PROJECT COMMITMENTS

T.I.P Project No. R-2511
Widening of US 17
from North of NC 171 to Multi-Lanes South of Williamston
Beaufort and Martin Counties
WBS Element No. 35494.1.1

NCDOT Hydraulics Unit/Division One Construction

NCDOT will coordinate with the Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine whether the Memorandum of Agreement between NCDOT and the FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required. This project involves construction activities on or adjacent to a FEMA-regulated stream. Therefore, NCDOT Division One shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Division 1 Environmental Officer, Environmental Analysis Unit

The Neuse River waterdog has been identified to occur in waters within the project study area. A survey is being conducted to determine which waterbodies within the study area contain habitat for the species. For the waterbodies that are deemed suitable habitat, payment will be made into the North Carolina Nongame Aquatic Species Fund for each of these crossings as set forth in the Neuse River waterdog and Carolina madtom Programmatic Biological Opinion (PBO) if all construction measures of the PBO can be met.

Division 1 Construction, Division 1 Environmental Officer

Northern long-eared bat: At individual project sites where a total of 1.0 acre or more of tree clearing will occur, no tree clearing will occur during the portion of the day that the air temperature is <40 degrees Fahrenheit in order to protect NLEBs that may be in torpor. This restriction is only subject to the known/potential range (30 coastal counties) that is shown in Figure 2 of the 2020 PBO.

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2004-11082** County: **Beaufort County** U.S.G.S. Quad: **Old Ford**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **Paul Williams**
NCDOT Division 1
Address: **113 Airport Drive**
Edenton NC, 27932
Telephone Number: **(252) 482-1861**

Size (acres) **Project area ROW for 11 miles**
Nearest Waterway **Smithwick Creek**
USGS HUC **03020103**
Nearest Town **Williamston**
River Basin **Pamlico**
Coordinates Latitude: **35.68976**
Longitude: **-77.080023**

Location description: **The project is located along the US 17 Highway corridor between the community of Old Ford in Beaufort County running approximately 10.6 miles north to Mill Inn Road near the town of Williamston in Martin County, North Carolina.**

Description of projects area and activity: **The project involves the widening of US 17 from a 2 lane to a 4 lane with a raised median for approximately 10.6 miles. The bridge over Gum Swamp will be replaced with dual bridges along with multiple culvert extensions and 4.12 acres of permanent wetland impacts. The utility impacts associated with this project are covered under this RGP.**

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

Authorization: Regional General Permit Number and/or Nationwide Permit Number: **RGP 31**
SEE ATTACHED RGP or 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 and your submitted application and attached information dated June 23, 2021 and Utility Supplemental Plans dated August 4, 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 in Elizabeth City, NC, at (252) 264-3901.

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 **Kyle Barnes at (910) 251-4584 or Kyle.W.Barnes@usace.army.mil**.

Corps Regulatory Official: Kyle Barnes Date: **November 23, 2021**
Expiration Date of Verification: **May 25, 2025**

SAW-2004-11082

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). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

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). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

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 aquatic resources within the above described project area have been identified under a previous action. Please reference the approved jurisdictional determination issued . Action ID: **SAW-** .

B. Basis For Jurisdictional Determination: **All Waters and Wetlands within the project area flow unimpeded to either the Tar River or the Roanoke River which are TNW's.**

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

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 **N/A**.
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: Kyle Barnes
Kyle Barnes

Date of JD: **November 19, 2021** Expiration Date of JD: **None**

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 http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

SAW-2004-11082

Copy furnished:

Paul Williams
NCDOT Division 1
113 Airport Drive
Edenton NC, 27932

SPECIAL CONDITIONS

Conditions listed below are related to the activities required for the construction, maintenance, repair, and removal of utility lines for water and other substances and electricity, excluding oil, natural gas and products derived from oil or natural gas.

A. Electric utility lines and telecommunication lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of electric utility lines and telecommunication lines. There must be no change in pre-construction contours of waters of the United States. An "electric utility line and telecommunication line" is defined as any cable, line, fiber optic line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication.

B. Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the electric utility line or telecommunication line crossing of each waterbody.

C. Electric utility line and telecommunications substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with an electric utility line or telecommunication line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

D. Foundations for overhead electric utility line or telecommunication line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead electric utility line or telecommunication line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

E. Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of electric utility lines or telecommunication lines, including overhead lines and substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

F. This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional

drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines.

G. This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the electric utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

H. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

I. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

J. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable

K. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

L. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

M. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

N. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

O. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

P. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

Q. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

R. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

S. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

T. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

U. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in

the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

V. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

W. Historic Properties. (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the

appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

X. 21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

Y. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory

mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider

appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

Z. Water Quality. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

AA. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

BB. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

CC. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

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

_____
(Transferee)

_____
(Date)

DD. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

EE. <u>Required Mitigation:</u>

NCDOT is required to mitigate for unavoidable impacts to jurisdictional Waters and Wetlands associated with the R-2511 project. The following impacts shall be mitigated at a 2:1 ratio: **1.277 acres** of Riparian wetlands, **0.35 acres** of Non-Riparian wetlands and **635 linear feet** of stream in the Tar-Pamlico 03020103 HUC as well as **2.495 acres** of Riparian wetlands and **1322 linear feet** in the Roanoke 03010107 HUC. The attached mitigation transfer form shall be provided back to the USACE upon completion of mitigation and prior to the impacts to jurisdictional Waters and Wetlands.

Definitions:

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.
Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases

of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance

of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.
Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a "water of the United States." If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

REGIONAL CONDITIONS:

The following Regional Conditions have been approved by the Wilmington District for the Nationwide Permits (NWPs) published in the January 13, 2021, *Federal Register* (86 FR 2744) announcing the reissuance of 12 existing (NWPs) and four new NWPs, as well as the reissuance of NWP general conditions and definitions with some modifications.

A. EXCLUDED WATERS AND/OR AREAS

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1. Anadromous Fish Spawning Areas. Work in waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited from February 15th through June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC and/or the National Marine Fisheries Service (NMFS)). Work in waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited from February 15th through September 30th, without prior written approval from the Corps and the appropriate wildlife agencies. Work in waters of the U.S. designated by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this NWP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

2. Trout Waters Moratorium. Work in waters of the U.S. in the designated trout watersheds of North Carolina are prohibited from October 15th through April 15th without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section C.3. above for information on the designated trout watersheds).

3. Sturgeon Spawning Areas. No in-water work shall be conducted in waters of the U.S. designated by the National Marine Fisheries Service as Atlantic sturgeon critical habitat from February 1st through June 30th. No in-water work shall be conducted in waters of the U.S. in the Roanoke River designated as Atlantic sturgeon critical habitat from February 1st through June 30th, and August 1st through October 31st, without prior written approval from NMFS.

4. Submerged Aquatic Vegetation. Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, NWP 55 and NWP 56, unless Essential Fish Habitat (EFH) consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is verified.

B. REGIONAL CONDITIONS APPLICABLE TO ALL NWP's

A. Mitigation for Loss of Stream Bed. For any NWP that results in a loss of more than 0.02 acres of stream bed, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate, or the adverse effects of the proposed activity are minimal. For stream bed losses of 0.02 acres or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

B. Riprap. For all NWPs that allow for the use of riprap material for bank stabilization, the following conditions shall be applied:

a. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody. A waiver from the specifications in this Regional Condition must be requested in writing.

b. Riprap shall be placed only on the stream banks, or, if it is necessary to be placed in the stream bed, the finished top elevation of the riprap should not exceed that of the original stream bed.

C. Culvert Placement. For all NWPs that allow for culvert placement, the following conditions shall be applied:

a. For all NWPs that involve the construction/installation of culverts, measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or

equal to 48 inches. If the culvert outlet is submerged within a pool or scour hole and designed to provide for aquatic passage, then culvert burial into the streambed is not required.
Culvert burial is not required for structures less than 72 inch diameter/width, where the slope of the culvert will be greater than 2.5%, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g., rock ladders, cross vanes, sills, baffles etc.).
Culvert burial is not required when bedrock is present in culvert locations.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp. This waiver request must be specific as to the reasons(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment. Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

b. Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.

c. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. If the width of the culvert is wider than the stream channel, the culvert shall include multiple boxes/pipes, baffles, benches and/or sills to maintain the natural width of the stream channel. If multiple culverts/pipes/barrels are used, low flows shall be accommodated in one culvert/pipe and additional culverts/pipes shall be installed such that they receive only flows above bankfull.

D. Utility Lines. For all NWPs that allow for the construction and installation of utility lines, the following conditions shall be applied:

a. Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the U.S. (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

b. The work area authorized by this permit, including temporary and/or permanent fills, will be minimized to the greatest extent practicable. Justification for work corridors exceeding forty (40) feet in width is required and will be based on pipeline diameter and length, size of equipment required to construct the utility line, and other construction information deemed necessary to support the request. The permittee is required to provide this information to the Corps with the initial PCN package.

c. A plan to restore and re-vegetate wetland areas cleared for construction must be submitted with the required PCN. Cleared wetland areas shall be re-vegetated, as appropriate, with species of canopy, shrub, and herbaceous species. The permittee shall not use fescue grass or any other species identified as invasive or exotic species by the NC Native Plant Society (NCNPS): https://ncwildflower.org/invasive-exotic-species-list/.

d. Any permanently maintained corridor along the utility right of way within forested wetlands shall be considered a loss of aquatic function. A compensatory mitigation plan will be required for all such impacts

associated with the requested activity if the activity requires a PCN and the cumulative total of permanent conversion of forested wetlands exceeds 0.1 acres, unless the District Engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal.

Where permanently maintained corridor within forested wetlands is 0.1 acres or less, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment.

e. When directional boring or horizontal directional drilling (HDD) under waters of the U.S., including wetlands, permittees shall closely monitor the project for hydraulic fracturing or "fracking." Any discharge from hydraulic fracturing or "fracking" into waters of the U.S., including wetlands, shall be reported to the appropriate Corps Regulatory Field Office within 48 hours. Restoration and/or compensatory mitigation may be required as a result of any unintended discharges.

E. Temporary Access Fills. The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 0.1 acres of wetlands or 0.02 acres of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, how pre-project conditions will be restored, and include a timetable for all restoration activities.

F. Northern Long-eared Bat – Endangered Species Act Compliance

The Wilmington District, U.S. Army Corps of Engineers has consulted with the United States Fish and Wildlife Service (USFWS) in regard to the threatened Northern long-eared bat (NLEB) (Myotis septentrionalis) and Standard Local Operating Procedures for Endangered Species (SLOPES) have been approved by the Corps and the USFWS. This condition concerns effects to the NLEB only and does not address effects to other federally listed species and/or federally designated critical habitat.

A. Procedures when the Corps is the lead federal* agency for a project:

The permittee must comply with (1) and (2) below when:

• the project is located in the western 41 counties of North Carolina, to include non-federal aid North Carolina Department of Transportation (NCDOT) projects, OR;
• the project is located in the 59 eastern counties of North Carolina and is a non-NCDOT project

*Generally, if a project is located on private property or on non-federal land, and the project is not being funded by a federal entity, the Corps will be the lead federal agency due to the requirement to obtain Department of the Army authorization to impact waters of the U.S. If the project is located on federal land, contact the Corps to determine the lead federal agency.

(1) A permittee using an NWP must check to see if their project is located in the range of the NLEB by using the following website:
http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf. If the project is within the range of the NLEB, or if the project includes percussive activities (e.g., blasting, pile driving, etc.), the permittee is then required to check the appropriate website in the paragraph below to discover if their project:

• is located in a 12-digit Hydrologic Unit Code area ("red HUC" - shown as red areas on the map), AND/OR;
• involves percussive activities within 0.25 mile of a red HUC.

Red HUC maps - for the western 41 counties in NC (covered by the Asheville Ecological Services Field Office), check the project location against the electronic maps found at:
http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html. For the eastern 59 counties in NC

(covered by the Raleigh Ecological Services Field Office), check the project location against the electronic maps found at:
https://www.fws.gov/raleigh/NLEB_RFO.html.

(2) A permittee must submit a PCN to the District Engineer, and receive written verification from the District Engineer, prior to commencing the activity, if the activity will involve any of the following:

• tree clearing/removal and/or, construction/installation of wind turbines in a red HUC, AND/OR;
• bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, (applies anywhere in the range of the NLEB), AND/OR:
• percussive activities in a red HUC, or within 0.25 mile of a red HUC.

The permittee may proceed with the activity without submitting a PCN to either the Corps or the USFWS, provided the activity complies with all applicable NWP terms and general and regional conditions, if the permittee's review under A.(1) and A.(2) above shows that the project is:

• located outside of a red HUC (and there are no percussive activities), and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
• located outside of a red HUC and there are percussive activities, but the percussive activities will not occur within 0.25-mile of a red HUC boundary, and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
• located in a red HUC, but the activity will NOT include tree clearing/removal; construction/installation of wind turbines; bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, and/or; any percussive activities.

B. Procedures when the USACE is not the lead federal agency:

For projects where another federal agency is the lead federal agency - if that other federal agency has completed project-specific ESA Section 7(a)(2) consultation for the NLEB, and has (1) determined that the project would not cause prohibited incidental take of the NLEB, and (2) completed coordination/consultation that is required by the USFWS (per the directions on the respective USFWS office's website), that project may proceed without PCN to either the USACE or the USFWS, provided all General and Regional Permit Conditions are met.

The NLEB SLOPES can be viewed on the USACE website at:
http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/.
Permittees who do not have internet access may contact the USACE at (910) 251- 4633.

G. ESA Programmatic Biological Opinions. The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and designated critical habitat (DCH), and programmatic consultation concerning other federally listed species and/or DCH may occur in the future. The result of completed programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS. These PBOs contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" of whichever species or critical habitat is covered by a specific PBO. Authorization under NWPs is conditional upon the permittee's compliance with all the mandatory terms and conditions associated with incidental take of the applicable PBO (or PBOs), which are incorporated by reference in the NWPs. Failure to comply with the terms and conditions associated with incidental take of an applicable PBO, where a take of the federally listed species occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee non-compliance with the authorization under the NWPs. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any NWP verification that may be issued for a project. For an activity/project that does not require a PCN, the terms and conditions of the applicable PBO(s) also apply to that non-notifying

activity/project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO and the ESA. All PBOs can be found on our website at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/.

H. Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

C. SECTION 401 WATER QUALITY CERTIFICATION (WQC) AND/OR COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION SUMMARY AND APPLICABLE CONDITIONS

The CZMA Consistency Determination and all Water Quality Certifications for the NWPs can be found at: https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Permits/2017-Nationwide-Permits/

Action ID Number: **SAW-2004-11082** **County:** **Beaufort/Martin Counties**

Permittee: **Paul Williams**
NCDOT Division 1

Project Name: **NCDOT/FROM SR1205 SOUTH ALONG US17 TO BE/ TIP # R-2511**

Date Verification Issued: **November 23, 2021**

Project Manager: **Kyle Barnes**

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: Kyle Barnes

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**

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Paul Williams NCDOT Division 1**	File Number: **SAW-2004-11082**	Date: **November 23, 2021**

Attached is:	See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)	B
☐ PERMIT DENIAL	C
☐ APPROVED JURISDICTIONAL DETERMINATION	D
☒ PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: **District Engineer, Wilmington Regulatory Division,** **Attn: Kyle Barnes** **2407 West 5th Street** **Washington, North Carolina 27889**	If you only have questions regarding the appeal process you may also contact: Mr. Philip Shannin, Administrative Appeal Review Officer CESAD-PDO U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, Attn: Kyle Barnes, 2407 West 5th Street
Washington, North Carolina 27889

For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Philip Shannin, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

DEPARTMENT OF THE ARMY
Wilmington District, Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403-1343

Regional General Permit No. SAW-198200031 (RGP 31)
Name of Permittee: North Carolina Department of Transportation
Effective Date: May 26, 2020
Expiration Date: May 25, 2025

DEPARTMENT OF THE ARMY
REGIONAL GENERAL PERMIT

A regional general permit (RGP) to perform work in or affecting navigable waters of the United States and waters of the United States, upon recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403), and Section 404 of the Clean Water Act (33 U.S.C. 1344), is hereby modified and re-issued by authority of the Secretary of the Army by the

District Commander
U.S. Army Engineer District, Wilmington
Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403-1343

TO AUTHORIZE THE DISCHARGE OF DREDGED OR FILL MATERIAL IN WATERS OF THE UNITED STATES (U.S.), INCLUDING WETLANDS, ASSOCIATED WITH BEST-FIT WIDENING PROJECTS, OR PHASES OF "PHASED" BEST-FIT WIDENING PROJECTS, THAT (1) HAVE UNDERGONE INTERAGENCY REVIEW AND COMPLETED THE INTERAGENCY MERGER PROCESS, AND (2) WOULD CAUSE ONLY MINIMAL INDIVIDUAL AND CUMULATIVE ADVERSE ENVIRONMENTAL EFFECTS. THESE PROJECTS ARE CONDUCTED BY THE VARIOUS DIVISIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT), INCLUDING THE NCDOT DIVISION OF HIGHWAYS, RAIL, BICYCLE/PEDESTRIAN, ETC.

Detailed Description/Terms

The Merger Process merges the requirements of the National Environmental Policy Act (NEPA) with those of Section 404 of the Clean Water Act (CWA).

A best-fit widening project, or a phase of a "phased" best-fit widening project, must complete the interagency Merger Process in order to qualify for authorization under RGP 31.

Projects that require an Environmental Impact Statement (EIS) cannot be authorized by RGP 31.

Best-fit widening projects, or phases of "phased" best-fit widening projects, may include a small amount of new location roadway for components such as interchanges, intersections, road segments, etc., provided that (1) the Merger Team concurs on the new location portion, and (2) the Corps determines that the amount of new location roadway is acceptable for authorization under RGP 31. Note that "new location roadway" is not limited to the examples provided above.

If the Merger Process for a specific best-fit widening project, or a phase of a "phased" best-fit widening project, is modified to exclude Concurrence Points (CPs), or changed in any way that prevents the interagency Merger Team from concurring, non-concurring, or abstaining (for those agencies that are allowed to abstain under the Merger Memorandum of Understanding) on all CPs, RGP 31 cannot be used to authorize the best-fit widening project or phase. Note that combining CPs is acceptable in some circumstances and will not prevent a best-fit widening project or phase from being authorized under RGP 31.

The Corps will determine if RGP 31 can be used to authorize a particular best-fit widening project, as follows:

- **Best-fit widening projects that are <u>not</u> phased** - this decision will not be made by the Corps until (1) the best-fit widening project completes the full Merger Process (i.e., all CPs have been completed) for road widening projects; (2) the prospective permittee completes final design for the project; (3) the prospective permittee submits a pre-construction notification (PCN) for the project to the Corps, and; (4) the Corps completes the evaluation of the PCN. If the Corps determines that the project qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a verification letter for the use of RGP 31 for impacts to waters of the U.S. for the best-fit widening project.

- **Best-fit widening projects that are phased** - this decision will not be made by the Corps until (1) the entire best-fit widening project completes the Merger Process, up to and including completion of CP 4A (Avoidance/Minimization); (2) the initial phase to be constructed (Phase 1) completes CPs 4B and 4C; (3) the prospective permittee completes final design for Phase 1; (4) the prospective permittee submits a PCN for the entire project to the Corps, and; (5) the Corps completes the evaluation of the PCN. If the Corps determines that the project qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a verification letter for the use of RGP 31 for impacts to waters of the U.S. for the project, but the verification letter will authorize construction of Phase 1 <u>only</u>.

  Authorization of impacts for Phase 2 - with the exception of (1) noted above, Phase 2 will be processed as Phase 1 was, i.e., Phase 2 completes CPs 4B and 4C, the prospective permittee completes final design for Phase 2, the prospective permittee submits a PCN to the Corps for evaluation, and the Corps completes the re-evaluation of the PCN. If the

Corps determines that the project still qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a re-verification letter for the use of RGP 31 authorizing Phase 2 construction. If there are additional phases of a project, the same process will apply.

Phased Projects - if, after the entire project completes CP 4A, project impacts to waters of the U.S. for a particular phase increase or change to such a degree that the Corps determines that the proposed impacts of that phase would cause more than minimal individual and cumulative adverse environmental effects, RGP 31 will no longer be available for use and an Individual Permit will be required for the remainder of the project. This will apply even if impacts to waters of the U.S. for previous phases of that specific project were authorized by RGP 31.

If the Programmatic Merger Process changes while a best-fit widening project, or phase of a "phased" best-fit widening project, is in the Merger Process (e.g., if the Merger Process is updated or revised on a programmatic scale), the Merger Process for widening projects that was in place when the project review by the interagency Merger Team began (i.e., at CP 1), will remain in effect, unless the Merger Team concurs that the new programmatic process may be used. If the Merger Teams concurs that the new programmatic process may be used for a phase of a "phased" best-fit widening project, that process will be used for the remainder of the project/all phases.

While there is no impact limit under RGP 31, the Corps will require an Individual Permit if the proposed impacts (permanent and/or temporary) of a best-fit widening project, or phases of a "phased" best-fit widening project, would have more than minimal individual and cumulative adverse environmental effects. Additionally, if the Corps determines, on a case-by-case basis, that the concerns for the aquatic environment so indicate, he/she may exercise discretionary authority to override this RGP and require an Individual Permit.

1. Special Conditions.

a. The prospective permittee must submit a pre-construction notification (PCN) and applicable supporting information to the District Engineer and receive written verification from the Corps that the proposed work complies with this RGP prior to commencing any activity authorized by this RGP.

b. If the project will not impact a designated "Area of Environmental Concern" (AEC) in the twenty* (20) counties of North Carolina covered by the North Carolina Coastal Area Management Act (CAMA) ("CAMA counties"), a consistency submission is not required. If the project will impact a designated AEC and meets the definition of "development", the prospective permittee must obtain the required CAMA permit. Development activities shall not commence until a copy of the approved CAMA permit is furnished to the appropriate Corps Regulatory Field Office (Wilmington Field Office – 69 Darlington Avenue, Wilmington, NC 28403 or Washington Field Office – 2407 West 5th Street, Washington, NC 27889).

***The 20 CAMA counties in North Carolina include Beaufort, Bertie, Brunswick, Camden,**

Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.

c. No work shall be authorized by this RGP within the 20* CAMA counties without prior consultation with the National Oceanic and Atmospheric Administration's (NOAA) Habitat Conservation Division. For each activity reviewed by the Corps where it is determined that the activity may affect Essential Fish Habitat (EFH) for federally managed species, an EFH Assessment shall be prepared by the prospective permittee and forwarded to the Corps and NOAA Fisheries for review and comment prior to authorization of work.

d. Culverts and pipes. The following conditions [(1)-(8)] apply to the construction of culverts/pipes, and work on existing culverts/pipes.

Additionally, if the proposed work would affect an existing culvert/pipe (e.g., culvert/pipe extensions), the prospective permittee must include actions (in the PCN) to correct any existing deficiencies that are located:

- At the inlet and/or outlet of the existing culvert/pipe, IF these deficiencies are/were caused by the existing culvert/pipe, or

- Near the inlet or outlet of the existing culvert/pipe, IF these deficiencies are/were caused by the existing culvert/pipe.

These deficiencies may include, but are not limited to, stream over-widening, bank erosion, streambed scour, perched culvert/pipes, and inadequate water depth in culvert(s). Also note if the proposed work would address the existing deficiency or eliminate it – e.g., bank erosion on left bank, but the culvert extension will be placed in this eroded area. If the prospective permittee is unable to correct the deficiencies caused by the existing culvert/pipe, they must document the reasons in the PCN for Corps consideration.

(1) No activity may result in substantial, permanent disruption of the movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. Measures will be included that will promote the safe passage of fish and other aquatic organisms.

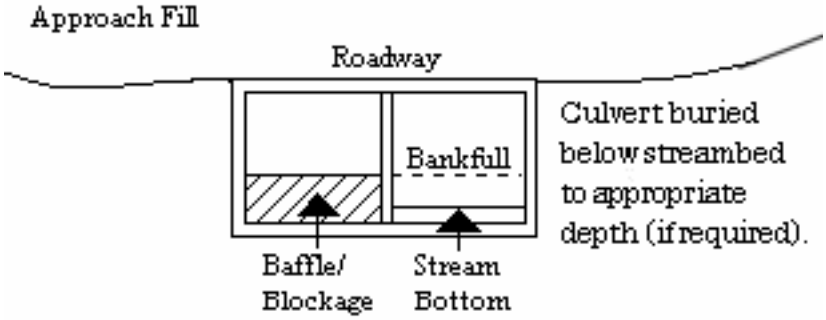
(2) The dimension, pattern, and profile of the stream above and below a culvert/pipe shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. It is acceptable to use rock vanes at culvert/pipe outlets to ensure, enhance, or maintain aquatic passage. Pre-formed scour holes are acceptable when designed for velocity reduction. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow will be determined from gauge data, if available. In the absence of such data, bankfull flow will be used as a comparable level.

(3) Burial/depth specifications: If the project is located within any of the 20* CAMA counties, culvert/pipe inverts will be buried at least one foot below normal bed elevation when they are placed within the Public Trust AEC and/or the Estuarine Waters AEC as designated by CAMA. If the project is located outside of the 20* CAMA counties, culvert/pipe inverts will be buried at least one foot below the bed of the stream for culverts/pipes that are greater than 48 inches in diameter. Culverts/pipes that are 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, to include passage during drought or low flow conditions. Every effort shall be made to maintain the existing channel slope. A waiver from the burial/depth specifications in this condition may be requested in writing. The prospective permittee is encouraged to request agency input about waiver requests as early as possible, and prior to submitting the PCN for a specific project; this will allow the agencies time to conduct a site visit, if necessary, and will prevent time delays and potential project revisions for the prospective permittee. The waiver will only be issued by the Corps if it can be demonstrated that the impacts of complying with burial requirements would result in more adverse impacts to the aquatic environment.

(4) Appropriate actions to prevent destabilization of the channel and head cutting upstream shall be incorporated in the design and placement of culverts/pipes.

(5) Culverts/pipes placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the U.S. Culverts/pipes placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but must be of adequate size and/or number to ensure unrestricted transmission of water.

(6) Bankfull flows (or less) shall be accommodated through maintenance of the existing bankfull channel cross sectional area in no more than one culvert/pipe or culvert/pipe barrel. Additional culverts/pipes or barrels at such crossings shall be allowed only to receive flows exceeding the bankfull flow. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable to comply with this condition.



(7) Where adjacent floodplain is available, flows exceeding bankfull will be accommodated by installing culverts/pipes at the floodplain elevation. When multiple culverts/pipes are used, baseflow must be maintained at the appropriate width and depth by the construction of floodplain benches, sills, and/or construction methods to ensure that the overflow culvert(s)/pipe(s) is elevated above the baseflow culvert(s)/pipe(s).

(8) The width of the baseflow culvert/pipe shall be comparable to the width of the bankfull width of the stream channel. If the width of the baseflow culvert/pipe is wider than the stream channel, the culvert/pipe shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills.

See the remaining special conditions for additional information about culverts/pipes in specific areas.

e. Discharges into waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited during the period between February 15th and June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC, and/or the National Marine Fisheries Service (NMFS)). Discharges into waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited during the period between February 15th and September 30th, without prior written approval from the Corps and the appropriate wildlife agencies. Discharges into waters of the U.S. designated by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this RGP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

The prospective permittee should contact:

NC Division of Marine Fisheries
3441 Arendell Street
Morehead City, NC 28557
Telephone 252-726-7021
or 800-682-2632

North Carolina Wildlife Resources Commission
Habitat Conservation Division
1721 Mail Service Center
Raleigh, NC 27699-1721
Telephone (919) 707-0220

f. This permit does not authorize the use of culverts in areas designated as anadromous fish spawning areas by the NCDMF or the NCWRC.

g. No in-water work shall be conducted in waters of the U.S. designated as Atlantic sturgeon critical habitat during the periods between February 1st and June 30th. No in-water work shall be conducted in waters of the U.S. in the Roanoke River designated as Atlantic sturgeon critical habitat during the periods between February 1st and June 30th, and between August 1st to October 31st, without prior written approval from NMFS.

h. Before discharging dredged or fill material into waters of the U.S. in designated trout watersheds in North Carolina, the PCN will be sent to the NCWRC and the Corps concurrently. See https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx for the designated trout watersheds. The PCN shall summarize alternatives to conducting work in waters of the U.S. in trout watersheds that were considered during the planning process and detail why alternatives were or were not selected. For proposals where (1) a bridge in a trout stream will be replaced with a culvert, or (2) a culvert will be placed in a trout stream, the PCN must also include a compensatory mitigation plan for all loss of stream bed, and details of any on-site evaluations that were conducted to determine that installation of a culvert will not adversely affect passage of fish or other aquatic biota at the project site. The evaluation information must include factors such as the proposed slope of the culvert and determinations of how the slope will be expected to allow or impede passage, the necessity of baffles and/or sills to ensure passage, design considerations to ensure that expected baseflow will be maintained for passage and that post-construction velocities will not prevent passage, site conditions that will or will not allow proper burial of the culvert, existing structures (e.g., perched culverts, waterfalls, etc.) and/or stream patterns up and downstream of the culvert site that could affect passage and bank stability, and any other considerations regarding passage. The level of detail for this information shall be based on site conditions (i.e., culverts on a slope over 3% will most likely require more information than culverts on a slope that is less than 1%, etc.). Also, in order to evaluate potential impacts, the prospective permittee will describe bedforms that will be impacted by the proposed culvert – e.g., pools, glides, riffles, etc. The NCWRC will respond to both the prospective permittee and the Corps.

i. For all activities authorized by this RGP that involve the use of riprap material for bank stabilization, the following measures shall be applied:

(1) Where bank stabilization is conducted as part of an activity, natural design, bioengineering, and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized, as appropriate to site conditions, to the maximum extent practicable.

(2) Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters; however, the prospective permittee may request a waiver from this requirement. The waiver request must be in writing. The Corps will only issue a waiver if the prospective permittee demonstrates that the impacts of complying with this requirement would result in greater adverse impacts to the aquatic environment. Note that filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody.

(3) The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

(4) Riprap shall not be placed in a manner that prevents or impedes fish passage.

(5) Riprap shall be clean and free from loose dirt or any pollutant except in trace quantities that will not have an adverse environmental effect.

(6) Riprap shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

(7) Riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

j. Discharges of dredged or fill material into waters of the U.S., including wetlands, must be minimized or avoided to the maximum extent practicable.

k. Generally, off-site detours are preferred to avoid and minimize impacts to the human and natural environment; however, if an off-site detour is considered impracticable, then an on-site detour may be considered as a necessary component of the actions authorized by this RGP. Impacts from the detour may be considered temporary and may not require compensatory mitigation if the impacted area is restored to pre-construction elevations and contours after construction is complete. The permittee shall also restore natural hydrology and stream corridors (if applicable) and reestablish native vegetation/riparian corridors. If the construction of a detour (on-site or off-site) includes standard undercutting methods, removal of all material and backfilling with suitable material is required. See special condition “s” for additional information.

l. All activities authorized by this RGP shall, to the maximum extent practicable, be conducted "in the dry", with barriers installed between work areas and aquatic habitat to protect that habitat from sediment, concrete, and other pollutants. Where concrete is utilized, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the U.S. until the concrete has set and cured. All water in the work area that has been in contact with concrete shall only be returned to waters of the U.S. when it no longer poses a threat to aquatic organisms (concrete is set and cured).

m. In cases where new alignment approaches are to be constructed and the existing approach fill in waters of the U.S. is to be abandoned and no longer maintained as a roadway, the abandoned fill shall be removed and the area will be restored to pre-construction elevations and contours. The permittee shall also restore natural hydrology and stream corridors (if applicable), and reestablish native vegetation/riparian corridors, to the extent practicable. This activity may qualify as compensatory mitigation credit for the project and will be assessed on a case-by-case basis in accordance with Special Conditions “q” and “r” in this document. Any proposed on-site wetland restoration area must be void of utility conflicts and/or utility maintenance areas. A restoration plan detailing this activity will be required with the submittal of the PCN.

n. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity

must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

o. The project must be implemented and/or conducted so that all reasonable and practicable measures to ensure that equipment, structures, fill pads, and work associated with the project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, scour, flooding, and/or shoreline/streambank erosion. During construction, the permittee shall routinely monitor for these effects, cease all work if/when detected, take initial corrective measures to correct actively eroding areas, and notify the Corps immediately. Permanent corrective measures may require additional authorization from the Corps.

p. All PCNs will describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. To the maximum extent practicable, structures and measures will be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams. In addition, appropriate soil and erosion control measures must be established and maintained during construction. All fills, temporary and permanent, must be adequately stabilized at the earliest practicable date to prevent erosion of fill material into adjacent waters or wetlands.

q. Compensatory mitigation will be required for permanent impacts resulting in a loss of waters of the U.S. due to culvert/pipe installation and other similar activities. Mitigation may be required for stream relocation projects (see Special Condition "r" below). When compensatory mitigation is required, the prospective permittee will attach a proposed mitigation plan to the PCN. Compensatory mitigation proposals will be written in accordance with currently approved Wilmington District guidance and Corps mitigation regulations, unless the purchase of mitigation credits from an approved mitigation bank or the North Carolina Division of Mitigation Services (NCDMS) is proposed to address all compensatory mitigation requirements. The Corps Project Manager will make the final determination concerning the appropriate amount and type of mitigation.

r. Stream Relocations (non-tidal only) - for the purposes of permitting, stream relocations are considered a loss of waters of the U.S. Depending on the condition and location of (1) the existing stream, and (2) the relocated channel, stream relocation(s) may provide a functional uplift. The Corps will determine if an uplift is possible based on the information submitted with the PCN. If the anticipated uplift(s) occurs, it may offset, either partially or fully, the loss associated with a stream relocation(s) - (i.e., due to the uplift, either no compensatory mitigation would be required for the stream relocation itself, or compensatory mitigation would be required at a reduced ratio).

Because the amount of potential uplift is dependent upon the condition (or quality) of the channel to be relocated, there is no pre-determined amount of uplift needed to satisfy the requirements for a successful relocation project. After performing the evaluation(s) noted in this

document, the prospective permittee will propose a certain amount of uplift potential and the Corps project manager will make the final determination. Baseline conditions and subsequent monitoring must show that the relocated channel is providing/will provide aquatic function at, or above, the level provided by the baseline (pre-project) condition. If the required uplift is not achieved, the work will not be in compliance with this special condition of RGP 31 and remediation will be required through repair (and continued monitoring), or by the permittee providing compensatory mitigation (e.g., mitigation credit through an approved bank, mitigation credit through NCDMS, etc.).

Compensatory mitigation, in addition to the stream relocation activity, may be required if the Corps determines that (a) no uplift in stream function is achievable, (b) the proposed uplift in stream function is not sufficient, by itself, (c) the risks associated with achieving potential uplifts in stream function are excessive, and/or (d) the time period for achieving the potential uplifts/functional success is too great.

On-site compensatory mitigation is not the same as stream relocation. While stream relocation simply moves a stream to a nearby, geographically similar area, it does not generate mitigation credits. If NCDOT proposes to generate compensatory mitigation on a project site, NCDOT must submit a mitigation plan that complies with 33 CFR 332.4.

The prospective permittee is required to submit the following information for any proposed project that involves stream relocation, regardless of the size/length of the stream relocation (note that 1-5 below only apply to stream relocations and not to compensatory mitigation):

(1) A statement detailing why relocating the stream is unavoidable. In order to ensure that this action is separate from a compensatory mitigation project, the need for the fill must be related to road/interchange/intersection construction or improvement, and the project must meet the requirements set forth in the full description/terms on pages 1-3 of this permit.

(2) An evaluation of effects on the relocated stream and buffer from utilities, or potential for impact from utility placement in the future.

(3) An evaluation of the baseline condition of the stream to be relocated. In order to demonstrate a potential uplift, the prospective permittee must provide the baseline (pre-impact) condition of the stream that is proposed for relocation. The prospective permittee will document the baseline condition of the stream by using the Corps' (Wilmington District's) current functional assessment method - e.g., the North Carolina Stream Assessment Method (NCSAM). The functional assessment must be used to identify specific areas where an uplift would reasonably be expected to occur, and also show important baseline functions that will remain after the relocation.

(4) An evaluation of the potential uplifts to stream function for the relocated channel. The amount of detail required in the plan will be commensurate with the functional capacity of the original stream and proposed uplift(s). Low functional capacity will warrant less monitoring and less detail in the plan in order to ensure that the relocated channel provides the same, or better/increased, suite of aquatic functions as the existing channel.

(5) A proposed monitoring plan for the relocated channel (and buffer, if applicable), will be prepared in accordance with current District guidance. The level of detail needed in the plan will be directly related to the quality of baseline functions and the anticipated uplift, therefore it is recommended that a pre-application discussion occur with the Corps Project Manager as early as possible. For example, if the risk for achieving the anticipated functional uplift is moderate or low, or if there is a low amount of proposed uplift, less information and monitoring will be required in the proposed relocation plan; similar to the requirements found in the "2003 Stream Mitigation Guidelines". If the risk for uplift is higher, or if there is a high amount of proposed uplift, additional monitoring and information will be required, trending toward the prescriptions found in the most recent Wilmington District Compensatory Mitigation Guidance – e.g., the 2016 Wilmington District Stream and Wetland Compensatory Mitigation Update. All monitoring will be for at least 5 years unless the Corps project manager determines that (a) a specific project requires less than 5 years due to site conditions or limited risk/uplift potential, and/or complexity (or simplicity) of the existing channel and/or the relocation work, or (b) the Corps project manager determines (during the monitoring period) that the 5 years of monitoring may be reduced (or that no further monitoring is required) based on monitoring information received once the stream relocation has been completed.

s. Upon completion of any work authorized by this RGP, all temporary fills (to include culverts, pipes, causeways, etc.) will be completely removed from waters of the U.S. and the areas will be restored to pre-construction elevations and contours. The permittee shall also restore natural hydrology and stream corridors (if applicable), and reestablish native vegetation/riparian corridors. This work will be completed within 60 days of completion of project construction. If this timeframe occurs while a required moratorium of this permit is in effect, the temporary fill shall be removed in its entirety within 60 days of the moratorium end date. If vegetation cannot be planted due to the time of the year, all disturbed areas will be seeded with a native mix appropriate for the impacted area, and vegetation will be planted during the next appropriate time frame. A native seed mix may contain non-invasive small grain annuals (e.g. millet and rye grain) to ensure adequate cover while native vegetation becomes established. The PCN must include a restoration plan showing how all temporary fills and structures will be removed and how the area will be restored to pre-project elevations and contours.

t. Once the authorized work in waters of the U.S. is complete, the permittee shall sign and return the compliance certificate that is attached to the RGP verification letter.

u. The District Engineer will consider any comments from Federal and/or State agencies concerning the proposed activity's compliance with the terms and conditions of this RGP.

v. The Corps may place additional special conditions, limitations, or restrictions on any verification of the use of RGP 31 on a project-by-project basis.

2. General Conditions.

a. Except as authorized by this RGP or any Corps approved modification to this RGP, no excavation, fill or mechanized land-clearing activities shall take place within waters or wetlands, at any time during construction or maintenance of the project. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with the project.

b. Authorization under this RGP does not obviate the need to obtain other federal, state, or local authorizations.

c. All work authorized by this RGP must comply with the terms and conditions of the applicable CWA Section 401 Water Quality Certification for this RGP issued by the North Carolina Division of Water Resources (NCDWR).

d. The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside of the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

e. The activities authorized by this RGP must not interfere with the public's right to free navigation on all navigable waters of the U.S. No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at, or adjacent to, the authorized work for a reason other than safety.

f. The permittee understands and agrees that if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

g. The permittee, upon receipt of a notice of revocation of this RGP for the verified individual activity, may apply for an individual permit, or will, without expense to the U.S. and in such time and manner as the Secretary of the Army or his/her authorized representative may direct, restore the affected water of the U.S. to its former conditions.

h. This RGP does not authorize any activity that would conflict with a federal project's congressionally authorized purposes, established limitations or restrictions, or limit an agency's ability to conduct necessary operation and maintenance functions. Per Section 14 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. 408), no project that has the potential to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, or obstruct a federally constructed work or project, including, but not limited to, levees, dams, jetties, navigation channels, borrow areas, dredged material disposal sites, flood control projects, etc., shall be permitted unless the project has been reviewed and approved by the appropriate Corps approval authority. Permittees shall not begin the activity authorized by this RGP until notified by the Corps that the activity may proceed.

i. The permittee shall obtain a Consent to Cross Government Easement from the appropriate Corps District's Land Use Coordinator prior to any crossing of a Corps easement and/or prior to commencing construction of any structures, authorized dredging, or other work within the right-of-way of, or in proximity to, a federally designated disposal area.

j. The permittee will allow the Wilmington District Engineer or his/her representative to inspect the authorized activity at any time deemed necessary to ensure that the activity is being performed or maintained in strict accordance with the Special and General Conditions of this permit.

k. This RGP does not grant any property rights or exclusive privileges.

l. This RGP does not authorize any injury to the property or rights of others.

m. This RGP does not authorize the interference with any existing or proposed federal project.

n. In issuing this permit, the Federal Government does not assume any liability for the following:

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

(2) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest.

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

(4) Design or construction deficiencies associated with the permitted work.

(5) Damage claims associated with any future modification, suspension, or revocation of this permit.

o. Authorization provided by this RGP may be modified, suspended or revoked in whole, or in part, if the Wilmington District Engineer, acting for the Secretary of the Army, determines that such action would be in the best public interest. The term of this RGP shall be five (5) years unless subject to modification, suspension, or revocation. Any modification, suspension, or revocation of this authorization will not be the basis for any claim for damages against the U.S. Government.

p. No activity may occur in a component of the National Wild and Scenic Rivers System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or "study river" (e.g., National Park Service, U.S. Forest Service, etc.).

q. Endangered Species.

(1) No activity is authorized under this RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under this RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(2) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal prospective permittees (and when FHWA is the lead federal agency) must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements. The District Engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the RGP activity, or whether additional ESA consultation is necessary.

(3) Non-federal prospective permittees - for activities that might affect federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The District Engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat. In cases where the non-federal prospective permittee has identified listed species or critical habitat that might be affected or is

in the vicinity of the project, and has so notified the Corps, the prospective permittee shall not begin work until the Corps has provided notification that the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(4) As a result of formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) or NMFS, the District Engineer may add species-specific endangered species conditions to the RGP verification letter for a project.

(5) Authorization of an activity by a RGP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, the ESA prohibits any person subject to the jurisdiction of the U.S. to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(6) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS in North Carolina at the addresses provided below, or from the USFWS and NMFS via their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

USFWS offices in North Carolina:

The Asheville USFWS Office covers all NC counties west of, and including, Anson, Stanly, Davidson, Forsyth and Stokes Counties.

US Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

The Raleigh USFWS Office covers all NC counties east of, and including, Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

US Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

r. The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and habitat, and programmatic consultation concerning other federally listed species and/or habitat may occur in the future. The result of completed programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS. These PBOs contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" of whichever species or critical habitat is covered by a specific PBO. Authorization under RGP 31 is conditional upon the permittee's compliance with all the mandatory terms and conditions associated with incidental take of the applicable PBO (or PBOs), which are incorporated by reference in RGP 31. Failure to comply with the terms and conditions associated with incidental take of an applicable PBO, where a take of the federally listed species occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee non-compliance with the authorization under RGP 31. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any RGP 31 verification that may be issued for a project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.

s. Northern long-eared bat (NLEB) (*Myotis septentrionalis*). Standard Local Operating Procedures for Endangered Species (SLOPES) for the NLEB have been approved by the Corps and the U.S. Fish and Wildlife Service. See http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/ . This SLOPES details how the Corps will make determinations of effect to the NLEB when the Corps is the lead federal agency for an NCDOT project that is located in the western 41 counties of North Carolina. This SLOPES does not address NCDOT projects (either federal or state funded) in the eastern 59 counties of North Carolina. Note that if another federal agency is the lead federal agency for a project in the western 41 counties, procedures for satisfying the requirements of Section 7(a)(2) of the ESA will be dictated by that agency and will not be applicable for consideration under the SLOPES; however, information that demonstrates the lead federal agency's (if other than the Corps) compliance with Section 7(a)(2) / 4(d) Rule for the NLEB, will be required in the PCN. Note that at the time of issuance of RGP 31, the federal listing status of the NLEB as "Threatened" is being litigated at the National level. If, as a result of litigation, the NLEB is federally listed as "Endangered", this general condition ("s") will no longer be applicable because the 4(d) Rule, and this NLEB SLOPES, will no longer apply/be valid.

t. For proposed activities the sixteen (16) counties listed below, prospective permittees must provide a copy of the PCN to the USFWS, 160 Zillicoa Street, Asheville, North Carolina 28801. This PCN must be sent concurrently to the USFWS and the Corps Project Manager for that specific county.

The 16 counties with tributaries that drain to designated critical habitat that require notification to the Asheville USFWS are: Avery, Cherokee, Forsyth, Graham, Haywood, Henderson, Jackson, Macon Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

u. If the permittee discovers or observes any live, damaged, injured or dead individual of an endangered or threatened species during construction, the permittee shall immediately notify the Wilmington District Engineer so that required coordination can be initiated with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

v. Historic Properties.

(1) In cases where the District Engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(2) Federal prospective permittees (or when FHWA is the lead federal agency) should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Federal prospective permittees must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements; this includes copies of correspondence sent to all interested, federally recognized tribes and a summary statement about tribal consultation efforts or, if the Corps enters into a Programmatic Agreement (PA) with the FHWA/NCDOT, documentation that the FHWA/NCDOT has complied with PA requirements. The District Engineer will review the documentation and determine whether it is sufficient to address Section 106 compliance for this RGP activity, or whether additional Section 106 consultation is necessary.

(3) Non-federal prospective permittees - the PCN must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO), as appropriate, and the NRHP (see 33 CFR 330.4(g)). When reviewing PCNs, the District Engineer will comply with the current procedures for addressing the requirements of Section 106 of the NHPA. The District Engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the District Engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties.

(4) Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)).

(5) Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to a prospective permittee who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a

historic property to which the permit will relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the prospective permittee. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the prospective permittee, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

w. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this general permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

x. Permittees are advised that development activities in or near a floodway may be subject to the National Flood Insurance Program that prohibits any development, including fill, within a floodway that results in any increase in base flood elevations. This general permit does not authorize any activity prohibited by the National Flood Insurance Program.

y. The permittee must install and maintain, at his/her expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities. For further information, the permittee should contact Coast Guard Sector North Carolina at (910) 772-2191 or email Coast Guard Fifth District at cgd5waterways@uscg.mil.

z. The permittee must maintain any structure or work authorized by this general permit in good condition and in conformance with the terms and conditions of this general permit. The permittee is not relieved of this requirement if the permittee abandons the structure or work. Transfer in fee simple of the work authorized by this general permit will automatically transfer this general permit to the property's new owner, with all of the rights and responsibilities enumerated herein. The permittee must inform any subsequent owner of all activities undertaken under the authority of this general permit and provide the subsequent owner with a copy of the terms and conditions of this general permit.

aa. At his or her sole discretion, any time during the processing cycle, the Wilmington District Engineer may determine that this general permit will not be applicable to a specific proposal. In such case, the procedures for processing an individual permit in accordance with 33 CFR 325 will be available.

bb. Except as authorized by this general permit or any Corps approved modification to this general permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.

cc. Except as authorized by this general permit or any Corps approved modification to this general permit, all excavated material will be disposed of in approved upland disposal areas.

dd. Activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon this general permit will remain authorized provided the activity is completed within twelve months of the date of the general permit's expiration, modification, or revocation. Activities completed under the authorization of this general permit that were in effect at the time the activity was completed continue to be authorized by the general permit.

ee. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

ff. The activity must comply with applicable FEMA approved state or local floodplain management requirements.

gg. There will be no unreasonable interference with navigation or the right of the public to riparian access by the existence or use of activities authorized by this RGP.

hh. Unless authorization to fill those specific wetlands or mudflats has been issued by the Corps, heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

ii. This RGP will not be applicable to proposed construction when the Wilmington District Engineer determines that the proposed activity will significantly affect the quality of the human environment and determines that an EIS must be prepared.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Robert J. Clark
Colonel, U. S. Army
District Commander

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

NORTH CAROLINA
Environmental Quality

December 17, 2021
Martin County
Beaufort County
NCDWR Project No. 20211026
TIP R-2511

REISSUANCE of APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS

Mr. Paul Williams
NCDOT Division 1
113 Airport Drive
Edenton, NC 27932

Dear Mr. Williams:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of the widening of US 17 in Martin and Beaufort Counties:

Wetland Impacts in the Roanoke and Tar-Pamlico River Basins

Site	Wetland Type	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
1	riparian	--	--	--	<0.01	0.01	0.01
2	non-riparian	0.26	0.01	--	0.05	--	0.32
5	riparian	1.00	0.04	--	0.27	0.83	2.14
6	non-riparian	0.02	<0.01	--	0.01	--	0.02
7	riparian	0.11	--	--	0.03	0.13	0.27
8	riparian	1.10	--	0.06	0.32	0.76	2.24
9	riparian	0.64	0.03	0.01	0.15	0.22	1.05
12	riparian	--	<0.01	--	--	0.03	0.03
14	riparian	<0.01	0.05	--	0.08	0.86	0.99
Total		3.14	0.14	0.07	0.91	2.84*	7.1

* all hand clearing impacts due to utilities

Open Water Impacts in the Roanoke River Basin

Site	Type	Basin	Fill (ac)
12	Pond	Roanoke	0.50

Stream Impacts in the Roanoke and Tar-Pamlico River Basins

Site	Type	Basin	Permanent (linear ft)	Temporary (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	P	Tar-Pam	79	20	99	n/a
2	P	Tar-Pam	351	13	364	351
3	P	Tar-Pam	284	38	322	n/a
4	I	Tar-Pam	129	10	139	n/a
5	P	Tar-Pam	7	155	162	n/a
7	P	Roanoke	128	20	148	n/a
8	P	Roanoke	286	9	295	n/a
9	P	Roanoke	227	36	263	n/a
10	I	Roanoke	129	13	142	n/a
11	P	Roanoke	512	42	554	512
12	P	Roanoke	40	10	50	n/a
13	P	Roanoke	169	20	189	n/a
Total			2,341	386	2,727	863

n/a= stream impacts < 300 lf and/or intermittent stream, no mitigation required

Tar-Pamlico Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	*minus* Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)		Zone 2 Impact (sq ft)	*minus* Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	5529	176	5353	n/a*		4527	6	4521	n/a*
2	16327	2030	14297	42,891		10878	2688	8190	12,285
3	14972	--	14972	44,916		8618	--	8618	12,927
4	8377	--	8377	n/a*		5662	--	5662	n/a*
5	8230	8230	0	n/a**		5181	5181	0	n/a**
Total	53,435	10,436	42,999	87,807		34,866	7,875	26,991	25,212

* = impact < 1/3 ac, mitigation not required

** = impact due to bridge construction, mitigation not required

The project shall be constructed in accordance with your application dated received June 23, 2021 and additional information received November 30, 2021. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 4135. This certification corresponds to the Regional General Permit Permit Number 198200031 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter,and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required as

described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0714. For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. Compensatory mitigation for **863** linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated June 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.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.

2. Compensatory mitigation for impacts to **4.12** acres of wetlands (3.78 ac riparian, 0.35 ac non-riparian) 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 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.

3. Compensatory mitigation for impacts to **29,269** square feet of protected riparian buffers in Zone 1 shall be required at a 3:1 ratio for a total of **87,807** square feet of required Zone 1 mitigation. Compensatory mitigation for impacts to **16,808** square feet of protected riparian buffers in Zone 2 shall be required at a ratio of 1.5:1 for a total of **25,212** square feet of required Zone 2 mitigation. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to Tar-Pamlico Buffers shall be provided in the Tar-Pamlico River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated June 29, 2021 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016.

General Conditions

4. 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.

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

6. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

7. 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)]

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

9. 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 downstream 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)]

10. 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)]

11. 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)]

12. 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]

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

14. 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)]

15. 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)]

16. 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]
    a. 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.*
    b. 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.
    c. 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.
    d. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-1, WS-11, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), 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]

17. 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)]

18. Erosion control matting in riparian areas shall not contain a plastic or nylon mesh grid which can impinge and entrap small animals. Matting should be secured in place by staples, stakes, or wherever possible live stakes of native trees. Riparian areas are defined as a distance 25 feet from top of stream bank. [15A NCAC 02B.0201]

19. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, then design and placement of temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands, stream beds, or banks, adjacent to or upstream and downstream of the above structures. All sediment and erosion control devices shall be removed from wetlands and waters and the natural grade restored within two (2) months of the date that the Division of Energy, Mining and Land Resources (DEMLR) or locally delegated program has released the specific area within the project. [15A NCAC 02H.0506(b)(3) and (c)(3)]

20. Pursuant to 15A NCAC 2B.0734(11), temporary sediment and erosion control devices are not allowed in Zone 1 of the Tar-Pamlico riparian buffer outside of the approved project impacts. Sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow. Upon completion of construction the disturbed area shall be restored to preconstruction topographic and hydrologic conditions and replanted with comparable vegetation within 2 months of when construction is completed. At the end of 5 years any restored wooded riparian buffer shall comply with the restoration criteria in Rule .0295(i) of this subchapter.

21. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. Insert buffer rule citation. [15A NCAC 2B.0734 (11)]

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

23. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) where possible before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS0000250, please refer to the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

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

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

26. 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)]

27. 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)]

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

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

30. NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000.

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

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

33. 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]

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

35. The NCDOT will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the permit conditions and any potential issues at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]

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

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

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

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

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

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

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

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Garcy Ward at (252)948-3917 or garcy.ward@ncdenr.gov.

Sincerely,

DocuSigned by:
Amy Chapman
[illegible]

S. Daniel Smith, Director
Division of Water Resources

Electronic copy only distribution:
Kyle Barnes, US Army Corps of Engineers, Washington Field Office
Garcy Ward, NC Division of Water Resources Washington Regional Office
File Copy

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4135

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS), AND**
- **REGIONAL GENERAL PERMIT 198200031 (NCDOT BRIDGES, WIDENING PROJECTS, INTERCHANGE IIMPROVEMENTS)**

Water Quality Certification Number 4135 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (14) of the US Army Corps of Engineers regulations and Regional General Permit 198200031.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: December 1, 2017

Signed this day: December 1, 2017

By

for Linda Culpepper
Interim Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the conditions of this Certification (listed below) cannot be met; or
b) Any temporary or permanent impacts to wetlands, open waters and/or streams, except for construction of a driveway to a single family residential lot that is determined to not be part of a larger common plan of development, as long as the driveway involves a travel lane of less than 25 feet and total stream impacts of less than 60 feet, including any topographic/slope stabilization or in-stream stabilization needed for the crossing; or
c) Any stream relocation or stream restoration; or
d) Any high-density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which:
    i. Disturbs one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); and
    ii. Has permanent wetland, stream or open water impacts; and
    iii. Is proposing new built-upon area; and
    iv. Does not have a stormwater management plan reviewed and approved under a state stormwater program[1] or a state-approved local government stormwater program[2].

    Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or
e) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, or North Carolina or National Wild and Scenic River.
f) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as Trout except for driveway projects that are below threshold (b) above provided that:
    i. The impacts are not adjacent to any existing structures
    ii. All conditions of this General Certification can be met, including adherence to any moratoriums as stated in Condition #10; and
    iii. A *Notification of Work in Trout Watersheds Form* is submitted to the Division at least 60 days prior to commencement of work; or
g) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
h) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES
[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

i) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
   i. The activities are listed as "EXEMPT" from these rules; or
   ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
   iii. A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

1. If this Water Quality Certification is used to access residential, commercial or industrial building sites, then all parcels owned by the applicant that are part of the single and complete project authorized by this Certification must be buildable without additional impacts to streams or wetlands. If required in writing by DWR, the applicant shall provide evidence that the parcels are buildable without requiring additional impacts to wetlands, waters, or state regulated riparian buffers. [15A NCAC 02H .0506(b)(4) and (c)(4)]

2. For road and driveway construction purposes, this Certification shall only be utilized from natural high ground to natural high ground. [15A NCAC 02H .0506(b)(2) and (c)(2)]

3. Deed notifications or similar mechanisms shall be placed on all lots with retained jurisdictional wetlands, waters, and state regulated riparian buffers within the project boundaries in order to assure compliance with NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), and/or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200). These mechanisms shall be put in place at the time of recording of the property or individual parcels, whichever is appropriate. [15A NCAC 02H .0506(b)(4) and (c)(4)]

4. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. All other high-density projects that trigger threshold item (d) above shall comply with one of the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

a. Provide a completed Stormwater Management Plan (SMP) for review and approval, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high-density development requirements of 15A NCAC 02H .1003. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

b. Provide documentation (including calculations, photos, etc.) that the project will not cause degradation of downstream surface waters. Documentation shall include a detailed analysis of the hydrological impacts from stormwater runoff when considering the volume and velocity of stormwater runoff from the project built upon area and the size and existing condition of the receiving stream(s).

Exceptions to this condition require application to and written approval from DWR.

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h) and Session Law 2017-10, compensatory mitigation may be required for losses of greater than 300 linear feet of perennial streams and/or greater than one (1) acre of wetlands. Impacts associated with the removal of a dam shall not require mitigation when the removal complies with the requirements of Part 3 of Article 21 in Chapter 143 of the North Carolina General Statutes. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 300 linear feet per perennial stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. 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]

   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, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as, a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all 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 DWR determines that such standards or laws are not being met, including 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, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this Certification. A copy of this Certification, including all conditions shall be available at the project site during the construction and maintenance of this project. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

27. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

28. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

29. If the property or project is sold or transferred, the new permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

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

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

History Note: Water Quality Certification (WQC) Number 4135 issued December 1, 2017 replaces WQC Number 4088 issued March 3, 2017; WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

General Project Information

WBS Element:	35494.1.1	**TIP Number:**	R-2511	**Project Type:**	Roadway Widening
NCDOT Contact:	John S. Abel Jr.	**Contractor / Designer:**	RK&K: Brent Huskey,PE		
Address:	NCDOT - Highway Division 1 113 Airport Drive Suite 100 Edenton, NC 27932	**Address:**	8601 Six Fork Road Suite 700 Raleigh, NC 27615		
Phone:	252-482-7977	**Phone:**	919-878-9560		
Email:	jabel@ncdot.gov	**Email:**	bhuskey@rkk.com		
City/Town:	Washington/Williamston	**County(ies):**	Beaufort	Martin	
River Basin(s):	Tar-Pamlico Roanoke	**CAMA County?**	Yes	No	
Wetlands within Project Limits?	Yes				

Project Description

Project Length (lin. miles or feet):	10.62 miles	**Surrounding Land Use:**	Rural / Farmland/ Residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	105.0 ac.	49.0 ac.
Typical Cross Section Description:	The proposed typical cross section of US 17 will be a four lane highway with (2)-12' lanes in each direction with 4' shoulders. For most of the project there will be a 46' median from edge of travel to edge of travel. Through out the project there will be various locations with bulbout turns.	The existing typical cross section for US 17 is a two lane highway with 12' lanes and 2' shoulders.
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 14,284 Year: 2040	Existing: 9,164 Year: 2020
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The widening of US 17 between Washington and Williamston will involve alignment improvement, adding lanes and drainage improvements. There are four major crossings on the project providing adequate cross sectional openings to allow water to travel under US 17 without impacting any structures adjacent to the project. The four major crossings consist of a set of dual bridges and three RCBCs. Drainage outfalls along the project have been analyzed to verify stability as well as outlet protection has been incorporated into the design for all proposed drainage improvements. Areas of the project around jurisdictional features have incorporated steeper side slopes of 3:1 to minimize impacts. Due to the water table being at the existing ground, there is a requirement by geotech for the entire length of the project on both sides of the highway, the ditch flow line has to be at least 5' below the edge of travel to allow the ground water to drain properly. The first half of the project is located in Beaufort county which is located in the Tar-Pamlico river basin. The Tar-Pamlico river basin adheres to buffer rules so there are buffer swales that run parallel to US 17 providing filtration before water enters jurisdictional streams. There are 17 sites on the project that have buffer filtration in the Tar-Pamlico river basin. The second half of the project is located in Martin county which is located in the Roanoke river basin. The Roanoke river basin does not adhere to buffer rules.	

Waterbody Information

Surface Water Body (1):	UT Old Ford Swamp	**NCDWR Stream Index No.:**	28-103-14-1		
NCDWR Surface Water Classification for Water Body	**Primary Classification:**	Class C			
	Supplemental Classification:	Swamp Waters (Sw)	(NSW)		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	None Provided		**Buffer Rules in Effect:**	Tar-Pamlico	
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)

Additional Waterbody Information

Surface Water Body (2):	UT to Latham Creek		**NCDWR Stream Index No.:**	28-103-14-2		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Swamp Waters (Sw)	(NSW)		
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	None Provided			**Buffer Rules in Effect:**	Tar-Pamlico	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (3):	Gum Swamp		**NCDWR Stream Index No.:**	28-103-14-2-1		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Swamp Waters (Sw)	(NSW)		
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	None Provided			**Buffer Rules in Effect:**	Tar-Pamlico	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (4):	Smithwick Creek		**NCDWR Stream Index No.:**	23-50-2		
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:	None Provided			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (5):	Jacks Swamp		**NCDWR Stream Index No.:**	23-50-2-1		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	None Provided			**Buffer Rules in Effect:**		
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: 35494.1.1 **TIP No.:** R-2511 **County(ies):** Beaufort Martin

Swales

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
4	-L- 18+48 RT		4.0	3.0	3.0	1.5	145	248	1.61%	4.2	2.0	5.5	2.2	No	Yes
4	-L- 17+75 LT		4.0	3.0	3.0	2.1	210	211	0.30%	6.6	1.3	8.6	1.4	No	Yes
4	-L- 17+79 LT		4.0	3.0	3.0	5.4	536	571	0.30%	15.7	1.6	20.3	1.7	No	Yes
4-5	-L- 18+91 RT		4.0	3.0	3.0	4.2	419	459	0.66%	12.2	2.0	15.9	2.1	No	Yes
7	-L- 54+10 LT		4.0	3.0	3.0	1.9	189	210	1.19%	6.0	2.0	7.8	2.1	No	Yes
7	-L- 54+11 RT		4.0	3.0	3.0	1.3	125	536	1.51%	3.7	1.9	4.7	2.0	No	Yes
7	-Y2- 17+25 LT		4.0	3.0	3.0	0.9	88	225	2.19%	2.6	1.9	3.3	2.0	No	Yes
7	-L- 55+43 LT		4.0	3.0	3.0	6.6	662	43	0.49%	16.1	1.9	20.9	2.1	No	Yes
7-8	-L- 55+43 LT		4.0	3.0	3.0	0.7	73	307	1.00%	2.1	1.4	2.8	1.5	No	Yes
8	-L- 69+53 LT		4.0	3.0	3.0	4.9	492	1103	0.55%	14.4	1.9	18.7	2.1	No	Yes
8	-L- 68+84 RT		4.0	3.0	3.0	4.9	490	534	0.59%	14.3	2.0	18.6	2.1	No	Yes
8-9	-L- 68+88 RT		4.0	3.0	3.0	9.4	938	962	0.42%	22.8	2.0	29.6	2.1	No	Yes
8-9	-L- 69+59 LT		4.0	3.0	3.0	4.7	465	521	0.62%	13.6	2.0	17.6	2.1	No	Yes
10-11	-L- 98+50 RT		4.0	3.0	3.0	1.3	130	450	0.74%	3.8	1.5	4.9	1.6	No	Yes
11	-L- 98+94 RT		4.0	3.0	3.0	3.1	307	1006	0.52%	9.0	1.7	11.6	1.8	No	Yes
10-11	-L- 99+34 LT		4.0	3.0	3.0	3.2	321	615	0.63%	9.4	1.8	12.2	1.9	No	Yes
11	-L- 99+39 LT		4.0	3.0	3.0	2.4	237	651	0.82%	6.9	1.8	9.0	2.0	No	Yes

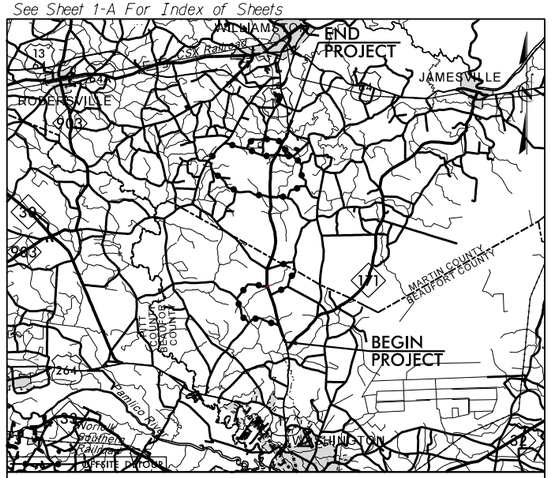
Additional Comments

09/08/99

TIP PROJECT: R-2511

CONTRACT: C204498

See Sheet 1-A For Index of Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT & MARTIN COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2511	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35494.1.1	N/A	PE
35494.2.1		R/W
35494.3.1		CONST.

LOCATION: US 17 FROM NORTH OF NC 171 TO EXISTING MULTI-LANES SOUTH OF WILLIAMSTON

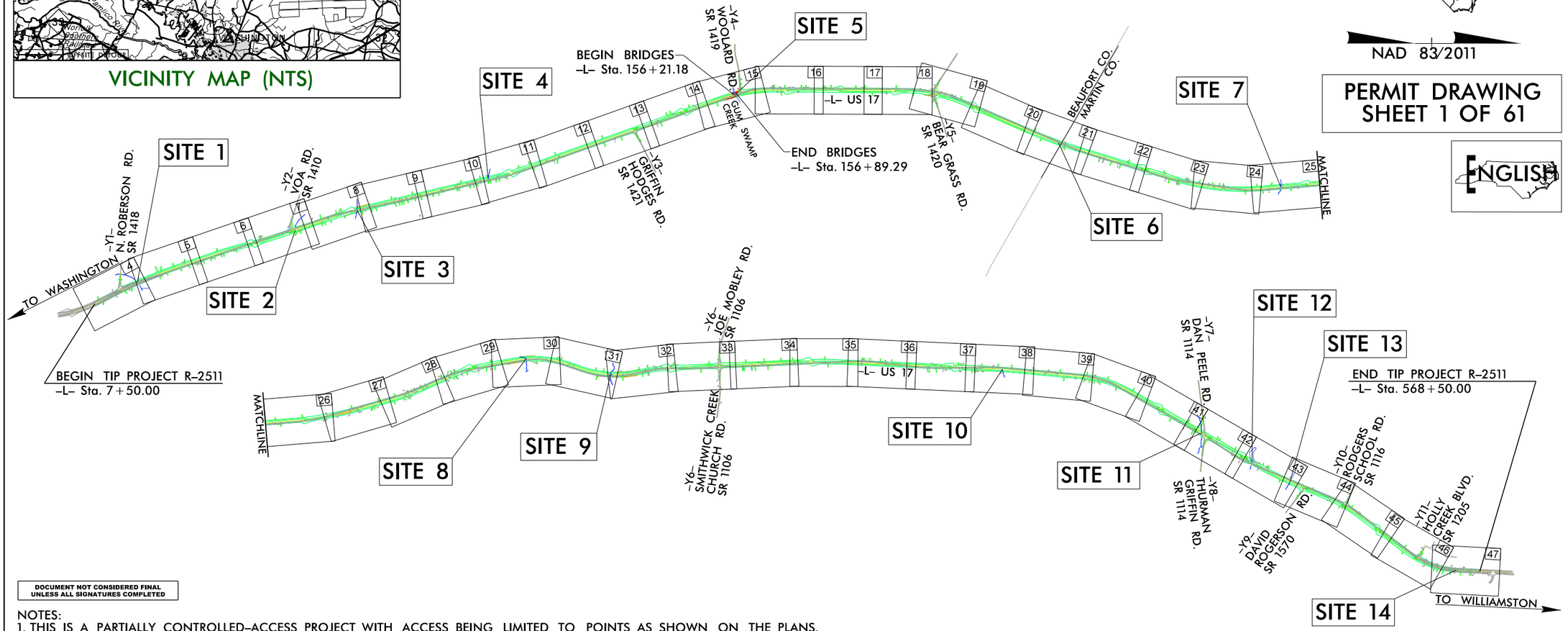
WETLAND AND STREAM IMPACTS

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

NAD 83/2011

PERMIT DRAWING
SHEET 1 OF 61

ENGLISH



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:
1. THIS IS A PARTIALLY CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2020 = 9,164
ADT 2040 = 14,284
K = 5%
D = 60%
T = 13% *
V = 60 MPH
* TTST = 8% DUAL 5%
FUNC CLASS = RURAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2511..... 10.612 miles
LENGTH STRUCTURE TIP PROJECT R-2511..... 0.013 miles
TOTAL LENGTH OF TIP PROJECT R-2511..... 10.625 miles

PLANS PREPARED BY:

RK&K

RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 20, 2018

LETTING DATE: DECEMBER 21, 2021

MICHAEL T. MERRITT, P.E.
PROJECT ENGINEER

SCOTT D. BLEVINS, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: JOHN ABEL, JR.
PROJECT ENGINEER - DIVISION 1

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\r2511_Hyd_prm_tsh.dgn
agneushev

8/17/99

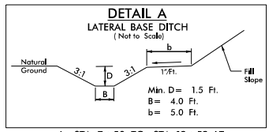
PROJECT REFERENCE NO.	SHEET NO.
R-2511	2D-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 2 OF 61

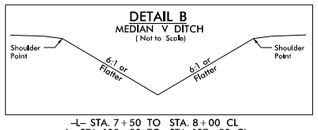
ENGLISH

DETAIL A
LATERAL BASE DITCH
(Not to Scale)



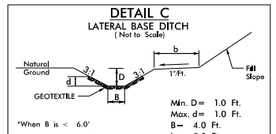
–L– STA. 7+50 TO STA. 12+52 LT
–L– STA. 7+50 TO STA. 18+39 RT
–L– STA. 15+64 TO STA. 17+75 LT
–L– STA. 17+79 TO STA. 23+50 LT
–L– STA. 18+91 TO STA. 31+85 RT
–L– STA. 30+00 TO STA. 53+20 LT
–L– STA. 53+75 TO STA. 54+10 LT
–L– STA. 32+50 TO STA. 54+11 RT
–L– STA. 55+00 TO STA. 69+53 LT
–L– STA. 58+50 TO STA. 68+84 RT
–L– STA. 69+59 TO STA. 92+76 LT
–L– STA. 78+50 TO STA. 84+00 RT
–L– STA. 90+50 TO STA. 98+50 RT
–L– STA. 93+19 TO STA. 99+34 LT
–L– STA. 98+94 TO STA. 109+00 RT
–L– STA. 99+39 TO STA. 105+90 LT
–L– STA. 109+45 TO STA. 129+43 RT
–L– STA. 136+67 TO STA. 144+25 LT
–L– STA. 144+75 TO STA. 152–50 LT
–L– STA. 139+20 TO STA. 147+50 RT
–L– STA. 202+00 TO STA. 212+27 LT
–L– STA. 216+50 TO STA. 246+20 LT
–L– STA. 217+00 TO STA. 229+00 RT
–L– STA. 230+50 TO STA. 238+50 RT
–L– STA. 265+71 TO STA. 273+75 LT
–L– STA. 280+19 TO STA. 294+00 RT
–L– STA. 281+08 TO STA. 282+50 LT
–L– STA. 306+75 TO STA. 315+00 LT
–L– STA. 316+50 TO STA. 318+00 LT
–L– STA. 322+50 TO STA. 331+25 LT
–L– STA. 368+50 TO STA. 373+00 LT
–L– STA. 398+91 TO STA. 401+17 LT
–L– STA. 423+25 TO STA. 430+25 LT
–L– STA. 452+37 TO STA. 453+50 RT
–L– STA. 452+40 TO STA. 460+80 LT
–L– STA. 465+15 TO STA. 471–90 LT
–L– STA. 557+00 TO STA. 557+43 LT
–Y2– STA. 15+00 TO STA. 17+25 LT
–Y2– STA. 15+70 TO STA. 17+30 RT

DETAIL B
MEDIAN 'V' DITCH
(Not to Scale)



–L– STA. 7+50 TO STA. 8+00 CL
–L– STA. 105+50 TO STA. 107+50 CL
–L– STA. 135+50 TO STA. 138+00 CL
–L– STA. 472+50 TO STA. 476+00 CL
–L– STA. 526+00 TO STA. 533+50 CL
–L– STA. 566+00 TO STA. 568+50 CL

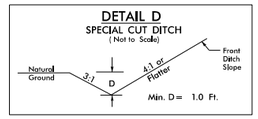
DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CIB Rip-Rap

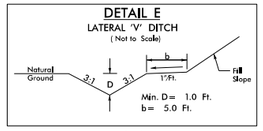
–L– STA. 23+50 TO STA. 24+50 LT
–L– STA. 53+20 TO STA. 53+75 LT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



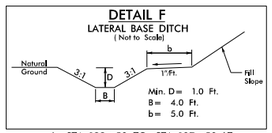
–L– STA. 24+50 TO STA. 28+00 LT
–L– STA. 197+50 TO STA. 199+50 LT
–L– STA. 201+50 TO STA. 204+00 RT
–L– STA. 331+50 TO STA. 335+50 RT
–L– STA. 493+00 TO STA. 497+50 LT
–L– STA. 553+00 TO STA. 554+00 RT
–Y3– STA. 11+00 TO STA. 11+50 RT
–Y3– STA. 12+00 TO STA. 13+00 RT
–Y5– STA. 16+85 TO STA. 18+38 RT
–Y5– STA. 16+85 TO STA. 18+50 LT
–Y5– STA. 12+18 TO STA. 14+50 LT
–Y9– STA. 11+00 TO STA. 12+50 RT
–Y10– STA. 12+14 TO STA. 14+15 RT

DETAIL E
LATERAL 'V' DITCH
(Not to Scale)



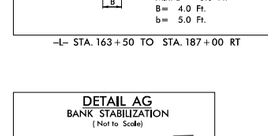
–L– STA. 28+00 TO STA. 30+00 LT
–L– STA. 106+32 TO STA. 108+45 LT
–L– STA. 133+50 TO STA. 138+65 RT
–L– STA. 134+50 TO STA. 135+50 LT
–L– STA. 199+50 TO STA. 200+00 LT
–L– STA. 204+00 TO STA. 205+00 RT
–L– STA. 266+20 TO STA. 274+40 RT
–L– STA. 273+75 TO STA. 277+00 LT
–L– STA. 278+30 TO STA. 280+19 RT
–L– STA. 277+50 TO STA. 280+16 LT
–L– STA. 294+00 TO STA. 300+36 RT
–L– STA. 305+50 TO STA. 310+00 RT
–L– STA. 315+71 TO STA. 319+00 RT
–L– STA. 322+00 TO STA. 329+50 RT
–L– STA. 330+00 TO STA. 331+50 RT
–L– STA. 395+00 TO STA. 398+91 LT
–L– STA. 399+35 TO STA. 401+16 RT
–L– STA. 401+17 TO STA. 405+70 LT
–L– STA. 416+95 TO STA. 421+00 LT
–L– STA. 417+50 TO STA. 419+66 RT
–L– STA. 426+50 TO STA. 437+30 RT
–L– STA. 434+50 TO STA. 435+80 LT
–L– STA. 441+00 TO STA. 442+69 LT
–L– STA. 442+69 TO STA. 446+00 RT
–L– STA. 446+35 TO STA. 452+37 RT
–L– STA. 477+46 TO STA. 480+00 RT
–L– STA. 480+00 TO STA. 481+18 LT
–L– STA. 486+75 TO STA. 493+00 LT
–L– STA. 501+20 TO STA. 505+00 RT
–L– STA. 512+00 TO STA. 515+00 LT
–L– STA. 518+50 TO STA. 521+25 RT
–L– STA. 521+30 TO STA. 524+00 RT
–L– STA. 535+16 TO STA. 538+00 LT
–L– STA. 541+50 TO STA. 544+97 RT
–L– STA. 551+15 TO STA. 553+00 RT
–Y3– STA. 11+00 TO STA. 13+52 LT
–Y6– STA. 21+90 TO STA. 23+65 RT
–Y8– STA. 11+00 TO STA. 14+50 LT
–Y10– STA. 13+50 TO STA. 14+28 LT

DETAIL F
LATERAL BASE DITCH
(Not to Scale)



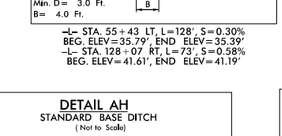
–L– STA. 188+50 TO STA. 197+50 LT
–L– STA. 205+00 TO STA. 217+00 RT
–L– STA. 212+27 TO STA. 216+50 LT
–L– STA. 238+50 TO STA. 240+50 RT
–L– STA. 242+61 TO STA. 255+35 RT
–L– STA. 246+32 TO STA. 253+92 LT
–L– STA. 288+50 TO STA. 306+00 LT
–L– STA. 310+00 TO STA. 315+71 RT
–L– STA. 335+50 TO STA. 341+80 RT
–L– STA. 352+50 TO STA. 363+50 LT
–L– STA. 387+00 TO STA. 389+20 LT
–L– STA. 387+00 TO STA. 389+00 RT
–L– STA. 390+30 TO STA. 395+00 LT
–L– STA. 390+30 TO STA. 398+95 RT
–L– STA. 401+16 TO STA. 405+70 RT
–L– STA. 406+00 TO STA. 416+95 LT
–L– STA. 421+09 TO STA. 426+30 RT
–L– STA. 430+25 TO STA. 434+50 LT
–L– STA. 437+80 TO STA. 442+69 RT
–L– STA. 442+69 TO STA. 452+40 LT
–L– STA. 463+80 TO STA. 465+15 LT
–L– STA. 465+15 TO STA. 471+20 RT
–L– STA. 471+50 TO STA. 475+15 RT
–L– STA. 481+50 TO STA. 486+75 LT
–L– STA. 490+00 TO STA. 499+75 RT
–L– STA. 498+75 TO STA. 502+50 LT
–L– STA. 503+50 TO STA. 510+70 LT
–L– STA. 511+00 TO STA. 512+15 RT
–L– STA. 521+40 TO STA. 526+30 LT
–L– STA. 526+70 TO STA. 534+00 LT
–L– STA. 531+16 TO STA. 537+00 RT
–L– STA. 538+00 TO STA. 541+50 LT
–L– STA. 551+00 TO STA. 554+00 LT
–L– STA. 555+10 TO STA. 557+00 LT
–L– STA. 556+50 TO STA. 560+50 RT

DETAIL G
SPECIAL CUT BASE DITCH
(Not to Scale)



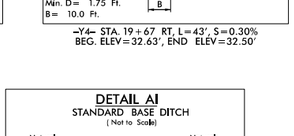
–L– STA. 282+50 TO STA. 288+50 LT
–L– STA. 381+00 TO STA. 387+00 RT
–L– STA. 382+50 TO STA. 387+00 LT
–L– STA. 480+00 TO STA. 486+75 RT
–L– STA. 560+50 TO STA. 564+50 RT
–L– STA. 567+00 TO STA. 568+00 RT

DETAIL H
SPECIAL CUT BASE DITCH
(Not to Scale)



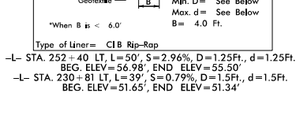
–L– STA. 191+50 TO STA. 200+40 RT
–L– STA. 564+50 TO STA. 567+00 RT
–Y5– STA. 16+28 TO STA. 16+85 RT

DETAIL I
SPECIAL CUT DITCH wHINGE
(Not to Scale)



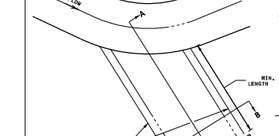
–L– STA. 554+00 TO STA. 556+50 RT

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



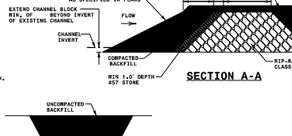
–L– STA. 373+00 TO STA. 382+50 LT
–L– STA. 372+50 TO STA. 381+00 RT
–L– STA. 405+94 TO STA. 417+50 RT
–L– STA. 419+66 TO STA. 421+09 RT
–L– STA. 516+00 TO STA. 521+35 LT
–L– STA. 541+50 TO STA. 544+87 LT
–L– STA. 544+97 TO STA. 550+50 RT
–L– STA. 545+00 TO STA. 551+00 LT
–Y6– STA. 18+73 TO STA. 19+85 LT

DETAIL K
SPECIAL CUT DITCH
(Not to Scale)



–Y3– STA. 12+00 TO STA. 13+00 RT

DETAIL L
SPECIAL LATERAL BASE DITCH
(Not to Scale)



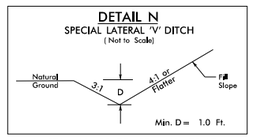
–L– STA. 318+00 TO STA. 319+22 LT
–Y9– STA. 11+00 TO STA. 13+00 LT

DETAIL M
CHANNEL CHANGE
(Not to Scale)

Type of Liner= SEE BELOW

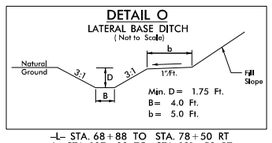
–L– STA. 17+76 LT, B=4.0', S=0.30%,
BEG. ELEV=26.10', END ELEV=26.00', GRASS
–L– STA. 18+39 RT, B=4.0', S=0.50%,
BEG. ELEV=27.00', END ELEV=26.90', GRASS
–L– STA. 135+50 TO STA. 136+67 LT, B=7.0', S=0.17%,
BEG. ELEV=39.06', END ELEV=38.86', GRASS
–Y7– STA. 18+75 TO STA. 20+20 RT, B=4.0', S=0.31%,
BEG. ELEV=54.20' END ELEV=53.90', GRASS
–Y8– STA. 12+10 TO STA. 12+85 RT, B=5.0', S=0.89%,
BEG. ELEV=51.70', END ELEV=50.90', CL B RIPRAP

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



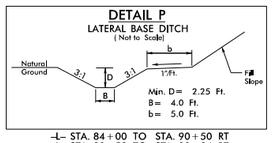
–L– STA. 460+80 TO STA. 461+75 LT
–L– STA. 486+75 TO STA. 490+00 RT
–L– STA. 505+00 TO STA. 511+00 RT
–Y5– STA. 12+31 TO STA. 14+50 RT
–Y6– STA. 17+25 TO STA. 19+80 RT
–Y11– STA. 11+00 TO STA. 11+50 LT
–Y11– STA. 11+00 TO STA. 12+10 RT

DETAIL O
LATERAL BASE DITCH
(Not to Scale)



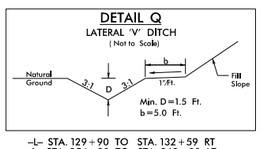
–L– STA. 68+88 TO STA. 78+50 RT
–L– STA. 187+00 TO STA. 191+50 RT
–L– STA. 331+25 TO STA. 340+00 LT
–L– STA. 475+15 TO STA. 477+46 RT

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



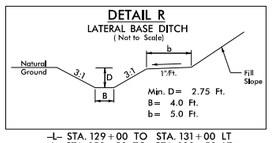
–L– STA. 84+00 TO STA. 90+50 RT
–L– STA. 98+50 TO STA. 98+94 RT
–L– STA. 108+88 TO STA. 129+00 LT
–L– STA. 147+50 TO STA. 154+25 RT
–L– STA. 340+00 TO STA. 342+00 LT
–L– STA. 453+50 TO STA. 461+00 RT
–L– STA. 461+00 TO STA. 465+00 RT, B=1.0 Ft.
–L– STA. 465+00 TO STA. 465+15 RT

DETAIL Q
LATERAL 'V' DITCH
(Not to Scale)



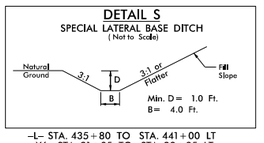
–L– STA. 129+90 TO STA. 132+59 RT
–L– STA. 254+30 TO STA. 262+00 LT
–L– STA. 256+00 TO STA. 263+75 RT
–L– STA. 262+75 TO STA. 265+71 LT
–L– STA. 263+75 TO STA. 266+20 RT
–L– STA. 274+40 TO STA. 276+65 RT
–L– STA. 300+36 TO STA. 305+50 RT
–L– STA. 352+50 TO STA. 356+00 RT
–Y10– STA. 11+62 TO STA. 13+50 LT

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



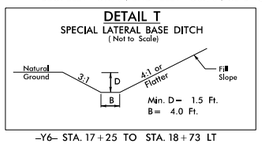
–L– STA. 129+00 TO STA. 131+00 LT
–L– STA. 158+50 TO STA. 188+50 LT
–L– STA. 356+00 TO STA. 365+50 RT
–Y4– STA. 19+58 TO STA. 19+78 LT

DETAIL S
SPECIAL LATERAL BASE DITCH
(Not to Scale)



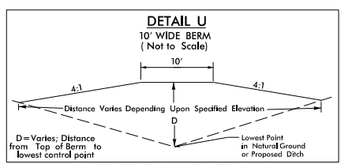
–L– STA. 435+80 TO STA. 441+00 LT
–Y6– STA. 21+85 TO STA. 23+95 LT
–Y7– STA. 17+50 TO STA. 20+30 LT

DETAIL T
SPECIAL LATERAL BASE DITCH
(Not to Scale)



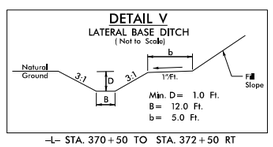
–Y6– STA. 17+25 TO STA. 18+73 LT

DETAIL U
10' WIDE BERM
(Not to Scale)



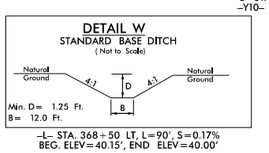
–L– STA. 273+77 LT, TOP ELEV=57.7', D=0.3'

DETAIL V
LATERAL BASE DITCH
(Not to Scale)



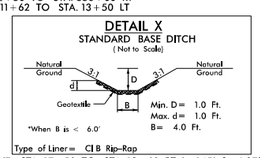
–L– STA. 370+50 TO STA. 372+50 RT

DETAIL W
STANDARD BASE DITCH
(Not to Scale)



–L– STA. 368+50 LT, L=90', S=0.17%
BEG. ELEV=40.15', END ELEV=40.00'

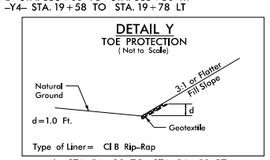
DETAIL X
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CIB Rip-Rap

–Y7– STA. 17+50 TO STA. 18+60 RT, L=145', S=4.97%
BEG. ELEV=61.70', END ELEV=54.50'
–Y8– STA. 12+75 RT, L=30', S=2.57%
BEG. ELEV=51.80', END ELEV=51.03'

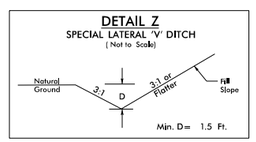
DETAIL Y
TOE PROTECTION
(Not to Scale)



Type of Liner= CIB Rip-Rap

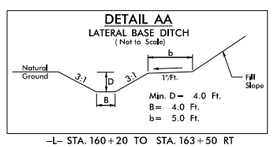
–L– STA. 54+28 TO STA. 54+58 RT
–L– STA. 55+00 TO STA. 55+62 RT
–L– STA. 55+67 TO STA. 57+75 RT
–L– STA. 153+11 TO STA. 156+08 LT
–L– STA. 154+29 TO STA. 156+32 RT
–L– STA. 156+70 TO STA. 157+35 LT
–L– STA. 156+99 TO STA. 160+05 RT
–L– STA. 280+14 TO STA. 281+08 LT
–L– STA. 340+00 TO STA. 342+00 RT
–L– STA. 341+92 TO STA. 344+22 LT
–L– STA. 344+70 TO STA. 344+97 RT
–L– STA. 344+58 TO STA. 346+43 RT
–L– STA. 346+40 TO STA. 347+55 RT
–L– STA. 364+29 TO STA. 365+73 LT
–L– STA. 366+39 TO STA. 367+03 RT
–L– STA. 366+36 TO STA. 367+61 LT
–L– STA. 368+72 TO STA. 370+12 RT
–L– STA. 557+41 TO STA. 567+12 LT

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



–Y4– STA. 17+00 TO STA. 19+58 LT

DETAIL AA
LATERAL BASE DITCH
(Not to Scale)



–L– STA. 160+20 TO STA. 163+50 RT

DETAIL AB
LATERAL BASE DITCH
(Not to Scale)

–L– STA. 163+50 TO STA. 187+00 RT

DETAIL AC
STANDARD BASE DITCH
(Not to Scale)

–L– STA. 55+43 LT, L=128', S=0.30%
BEG. ELEV=35.79', END ELEV=35.39'
–L– STA. 128+07 RT, L=73', S=0.58%
BEG. ELEV=41.61', END ELEV=41.19'

DETAIL AD
STANDARD BASE DITCH
(Not to Scale)

–Y4– STA. 19+67 RT, L=43', S=0.30%
BEG. ELEV=32.63', END ELEV=32.50'

DETAIL AE
STANDARD BASE DITCH
(Not to Scale)

Type of Liner= CIB Rip-Rap

–L– STA. 252+40 LT, L=50', S=2.96%, D=1.25Ft., d=1.25Ft.
BEG. ELEV=56.98', END ELEV=55.50'
–L– STA. 230+81 LT, L=39', S=0.79%, D=1.5Ft., d=1.5Ft.
BEG. ELEV=51.65', END ELEV=51.34'

–L– STA. 135+90 LT
–Y7– STA. 19+00 RT
–Y8– STA. 12+40 RT

DETAIL AG
BANK STABILIZATION
(Not to Scale)

Type of Liner= 80 TONS,CL II Rip-Rap
Geotextile= 125 sy

–L– STA. 156+38 TO STA. 156+46
–L– STA. 156+67 TO STA. 156+80

DETAIL AH
STANDARD BASE DITCH
(Not to Scale)

–L– STA. 42+57 LT, L=73', S=0.27%, D=2.0 FT.
BEG. ELEV=40.91', END ELEV=40.71'

DETAIL AI
STANDARD BASE DITCH
(Not to Scale)

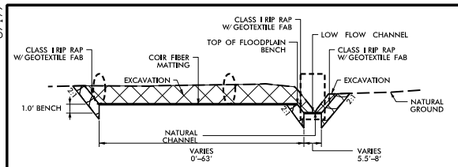
Type of Liner= CIB Rip-Rap

–L– STA. 11+80 RT, L=50', S=1.66%,
BEG. ELEV=31.53', END ELEV=30.70'

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

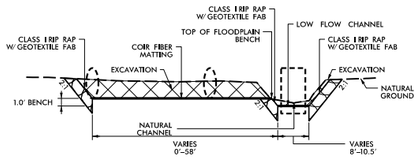
6/18/2021
R:\Projects\Julius\PERMITS_Environmental\Drawings\R2511_Hyd_prm_Ditch Detail.dgn
apowell

8/17/99



INLET CHANNEL IMPROVEMENTS

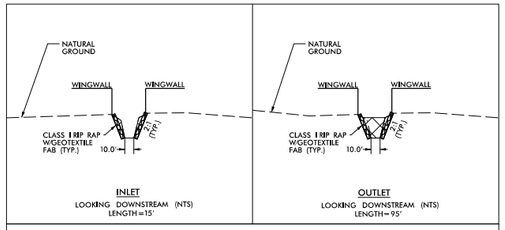
LOOKING DOWNSTREAM (NTS)
LENGTH=105'



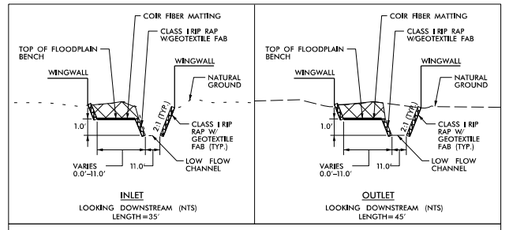
OUTLET CHANNEL IMPROVEMENTS

LOOKING DOWNSTREAM (NTS)
LENGTH=75'

1 @ 8' x 6' RCBC + (2) – 48" WELDED STEEL
STA. 69+25.5 –L–



1 @ 10' x 5' RCBC
STA. 345+79.0 –L–



2 @ 11' x 8' RCBC
STA. 365+81.0 –L–

PROJECT REFERENCE NO.	SHEET NO.
R-2511	2D-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 3 OF 61

ENGLISH

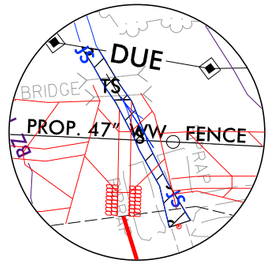
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_InletOutlet Detail.dgn
agonzalez

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING

INSET A



PERMIT DRAWING SHEET 4 OF 61

ENGLISH

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 1

SA

1 DAVID LEE LAWRENCE, JR.

2 MCDONALD GAUTIER, III, ET AL

3 ROSEANN BASS

4 MAXWELL P. CHESNUTT FAMILY TRUST

5 CHRISTINA BASS TOPPIN

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

-Y1- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y1- Sta. 10+50.00

END C/A END FENCE +80.00

-Y1- POT Sta. 14+25.74= -L- POC Sta. 13+74.26

-L- CS Sta. 7+75.00

BEGIN WW FENCE TIE TO EXIST. FENCE

BEGIN C/A BEGIN FENCE +80.00

33 TONS CL I RIPRAP W/62 SY GEO FAB

3 TONS CL B RIPRAP W/10 SY GEO FAB

48 TONS CL I RIPRAP W/89 SY GEO FAB ON BANKS ONLY

LATERAL 4' BASE DITCH SEE DETAIL A

CHANNEL CHANGE SEE DETAIL M

STANDARD 5' BASE DITCH SEE DETAIL A1

MEDIAN V DITCH SEE DETAIL B

REMOVE EXISTING PIPE

REMOVE EXISTING SYSTEM

PLUG & FILL W/ FLOWABLE FILL

PROP. 47" WW FENCE

FS ELEV. =35.0

ACCESS BREAK

S 84°51'36.0" E

N 27°16'35.0" W

-L- ST Sta. 10+00.00

-L- TS Sta. 12+08.88

-L- SC Sta. 13+08.88

BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00

MATCHLINE -L- STA. 19+00 SEE SHEET 5

INSET B

SA

WA

V10=2.13ft/s
Q10=15.89cfs

25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Highways\Projects\PERMITS.Environmental\Drawings\R2511_Hyd_prm_wet_psh04.dgn
agnashey

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING

INSET A

PERMIT DRAWING
SHEET 5 OF 61

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

SITE 1

1 DAVID LEE LAWRENCE, JR.

3 END C/A END FENCE +80.00 ROSEANN BASS

5 CHRISTINA BASS TOPPIN

2 MCDONALD GAUTIER, III, ET AL

4 MAXWELL P. CHESNUTT FAMILY TRUST

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

-Y1- POT Sta. 14+25.74=
-L- POC Sta. 13+74.26

-Y1- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y1- Sta. 10+50.00

-L- CS Sta. 7+75.00

BEGIN WW FENCE
TIE TO EXIST. FENCE

BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00

-L- ST Sta. 10+00.00

-L- TS Sta. 12+08.88

-L- SC Sta. 13+08.88

-Y1- POT Sta. 10+00.00

BEGIN C/A
BEGIN FENCE
+80.00

END C/A
END FENCE
+80.00

33 TONS CL I RIPRAP W/62 SY GEO FAB

3 TONS CL B RIPRAP W/10 SY GEO FAB

48 TONS CL I RIPRAP W/89 SY GEO FAB ON BANKS ONLY

PROP. 47" WW FENCE

PROP. 47" WW FENCE
FS ELEV. =35.0

LATERAL 4' BASE DITCH SEE DETAIL A

STANDARD 5' BASE DITCH SEE DETAIL A1

CHANNEL CHANGE SEE DETAIL M

MEDIAN V DITCH SEE DETAIL B

REMOVE EXISTING PIPE

REMOVE EXISTING SYSTEM

PLUG & FILL W/ FLOWABLE FILL

RENCHLESS INSTALLATION 54" WELDED STEEL

ACCESS BREAK

EXISTING R/W

N 27° 16' 35.0" W

S 84° 51' 36.0" E

10+00

15+00

MATCHLINE -L- STA. 19+00 SEE SHEET 5

SA

WA

V10 = 2.13ft/s
Q10 = 15.89cfs

INSET A

INSET B

INSET B

SCALE FOR INSETS
25 0 25 50

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Highways\Projects\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh04_con.dgn
agoudshev

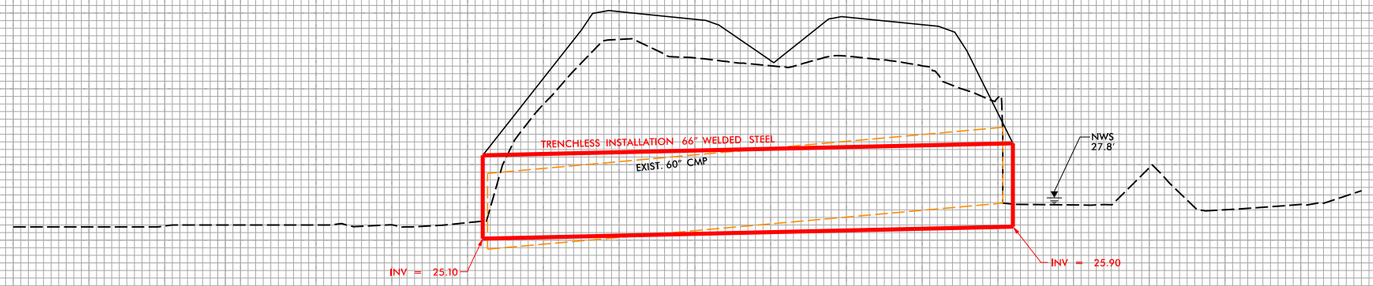
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 1
–L– STA. 18+10

PERMIT DRAWING
SHEET 6 OF 61



PROPOSED 66" TRENCHLESS WELDED STEEL PIPE (BURIED 1')
(TOTAL LENGTH=182')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE1.dgn
approshey

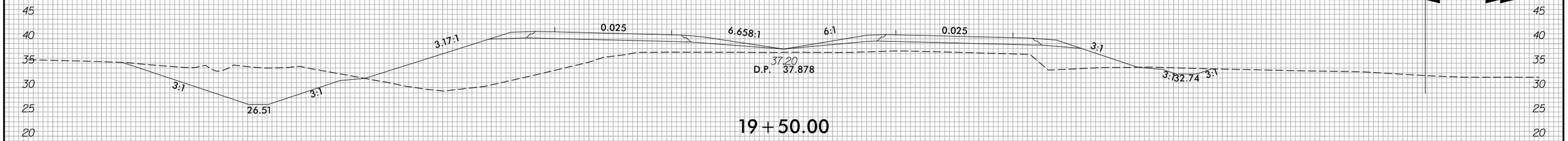
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

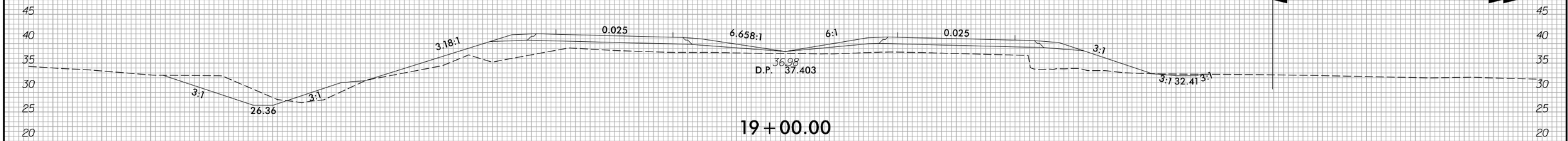
PERMIT DRAWING
SHEET 7 OF 61

WETLAND

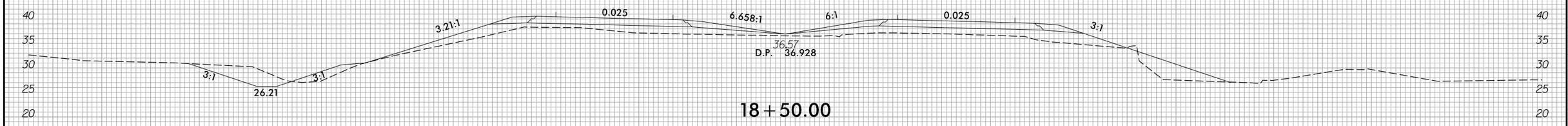


19+50.00

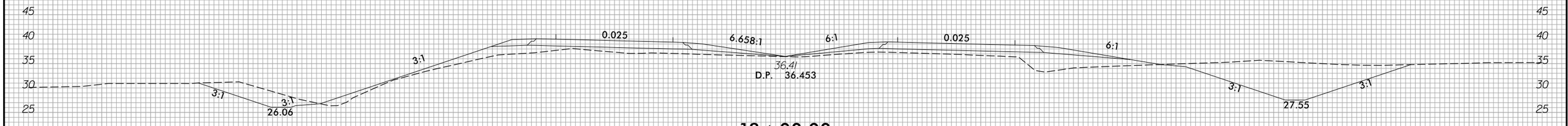
WETLAND



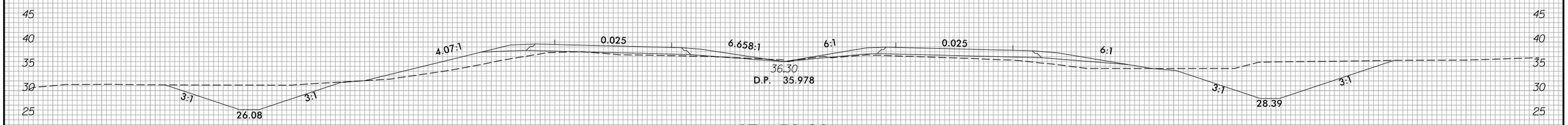
19+00.00



18+50.00



18+00.00



17+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 1_19+00.dgn
agnedushev

8/17/99

S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F	DENOTES FILL IN WETLAND
∴	DENOTES MECHANIZED CLEARING
T	DENOTES TEMPORARY FILL IN WETLAND

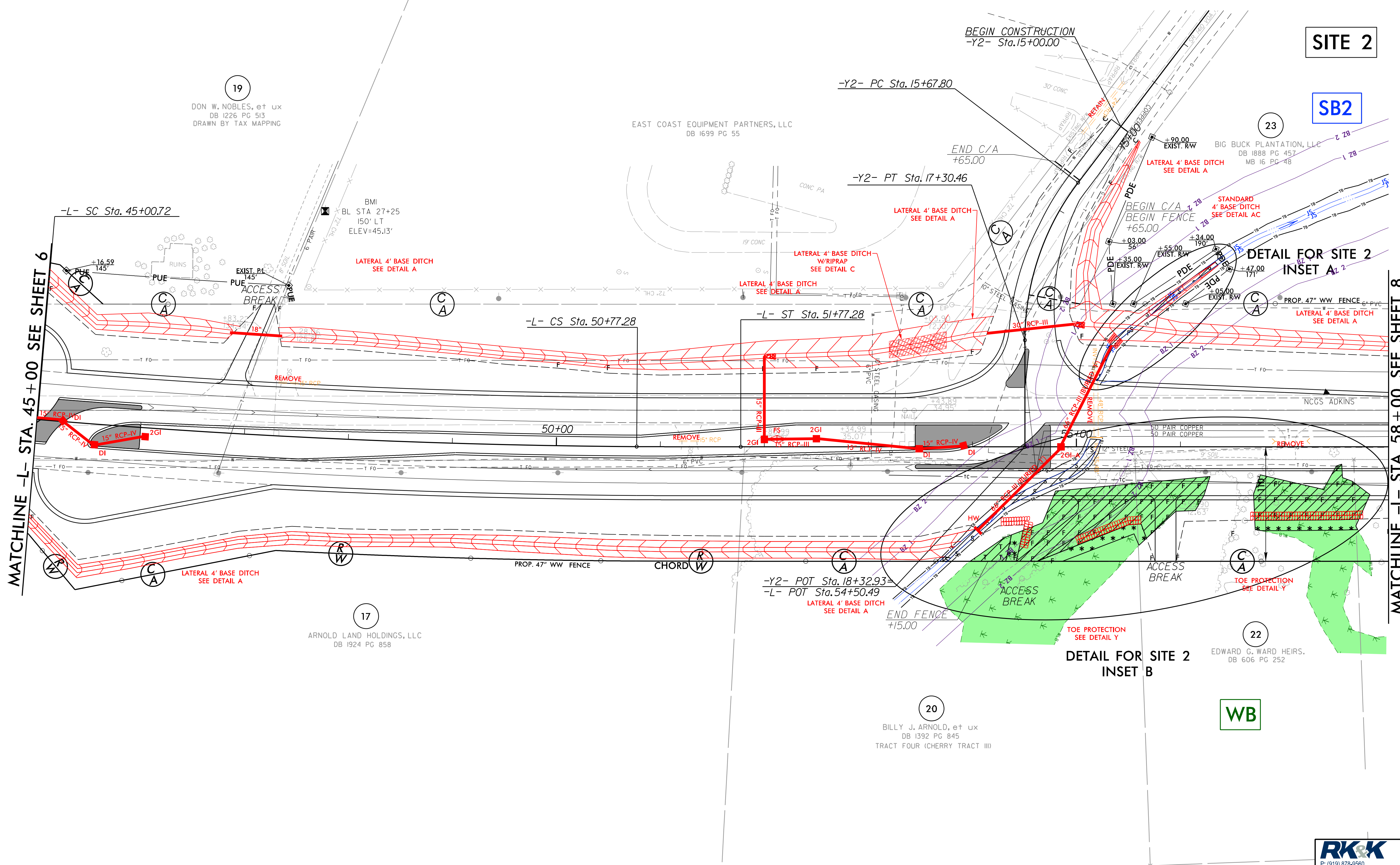
PERMIT DRAWING SHEET 8 OF 61

NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 2



SB2
WB
BEGIN CONSTRUCTION -Y2- Sta.15+00.00
-Y2- PC Sta. 15+67.80
END C/A +65.00
-Y2- PT Sta. 17+30.46
-L- SC Sta. 45+00.72
-L- CS Sta. 50+77.28
-L- ST Sta. 51+77.28
-Y2- POT Sta. 18+32.93=
-L- POT Sta.54+50.49
END FENCE +15.00
BEGIN C/A
BEGIN FENCE +65.00
19
DON W. NOBLES, et ux
DB 1226 PG 513
DRAWN BY TAX MAPPING
EAST COAST EQUIPMENT PARTNERS, LLC
DB 1699 PG 55
23
BIG BUCK PLANTATION, LLC
DB 1888 PG 457
MB 16 PG 48
17
ARNOLD LAND HOLDINGS, LLC
DB 1924 PG 858
20
BILLY J. ARNOLD, et ux
DB 1392 PG 845
TRACT FOUR (CHERRY TRACT III)
22
EDWARD G. WARD HEIRS.
DB 606 PG 252
BMI
BL STA 27+25
150' LT
ELEV=45.13'
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL 4' BASE DITCH W/RIPRAP SEE DETAIL C
STANDARD 4' BASE DITCH SEE DETAIL AC
TOE PROTECTION SEE DETAIL Y
DETAIL FOR SITE 2 INSET A
DETAIL FOR SITE 2 INSET B
ACCESS BREAK
PROP. 47" WW FENCE
CHORD
NCGS ADKINS
50 PAIR COPPER
MATCHLINE -L- STA. 45+00 SEE SHEET 6
MATCHLINE -L- STA. 58+00 SEE SHEET 8
50+00
REMOVE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh07.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2511	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

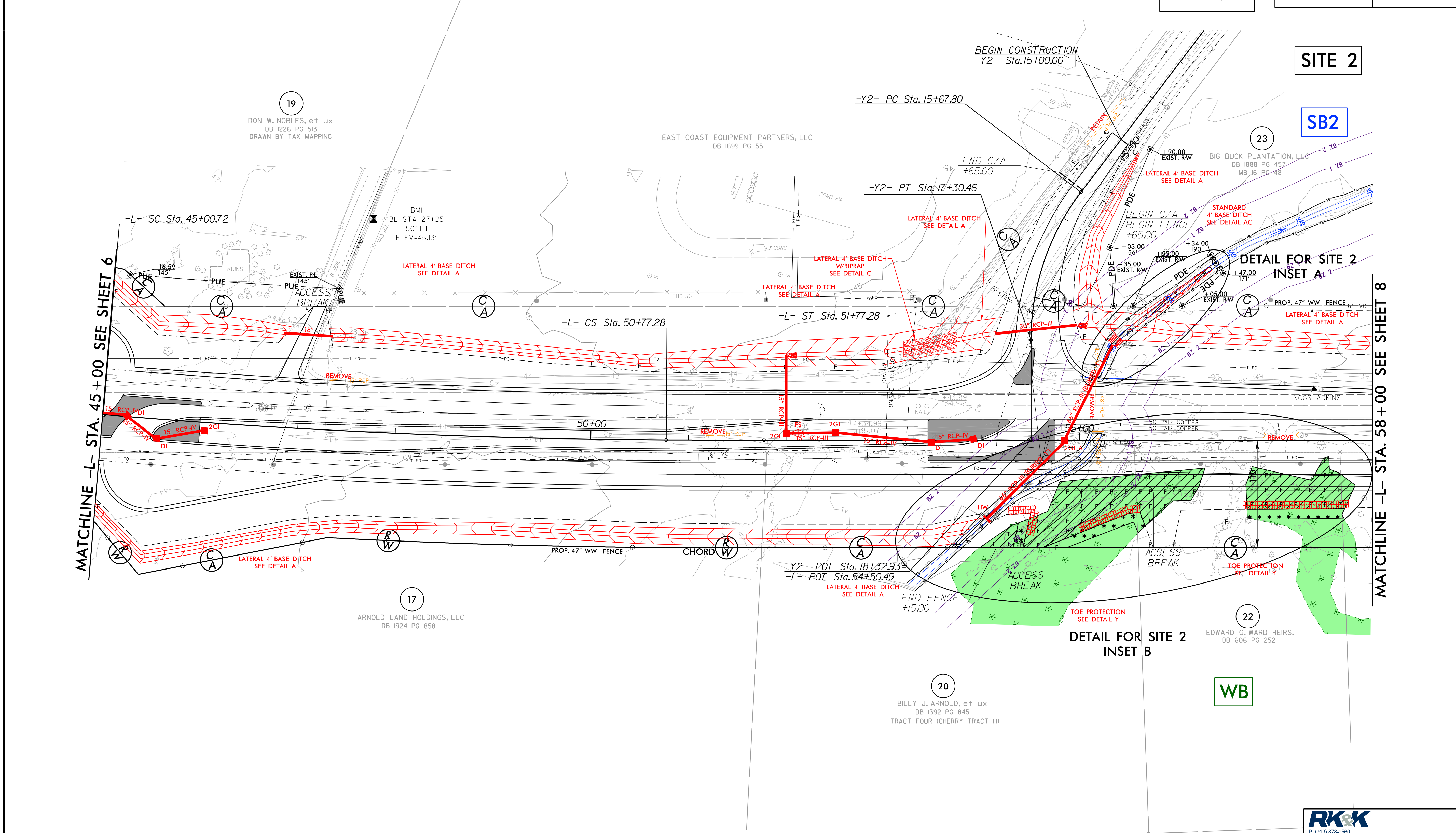
PERMIT DRAWING SHEET 9 OF 61

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

NAD 83/2011

ENGLISH

SITE 2



SB2
WB
BEGIN CONSTRUCTION -Y2- Sta.15+00.00
-Y2- PC Sta. 15+67.80
-Y2- PT Sta. 17+30.46
END C/A +65.00
BEGIN C/A BEGIN FENCE +65.00
-L- SC Sta. 45+00.72
-L- CS Sta. 50+77.28
-L- ST Sta. 51+77.28
-Y2- POT Sta. 18+32.93=
-L- POT Sta. 54+50.49
END FENCE +15.00
DETAIL FOR SITE 2 INSET A
DETAIL FOR SITE 2 INSET B
MATCHLINE -L- STA. 45+00 SEE SHEET 6
MATCHLINE -L- STA. 58+00 SEE SHEET 8
DON W. NOBLES, et ux DB 1226 PG 513 DRAWN BY TAX MAPPING
EAST COAST EQUIPMENT PARTNERS, LLC DB 1699 PG 55
BIG BUCK PLANTATION, LLC DB 1888 PG 457 MB 16 PG 48
ARNOLD LAND HOLDINGS, LLC DB 1924 PG 858
EDWARD G. WARD HEIRS. DB 606 PG 252
BILLY J. ARNOLD, et ux DB 1392 PG 845 TRACT FOUR (CHERRY TRACT III)
BMI BL STA 27+25 150' LT ELEV=45.13'
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL 4' BASE DITCH W/RIPRAP SEE DETAIL C
STANDARD 4' BASE DITCH SEE DETAIL AC
TOE PROTECTION SEE DETAIL Y
ACCESS BREAK
PROP. 47" WW FENCE
NCGS ADKINS
50+00

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh07_con.dgn

8/17/99

S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
T	DENOTES TEMPORARY FILL IN WETLAND

DETAIL FOR SITE 2

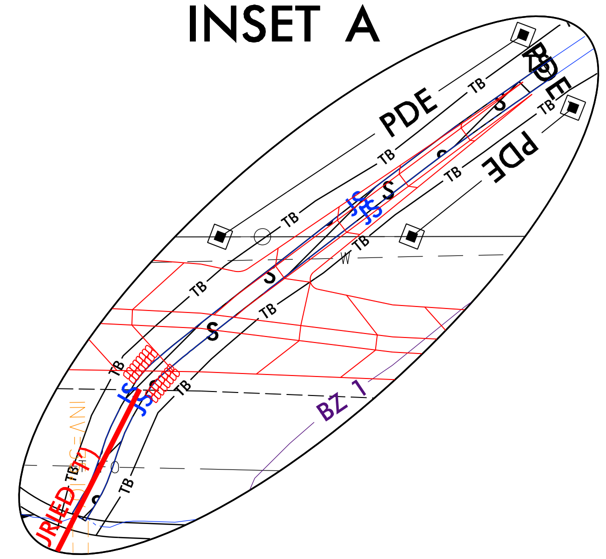
PROJECT REFERENCE NO.	SHEET NO.
R-2511	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

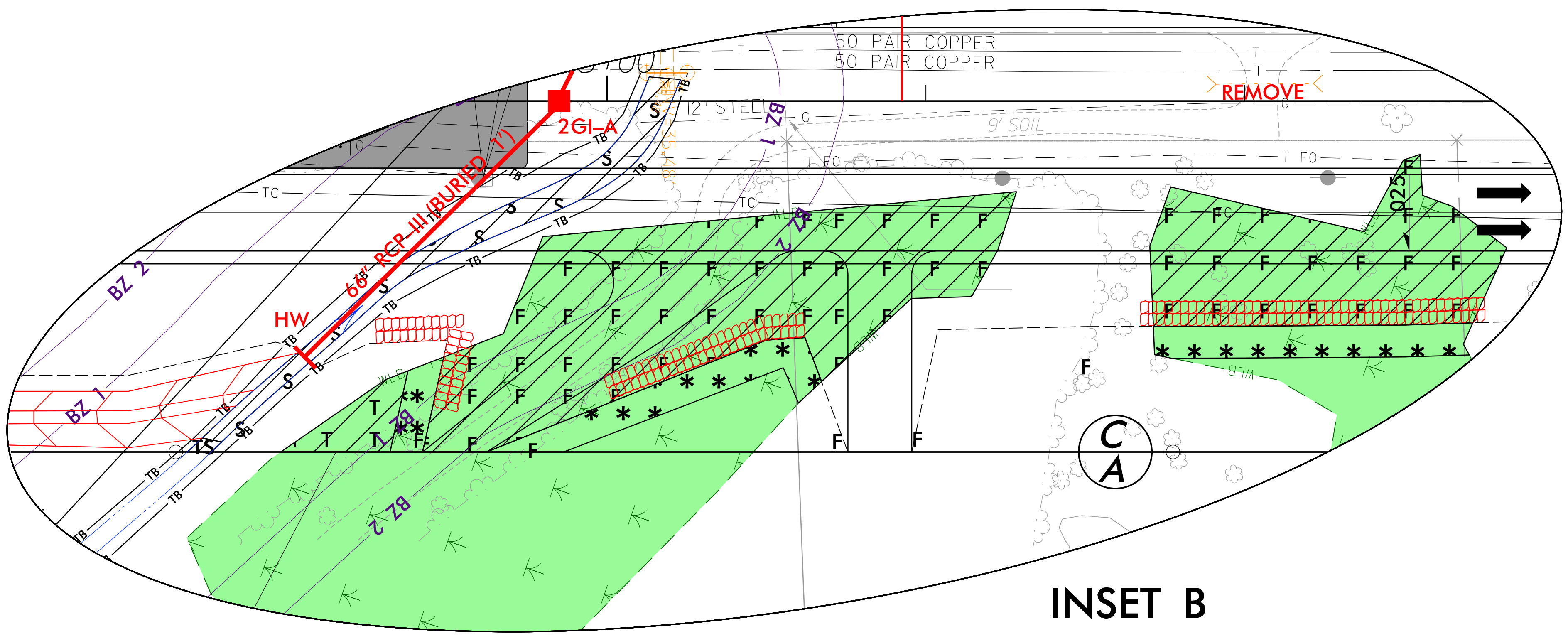
NAD 83/2011

ENGLISH

PERMIT DRAWING
SHEET 10 OF 61

INSET A





INSET B

25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

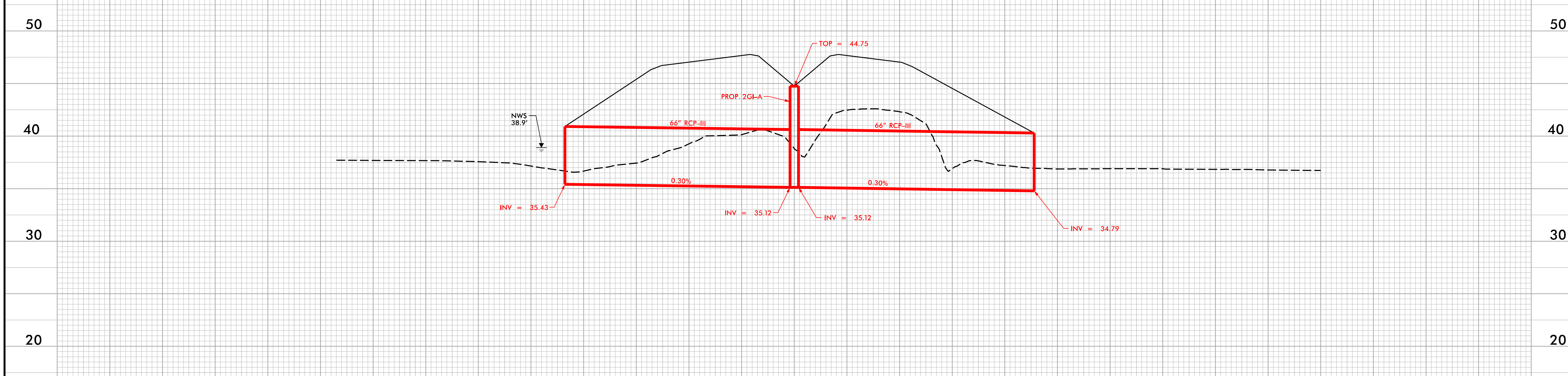
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh07_Detail.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 2
-L- STA. 54+85

PERMIT DRAWING
SHEET 11 OF 61



PROPOSED 66" RCP-III (BURIED 1')
(TOTAL LENGTH=215')

250 200 150 100 50 0 50 100 150 200 250

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

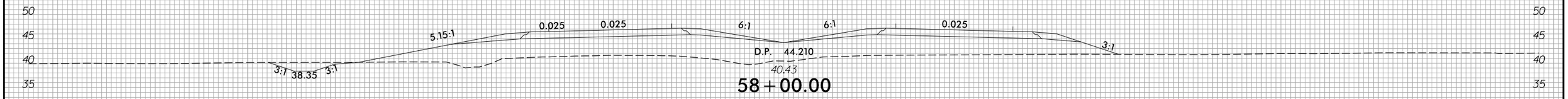
5/14/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE2.dgn

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-17

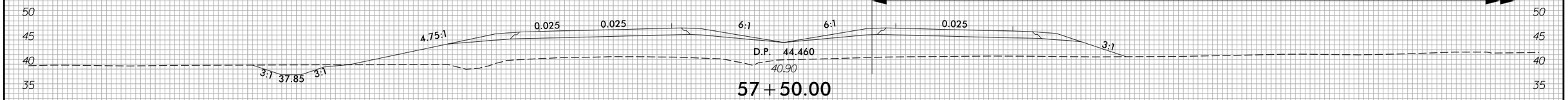
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 12 OF 61



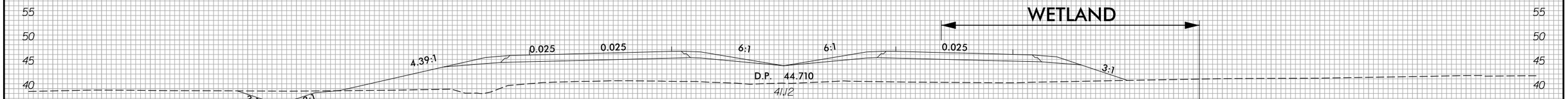
58 + 00.00

WETLAND

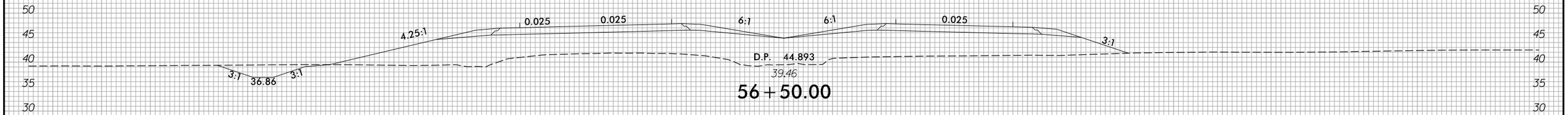


57 + 50.00

WETLAND

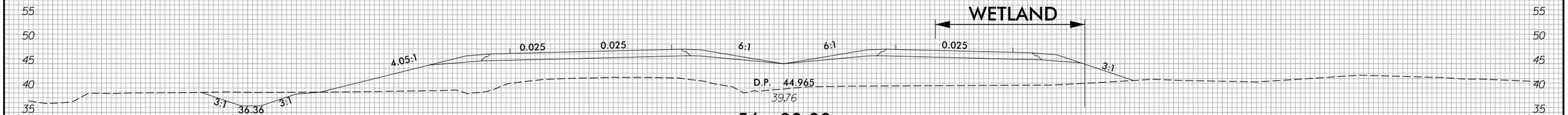


57 + 00.00



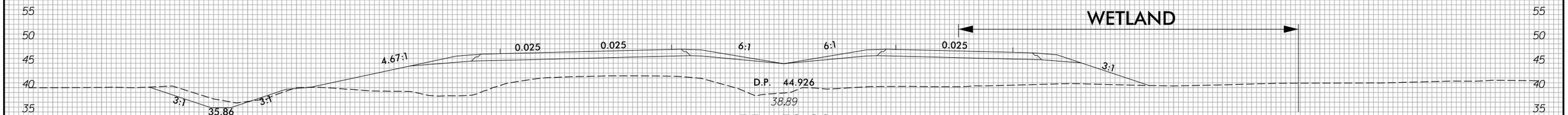
56 + 50.00

WETLAND



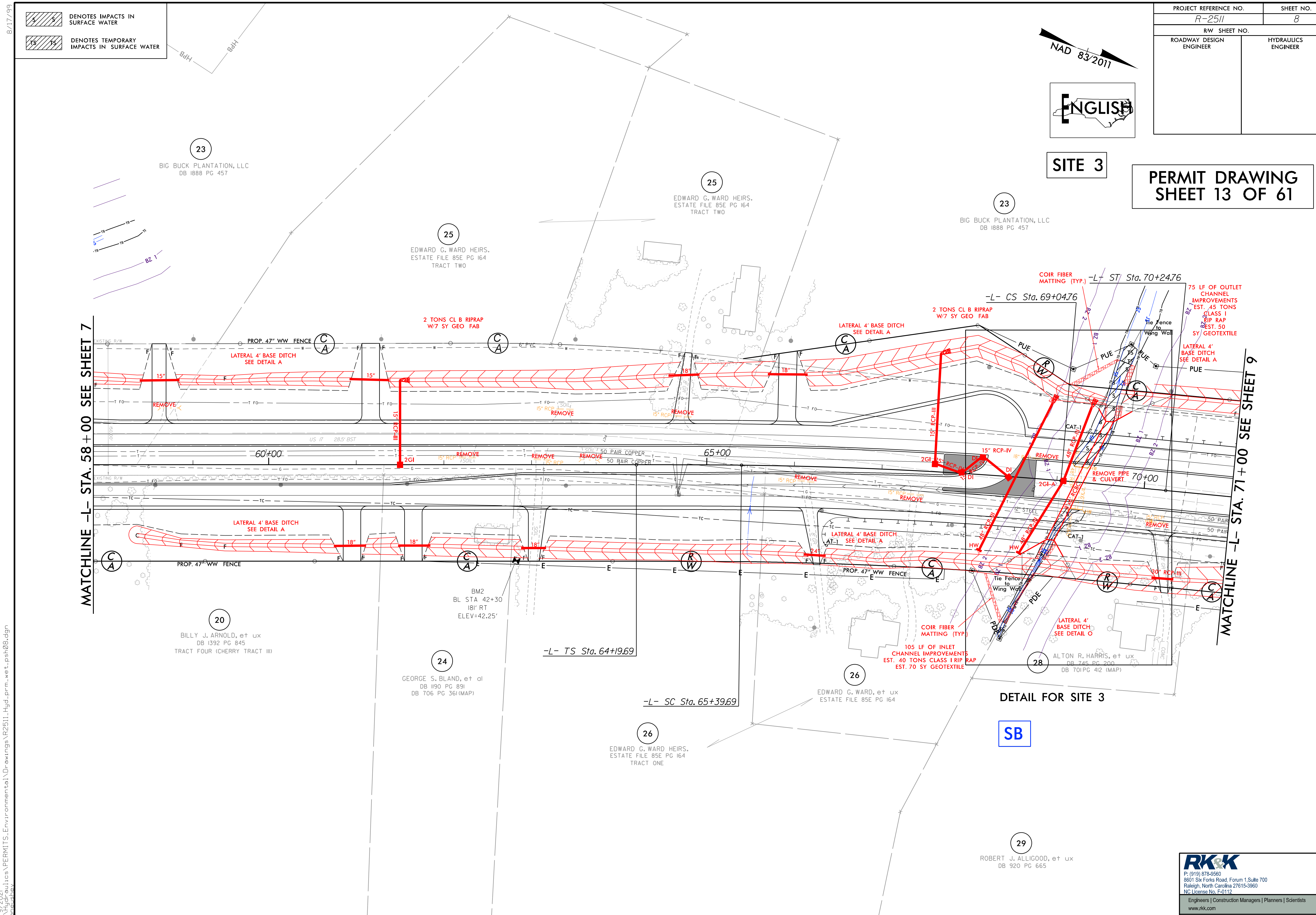
56 + 00.00

WETLAND



55 + 50.00

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 2_55+50.dgn
agnedushev


DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO.
R-2511
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/2011
ENGLISH
SITE 3
PERMIT DRAWING
SHEET 13 OF 61
BIG BUCK PLANTATION, LLC
DB 1888 PG 457
EDWARD G. WARD HEIRS.
ESTATE FILE 85E PG 164
TRACT TWO
COIR FIBER MATTING (TYP.)
-L- ST Sta. 70+24.76
-L- CS Sta. 69+04.76
75 LF OF OUTLET CHANNEL IMPROVEMENTS
EST. 45 TONS CLASS I RIP RAP
EST. 50 SY GEOTEXTILE
LATERAL 4' BASE DITCH SEE DETAIL A
2 TONS CL B RIPRAP W/7 SY GEO FAB
PROP. 47" WW FENCE
REMOVE
60+00
65+00
70+00
50 PAIR COPPER
15" RCP-IV
REMOVE PIPE & CULVERT
Tie Fence to Wing Wall
MATCHLINE -L- STA. 58+00 SEE SHEET 7
MATCHLINE -L- STA. 71+00 SEE SHEET 9
BM2
BL STA 42+30
181' RT
ELEV=42.25'
BILLY J. ARNOLD, et ux
DB 1392 PG 845
TRACT FOUR (CHERRY TRACT III)
GEORGE S. BLAND, et al
DB 1190 PG 891
DB 706 PG 361(MAP)
-L- TS Sta. 64+19.69
-L- SC Sta. 65+39.69
EDWARD G. WARD, et ux
ESTATE FILE 85E PG 164
EDWARD G. WARD HEIRS.
ESTATE FILE 85E PG 164
TRACT ONE
COIR FIBER MATTING (TYP)
105 LF OF INLET CHANNEL IMPROVEMENTS
EST. 40 TONS CLASS I RIP RAP
EST. 70 SY GEOTEXTILE
LATERAL 4' BASE DITCH SEE DETAIL O
ALTON R. HARRIS, et ux
DB 745 PG 200
DB 70 PG 412 (MAP)
DETAIL FOR SITE 3
SB
ROBERT J. ALLIGOOD, et ux
DB 920 PG 665
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-2511	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

SITE 3

PERMIT DRAWING SHEET 14 OF 61

23
BIG BUCK PLANTATION, LLC
DB 1888 PG 457

25
EDWARD G. WARD HEIRS,
ESTATE FILE 85E PG 164
TRACT TWO

MATCHLINE -L- STA. 58+00 SEE SHEET 7

MATCHLINE -L- STA. 71+00 SEE SHEET 9

-L- CS Sta. 69+04.76

-L- ST Sta. 70+24.76

-L- TS Sta. 64+19.69

-L- SC Sta. 65+39.69

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL A

PROP. 47" WW FENCE

COIR FIBER MATTING (TYP.)

75 LF OF OUTLET CHANNEL IMPROVEMENTS EST. 45 TONS CLASS I RIP RAP EST. 50 SY GEOTEXTILE

Tie Fence to Wing Wall

REMOVE PIPE & CULVERT

105 LF OF INLET CHANNEL IMPROVEMENTS EST. 40 TONS CLASS I RIP RAP EST. 70 SY GEOTEXTILE

BM2
BL STA 42+30
181' RT
ELEV=42.25'

20
BILLY J. ARNOLD, et ux
DB 1392 PG 845
TRACT FOUR (CHERRY TRACT III)

24
GEORGE S. BLAND, et al
DB 1190 PG 891
DB 706 PG 361(MAP)

26
EDWARD G. WARD, et ux
ESTATE FILE 85E PG 164

28
ALTON R. HARRIS, et ux
DB 745 PG 200
DB 701PG 412 (MAP)

26
EDWARD G. WARD HEIRS,
ESTATE FILE 85E PG 164
TRACT ONE

29
ROBERT J. ALLIGOOD, et ux
DB 920 PG 665

DETAIL FOR SITE 3

SB

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Highways\Utilities\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh08_con.dgn
apoulsbey

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

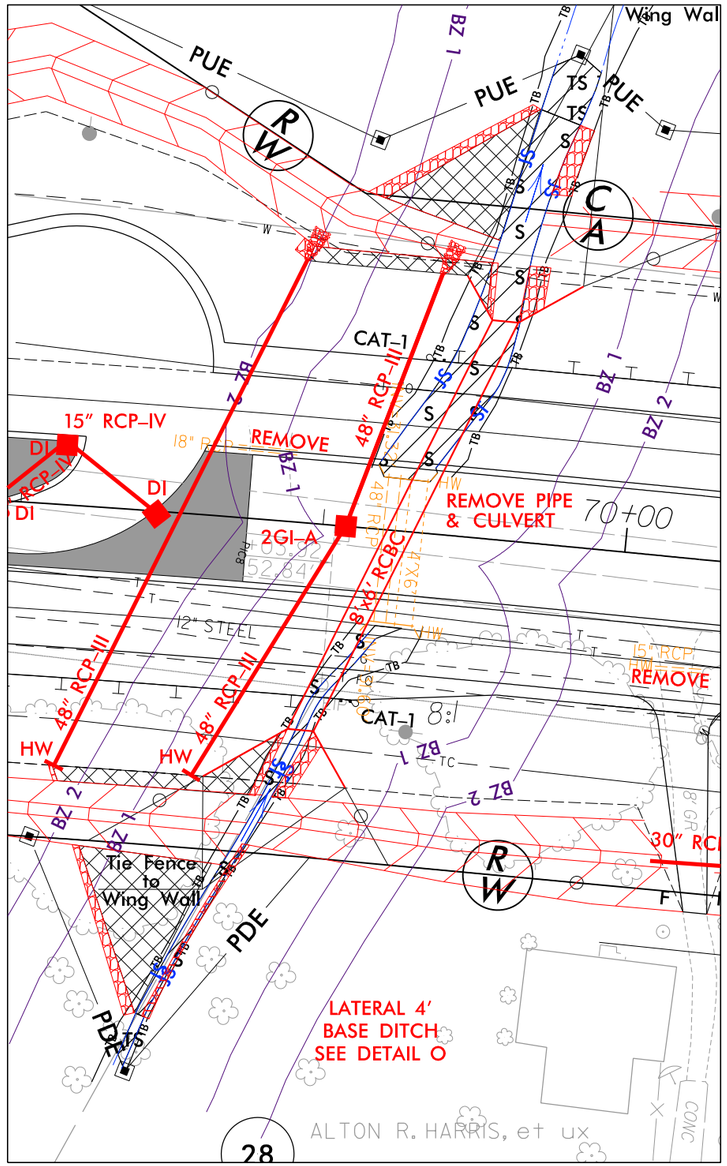
DETAIL FOR SITE 3

NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 15 OF 61



SCALE FOR INSETS
25 0 25 50

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh08_Detail.dgn
agoudey

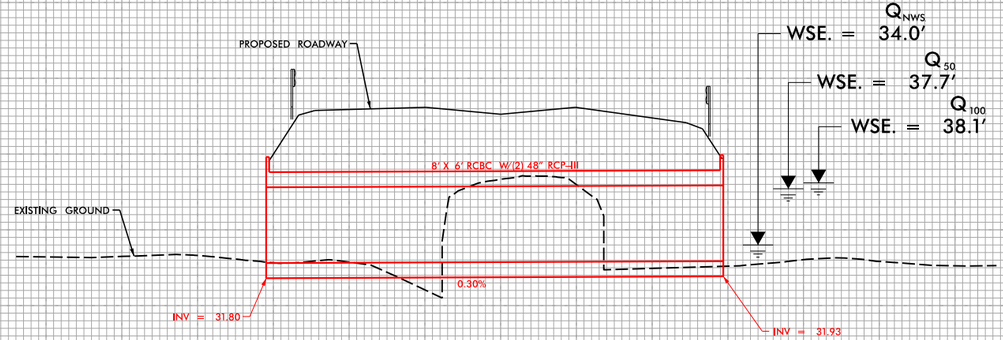
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 3
–L– STA. 69+25.5

PERMIT DRAWING
SHEET 16 OF 61



PROPOSED 8'X 6'RCBC (BURIED 1') W/ (2)–48" RCP–III (NOT BURIED) (TOTAL LENGTH=190')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE3.dgn
apoulsbey

DENOTES IMPACTS IN SURFACE WATER

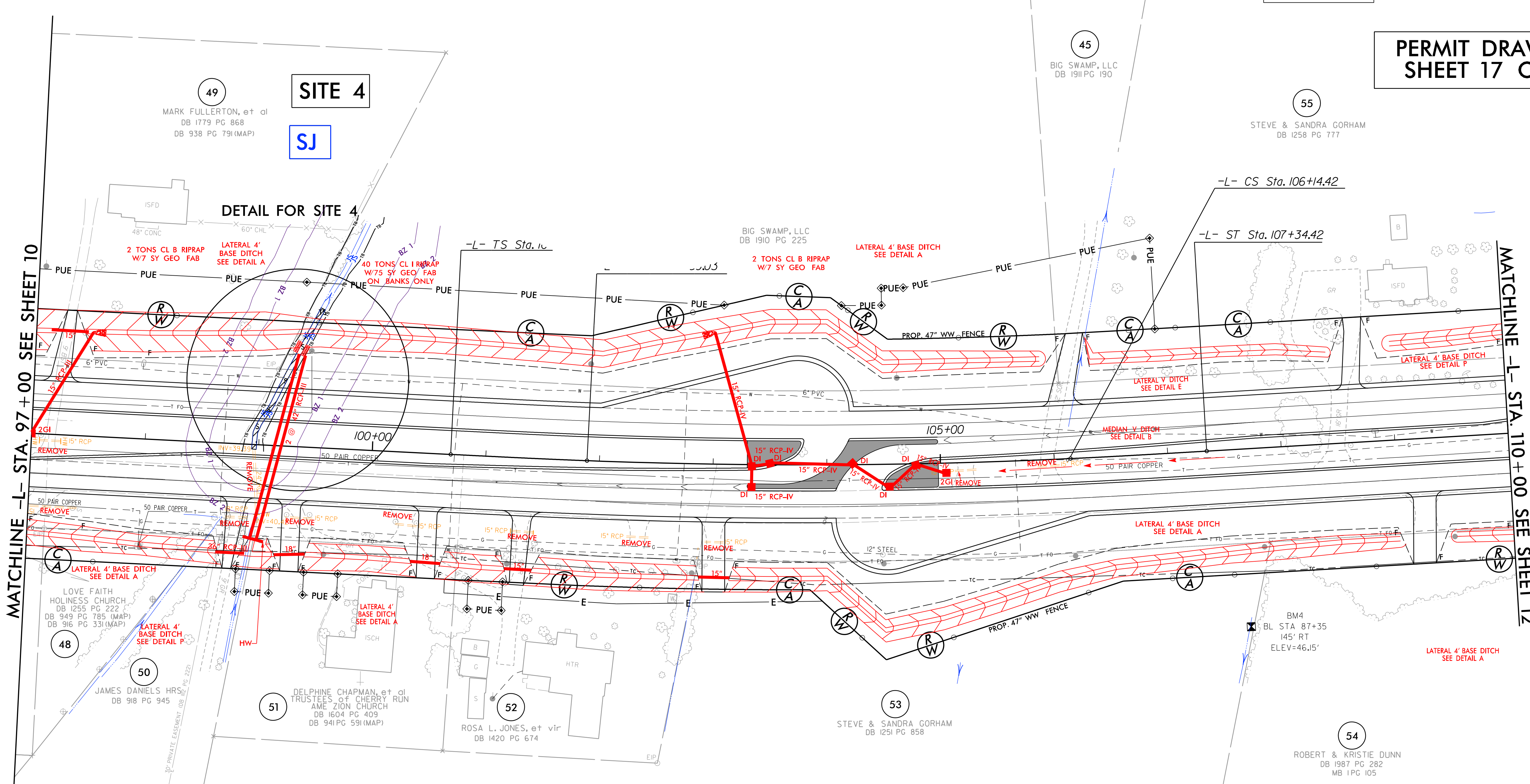
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-2511	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING SHEET 17 OF 61



SITE 4
SJ
DETAIL FOR SITE 4
MATCHLINE -L- STA. 97+00 SEE SHEET 10
MATCHLINE -L- STA. 110+00 SEE SHEET 12
49
MARK FULLERTON, et al
DB 1779 PG 868
DB 938 PG 791 (MAP)
45
BIG SWAMP, LLC
DB 1911 PG 190
55
STEVE & SANDRA GORHAM
DB 1258 PG 777
BIG SWAMP, LLC
DB 1910 PG 225
2 TONS CL B RIPRAP
W/7 SY GEO FAB
LATERAL 4' BASE DITCH
SEE DETAIL A
40 TONS CL I RIPRAP
W/75 SY GEO FAB
ON BANKS ONLY
-L- CS Sta. 106+14.42
-L- ST Sta. 107+34.42
100+00
105+00
PROP. 47" WW FENCE
LATERAL V DITCH
SEE DETAIL E
MEDIAN V DITCH
SEE DETAIL B
LATERAL 4' BASE DITCH
SEE DETAIL P
50 PAIR COPPER
15" RCP-IV
REMOVE
12" STEEL
LOVE FAITH
HOLINESS CHURCH
DB 1255 PG 222
DB 949 PG 785 (MAP)
DB 916 PG 331 (MAP)
48
50
JAMES DANIELS HRS
DB 918 PG 945
51
DELPHINE CHAPMAN, et al
TRUSTEES of CHERRY RUN
AME ZION CHURCH
DB 1604 PG 409
DB 941 PG 591 (MAP)
52
ROSA L. JONES, et vir
DB 1420 PG 674
53
STEVE & SANDRA GORHAM
DB 1251 PG 858
54
ROBERT & KRISTIE DUNN
DB 1987 PG 282
MB 1 PG 105
BM4
BL STA 87+35
145' RT
ELEV=46.15'

25 0 25 50

SCALE FOR INSETS

RK&K

P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists
www.rkk.com

Responsive People | Creative Solutions

8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh11.dgn

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-2511	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING SHEET 18 OF 61

SITE 4

SJ

DETAIL FOR SITE 4

MATCHLINE -L- STA. 97+00 SEE SHEET 10

MATCHLINE -L- STA. 110+00 SEE SHEET 12

-L- TS Sta. 10

-L- CS Sta. 106+14.42

-L- ST Sta. 107+34.42

49 MARK FULLERTON, et al DB 1779 PG 868 DB 938 PG 791(MAP)

45 BIG SWAMP, LLC DB 1911 PG 190

55 STEVE & SANDRA GORHAM DB 1258 PG 777

BIG SWAMP, LLC DB 1910 PG 225

48 LOVE, FAITH HOLINESS CHURCH DB 1255 PG 222 DB 949 PG 785 (MAP) DB 916 PG 331(MAP)

50 JAMES DANIELS HRS DB 918 PG 945

51 DELPHINE CHAPMAN, et al TRUSTEES of CHERRY RUN AME ZION CHURCH DB 1604 PG 409 DB 941PG 591(MAP)

52 ROSA L. JONES, et vir DB 1420 PG 674

53 STEVE & SANDRA GORHAM DB 1251 PG 858

54 ROBERT & KRISTIE DUNN DB 1987 PG 282 MB 1PG 105

BM4 BL STA 87+35 145' RT ELEV=46.15'

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL A

40 TONS CL I RIPRAP W/75 SY GEO FAB ON BANKS ONLY

PROP. 47" WW FENCE

LATERAL V DITCH SEE DETAIL E

MEDIAN V DITCH SEE DETAIL B

LATERAL 4' BASE DITCH SEE DETAIL P

25 0 25 50

SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/3/2021
R:\Projects\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh11_con.dgn
agoolsbey

8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

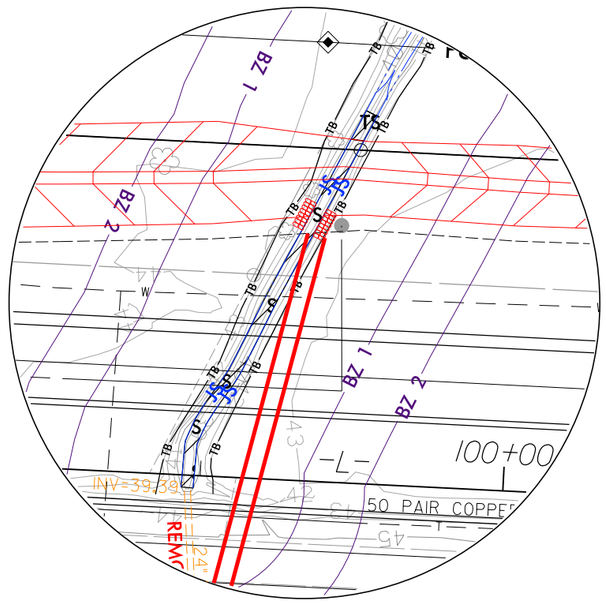
PROJECT REFERENCE NO.	SHEET NO.
R-2511	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

DETAIL FOR SITE 4

PERMIT DRAWING
SHEET 19 OF 61



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh11_Detail.dgn
approshey

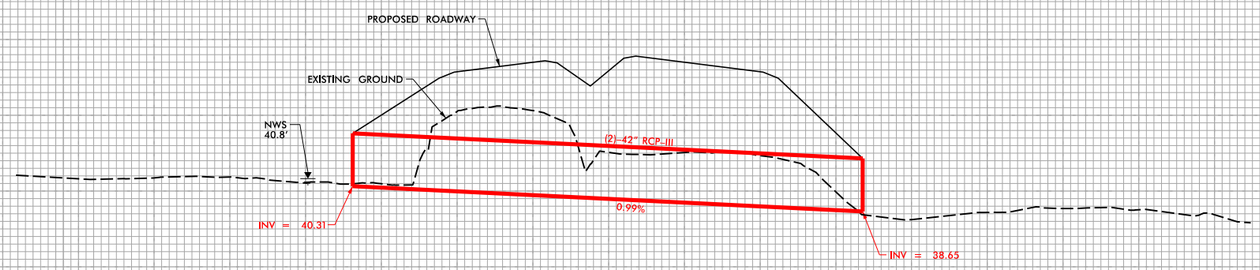
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 4
–L– STA. 99+14

PERMIT DRAWING
SHEET 20 OF 61



PROPOSED (2)–42" RCP–III
(TOTAL LENGTH=168')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

50 40 30 20

250 200 150 100 50 0 50 100 150 200 250

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 5

NAD 83/2011

-Y4- PT Sta. 16+62.46

BEGIN CONSTRUCTION
-Y4- Sta. 17+00.00

END BRIDGE
-L- Sta. 156+80.76

END APPROACH SLAB
-L- Sta. 157+04.75

BEGIN C/A
BEGIN FENCE
+53.97

END C/A
END FENCE
+45.00

BEGIN BRIDGE
-L- Sta. 156+21.18

BEGIN APPROACH SLAB
-L- Sta. 155+97.19

-L- TS Sta. 152+21.24

-L- SC Sta. 153+81.24

-Y4- POT Sta. 20+93.34=
-L- POC Sta. 157+73.77

END APPROACH SLAB
-L- Sta. 157+13.61

END BRIDGE
-L- Sta. 156+89.29

MATCHLINE -L- STA. 149+00 SEE SHEET 14

MATCHLINE -L- STA. 162+00 SEE SHEET 16

65 SANDRA W. WYNN

67 STEVEN C. WARD

68 ALEX J. TYSON

69 WILLIAM V. WARD

68A WILLIAM V. WARD, ET AL

62 JAMES L. HODGES, JR. et ux

V10 = 1.83ft/s
Q10 = 64.77cfs
D.A. = 40.0ac

V10 = 2.59ft/s
Q10 = 62.88cfs
D.A. = 32.6ac

V10 = 1.78ft/s
Q10 = 103.41cfs
D.A. = 53.6ac

26 TONS CL I RIPRAP W/50 SY GEO FAB

2 TONS CL B RIPRAP W/2 SY GEO FAB

2 TONS CL B RIPRAP W/7 SY GEO FAB

1 TON CL B RIPRAP W/5 SY GEO FAB

STANDARD 10' BASE DITCH SEE DETAIL AD

LATERAL 4' BASE DITCH SEE DETAIL A

LATERAL 4' BASE DITCH SEE DETAIL P

LATERAL 4' BASE DITCH SEE DETAIL R

LATERAL 4' BASE DITCH SEE DETAIL AA

SP. LAT V DITCH SEE DETAIL Z

TOE PROTECTION SEE DETAIL Y

PROP. 47" WW FENCE

Tie Fence to Bridge

REMOVE EXISTING PIPE

WC SC WC

PERMIT DRAWING
SHEET 21 OF 61

ENGLISH

SCALE FOR INSETS
25 0 25 50

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh15.dgn
agoolsby

PROJECT REFERENCE NO.	SHEET NO.
R-2511	15

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 22 OF 61

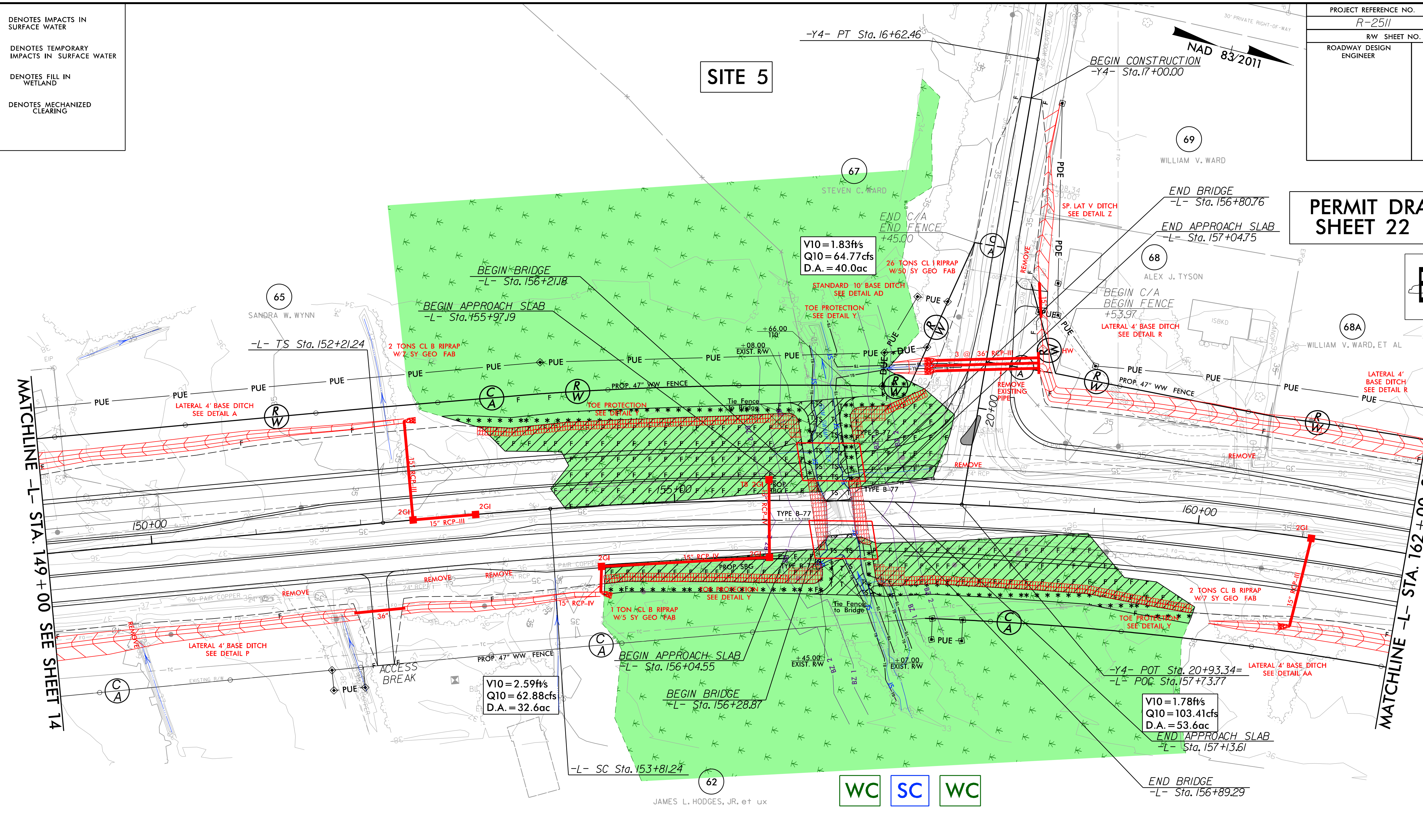
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

8/17/99



SITE 5
NAD 83/2011
ENGLISH
-Y4- PT Sta. 16+62.46
BEGIN CONSTRUCTION -Y4- Sta. 17+00.00
END BRIDGE -L- Sta. 156+80.76
END APPROACH SLAB -L- Sta. 157+04.75
BEGIN BRIDGE -L- Sta. 156+21.18
BEGIN APPROACH SLAB -L- Sta. 155+97.19
-L- TS Sta. 152+21.24
V10 = 1.83ft/s
Q10 = 64.77cfs
D.A. = 40.0ac
V10 = 2.59ft/s
Q10 = 62.88cfs
D.A. = 32.6ac
V10 = 1.78ft/s
Q10 = 103.41cfs
D.A. = 53.6ac
BEGIN APPROACH SLAB -L- Sta. 156+04.55
BEGIN BRIDGE -L- Sta. 156+28.87
-Y4- POT Sta. 20+93.34= -L- POC Sta. 157+73.77
END APPROACH SLAB -L- Sta. 157+13.61
END BRIDGE -L- Sta. 156+89.29
-L- SC Sta. 153+81.24
MATCHLINE -L- STA. 149+00 SEE SHEET 14
MATCHLINE -L- STA. 162+00 SEE SHEET 16
SANDRA W. WYNN
STEVEN C. WARD
WILLIAM V. WARD
ALEX J. TYSON
WILLIAM V. WARD, ET AL
JAMES L. HODGES, JR. et ux
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL 4' BASE DITCH SEE DETAIL P
LATERAL 4' BASE DITCH SEE DETAIL R
LATERAL 4' BASE DITCH SEE DETAIL AA
2 TONS CL B RIPRAP W/7 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB
1 TON CL B RIPRAP W/5 SY GEO FAB
STANDARD 10' BASE DITCH SEE DETAIL AD
TOE PROTECTION SEE DETAIL Y
SP. LAT V DITCH SEE DETAIL Z
END C/A END FENCE
BEGIN C/A BEGIN FENCE
PROP. 47" WW FENCE
ACCESS BREAK
Tie Fence to Bridge
REMOVE EXISTING PIPE
150+00
155+00
160+00
20+00
WC
SC
WC

25 0 25 50

SCALE FOR INSETS

RK&K

P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh15_con.dgn

5/28/99

PERMIT DRAWING SHEET 23 OF 61

-L-

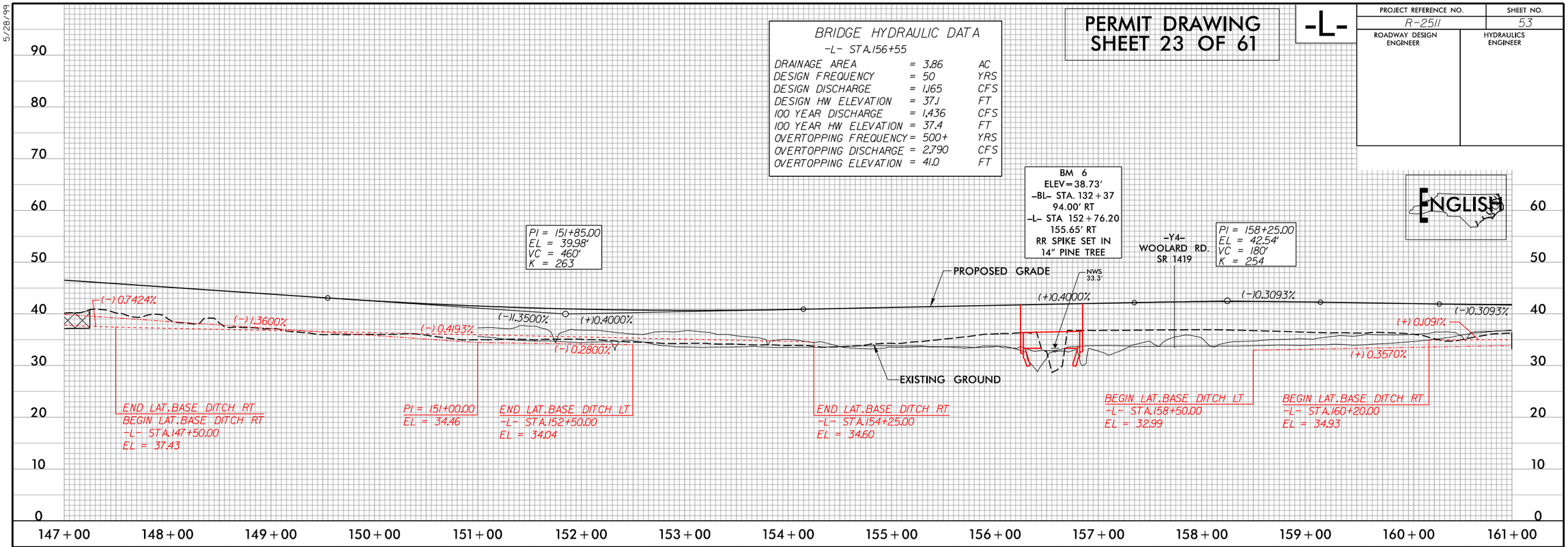
PROJECT REFERENCE NO.	SHEET NO.
R-2511	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

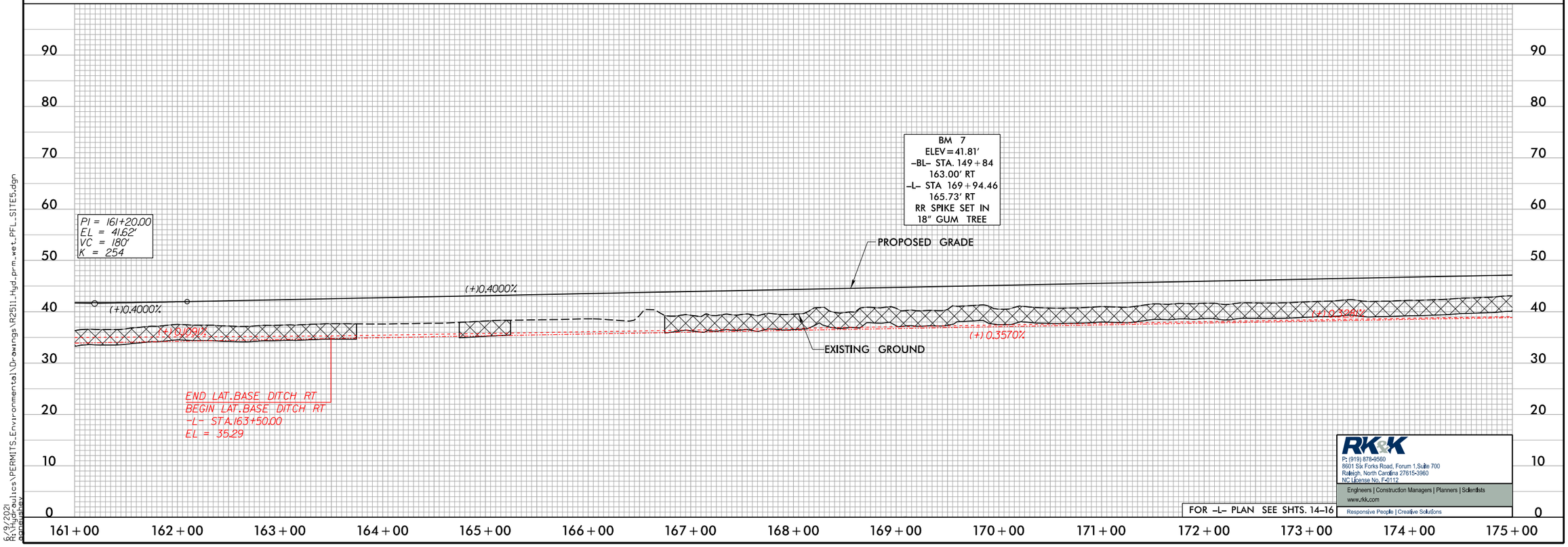
BRIDGE HYDRAULIC DATA

-L- STA.156+55

DRAINAGE AREA	= 3.86	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1,165	CFS
DESIGN HW ELEVATION	= 37.1	FT
100 YEAR DISCHARGE	= 1,436	CFS
100 YEAR HW ELEVATION	= 37.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 2,790	CFS
OVERTOPPING ELEVATION	= 41.0	FT

ENGLISH





FOR -L- PLAN SEE SHTS. 14-16

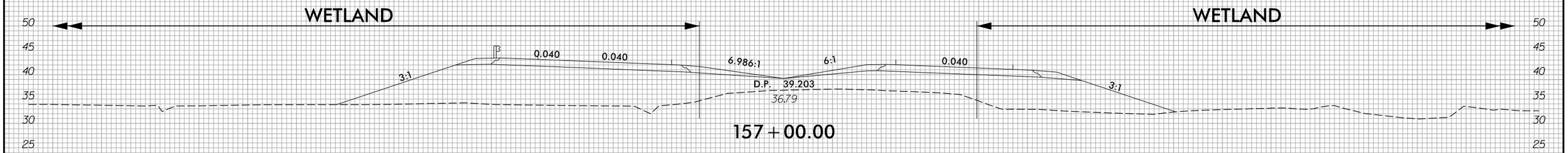
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/23/16

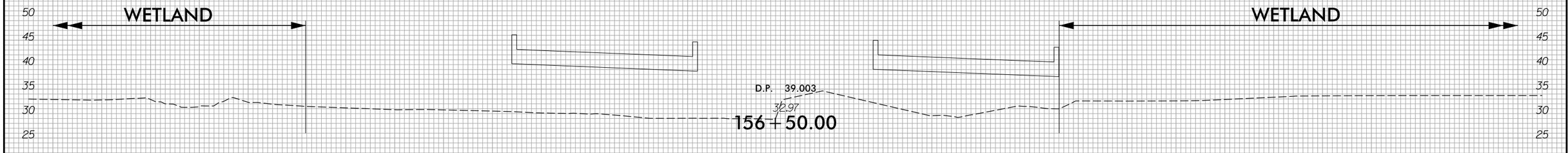
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-49

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

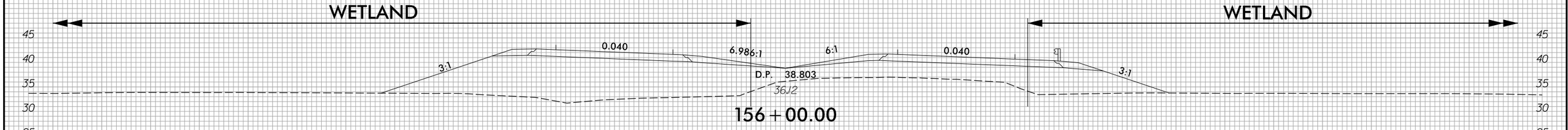
PERMIT DRAWING
SHEET 24 OF 61



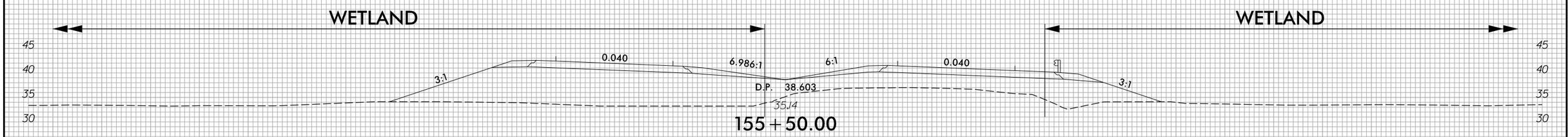
157 + 00.00



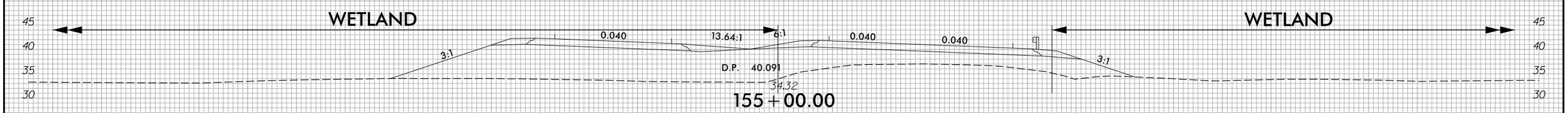
156 + 50.00



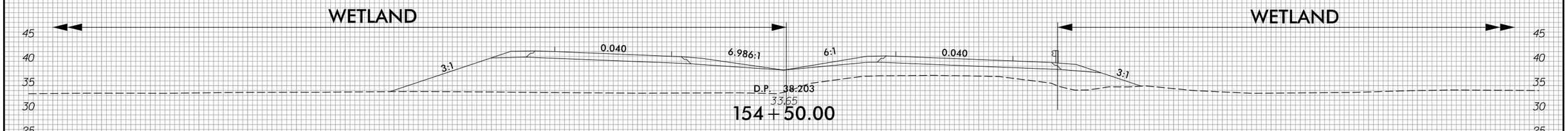
156 + 00.00



155 + 50.00



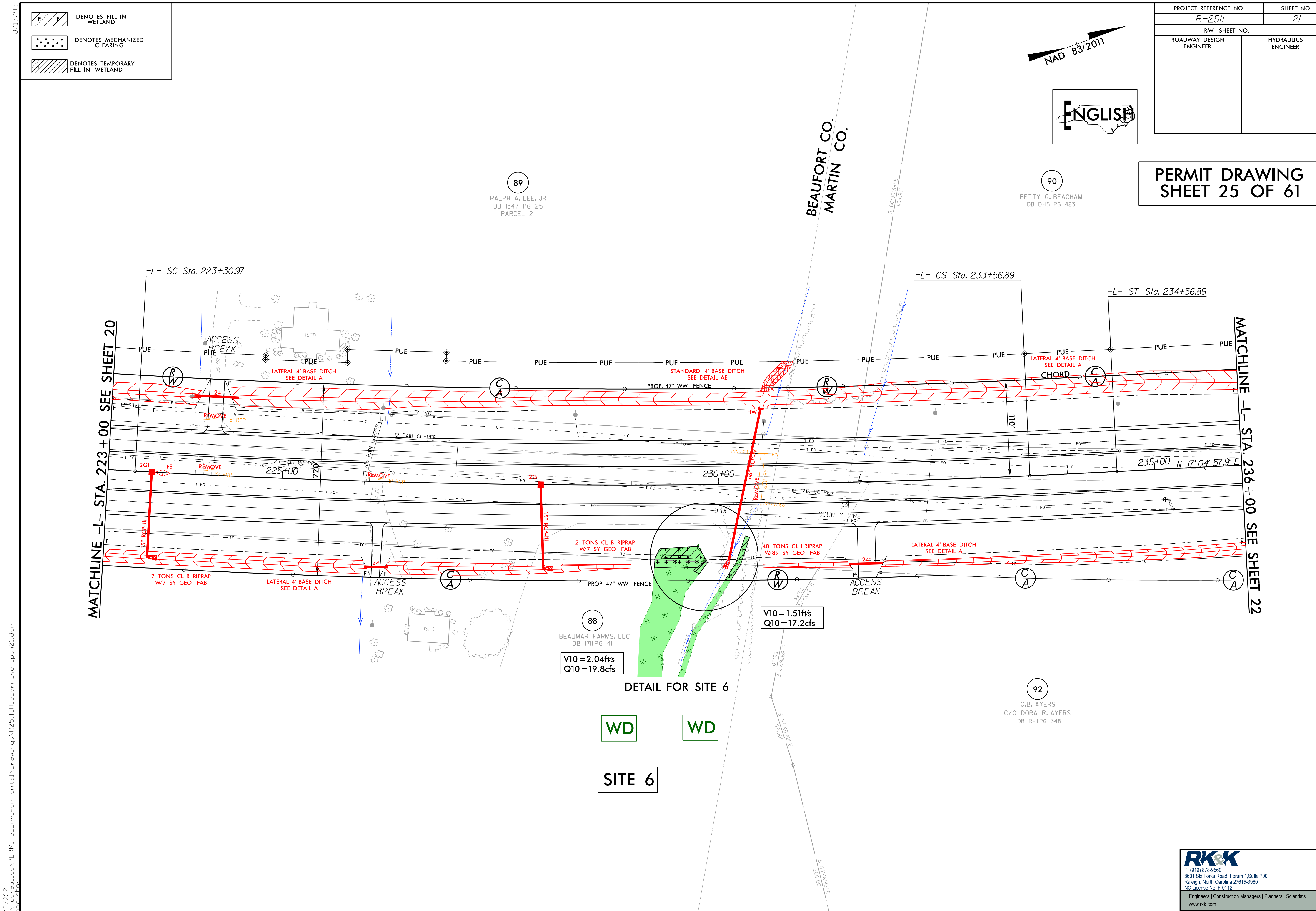
155 + 00.00



154 + 50.00

—L—

6/9/2021
R:\Highways\Projects\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 5_155+00.dgn
agnedushev



DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND
PROJECT REFERENCE NO.
R-2511
SHEET NO.
21
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/2011
ENGLISH
PERMIT DRAWING SHEET 25 OF 61
BEAUFORT CO.
MARTIN CO.
89
RALPH A. LEE, JR
DB 1347 PG 25
PARCEL 2
90
BETTY G. BEACHAM
DB D-15 PG 423
-L- SC Sta. 223+30.97
-L- CS Sta. 233+56.89
-L- ST Sta. 234+56.89
MATCHLINE -L- STA. 223+00 SEE SHEET 20
MATCHLINE -L- STA. 236+00 SEE SHEET 22
ACCESS BREAK
PUE
LATERAL 4' BASE DITCH SEE DETAIL A
STANDARD 4' BASE DITCH SEE DETAIL AE
PROP. 47" WW FENCE
CHORD
110'
REMOVE
12 PAIR COPPER
25 PAIR COPPER
225+00
230+00
235+00
N 17°04' 57.9" E
-L-
COUNTY LINE
2GI
FS
15" RCP-III
24"
2 TONS CL B RIPRAP W/7 SY GEO FAB
48 TONS CL I RIPRAP W/89 SY GEO FAB
88
BEAUMAR FARMS, LLC
DB 1711 PG 41
V10 = 2.04ft/s
Q10 = 19.8cfs
V10 = 1.51ft/s
Q10 = 17.2cfs
DETAIL FOR SITE 6
WD
WD
SITE 6
92
C.B. AYERS
C/O DORA R. AYERS
DB R-11 PG 348
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh21.dgn

8/17/99

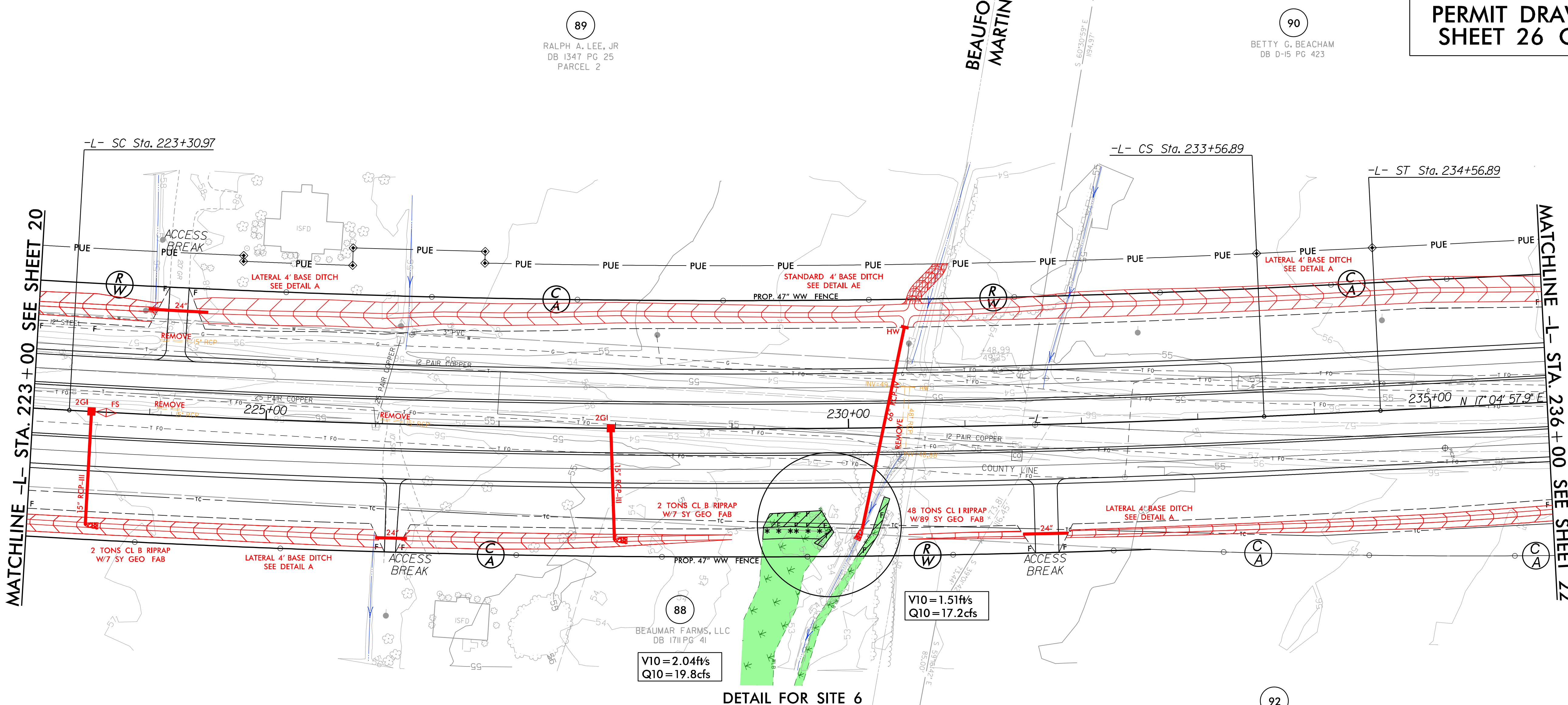
F F	DENOTES FILL IN WETLAND
. . .	DENOTES MECHANIZED CLEARING
T	DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2511	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING
SHEET 26 OF 61



BEAUFORT CO.
MARTIN CO.
89
RALPH A. LEE, JR
DB 1347 PG 25
PARCEL 2
90
BETTY G. BEACHAM
DB D-15 PG 423
-L- SC Sta. 223+30.97
-L- CS Sta. 233+56.89
-L- ST Sta. 234+56.89
MATCHLINE -L- STA. 223+00 SEE SHEET 20
MATCHLINE -L- STA. 236+00 SEE SHEET 22
ACCESS BREAK
PUE
LATERAL 4' BASE DITCH SEE DETAIL A
STANDARD 4' BASE DITCH SEE DETAIL AE
PROP. 47" WW FENCE
REMOVE
2GI
15" RCP-III
225+00
230+00
235+00
N 17°04'57.9" E
25 PAIR COPPER
12 PAIR COPPER
COUNTY LINE
2 TONS CL B RIPRAP W/7 SY GEO FAB
48 TONS CL I RIPRAP W/89 SY GEO FAB
88
BEAUMAR FARMS, LLC
DB 1711 PG 41
V10=2.04ft/s
Q10=19.8cfs
V10=1.51ft/s
Q10=17.2cfs
DETAIL FOR SITE 6
92
C.B. AYERS
C/O DORA R. AYERS
DB R-11 PG 348

WD WD

SITE 6

R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh21_con.dgn
6/9/2021

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

F F DENOTES FILL IN WETLAND

▨ DENOTES MECHANIZED CLEARING

T T DENOTES TEMPORARY FILL IN WETLAND

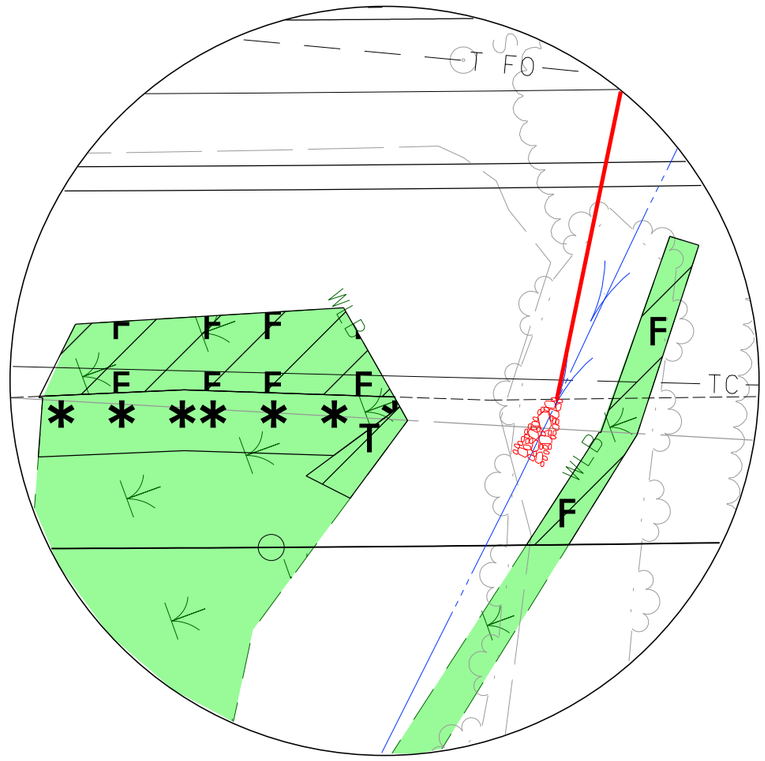
PROJECT REFERENCE NO.	SHEET NO.
R-2511	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

DETAIL FOR SITE 6

PERMIT DRAWING
SHEET 27 OF 61



12.5 0 12.5 25
SCALE FOR INSETS

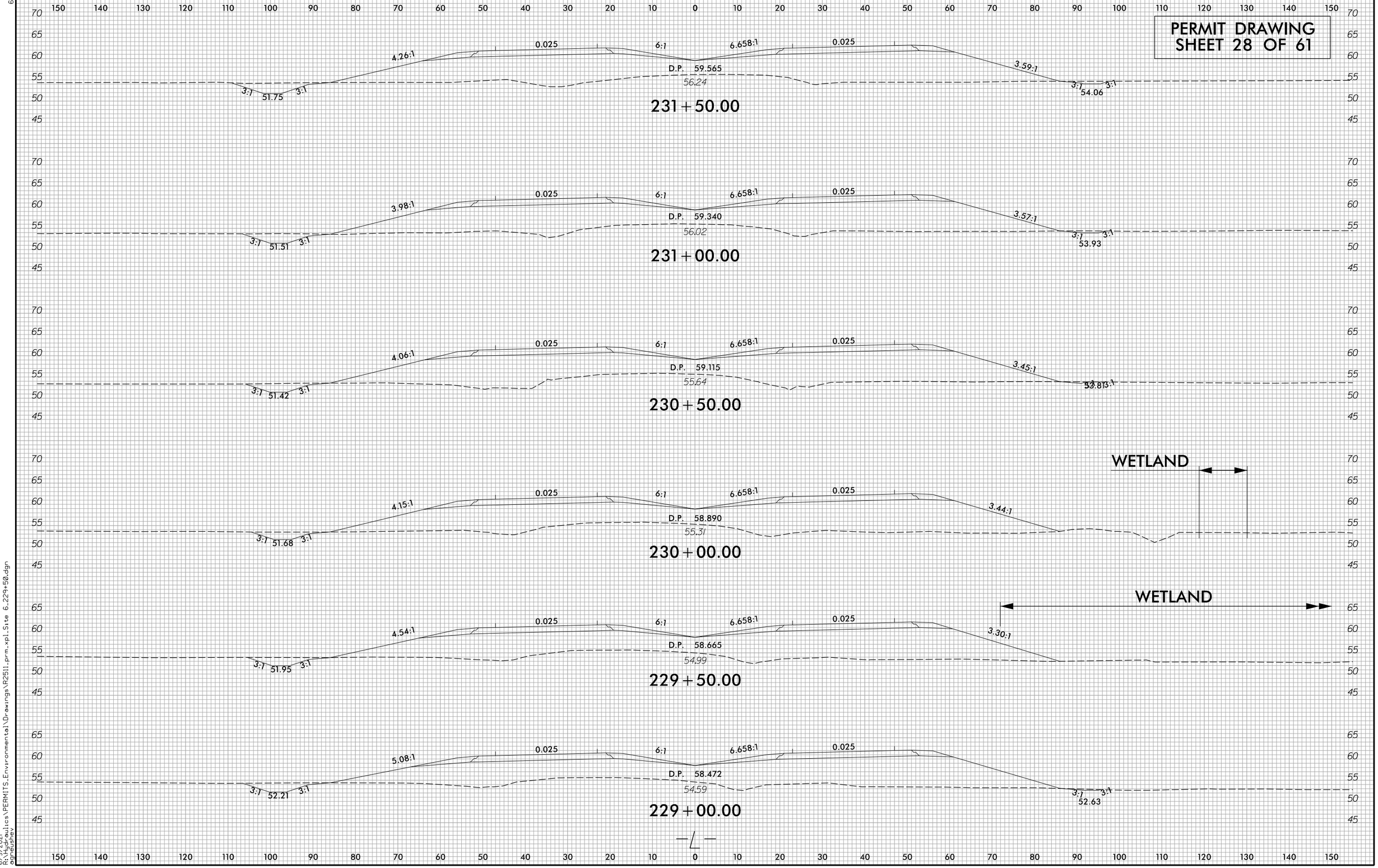
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh21_Detail.dgn
agneushev

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-73

PERMIT DRAWING
SHEET 28 OF 61



6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 6_229+50.dgn
agnedushev

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 29 OF 61

SITE 7

SD

WE

DETAIL FOR SITE 7

MATCHLINE -L- STA. 275+00 SEE SHEET 24

MATCHLINE -L- STA. 288+00 SEE SHEET 26

-L- CS Sta. 275+53.12

-L- ST Sta. 276+73.12

V10=1.39ft/s
Q10=3.2cfs

V10=1.45ft/s
Q10=11.1cfs

ACCESS BREAK

LATERAL V DITCH SEE DETAIL E

LATERAL 4' BASE DITCH SEE DETAIL A

TOE PROTECTION SEE DETAIL

SPECIAL CUT 4' BASE DITCH SEE DETAIL G

PROP. 47" WW FENCE

15" RCP

12" STEEL

15" RCP-III

24" RCP-III

48" RCP-III (BENT)

REMOVE

NCGS HOLLIDAY

CEMETERY
32 MARKED GRAVES

LATERAL V DITCH SEE DETAIL Q 2 TONS CL B RIPRAP W/7 SY GEO FAB

26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL A

REMOVE 24" CMP

15" RCP-IV

2 TONS CL B RIPRAP W/7 SY GEO FAB

REMOVE 15" RCP

REMOVE 15" RCP

REMOVE 15" RCP

LATERAL 4' BASE DITCH SEE DETAIL A

CONC

2SFD

INV=56.47' WATERMAIN

INV=50.65'

INV=55.27'

6" WATERMAIN

103
JOHN DAVID HODGES, JR.
DB G-4 PG 244

98
WILLIAM FRANKLIN HOLIDAY HEIRS
DB J-5 PG 538

102
PATRICIA G. WOOLARD
DB L-18 PG 277
DB B-13 PG 138(MAP)

103
JOHN DAVID HODGES, JR.
DB G-4 PG 244

BM11
BL STA 258+07
207' RT
ELEV=54.61'

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Projects\Roulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh25.dgn
gmashey

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

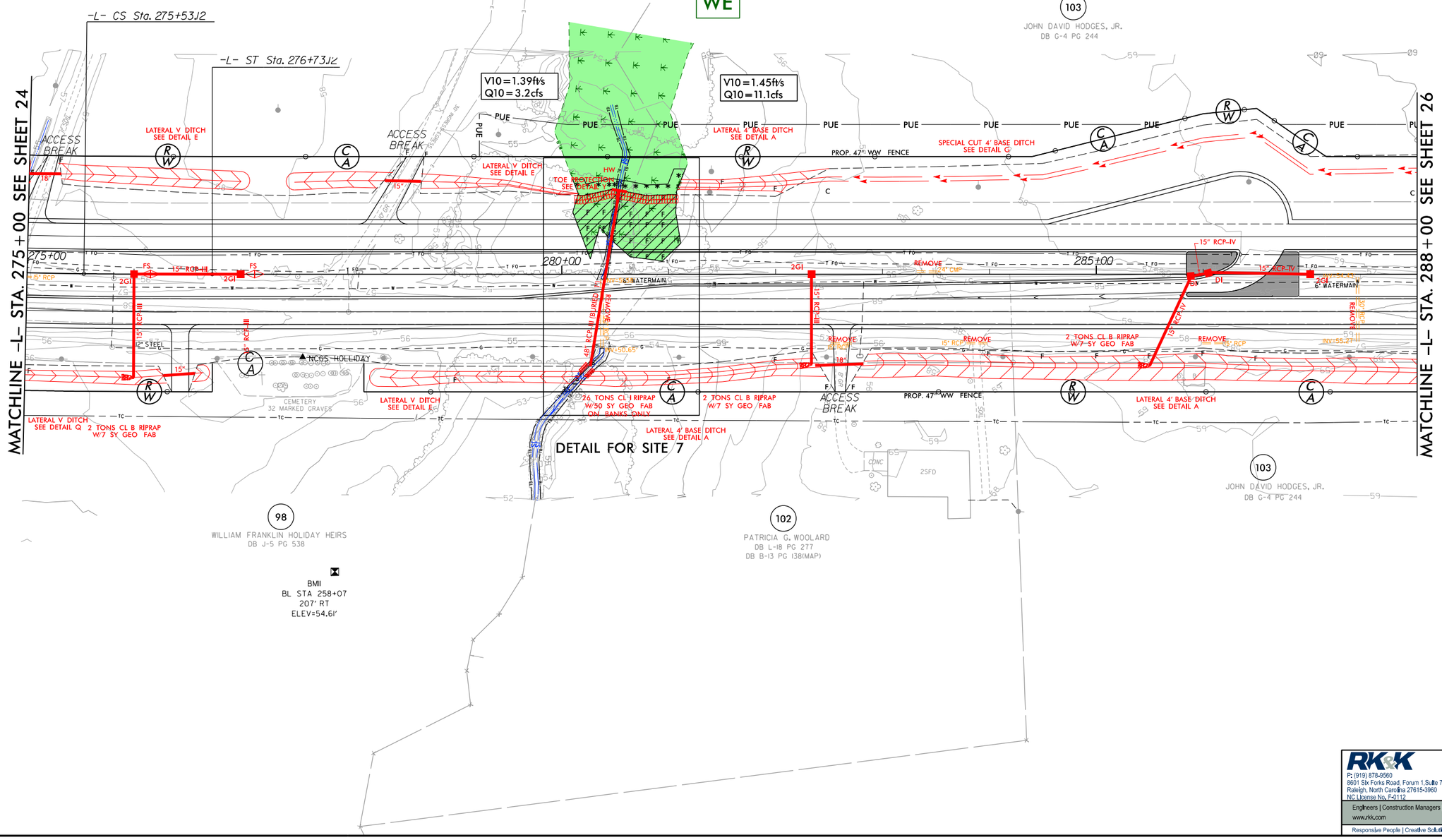
ENGLISH

PERMIT DRAWING SHEET 30 OF 61

SITE 7

SD

WE



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

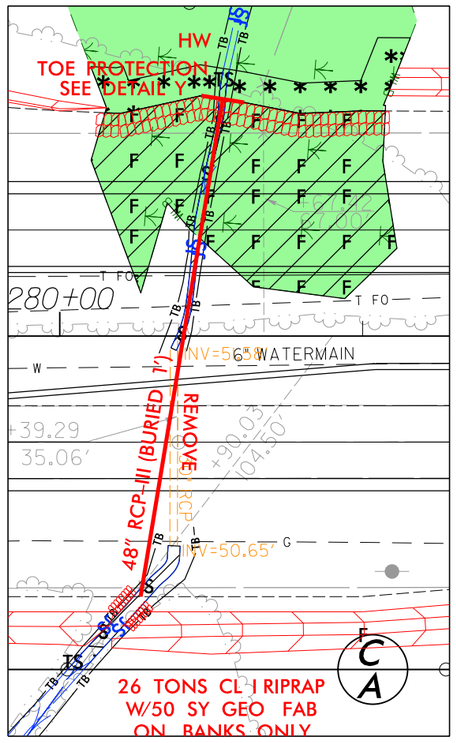
NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL FOR SITE 7

PERMIT DRAWING
SHEET 31 OF 61



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

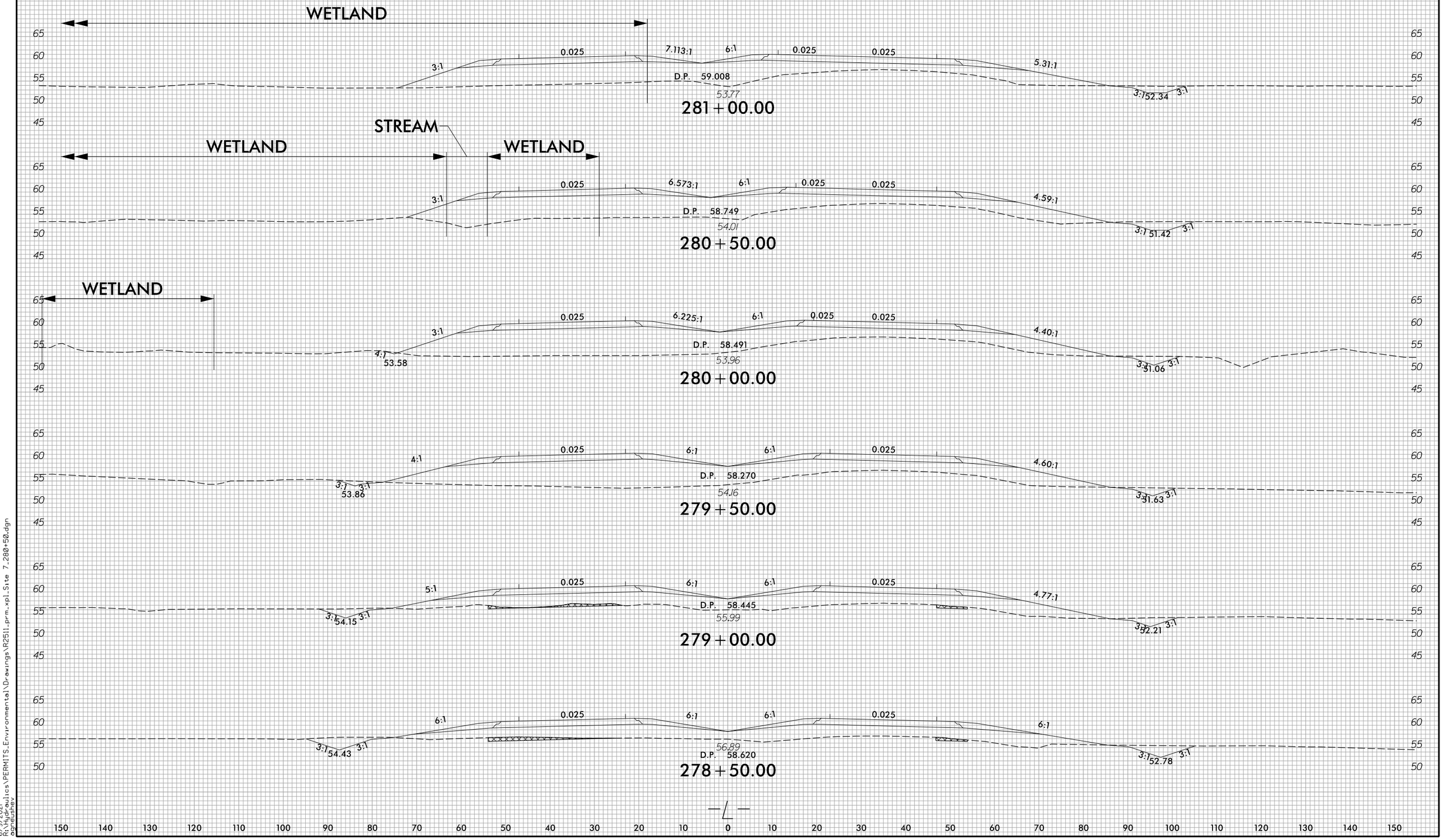
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh25_Detail.dgn
agoudey

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-89

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 32 OF 61



6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 7_280+50.dgn
agnadushev

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

SITE 8

ENGLISH

PERMIT DRAWING SHEET 33 OF 61

121 CARL L. BEACHAM, JR., et al

WF

123 JEFFREY W. HARRISON, et ux

MATCHLINE -L- STA. 340+50 SEE SHEET 29

MATCHLINE -L- STA. 353+00 SEE SHEET 31

PUE

LATERAL 4' BASE DITCH SEE DETAIL F

TOE PROTECTION SEE DETAIL Y

TIE FENCE TO WINGWALL

PROP. 47" WW FENCE

REMOVE

10x8 RCBC

345+00

350+00

-L-

N 10° 04' 46.3" W

15' RCP-III

6" WATERMAIN

25 PAIR COPPER

+08.00 110'

+85.00 110

+95.00 EXIST. R/W

+65.00 EXIST. R/W

EXISTING R/W

2 TONS CL B RIPRAP W/7 SY GEO FAB

V10 = 1.31ft/s
Q10 = 7.6cfs

-L- TS Sta. 342+97.01

-L- SC Sta. 344+97.01

WF

SE

124 STANLEY-WARD FAMILY TRUST

125 GUY W. LIVESAY, et ux

LATERAL V DITCH SEE DETAIL Q

122 CARL L. BEACHAM, JR., et al

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/3/2021
R:\Projects\Julcs\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh30.dgn
agoolsby

PROJECT REFERENCE NO.	SHEET NO.
R-2511	30

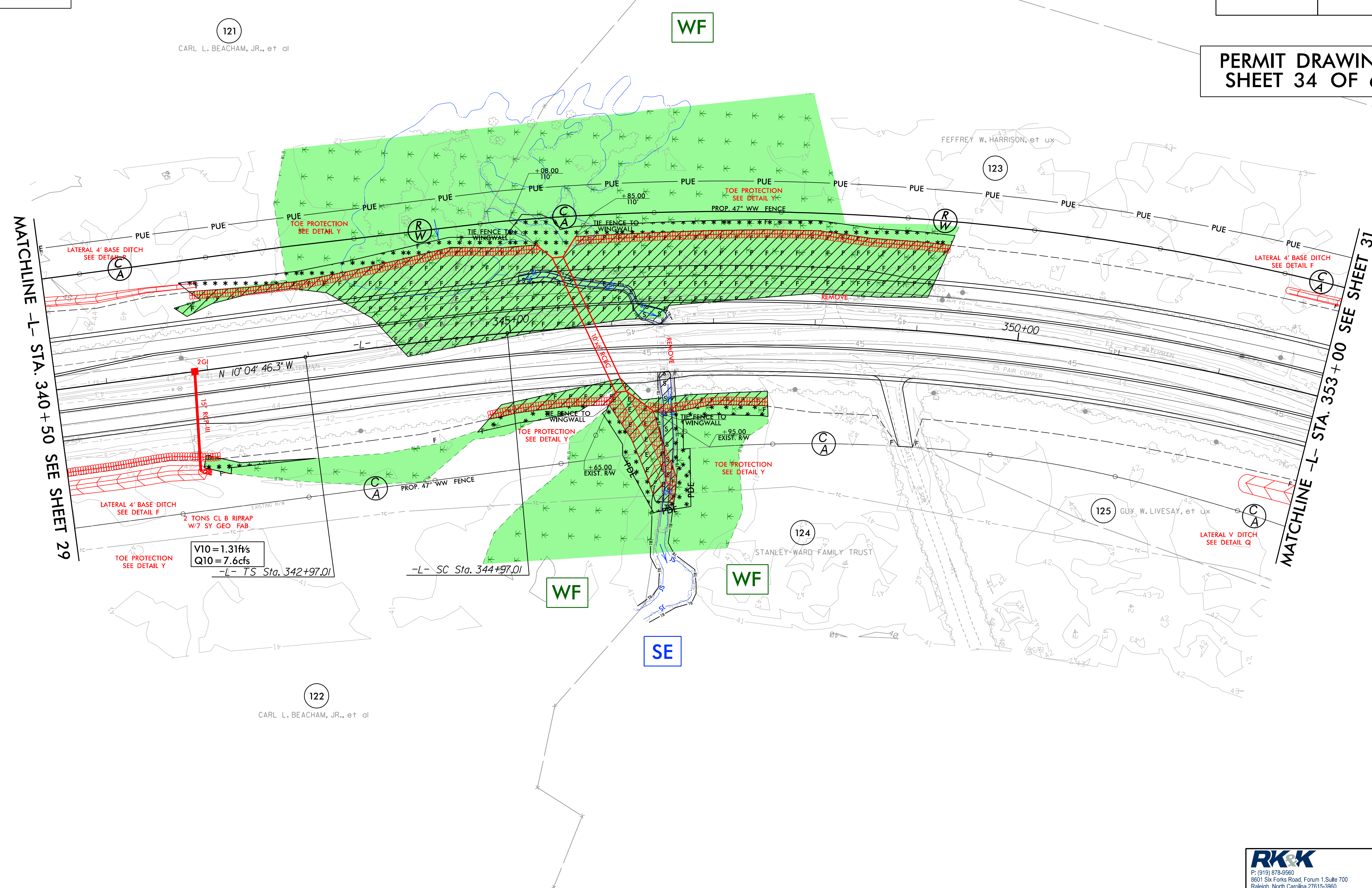
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 34 OF 61

SITE 8

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



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh30_con.dgn

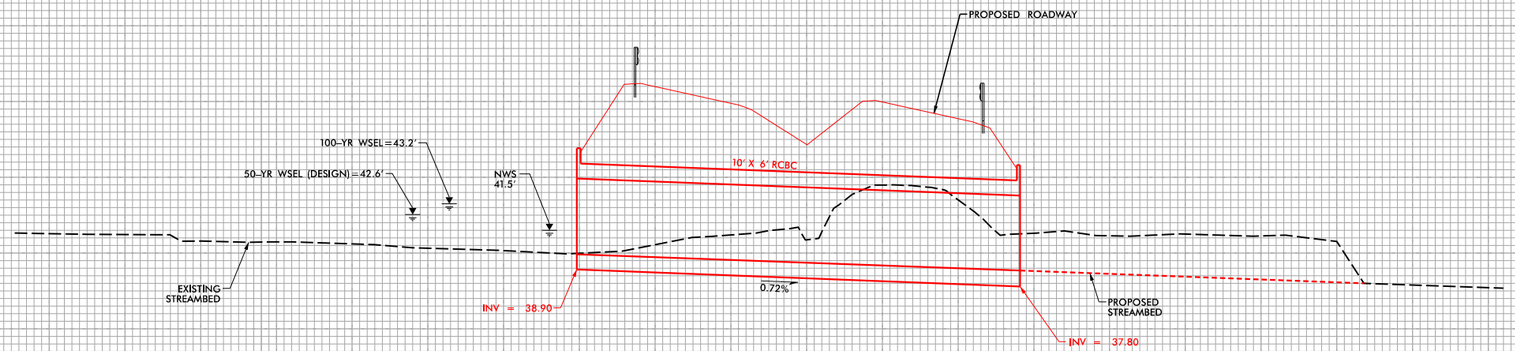
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 8
–L– STA. 345+79.0

PERMIT DRAWING
SHEET 35 OF 61



PROPOSED 10'X 6'RCBC (BURIED 1')
(TOTAL LENGTH=153')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

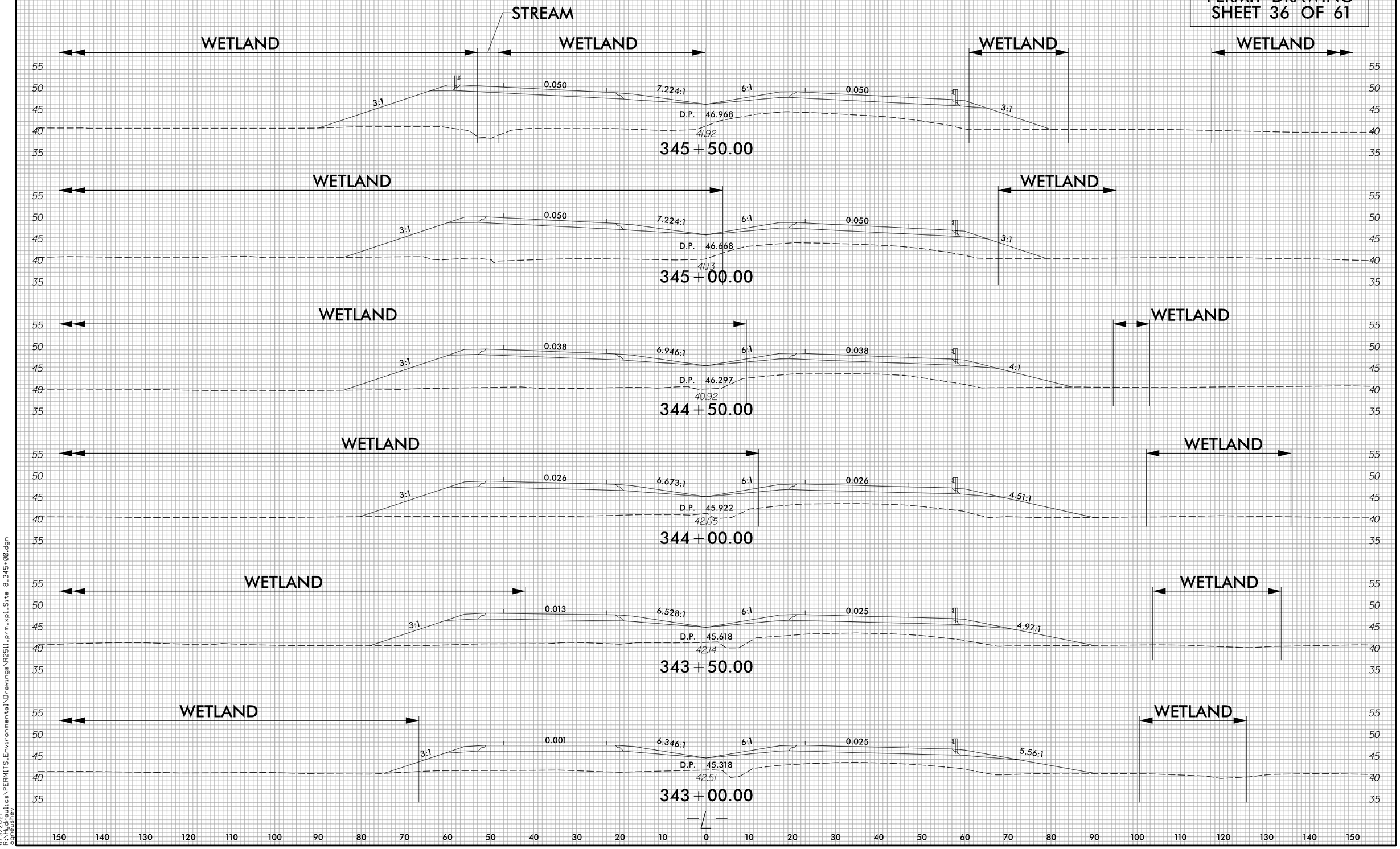
6/8/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE8.dgn
agnelsbey

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-110

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 36 OF 61



6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 8_345+00.dgn
agnidushev

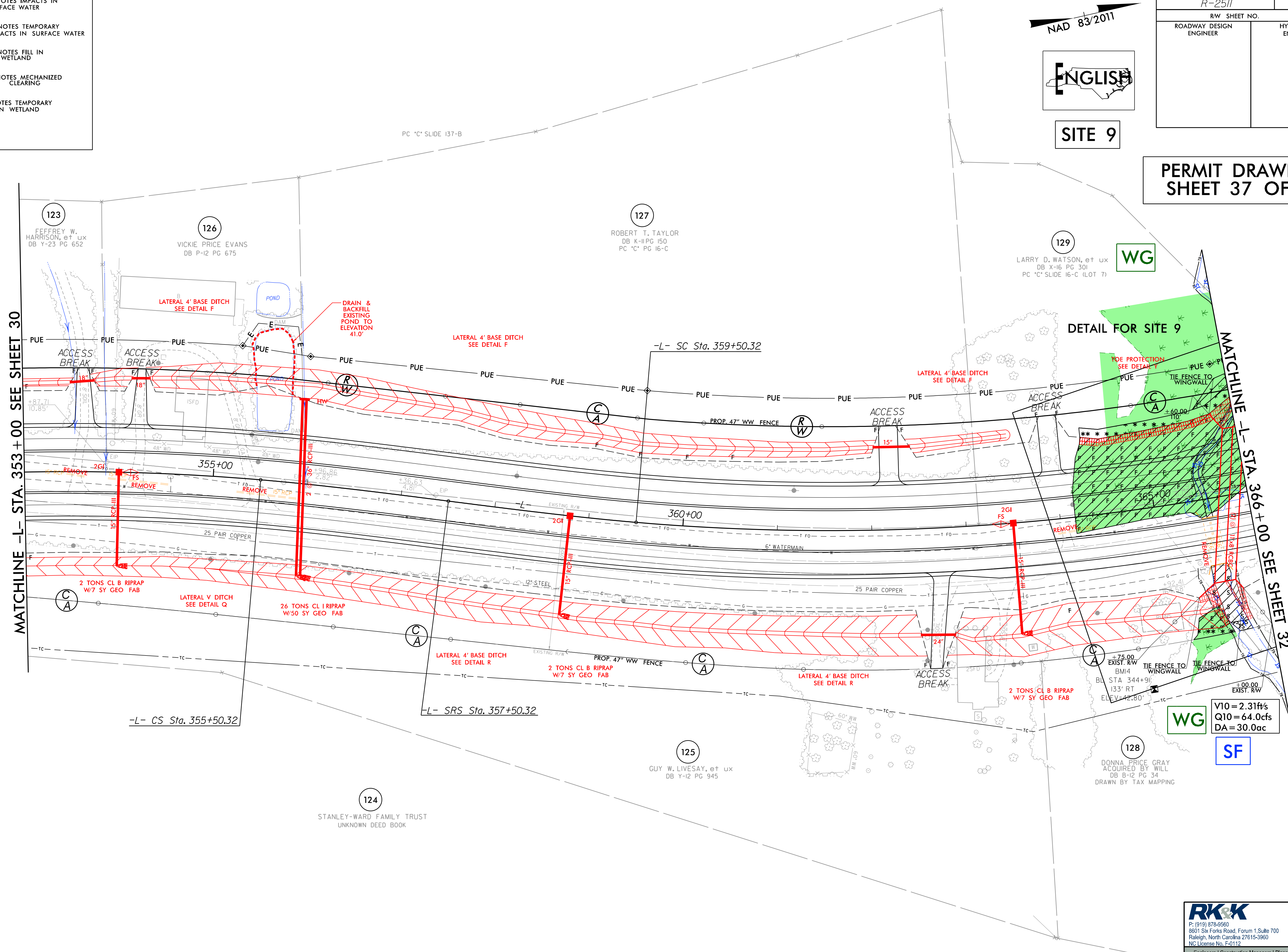
8/17/99

S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F	DENOTES FILL IN WETLAND
· · ·	DENOTES MECHANIZED CLEARING
T	DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2511	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 9

PERMIT DRAWING
SHEET 37 OF 61



NAD 83/2011
ENGLISH
DETAIL FOR SITE 9
WG
SF
MATCHLINE -L- STA. 353+00 SEE SHEET 30
MATCHLINE -L- STA. 366+00 SEE SHEET 32
JEFFREY W. HARRISON, et ux
DB Y-23 PG 652
VICKIE PRICE EVANS
DB P-12 PG 675
ROBERT T. TAYLOR
DB K-11 PG 150
PC "C" PG 16-C
LARRY D. WATSON, et ux
DB X-16 PG 301
PC "C" SLIDE 16-C (LOT 7)
GUY W. LIVESAY, et ux
DB Y-12 PG 945
STANLEY-WARD FAMILY TRUST
UNKNOWN DEED BOOK
DONNA PRICE GRAY
ACQUIRED BY WILL
DB B-12 PG 34
DRAWN BY TAX MAPPING
PC "C" SLIDE 137-B
LATERAL 4' BASE DITCH SEE DETAIL F
DRAIN & BACKFILL EXISTING POND TO ELEVATION 41.0'
LATERAL V DITCH SEE DETAIL Q
LATERAL 4' BASE DITCH SEE DETAIL R
2 TONS CL B RIPRAP W/7 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB
-L- SC Sta. 359+50.32
-L- CS Sta. 355+50.32
-L- SRS Sta. 357+50.32
355+00
360+00
365+00
ACCESS BREAK
PROP. 47" WW FENCE
TOE PROTECTION SEE DETAIL
TIE FENCE TO WINGWALL
25 PAIR COPPER
6" WATERMAIN
12" STEEL
POND
BM14
BL STA 344+91
133' RT
ELEV=42.80'
V10 = 2.31ft/s
Q10 = 64.0cfs
DA = 30.0ac

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh31.dgn

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
T T	DENOTES TEMPORARY FILL IN WETLAND

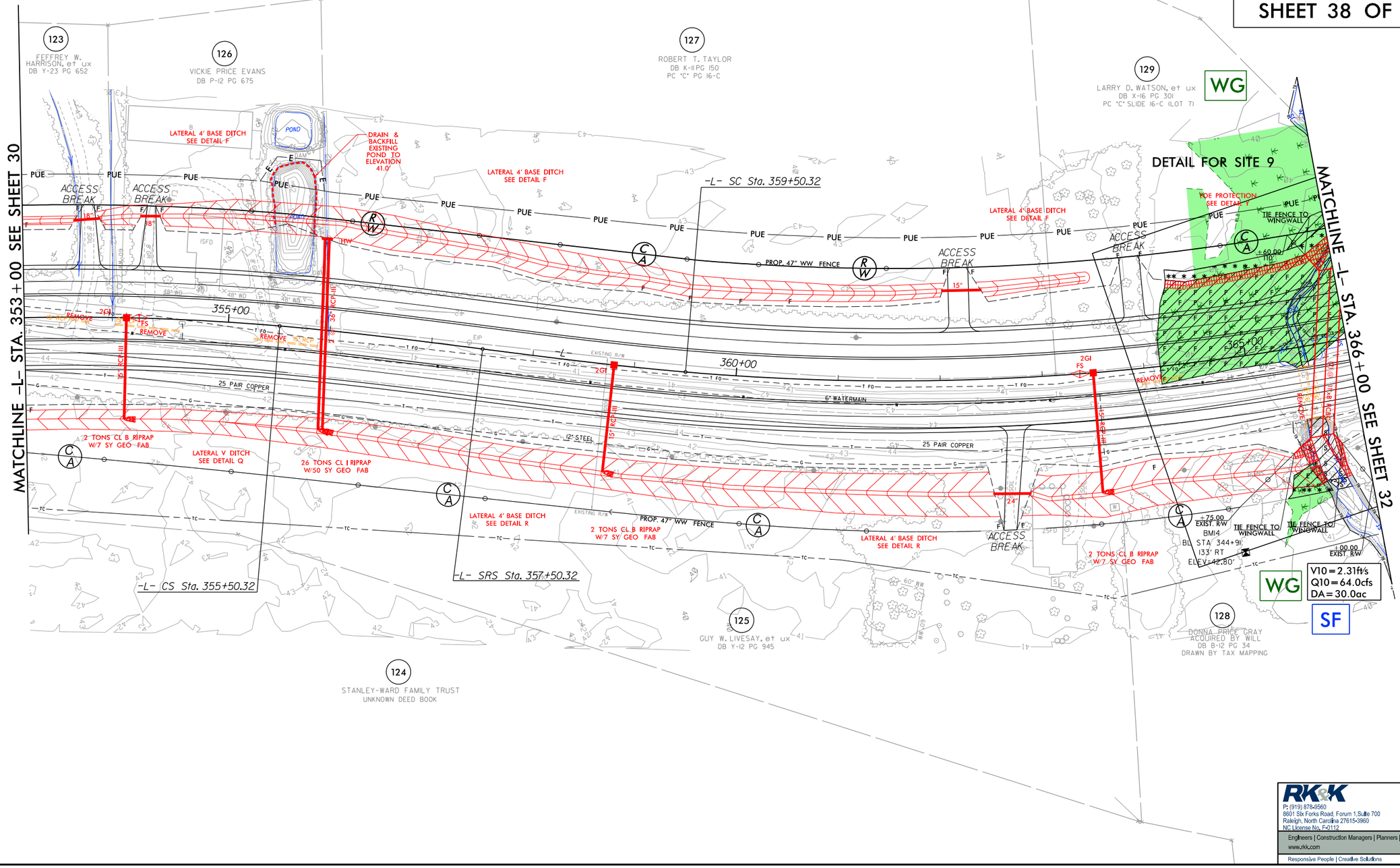
PROJECT REFERENCE NO.	SHEET NO.
R-2511	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

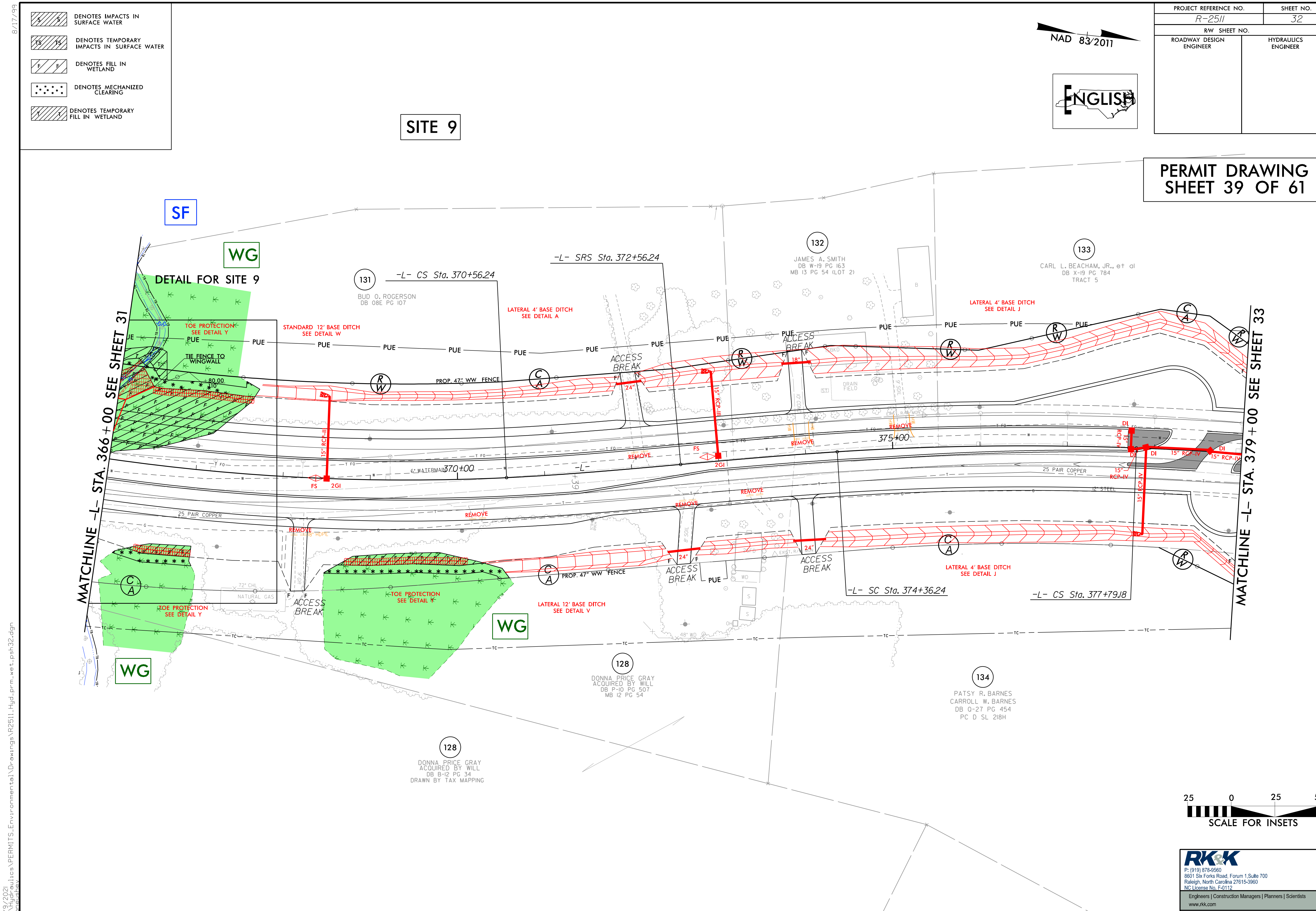
SITE 9

PERMIT DRAWING SHEET 38 OF 61



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/3/2021
R:\Projects\PERMITS_Environmental\0-Drawings\R2511_Hyd_prm_set_psh31_con.dgn
agoolsbey


PROJECT REFERENCE NO.
R-2511
SHEET NO.
32
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING
SHEET 39 OF 61
NAD 83/2011
ENGLISH
SITE 9
DETAIL FOR SITE 9
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND
SF
WG
MATCHLINE -L- STA. 366+00 SEE SHEET 31
MATCHLINE -L- STA. 379+00 SEE SHEET 33
-L- CS Sta. 370+56.24
-L- SRS Sta. 372+56.24
-L- SC Sta. 374+36.24
-L- CS Sta. 377+79.18
131
BUD O. ROGERSON
DB 08E PG 107
132
JAMES A. SMITH
DB W-19 PG 163
MB 13 PG 54 (LOT 2)
133
CARL L. BEACHAM, JR., et al
DB X-19 PG 784
TRACT 5
128
DONNA PRICE GRAY
ACQUIRED BY WILL
DB P-10 PG 507
MB 12 PG 54
134
PATSY R. BARNES
CARROLL W. BARNES
DB O-27 PG 454
PC D SL 218H
128
DONNA PRICE GRAY
ACQUIRED BY WILL
DB B-12 PG 34
DRAWN BY TAX MAPPING
STANDARD 12' BASE DITCH
SEE DETAIL W
LATERAL 4' BASE DITCH
SEE DETAIL A
LATERAL 4' BASE DITCH
SEE DETAIL J
LATERAL 12' BASE DITCH
SEE DETAIL V
TOE PROTECTION
SEE DETAIL Y
TIE FENCE TO WINGWALL
PROP. 47" WW FENCE
ACCESS BREAK
REMOVE
PUE
370+00
375+00
-L-
25 PAIR COPPER
6" WATERMAIN
15" RCP-III
15" RCP-IV
2GI
FS
DI
DRAIN FIELD
NATURAL GAS
SCALE FOR INSETS
25 0 25 50
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh32.dgn

8/17/99

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES TEMPORARY FILL IN WETLAND

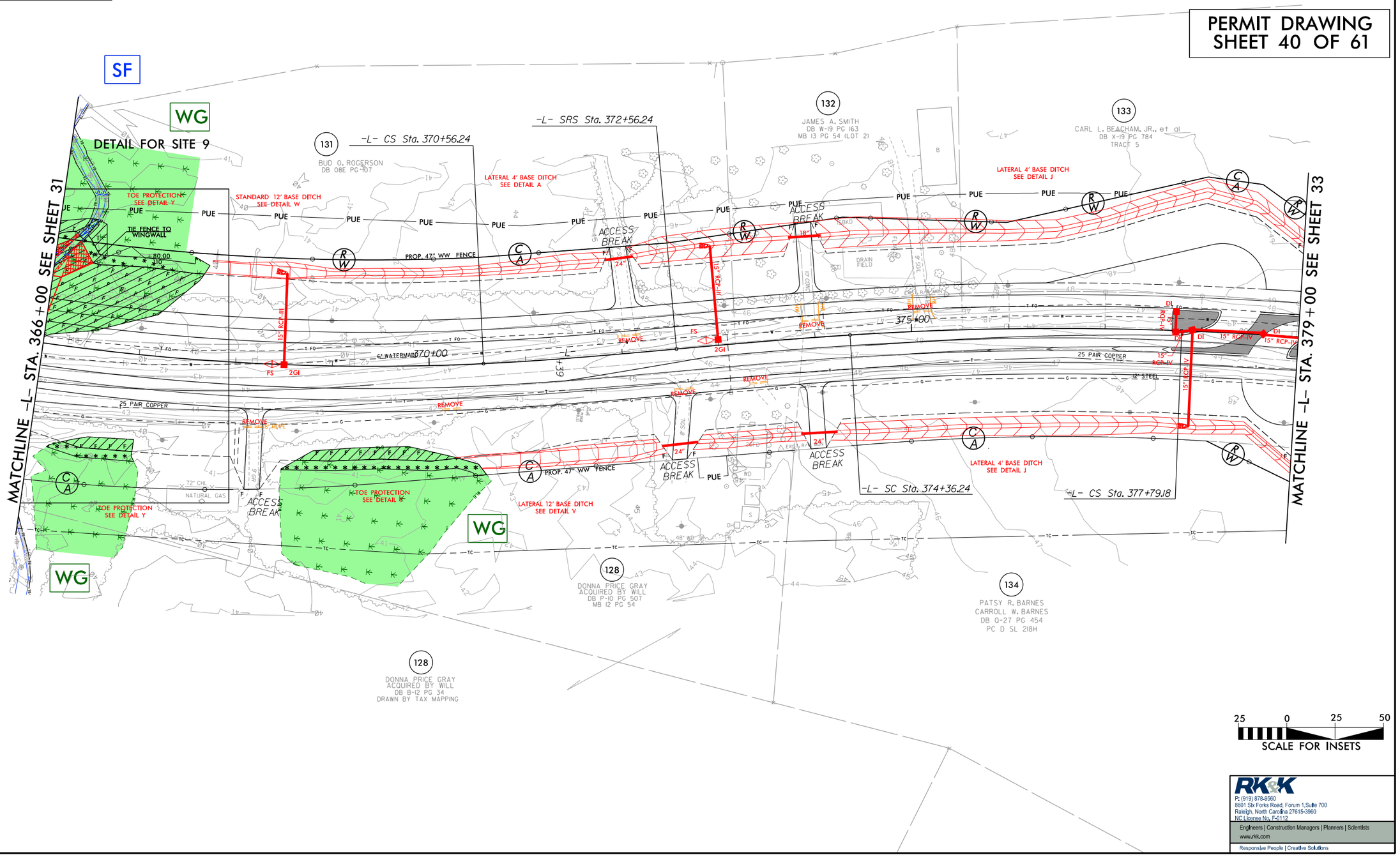
PROJECT REFERENCE NO.	SHEET NO.
R-2511	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

SITE 9

PERMIT DRAWING
SHEET 40 OF 61



RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh32_con.dgn
agoolsby

8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

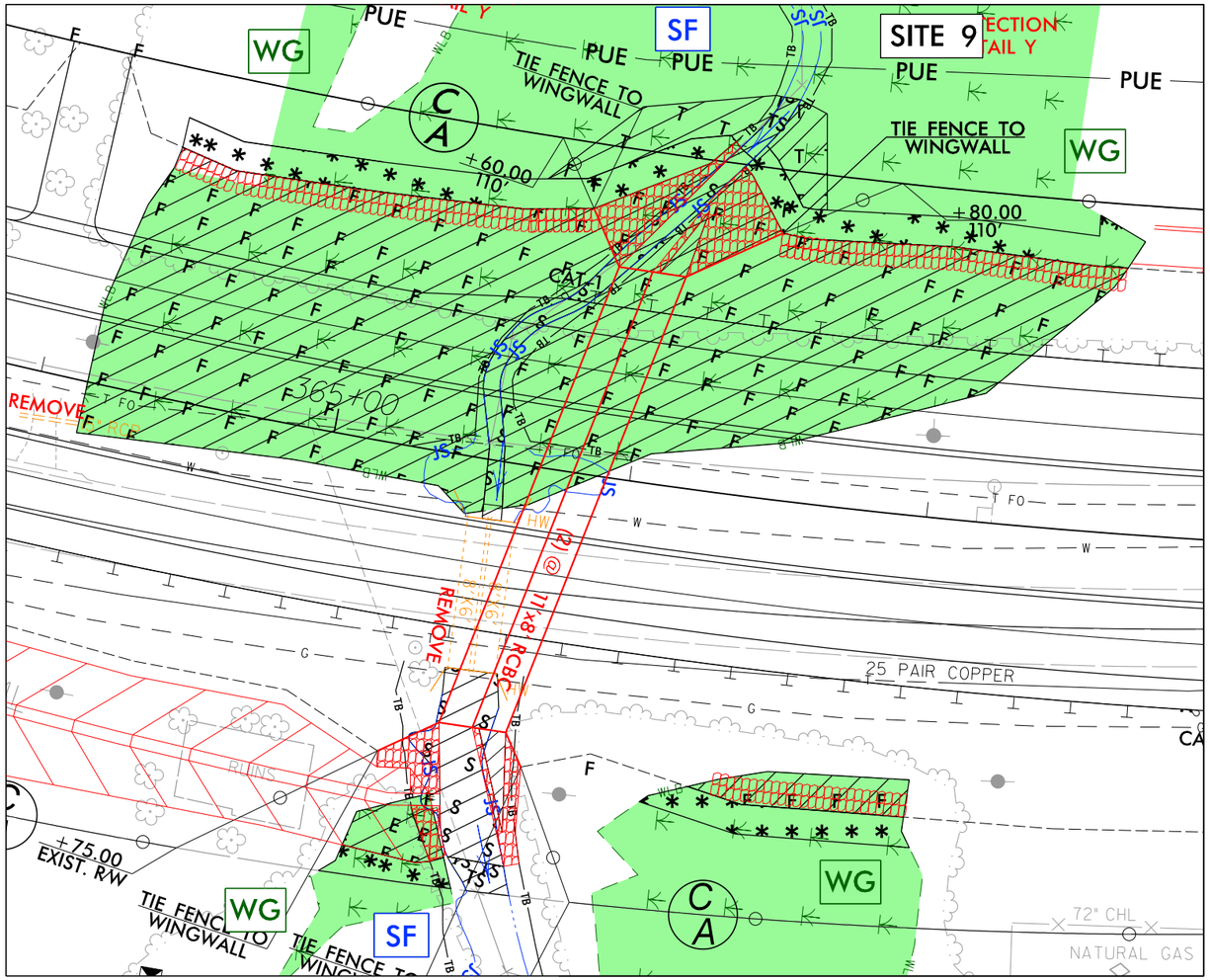
NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	31A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETAIL FOR SITE 9

PERMIT DRAWING
SHEET 41 OF 61



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/3/2021
R:\Projects\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_detail_site 9.dgn
agoolsbey

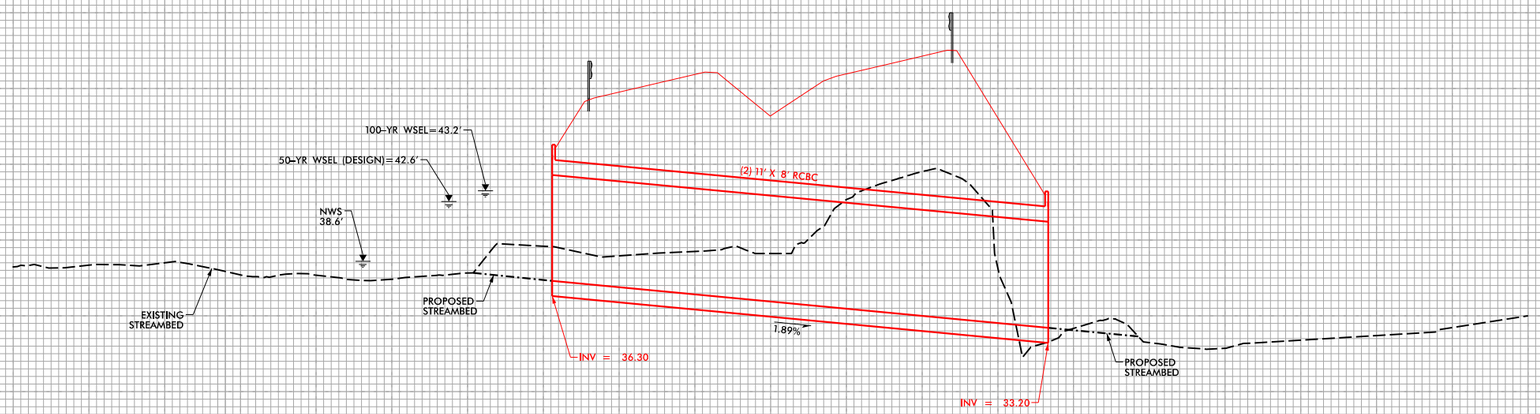
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 9
-L- STA. 365+81.0

PERMIT DRAWING
SHEET 42 OF 61



PROPOSED (2) 11' X 8' RCBC (BURIED 1')
(TOTAL LENGTH=164')

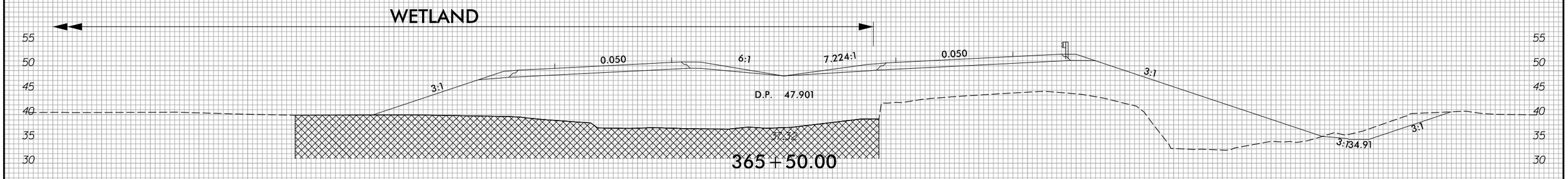
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

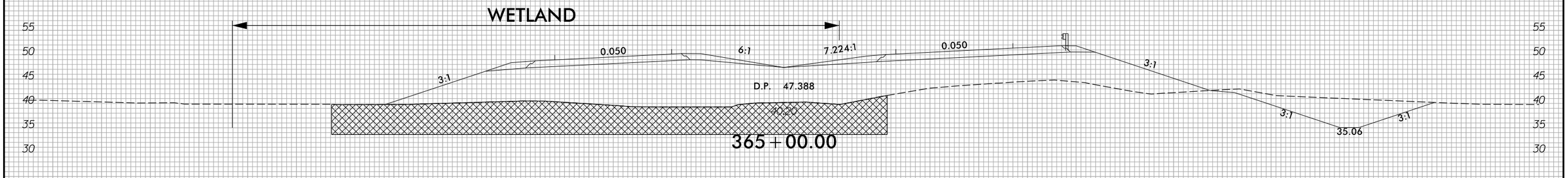
6/23/16

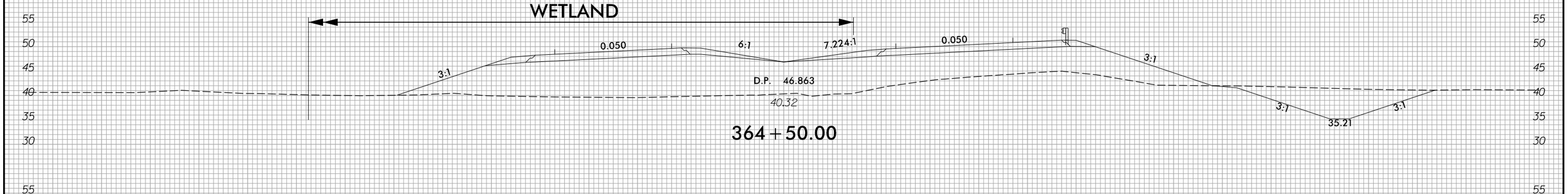
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-117

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 43 OF 61







150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/9/2021
R:\Projects\PERMITS_Environmental\Drawings\R2511.prn.xpl.Site 9_365+00.dgn
agmelushev

8/17/99

DENOTES IMPACTS IN SURFACE WATER

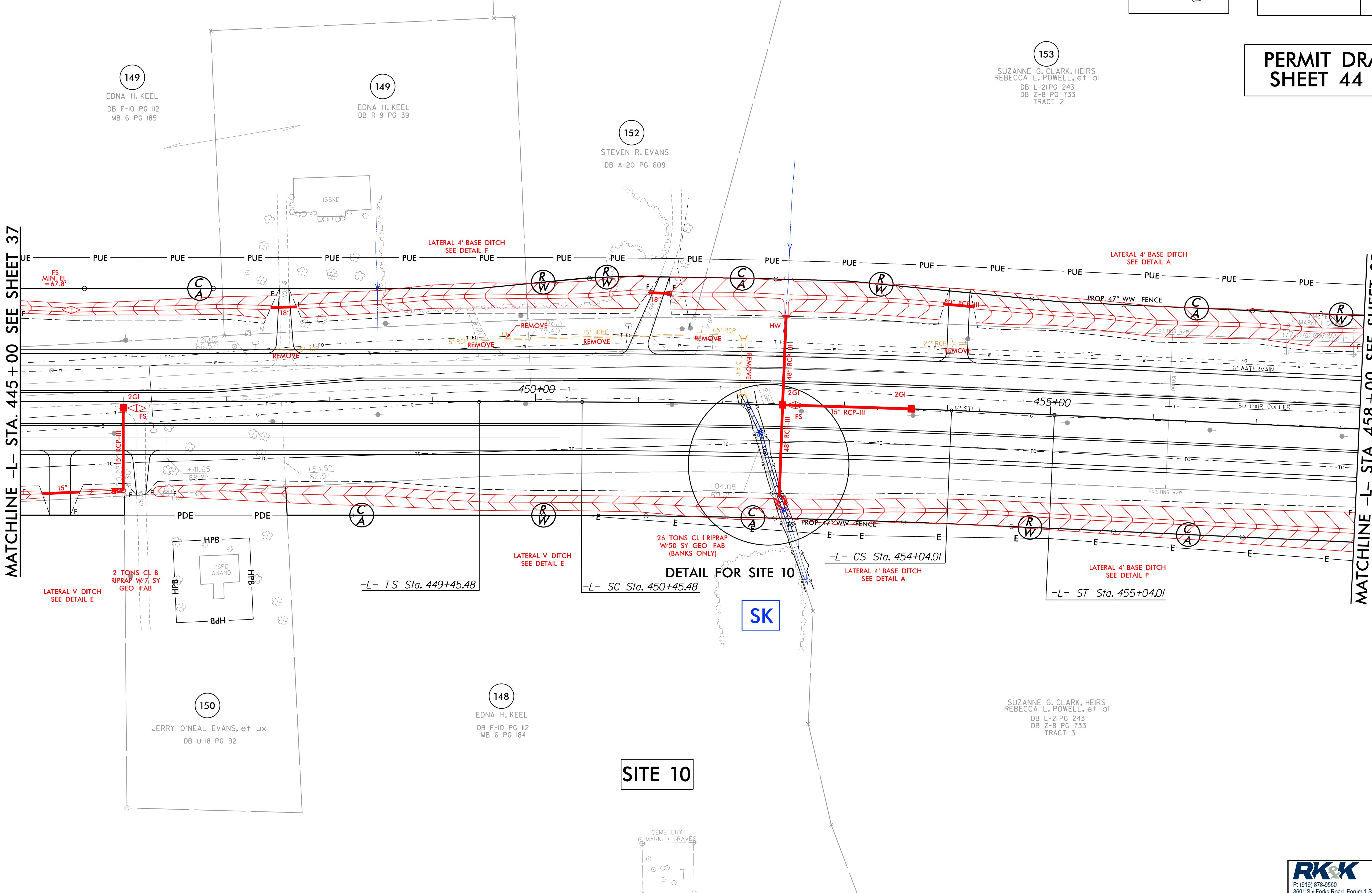
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-2511	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING SHEET 44 OF 61



149
EDNA H. KEEL
DB F-10 PG 112
MB 6 PG 185
149
EDNA H. KEEL
DB R-9 PG 39
152
STEVEN R. EVANS
DB A-20 PG 609
153
SUZANNE G. CLARK, HEIRS
REBECCA L. POWELL, et al
DB L-21 PG 243
DB Z-8 PG 733
TRACT 2
LATERAL 4' BASE DITCH
SEE DETAIL F
LATERAL 4' BASE DITCH
SEE DETAIL A
MATCHLINE -L- STA. 445+00 SEE SHEET 37
MATCHLINE -L- STA. 458+00 SEE SHEET 39
FS
MIN. EL.
=67.8'
450+00
455+00
2GI
15" RCP-III
48" RCP-III
HW
REMOVE
PROP. 47" WW FENCE
6" WATERMAIN
50 PAIR COPPER
12" STEEL
-L- TS Sta. 449+45.48
-L- SC Sta. 450+45.48
-L- CS Sta. 454+04.01
-L- ST Sta. 455+04.01
LATERAL V DITCH
SEE DETAIL E
2 TONS CL B
RIPRAP W/7 SY
GEO FAB
26 TONS CL I RIPRAP
W/50 SY GEO FAB
(BANKS ONLY)
DETAIL FOR SITE 10
LATERAL 4' BASE DITCH
SEE DETAIL P
SK
HPB
150
JERRY O'NEAL EVANS, et ux
DB U-18 PG 92
148
EDNA H. KEEL
DB F-10 PG 112
MB 6 PG 184
SUZANNE G. CLARK, HEIRS
REBECCA L. POWELL, et al
DB L-21 PG 243
DB Z-8 PG 733
TRACT 3
CEMETERY
6 MARKED GRAVES

SITE 10

6/9/2021

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

PROJECT REFERENCE NO.	SHEET NO.
R-2511	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

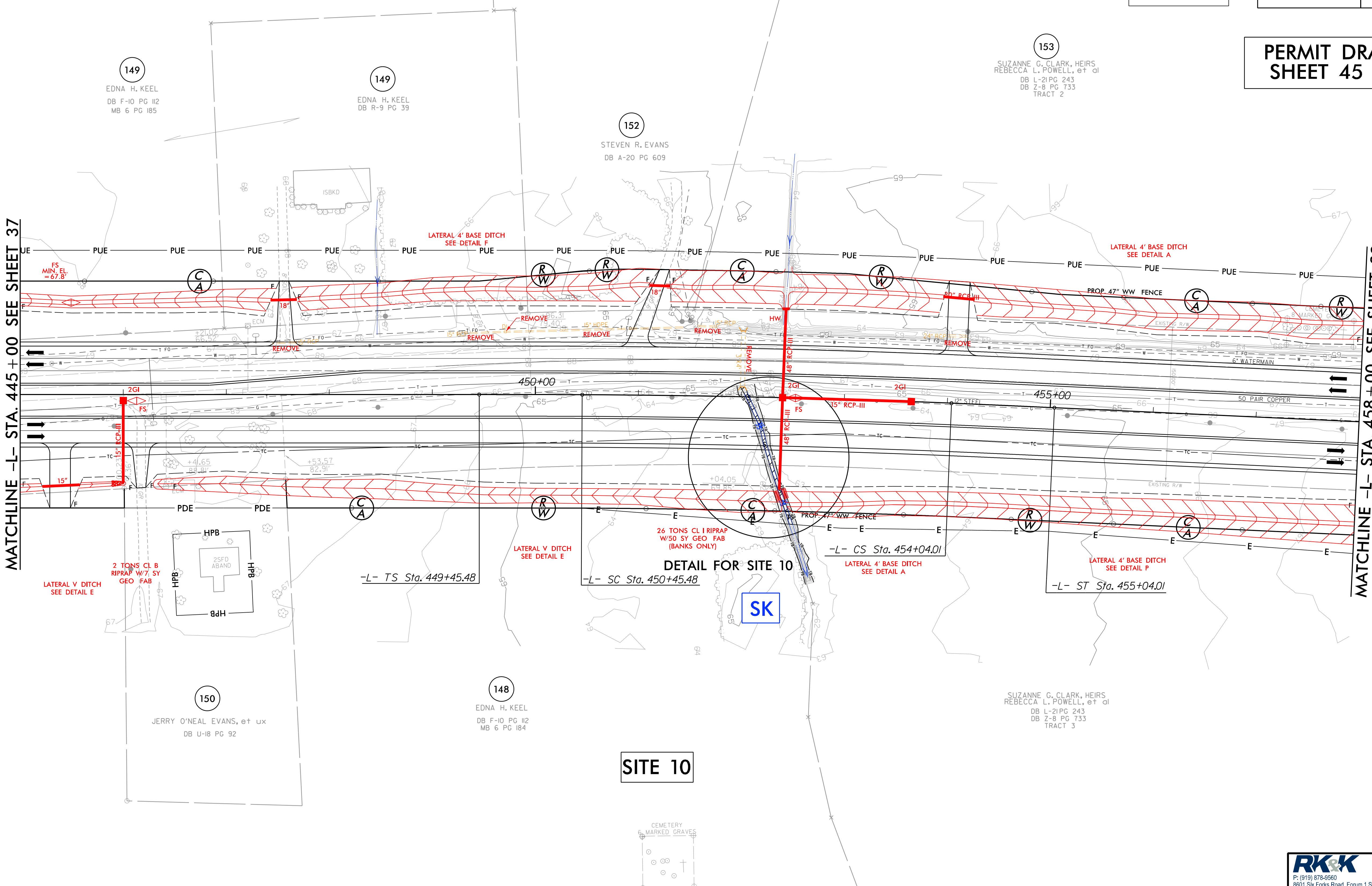
S — DENOTES IMPACTS IN SURFACE WATER

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 45 OF 61

NAD 83/2011

ENGLISH



MATCHLINE -L- STA. 445+00 SEE SHEET 37
MATCHLINE -L- STA. 458+00 SEE SHEET 39
149 EDNA H. KEEL DB F-10 PG 112 MB 6 PG 185
149 EDNA H. KEEL DB R-9 PG 39
152 STEVEN R. EVANS DB A-20 PG 609
153 SUZANNE G. CLARK, HEIRS REBECCA L. POWELL, et al DB L-21 PG 243 DB Z-8 PG 733 TRACT 2
150 JERRY O'NEAL EVANS, et ux DB U-18 PG 92
148 EDNA H. KEEL DB F-10 PG 112 MB 6 PG 184
SUZANNE G. CLARK, HEIRS REBECCA L. POWELL, et al DB L-21 PG 243 DB Z-8 PG 733 TRACT 3
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL V DITCH SEE DETAIL E
LATERAL 4' BASE DITCH SEE DETAIL P
2 TONS CL B RIPRAP W/ 7 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB (BANKS ONLY)
DETAIL FOR SITE 10
SK
PROP. 47" WW FENCE
48" RCP-III
15" RCP-III
-L- TS Sta. 449+45.48
-L- SC Sta. 450+45.48
-L- CS Sta. 454+04.01
-L- ST Sta. 455+04.01
450+00
455+00
CEMETERY 6 MARKED GRAVES

SITE 10

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh38_con.dgn

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

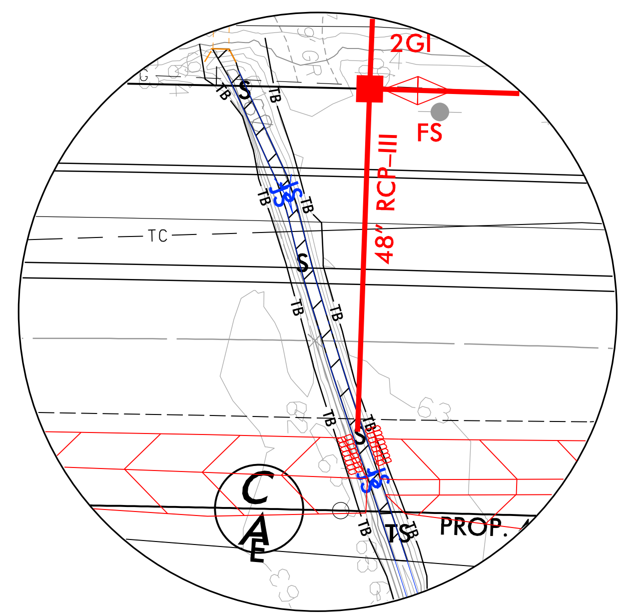
PROJECT REFERENCE NO.	SHEET NO.
R-2511	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING
SHEET 46 OF 61

DETAIL FOR SITE 10

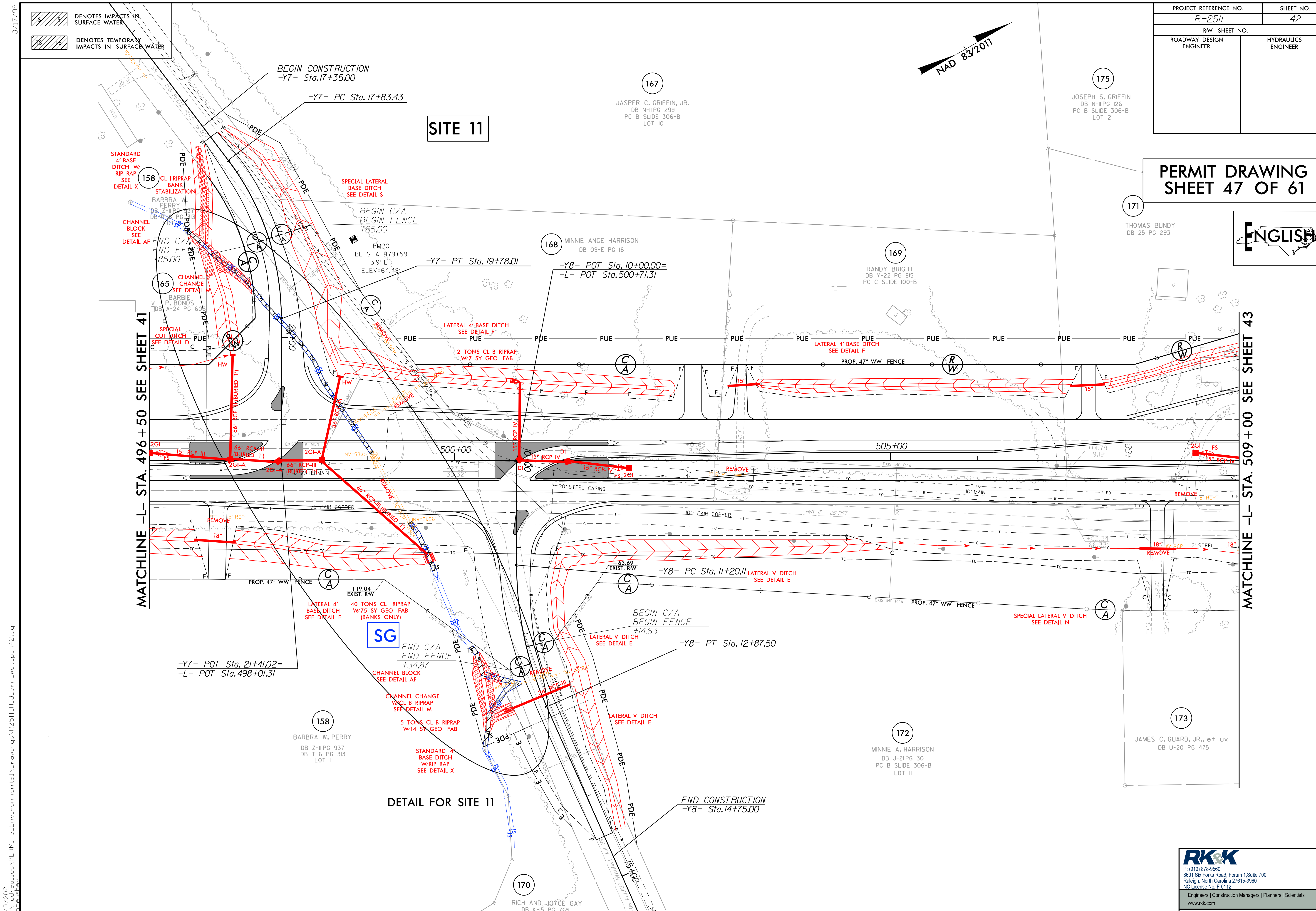


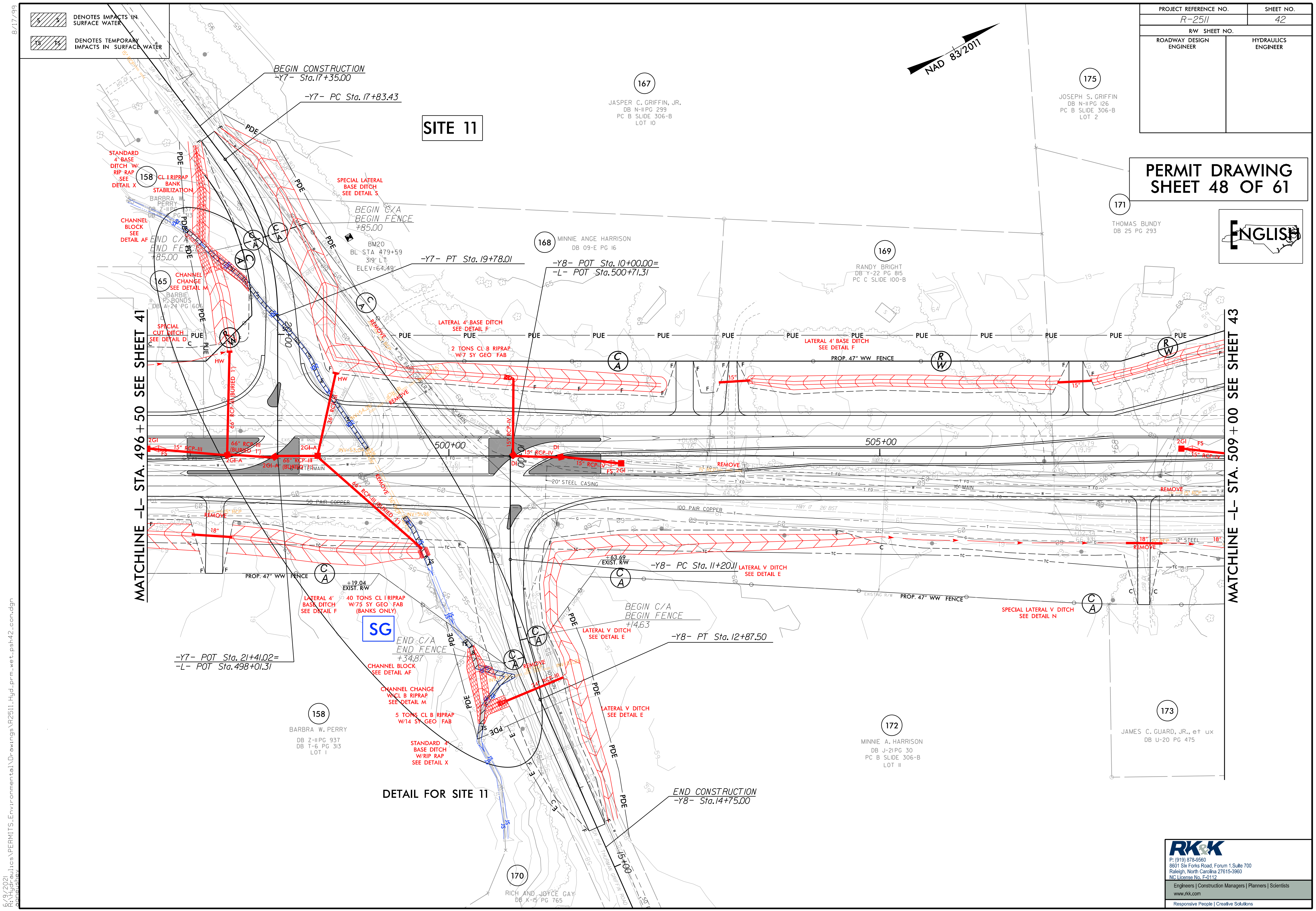
25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh38_Detail.dgn


DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO. R-2511
SHEET NO. 42
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 47 OF 61
ENGLISH
NAD 83/2011
SITE 11
BEGIN CONSTRUCTION -Y7- Sta.17+35.00
-Y7- PC Sta. 17+83.43
-Y7- PT Sta. 19+78.01
-Y8- POT Sta. 10+00.00= -L- POT Sta.500+71.31
-Y7- POT Sta. 21+41.02= -L- POT Sta. 498+01.31
-Y8- PC Sta. 11+20.11
-Y8- PT Sta. 12+87.50
END CONSTRUCTION -Y8- Sta.14+75.00
BEGIN C/A BEGIN FENCE +85.00
END C/A END FENCE +85.00
BEGIN C/A BEGIN FENCE +14.63
END C/A END FENCE +34.87
BM20 BL STA 479+59 319' LT ELEV=64.49'
STANDARD 4' BASE DITCH W/ RIP RAP SEE DETAIL X
CL I RIPRAP BANK STABILIZATION
CHANNEL BLOCK SEE DETAIL AF
CHANNEL CHANGE SEE DETAIL M
SPECIAL CUT DITCH SEE DETAIL D
SPECIAL LATERAL BASE DITCH SEE DETAIL S
LATERAL 4' BASE DITCH SEE DETAIL F
2 TONS CL B RIPRAP W/7 SY GEO FAB
PROP. 47" WW FENCE
LATERAL V DITCH SEE DETAIL E
SPECIAL LATERAL V DITCH SEE DETAIL N
LATERAL 4' BASE DITCH SEE DETAIL F
40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)
SG
CHANNEL BLOCK SEE DETAIL AF
CHANNEL CHANGE W/CL B RIPRAP SEE DETAIL M
5 TONS CL B RIPRAP W/14 SY GEO FAB
STANDARD 4' BASE DITCH W/RIP RAP SEE DETAIL X
DETAIL FOR SITE 11
MATCHLINE -L- STA. 496+50 SEE SHEET 41
MATCHLINE -L- STA. 509+00 SEE SHEET 43
500+00
505+00
15+00
167 JASPER C. GRIFFIN, JR. DB N-11 PG 299 PC B SLIDE 306-B LOT 10
175 JOSEPH S. GRIFFIN DB N-11 PG 126 PC B SLIDE 306-B LOT 2
171 THOMAS BUNDY DB 25 PG 293
168 MINNIE ANGE HARRISON DB 09-E PG 16
169 RANDY BRIGHT DB Y-22 PG 815 PC C SLIDE 100-B
158 BARBRA W. PERRY DB Z-11 PG 937 DB T-6 PG 313 LOT 1
165 BARBIE P. BONDS DB A-24 PG 606
172 MINNIE A. HARRISON DB J-21 PG 30 PC B SLIDE 306-B LOT 11
173 JAMES C. GUARD, JR., et ux DB U-20 PG 475
170 RICH AND JOYCE GAY DB K-15 PG 765
66" RCP-III (BURIED 1')
36" RCP-III
15" RCP-IV
20" STEEL CASING
100 PAIR COPPER
50 PAIR COPPER
REMOVE
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh42.dgn


PROJECT REFERENCE NO.
R-2511
SHEET NO.
42
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING
SHEET 48 OF 61
ENGLISH
NAD 83/2011
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 11
DETAIL FOR SITE 11
SG
BEGIN CONSTRUCTION
-Y7- Sta.17+35.00
-Y7- PC Sta.17+83.43
-Y7- PT Sta.19+78.01
-Y8- POT Sta.10+00.00=
-L- POT Sta.500+71.31
-Y7- POT Sta.21+41.02=
-L- POT Sta.498+01.31
-Y8- PC Sta.11+20.11
-Y8- PT Sta.12+87.50
END CONSTRUCTION
-Y8- Sta.14+75.00
BEGIN C/A
BEGIN FENCE
+85.00
END C/A
END FENCE
+34.87
+14.63
BM20
BL STA 479+59
319' LT
ELEV=64.49'
MATCHLINE -L- STA. 496+50 SEE SHEET 41
MATCHLINE -L- STA. 509+00 SEE SHEET 43
500+00
505+00
15+00
167
JASPER C. GRIFFIN, JR.
DB N-11 PG 299
PC B SLIDE 306-B
LOT 10
175
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 2
171
THOMAS BUNDY
DB 25 PG 293
168
MINNIE ANGE HARRISON
DB 09-E PG 16
169
RANDY BRIGHT
DB Y-22 PG 815
PC C SLIDE 100-B
158
BARBRA W. PERRY
DB Z-11 PG 937
DB T-6 PG 313
LOT 1
165
BARBIE P. BONDS
172
MINNIE A. HARRISON
DB J-21 PG 30
PC B SLIDE 306-B
LOT 11
173
JAMES C. GUARD, JR., et ux
DB U-20 PG 475
170
RICH AND JOYCE GAY
DB K-15 PG 765
STANDARD 4' BASE DITCH W/ RIP RAP SEE DETAIL X
CL I RIPRAP BANK STABILIZATION
CHANNEL BLOCK SEE DETAIL AF
CHANNEL CHANGE SEE DETAIL M
SPECIAL CUT DITCH SEE DETAIL D
SPECIAL LATERAL BASE DITCH SEE DETAIL S
LATERAL 4' BASE DITCH SEE DETAIL F
2 TONS CL B RIPRAP W/7 SY GEO FAB
PROP. 47" WW FENCE
LATERAL V DITCH SEE DETAIL E
SPECIAL LATERAL V DITCH SEE DETAIL N
40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)
CHANNEL CHANGE W/CL B RIPRAP SEE DETAIL M
5 TONS CL B RIPRAP W/14 SY GEO FAB
STANDARD 4' BASE DITCH W/RIP RAP SEE DETAIL X
+19.04 EXIST. R/W
+63.69 EXIST. R/W
20" STEEL CASING
100 PAIR COPPER
50 PAIR COPPER
REMOVE
PDE
PUE
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh42_con.dgn

DETAIL FOR SITE 11

PROJECT REFERENCE NO.	SHEET NO.
R-2511	42A

R/W SHEET NO.

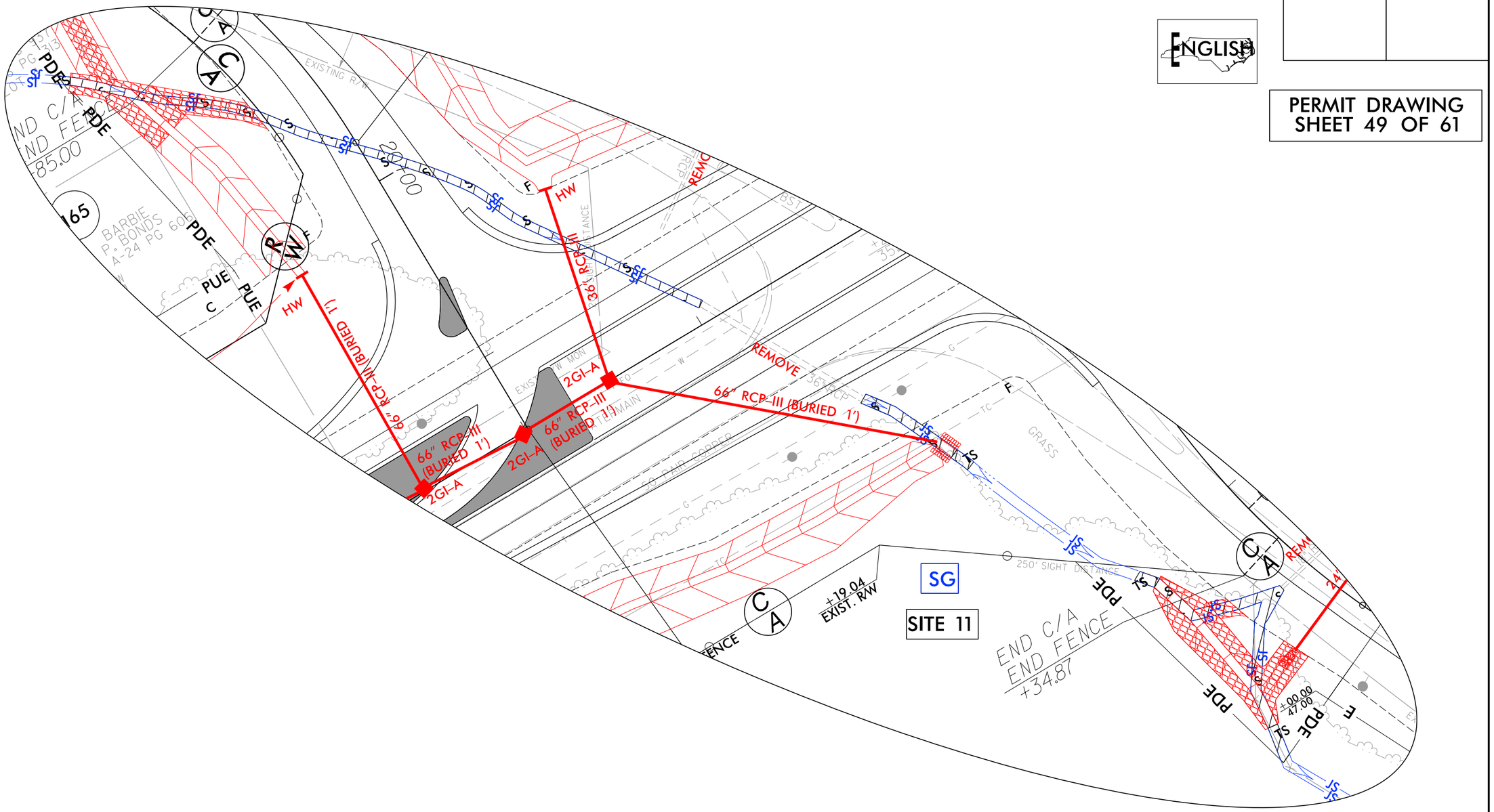
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING
SHEET 49 OF 61



25 0 25 50
SCALE FOR INSETS

S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

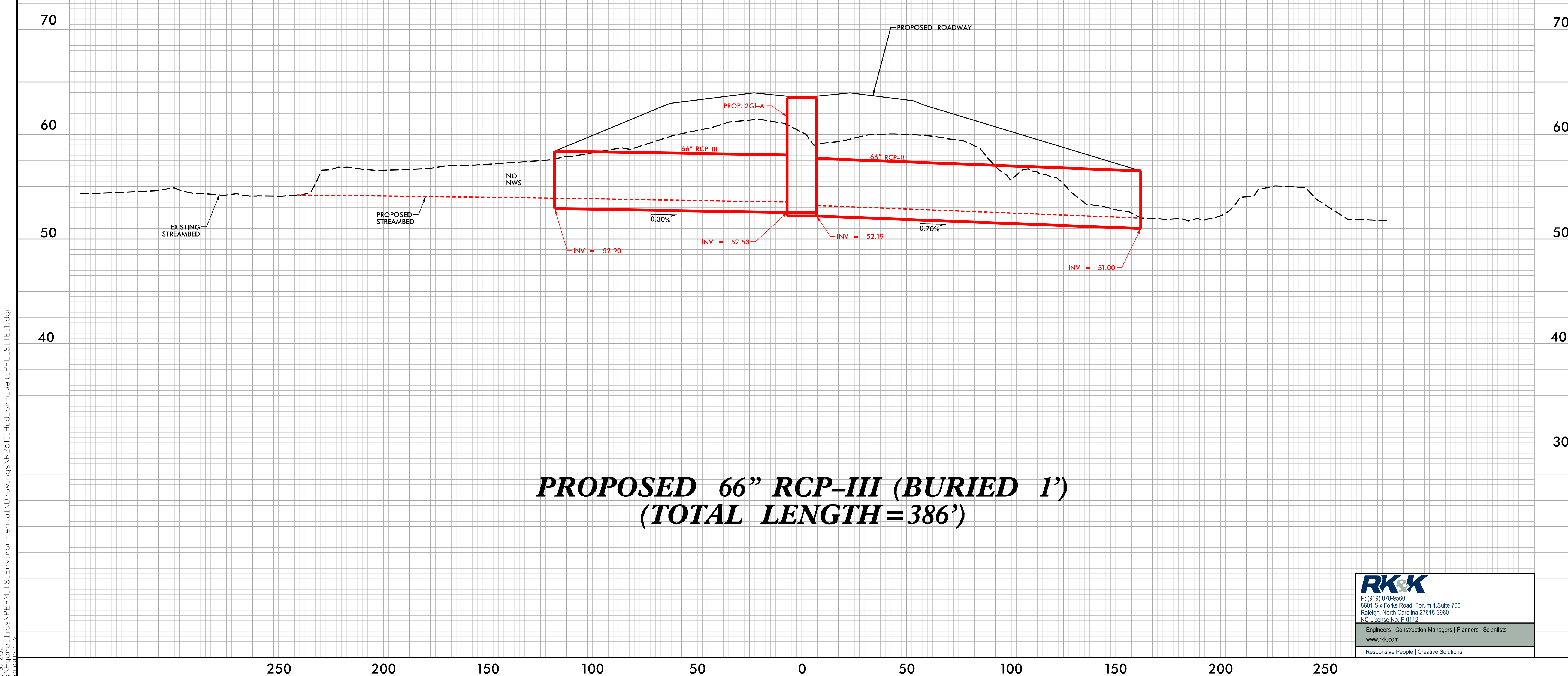
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_detail_site 11dgn.dgn
agneushev

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 11
-L- STA. 497+42

PERMIT DRAWING
SHEET 50 OF 61



PROPOSED 66" RCP-III (BURIED 1')
(TOTAL LENGTH=386')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

5/14/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE11.dgn
agneushev

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
P P	DENOTES IMPACTS IN SURFACE WATER (POND)
T T	DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING SHEET 51 OF 61

WH

DRAIN POND AND VERIFY BOTTOM OF POND ELEVATION. TIE LOW FLOW CHANNEL IN POND TO #4314 INVERT AT ELEVATION 48.0'. USE CHANNEL CHANGE DETAIL M AT A SLOPE NOT TO EXCEED 0.50%. FILL MAY BE REQUIRED BASED ON POND ELEVATION. DO NOT EXTEND CONSTRUCTION IMPACTS BEYOND LIMITS OF POND. CONSTRUCTION WITHIN POND MAY CAUSE TEMPORARY IMPACTS TO WETLAND WH.

SITE 12

175
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 2

177
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 1

171
THOMAS BUNDY
DB 25 PG 293

PA

174
JOSEPH S. GRIFFIN
DB L-16 PG 759

175A
JOSEPH S. GRIFFIN, JR.
DB A-24 PG 193
PC B SLIDE 306-B
LOT 3 (OUT PARCEL)

179
SETH & RACHEL PERRY FARMS, LLC
DB M-24 PG 284
DB T-10 PG 654
MB 13 PG 14
PARCEL 2

-L- CS Sta. 521+98.66

MATCHLINE -L- STA. 509+00 SEE SHEET 42

MATCHLINE -L- STA. 522+00 SEE SHEET 44

LATERAL 4' BASE DITCH SEE DETAIL F

LATERAL V DITCH SEE DETAIL E

5 TONS CL B RIPRAP W/14 SY GEO FAB

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL J

PROP. 47" WW FENCE

510+00

515+00

520+00

-L- TS Sta. 513+20.65

-L- SC Sta. 514+20.65

NCGS BEECH

40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)

LATERAL 4' BASE DITCH SEE DETAIL F

SPECIAL LATERAL V DITCH SEE DETAIL N

SH

DETAIL FOR SITE 12
INSET A

WH

J. COMER GRIFFIN
DB N-11 PG 299

26 TONS CL I RIPRAP W/50 SY GEO FAB

SH2

DETAIL FOR SITE 13
INSET B

178
HUGH B. KENNEDY, et ux
DB G-17 PG 366
MB 13 PG 14

SITE 13

173
JAMES C. GUARD, JR., et ux
DB U-20 PG 475

172
MINNIE A. HARRISON
DB J-21 PG 30
PC B SLIDE 306-B
LOT 11

6/9/2021
R:\Highway Studies\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh43.dgn
apoulsbey

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
P P	DENOTES IMPACTS IN SURFACE WATER (POND)
T T	DENOTES TEMPORARY FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING SHEET 52 OF 61

175
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 2

177
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 1

WH

DRAIN POND AND VERIFY BOTTOM OF POND ELEVATION. TIE LOW FLOW CHANNEL IN POND TO #4314 INVERT AT ELEVATION 48.0'. USE CHANNEL CHANGE DETAIL M AT A SLOPE NOT TO EXCEED 0.50%. FILL MAY BE REQUIRED BASED ON POND ELEVATION. DO NOT EXTEND CONSTRUCTION IMPACTS BEYOND LIMITS OF POND. CONSTRUCTION WITHIN POND MAY CAUSE TEMPORARY IMPACTS TO WETLAND WH.

SITE 12

171
THOMAS BUNDY
DB 25 PG 293

PA

174
JOSEPH S. GRIFFIN
DB C-16 PG 759

175A
JOSEPH S. GRIFFIN, JR.
DB A-24 PG 193
PC B SLIDE 306-B
LOT 3 (OUT PARCEL)

179
SETH & RACHEL PERRY FARMS, LLC
DB M-24 PG 284
DB T-10 PG 654
MB 13 PG 14
PARCEL 2

-L- CS Sta. 521+98.66

LATERAL 4' BASE DITCH SEE DETAIL F

LATERAL V DITCH SEE DETAIL E

5 TONS CL B RIPRAP W/14 SY GEO FAB

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL J

PROP. 47" WW FENCE

MATCHLINE -L- STA. 509+00 SEE SHEET 42

MATCHLINE -L- STA. 522+00 SEE SHEET 44

510+00

515+00

520+00

NCGS BEECH

40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)

LATERAL 4' BASE DITCH SEE DETAIL F

SH

-L- TS Sta. 513+20.65

SPECIAL LATERAL V DITCH SEE DETAIL N

DETAIL FOR SITE 12
INSET A

-L- SC Sta. 514+20.65

WH

J. COMER GRIFFIN
DB N-11 PG 299

SH2

DETAIL FOR SITE 13
INSET B

26 TONS CL I RIPRAP W/50 SY GEO FAB

LATERAL V DITCH SEE DETAIL E

178
HUGH B. KENNEDY, et ux
DB G-17 PG 366
MB 13 PG 14

SITE 13

173
JAMES C. GUARD, JR., et ux
DB U-20 PG 475

172
MINNIE A. HARRISON
DB J-21 PG 30
PC B SLIDE 306-B
LOT 11

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Projects\Julius\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh43_CON.dgn
aguidry

8/17/99

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

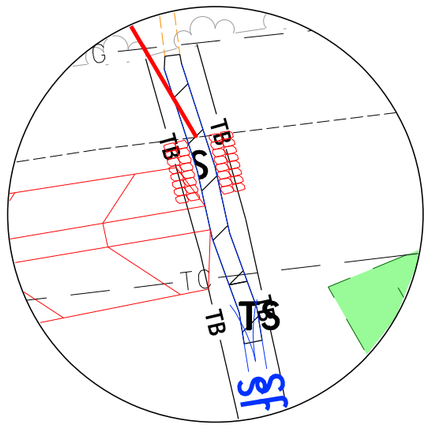
NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 53 OF 61

DETAIL FOR SITE 12
INSET A



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/8/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh43_Detail.dgn
agoolsby

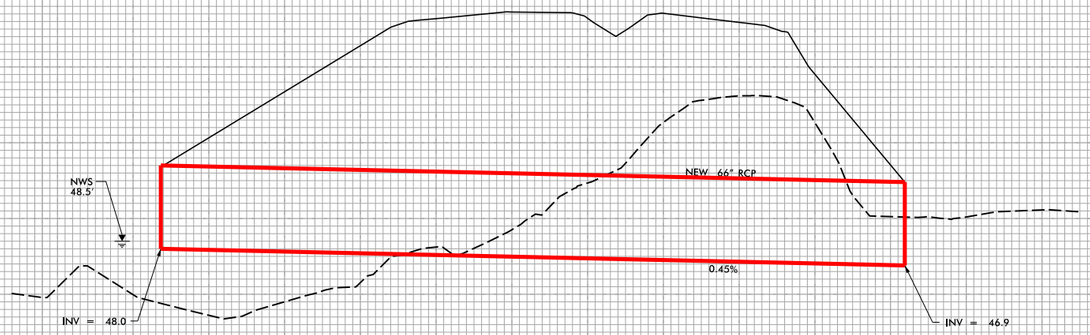
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

SITE 12
–L– STA. 511+63

PERMIT DRAWING
SHEET 54 OF 61



790 50 40 30 20

250 200 150 100 50 0 50 100 150 200 250

PROPOSED 66" RCP–III
(TOTAL LENGTH=246')

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_PFL_SITE12.dgn
agoldsbey

8/17/99

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

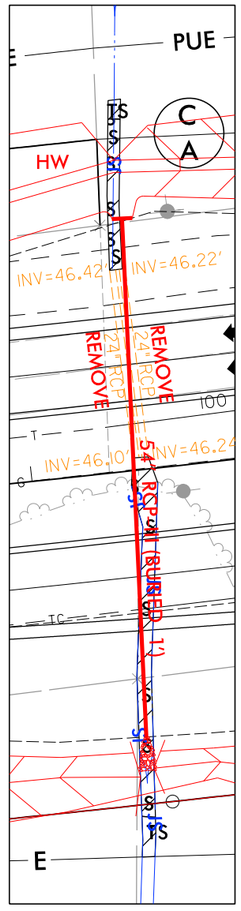
PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

PERMIT DRAWING
SHEET 55 OF 61

DETAIL FOR SITE 13
INSET B



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh43_Detail2.dgn
agoolsbey

8/17/99

DENOTES MECHANIZED CLEARING

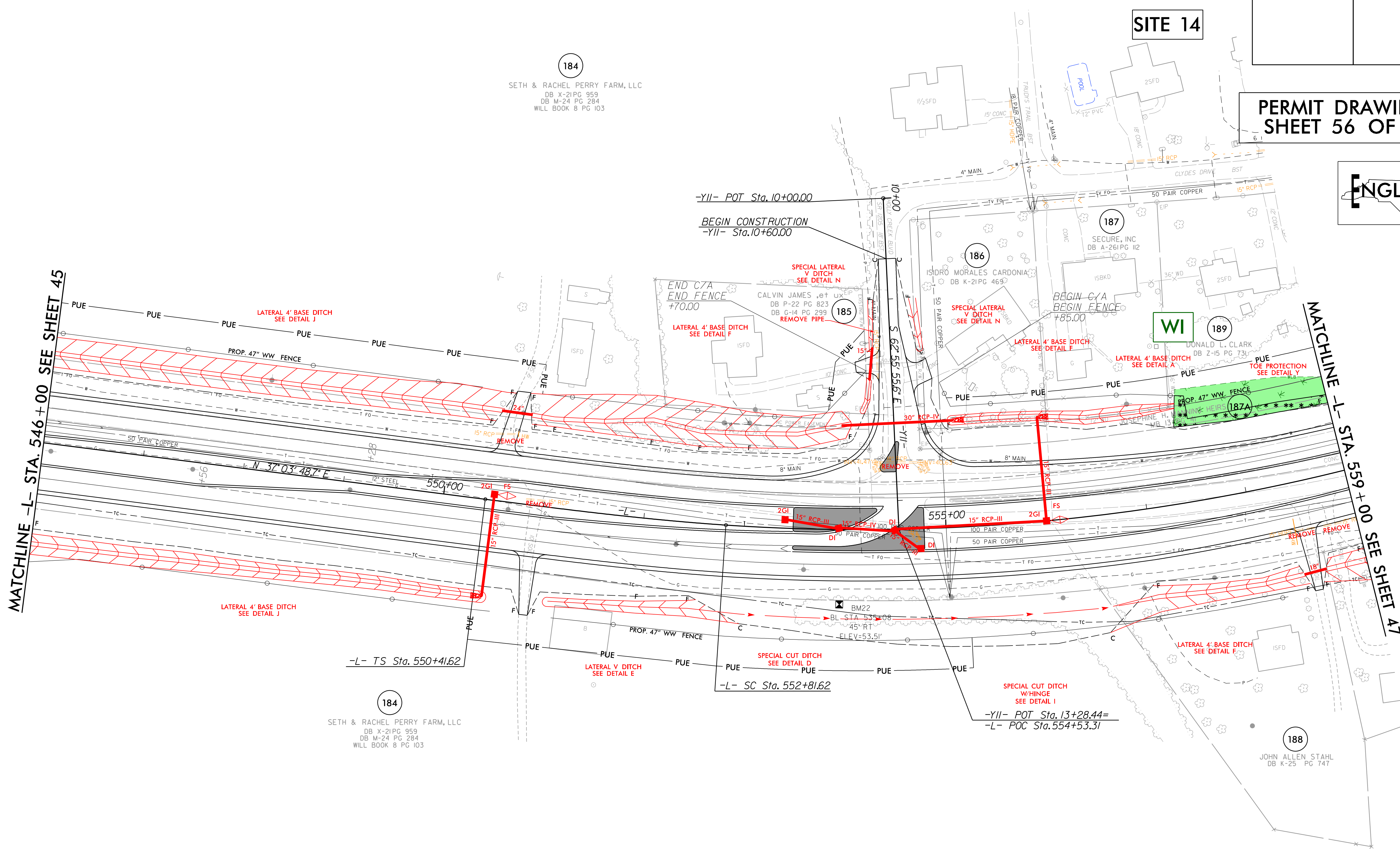
PROJECT REFERENCE NO.	SHEET NO.
R-2511	46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 56 OF 61

SITE 14

NAD 83/2011

ENGLISH



MATCHLINE -L- STA. 546+00 SEE SHEET 45
MATCHLINE -L- STA. 559+00 SEE SHEET 47
184
SETH & RACHEL PERRY FARM, LLC
DB X-21 PG 959
DB M-24 PG 284
WILL BOOK 8 PG 103
-Y11- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y11- Sta. 10+60.00
END C/A
END FENCE
+70.00
CALVIN JAMES ,et ux
DB P-22 PG 823
DB G-14 PG 299
185
186
ISIDRO MORALES CARDONIA
DB K-21 PG 469
187
SECURE, INC
DB A-26 PG 112
BEGIN C/A
BEGIN FENCE
+85.00
189
DONALD L. CLARK
DB Z-15 PG 731
187A
WI
SPECIAL LATERAL V DITCH SEE DETAIL N
LATERAL 4' BASE DITCH SEE DETAIL J
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL 4' BASE DITCH SEE DETAIL A
TOE PROTECTION SEE DETAIL Y
REMOVE PIPE
PROP. 47" WW FENCE
N 37°03' 48.7" E
S 62°55' 55.6" E
550+00
555+00
30" RCP-IV
15" RCP-III
15" RCP-IV
2GI
DI
FS
REMOVE
50 PAIR COPPER
100 PAIR COPPER
8" MAIN
12" STEEL
BM22
BL STA 553+08
45' RT
ELEV=53.51'
-L- TS Sta. 550+41.62
-L- SC Sta. 552+81.62
-Y11- POT Sta. 13+28.44=
-L- POC Sta. 554+53.31
LATERAL V DITCH SEE DETAIL E
SPECIAL CUT DITCH SEE DETAIL D
SPECIAL CUT DITCH W/HINGE SEE DETAIL I
188
JOHN ALLEN STAHL
DB K-25 PG 747
PUE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh46.dgn

8/17/99

DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

SITE 14

PERMIT DRAWING
SHEET 57 OF 61

ENGLISH

184
SETH & RACHEL PERRY FARM, LLC
DB X-21PG 959
DB M-24 PG 284
WILL BOOK 8 PG 103

-Y11- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y11- Sta. 10+60.00
10+00

END C/A
END FENCE
+70.00

BEGIN C/A
BEGIN FENCE
+85.00

MATCHLINE -L- STA. 546+00 SEE SHEET 45

MATCHLINE -L- STA. 559+00 SEE SHEET 47

LATERAL 4' BASE DITCH SEE DETAIL J

PROP. 47" WW FENCE

50 PAIR COPPER

N 37° 03' 48.7" E

12" STEEL

550+00

15" RCP-III

REMOVE 15" RCP

-L- TS Sta. 550+41.62

LATERAL 4' BASE DITCH SEE DETAIL F

SPECIAL LATERAL V DITCH SEE DETAIL N

CALVIN JAMES, ET UX
DB P-22 PG 825
DB G-14 PG 299
REMOVE PIPE

185

S 62° 55' 55.6" E

30" RCP-IV

REMOVE 30" RCP

LATERAL V DITCH SEE DETAIL E

SPECIAL CUT DITCH SEE DETAIL D

-L- SC Sta. 552+81.62

BM22
BL STA. 539+08
45° RT
ELEV=53.51'

555+00

100 PAIR COPPER

SPECIAL LATERAL V DITCH SEE DETAIL N

186
ISIDRO MORALES CARDONIA
DB K-21PG 469

187
SECURE, INC
DB A-261PG 112

LATERAL 4' BASE DITCH SEE DETAIL F

LATERAL 4' BASE DITCH SEE DETAIL A

TOE PROTECTION SEE DETAIL Y

WI

189
DONALD L. CLARK
DB Z-15 PG 734

PROP. 47" WW FENCE

187A

SPECIAL CUT DITCH W/HINGE SEE DETAIL I

-Y11- POT Sta. 13+28.44=
-L- POC Sta. 554+53.31

LATERAL 4' BASE DITCH SEE DETAIL F

188
JOHN ALLEN STAHL
DB K-25 PG 747

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

PROJECT REFERENCE NO.	SHEET NO.
R-2511	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 58 OF 61

SITE 14

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83/2011
ENGLISH
WI
V10 = 1.11ft/s
Q10 = 5.2cfs
END PROJECT R-2511
-L- POT Sta. 568+50.00
MATCHLINE -L- STA. 559+00 SEE SHEET 46
560+00
565+00
570+00
-L-
N 2°55' 42.6" E
-L- CS Sta. 562+27.20
-L- ST Sta. 564+67.20
PROP. 47" WW. FENCE
JOSEPHINE H. MANNING HEIRS MB 13 PG 41
ROBERT GRIFFIN DB R-20 PG 636
JERI-LOU GRIFFIN DB L-18 PG 314
DAVID H. LAMB DB G-13 PG 741
CHARLES D. EDMONDSON DB H-17 PG 118
PATRICA A. CHESSON DB B-18 PG 610
NEWCOMB, JOHNNY A., et ux DB B-12 PG 926 DB T-10 PG 86 (PLAT)
SIMON A. PERRY III DB L-22 PG 194 PC-C SL 44-D
EDWARD F. CUTLER AND MYRTLE C. JOHNSON DB 0-22 PG 924 PC-C SL 87-C LOTS 4 & 5
JACKIE L. HESTER DB F-23 PG 632
DORIS H. BONDS DB S-23 PG 781 PC C SL 87-C (LOT 3)
RENEE A. ROBERSON WILLIAM G. GRIFFIN DB R-25 PG 59 PC C SL 44-E (LOT 1)
JAMES W. EDMONDS DB R-13 PG 318 DB R-10 PG 759
JAMES W. EDMONDS DB Y-22 PG 107
LATERAL 4' BASE DITCH SEE DETAIL F
SPECIAL CUT 4' BASE DITCH SEE DETAIL G
SPECIAL CUT 4' BASE DITCH SEE DETAIL H
MEDIAN V DITCH SEE DETAIL B
REMOVE
TRENCHLESS INSTALLATION

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh47.dgn

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 14

ENGLISH

NAD 83/2011

PERMIT DRAWING SHEET 59 OF 61

WI
V10 = 1.11ft/s
Q10 = 5.2cfs
END PROJECT R-2511
-L- POT Sta. 568+50.00
MATCHLINE -L- STA. 559+00 SEE SHEET 46
560+00
565+00
570+00
N 2° 55' 42.6" E
PROP. 47" WW FENCE
JOSEPHINE H. MANNING HEIRS
MB 13 PG 41
ROBERT GRIFFIN
DB R-20 PG 636
JERI LOU GRIFFIN
DB E-18 PG 314
DAVID H. LAMB
DB G-13 PG 741
CHARLES D. EDMONDSON
DB H-17 PG 118
PATRICA A. CHESSON
DB B-18 PG 610
JOHNNY A. et ux
DB B-12 PG 926
DB T-10 PG 86 (PLAT)
SIMON A. PERRY III
DB L-22 PG 194
PC-C SL 44-D
EDWARD F. CUTLER AND
MYRTLE C. JOHNSON
DB 0-22 PG 924
PC-C SL 87-C
LOTS 4 & 5
JACKIE L. HESTER
DB F-23 PG 632
DORIS H. BONDS
DB S-23 PG 781
PC C SL 87-C (LOT 3)
RENEE A. ROBERSON
WILLIAM G. GRIFFIN
DB R-25 PG 59
PC C SL 44-E (LOT 1)
JAMES W. EDMONDS
DB R-13 PG 318
DB R-10 PG 759
JAMES W. EDMONDS
DB Y-22 PG 107
LATERAL 4' BASE DITCH
SEE DETAIL F
SPECIAL CUT
4' BASE DITCH
SEE DETAIL G
SPECIAL CUT
4' BASE DITCH
SEE DETAIL H
MEDIAN V DITCH
SEE DETAIL B
-L- CS Sta. 562+27.20
-L- ST Sta. 564+67.20
REMOVE
TRENCHLESS INSTALLATION
100 PAIR COPPER
50 PAIR COPPER
4" MAIN
8" MAIN
12" STEEL
PUE
PDE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

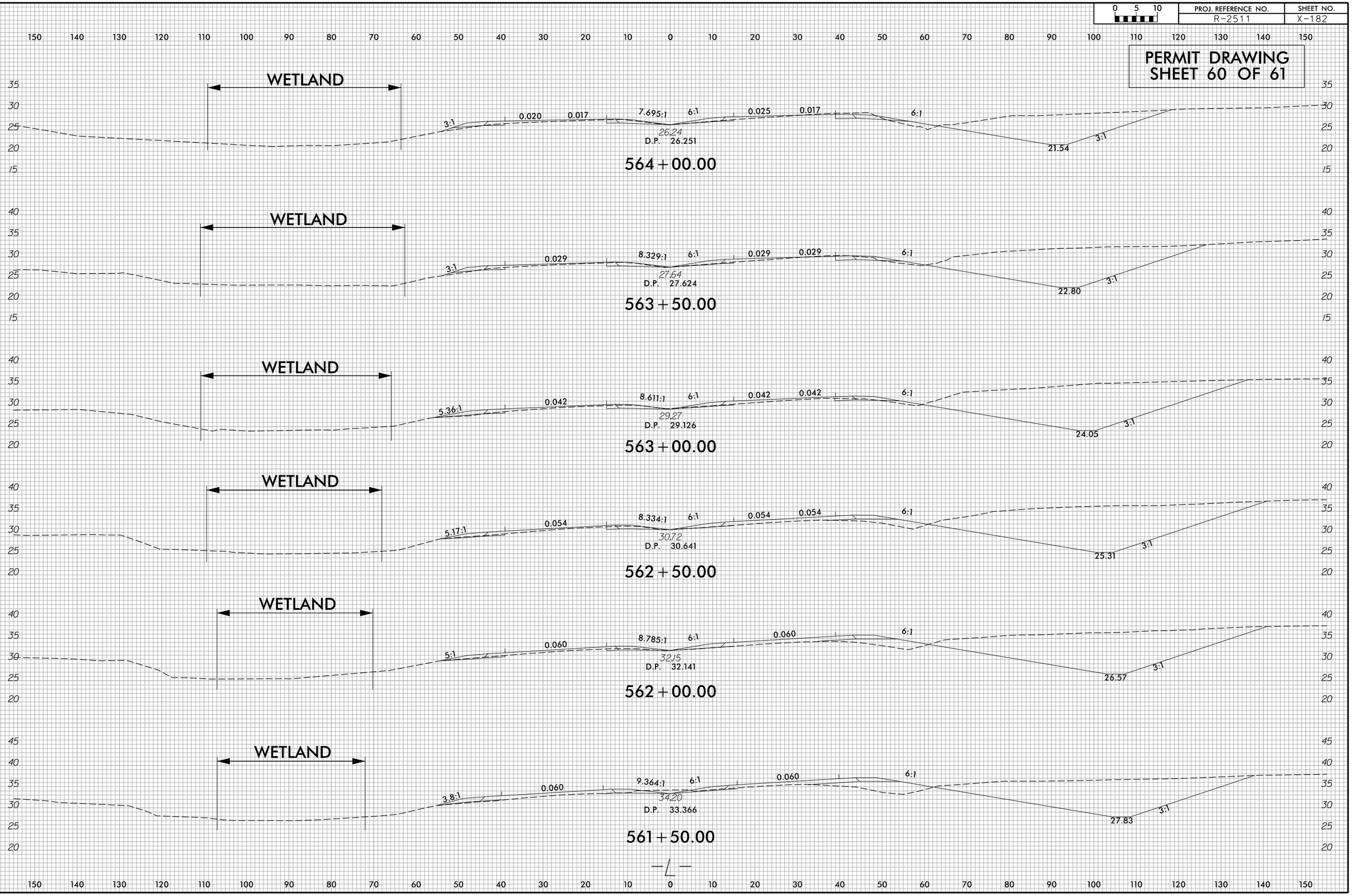
8/17/99

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_wet_psh47_con.dgn

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-182

PERMIT DRAWING
SHEET 60 OF 61



6/19/2021
R:\NCDOT Projects\PERMITS_Environmental\Drawings\R2511_prm_xpl_Site 14_560+00.dgn
agnelushev

WETLAND AND SURACE 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	-L- 17+60 TO 18+88	PROP 66" WELDED STEEL: SA, WA				< 0.01		0.01	< 0.01	79	20	
2	-L- 54+35 TO 57+82	PROP. 60" RCP & ROADWAY FILL: SB2, WB	0.26	0.01		0.05		0.04	< 0.01	351	13	
3	-L- 68+45 TO 69+77	PROP. 8'X6' RCBC W/ (2) 48" RCP: SB						0.05	< 0.01	284	38	
4	-L- 98+94 TO 99+55	PROP. (2) 42" RCP: SJ						0.01	< 0.01	129	10	
5	-L- 152+86 TO 160+06	PROP. DUAL BRIDGES: SC, WC	1.00	0.04		0.27		< 0.01	0.07	7	155	
6	-L- 229+26 TO 230+35	ROADWAY FILL: WD	0.02	< 0.01		0.01						
7	-L- 280+02 TO 281+11	PROP. 48" RCP & ROADWAY FILL: SD, WE	0.11			0.03		< 0.01	< 0.01	128	20	
8	-L- 341+75 TO 349+30	PROP. 10'X6' RCBC & ROADWAY FILL: SE, WF	1.10		0.06	0.32		0.04	< 0.01	286	9	
9	-L- 364+15 TO 367+67	PROP. (2) 11'X8' RCBC & ROADWAY FILL: SF, WG	0.64	0.03	0.01	0.15		0.05	< 0.01	227	36	
10	-L- 452+03 TO 452+53	PROP. 48" RCP & ROADWAY FILL: SK						< 0.01	< 0.01	129	13	
11	-L- 496+93 TO 500+77	PROP. 66" RCP & ROADWAY FILL: SG						0.05	< 0.01	512	42	
12	-L- 510+39 TO 512+28	DRAIN/FILL POND: PA, WH		< 0.01				0.50				
	-L- 512+10 TO 512+27	PROP. 66" RCP & ROADWAY FILL: SH						< 0.01	< 0.01	40	10	
13	-L- 521+22 TO 521+28	PROP. 54" RCP & ROADWAY FILL: SH2						0.02	< 0.01	169	20	
14	-L- 557+40 TO 567+41	ROADWAY FILL: WI	< 0.01	0.05		0.08						
TOTALS*:			3.14	0.14	0.07	0.91		0.80	0.10	2341	385	0

*Rounded totals are sum of actual impacts

NOTES:

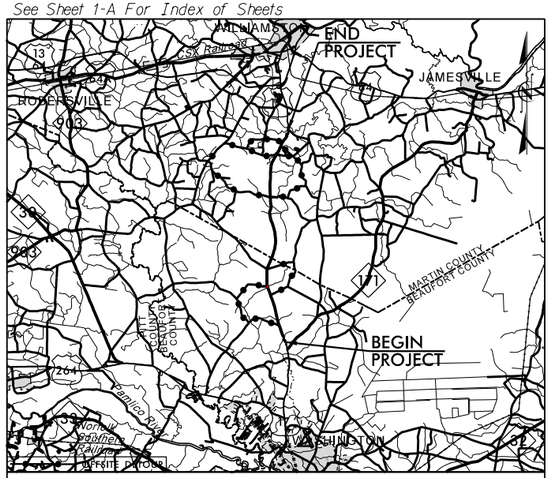
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/9/2021
BEAUFORT & MARTIN COUNTY
R-2511
35494.1.1

09/08/99

TIP PROJECT: R-2511

CONTRACT: C204498

See Sheet 1-A For Index of Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT & MARTIN COUNTIES

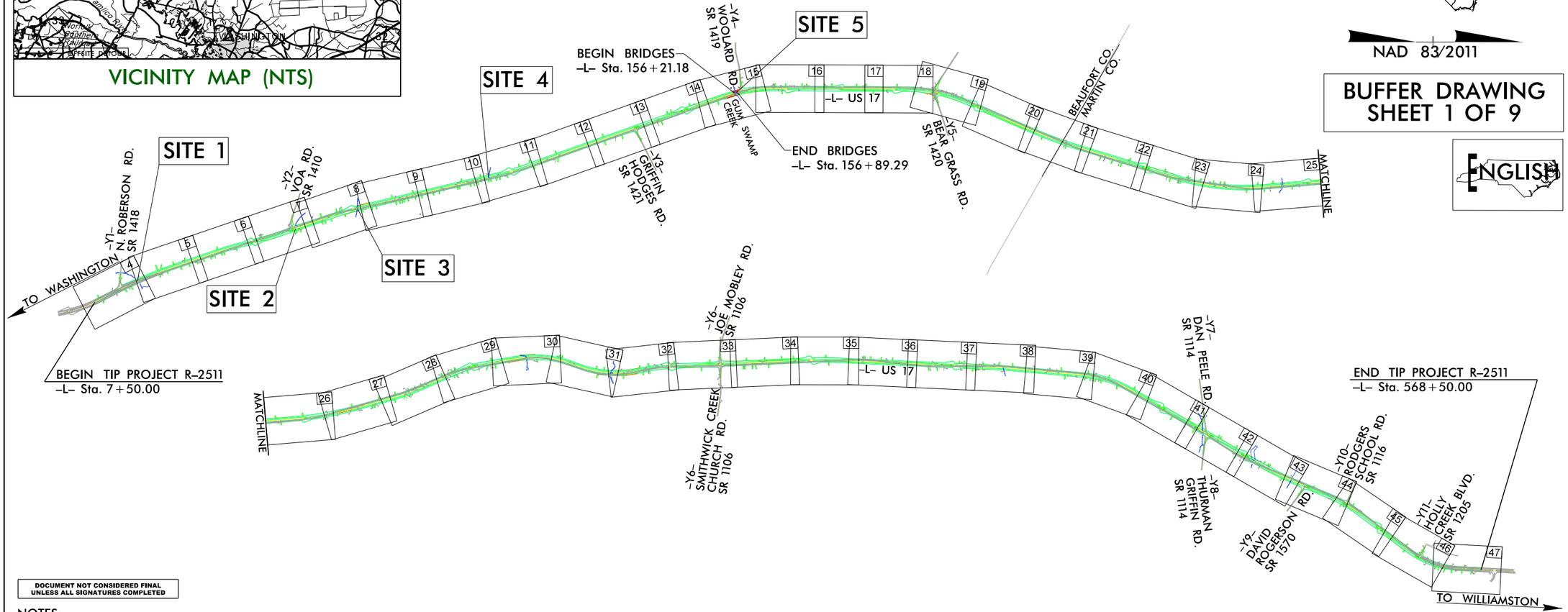
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2511	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35494.1.1	N/A	PE
35494.2.1		R/W
35494.3.1		CONST.

LOCATION: US 17 FROM NORTH OF NC 171 TO EXISTING MULTI-LANES SOUTH OF WILLIAMSTON

BUFFER IMPACTS

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



NAD 83/2011

BUFFER DRAWING SHEET 1 OF 9

ENGLISH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:
1. THIS IS A PARTIALLY CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2020	=	9,164
ADT 2040	=	14,284
K	=	5%
D	=	60%
T	=	13% *
V	=	60 MPH

* TTST = 8% DUAL 5%

FUNC CLASS = RURAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2511..... 10.612 miles

LENGTH STRUCTURE TIP PROJECT R-2511..... 0.013 miles

TOTAL LENGTH OF TIP PROJECT R-2511..... 10.625 miles

PLANS PREPARED BY:

RK&K

RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 20, 2018

LETTING DATE: DECEMBER 21, 2021

MICHAEL T. MERRITT, P.E.
PROJECT ENGINEER

SCOTT D. BLEVINS, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: JOHN ABEL, JR.
PROJECT ENGINEER – DIVISION 1

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\r2511_Hyd_BUF_tsh.dgn
agneushev

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2511	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BUFFER DRAWING SHEET 2 OF 9

ENGLISH

BUFFER FILTRATION

GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA
DA= 1.45ac SLOPE= 1.61% Q2= 4.24cfs V2= 1.98ft/s D2= 0.41' Q10= 5.50cfs V10= 2.15ft/s D10= 0.47'	DA= 2.10ac SLOPE= 0.30% Q2= 6.60cfs V2= 1.25ft/s D2= 0.82' Q10= 8.57cfs V10= 1.35ft/s D10= 0.94'	DA= 5.36ac SLOPE= 0.30% Q2= 15.66cfs V2= 1.59ft/s D2= 1.26' Q10= 20.33cfs V10= 1.70ft/s D10= 1.43'	DA= 4.19ac SLOPE= 0.66% Q2= 12.24cfs V2= 1.98ft/s D2= 0.91' Q10= 15.89cfs V10= 2.13ft/s D10= 1.04'	DA= 1.89ac SLOPE= 1.19% Q2= 5.98cfs V2= 1.98ft/s D2= 0.54' Q10= 7.76cfs V10= 2.14ft/s D10= 0.62'	DA= 1.25ac SLOPE= 1.51% Q2= 3.65cfs V2= 1.85ft/s D2= 0.38' Q10= 4.74cfs V10= 2.01ft/s D10= 0.44'	DA= 0.88ac SLOPE= 2.19% Q2= 2.57cfs V2= 1.87ft/s D2= 0.28' Q10= 3.34cfs V10= 2.04ft/s D10= 0.33'	DA= 6.62ac SLOPE= 0.49% Q2= 16.12cfs V2= 1.91ft/s D2= 1.14' Q10= 20.92cfs V10= 2.05ft/s D10= 1.29'	DA= 0.73ac SLOPE= 1.00% Q2= 2.13cfs V2= 1.35ft/s D2= 0.32' Q10= 2.77cfs V10= 1.47ft/s D10= 0.37'	DA= 4.92ac SLOPE= 0.55% Q2= 14.38cfs V2= 1.94ft/s D2= 1.04' Q10= 18.66cfs V10= 2.08ft/s D10= 1.19'	DA= 4.90c SLOPE= 0.59% Q2= 14.32cfs V2= 1.99ft/s D2= 1.02' Q10= 18.58cfs V10= 2.14ft/s D10= 1.16'
PROVIDING FILTRATION –L– STA. 16+00 TO 18+48 RT PSH 4 DETAIL A	PROVIDING FILTRATION –L– STA. 15+64 TO 17+75 LT PSH 4 DETAIL A	PROVIDING FILTRATION –L– STA. 17+79 TO 23+50 LT PSH 4 DETAIL A	PROVIDING FILTRATION –L– STA. 18+91 TO 23+50 RT PSH 4–5 DETAIL A	PROVIDING FILTRATION –L– STA. 52+00 TO 54+10 LT PSH 7 DETAIL A	PROVIDING FILTRATION –L– STA. 48+75 TO 54+11 RT PSH 7 DETAIL A	PROVIDING FILTRATION –Y2– STA. 15+00 TO 17+25 LT PSH 7 DETAIL A	PROVIDING FILTRATION –L– STA. 55+00 TO 55+43 LT PSH 7 DETAIL A	PROVIDING FILTRATION –L– STA. 55+43 TO 58+50 LT PSH 7–8 DETAIL A	PROVIDING FILTRATION –L– STA. 58+50 TO 69+53 LT PSH 8 DETAIL A	PROVIDING FILTRATION –L– STA. 63+50 TO 68+84 RT PSH 8 DETAIL A

GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA	GRASS SWALE DATA
DA= 9.38ac SLOPE= 0.42% Q2= 22.84cfs V2= 1.99ft/s D2= 1.40' Q10= 29.64cfs V10= 2.13ft/s D10= 1.59'	DA= 4.65ac SLOPE= 0.62% Q2= 13.59cfs V2= 1.99ft/s D2= 0.98' Q10= 17.63cfs V10= 2.14ft/s D10= 1.12'	DA= 1.30ac SLOPE= 0.74% Q2= 3.8cfs V2= 1.47ft/s D2= 0.48' Q10= 4.93cfs V10= 1.59ft/s D10= 0.55'	DA= 3.07ac SLOPE= 0.52% Q2= 8.97cfs V2= 1.66ft/s D2= 0.83' Q10= 11.64cfs V10= 1.79ft/s D10= 0.95'	DA= 3.21ac SLOPE= 0.63% Q2= 9.38cfs V2= 1.80ft/s D2= 0.81' Q10= 12.17cfs V10= 1.94ft/s D10= 0.93'	DA= 2.37ac SLOPE= 0.82% Q2= 6.93cfs V2= 1.82ft/s D2= 0.64' Q10= 8.99cfs V10= 1.96ft/s D10= 0.74'
PROVIDING FILTRATION –L– STA. 68+88 TO 78+50 RT PSH 8–9 DETAIL O	PROVIDING FILTRATION –L– STA. 69+59 TO 74+50 LT PSH 8–9 DETAIL A	PROVIDING FILTRATION –L– STA. 94+00 TO 98+50 RT PSH 10–11 DETAIL A	PROVIDING FILTRATION –L– STA. 98+94 TO 109+00 RT PSH 11 DETAIL A	PROVIDING FILTRATION –L– STA. 93+19 TO 99+34 LT PSH 10–11 DETAIL A	PROVIDING FILTRATION –L– STA. 99+39 TO 105+90 LT PSH 11 DETAIL A

6/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_Buf Filtration.dgn
aoneshey

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

BUFFER DRAWING SHEET 3 OF 9

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

NAD 83/2011

SITE 1

SA

BEGIN CONSTRUCTION
-Y1- Sta.10+50.00

-Y1- POT Sta.10+00.00

1
DAVID LEE LAWRENCE, JR.
DB 1431 PG 103

-Y1- POT Sta. 14+25.74=
-L- POC Sta.13+74.26

3
END C/A
END FENCE
+80.00

ROSEANN BASS
DB 1809 PG 836
DB 739 PG 496
DB 804 PG 851
WB 15E PG 178

5
CHRISTINA BASS TOPPIN
DB 1595 PG 341

-L- CS Sta. 7+75.00

BEGIN WW FENCE
TIE TO EXIST.FENCE

BEGIN C/A
BEGIN FENCE
+80.00

33 TONS CL I RIPRAP
W/62 SY GEO FAB

3 TONS CL B RIPRAP
W/10 SY GEO FAB

LATERAL 4' BASE DITCH
SEE DETAIL A

CHANNEL CHANGE
SEE DETAIL M

PROP. 47" WW FENCE

REMOVE
15" RCP

REMOVE EXISTING
PIPE

HWY 17 BST VARIES

MEDIAN V DITCH
SEE DETAIL B

10+00

N 27° 16' 35.0" W

S 84° 51' 36.0" E

15+00

15" RCP-IV

18" RCP-III

TB 2GI
REMOVE
DI

FS
2GI

GRASS

REMOVE EXISTING
SYSTEM

FRENCHLESS INSTALLATION
54" WELDED STEEL

48 TONS CL I RIPRAP
W/89 SY GEO FAB
ON BANKS ONLY

PLUG & FILL W/
FLOWABLE FILL

REMOVE
HW

REMOVE 15" RCP

6" PVC

EXISTING R/W

FS ELEV. =35.0

PDE

STANDARD 5' BASE DITCH
SEE DETAIL A1

BEGIN WW FENCE
TIE TO EXIST.FENCE

BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00

-L- ST Sta. 10+00.00

-L- TS Sta. 12+08.88

-L- SC Sta. 13+08.88

2
MCDONALD GAUTIER, III, ET AL
DB 1258 PG 57

4
MAXWELL P. CHESNUTT FAMILY TRUST
DB 1124 PG 2

NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DB 1708 PG 617

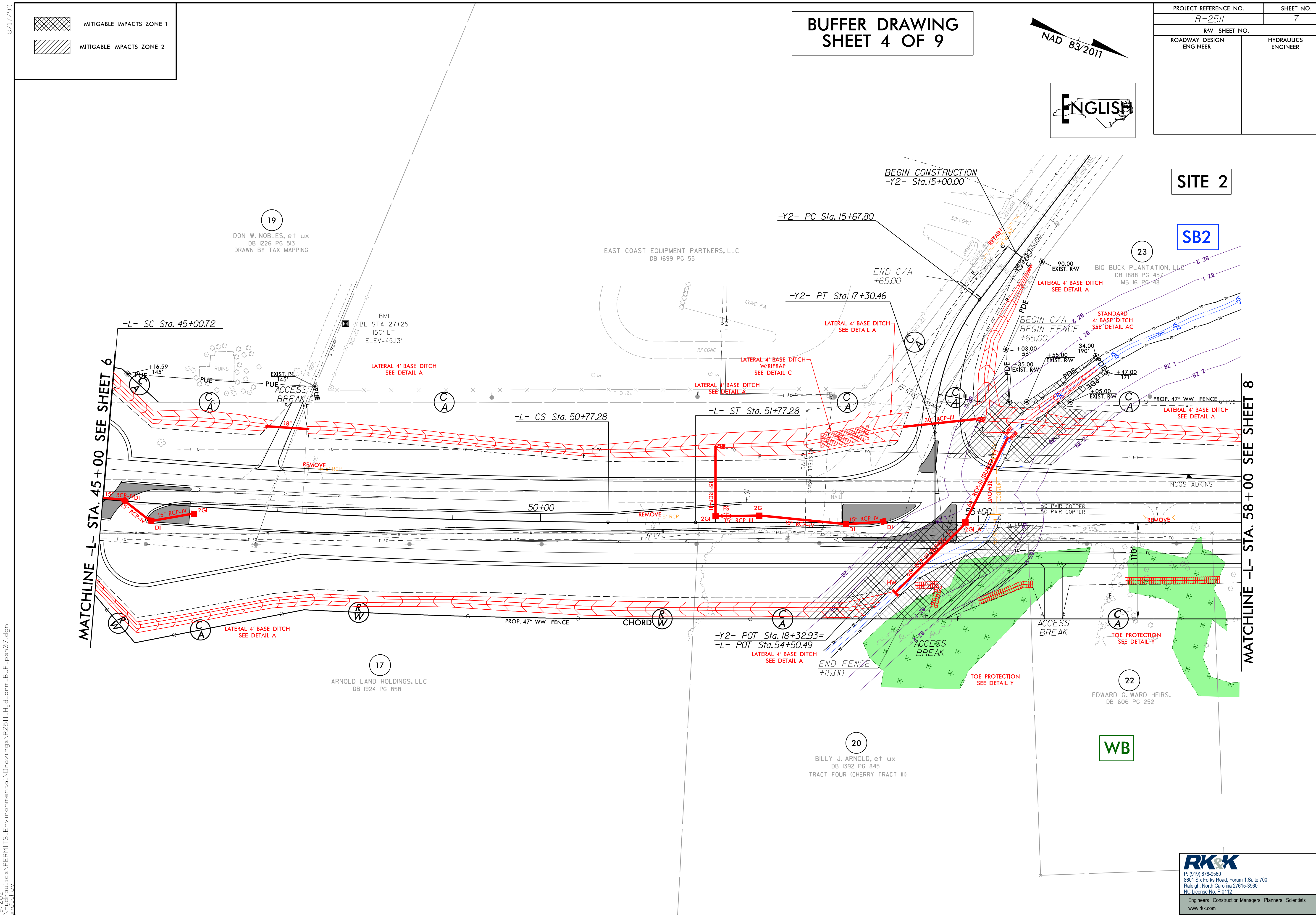
SA

WA

MATCHLINE -L- STA. 19+50 SEE SHEET 5

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Highways\Projects\PERMITS_Environmental\Drawings\R2511_Hyd_prm_BUF_psh04.dgn
ggoudsey



MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
BUFFER DRAWING
SHEET 4 OF 9
NAD 83/2011
PROJECT REFERENCE NO.
R-2511
SHEET NO.
7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
SITE 2
SB2
WB
BEGIN CONSTRUCTION
-Y2- Sta.15+00.00
-Y2- PC Sta. 15+67.80
-Y2- PT Sta. 17+30.46
END C/A
+65.00
BEGIN C/A
BEGIN FENCE
+65.00
-L- SC Sta. 45+00.72
-L- CS Sta. 50+77.28
-L- ST Sta. 51+77.28
-Y2- POT Sta. 18+32.93=
-L- POT Sta.54+50.49
END FENCE
+15.00
50+00
55+00
DON W. NOBLES, et ux
DB 1226 PG 513
DRAWN BY TAX MAPPING
EAST COAST EQUIPMENT PARTNERS, LLC
DB 1699 PG 55
BIG BUCK PLANTATION, LLC
DB 1888 PG 457
MB 16 PG 48
ARNOLD LAND HOLDINGS, LLC
DB 1924 PG 858
BILLY J. ARNOLD, et ux
DB 1392 PG 845
TRACT FOUR (CHERRY TRACT III)
EDWARD G. WARD HEIRS,
DB 606 PG 252
BMI
BL STA 27+25
150' LT
ELEV=45.13'
LATERAL 4' BASE DITCH
SEE DETAIL A
LATERAL 4' BASE DITCH W/RIPRAP
SEE DETAIL C
STANDARD 4' BASE DITCH
SEE DETAIL AC
TOE PROTECTION
SEE DETAIL Y
ACCESS BREAK
PROP. 47" WW FENCE
CHORD
REMOVE
NCGS ADKINS
MATCHLINE -L- STA. 45+00 SEE SHEET 6
MATCHLINE -L- STA. 58+00 SEE SHEET 8
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
6/9/2021

8/17/99

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

PROJECT REFERENCE NO.	SHEET NO.
R-2511	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

SITE 3

BUFFER DRAWING SHEET 5 OF 9

ENGLISH

MATCHLINE -L- STA. 58+00 SEE SHEET 7

MATCHLINE -L- STA. 71+00 SEE SHEET 9

23 BIG BUCK PLANTATION, LLC DB 1888 PG 457

25 EDWARD G. WARD HEIRS, ESTATE FILE 85E PG 164 TRACT TWO

25 EDWARD G. WARD HEIRS, ESTATE FILE 85E PG 164 TRACT TWO

23 BIG BUCK PLANTATION, LLC DB 1888 PG 457

BZ 1

PROP. 47" WW FENCE

LATERAL 4' BASE DITCH SEE DETAIL A

2 TONS CL B RIPRAP W/7 SY GEO FAB

6" PVC

15" RCP-III

15" RCP-IV

18" RCP-III

REMOVE

US 17 28.5' BST

50 PAIR COPPER

2GI

DI

-L- CS Sta. 69+04.76

-L- TS Sta. 64+19.69

-L- SC Sta. 65+39.69

-L- ST Sta. 70+24.76

COIR FIBER MATTING (TYP.)

75 LF OF OUTLET CHANNEL IMPROVEMENTS EST. 45 TONS CLASS I RIP RAP EST. 50 SY GEOTEXTILE

Tie Fence to Wing Wall

Re-Establish to Wing Wall

105 LF OF INLET CHANNEL IMPROVEMENTS EST. 40 TONS CLASS I RIP RAP EST. 70 SY GEOTEXTILE

REMOVE PIPE & CULVERT

BM2
BL STA 42+30
181' RT
ELEV=42.25'

20 BILLY J. ARNOLD, et ux DB 1392 PG 845 TRACT FOUR (CHERRY TRACT III)

24 GEORGE S. BLAND, et al DB 1190 PG 891 DB 706 PG 361(MAP)

26 EDWARD G. WARD, et ux ESTATE FILE 85E PG 164

26 EDWARD G. WARD HEIRS, ESTATE FILE 85E PG 164 TRACT ONE

28 ALTON R. HARRIS, et ux DB 745 PG 200 DB 701PG 412 (MAP)

29 ROBERT J. ALLIGOOD, et ux DB 920 PG 665

SB

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/24/2021
R:\Highways\Projects\PERMITS_Environmental\Drawings\R2511_Hyd_prm_BUF_psh08.dgn
agoolsbey

8/17/99

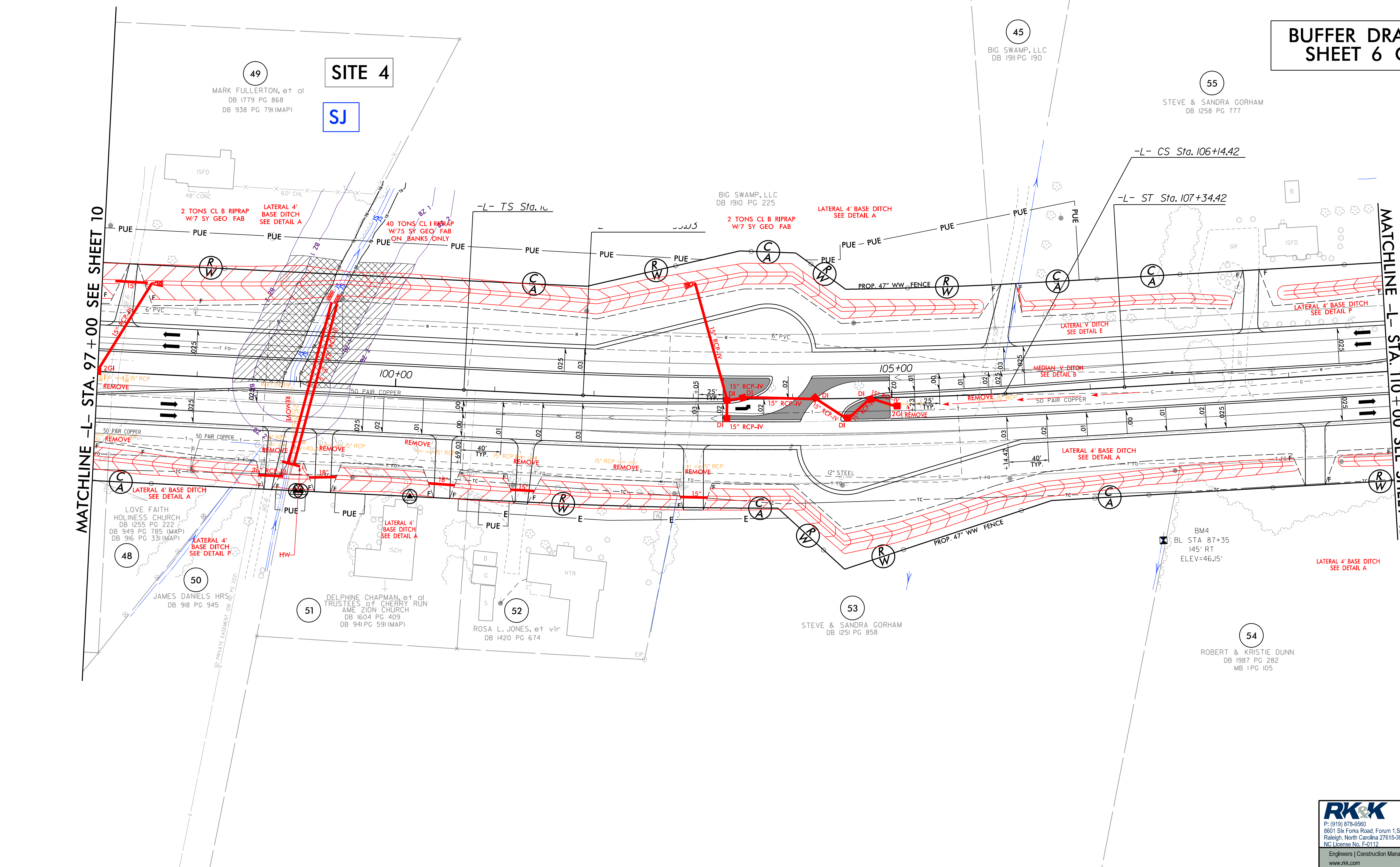
	MITIGABLE IMPACTS ZONE 1
	MITIGABLE IMPACTS ZONE 2

PROJECT REFERENCE NO.	SHEET NO.
R-2511	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

BUFFER DRAWING SHEET 6 OF 9



SITE 4
SJ
49
MARK FULLERTON, et al
DB 1779 PG 868
DB 938 PG 791 (MAP)
45
BIG SWAMP, LLC
DB 1911 PG 190
55
STEVE & SANDRA GORHAM
DB 1258 PG 777
-L- CS Sta. 106+14.42
-L- ST Sta. 107+34.42
BIG SWAMP, LLC
DB 1910 PG 225
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL 4' BASE DITCH SEE DETAIL A
40 TONS CL I RIPRAP W/75 SY GEO FAB ON BANKS ONLY
LATERAL 4' BASE DITCH SEE DETAIL P
LATERAL V DITCH SEE DETAIL E
MEDIAN V DITCH SEE DETAIL B
PROP. 47" WW FENCE
100+00
105+00
50 PAIR COPPER
12" STEEL
MATCHLINE -L- STA. 97+00 SEE SHEET 10
MATCHLINE -L- STA. 110+00 SEE SHEET 12
LOVE FAITH HOLINESS CHURCH
DB 1255 PG 222
DB 949 PG 785 (MAP)
DB 916 PG 331 (MAP)
48
50
JAMES DANIELS HRS
DB 918 PG 945
51
DELPHINE CHAPMAN, et al
TRUSTEES of CHERRY RUN AME ZION CHURCH
DB 1604 PG 409
DB 941 PG 591 (MAP)
52
ROSA L. JONES, et vir
DB 1420 PG 674
53
STEVE & SANDRA GORHAM
DB 1251 PG 858
54
ROBERT & KRISTIE DUNN
DB 1987 PG 282
MB 1 PG 105
BM4
BL STA 87+35
145' RT
ELEV=46.15'
LATERAL 4' BASE DITCH SEE DETAIL A
REMOVE
15" RCP-IV
2GI
DI
HW
PUE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_BUF_psh11.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2511	15

R/W SHEET NO.

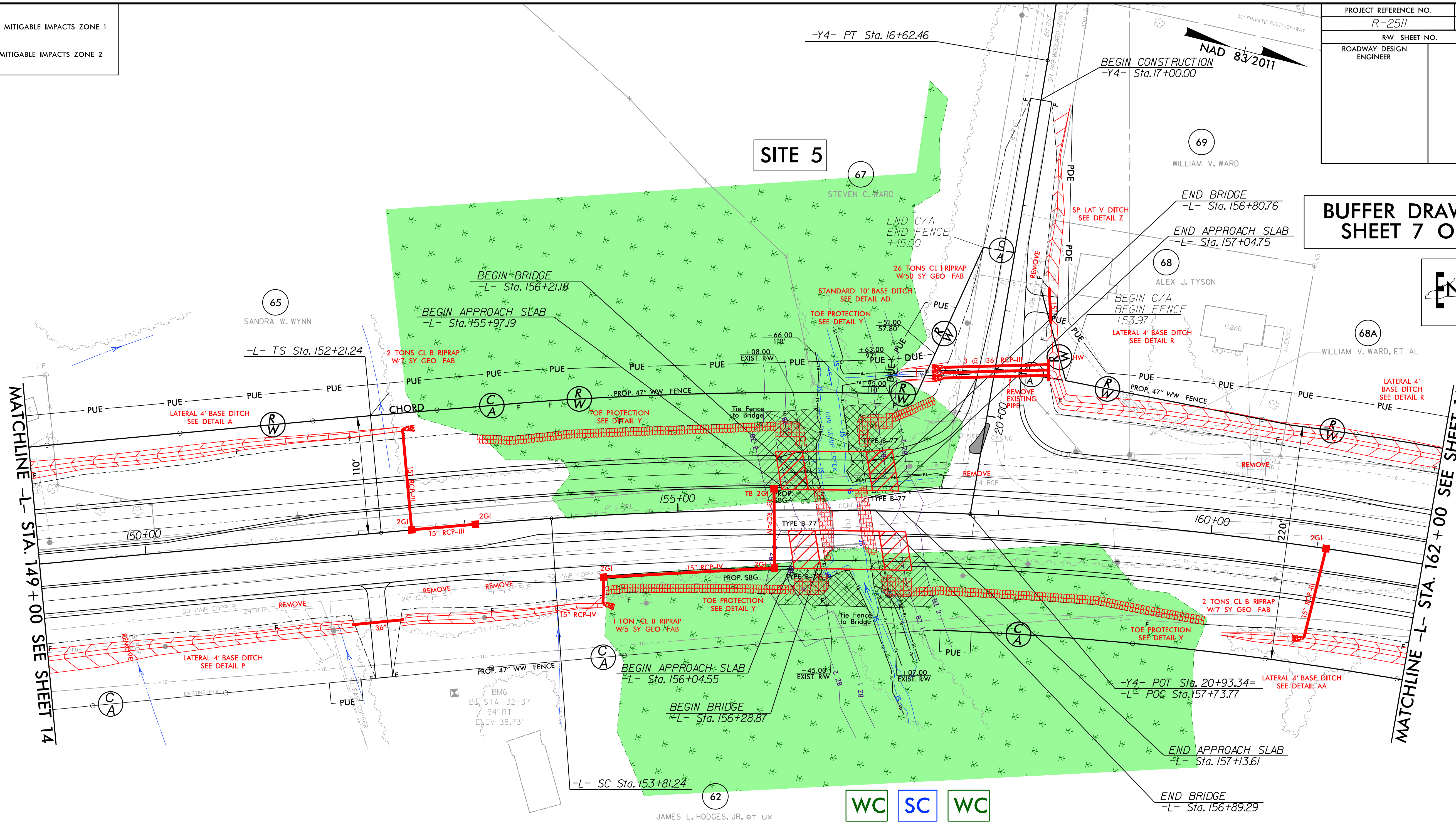
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

BUFFER DRAWING SHEET 7 OF 9



SITE 5
NAD 83/2011
ENGLISH
-Y4- PT Sta. 16+62.46
BEGIN CONSTRUCTION
-Y4- Sta. 17+00.00
END BRIDGE
-L- Sta. 156+80.76
END APPROACH SLAB
-L- Sta. 157+04.75
BEGIN BRIDGE
-L- Sta. 156+21.18
BEGIN APPROACH SLAB
-L- Sta. 155+97.19
-L- TS Sta. 152+21.24
BEGIN APPROACH SLAB
-L- Sta. 156+04.55
BEGIN BRIDGE
-L- Sta. 156+28.87
-L- SC Sta. 153+81.24
-Y4- POT Sta. 20+93.34=
-L- POC Sta. 157+73.77
END APPROACH SLAB
-L- Sta. 157+13.61
END BRIDGE
-L- Sta. 156+89.29
MATCHLINE -L- STA. 149+00 SEE SHEET 14
MATCHLINE -L- STA. 162+00 SEE SHEET 16
STEVEN C. WARD
SANDRA W. WYNN
WILLIAM V. WARD
ALEX J. TYSON
WILLIAM V. WARD, ET AL
JAMES L. HODGES, JR. et ux
END C/A
END FENCE
+45.00
BEGIN C/A
BEGIN FENCE
+53.97
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL 4' BASE DITCH SEE DETAIL R
LATERAL 4' BASE DITCH SEE DETAIL P
LATERAL 4' BASE DITCH SEE DETAIL AA
SP. LAT V DITCH SEE DETAIL Z
26 TONS CL I RIPRAP W/50 SY GEO FAB
STANDARD 10' BASE DITCH SEE DETAIL AD
TOE PROTECTION SEE DETAIL Y
2 TONS CL B RIPRAP W/7 SY GEO FAB
1 TON CL B RIPRAP W/5 SY GEO FAB
PROP. 47" WW FENCE
REMOVE EXISTING PIPE
Tie Fence to Bridge
TYPE B-77
PROP. SBG
CHORD
150+00
155+00
160+00
20+00
BM6
BL STA 132+37
94' RT
ELEV=38.73'
WC
SC
WC

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
6/9/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\R2511_Hyd_prm_BUF_psh15.dgn

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	16+90 to 19+13	Prop. 66" WELDED STEEL	X			5529	4527	10056					
2	52+89 to 55+62	Prop. 60" RCP	X						16327	10878	27205		
3	68+12 to 70+29	Prop. 8'x6' RCBC w/ (2) 48" RCP	X						14972	8618	23590		
4	98+36 to 100+13	Prop. (2) 42" RCP	X						8377	5662	14039		
5	155+70 to 157+45	Prop. Dual 60' Bridges		X					8230	5181	13411		
TOTALS*:						**5529**	**4527**	**10056**	**47906**	**30339**	**78245**	**0**	**0**

NOTES:

Total area, including utility impacts, has been taken into consideration for Allowable vs Mitigable Impacts

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/9/2021
BEAUFORT & MARTIN COUNTIES
R-2511
35494.1.1
SHEET 8 OF 9

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS ZONE 1 (ft^2)	WETLANDS IN BUFFERS ZONE 2 (ft^2)
1	18+85 RT		176	6
2	53+98 to 55+62		2030	2688
5	155+70 to 157+45		8230	5181
TOTAL:			**10436**	**7875**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
6/9/2021
BEAUFORT & MARTIN COUNTIES
R-2511
35494.1.1
SHEET 9 OF 9

Revised 2018 Feb

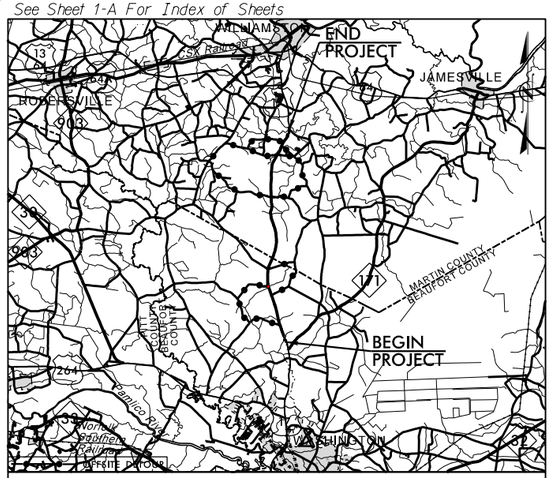
Rev. Jan 2009

09/08/99

TIP PROJECT: R-2511

CONTRACT: C204498

See Sheet 1-A For Index of Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT & MARTIN COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2511	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35494.1.1	N/A	PE
35494.2.1		R/W
35494.3.1		CONST.

LOCATION: US 17 FROM NORTH OF NC 171 TO EXISTING MULTI-LANES SOUTH OF WILLIAMSTON

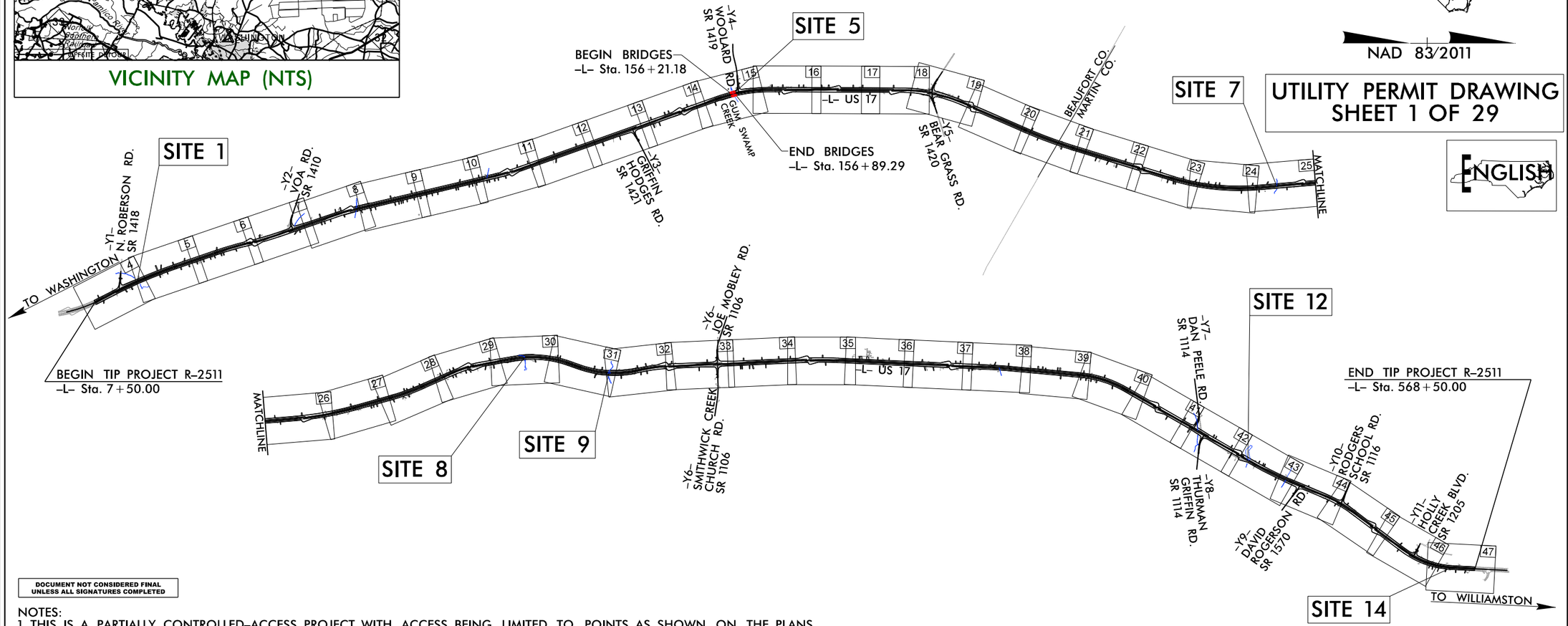
WETLAND AND STREAM IMPACTS

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

NAD 83/2011

UTILITY PERMIT DRAWING
SHEET 1 OF 29

ENGLISH



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:
1. THIS IS A PARTIALLY CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2020 = 9,164
ADT 2040 = 14,284
K = 5%
D = 60%
T = 13% *
V = 60 MPH
* TTST = 8% DUAL 5%
FUNC CLASS = RURAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2511..... 10.612 miles
LENGTH STRUCTURE TIP PROJECT R-2511..... 0.013 miles
TOTAL LENGTH OF TIP PROJECT R-2511..... 10.625 miles

PLANS PREPARED BY:

RK&K

RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 20, 2018

LETTING DATE: DECEMBER 21, 2021

MICHAEL T. MERRITT, P.E.
PROJECT ENGINEER

SCOTT D. BLEVINS, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: JOHN ABEL, JR.
PROJECT ENGINEER - DIVISION 1

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

8/4/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\r2511_Hyd_prm_tsh_utl.dgn
Fkeys

DENOTES HAND CLEARING

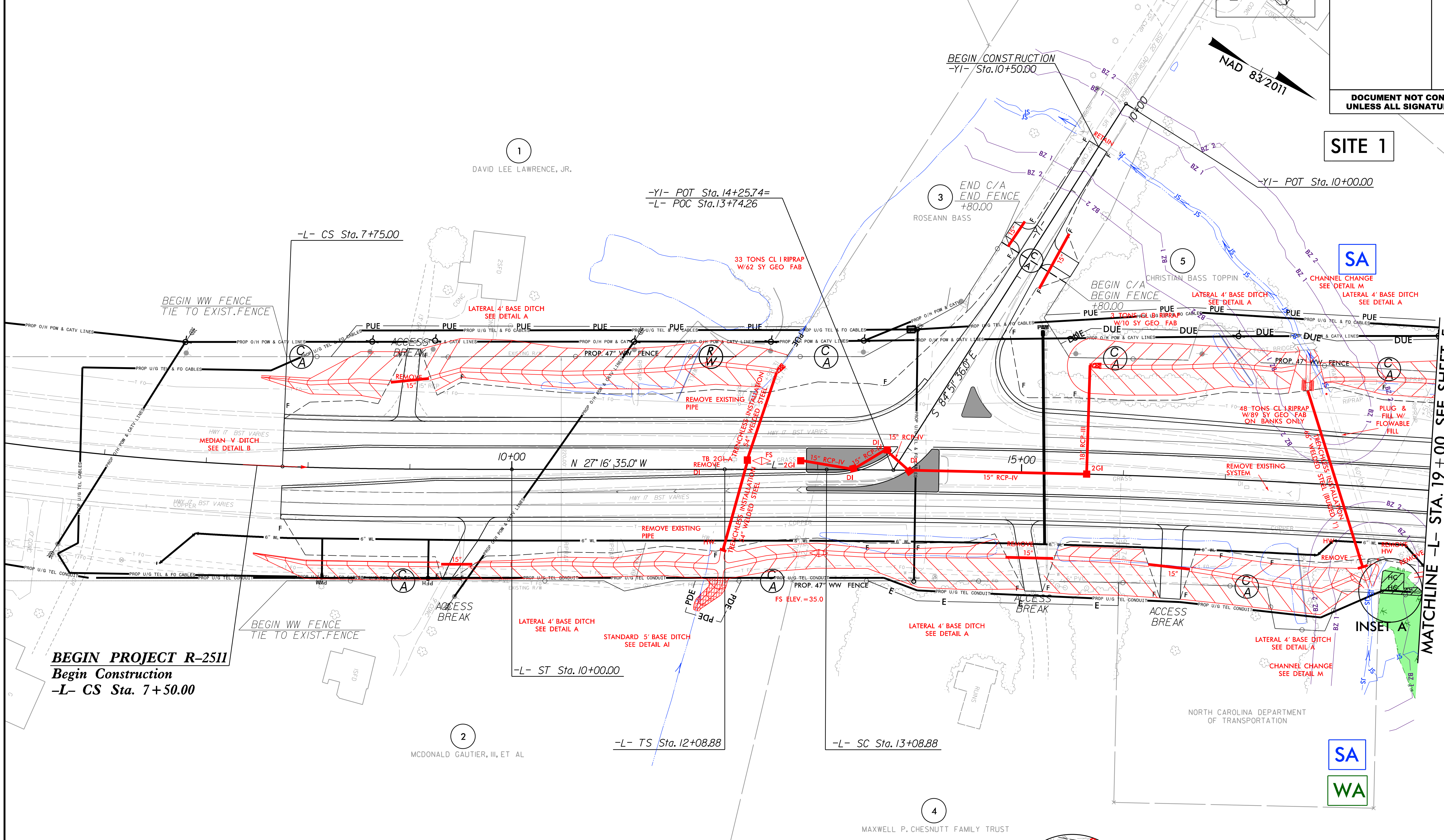
UTILITY PERMIT DRAWING
SHEET 2 OF 29

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

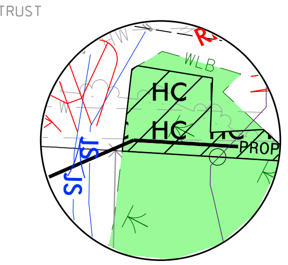
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGLISH

SITE 1



NAD 83/2011
BEGIN CONSTRUCTION
-Y1- Sta.10+50.00
-Y1- POT Sta. 10+00.00
DAVID LEE LAWRENCE, JR.
ROSEANN BASS
CHRISTIAN BASS TOPPIN
MCDONALD GAUTIER, III, ET AL
MAXWELL P. CHESNUTT FAMILY TRUST
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
-Y1- POT Sta. 14+25.74=
-L- POC Sta.13+74.26
-L- CS Sta. 7+75.00
END C/A
END FENCE
+80.00
BEGIN C/A
BEGIN FENCE
+80.00
BEGIN WW FENCE
TIE TO EXIST.FENCE
33 TONS CL I RIPRAP
W/62 SY GEO FAB
LATERAL 4' BASE DITCH
SEE DETAIL A
MEDIAN V DITCH
SEE DETAIL B
REMOVE EXISTING PIPE
TRENCHLESS INSTALLATION 54" WELDED STEEL
N 27° 16' 35.0" W
S 84° 51' 36.0" E
10+00
15+00
3 TONS CL B RIPRAP
W/10 SY GEO FAB
48 TONS CL I RIPRAP
W/89 SY GEO FAB
ON BANKS ONLY
CHANNEL CHANGE
SEE DETAIL M
PLUG & FILL W/ FLOWABLE FILL
REMOVE EXISTING SYSTEM
PROP. 47" WW FENCE
ACCESS BREAK
STANDARD 5' BASE DITCH
SEE DETAIL A1
FS ELEV.=35.0
BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00
-L- ST Sta. 10+00.00
-L- TS Sta. 12+08.88
-L- SC Sta. 13+08.88
MATCHLINE -L- STA. 19+00 SEE SHEET 5
SA
WA
INSET A



INSET A

25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh04_utl.dgn

8/17/99

DENOTES HAND CLEARING

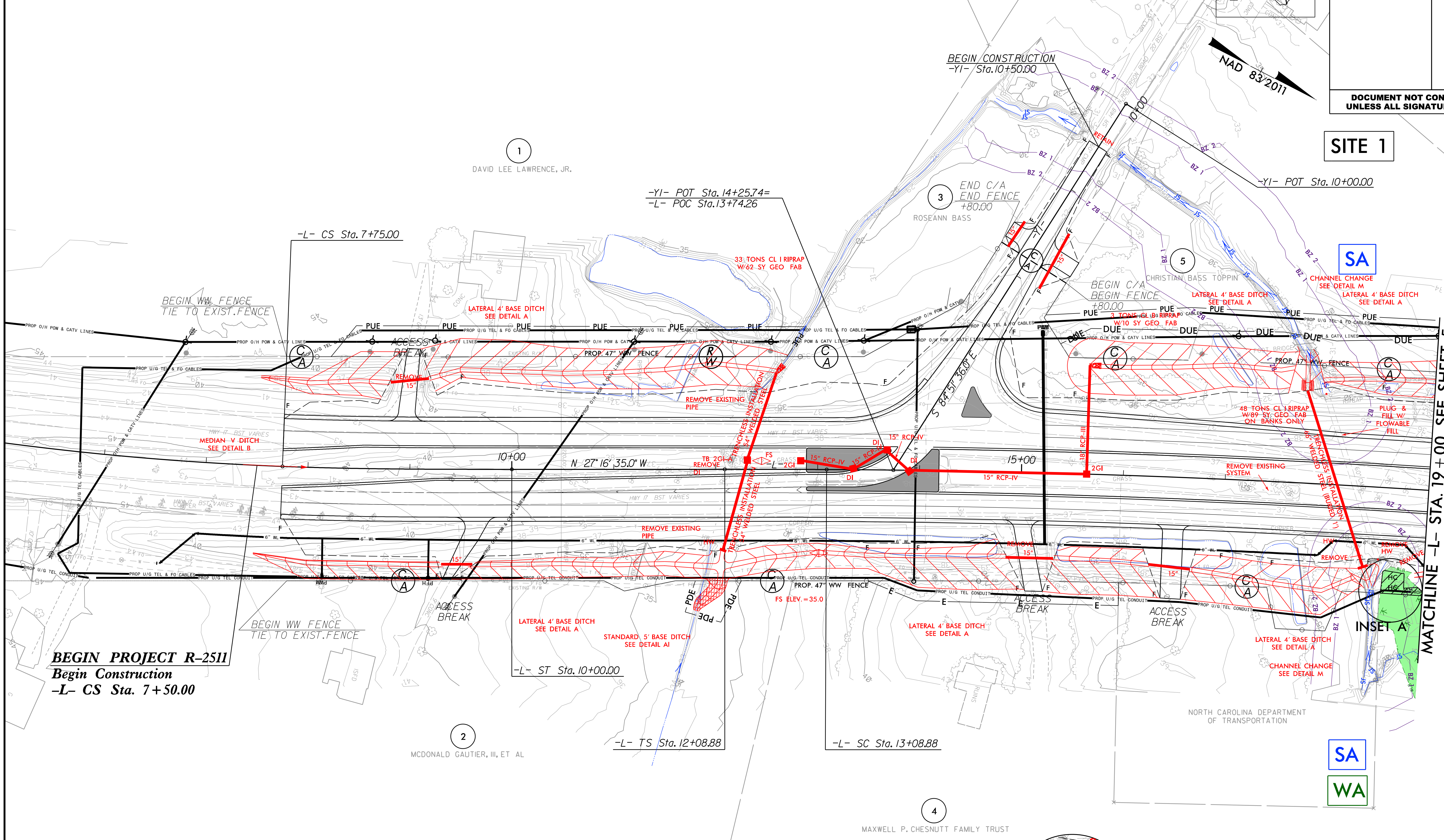
UTILITY PERMIT DRAWING
SHEET 3 OF 29

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

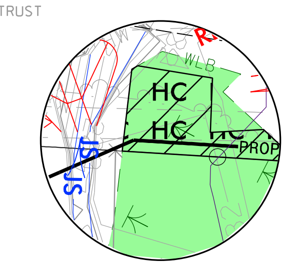
ENGLISH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SITE 1



NAD 83/2011
BEGIN CONSTRUCTION
-Y1- Sta.10+50.00
-Y1- POT Sta. 10+00.00
-Y1- POT Sta. 14+25.74=
-L- POC Sta.13+74.26
END C/A
END FENCE
+80.00
BEGIN C/A
BEGIN FENCE
+80.00
-L- CS Sta. 7+75.00
BEGIN WW FENCE
TIE TO EXIST.FENCE
1
DAVID LEE LAWRENCE, JR.
3
ROSEANN BASS
5
CHRISTIAN BASS TOPPIN
33 TONS CL I RIPRAP
W/ 62 SY GEO FAB
LATERAL 4' BASE DITCH
SEE DETAIL A
3 TONS CL B RIPRAP
W/10 SY GEO FAB
48 TONS CL I RIPRAP
W/89 SY GEO FAB
ON BANKS ONLY
PLUG & FILL W/ FLOWABLE FILL
CHANNEL CHANGE
SEE DETAIL M
PROP. 47" WW FENCE
REMOVE EXISTING PIPE
MEDIAN V DITCH
SEE DETAIL B
N 27° 16' 35.0" W
10+00
15+00
S 84° 51' 36.0" E
15" RCP-IV
18" RCP-III
REMOVE EXISTING SYSTEM
TRENCHLESS INSTALLATION 24" WELDED STEEL
ACCESS BREAK
FS ELEV. = 35.0
STANDARD 5' BASE DITCH
SEE DETAIL AI
BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00
-L- ST Sta. 10+00.00
-L- TS Sta. 12+08.88
-L- SC Sta. 13+08.88
2
MCDONALD GAUTIER, III, ET AL
4
MAXWELL P. CHESNUTT FAMILY TRUST
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
INSET A
MATCHLINE -L- STA. 19+00 SEE SHEET 5
SA
WA



INSET A

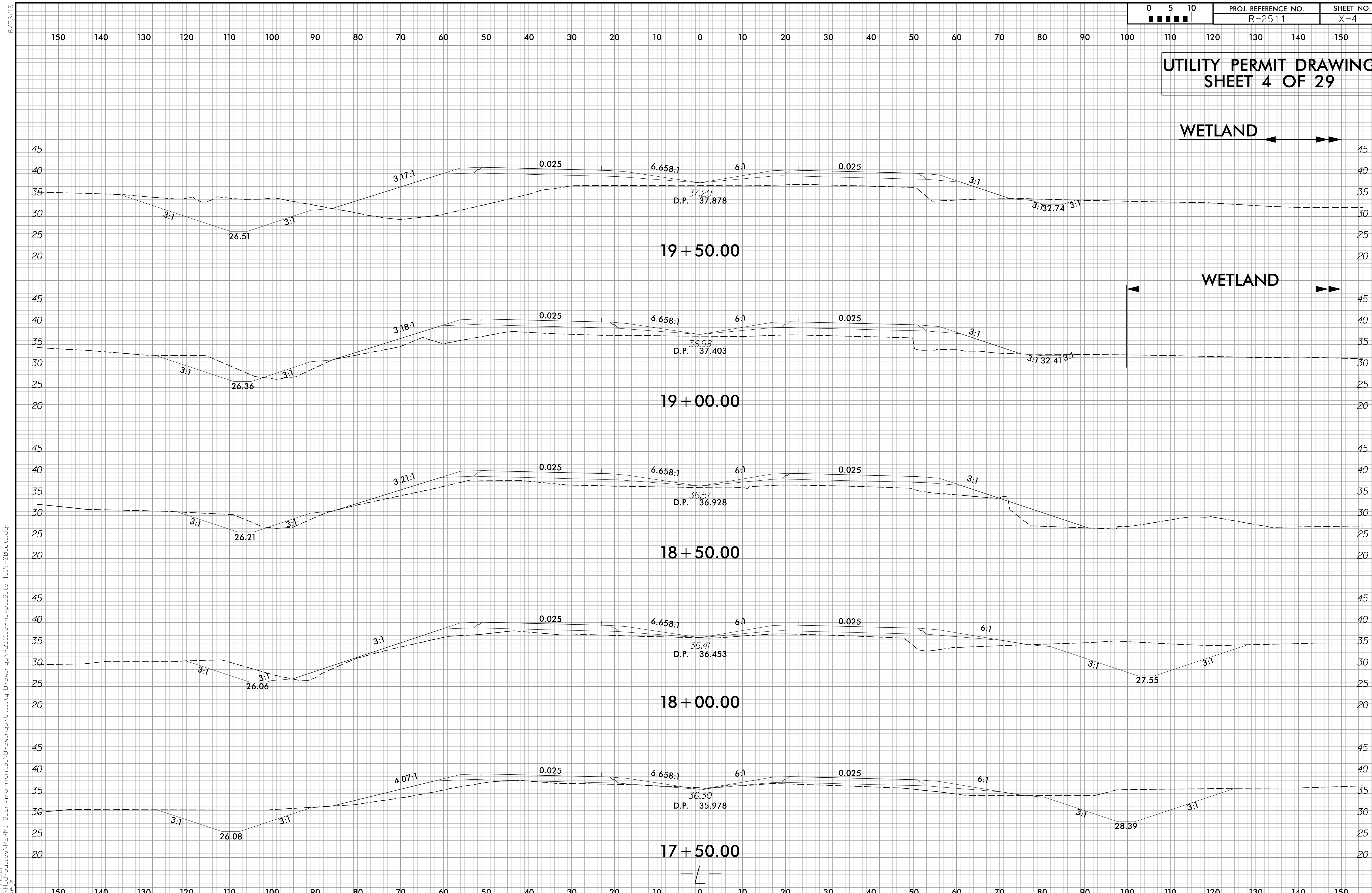
25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh04_utl_con.dgn

PROJ. REFERENCE NO.	SHEET NO.
R-2511	X-4

UTILITY PERMIT DRAWING
SHEET 4 OF 29



6/23/16

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_prm_xpl_Site 1_19+00_utl.dgn
Keys

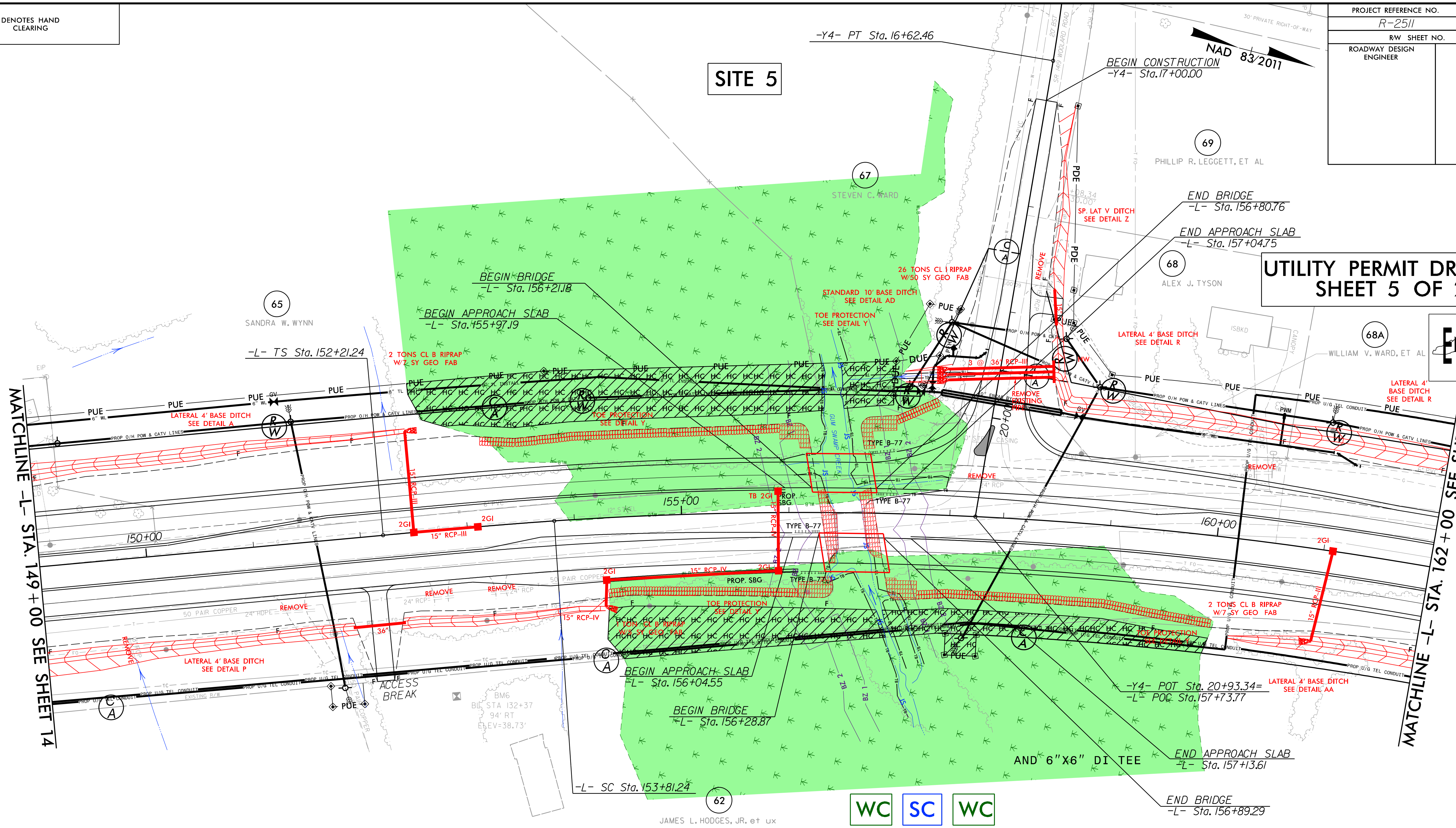
DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 5

UTILITY PERMIT DRAWING SHEET 5 OF 29

ENGLISH



NAD 83/2011
-Y4- PT Sta. 16+62.46
BEGIN CONSTRUCTION -Y4- Sta. 17+00.00
END BRIDGE -L- Sta. 156+80.76
END APPROACH SLAB -L- Sta. 157+04.75
BEGIN BRIDGE -L- Sta. 156+21.18
BEGIN APPROACH SLAB -L- Sta. 155+97.19
-L- TS Sta. 152+21.24
BEGIN APPROACH SLAB -L- Sta. 156+04.55
BEGIN BRIDGE -L- Sta. 156+28.87
-Y4- POT Sta. 20+93.34= -L- POC Sta. 157+73.77
END APPROACH SLAB -L- Sta. 157+13.61
END BRIDGE -L- Sta. 156+89.29
-L- SC Sta. 153+81.24
AND 6"X6" DI TEE
MATCHLINE -L- STA. 149+00 SEE SHEET 14
MATCHLINE -L- STA. 162+00 SEE SHEET 16
65 SANDRA W. WYNN
67 STEVEN C. WARD
69 PHILLIP R. LEGGETT, ET AL
68 ALEX J. TYSON
68A WILLIAM V. WARD, ET AL
62 JAMES L. HODGES, JR. et ux
150+00
155+00
160+00
ACCESS BREAK
LATERAL 4' BASE DITCH SEE DETAIL A
LATERAL 4' BASE DITCH SEE DETAIL P
LATERAL 4' BASE DITCH SEE DETAIL R
LATERAL 4' BASE DITCH SEE DETAIL AA
2 TONS CL B RIPRAP W/7 SY GEO FAB
26 TONS CL I RIPRAP W/50 SY GEO FAB
STANDARD 10' BASE DITCH SEE DETAIL AD
TOE PROTECTION SEE DETAIL Y
SP. LAT V DITCH SEE DETAIL Z
REMOVE
TYPE B-77
PROP. SBG
15" RCP-III
15" RCP-IV
WC
SC
WC

25 0 25 50

SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

8/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh15_utl.dgn

8/17/99

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

SITE 5

UTILITY PERMIT DRAWING
SHEET 6 OF 29

ENGLISH

-Y4- PT Sta. 16+62.46

BEGIN CONSTRUCTION
-Y4- Sta.17+00.00

END BRIDGE
-L- Sta. 156+80.76

END APPROACH SLAB
-L- Sta. 157+04.75

BEGIN BRIDGE
-L- Sta. 156+21.18

BEGIN APPROACH SLAB
-L- Sta.155+97.19

-L- TS Sta. 152+21.24

-L- SC Sta.153+81.24

BEGIN APPROACH SLAB
-L- Sta. 156+04.55

BEGIN BRIDGE
-L- Sta. 156+28.87

-Y4- POT Sta. 20+93.34=
-L- POC Sta.157+73.77

END APPROACH SLAB
-L- Sta. 157+13.61

END BRIDGE
-L- Sta. 156+89.29

65 SANDRA W. WYNN

67 STEVEN C. WARD

68 ALEX J. TYSON

69 PHILLIP R. LEGGETT, ET AL

68A WILLIAM V. WARD, ET AL

62 JAMES L. HODGES, JR. et ux

MATCHLINE -L- STA. 149+00 SEE SHEET 14

MATCHLINE -L- STA. 162+00 SEE SHEET 16

26 TONS CL I RIPRAP W/50 SY GEO FAB

2 TONS CL B RIPRAP W/2 SY GEO FAB

STANDARD 10' BASE DITCH SEE DETAIL AD

SP. LAT V DITCH SEE DETAIL Z

TOE PROTECTION SEE DETAIL Y

LATERAL 4' BASE DITCH SEE DETAIL A

LATERAL 4' BASE DITCH SEE DETAIL P

LATERAL 4' BASE DITCH SEE DETAIL R

LATERAL 4' BASE DITCH SEE DETAIL AA

REMOVE EXISTING STRUCTURE

REMOVE

ACCESS BREAK

BM6
BL STA 132+37
94' RT
ELEV=38.73'

WC SC WC

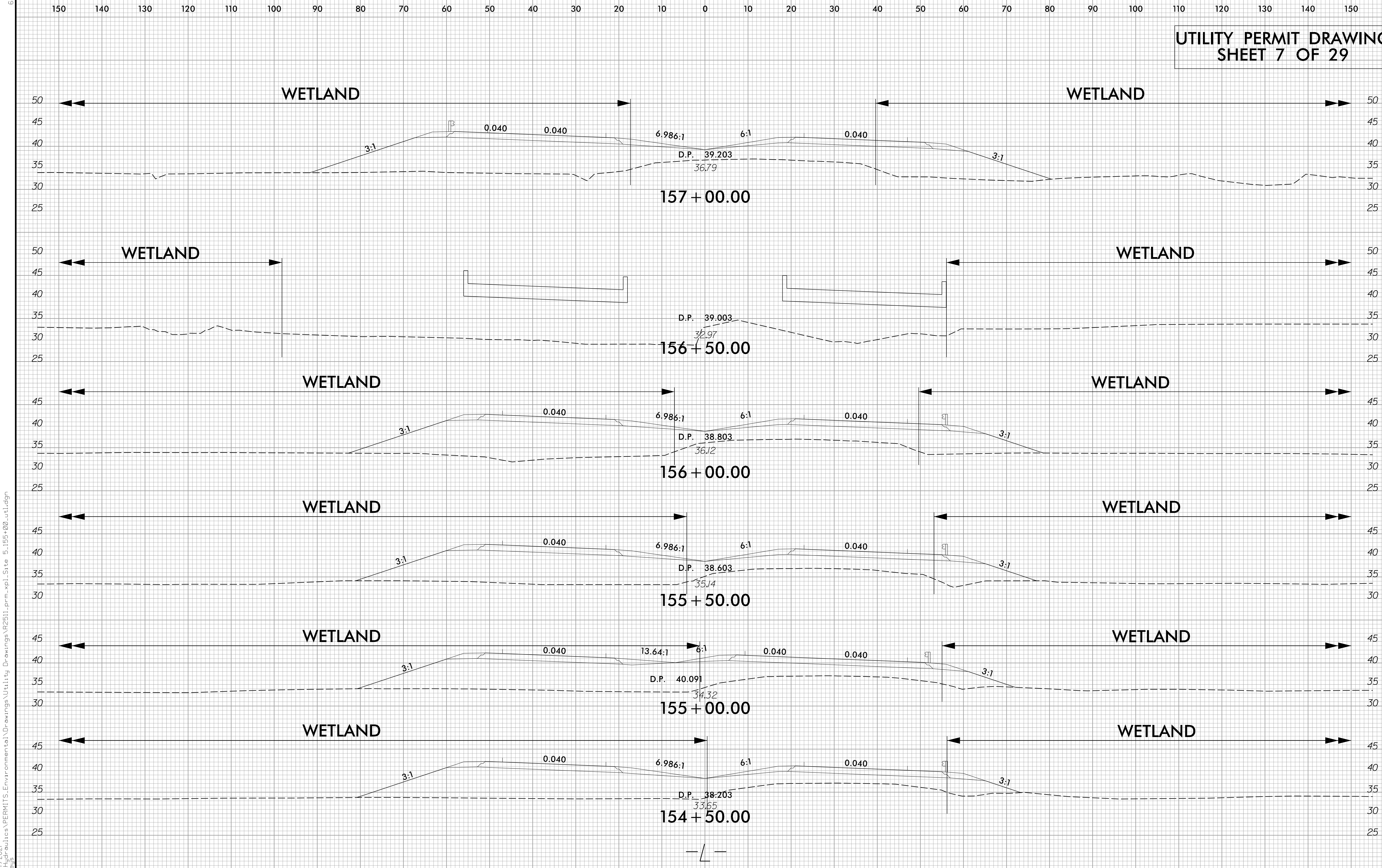
25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/3/2021
K:\Highways\Projects\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh15_utl_con.dgn

PROJ. REFERENCE NO.	SHEET NO.
R-2511	X-49

UTILITY PERMIT DRAWING
SHEET 7 OF 29

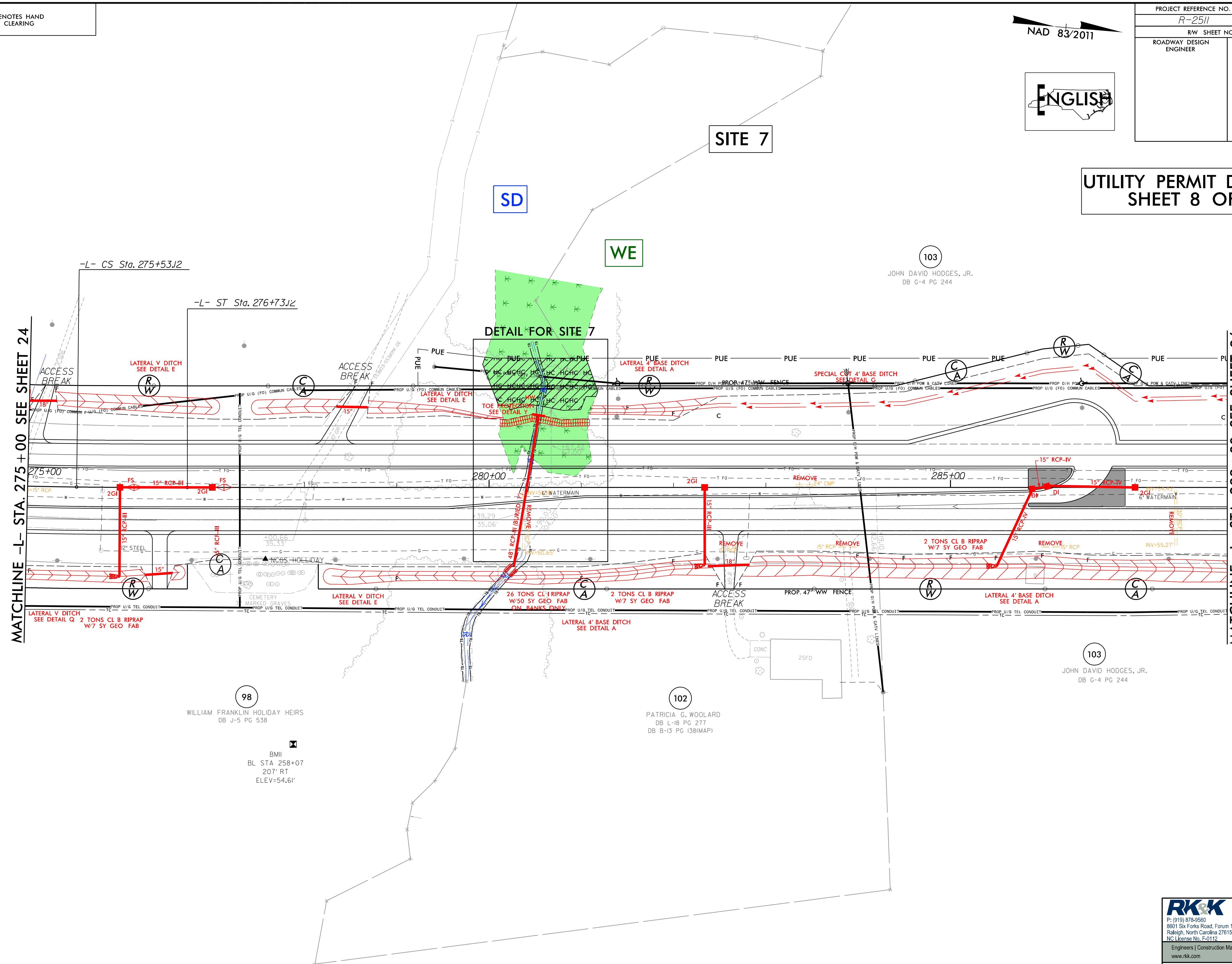


6/23/16

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_prm_xpl_Site 5_155+00_util.dgn
Fkeys

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING
SHEET 8 OF 29



DENOTES HAND CLEARING
NAD 83/2011
ENGLISH
SITE 7
SD
WE
DETAIL FOR SITE 7
-L- CS Sta. 275+53.12
-L- ST Sta. 276+73.12
MATCHLINE -L- STA. 275+00 SEE SHEET 24
MATCHLINE -L- STA. 288+00 SEE SHEET 26
275+00
280+00
285+00
ACCESS BREAK
LATERAL V DITCH SEE DETAIL E
LATERAL V DITCH SEE DETAIL Q
2 TONS CL B RIPRAP W/7 SY GEO FAB
TOE PROTECTION SEE DETAIL Y
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
LATERAL 4' BASE DITCH SEE DETAIL A
SPECIAL CUT 4' BASE DITCH SEE DETAIL G
PROP. 47" WW FENCE
REMOVE
15" RCP-IV
15" RCP-III
48" RCP-III (BURIED 1')
NCGS HOLLIDAY
CEMETERY MARKED GRAVES
103
JOHN DAVID HODGES, JR.
DB G-4 PG 244
98
WILLIAM FRANKLIN HOLIDAY HEIRS
DB J-5 PG 538
102
PATRICIA G. WOOLARD
DB L-18 PG 277
DB B-13 PG 138(MAP)
BMII
BL STA 258+07
207' RT
ELEV=54.61'

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

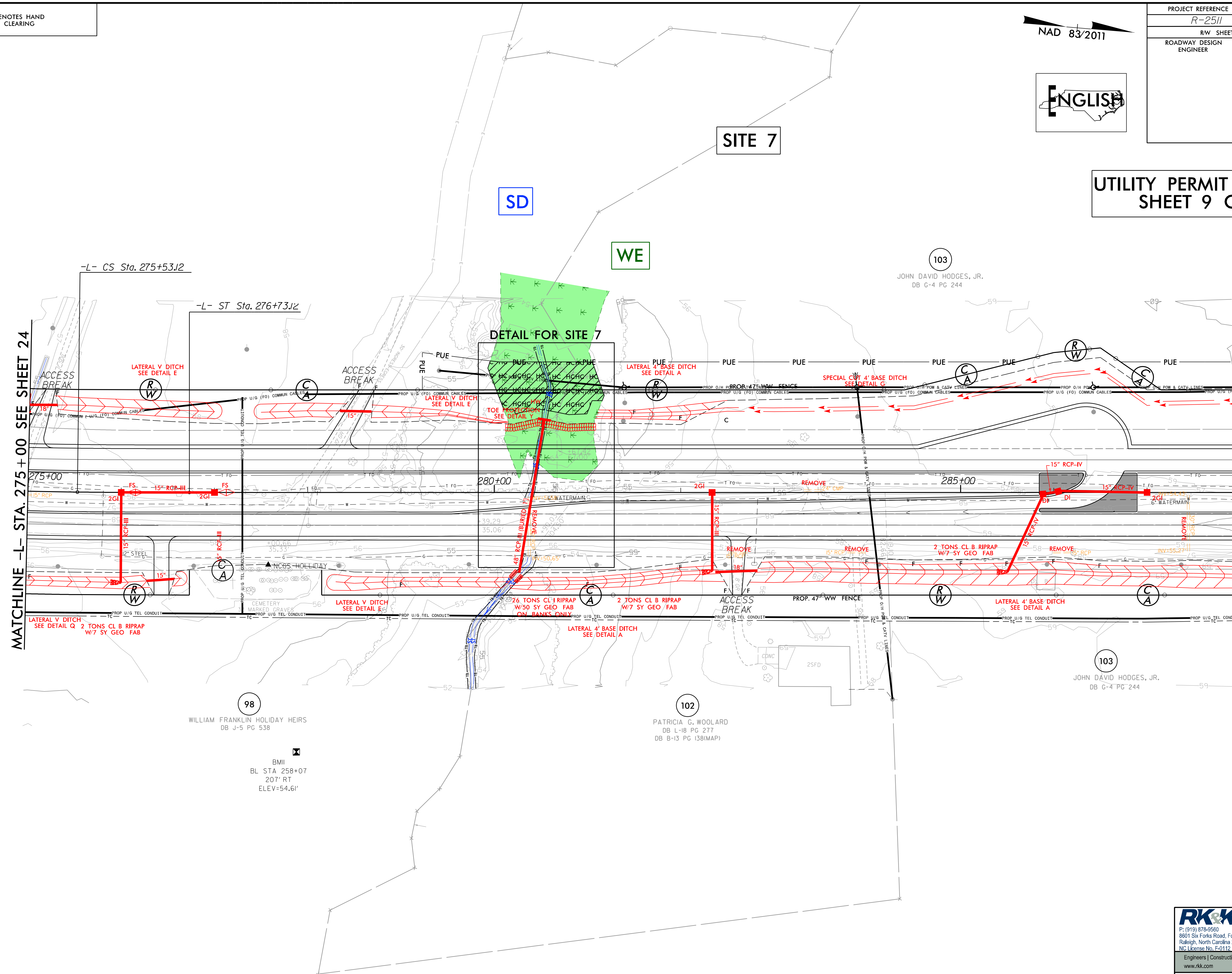
8/17/99
6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh25_utl.dgn

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

UTILITY PERMIT DRAWING
SHEET 9 OF 29



NAD 83/2011
SITE 7
SD
WE
DETAIL FOR SITE 7
-L- CS Sta. 275+53.12
-L- ST Sta. 276+73.12
MATCHLINE -L- STA. 275+00 SEE SHEET 24
MATCHLINE -L- STA. 288+00 SEE SHEET 26
275+00
280+00
285+00
ACCESS BREAK
LATERAL V DITCH SEE DETAIL E
LATERAL V DITCH SEE DETAIL Q
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL 4' BASE DITCH SEE DETAIL A
SPECIAL CUT 4' BASE DITCH SEE DETAIL G
TOE PROTECTION SEE DETAIL Y
26 TONS CL I RIPRAP W/50 SY GEO FAB ON BANKS ONLY
PROP. 47" WW FENCE
PUE
REMOVE
15" RCP-III
15" RCP-IV
48" RCP-III (BURIED 1')
NCGS HOLLIDAY
CEMETERY MARKED GRAVES
103
JOHN DAVID HODGES, JR.
DB G-4 PG 244
98
WILLIAM FRANKLIN HOLIDAY HEIRS
DB J-5 PG 538
102
PATRICIA G. WOOLARD
DB L-18 PG 277
DB B-13 PG 138(MAP)
BMII
BL STA 258+07
207' RT
ELEV=54.61'

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh25_utl_con.dgn

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

HC HC DENOTES HAND CLEARING

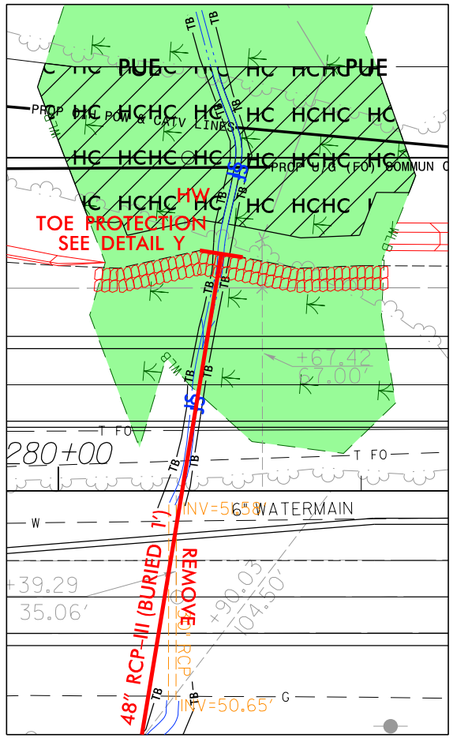
NAD 83/2011

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING
SHEET 10 OF 29

DETAIL FOR SITE 7



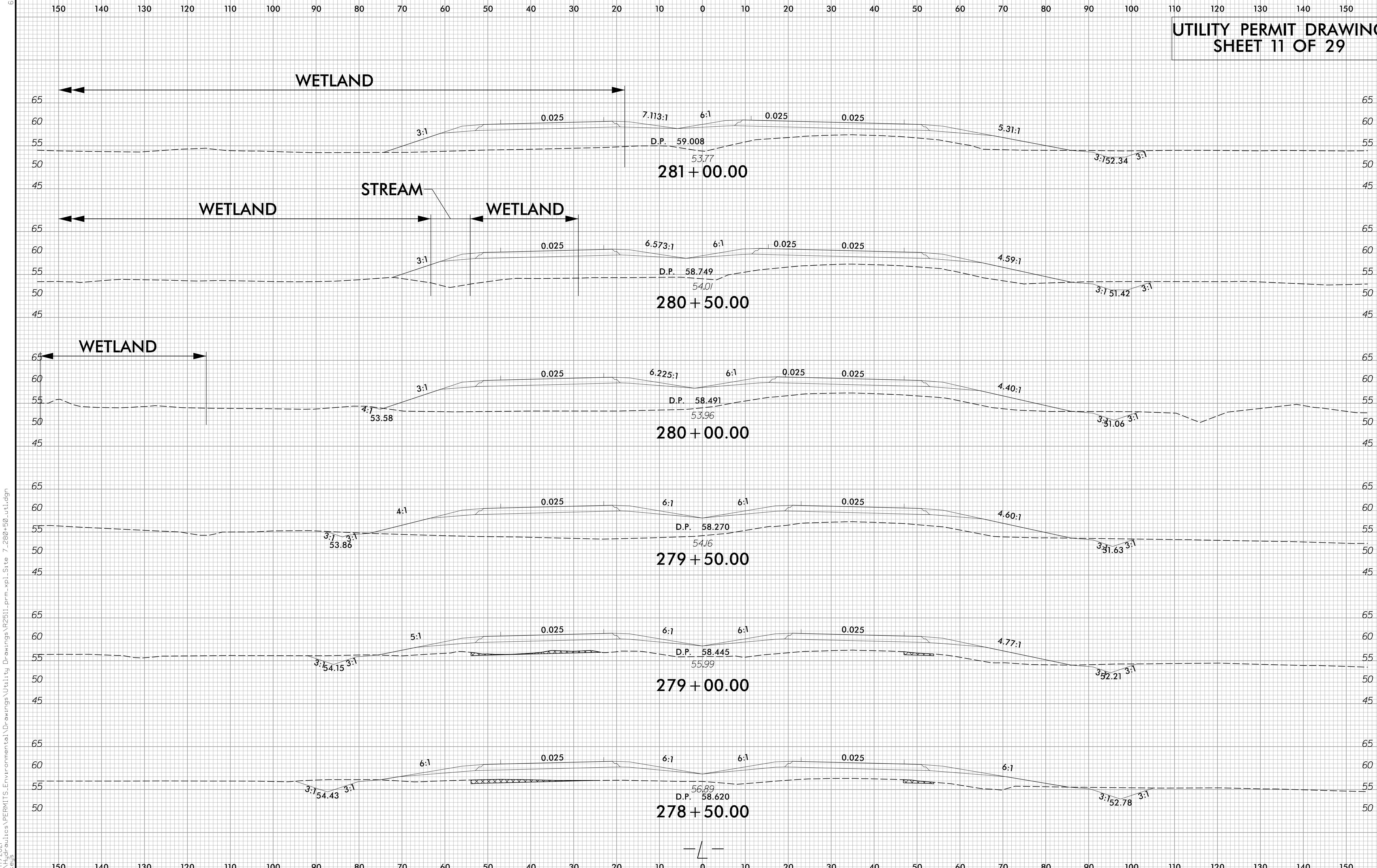
25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh25_Detail_utl.dgn
Ekeu

PROJ. REFERENCE NO.	SHEET NO.
R-2511	X-89

UTILITY PERMIT DRAWING
SHEET 11 OF 29



HC HC DENOTES HAND CLEARING

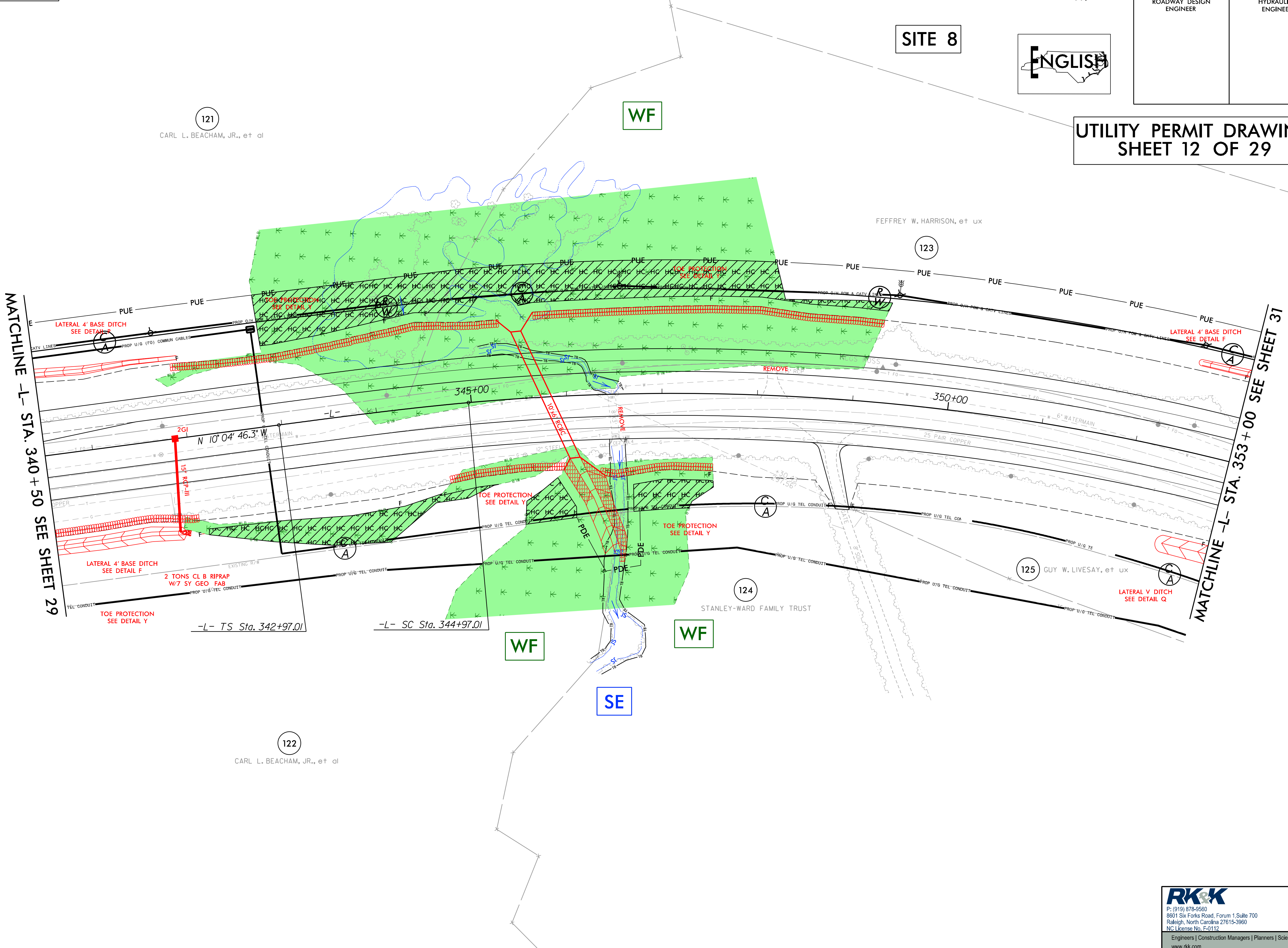
PROJECT REFERENCE NO.	SHEET NO.
R-2511	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

SITE 8

ENGLISH

UTILITY PERMIT DRAWING SHEET 12 OF 29



MATCHLINE -L- STA. 340+50 SEE SHEET 29
MATCHLINE -L- STA. 353+00 SEE SHEET 31
121
CARL L. BEACHAM, JR., et al
122
CARL L. BEACHAM, JR., et al
123
FEFFREY W. HARRISON, et ux
124
STANLEY-WARD FAMILY TRUST
125
GUY W. LIVESAY, et ux
WF
WF
WF
SE
PUE
345+00
350+00
-L-
N 10° 04' 46.3" W
2GI
15" RCP-III
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL V DITCH SEE DETAIL Q
TOE PROTECTION SEE DETAIL Y
2 TONS CL B RIPRAP W/7 SY GEO FAB
REMOVE
PDE
-L- TS Sta. 342+97.01
-L- SC Sta. 344+97.01
6" WATERMAIN
25 PAIR COPPER
PROP U/G TEL CONDUIT

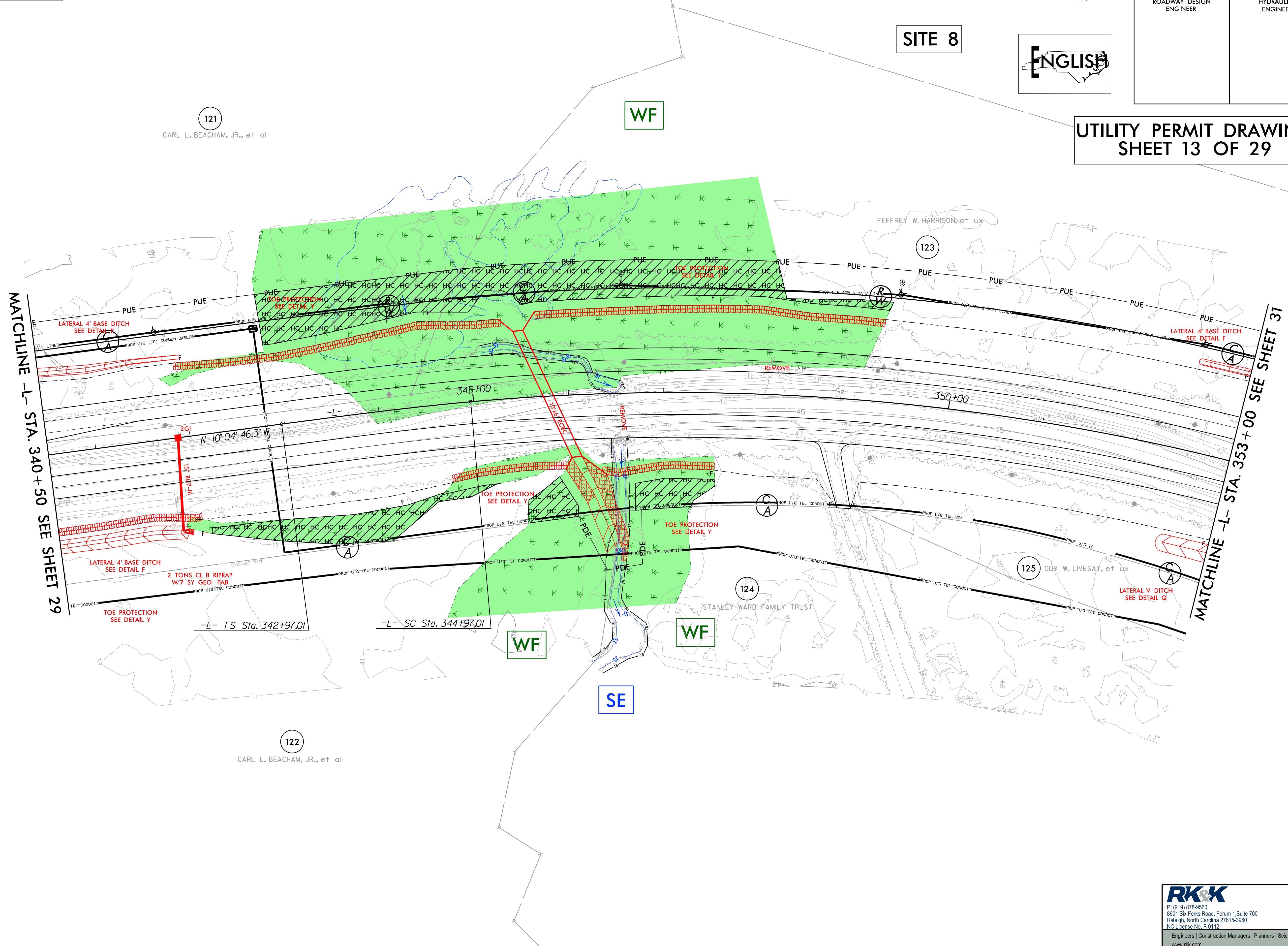
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh30_utl.dgn

DENOTES HAND CLEARING (HC)

PROJECT REFERENCE NO.	SHEET NO.
R-2511	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING
SHEET 13 OF 29



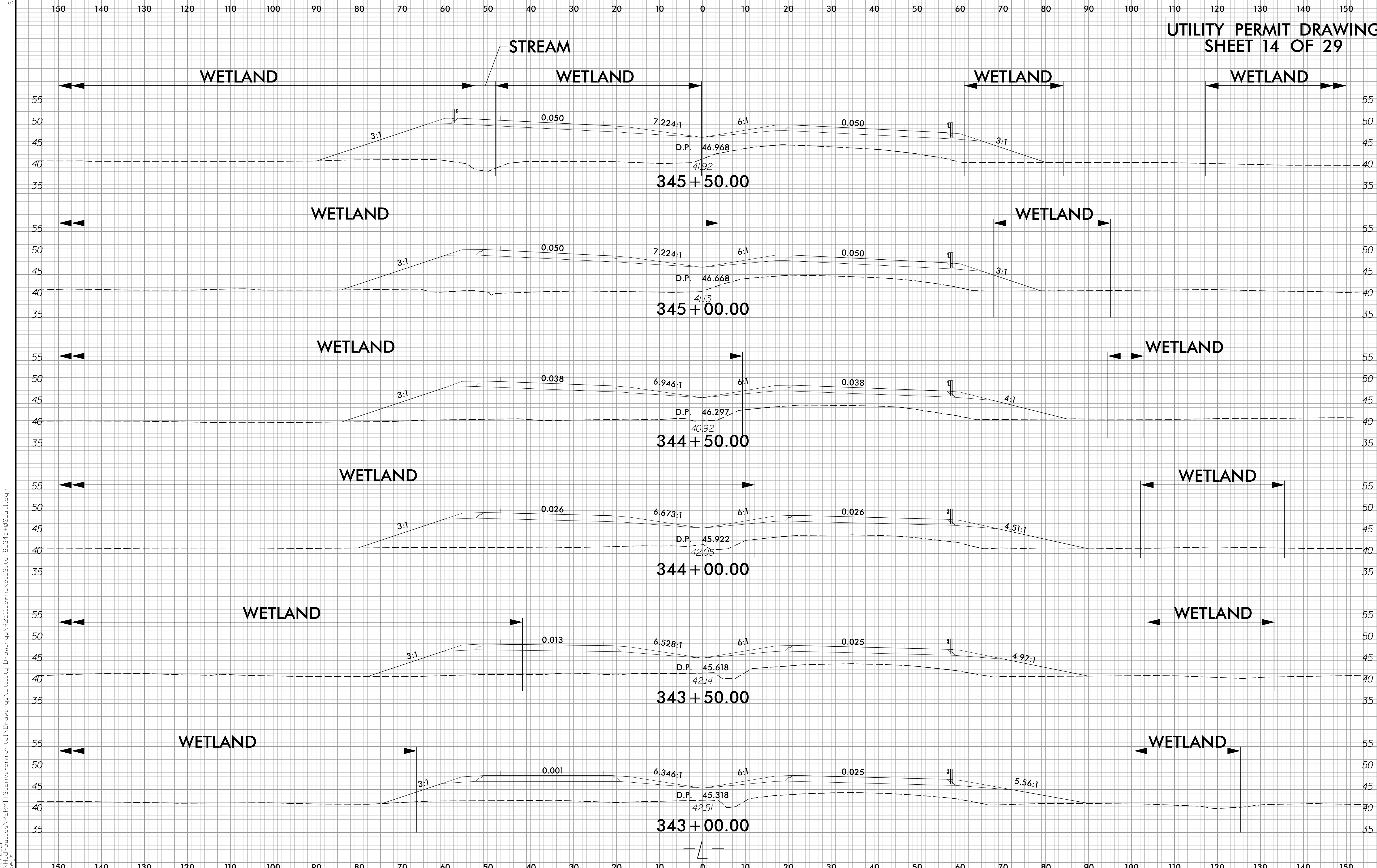
NAD 83/2011
SITE 8
ENGLISH
WF
WF
WF
SE
121
CARL L. BEACHAM, JR., et al
122
CARL L. BEACHAM, JR., et al
123
FEFFREY W. HARRISON, et ux
124
STANLEY-WARD FAMILY TRUST
125
GUY W. LIVESAY, et ux
MATCHLINE -L- STA. 340+50 SEE SHEET 29
MATCHLINE -L- STA. 353+00 SEE SHEET 31
345+00
350+00
N 10° 04' 46.3" W
-L- TS Sta. 342+97.01
-L- SC Sta. 344+97.01
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL V DITCH SEE DETAIL Q
TOE PROTECTION SEE DETAIL Y
TOE PROTECTION SEE DETAIL Y
TOE PROTECTION SEE DETAIL Y
TOE PROTECTION SEE DETAIL Y
TOE PROTECTION SEE DETAIL Y
2 TONS CL B RIPRAP W/7 SY GEO FAB
2GI
15" RCP-III
REMOVE
REMOVE
PUE
PDE
PDE
PDE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh30_utl_con.dgn

PROJ. REFERENCE NO.	SHEET NO.
R-2511	X-110

UTILITY PERMIT DRAWING
SHEET 14 OF 29



8/17/99

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

SITE 9

UTILITY PERMIT DRAWING
SHEET 15 OF 29

DETAIL FOR SITE 9

WG

123 JEFFREY W. HARRISON, et ux DB Y-23 PG 652

126 VICKIE PRICE EVANS DB P-12 PG 675

127 ROBERT T. TAYLOR DB K-11PG 150 PC "C" PG 16-C

129 LARRY D. WATSON, et ux DB X-16 PG 301 PC "C" SLIDE 16-C (LOT 7)

PC "C" SLIDE 137-B

MATCHLINE -L- STA. 353+00 SEE SHEET 30

MATCHLINE -L- STA. 366+00 SEE SHEET 32

-L- SC Sta. 359+50.32

-L- CS Sta. 355+50.32

-L- SRS Sta. 357+50.32

LATERAL 4' BASE DITCH SEE DETAIL F

DRAIN & BACKFILL EXISTING POND TO ELEVATION 41.0'

POND

DAM

ACCESS BREAK

PROP O/H POW & CATV LINES

PROP U/G TEL CONDUIT

PUE

355+00

360+00

365+00

6" WATERMAIN

25 PAIR COPPER

12" STEEL

15" RCP III

18" RCP III

24" RCP III

48" WD

60" WD

2 TONS CL B RIPRAP W/7 SY GEO FAB

26 TONS CL I RIPRAP W/50 SY GEO FAB

LATERAL V DITCH SEE DETAIL Q

LATERAL 4' BASE DITCH SEE DETAIL R

HDE PROJECTION SEE DETAIL Y

REMOVE

BMI4 BL STA 344+91 133' RT ELEV=42.80'

124 STANLEY-WARD FAMILY TRUST UNKNOWN DEED BOOK

125 GUY W. LIVESAY, et ux DB Y-12 PG 945

128 DONNA PRICE GRAY ACQUIRED BY WILL DB B-12 PG 34 DRAWN BY TAX MAPPING

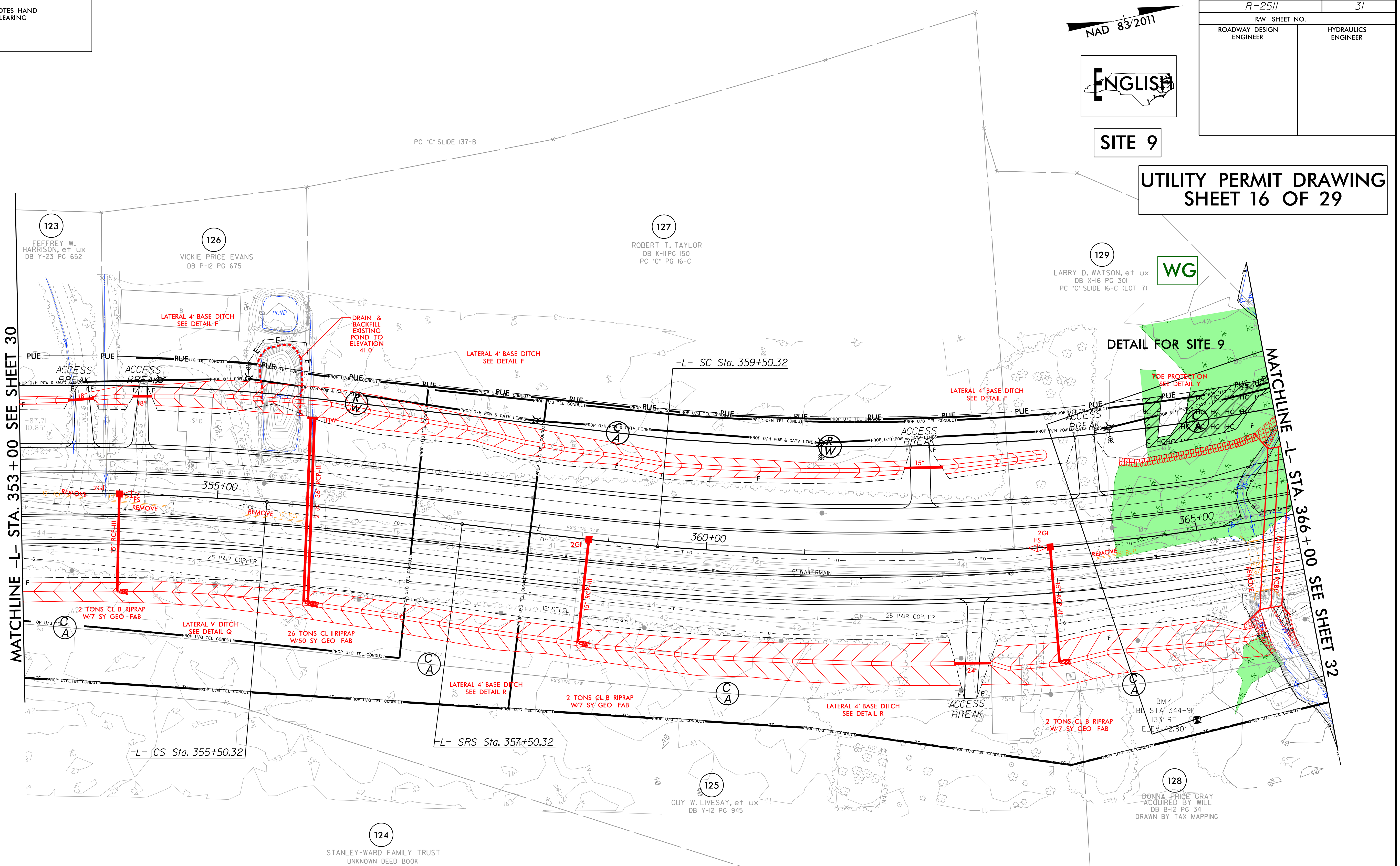
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

PROJECT REFERENCE NO.	SHEET NO.
R-2511	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

HC HC DENOTES HAND CLEARING

UTILITY PERMIT DRAWING
SHEET 16 OF 29

SITE 9



NAD 83/2011
ENGLISH
WG
DETAIL FOR SITE 9
MATCHLINE -L- STA. 353+00 SEE SHEET 30
MATCHLINE -L- STA. 366+00 SEE SHEET 32
123
FEFFREY W. HARRISON, et ux
DB Y-23 PG 652
126
VICKIE PRICE EVANS
DB P-12 PG 675
127
ROBERT T. TAYLOR
DB K-11 PG 150
PC "C" PG 16-C
129
LARRY D. WATSON, et ux
DB X-16 PG 301
PC "C" SLIDE 16-C (LOT 7)
PC "C" SLIDE 137-B
125
GUY W. LIVESAY, et ux
DB Y-12 PG 945
124
STANLEY-WARD FAMILY TRUST
UNKNOWN DEED BOOK
128
DONNA PRICE GRAY
ACQUIRED BY WILL
DB B-12 PG 34
DRAWN BY TAX MAPPING
LATERAL 4' BASE DITCH
SEE DETAIL F
DRAIN & BACKFILL EXISTING POND TO ELEVATION 41.0'
POND
-L- SC Sta. 359+50.32
-L- CS Sta. 355+50.32
-L- SRS Sta. 357+50.32
TOE PROTECTION
SEE DETAIL Y
ACCESS BREAK
355+00
360+00
365+00
25 PAIR COPPER
6" WATERMAIN
12" STEEL
2 TONS CL B RIPRAP
W/7 SY GEO FAB
26 TONS CL I RIPRAP
W/50 SY GEO FAB
LATERAL V DITCH
SEE DETAIL Q
LATERAL 4' BASE DITCH
SEE DETAIL R
REMOVE
BM14
BL STA 344+91
133' RT
ELEV=42.80'
PUE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh31_utl_con.dgn

8/17/99

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

SITE 9

UTILITY PERMIT DRAWING
SHEET 17 OF 29

SF

WG

DETAIL FOR SITE 9

-L- CS Sta. 370+56.24

-L- SRS Sta. 372+56.24

-L- SC Sta. 374+36.24

-L- CS Sta. 377+79.18

MATCHLINE -L- STA. 366+00 SEE SHEET 31

MATCHLINE -L- STA. 379+00 SEE SHEET 33

131 BUD O. ROGERSON DB 08E PG 107

132 JAMES A. SMITH DB W-19 PG 163 MB 13 PG 54 (LOT 2)

133 CARL L. BEACHAM, JR., et al DB X-19 PG 784 TRACT 5

128 DONNA PRICE GRAY ACQUIRED BY WILL DB P-10 PG 507 MB 12 PG 54

128 DONNA PRICE GRAY ACQUIRED BY WILL DB B-12 PG 34 DRAWN BY TAX MAPPING

134 PATSY R. BARNES CARROLL W. BARNES DB Q-27 PG 454 PC D SL 218H

TOE PROTECTION SEE DETAIL Y

STANDARD 12' BASE DITCH SEE DETAIL W

LATERAL 4' BASE DITCH SEE DETAIL A

LATERAL 12' BASE DITCH SEE DETAIL V

LATERAL 4' BASE DITCH SEE DETAIL J

TOE PROTECTION SEE DETAIL K

ACCESS BREAK

PROP U/G TEL CONDUIT

PROP O/H POW & CATV LINES

6" WATERMAIN

25 PAIR COPPER

12" STEEL

72" CHL

NATURAL GAS

DRAIN FIELD

REMOVE

15" RCP-III

15" RCP-IV

18" RCP-IV

24" RCP-IV

SCALE FOR INSETS 25 0 25 50

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh32_utl.dgn
Ekeu

PROJECT REFERENCE NO.	SHEET NO.
R-2511	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

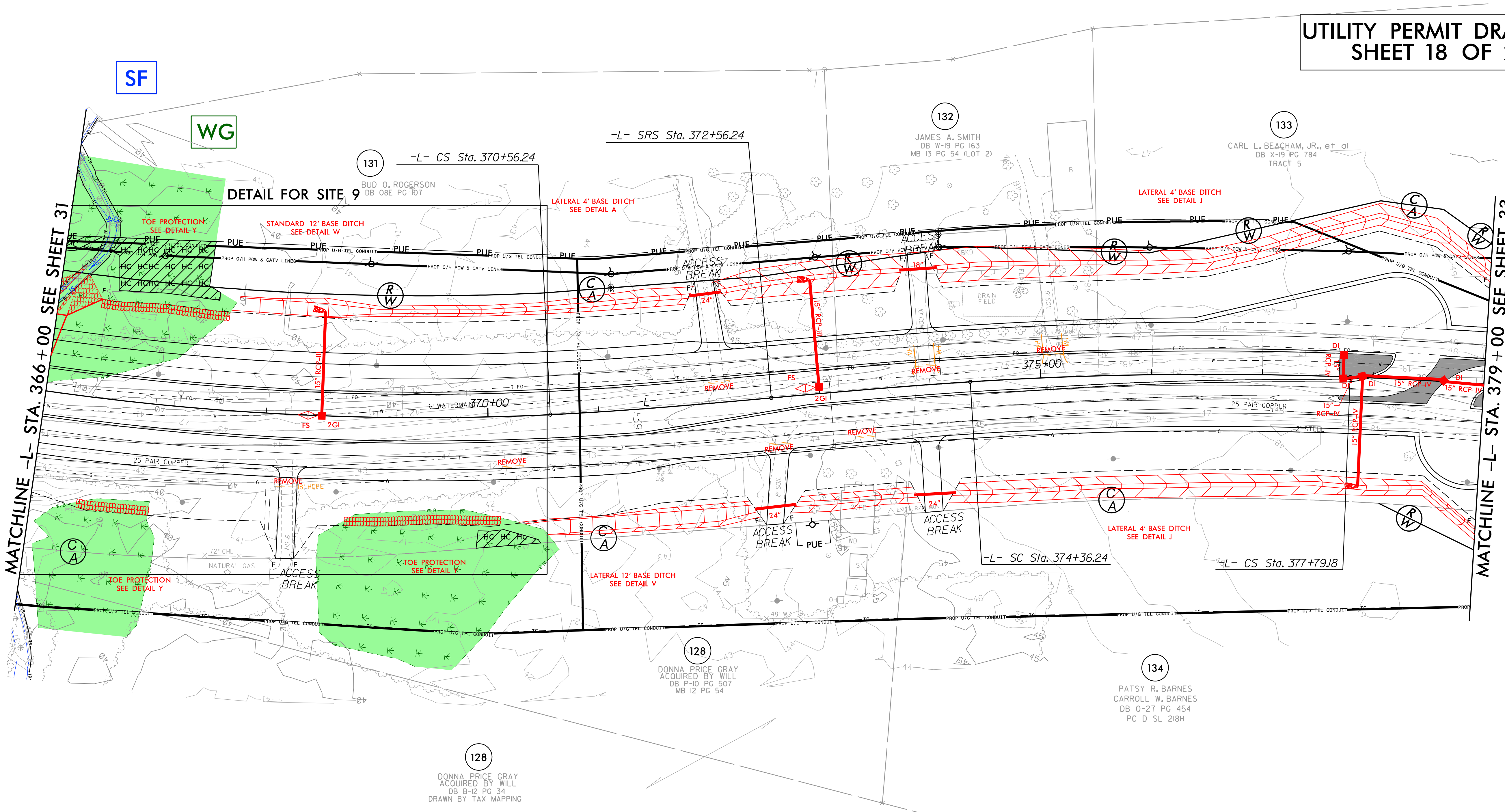
HC HC DENOTES HAND CLEARING

NAD 83/2011

ENGLISH

UTILITY PERMIT DRAWING SHEET 18 OF 29

SITE 9



SF
WG
DETAIL FOR SITE 9
MATCHLINE -L- STA. 366+00 SEE SHEET 31
MATCHLINE -L- STA. 379+00 SEE SHEET 33
131
BUD O. ROGERSON
DB 08E PG 107
-L- CS Sta. 370+56.24
-L- SRS Sta. 372+56.24
132
JAMES A. SMITH
DB W-19 PG 163
MB 13 PG 54 (LOT 2)
133
CARL L. BEACHAM, JR., et al
DB X-19 PG 784
TRACT 5
TOE PROTECTION
SEE DETAIL Y
STANDARD 12' BASE DITCH
SEE DETAIL W
LATERAL 4' BASE DITCH
SEE DETAIL A
LATERAL 4' BASE DITCH
SEE DETAIL J
ACCESS BREAK
15" RCP-III
15" RCP-IV
FS
2GI
DI
REMOVE
370+00
375+00
6" WATERMAIN
25 PAIR COPPER
12" STEEL
NATURAL GAS
LATERAL 12' BASE DITCH
SEE DETAIL V
-L- SC Sta. 374+36.24
-L- CS Sta. 377+79.18
128
DONNA PRICE GRAY
ACQUIRED BY WILL
DB P-10 PG 507
MB 12 PG 54
134
PATSY R. BARNES
CARROLL W. BARNES
DB Q-27 PG 454
PC D SL 218H
128
DONNA PRICE GRAY
ACQUIRED BY WILL
DB B-12 PG 34
DRAWN BY TAX MAPPING
PROP U/G TEL CONDUIT
PROP O/H POW & CATV LINES

25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

8/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh32_utl_con.dgn

DENOTES HAND CLEARING

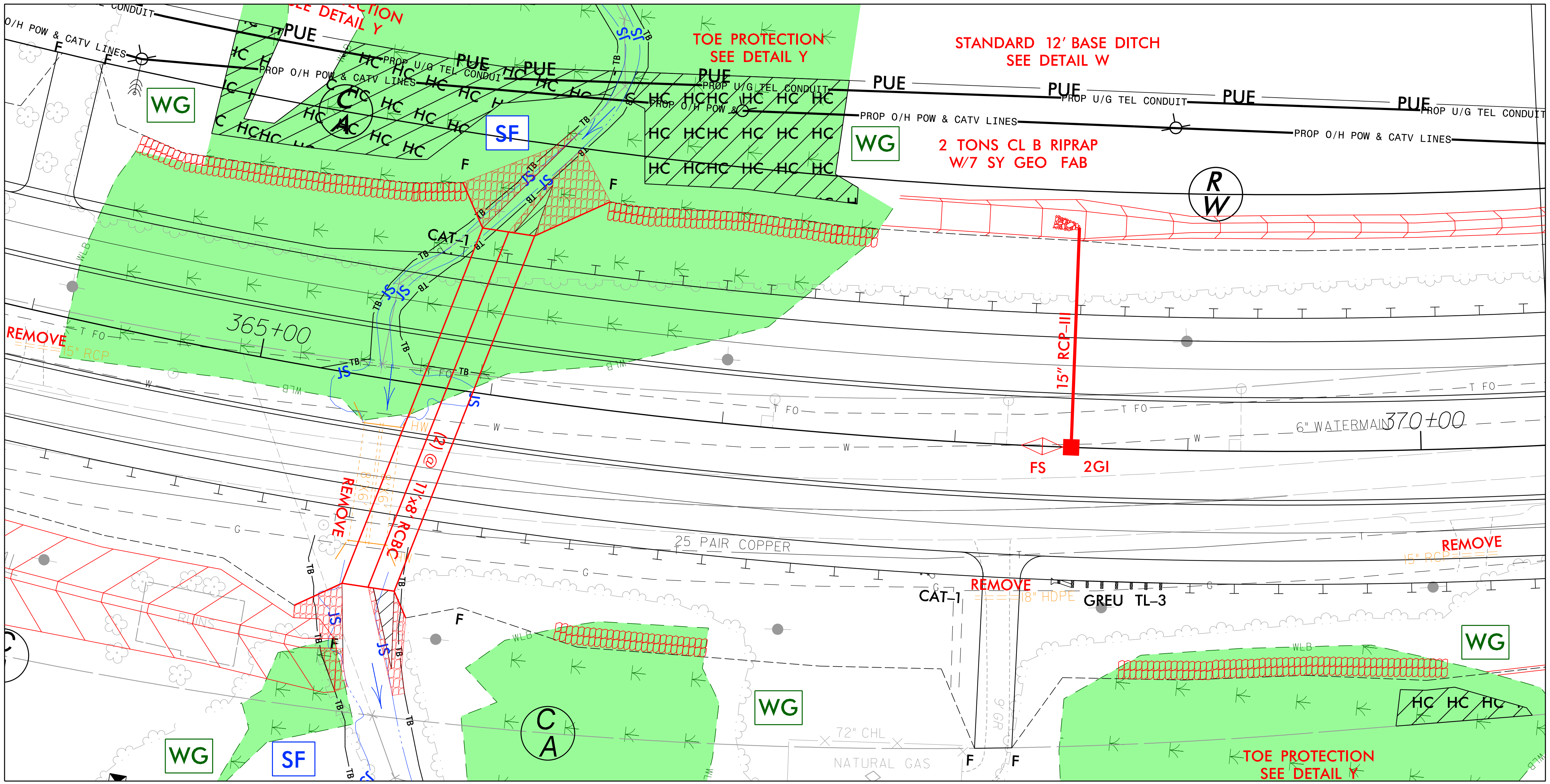
PROJECT REFERENCE NO.	SHEET NO.
R-2511	31A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

DETAIL FOR SITE 9

UTILITY PERMIT DRAWING
SHEET 19 OF 29



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_detail_site 9_utl.dgn

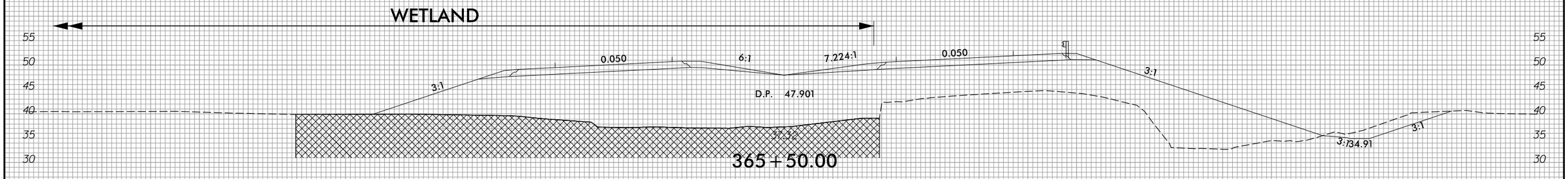
8/17/99

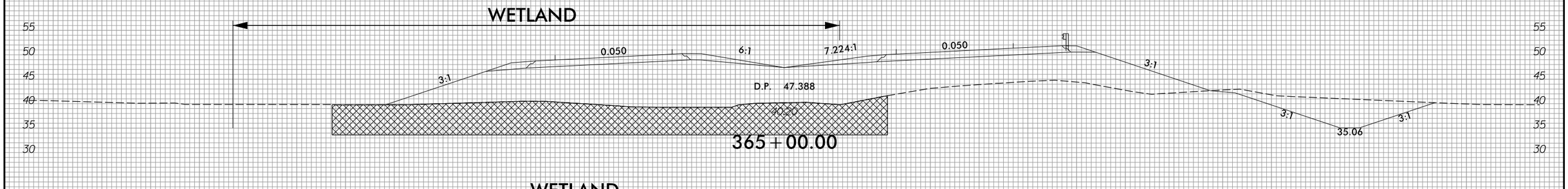
6/23/16

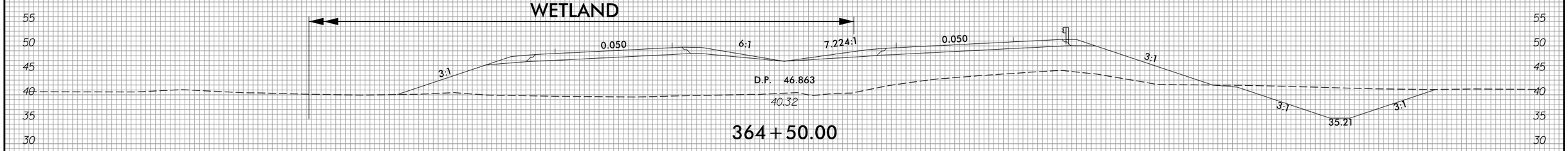
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-117

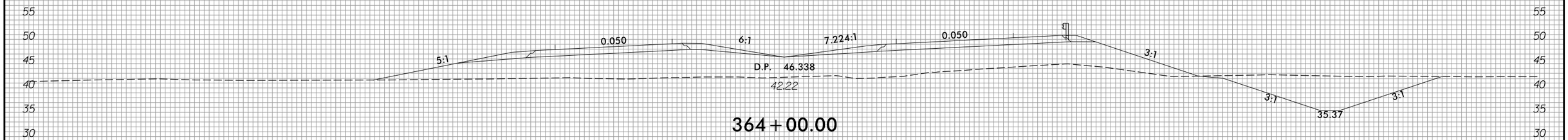
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

UTILITY PERMIT DRAWING
SHEET 20 OF 29









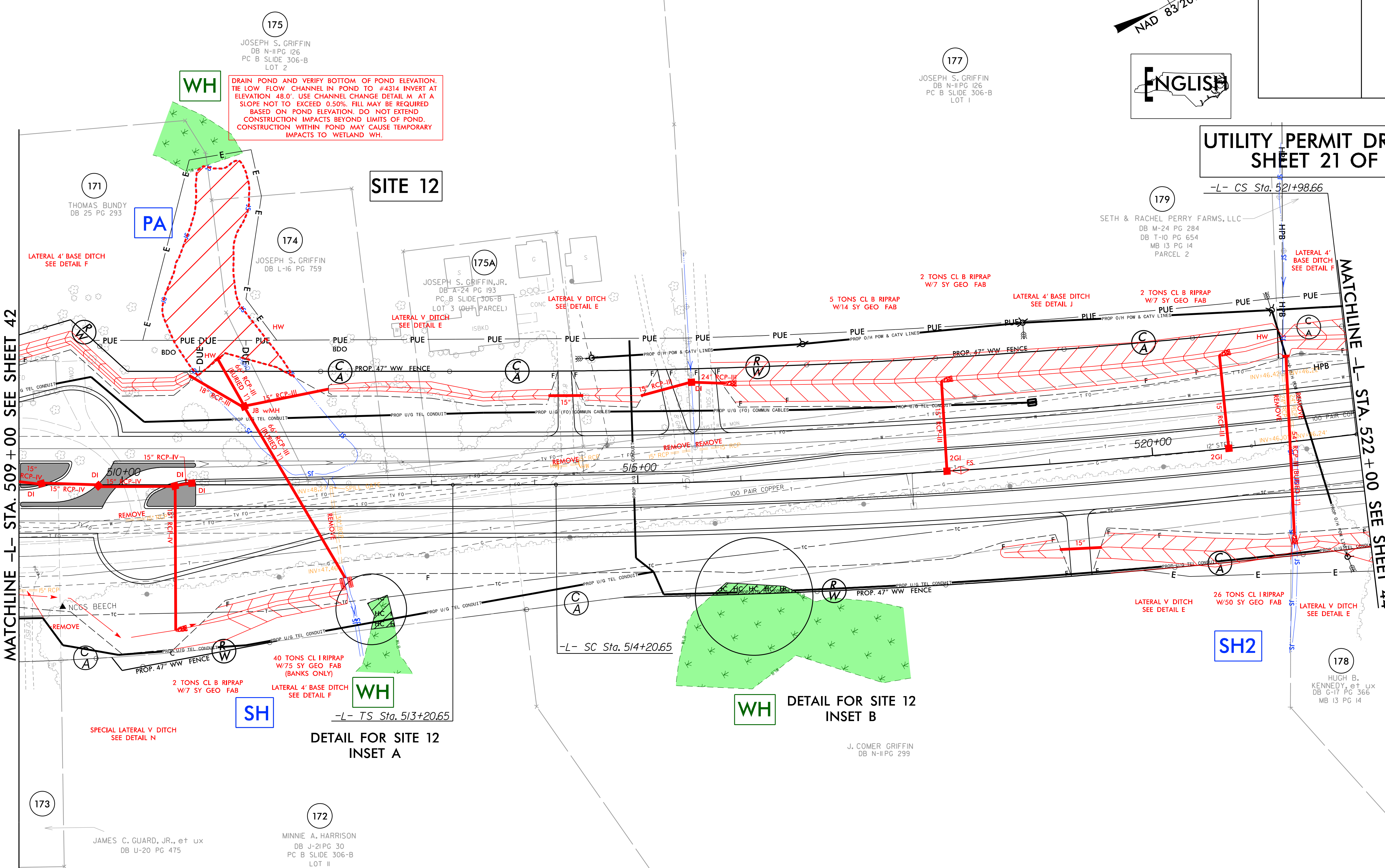
PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

HC HC DENOTES HAND CLEARING

ENGLISH

NAD 83/2011

UTILITY PERMIT DRAWING
SHEET 21 OF 29



SITE 12
WH
PA
SH
SH2
DRAIN POND AND VERIFY BOTTOM OF POND ELEVATION. TIE LOW FLOW CHANNEL IN POND TO #4314 INVERT AT ELEVATION 48.0'. USE CHANNEL CHANGE DETAIL M AT A SLOPE NOT TO EXCEED 0.50%. FILL MAY BE REQUIRED BASED ON POND ELEVATION. DO NOT EXTEND CONSTRUCTION IMPACTS BEYOND LIMITS OF POND. CONSTRUCTION WITHIN POND MAY CAUSE TEMPORARY IMPACTS TO WETLAND WH.
175 JOSEPH S. GRIFFIN DB N-11 PG 126 PC B SLIDE 306-B LOT 2
171 THOMAS BUNDY DB 25 PG 293
174 JOSEPH S. GRIFFIN DB L-16 PG 759
175A JOSEPH S. GRIFFIN, JR. DB A-24 PG 193 PC B SLIDE 306-B LOT 3 (OUT PARCEL)
177 JOSEPH S. GRIFFIN DB N-11 PG 126 PC B SLIDE 306-B LOT 1
179 SETH & RACHEL PERRY FARMS, LLC DB M-24 PG 284 DB T-10 PG 654 MB 13 PG 14 PARCEL 2
178 HUGH B. KENNEDY, et ux DB G-17 PG 366 MB 13 PG 14
173 JAMES C. GUARD, JR., et ux DB U-20 PG 475
172 MINNIE A. HARRISON DB J-21 PG 30 PC B SLIDE 306-B LOT 11
J. COMER GRIFFIN DB N-11 PG 299
-L- CS Sta. 521+98.66
-L- SC Sta. 514+20.65
-L- TS Sta. 513+20.65
MATCHLINE -L- STA. 509+00 SEE SHEET 42
MATCHLINE -L- STA. 522+00 SEE SHEET 44
510+00
515+00
520+00
LATERAL 4' BASE DITCH SEE DETAIL F
LATERAL V DITCH SEE DETAIL E
LATERAL 4' BASE DITCH SEE DETAIL J
SPECIAL LATERAL V DITCH SEE DETAIL N
2 TONS CL B RIPRAP W/7 SY GEO FAB
5 TONS CL B RIPRAP W/14 SY GEO FAB
40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)
26 TONS CL I RIPRAP W/50 SY GEO FAB
PROP. 47" WW FENCE
100 PAIR COPPER
NCDS BEECH
REMOVE
DETAIL FOR SITE 12 INSET A
DETAIL FOR SITE 12 INSET B

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh43_utl.dgn

8/17/99

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

UTILITY PERMIT DRAWING
SHEET 22 OF 29

-L- CS Sta. 521+98.66

175
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 2

177
JOSEPH S. GRIFFIN
DB N-11 PG 126
PC B SLIDE 306-B
LOT 1

WH

DRAIN POND AND VERIFY BOTTOM OF POND ELEVATION. TIE LOW FLOW CHANNEL IN POND TO #4314 INVERT AT ELEVATION 48.0'. USE CHANNEL CHANGE DETAIL M AT A SLOPE NOT TO EXCEED 0.50%. FILL MAY BE REQUIRED BASED ON POND ELEVATION. DO NOT EXTEND CONSTRUCTION IMPACTS BEYOND LIMITS OF POND. CONSTRUCTION WITHIN POND MAY CAUSE TEMPORARY IMPACTS TO WETLAND WH.

SITE 12

171
THOMAS BUNDY
DB 25 PG 293

PA

174
JOSEPH S. GRIFFIN
DB C-16 PG 759

175A
JOSEPH S. GRIFFIN, JR.
DB A-24 PG 193
PC B SLIDE 306-B
LOT 3 (OUT PARCEL)

179
SETH & RACHEL PERRY FARMS, LLC
DB M-24 PG 284
DB T-10 PG 654
MB 13 PG 14
PARCEL 2

MATCHLINE -L- STA. 509+00 SEE SHEET 42

MATCHLINE -L- STA. 522+00 SEE SHEET 44

LATERAL 4' BASE DITCH SEE DETAIL F

LATERAL V DITCH SEE DETAIL E

5 TONS CL B RIPRAP W/14 SY GEO FAB

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL J

PROP. 47" WW FENCE

PROP O/H POW & CATV LINES

PROP U/G TEL CONDUIT

PROP U/G (FO) COMMON CABLES

100 PAIR COPPER

15" RCP-III

24" RCP-III

REMOVE

510+00

515+00

520+00

-L- SC Sta. 514+20.65

-L- TS Sta. 513+20.65

NCSS BEECH

40 TONS CL I RIPRAP W/75 SY GEO FAB (BANKS ONLY)

2 TONS CL B RIPRAP W/7 SY GEO FAB

LATERAL 4' BASE DITCH SEE DETAIL F

SPECIAL LATERAL V DITCH SEE DETAIL N

SH

SH2

WH

DETAIL FOR SITE 12
INSET A

DETAIL FOR SITE 12
INSET B

26 TONS CL I RIPRAP W/50 SY GEO FAB

LATERAL V DITCH SEE DETAIL E

178
HUGH B. KENNEDY, et ux
DB 6-17 PG 366
MB 13 PG 14

173
JAMES C. GUARD, JR., et ux
DB U-20 PG 475

172
MINNIE A. HARRISON
DB J-21 PG 30
PC B SLIDE 306-B
LOT 11

J. COMER GRIFFIN
DB N-11 PG 299

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

HC HC DENOTES HAND CLEARING

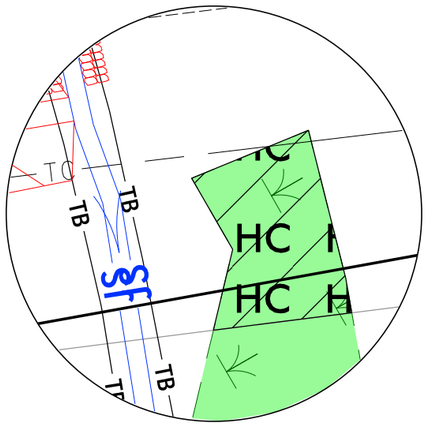
PROJECT REFERENCE NO.	SHEET NO.
R-2511	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

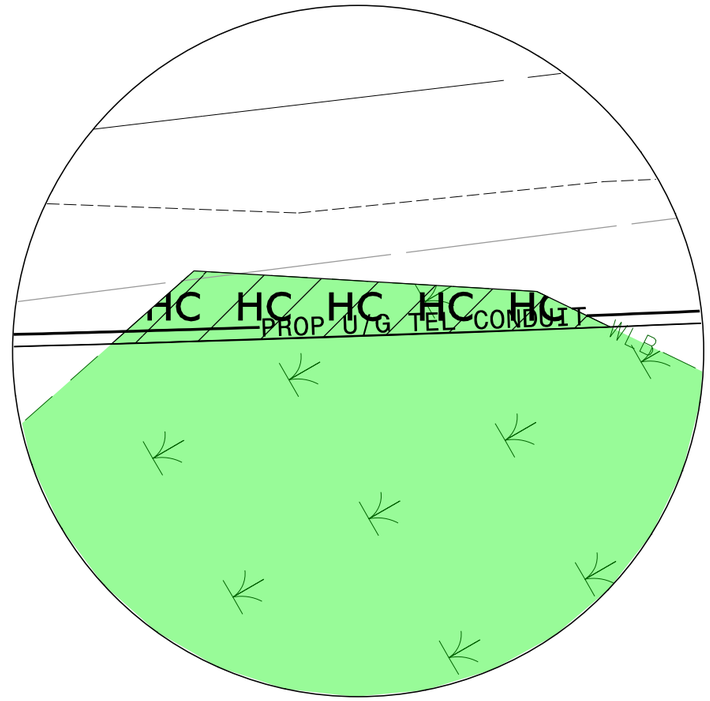
ENGLISH

UTILITY PERMIT DRAWING
SHEET 23 OF 29

DETAIL FOR SITE 12
INSET A



DETAIL FOR SITE 12
INSET B



25 0 25 50
SCALE FOR INSETS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh43_Detail_utl.dgn
Ekeus

8/17/99

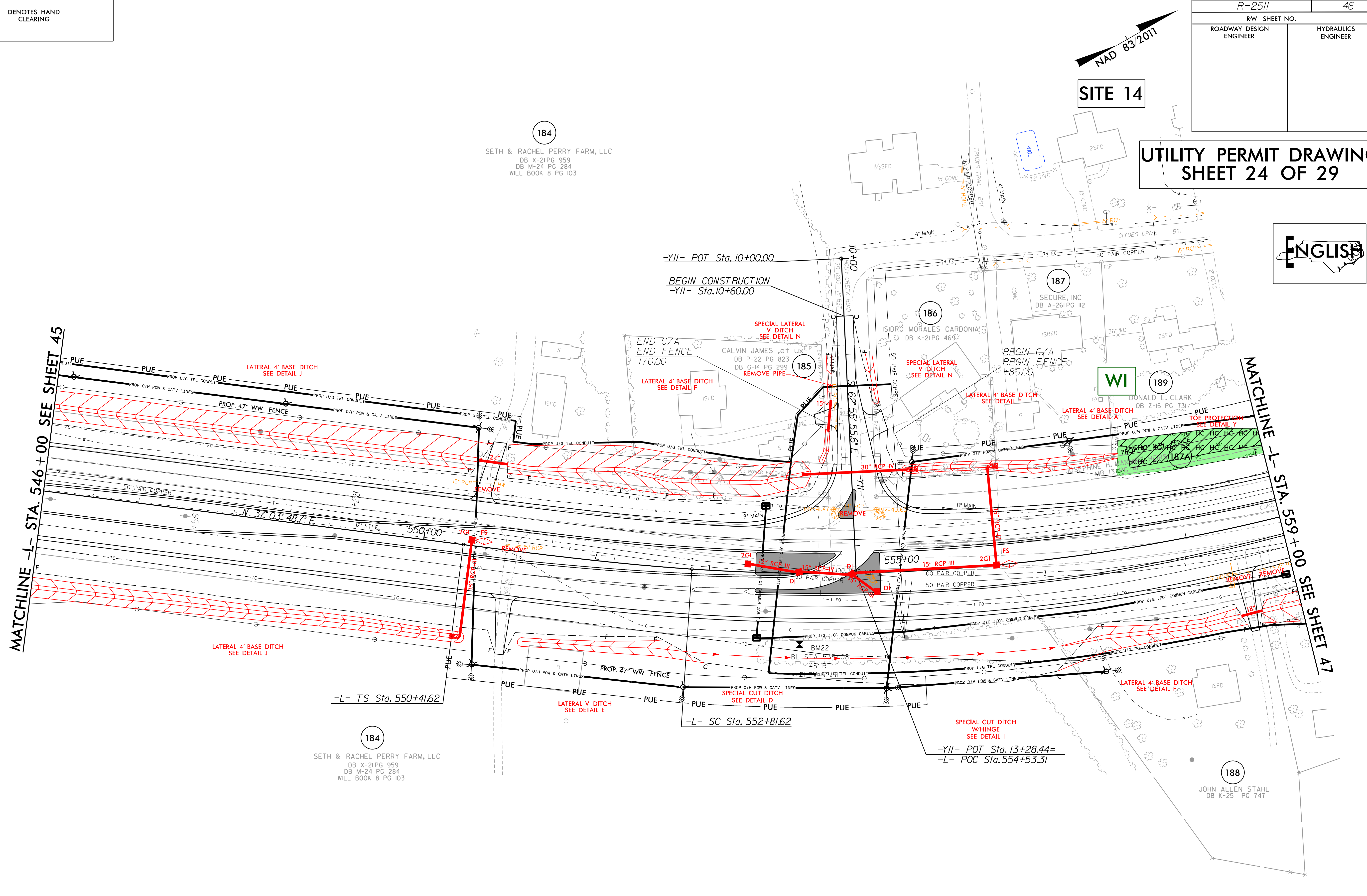
HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	46
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING SHEET 24 OF 29

SITE 14

ENGLISH



NAD 83/2011
MATCHLINE -L- STA. 546+00 SEE SHEET 45
MATCHLINE -L- STA. 559+00 SEE SHEET 47
184
SETH & RACHEL PERRY FARM, LLC
DB X-21 PG 959
DB M-24 PG 284
WILL BOOK 8 PG 103
185
CALVIN JAMES ,et ux
DB P-22 PG 823
DB G-14 PG 299
186
ISIDRO MORALES CARDONIA
DB K-21 PG 469
187
SECURE, INC
DB A-26 PG 112
188
JOHN ALLEN STAHL
DB K-25 PG 747
189
DONALD L. CLARK
DB Z-15 PG 731
-YII- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-YII- Sta. 10+60.00
END C/A
END FENCE
+70.00
BEGIN C/A
BEGIN FENCE
+85.00
WI
LATERAL 4' BASE DITCH SEE DETAIL J
LATERAL 4' BASE DITCH SEE DETAIL F
SPECIAL LATERAL V DITCH SEE DETAIL N
LATERAL 4' BASE DITCH SEE DETAIL A
TOE PROTECTION SEE DETAIL Y
LATERAL V DITCH SEE DETAIL E
SPECIAL CUT DITCH SEE DETAIL D
SPECIAL CUT DITCH W/HINGE SEE DETAIL I
PROP. 47" WW FENCE
N 37°03'48.7" E
S 62°55'55.6" E
550+00
555+00
-L- TS Sta. 550+41.62
-L- SC Sta. 552+81.62
-YII- POT Sta. 13+28.44=
-L- POC Sta. 554+53.31
BM22
BL STA 535+08
45' RT
30" RCP-IV
15" RCP-III
REMOVE

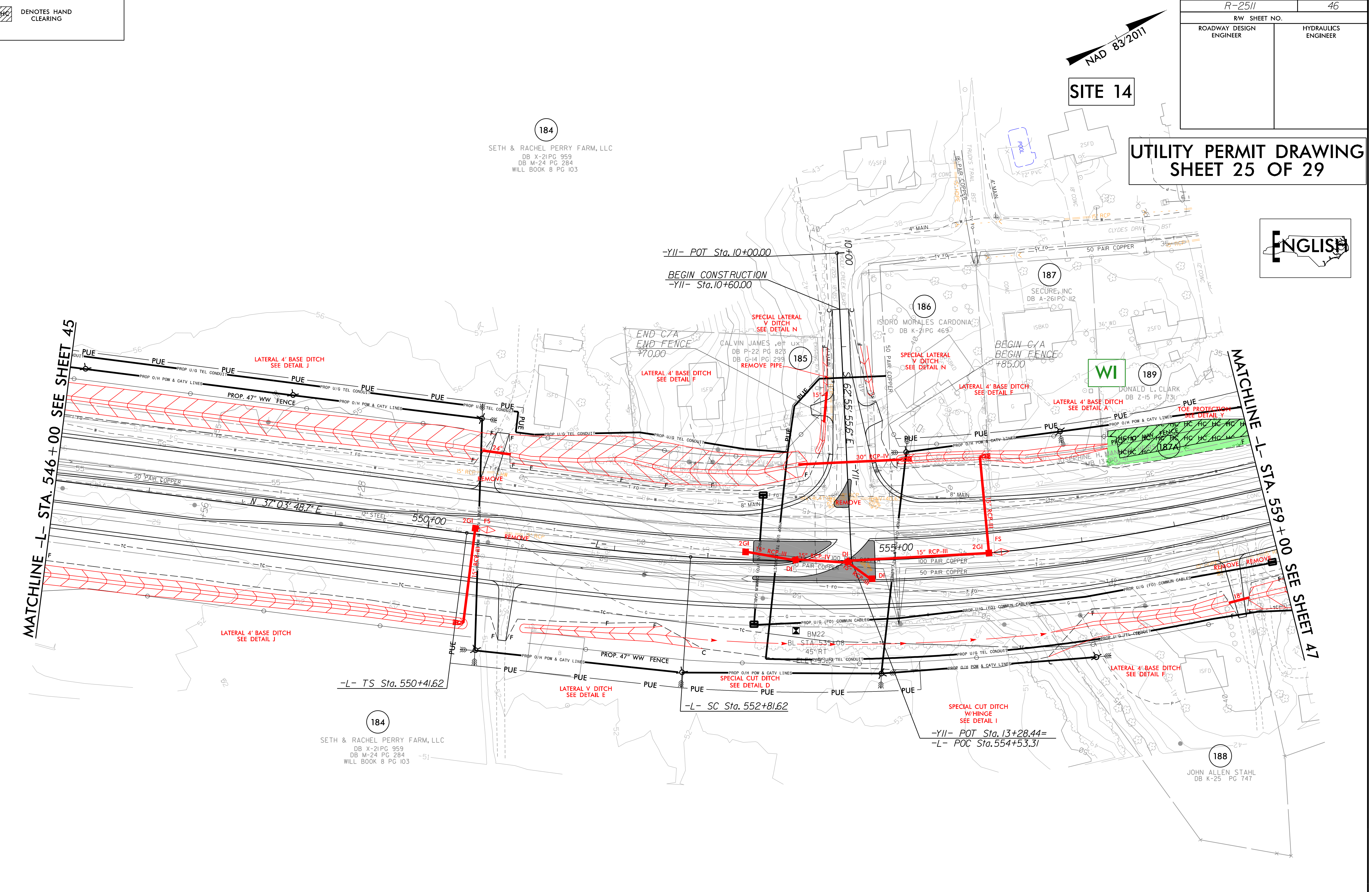
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh46_utl.dgn

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	46
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING SHEET 25 OF 29



NAD 83/2011
SITE 14
ENGLISH
184
SETH & RACHEL PERRY FARM, LLC
DB X-21 PG 959
DB M-24 PG 284
WILL BOOK 8 PG 103
MATCHLINE -L- STA. 546+00 SEE SHEET 45
MATCHLINE -L- STA. 559+00 SEE SHEET 47
-Y11- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y11- Sta. 10+60.00
END C/A
END FENCE
+70.00
CALVIN JAMES, et ux
DB P-22 PG 823
DB G-14 PG 299
REMOVE PIPE
185
186
ISIDRO MORALES CARDONIA
DB K-21 PG 469
187
SECURE, INC
DB A-26 PG 112
BEGIN C/A
BEGIN FENCE
+85.00
WI
189
DONALD L. CLARK
DB Z-15 PG 731
LATERAL 4' BASE DITCH SEE DETAIL J
LATERAL 4' BASE DITCH SEE DETAIL F
SPECIAL LATERAL V DITCH SEE DETAIL N
LATERAL 4' BASE DITCH SEE DETAIL A
TOE PROTECTION SEE DETAIL Y
PROP. 47" WW FENCE
30" RCP-IV
15" RCP-III
N 37° 03' 48.7" E
550+00
555+00
BM22
BL STA 535+08
45' RT
-L- TS Sta. 550+41.62
LATERAL V DITCH SEE DETAIL E
SPECIAL CUT DITCH SEE DETAIL D
-L- SC Sta. 552+81.62
SPECIAL CUT DITCH W/HINGE SEE DETAIL I
-Y11- POT Sta. 13+28.44=
-L- POC Sta. 554+53.31
188
JOHN ALLEN STAHL
DB K-25 PG 747

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

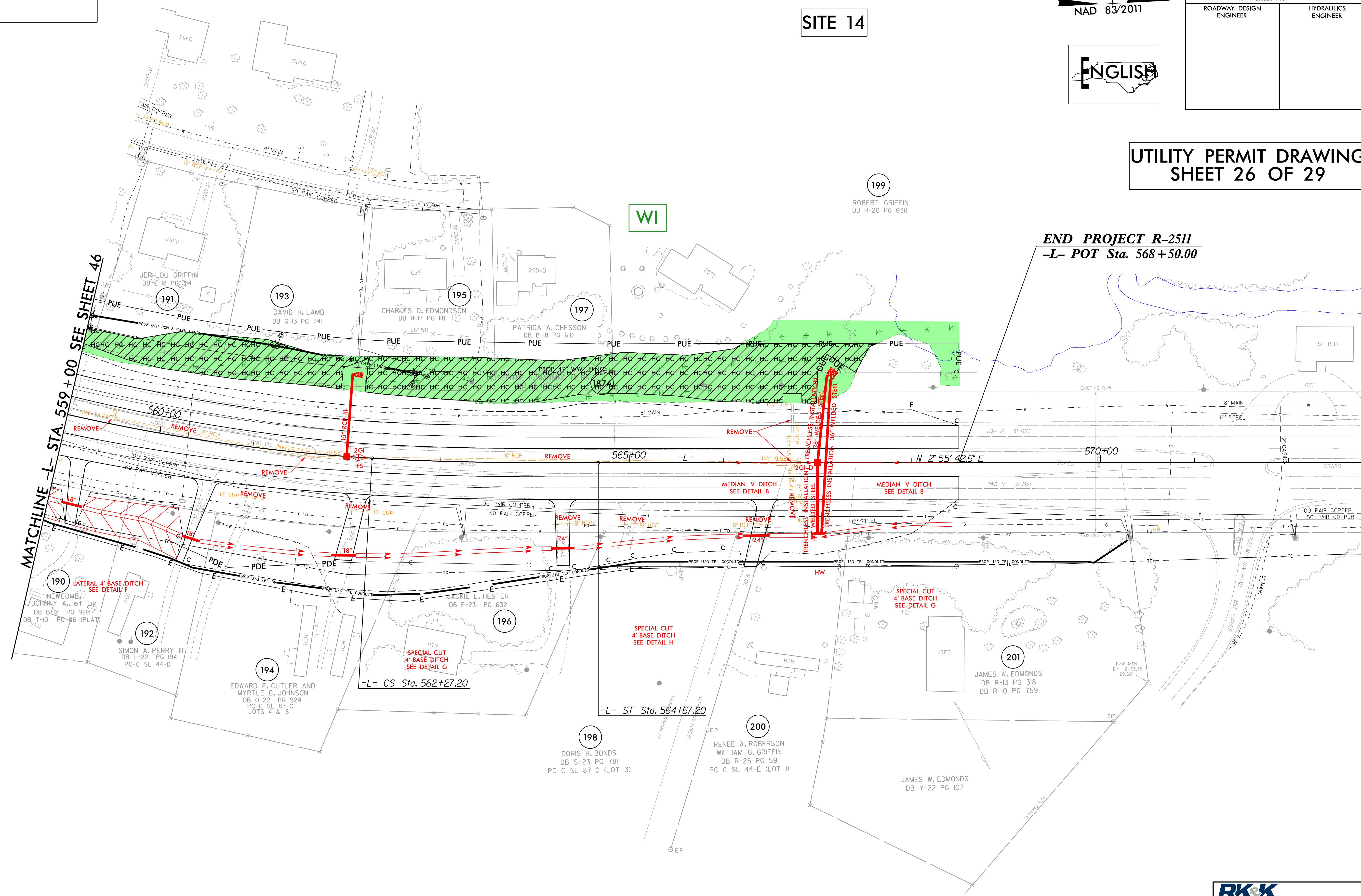
8/17/99
6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh46_utl_con.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2511	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

HC DENOTES HAND CLEARING

SITE 14

UTILITY PERMIT DRAWING
SHEET 26 OF 29



NAD 83/2011
ENGLISH
WI
END PROJECT R-2511
-L- POT Sta. 568+50.00
MATCHLINE -L- STA. 559+00 SEE SHEET 46
ROBERT GRIFFIN
DB R-20 PG 636
JERI-LOU GRIFFIN
DB L-18 PG 314
DAVID H. LAMB
DB G-13 PG 741
CHARLES D. EDMONDSON
DB H-17 PG 118
PATRICIA A. CHESSON
DB B-18 PG 610
NEWCOMB, JOHNNY A., et ux
DB B-12 PG 926
DB T-10 PG 86 (PLAT)
SIMON A. PERRY III
DB L-22 PG 194
PC-C SL 44-D
EDWARD F. CUTLER AND
MYRTLE C. JOHNSON
DB O-22 PG 924
PC-C SL 87-C
LOTS 4 & 5
JACKIE L. HESTER
DB F-23 PG 632
DORIS H. BONDS
DB S-23 PG 781
PC C SL 87-C (LOT 3)
RENEE A. ROBERSON
WILLIAM G. GRIFFIN
DB R-25 PG 59
PC C SL 44-E (LOT 1)
JAMES W. EDMONDS
DB R-13 PG 318
DB R-10 PG 759
JAMES W. EDMONDS
DB Y-22 PG 107
LATERAL 4' BASE DITCH
SEE DETAIL F
SPECIAL CUT
4' BASE DITCH
SEE DETAIL G
SPECIAL CUT
4' BASE DITCH
SEE DETAIL H
MEDIAN V DITCH
SEE DETAIL B
-L- CS Sta. 562+27.20
-L- ST Sta. 564+67.20
N 2° 55' 42.6" E
560+00
565+00
570+00
TRENCHLESS INSTALLATION 36" WELDED STEEL
REMOVE
PUE
PDE
8" MAIN
12" STEEL
100 PAIR COPPER
50 PAIR COPPER
PROP U/G TEL CONDUIT

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh47_utl.dgn

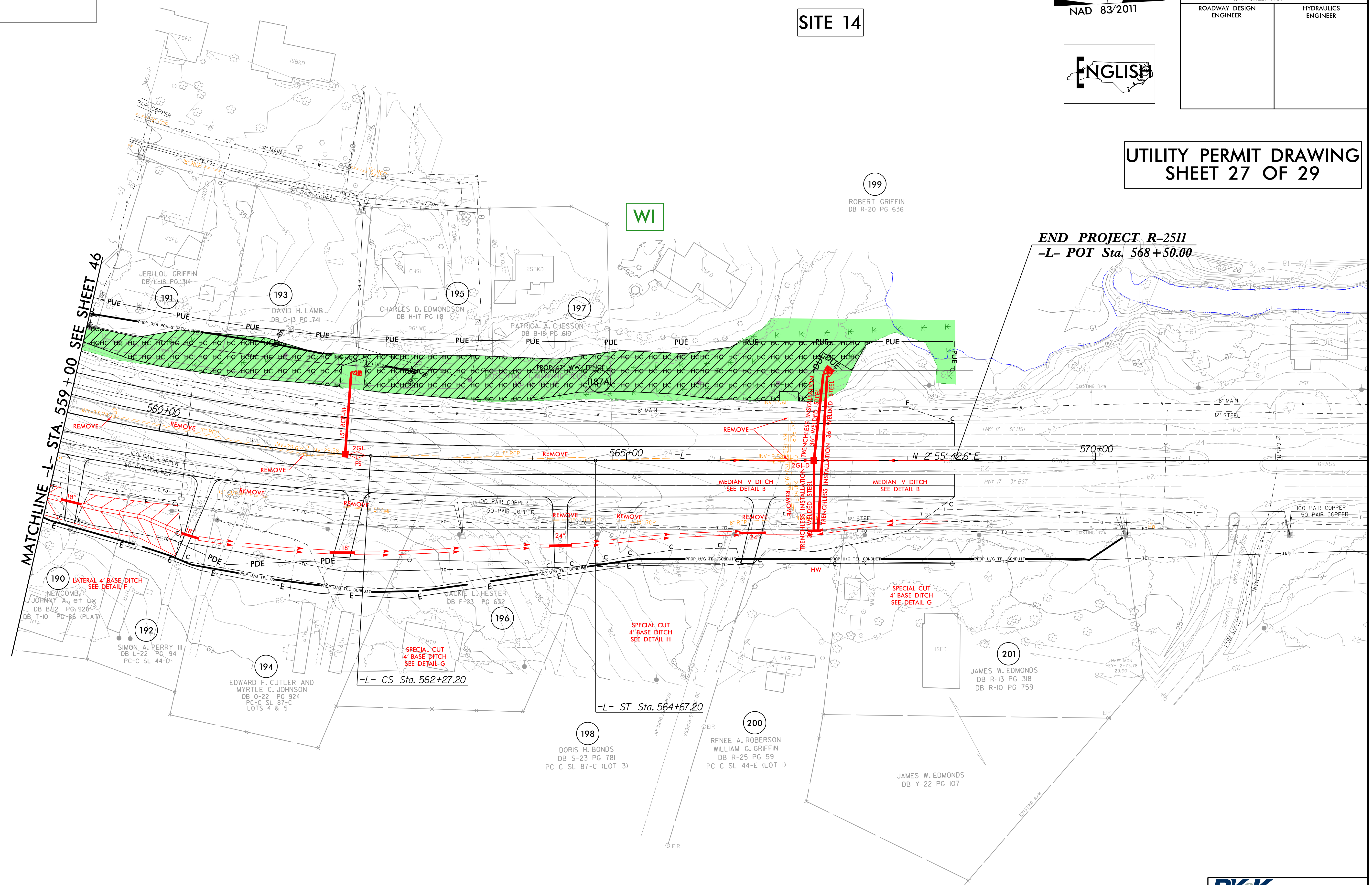
8/17/99

HC HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-2511	47
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 14

UTILITY PERMIT DRAWING
SHEET 27 OF 29



NAD 83/2011
ENGLISH
WI
END PROJECT R-2511
-L- POT Sta. 568+50.00
MATCHLINE -L- STA. 559+00 SEE SHEET 46
560+00
565+00
570+00
N 2° 55' 42.6" E
-L- CS Sta. 562+27.20
-L- ST Sta. 564+67.20
ROBERT GRIFFIN
DB R-20 PG 636
JERI-LOU GRIFFIN
DB E-18 PG 314
DAVID H. LAMB
DB G-13 PG 741
CHARLES D. EDMONDSON
DB H-17 PG 118
PATRICIA A. CHESSON
DB B-18 PG 610
NEWCOMB, JOHNNY A., et ux
DB B-12 PG 926
DB T-10 PG 86 (PLAT)
SIMON A. PERRY III
DB L-22 PG 194
PC-C SL 44-D
EDWARD F. CUTLER AND MYRTLE C. JOHNSON
DB O-22 PG 924
PC-C SL 87-C
LOTS 4 & 5
JACKIE L. HESTER
DB F-23 PG 632
DORIS H. BONDS
DB S-23 PG 781
PC C SL 87-C (LOT 3)
RENEE A. ROBERSON
WILLIAM G. GRIFFIN
DB R-25 PG 59
PC C SL 44-E (LOT 1)
JAMES W. EDMONDS
DB R-13 PG 318
DB R-10 PG 759
JAMES W. EDMONDS
DB Y-22 PG 107
LATERAL 4' BASE DITCH
SEE DETAIL F
SPECIAL CUT
4' BASE DITCH
SEE DETAIL G
SPECIAL CUT
4' BASE DITCH
SEE DETAIL H
SPECIAL CUT
4' BASE DITCH
SEE DETAIL G
MEDIAN V DITCH
SEE DETAIL B
MEDIAN V DITCH
SEE DETAIL B
TRENCHLESS INSTALLATION 36" WELDED STEEL
REMOVE
PUE
PDE
100 PAIR COPPER
50 PAIR COPPER
8" MAIN
12" STEEL
HWY 17

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_wet_psh47_utl_con.dgn

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2511	X-182

UTILITY PERMIT DRAWING
SHEET 28 OF 29

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

35 30 25 20 15

WETLAND

3:1 | 0.020 | 0.017 | 7.695:1 | 6:1 | 0.025 | 0.017 | 6:1 | 3:1

26.24
D.P. 26.251
21.54

564+00.00

40 35 30 25 20 15

WETLAND

3:1 | 0.029 | 8.329:1 | 6:1 | 0.029 | 0.029 | 6:1 | 3:1

27.64
D.P. 27.624
22.80

563+50.00

40 35 30 25 20

WETLAND

5.36:1 | 0.042 | 8.611:1 | 6:1 | 0.042 | 0.042 | 6:1 | 3:1

29.27
D.P. 29.126
24.05

563+00.00

40 35 30 25 20

WETLAND

5.17:1 | 0.054 | 8.334:1 | 6:1 | 0.054 | 0.054 | 6:1 | 3:1

30.72
D.P. 30.641
25.31

562+50.00

40 35 30 25 20

WETLAND

5:1 | 0.060 | 8.785:1 | 6:1 | 0.060 | 6:1 | 3:1

32.15
D.P. 32.141
26.57

562+00.00

45 40 35 30 25 20

WETLAND

3.8:1 | 0.060 | 9.364:1 | 6:1 | 0.060 | 6:1 | 3:1

34.20
D.P. 33.366
27.83

561+50.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/17/2021
K:\Projects\PERMITS_Environmental\Drawings\Utility Drawings\R2511_prm.xpl_Site 14.560+00_utl.dgn
Kegg

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 17+47 TO 19+05	UNDERGROUND TELEPHONE: WA					0.01					
5	-L- 152+55 TO 160+01	UNDERGROUND TELEPHONE, OVERHEAD POWER AND 8" WATER LINE: WC					0.83					
7	-L- 279+93 TO 281+18 LT	UNDERGROUND FIBER AND OVERHEAD POWER: WE					0.13					
8	-L- 342+10 TO 349+32	UNDERGROUND TELEPHONE AND OVERHEAD POWER: WF					0.76					
9	-L- 364+60 TO 370+42	UNDERGROUND TELEPHONE AND OVERHEAD POWER: WG					0.22					
12	-L- 512+24 TO 516+50 RT	UNDERGROUND TELEPHONE: WH					0.03					
14	-L- 557+45 TO 567+64 LT	OVERHEAD POWER: WI					0.86					
TOTALS*:							2.84			0	0	0

*Rounded totals are sum of actual impacts

NOTES:

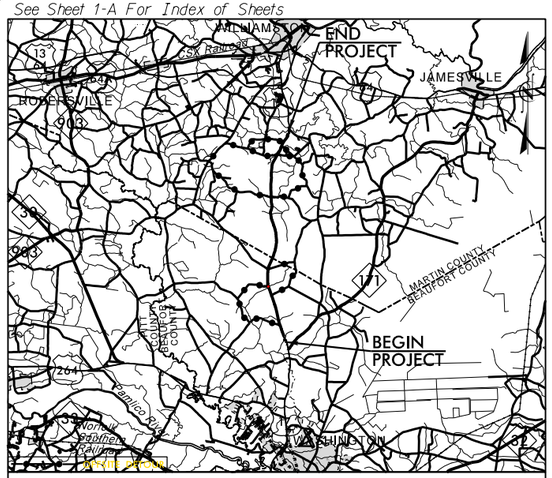
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/4/2021
BEAUFORT & MARTIN COUNTY
R-2511
35494.1.1

09/08/99

TIP PROJECT: R-2511

CONTRACT: C204498

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT & MARTIN COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2511	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35494.1.1	N/A	PE
35494.2.1		R/W
35494.3.1		CONST.

LOCATION: US 17 FROM NORTH OF NC 171 TO EXISTING MULTI-LANES SOUTH OF WILLIAMSTON

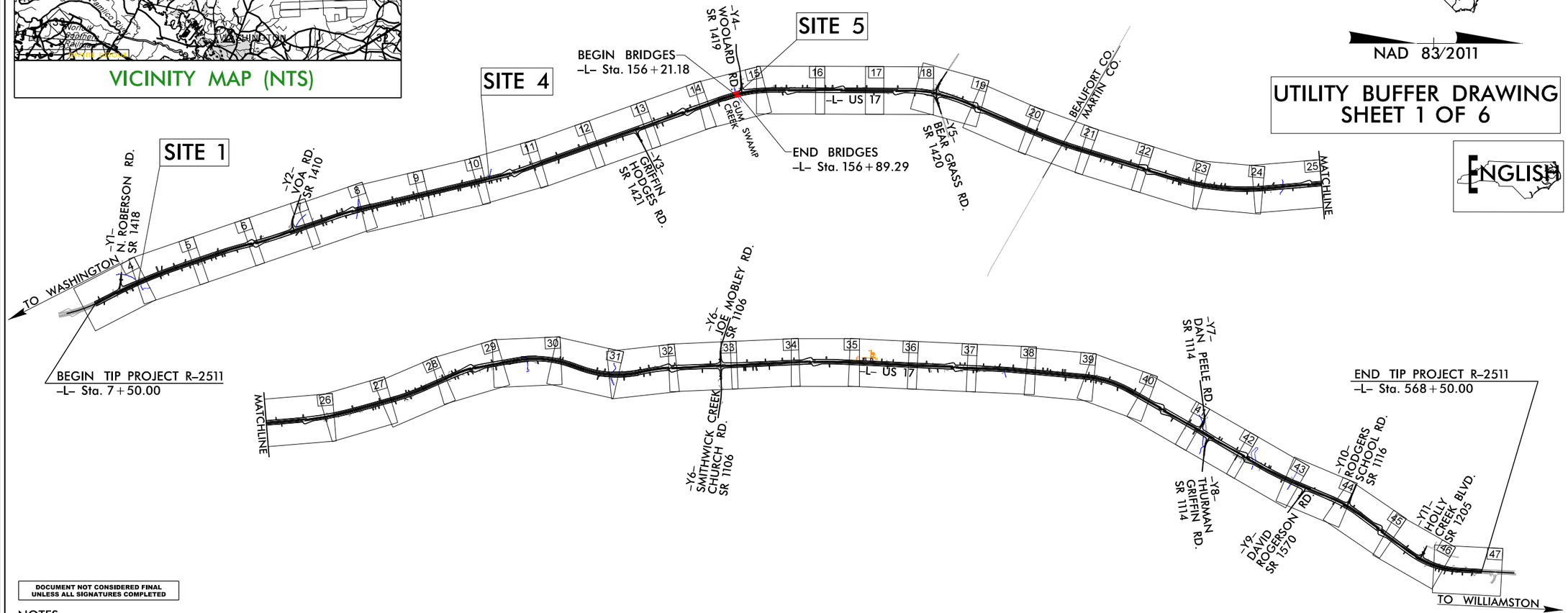
BUFFER IMPACTS

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

NAD 83/2011

UTILITY BUFFER DRAWING SHEET 1 OF 6

ENGLISH



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:
1. THIS IS A PARTIALLY CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2020 = 9,164
ADT 2040 = 14,284
K = 5%
D = 60%
T = 13% *
V = 60 MPH
* TTST = 8% DUAL 5%
FUNC CLASS = RURAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2511..... 10.612 miles
LENGTH STRUCTURE TIP PROJECT R-2511..... 0.013 miles
TOTAL LENGTH OF TIP PROJECT R-2511..... 10.625 miles

PLANS PREPARED BY:

RK&K

RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 20, 2018

LETTING DATE: DECEMBER 21, 2021

MICHAEL T. MERRITT, P.E.
PROJECT ENGINEER

SCOTT D. BLEVINS, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: JOHN ABEL, JR.
PROJECT ENGINEER - DIVISION 1

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

8/4/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\r2511_Hyd_BUF_tsh_utl.dgn
Fkeys

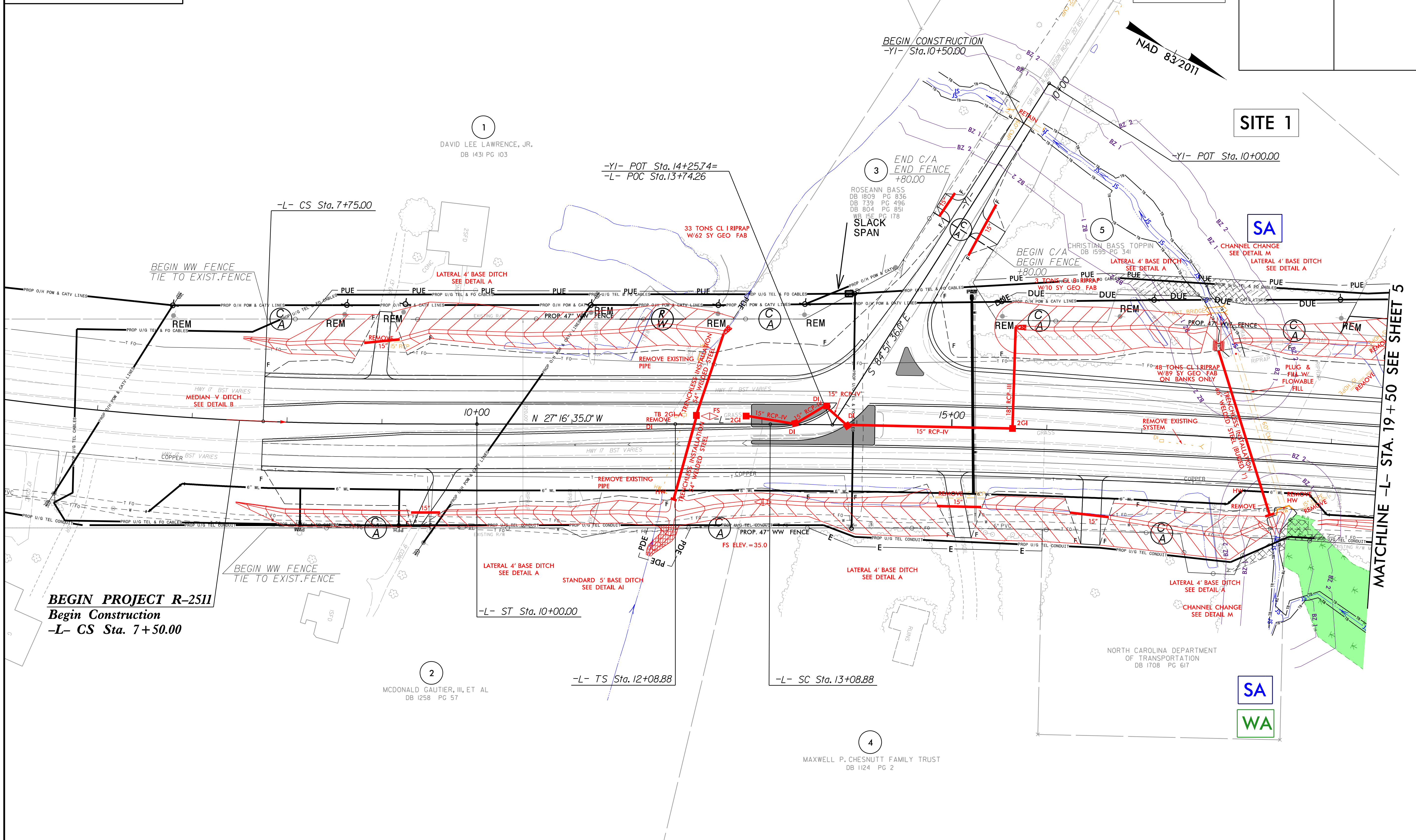
8/17/99

ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2

UTILITY BUFFER DRAWING SHEET 2 OF 6

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2511	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NAD 83/2011
SITE 1
BEGIN CONSTRUCTION
-Y1- Sta.10+50.00
-Y1- POT Sta. 10+00.00
-Y1- POT Sta. 14+25.74=
-L- POC Sta.13+74.26
-L- CS Sta. 7+75.00
DAVID LEE LAWRENCE, JR.
DB 1431 PG 103
END C/A
END FENCE
+80.00
ROSEANN BASS
SLACK SPAN
33 TONS CL I RIPRAP
W/62 SY GEO FAB
BEGIN WW FENCE
TIE TO EXIST.FENCE
LATERAL 4' BASE DITCH
SEE DETAIL A
BEGIN C/A
BEGIN FENCE
+80.00
CHRISTIAN BASS TOPPIN
DB 1595 PG 341
CHANNEL CHANGE
SEE DETAIL M
SA
PROP. 47" WW FENCE
REMOVE EXISTING PIPE
MEDIAN V DITCH
SEE DETAIL B
N 27° 16' 35.0" W
10+00
15+00
S 84° 51' 36.0" E
48 TONS CL I RIPRAP
W/89 SY GEO FAB
ON BANKS ONLY
PLUG & FILL W/ FLOWABLE FILL
REMOVE EXISTING SYSTEM
TRENCHLESS INSTALLATION
24" WELDED STEEL
MATCHLINE -L- STA. 19+50 SEE SHEET 5
BEGIN PROJECT R-2511
Begin Construction
-L- CS Sta. 7+50.00
BEGIN WW FENCE
TIE TO EXIST.FENCE
-L- ST Sta. 10+00.00
STANDARD 5' BASE DITCH
SEE DETAIL A1
FS ELEV.=35.0
PROP. 47" WW FENCE
MCDONALD GAUTIER, III, ET AL
DB 1258 PG 57
-L- TS Sta. 12+08.88
-L- SC Sta. 13+08.88
MAXWELL P. CHESNUTT FAMILY TRUST
DB 1124 PG 2
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 1708 PG 617
SA
WA

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_BUF_psh04_utl.dgn

8/17/99

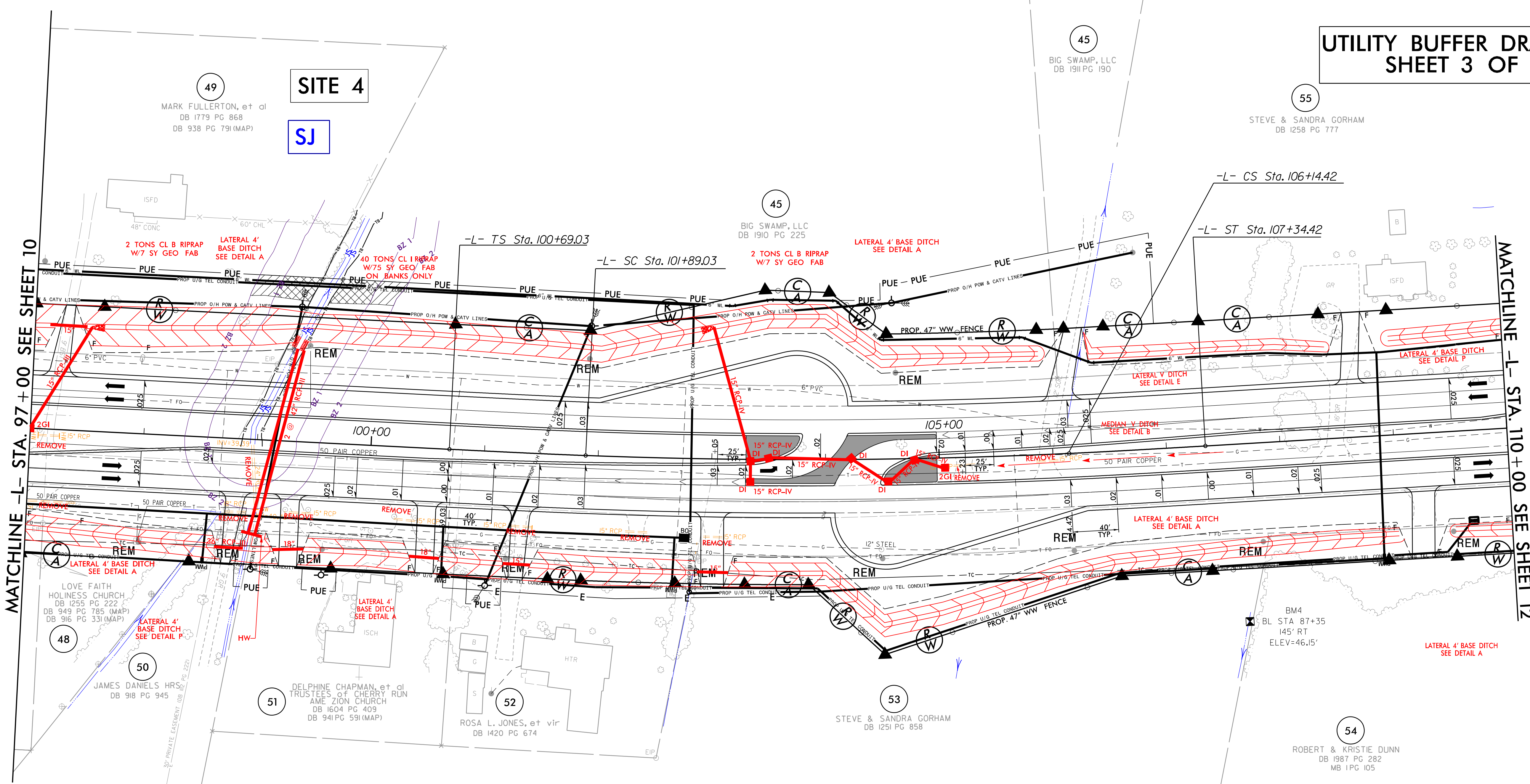
(crosshatch)	MITIGABLE IMPACTS ZONE 1
(hatch)	MITIGABLE IMPACTS ZONE 2

PROJECT REFERENCE NO.	SHEET NO.
R-2511	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/2011

ENGLISH

UTILITY BUFFER DRAWING
SHEET 3 OF 6



SITE 4
SJ
49
MARK FULLERTON, et al
DB 1779 PG 868
DB 938 PG 79I (MAP)
45
BIG SWAMP, LLC
DB 1910 PG 225
45
BIG SWAMP, LLC
DB 1911 PG 190
55
STEVE & SANDRA GORHAM
DB 1258 PG 777
-L- TS Sta. 100+69.03
-L- SC Sta. 101+89.03
-L- CS Sta. 106+14.42
-L- ST Sta. 107+34.42
2 TONS CL B RIPRAP
W/7 SY GEO FAB
LATERAL 4' BASE DITCH
SEE DETAIL A
40 TONS CL I RIPRAP
W/75 SY GEO FAB
ON BANKS ONLY
LATERAL 4' BASE DITCH
SEE DETAIL F
LATERAL V DITCH
SEE DETAIL E
MEDIAN V DITCH
SEE DETAIL B
100+00
105+00
50 PAIR COPPER
PUE
REM
REMOVE
PROP. 47" WW FENCE
MATCHLINE -L- STA. 97+00 SEE SHEET 10
MATCHLINE -L- STA. 110+00 SEE SHEET 12
LOVE FAITH
HOLINESS CHURCH
DB 1255 PG 222
DB 949 PG 785 (MAP)
DB 916 PG 331 (MAP)
48
50
JAMES DANIELS HRS
DB 918 PG 945
51
DELPHINE CHAPMAN, et al
TRUSTEES of CHERRY RUN
AME ZION CHURCH
DB 1604 PG 409
DB 941 PG 591 (MAP)
52
ROSA L. JONES, et vir
DB 1420 PG 674
53
STEVE & SANDRA GORHAM
DB 1251 PG 858
54
ROBERT & KRISTIE DUNN
DB 1987 PG 282
MB 1 PG 105
BM4
BL STA 87+35
145' RT
ELEV=46.15'
LATERAL 4' BASE DITCH
SEE DETAIL A
15" RCP-IV
12" STEEL
40' TYP.
25' TYP.

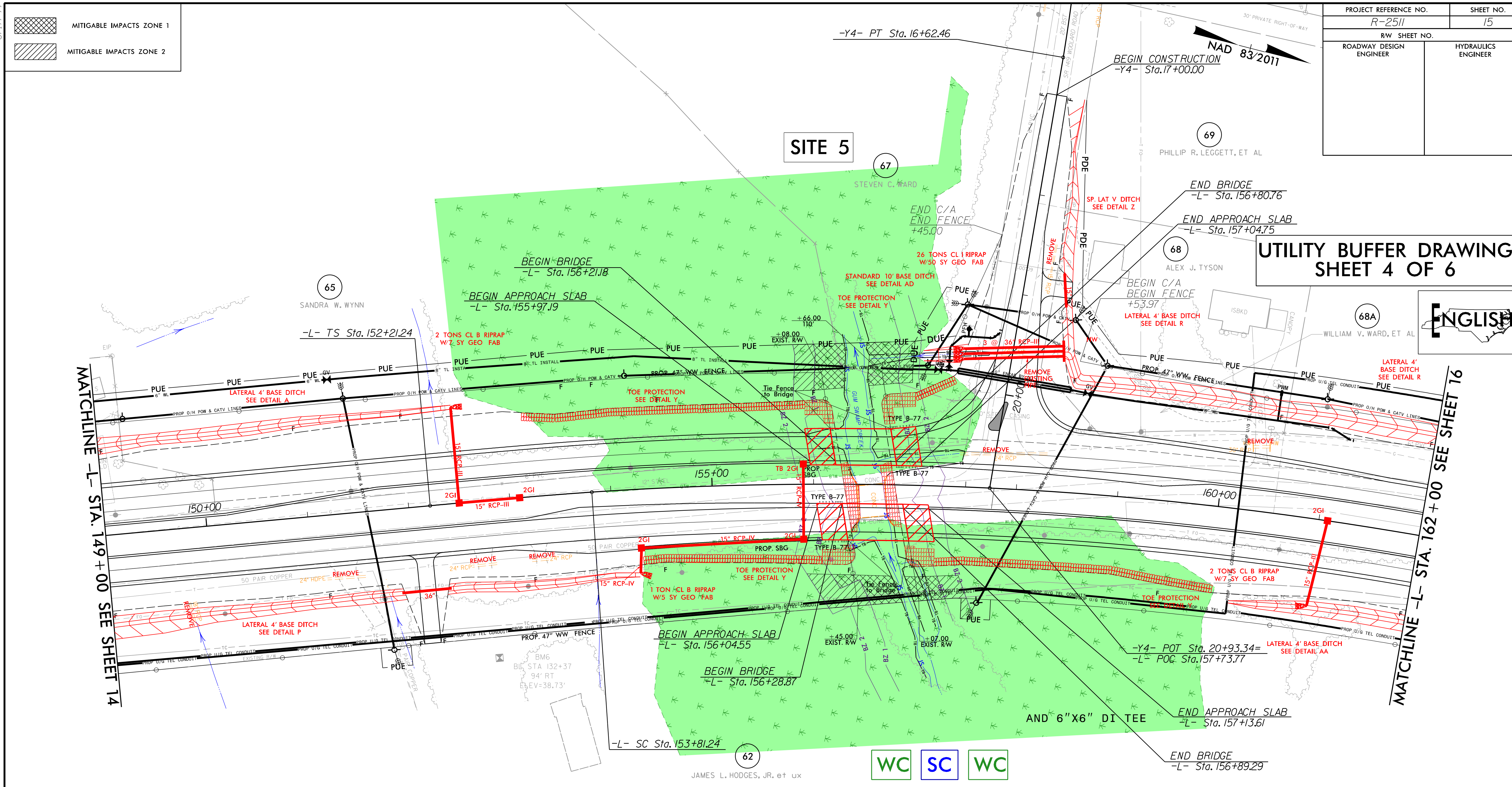
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

6/17/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_BUF_psh11_utl.dgn

PROJECT REFERENCE NO. R-2511 | SHEET NO. 15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

UTILITY BUFFER DRAWING SHEET 4 OF 6

ENGLISH



MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
SITE 5
NAD 83/2011
-Y4- PT Sta. 16+62.46
BEGIN CONSTRUCTION -Y4- Sta. 17+00.00
PHILLIP R. LEGGETT, ET AL
STEVEN C. WARD
END BRIDGE -L- Sta. 156+80.76
END APPROACH SLAB -L- Sta. 157+04.75
END C/A END FENCE +45.00
ALEX J. TYSON
BEGIN C/A BEGIN FENCE +53.97
LATERAL 4' BASE DITCH SEE DETAIL R
WILLIAM V. WARD, ET AL
SP. LAT V DITCH SEE DETAIL Z
26 TONS CL I RIPRAP W/50 SY GEO FAB
STANDARD 10' BASE DITCH SEE DETAIL AD
TOE PROTECTION SEE DETAIL Y
BEGIN BRIDGE -L- Sta. 156+21.18
BEGIN APPROACH SLAB -L- Sta. 155+97.19
SANDRA W. WYNN
-L- TS Sta. 152+21.24
2 TONS CL B RIPRAP W/7 SY GEO FAB
LATERAL 4' BASE DITCH SEE DETAIL A
MATCHLINE -L- STA. 149+00 SEE SHEET 14
MATCHLINE -L- STA. 162+00 SEE SHEET 16
150+00
155+00
160+00
20+00
TYPE B-77
PROP. SBG
Tie Fence to Bridge
15" RCP-IV
15" RCP-III
36" RCP-III
REMOVE
REMOVE EXISTING
1 TON CL B RIPRAP W/5 SY GEO FAB
LATERAL 4' BASE DITCH SEE DETAIL P
PROP. 47" WW FENCE
BEGIN APPROACH SLAB -L- Sta. 156+04.55
BEGIN BRIDGE -L- Sta. 156+28.87
-Y4- POT Sta. 20+93.34= -L- POC Sta. 157+73.77
LATERAL 4' BASE DITCH SEE DETAIL AA
END APPROACH SLAB -L- Sta. 157+13.61
END BRIDGE -L- Sta. 156+89.29
AND 6"X6" DI TEE
-L- SC Sta. 153+81.24
JAMES L. HODGES, JR. et ux
BM6 BL STA 132+37 94' RT ELEV=38.73'
WC
SC
WC
PUE
DUE
PDE

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
8/3/2021
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Drawings\R2511_Hyd_prm_BUF_psh15_utl.dgn

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	16+56 to 19+16	Underground Fiber & Telephone			X	2621	1545	4166					
4	98+87 to 100+25 LT	Underground Telephone and 6" Water Line			X				1376	874	2250		
5	155+92 to 157+64	Underground Telephone, Overhead Power and 8" Water Line			X				4500	3387	7887		
TOTALS*:						**2621**	**1545**	**4166**	**5876**	**4261**	**10137**	**0**	**0**

NOTES:

Total area, including utility impacts, has been taken into consideration for Allowable vs Mitigable Impacts

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/4/2021
BEAUFORT & MARTIN COUNTIES
R-2511
35494.1.1
SHEET 5 OF 6

WETLANDS IN BUFFER IMPACTS SUMMARY

			WETLANDS IN BUFFERS	
SITE NO.	STATION (FROM/TO)		ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	18+58 to 19+04 RT		499	98
5	155+92 to 157+64		4500	3387
TOTAL:			**4999**	**3485**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/4/2021
BEAUFORT & MARTIN COUNTIES
R-2511
35494.1.1
SHEET 6 OF 6

Revised 2018 Feb

Rev. Jan 2009