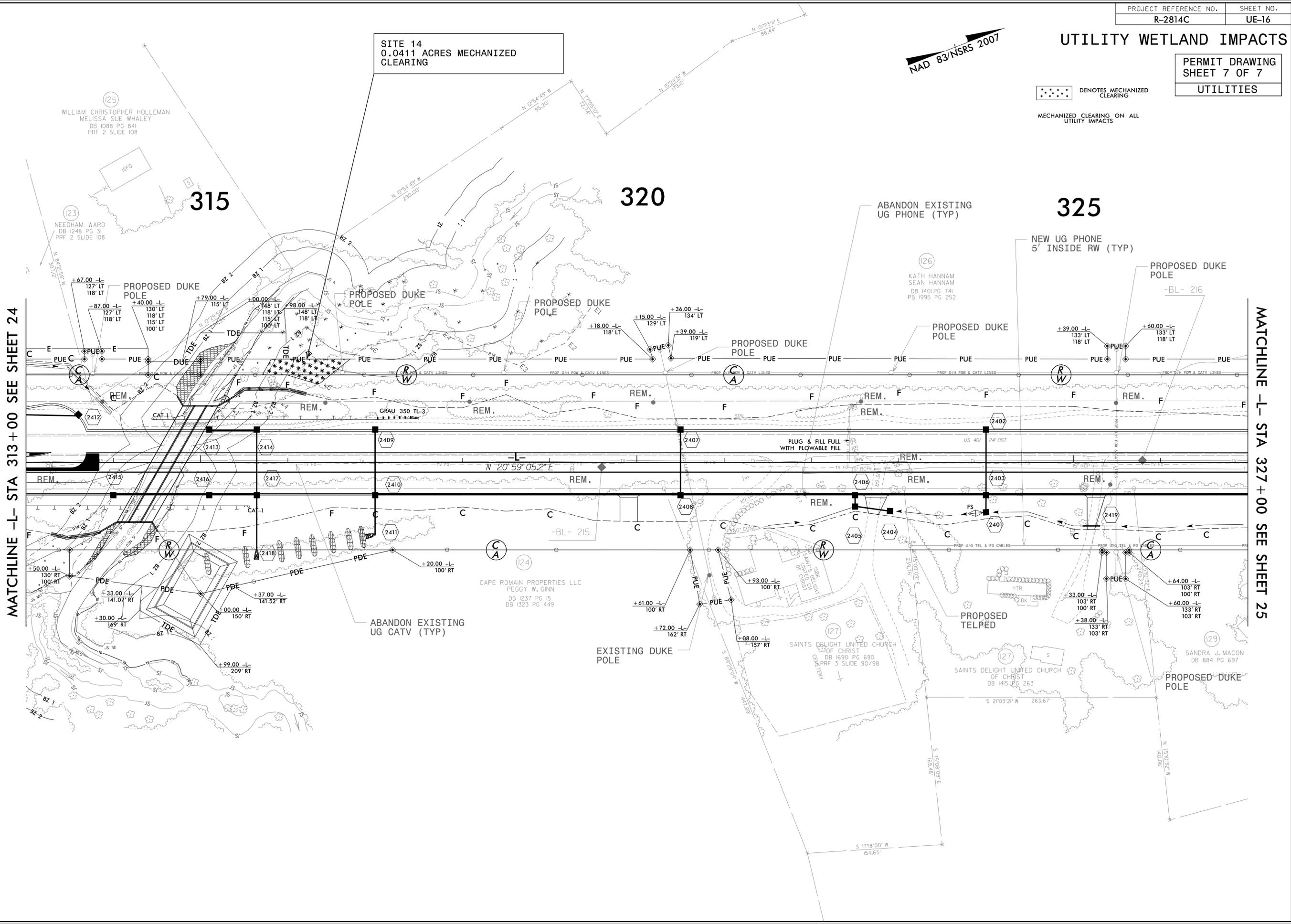
UTILITY WETLAND IMPACTS

PERMIT DRAWING
SHEET 7 OF 7
UTILITIES

••••• DENOTES MECHANIZED CLEARING
MECHANIZED CLEARING ON ALL UTILITY IMPACTS



SITE 14
0.0411 ACRES MECHANIZED CLEARING



MATCHLINE -L- STA 313+00 SEE SHEET 24

MATCHLINE -L- STA 327+00 SEE SHEET 25

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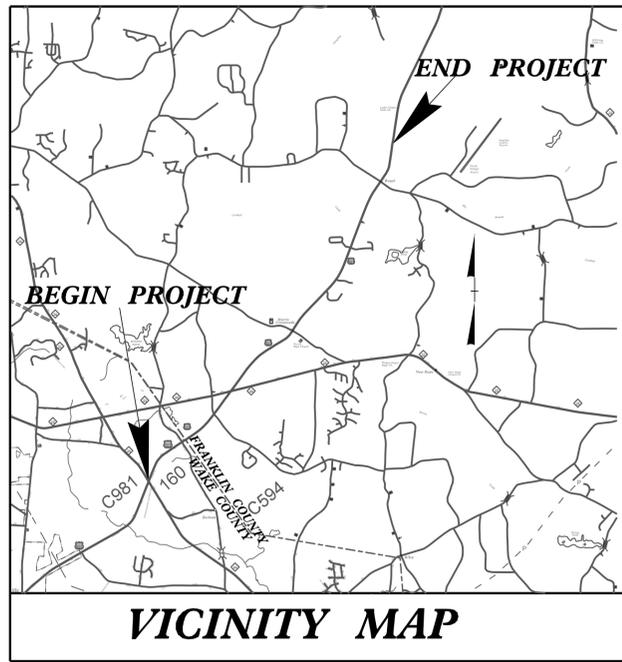
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
R-2814C	UE-1

PERMIT DRAWING
SHEET 1 OF 9
UTILITIES

TIP PROJECT: R-2814C



UTILITY PERMIT DRAWINGS WAKE /FRANKLIN COUNTY

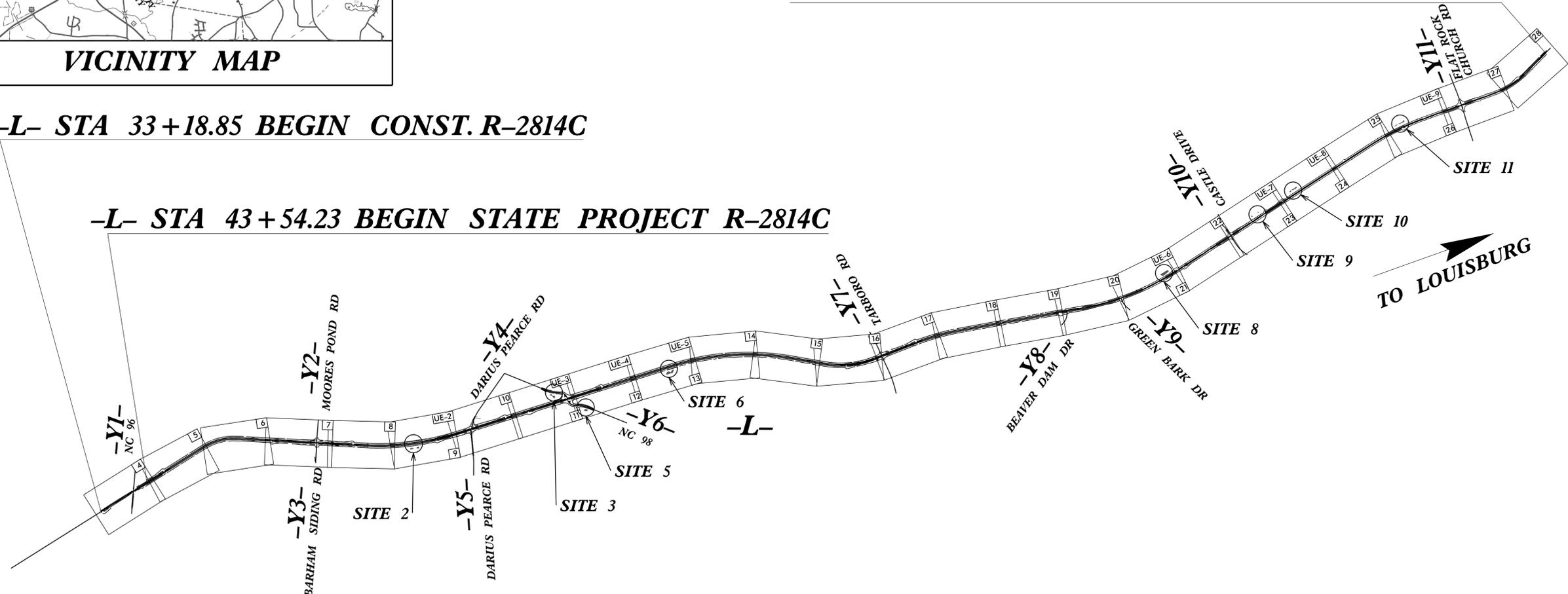
LOCATION: US 401 FROM NC 96 TO SR 1103

BUFFER IMPACTS

-L- STA 381+40.55 END STATE PROJECT R-2814C

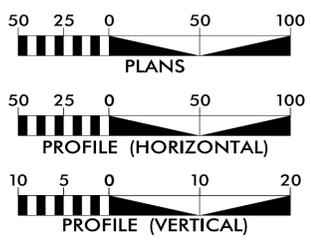
-L- STA 33+18.85 BEGIN CONST. R-2814C

-L- STA 43+54.23 BEGIN STATE PROJECT R-2814C



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GRAPHIC SCALES



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SHEET NO.:	DESCRIPTION:
UE-1	BUFFER IMPACTS TITLE SHEET
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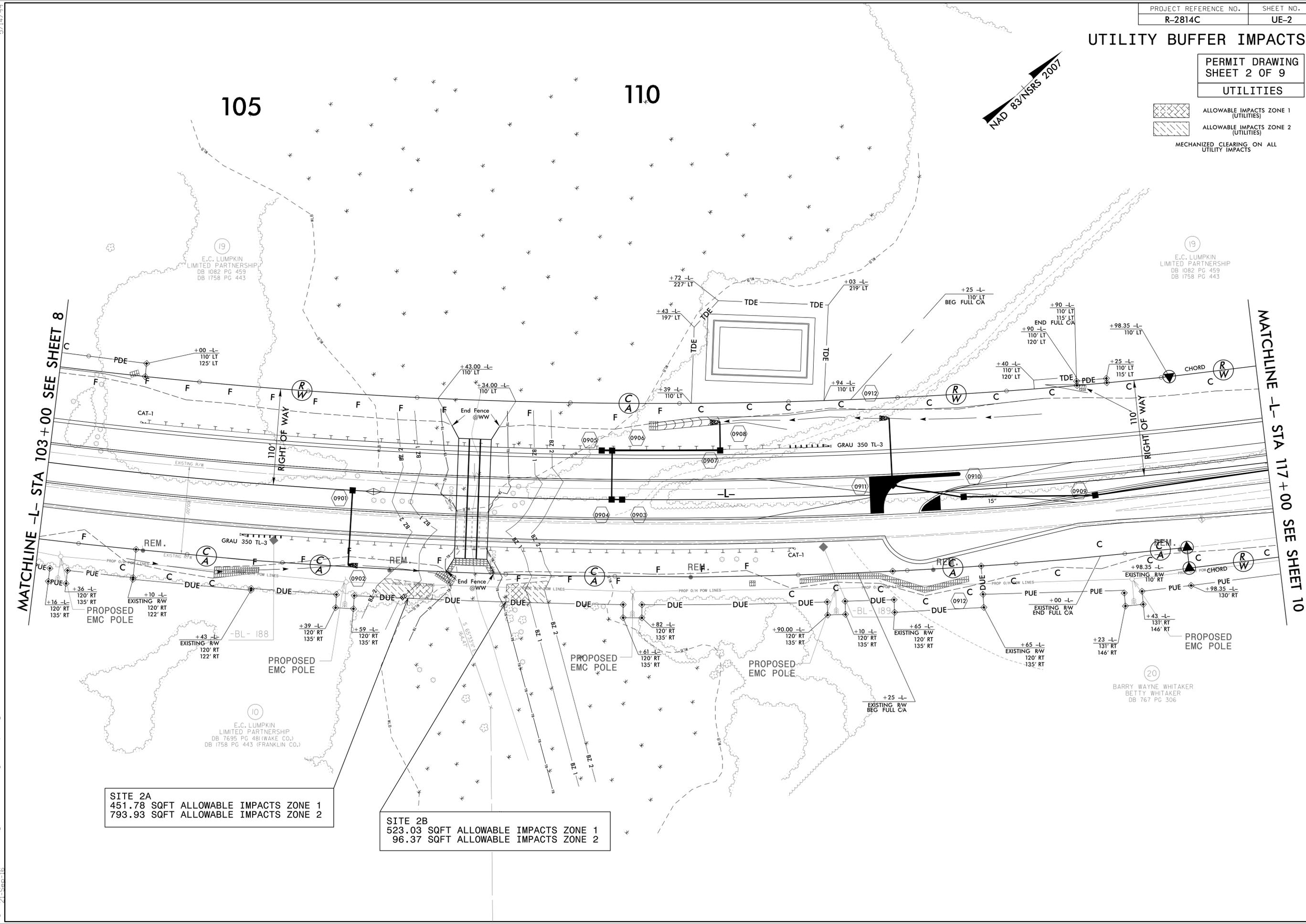
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\$\$\$\$\$ DGN \$\$\$\$\$\$
\$\$\$\$\$ USERNAME \$\$\$\$\$\$

UTILITY BUFFER IMPACTS

PERMIT DRAWING
SHEET 2 OF 9

UTILITIES

-  ALLOWABLE IMPACTS ZONE 1 (UTILITIES)
-  ALLOWABLE IMPACTS ZONE 2 (UTILITIES)
- MECHANIZED CLEARING ON ALL UTILITY IMPACTS



MATCHLINE -L- STA 103 + 00 SEE SHEET 8

MATCHLINE -L- STA 117 + 00 SEE SHEET 10

SITE 2A
451.78 SQFT ALLOWABLE IMPACTS ZONE 1
793.93 SQFT ALLOWABLE IMPACTS ZONE 2

SITE 2B
523.03 SQFT ALLOWABLE IMPACTS ZONE 1
96.37 SQFT ALLOWABLE IMPACTS ZONE 2

19
E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 1082 PG 459
DB 1758 PG 443

19
E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 1082 PG 459
DB 1758 PG 443

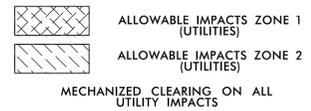
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E.C. LUMPKIN
LIMITED PARTNERSHIP
DB 7695 PG 481 (WAKE CO.)
DB 1758 PG 443 (FRANKLIN CO.)

20
BARRY WAYNE WHITAKER
BETTY WHITAKER
DB 767 PG 306

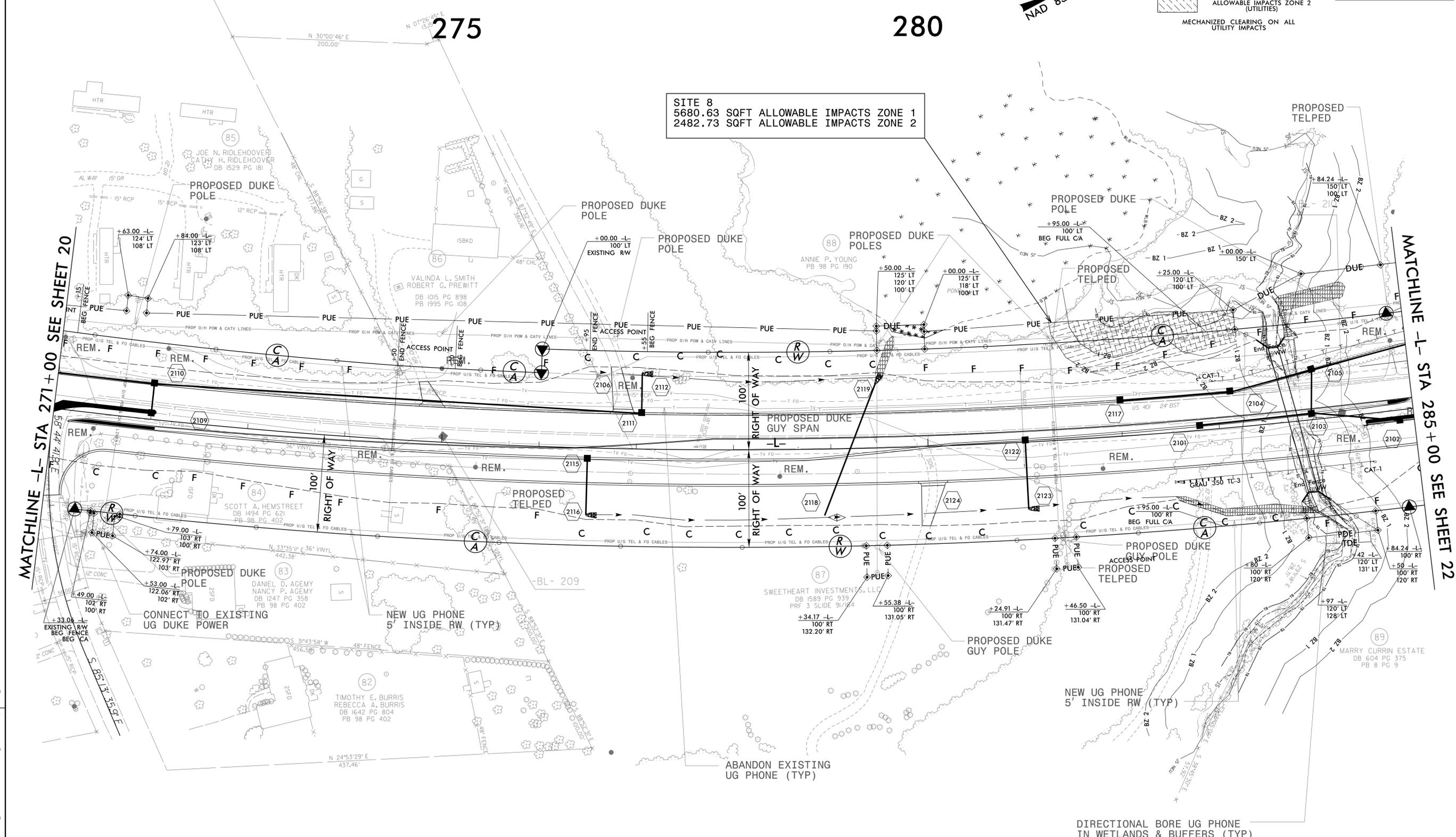
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UTILITY BUFFER IMPACTS

PERMIT DRAWING
SHEET 6 OF 9
UTILITIES



SITE 8
5680.63 SQFT ALLOWABLE IMPACTS ZONE 1
2482.73 SQFT ALLOWABLE IMPACTS ZONE 2



MATCHLINE -L- STA 271+00 SEE SHEET 20

MATCHLINE -L- STA 285+00 SEE SHEET 22

REVISIONS

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DIRECTIONAL BORE UG PHONE
IN WETLANDS & BUFFERS (TYP)

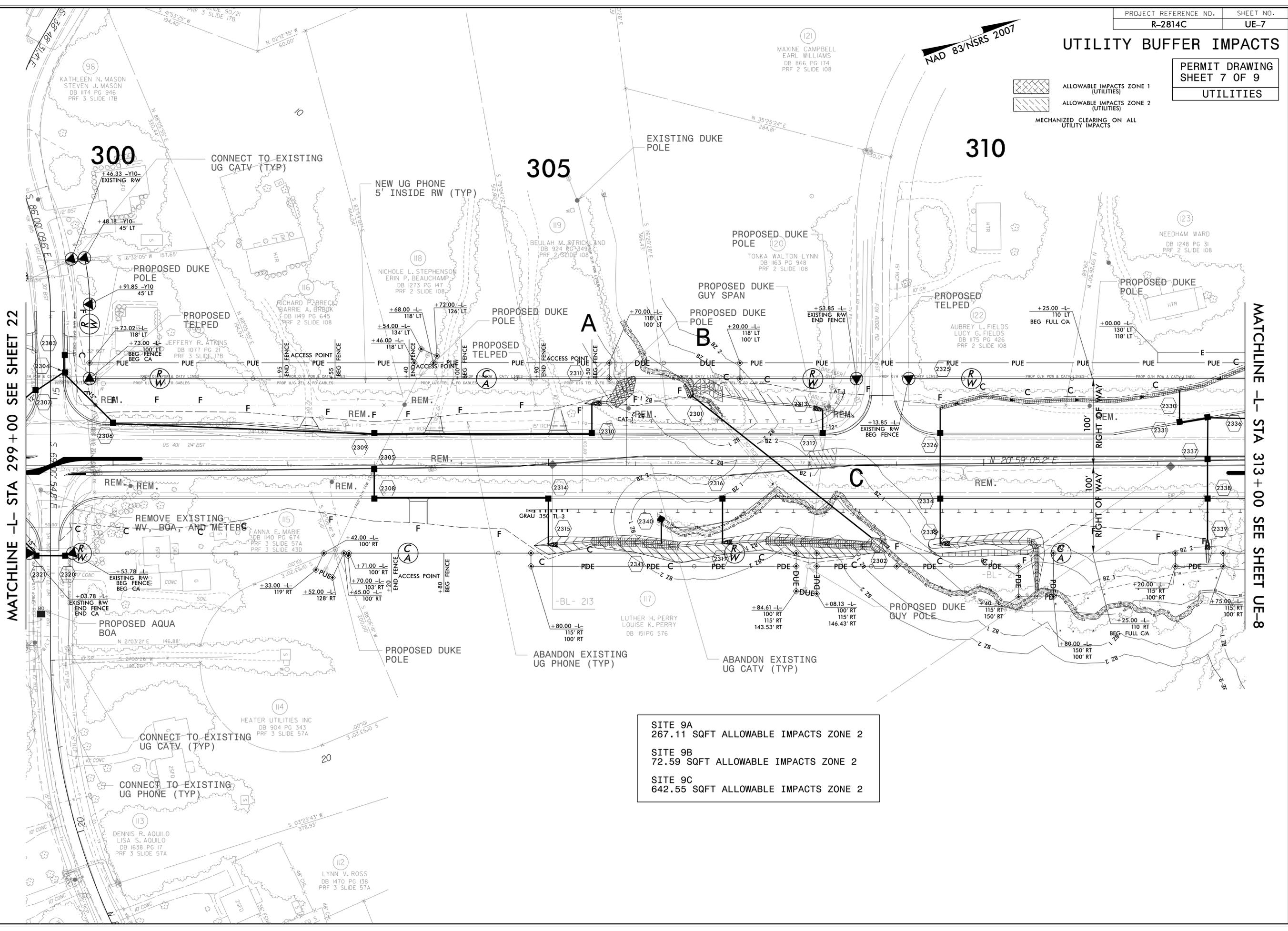
ABANDON EXISTING
UG PHONE (TYP)

NEW UG PHONE
5' INSIDE RW (TYP)

CONNECT TO EXISTING
UG DUKE POWER

UTILITY BUFFER IMPACTS

PERMIT DRAWING
SHEET 7 OF 9
UTILITIES



MATCHLINE -L- STA 299+00 SEE SHEET 22

MATCHLINE -L- STA 313+00 SEE SHEET UE-8

SITE 9A
267.11 SQFT ALLOWABLE IMPACTS ZONE 2

SITE 9B
72.59 SQFT ALLOWABLE IMPACTS ZONE 2

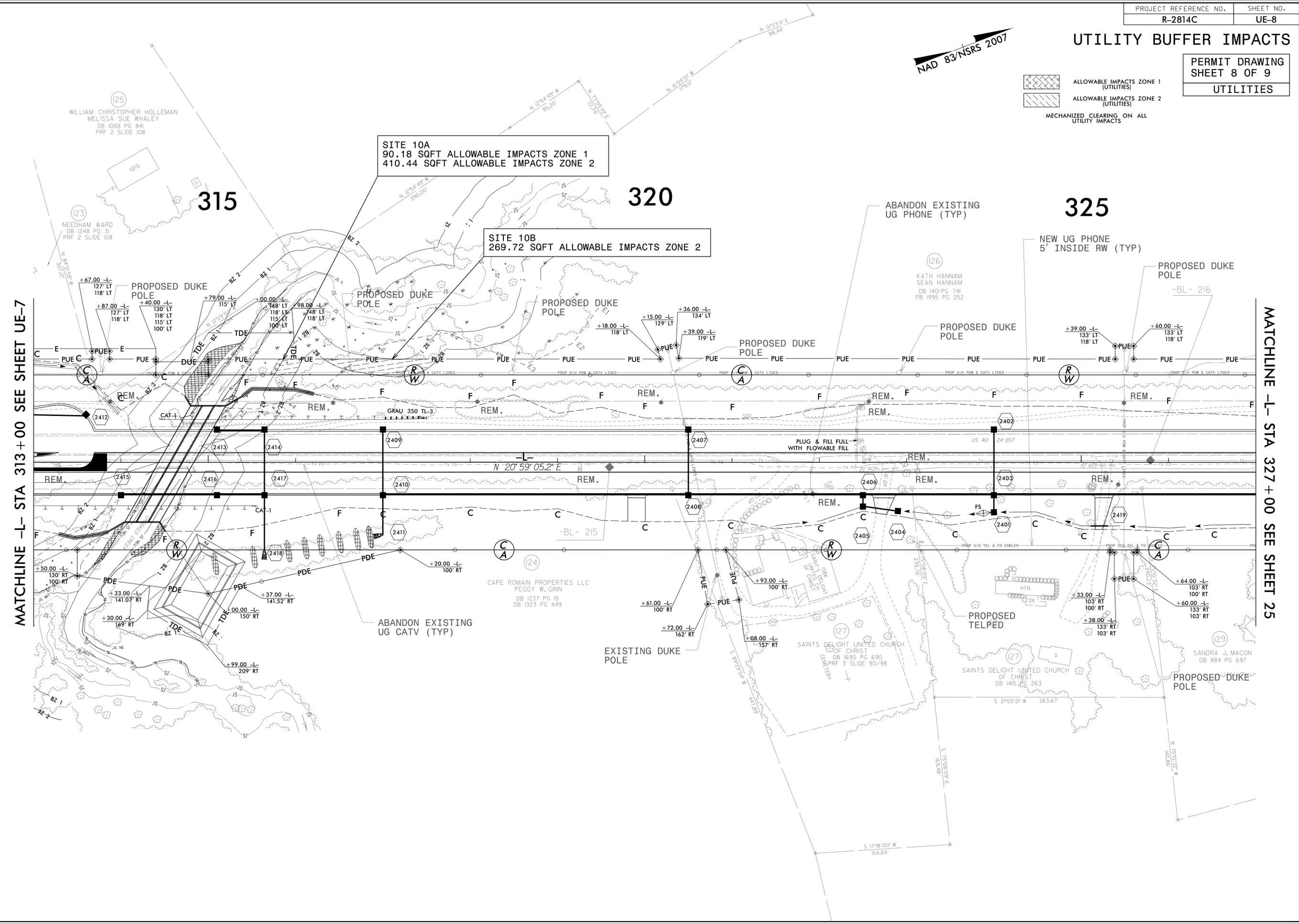
SITE 9C
642.55 SQFT ALLOWABLE IMPACTS ZONE 2

REVISIONS

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UTILITY BUFFER IMPACTS

PERMIT DRAWING
SHEET 8 OF 9
UTILITIES



MATCHLINE -L- STA 313+00 SEE SHEET UE-7

MATCHLINE -L- STA 327+00 SEE SHEET 25

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UTILITY BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)		
SITE 2A	Aerial Line	-L- 106+78 To 107+47 RT				451.8	793.9	1245.7					
SITE 2B	Aerial Line	-L- 108+29 To 108+77 RT				523.0	96.4	619.4					
SITE 3A	Aerial Line	-Y6- 21+17 To 21+57 RT				323.9	372.2	696.1					
SITE 3B	Aerial Line	-Y6- 21+70 To 22+07 RT				654.9	769.9	1424.8					
SITE 5	Aerial Line	-Y6- 30+25 To 31+12 RT				959.0	867.9	1827.0					
SITE 6A	Aerial Line	-L- 166+35 To 167+21 RT				1683.3	1213.8	2897.0					
SITE 6B	Aerial Line	-L- 167+05 To 168+18 RT				1229.3	1379.3	2608.6					
SITE 8	Aerial Line	-L- 281+31 To 283+26 LT				5680.6	2482.7	8163.4					
SITE 9A	Aerial Line	-L- 305+53 To 305+70 LT				0.0	267.1	267.1					
SITE 9B	Aerial Line	-L- 307+20 To 307+32 LT				0.0	72.6	72.6					
SITE 9C	Aerial Line	-L- 307+98 To 308+28 RT				0.0	642.6	642.6					
SITE 10A	Aerial Line	-L- 316+32 To 316+63 LT				90.2	410.4	500.6					
SITE 10B	Aerial Line	-L- 315+75 To 316+08 LT				0.0	269.7	269.7					
SITE 11A	Aerial Line	-L- 343+29 To 343+90 LT				0.0	146.0	146.0					
SITE 11B	Aerial Line	-L- 344+37 To 345+64 LT				706.1	592.0	1298.1					
								0.0					
								0.0					
								0.0					
								0.0					
								0.0					
TOTAL:						12302.2	10376.4	22678.6	0.0	0.0	0.0		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE/FRANKLIN COUNTY
PROJECT: R-2814C

28/Sep/2016
SHEET 1 OF 1