



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

DANIEL H. JOHNSON
SECRETARY

March 5, 2026

MEMORANDUM TO: Division Environmental and Construction Units
FROM: *mat* Michael A. Turchy, ECAP Group Leader
Environmental Analysis Unit
SUBJECT: Environmental Permits for the Proposed NC 73 Improvements from NC 16 to Northcross Drive (SR 2316) in Lincoln and Mecklenburg Counties, Division 10 & 12, TIP Nos. **U-5765, R-5721B, and R-5721A**

Please find enclosed the following permits for this project:

Agency	Permit Type	Permit Expiration
US Army Corps of Engineers Section 404 Clean Water Act Permit	Regional General Permit 31 <i>(Approval for Final U-5765, Preliminary R-5721)</i>	May 25, 2030
NC Division of Water Resources Section 401 Water Quality Certification	Individual Certification No. 008664 <i>(Approval for Final U-5765, Preliminary R-5721)</i>	May 25, 2030

Work is authorized by the above referenced permit provided it is accomplished in strict accordance with the permitted plans. The Environmental Coordination and Permitting Group or the Division Environmental Office must be consulted if any deviation from the permit(s) is required.

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

The Project Commitments “Greensheet” is located on the Preconstruction SharePoint Dashboard at: <https://connect.ncdot.gov/site/preconstruction>



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
WILMINGTON REGULATORY OFFICE
69 DARLINGTON AVENUE
WILMINGTON NORTH CAROLINA 28403

March 2, 2026

Regulatory Division
SAW-2016-00465

Sent Via email: ekcheely@ncdot.gov

Erin Cheely, Western Team Lead
NCDOT Environmental Analysis Unit
1598 Mail Service Center
Raleigh, NC 27699

Dear Ms. Cheely:

This letter is in response to the Pre-Construction Notification (PCN) you submitted to the Wilmington District, WRDA/Transportation Branch on January 13, 2026, for a Department of the Army Regional General permit (RGP) verification. This project has been assigned the file number SAW-2016-00465 and is known as NC DOT_R-5721_U-5765_NC 73 from NC 16 Business to SR 2316_NorthcrossAve_Mecklenburg_Div10. This file number should be referenced in all correspondence concerning this project.

A review of the information provided indicates that the proposed work would include the improvements to NC 73 from NC 16 to SR 2316 (Northcross Drive) in Mecklenburg and Lincoln Counties. These improvements will include the phased widening of NC 73 and intersection improvements along an approximate 8.72-mile-long segment of NC 73. This entire project includes the construction of three phased sections: Section U-5765 includes a 1.06 mile long segment of NC 73 from SR 5544 (West Catawba Ave) to SR 2316 (Northcross Drive), Section R-5721 B is a 2.51 mile long segment of NC 73 from SR 5544 to Vance Road Extension/Beatties Ford Road, and Section R-5721 A is a 5.15 mile long segment of NC 73 from Vance Road Extension/Beatties Ford Road to NC 16. This verification is for the first phase and includes Section U-5765 which will include the permanent placement of fill/conduct mechanical clearing in a total of 0.14 acre of wetlands, the permanent placement of fill/structures/bank stabilization in a total of 787 linear feet (lf) of streams and the temporary placement of fills/structures for de-watering in a total of 121 lf of streams. The entire three phase project area for this determination includes an approximate 125 acres area which is illustrated on the enclosed site plans/maps. The project/review area for this verification includes Section U-5765 which is located along a 1.06-mile-long segment of NC 73 from SR 5544 (West Catawba Ave) to SR 2316 (Northcross Drive) , at Latitude 35.438820 and Longitude -80.939610; in Cornelius, Mecklenburg County, North Carolina.

We have determined that the proposed work is authorized by Regional General Permit 31 (RGP-31) pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C § 1344). The proposed work must be accomplished in strict accordance with the general permit conditions, any regional conditions, the special conditions listed in this letter, the application materials, and the enclosed plans. If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised PCN must be submitted to this office for written approval before work is initiated. Any violation of permit conditions or deviation from your submitted plans may subject the permittee to enforcement action.

This verification is valid until May 25, 2030, unless prior to this date the subject RGP is suspended, revoked, or is modified such that the activity no longer complies with the terms and conditions of this RGP. If you commence or are under contract to commence this activity before the date that the relevant RGP is modified or revoked, you will have 12 months from the date of the modification or revocation of the RGP to complete the activity under the present terms and conditions of this NWP.

Project Specific Special Conditions:

1. All work must be performed in strict compliance with (a) the description of work in the PCN and (b) the Wetlands and Surface Water Impact Permit Drawing(s) (Permit Plans) in the application dated January 13, 2025. Any modification to the description of work and/or the permit plans must be approved by the USACE prior to implementation.
2. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this authorization letter 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 authorization letter, all conditions, and any authorized modifications. A copy of this authorization letter, all conditions, and any authorized modifications, shall be available at the project site during construction and maintenance of this project.
3. The U.S. Fish and Wildlife Service's (USFWS's) Programmatic Biological (PBO) and Conference Opinion (PCO) and Programmatic Conference Report titled "Five Imperiled Bat Species in Western North Carolina" dated April 1, 2025, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that are specified in the PBO/PCO. The USFWS adopted the PBO/PCO as the Programmatic Biological Opinion (PBO) for the effects of this action on August 26, 2025. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the PBO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the PBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The

USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.

4. This permit only authorizes work on Sections U-5765. Construction on Sections R-5721 A & R-5721 B shall not commence until: (a) final design has been completed for those sections and submitted to the U.S. Army Corps of Engineers (Corps); (b) the Permittee has minimized impacts to waters and wetlands to the maximum extent practicable and the Corps concurs with this assessment through standard Merger 4B and 4C meetings; (c) any modification to the plans have been approved by the Corps in writing; and (d) a final compensatory mitigation plan has been submitted by the Permittee and approved by the Corps.
5. 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 Forms. The requirements of these forms, including any special conditions listed on these forms, are hereby incorporated as special conditions of this permit authorization

This NWP verification does not preclude the necessity to obtain any other Federal, State, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Stephen Brumagin, WRDA/ Transportation Branch Project Manager of the Charlotte Field Office at 704-798-6471, by mail at the above address, or by email at stephen.a.brumagin@usace.army.mil. Please take a moment to complete our customer satisfaction survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,

A handwritten signature in black ink that reads "M. Scott Jones". The signature is written in a cursive style with a large, prominent "M" and "J". There are small red marks above the "M" and below the "J".

M. Scott Jones, PWS
WRDA/Transportation Branch Chief

Enclosures

U-5765 Project Plans
R-5721 A Project Plans
R-5721 B Project Plans
Individual 401 WQC
RGP-31

cc (w/enclosures):

Erin Cheely, NCDOT Environmental Analysis Unit (via ekcheely@ncdot.gov) Joel Howard, PDEA-NCDOT Div 10 (via jmhoward@ncdot.gov)

<p>U.S. Army Corps of Engineers (USACE)</p> <p>CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT</p> <p>For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.</p>	<p><i>Form Approved -</i></p> <p><i>OMB No. 0710-0003</i></p> <p><i>Expires 2027-10-31</i></p>
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The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PURPOSE: This form is used by recipients of U.S. Army Corps of Engineer Regulatory permits to certify compliance with the permit terms and conditions.

Your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, Wilmington District, Regulatory Office.

The certification can be submitted by email at Enter Email Name@usace.army.mil or by mail at the below address:

U.S. Army Corps of Engineers
 Wilmington District Office
 Street Address: 69 Darlington Avenue
 City: Wilmington State: North Carolina Zip Code: 28403

COMPLETED BY THE CORPS

Corps Action Number:	SAW-2016-00465
Permit Type: <u>General Permit</u>	
General Permit Number and Name (if applicable):	
Name of Permittee:	Erin Cheely
Project Name: 2316_NorthcrossAve_Mecklenburg_Div10	NC DOT_R-5721_U-5765_NC 73 from NC 16 Bus. to SR
Project Location (physical address):	Section U-5765 Cornelius, North Carolina

PERMITTEE'S CERTIFICATION

Date Work Started: _____

Date Work Completed: _____

Enclose photographs showing the completed project (if available).

I _____ hereby certify that the work authorized by the above referenced permit has been completed in accordance with all of the permit terms and conditions, and that any required compensatory mitigation has been completed in accordance with the permit conditions.

Name	Date	Signature

US Army Corps of Engineers – Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: Erin Cheely
Project Name: NC DOT_U-5765_NC 73 from SR 5544 to SR 2316,

Action ID: SAW-2016-00465
County: Mecklenburg

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 Wilmington District 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 verifies that the mitigation requirements (credits) shown below have been released and are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether 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 ledger to the Permittee, the Project Manager who issued the permit, the Bank Project Manager, and the 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:** 03050101, Catawba River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
787			0.14			

*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:** 03050101, Catawba River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1,574			0.28			

Mitigation Site Debited: NCDMS.

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 Wilmington District, 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: NCDMS

Name of Sponsor’s Authorized Representative: Beth Harmon

Beth Harmon

03/02/2026

Signature of Sponsor’s Authorized Representative

Date of Signature

USACE Wilmington District – MRTF Page 2

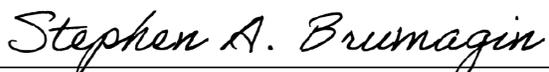
Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the District 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 District 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. When NCDMS provides mitigation 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 NCDMS must be provided to the District within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the District 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 District 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 District, the Sponsor must obtain case-by-case approval from the District 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 District administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions: NCDMS provided a letter dated January 12, 2026, indicating approval to provide mitigation for NCDOT U-5765 project in Mecklenburg County. Specifically, to provide mitigation for 787 lf of warm stream impacts and 0.14 acres of riparian wetland impacts.

This form is not valid unless signed below by the District 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 District Project Manager at the address below, 3) the Bank Manager listed in RIBITS, and 4) the Wilmington District Mitigation Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (or by email to SAWMIT@usace.army.mil).*** Questions regarding this form or any of the permit conditions may be directed to the District Mitigation Office.

USACE Project Manager: Stephen Brumagin
USACE Field Office: Charlotte Field Office
US Army Corps of Engineers
8430 University Executive Park Drive
Charlotte
Email: stephen.a.brumagin@usace.army.mil



Wilmington District Project Manager Signature

March 2, 2026

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>.



NORTH CAROLINA
Environmental Quality

JOSH STEIN
Governor

D. REID WILSON
Secretary

RICHARD E. ROGERS, JR.
Director

February 16, 2026

Mr. Randall W. Griffin
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598
rwgriffin@ncdot.gov

Subject: 401 Individual Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to NC 73 in Mecklenburg and Lincoln Counties, State Project No. 50178.1.1
TIP Nos. U-5765, R-5721A, R-5721B. (Phased Permit)
NCDWR Project No. 20260051 version 1.

Dear Mr. Griffin:

Attached hereto is a copy of Water Quality Certification No. 8664 issued to The North Carolina Department of Transportation (NCDOT) dated February 16, 2026.

This approval is for the purpose and design described in your application. The plans and specifications for this project are incorporated by reference as part of this Water Quality Certification. If you change your project, you must notify the Division and you may be required to submit a new application package with the appropriate fee. If the property is sold, the new owner must be given a copy of this Certification and is responsible for complying with all conditions. [15A NCAC 02H .0507(d)(2)]. This Certification does not relieve the permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

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

Sincerely,

Signed by:

Faith Hardin

3185423002EA45E...

Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

Attachments

cc: Steve Brumagin, USACE Regulatory Field Office (stephen.a.brumagin@usace.army.mil)
Michael Turkey, NCDOT Environmental Coordination & Permitting (maturchy@ncdot.gov)
Erin Cheely, NCDOT Environmental Coordination & Permitting (ekcheely@ncdot.gov)
William Wescott, NCDOT Division 10 Environmental Supervisor (wgwescott@ncdot.gov)
Beth Harmon, Division of Mitigation Services (beth.harmon@deq.nc.gov)
File Copy



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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 0.144 acres of jurisdictional wetlands and 908 linear feet of jurisdictional streams in Mecklenburg County. The project shall be constructed pursuant to the application dated received January 13, 2026. The authorized impacts are as described below:

U-5765 Stream Impacts in the Catawba River Basin

Site	Permanent Fill in Perennial Stream (linear ft)	Temporary Impact to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
2	0	15	15	0
4	177	34	211	0
6	189	27	216	189
8	345	0	345	345
9	76	37	113	76
10	0	8	8	0
Total	787	121	908	610

Total Stream Impact for Project U-5765: 908 linear feet

**Preliminary Stream Impacts for section R-5721A: 2474 linear feet permanent & 492 linear feet temporary.*

U-5765 Wetland Impacts in the Catawba River Basin

Site	Permanent Fill (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Wetland Impacts Requiring Mitigation (ac)
1	0.002	0	0.006	0.008	0.002
5	0.029	0.056	0	0.085	0.085
7	0.028	0.023	0	0.051	0.051
Total	0.059	0.079	0.006	0.144	0.138

Total Wetland Impact for Project U-5765: 0.144 acres.

**Preliminary Wetland Impacts for Section R-5721A: 2.49 acres permanent.*



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

This approval is only valid for the purpose and design that you submitted in your application dated received January 13, 2026. 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 0.1 acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7).

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

This Water Quality Certification neither grants nor affirms any property right, license, or privilege in any lands or waters, or any right of use in any waters. This Water Quality Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and does not create any prescriptive right or any right of priority regarding any usage of water. This Water Quality Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Water Quality Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded. Upon the presentation of proper credentials, the Division may inspect the property.

Conditions of Certification:

1. This 401 Water Quality Certification is approved for the finalized section of this project, U-5765. When final design plans are completed for section R-5721, a modification to the 401 Water Quality Certification and Catawba Riparian Buffer Authorization 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-5721A shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification and Catawba Buffer Authorization from the NC Division of Water Resources.
2. Compensatory mitigation for 610 linear feet of impact to perennial streams in the Catawba River Basin 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 January 12, 2026 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.
3. Compensatory mitigation for impacts to 0.138 acres of riparian wetlands in the Catawba River Basin 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 January 12, 2026 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.
4. 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)]



5. 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)]
6. 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)]
7. Channel relocations shall be completed and stabilized, and approved by NCDWR, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, rip-rap is allowed as necessary to maintain the physical integrity of the stream. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills. [15A NCAC 02H .0506(b)(3)]
8. Wetland areas impacted by temporary clearing shall be stabilized and reseeded with native wetland seed. [15A NCAC 2H.0506(b)]
9. DWR approves the stormwater drainage design as shown in the 401 application, under the assumption that it meets the requirements of the NCDOT NPDES permit #NCS000250. These plans are enforceable by DWR. Changes to the approved plans are prohibited without prior approval from DWR. If sediment or other pollutants are found to be discharged from the stormwater outfalls, DWR may take enforcement action. NCDOT and DWR shall assess the damage to water quality standards and implement an appropriate action plan to address the impacts. The action plan shall provide an appropriate timeline for implementation as agreed upon by both DWR and NCDOT. This may require NCDOT to obtain a modification to its current 401 and 404 permits.
10. 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]
11. 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)]
12. 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)]
13. 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)]
14. 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)]
15. 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)]
16. 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)]



17. 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)]
18. 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)]
19. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
20. 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]
21. 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)]
22. 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)]
23. 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]
24. 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.
25. 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)]
26. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0507]
27. Native riparian vegetation (i.e., herbaceous, 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)]
28. 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)]
29. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within jurisdictional wetlands. [15A NCAC 2H.0506; 15A NCAC 2H.0507]



30. 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.

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

32. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 {b)(3) and (c)(3) and 15A NCAC 02B .0200]

33. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971. [15A NCAC 02H.0506(b)(3) and (c)(3)]

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



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

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

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

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

This the 16th day of February 2026

DIVISION OF WATER RESOURCES

Signed by:

3185423002EA45E...

Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

WQC No. 8664



U-5765
Final
Permit
Drawings



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 50178.1.1 TIP/Proj No: U-5765 County(ies): Mecklenburg Page 1 of 3

General Project Information

WBS Element:	50178.1.1	TIP Number:	U-5765	Project Type:	Roadway Widening	Date:	12/16/2022
NCDOT Contact:	J. Wilson Stroud, CPM		Contractor / Designer:		HDR Engineering / Taylor Carter, P.E.		
Address:	1000 Birch Ridge Drive Raleigh, NC 27610		Address:	555 Fayetteville Street, Suite 900 Raleigh, NC 27601			
Phone:	(919) 707-6045		Phone:	(919) 232-6689			
Email:	wstroud@ncdot.gov		Email:	taylor.carter@hdrinc.com			
City/Town:	Huntersville			County(ies):	Mecklenburg		
River Basin(s):	Catawba			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	1.06	Surrounding Land Use:	Commercial/High Density Residential				
	Proposed Project			Existing Site			
Project Built-Upon Area (ac.)	23.7	ac.	16.7	ac.			
Typical Cross Section Description:	Multilane divided highway with turn lanes and U-turn bulb outs. The roadway will be entirely curb and gutter with grassed centerline medians. Total width of 111'			Multilane divided highway with turning lanes, a paved centerline median and paved variable width shoulders. Total width of 82'.			

Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	63350	Year:	2026	Existing:	76100	Year:	2045
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General Project Narrative:
(Description of Minimization of Water Quality Impacts)

Project Description: The proposed project (U-5765) widens NC-73 from approximately 500 feet west of the I-77 exit to approximately 400 feet west of the Kenton Drive and NC-73 intersection. The project will construct approximately 1 mile of 6-lane divided highway along NC-73 as well as approximately 0.5 miles of 4-lane divided highway that includes 2 roundabouts. The project includes 4 Jurisdictional stream crossings, 3 of which propose box culvert extensions and stream relocation. Three of the stream crossings are located on FEMA regulated streams within the project corridor and will require SFC coordination. Box culverts and circular overflow pipe culverts are used to convey all jurisdictional stream crossings through the project. Wetlands are also located throughout the project.

Impact Minimization Efforts: Guardrail with 2:1 slopes were utilized throughout the project to minimize impacts to streams and wetlands, where feasible 1.5:1 slopes were used to reduce wetland impacts. Ditches and pipes that outlet adjacent to wetlands have been designed to have non-erosive velocities and are directed onto floodplains where practical to increase dissipations before contact with surface water. Culvert extensions were designed to maintain existing conditions on the site, high flow barrels will be buried to create a one foot flood bench and maintain a low flow channel. The use of a low flow channel is intended to maintain the existing channel geometry as to not overextend the existing channel and maintain existing low flow depths. To prevent erosion of the flood benches, the flood bench borders will be lined with rip rap. The rip rap will be keyed-in to the banks as to not disturb the existing channel bed. When possible medians were designed to be vegetated in an effort to decrease runoff and increase pervious area within the project. Retaining walls were utilized to minimize impacts to jurisdictional features.

Stormwater BMP Measures: Structural BMPs were considered but limited by site criteria due to restrictive access for a suitable footprint. The project is located in a high density area with both residential and commercial properties and existing high priority buried utilities to support these properties. In addition the project area consists of flat terrain and has a high water table which are conditions unsuitable for most structural BMPs. It should also be noted that avoidance measures have been taken within the project area to keep the existing BMPs fully intact (6 wet ponds, 1 dry detention basin).



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 50178.1.1 TIP/Proj No.: U-5765 County(ies): Mecklenburg Page 2 of 3

General Project Information

Waterbody Information

Surface Water Body (1):	McDowell Creek		NCDWR Stream Index No.:	11-115-(1.5)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)		
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	McDowell Creek		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (2):	Caldwell Station Creek		NCDWR Stream Index No.:	11-115-2-(2)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)		
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	Caldwell Station Creek		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					
Surface Water Body (3):	UT to McDowell Creek		NCDWR Stream Index No.:	11-115-(1.5)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)		
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SBB		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					



North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

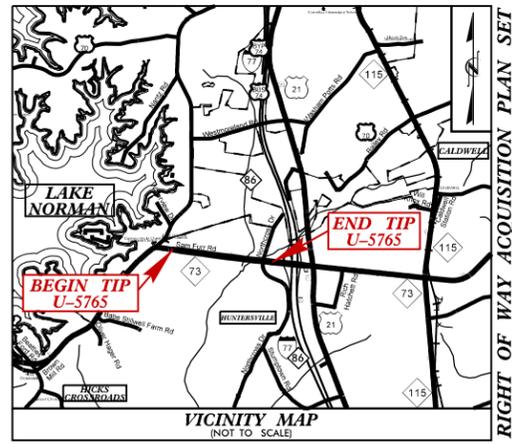
WBS Element: 50178.1.1 **TIP No.:** U-5765 **County(ies):** Mecklenburg **Page** 3 **of** 3

Additional Waterbody Information

Surface Water Body (4):		UT to Caldwell Station Creek		NCDWR Stream Index No.:		11-115-2-(2)	
NCDWR Surface Water Classification for Water Body			Primary Classification:		Water Supply IV (WS-IV)		
			Supplemental Classification:				
Other Stream Classification:		None					
Impairments:		None					
Aquatic T&E Species?		No		Comments:			
NRTR Stream ID:		SCC		Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		N/A	
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		Dissipator Pads Provided in Buffer?	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
Surface Water Body (5):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body			Primary Classification:				
			Supplemental Classification:				
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?				Comments:			
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?			
Deck Drains Discharge Over Water Body?				(If yes, provide justification in the General Project Narrative)		Dissipator Pads Provided in Buffer?	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
Surface Water Body (6):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body			Primary Classification:				
			Supplemental Classification:				
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?				Comments:			
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?			
Deck Drains Discharge Over Water Body?				(If yes, provide justification in the General Project Narrative)		Dissipator Pads Provided in Buffer?	
(If yes, provide justification in the General Project Narrative)						(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	

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See Sheet 1A-1 For Index of Sheets



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

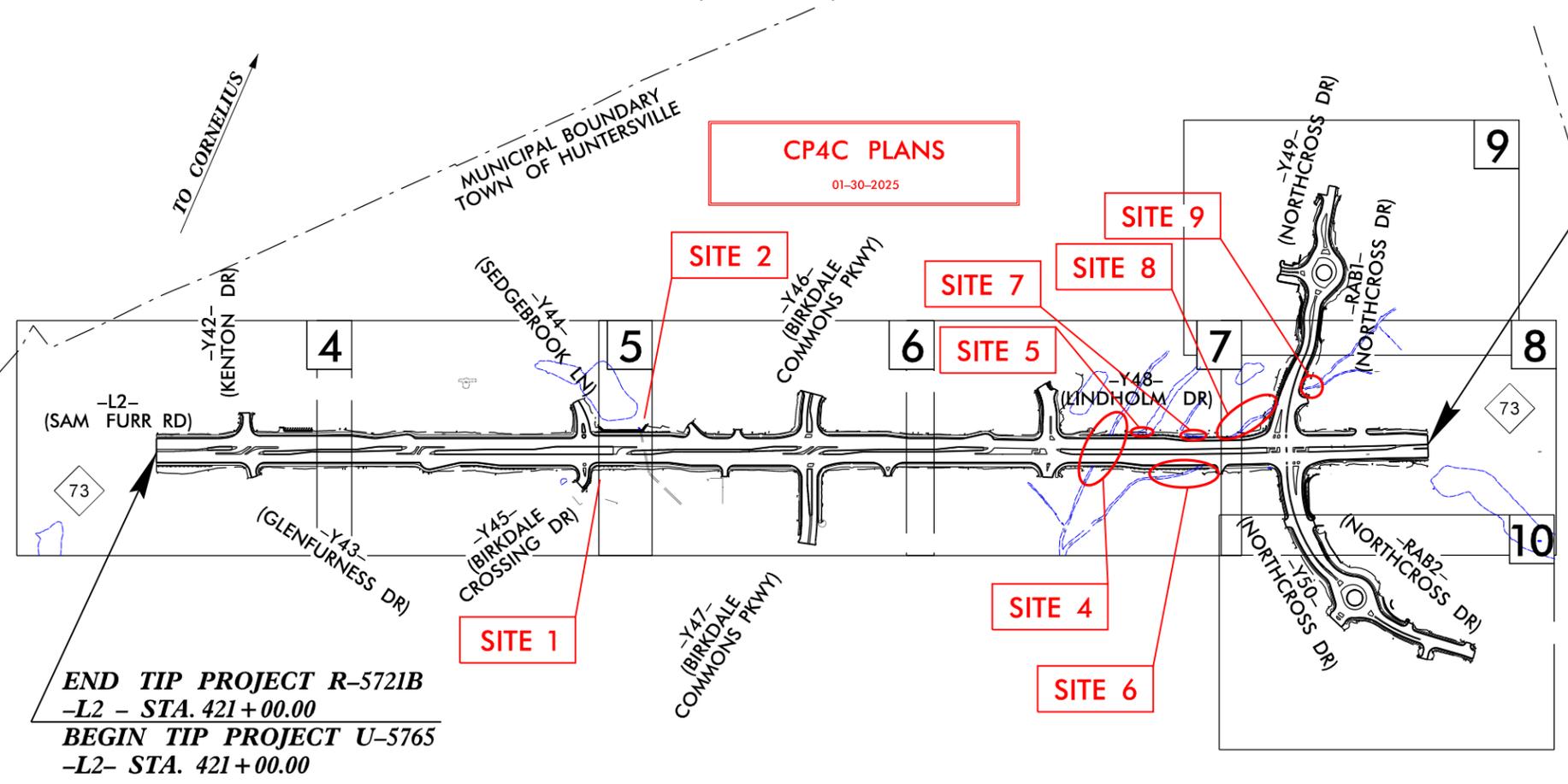
LOCATION: NC 73 - SR 5544 (WEST CATAWBA AVENUE) TO SR 2316 (NORTHCROSS DRIVE)

TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, RETAINING WALLS, SIGNALS, SIGNING, AND CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5765	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50178.1.1	N/A	PE	
50178.2.1	N/A	ROW	
50178.2.2	N/A	UTIL	



CONTRACT: TIP PROJECT: U-5765



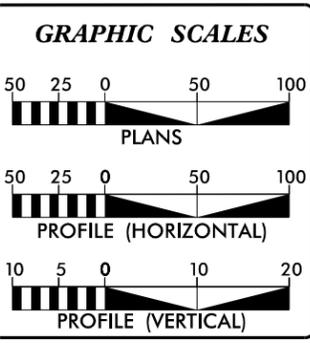
END TIP PROJECT U-5765
 -L2- STA. 477+93.62

PERMIT DRAWING SHEET 1 OF 22

NOTES:
 THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF HUNTERSVILLE.
 CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
 THIS PROJECT IS NOT A CONTROL OF ACCESS PROJECT BUT FULL CONTROL OF ACCESS WILL BE LIMITED TO POINTS AS SHOWN ON THE PLANS.

HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2026 =	63,350
ADT 2045 =	76,100
K =	8 %
D =	55 %
T =	4 % *
V =	50 MPH
*TTST =	1% DUAL = 3%
FUNC CLASS =	REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5765 =	1.045 MILES
LENGTH STRUCTURE TIP PROJECT U-5765 =	0.011 MILES
TOTAL LENGTH TIP PROJECT U-5765 =	1.056 MILES

NCDOT CONTACT: _____ LINDSAY CROCKER PROJECT MANAGER

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

2018 STANDARD SPECIFICATIONS

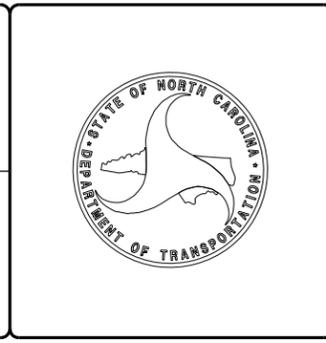
RIGHT OF WAY DATE: SEPTEMBER 16, 2022	PAUL ROBBINS, PE PROJECT ENGINEER
LETTING DATE: MAY 19, 2026	JORDAN BOND, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

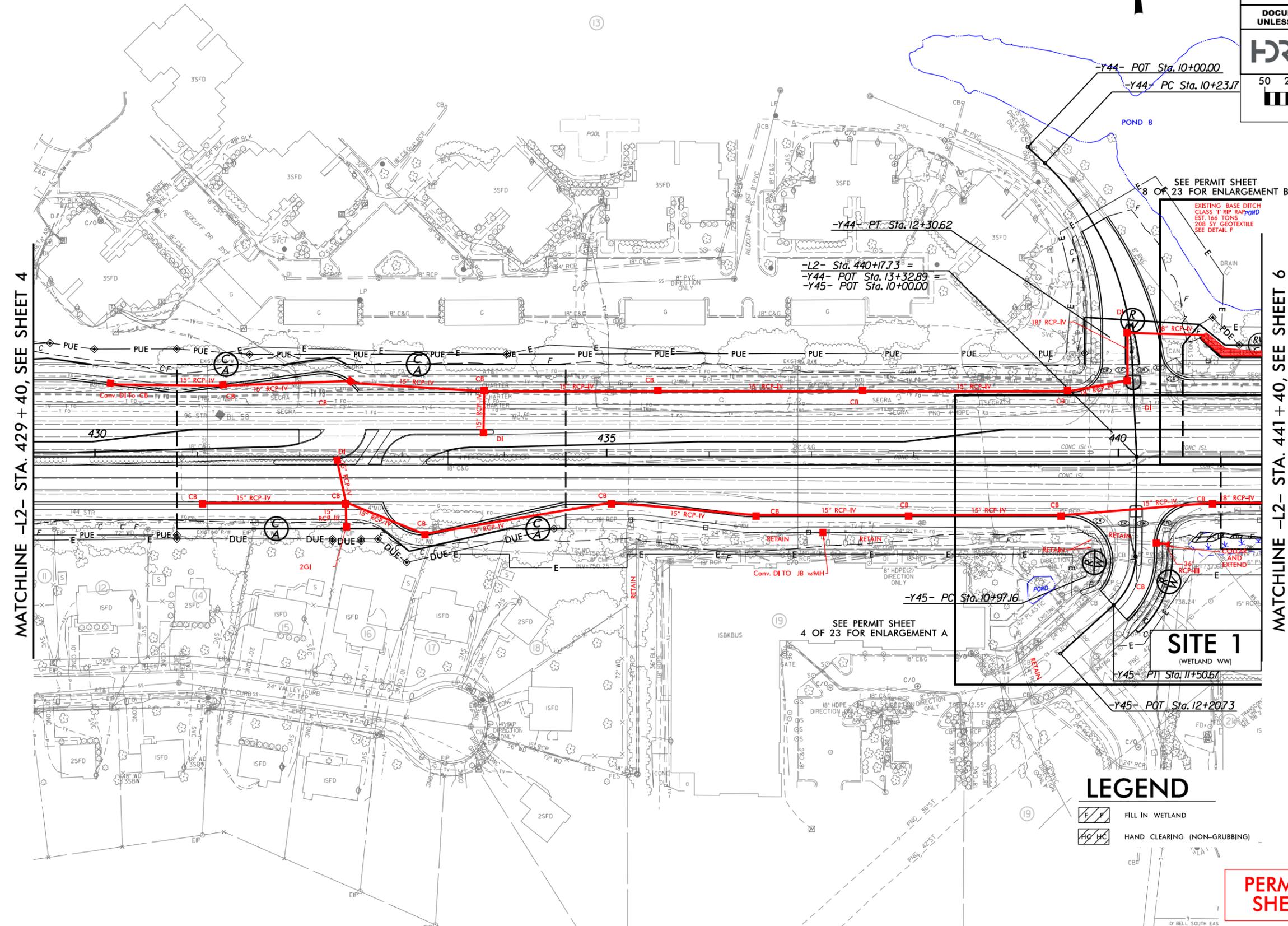
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ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



PROJECT REFERENCE NO. <i>U-5765</i>	SHEET NO. <i>5</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
 GRAPHIC SCALE	



MATCHLINE -L2- STA. 429 + 40, SEE SHEET 4

MATCHLINE -L2- STA. 441 + 40, SEE SHEET 6

SEE PERMIT SHEET 8 OF 23 FOR ENLARGEMENT B

EXISTING BASE DITCH
CLASS 1 RFP RAP POND
EST. 166 TONS
208 SY GEOTEXTILE
SEE DETAIL F

-Y44- PT. Sta. 12+30.62
-L2- Sta. 440+17.73 =
-Y44- POT Sta. 13+32.89 =
-Y45- POT Sta. 10+00.00

SEE PERMIT SHEET 4 OF 23 FOR ENLARGEMENT A

SITE 1
(WETLAND WW)

LEGEND

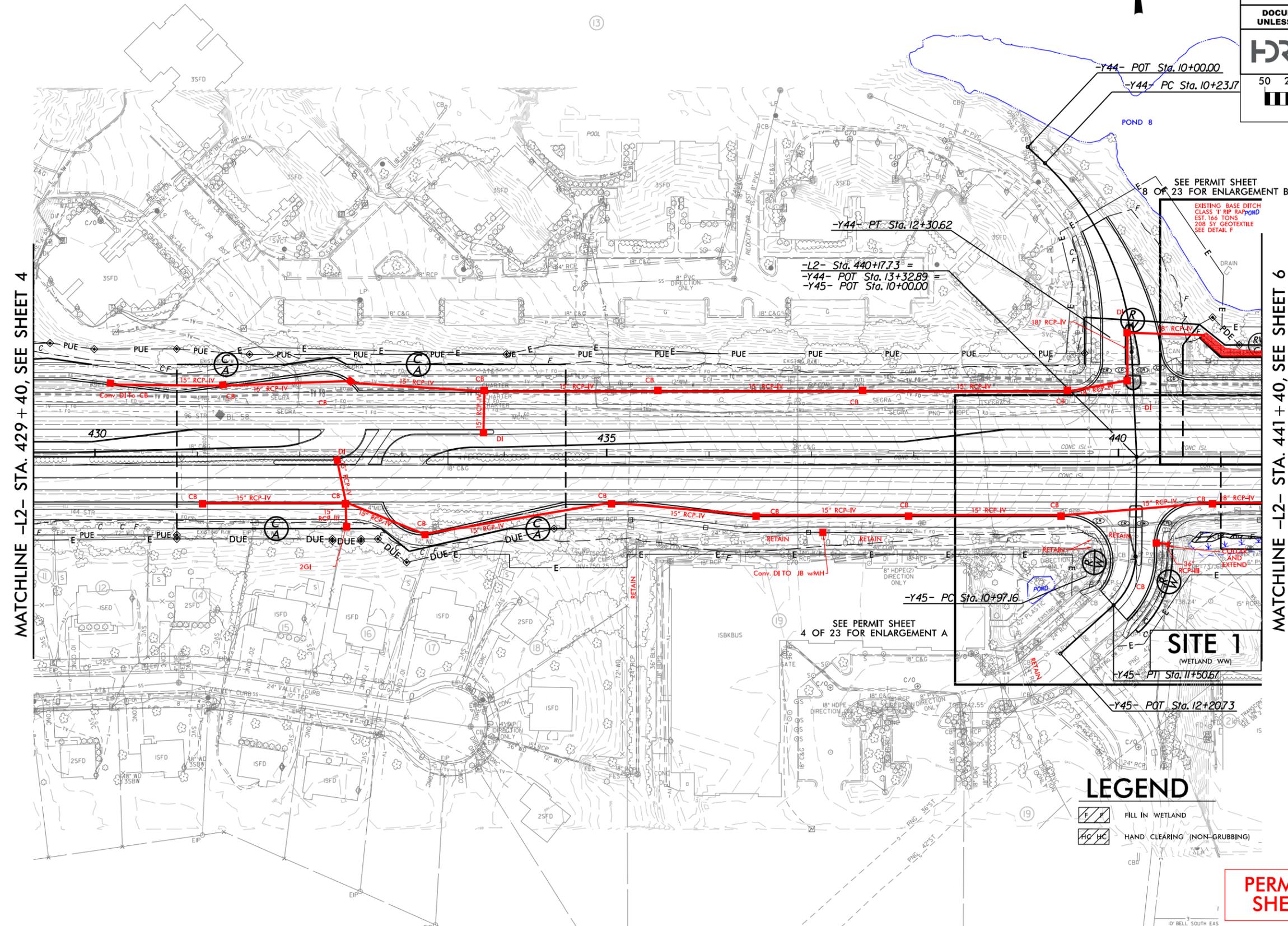
-  FILL IN WETLAND
-  HAND CLEARING (NON-GRUBBING)

PERMIT DRAWING
SHEET 2 OF 22

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PROJECT REFERENCE NO. <i>U-5765</i>	SHEET NO. <i>5</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
 GRAPHIC SCALE	



MATCHLINE -L2- STA. 429 + 40, SEE SHEET 4

MATCHLINE -L2- STA. 441 + 40, SEE SHEET 6

SEE PERMIT SHEET 8 OF 23 FOR ENLARGEMENT B

EXISTING BASE DITCH
 CLASS 1 RFP RAP POND
 EST. 166 TONS
 208 SY GEOTEXTILE
 SEE DETAIL F

-L2- Sta. 440+17.73 =
 -Y44- POT Sta. 13+32.89 =
 -Y45- POT Sta. 10+00.00

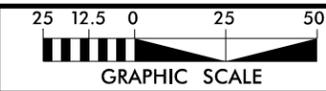
SEE PERMIT SHEET 4 OF 23 FOR ENLARGEMENT A

SITE 1
 (WETLAND WW)

LEGEND

-  FILL IN WETLAND
-  HAND CLEARING (NON-GRUBBING)

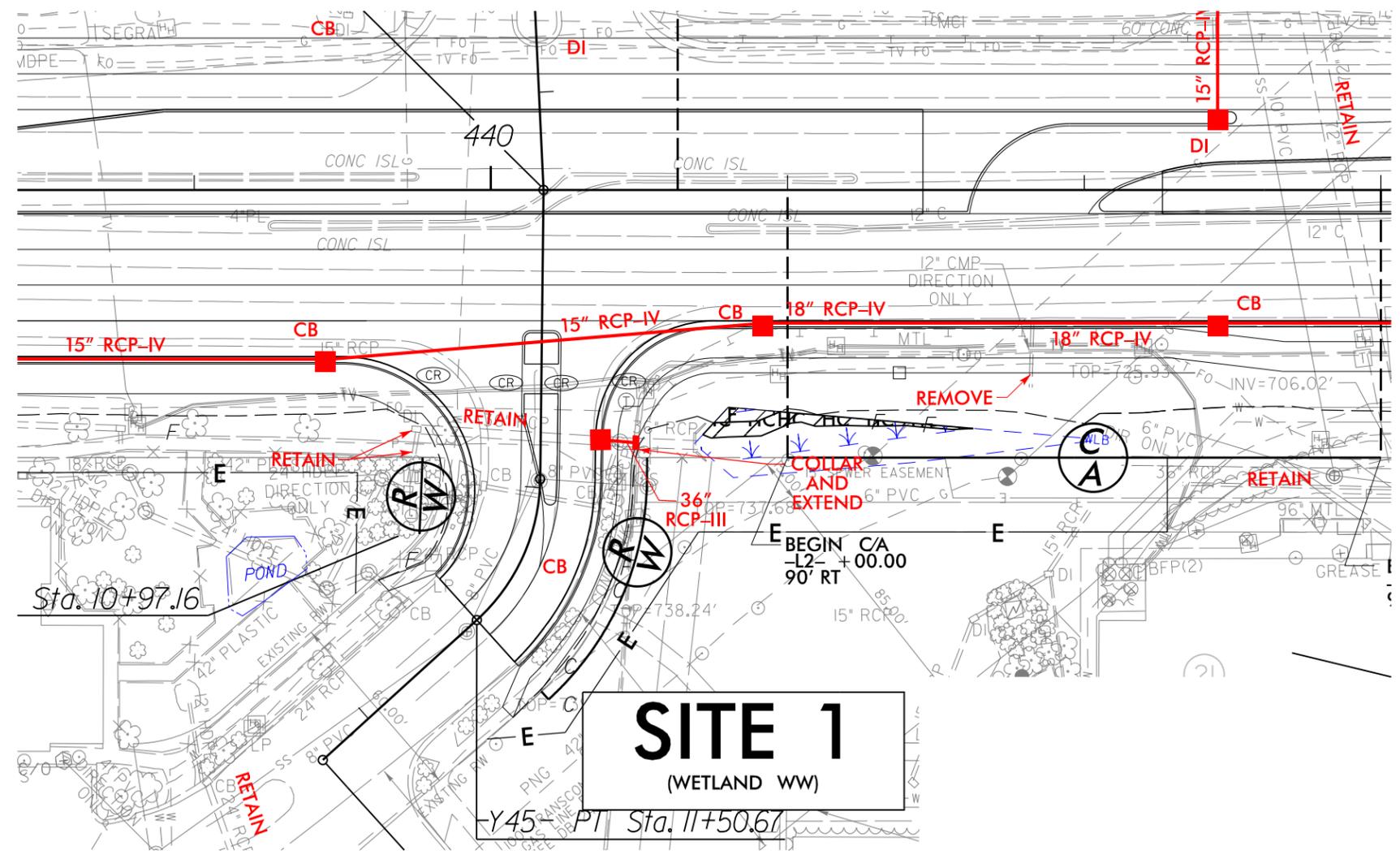
PERMIT DRAWING
SHEET 3 OF 22



PROJECT REFERENCE NO. <i>U-5765</i>		SHEET NO. <i>5A</i>	
RW SHEET NO.		HYDRAULICS	
ROADWAY DESIGN ENGINEER		ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			

NAD 83/2011

ENLARGEMENT A



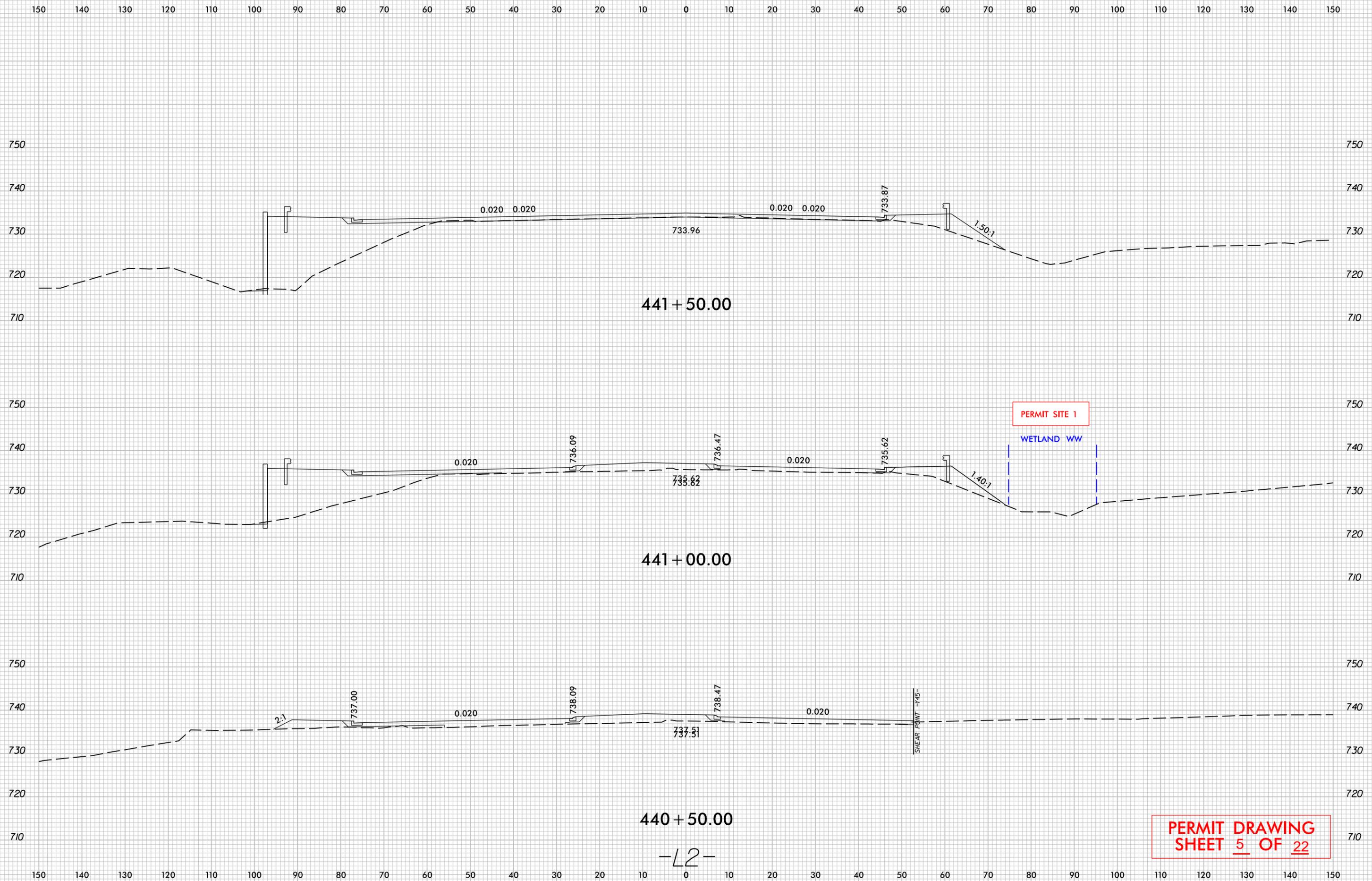
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- HC HC HAND CLEARING (NON-GRUBBING)

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SHEET 4 OF 22**

8/23/99



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**PERMIT DRAWING
 SHEET 5 OF 22**

LEGEND

-  TEMPORARY SURFACE WATER IMPACTS
-  HAND CLEARING (NON-GRUBBING)

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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
 50 25 0 50 100 GRAPHIC SCALE	

NAD 83/2011

MATCHLINE -L2- STA. 441 + 40, SEE SHEET 5

MATCHLINE -L2- STA. 455 + 00, SEE SHEET 7

SEE PERMIT SHEET 8 OF 23 FOR ENLARGEMENT B

EXISTING BASE DITCH CLASS 1 RCP RAP EST 46 TONS 208 SY GEOTEXTILE SEE DETAIL F

SITE 2
(UT TO MCDOWELL CREEK)
(STREAM SBB)

SITE 1
(WETLAND WW)

SEE PERMIT SHEET 4 OF 23 FOR ENLARGEMENT A

-L2- PT Sta. 450+2472 =
-Y46- POT Sta. 13+72.67 =
-Y47- POT Sta. 10+00.00 =

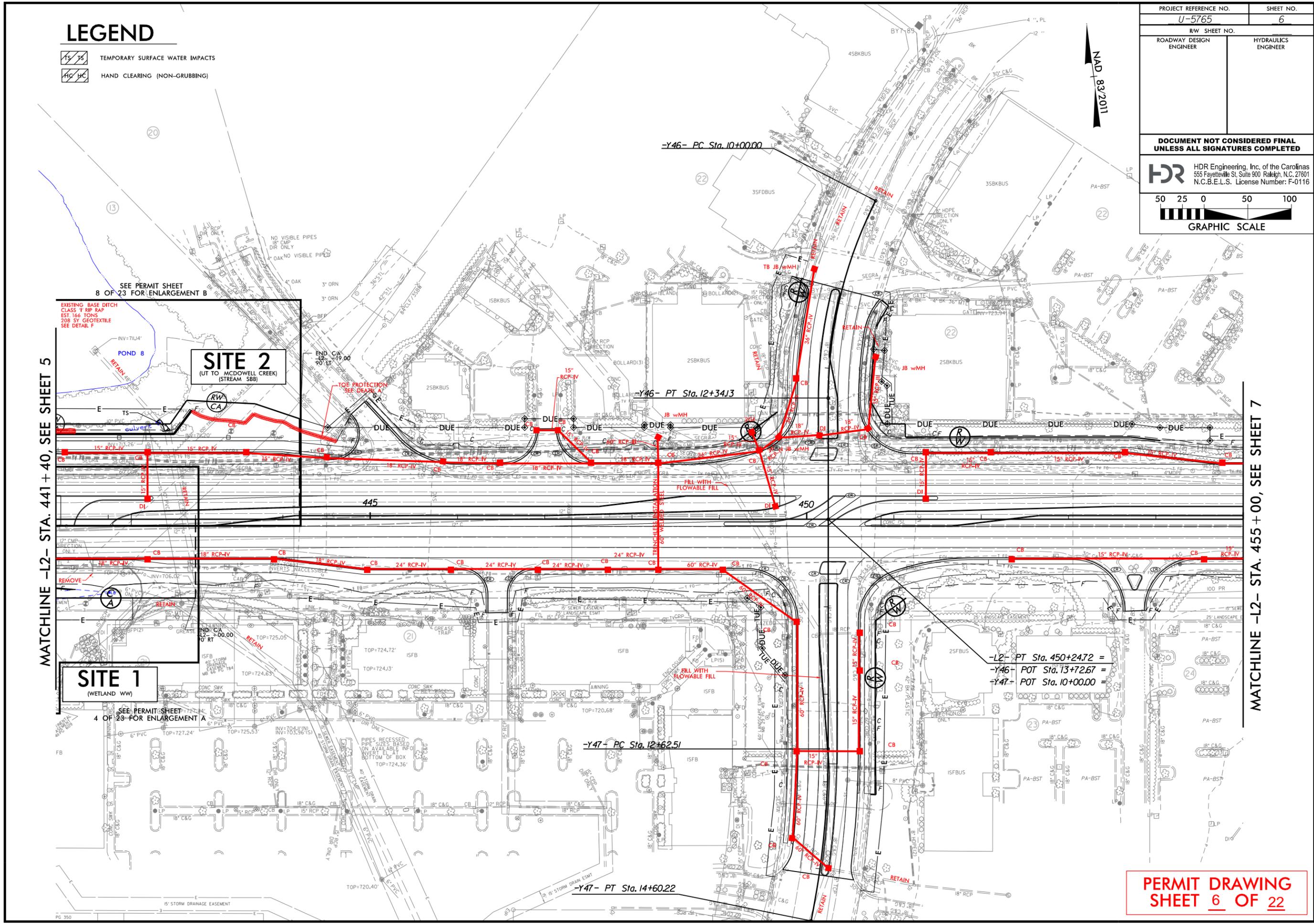
-Y47- PC Sta. 12+62.51

-Y46- PC Sta. 10+00.00

-Y46- PT Sta. 12+34.13

-Y47- PT Sta. 14+60.22

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 TIME: 5:59:38 PM
 DATE: 1/22/2025



PERMIT DRAWING
SHEET 6 OF 22

LEGEND

-  TEMPORARY SURFACE WATER IMPACTS
-  HAND CLEARING (NON-GRUBBING)

PROJECT REFERENCE NO. U-5765		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
50 25 0 50 100		GRAPHIC SCALE	

NAD 83/2011

MATCHLINE -L2- STA. 441 + 40, SEE SHEET 5

MATCHLINE -L2- STA. 455 + 00, SEE SHEET 7

SEE PERMIT SHEET 8 OF 23 FOR ENLARGEMENT B
 EXISTING BASE DITCH CLASS 1 RCP RAP EST 46 TONS 208 SY GEOTEXTILE SEE DETAIL F

SITE 2
(UT TO MCDOWELL CREEK)
(STREAM SBB)

SITE 1
(WETLAND WW)

SEE PERMIT SHEET 4 OF 23 FOR ENLARGEMENT A

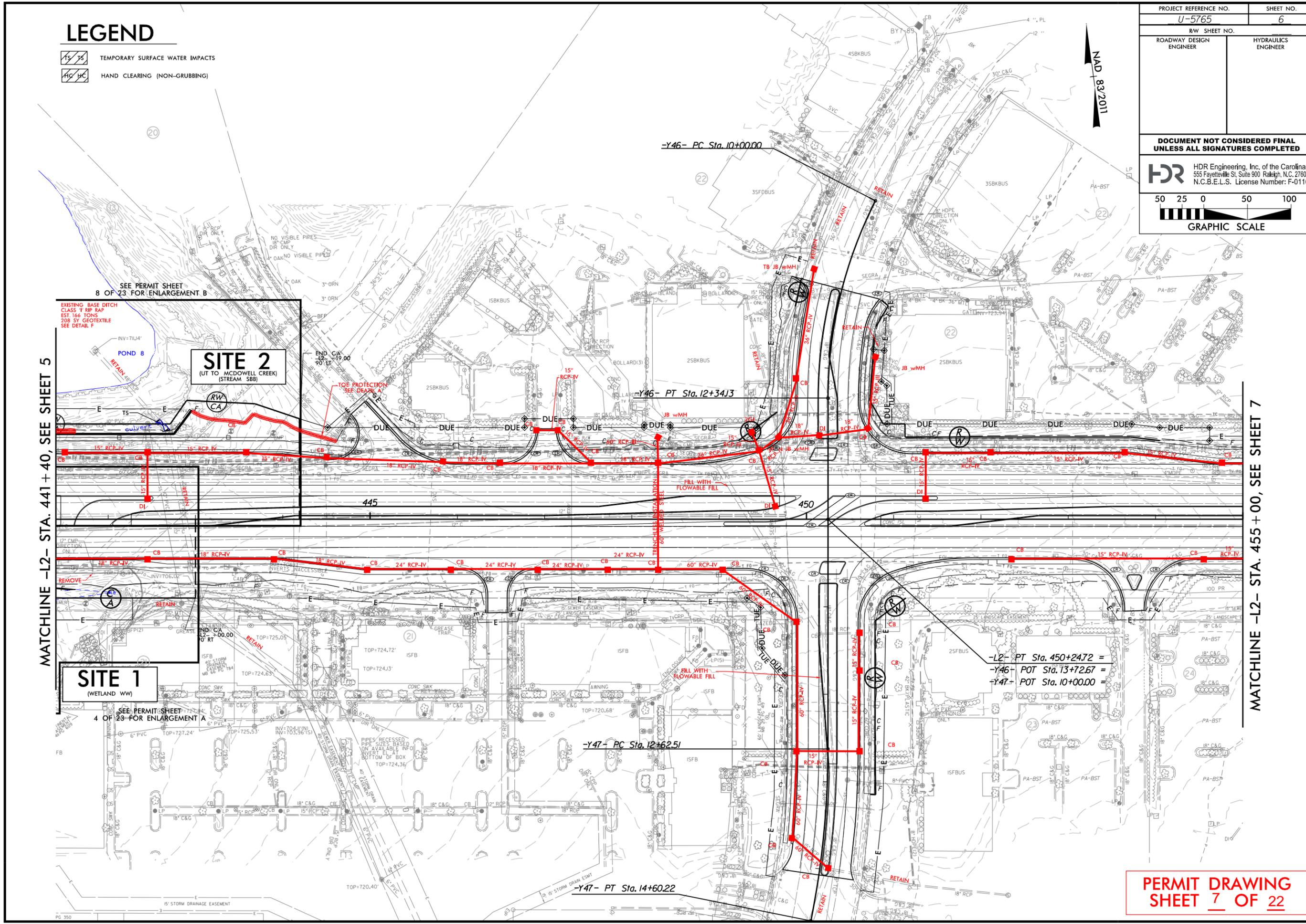
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 -Y46- POT Sta. 13+72.67 =
 -Y47- POT Sta. 10+00.00 =

-Y47- PC Sta. 14+60.22

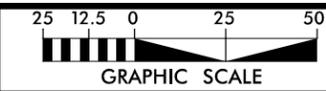
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-Y46- PC Sta. 10+00.00

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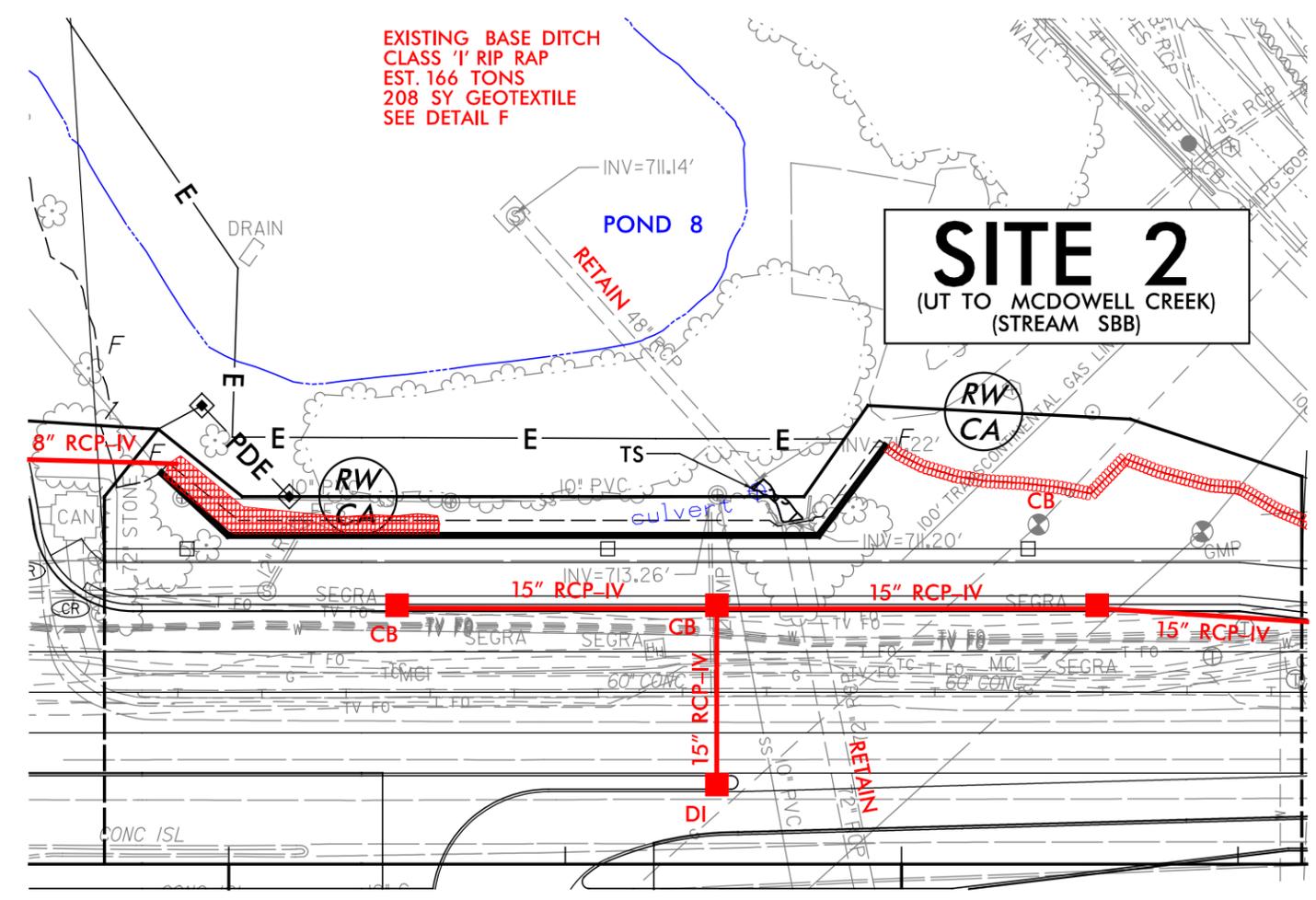
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SHEET 7 OF 22



PROJECT REFERENCE NO. <i>U-5765</i>	SHEET NO. <i>6A</i>
RW SHEET NO.	
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ENLARGEMENT B



LEGEND

TEMPORARY SURFACE WATER IMPACTS

**PERMIT DRAWING
SHEET 8 OF 22**

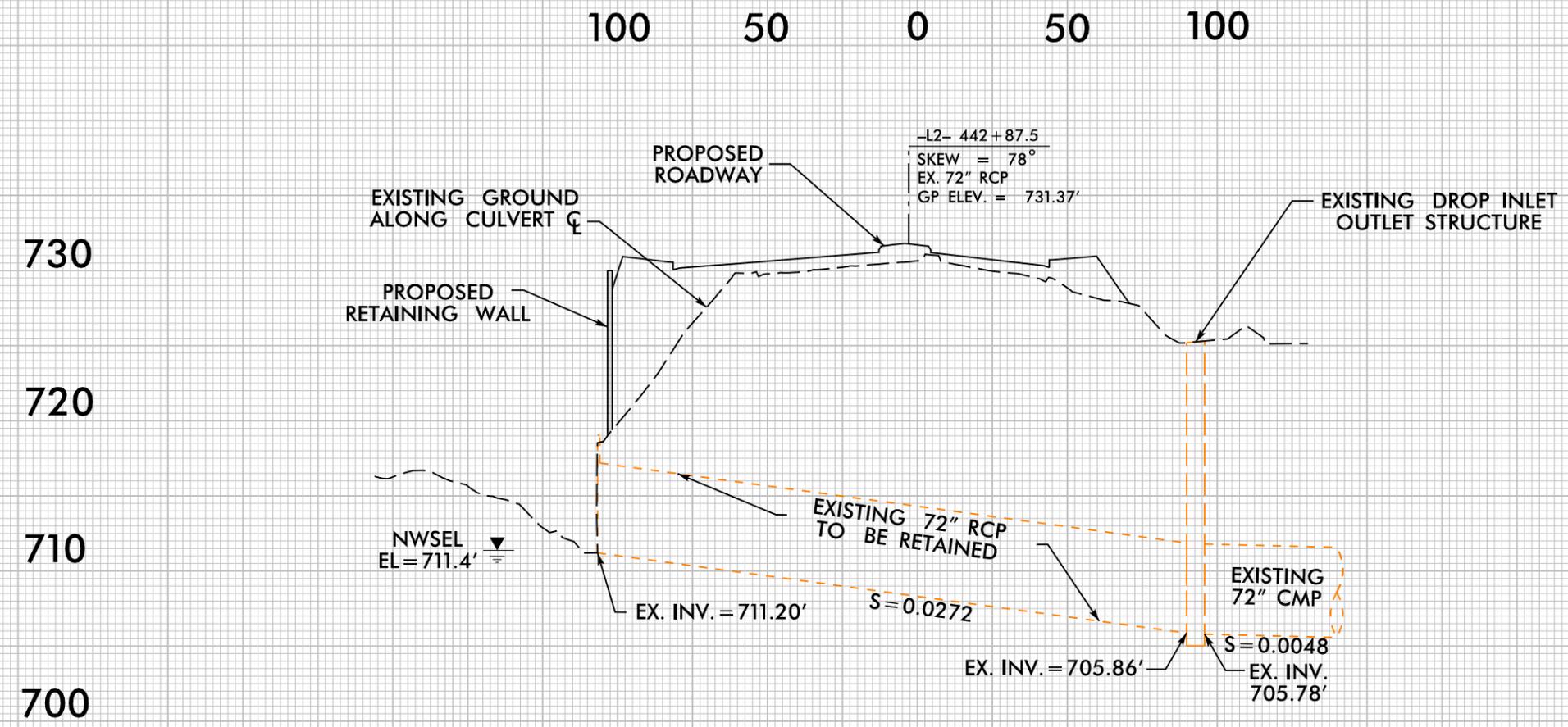
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 DATE: 1/23/2025

5/14/99

PROJECT REFERENCE NO. U-5765	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SITE 2

SCALE:
1" = 25' HORIZONTAL
1" = 5' VERTICAL



PROFILE ALONG CL OF CULVERT

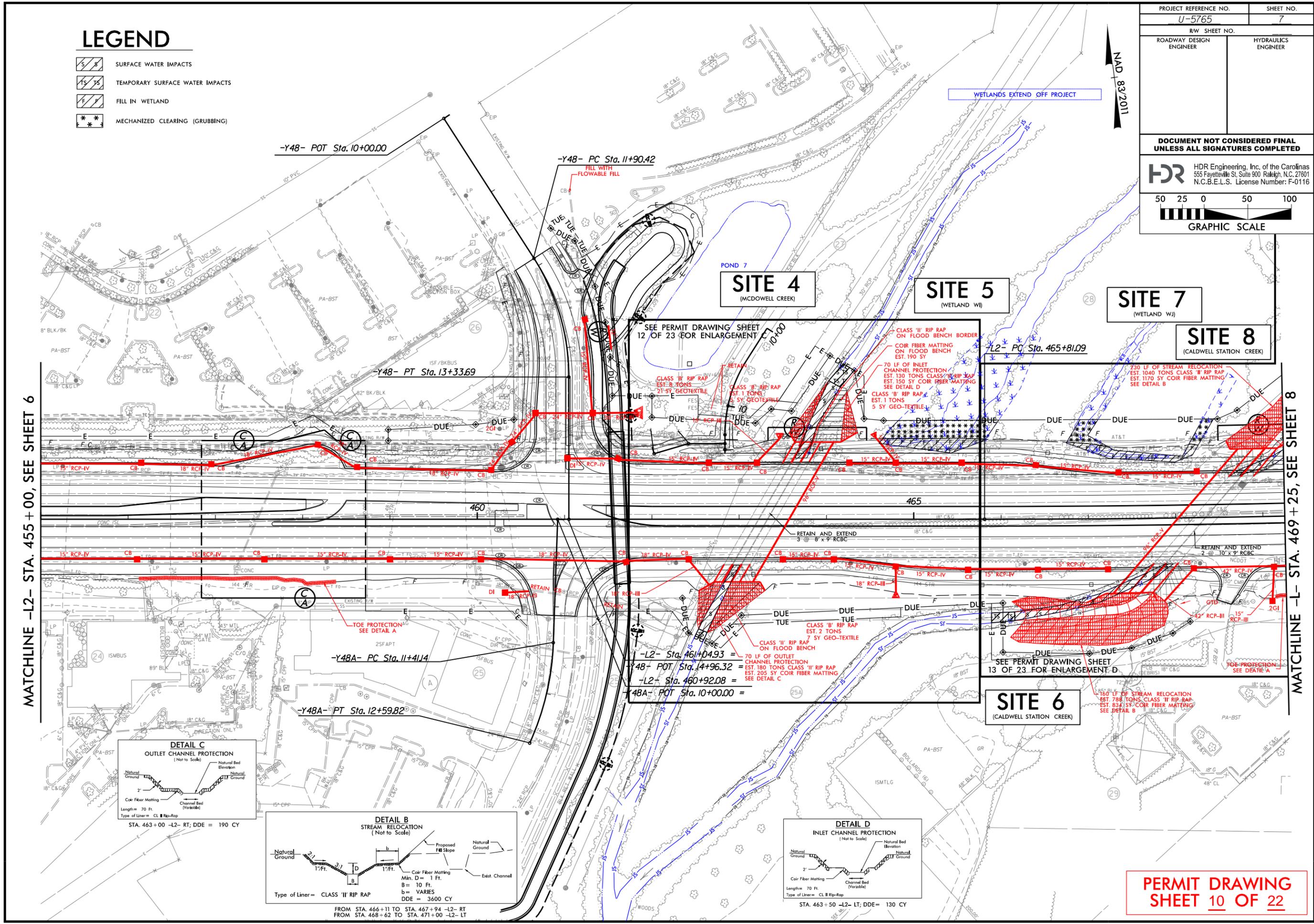
PERMIT DRAWING
SHEET 9 OF 22

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LEGEND

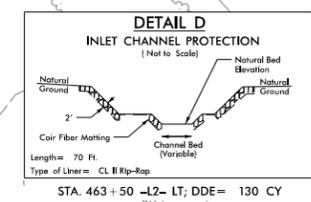
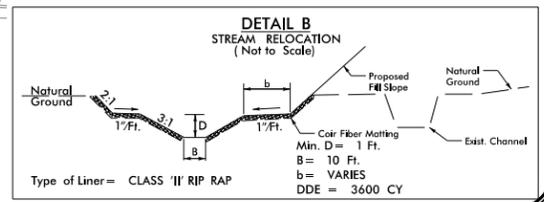
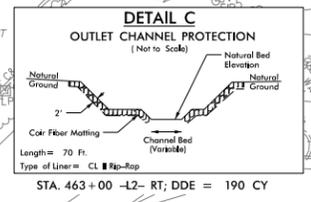
- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND
- MECHANIZED CLEARING (GRUBBING)

PROJECT REFERENCE NO. U-5765	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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 GRAPHIC SCALE	



MATCHLINE -L2- STA. 455 + 00, SEE SHEET 6

MATCHLINE -L- STA. 469 + 25, SEE SHEET 8



PERMIT DRAWING
SHEET 10 OF 22

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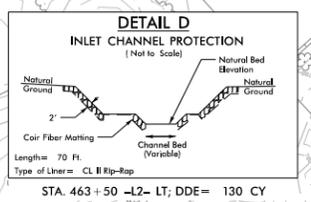
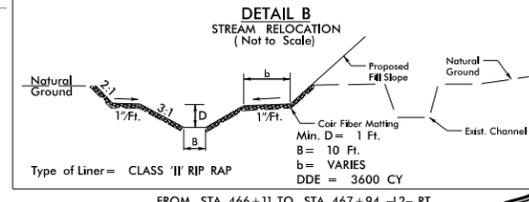
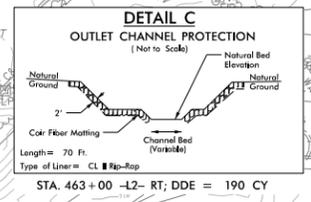
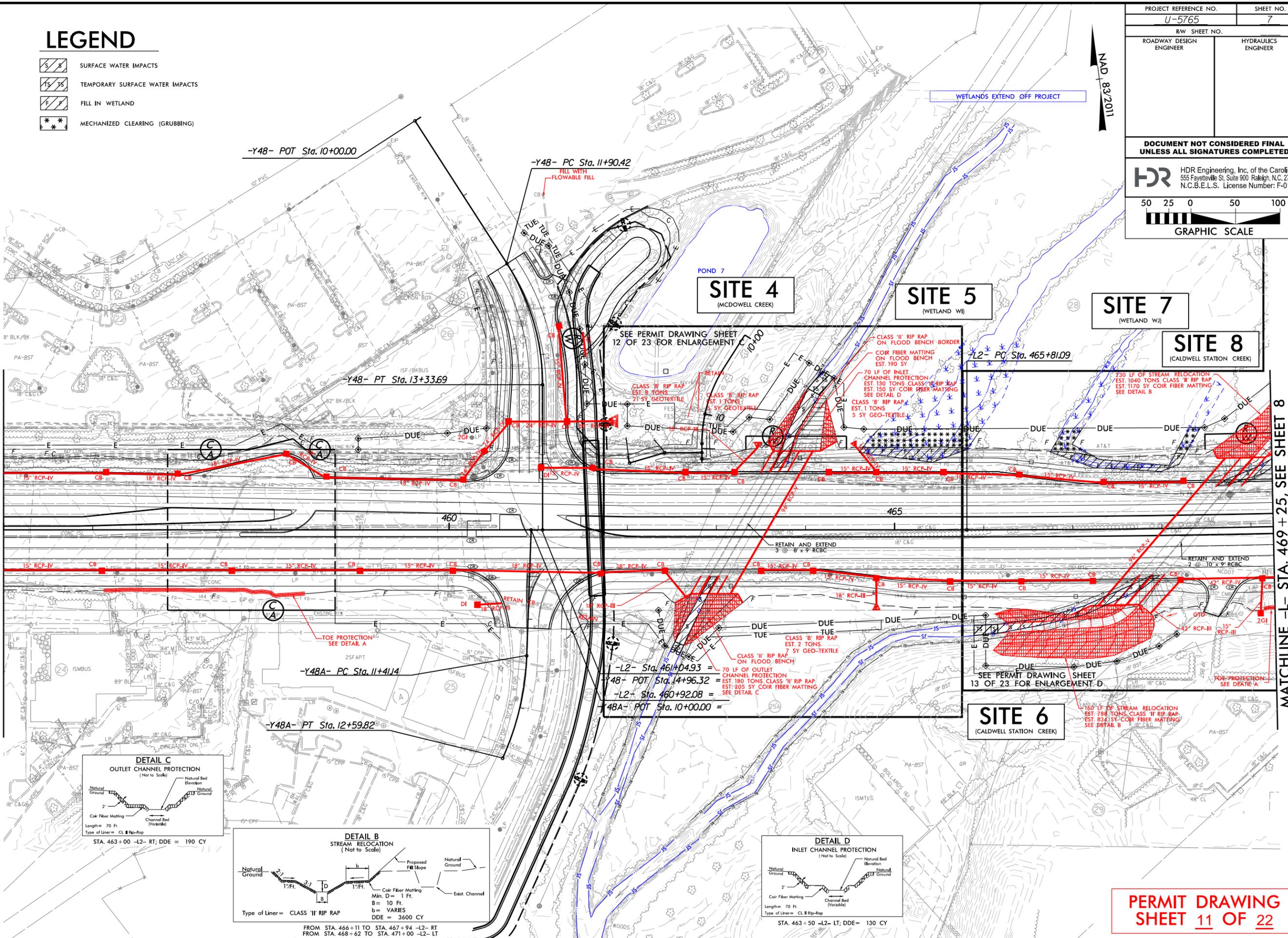
LEGEND

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND
- MECHANIZED CLEARING (GRUBBING)

PROJECT REFERENCE NO. U-5765	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
 GRAPHIC SCALE	

MATCHLINE -L2- STA. 455 + 00, SEE SHEET 6

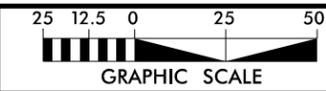
MATCHLINE -L- STA. 469 + 25, SEE SHEET 8



FROM STA. 466 + 11 TO STA. 467 + 94 -L2- RT
FROM STA. 468 + 62 TO STA. 471 + 00 -L2- LT

PERMIT DRAWING
SHEET 11 OF 22

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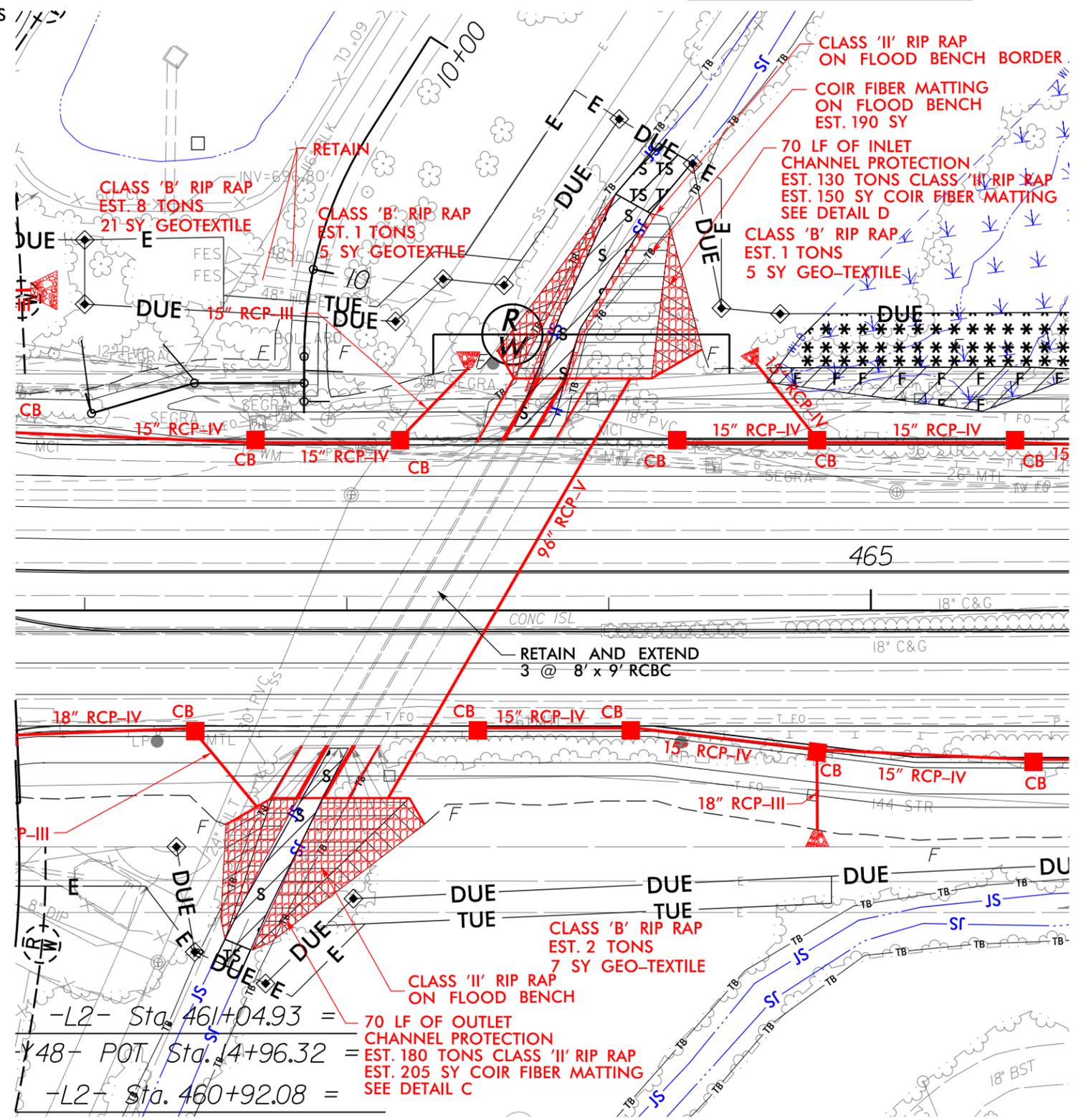
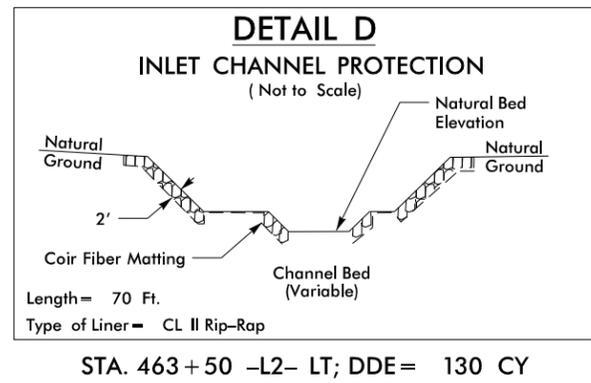
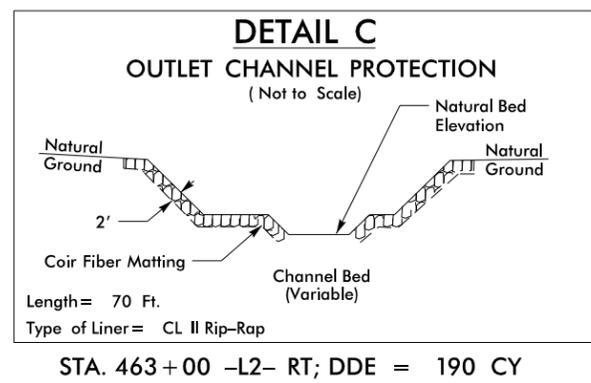
PROJECT REFERENCE NO. U-5765	SHEET NO. 7A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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ENLARGEMENT C

SITE 4 (MCDOWELL CREEK)

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND
- MECHANIZED CLEARING (GRUBBING)

NAD 83/2011



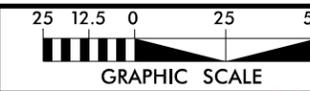
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ENLARGEMENT D

LEGEND

-  SURFACE WATER IMPACTS
-  TEMPORARY SURFACE WATER IMPACTS
-  MECHANIZED CLEARING (GRUBBING)
-  FILL IN WETLAND

PROJECT REFERENCE NO. U-5765	SHEET NO. 7B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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NAD 83/2011

SITE 8
(CALDWELL STATION CREEK)

230 LF OF STREAM RELOCATION
EST. 1040 TONS CLASS 'II' RIP RAP
EST. 1170 SY COIR FIBER MATTING
SEE DETAIL B

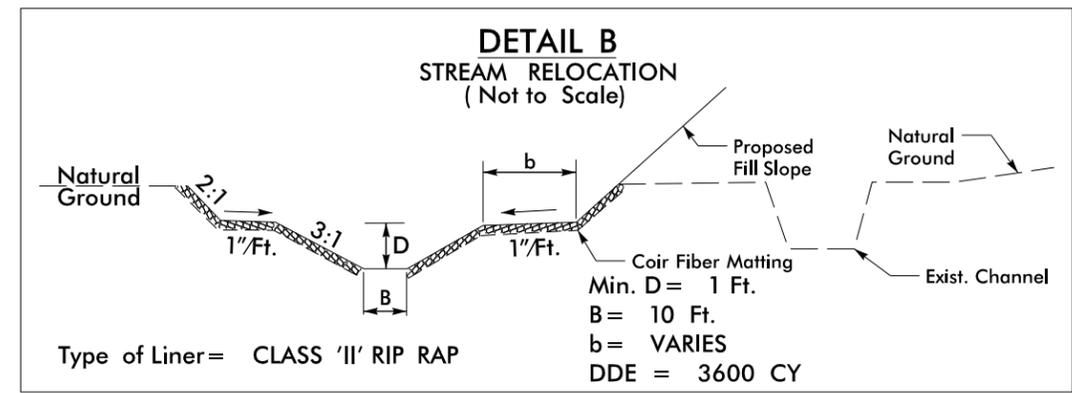
CLASS 'B' RIP RAP
EST. 1 TONS
5 SY GEOTEXTILE

COIR FIBER MATTING ON
FILL FOR EXISTING STREAM
EST. 175 SY

SITE 7
(WETLAND WJ)

230 LF OF STREAM RELOCATION
EST. 1040 TONS CLASS 'II' RIP RAP
EST. 1170 SY COIR FIBER MATTING
SEE DETAIL B

SITE 6
(CALDWELL STATION CREEK)



FROM STA. 466+11 TO STA. 467+94 -L2- RT
FROM STA. 468+62 TO STA. 471+00 -L2- LT

**PERMIT DRAWING
SHEET 13 OF 22**

PLOT DRIVER: NCDOT_color_eng_100.plt
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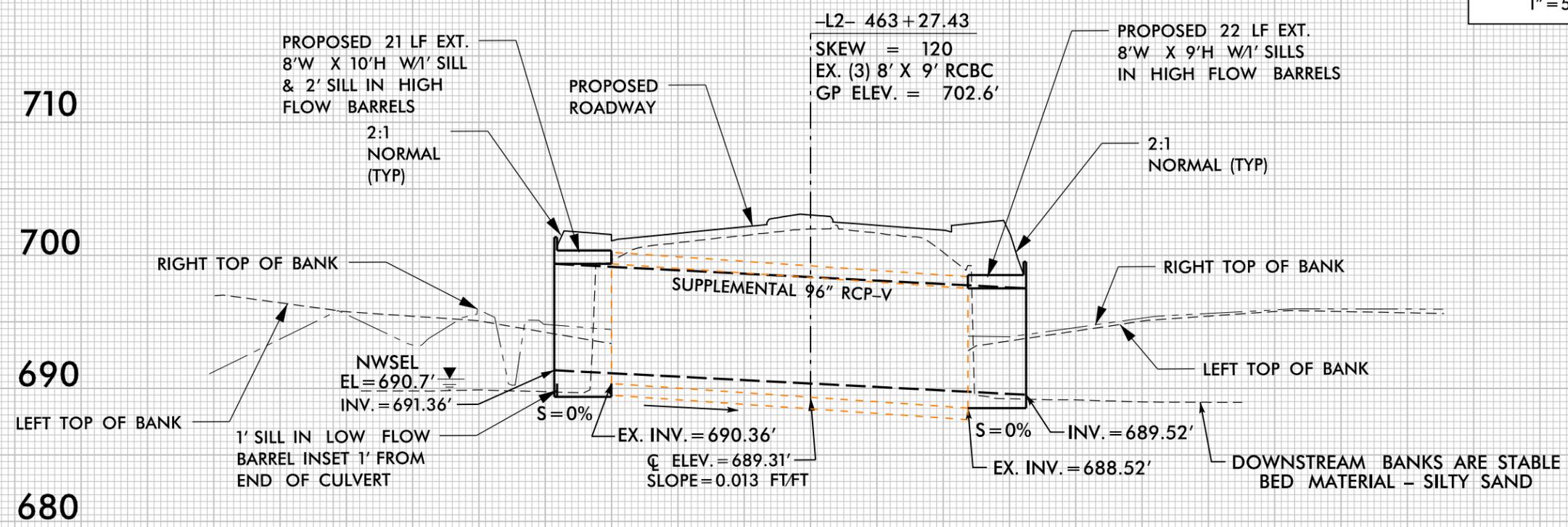
5/14/99

PROJECT REFERENCE NO. U-5765	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SITE 4

100 50 0 50 100

SCALE:
1" = 25' HORIZONTAL
1" = 5' VERTICAL



PROFILE ALONG Q_c OF CULVERT

PERMIT DRAWING
SHEET 14 OF 22

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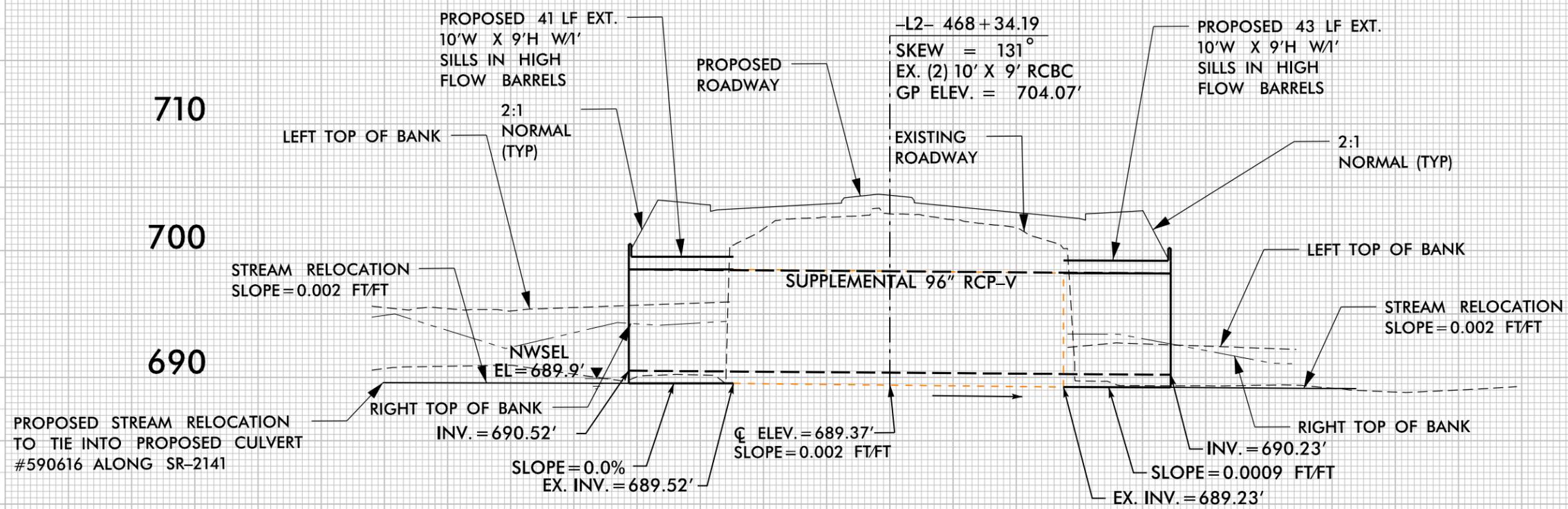
5/14/99

PROJECT REFERENCE NO. U-5765	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**SITE 6 – DOWNSTREAM
SITE 8 – UPSTREAM**

100 50 0 50 100

SCALE:
1" = 25' HORIZONTAL
1" = 5' VERTICAL

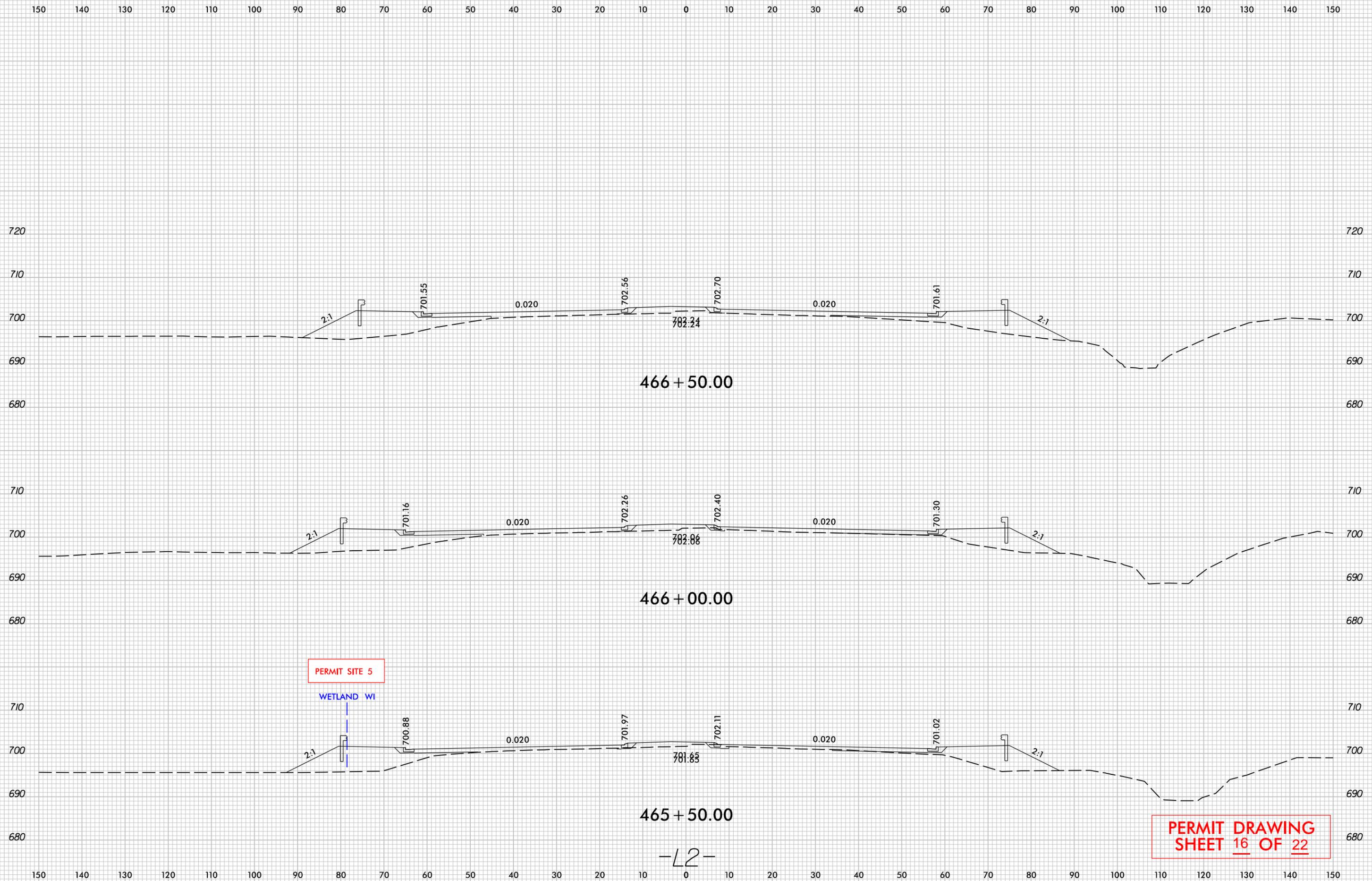


PROFILE ALONG \underline{C} OF CULVERT

**PERMIT DRAWING
SHEET 15 OF 22**

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8/23/99



PERMIT SITE 5

WETLAND WI

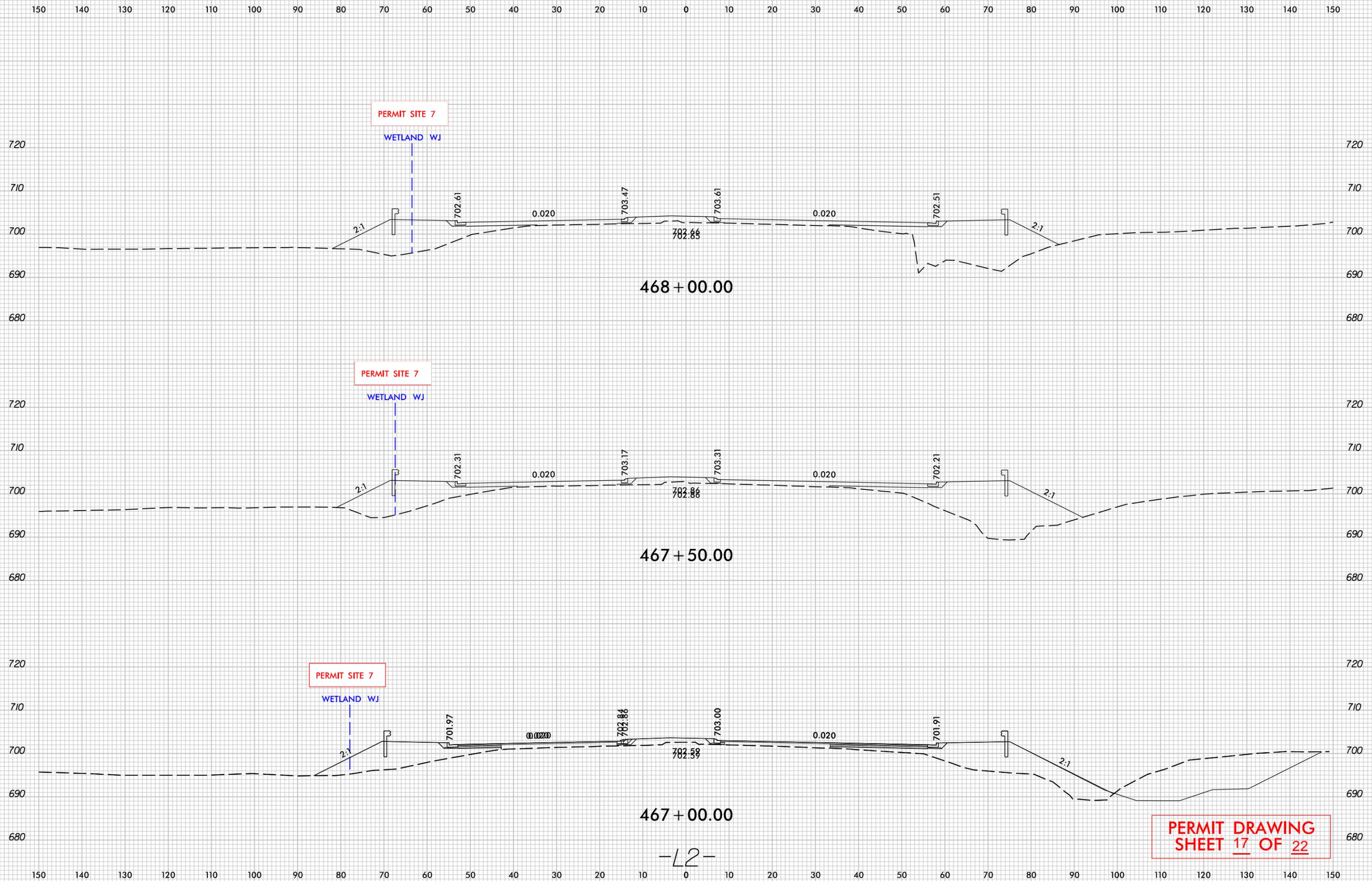
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SHEET 16 OF 22

-L2-

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8/23/99

8/23/99



-L2-

**PERMIT DRAWING
SHEET 17 OF 22**

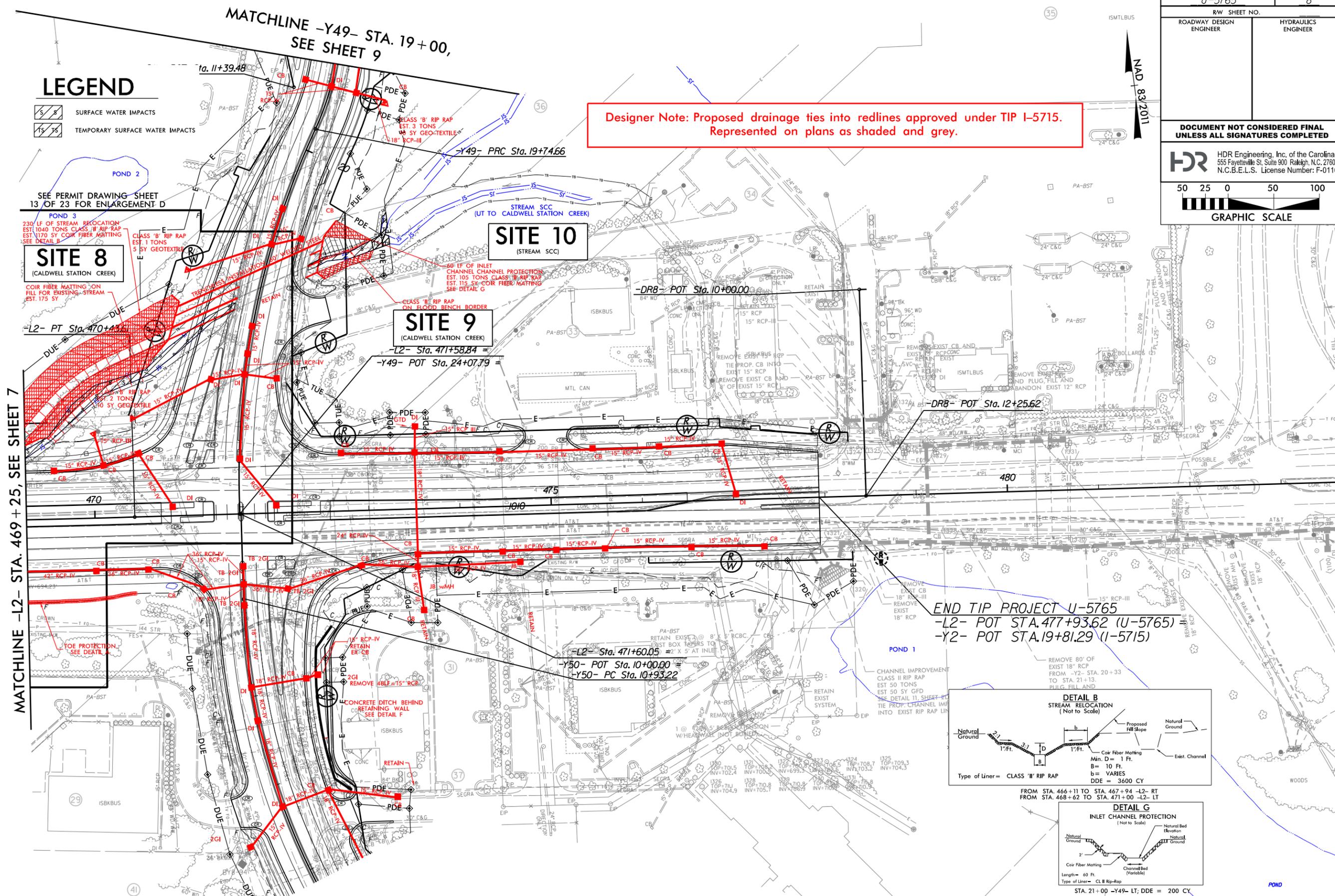
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PROJECT REFERENCE NO. U-5765	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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 GRAPHIC SCALE	

LEGEND

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS

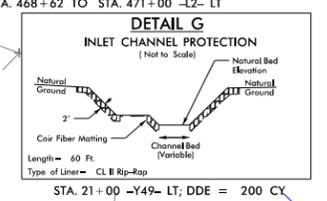
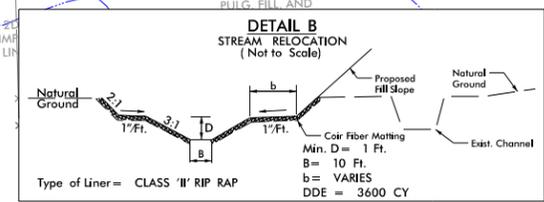
Designer Note: Proposed drainage ties into redlines approved under TIP I-5715.
Represented on plans as shaded and grey.



MATCHLINE -L2- STA. 469 + 25, SEE SHEET 7

MATCHLINE -Y49- STA. 19 + 00,
SEE SHEET 9

END TIP PROJECT U-5765
-L2- POT STA. 477+93.62 (U-5765)
-Y2- POT STA. 19+81.29 (I-5715)



PERMIT DRAWING
SHEET 18 OF 22

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PROJECT REFERENCE NO.	SHEET NO.
U-5765	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
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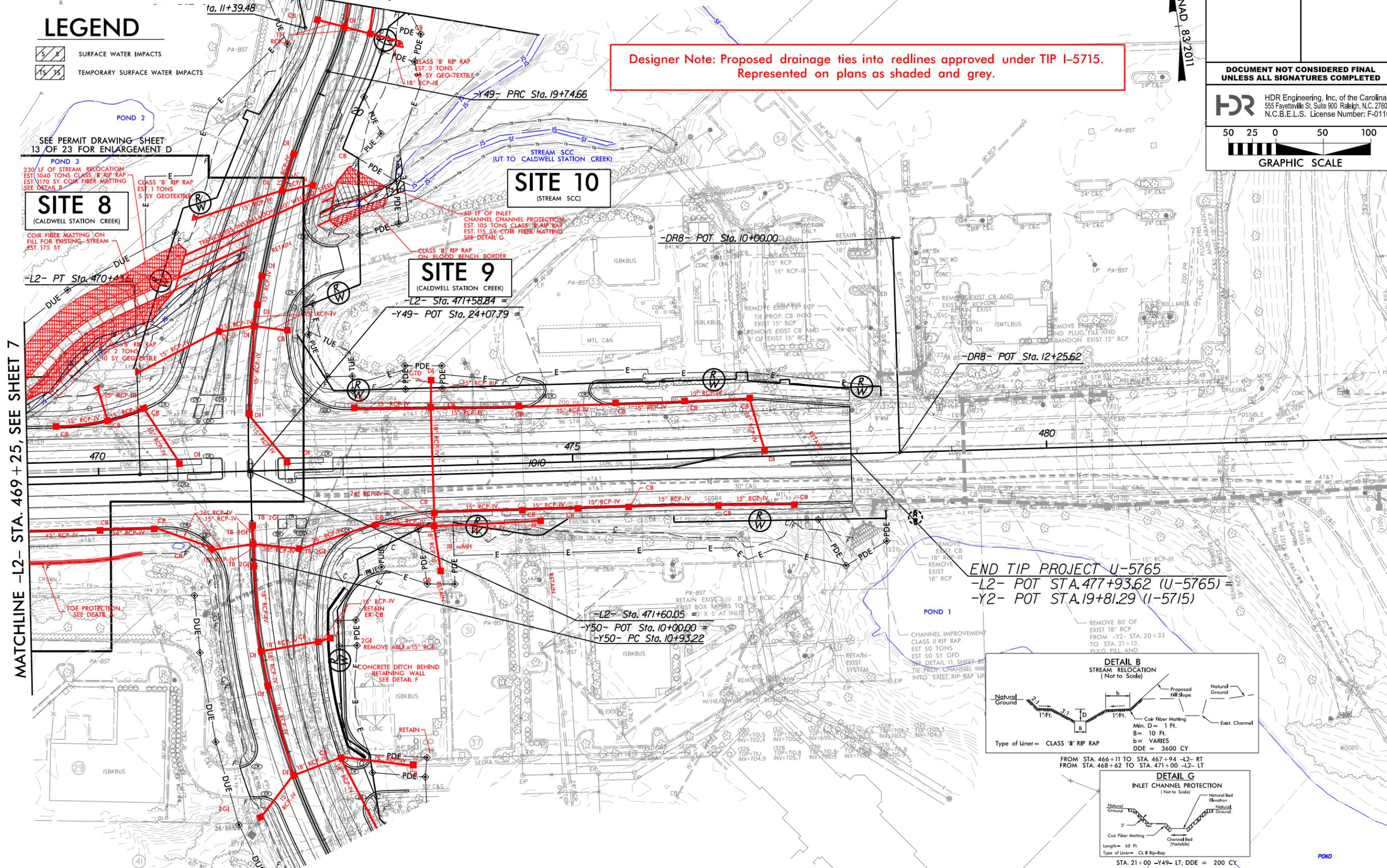
LEGEND

-  SURFACE WATER IMPACTS
-  TEMPORARY SURFACE WATER IMPACTS

Designer Note: Proposed drainage ties into redlines approved under TIP I-5715.
Represented on plans as shaded and grey.

MATCHLINE -L2- STA. 469 + 25, SEE SHEET 7

MATCHLINE -Y49- STA. 19 + 00,
SEE SHEET 9



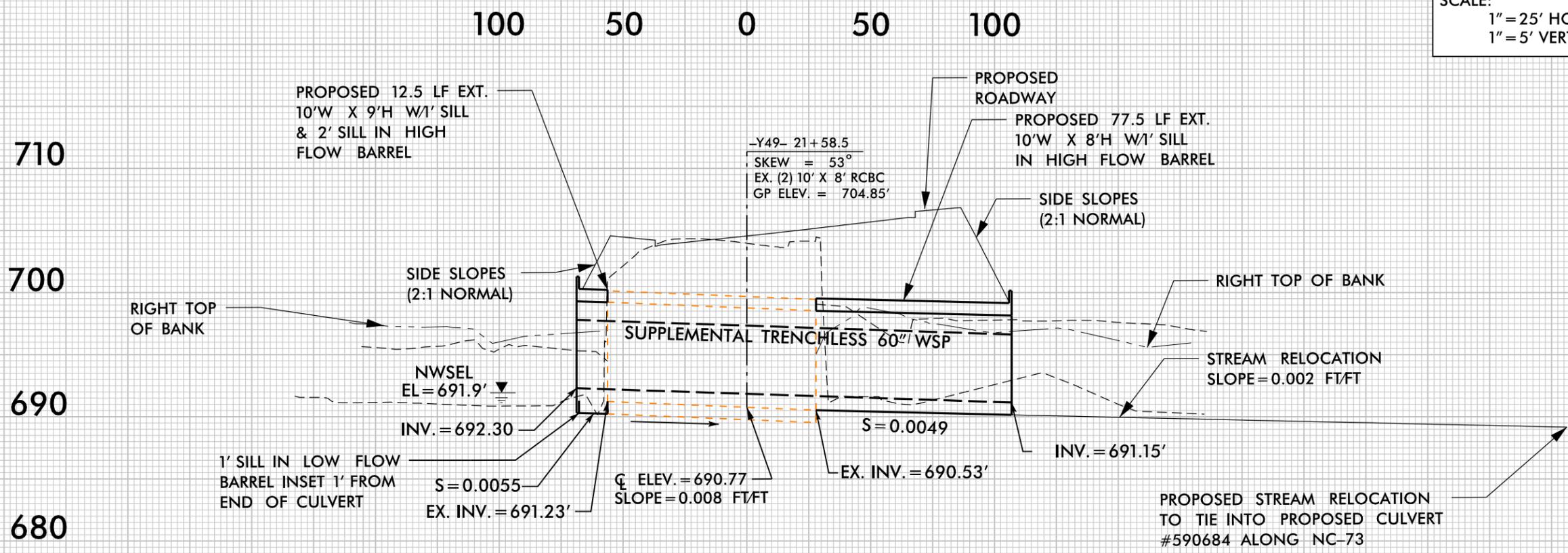
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5/14/99

PROJECT REFERENCE NO. U-5765	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**SITE 8 – DOWNSTREAM
SITE 9 – UPSTREAM**

SCALE:
1" = 25' HORIZONTAL
1" = 5' VERTICAL

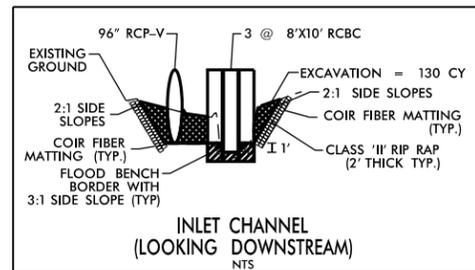
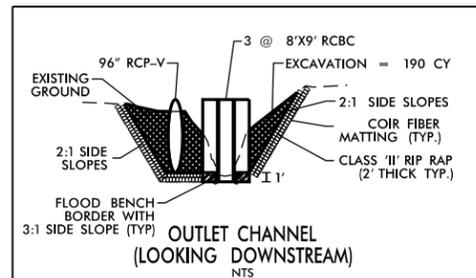


PROFILE ALONG \bar{C} OF CULVERT

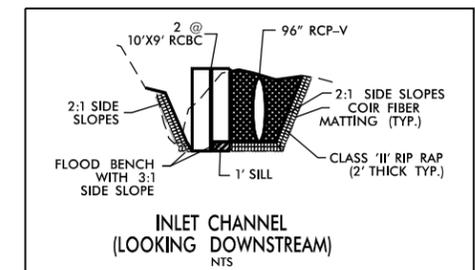
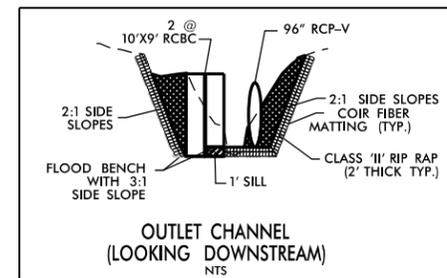
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SHEET 20 OF 22**

5/14/99 8-9.dgn

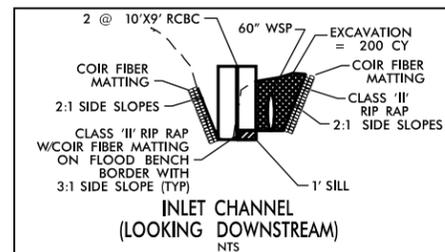
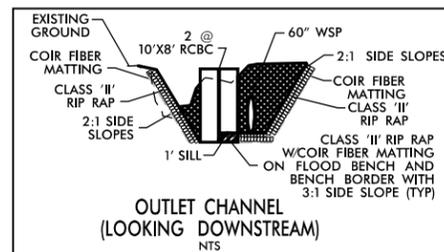
PROJECT REFERENCE NO.		SHEET NO.	
U-5765			
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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MCDOWELL CREEK CULVERT (NC-73) DETAILS/NOTES – SITE 4



CALDWELL STATION CREEK (NC-73) CULVERT DETAILS – SITES 6 & 8



CALDWELL STATION CREEK (SR-2141) CULVERT DETAILS – SITES 8 & 9

NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE CULVERT BARREL. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW BARRELS. IF RIP RAP IS USED TO LINE THE HIGH FLOW CULVERT BARRELS, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

GENERAL NOTES FOR ALL CULVERTS EXTENSIONS

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	440+75 to 440+98	ROADWAY FILL	< 0.01				< 0.01					
2	442+55 to 442+70	EXISTING 72" RCP**						< 0.01			15	
4	462+50 to 464+32	3-8'X9' RCBC W/96" RCP***						0.04	0.01	177	34	
5	464+60 to 465+92	ROADWAY FILL	0.03			0.06						
6	465+89 to 467+89	2-10'X9' RCBC W/96" RCP						0.04	< 0.01	189	27	161
7	466+75 to 468+56	ROADWAY FILL	0.03			0.02						
8	468+74 L to 21+83 Y49	2-10'X9' RCBC W/96" RCP						0.07		345		227
9	20+32 to 21+20	2-10'X8' RCBC W/60" WSP						0.01	< 0.01	76	37	
10	20+58 to 20+73	2-10'X8' RCBC W/60" WSP							< 0.01		8	
TOTALS*:			0.06			0.08	< 0.01	0.16	0.03	787	121	388

*Rounded totals are sum of actual impacts

NOTES:

**Temporary impacts associated with retaining wall construction within the temporary construction easement

***Stabilization efforts are not to be in channel bed. Stabilization efforts are to be limited

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 01/24/2025
 MECKLENBURG COUNTY
 U-5765
 50178.1.1
 SHEET 22 OF 22

R-5721B

No Permit

Drawings

Needed



Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 50215.1.3 TIP/Proj No: R-5721B County(ies): Mecklenburg Page 1 of 4

General Project Information

WBS Element:	50215.1.3	TIP Number:	R-5721B	Project Type:	Roadway Widening	Date:	5/11/2023
NCDOT Contact:	J. Wilson Stroud, CPM		Contractor / Designer:		HDR Engineering / Taylor Carter, P.E.		
Address:	1000 Birch Ridge Drive Raleigh, NC 27610		Address:	555 Fayetteville Street, Suite 900 Raleigh, NC 27601			
Phone:	(919) 707-6045		Phone:	(919) 232-6689			
Email:	wstroud@ncdot.gov		Email:	taylor.carter@hdrinc.com			
City/Town:	Huntersville		County(ies):	Mecklenburg			
River Basin(s):	Catawba		CAMA County?	No			
Wetlands within Project Limits?	No						

Project Description

Project Length (lin. miles or feet):	2.51	Surrounding Land Use:	Single family residential adjacent to high density residential.					
Project Built-Up Area (ac.)		Proposed Project			Existing Site			
		39.3	ac.	17.9	ac.			
Typical Cross Section Description:	Multilane Divided Highway - Multiuse path (MUP) on the westbound side of NC-73 varies from 10'-13', (2) 12 foot travel lanes with curb and gutter, a varying width (17.5'-35.0') concrete/grassed median, (2) 12 foot eastbound travel lanes with curb and gutter, and 6 foot sidewalk.			Two lane two way with 12 foot lanes, open unpaved shoulder. Typical section does not have a median or turn lane.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	59830	Year:	2045	Existing:	40000	Year:	2026

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

Project Description: The proposed project (R-5721B) widens NC-73 from approximately 1500 feet west of the intersection with Beatties Ford Road to approximately 750 feet east of the intersection with West Catawba Ave. The project will construct approximately 2.5 miles of 4-lane divided highway along NC-73. The project has no Jurisdictional Stream crossings or wetlands within the project limits. Several of the proposed outlets eventually drain to Lake Norman, however these areas are outside of the buffer zones of the lake.

Stormwater BMP Measures: A dry detention basin has been proposed along the project to reduce peak discharges. A preformed scour hole is also proposed to provide energy dissipation and diffuse flow before entering Lake Norman.

Impact Minimization Efforts: Ditches and pipe outlets have been designed to have non-erosive velocities where practical, elsewhere included appropriate ditch liners and outlet pads. When possible, medians were designed to be vegetated in an effort to decrease runoff and increase pervious area within the project. Outfall locations have been located to eliminate buffer impacts.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 3.00; Released August 2021)

WBS Element: 50215.1.3 TIP/Proj No.: R-5721B County(ies): Mecklenburg Page 2 of 4

General Project Information

Waterbody Information

Surface Water Body (1):	Lake Norman		NCDWR Stream Index No.:	11-(75)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)	Class B	
	Supplemental Classification:				
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:				Buffer Rules in Effect:	Catawba
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (2):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:				Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

Surface Water Body (3):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:				Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)				

R-5721A
Preliminary
Permit
Drawings



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.02; Released April 23, 2024)

WBS Element: 50215.1.2 TIP/Proj No: R-5721A County(ies): Lincoln Mecklenburg Page 1 of 2

General Project Information

WBS Element:	50215.1.2	TIP Number:	R-5721A	Project Type:	Roadway Widening	Date:	10/31/2025
NCDOT Contact:	Radha Attaluri, PE		Contractor / Designer:		HDR Engineering / Dean Lewis, P.E.		
Address:	1000 Birch Ridge Drive Raleigh, NC 27610		Address:	1200 Ridgfield Blvd Suite 170 Asheville, NC 28806			
Phone:	(919) 707-6038		Phone:	(336) 955-8279			
Email:	rattaluri@ncdot.gov		Email:	dean.lewis@hdrinc.com			
City/Town:			County(ies):	Lincoln	Mecklenburg		
River Basin(s):	Catawba		CAMA County?	No	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	5.15	Surrounding Land Use:	Commercial (West) transitioning to Rural Residential (East)					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	61.7	ac.	37.0	ac.				
Typical Cross Section Description:	2-lane divided highway w/multiuse path (MUP) along westbound NC-73 and a 6 foot wide sidewalk along the eastbound lanes, MUP varies in width from 10'-12'. 12 foot travel lanes with curb and gutter and a concrete/grassed median with varying width (11'-35'). Median crossovers and bulbouts are also provided for.			NC-16 to Business 16 - Multilane divided highway, two 12 foot travels lanes (east and westbound) with center concrete median with no sidewalks. Business 16 East - Two lane two way with 12 foot lanes, open unpaved shoulder. Typical section does not have a median or turn lane.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	53,784	Year:	2045	Existing:	43,034	Year:	2030

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

Project Description: The proposed project (R-5721A) widens NC-73 from the NC-16 interchange to approximately 1500 feet west of the intersection with Beatties Ford Road to connect to the adjacent (R-5721B) project. The project will construct approximately 5.1 miles of 4-lane divided highway along NC-73. The project contains three jurisdictional stream crossings, two culverts and one bridge replacement. One culvert and the bridge replacement are FEMA regulated and will require SFC coordination. Wetlands are also located throughout the project.

Impact Monimization Efforts: Guardrail and 2:1 slopes are being utilized throughout the project to minimize impacts to streams and wetlands. Ditches and pipes that outlet into or adjacent to wetlands will be designed to have non-erosive velocities and will be directed onto floodplains where practical to increase dissipation before contact with surface water. Culverts will be designed to ensure aquatic passage by utilizing high and low flow barrels (where necessary) to maintain existing low flows depths and avoid channel overwidening. If necessary flood benches will be lined with rip rap, rip rap will be keyed-in to the banks as to not disturb the existing channel bed. When possible medians will be vegetated in an effort to decrease runoff by increasing pervious area within the project limits.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 3.02; Released April 23, 2024)

WBS Element: 50215.1.2 TIP/Proj No.: R-5721A County(ies): Lincoln Mecklenburg Page 2 of 2

General Project Information

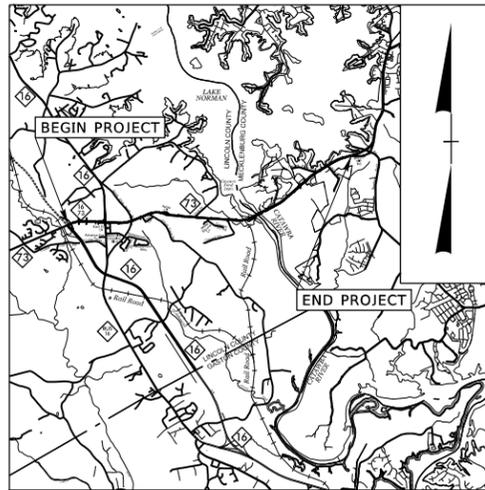
Waterbody Information

Surface Water Body (1):	Catawba River		NCDWR Stream Index No.:	11-(112)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	Catawba River		Buffer Rules in Effect:	Catawba	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (2):	Unnamed Tributary to Catawba River		NCDWR Stream Index No.:	11-(112)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Water Supply IV (WS-IV)		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SE; SF; SDD		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

Surface Water Body (3):	Unnamed Tributary to Forney Creek		NCDWR Stream Index No.:	11-119-2-3	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		None		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	SD; SGG; SHH; SII		Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

See Sheet 1A For Index of Sheets



VICINITY MAP (NTS)

DESIGN RECOMMENDATION PLAN SET

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

LINCOLN & MECKLENBURG COUNTY

LOCATION: NC 73 FROM NC 16 IN LINCOLN COUNTY
TO I-77 IN MECKLENBURG COUNTY

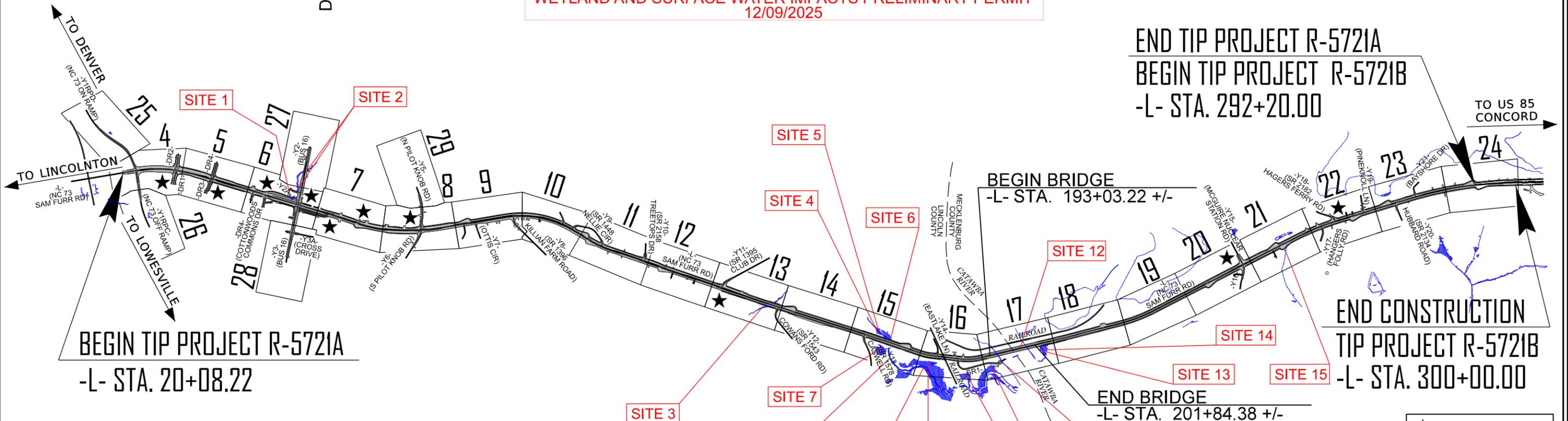
TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING,
STRUCTURES, RETAINING WALLS, SIGNALS,
SIGNING, AND PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5721A	11	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50215.1.2		PE	
50215.2.1		ROW	
50215.2.2		UTILITIES RELO.	
50215.3.1		CONST.	



WETLAND AND SURFACE WATER IMPACTS PRELIMINARY PERMIT
12/09/2025

END TIP PROJECT R-5721A
BEGIN TIP PROJECT R-5721B
-L- STA. 292+20.00



NOTE:
CLEARING ON THE PROJECT SHALL BE PERFORMED TO THE
LIMITS ESTABLISHED BY MODIFIED METHOD III.
THIS PROJECT IS A NO CONTROL OF ACCESS PROJECT WITH FULL CONTROL
OF ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

PERMIT DRAWINGS
SHEET 1 OF 37

★ PROPOSED SIGNAL
INCOMPLETE PLANS
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TIP PROJECT: R-5721A

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2030 = 43,034
ADT 2045 = 53,784
K = 9 %
D = 55 %
T = 5 % *
V = 50 MPH
* TTST = 1% DUAL = 4%
FUNC CLASS =
PRINCIPAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-5721A = 5.154 MILES
LENGTH OF STRUCTURE TIP PROJECT R-5721A = 0.167 MILE
TOTAL LENGTH OF TIP PROJECT R-5721A = 4.987 MILES

NCDOT CONTACT: RADHA ATTALURI, P.E.
PROJECT MANAGER

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
7/31/2026

LETTING DATE:
7/16/2030

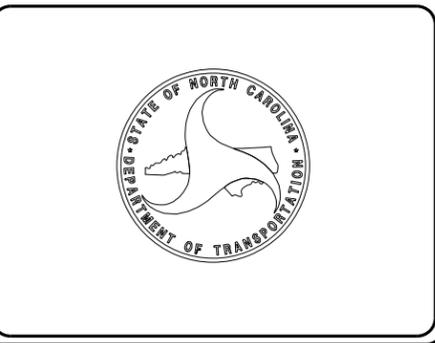
PAUL ROBBINS, P.E.
PROJECT ENGINEER

JORDAN BOND, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.





ROADWAY DESIGN UNIT
ROADWAY DESIGN ENGINEER

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HYDRAULICS ENGINEER

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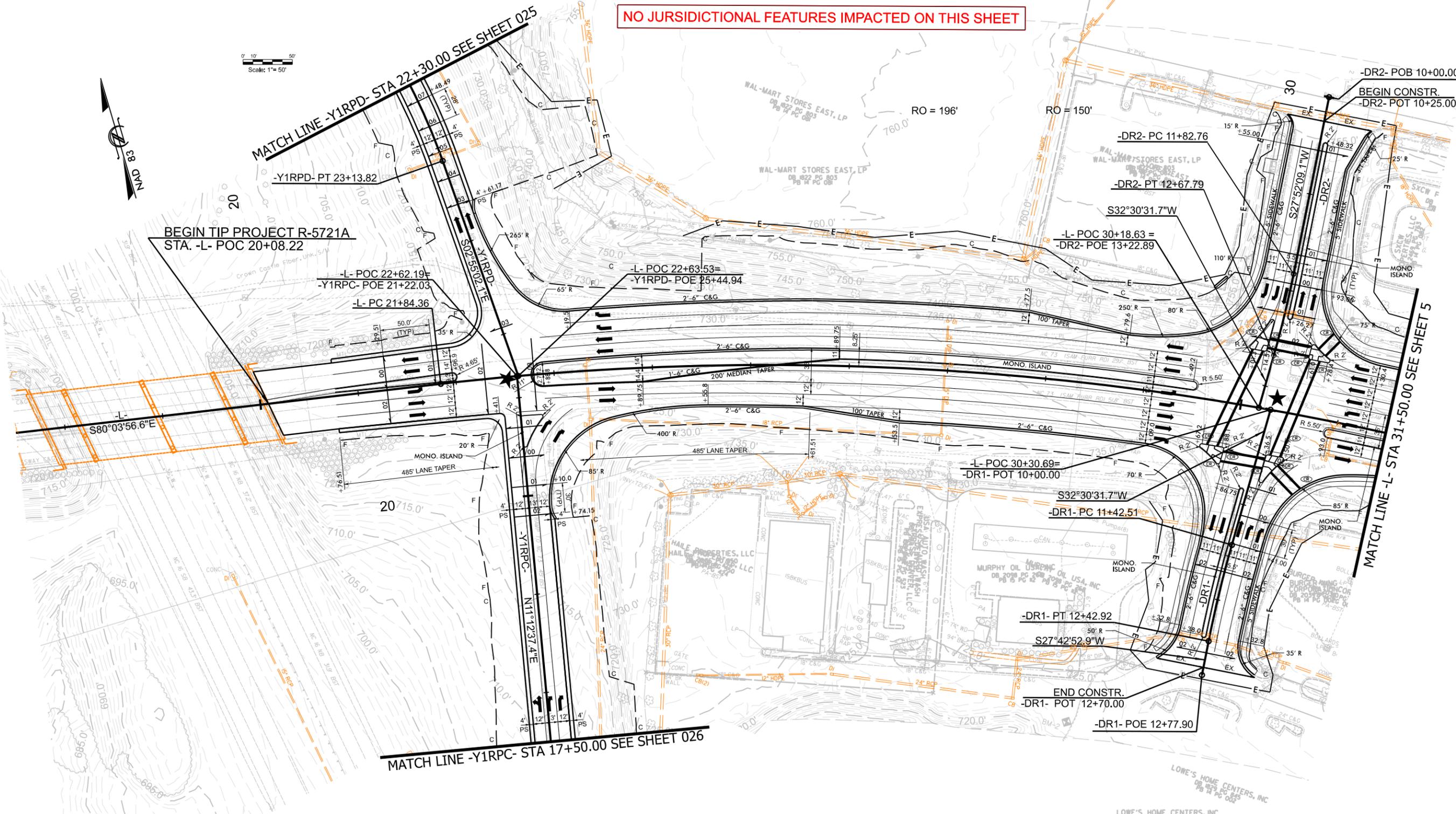
PREPARED BY

HR Engineering, Inc. of the Carolinas
557 South Main Street, Suite 200, Raleigh, NC 27601
N.C.E.L.S. License Number: F-0179

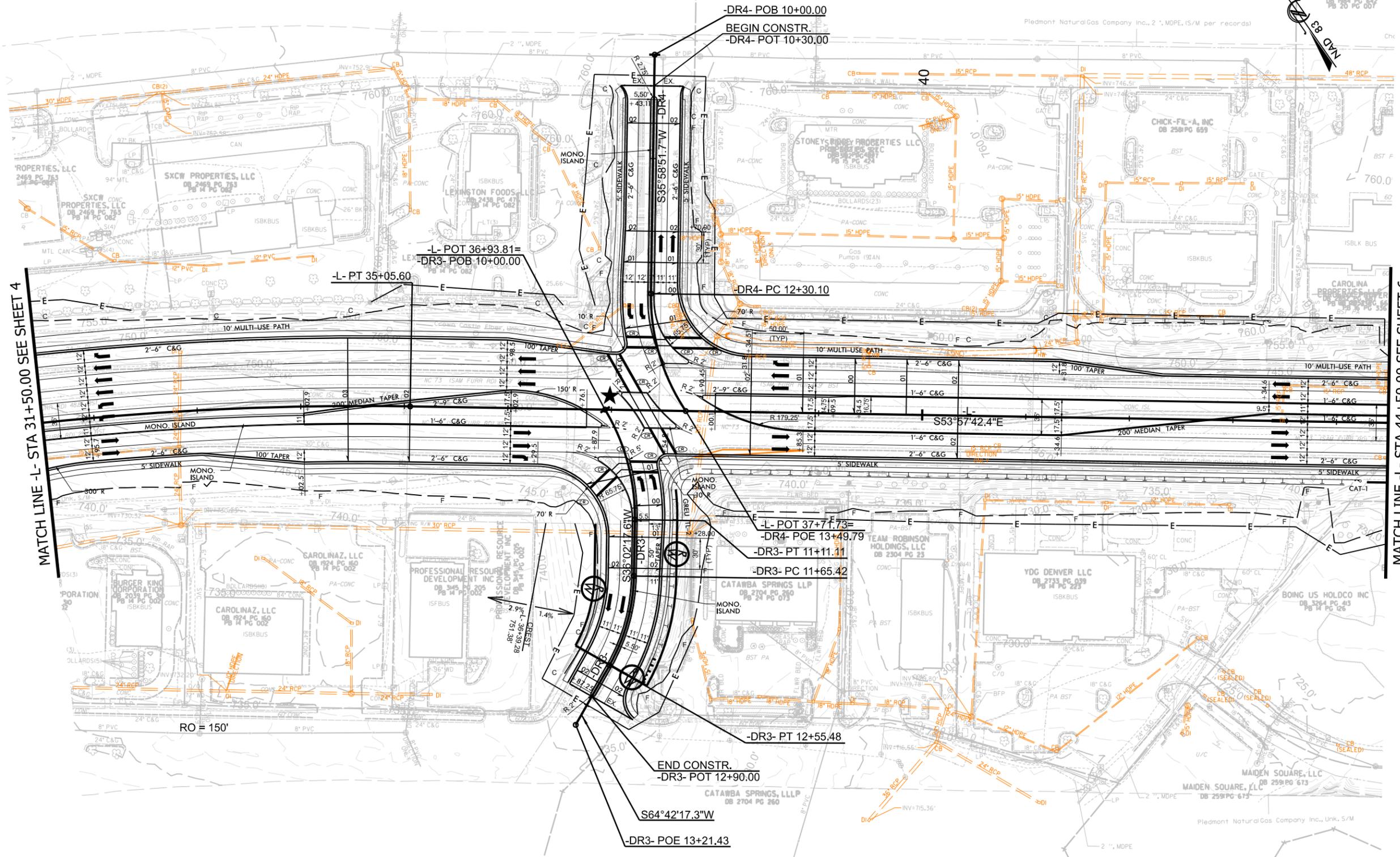
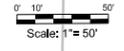
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PERMIT DRAWINGS
SHEET 2 OF 37



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MATCH LINE -L- STA 31+50.00 SEE SHEET 4

MATCH LINE -L- STA 44+50.00 SEE SHEET 6

-DR4- POB 10+00.00
BEGIN CONSTR.
-DR4- POT 10+30.00

-L- POT 36+93.81=
-DR3- POB 10+00.00

-DR4- PC 12+30.10

-L- POT 37+77.73=
-DR4- POE 13+49.79

-DR3- PT 11+11.11

-DR3- PC 11+65.42

-DR3- PT 12+55.48

END CONSTR.
-DR3- POT 12+90.00

-DR3- POE 13+21.43

PERMIT DRAWINGS
SHEET 3 OF 37

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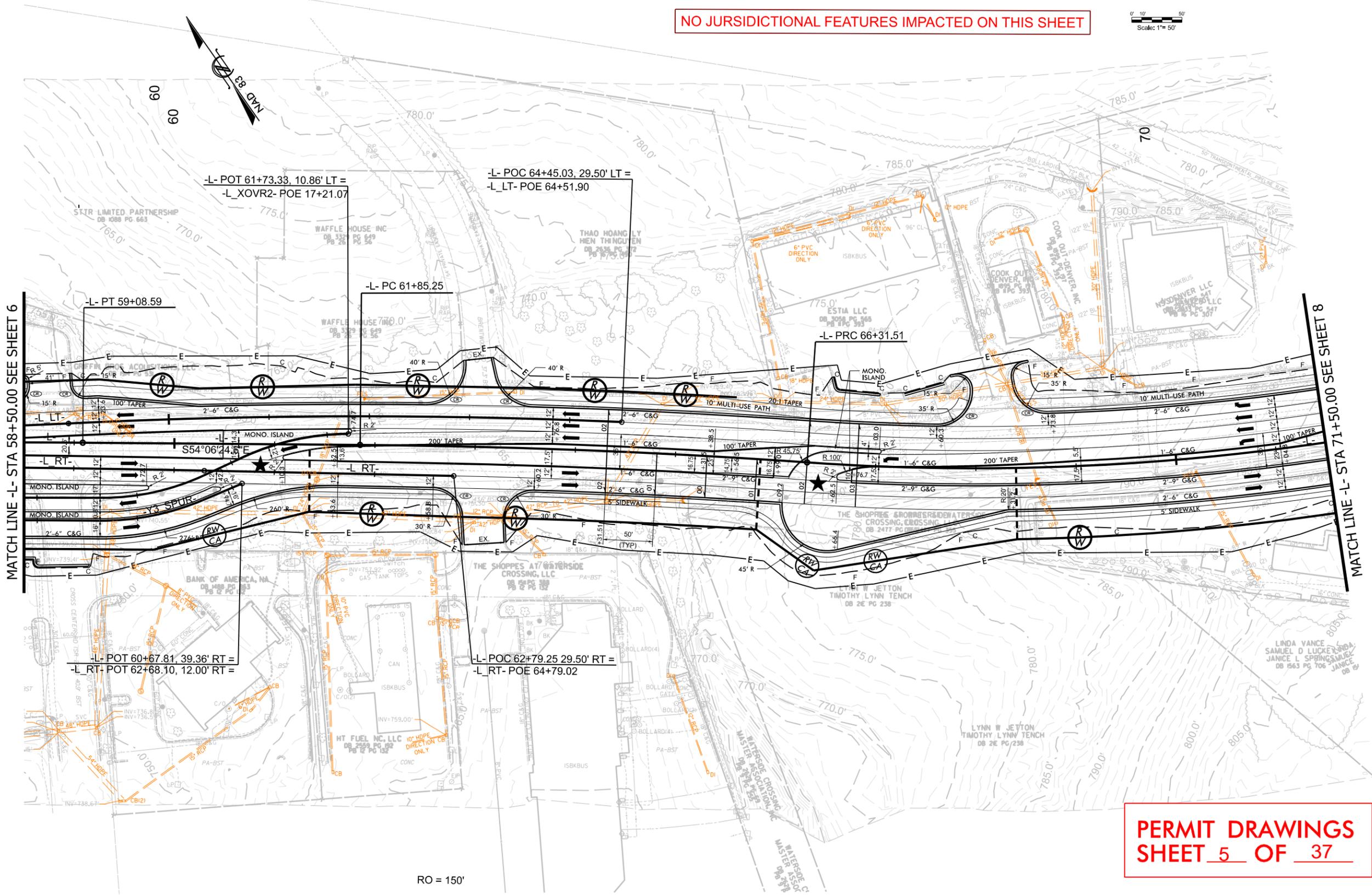
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Scale: 1"= 50'



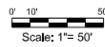
MATCH LINE -L- STA 58+50.00 SEE SHEET 6

MATCH LINE -L- STA 71+50.00 SEE SHEET 8

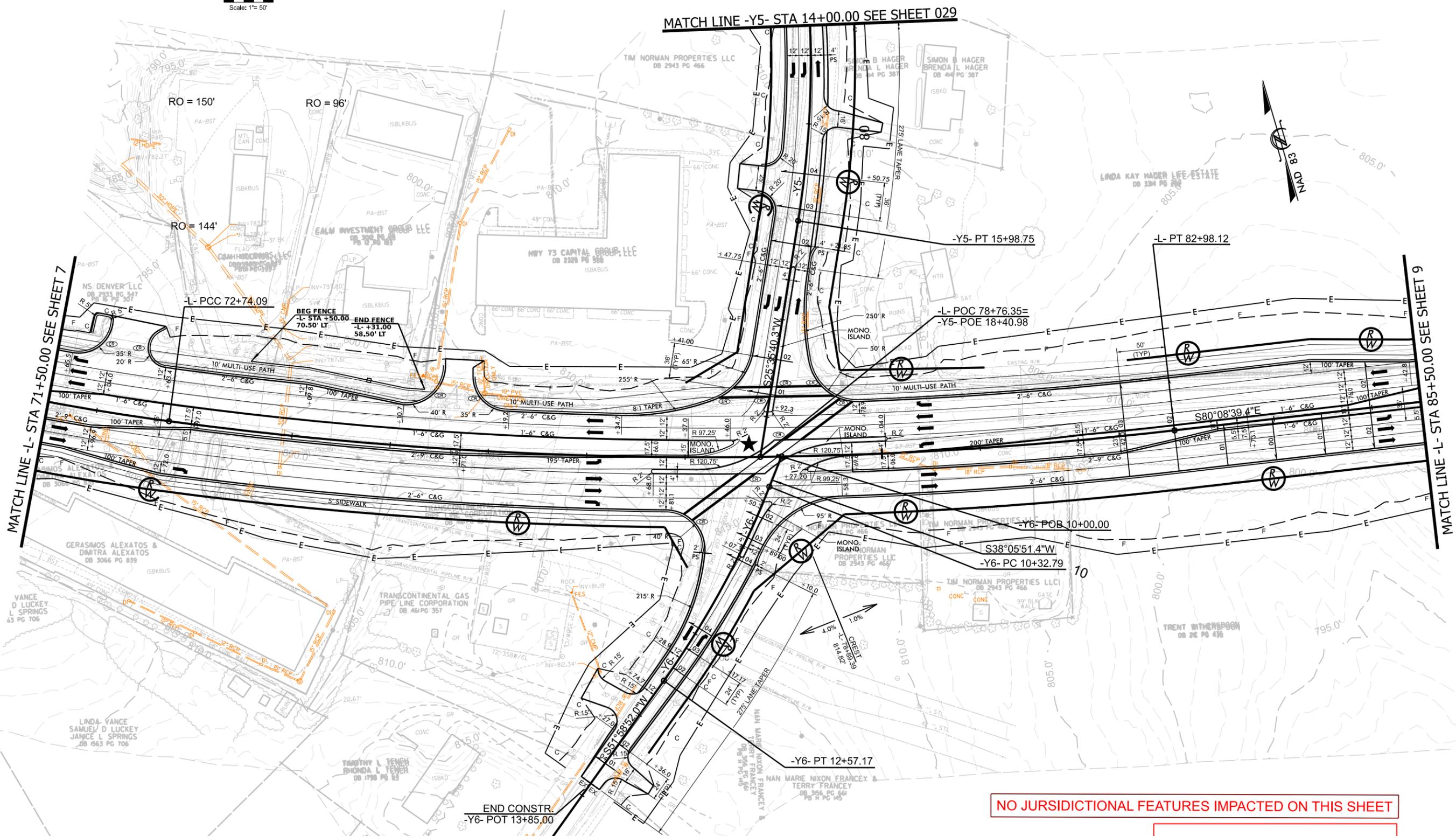
PERMIT DRAWINGS
SHEET 5 OF 37

RO = 150'

REVISIONS

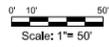


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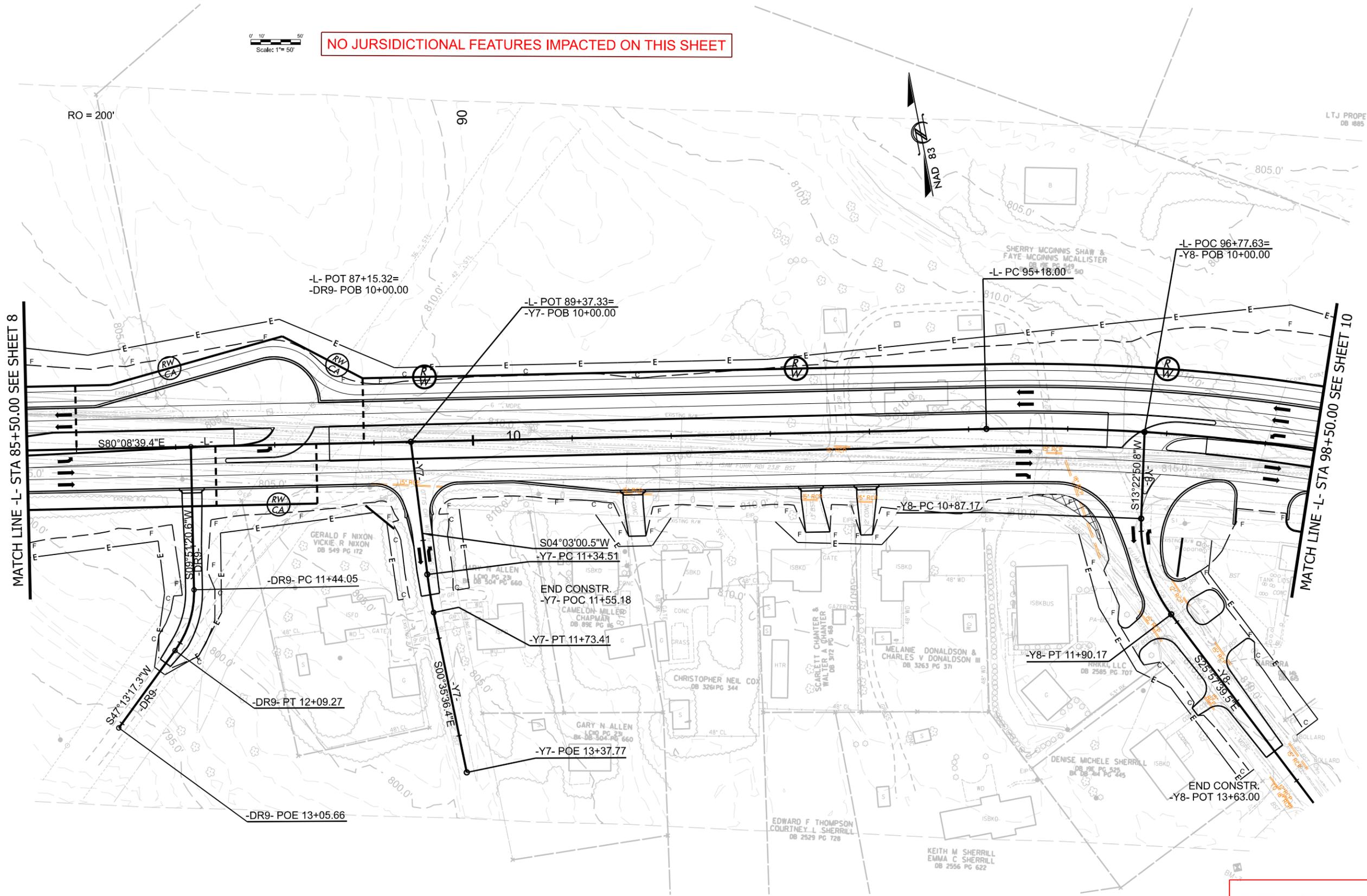


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SHEET 6 OF 37



NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 85+50.00 SEE SHEET 8

MATCH LINE -L- STA 98+50.00 SEE SHEET 10



REVISIONS

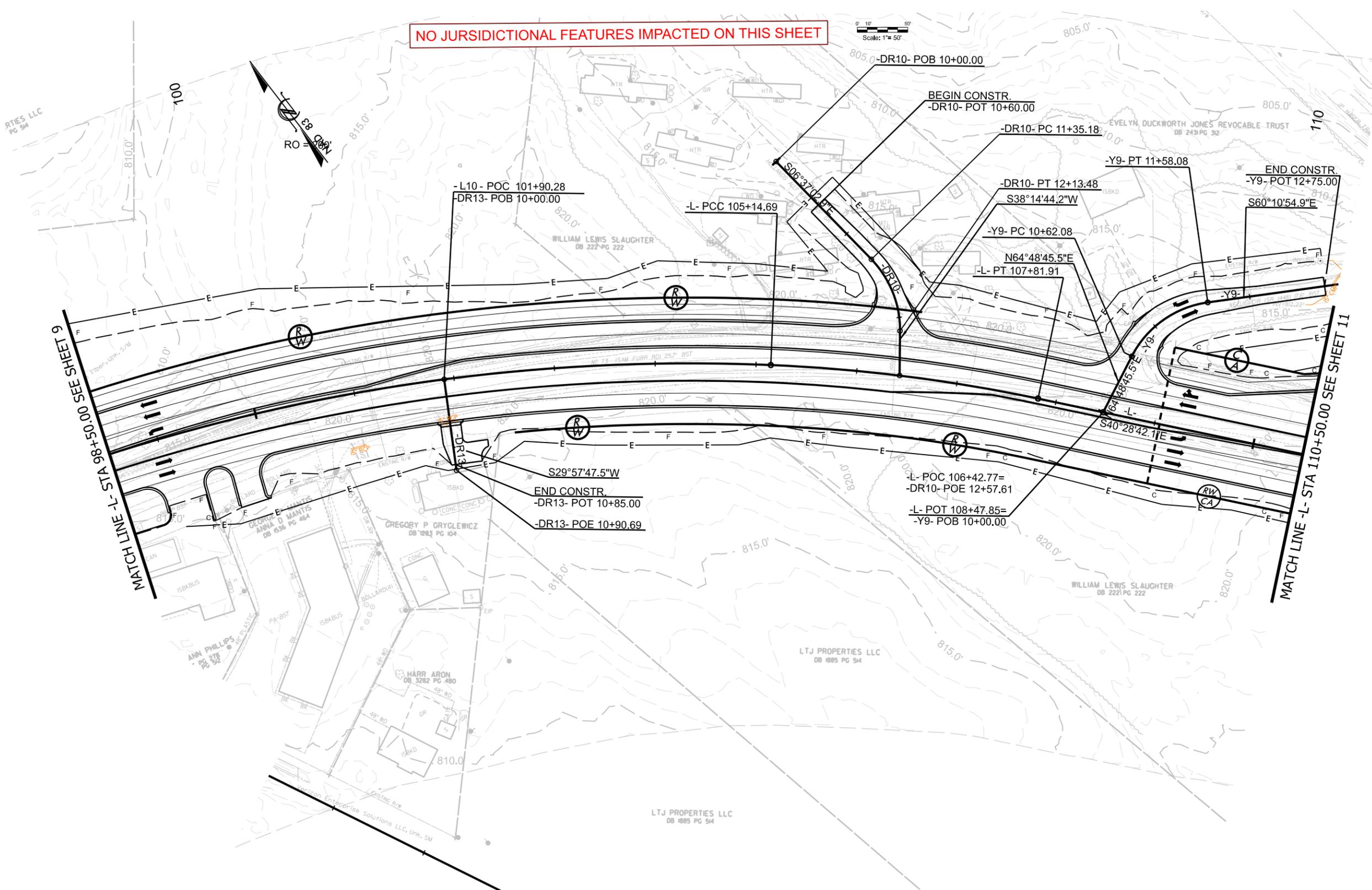
PERMIT DRAWINGS
SHEET 7 OF 37

NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET

Scale: 1" = 50'

MATCH LINE - L- STA 98+50.00 SEE SHEET 9

MATCH LINE - L- STA 110+50.00 SEE SHEET 11



PERMIT DRAWINGS
SHEET 8 OF 37

R-5721A

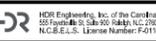


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ROADWAY DESIGN ENGINEER

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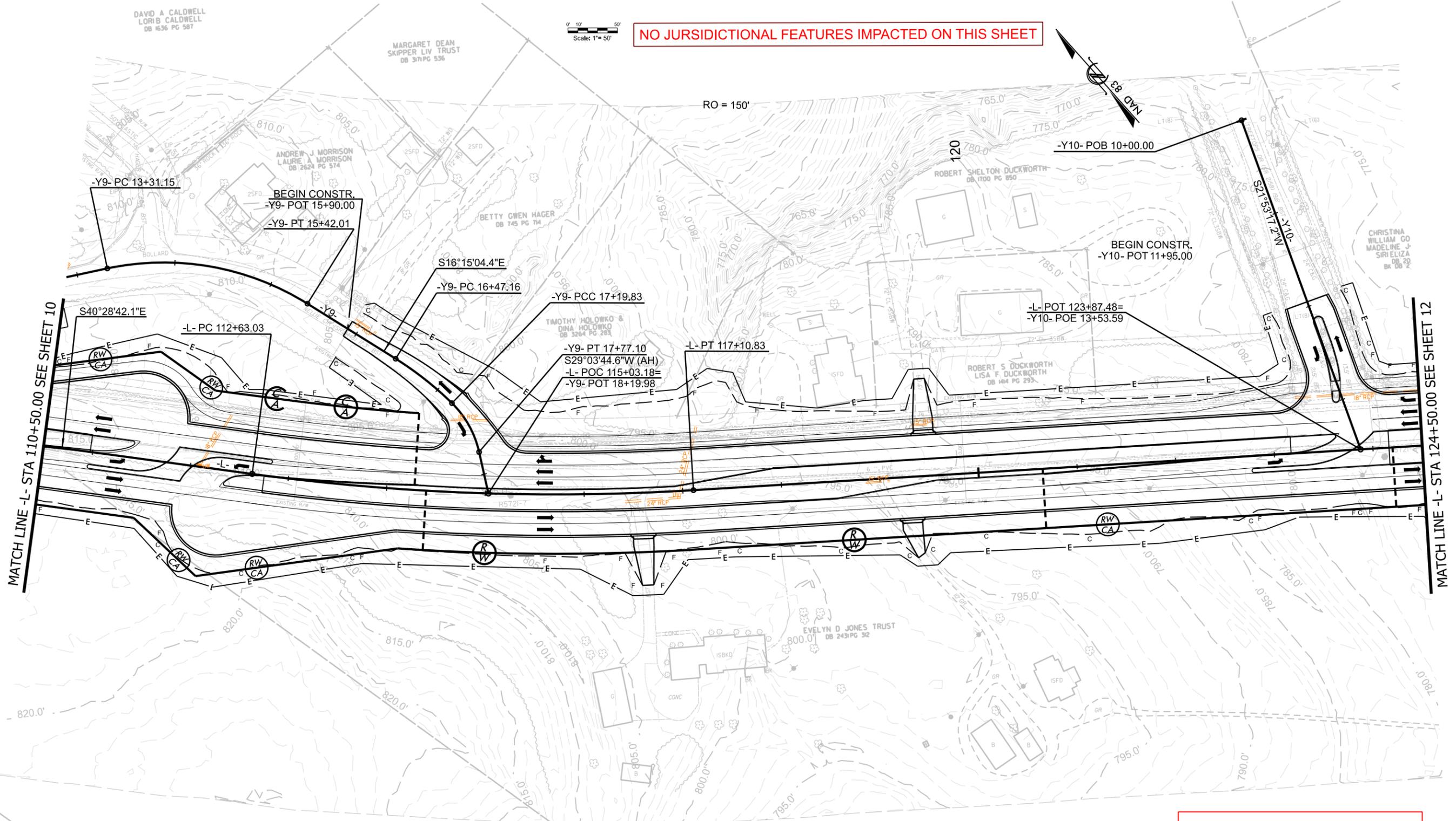
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DAVID A CALDWELL
LORIE B CALDWELL
DB 1636 PG 587

MARGARET DEAN
SKIPPER LIV TRUST
DB 3171 PG 536

Scale: 1" = 50'

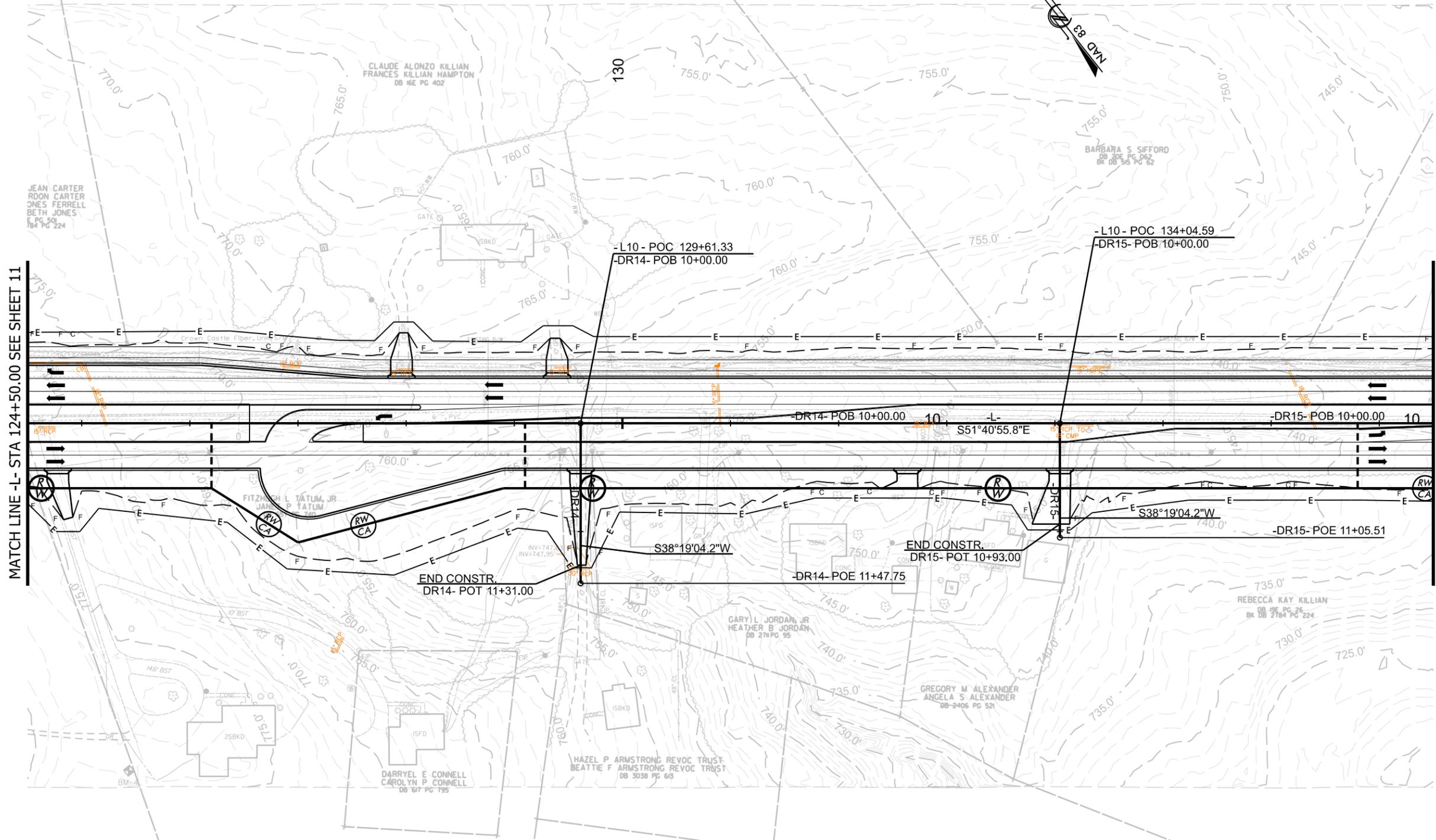
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PERMIT DRAWINGS
SHEET 9 OF 37



NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 124+50.00 SEE SHEET 11

MATCH LINE -L- STA 137+50.00 SEE SHEET 13

PERMIT DRAWINGS
SHEET 10 OF 37

R-5721A
12
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MECKLENBURG COUNTY AND
LINCOLN COUNTY

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ROADWAY DESIGN
ENGINEER

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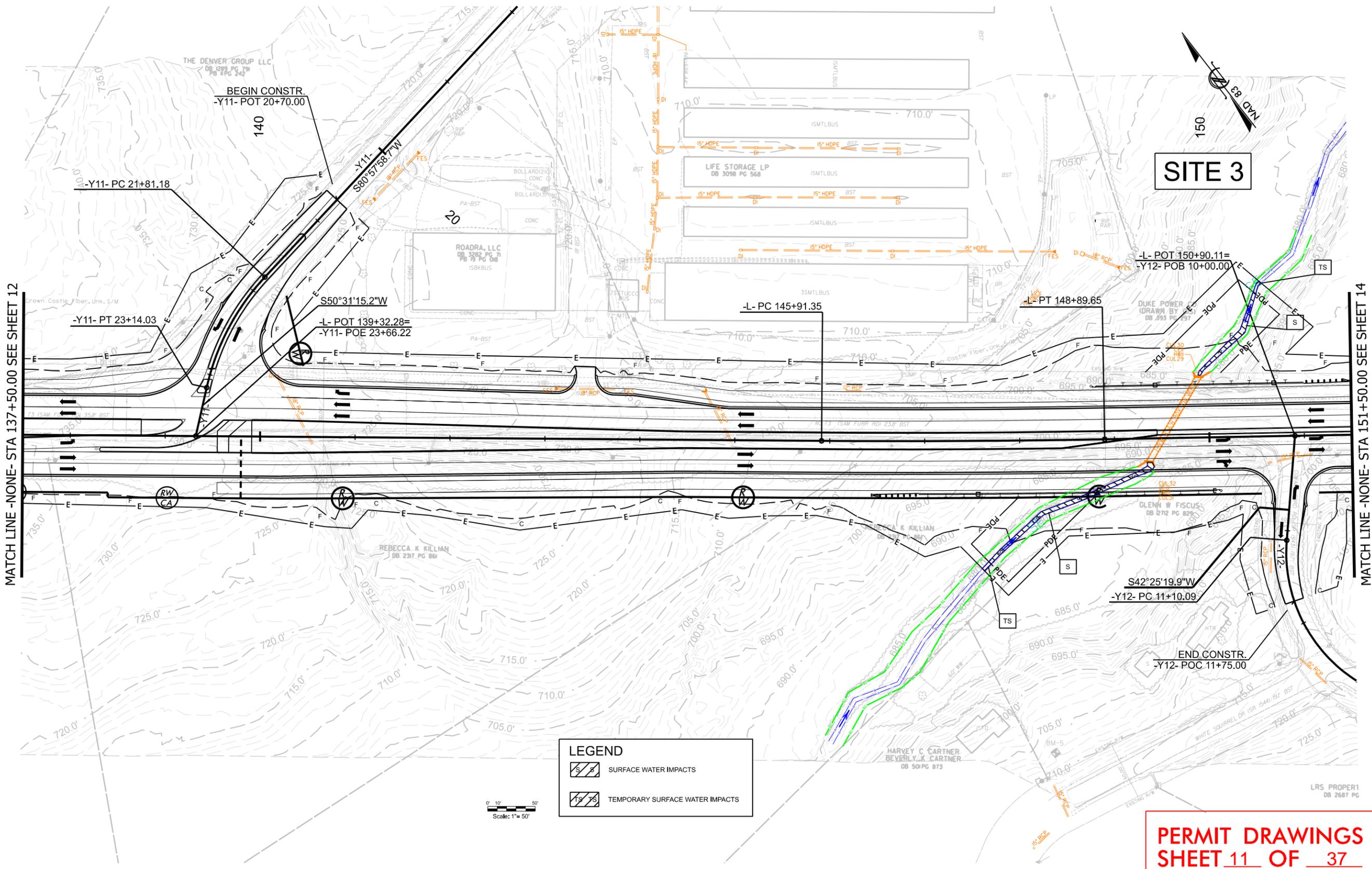
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REVISIONS



LEGEND

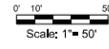
- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS

Scale: 1" = 50'

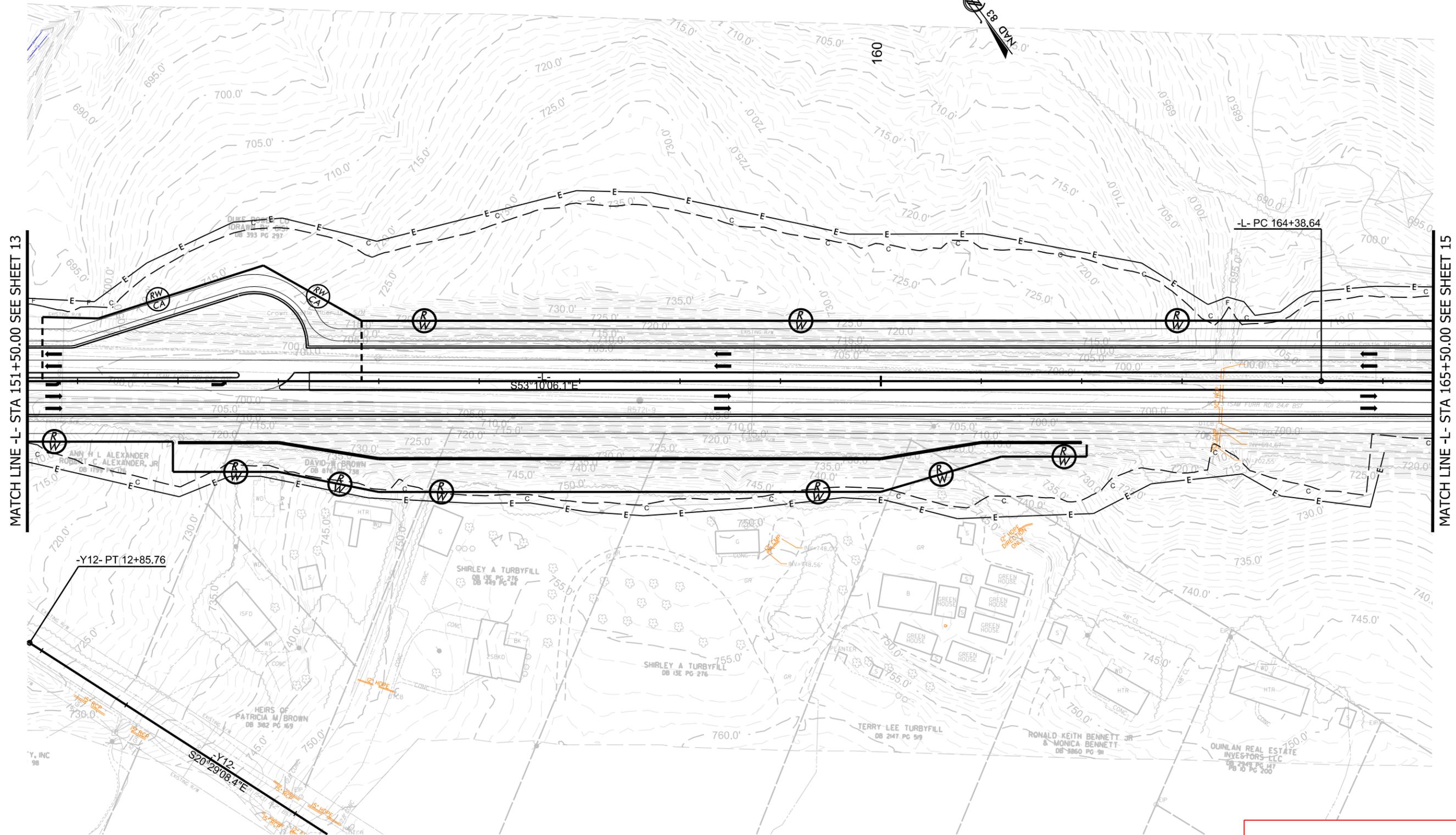
**PERMIT DRAWINGS
SHEET 11 OF 37**

MATCH LINE - NONE - STA 137+50.00 SEE SHEET 12

MATCH LINE - NONE - STA 151+50.00 SEE SHEET 14



NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 151+50.00 SEE SHEET 13

MATCH LINE -L- STA 165+50.00 SEE SHEET 15

R-5721A
14
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MECKLENBURG COUNTY AND
LINCOLN COUNTY
ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

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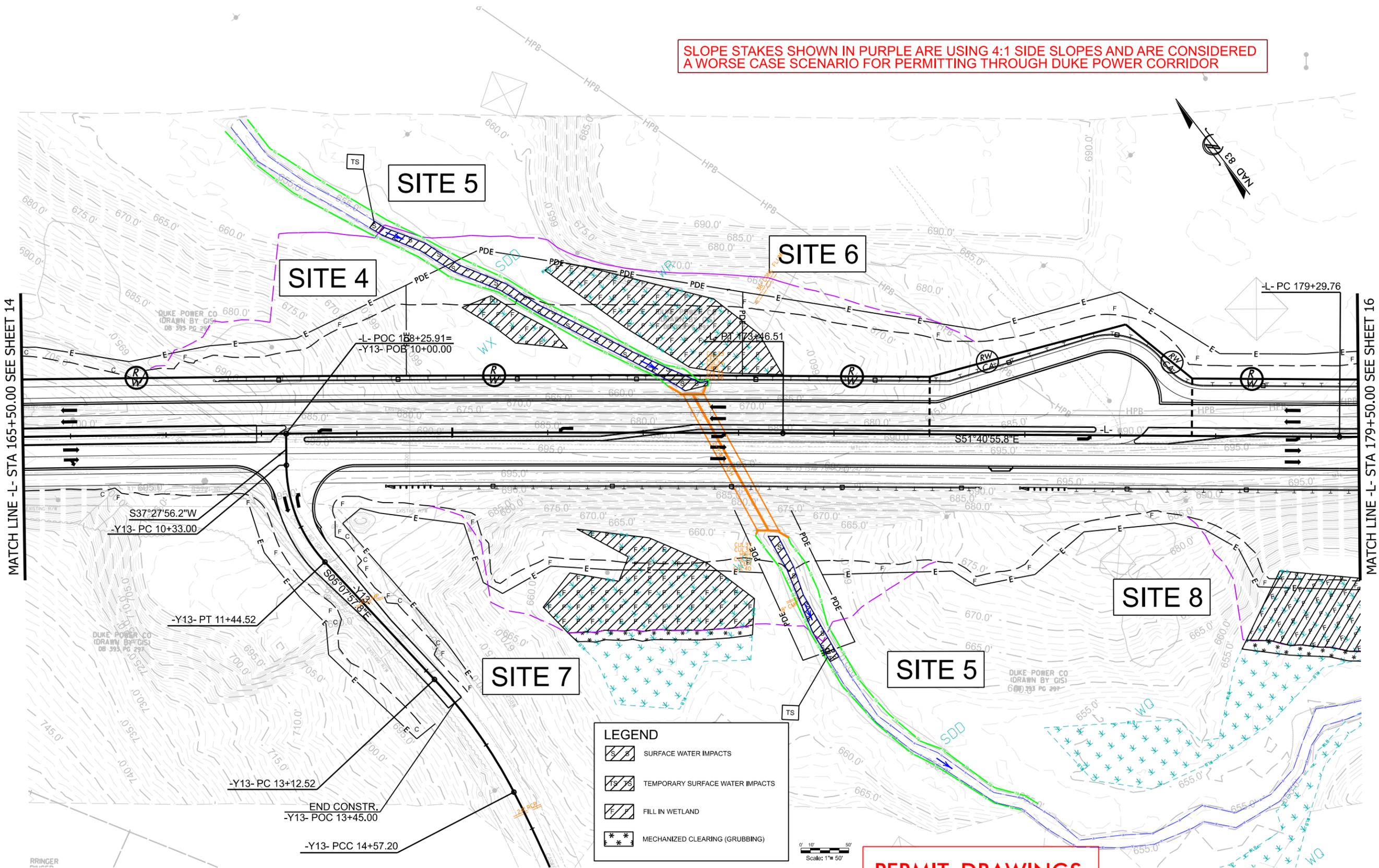


REVISIONS

PERMIT DRAWINGS
SHEET 12 OF 37



SLOPE STAKES SHOWN IN PURPLE ARE USING 4:1 SIDE SLOPES AND ARE CONSIDERED A WORSE CASE SCENARIO FOR PERMITTING THROUGH DUKE POWER CORRIDOR



MATCH LINE -L- STA 165+50.00 SEE SHEET 14

MATCH LINE -L- STA 179+50.00 SEE SHEET 16

SITE 5

SITE 4

SITE 6

SITE 7

SITE 5

SITE 8

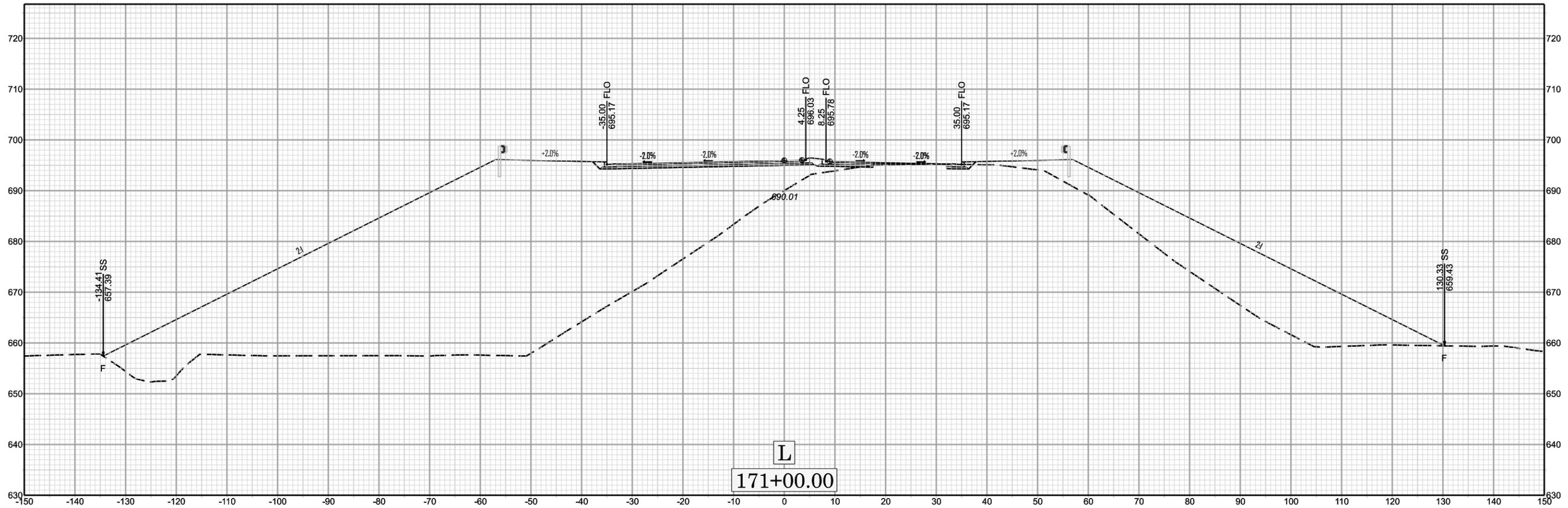
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- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND
- MECHANIZED CLEARING (GRUBBING)

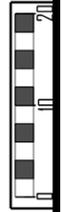
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PERMIT DRAWINGS
SHEET 13 OF 37

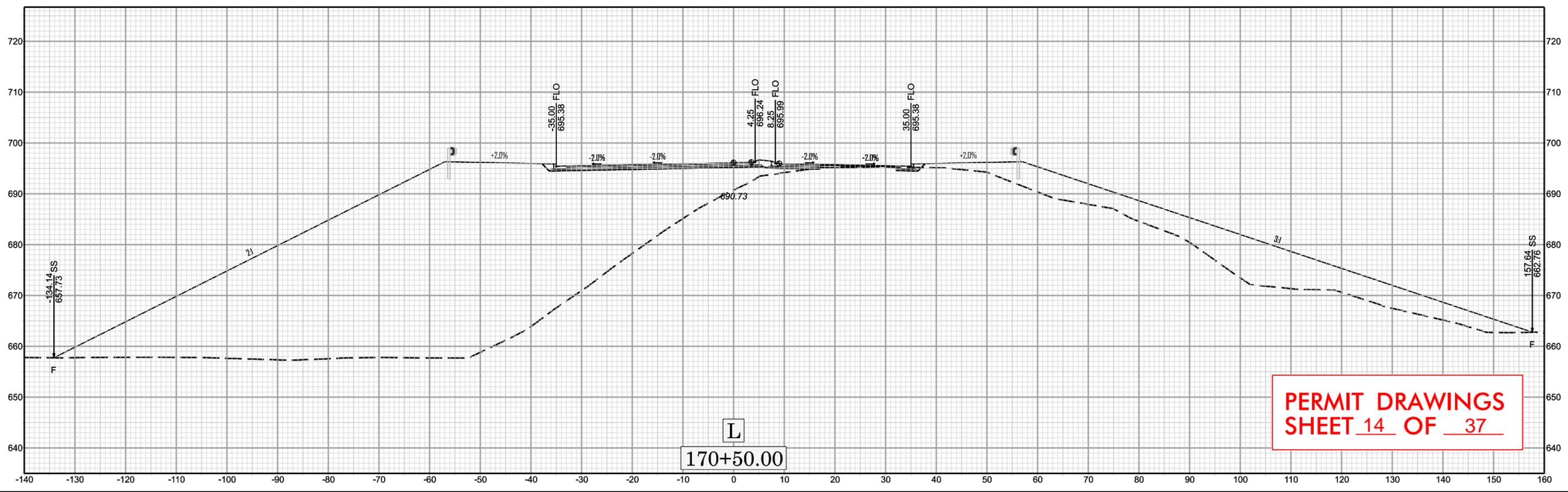
REVISIONS



L
171+00.00



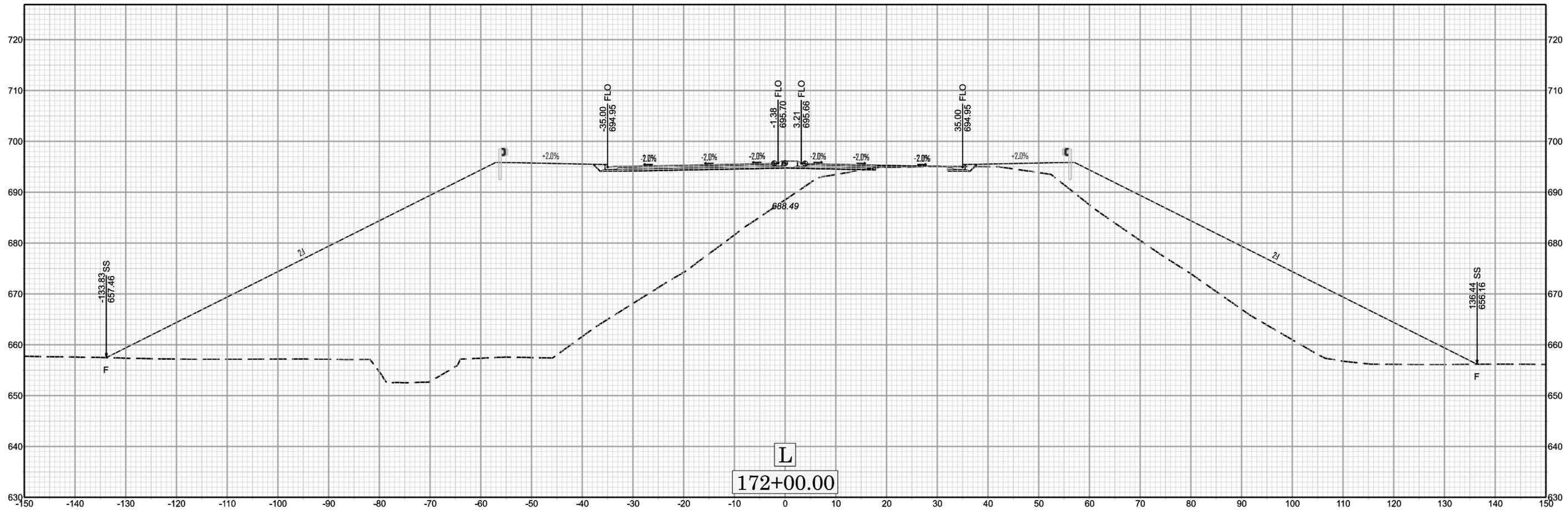
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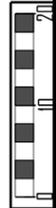
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PERMIT DRAWINGS
SHEET 14 OF 37

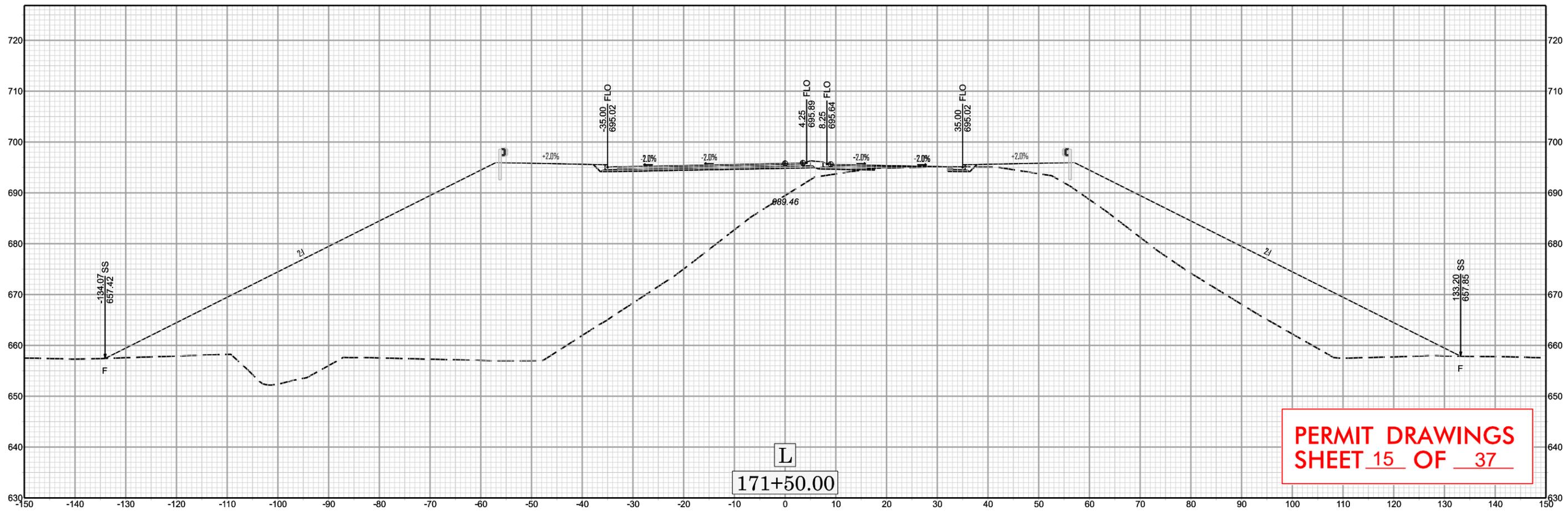
R-5721A



L
172+00.00



X
134



L
171+50.00

PERMIT DRAWINGS
SHEET 15 OF 37

R-5721A



ROADWAY DESIGN UNIT
ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

PREPARED BY



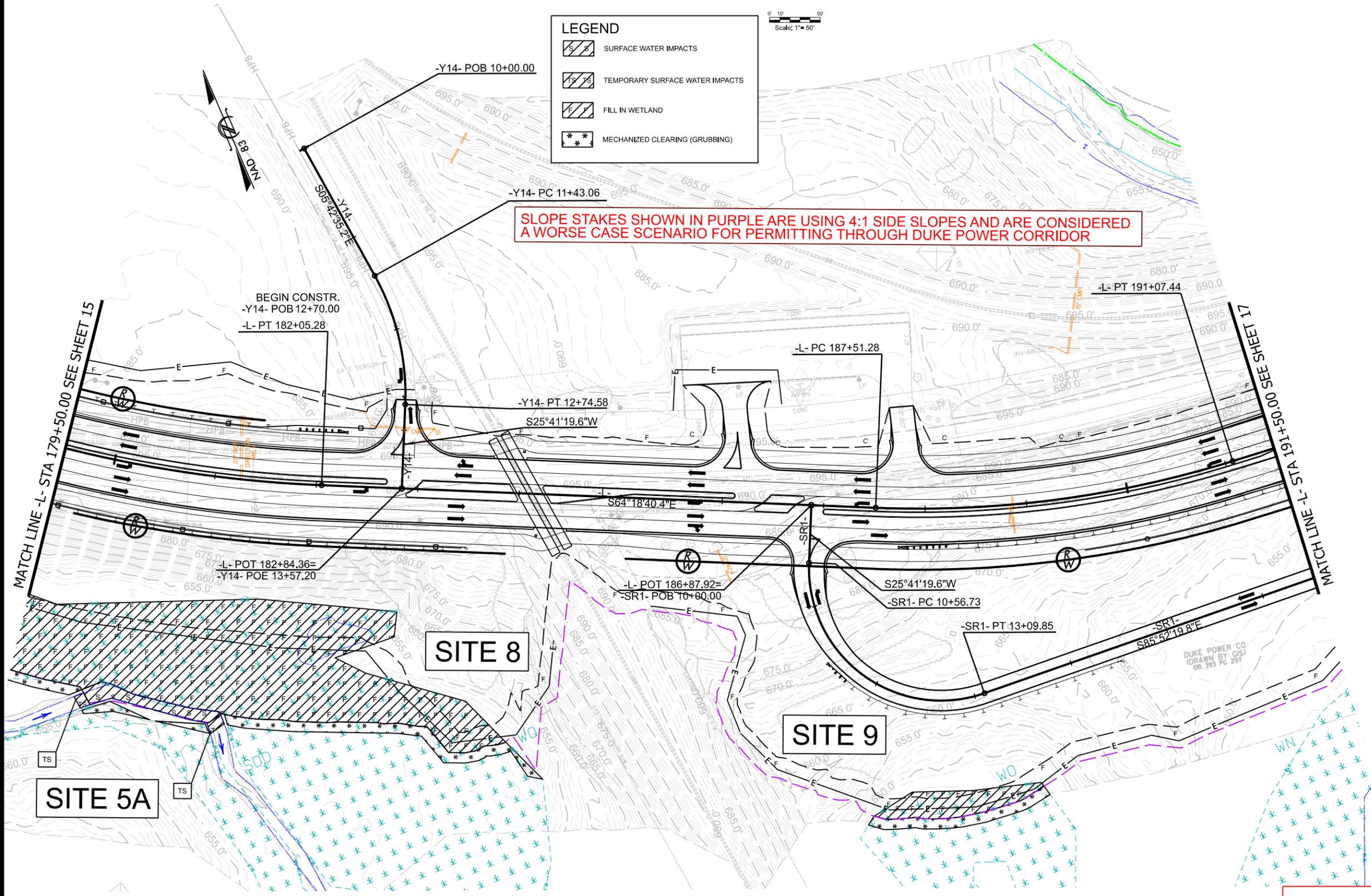
REVISIONS

LEGEND

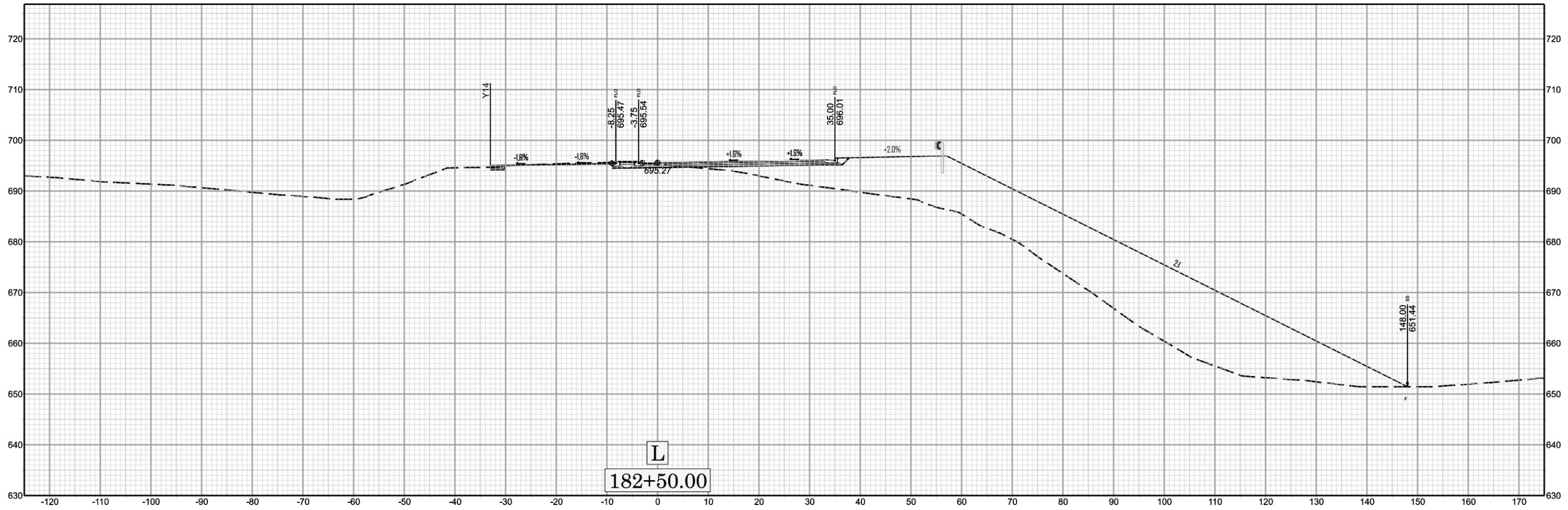
-  SURFACE WATER IMPACTS
-  TEMPORARY SURFACE WATER IMPACTS
-  FILL IN WETLAND
-  MECHANIZED CLEARING (GRUBBING)



SLOPE STAKES SHOWN IN PURPLE ARE USING 4:1 SIDE SLOPES AND ARE CONSIDERED A WORSE CASE SCENARIO FOR PERMITTING THROUGH DUKE POWER CORRIDOR

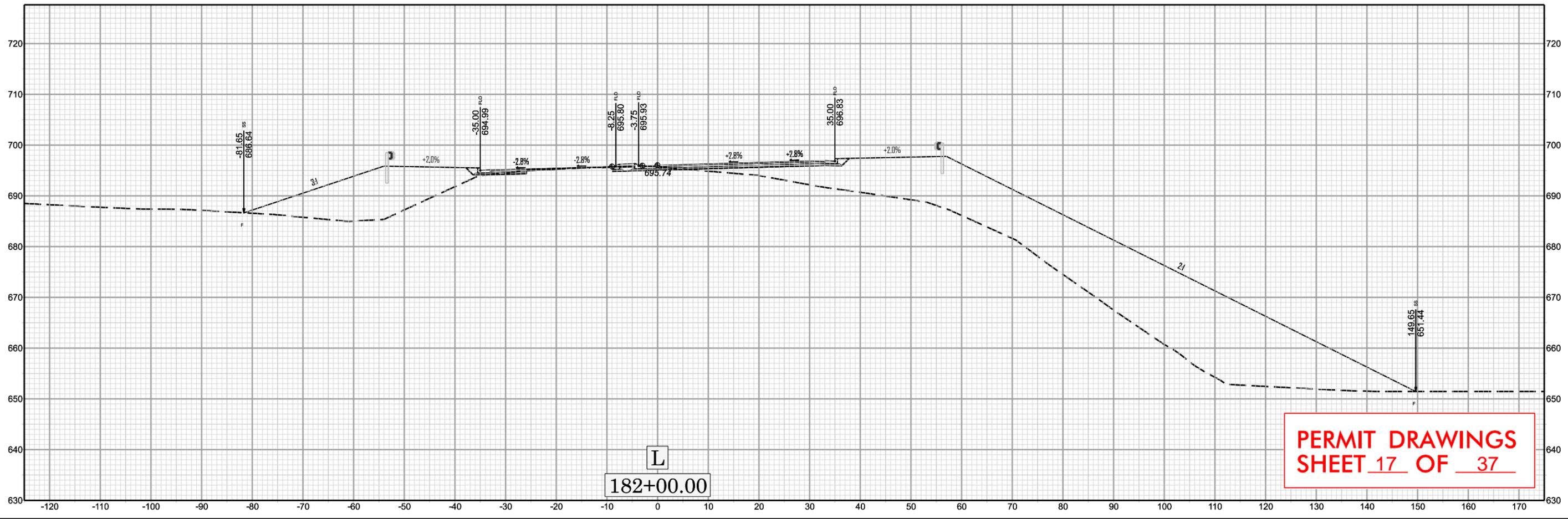


**PERMIT DRAWINGS
SHEET 16 OF 37**

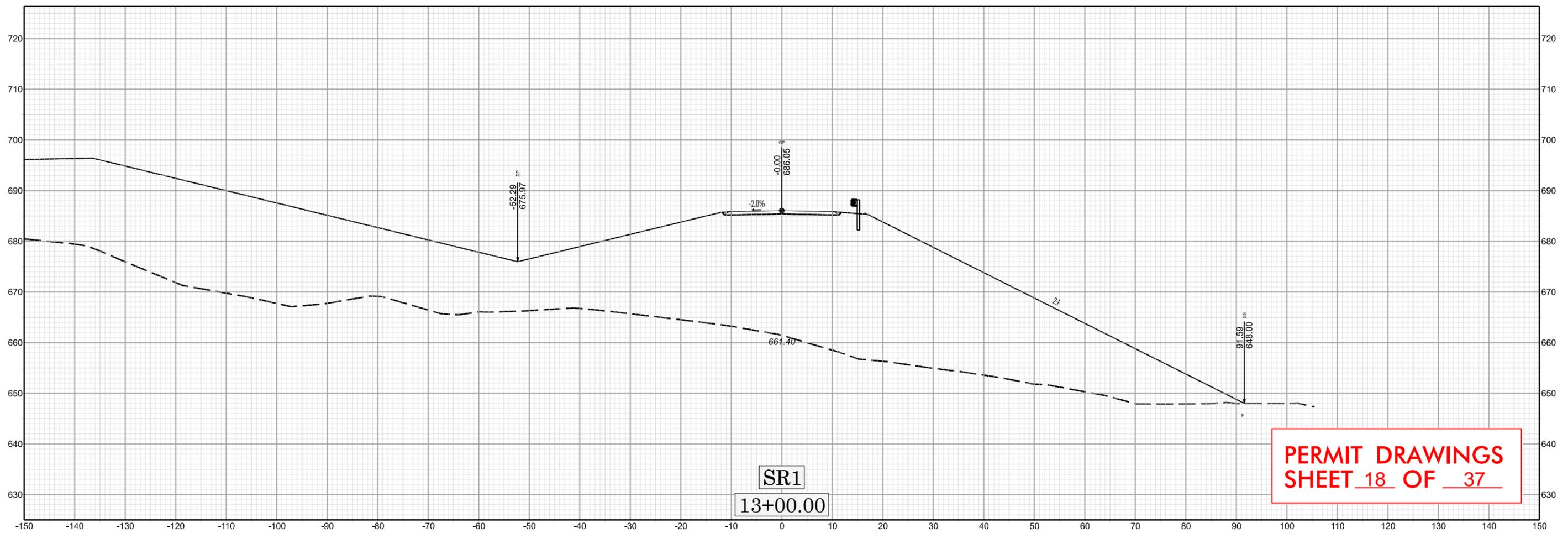


X 148

R-5721A



**PERMIT DRAWINGS
SHEET 17 OF 37**

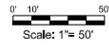


X 331

R-5721A

PERMIT DRAWINGS
SHEET 18 OF 37

SR1
13+00.00



SLOPE STAKES SHOWN IN PURPLE ARE USING 4:1 SIDE SLOPES AND ARE CONSIDERED A WORSE CASE SCENARIO FOR PERMITTING THROUGH DUKE POWER CORRIDOR

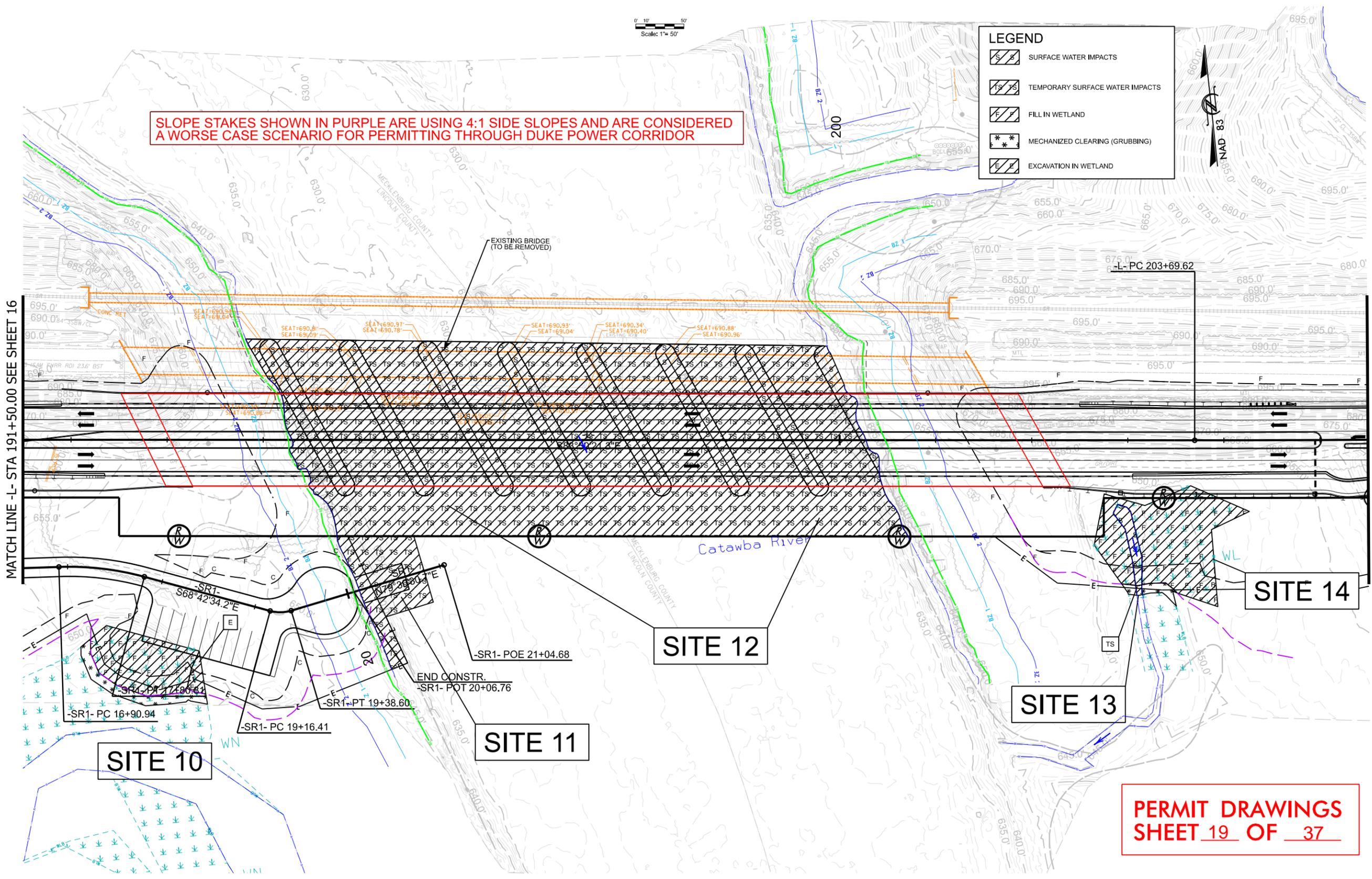
LEGEND

- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- FILL IN WETLAND
- MECHANIZED CLEARING (GRUBBING)
- EXCAVATION IN WETLAND



MATCH LINE -L- STA 191+50.00 SEE SHEET 16

MATCH LINE -L- STA 205+50.00 SEE SHEET 18



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

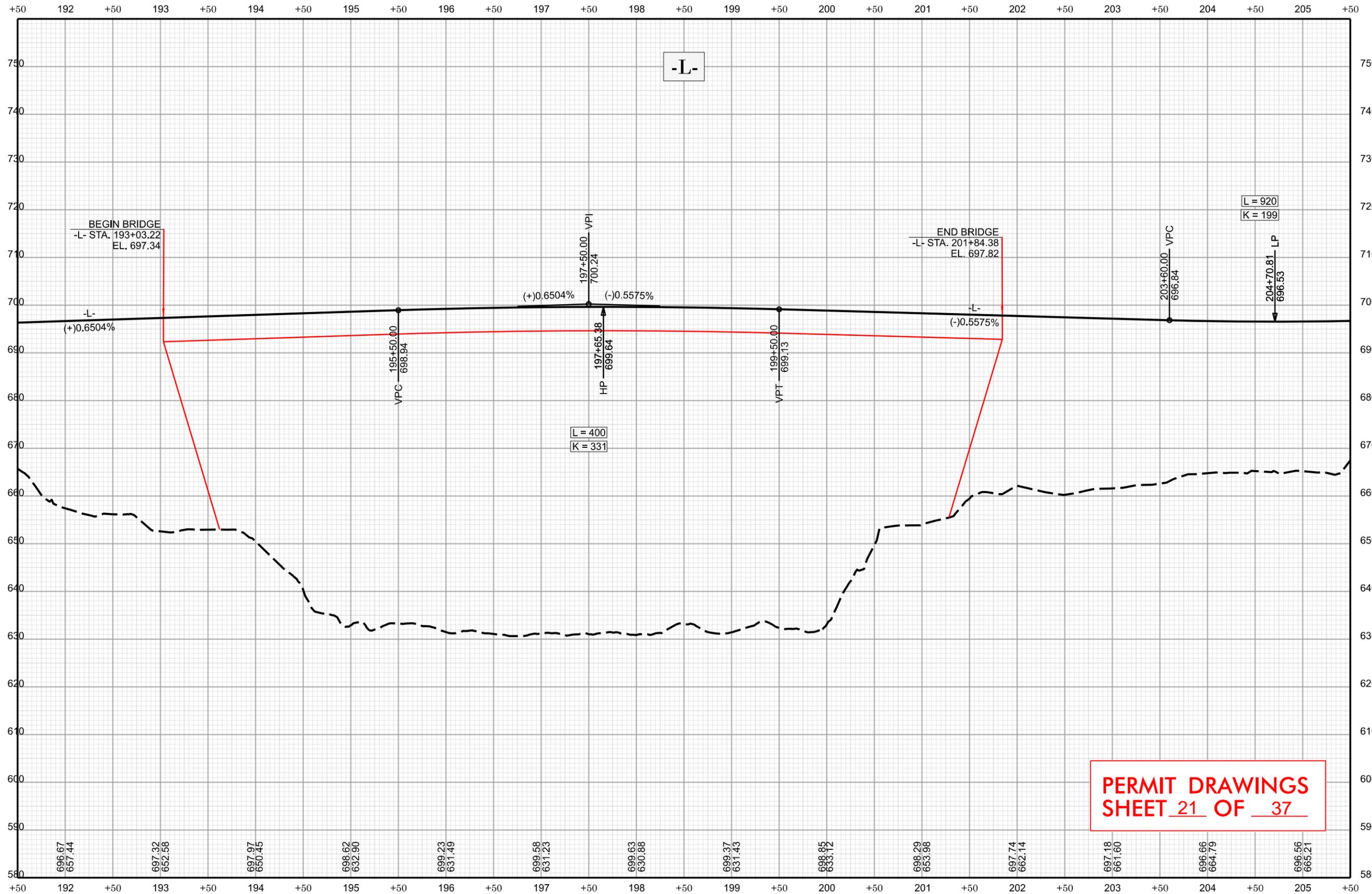
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ENGINEER

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557 South Beaufort Parkway, Suite 200
NC 27613 License Number: F-0119

REVISIONS

PERMIT DRAWINGS
SHEET 19 OF 37



696.67
657.44

697.32
652.58

697.97
650.45

698.62
632.90

699.23
631.49

699.58
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699.37
631.43

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633.12

698.29
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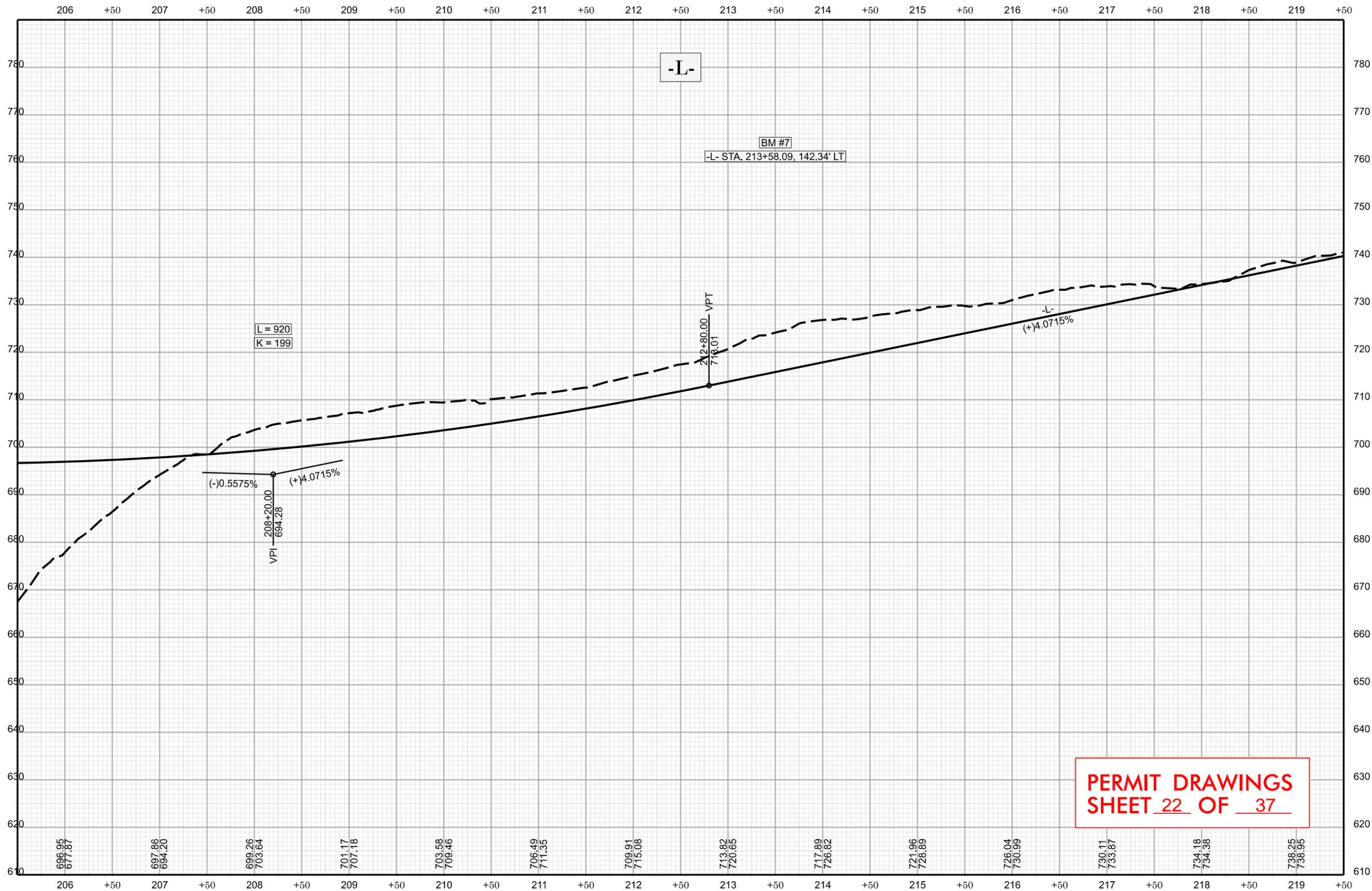
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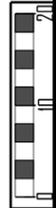
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696.56
665.21

FOR -L- PLAN, SEE SHEET 017

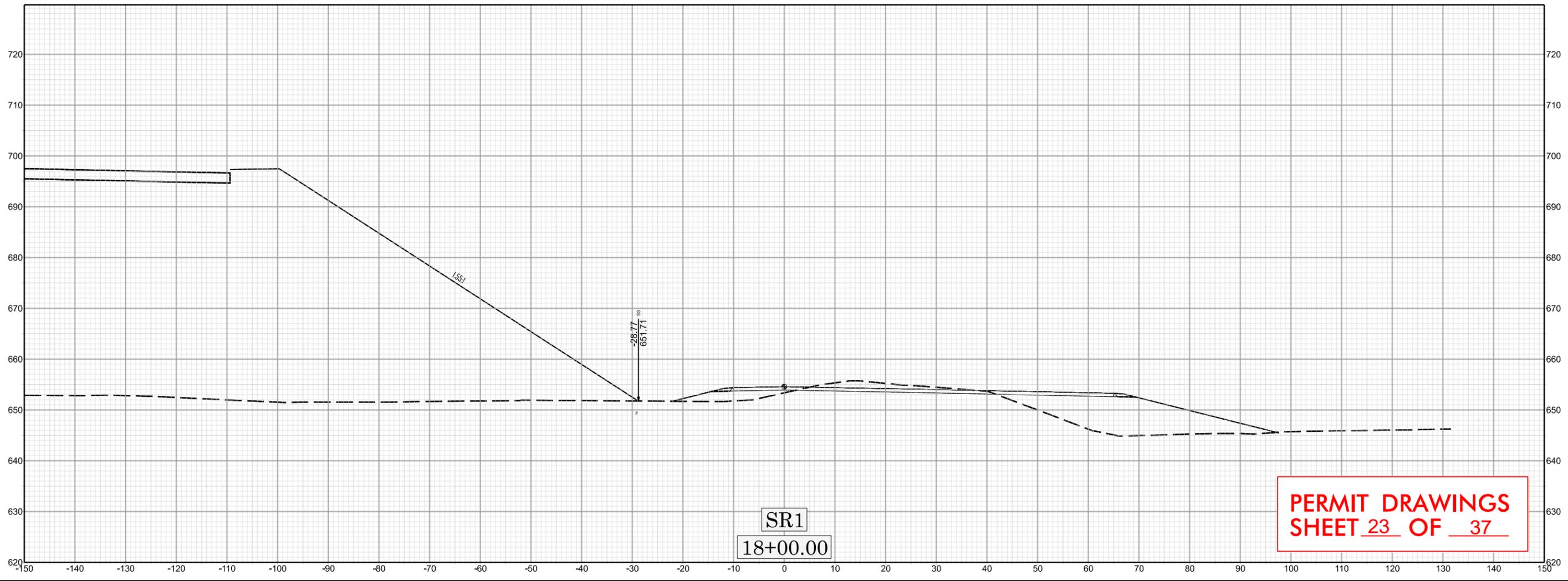


FOR -L- PLAN, SEE SHEET 018



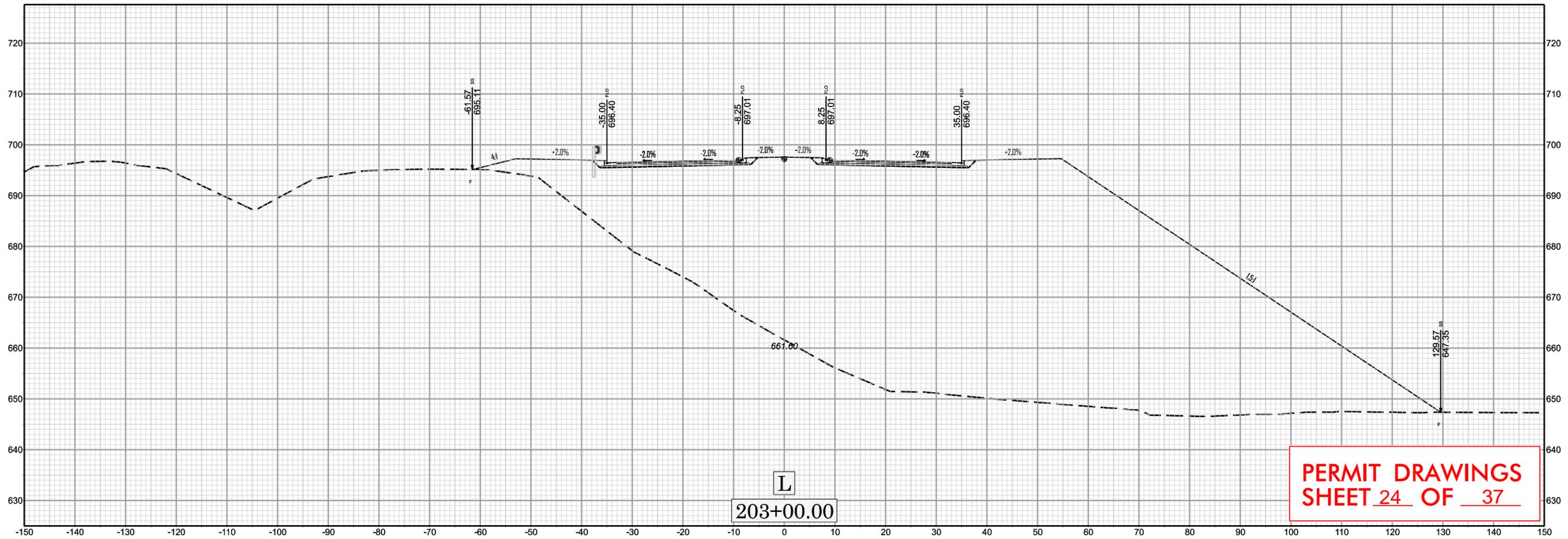
X 339

R-572/A



SR1
18+00.00

PERMIT DRAWINGS
SHEET 23 OF 37



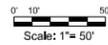
L
203+00.00

PERMIT DRAWINGS
SHEET 24 OF 37

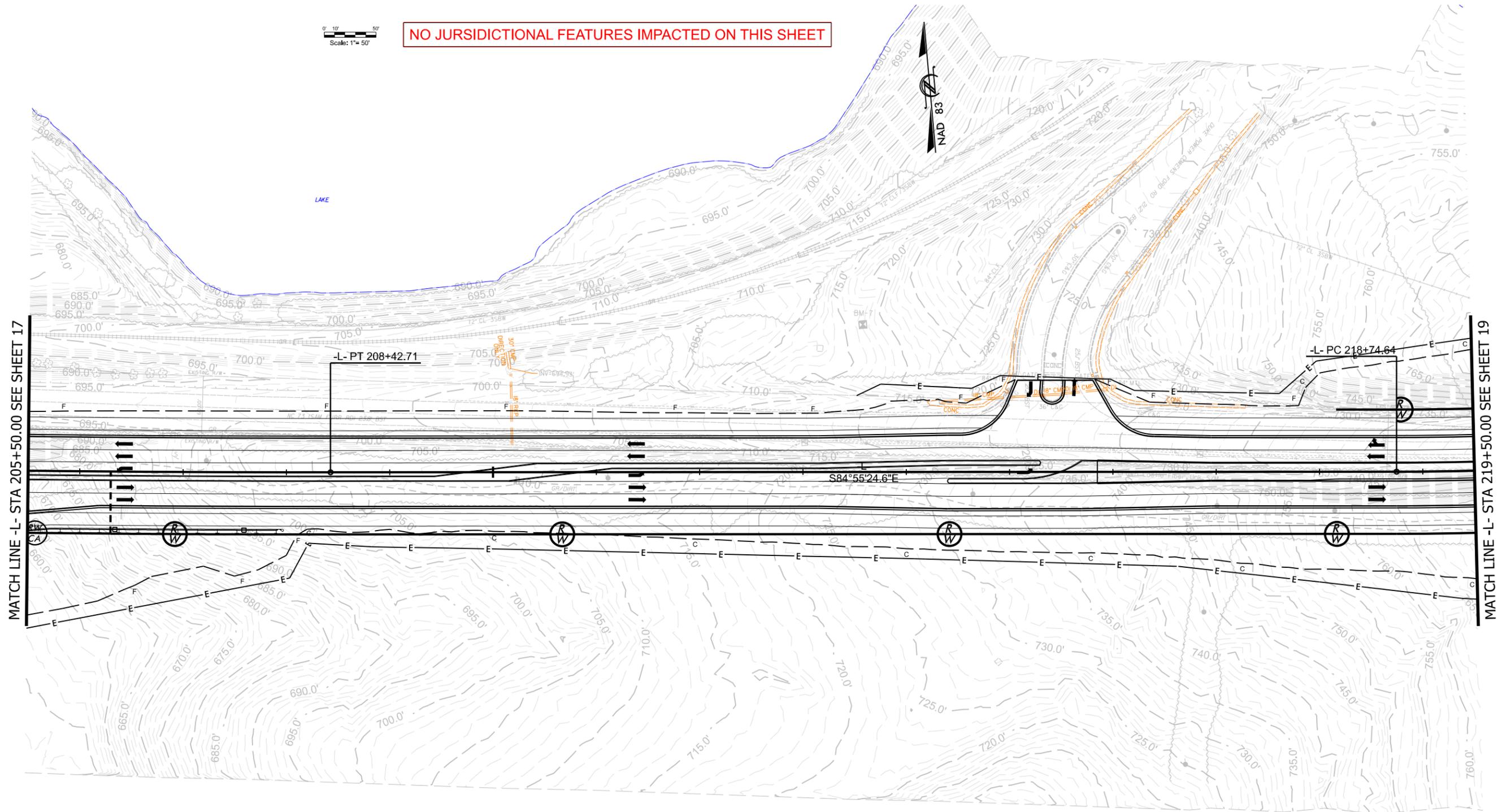


X 180

R-5721A



NO JURISDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 205+50.00 SEE SHEET 17

MATCH LINE -L- STA 219+50.00 SEE SHEET 19

PERMIT DRAWINGS
SHEET 25 OF 37

R-5721A

IB

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MECKLENBURG COUNTY AND
LINCOLN COUNTY

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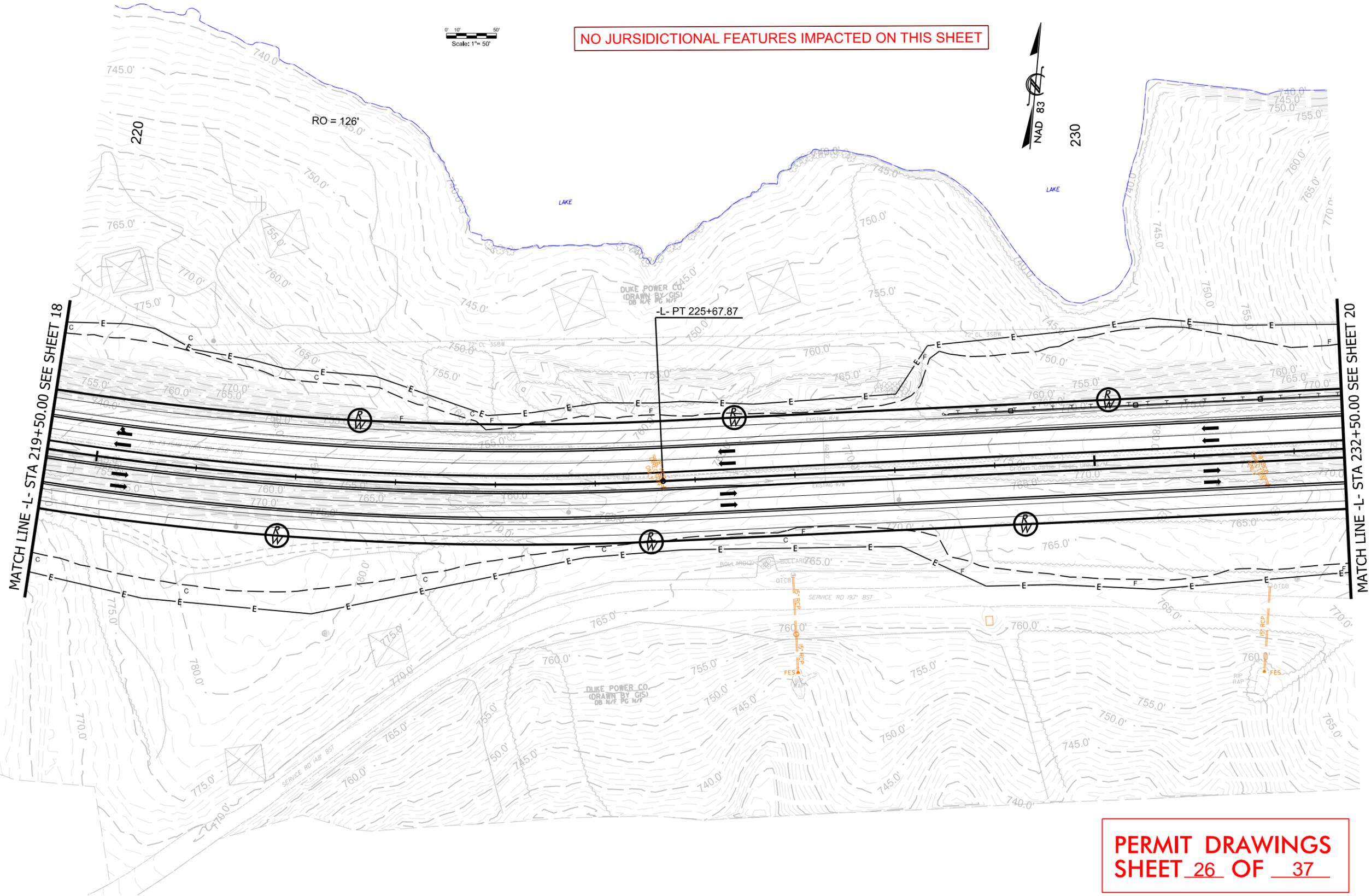


NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 219+50.00 SEE SHEET 18

MATCH LINE -L- STA 232+50.00 SEE SHEET 20



PERMIT DRAWINGS
SHEET 26 OF 37

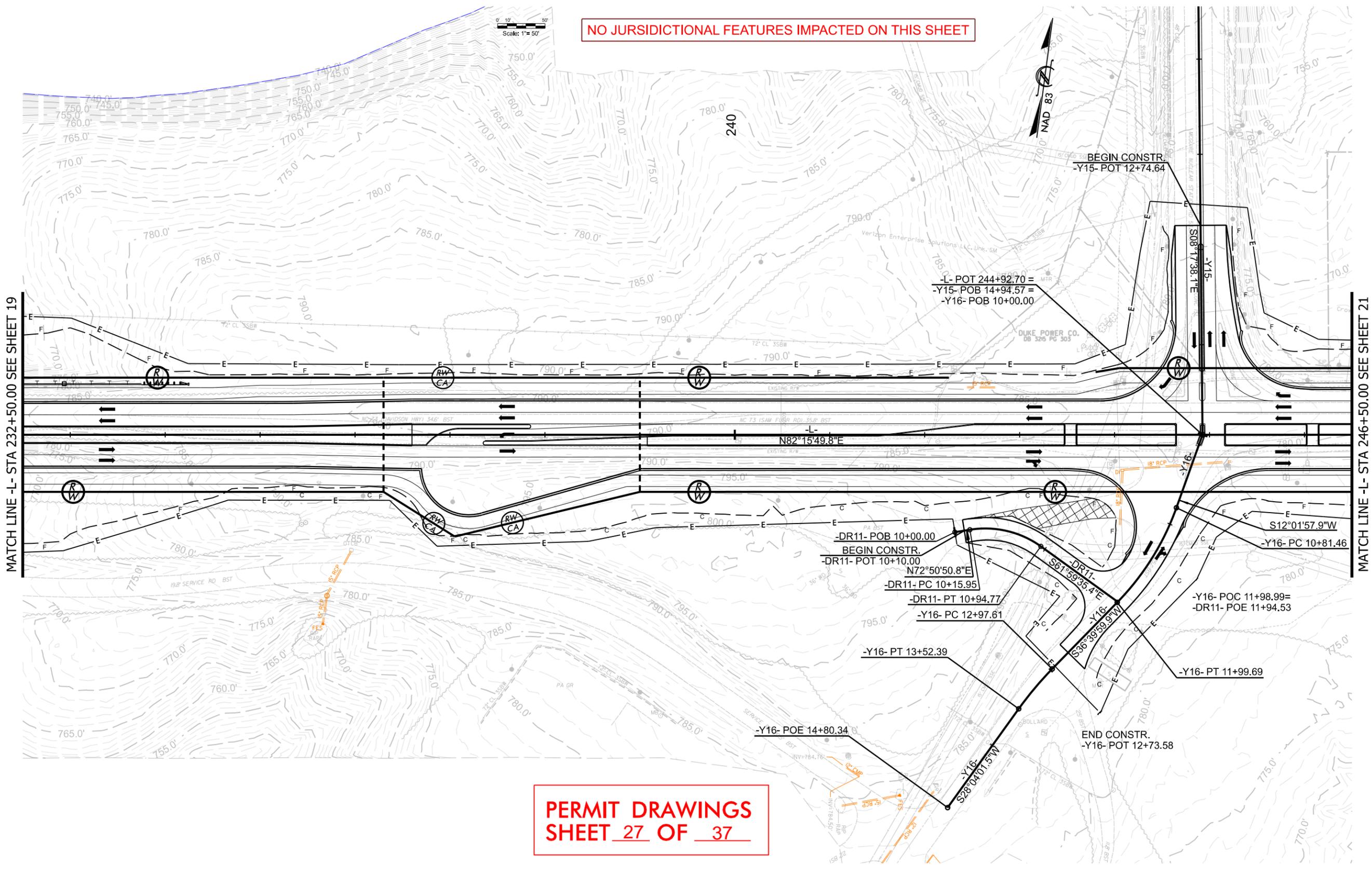


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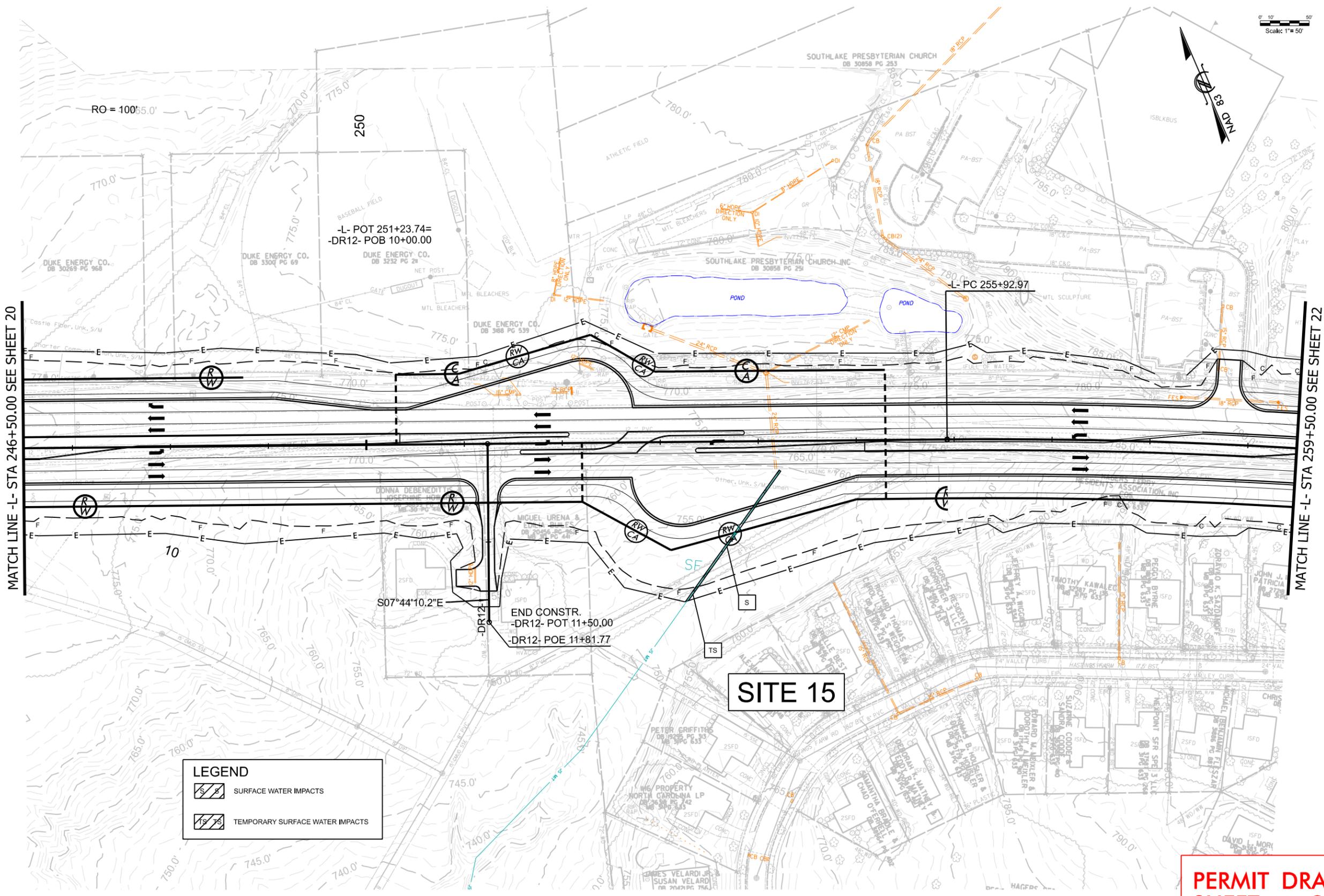
PERMIT DRAWINGS
SHEET 27 OF 37



REVISIONS



REVISIONS



LEGEND

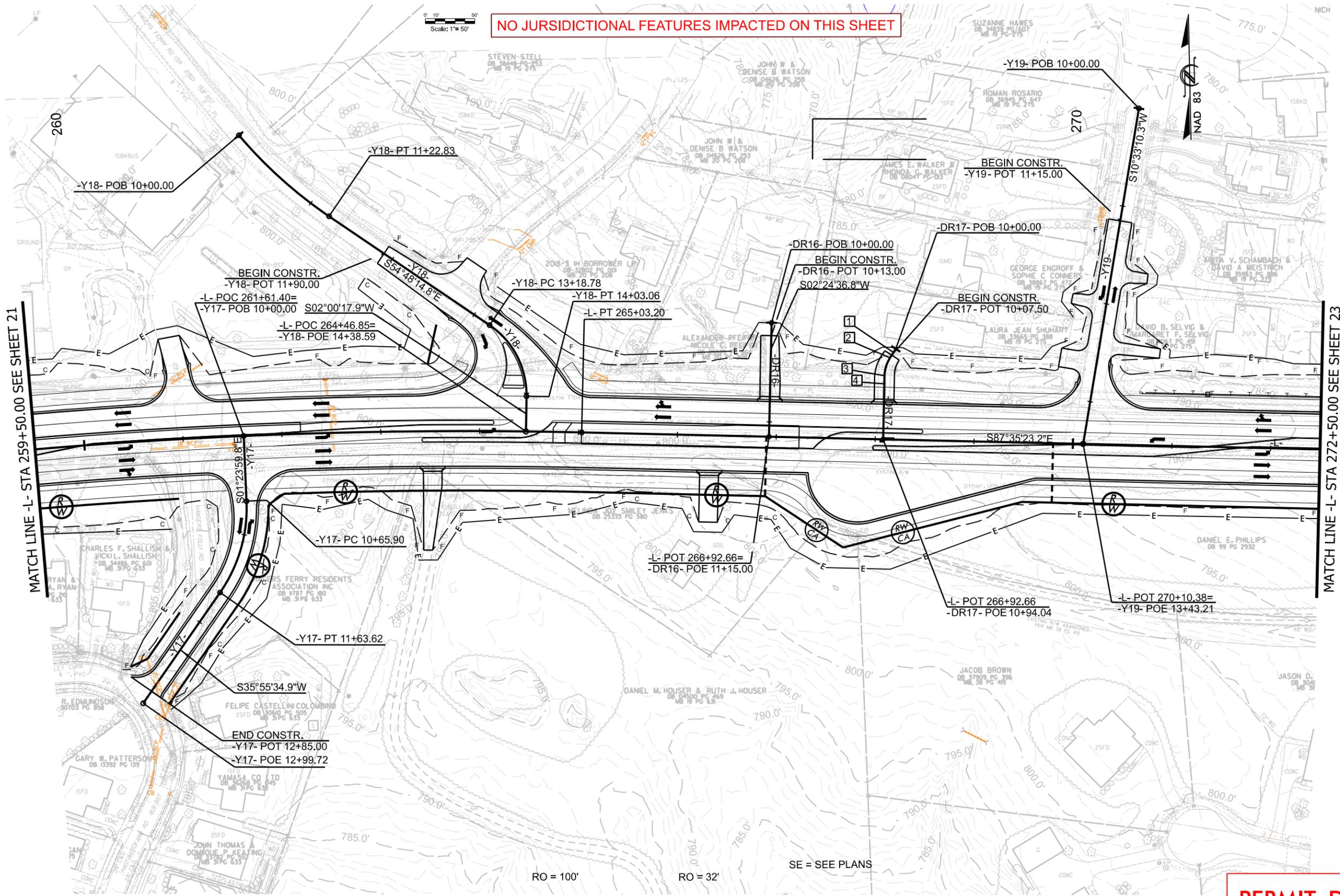
- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS

SITE 15

**PERMIT DRAWINGS
SHEET 28 OF 37**



NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



MATCH LINE -L- STA 259+50.00 SEE SHEET 21

MATCH LINE -L- STA 272+50.00 SEE SHEET 23

PERMIT DRAWINGS
SHEET 29 OF 37

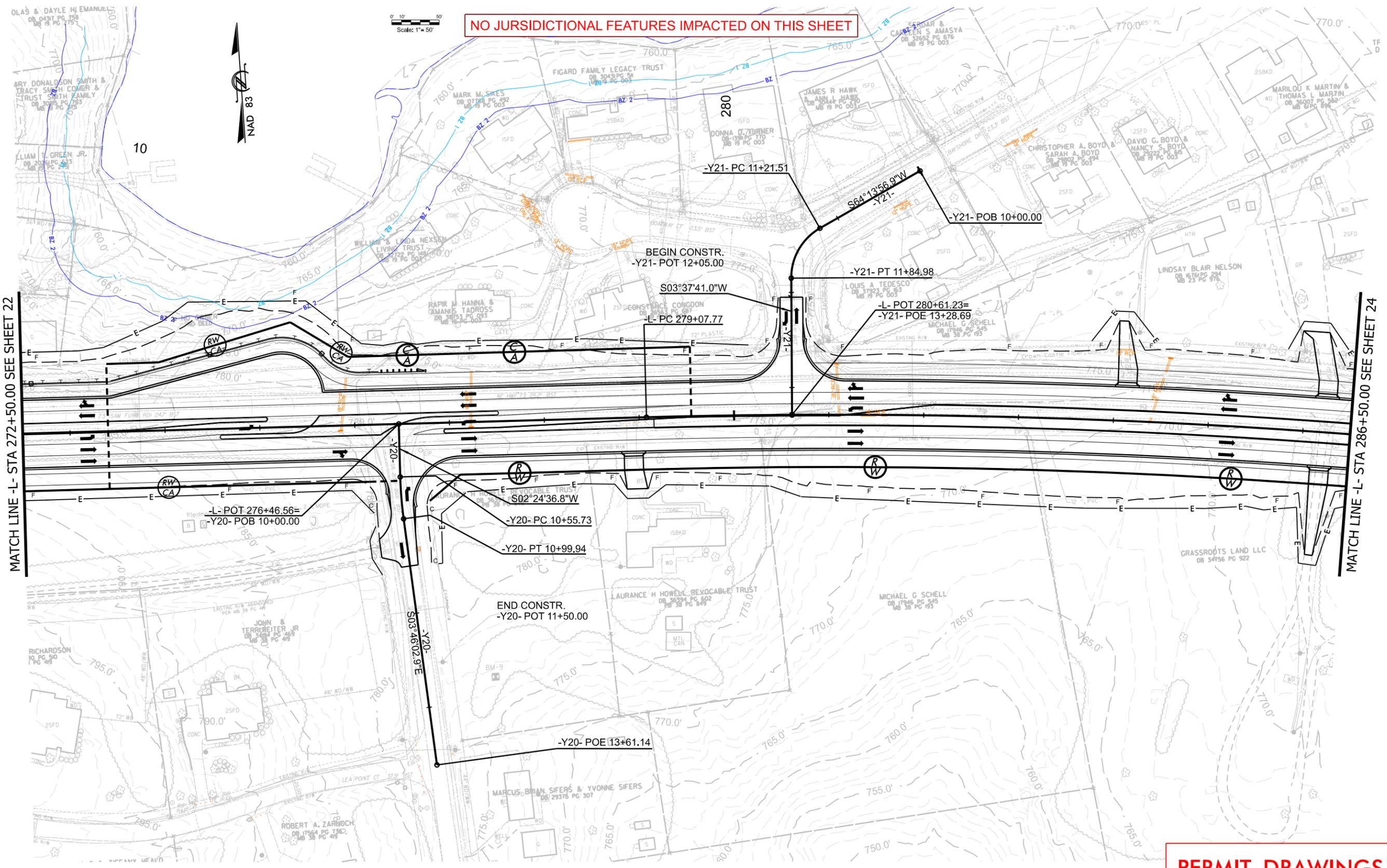
REVISIONS



REVISIONS

NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET

PERMIT DRAWINGS
SHEET 30 OF 37



Scale: 1" = 50'

NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET

MATCH LINE -L- STA 286+50.00 SEE SHEET 23

END TIP PROJECT R-5721A
BEGIN TIP PROJECT R-5721B
-L- POC 292+20.00

-L- PT 298+46.60

END CONSTRUCTION
PROJECT R-5721A
-L- POT 300+00.00

PERMIT DRAWINGS
SHEET 31 OF 37

R-5721A
24
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MECKLENBURG COUNTY AND
LINCOLN COUNTY

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ROADWAY DESIGN
ENGINEER

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INCOMPLETE PLANS
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PREPARED BY



REVISIONS

Scale: 1" = 50'

NO JURSDICTIONAL FEATURES IMPACTED ON THIS SHEET



10

20

WAL-MART STORES EAST, LP
DB 1822 PG 803
PB 14 PG 08

WAL-MART REAL ESTATE
BUSINESS TRUST
DB 2046 PG 653
PB 14 PG 08

HOPE SPRINGS BUILDERS, INC.
DB 1822 PG 370
PB 14 PG 08

HOPE SPRINGS BUILDERS INC
DB 1822 PG 370
PB 14 PG 08

-Y1RPD- POB 10+00.00

-Y1RPD- SC 11+96.00

-Y1RPD- CS 16+57.79

-Y1RPD- SRS 18+53.79

-Y1RPD- SC 20+49.79

BEGIN CONSTR.
-Y1RPD- POC 13+45.00

MATCH LINE -Y1RPD- STA 22+30.00 SEE SHEET 004

PERMIT DRAWINGS
SHEET 32 OF 37

U-5751
25

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MECKLENBURG COUNTY AND
LINCOLN COUNTY

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ROADWAY DESIGN
ENGINEER

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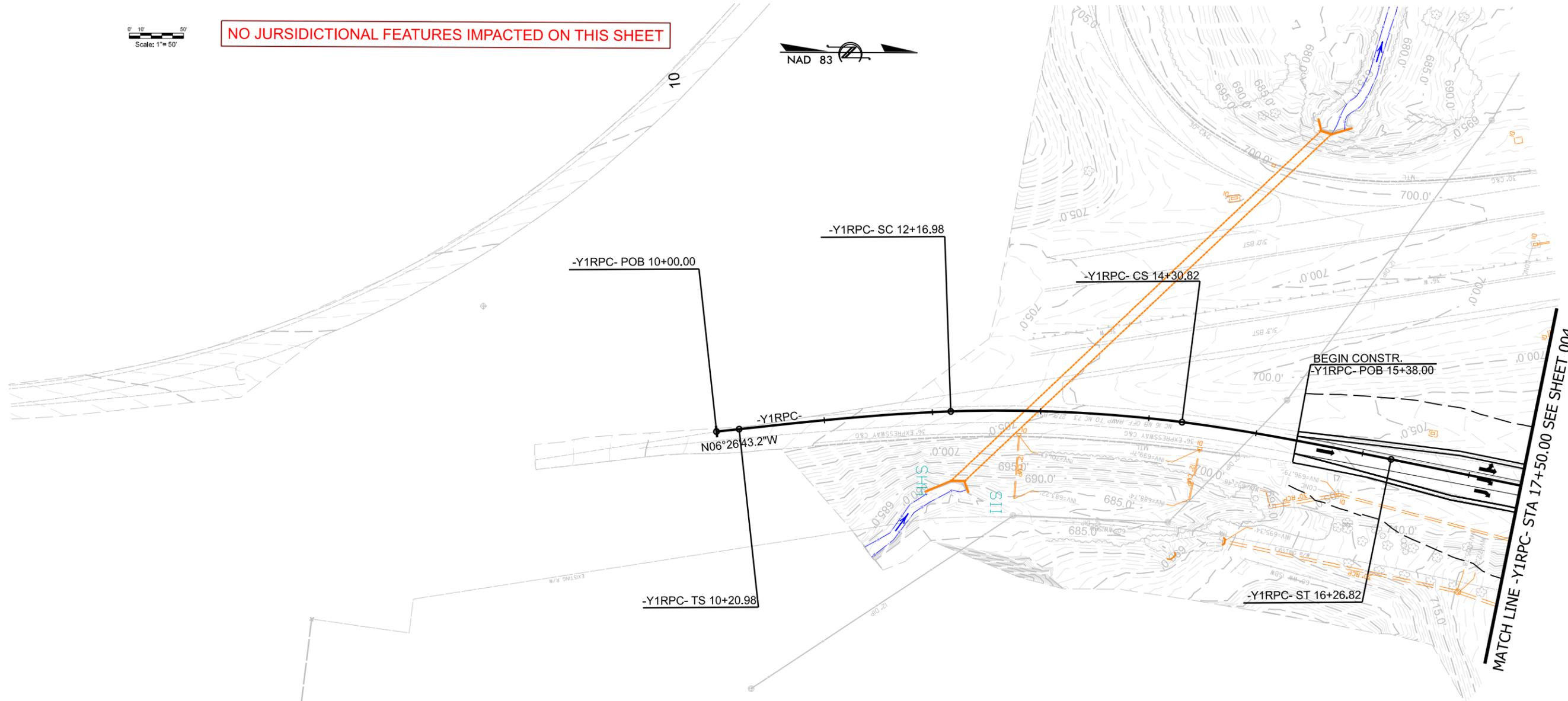
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557 South Main Street, Raleigh, NC 27601
N.C.E.L.S. License Number: F-0119

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ROADWAY DESIGN ENGINEER

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HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

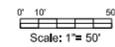
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557 South Blvd., Suite 200, Raleigh, NC 27603
N.C.E.L.S. License Number: F-0119

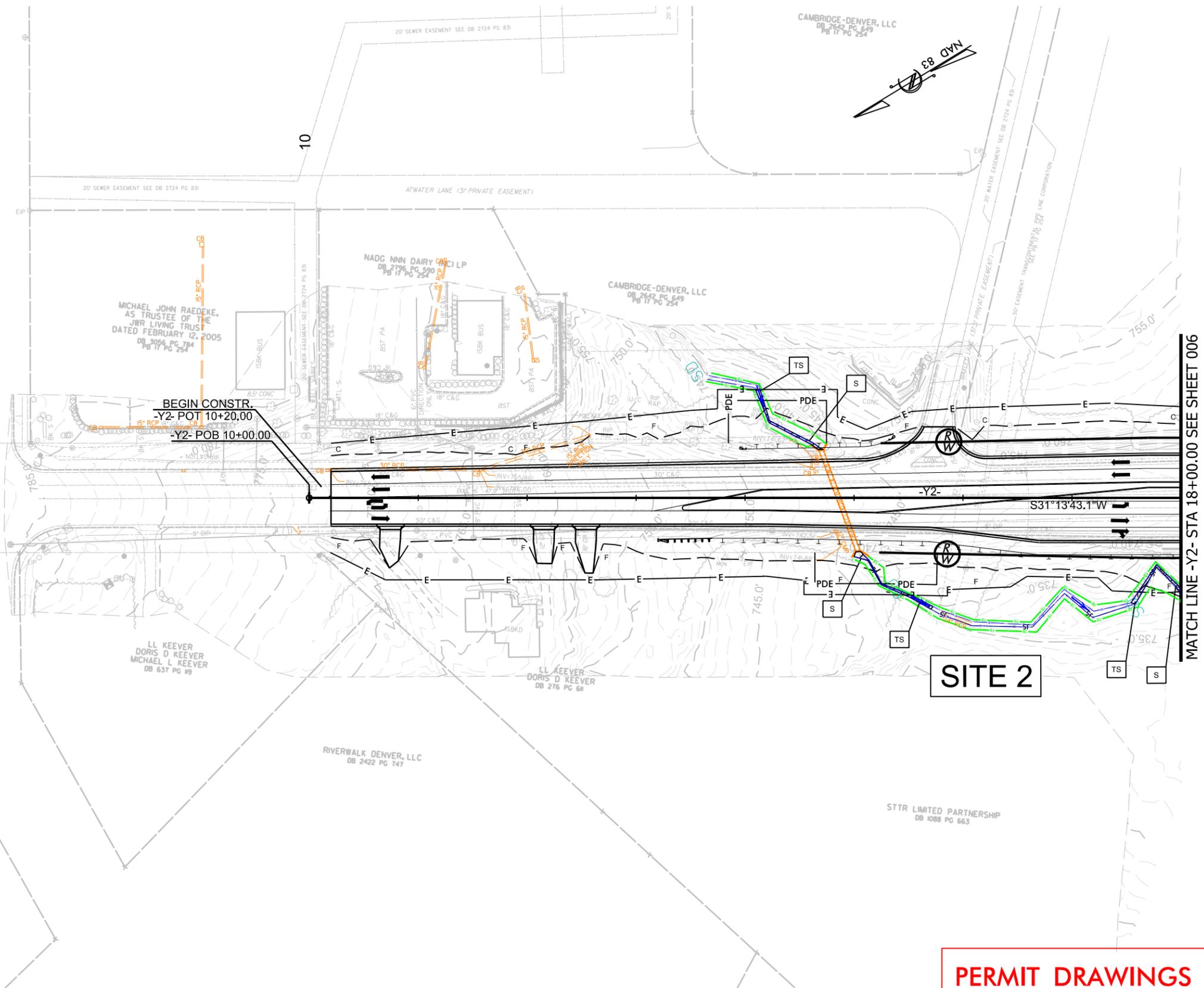
REVISIONS

PERMIT DRAWINGS
SHEET 33 OF 37



LEGEND

-  SURFACE WATER IMPACTS
-  TEMPORARY SURFACE WATER IMPACTS



SITE 2

MATCH LINE -Y2- STA 18+00.00 SEE SHEET 006

**PERMIT DRAWINGS
SHEET 34 OF 37**



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ENGINEER

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DO NOT USE FOR CONSTRUCTION

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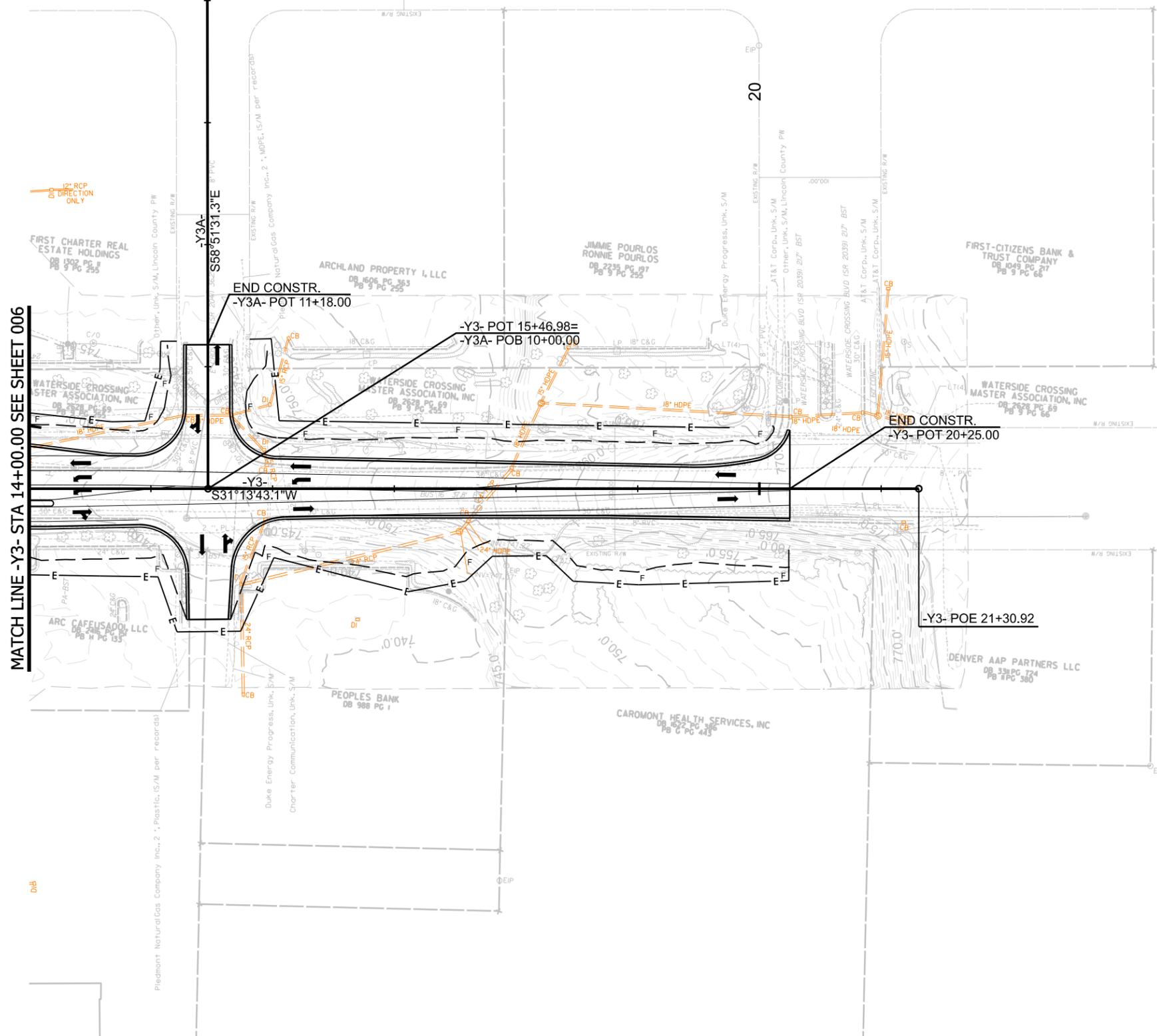
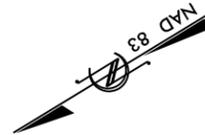
HR
HR Engineering, Inc. of the Carolinas
557 South Beaufort Street, Raleigh, NC 27601
N.C.E.E.L.S. License Number: F-0119

REVISIONS

-Y3A- POE 14+21.97

Scale: 1"=50'

NO JURISDICTIONAL FEATURES IMPACTED ON THIS SHEET



PERMIT DRAWINGS
SHEET 35 OF 37

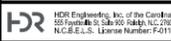


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ROADWAY DESIGN
ENGINEER

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UNLESS ALL SIGNATURES COMPLETED
HYDRAULICS
ENGINEER

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DO NOT USE FOR CONSTRUCTION

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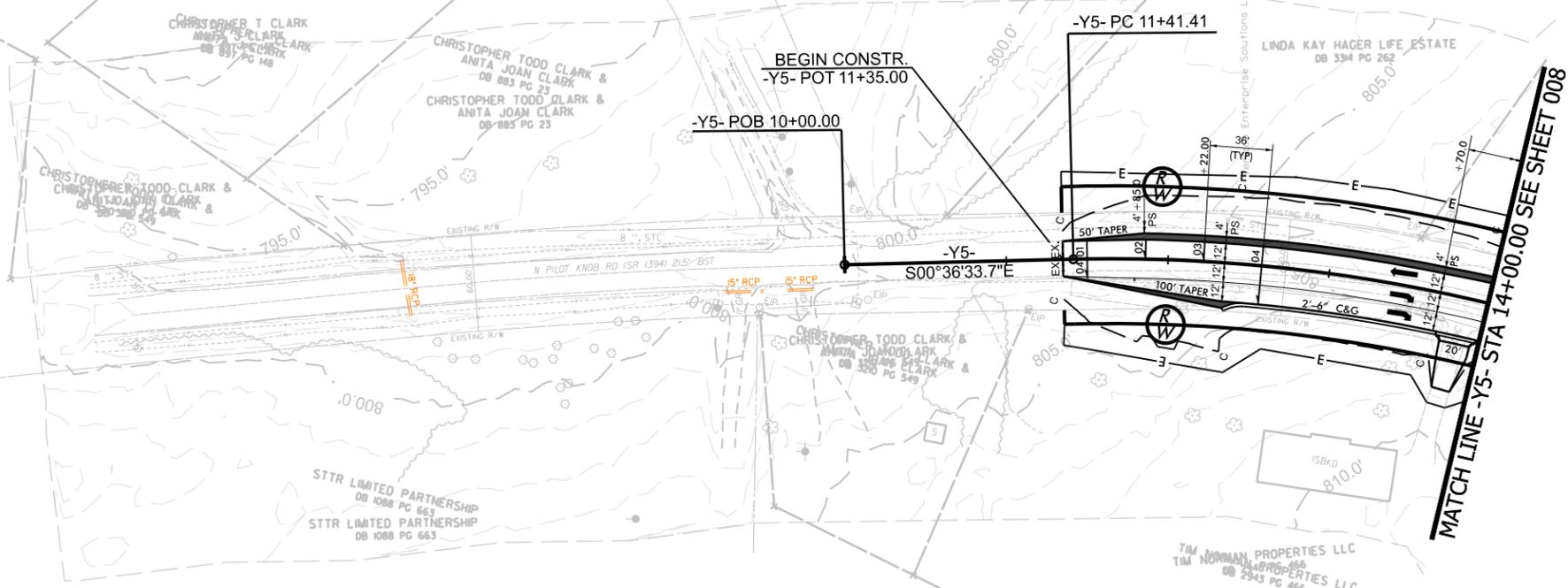


HDR Engineering, Inc. of the Carolinas
557 South Beaufort Parkway, Suite 200
NC, R.E.L.S. License Number: F-0119

REVISIONS

Scale: 1" = 50'

NO JURISDICTIONAL FEATURES IMPACTED ON THIS SHEET



PERMIT DRAWINGS
SHEET 36 OF 37

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REVISIONS

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	52+50 to 52+76 -L- LT	Pond/Roadway Fill						0.013				
2	19+78 to 20+74 -Y2- RT	SD/Exist. 72" RCP						0.015		174		
	17+61 to 19+25 -Y2- RT	SD/Roadway Fill						0.011	0.003	207	38	
	14+15 to 15+40 -Y2- CL	SD/Exist. 4'x4' RCBC						0.003	0.001	116	10	
3	147+89 to 150+57 -L- CL	SE/Exist. 6'x6' RCBC						0.030	0.002	269	23	
4	170+10 to 171+21 -L- LT	WX/Roadway Fill	0.055									
5	169+15 to 174+01 -L- CL	SDD/Exist. 2@9'x10' RCBC						0.104	0.004	370	20	
5A	180+06 to 181+33 -L- LT	SDD/Roadway Fill						0.037	0.007	131	20	
6	170+97 to 173+46 -L- LT	WR/Roadway Fill	0.280									
7	170+95 to 173+18 -L- RT	WS/Roadway Fill	0.337			0.044						
8	178+60 to 183+92 -L- RT	WQ/Roadway Fill	1.096			0.126						
9	12+37 to 13+34 -SR1- RT	WO/Roadway Fill	0.074			0.042						
10	17+36 to 18+69 -SR1- RT	WN/Roadway Fill	0.129		0.011	0.037						
11	20+10 SR1- CL	Catawba River/Boat Ramp						0.033	0.124	28	119	
12	203+00 -L- RT	Catawba River/Bridge						0.609	2.155	179	220	
13	203+00 -L- RT	Roadway Fill						0.017	0.004	68	23	
14	202+65 to 204+26 -L- RT	WL/Roadway Fill	0.252			0.011						
15	253+25 to 254+22 -L- RT	SF/Roadway Fill						0.007	0.001	145	19	
TOTALS*:			2.22	0.00	0.01	0.26	0.00	0.88	2.30	1687	492	0

*Rounded totals are sum of actual impacts

NOTES:

Site 2: Natural Stream Design may be used at this site. A determination will be made during final design

Sites 4 through 14 impacts calculated using 4:1 side slopes and are considered a worst case scenario for permitting through Duke Power corridor.

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

12/09/2025

Lincoln/Mecklenburg

R-5721A

50215.1.2

SHEET

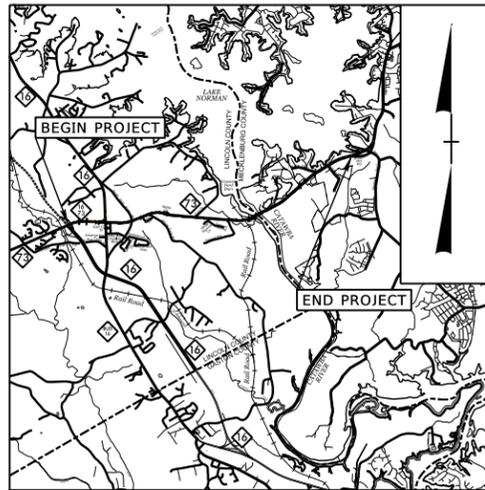
37

OF

37

R-5721A
Preliminary
Buffer
Drawings

See Sheet 1A For Index of Sheets



VICINITY MAP (NTS)

DESIGN RECOMMENDATION PLAN SET

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

LINCOLN & MECKLENBURG COUNTY

LOCATION: NC 73 FROM NC 16 IN LINCOLN COUNTY
TO I-77 IN MECKLENBURG COUNTY

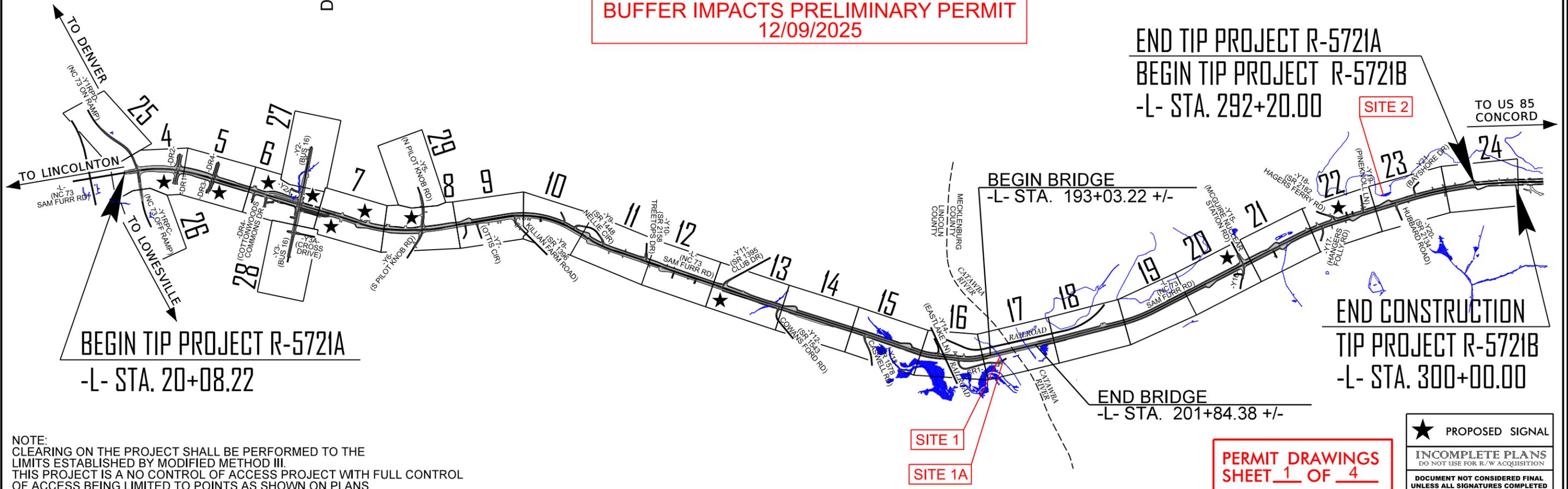
TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING,
STRUCTURES, RETAINING WALLS, SIGNALS,
SIGNING, AND PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5721A	11	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50215.1.2		PE	
50215.2.1		ROW	
50215.2.2		UTILITIES RELO.	
50215.3.1		CONST.	



**BUFFER IMPACTS PRELIMINARY PERMIT
12/09/2025**

END TIP PROJECT R-5721A
BEGIN TIP PROJECT R-5721B
-L- STA. 292+20.00



BEGIN TIP PROJECT R-5721A
-L- STA. 20+08.22

END CONSTRUCTION
TIP PROJECT R-5721B
-L- STA. 300+00.00

NOTE:
CLEARING ON THE PROJECT SHALL BE PERFORMED TO THE
LIMITS ESTABLISHED BY MODIFIED METHOD III.
THIS PROJECT IS A NO CONTROL OF ACCESS PROJECT WITH FULL CONTROL
OF ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

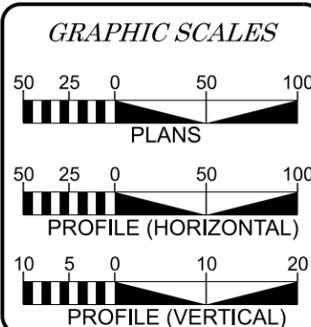
SITE 1
SITE 1A

**PERMIT DRAWINGS
SHEET 1 OF 4**

★ PROPOSED SIGNAL
INCOMPLETE PLANS
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TIP PROJECT: R-5721A

CONTRACT:

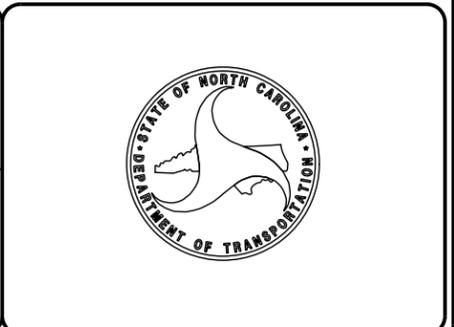


DESIGN DATA	
ADT 2030 =	43,034
ADT 2045 =	53,784
K =	9 %
D =	55 %
T =	5 % *
V =	50 MPH
* TTST =	1% DUAL = 4%
FUNC CLASS =	PRINCIPAL ARTERIAL STATEWIDE TIER

PROJECT LENGTH	
LENGTH OF ROADWAY TIP PROJECT R-5721A =	5.154 MILES
LENGTH OF STRUCTURE TIP PROJECT R-5721A =	0.167 MILE
TOTAL LENGTH OF TIP PROJECT R-5721A =	4.987 MILES
NCDOT CONTACT:	RADHA ATTALURI, P.E. PROJECT MANAGER

HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
2024 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	PAUL ROBBINS, P.E. PROJECT ENGINEER
	JORDAN BOND, P.E. PROJECT DESIGN ENGINEER
LETTING DATE:	

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



Scale: 1"= 50'

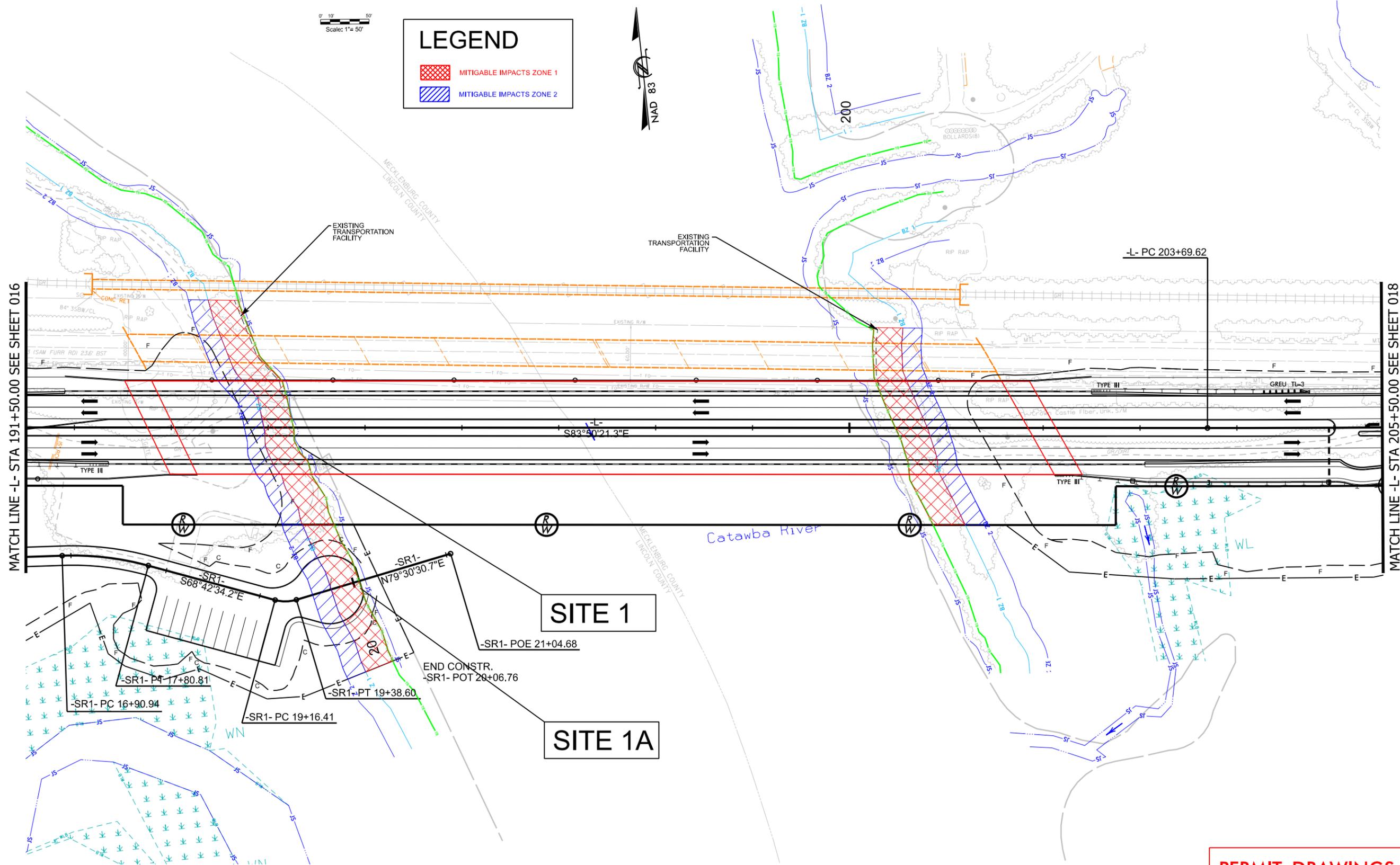
LEGEND

-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2



MATCH LINE -L- STA 191+50.00 SEE SHEET 016

MATCH LINE -L- STA 205+50.00 SEE SHEET 018



U-5751
017

NORTH CAROLINA
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MECKLENBURG COUNTY AND
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 HDR Engineering, Inc. of the Carolinas
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N.C.E.L.S. License Number: F-0119

REVISIONS

PERMIT DRAWINGS
SHEET 2 OF 4



ROADWAY DESIGN UNIT
ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

PREPARED BY



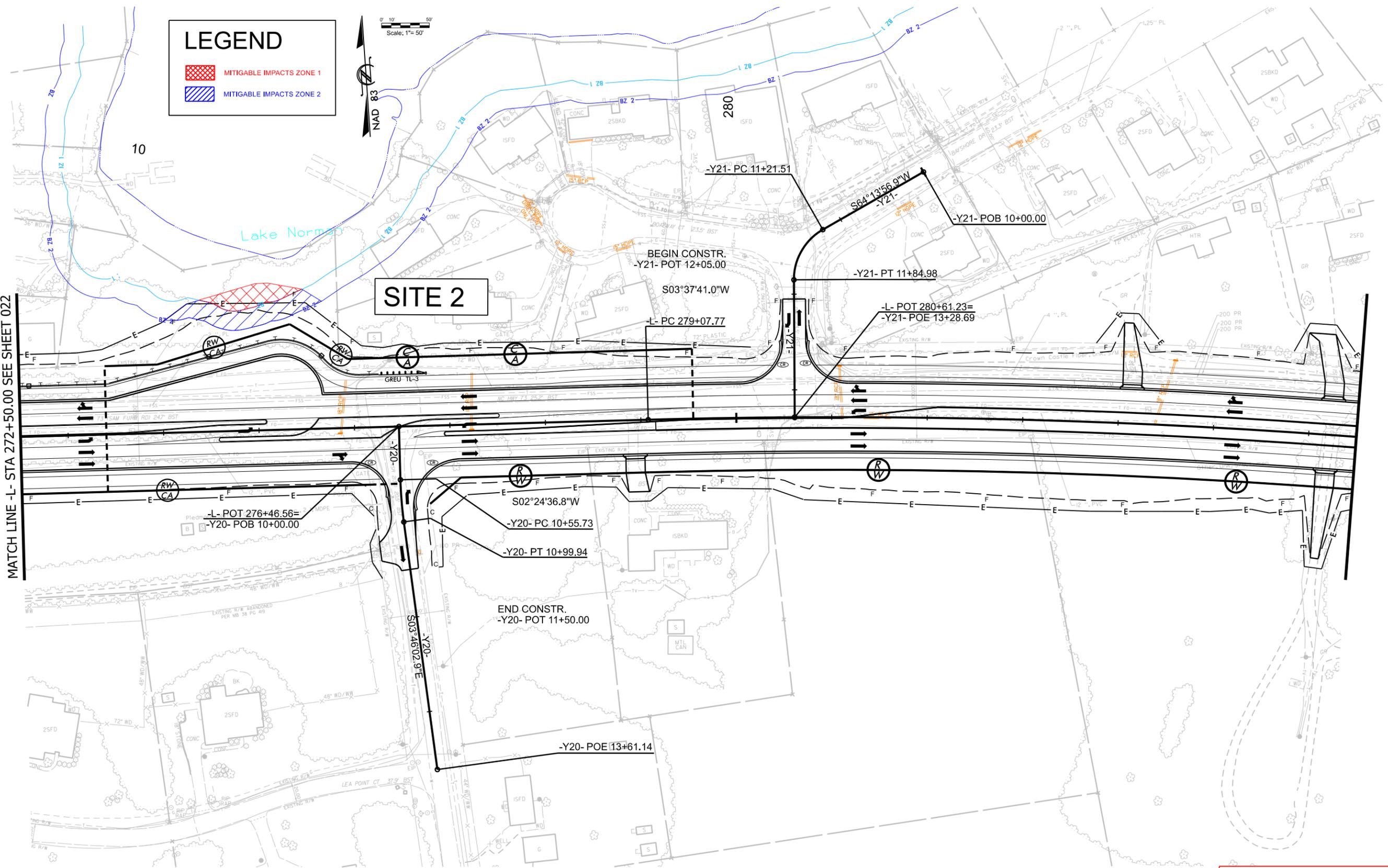
REVISIONS

LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2

0' 10' 50'
Scale: 1"= 50'

NAD 83



**PERMIT DRAWINGS
SHEET 3 OF 4**

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									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)			
1	193+78 to 201+43 -L-	Catawba River/Prop. Bridge		x						14172	9375	23547		
1A	194+15 to 195+29 -L-	Catawba River Boat Ramp			x					4773	3378	8151		
2	274+04 to 275+69 -L-	Lake Norman/Roadway Fill			x					1622	2928	4550		
TOTALS*:						0	0	0	20567	15681	36248	0	0	

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 12/09/2025
 Lincoln/Mecklenburg
 R-5721A
 50215.1.2
 SHEET 4 OF 4