



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

August 11, 2021

MEMORANDUM TO: Division Environmental and Construction Units

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

SUBJECT: Environmental Permits for the Widening of NC 211 from US 15/501 in Aberdeen, Moore County to SR 1244/1311 in Raeford, Hoke County, Division 8, **TIP: R-5709.**

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	May 25, 2025
US Army Corps of Engineers Section 404 Clean Water Act Permit	Nationwide Permit 57 [Utility Relocations]	March 14, 2026
NC Division of Water Resources Section 401 Water Quality Certification	General Certification No. 4135	May 25, 2025

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

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

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

PROJECT COMMITMENTS

STIP Project No. R-5709
NC 211 widening to Multilanes
From US 15-501 in Aberdeen to SR 1244 (West Palmer Street) / SR 1311
(Mockingbird Hill Road) in Raeford
Moore and Hoke Counties
WBS Element No. 50205.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 8 Construction - Resident Engineer

Pedestrian access to the All-American Trail at Plank Road will be maintained during construction while the trail is open (February through late September).

The NCDOT Resident Engineer will continue coordination with local EMS/fire officials through project construction to minimize potential impacts to response time and access during peak times and special events.

The NCDOT Resident Engineer will coordinate with school transportation officials at least one month prior to and throughout construction.

The Town of Aberdeen expressed interest in special landscaping and requested to participate in review of the landscaping plan during the construction phase. The maintenance of any proposed landscape will be included in a municipal agreement with the Town of Aberdeen.

Division 8 - Traffic Engineer

The NCDOT Division Traffic Engineer will request a revision of the ordinance to reduce the NC 211 posted speed from 55 mph to 45 mph prior to Gable Drive in Raeford.

Project Management Unit/Geotechnical Unit

Twenty-four (24) sites of concern were identified within the study area. NCDOT GeoEnvironmental Section will re-evaluate potential hazardous waste sites once the Final Right of Way plans are complete to determine whether soil and groundwater assessments are necessary prior to right of way acquisition.

A GeoEnvironmental Phase II Investigation (February 17, 2020) was completed for the potentially impacted Superfund site (Bethesda Cemetery Association). No special handling of soils on this site are recommended; however, if groundwater is encountered during construction activities on this site, refer to special provisions for handling potentially impacted saturated soil. All excavated soil will remain onsite.

Project Management Unit

Sidewalks are included on both sides of NC 211 from US 15-501 to the eastern end of the dual bridges over the Aberdeen & Rockfish Railroad. The maintenance of the sidewalks and cost share (Pee Dee Road to eastern end of dual bridges) will be included in the municipal agreement(s) with the Town of Aberdeen.

Sidewalks will be included on the south side of NC 211 from Gable Drive to the eastern project terminus and on the west side of Palmer Street from NC 211 to the first entrance at West Hoke Middle School. The maintenance of the sidewalks will be included in a municipal agreement with the City of Raeford.

NCDOT Division 8 - Right of Way and NCDOT Environmental Analysis Unit (EAU) - Archaeology

Where final project design includes intrusion into cemetery boundaries, additional consultation between NCDOT's Right of Way (ROW) and Environmental Analysis Units (EAU) and the Office of State Archaeology (OSA) will be required to identify graves, both marked and unmarked, in the impact area and arrange for their relocation per North Carolina General Statutes 14-148, 65 and 70. The ROW agent will notify archaeologist Shane Petersen of the EAU (scpetersen@ncdot.gov, 919.707.6083) at least two months in advance of the ROW acquisition of any cemetery parcels in order to determine if the OSA will require archaeological investigations to identify and remove unmarked burials. Should OSA require investigations in relation to the likelihood of unmarked burials being impacted within the cemetery, three months will be required to complete the investigations after ROW has acquired all necessary cemetery parcels. The final disposition of any interments recovered during the archaeological investigations will be determined by NCDOT's ROW Unit and the EAU in consultation with OSA.

NCDOT Environmental Analysis Unit (EAU) – Environmental Coordination & Permitting

Due to two known occurrences of federally protected species (American chaffseed, Michaux's sumac) within 1.0 mile of the study area, updated plant surveys were conducted in May 2021, and no plants were found.

COMMITMENTS FROM PERMITTING

No project special commitments were developed during permitting.

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

Action Id. SAW-2018-02283 County: Hoke and Moore U.S.G.S. Quad: NC-McCain

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: NCDOT Division 8

Address: Phillip Harris
1000 Birch Ridge Drive
Raleigh, NC 27610

Telephone Number: 919-749-0442

E-mail: pharris@ncdot.gov

Size (acres) N/A

Nearest Waterway Mountain Creek

USGS HUC 03040203 and 03030004

Nearest Town Raeford

River Basin Lower Pee Dee and Cape Fear

Coordinates Latitude: 35.0514

Longitude: -79.3431

Location description: The project corridor is existing NC 211 from its intersection with NC 15-501 in Aberdeen south to its intersection with West Palmer Street in Raeford, Moore and Hoke counties, North Carolina.

Description of projects area and activity: This verification authorizes the permanent discharge of fill material into 1,443 linear feet of stream channel and 2.3 acres of wetlands, and the temporary discharge of fill material into 161 linear feet of stream channel and 0.01 acre of wetlands for the widening of NC 211. Mitigation is required for this proposal.

Applicable Law(s): Section 404 (Clean Water Act, 33 USC 1344)

Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: **RGP198200031 and NWP 57 Electric Utility Line and Telecommunications Activities**

SEE ATTACHED NWP GENERAL, REGIONAL, AND/OR SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached Conditions, your application signed and dated 6/24/2021, and the enclosed plans dated 6/18/2021. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.


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

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management **Morehead City, NC, at (252) 808-2808.**

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits. If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **James Lastinger at 919-554-4884 ext 32 or James.C.Lastinger@usace.army.mil.**

Corps Regulatory Official: _____



Date: 7/19/2021

Expiration Date of Verification: 5/25/2025

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0

Copy furnished:

SPECIAL CONDITIONS

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

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

Action ID Number: SAW-2018-02283

County: Hoke and Moore

Permittee: NCDOT Division 8, Phillip Harris

Project Name: NCDOT/R-5709/NC 211 from US 15/501 to SR 1244/SR1311/Division 8

Date Verification Issued: 7/19/2021

Project Manager: James Lastinger

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

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: James Lastinger
Raleigh Regulatory Office
U.S Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
or
James.C.Lastinger@usace.army.mil

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

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

Signature of Permittee

Date

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

Permittee: NCDOT Division 8, Phillip Harris

Action ID: SAW-2018-02283

Project Name: NCDOT/R-5709/NC 211 from US 15/501 to SR 1244/SR1311/Division 8 **County:** Hoke and Moore

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: 03040203, Lumber River Basin			
Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1,339				1.26	1.04	

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

Compensatory Mitigation Requirements:			8-digit HUC and Basin: 03040203, Lumber River Basin			
Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
2,678				2.52	2.08	

Mitigation Site Debited: NCDMS

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

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the 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: _____

Name of Sponsor’s Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

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: A letter from NCDMS, confirming they are willing and able to accept the applicant's compensatory mitigation responsibility, dated 6/22/2021 was included with the preconstruction notification.

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: James Lastinger
USACE Field Office: Raleigh Regulatory Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
Email: James.C.Lastinger@usace.army.mil



USACE Project Manager Signature

7/19/2021

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>.

A. Determination of Jurisdiction:

1. There are **waters, including wetlands** on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.
2. There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). This determination may be relied upon for a period not to exceed five years from the date of this notification, provided there is no change in law or our published regulations or new information that warrants revision of this determination.
3. There are **waters, including wetlands** within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). This determination may be relied upon for a period not to exceed five years from the date of this notification, provided there is no change in law or our published regulations or new information that warrants revision of this determination.
4. A jurisdiction determination was not completed with this request. Therefore, this is not an appealable action. However, you may request an approved JD, which is an appealable action, by contacting the Corps for further instruction.
5. The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued. Action ID:.

B. Basis For Determination: See the preliminary jurisdictional determination form dated 7/19/2021.

C. Remarks:

D. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

E. Appeals Information for Approved Jurisdiction Determinations (as indicated in A2 and A3 above).

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Philip Shannin, Appeal Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137
AND
PHILIP.A.SHANNIN@USACE.ARMY.MIL

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **Not applicable**.

SAW-2018-02283

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official:


James Lastinger

Date of JD: 7/19/2021

Expiration Date of JD: Not applicable

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

Copy furnished:



NORTH CAROLINA
Environmental Quality

July 14, 2021

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

S. DANIEL SMITH

Director

DWR # 20211043
Hoke and Moore County

Mr. Philip S. Harris, III, P.E., CPM
Environmental Analysis Unit Head
1598 Mail Service Center
Raleigh, NC 27699-1598

Subject: APPROVAL OF 401 WATER QUALITY CERTIFICATION WITH ADDITIONAL CONDITIONS
NCDOT TIP # R-5709, Hoke and Moore County

Dear Mr. Harris:

You have our approval for the impacts listed below for the purpose described in your application received by the Division of Water Resources (Division) on 6/24/2021. These impacts are covered by the Water Quality General Certification Number 4135 and the conditions listed below. This certification is associated with the use of Permit Number GP31 once it is issued to you by the U.S. Army Corps of Engineers. Please note that you should get any other federal, state or local permits before proceeding with your project, including those required by (but not limited to) Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations.

The Division has determined that the proposed project will comply with water quality requirements provided that you adhere to the conditions listed in the enclosed certification and to the additional conditions itemized below.

The following proposed impacts are hereby approved. No other impacts are approved, including incidental impacts. [15A NCAC 02H .0506(b)].

Stream Impacts in the Cape Fear and Lumber River Basin

Site	Permanent Impacts in Intermittent Stream (linear ft)	Temporary Impacts in Intermittent Stream (linear ft)	Permanent Impacts in Perennial Stream (linear ft)	Temporary Impacts in Perennial Stream (linear ft)	Total Stream Impacts (linear ft)
Site 3- SA	0	0	183	20	203
Site 4- SD	0	0	20	12	32
Site 8- SC	0	0	111	53	164
Site 10- SE	0	0	70	0	70
Site 14- SF	0	0	185	0	185
Site 15- SJ	140	11	0	0	151
Site 16- SG	0	0	136	11	147
Site 18- SH	0	0	228	38	266
Site 22- SM	341	12	0	0	353
Site 22A-SK	0	0	29	3	32
Total	481	23	962	137	1,603



Total Stream Impact for Project: 1,603 linear feet.

Wetland Impacts in the Cape Fear and Lumber River Basin						
Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
WB	0.020	0	0.008	0	< 0.01	0.028
WA	0.074	0	0.006	0	0.03	0.008
WF	0.019	0	0	0	0.03	0.019
WG	0.84	0	0	0	0.03	0.84
WG2	0.002	0	0.027	0	0.03	0.029
WH	0.062	0	0.005	0	0.03	0.067
WJ	0.014	0	0	0	0.02	0.014
WI	0.192	0	0	0	0.06	0.192
WM	0.072	0	0	0	0.22	0.072
WL	0.289	0	0	0	0.06	0.289
WN	0	0	0.016	0	< 0.01	0.016
WP	0.820	0.010	0	0	0.14	0.830
WQ	0.540	0	0	0	0.05	0.540
WR	0.030	0	0	0	0	0.030
WT	0.020	0	0	0	0.01	0.020
Total	2.3	0.010	0.062	0	0.82	2.310

Total Wetland Impact for Project: 2.310 acres.

Pond Impacts in the Cape Fear and Lumber River Basin			
Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
PE	0.01	0	0.01
Total	0.01	0	0.01

Total Open Water Impact for Project: 0.01 acres.

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 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)].

If you are unable to comply with any of the conditions of the Water Quality General Certification or with the additional conditions itemized below, you must notify the Transportation Permitting Branch (TPB) within 24 hours (or the next business day if a weekend or holiday) from the time the permittee becomes aware of the circumstances.

The permittee shall report to the TPB any noncompliance with, and/or any violation of, stream or wetland standards [15A NCAC 02B .0200] including but not limited to sediment impacts to streams or wetlands. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the permittee became aware of the non-compliance circumstances.

Conditions of Certification

Project Specific Conditions



- 1) The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]
- 2) **Off-Site Wetland Mitigation**
Compensatory mitigation for impacts to 2.3 acres of wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated June 22, 2021, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.
- 3) *Relocations not for credit*
Channel relocations shall be completed and stabilized, and approved on site by NCDWR staff, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills. [15A NCAC 02H .0506(b)(3)]
- 4) At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species. The permittee shall observe any natural channel re-establishment, or utilize natural channel construction techniques, to ensure that the jurisdictional stream channel above and below the drained pond remain stable, and that no additional impacts occur within the natural stream channel as a result of draining the pond. [15A NCAC 2H.0506(b)(3)]
- 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 NCDWR. If this condition is unable to be met due to bedrock or other limiting features



encountered during construction, please contact 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) 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)]
- 7) 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)]
- 8) 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)]
- 9) The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]
- 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) 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)]
- 12) 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)]
- 13) The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
- 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 (or whomever is the authorized agent if a non-NCDOT project) shall



complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]

- 27) Native riparian vegetation (ex. list 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 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.
- 30) 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)].
- 31) 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]
- 32) 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. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, Trout, WS-1, WS-11, High Quality Waters (HQW), Outstanding Resource Waters (ORW), or 303(d) Impaired Waters, then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watershed*. [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]

This approval and its conditions are final and binding unless contested. [G.S. 143-215.5] Please be aware that by having impacted waters without first applying for and securing the issuance of a 401 Water Quality Certification, you have violated 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.

One (1) copy of the Petition must also be served to the North Carolina Department of Environmental Quality:

William F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601



This letter completes the review of the Division under section 401 of the Clean Water Act and 15A NCAC 02H .0500. Please contact Ryan Conchilla at 919-710-6516 or ryan.conchilla@ncdenr.gov if have any questions or concerns.

Sincerely,

DocuSigned by:
Amy Champman



9C9886312DCD474...
S. Daniel Smith, Director
Division of Water Resources

cc:

James Lastinger, USACE Raleigh Regulatory Field Office (via email)
Art King, Division 8 Environmental Officer
Gordan Cashin, NCDOT
Amanetta Somerville, US Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Division of Mitigation Services



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617
919.707.9000

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS					
(Version 2.08; Released April 2018)							
WBS Element: 50205.1.1		TIP No.: R-5709	County(ies): Hoke Moore		Page 1 of 3		
General Project Information							
WBS Element:		50205.1.1	TIP Number: R-5709		Project Type: Roadway Widening	Date: 6/18/2021	
NCDOT Contact:		Paul Atkinson, PE		Contractor / Designer:	Trent Cormier		
		Address: 1202 Birch Ridge Drive Raleigh, NC 27610			Address: 8601 Six Forks Road Forum 1, Suite 700 Raleigh, NC 27615		
		Phone: (919)707-6707			Phone: (919)878-9560		
		Email: patkinson@ncdot.gov			Email: tcormier@rkk.com		
City/Town:		Aberdeen, Raeford		County(ies):	Hoke	Moore	
River Basin(s):		Lumber		CAMA County?	No	No	
Wetlands within Project Limits?		Yes					
Project Description							
Project Length (lin. miles or feet):		15.648 MI.	Surrounding Land Use: Farmland, Woods, Residential				
Proposed Project			Existing Site				
Project Built-Upon Area (ac.)		222.7 ac.		63.3 ac.			
Typical Cross Section Description:		A typical cross-section - 178 foot-wide will be used; which will include four 12-foot travel lanes with varying grass medians (23 foot, 30 foot, or 46 foot). It also contains varying exterior shoulder sections where 10-feet is paved, curb and gutter, and open shoulder section.			The existing typical cross-section is 24-foot wide with two 12-foot travel lanes and varying 8 to 10-foot unpaved shoulders.		
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 16,100 / 22,300	Year: 2022 / 2040		Existing: 10,000	Year: 2001	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		R-5709 is a roadway widening project of NC 211 from the existing two lanes to the proposed four lanes in Hoke and Moore Counties. The expansion is 15.648 miles long and begins from US 15-501 in Aberdeen to east of SR 1244 (West Palmer Street) – SR 1311 (Mockingbird Hill Road) in Raeford. Wetlands, perennial streams, and intermittent streams are found within the limits of the project area. The jurisdictional streams within the study area have no impairments and do not provide habitat for any threatened or endangered aquatic species. Design Mitigations for wetlands and streams include: 1. Steepening of roadway fill slopes within jurisdictional areas. 2. Stormwater was designed to avoid direct discharge into jurisdictional features to the maximum extent practicable. 3. Stormwater design velocities entering jurisdictional features have been mitigated to be non-erosive (less than 2 fps). 4. Open shoulder sections were maximized to promote sheet flow from the roadway. 5. Diffuse flow provided at outlets that do not have a well defined outfall.					
Waterbody Information							
Surface Water Body (1):		UT to Devil Gut Branch		NCDWR Stream Index No.:	14-2-11-7		
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:		SA, SB, SD			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 2.08; Released April 2018)

WBS Element: 50205.1.1 **TIP No.:** R-5709 **County(ies):** Hoke Moore **Page** 2 **of** 3



Additional Waterbody Information

Surface Water Body (2):		Devil Gut Branch		NCDWR Stream Index No.:		14-2-11-7	
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:		SC		Buffer Rules in Effect:		N/A	
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 (3):		Quewhiffle Creek		NCDWR Stream Index No.:		14-2-14	
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:		SE		Buffer Rules in Effect:		N/A	
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 (4):		UT to Quewhiffle Creek		NCDWR Stream Index No.:		14-2-14	
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:		SF, SJ		Buffer Rules in Effect:		N/A	
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):		UT to Mountain Creek		NCDWR Stream Index No.:		14-2-16-(2)	
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:		SG		Buffer Rules in Effect:		N/A	
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)	

	North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS			
(Version 2.08; Released April 2018)				
WBS Element: 50205.1.1	TIP No.: R-5709	County(ies): Hoke Moore		Page 3 of 3
Additional Waterbody Information				
Surface Water Body (6):	UT to Buffalo Creek		NCDWR Stream Index No.:	14-2.5
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:	SH		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?
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 (7):				
	UT to Toney's Creek		NCDWR Stream Index No.:	14-10-1.2
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C	
	Supplemental Classification:		Swamp Waters (Sw)	
Other Stream Classification:	None			
Impairments:	None			
Aquatic T&E Species?	No	Comments:		
NRTR Stream ID:	SI, SM		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?
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 (8):				
	UT to Rockfish Creek		NCDWR Stream Index No.:	18-31-(12)
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class B	
	Supplemental Classification:		None	
Other Stream Classification:	None			
Impairments:	None			
Aquatic T&E Species?	No	Comments:		
NRTR Stream ID:	SK, SL		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?
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)				

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5709	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50205.1.1		PE	
50205.2.1		ROW	
50205.2.2		UTILITIES	
50205.3.1		CONSTRUCTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

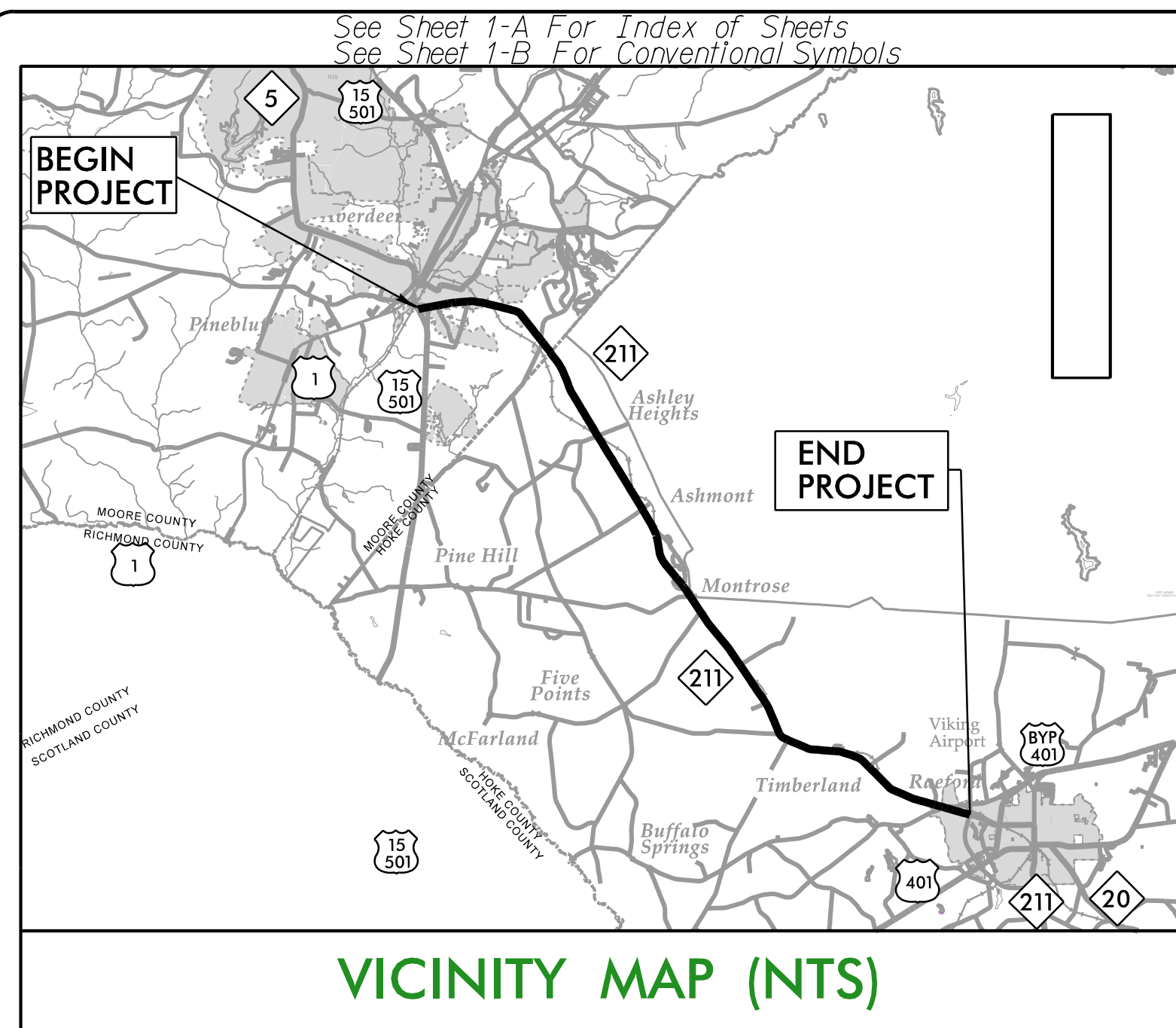
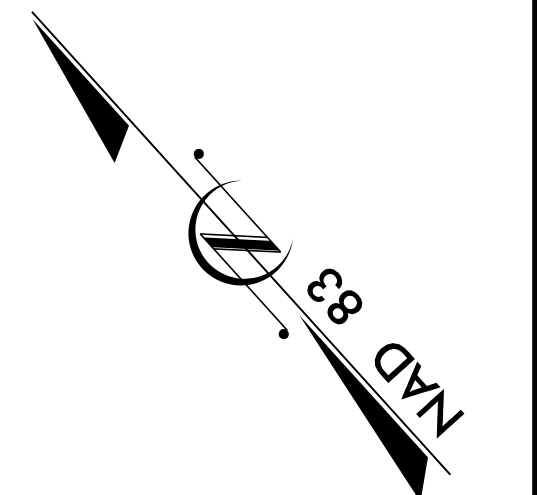
MOORE/HOKE COUNTIES

LOCATION: NC 211 FROM US 15/US 501 IN ABERDEEN TO SR 1244
(WEST PALMER ST) /SR 1311 (MOCKINGBIRD HILL RD) IN RAEFORD

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

WETLAND AND SURFACE WATER IMPACTS PERMIT DRAWINGS

PERMIT DRAWING
SHEET 1 OF 60

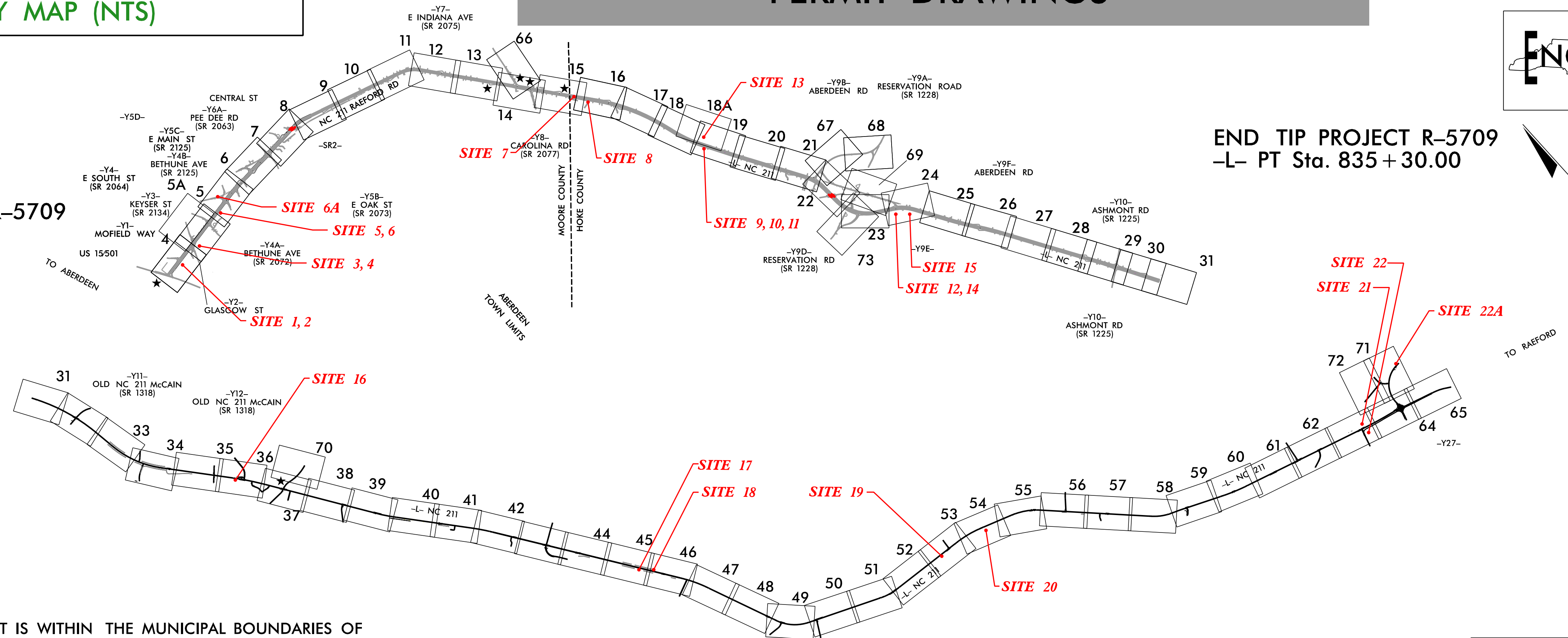


TIP PROJECT: R-5709

BEGIN TIP PROJECT R-5709
-L- POT Sta. 10+32.11

-L- POT STA. 362+18.44 BK =
-L- POT STA. 361+50.00 AH

END TIP PROJECT R-5709
-L- PT Sta. 835+30.00

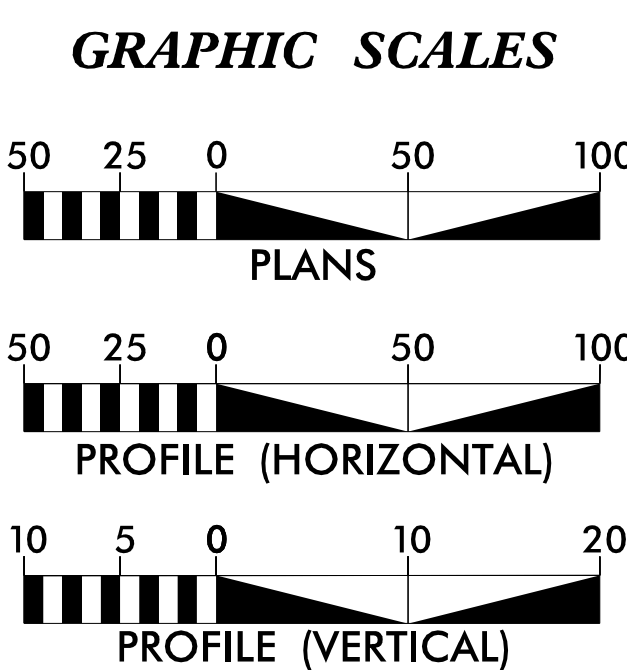


- NOTE:
1. A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF ABERDEEN & THE CITY OF RAEFORD.
 2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II & III AS DESCRIBED IN THE GENERAL NOTES.
 3. THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

★ PROPOSED SIGNAL

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

CONTRACT:



DESIGN DATA

ADT 2024 =	16,400
ADT 2044 =	23,400
K =	9%
D =	60%
T =	21% *
**V =	50 MPH/60 MPH
* TTST =	16% DUAL 5%
FUNC CLASS =	MINOR ARTERIAL
REGIONAL TIER	
**DESIGN SPEED CHANGES	AT COUNTY LINE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5709.....	15.607 miles
LENGTH STRUCTURE TIP PROJECT R-5709.....	0.031 miles
TOTAL LENGTH OF PROJECT R-5709.....	15.638 miles

NCDOT CONTACT

Elmo E. Vance, Jr.
PROJECT MANAGER

PLANS PREPARED BY:

RK&K
8601 Six Forks Road, Forum 1 Suite 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 23, 2021

LETTING DATE:
MARCH 19, 2024

Brandon McInnis, PE
PROJECT ENGINEER

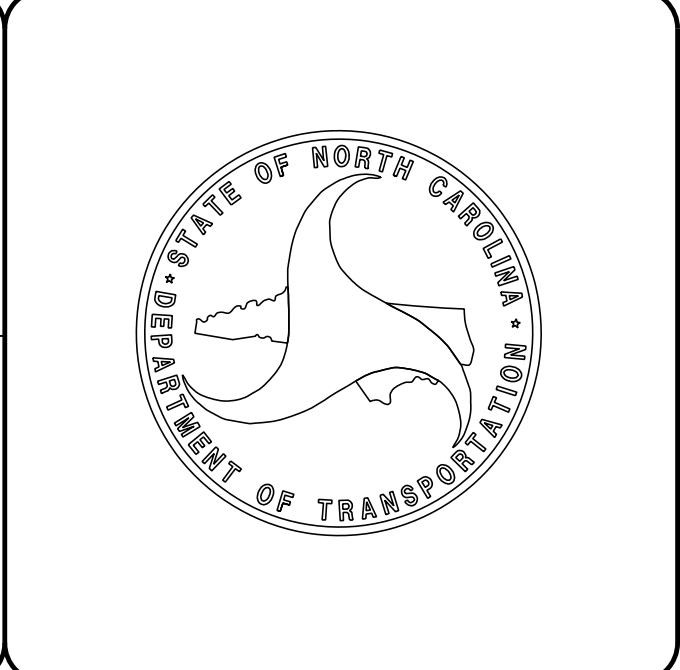
Mary Mays Yahl, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

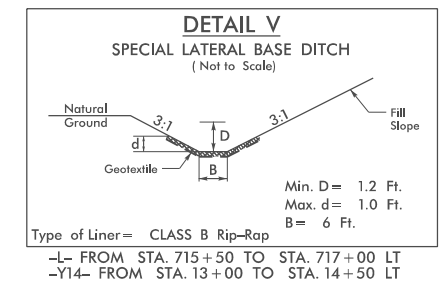
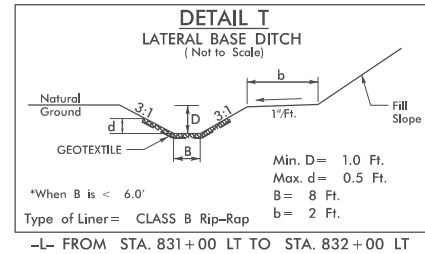
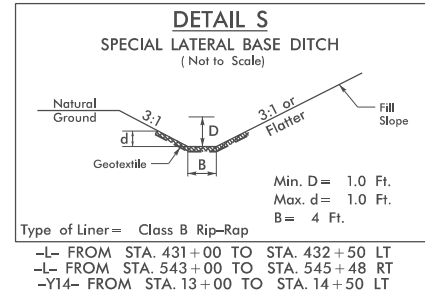
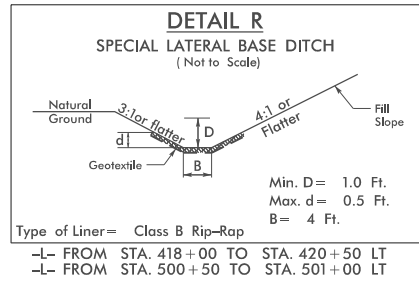
SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

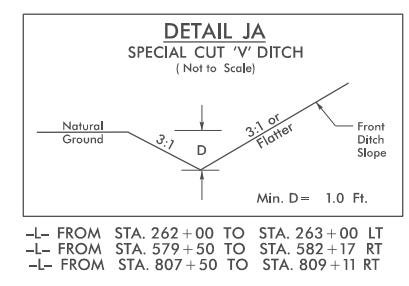
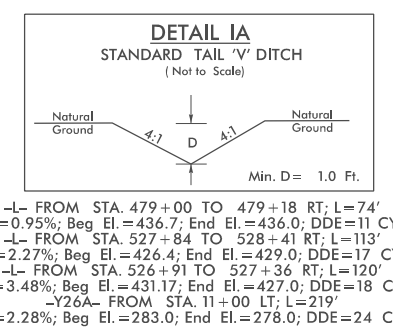
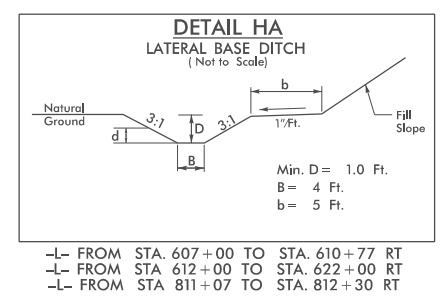
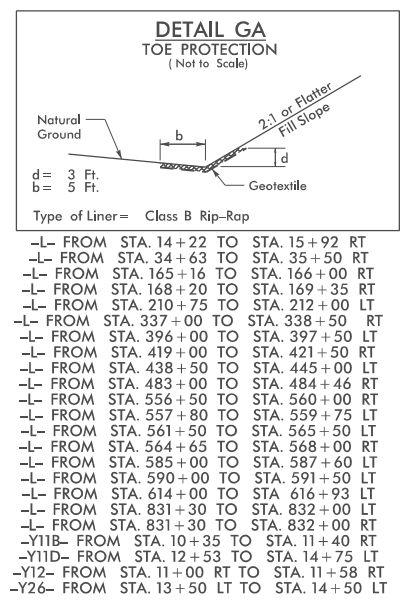
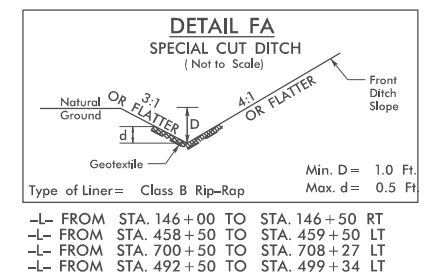
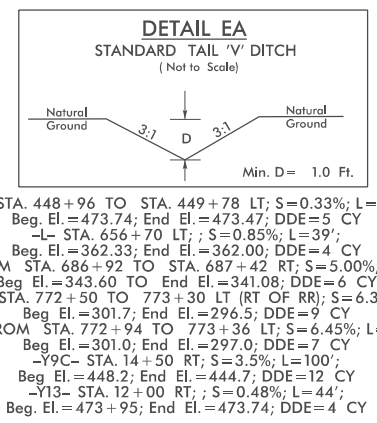
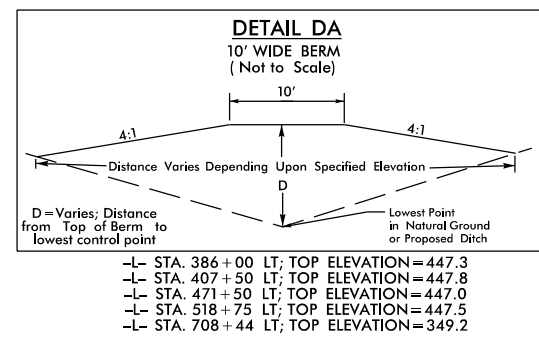
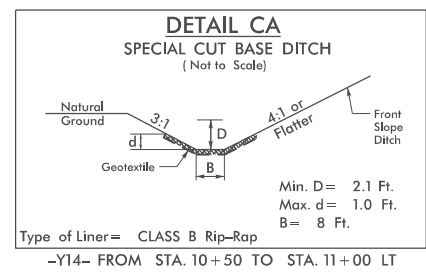
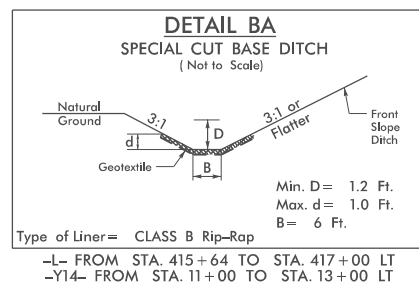
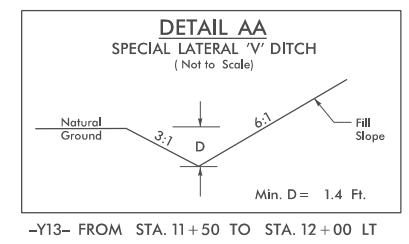
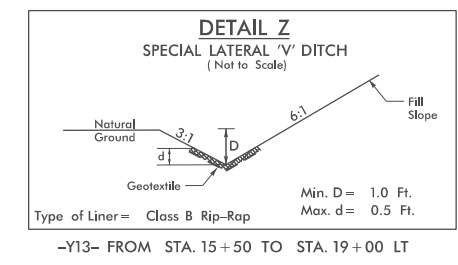
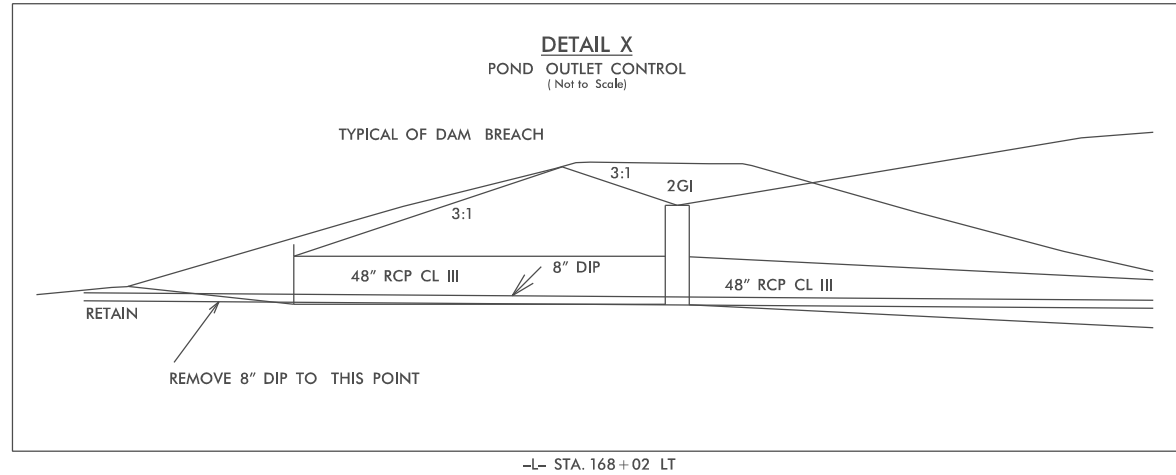
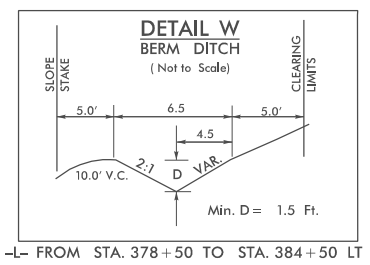
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PROJECT REFERENCE NO. R-5709	SHEET NO. 2D-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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SHEET 3 OF 60



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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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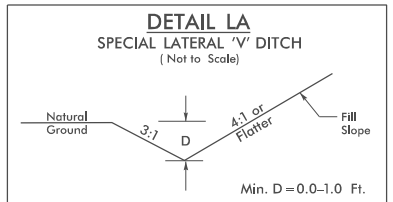
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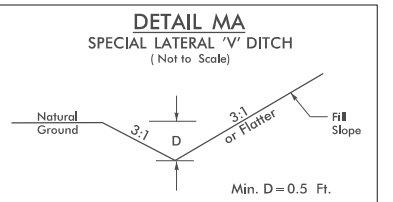
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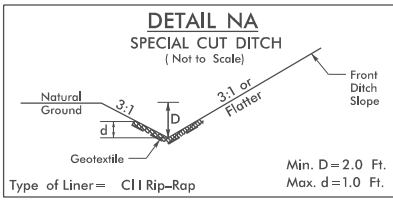
PROJECT REFERENCE NO. R-5709	SHEET NO. 2D-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



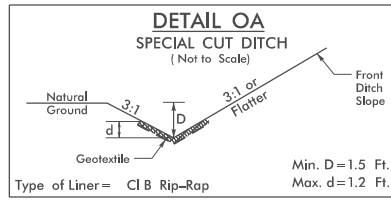
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-L- FROM STA. 274+50 TO STA. 275+50 RT



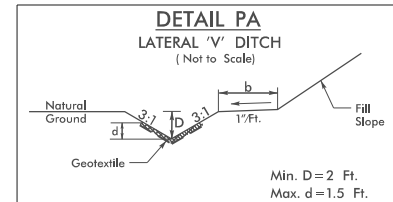
-L- FROM STA. 53+00 TO STA. 56+00 LT
-Y1- FROM STA. 11+00 TO STA. 12+50 RT
-Y2- FROM STA. 14+50 TO STA. 15+50 RT
-Y2- FROM STA. 19+25 TO STA. 20+50 RT
-Y3- FROM STA. 18+20 TO STA. 18+90 LT
-Y4- FROM STA. 12+00 TO STA. 14+50 RT
-Y4A- FROM STA. 11+00 TO STA. 11+85 RT
-Y4B- FROM STA. 10+50 TO STA. 12+50 LT
-Y5- FROM STA. 11+00 TO STA. 12+00 RT
-Y6- FROM STA. 13+00 TO STA. 14+50 LT
-Y6A- FROM STA. 11+22 TO STA. 11+75 LT
-Y9F- FROM STA. 20+50 TO STA. 21+00 LT



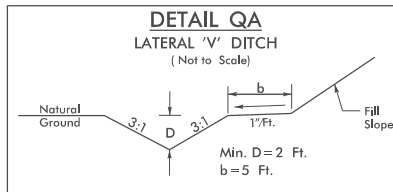
-L- FROM STA. 14+15 TO STA. 15+00 LT
-L- FROM STA. 22+00 TO STA. 24+50 RT
-L- FROM STA. 38+00 TO STA. 39+40 LT
-Y2- FROM STA. 15+50 TO STA. 16+38 RT
-Y5A- FROM STA. 10+66 TO STA. 12+00 RT



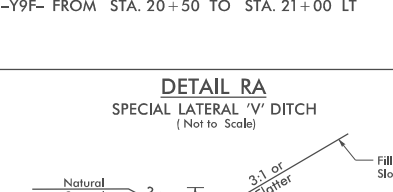
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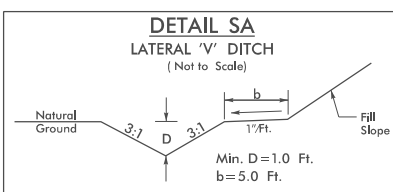
-Y9E- FROM STA. 11+00 TO STA. 12+00 RT



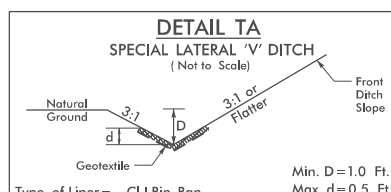
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-L- FROM STA. 263+00 TO STA. 264+30 LT
-L- FROM STA. 264+50 TO STA. 266+00 LT



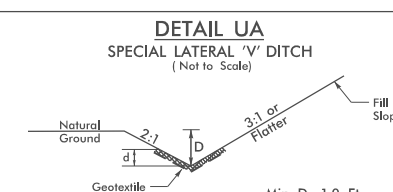
-L- FROM STA. 49+00 TO STA. 51+76.69 RT
-L- FROM STA. 60+32.75 TO STA. 60+75 RT
-Y6- FROM STA. 13+00 TO STA. 15+00 RT



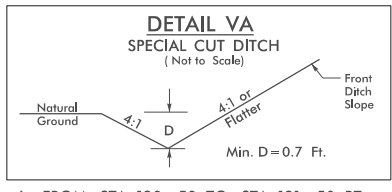
-L- FROM STA. 73+50 TO STA. 74+50 RT
-L- FROM STA. 243+70 TO STA. 244+80 LT
-L- FROM STA. 253+00 TO STA. 255+10 RT
-L- FROM STA. 254+85 TO STA. 260+30 LT
-Y9A- FROM STA. 11+71 TO STA. 12+85 RT



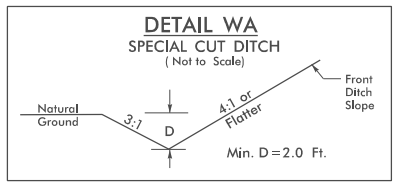
-L- FROM STA. 34+00 TO STA. 34+60 RT



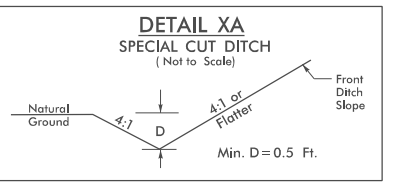
-L- FROM STA. 40+35 TO STA. 44+90 LT



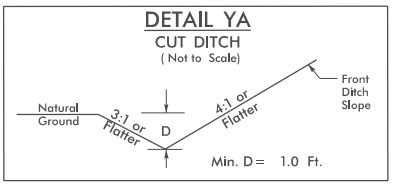
-L- FROM STA. 120+50 TO STA. 121+50 RT
-L- FROM STA. 127+50 TO STA. 128+25 RT



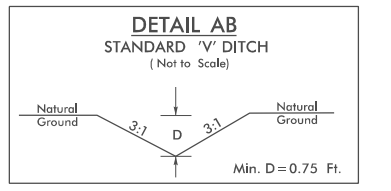
-L- FROM STA. 134+20 TO STA. 135+75 LT



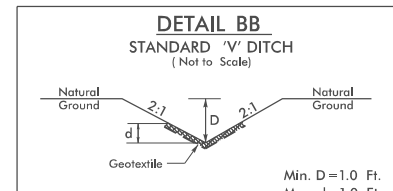
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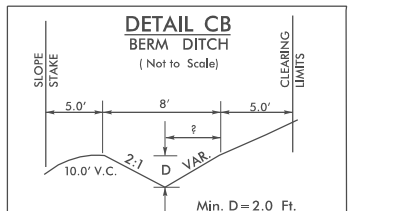
-L- FROM STA. 146+50 TO STA. 151+00 RT
-Y8- FROM STA. 10+39 TO STA. 11+00 RT



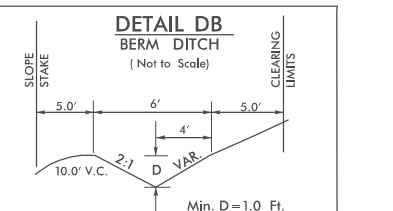
-Y9F- FROM STA. 20+00 TO STA. 20+50 LT; L=50'
S=1.75%; Beg El.=431.8; End El.=430.9; DDE=6 CY



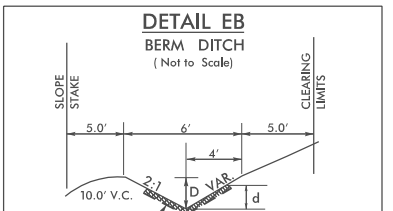
-L- FROM STA. 45+50 TO STA. 45+79 LT



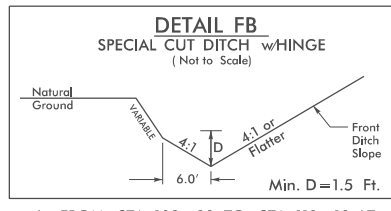
-L- FROM STA. 156+00 TO STA. 157+50 LT



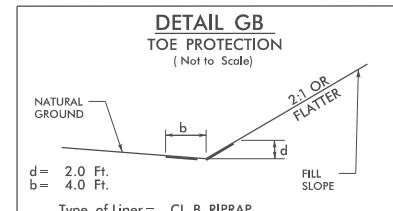
-L- FROM STA. 27+00 TO STA. 30+00 RT
-L- FROM STA. 32+00 TO STA. 33+00 RT
-L- FROM STA. 157+50 TO STA. 160+50 LT
-L- FROM STA. 161+25 TO STA. 163+50 LT



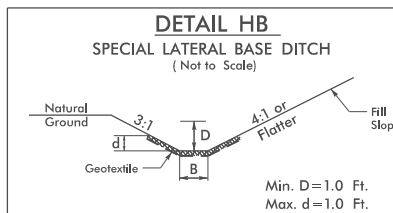
-L- FROM STA. 24+50 TO STA. 27+00 RT
-L- FROM STA. 33+00 TO STA. 34+00 RT



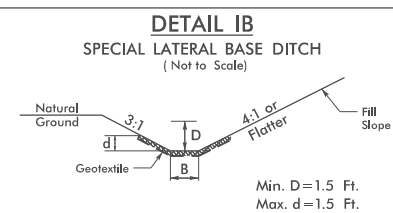
-L- FROM STA. 108+80 TO STA. 112+10 LT
-L- FROM STA. 128+18 TO STA. 131+50 LT
-L- FROM STA. 147+25 TO STA. 148+50 LT



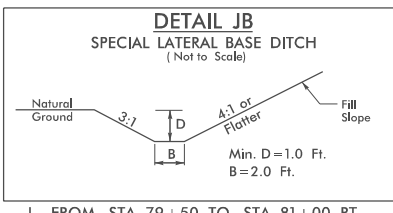
-L- FROM STA. 35+45 TO STA. 37+60 LT



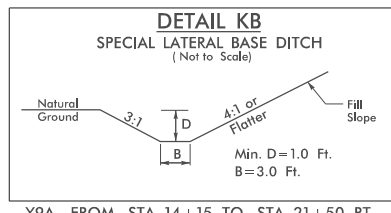
-L- FROM STA. 78+50 TO STA. 79+50 RT
-L- FROM STA. 201+00 TO STA. 201+80 LT



-L- FROM STA. 244+60 TO STA. 244+80 RT
-DR4- FROM STA. 12+50 TO STA. 13+00 RT



-L- FROM STA. 79+50 TO STA. 81+00 RT
-L- FROM STA. 199+50 TO STA. 201+00 LT
-L- FROM STA. 237+50 TO STA. 238+05 RT
-Y9B- FROM STA. 18+50 TO STA. 22+75 RT



-Y9A- FROM STA. 14+15 TO STA. 21+50 RT



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SHEET 4 OF 60

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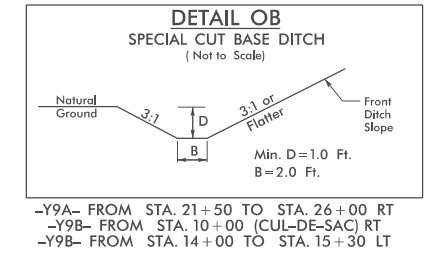
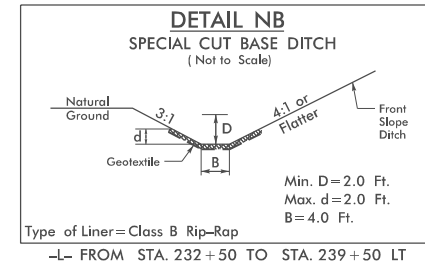
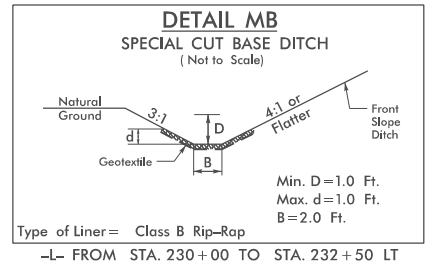
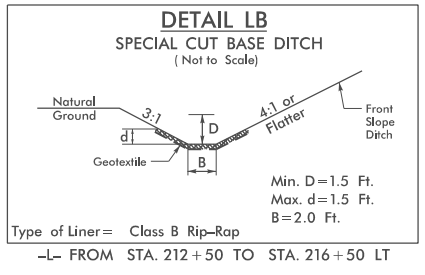
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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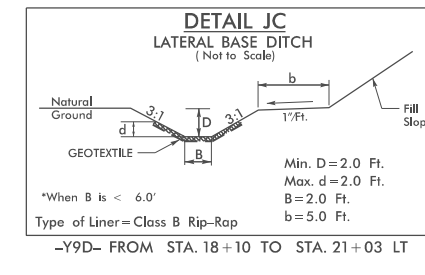
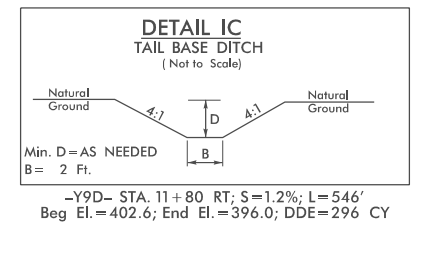
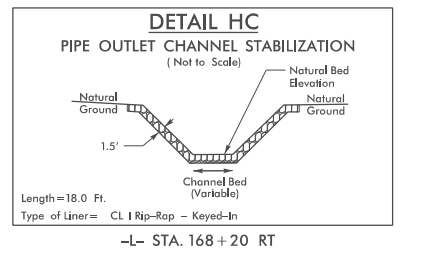
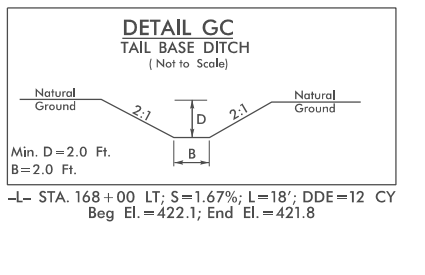
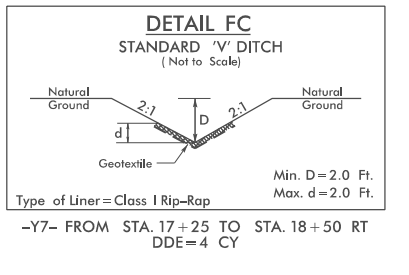
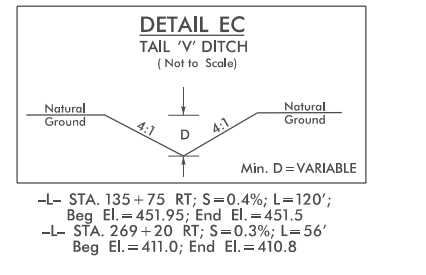
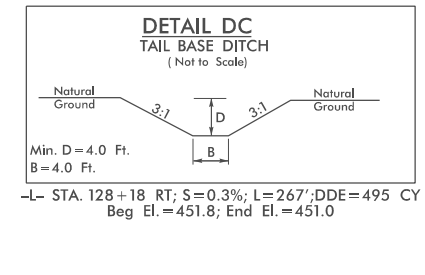
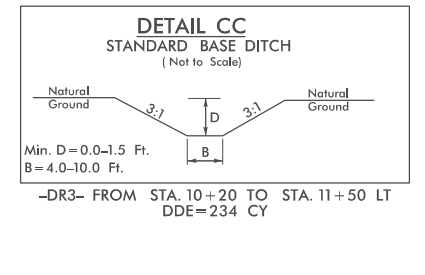
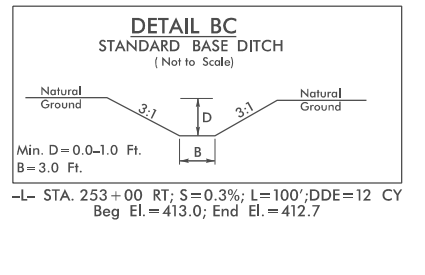
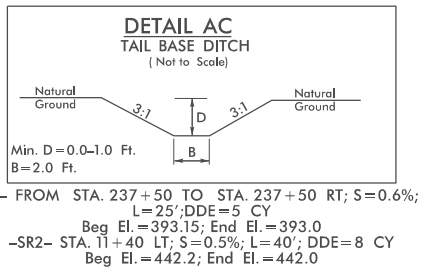
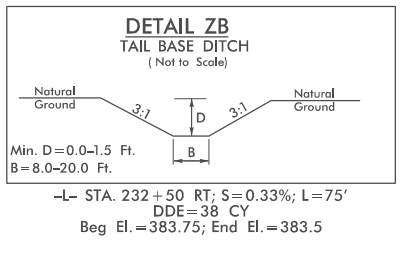
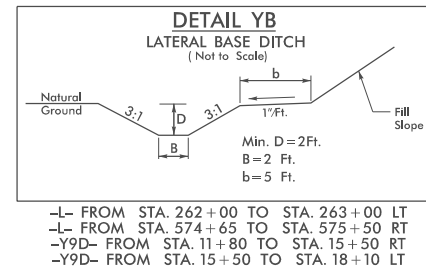
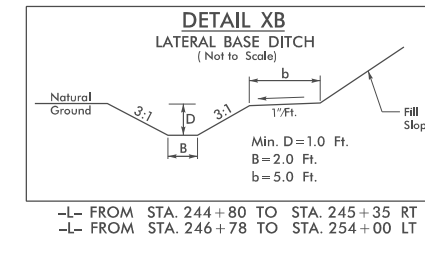
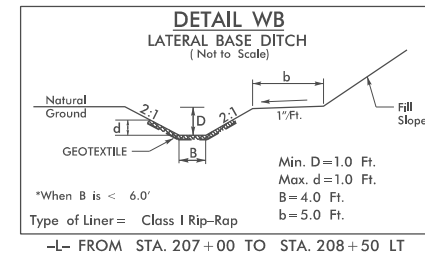
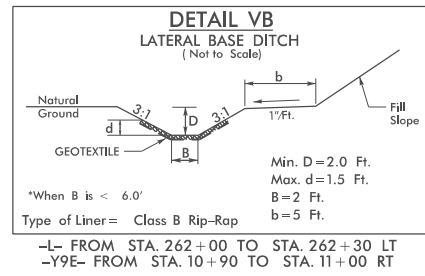
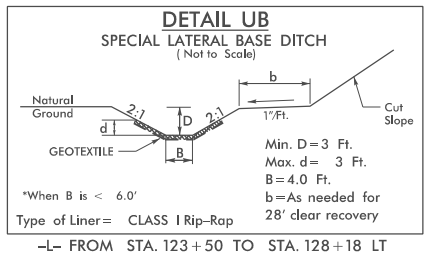
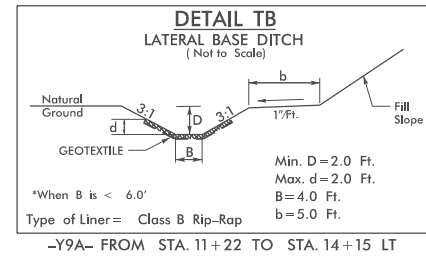
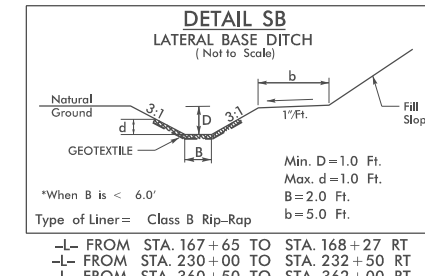
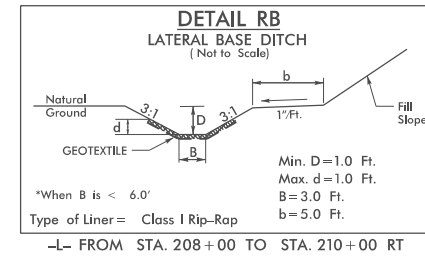
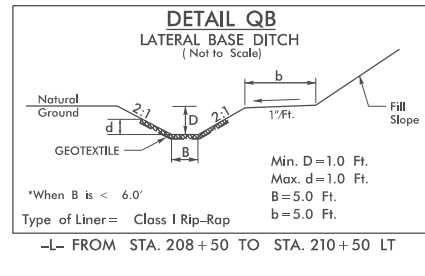
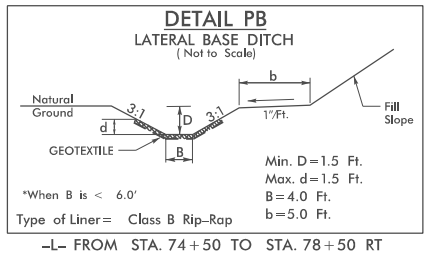
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PROJECT REFERENCE NO. R-5709	SHEET NO. 2D-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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SHEET 5 OF 60



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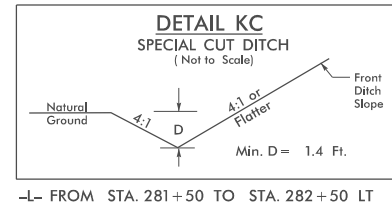
ETHERILL ENGINEERING

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

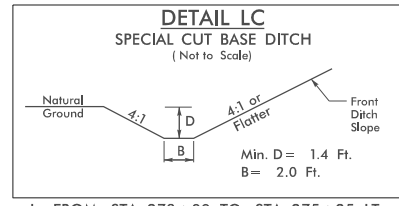
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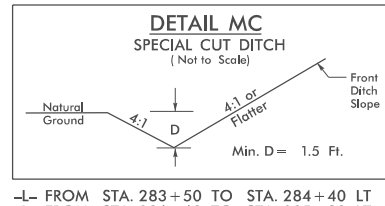
PROJECT REFERENCE NO. R-5709	SHEET NO. 2D-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



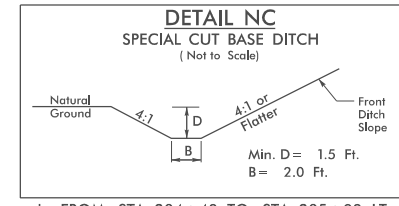
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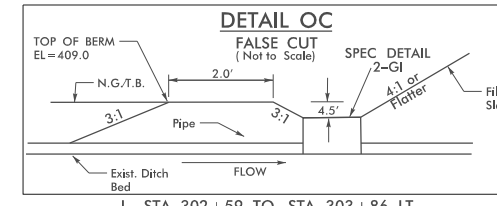
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-L- FROM STA. 276+10 TO STA. 281+50 LT



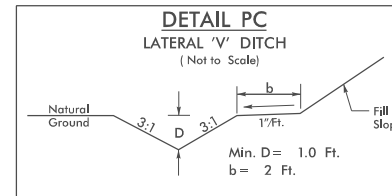
-L- FROM STA. 283+50 TO STA. 284+40 LT
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-L- FROM STA. 315+00 TO STA. 329+50 LT
-L- FROM STA. 336+00 TO STA. 339+00 LT
-L- FROM STA. 348+50 TO STA. 352+00 RT
-L- FROM STA. 358+00 TO STA. 358+88 RT
-L- FROM STA. 359+50 TO STA. 360+50 LT
-Y10- FROM STA. 15+00 TO STA. 15+85 RT
-Y10- FROM STA. 18+00 TO STA. 19+50 RT



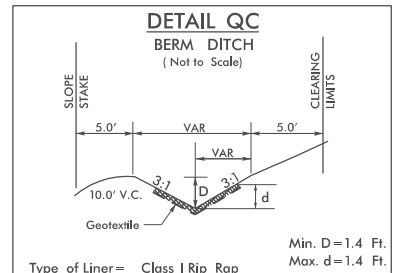
-L- FROM STA. 284+40 TO STA. 285+00 LT



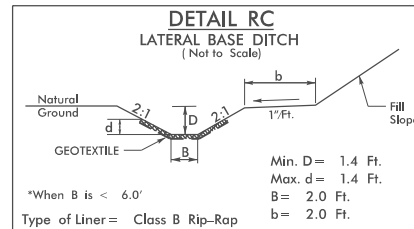
-L- STA. 302+59 TO STA. 303+86 LT



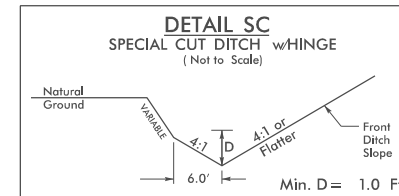
-L- FROM STA. 302+50 TO STA. 303+00 LT



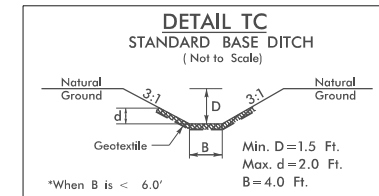
-L- FROM STA. 310+00 TO STA. 311+50 LT



-L- FROM STA. 313+25 TO STA. 314+50 LT

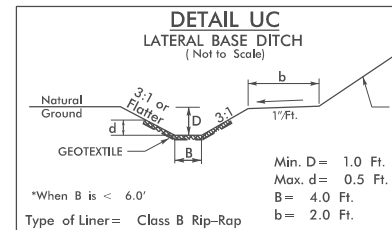


-L- FROM STA. 330+50 TO STA. 333+50 LT
-L- FROM STA. 352+50 TO STA. 359+50 LT

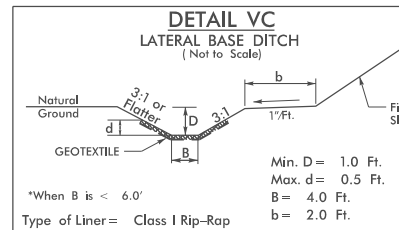


-L- STA. 208+50 LT; S = 6.0%; L = 25';
Beg. El. = 373.4; End El. = 371.9; DDE = 13 CY
-L- STA. 644+46 LT; S = 0.33%; L = 60';
Beg. El. = 364.00; End El. = 362.00; DDE = 62 CY

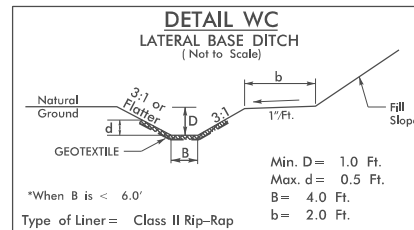
PERMIT DRAWING
SHEET 6 OF 60



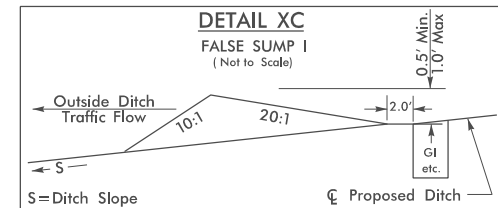
-L- FROM STA. 402+50 TO STA. 407+50 LT
-L- FROM STA. 557+00 TO STA. 557+75 LT
-L- FROM STA. 737+93 TO STA. 741+34 RT
-Y11E- FROM STA. 10+64 TO STA. 11+50 RT



-L- FROM STA. 389+50 TO STA. 393+00 LT
-DR3- FROM STA. 11+50 TO STA. 12+50 LT

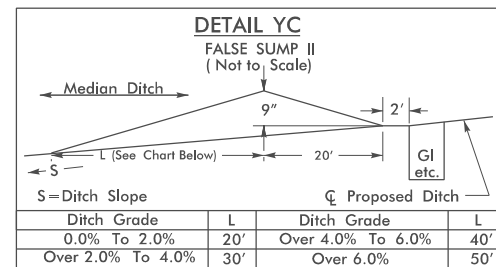


-Y11C- FROM STA. 10+67 TO STA. 11+28 RT



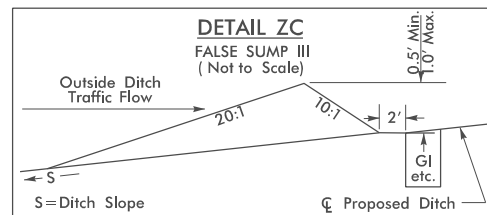
-L- STA. 113+00 TO STA. 120+00 LT

-L- STA. 135+89 LT
-L- STA. 201+20 RT
-L- STA. 299+30 RT
-L- STA. 311+30 LT
-L- STA. 314+80 LT
-L- STA. 320+80 LT
-L- STA. 339+30 LT
-L- STA. 361+05 LT
-L- STA. 378+00 LT
-L- STA. 390+00 RT
-L- STA. 397+31 LT
-L- STA. 402+00 LT
-L- STA. 421+88 LT
-L- STA. 529+00 LT
-L- STA. 555+80 LT
-Y9B- STA. 10+00 RT
-Y11A- STA. 11+39 LT



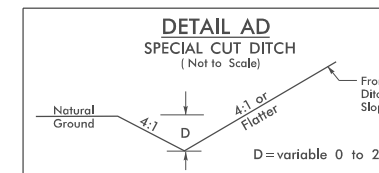
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

-L- STA. 173+19 MEDIAN
-L- STA. 264+30 TO 269+12 MEDIAN
-L- STA. 185+20 MEDIAN
-L- STA. 195+85 MEDIAN
-L- STA. 201+20 MEDIAN
-L- STA. 207+20 MEDIAN
-L- STA. 284+00 MEDIAN
-L- STA. 286+30 MEDIAN
-L- STA. 311+80 MEDIAN
-L- STA. 314+30 MEDIAN
-L- STA. 320+80 MEDIAN
-L- STA. 359+23 MEDIAN
-L- STA. 361+05 MEDIAN
-L- STA. 376+31 MEDIAN
-L- STA. 387+14 MEDIAN
-L- STA. 400+78 MEDIAN
-L- STA. 401+63 MEDIAN
-L- STA. 407+62 MEDIAN
-L- STA. 413+00 MEDIAN
-L- STA. 426+00 MEDIAN
-L- STA. 453+00 MEDIAN
-L- STA. 489+00 MEDIAN
-L- STA. 507+00 MEDIAN
-L- STA. 528+69 MEDIAN
-L- STA. 555+63 MEDIAN
-L- STA. 607+35 MEDIAN
-L- STA. 633+64 MEDIAN
-L- STA. 650+39 MEDIAN
-L- STA. 699+57 MEDIAN
-L- STA. 708+43 MEDIAN
-L- STA. 731+49 MEDIAN
-L- STA. 740+50 MEDIAN
-L- STA. 758+00 MEDIAN
-L- STA. 782+69 MEDIAN

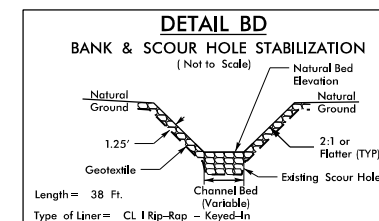


-L- STA. 157+50 TO 165+10 LT

-L- STA. 97+40 LT
-L- STA. 195+75 LT
-L- STA. 303+50 LT
-L- STA. 314+30 RT
-L- STA. 385+12 RT
-L- STA. 422+00 RT
-L- STA. 555+63 RT
-L- STA. 569+00 RT
-L- STA. 644+63 LT



FROM STA. 172+75 TO STA. 173+17 -L- RT



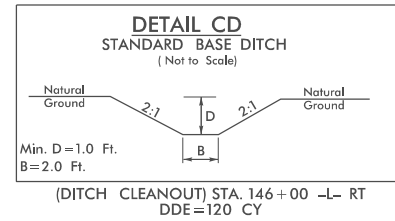
-L- STA. 14+62 LT; Length = 38 Ft.
-L- STA. 34+64 LT; Length = 26 Ft.

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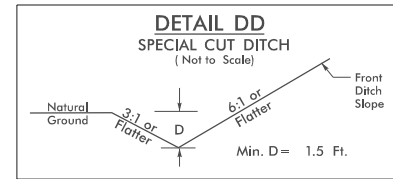
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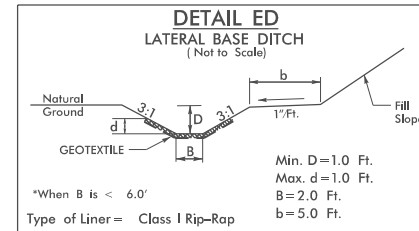
PROJECT REFERENCE NO. R-5709	SHEET NO. 2D-6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



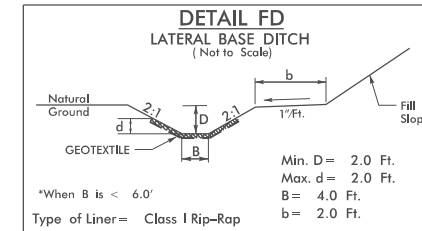
(DITCH CLEANOUT) STA. 146+00 -L- RT
DDE = 120 CY



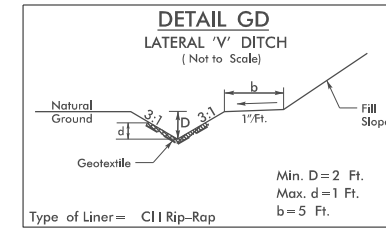
-Y10- FROM STA. 18+00 TO STA. 19+50 RT



*When B is < 6.0'
Type of Liner = Class I Rip-Rap
-L- FROM STA. 306+65 TO STA. 307+50 RT

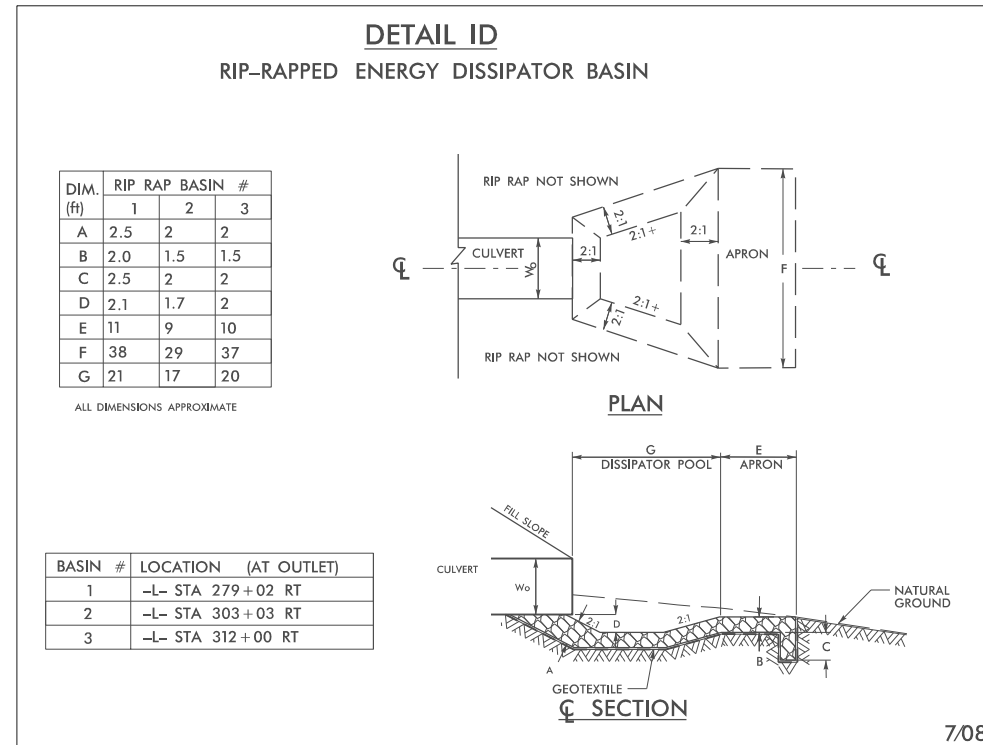


*When B is < 6.0'
Type of Liner = Class I Rip-Rap
-L- FROM STA. 311+50 TO STA. 313+25 LT



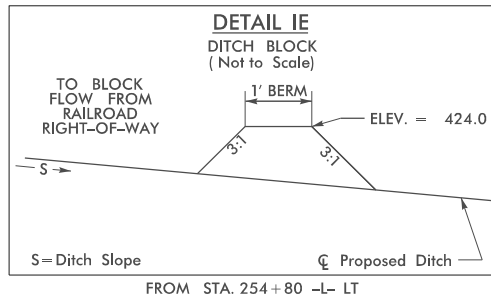
Type of Liner = CI I Rip-Rap
FROM STA. 14+32 TO STA. 15+45 -L- LT

PERMIT DRAWING
SHEET 7 OF 60

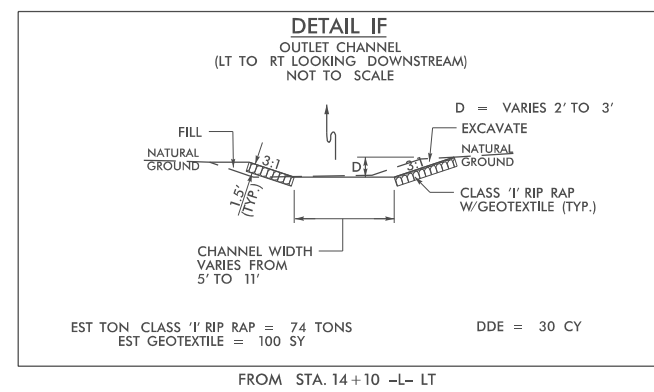


-L- STA 279+02 RT
-L- STA 303+03 RT
-L- STA 312+00 RT

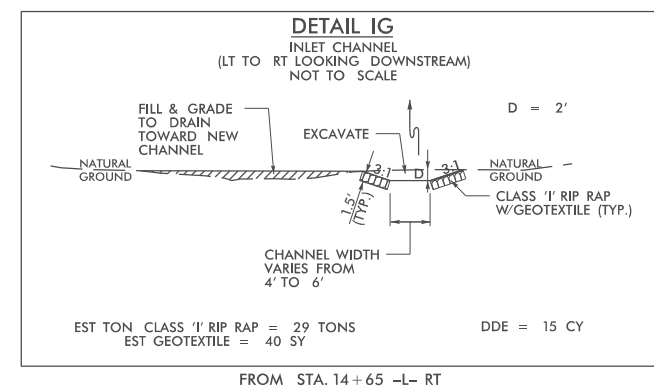
7/08



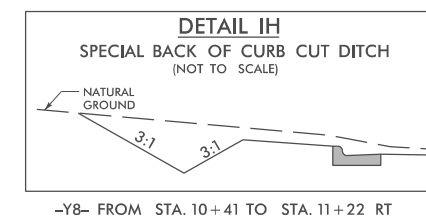
FROM STA. 254+80 -L- LT



FROM STA. 14+10 -L- LT



FROM STA. 14+65 -L- RT



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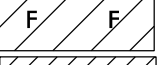
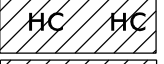



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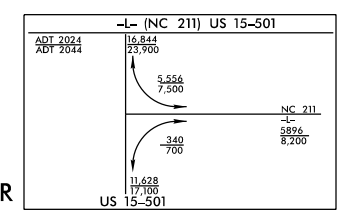
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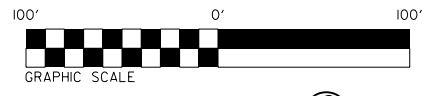
CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6"C+G	-L-	10+16.82	14+70.74	LT
2'-6"C+G	-Y1-	10+41.00	11+40.08	LT
2'-6"C+G	-Y1-	10+41.00	11+38.45	RT
2'-6"C+G	-L-	17+06.40	22+96.82	LT
1'-6"C+G	-L-	10+72.04	23+38.59	MEDIAN
2'-6"C+G	-L-	10+79.48	22+66.57	RT

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

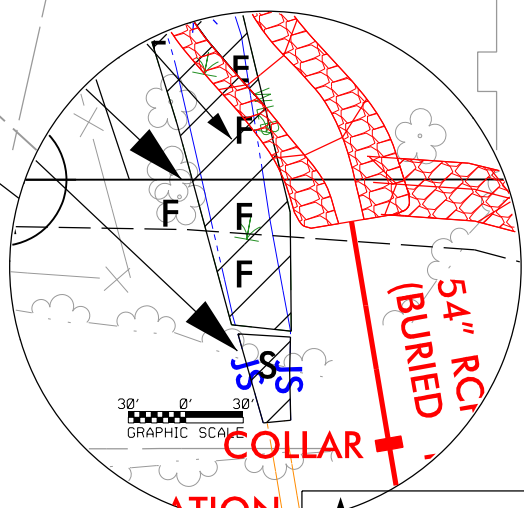
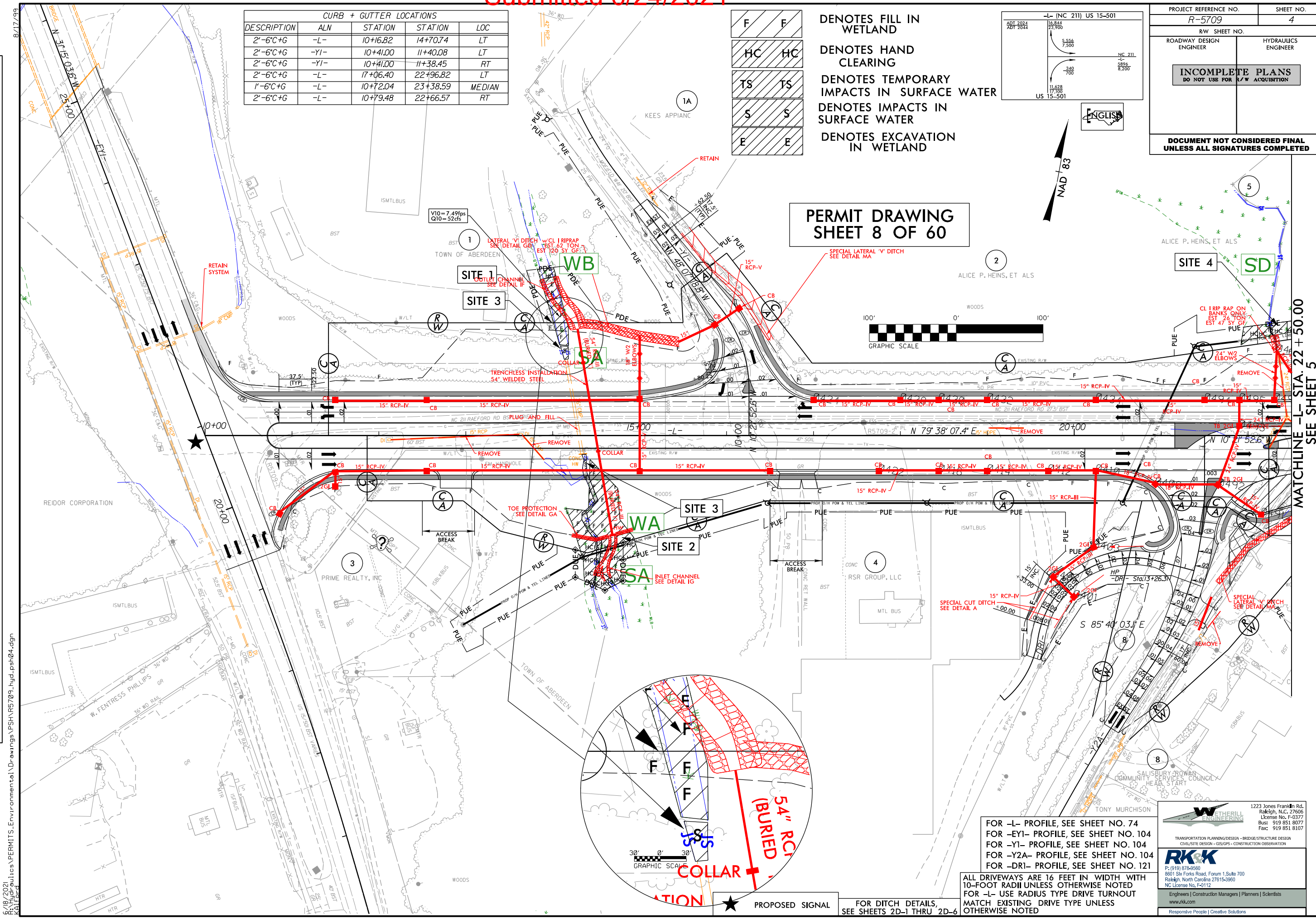


PROJECT REFERENCE NO. R-5709	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/V ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING SHEET 8 OF 60



REVISIONS



- FOR -L- PROFILE, SEE SHEET NO. 74
- FOR -Y1- PROFILE, SEE SHEET NO. 104
- FOR -Y2A- PROFILE, SEE SHEET NO. 104
- FOR -DR1- PROFILE, SEE SHEET NO. 121

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
FOR -L- USE RADIUS TYPE DRIVE TURNOUT MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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MATCHLINE -L- STA. 22 + 50.00 SEE SHEET 5

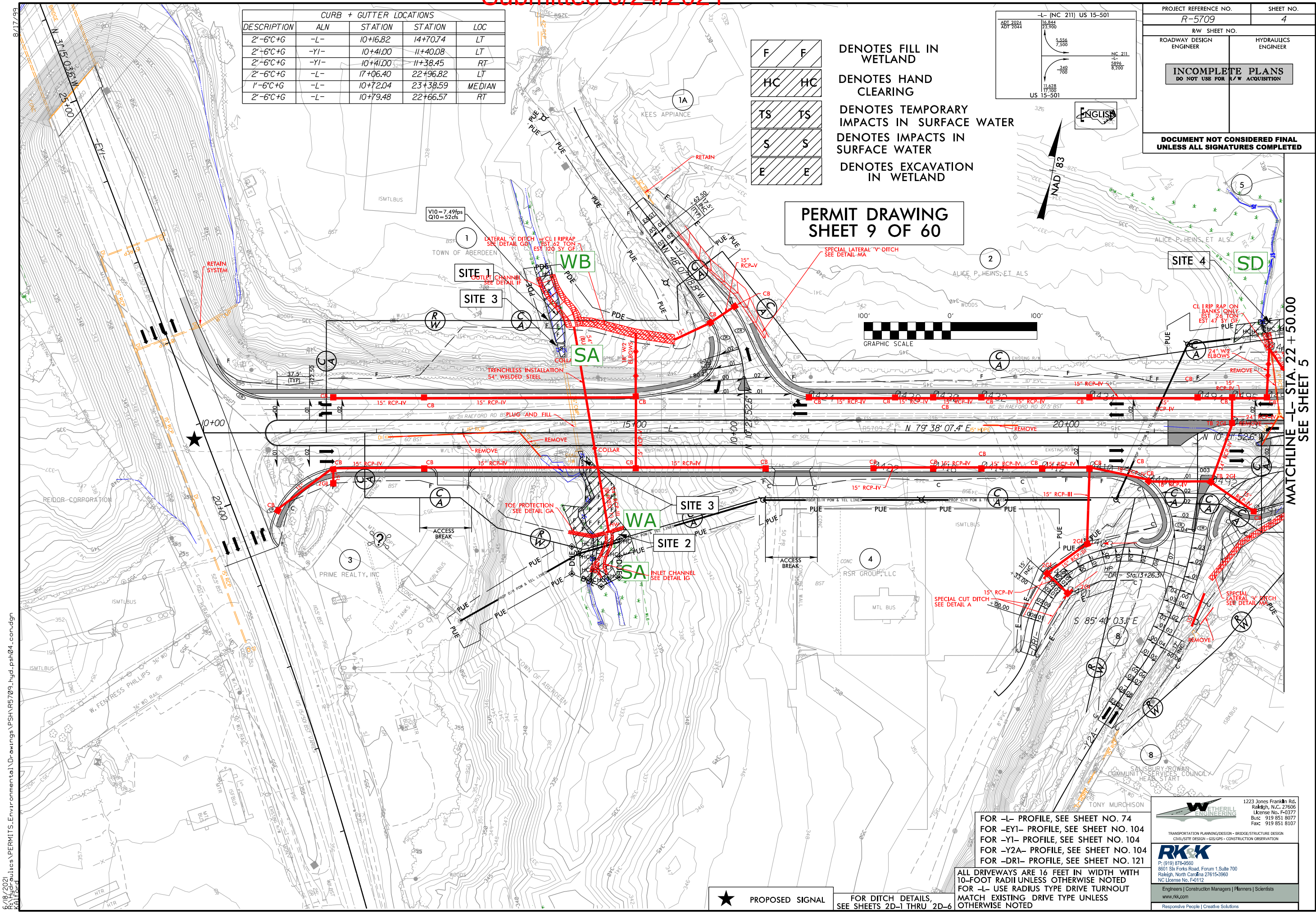
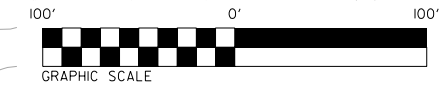
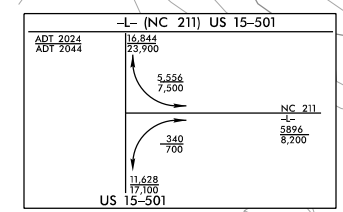
CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6"C+G	-L-	10+16.82	14+70.74	LT
2'-6"C+G	-Y1-	10+41.00	11+40.08	LT
2'-6"C+G	-Y1-	10+41.00	11+38.45	RT
2'-6"C+G	-L-	17+06.40	22+96.82	LT
1'-6"C+G	-L-	10+72.04	23+38.59	MEDIAN
2'-6"C+G	-L-	10+79.48	22+66.57	RT

F	F	DENOTES FILL IN WETLAND
HC	HC	
TS	TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S	S	
E	E	DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND

PERMIT DRAWING SHEET 9 OF 60

PROJECT REFERENCE NO. R-5709	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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MATCHLINE -L- STA. 22 + 50.00 SEE SHEET 5

FOR -L- PROFILE, SEE SHEET NO. 74
 FOR -Y1- PROFILE, SEE SHEET NO. 104
 FOR -Y2- PROFILE, SEE SHEET NO. 104
 FOR -DR1- PROFILE, SEE SHEET NO. 121

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
 FOR -L- USE RADIUS TYPE DRIVE TURNOUT MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

★ PROPOSED SIGNAL

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

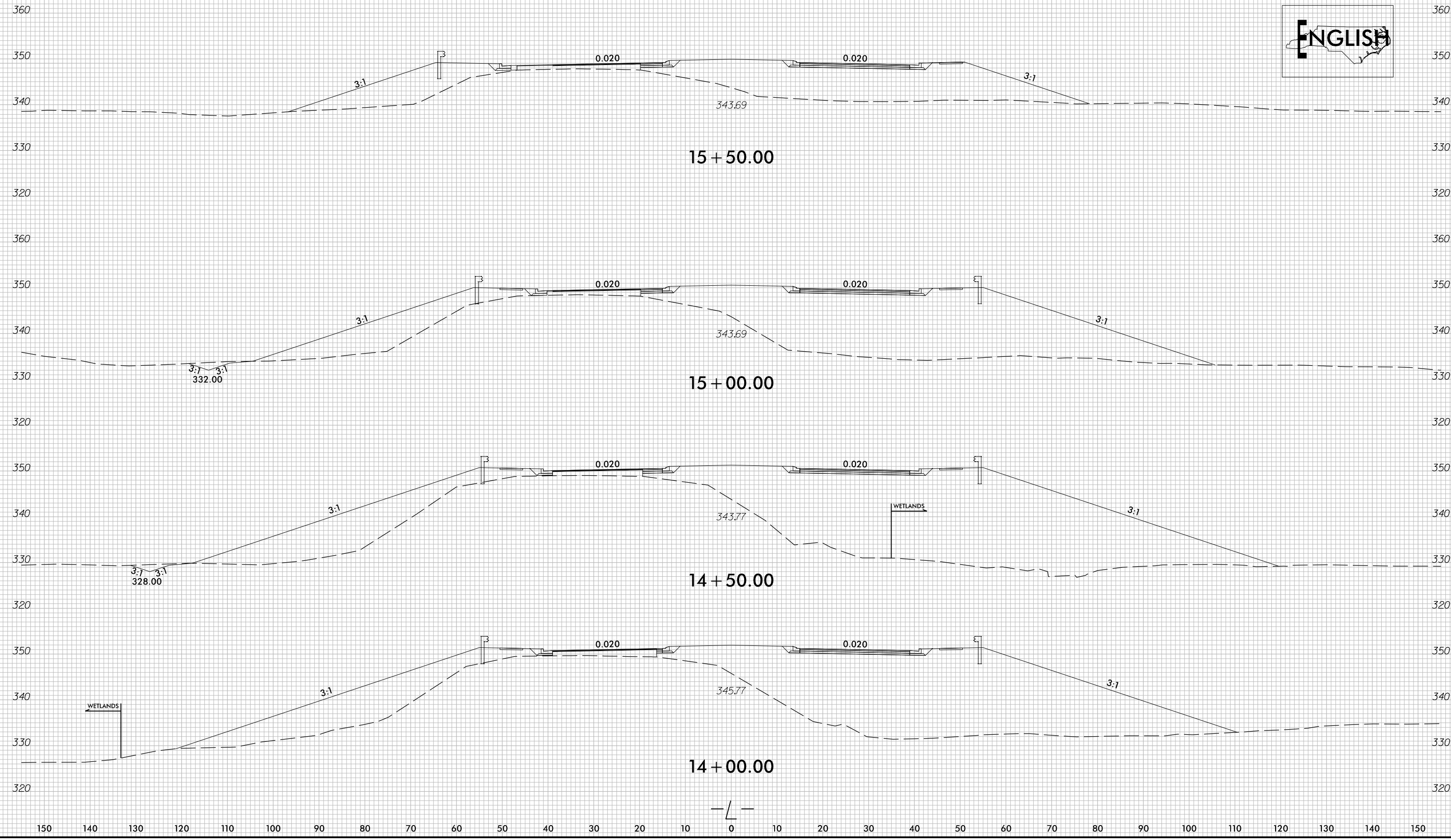
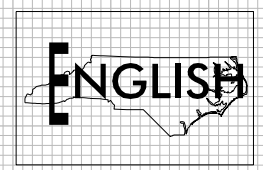
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SITE 1

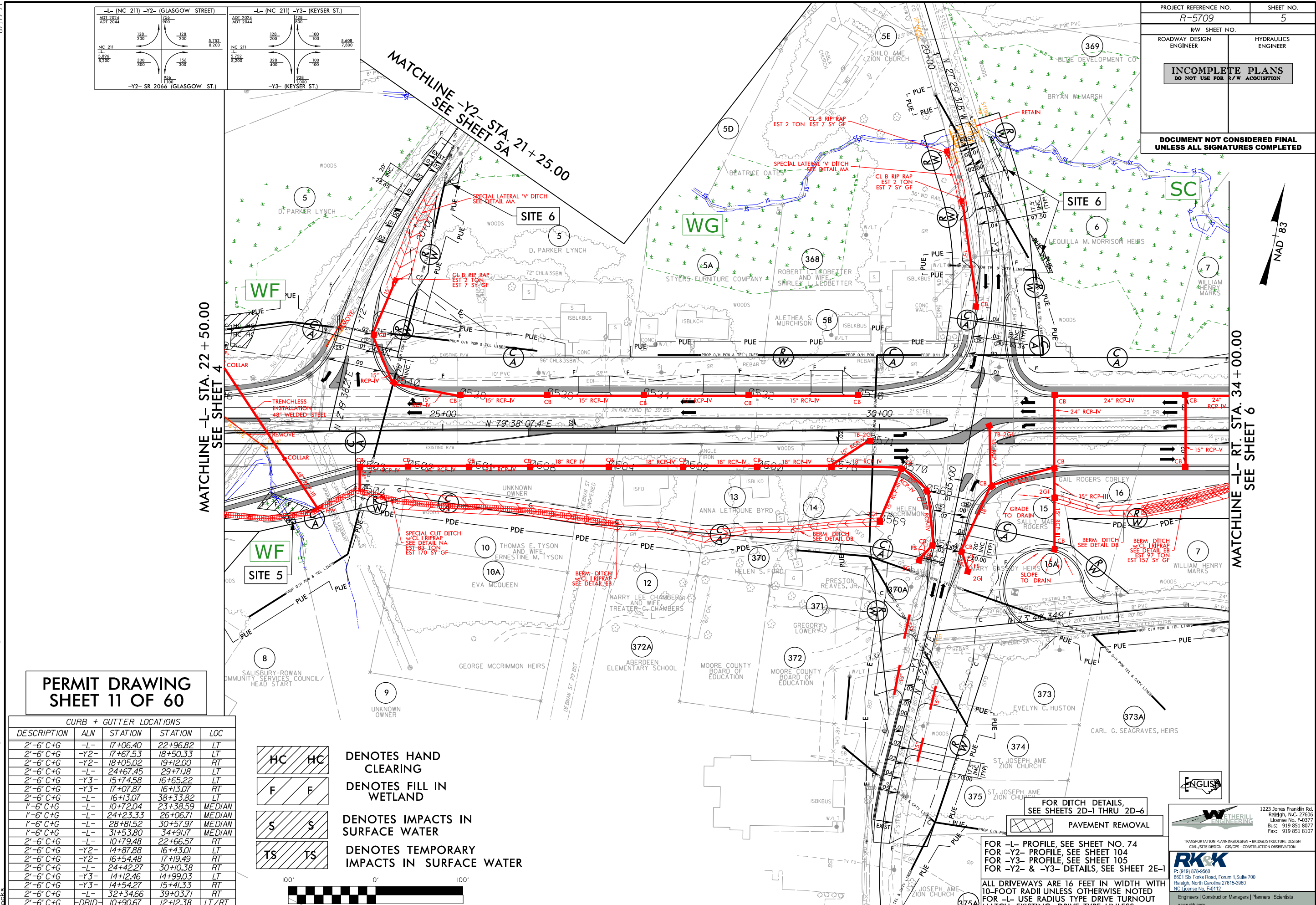
SITE 2

PERMIT DRAWING SHEET 10 OF 60



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6/18/2021
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S1 X-3

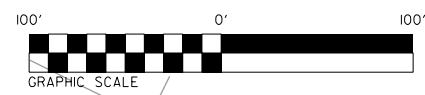
PROJECT REFERENCE NO. R-5709		SHEET NO. 5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



PERMIT DRAWING
SHEET 11 OF 60

CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C+G	-L-	17+06.40	22+96.82	LT
2'-6" C+G	-Y2-	17+67.53	18+50.33	LT
2'-6" C+G	-Y2-	18+05.02	19+12.00	RT
2'-6" C+G	-L-	24+67.45	29+71.18	LT
2'-6" C+G	-Y3-	15+74.58	16+65.22	LT
2'-6" C+G	-Y3-	17+07.87	16+13.07	RT
2'-6" C+G	-L-	16+13.07	38+33.82	LT
1'-6" C+G	-L-	10+72.04	23+38.59	MEDIAN
1'-6" C+G	-L-	24+23.33	26+06.71	MEDIAN
1'-6" C+G	-L-	28+81.52	30+57.97	MEDIAN
1'-6" C+G	-L-	31+53.80	34+91.17	MEDIAN
2'-6" C+G	-L-	10+79.48	22+66.57	RT
2'-6" C+G	-Y2-	14+87.88	16+43.01	LT
2'-6" C+G	-Y2-	16+54.48	17+19.49	RT
2'-6" C+G	-L-	24+42.27	30+10.38	RT
2'-6" C+G	-Y3-	14+12.46	14+99.03	LT
2'-6" C+G	-Y3-	14+54.27	15+41.33	RT
2'-6" C+G	-L-	32+34.66	39+03.71	RT
2'-6" C+G	-DRID-	10+90.67	12+12.38	LT/RT
VALLEY GUTTER	-Y3-	11+00.00	12+50.00	LT

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



FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NO. 74
FOR -Y2- PROFILE, SEE SHEET 104
FOR -Y3- PROFILE, SEE SHEET 105
FOR -Y2- & -Y3- DETAILS, SEE SHEET 2E-1

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
FOR -L- USE RADIUS TYPE DRIVE TURNOUT
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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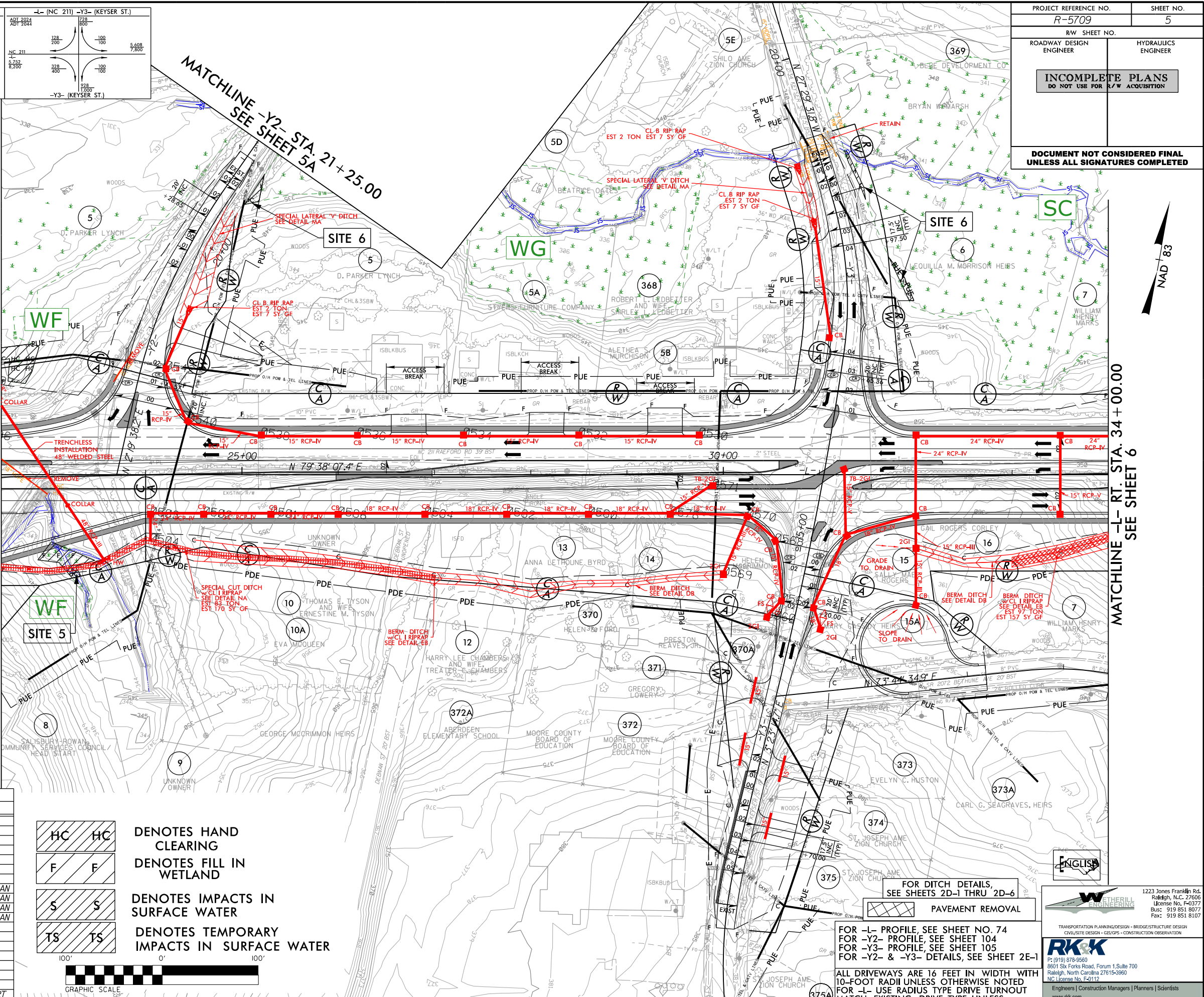
8/17/99

-L- (NC 211) -Y2- (GLASGOW STREET)		-L- (NC 211) -Y3- (KEYSER ST.)	
ADT 2024 128 200	ADT 2024 128 200	ADT 2024 128 200	ADT 2024 128 200
5,926 8,200	5,732 8,200	5,732 8,200	5,408 7,800
-Y2- SR 2066 (GLASGOW ST.)		-Y3- (KEYSER ST.)	

PROJECT REFERENCE NO. R-5709	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 22 + 50.00
SEE SHEET 4

MATCHLINE -L- RT. STA. 34 + 00.00
SEE SHEET 6



**PERMIT DRAWING
SHEET 12 OF 60**

CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C+G	-L-	17+06.40	22+96.82	LT
2'-6" C+G	-Y2-	17+67.53	18+50.33	LT
2'-6" C+G	-Y2-	18+05.02	19+12.00	RT
2'-6" C+G	-L-	24+67.45	29+71.18	LT
2'-6" C+G	-Y3-	15+74.58	16+65.22	LT
2'-6" C+G	-Y3-	17+07.87	16+13.07	RT
2'-6" C+G	-L-	16+13.07	38+33.82	LT
1'-6" C+G	-L-	10+72.04	23+38.59	MEDIAN
1'-6" C+G	-L-	24+23.33	26+06.71	MEDIAN
1'-6" C+G	-L-	28+81.52	30+57.97	MEDIAN
1'-6" C+G	-L-	31+53.80	34+91.7	MEDIAN
2'-6" C+G	-L-	10+79.48	22+66.57	RT
2'-6" C+G	-Y2-	14+87.88	16+43.01	LT
2'-6" C+G	-Y2-	16+54.48	17+19.49	RT
2'-6" C+G	-L-	24+42.27	30+10.38	RT
2'-6" C+G	-Y3-	14+12.46	14+99.03	LT
2'-6" C+G	-Y3-	14+54.27	15+41.33	RT
2'-6" C+G	-L-	32+34.66	39+03.71	RT
2'-6" C+G	-DRID-	10+90.67	12+12.38	LT/RT
VALLEY GUTTER	-Y3-	11+00.00	12+50.00	LT

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



FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NO. 74
FOR -Y2- PROFILE, SEE SHEET 104
FOR -Y3- PROFILE, SEE SHEET 105
FOR -Y2- & -Y3- DETAILS, SEE SHEET 2E-1

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
FOR -L- USE RADIUS TYPE DRIVE TURNOUT
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

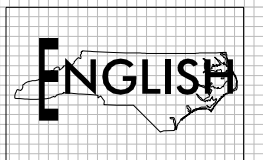
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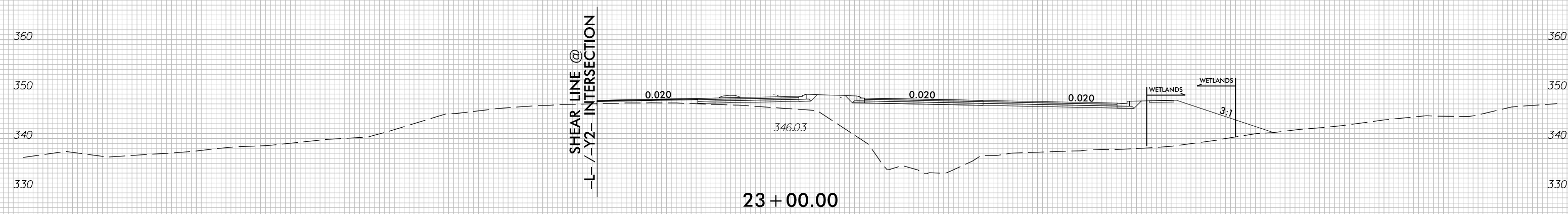
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PERMIT DRAWING
SHEET 13 OF 60



SITE 4

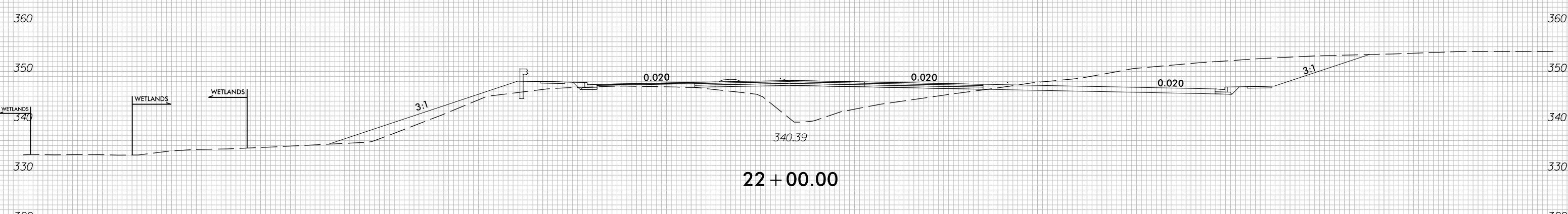
SITE 5



23 + 00.00



22 + 50.00

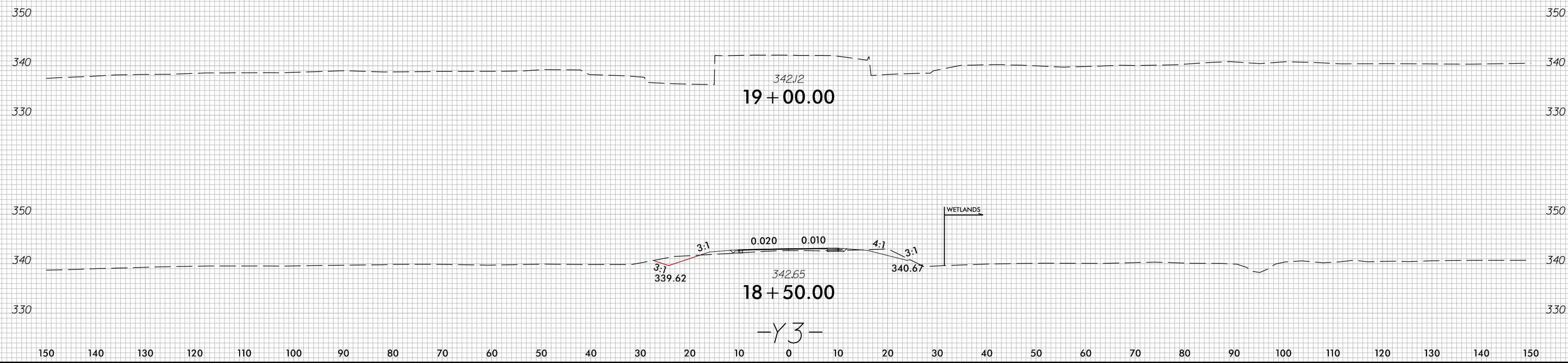
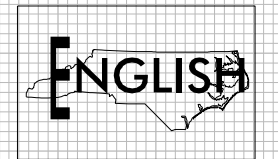


22 + 00.00

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PERMIT DRAWING
SHEET 14 OF 60

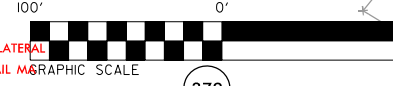
SITE 6



PROJECT REFERENCE NO. R-5709	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

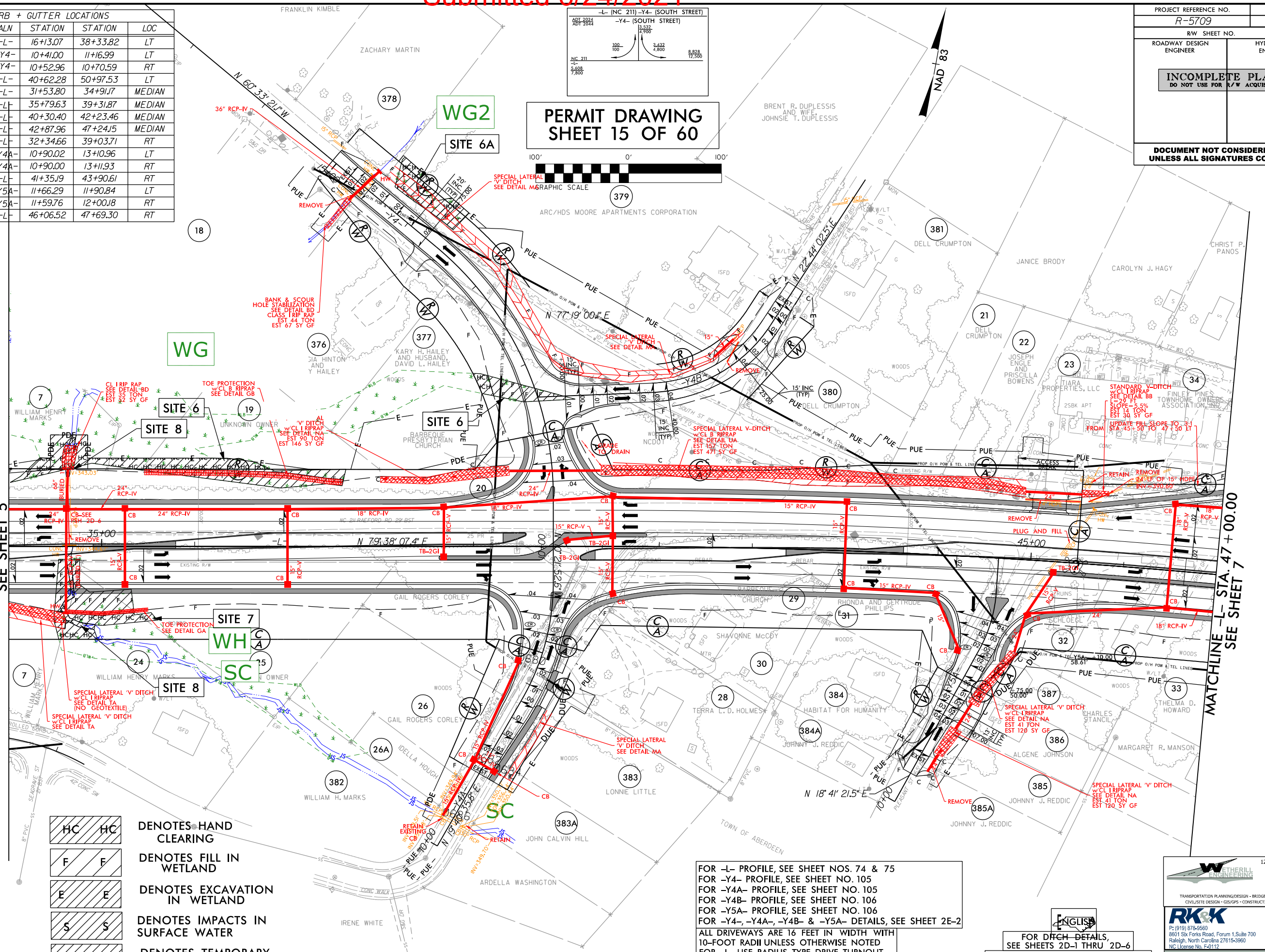
CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C+G	-L-	16+13.07	38+33.82	LT
2'-6" C+G	-Y4-	10+41.00	11+16.99	LT
2'-6" C+G	-Y4-	10+52.96	10+70.59	RT
2'-6" C+G	-L-	40+62.28	50+97.53	LT
1'-6" C+G	-L-	31+53.80	34+91.17	MEDIAN
1'-6" C+G	-L-	35+79.63	39+31.87	MEDIAN
1'-6" C+G	-L-	40+30.40	42+23.46	MEDIAN
1'-6" C+G	-L-	42+87.96	47+24.15	MEDIAN
2'-6" C+G	-L-	32+34.66	39+03.71	RT
2'-6" C+G	-Y4A-	10+90.02	13+10.96	LT
2'-6" C+G	-Y4A-	10+90.00	13+11.93	RT
2'-6" C+G	-L-	41+35.19	43+90.61	RT
2'-6" C+G	-Y5A-	11+66.29	11+90.84	LT
2'-6" C+G	-Y5A-	11+59.76	12+00.18	RT
2'-6" C+G	-L-	46+06.52	47+69.30	RT

PERMIT DRAWING SHEET 15 OF 60



MATCHLINE -L- STA. 34 + 00.00 SEE SHEET 5

MATCHLINE -L- STA. 47 + 00.00 SEE SHEET 7



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

FOR -L- PROFILE, SEE SHEET NOS. 74 & 75
 FOR -Y4- PROFILE, SEE SHEET NO. 105
 FOR -Y4A- PROFILE, SEE SHEET NO. 105
 FOR -Y4B- PROFILE, SEE SHEET NO. 106
 FOR -Y5A- PROFILE, SEE SHEET NO. 106
 FOR -Y4-, -Y4A-, -Y4B- & -Y5A- DETAILS, SEE SHEET 2E-2
 ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
 FOR -L- USE RADIUS TYPE DRIVE TURNOUT
 MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6
 PAVEMENT REMOVAL

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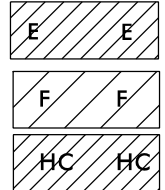
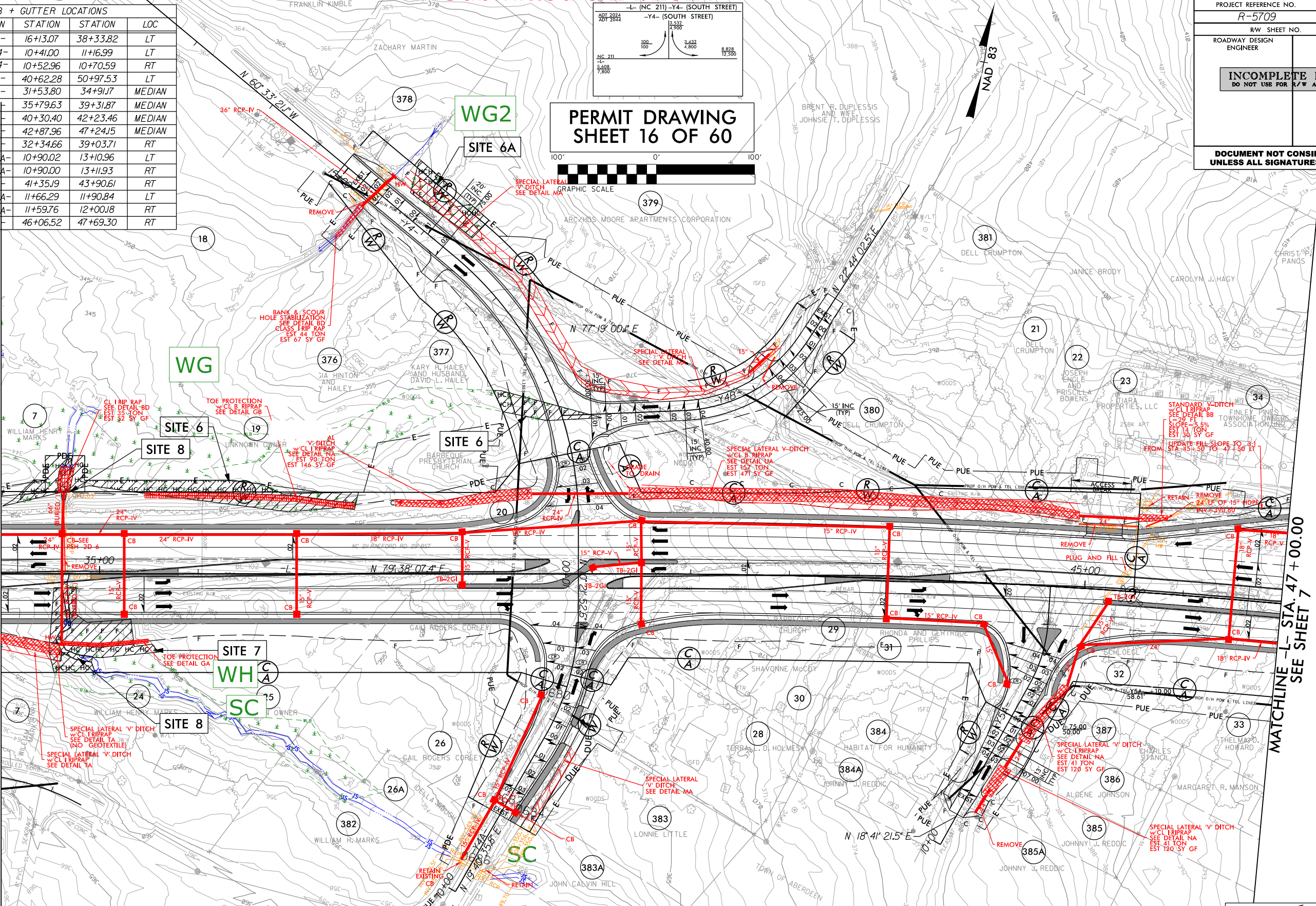
CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C+G	-L-	16+13.07	38+33.82	LT
2'-6" C+G	-Y4-	10+41.00	11+16.99	LT
2'-6" C+G	-Y4-	10+52.96	10+70.59	RT
2'-6" C+G	-L-	40+62.28	50+97.53	LT
1'-6" C+G	-L-	31+53.80	34+91.17	MEDIAN
1'-6" C+G	-L-	35+79.63	39+31.87	MEDIAN
1'-6" C+G	-L-	40+30.40	42+23.46	MEDIAN
1'-6" C+G	-L-	42+87.96	47+24.15	MEDIAN
2'-6" C+G	-L-	32+34.66	39+03.71	RT
2'-6" C+G	-Y4A-	10+90.02	13+10.96	LT
2'-6" C+G	-Y4A-	10+90.00	13+11.93	RT
2'-6" C+G	-L-	41+35.19	43+90.61	RT
2'-6" C+G	-Y5A-	11+66.29	11+90.84	LT
2'-6" C+G	-Y5A-	11+59.76	12+00.18	RT
2'-6" C+G	-L-	46+06.52	47+69.30	RT

PERMIT DRAWING
SHEET 16 OF 60

PROJECT REFERENCE NO. R-5709	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 34 + 00.00
SEE SHEET 5

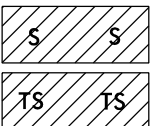
MATCHLINE -L- STA. 47 + 00.00
SEE SHEET 7



E DENOTES EXCAVATION IN WETLAND

F DENOTES FILL IN WETLAND

HC DENOTES HAND CLEARING



S DENOTES IMPACTS IN SURFACE WATER

TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR -L- PROFILE, SEE SHEET NOS. 74 & 75
 FOR -Y4- PROFILE, SEE SHEET NO. 105
 FOR -Y4B- PROFILE, SEE SHEET NO. 106
 FOR -Y5A- PROFILE, SEE SHEET NO. 106
 FOR -Y4-, -Y4A-, -Y4B- & -Y5A- DETAILS, SEE SHEET 2E-2
 ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
 FOR -L- USE RADIUS TYPE DRIVE TURNOUT
 MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

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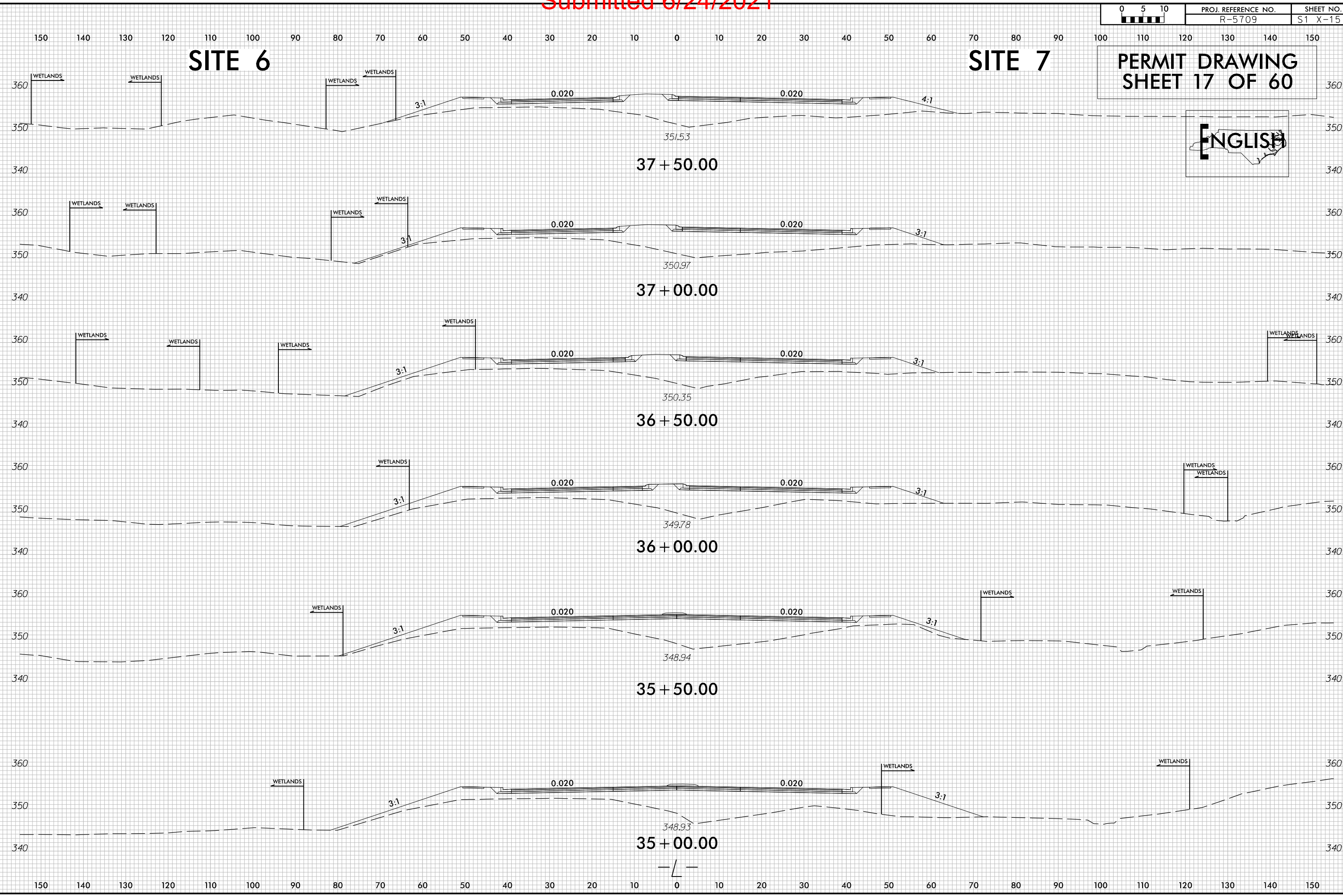
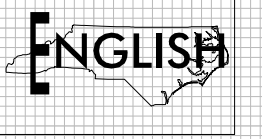
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SITE 6

SITE 7

PERMIT DRAWING SHEET 17 OF 60

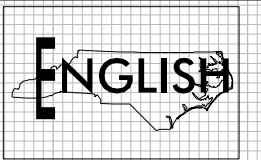


6/18/2021
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6/23/16

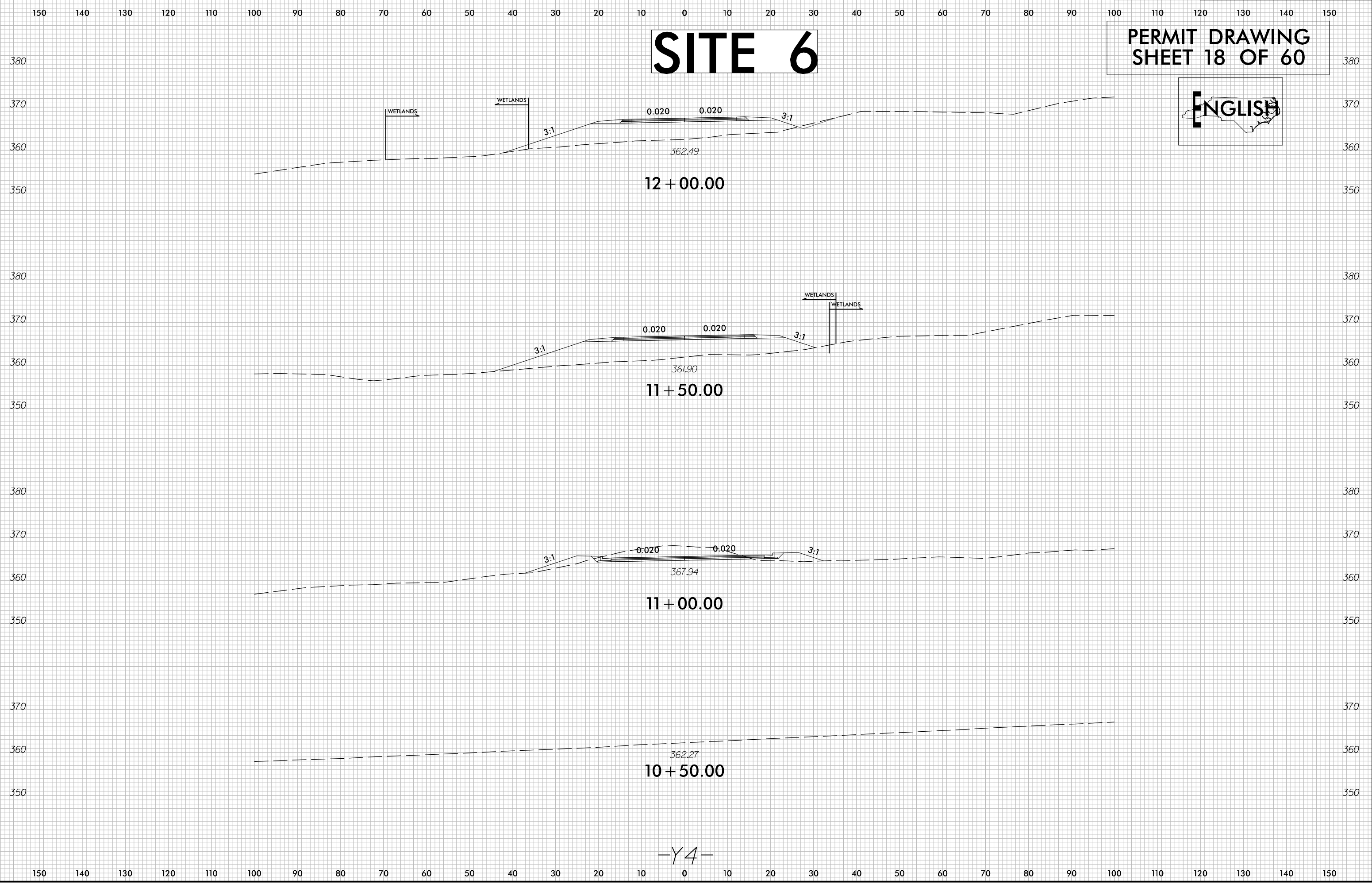
SITE 6

PERMIT DRAWING
SHEET 18 OF 60



6/23/16

4/26/2021
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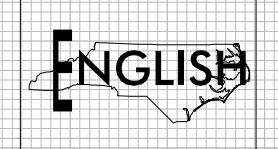
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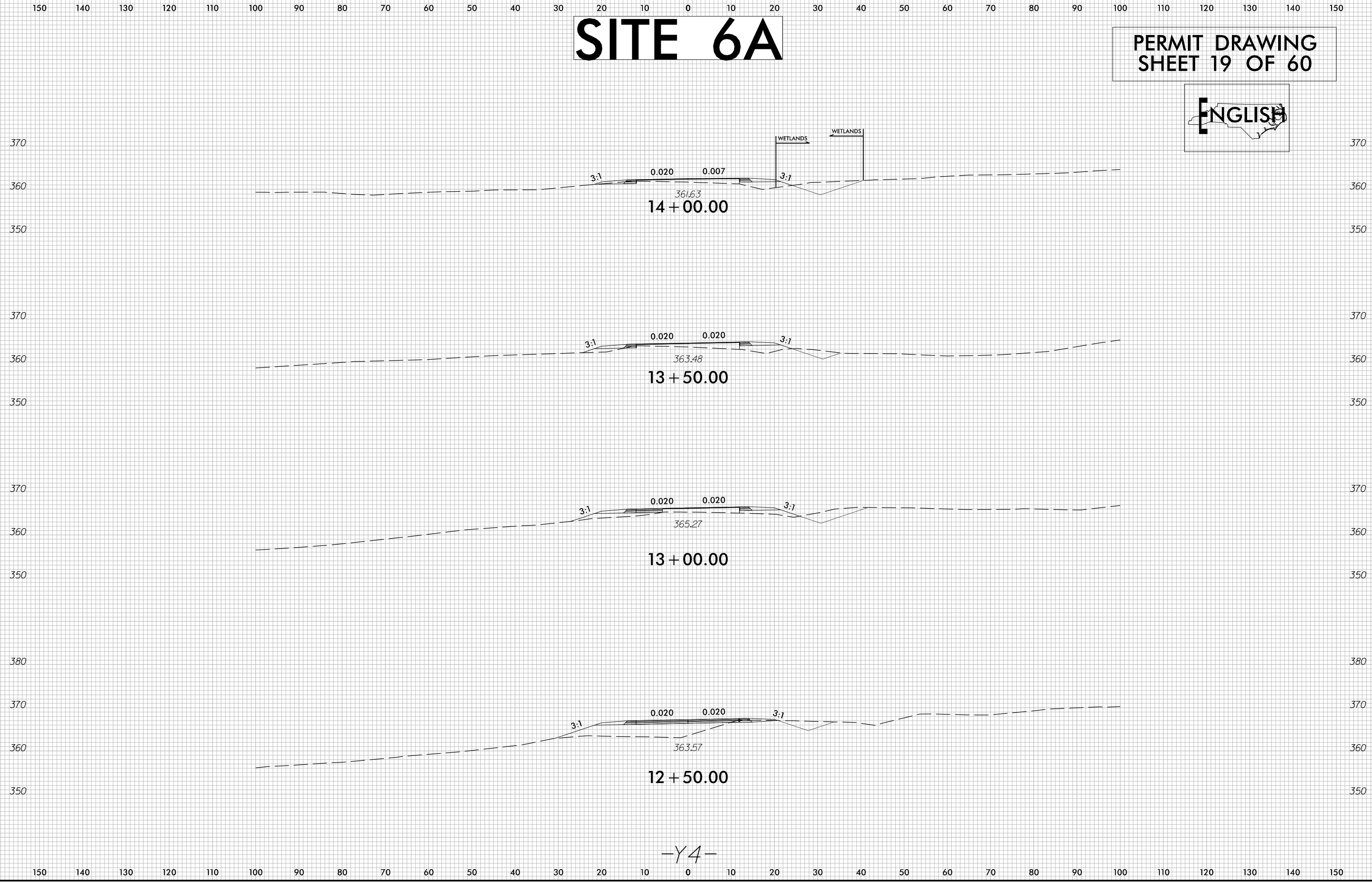
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R-5709	S1 X-168

SITE 6A

PERMIT DRAWING
SHEET 19 OF 60



6/23/16

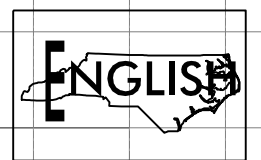


-Y4-

4/26/2021
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USER: jbr

SITE 8
-L- STA. 34 + 62

PERMIT DRAWING
SHEET 20 OF 60



355

3:1 (skewed 88.4*)

EXISTING ROADWAY

350

66" RCP-IV (BURIED 1')
(length = 152')

345

NWS = 344.9'

PROPOSED ELEVATION
= 345.20'

2.21%

NATURAL GROUND

PROPOSED ELEVATION
= 341.85'

340

-100

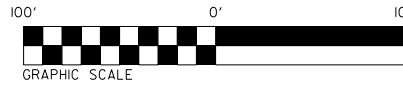
CL

100

6/23/16
4/26/2021
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CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
1'-6" C+G	-L-	155+04.61	160+29.61	MEDIAN
1'-6" C+G	-L-	161+18.55	163+93.98	MED.LT
1'-6" C+G	-L-	161+18.55	163+93.98	MED.RT
SBG	-L-	165+23.91	169+57.10	RT

PERMIT DRAWING
SHEET 21 OF 60



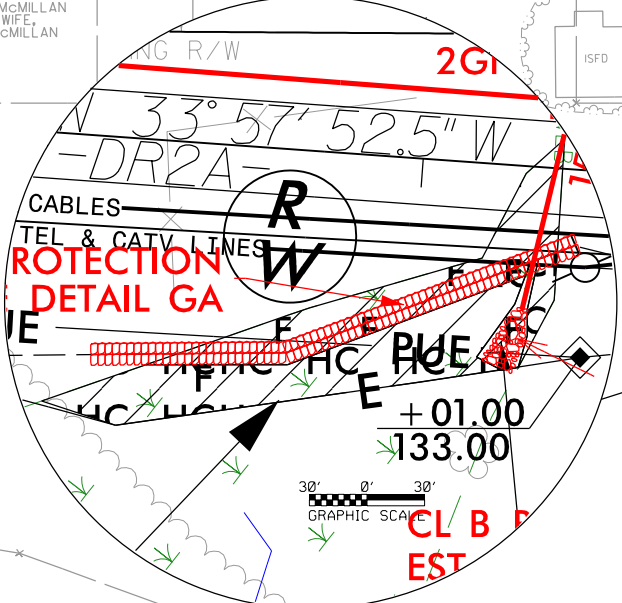
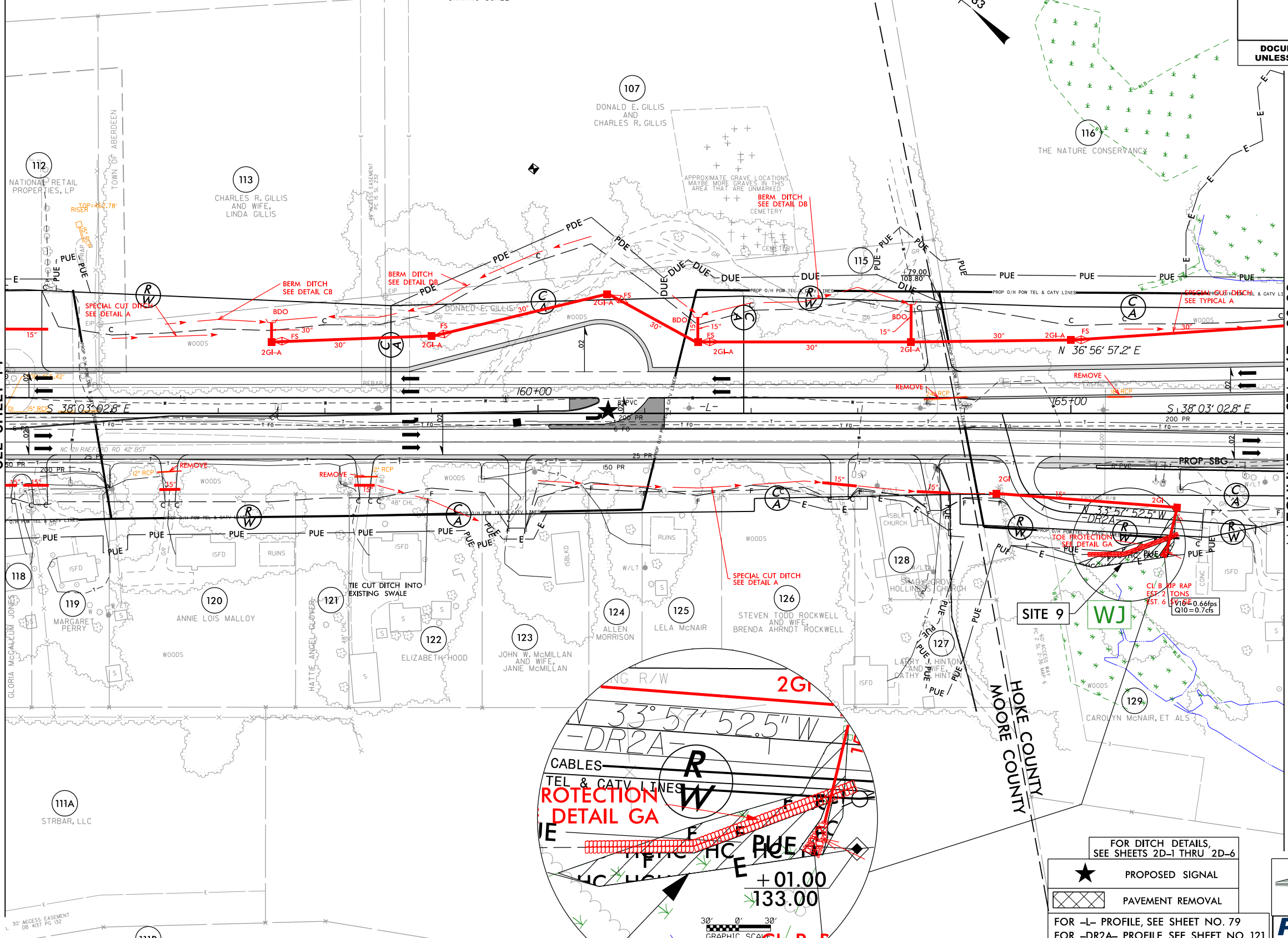
HC HC DENOTES HAND CLEARING

F F DENOTES FILL IN WETLAND

PROJECT REFERENCE NO. R-5709	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 155 + 00.00
SEE SHEET 14

MATCHLINE -L- STA. 167 + 00.00
SEE SHEET 16



- ★ PROPOSED SIGNAL
- ☒ PAVEMENT REMOVAL
- FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6
- FOR -L- PROFILE, SEE SHEET NO. 79
- FOR -DR2A- PROFILE, SEE SHEET NO. 121
- ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
- MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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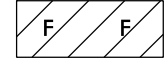
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6/18/2021
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CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
1'-6" C+G	-L-	155+04.61	160+29.61	MEDIAN
1'-6" C+G	-L-	161+18.55	163+93.98	MED.LT
1'-6" C+G	-L-	161+18.55	163+93.98	MED.RT
SBG	-L-	165+23.91	169+57.10	RT

PERMIT DRAWING
SHEET 22 OF 60



HC HC DENOTES HAND CLEARING



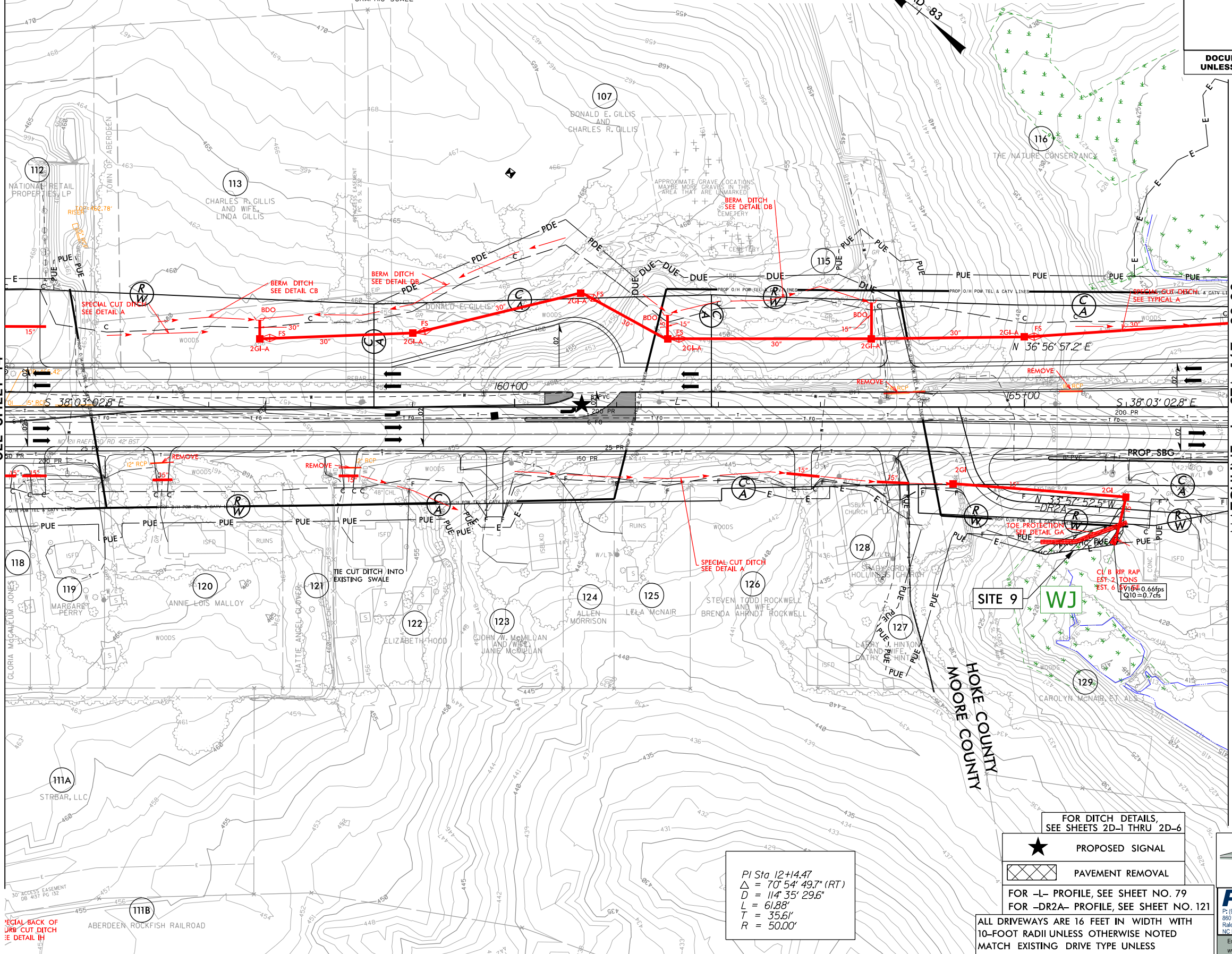
F F DENOTES FILL IN WETLAND



PROJECT REFERENCE NO. R-5709	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 155 + 00.00
SEE SHEET 14

MATCHLINE -L- STA. 167 + 00.00
SEE SHEET 16



PI Sta 12+14.47
 $\Delta = 70^\circ 54' 49.7" (RT)$
 $D = 114' 35' 29.6"$
 $L = 61.88'$
 $T = 35.61'$
 $R = 50.00'$

★ PROPOSED SIGNAL

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NO. 79
 FOR -DR2A- PROFILE, SEE SHEET NO. 121

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
 MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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 6/18/2021
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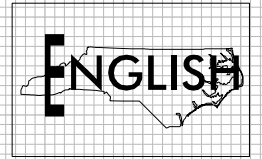
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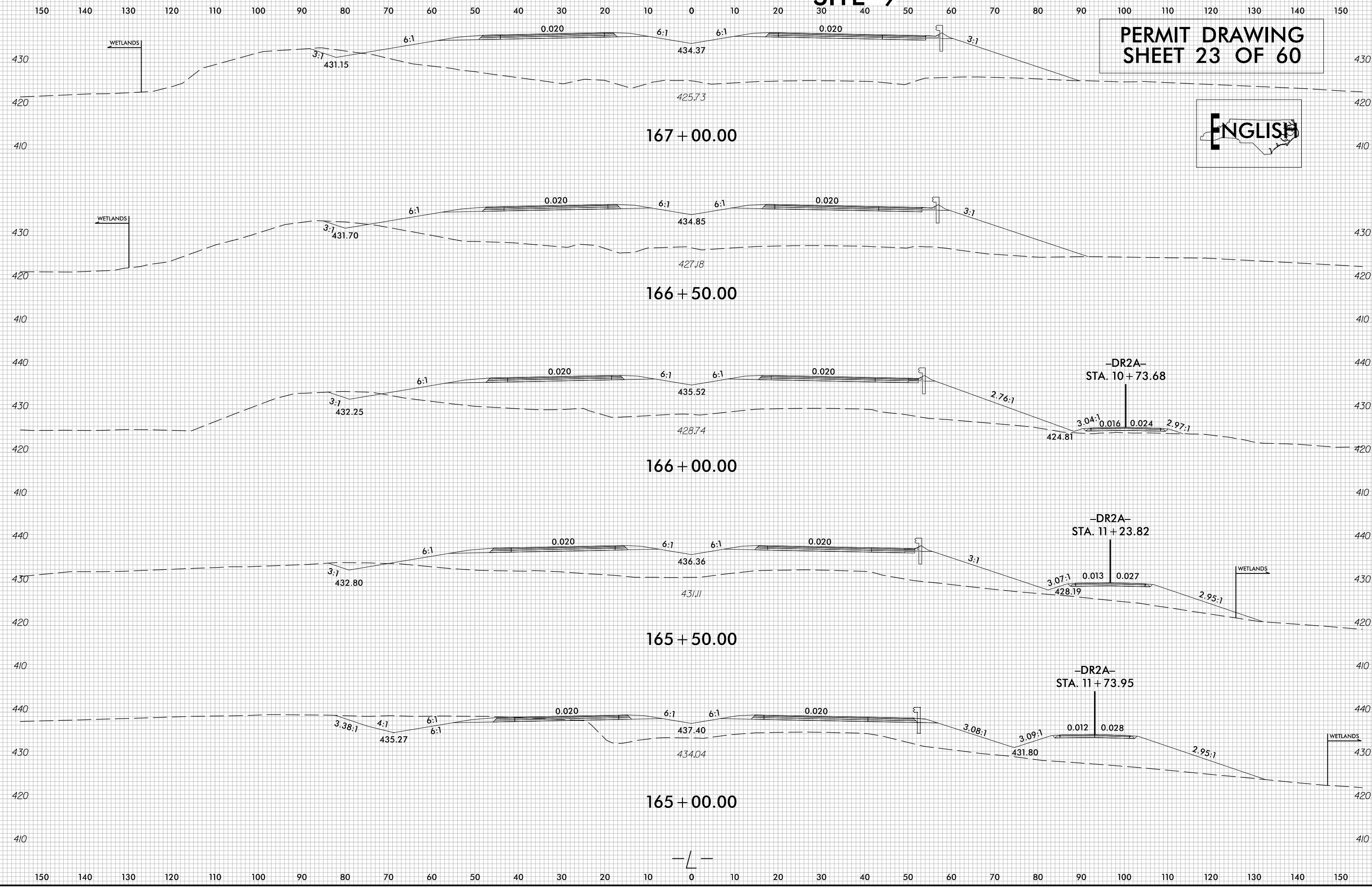
PROJ. REFERENCE NO.
R-5709

SHEET NO.
S1 X-79

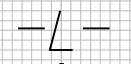
PERMIT DRAWING SHEET 23 OF 60



6/23/16



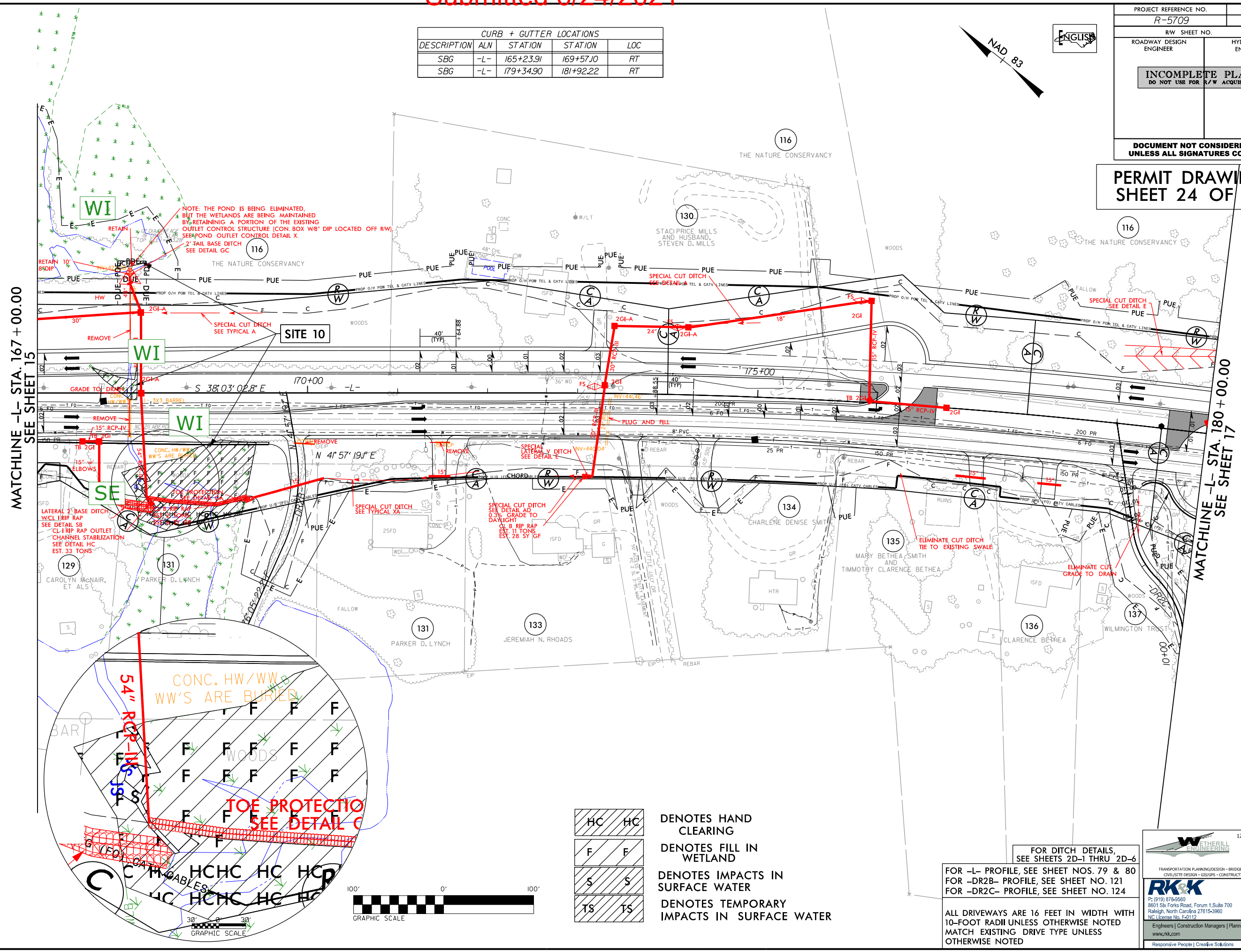
6/18/2021
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JAMES BROWN



PROJECT REFERENCE NO. R-5709	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

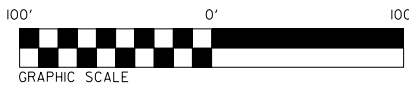
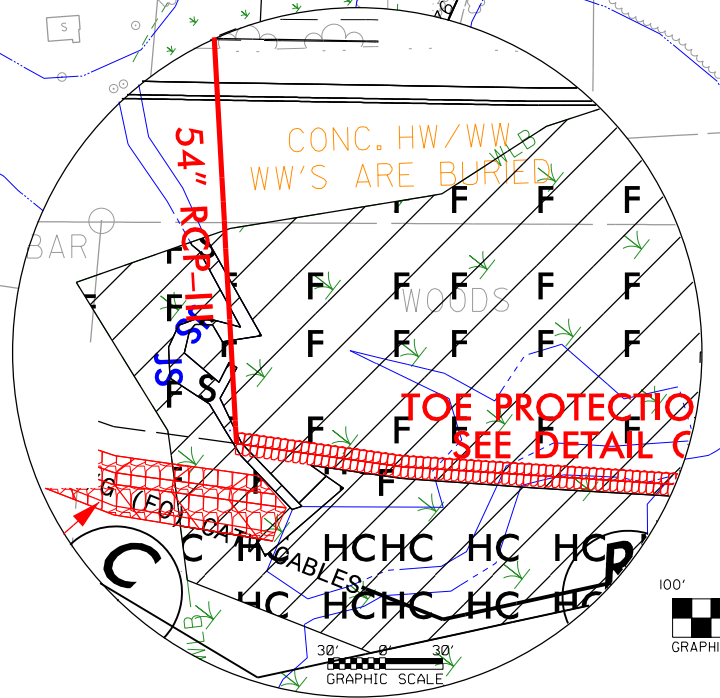
PERMIT DRAWING
SHEET 24 OF 60

CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	165+23.91	169+57.10	RT
SBG	-L-	179+34.90	181+92.22	RT



MATCHLINE -L- STA. 167 + 00.00
SEE SHEET 15

MATCHLINE -L- STA. 180 + 00.00
SEE SHEET 17



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

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6
 FOR -L- PROFILE, SEE SHEET NOS. 79 & 80
 FOR -DR2B- PROFILE, SEE SHEET NO. 121
 FOR -DR2C- PROFILE, SEE SHEET NO. 124

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
 MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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 Raleigh, N.C. 27606
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 Bus: 919 851 8077
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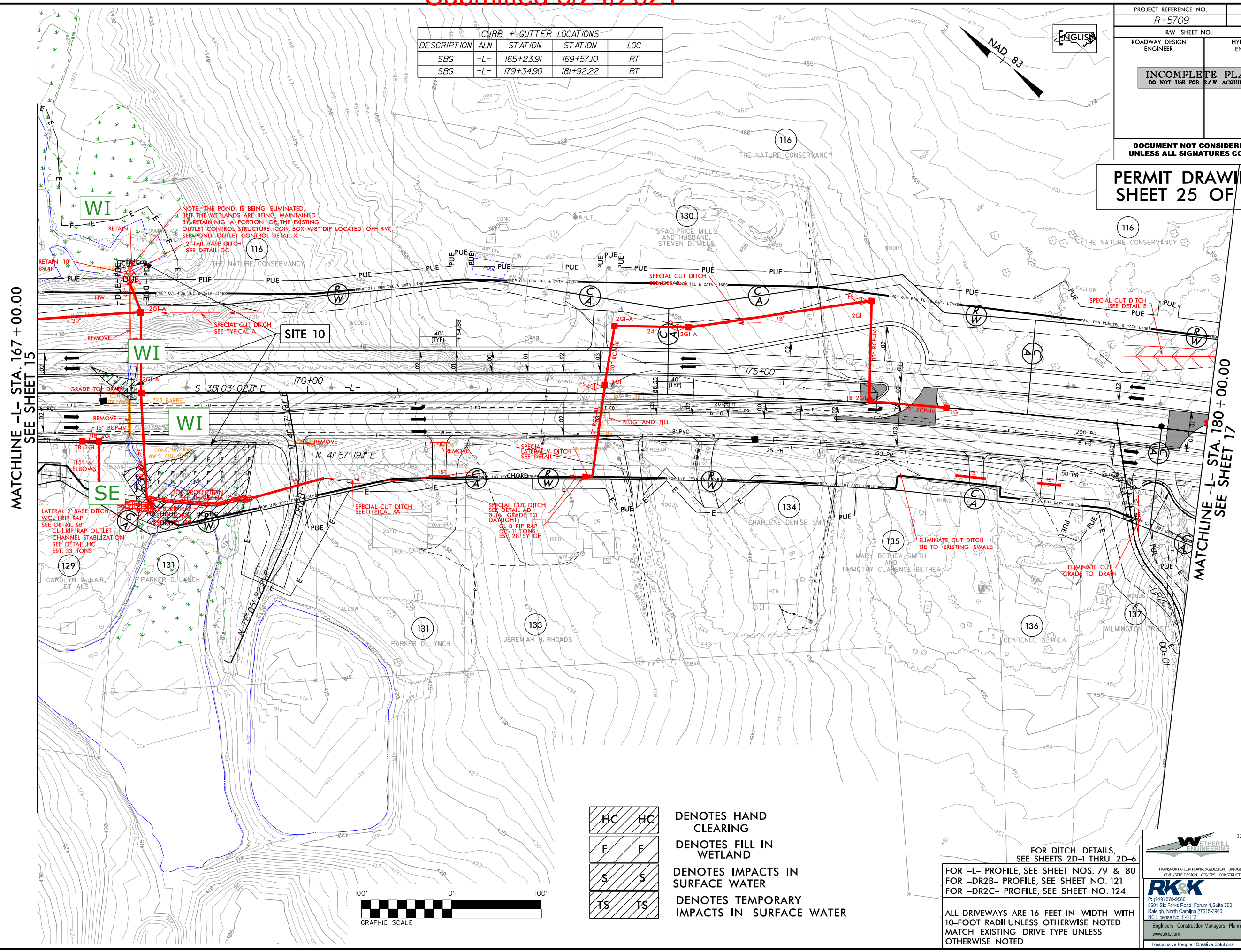
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PROJECT REFERENCE NO. R-5709	SHEET NO. 16
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 25 OF 60

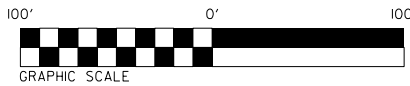
CURB + GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	165+23.91	169+57.10	RT
SBG	-L-	179+34.90	181+92.22	RT



MATCHLINE -L- STA. 167 + 00.00
SEE SHEET 15

MATCHLINE -L- STA. 180 + 00.00
SEE SHEET 17

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



FOR DITCH DETAILS,
SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NOS. 79 & 80
FOR -DR2B- PROFILE, SEE SHEET NO. 121
FOR -DR2C- PROFILE, SEE SHEET NO. 124

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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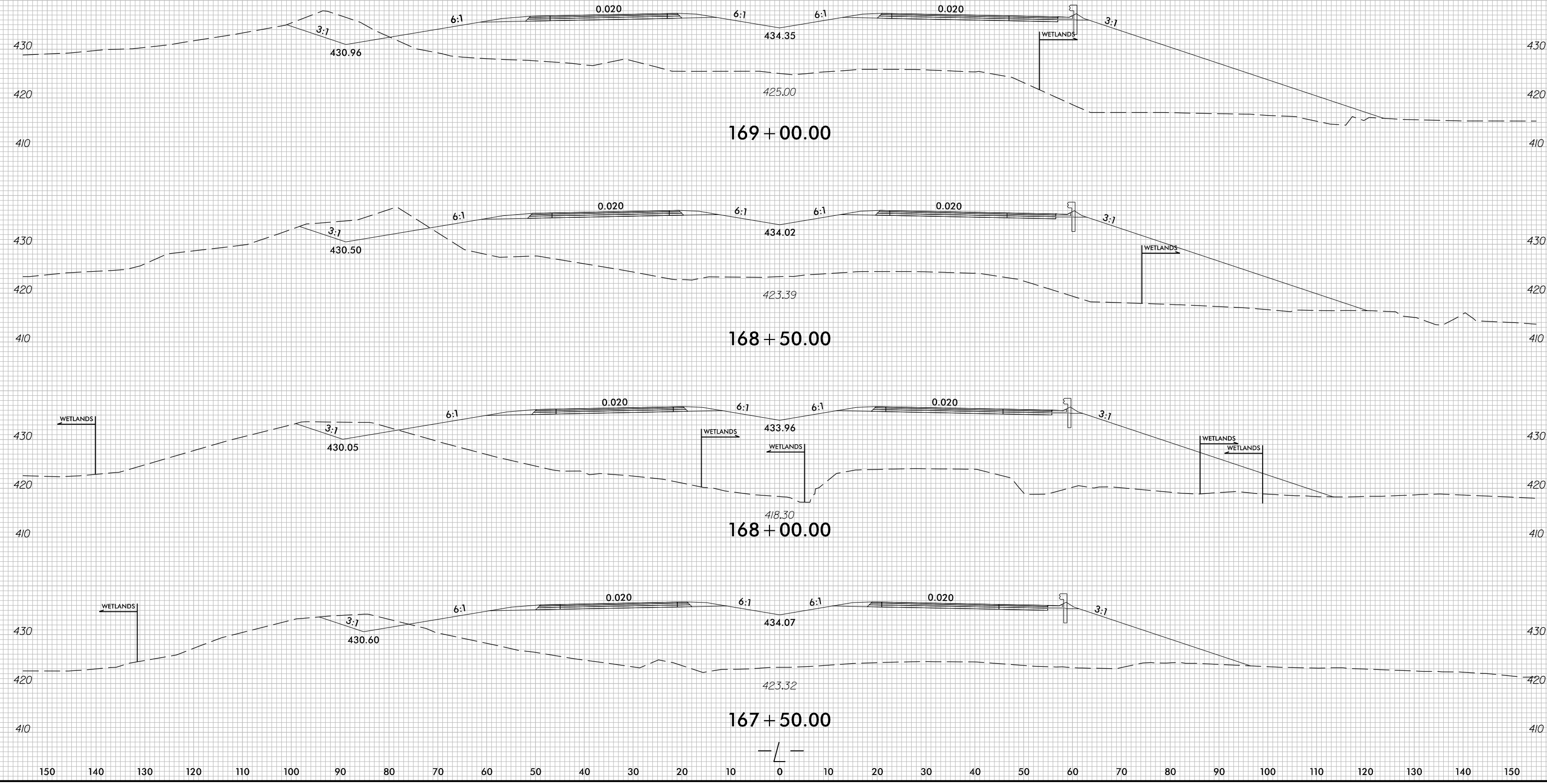
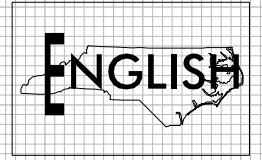
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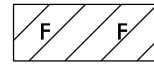
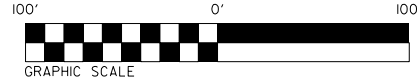
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PERMIT DRAWING SHEET 26 OF 60



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S1 X-80

PERMIT DRAWING
SHEET 27 OF 60



DENOTES FILL IN WETLAND

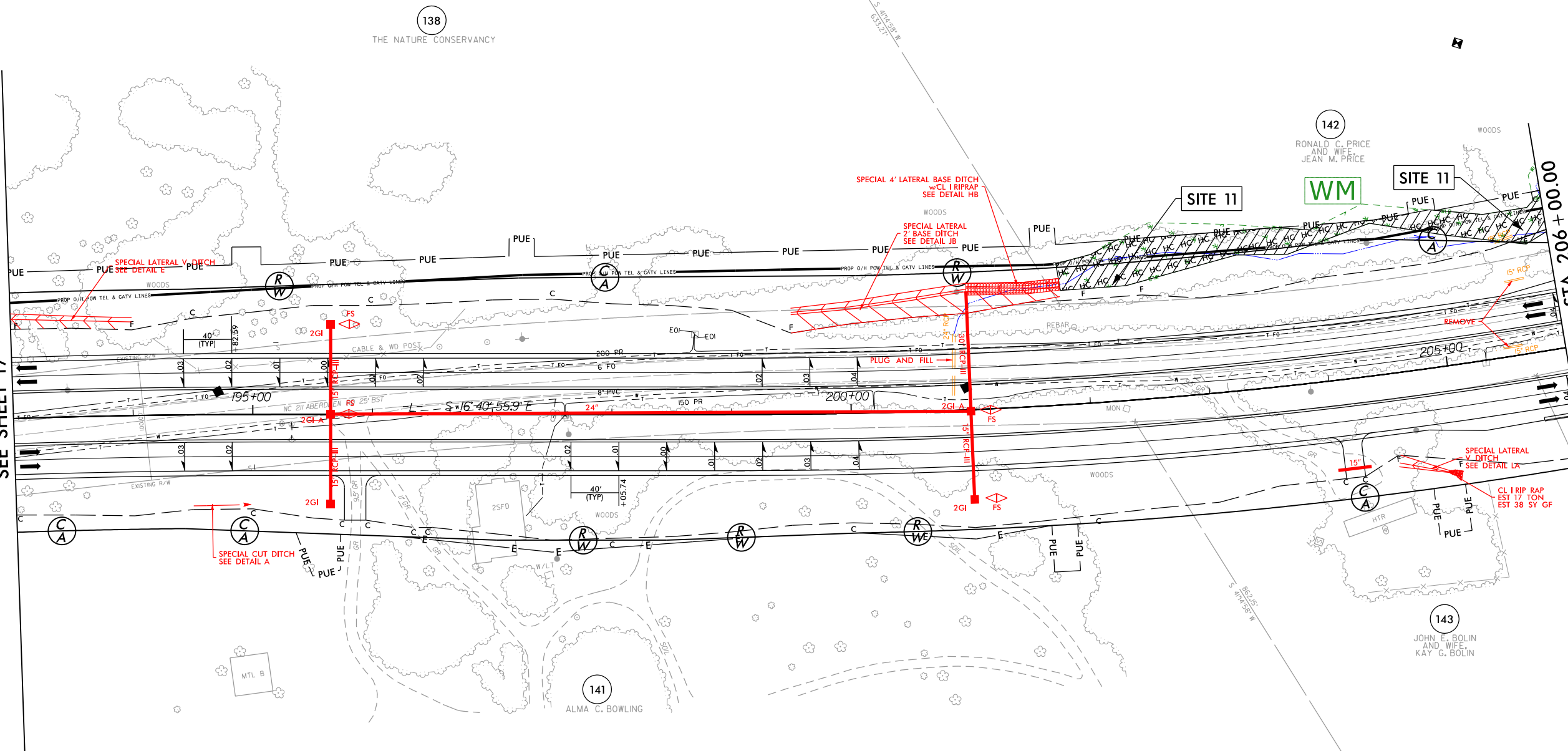


DENOTES HAND CLEARING

PROJECT REFERENCE NO. R-5709	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 193 + 00.00
SEE SHEET 17

MATCHLINE -L- STA. 206 + 00.00
SEE SHEET 19



CURB + GUTTER LOCATION				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	205+73.14	206+00.00	RT

FOR DITCH DETAILS,
SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NOS. 80 & 81

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

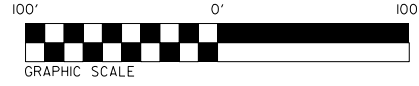
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PERMIT DRAWING
SHEET 28 OF 60



DENOTES FILL IN WETLAND

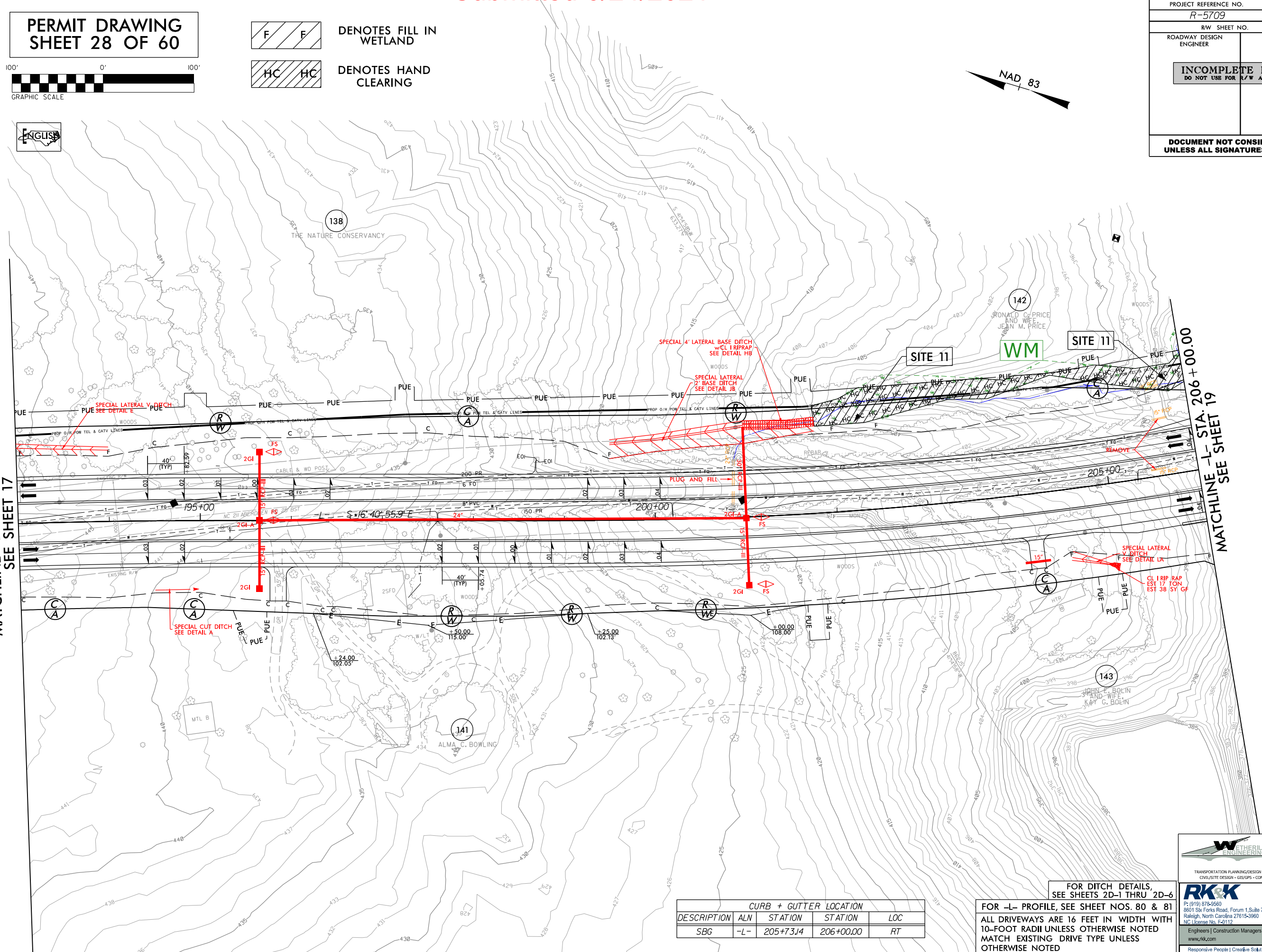


DENOTES HAND CLEARING

PROJECT REFERENCE NO. R-5709	SHEET NO. 18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 193 + 00.00
SEE SHEET 17

MATCHLINE -L- STA. 206 + 00.00
SEE SHEET 19



CURB + GUTTER LOCATION				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	205+73.14	206+00.00	RT

FOR DITCH DETAILS,
SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NOS. 80 & 81

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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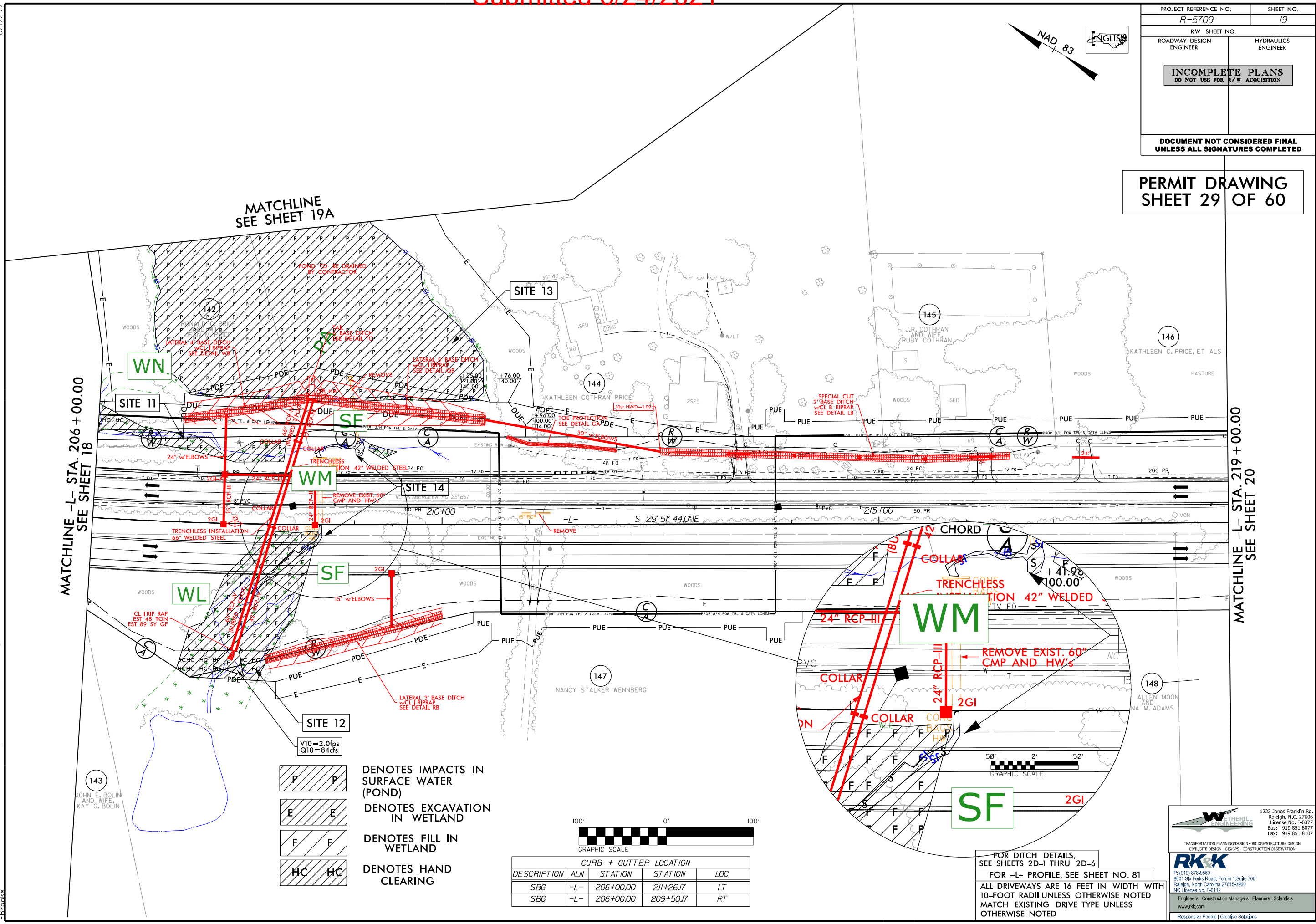
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PROJECT REFERENCE NO. R-5709	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING SHEET 29 OF 60



MATCHLINE -L- STA. 206 + 00.00
SEE SHEET 18

MATCHLINE -L- STA. 219 + 00.00
SEE SHEET 20

- DENOTES IMPACTS IN SURFACE WATER (POND)
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING



CURB + GUTTER LOCATION				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	206+00.00	211+26.17	LT
SBG	-L-	206+00.00	209+50.17	RT

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6
FOR -L- PROFILE, SEE SHEET NO. 81
ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

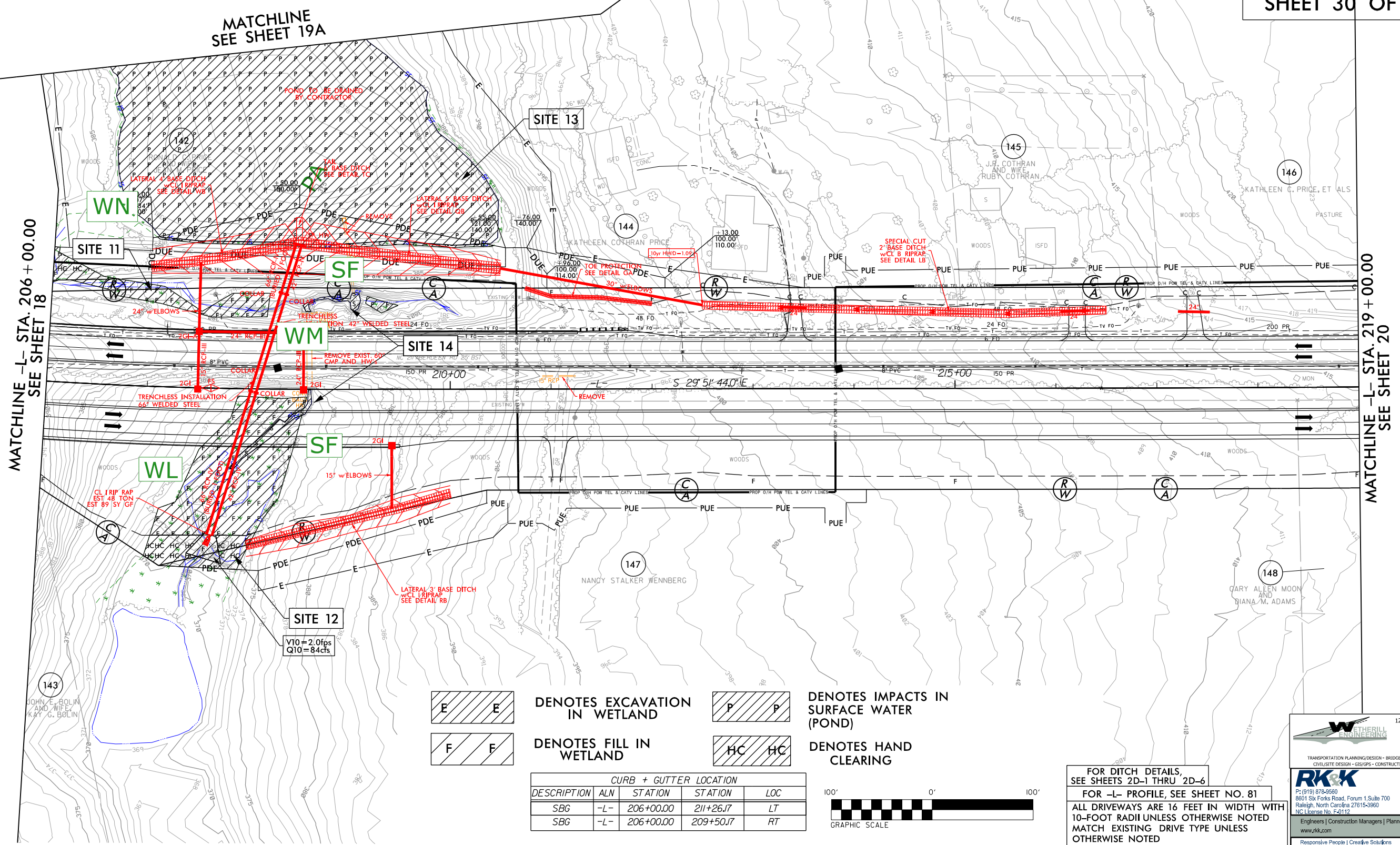
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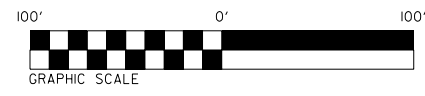
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 30 OF 60



- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER (POND)
- DENOTES HAND CLEARING

	CURB + GUTTER LOCATION			
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	206+00.00	211+26.17	LT
SBG	-L-	206+00.00	209+50.17	RT



FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6
FOR -L- PROFILE, SEE SHEET NO. 81
ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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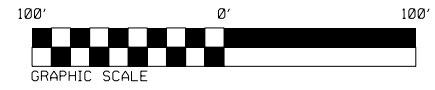
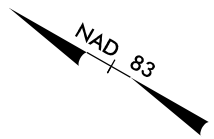
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DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 31 OF 60



PROJECT REFERENCE NO. R-5709	SHEET NO. 19A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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N 32°23'36" W
489.81'

N 32°23'36" W
976.83'

142
RONALD C. PRICE
AND WIFE
JEAN M. PRICE
DB 410 PG 776

144
KATHLEEN COTHRAN PRICE
DB 200 PG 65

MATCHLINE
SEE SHEET 18

MATCHLINE
SEE SHEET 19

MATCHLINE
SEE SHEET 18

MATCHLINE
SEE SHEET 19

PODS TO BE OBTAINED BY CONTRACTOR

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NC License No. F-0112

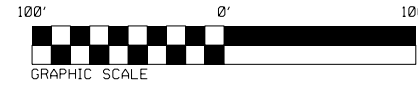
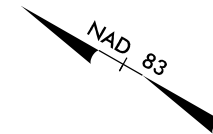
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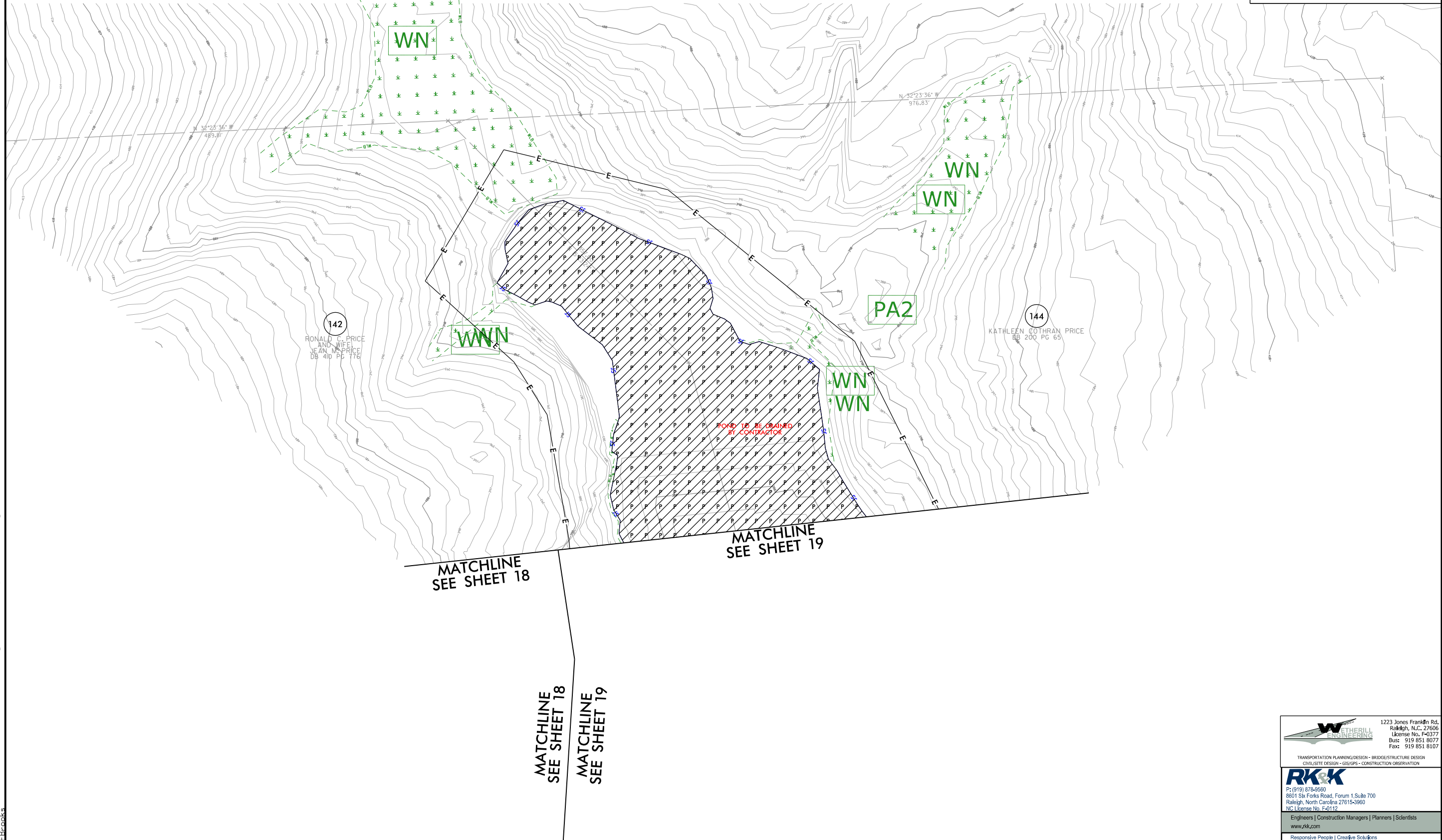


DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING SHEET 32 OF 60



PROJECT REFERENCE NO. R-5709	SHEET NO. 19A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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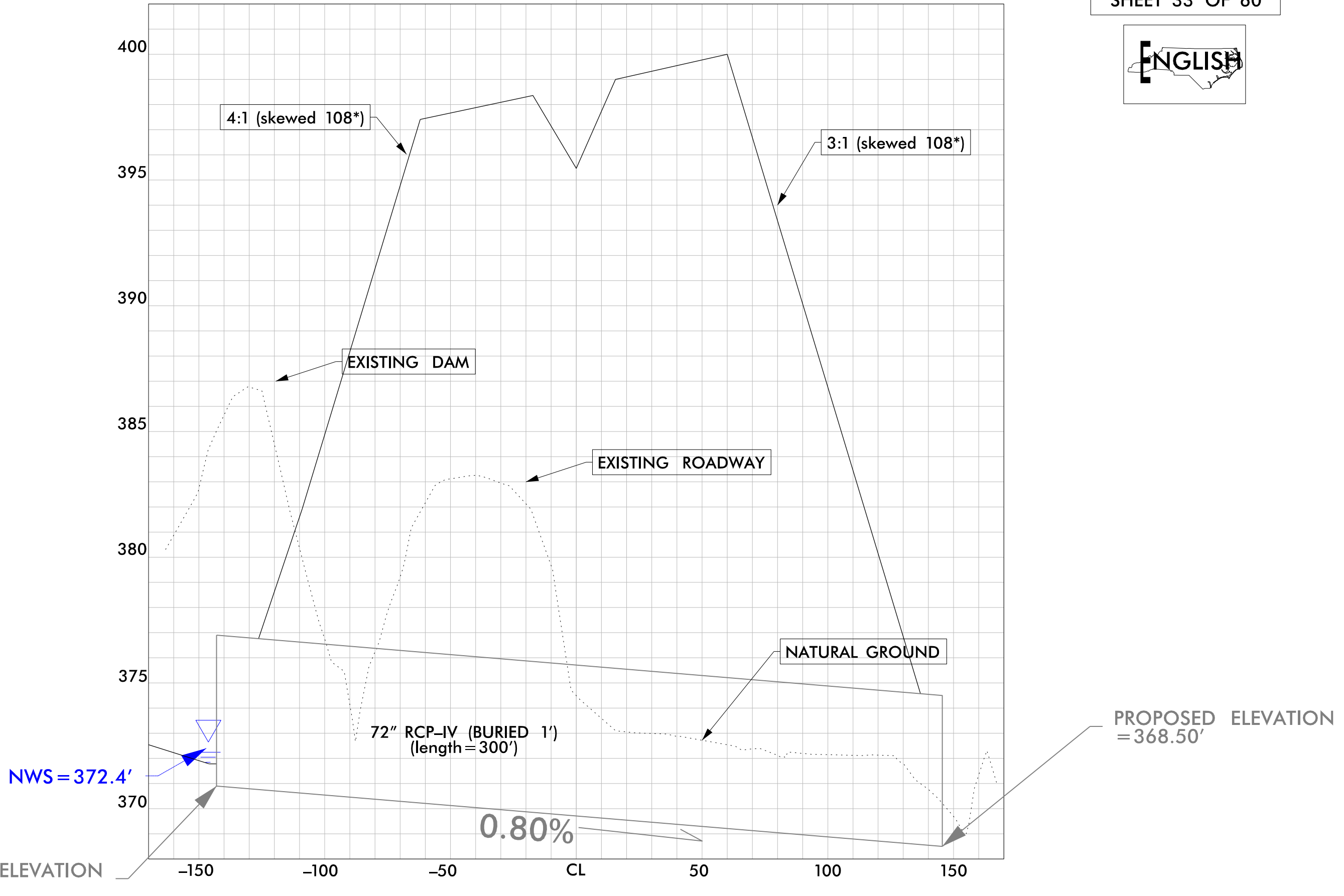
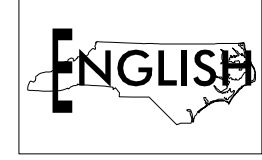
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
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SITE 14
-L- STA. 208+07

PERMIT DRAWING
SHEET 33 OF 60



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6/18/2021
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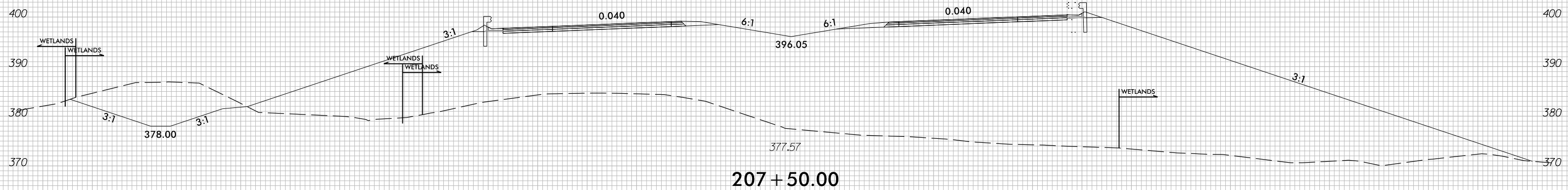
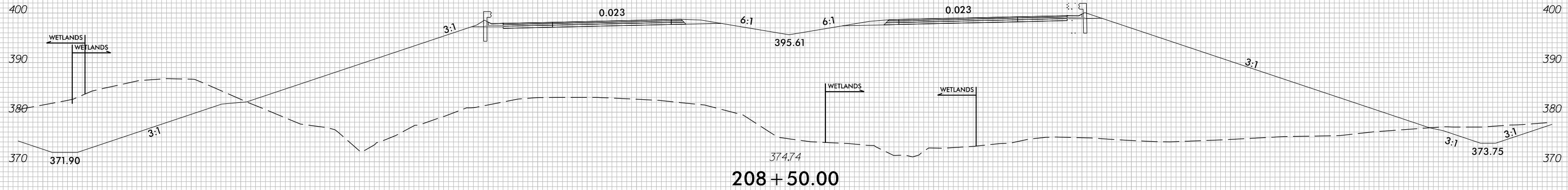
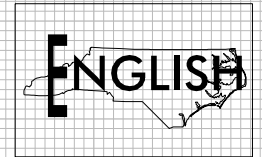


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SITES 11, 13

SITES 12

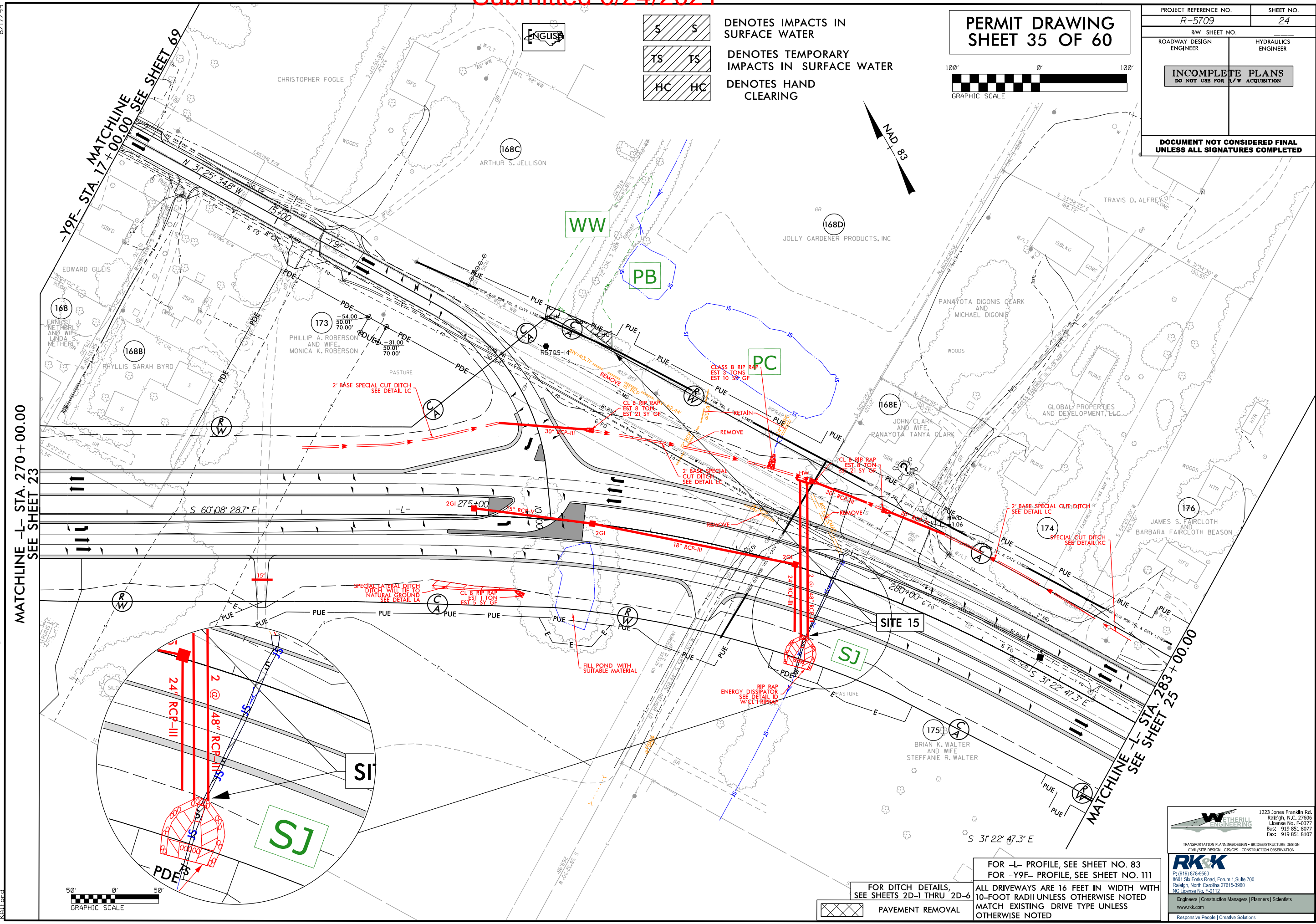
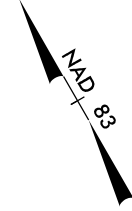
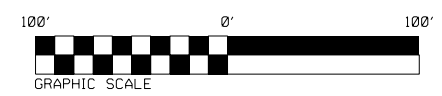
PERMIT DRAWING SHEET 34 OF 60



PERMIT DRAWING SHEET 35 OF 60

PROJECT REFERENCE NO. R-5709	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES HAND CLEARING



MATCHLINE -L- STA. 270 + 00.00
SEE SHEET 23

MATCHLINE -L- STA. 283 + 00.00
SEE SHEET 25



PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET NO. 83
FOR -Y9F- PROFILE, SEE SHEET NO. 111
ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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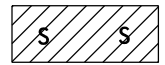
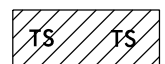
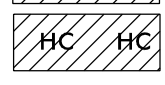
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CIVIL/SITE DESIGN - GIS/GIS - CONSTRUCTION OBSERVATION

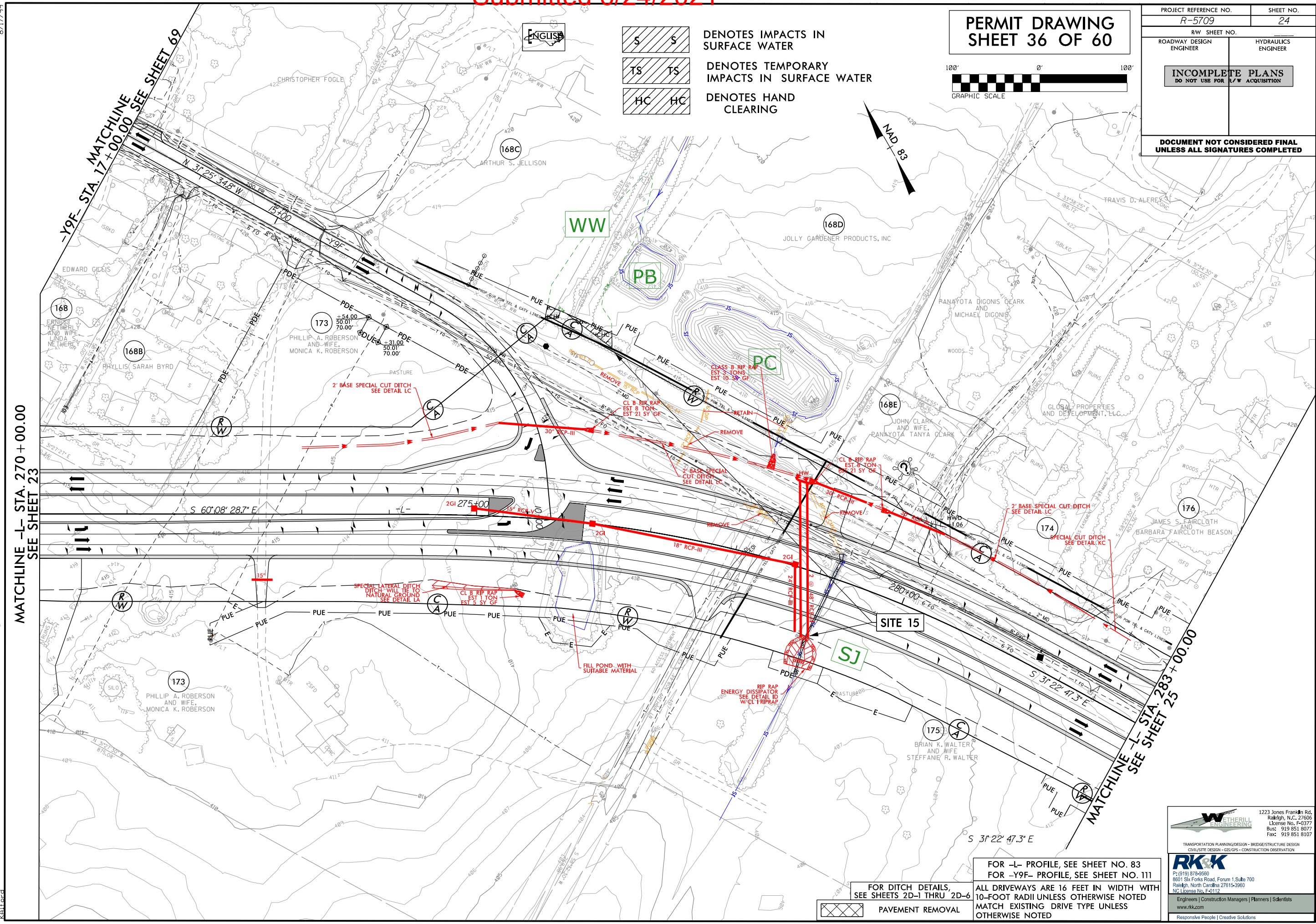
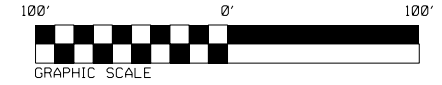
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PERMIT DRAWING SHEET 36 OF 60

PROJECT REFERENCE NO. R-5709	SHEET NO. 24
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES HAND CLEARING



MATCHLINE -L- STA. 270 + 00.00
SEE SHEET 23

MATCHLINE -L- STA. 283 + 00.00
SEE SHEET 25

FOR DITCH DETAILS,
SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NO. 83
FOR -Y9F- PROFILE, SEE SHEET NO. 111

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED



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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



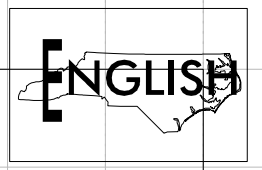
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PERMIT DRAWING
SHEET 37 OF 60

SITE 15
-L- STA. 278 + 80



420

4:1 (skewed 72.5*)

EXISTING ROADWAY

415

NATURAL GROUND

2@48" RCP-III
length = 174'

410

NWS = 410.2'

0.98%

PROPOSED ELEVATION
= 409.40'

PROPOSED ELEVATION
= 407.70'

405

-100

CL

100

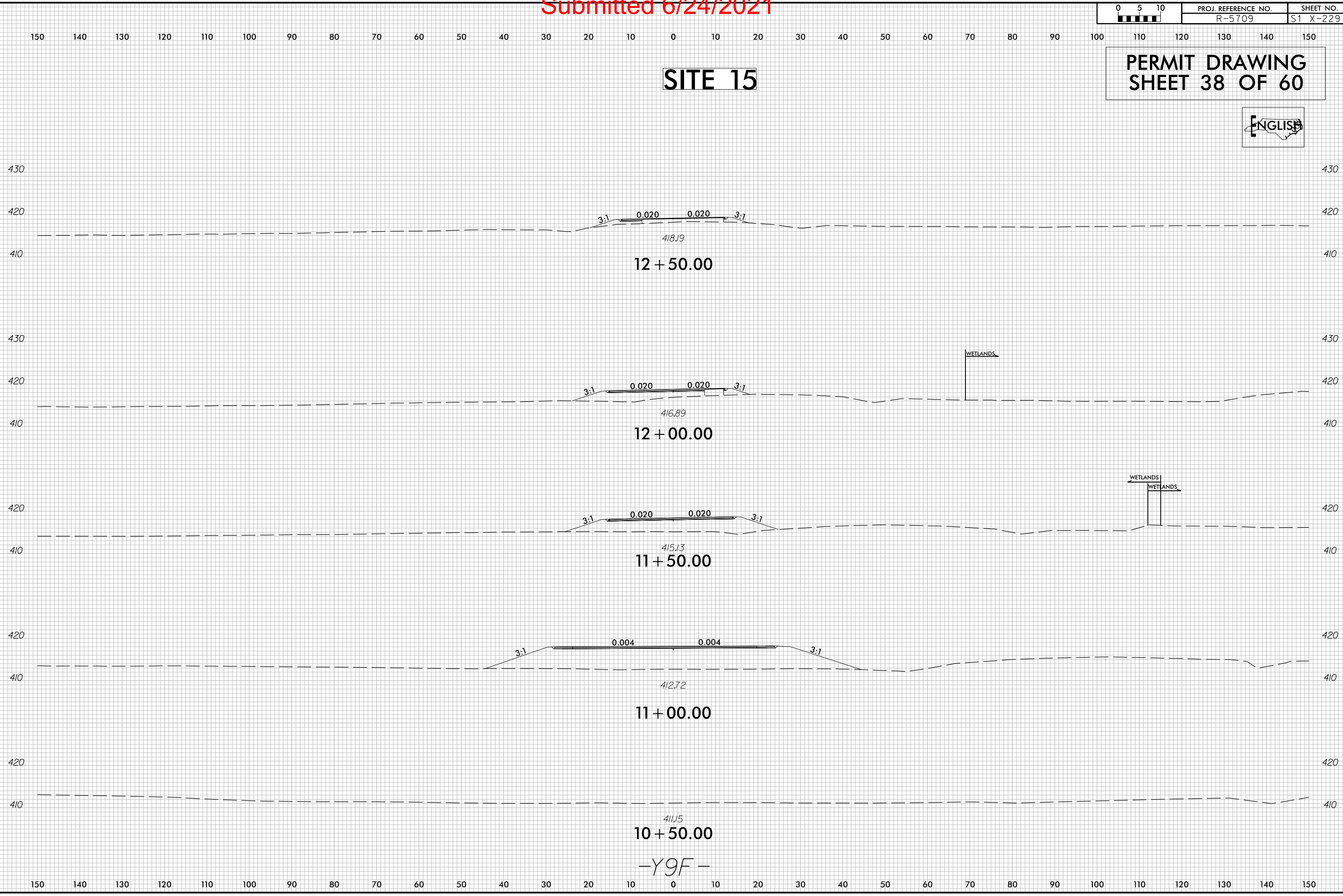
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PERMIT DRAWING SHEET 38 OF 60

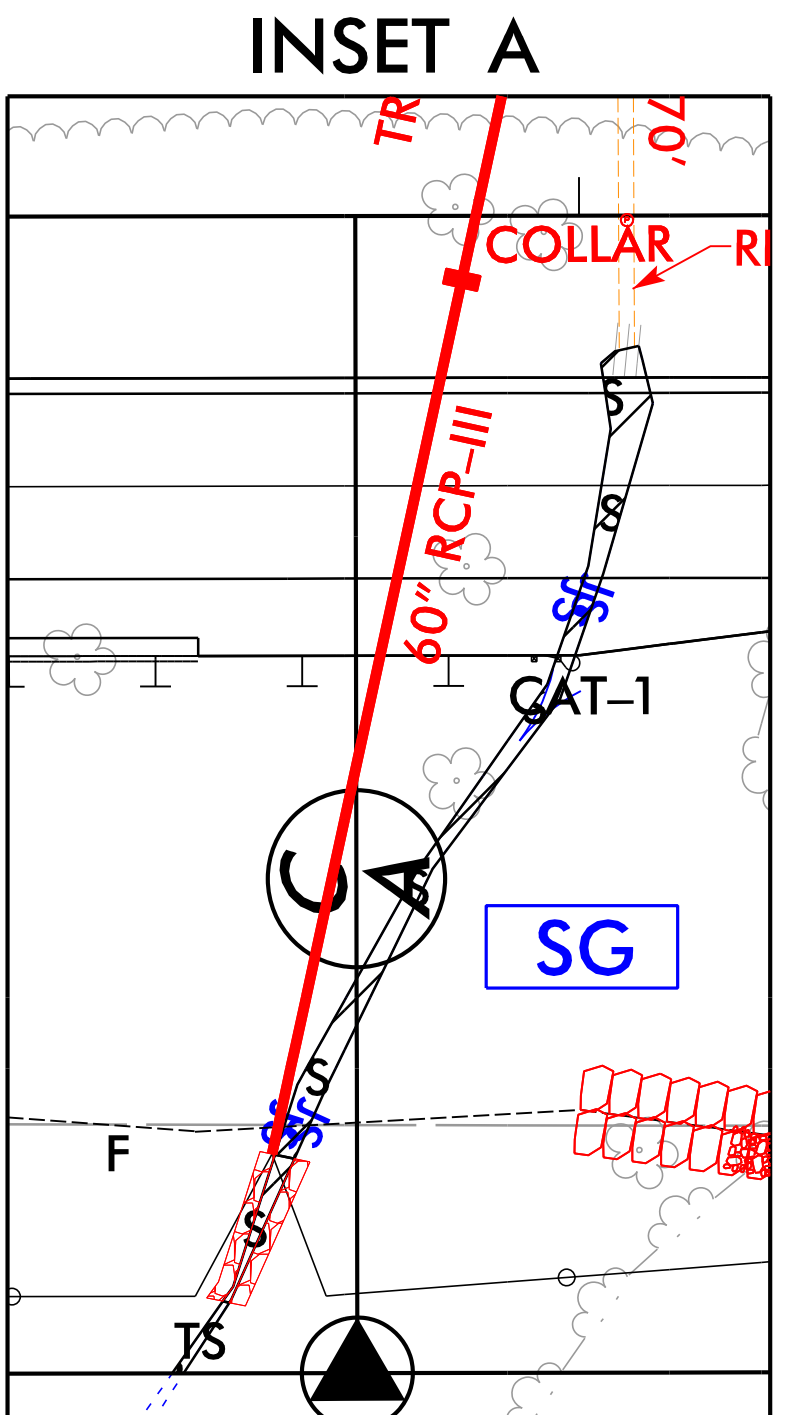
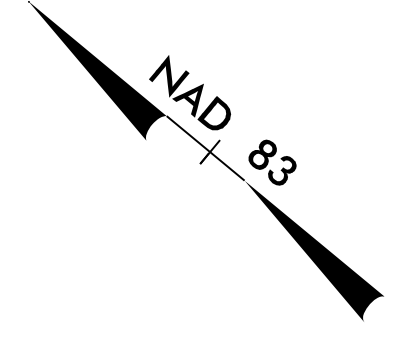


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6/18/2021
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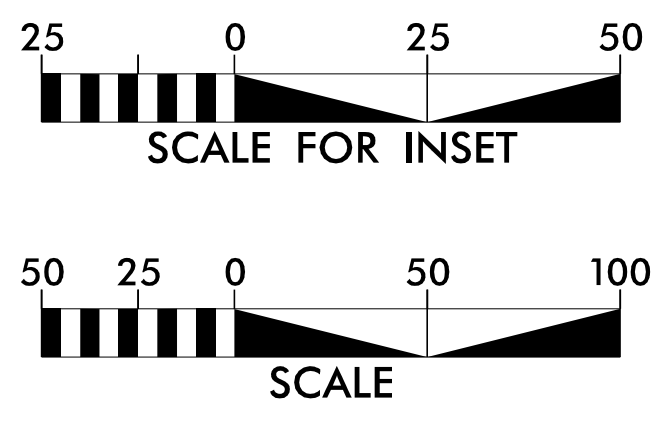
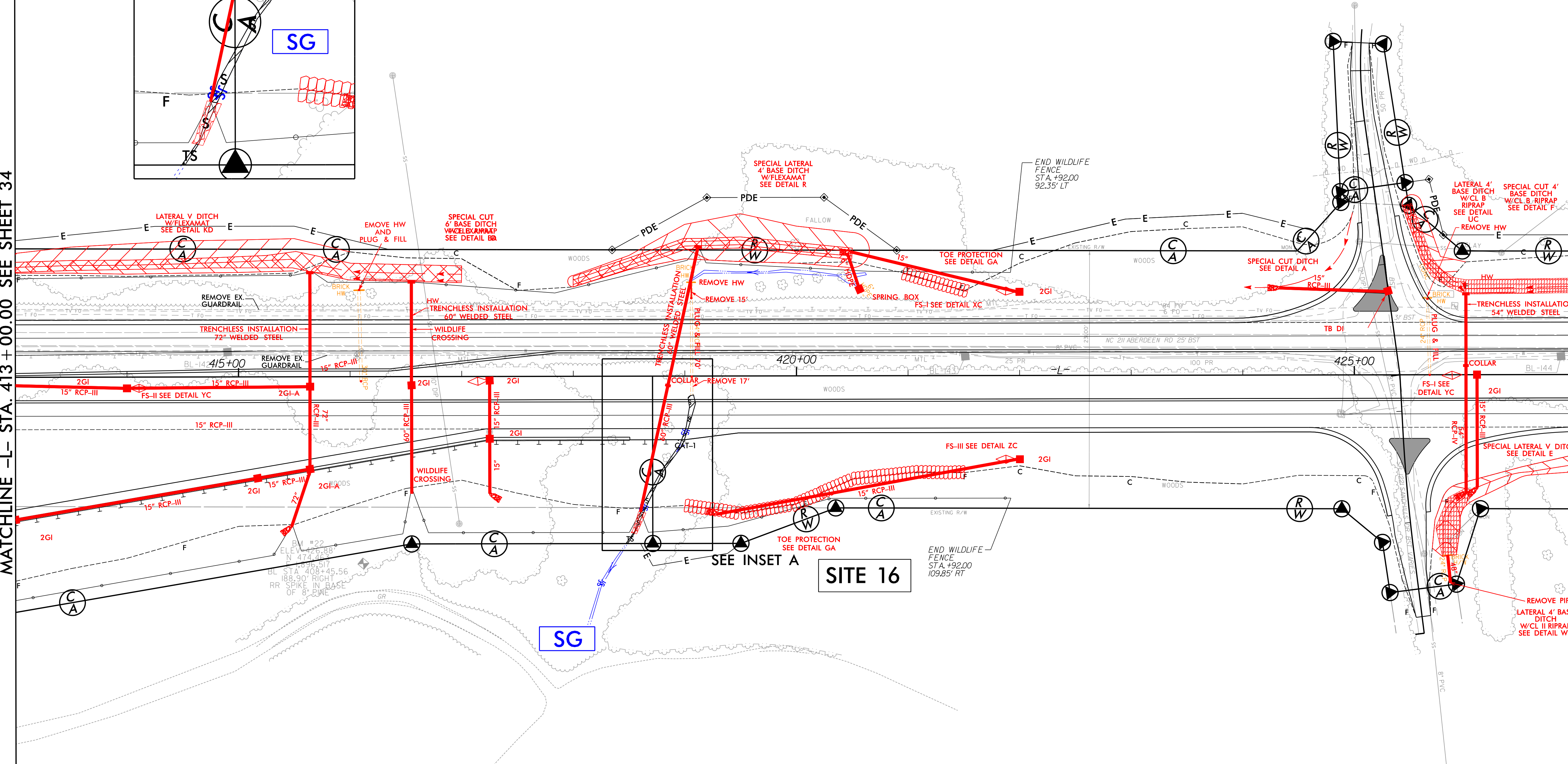
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PROJECT REFERENCE NO. R-5709	SHEET NO. 35
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -L- STA. 413 + 00.00 SEE SHEET 34

MATCHLINE -L- STA. 427 + 00.00 SEE SHEET 36



PERMIT DRAWING
SHEET 39 OF 60

ENGLISH

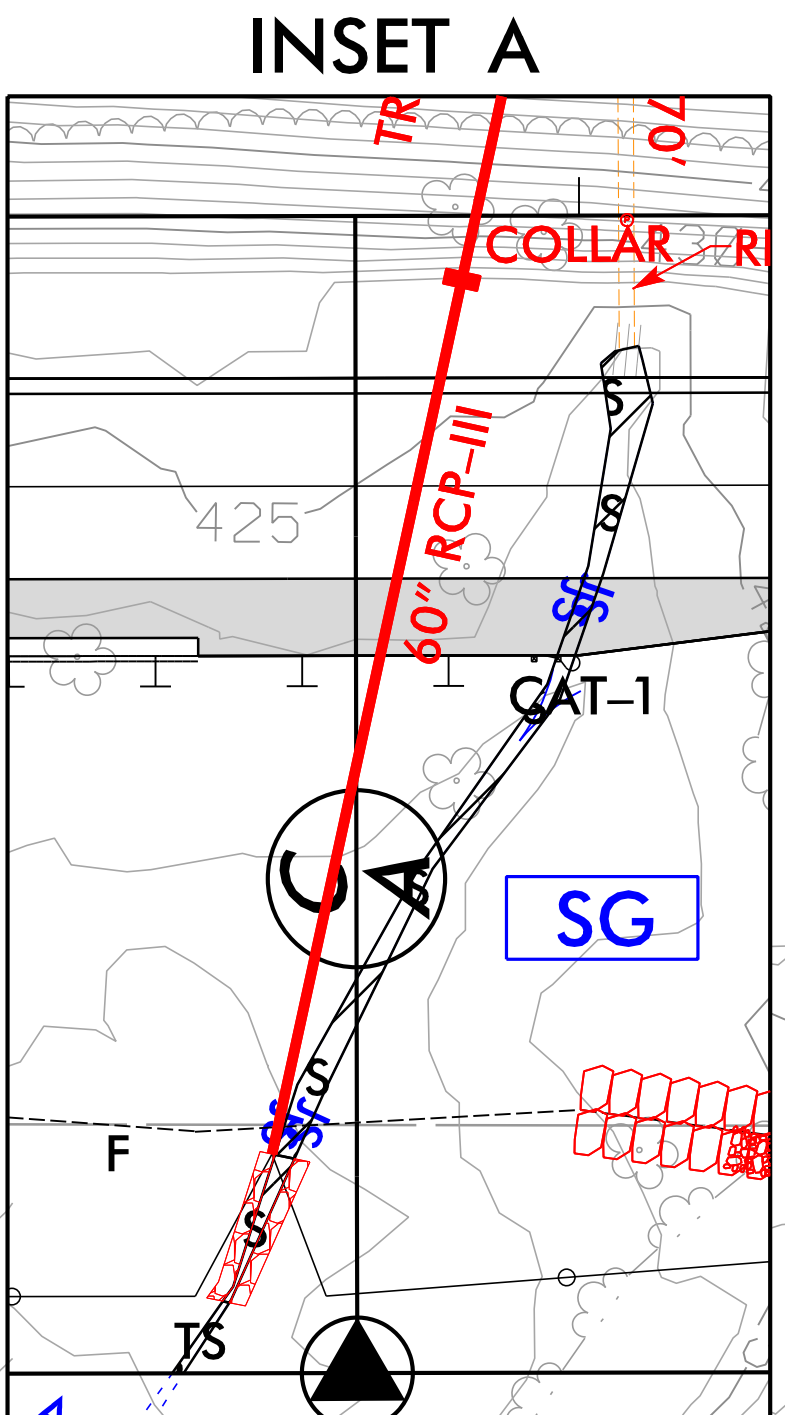
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

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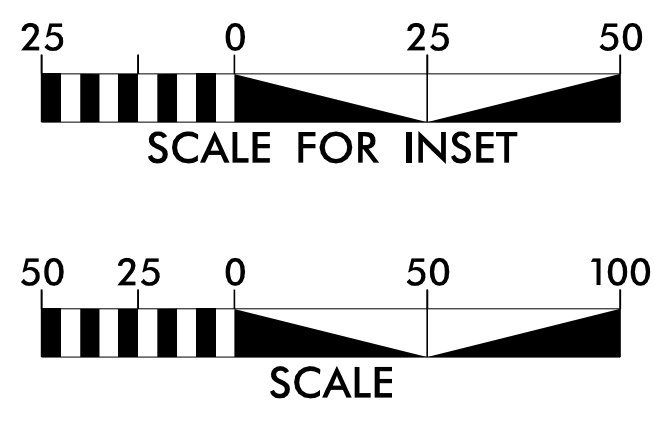
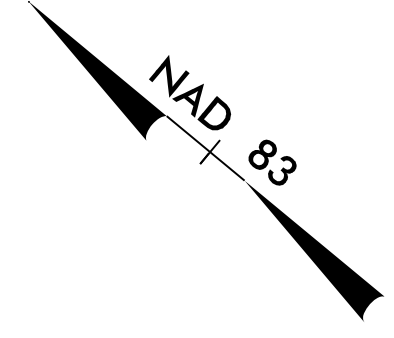
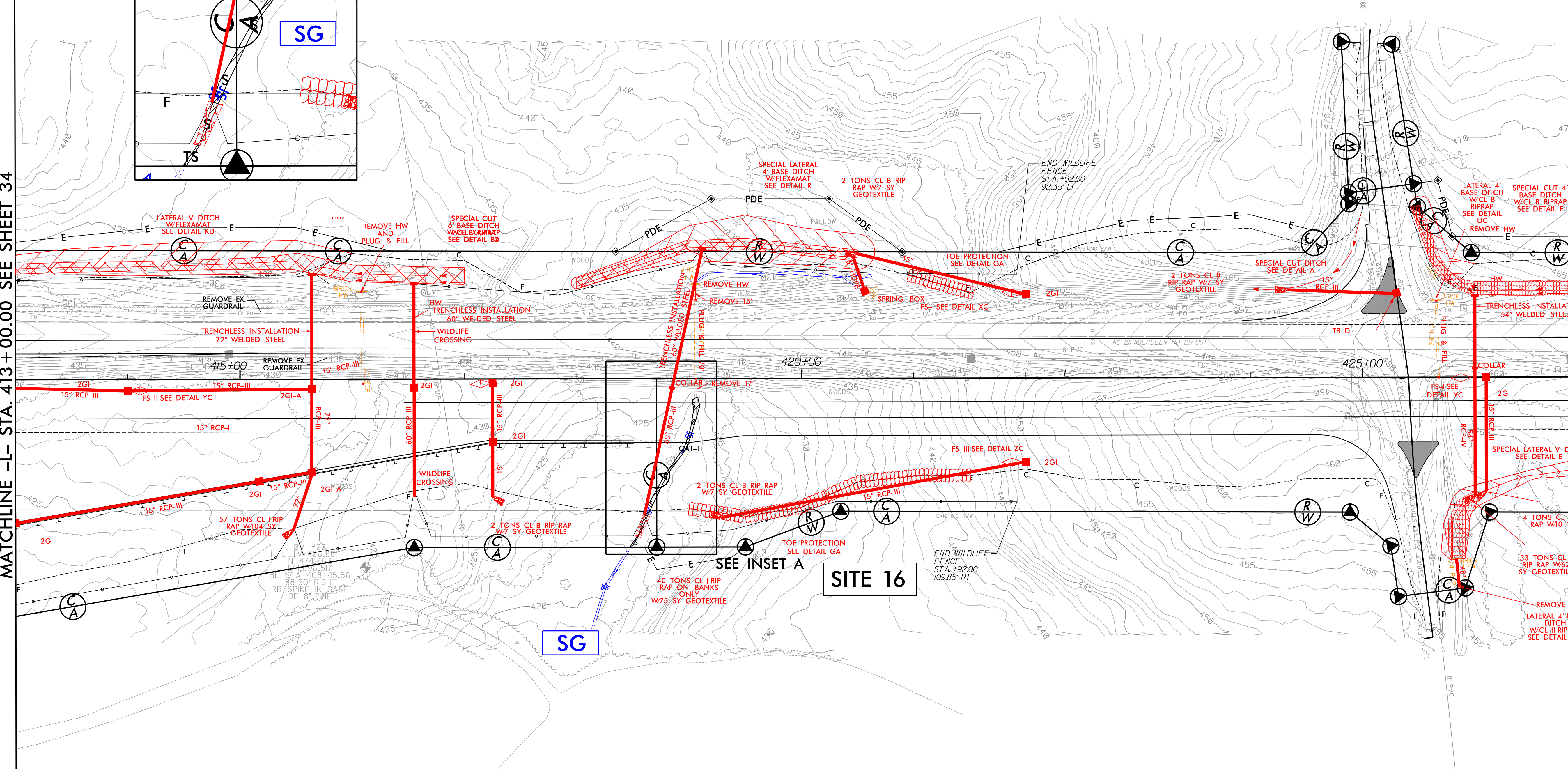
8/17/199
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PROJECT REFERENCE NO. R-5709	SHEET NO. 35
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -L- STA. 413 + 00.00 SEE SHEET 34

MATCHLINE -L- STA. 427 + 00.00 SEE SHEET 36



PERMIT DRAWING
SHEET 40 OF 60

ENGLISH

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

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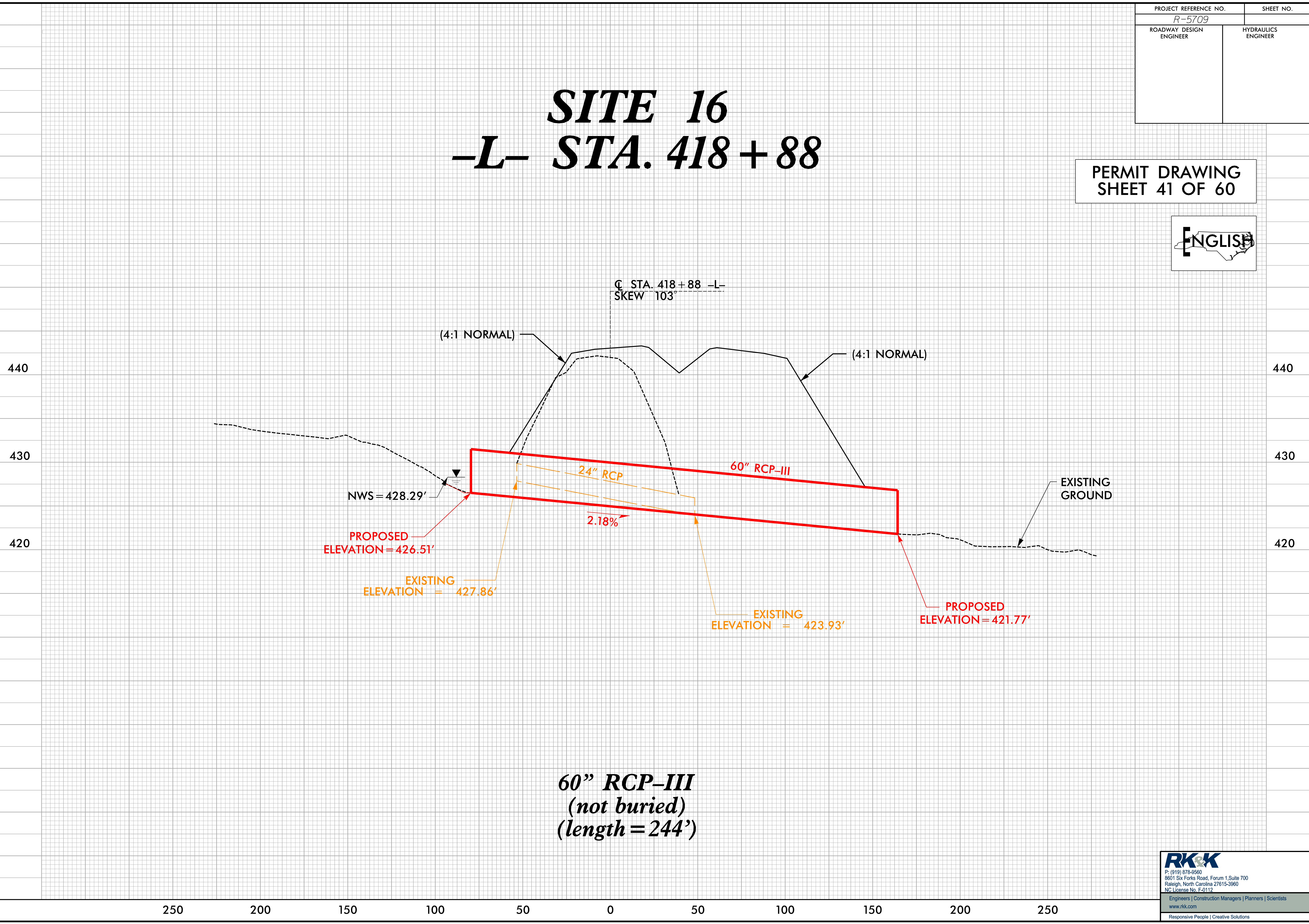
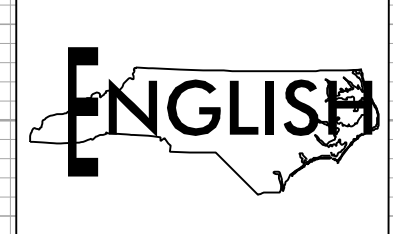
8/17/199
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PROJECT REFERENCE NO. <i>R-5709</i>	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 16

-L- STA. 418 + 88

PERMIT DRAWING
SHEET 41 OF 60



60" RCP-III
(not buried)
(length = 244')

5/14/99

6/18/2021
B:\Corporates\PERMITS_Environmental\Drawings\4C\Section 2\R-5709-Hyd-PFL-SITE16.dgn

PROJECT REFERENCE NO. R-5709	SHEET NO. 45
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SCALE FOR INSET

SCALE

PERMIT DRAWING SHEET 42 OF 60

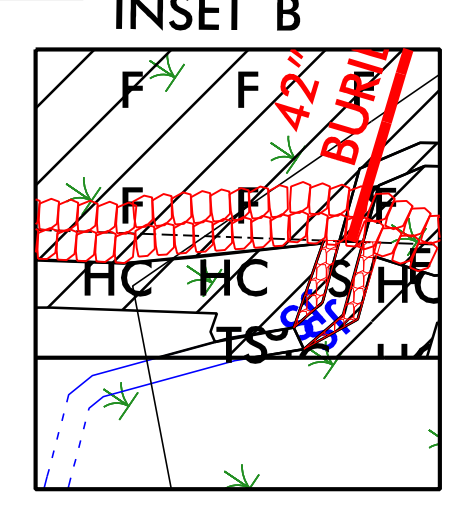
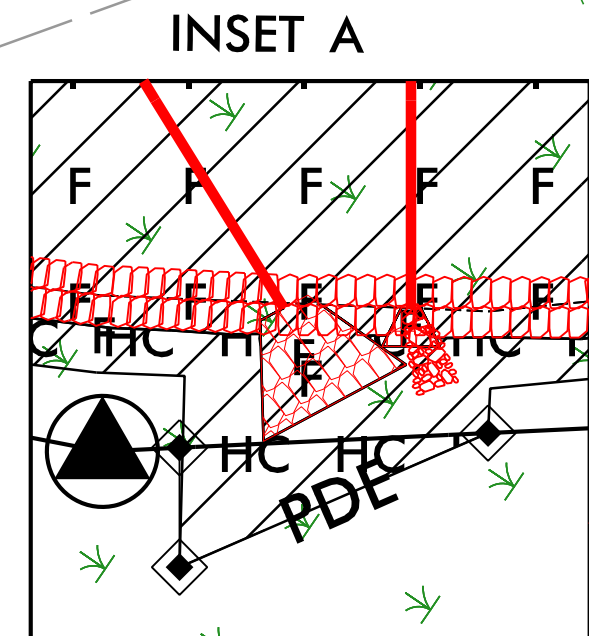
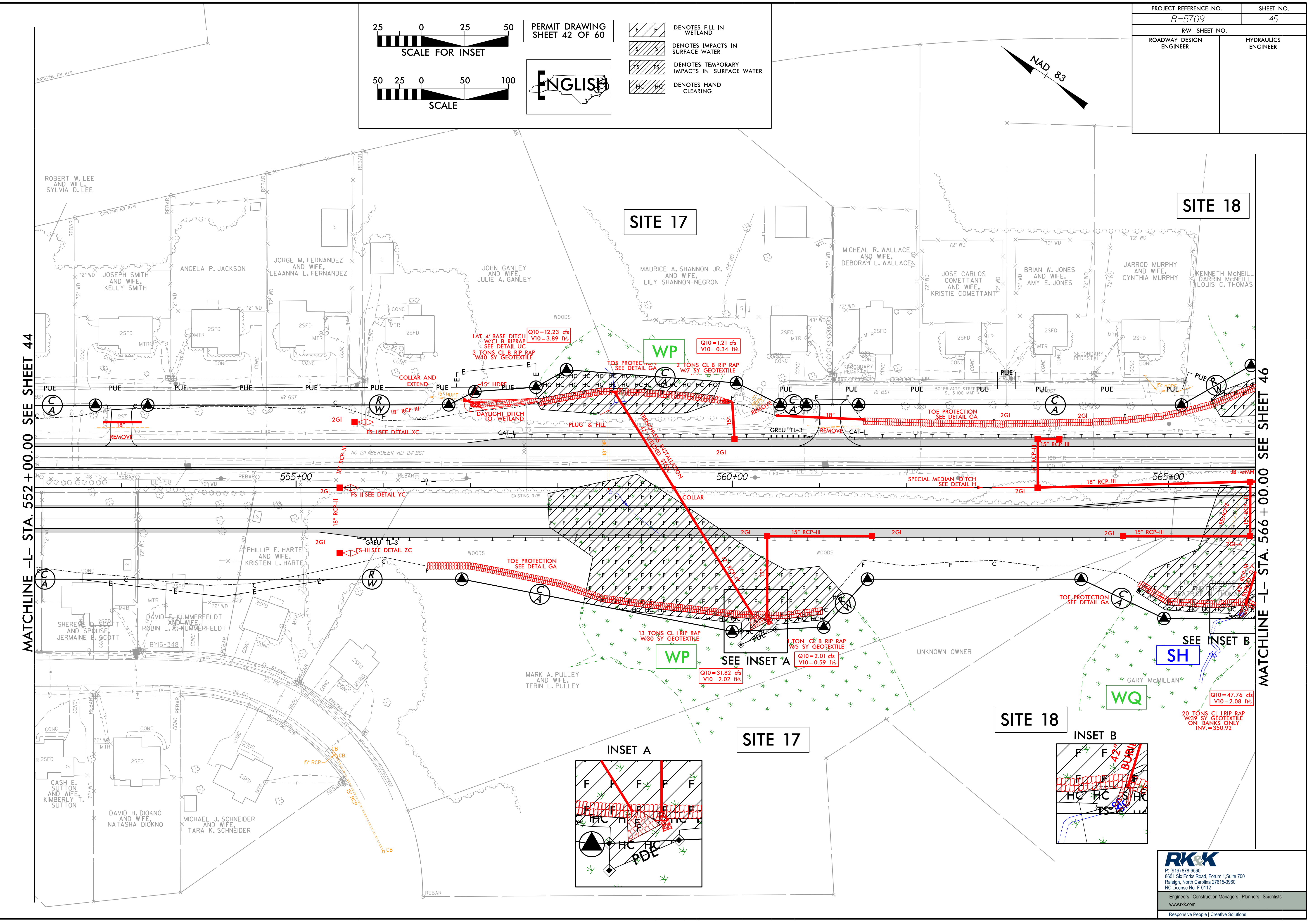
ENGLISH

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING



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PROJECT REFERENCE NO. R-5709	SHEET NO. 45
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

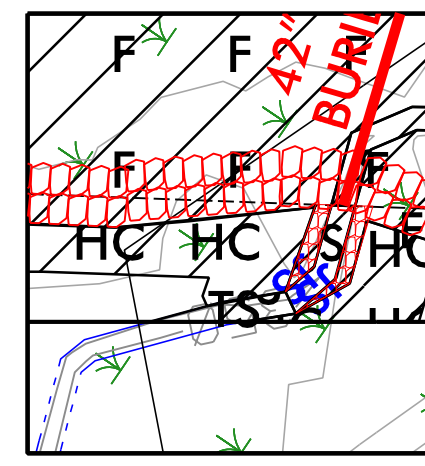
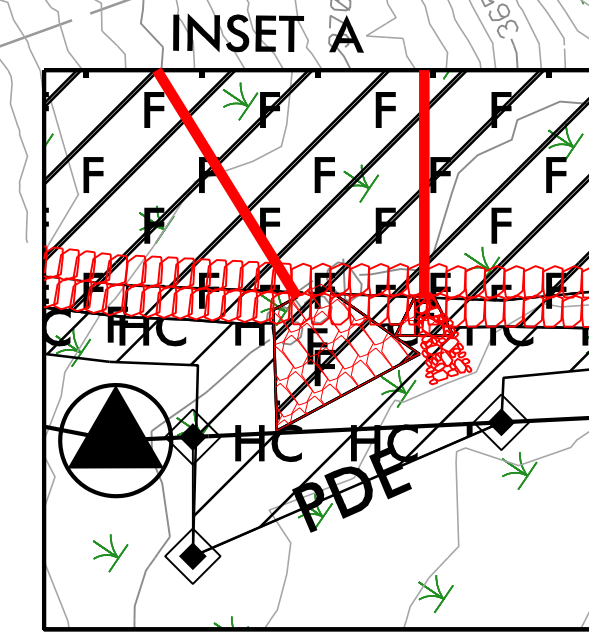
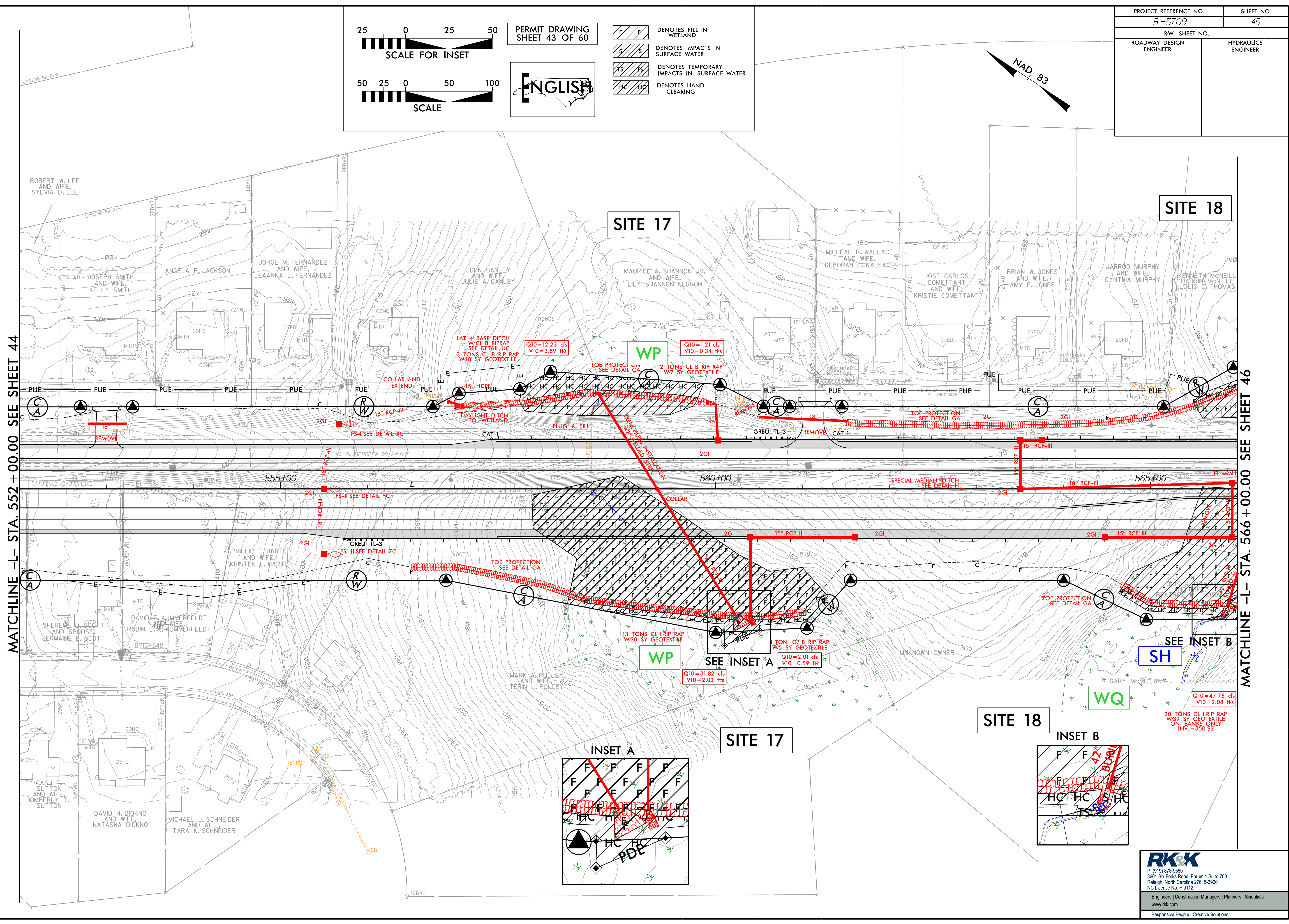
25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PERMIT DRAWING SHEET 43 OF 60

ENGLISH

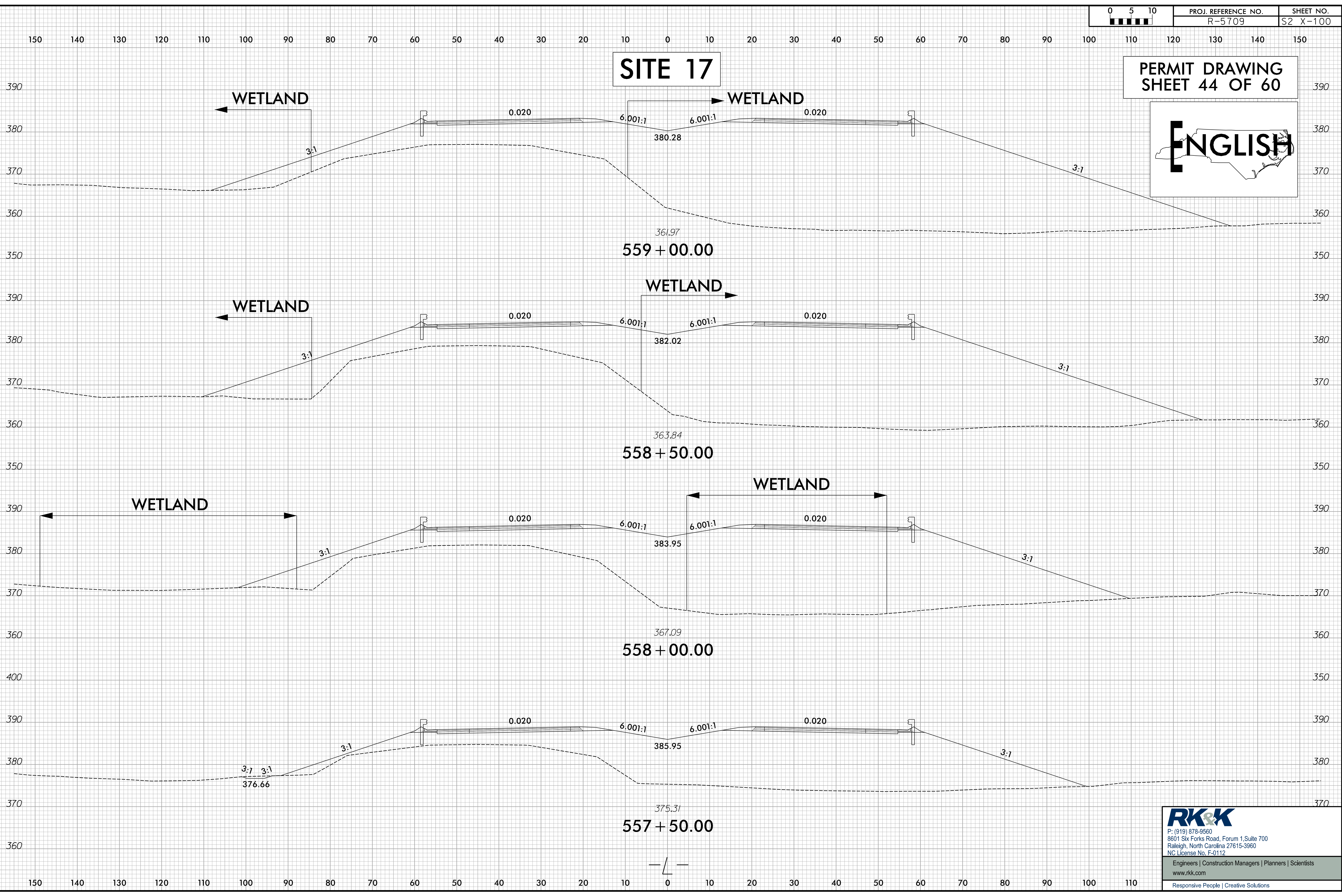
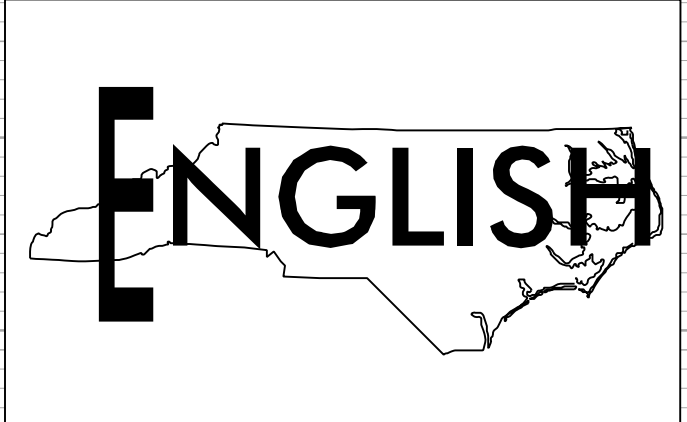
- Denotes Fill in Wetland
- Denotes Impacts in Surface Water
- Denotes Temporary Impacts in Surface Water
- Denotes Hand Clearing



8/17/199
8/18/2021
C:\Users\jperkins\Documents\Drawings\4C\Section 2\195709_Hyd_4C_wet.psn\45_con.dgn

SITE 17

PERMIT DRAWING SHEET 44 OF 60

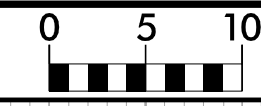


6/23/16

6/18/2021
R:\Hydro\Projects\PERMITS_Environmental\Drawings\4C\Section 2\AR-5709_Rdu_XPL_L2_SIT17.dgn

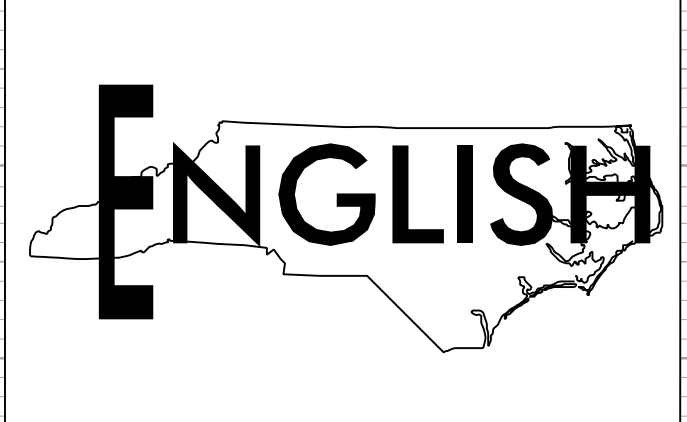
SITE 18

WETLAND



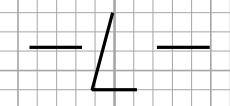
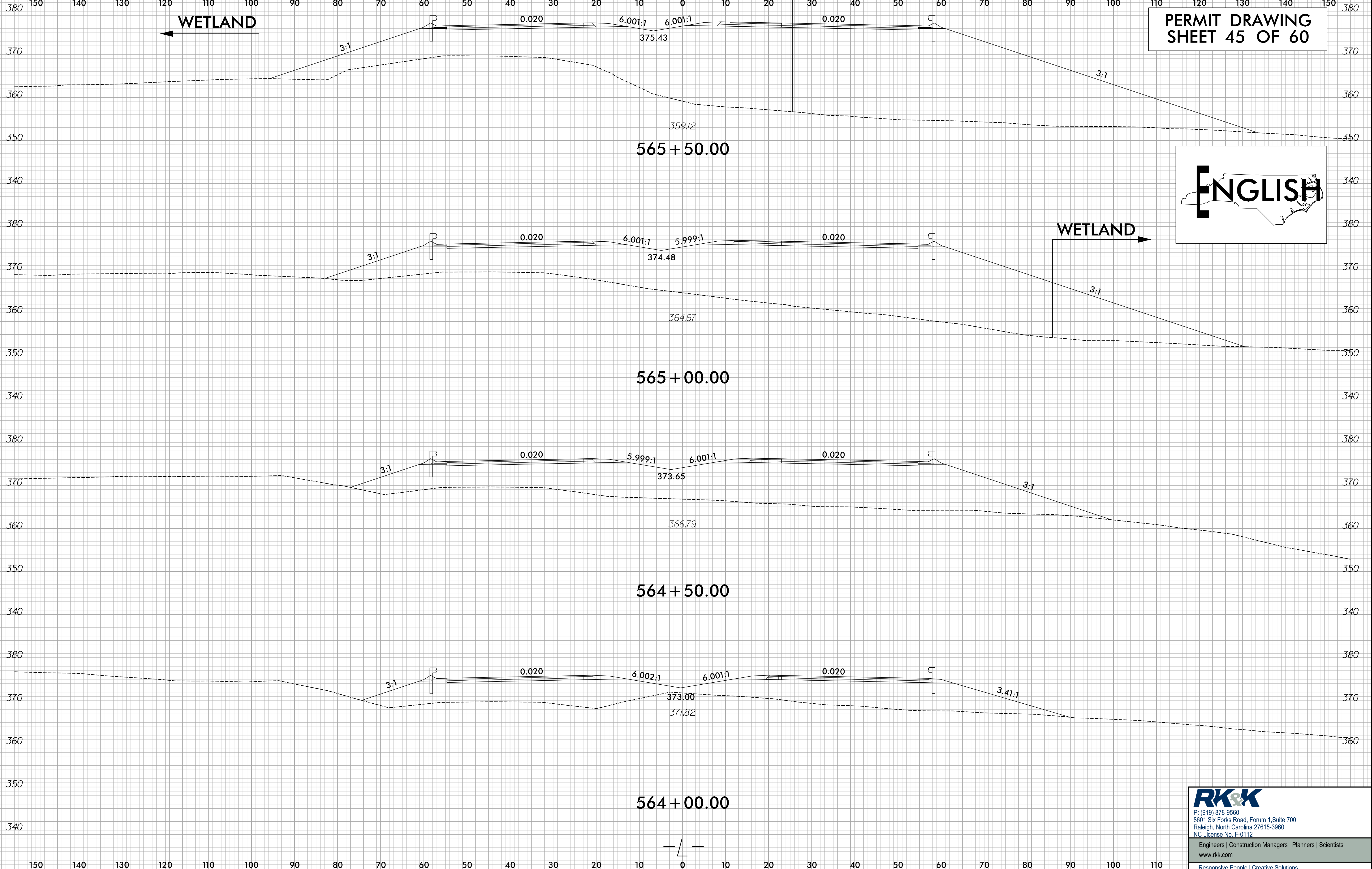
PROJ. REFERENCE NO.	SHEET NO.
R-5709	S2 X-104

PERMIT DRAWING SHEET 45 OF 60



6/23/16

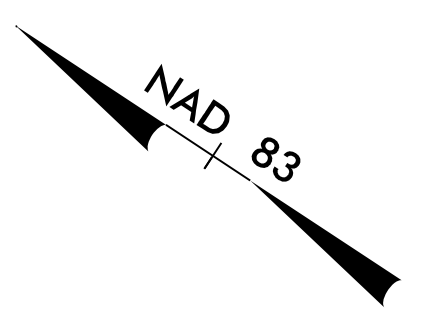
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PROJECT REFERENCE NO. R-5709	SHEET NO. 46
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PERMIT DRAWING
SHEET 46 OF 60

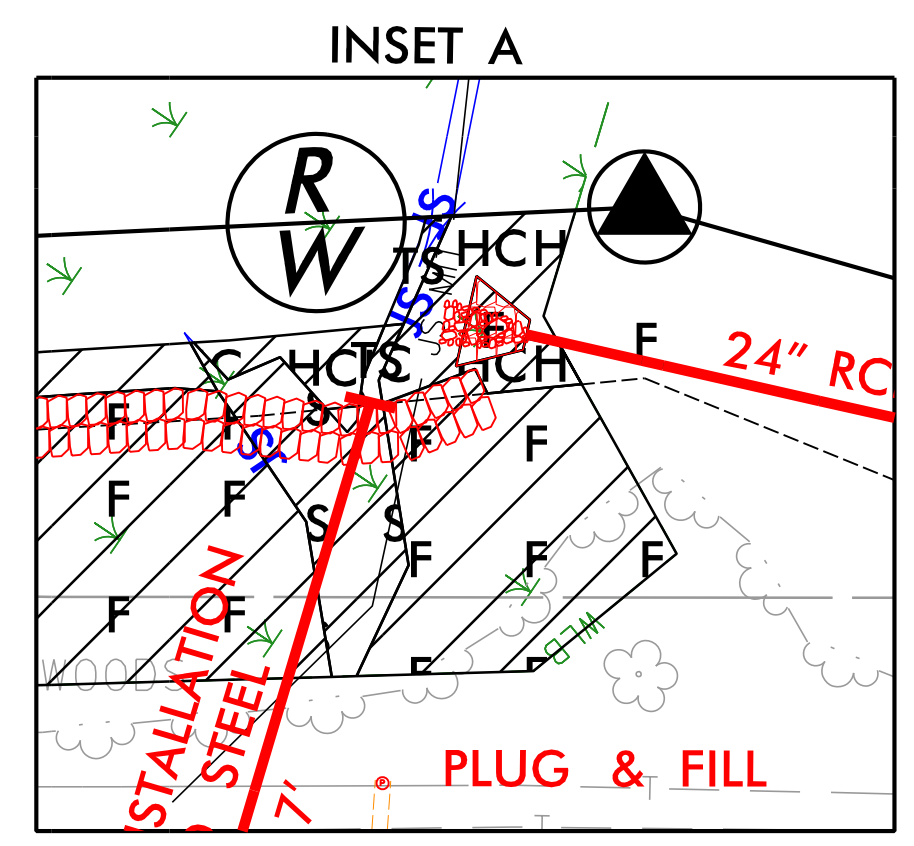
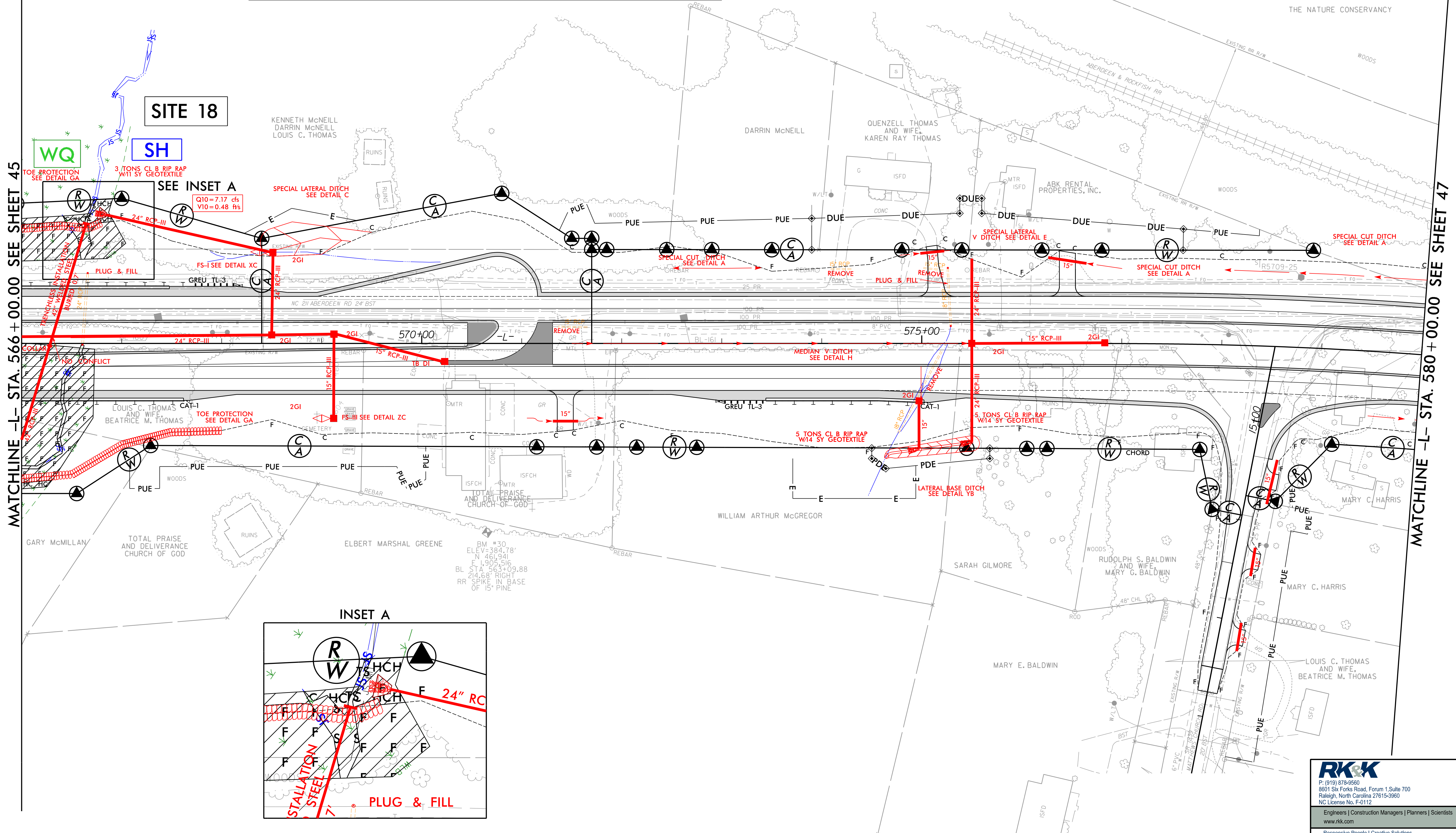
ENGLISH

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING



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8/18/2021
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PROJECT REFERENCE NO. R-5709	SHEET NO. 46
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

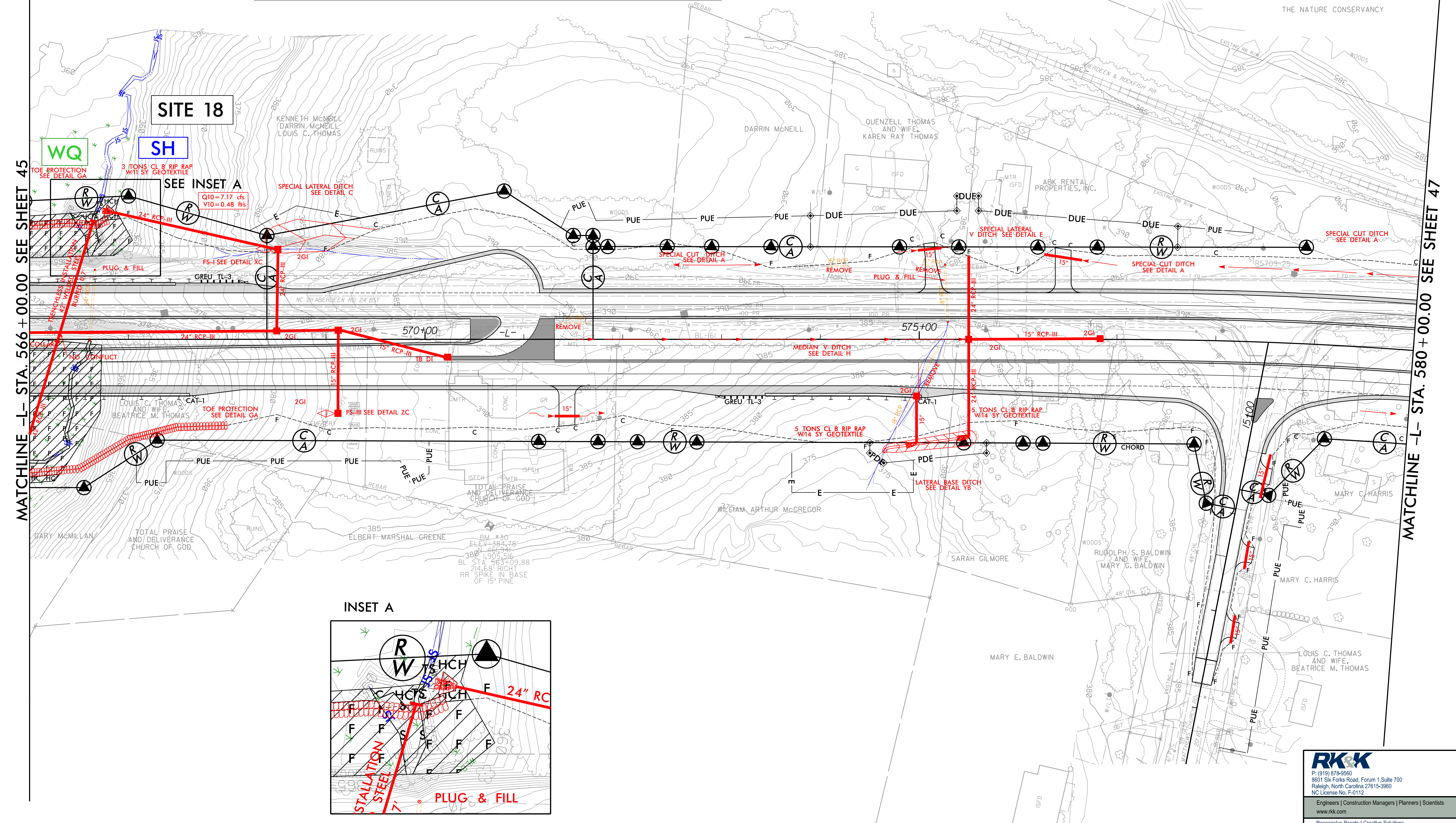
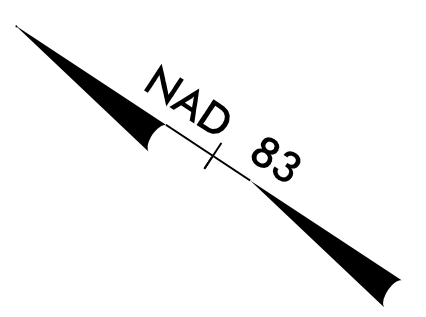
SCALE FOR INSET
25 0 25 50

SCALE
50 25 0 50 100

PERMIT DRAWING SHEET 47 OF 60

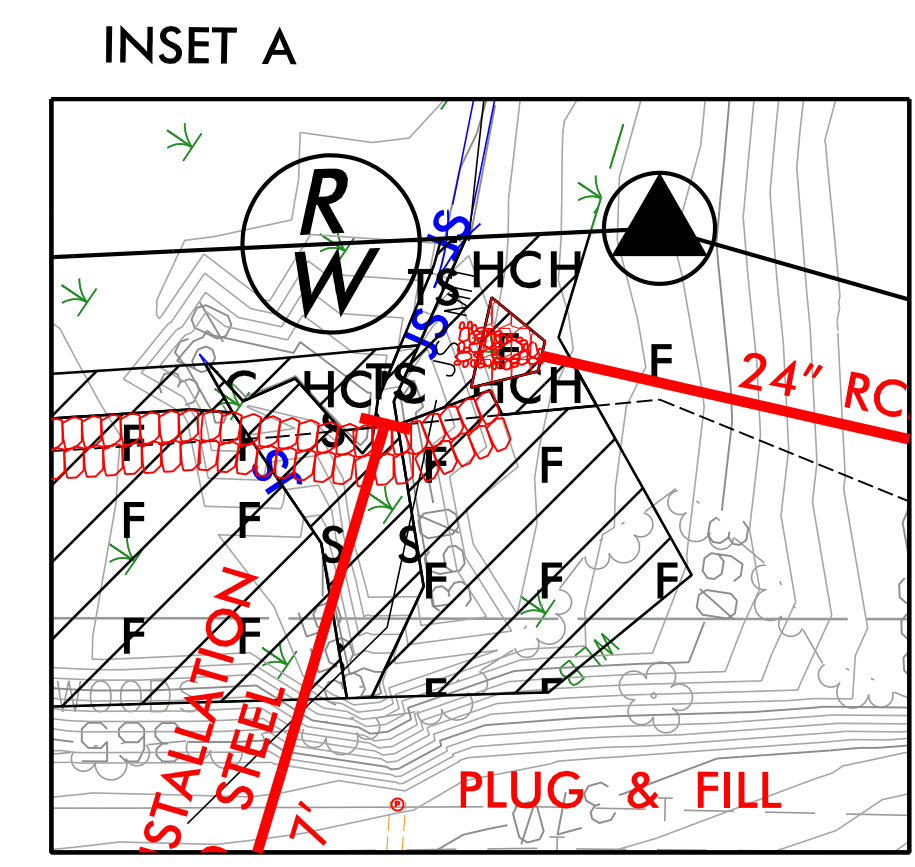
ENGLISH

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



MATCHLINE -L- STA. 566+00.00 SEE SHEET 45

MATCHLINE -L- STA. 580+00.00 SEE SHEET 47

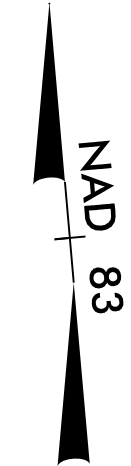


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8/18/2021
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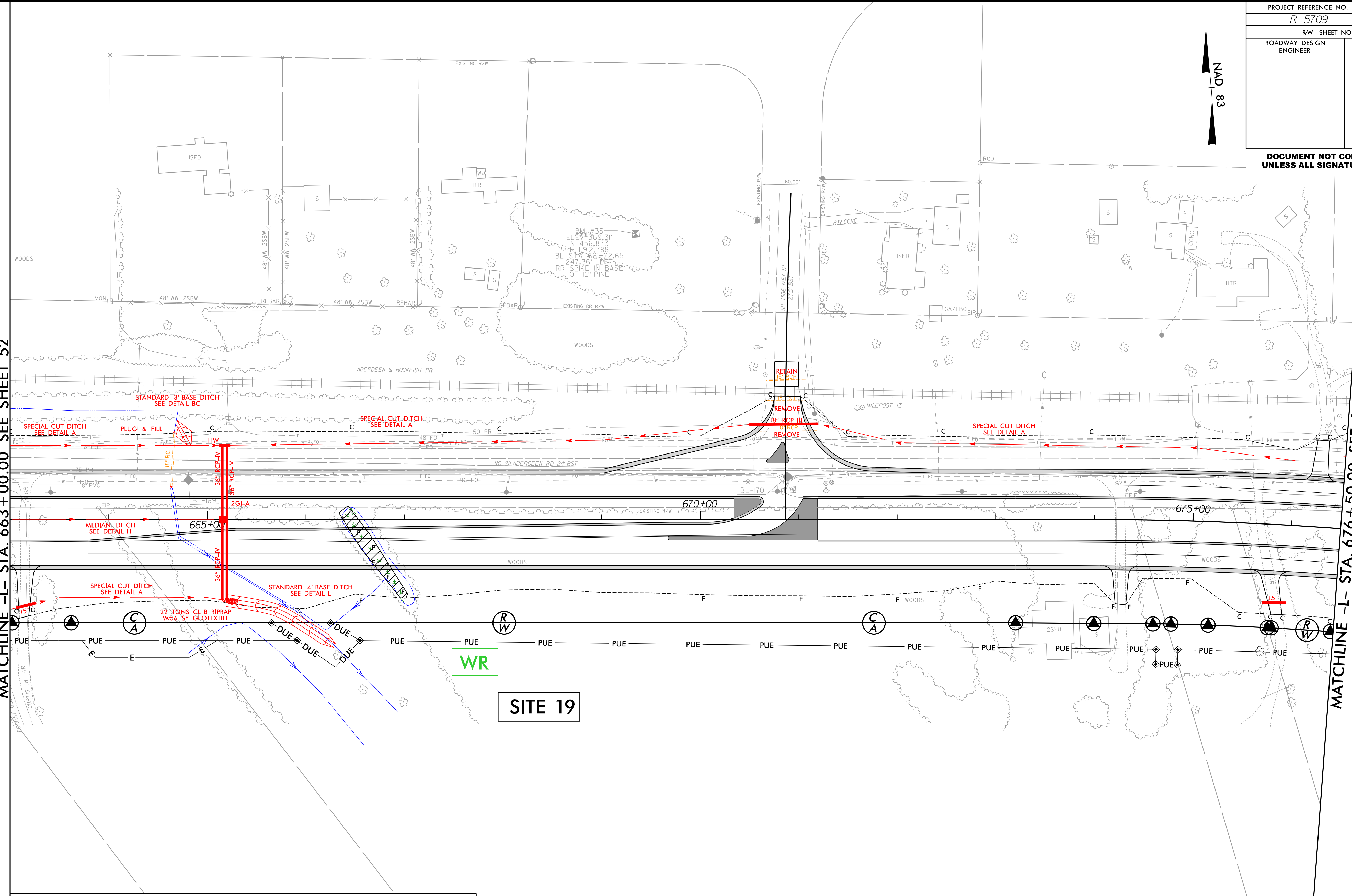
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PROJECT REFERENCE NO. R-5709	SHEET NO. 53
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



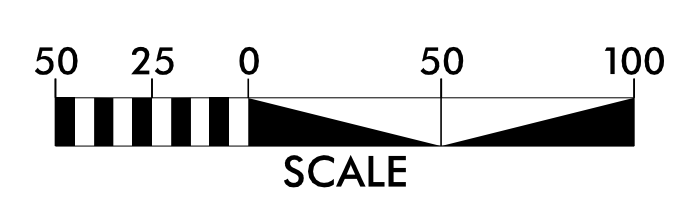
MATCHLINE -L- STA. 663 + 00.00 SEE SHEET 52

MATCHLINE -L- STA. 676 + 50.00 SEE SHEET 54

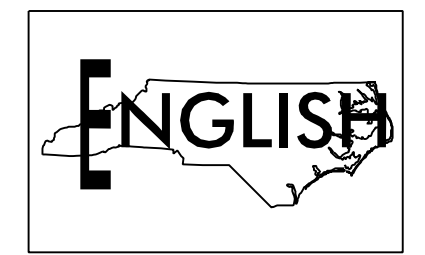


SITE 19

WR



PERMIT DRAWING
SHEET 48 OF 60



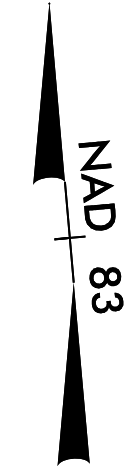
DENOTES FILL IN WETLAND



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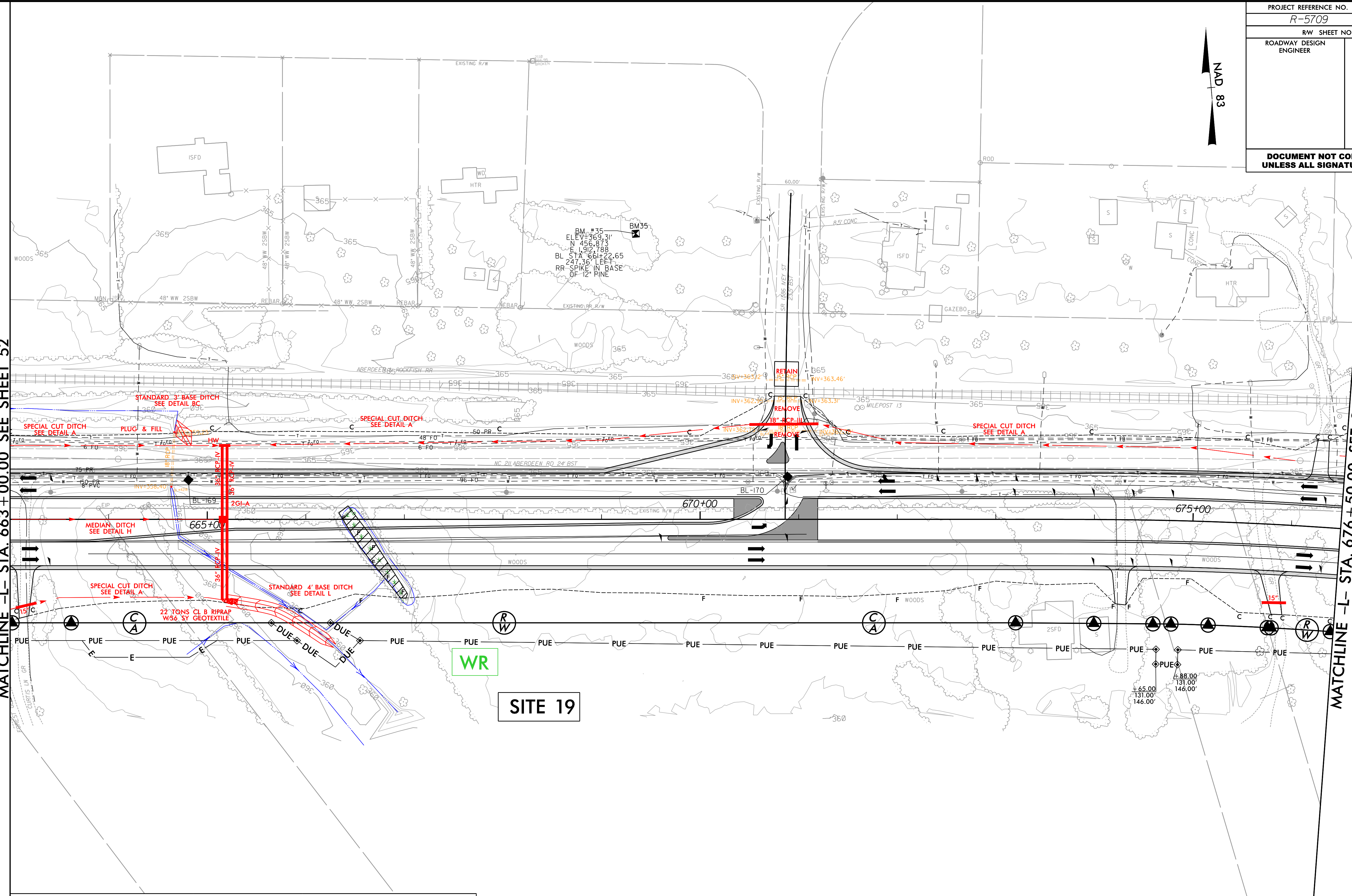
8/17/199
8/18/2021
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PROJECT REFERENCE NO. R-5709	SHEET NO. 53
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

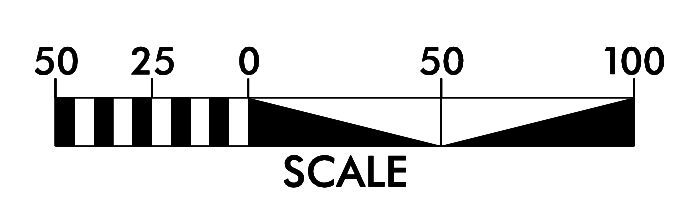


MATCHLINE -L- STA. 663 + 00.00 SEE SHEET 52

MATCHLINE -L- STA. 676 + 50.00 SEE SHEET 54



SITE 19



PERMIT DRAWING
SHEET 49 OF 60

ENGLISH

DENOTES FILL IN WETLAND

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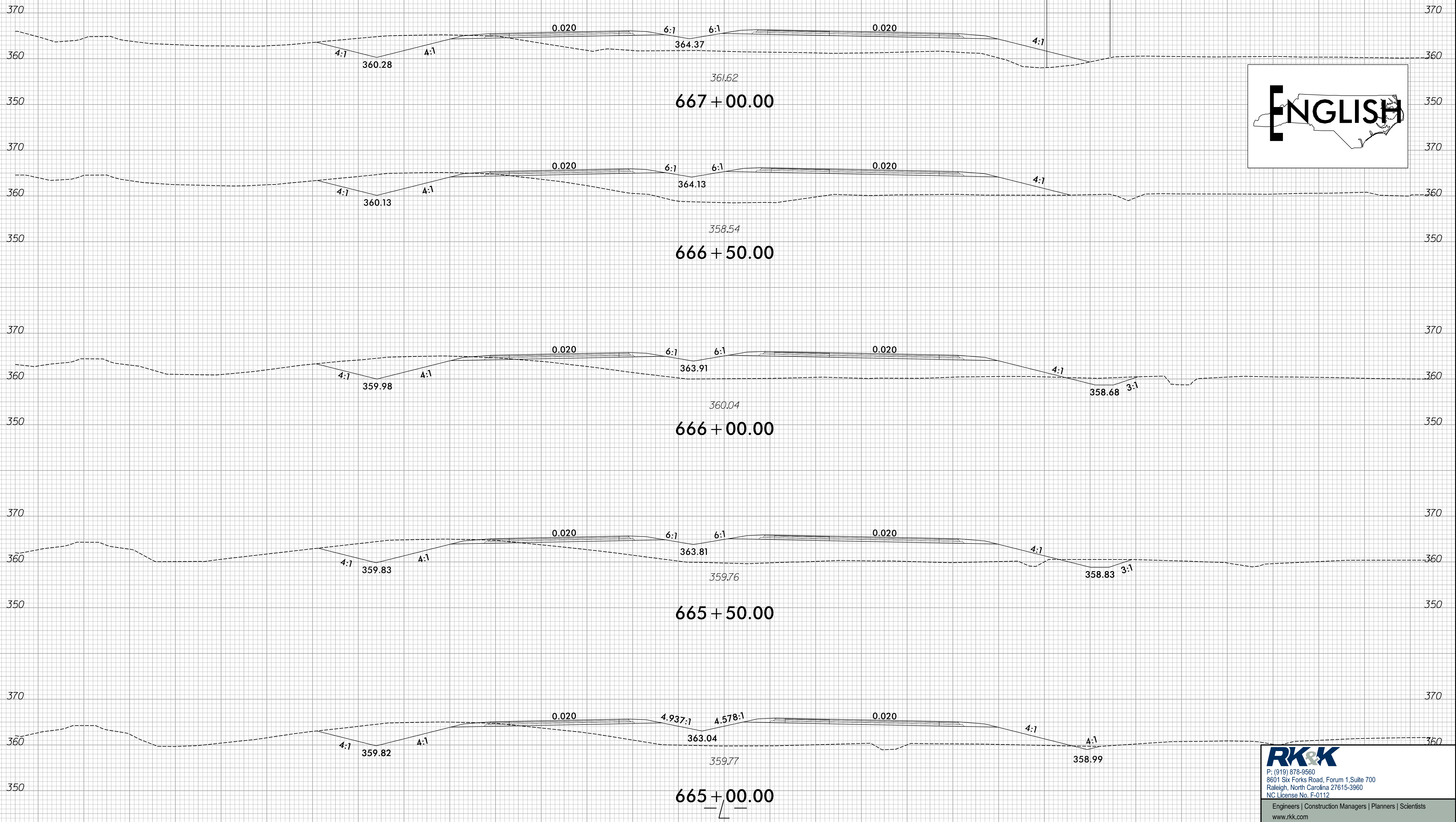
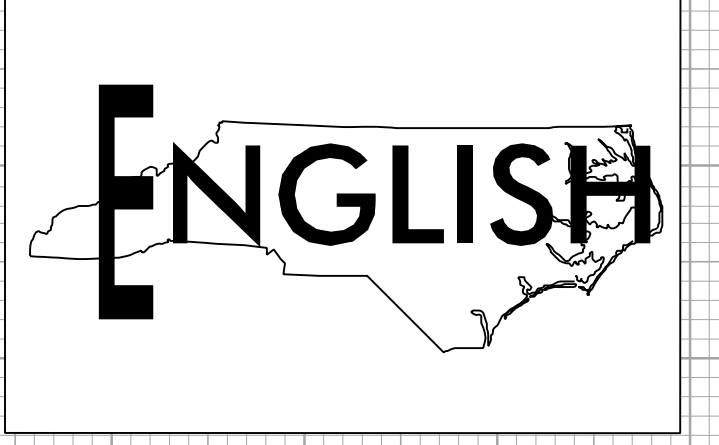
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SITE 19

PERMIT DRAWING SHEET 50 OF 60

WETLAND



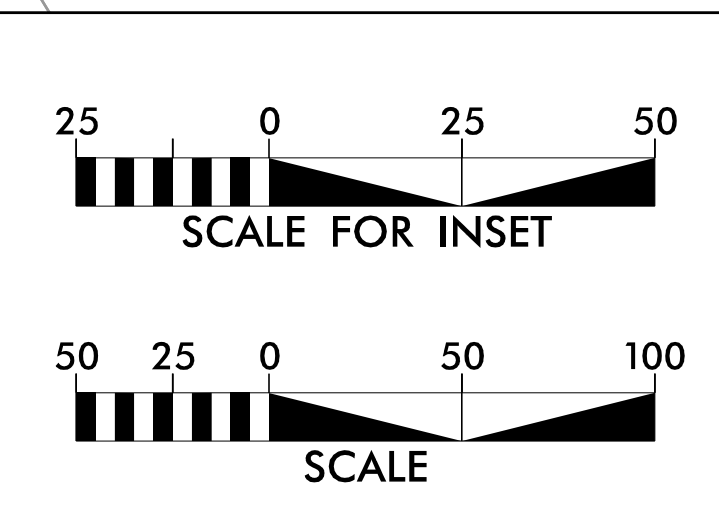
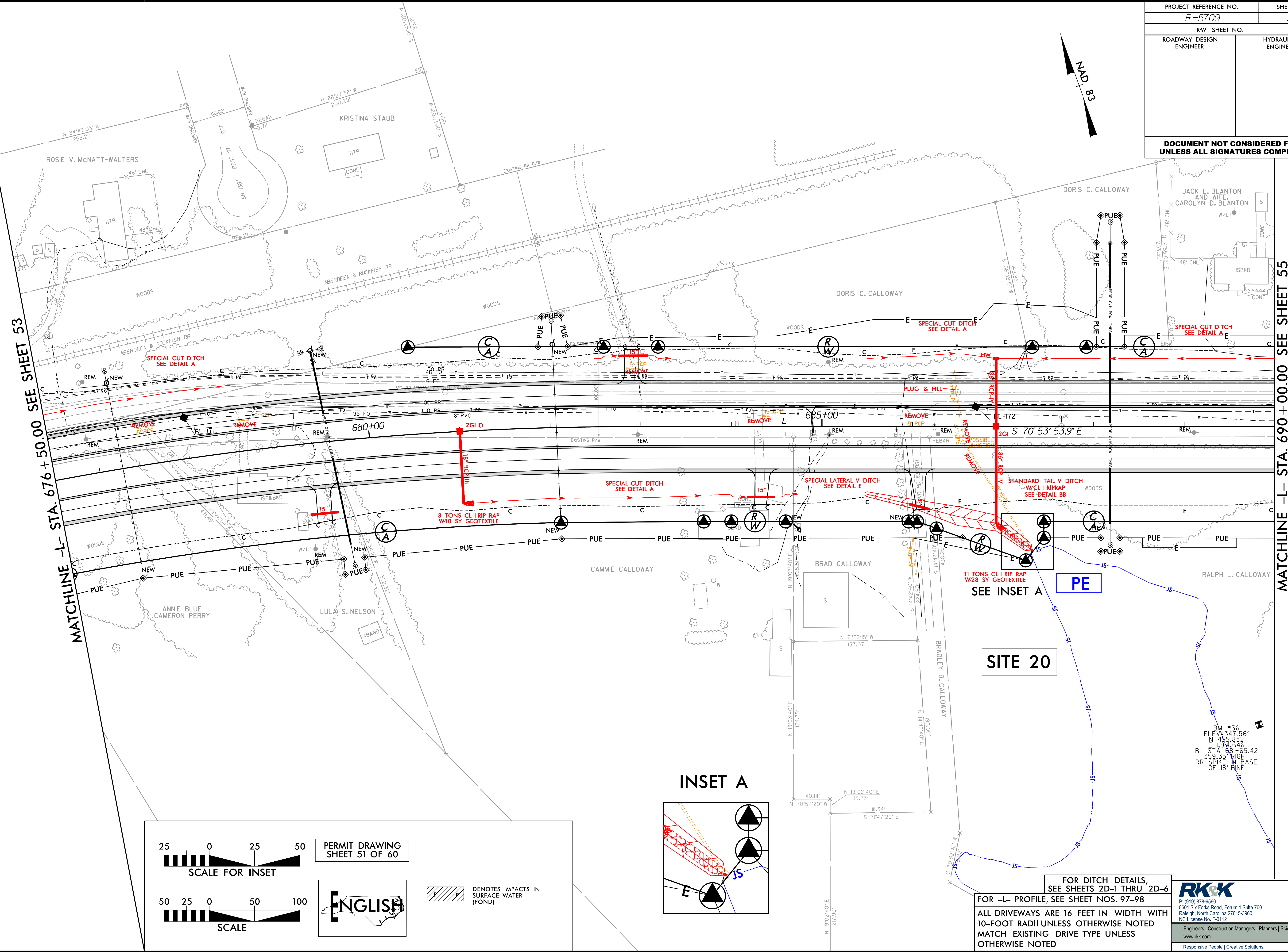
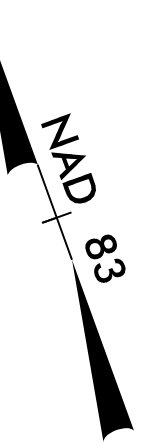
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6/18/2021
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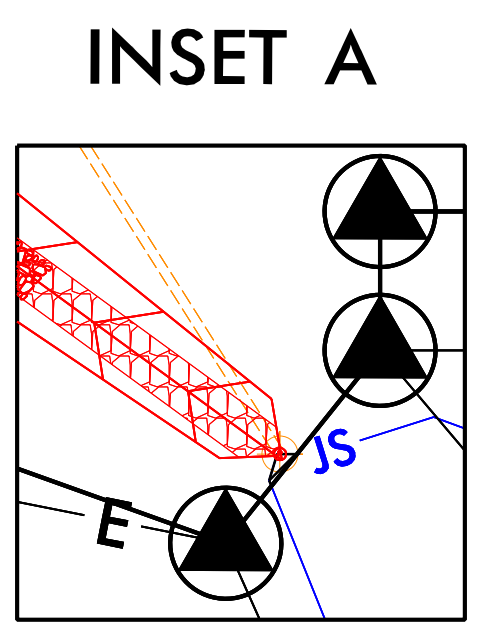
PROJECT REFERENCE NO. R-5709	SHEET NO. 54
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



PERMIT DRAWING
SHEET 51 OF 60

ENGLISH

DENOTES IMPACTS IN SURFACE WATER (POND)



FOR DITCH DETAILS,
SEE SHEETS 2D-1 THRU 2D-6

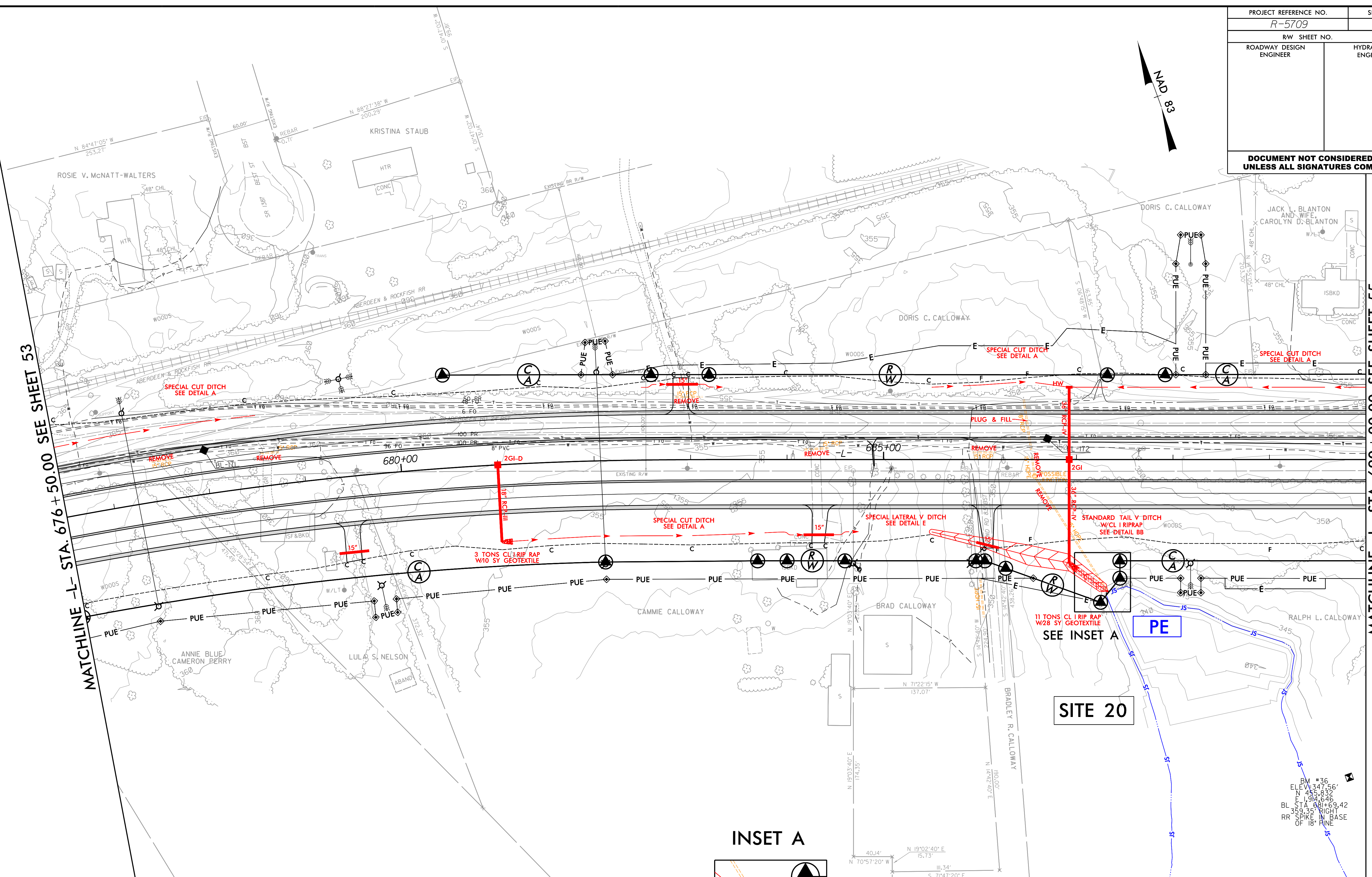
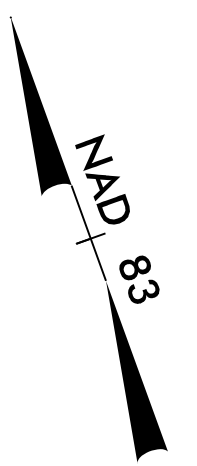
FOR -L- PROFILE, SEE SHEET NOS. 97-98

ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED

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PROJECT REFERENCE NO. R-5709	SHEET NO. 54
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



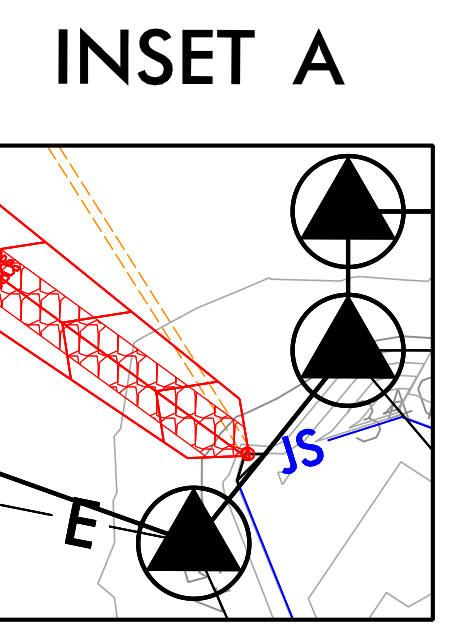
MATCHLINE -L- STA. 676 + 50.00 SEE SHEET 53

MATCHLINE -L- STA. 690 + 00.00 SEE SHEET 55

SITE 20

FOR DITCH DETAILS, SEE SHEETS 2D-1 THRU 2D-6

FOR -L- PROFILE, SEE SHEET NOS. 97-98
ALL DRIVEWAYS ARE 16 FEET IN WIDTH WITH 10-FOOT RADII UNLESS OTHERWISE NOTED
MATCH EXISTING DRIVE TYPE UNLESS OTHERWISE NOTED



SCALE FOR INSET

PERMIT DRAWING
SHEET 52 OF 60

SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER (POND)

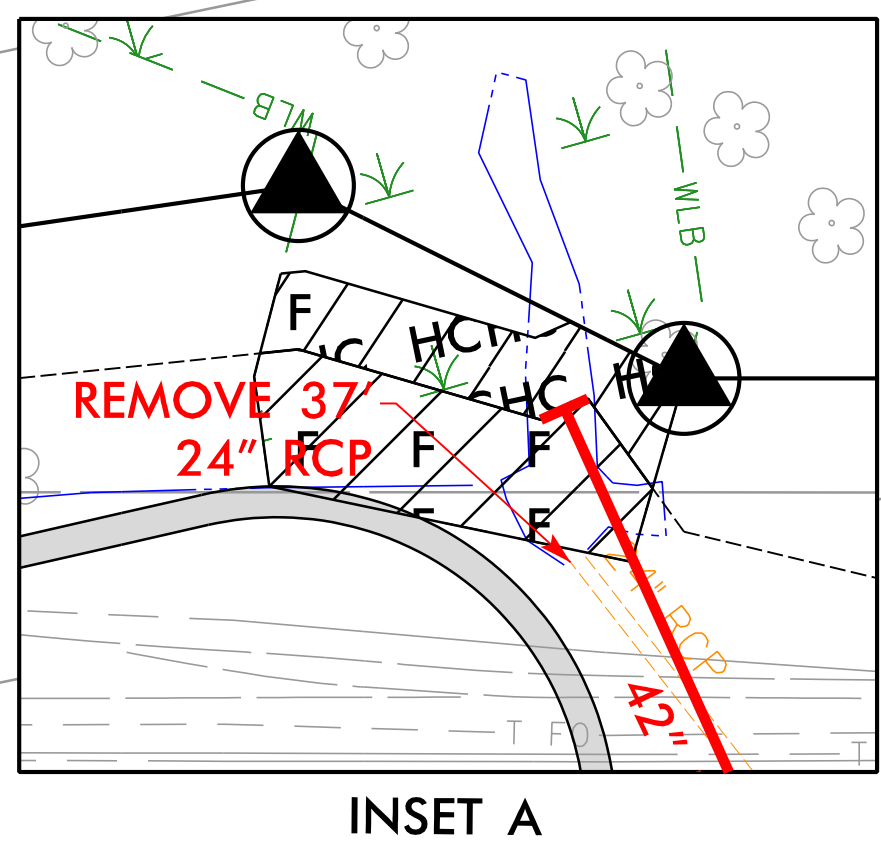
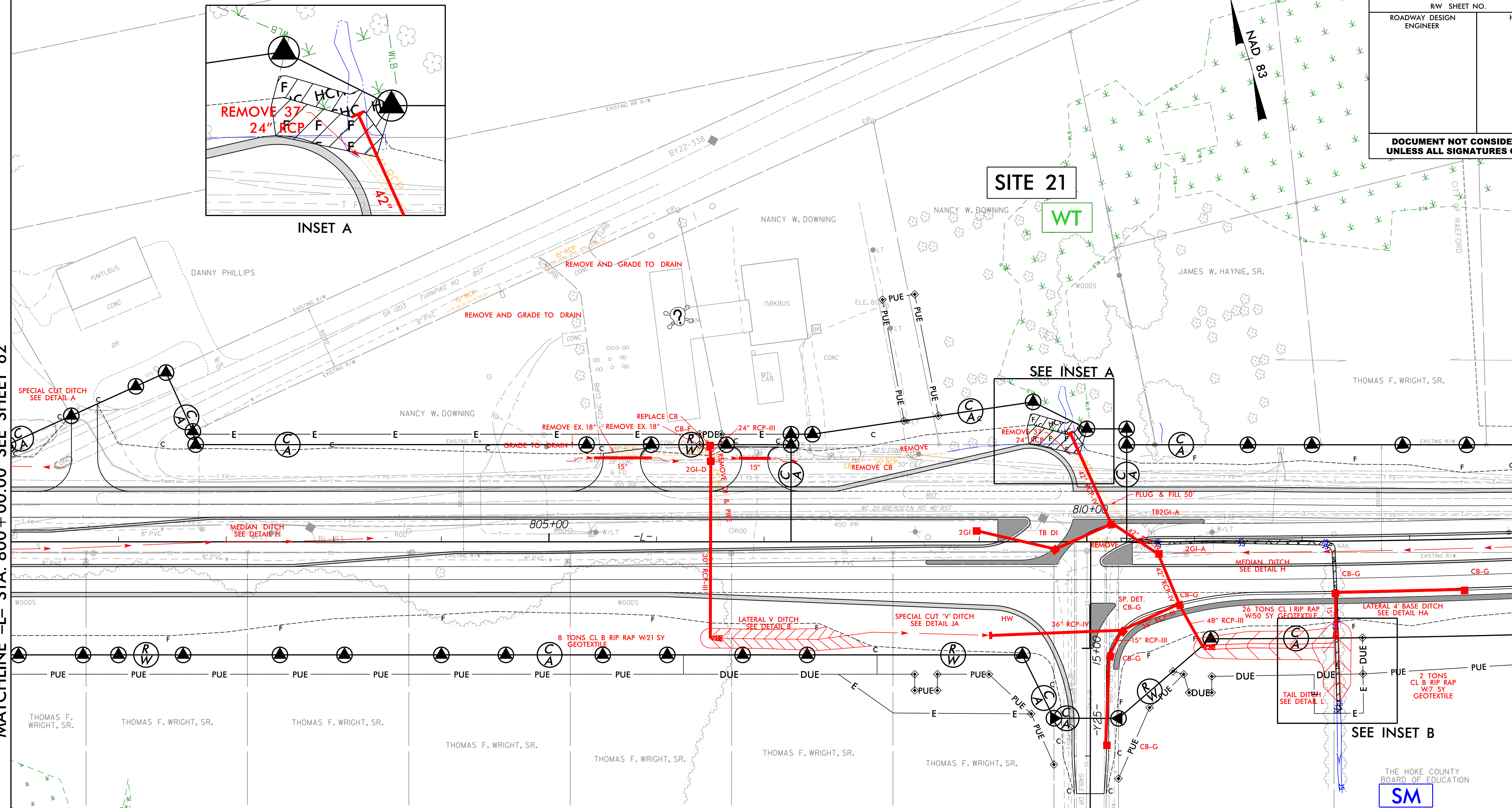
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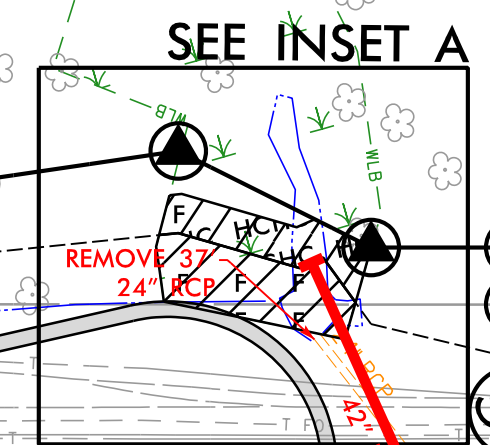
PROJECT REFERENCE NO. R-5709	SHEET NO. 63
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 800 + 00.00 SEE SHEET 62

MATCHLINE -L- STA. 814 + 00.00 SEE SHEET 64



SITE 21
WT



SITE 22
SM

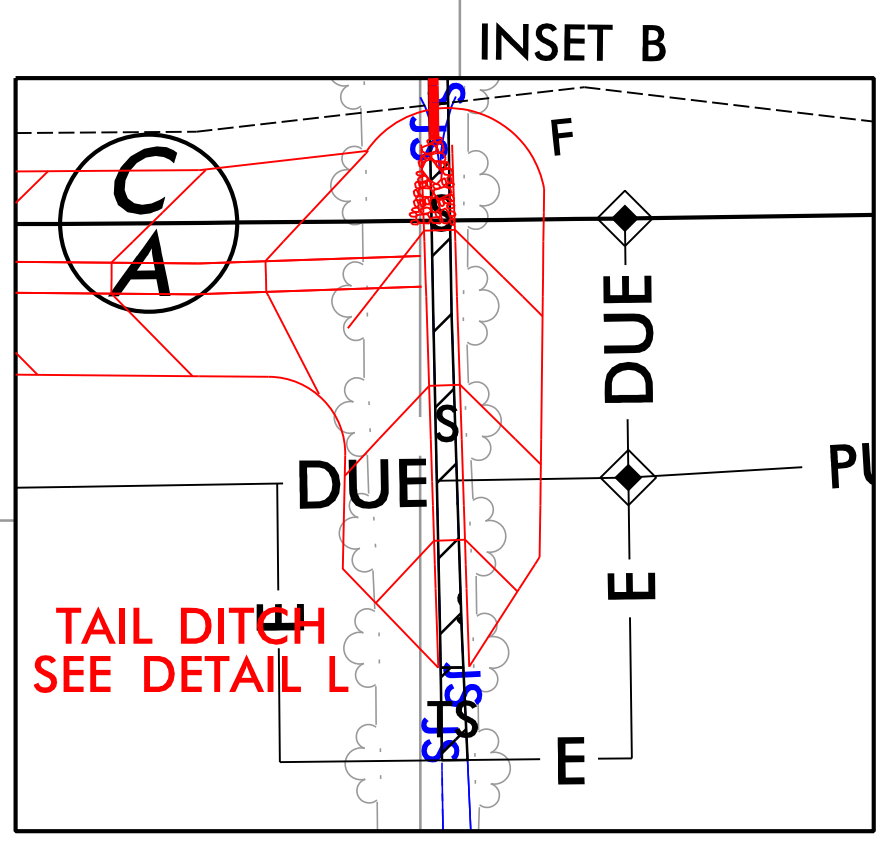
25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PERMIT DRAWING SHEET 53 OF 60

ENGLISH

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING

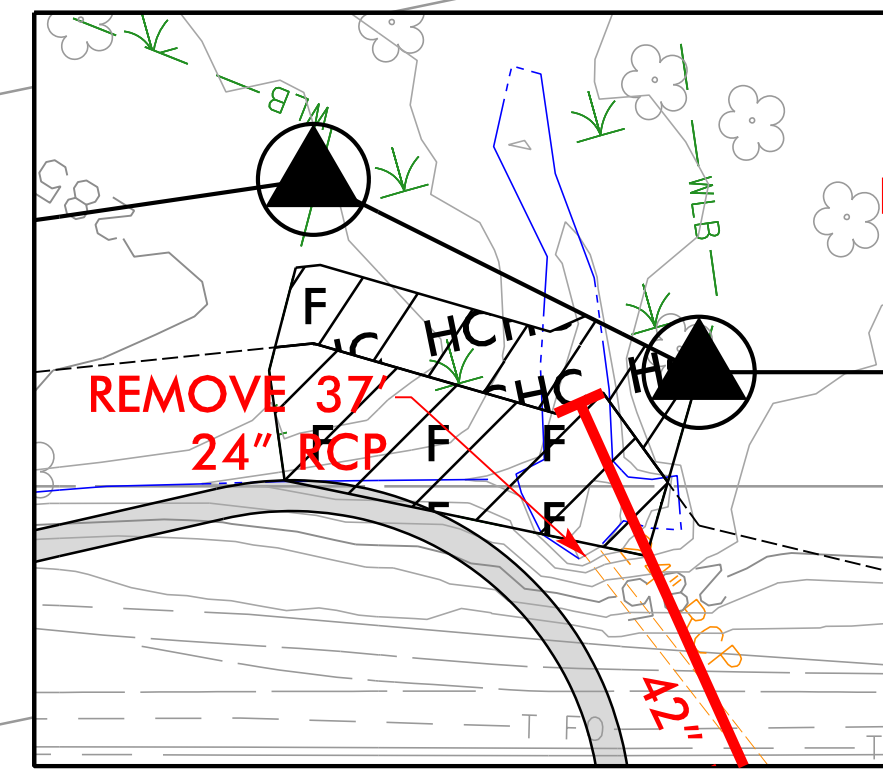
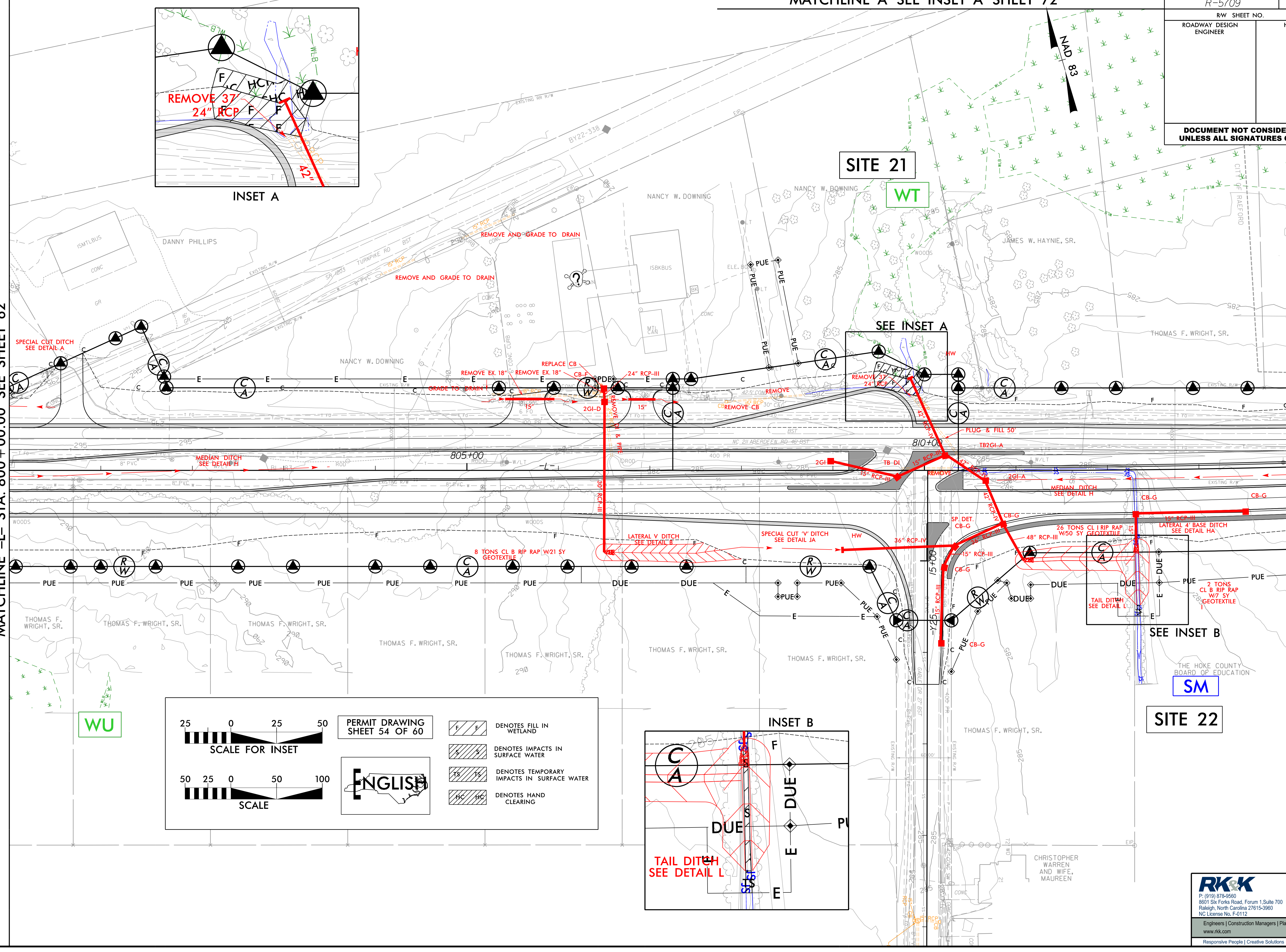


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8/18/2021
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PROJECT REFERENCE NO. R-5709	SHEET NO. 63
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE -L- STA. 800 + 00.00 SEE SHEET 62

MATCHLINE -L- STA. 814 + 00.00 SEE SHEET 64



INSET A

SITE 21

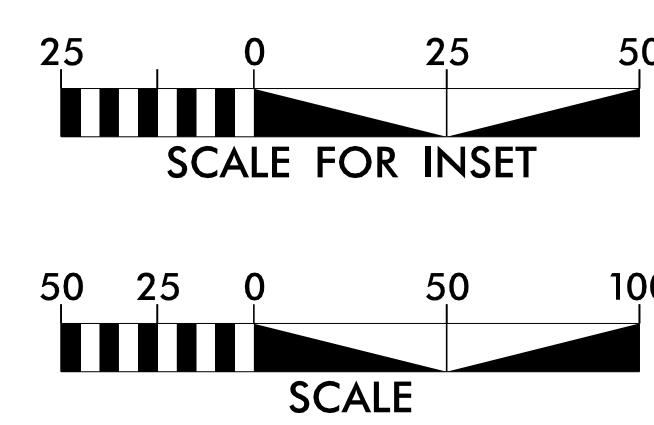
WT

SEE INSET A

SITE 22

SM

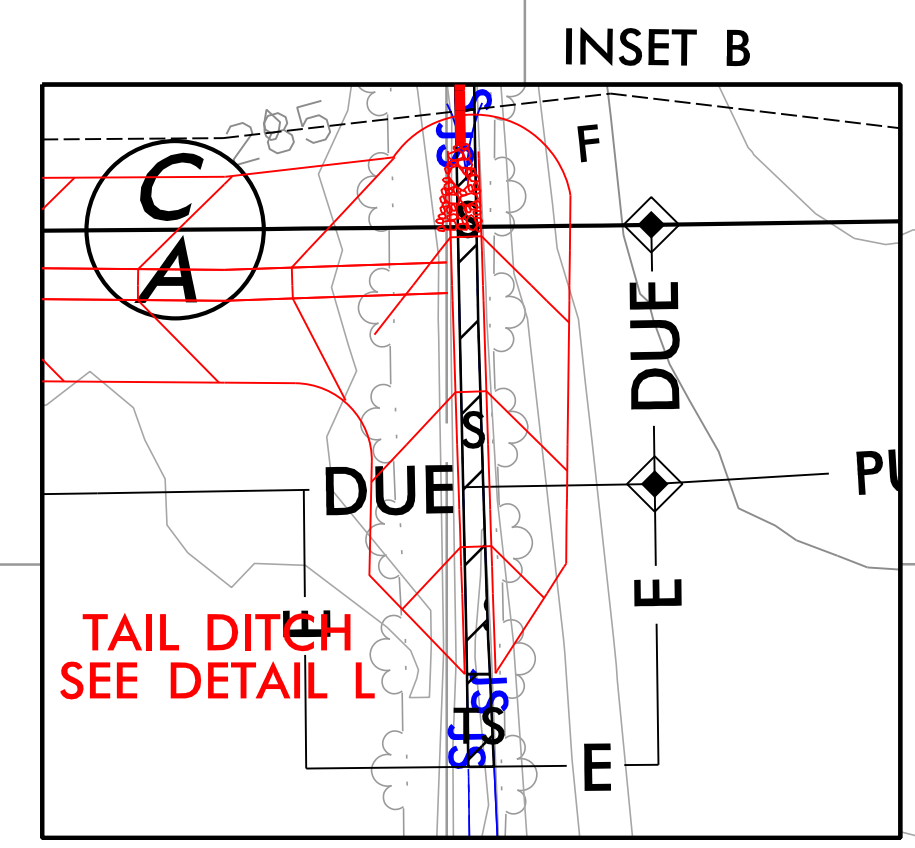
WU



PERMIT DRAWING SHEET 54 OF 60

ENGLISH

	DENOTES FILL IN WETLAND
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING



INSET B

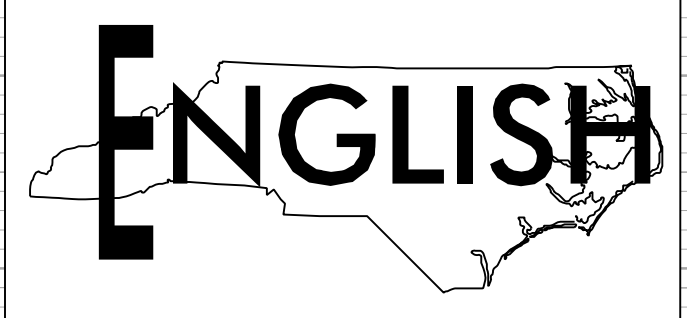
8/17/199
8/18/2021
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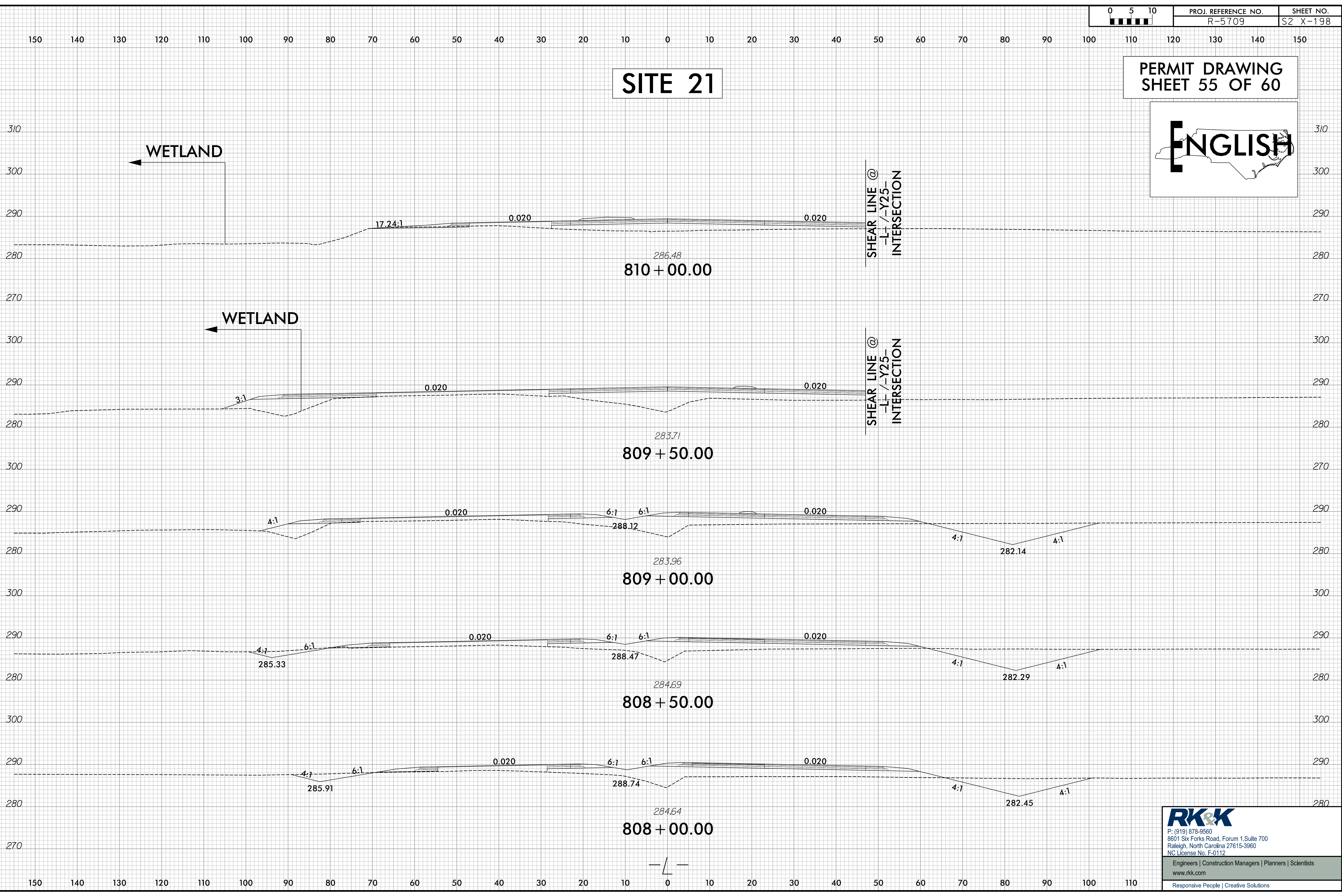
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SITE 21

PERMIT DRAWING
SHEET 55 OF 60

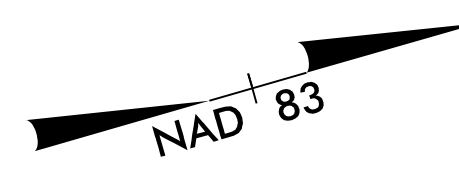
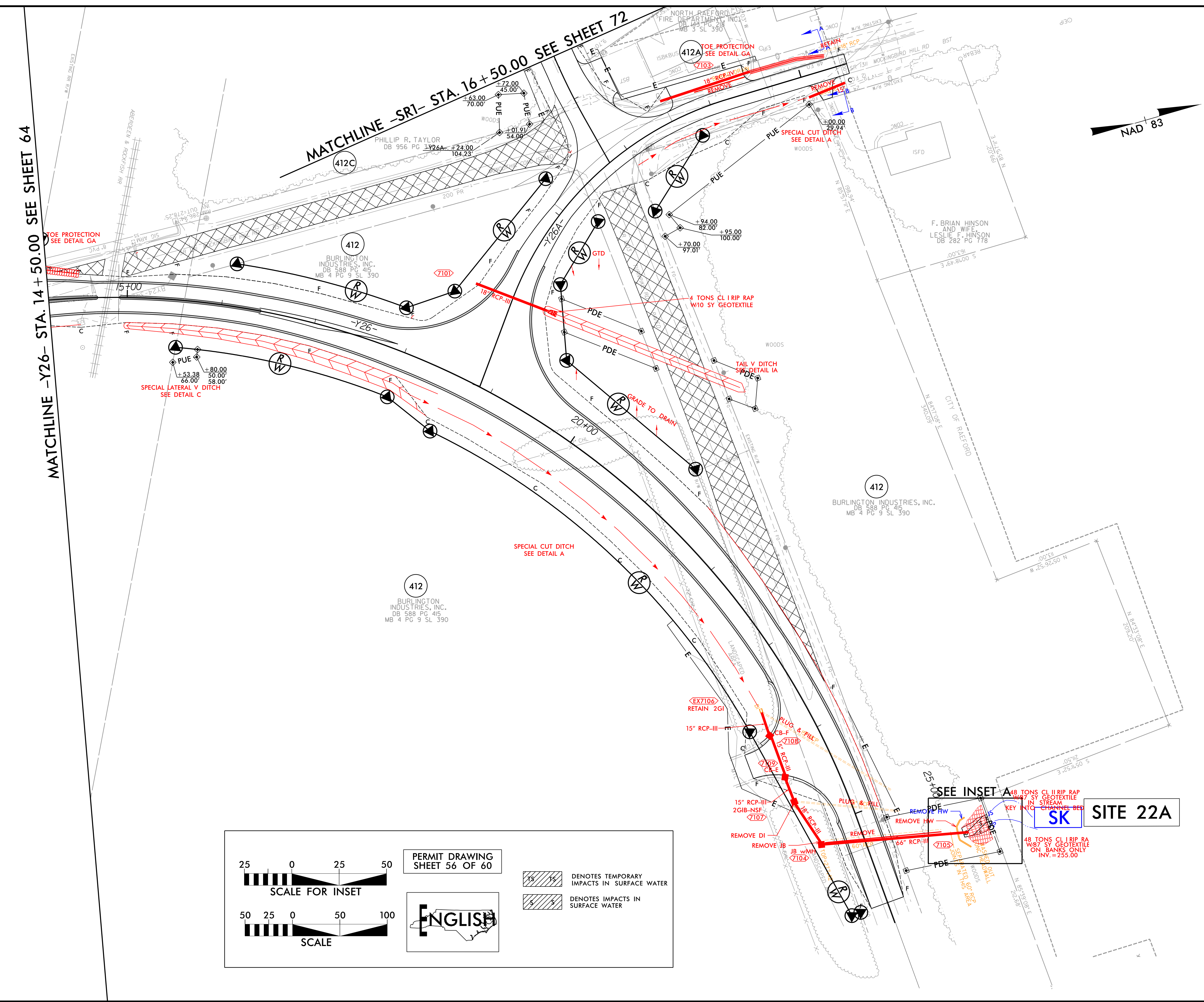


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SCALE FOR INSET

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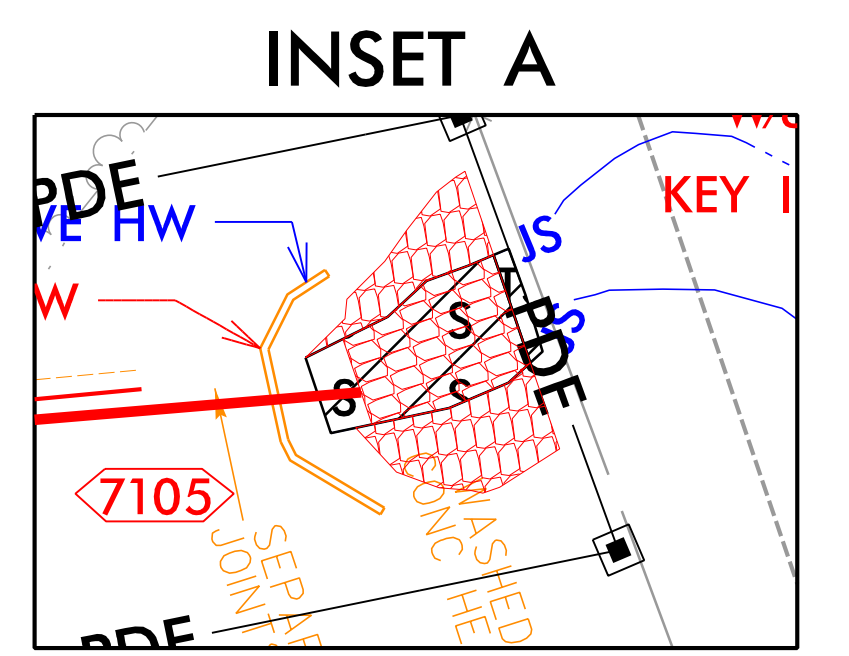
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PERMIT DRAWING SHEET 56 OF 60

ENGLISH

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



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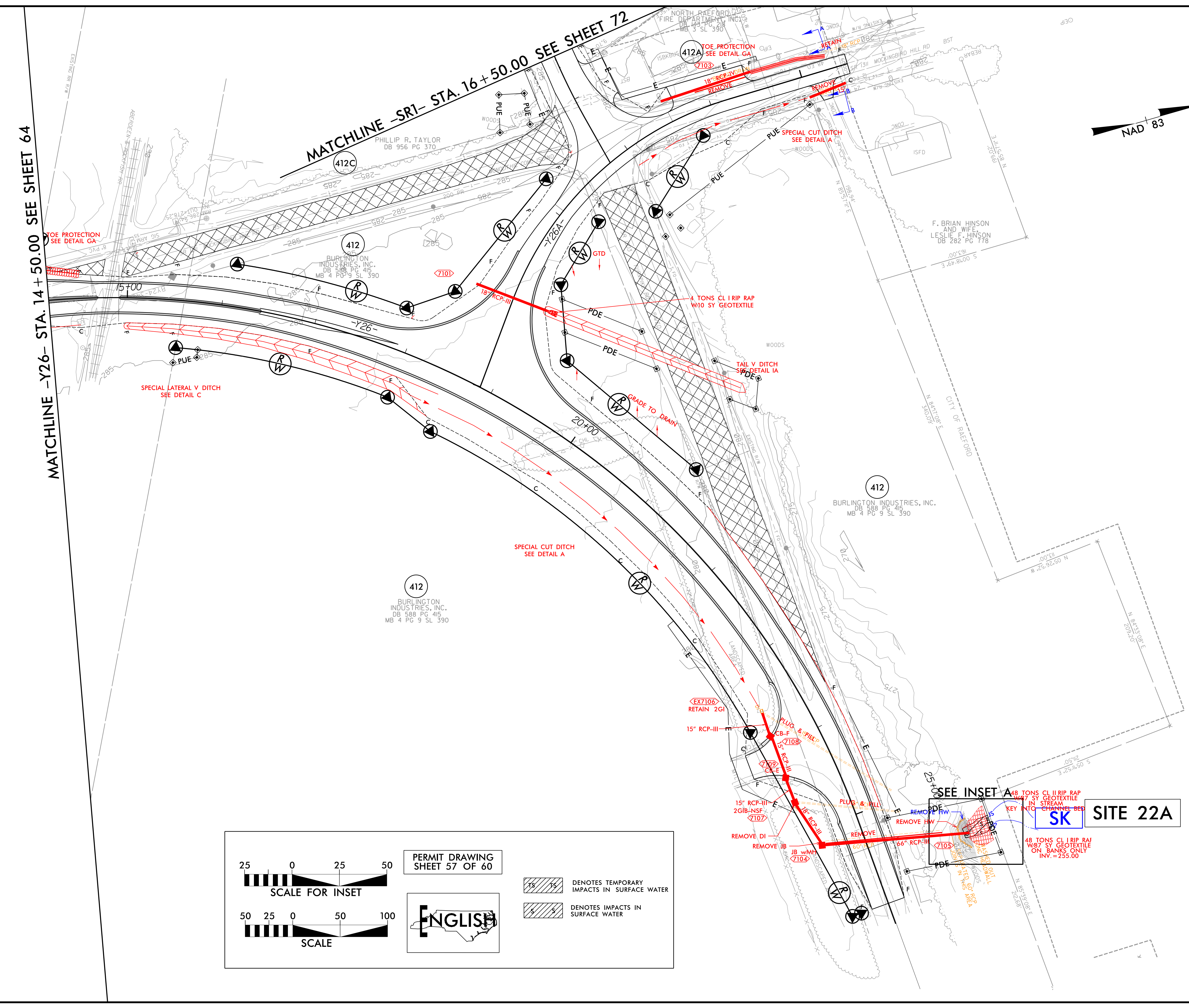
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PROJECT REFERENCE NO. R-5709	SHEET NO. 71
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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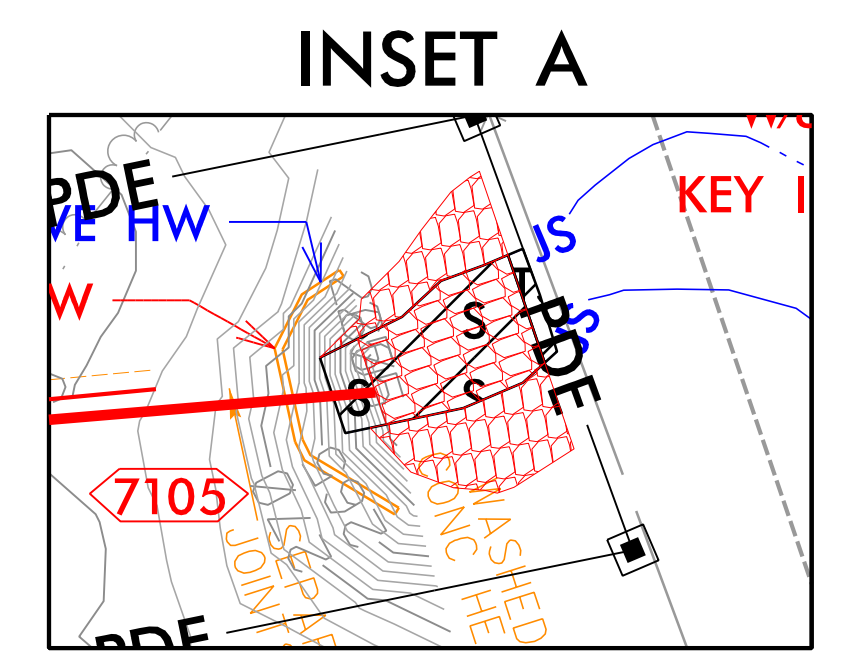
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PERMIT DRAWING SHEET 57 OF 60

ENGLISH

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



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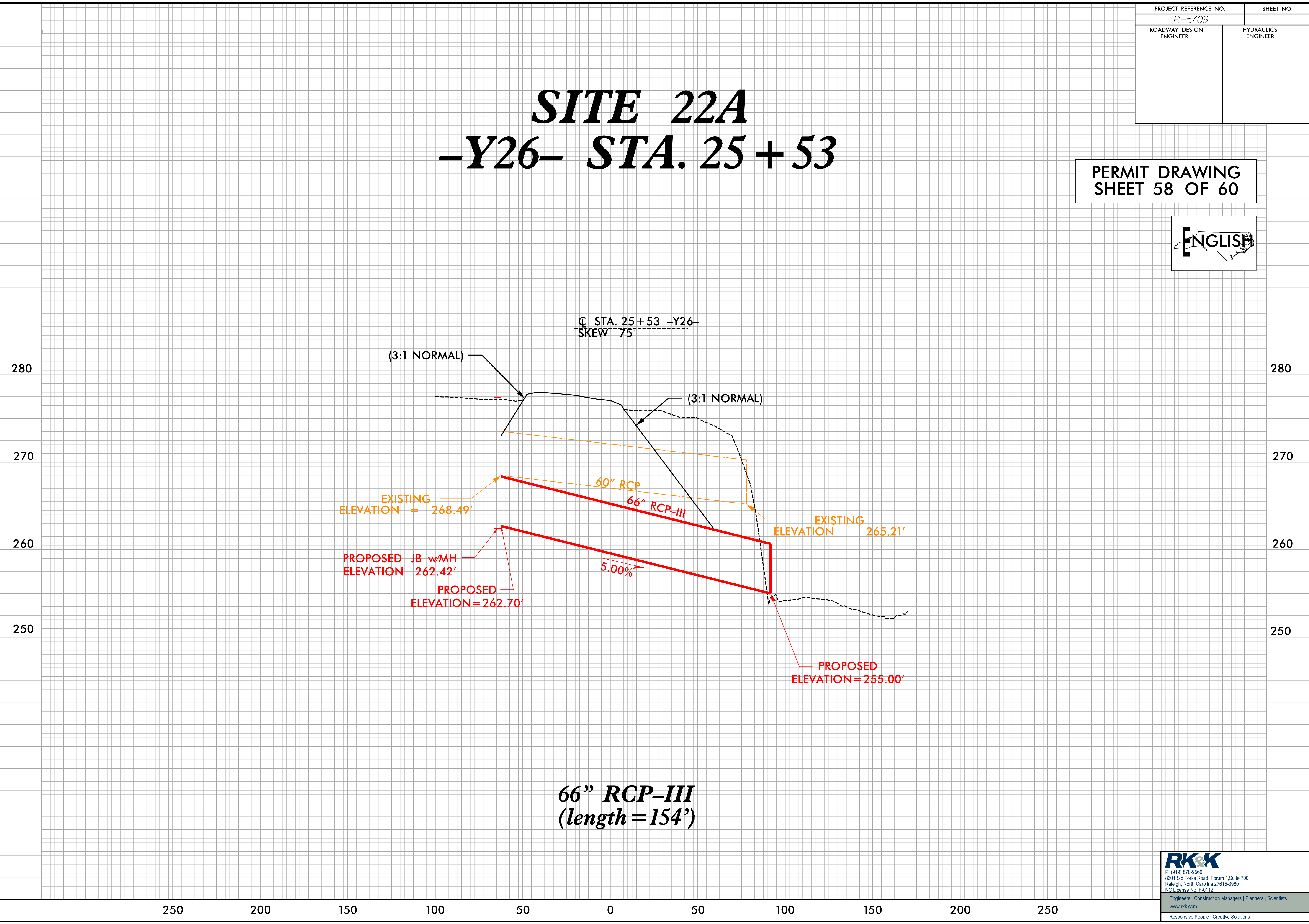
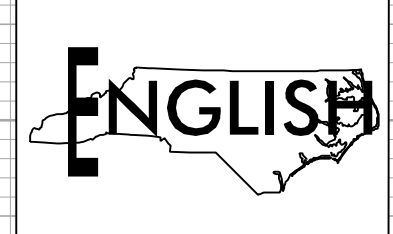
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PROJECT REFERENCE NO. <i>R-5709</i>	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 22A

-Y26- STA. 25+53

PERMIT DRAWING
SHEET 58 OF 60



66" RCP-III
(length = 154')

5/14/99

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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	14+10 -L- LT	ROADWAY FILL -WB	0.02		< 0.01		< 0.01					
2	14+50 -L- RT	ROADWAY FILL -WA	0.07		< 0.01		0.03					
3	14+30 -L-	54" RCP-III (BURIED 1') -SA						0.02	< 0.01	183	20	
4	22+30 -L- LT	BANK STABILIZATION -SD					0.01	< 0.01	< 0.01	20	12	
		ROADWAY FILL -WF					< 0.01					
		UTILITY IMPACTS					0.02					
5	23+25 -L- RT	-Y2- WF	0.02				< 0.01					
6	20+60 -Y2- RT	UTILITY IMPACTS -WG					< 0.01					
6	18+50 -Y3- RT	ROADWAY FILL -WG					< 0.01					
6	36+00 -L- LT	ROADWAY FILL -WG	0.06				0.09					
6	39+50 -L- LT	-Y4- WG	0.03				< 0.01					
6A	14+00 -Y4- RT	ROADWAY FILL -WG2	< 0.01		0.03		0.02					
7	35+00 -L- RT	ROADWAY FILL -WH	0.06		< 0.01		0.03					
8	34+65 -L-	66" RCP IV (BURIED 1') -SC						< 0.01	< 0.01	85	53	
		BANK STABILIZATION						< 0.01		26		
9	165+50 -L- RT	ROADWAY FILL -WJ	0.01				0.02					
10	168+00 -L-	ROADWAY FILL -WI	0.19				0.05					
		54" RCP-III -SE						< 0.01		70		
		UTILITY IMPACTS -WI					< 0.01					
11	203+50 -L- LT	ROADWAY FILL -WM	0.07				0.07					
		UTILITY IMPACTS					0.15					
12	207+80 -L- RT	ROADWAY FILL -WL	0.29				0.06					
13	208+50 -L- LT	POND DRAINAGE -WN			0.02		< 0.01					3
14	208+61 -L-	72" RCP IV (BURIED 1') -SF						0.02		185		
15	279+00 -L-	2@48" RCP III -SJ						< 0.01	< 0.01	140	11	
		UTILITY IMPACTS -WW					0.01					
TOTALS*:			0.83		0.06		0.62	0.06	< 0.01	709	96	3

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 6/16/2021
 HOKE & MOORE COUNTIES
 R-5709

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)
16	419+00 -L- RT	60" RCP-III -SG						<0.01		116		
		BANK STABILIZATION -SG						<0.01	<0.01	20	11	
17	557+75 -L-	ROADWAY FILL -WP	0.82	<0.01			0.14					
18	564+63 -L-	ROADWAY FILL -WQ	0.54				0.05					
		INLET, 42" RCP-III -SH							<0.01		26	
		CHANNEL RELOCATION -SH						0.02		213		
		BANK STABILIZATION -SH						<0.01	<0.01	15	12	
19	666+34 -L- RT	ROADWAY FILL -WR	0.03									
20	687+32 -L- RT	DITCH TO POND -PE						<0.01				
21	809+44 -L- LT	ROADWAY FILL -WT	0.02				0.01					
22	810+32 -L- RT	ROADWAY FILL AND TAIL DITCH -SM						0.02	<0.01	341	12	
22A	25+53 -Y26- LT	66" RCP-III - SK						0.01	<0.01	6		
		BANK STABILIZATION -SK						0.01		23	3	
		TOTALS for SHEET 1:	0.83		0.06		0.62	0.06	<0.01	709	96	3
		TOTALS for SHEET 2:	1.41	<0.01			0.20	0.06	<0.01	734	65	
		TOTALS*:	2.24	<0.01	0.06	0.00	0.82	0.12	<0.01	1443	161	3

*Rounded totals are sum of actual impacts

NOTES:

Site 19 has 13 SF of wetland WR that is outside of the fill slope. This area will be considered a take for the purposes of this summary sheet.

There will be 0.08 acre of temporary fill in wetlands in the hand clearing areas for erosion control measures.

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SHEET 60 OF 60