



PAT McCRORY  
Governor

NICHOLAS J. TENNYSON  
Secretary

December 8, 2016

U. S. Army Corps of Engineers  
2407 West 5th Street  
Washington, North Carolina 27889

Attention: Ms. Tracey Wheeler  
NCDOT Coordinator

**Subject: Application for Section 404 Individual Permit and Section 401 Water Quality Certification** for the proposed improvements along NC 11 from west of SR 1130 (Modlin Road) to east of NC 11/SR 1213 (Old NC 11 Road) Hertford County. TIP No. R-5311A. Debit \$570 from WBS 45449.1.1

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to construct a grade separation at SR 1130 (Modlin Road) and interchange at Old NC 11/ SR 1213 (Old NC 11 Road) in Hertford County, NC.

R-5311A is a section of R-5311 (improvements to existing NC 11, SR 1212 (Shortcut Road) and portions of existing US 13 from just south of the NC 11 intersection with NC 561 to the US 13 interchange with US 158 and NC 45). R-5311B (remainder of R-5311 from just south of the intersection of NC 11 and NC 561 to the intersection of US 13/US 158/NC 45) is currently unfunded and has a projected let date in FY 2030. Therefore, this application is only for R-5311A.

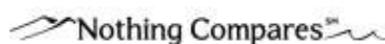
The purpose of this letter is to request approval for a Section 404 Individual Permit and Section 401 Water Quality Certification. In addition to this cover letter, this application package includes the following for R-5311A: ENG Form 4345, stormwater management plan, permit drawings, utility permit drawings, roadway plans, Screening Indirect and Cumulative Effects (SICE) Report, DMS acceptance letter and 4B/4C merger meeting minutes.

### **Purpose and Need**

The purpose of the proposed project is to improve the safety along the NC 11 corridor at the intersections of SR 1130 (Modlin Road) and Old NC 11/ SR 1213 (Old NC 11 Road) in Hertford County.

### **Project Description**

The proposed action involves construction of a grade separation at SR 1130 (Modlin Road) and interchange at Old NC 11/ SR 1213 (Old NC 11 Road). Full control of access is proposed. The total project length is 1.12 miles.



## **Summary of Impacts**

Waters of the U.S.: Proposed permanent impacts to jurisdictional areas total 11.47 acres of permanent wetland impacts. There are no jurisdictional streams or surface waters in the project area.

## **Summary of Mitigation**

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. The proposed construction of R-5311A will result in unavoidable impacts to 11.47 acres of non-riparian wetlands that will require mitigation. The Department has acquired the compensatory mitigation for these unavoidable impacts from the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS).

## **Project Schedule**

Currently, R-5311A is scheduled to let June 20, 2017 and R-5311B is unfunded and is not scheduled in the 2016-2025 STIP. The NCDOT will apply for an additional permit for R-5311B when the project is programmed in the STIP. Construction will not commence on R-5311B until relevant permits have been received based on final design.

## **NEPA Document Status**

The Environmental Assessment (EA) and the Finding of No Significant Impact (FONSI) were approved in October 2013 and December 2015 respectively for R-5311. These documents are available at <https://xfer.services.ncdot.gov/pdea/EnvironmentalDocs/Documents/>.

## **Resource Status**

The project is located in Chowan River Basin and lies within Hydrologic Units 03010203 and 03010204. This is within the Northern Outer Coastal Plain eco-region.

Jurisdictional areas within the project study area were reviewed by the USACE (Tracey Wheeler) and by NCDWR (David Wainwright) on January 23, 2014.

## **Impacts to Jurisdictional Resources**

Impacts to jurisdictional wetlands are summarized below in Table 1.

**Table 1. R-5311A Wetland Impacts**

Permit Drawing Site Number	FONSI Map Label	Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)	Mitigation Required
1	WT	Non-riparian	0.92	0	Yes (1:1)
2	WY	Non-riparian	0.62	0	Yes (1:1)
3	WU	Non-riparian	0	0	Yes (1:1)
4	WY	Non-riparian	4.29	0	Yes (1:1)
5	WU	Non-riparian	0.92	0	Yes (1:1)
6	WZ	Non-riparian	1.07	0	Yes (1:1)
7	WX	Non-riparian	2.76	0	Yes (1:1)
8	WY	Non-riparian	0.33	0	Yes (1:1)
9	WZ	Non-riparian	0.56	0	Yes (1:1)
<b>Total:</b>			<b>11.47</b>	<b>0</b>	<b>11.47</b>

Note: In addition to permanent impacts, there is 0.50 acre of proposed hand clearing in wetlands

Permanent Impacts: Proposed permanent impacts for R-5311A include 9.27 acres of fill, 1.17 acres of excavation, and 1.03 acres of mechanized clearing in non-riparian wetlands.

Utility Impacts: There will be less than 0.01 acre of permanent impacts to non-riparian wetlands due to overhead power pole installations. Please see attached utility permit drawings.

**Protected Species**

The United States Fish and Wildlife Service (USFWS) lists two species, and the National Marine Fisheries Service (NMFS) lists one species that are federally protected in Hertford County as of March 7, 2015 (Table 2).

**Table 2. Federally protected species listed for Hertford County**

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	Endangered	No	No Effect
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered	No	No Effect
<i>Trichechus manatus</i>	West Indian manatee	Endangered	No	No Effect

### ***Northern long-eared bat***

The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect." The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Hertford County, where R-5311A is located.

### ***Bald and Golden Eagle Protection Act (BGPA)***

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. Nesting and foraging habitat are not present in the project area, nor have bald eagle nests or individuals have been seen within a 660-foot radius of the project area.

### ***Moratoria***

There are no in-stream work moratoria required for R-5311A.

### **Cultural Resources**

As noted in the FONSI, the selected alternative will not have an impact on Historic Properties. Additionally, in a letter dated October 15, 2015 from the State Historic Preservation Office (SHPO), SHPO concurred with NCDOT's recommendation that no further archaeological investigation be conducted in connection with this project since the project will not involve significant archaeological resources.

### **FEMA Compliance**

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

### **Mitigation Options**

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

### ***Avoidance and Minimization***

All jurisdictional features were delineated, field verified and surveyed within the corridor for R-5311A. Using these features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the USACE, except as authorized by the USACE. To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow material, or to dispose of dredged, fill or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the USACE on request.
- All of the proposed drainage has been designed to have as little environmental and surface water impacts as possible.
- Ditches were designed using BMP grassed swale criteria. Velocities at wetland features are non-erosive.
- The 11,240 feet of ditches were designed using grassed swale criteria to reduce flow velocity, promote sedimentation, infiltration and runoff attenuation.
- Sediment and erosion control devices will be utilized where appropriate.
- The use of hand clearing rather than mechanized clearing where possible.
- Considering environmental, hydraulic, and roadway perspectives, 3:1 slopes are proposed within the wetlands where most practical.

### ***Compensation***

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to non-riparian wetlands will be offset by compensatory mitigation (1:1 ratio) provided by the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS). An acceptance letter from DMS is attached.

### ***Indirect and Cumulative Effects***

A Screening Indirect and Cumulative Effects (SICE) Report for R-5311 was completed in October 2013. A copy of the report is attached. As indicated on page 13 of the report, the screening assessment resulted in a "Not Likely" conclusion. As a result, no Land Use Scenario Assessment (LUSA) was performed. The overall conclusions of the Indirect Effects are summarized on page 16 and the Cumulative Effects are summarized on page 18.

## Essential Fish Habitat

The project will not impact any Essential Fish Habitat afforded protection under the Magnuson-Stevens Act of 1996 (16 U.S.C 1801 et seq.).

## Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities.

Section 401: We are requesting a Section 401 Water Quality Certification from NCDWR. We are providing this application to NCDEQ, for their approval. Authorization to debit the \$570 Permit Application Fee from WBS Element 45449.1.1 is hereby given.

CAMA: Under separate cover, NCDOT is submitting a request for a CAMA Federal Consistency Review from the N. C. Division of Coastal Management for R-5311A.

A copy of this permit request and its distribution list will be posted on the NCDOT website at: <https://connect.ncdot.gov/resources/Environmental>

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Tyler Stanton at [tstanton@ncdot.gov](mailto:tstanton@ncdot.gov) or (919) 707-6156.

Sincerely,



*Per*  
Philip S. Harris III, P.E., C.P.M.  
Natural Environment Section Head

cc:

NCDOT Permit Application Standard Distribution List



17. DIRECTIONS TO THE SITE

See attached vicinity map

18. Nature of Activity (Description of project, include all features)

Construct a grade separation at SR 1130 (Modlin Road) and interchange at Old NC 11/ SR 1213 (Old NC 11 Road)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

To improve the safety along the NC 11 corridor at the intersections of SR 1130 (Modlin Road) and Old NC 11/ SR 1213 (Old NC 11 Road).

**USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

Wetlands will be impacted by construction activities, i.e., widening of road, replacement/extension of drainage structures.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
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Please see attached permit drawings

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 11.47 acres of non-riparian wetlands

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See attached cover letter

24. Is Any Portion of the Work Already Complete?  Yes  No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See attached mailing labels

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

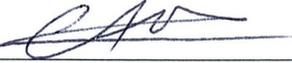
City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

 12-08-2016  
\_\_\_\_\_  
SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE  
for PHILIP S. HARRIS III

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



Transportation

PAT McCRORY  
Governor

NICHOLAS J. TENNYSON  
Secretary

December 8, 2016

N.C. Division of Coastal Management  
1638 Mail Service Center  
Raleigh, NC 27699-1638

ATTN: Ms. Cathy Brittingham, NCDOT Coordinator

Subject: Certification for DCM Consistency for the proposed improvements along NC 11 from west of SR 1130 (Modlin Road) to east of NC 11/SR 1213 (Old NC 11 Road) Hertford County. TIP No. R-5311A  
WBS 45449.1.1

Dear Madam:

The purpose of this letter and information package is to request concurrence from the Division of Coastal Management (DCM) for the North Carolina Department of Transportation's (NCDOT) consistency certification for the above-mentioned project. This package consists of the supporting information, half size plan sheets, permit drawings, utility plans, and the Division of Mitigation Services (DMS) acceptance letter for R-5311A.

NCDOT proposes to construct a grade separation at SR 1130 (Modlin Road) and interchange at Old NC 11/ SR 1213 (Old NC 11 Road) in Hertford County, NC. R-5311A is a section of R-5311 (improvements to existing NC 11, SR 1212 (Shortcut Road) and portions of existing US 13 from just south of the NC 11 intersection with NC 561 to the US 13 interchange with US 158 and NC 45). R-5311B (remainder of R-5311 from just south of the intersection of NC 11 and NC 561 to the intersection of US 13/US 158/NC 45) is currently unfunded and has a projected let date in FY 2030. Therefore, this certification request is only for R-5311A. The NCDOT is also submitting an application for a U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit as well as a N.C. Division of Water Quality (DWQ) Individual 401 Water Quality Certification.

NCDOT has reviewed the State's coastal program under 15 CFR 930.58 and 15A NCAC 07M. Specifically, we have considered the shoreline erosion, mitigation and coastal water quality policies, and the Hertford County CAMA Core Land Use Plan. The NCDOT certifies that the proposed activity complies with the enforceable policies of North Carolina's approved management program and will be conducted in a manner consistent with such program.

If you have any questions or need additional information please contact Tyler Stanton at (919) 707-6156 or [tstanton@ncdot.gov](mailto:tstanton@ncdot.gov).

Sincerely,

for Philip S. Harris III, P.E., C.P.M.  
Natural Environment Section Head

cc: Greg Daisey, NCDOT

Nothing Compares<sup>SM</sup>

**Coastal Zone Consistency Certification Supporting Information for the NCDOT's Request to Construct Improvements along NC 11 from west of SR 1130 (Modlin Road) to east of NC 11/SR 1213 (Old NC 11 Road) in Hertford County, NC. NCDOT TIP No. R-5311A.**

**History**

R-5311A is a section of R-5311 (improvements to existing NC 11, SR 1212 (Shortcut Road) and portions of existing US 13 from just south of the NC 11 intersection with NC 561 to the US 13 interchange with US 158 and NC 45). R-5311B (remainder of R-5311 from just south of the intersection of NC 11 and NC 561 to the intersection of US 13/US 158/NC 45) is currently unfunded and has a projected let date in FY 2030. Therefore, this certification request is only for R-5311A; however, due to National Environmental Policy Act (NEPA) documentation, much of the supporting information provided below pertains to the entire scope of R-5311.

The section of NC 11, SR 1212 (Shortcut Road) and US 13 to be improved under this project were originally part of two alternatives studied under the proposed US 13 Ahoskie Bypass project (TIP Project R-2205). Project R-2205 would have widened portions of existing US 13 to a four-lane, median divided facility, upgraded the highway to either freeway or expressway standards, and would also have included a new location bypass of Ahoskie. However, Project R-2205 is no longer funded in the State Transportation Improvement Program (STIP) and project development studies for this project have been discontinued. Due to safety issues along the section of NC 11 and US 13 between Ahoskie and Winton, particularly at the intersections of NC 11 and NC 561 and NC 11/SR 1213 (Old NC 11 Road) and NC 11, TIP Project R-5311 was programmed in the 2012-2018 STIP. It should also be noted that in September 2010, NCDOT closed one approach to the NC 11/SR 1213 (Old NC 11 Road) intersection to temporarily address safety concerns.

This project has followed the NEPA/404 Merger process. The Merger process is an interagency procedure integrating the regulatory requirements of Section 404 of the Clean Water Act into the National Environmental Policy Act decision making process. On September 14, 2011, the merger team concurred on the purpose and need (Concurrence Point 1) for this project. As a result, a Citizens Informational Workshop was held on March 27, 2012. At the Concurrence Point 2 meeting, which was held on September 19, 2012, the merger team concurred on alternatives for detailed study. The merger team concurred on the appropriate structure types for stream crossings (Concurrence Point 2A) at a merger team meeting held on June 18, 2013. The Public Hearing was held on June 9, 2014 in Ahoskie, NC to obtain public input on the location and design of the project. The Least Environmentally Damaging Practicable Alternative (LEDPA) (Alternative 1) was selected following the Concurrence Point 3 meeting, held on November 20, 2014. Finally, Avoidance and minimization measures were agreed upon at the Concurrence Point 4A meeting held on September 3, 2015.

The NCDOT completed the Environmental Assessment (EA) October 31, 2013 in compliance with NEPA guidelines. The EA explains the purpose and need for the project, provides a description of the alternatives considered, and characterizes the social, economic, and environmental effects. The EA was approved and circulated to federal, state, and local agencies. Then following the EA, a Finding of No Significant Impact (FONSI) Statement was completed December 23, 2015. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies are available at <https://xfer.services.ncdot.gov/pdea/EnvironmentalDocs/Documents/>.

## **Project Description**

The proposed action involves construction of a grade separation at SR 1130 (Modlin Road) and interchange at Old NC 11/ SR 1213 (Old NC 11 Road). Full control of access is proposed. The total project length is 1.12 miles.

### *Avoidance and Minimization*

All jurisdictional features were delineated, field verified and surveyed within the corridor for R-5311A. Using these features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the USACE, except as authorized by the USACE. To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow material, or to dispose of dredged, fill or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the USACE on request.
- All of the proposed drainage has been designed to have as little environmental and surface water impacts as possible.
- Ditches were designed using BMP grassed swale criteria. Velocities at wetland features are non-erosive.
- The 11,240 feet of ditches were designed using grassed swale criteria to reduce flow velocity, promote sedimentation, infiltration and runoff attenuation.
- Sediment and erosion control devices will be utilized where appropriate.
- The use of hand clearing rather than mechanized clearing where possible.
- Considering environmental, hydraulic, and roadway perspectives, 3:1 slopes are proposed within the wetlands where most practical.

## **Alternatives**

Along with the No-Build alternative, a total of six alternatives were considered for R-5311. Four of the six (Alternatives 1, 3, 5, and 6) were studied in detail. These study detailed alternatives were presented at the June 9, 2014 formal public hearing and are described below.

### Alternative 1 – Freeway (Part New Location)

This alternative proposes the upgrade of existing NC 11 and SR 1212 (Shortcut Road) to a four-lane freeway from south of NC 561 to US 13. A four-lane roadway on new location would be constructed between SR 1212 (Shortcut Road) at US 13 and existing US 13 at its northern intersection with NC 461. Full control of access (connections to the facility are only provided via ramps at interchanges) is proposed for this new roadway. Existing US 13 would be upgraded to a four-lane freeway between the northern intersection with NC 461 to south of US 158/NC 45 and interchanges would be constructed at the

intersections of NC 11 with NC 561 and NC 11/SR 1212 (Shortcut Road) with NC 11. All other crossing roads would be grade separated or have their access removed and turned into cul-de-sacs. Additional right of way would be required to construct the new road segment east of existing US 13, between US 13/SR 1212 (Shortcut Road) and the northern US 13/NC 461 intersection. As noted above, Alternative 1 was the selected LEDPA for R-5311.

Alternative 3 – Freeway/Expressway (Existing Location)

This alternative proposed the upgrade of existing NC 11 and SR 1212 (Shortcut Road) to a four-lane freeway from south of NC 561 to US 13. The portion of US 13 from SR 1212 (Shortcut Road) to NC 461 would have been widened to four lanes with partial control of access (one driveway per parcel). Existing US 13 would have been upgraded to a four-lane freeway between the northern intersection with NC 461 to south of US 158/NC 45. Interchanges would have been constructed at NC 11 and NC 561, NC 11/SR 1212 (Shortcut Road), and the northern US 13 intersection with NC 461.

Alternative 5 – Superstreet (Existing Location)

This alternative proposed the upgrade of NC 11, existing SR 1212 (Shortcut Road), and existing US 13 to a four-lane roadway from south of NC 561 to south of US 158/NC 45. Partial control of access would have been obtained along existing US 13 between SR 1212 (Shortcut Road) and the northern intersection with NC 461. Although an interchange would have been constructed at the northern intersection of US 13 and NC 461, a superstreet design would be utilized at the remaining intersections.

Alternative 6 – Superstreet (Part New Location)

This alternative proposed the upgrade of existing NC 11 and SR 1212 (Shortcut Road) to a four-lane roadway from south of NC 561 to US 13. A four-lane roadway on new location would have been constructed between SR 1212 (Shortcut Road) at US 13 and the northern intersection of US 13 at NC 461, which would have been become a grade separation. Full control of access would have been obtained for the new location portion of the project beyond SR 1408 (Saluda Hall Road). Existing US 13 would have been upgraded to a four-lane roadway between NC 461 to south of US 158/NC 45. No interchanges would have been constructed with this alternative, but a superstreet design would have been utilized at the NC 11/NC 561 and the NC 11/SR 1212 (Shortcut Road) intersections.

**Mitigation**

Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to non-riparian wetlands will be offset by compensatory mitigation (1:1 ratio) provided by the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS). An acceptance letter from DMS is attached.

## Protected Species

The United States Fish and Wildlife Service (USFWS) lists two species, and the National Marine Fisheries Service (NMFS) lists one species that are federally protected in Hertford County as of March 7, 2015 (Table 2).

**Table 2. Federally protected species listed for Hertford County**

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	E	No	No Effect
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<i>Trichechus manatus</i>	West Indian manatee	E	No	No Effect

E - Endangered

### *Northern long-eared bat*

The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect." The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Hertford County, where R-5311A is located.

### *Bald and Golden Eagle Protection Act (BGPA)*

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. Nesting and foraging habitat are not present in the project area, nor have bald eagle nests or individuals have been seen within a 660-foot radius of the project area.

## Cultural Resources

### Archaeology and Historic Architecture

As noted in the FONSI, the selected alternative will not have an impact on Historic Properties. Additionally, in a letter dated October 15, 2015 from the State Historic Preservation Office (SHPO), SHPO concurred with NCDOT's recommendation that no further archaeological investigation be conducted in connection with this project since the project will not involve significant archaeological resources.

### **Indirect and Cumulative Effects**

A Screening Indirect and Cumulative Effects (SICE) Report for R-5311 was completed in October 2013. A copy of the report is available upon request. As indicated on page 13 of the report, the screening assessment resulted in a "Not Likely" conclusion. As a result, no Land Use Scenario Assessment

(LUSA) was performed. The overall conclusions of the Indirect Effects are summarized on page 16 and the Cumulative Effects are summarized on page 18.

### **Other Permits**

In addition to the DCM Consistency Determination, permits to be obtained for this project include an Individual Section 404 permit and an Individual Section 401 Water Quality Certification.

### **Division of Coastal Management (DCM) General Policy Guidelines for the Coastal Area**

The general policy guidelines in 15A NCAC 07M have been reviewed for applicability to this project in its entirety. Explicitly, the .0700 rules (mitigation), and the .0800 rules (water quality) were reviewed. This project will not affect shoreline erosion or shoreline access. However, this project will require compensatory mitigation and impact water quality. This project has been designed to avoid and minimize jurisdictional areas to the largest extent possible. Best Management Practices will be in place during construction; compensatory mitigation will be provided through NCDMS.

### **Hertford County CAMA Land Use Plan**

The *Hertford County Coastal Area Management Act (CAMA) Land Use Plan Update* was adopted on January 18, 2011. This plan analyzed existing and emerging conditions by stating policies and implementation actions in order to guide development in the CAMA permitting process. According to the Hertford County CAMA Land Use Plan, much of the growth that the Town of Ahoskie has experienced in recent years has been single lot and multi-lot subdivisions for new modular homes. The local planning team also expects increased development along the Chowan River.

Additionally, the *Hertford County CAMA Land Use Plan Update*, a majority of Hertford County's land use is agriculture and forestry operations. The county intends for development to occur in areas that can access current and planned infrastructure. The Future Land Use Map shows a majority of the NC 11/US 13 corridor in the study area slated for rural development; the area of the corridor just north of the northern NC 461 intersection with US 13 and southeast of the Town of Winton is marked as developed. Properties within the rural development area generally have access to limited services such as county water, police, and fire protection. As such, land uses cannot support a high density of uses without extension of full municipal services. Rural development areas are allowed a residential density of 2 units per acre, with an average of 30% lot coverage.

After reviewing the various policy statements, NCDOT concludes that this project is consistent with the *Hertford County CAMA Land Use Plan Update*.



PAT MCCRORY  
Governor

DONALD R. VAN DER VAART  
Secretary

October 14, 2016

Mr. Philip S. Harris, III, P.E., CPM  
Project Development and Environmental Analysis Unit  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

**R-5311A**, US 13 / NC 11 Improvements from west of Modlin Road to east of NC 11 / SR 1213 (Old NC 11)), Hertford County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory wetland mitigation for the subject project. Based on the information supplied by you on October 13, 2016, the impacts are located in CUs 03010203 and 03010204 of the Chowan River basin in the Northern Outer Coastal Plain (NICP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Chowan	03010203	NOCP	0	0	0	0	10.85	0
Impacts	Chowan	03010204	NOCP	0	0	0	0	0.62	0

\*Some of the stream and wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

**Currently, DMS does not have non-riparian wetland mitigation credits available in Chowan 03010204 and proposes to utilize non-riparian wetland credits from Chowan 03010203. DMS commits to implementing sufficient compensatory wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.**

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill  
Credit Management Supervisor

cc: Ms. Tracey Wheeler, USACE – Washington Regulatory Field Office  
Ms. Amy Chapman, NCDWR  
File: R-5311A

R-5311A 4B Meeting Minutes  
3/21/2016



Project: R-5311A (US 13/NC11 AT NC 11/SR 1212 (SHORT CUT ROAD) AT NC 11/SR 1213 (OLD NC 11 ROAD)

Date: February 18, 2016

Location: NCDOT Structures Conference Room CCA

Time: 8:30AM

Minutes Authored by: Kyle Stoffer, ICA Engineering

Attendees:	Paul Atkinson- NCDOT Hydraulics	patkinson@ncdot.gov
	Craig Freeman- NCDOT Hydraulics	cafreeman2@ncdot.gov
	Nishont Shah- NCDOT Hydraulics	nmshah1@ncdot.gov
	Jay McInnis- NCDOT PDEA	jmcinnis@ncdot.gov
	Tracey Wheeler- USACE	tracey.l.wheeler@usace.army.mil
	Jim Hauser- NCDOT NES	jhauser@ncdot.gov
	Garcy Ward- NCDENR DWR	garcy.ward@ncdenr.gov
	Mark Staley- NCDOT REU	mstaley@ncdot.gov
	Cathy Brittingham- NCDENR DCM	cathy.brittingham@ncdenr.gov
	Tina Snell- NCDOT RDWY	tsnell@ncdot.gov
	Tyler Stanton- NCDOT NES	tstanton@ncdot.gov
	Gary Lovering- NCDOT RDWY	glovering@ncdot.gov
	Keith Paschal- NCDOT SMU	kpaschal@ncdot.gov
	Larry M. James- NCDOT Utilities	lmjames@ncdot.gov
	Travis Wilson- NCWRC	travis.wilson@ncwildlife.org
	Trent Cormier- ICA Engineering	trent.cormier@hdrinc.com
	Kyle Stoffer- ICA Engineering	kyle.stoffer@hdrinc.com

Agencies expressed concerns with the large proposed ditch lines along -Y1- and -Y2- and their prospective impacts to the wetlands. It was stated the project drainage design should ensure all proposed ditch depths and geometries be comparable to existing conditions to minimize wetland impacts. It was stated by Trent Cormier that the proposed drainage design limits hydraulic trespassing and maintains existing hydraulic and hydrological conditions.

**Plan Sheet 4:** It was requested by Tracey Wheeler to move outfall node 0508 and the riprap pad outside the wetland boundaries to minimize wetland impacts.

**Plan Sheet 5:** It was stated by Trent Cormier a proposed ditch along alignment -EL- (Sta. 320+00 to 322+91 LT not shown in plans) had been added in response to NCDOT Hydraulics review comments. It was also stated the ditch does not require a riprap pad at the outfall into the wetland due to a flat slope and a non-erosive flow velocity.

**Plan Sheet 6:** No comments or concerns

**Plan Sheet 7:** Trent Cormier explained the proposed drainage design had changed in response to NCDOT Hydraulics review comments in the gore area between -Y2RPB- and -Y2LPB- and gore area between -Y2LPD- and -Y2RPD-. The 36" RCP equalizer pipes had been replaced with drainage boxes and outlets (not shown in plans). Tracey Wheeler requested the riprap pads located in the wetlands within -Y2LPD- and -Y2LPB- loops be eliminated or reduced in size if possible. Trent Cormier stated the riprap pads at these locations were required to ensure non-erosive flow velocities and were sized based on NCDOT standards.

**Plan Sheet 8:** No comments or concerns.

**Plan Sheet 9:** No comments or concerns.

**Plan Sheet 10:** No comments or concerns.

**Plan Sheet 11:** Garcy Ward questioned what happened to the flow in the ditch along -Y2- at Sta. 70+00 LT downstream of the 18" RCP driveway pipe. Trent Cormier stated based field recon the flow reenters the wetlands downstream of the driveway pipe located at Sta. 70+00 LT along -Y2- and this location is outside the project area.

Final R-5311A 4C Meeting Minutes  
8/22/2016



**Project:** R-5311A (US 13/NC11 AT NC 11/SR 1212 (SHORT CUT ROAD) AT NC 11/SR 1213 (OLD NC 11 ROAD))  
**Date:** August 17, 2016  
**Location:** NCDOT Hydraulics Conference Room CCB  
**Time:** 11:00AM

**Minutes Authored by:** Kyle Stoffer, ICA Engineering

A handwritten signature in black ink, appearing to read 'Kyle Stoffer', is written over the typed name.

<b>Attendees:</b>	Paul Atkinson- NCDOT Hydraulics	patkinson@ncdot.gov
	Craig Freeman- NCDOT Hydraulics	cafreeman2@ncdot.gov
	Monte Matthews-USACE	monte.k.matthews@usace.army.mil
	Pareshkumar Patel- NCDOT STIP	pbpatel@ncdot.gov
	Jay McInnis- NCDOT PDEA	jmcinnis@ncdot.gov
	Kyle Barnes- USACE	kyle.w.barnes@usace.army.mil
	Carlos Moya-Astudill- NCDOT TPB	cemoya@ncdot.gov
	Greg Daisey- NCDENR DCM	greg.daisey@ncdenr.gov
	Mark Staley- NCDOT REU	mstaley@ncdot.gov
	Cathy Brittingham- NCDENR DCM	cathy.brittingham@ncdenr.gov
	Scott Emory- NCDOT RE DIV 1	semory@ncdot.gov
	Chris Rivenbark- NCDOT NES	crivenbark@ncdot.gov
	Gary Lovering- NCDOT RDWY	glovering@ncdot.gov
	Amy Chapman-NCDENR DEQ	amy.chapman@ncdenr.gov
	Larry M. James- NCDOT Utilities	lmjames@ncdot.gov
	Kifah Kamil- NCDOT Utilities	kkamil@ncdot.gov
	David Fuh- ICA Engineering	david.fuh@hdrinc.com
	Kyle Stoffer- ICA Engineering	kyle.stoffer@hdrinc.com

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Mark Staley, Amy Chapman, and Scott Emory stated the impacts not within the woods line that are currently designated as mechanized clearing should be reviewed to determine if they may be designated as hand clearing to reduce mitigation requirements. Post meeting Larry James requested the utility impacts to be shown and quantified separately from the roadway impacts. ICA Engineering will coordinate with the NCDOT Utilities Unit for clarification of plan requirements. Kyle Barnes and Amy Chapman expressed concerns with the proposed ditch lines along -Y1- and -Y2- and their prospective impacts to the wetlands. It was stated by Kyle Stoffer and Paul Atkinson that the project drainage ditch design depths and geometries are comparable to the existing conditions to minimize wetland impacts and maintains existing hydraulic and hydrological conditions.

**Stormwater Management Plan Sheet:** No comments or concerns.

**Title Sheet:** No comments or concerns.

**Plan Sheet 4:** Site 1, the clearing hatching is missing from outside ditch edge to the proposed right of way boundary. Mark Staley requested the impacts not in woods line should be reviewed if hand clearing is possible instead of mechanized clearing. Post meeting Chris Rivenbark had concerns if the fill slope at Site 1 along alignment -EL- (Approx. 311+50T to 312+75 LT) is needed. After review by ICA Engineering and NCDOT Hydraulics Unit it was determined the fill slope was not need to facilitate drainage and has been removed as an impact.

**Plan Sheet X-24:** No comments or concerns.

**Plan Sheet 5:** Site 3, Chris Rivenbark asked if the proposed ditch could be pulled back and outlet to natural ground to eliminate mechanized clearing. Kyle Stoffer stated the proposed ditch is designed to accommodate the final future condition and the ditch needs to tie to the wetland to maintain the existing drainage pattern. Post meeting Chris Rivenbark asked if the proposed ditch outfall could tie back into the existing ditch line before it enters the wetlands to avoid impacts. After a review by ICA Engineering the last 50 feet of the proposed ditch was revised to tie into the existing ditch line and avoid all wetland impacts for the current design.

**Plan Sheet X-7:** No comments or concerns.

**Plan Sheet 7:** Scott Emory and Amy Chapman requested to revise the mechanized clearing to hand clearing outside the woods line around the interchange at Site 4, Site 5, Site 6, and Site 8. ICA Engineering will revise and tabulate all proposed mechanized clearing outside the woods line to hand clearing. Post meeting Chris Rivenbark and agencies asked if the fill slopes at the grade separation would extend as far as is shown on the permit drawings at Site 5 & 6. ICA Engineering has coordinated between the Roadway Design and Structures Management Unit to verify the fill slopes and transition to the overpass slope protection. The permits have been revised and the impacts have been reduced at Site 5 to minimize the impacts. The impacts at Site 6 remain unchanged due to Detour 1 design.

**Plan Sheet X-15:** No comments or concerns.

**Plan Sheet X-38:** No comments or concerns.

**Plan Sheet X-51:** No comments or concerns.

**Plan Sheet X-43:** No comments or concerns.

**Plan Sheet X-55:** No comments or concerns.

**Plan Sheet 8:** No comments or concerns.

**Plan Sheet 10:** Post meeting Larry James stated only roadway impacts are to be shown and tabulated in the permit package. ICA Engineering will revise the permit drawings at Site 9 to only show roadway impacts. Any impacts from the proposed utility installations will be coordinated through the NCDOT Utilities Unit and ICA Engineering will submit a separate permit package.

**Plan Sheet X-33:** No comments or concerns.

**Plan Sheet 11:** No comments or concerns.

**Wetland Permit Impact Summary Sheet:** ICA Engineering will update the permit package based on requested mechanized to hand clearing changes and tabulate impacts for the roadway impacts only.



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



(Version 2.02; Released April 2015)

**WBS Element:** 45449.1.2      **TIP No.:** R-5311A      **County(ies):** Hertford      **Page** 1 **of** 1

**General Project Information**

<b>WBS Element:</b>	45449.1.2	<b>TIP Number:</b>	R-5311A	<b>Project Type:</b>	Roadway Widening	<b>Date:</b>	9/28/2016
<b>NCDOT Contact:</b>	Matthew Lauffer, PE			<b>Contractor / Designer:</b>	Trent Cormier, PE, CPESC, CPSWQ		
	<b>Address:</b>	NCDOT Hydraulics Unit 1590 Mail Service Raleigh, NC 27699-1590			<b>Address:</b>	ICA Engineering 5121 Kingdom Way, Suite 100 Raleigh, NC 27607	
	<b>Phone:</b>	(919) 707-6703			<b>Phone:</b>	(919) 900-1608	
	<b>Email:</b>	mslauffer@ncdot.gov			<b>Email:</b>	trenton.cormier@hdrinc.com	
<b>City/Town:</b>	Ahoskie			<b>County(ies):</b>	Hertford		
<b>River Basin(s):</b>	Chowan			<b>CAMA County?</b>	Yes		
<b>Wetlands within Project Limits?</b>	Yes						

**Project Description**

<b>Project Length (lin. miles or feet):</b>	1.12	<b>Surrounding Land Use:</b>	Agricultural and Low Residential					
	<b>Proposed Project</b>			<b>Existing Site</b>				
<b>Project Built-Up Area (ac.)</b>	38.0	ac.	8.3	ac.				
<b>Typical Cross Section Description:</b>	NC HWY 11 & Short Cut Road (SR 1212): 2 paved lanes (total 24' wide), 8' shoulder on each side (13' with guardrail), 4' paved. Varying fill and cut slopes (see project XSC's for detailed information). Modlin/Modlin Hatchery Road (SR 1130): 2 paved lanes (total 24' wide), 8' shoulder on each side (11' with guardrail). Varying fill and cut slopes (see project XSC's for detailed information)			NC HWY 11 & Short Cut Road (SR 1212): open shoulder section, 2 paved lane (total 32' wide); Modlin/Modlin Hatchery Road (SR 1130): open shoulder section, 2 paved lane (total 25' wide); Old NC 11 (SR 1213): open shoulder section, 2 paved lane (total 24' wide).				
<b>Annual Avg Daily Traffic (veh/hr/day):</b>	<b>Design/Future:</b>	10,667	<b>Year:</b>	2036	<b>Existing:</b>	7,333	<b>Year:</b>	2016

**General Project Narrative:**  
**(Description of Minimization of Water Quality Impacts)**  
 The North Carolina Department of Transportation (NCDOT) has proposed to construct an interchange for and widen NC 11 in Ahoskie, NC. There are no proposed major structures involved with the construction of the NC 11 Bypass. All of the proposed drainage has been designed to have as little environmental and surface water impacts as possible. Ditches were designed using BMP grassed swale criteria. Velocities at wetland features are non-erosive. 11,240 LF of ditches were designed using grassed swale criteria to reduce flow velocity, promote sedimentation, infiltration and runoff attenuation. All proposed utility impacts and quantities will be shown in a separate drawing.

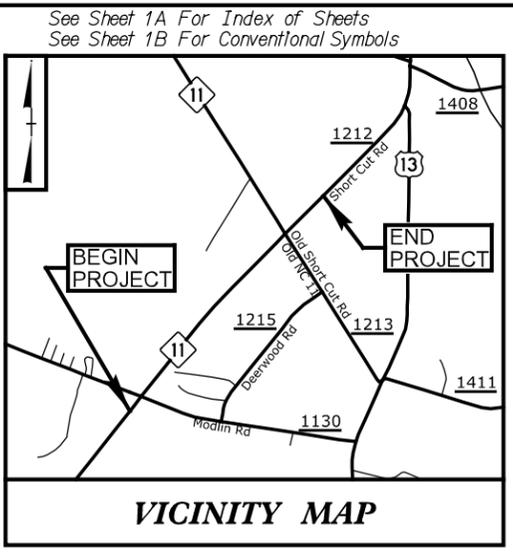
**Waterbody Information**

<b>Surface Water Body (1):</b>		<b>NCDWR Stream Index No.:</b>	
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>		
	<b>Supplemental Classification:</b>		
<b>Other Stream Classification:</b>			
<b>Impairments:</b>			
<b>Aquatic T&amp;E Species?</b>	<b>Comments:</b>		
<b>NRTR Stream ID:</b>		<b>Buffer Rules in Effect:</b>	
<b>Project Includes Bridge Spanning Water Body?</b>		<b>Deck Drains Discharge Over Buffer?</b>	<b>Dissipator Pads Provided in Buffer?</b>
<b>Deck Drains Discharge Over Water Body?</b>	(If yes, provide justification in the General Project Narrative)	(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)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5311A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45449.1.2	NHF-0013(37)	P.E.	
45449.2.FS1	NHF-0013(37)	RW	

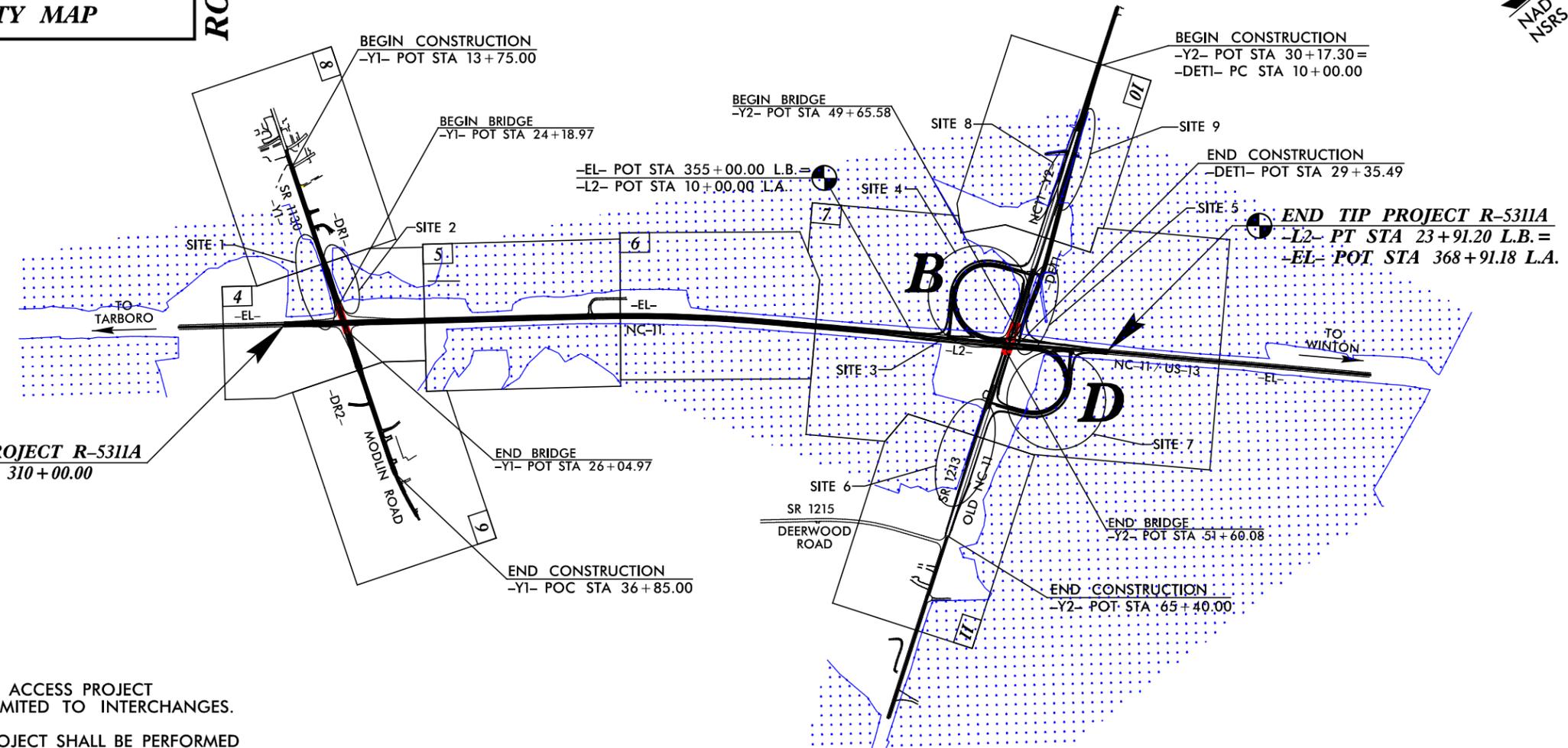
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**HERTFORD COUNTY**

**LOCATION: WEST OF MODLIN ROAD TO EAST OF NC 11/SR 1213 (OLD NC 11 ROAD). CONSTRUCT GRADE SEPARATION AT SR 1130 (MODLIN ROAD) AND INTERCHANGE AT OLD NC 11/SR 1213 (OLD NC 11 ROAD).**  
**TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES**



**ROW PLANS**

**TIP PROJECT: R-5311A**



**NOTES:**  
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

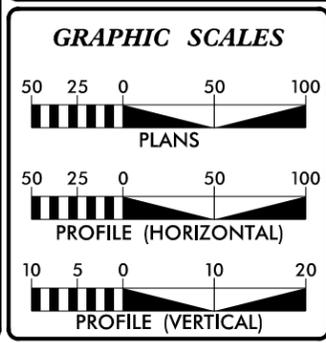
**WETLAND AND SURFACE WATER IMPACTS PERMIT**



PERMIT DRAWING SHEET 1 OF 19

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT (2017) =	7,500
ADT (2037) =	10,830
K =	10 %
D =	55 %
T =	26 % *
V =	60 MPH
* TTST = 22% DUAL 4%	
FUNC CLASS =	ARTERIAL REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-5311A =	1.116 MILES
TOTAL LENGTH TIP PROJECT R-5311A =	1.116 MILES

Prepared for the North Carolina Department of Transportation In the office of:

**ICA Engineering** 5121 Kingdom Way, Suite 100, Raleigh, NC 27607, NC License No: F-0258

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 17, 2016

LETTING DATE: JUNE 20, 2017

DENA C. SNEAD, PE PROJECT ENGINEER

JORDAN C. BOND PROJECT DESIGN ENGINEER

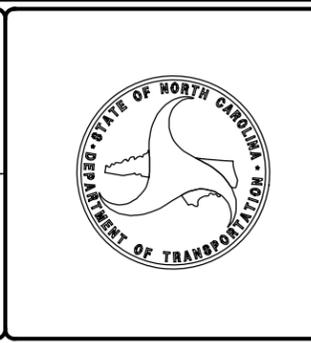
GARY LOVERING, PE ROADWAY DESIGN - PROJECT ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

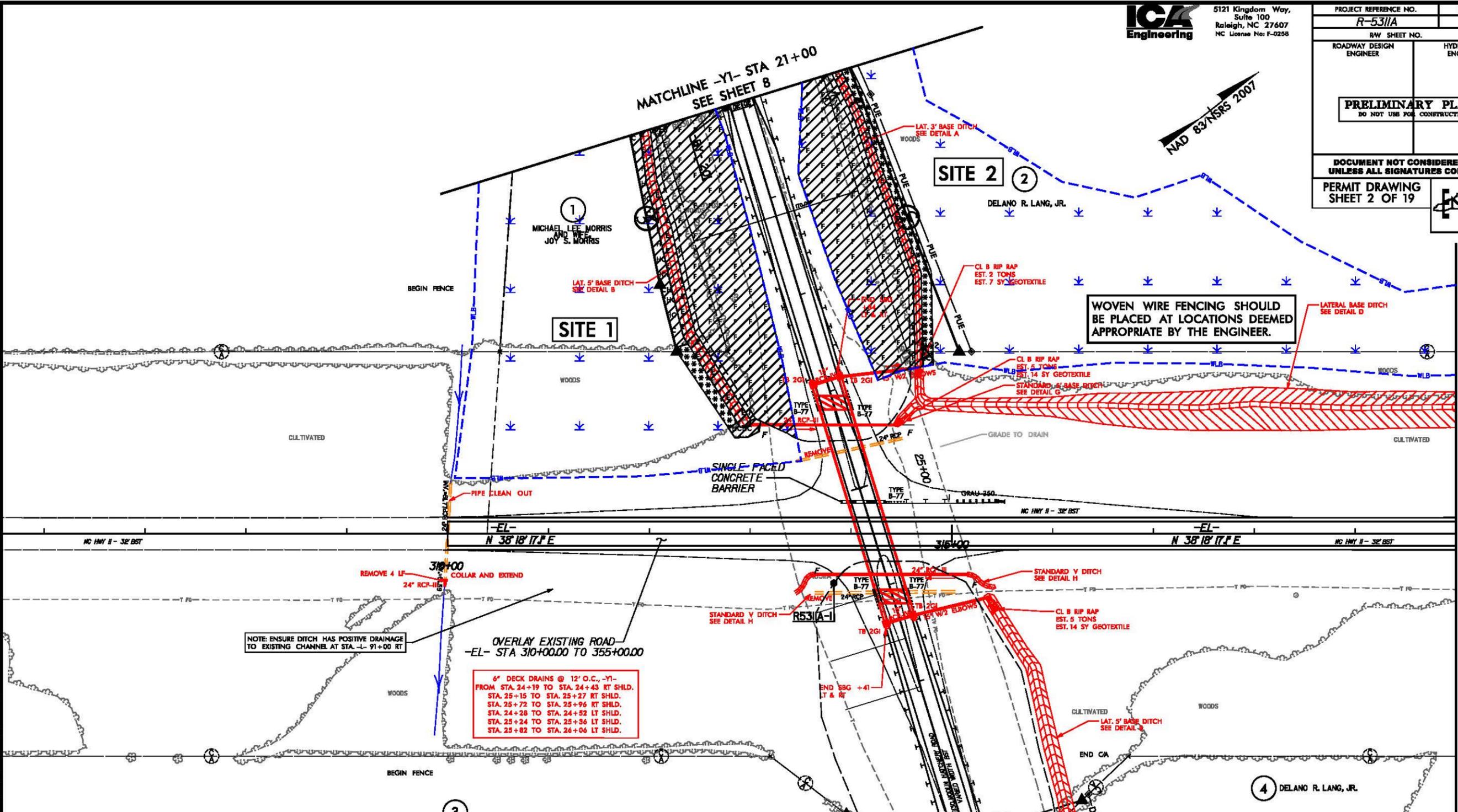


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PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>4</b>
RAW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 2 OF 19	



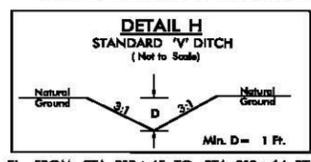
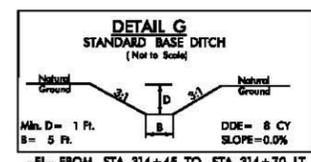
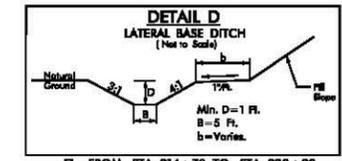
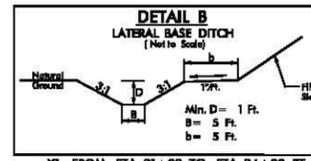
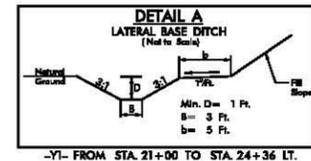
8/17/99  
 9/30/2016  
 ICA ENGINEERING, INC.  
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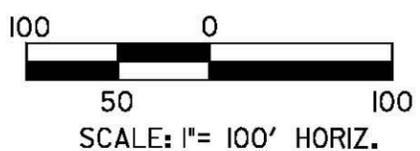
NOTE: ENSURE DITCH HAS POSITIVE DRAINAGE TO EXISTING CHANNEL AT STA. -L- 91+00 RT

OVERLAY EXISTING ROAD  
 -EL- STA 310+00.00 TO 355+00.00

6" DECK DRAINS @ 12' O.C., -YI- FROM STA. 24+19 TO STA. 24+43 RT SHLD. STA. 25+15 TO STA. 25+27 RT SHLD. STA. 25+72 TO STA. 25+96 RT SHLD. STA. 24+28 TO STA. 24+52 LT SHLD. STA. 25+24 TO STA. 25+36 LT SHLD. STA. 25+82 TO STA. 26+06 LT SHLD.



**PLAN VIEW  
 SITE 1 AND SITE 2**



- LEGEND**
- WETLAND BOUNDARY
  - DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES HAND CLEARING

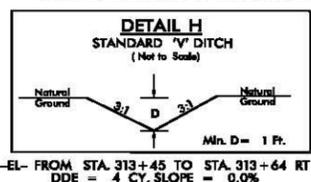
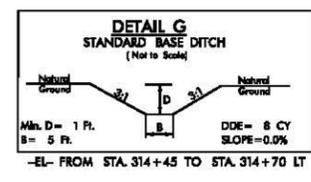
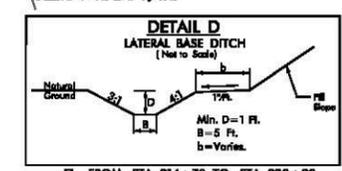
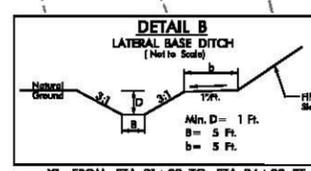
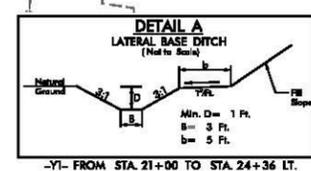
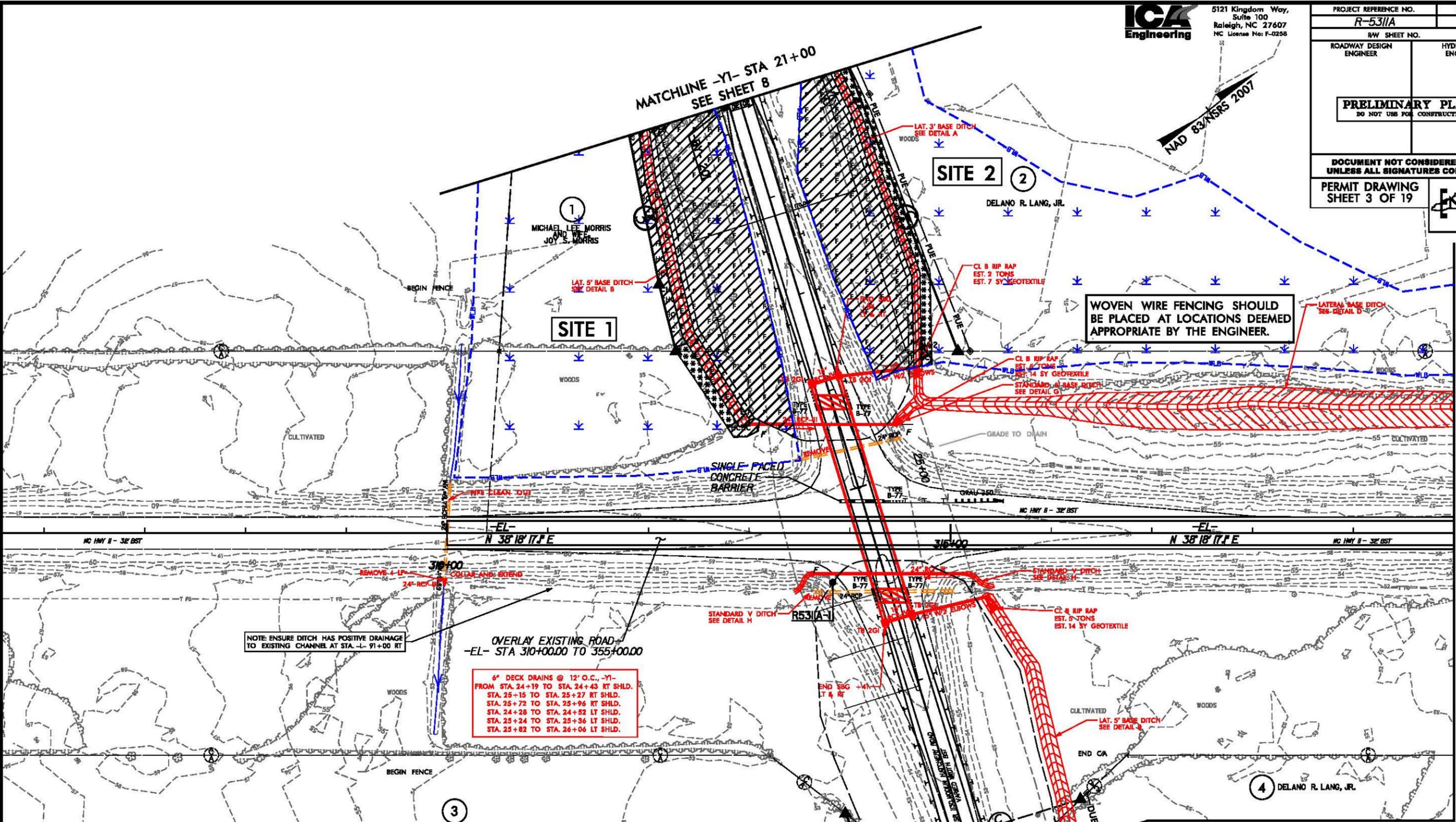
FOR -EL- PROFILE, SEE SHEET 12 & 13  
 FOR -YI- PROFILE, SEE SHEET 14 & 15  
 FOR BRIDGE /PAVEMENT RELATIONSHIP SKETCH, SEE SHEET 2B-4

MATCHLINE -EL- STA 320+00  
 SEE SHEET 5

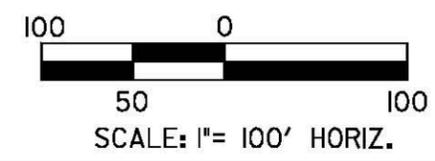
PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>4</b>
RAW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 3 OF 19	



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 9/30/2016  
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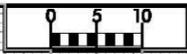
**PLAN VIEW  
SITE 1 AND SITE 2**



- LEGEND**
- WETLAND BOUNDARY
  - DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES HAND CLEARING

FOR -EL- PROFILE, SEE SHEET 12 & 13  
 FOR -Y1- PROFILE, SEE SHEET 14 & 15  
 FOR BRIDGE /PAVEMENT RELATIONSHIP SKETCH, SEE SHEET 2B-4

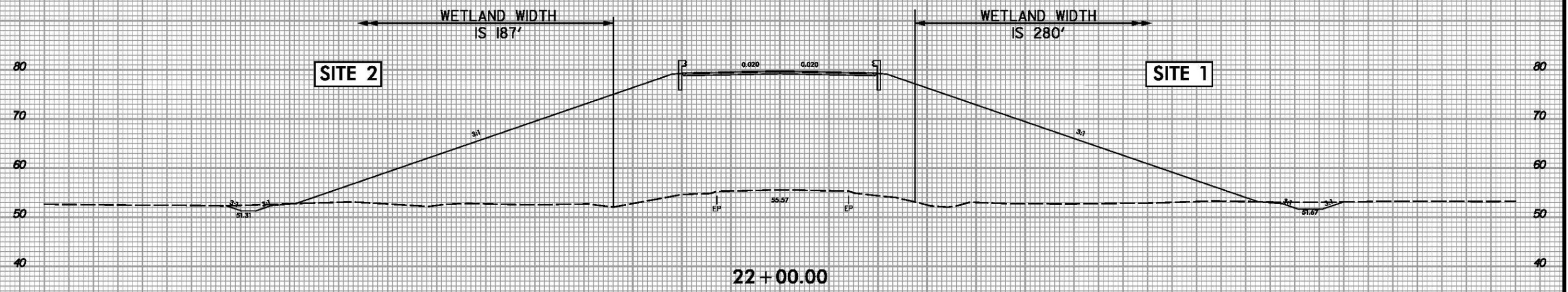
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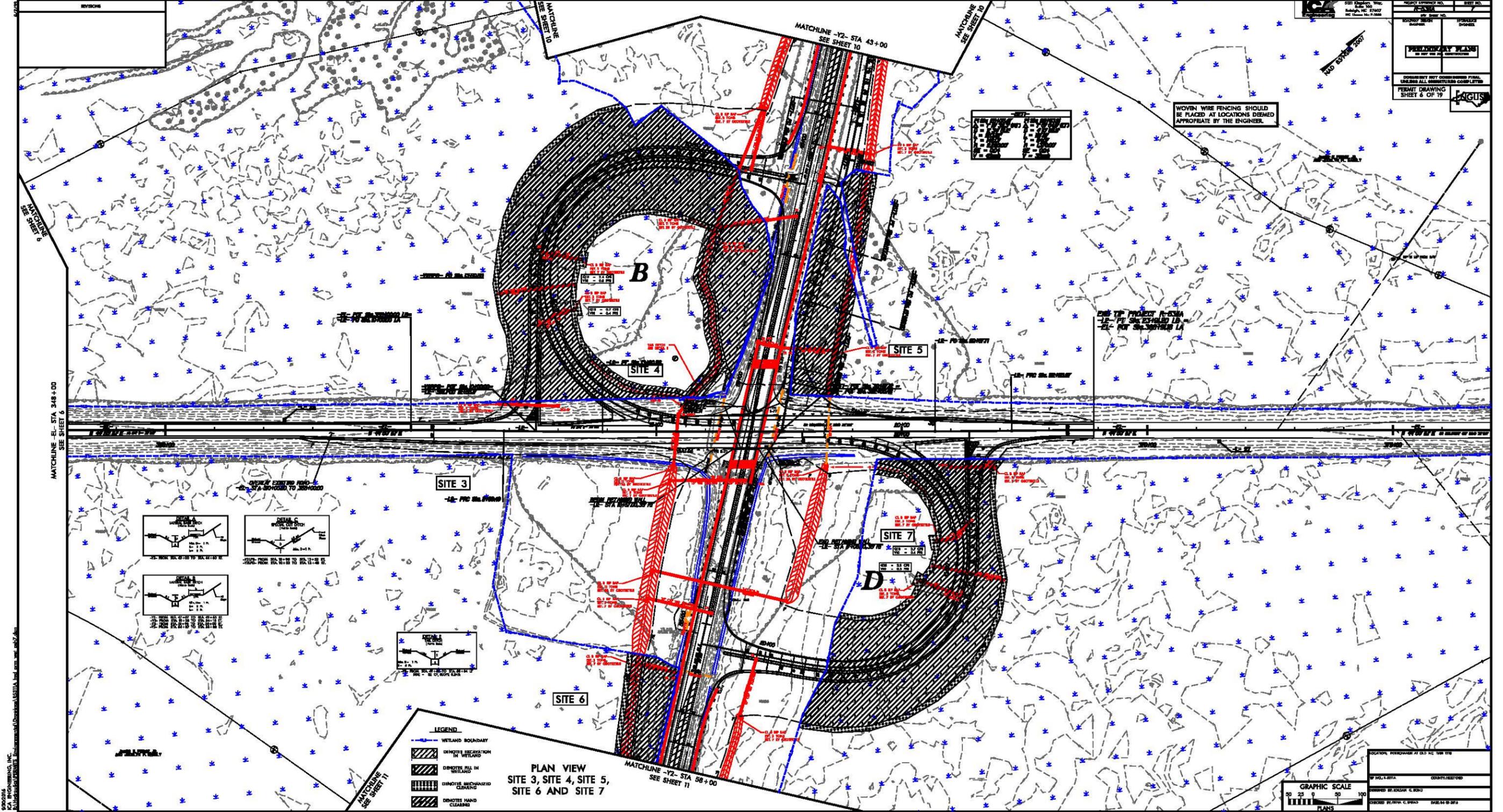
PERMIT DRAWING SHEET 4 OF 19



9/28/2016 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS Environmental\Drawings\5311A Rdy\_XPL\_YI\_site 1\_2.dwg

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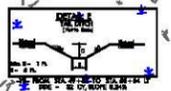
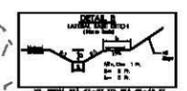
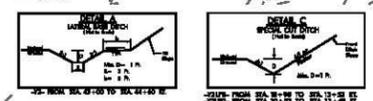
PROJECT NO.	12-0000
DATE	08/14/09
PROJECT NAME	WETLAND RESTORATION PROJECT
PROJECT LOCATION	STATION 43+00 TO 58+00
PROJECT DRAWING	PLAN
PROJECT SHEET	19
PROJECT DATE	08/14/09
PROJECT DRAWING	PLAN
PROJECT SHEET	19
PROJECT DATE	08/14/09

WOVEN WIRE FENCING SHOULD BE PLACED AT LOCATIONS DEEMED APPROPRIATE BY THE ENGINEER.

SEE THE PROJECT PLAN FOR THE LOCATION OF THE FENCING.

MATCHLINE - EL- STA 248+00 SEE SHEET 6

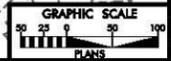
MATCHLINE -Y2- STA 43+00 SEE SHEET 10



- LEGEND**
- WETLAND BOUNDARY
  - DEMOTES RECONSTRUCTION IN WETLAND
  - DEMOTES FILL IN WETLAND
  - DEMOTES MECHANIZED CLEARING
  - DEMOTES HAND CLEARING

PLAN VIEW  
SITE 3, SITE 4, SITE 5,  
SITE 6 AND SITE 7

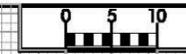
MATCHLINE -Y2- STA 58+00 SEE SHEET 11



PROJECT NO.	12-0000
DATE	08/14/09
PROJECT NAME	WETLAND RESTORATION PROJECT
PROJECT LOCATION	STATION 43+00 TO 58+00
PROJECT DRAWING	PLAN
PROJECT SHEET	19
PROJECT DATE	08/14/09

SPOONER, CA ENGINEERING, INC. Environmental/Construction/Utility and more...

8/23/99



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

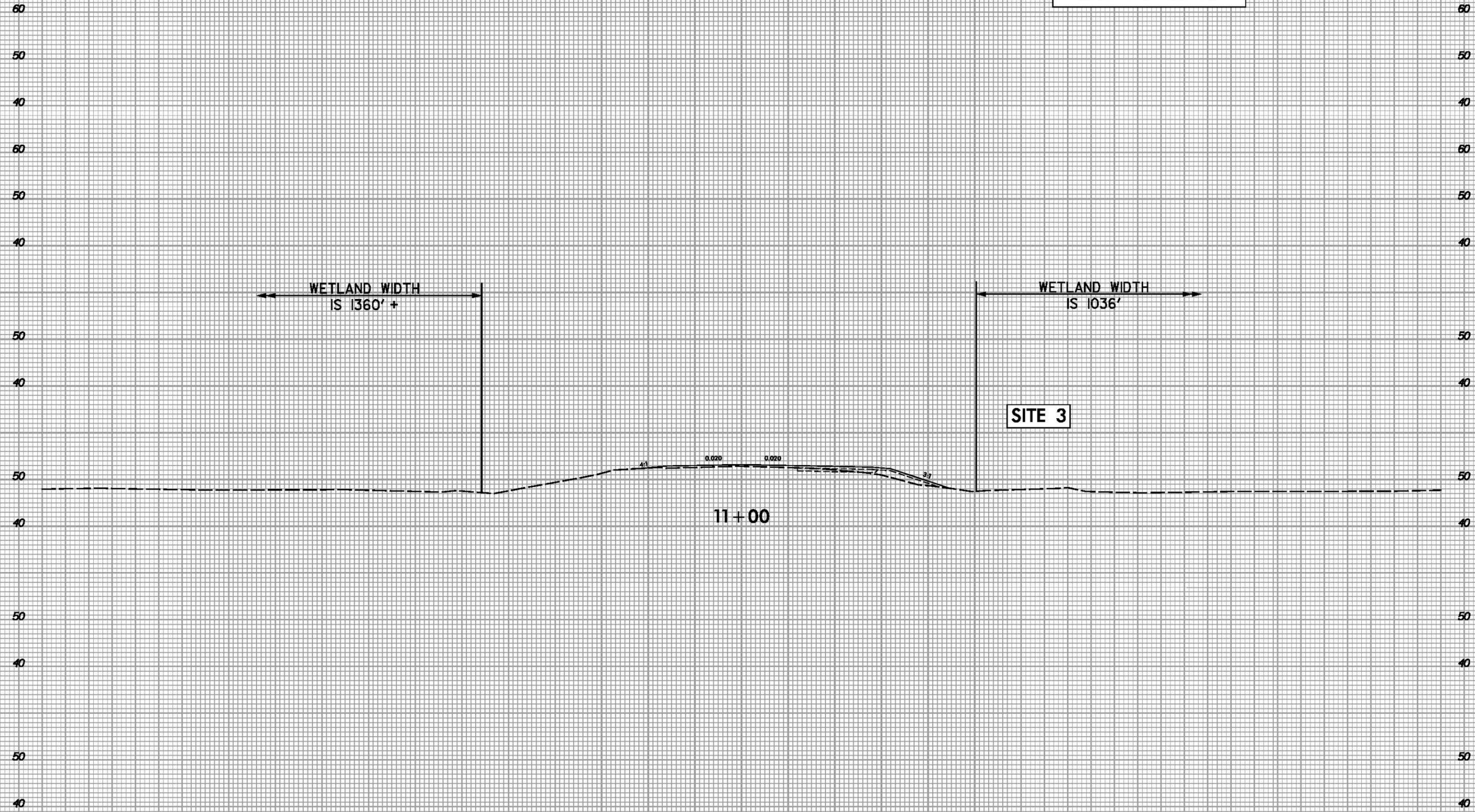


PERMIT DRAWING  
SHEET 7 OF 19

← WETLAND WIDTH  
IS 1360' +

← WETLAND WIDTH  
IS 1036'

SITE 3



11+00

-L2-

9/28/2016  
SCHEIDT  
USERNAME

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

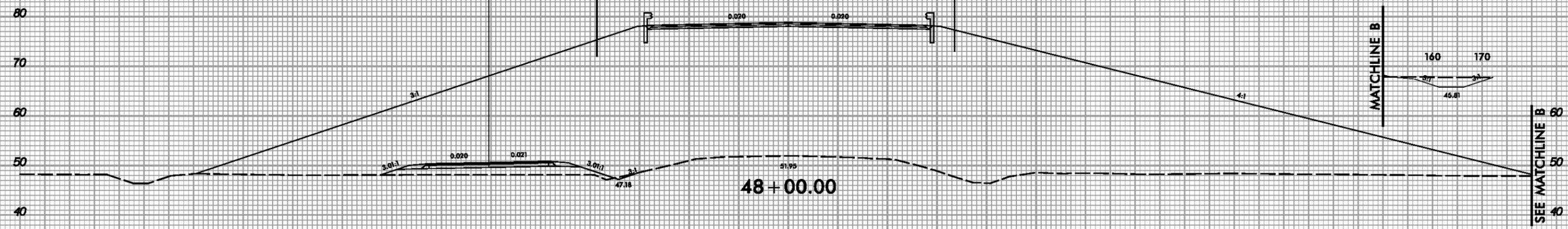
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**PERMIT DRAWING  
SHEET 8 OF 19**

← WETLAND WIDTH IS 1061' →  
**SITE 5**  
 ← WETLAND WIDTH IS 2000' + →  
**SITE 4**

-- DETI --  
STA 27 + 85.08



-Y2-

9/28/2016  
SC: [unreadable]  
[unreadable]

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

8/23/99



PROJ. REFERENCE NO.  
R-5311A

SHEET NO.  
X-51

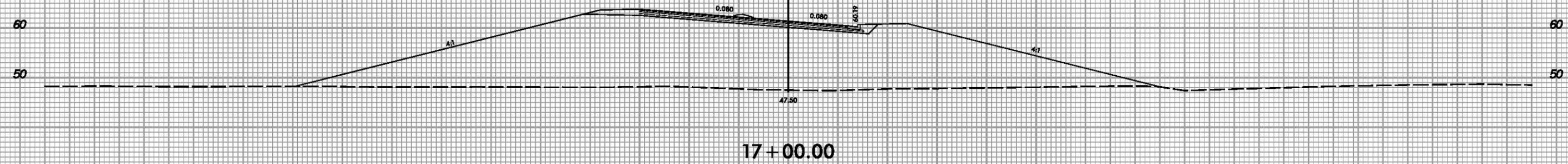
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PERMIT DRAWING  
SHEET 9 OF 19

SITE 4

← WETLAND WIDTH IS 1200' +      WETLAND WIDTH IS 460' →



17+00.00

-Y2LPB-

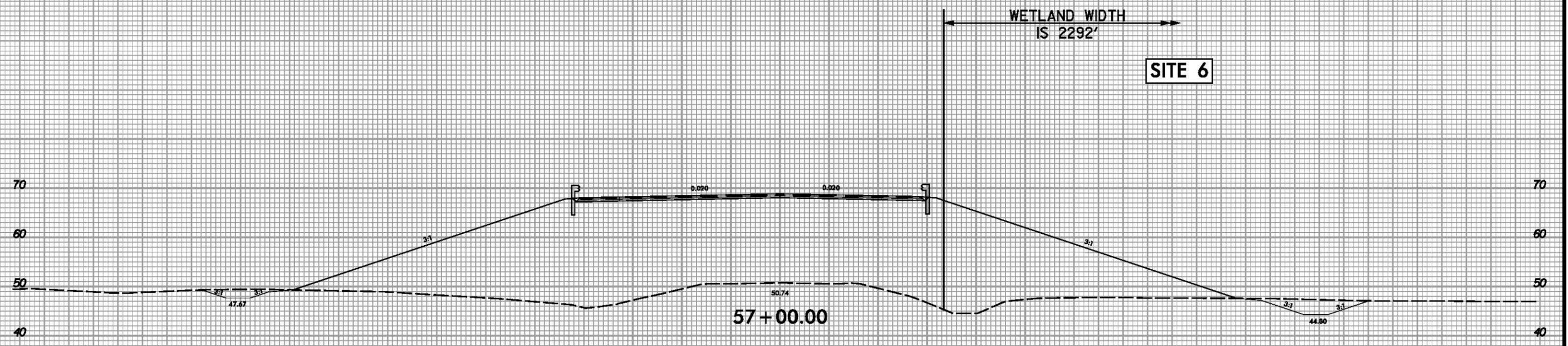
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9/28/2016  
\$(USERNAM)\$  
\$FILEL\$

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PERMIT DRAWING  
SHEET 10 OF 19



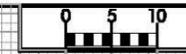
57+00.00

-Y2-

9/28/2016  
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 TCA ENGINEERING, INC.

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8/23/99



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

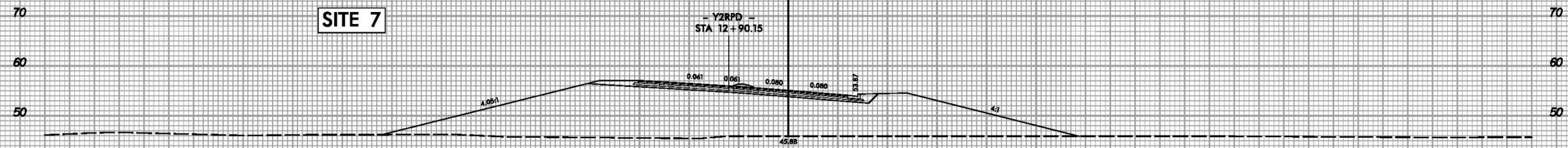


PERMIT DRAWING  
SHEET 11 OF 19

SITE 7

← WETLAND WIDTH IS 2350' →  
← WETLAND WIDTH IS 211' →

- Y2RPD -  
STA 12 + 90.15



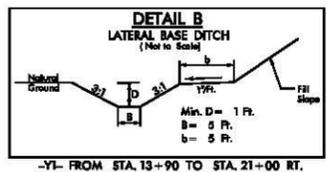
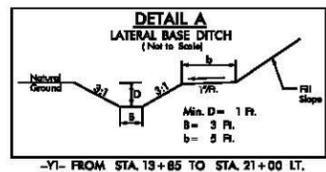
15 + 00.00

-Y2LPD-

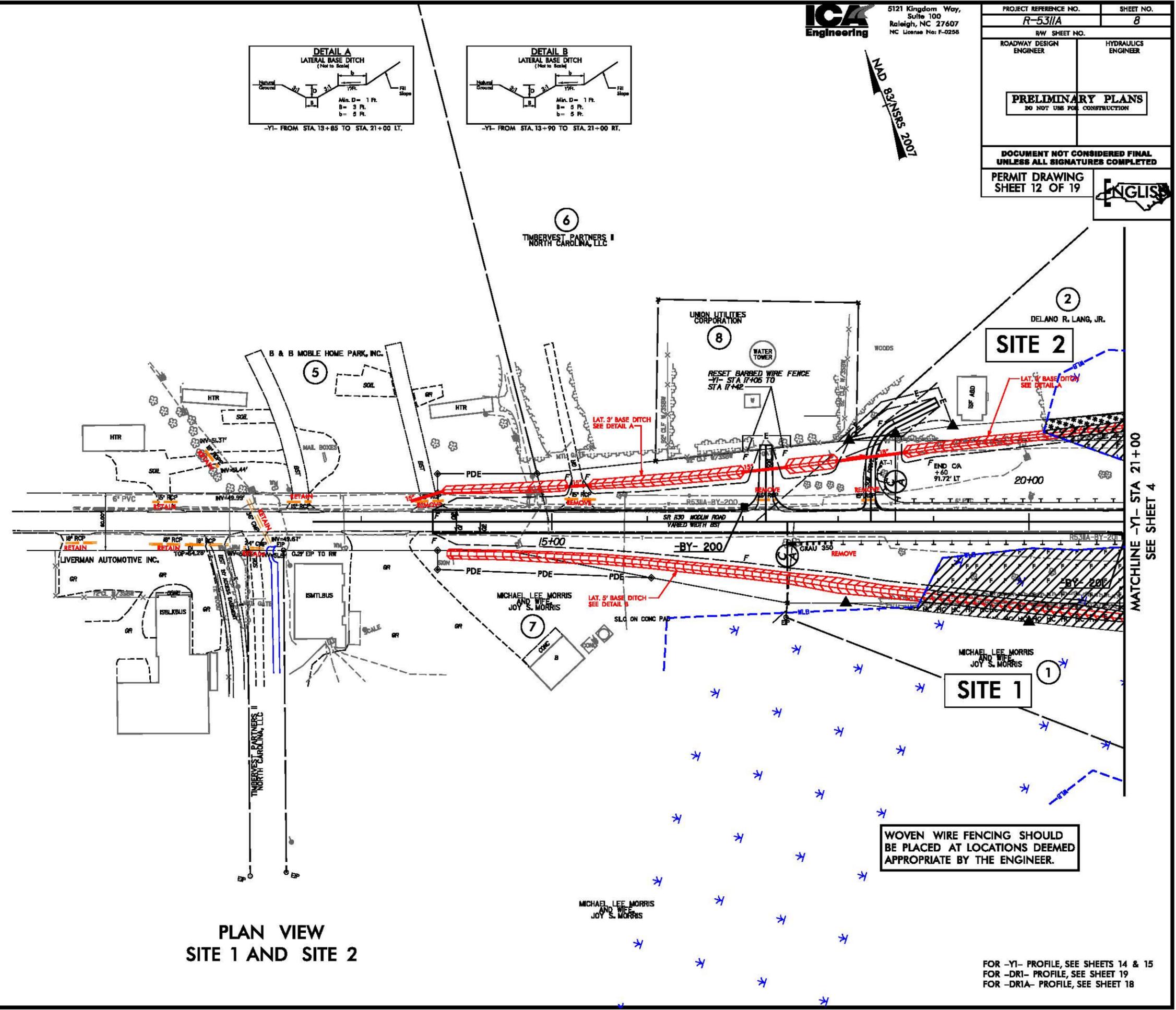
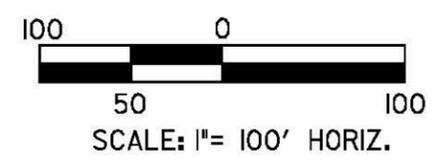
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PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>8</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 12 OF 19	<b>ENGLISH</b>

MD 82/NSRS 2007



- LEGEND**
- WLB - WETLAND BOUNDARY
  - DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES HAND CLEARING



**PLAN VIEW  
 SITE 1 AND SITE 2**

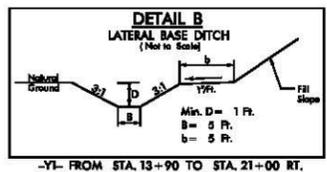
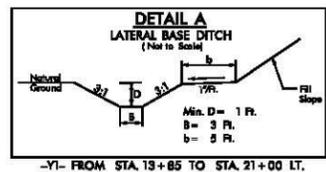
WOVEN WIRE FENCING SHOULD BE PLACED AT LOCATIONS DEEMED APPROPRIATE BY THE ENGINEER.

FOR -YI- PROFILE, SEE SHEETS 14 & 15  
 FOR -DR1- PROFILE, SEE SHEET 19  
 FOR -DR1A- PROFILE, SEE SHEET 18

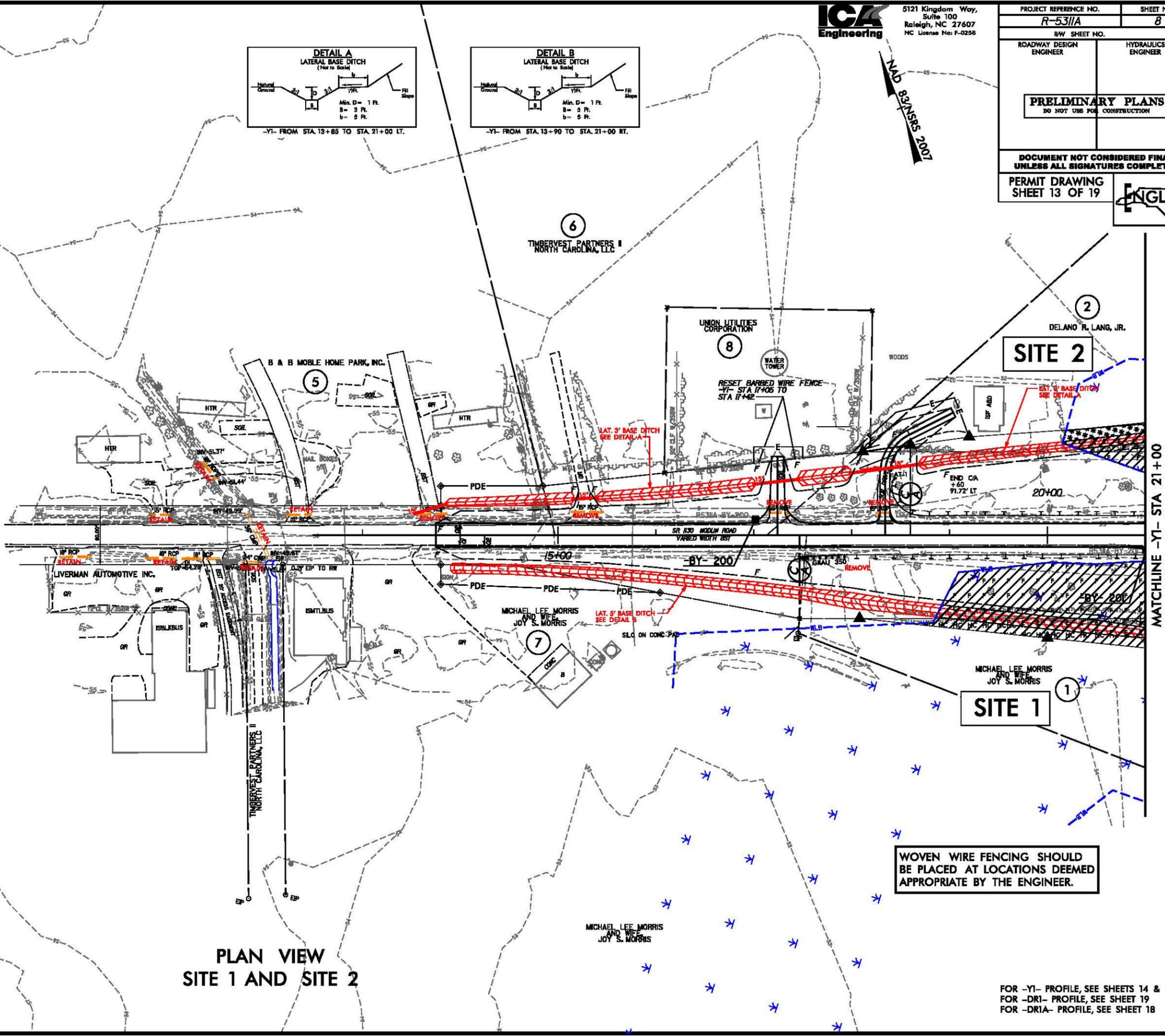
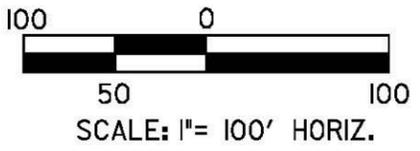
9/30/2016 ICA ENGINEERING, INC. Environmental\Drawings\R5311A\_hvd\_perm\_wet\_psh8.dgn  
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PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>8</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 13 OF 19	

MD 82/NSRS 2007



- LEGEND**
- WLB - WETLAND BOUNDARY
  - DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES HAND CLEARING



**PLAN VIEW  
 SITE 1 AND SITE 2**

WOVEN WIRE FENCING SHOULD BE PLACED AT LOCATIONS DEEMED APPROPRIATE BY THE ENGINEER.

FOR -YI- PROFILE, SEE SHEETS 14 & 15  
 FOR -DR1- PROFILE, SEE SHEET 19  
 FOR -DR1A- PROFILE, SEE SHEET 18

9/30/2016 ICA ENGINEERING, INC. Environmental\Drawings\R5311A\_hvd\_perm\_wet\_psh8.dwg  
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MATCHLINE -YI- STA 21+00  
 SEE SHEET 4

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

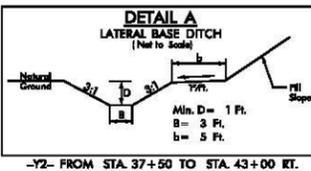
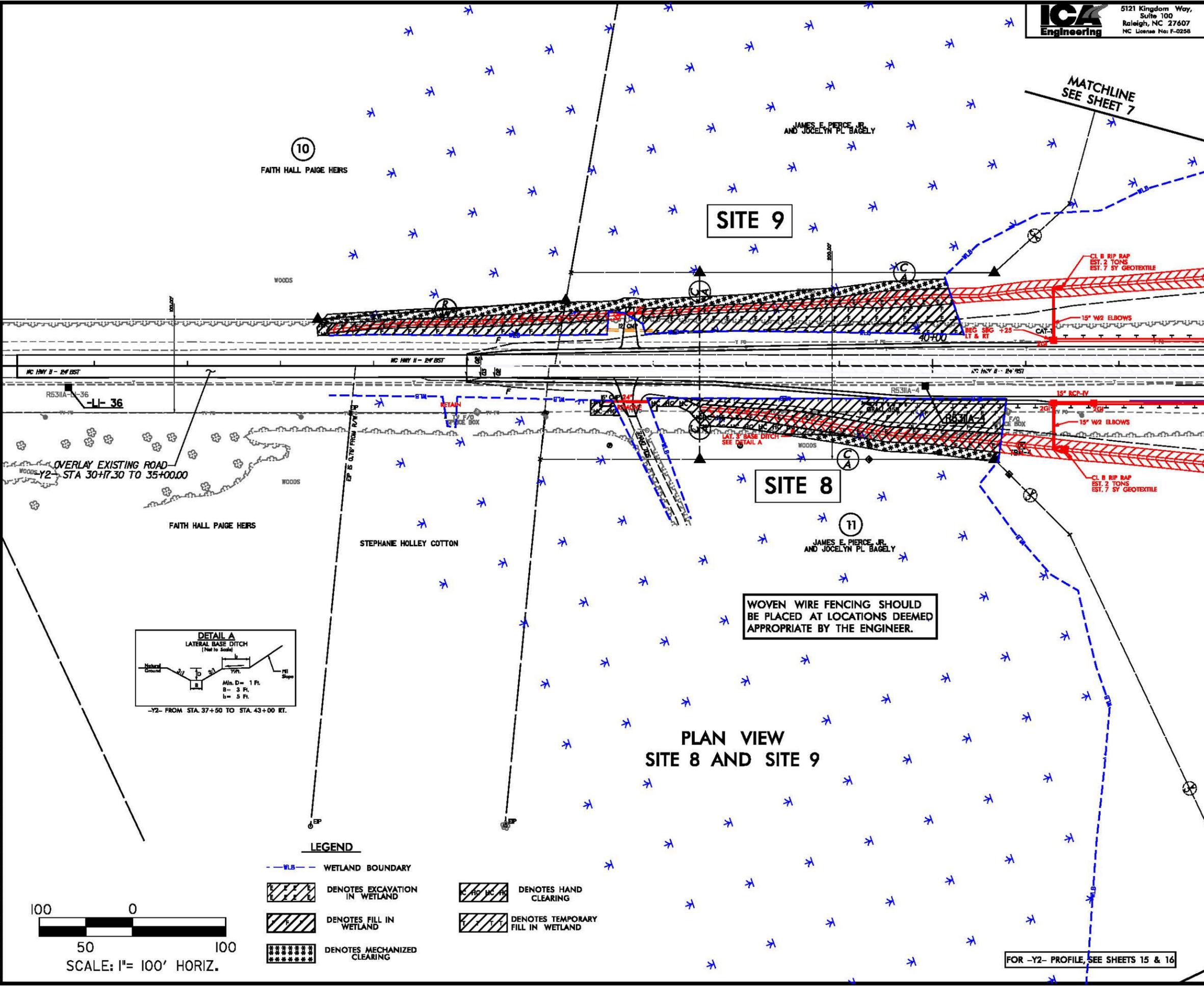
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
 SHEET 14 OF 19

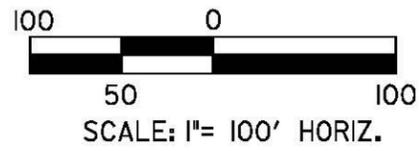


MATCHLINE -Y2- STA 43+00  
 SEE SHEET 7

MATCHLINE SEE SHEET 7



- LEGEND**
- WETLAND BOUNDARY
  - DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES HAND CLEARING
  - DENOTES TEMPORARY FILL IN WETLAND



FOR -Y2- PROFILE, SEE SHEETS 15 & 16

9/30/2016 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS\_Environmental\Drawings\R5311A\_hyd\_nrm\_wet\_msh10.dgn

8/17/99

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

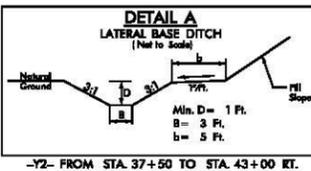
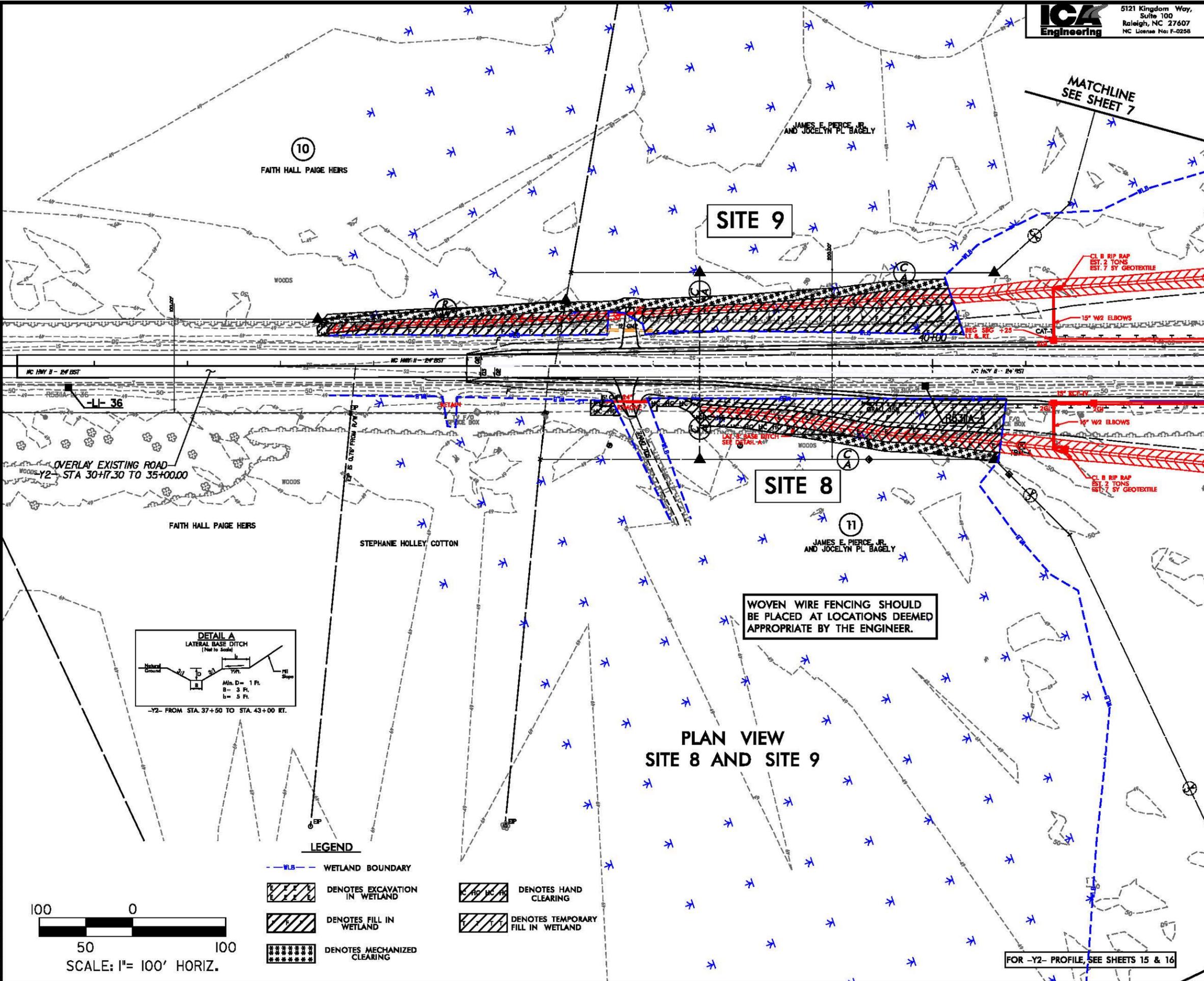
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
 SHEET 15 OF 19



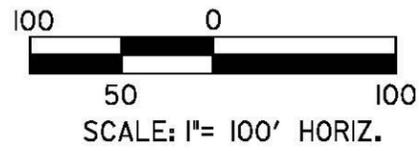
MATCHLINE -Y2- STA 43+00  
 SEE SHEET 7

MATCHLINE SEE SHEET 7



**LEGEND**

- WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES HAND CLEARING
- DENOTES TEMPORARY FILL IN WETLAND



FOR -Y2- PROFILE, SEE SHEETS 15 & 16

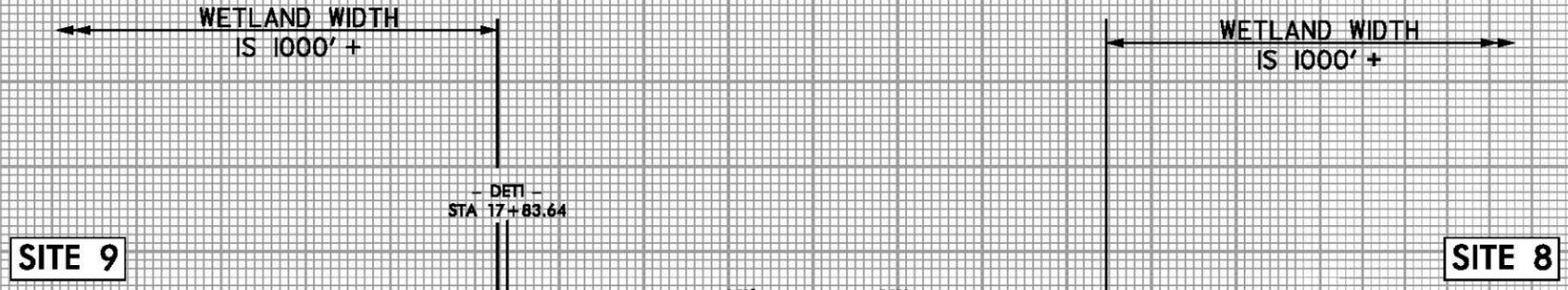
9/30/2016  
 ICA ENGINEERING, INC.  
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8/17/99

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 16 OF 19



50  
40

38+00.00

-Y2-

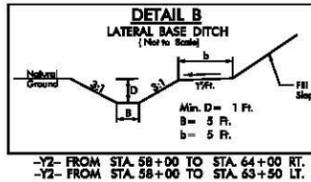
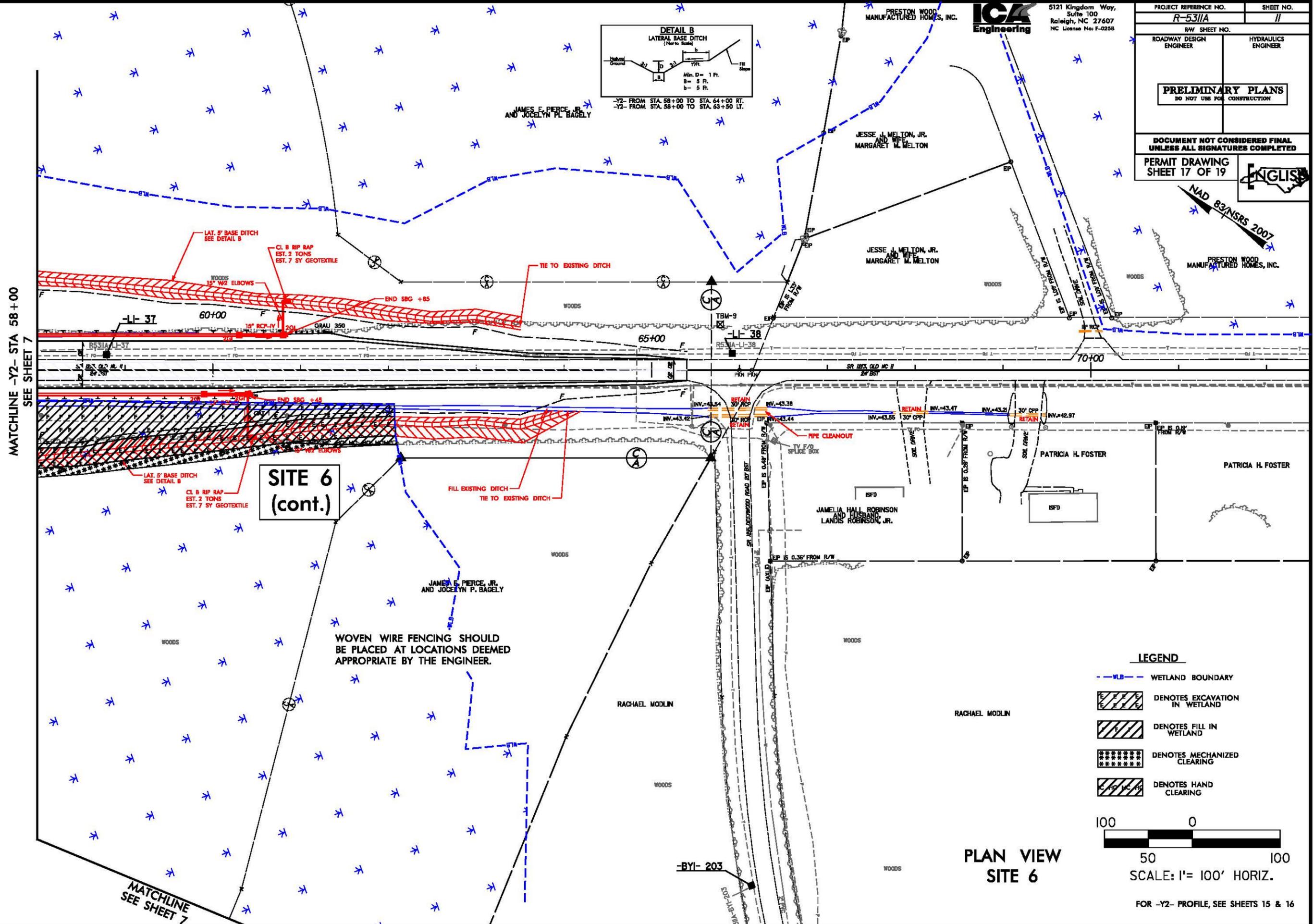
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8/17/99

9/30/2016 ICA ENGINEERING, INC. R:\Hydraulics\PERMITS Environmental\Drawings\R5311A\_hyd\_perm\_wet\_esh11.dgn

PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>11</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 17 OF 19	

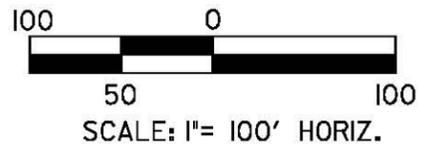
**ICA Engineering**  
5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No: F-0258



MATCHLINE -Y2- STA 58+00  
SEE SHEET 7

MATCHLINE  
SEE SHEET 7

- LEGEND**
- WLB--- WETLAND BOUNDARY
  - [Diagonal Hatching] DENOTES EXCAVATION IN WETLAND
  - [Cross-hatching] DENOTES FILL IN WETLAND
  - [Asterisks] DENOTES MECHANIZED CLEARING
  - [Dotted Pattern] DENOTES HAND CLEARING



**PLAN VIEW  
SITE 6**

FOR -Y2- PROFILE, SEE SHEETS 15 & 16

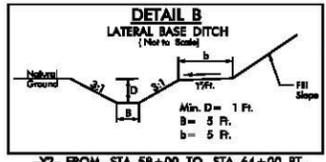
8/17/99

9/30/2016  
ICA ENGINEERING, INC.  
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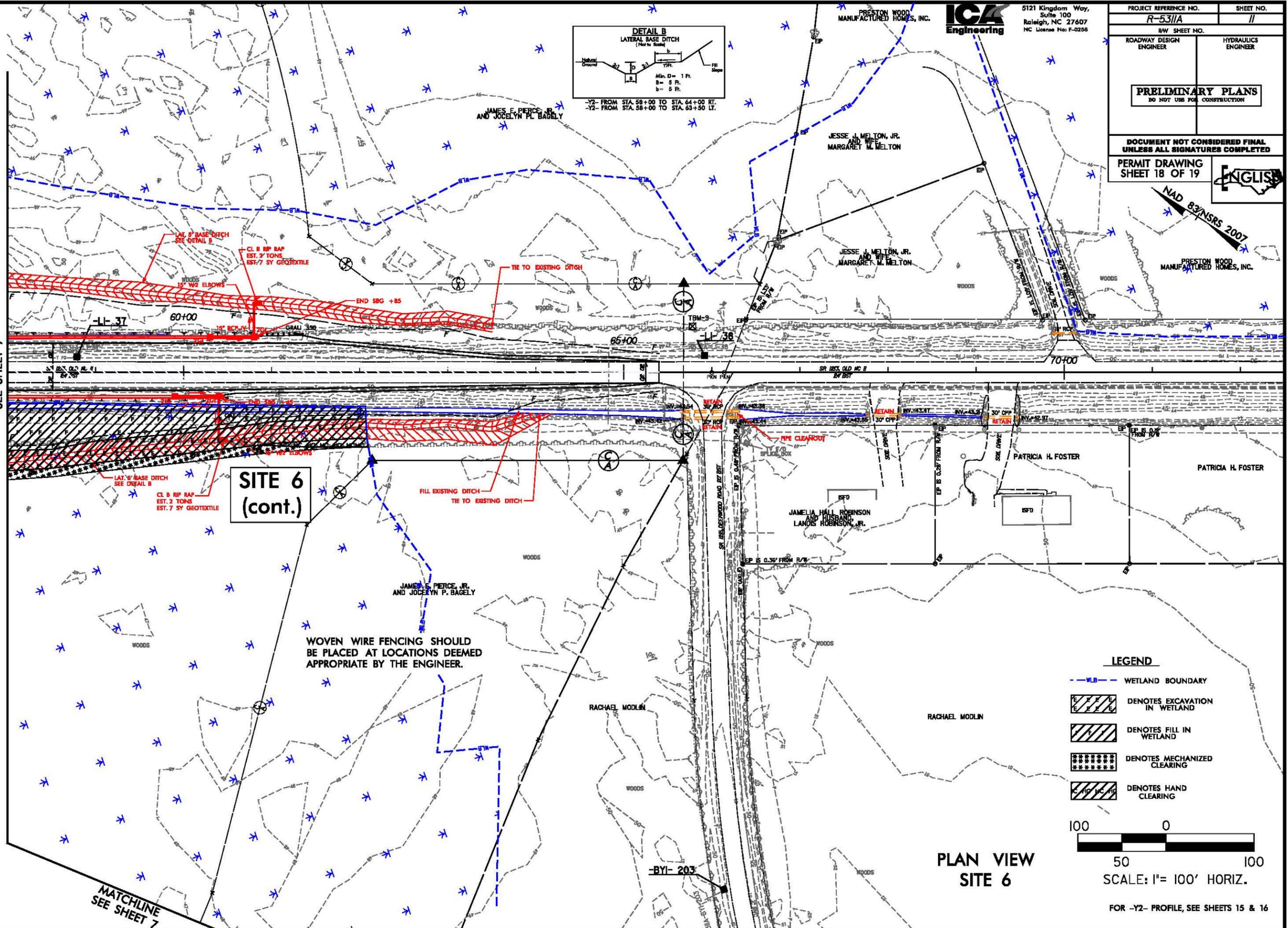
5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No: F-0258



PROJECT REFERENCE NO. <b>R-5311A</b>	SHEET NO. <b>11</b>
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 18 OF 19	



MATCHLINE -Y2- STA 58+00  
SEE SHEET 7

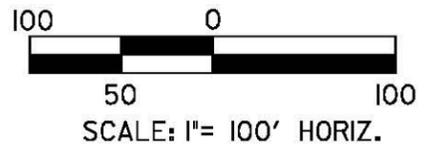


**SITE 6**  
**(cont.)**

WOVEN WIRE FENCING SHOULD  
BE PLACED AT LOCATIONS DEEMED  
APPROPRIATE BY THE ENGINEER.

**LEGEND**

- WETLAND BOUNDARY
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES HAND CLEARING



**PLAN VIEW**  
**SITE 6**

FOR -Y2- PROFILE, SEE SHEETS 15 & 16

MATCHLINE  
SEE SHEET 7

**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-Y1- 24+35 RT TO -Y1- 18+57 RT	ROADWAY FILL & BASE DITCH	0.74		0.15	0.03	0.11					
2	-Y1- 20+15 TO 24+05 LT	ROADWAY FILL & BASE DITCH	0.45		0.08	0.09	< 0.01					
3	-L2- 10+26 TO 12+07 RT	ROADWAY FILL					0.02					
4	-L2- 11+77 TO 15+94 LT, -Y2RPB- 10+58 LT TO -Y2- 45+86 RT, -Y2- 44+94 TO 50+53 RT	ROADWAY FILL , BASE DITCH & SPECIAL CUT DITCH	3.84		0.17	0.28	0.18					
5	-Y2- 45+32 TO 50+08 LT	ROADWAY FILL & BASE DITCH	0.77		0.13	0.02	0.08					
6	-Y2- 55+87 TO 62+10 RT	ROADWAY FILL & BASE DITCH	0.61		0.33	0.13	0.02					
7	-Y2LPD- 10+00 TO 19+10	ROADWAY FILL & SPECIAL CUT DITCH	2.44		0.03	0.29	0.03					
8	-Y2- 36+33 TO 40+79 RT	ROADWAY FILL, BASE DITCH & 24" RCP	0.17		0.12	0.04	0.05					
9	-Y2- 33+39 TO 40+33 LT	ROADWAY FILL & BASE DITCH	0.25		0.16	0.15	< 0.01					
<b>TOTALS*:</b>			<b>9.27</b>		<b>1.17</b>	<b>1.03</b>	<b>0.50</b>					

\*Rounded totals are sum of actual impacts

NOTES:

0.01 acres of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 REVISED 1/6/2017  
 HERTFORD COUNTY  
 R-5311A  
 45449.1.2  
 SHEET 19 OF 19

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5311A	1	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45449.1.2	NHF-0013(37)	P.E.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# NES PERMIT DRAWING PLANS

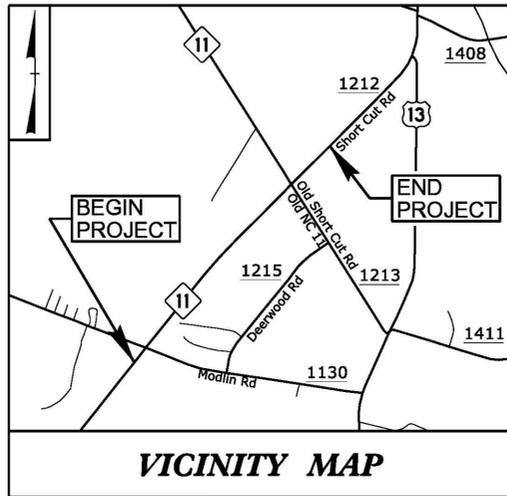
## HERTFORD COUNTY

LOCATION: WEST OF MODLIN ROAD TO EAST OF NC 11/SR 1213 (OLD NC 11 ROAD). CONSTRUCT GRADE SEPARATION AT SR 1130 (MODLIN ROAD) AND INTERCHANGE AT OLD NC 11/SR 1213 (OLD NC 11 ROAD).

TYPE OF WORK: RELOCATION OF UTILITY LINES

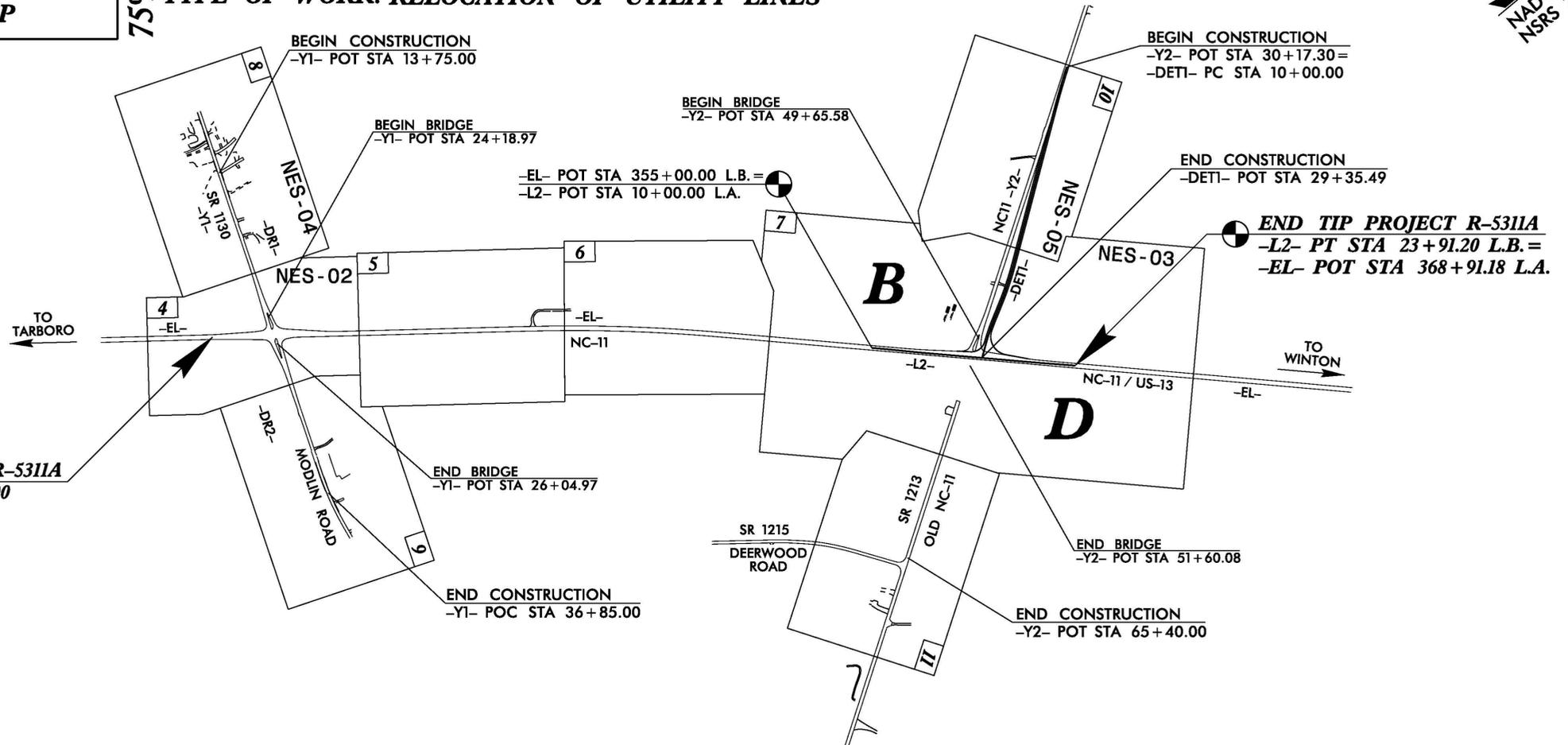


See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols



VICINITY MAP

75% PLANS



NOTES:

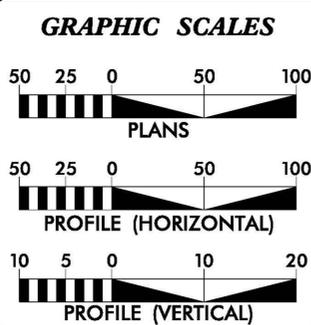
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

CONTRACT:



**DESIGN DATA**

ADT (2017) =	7,500
ADT (2037) =	10,830
K =	10 %
D =	55 %
T =	26 % *
V =	60 MPH
* TTST = 22% DUAL 4%	
FUNC CLASS = ARTERIAL REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-5311A =	1.116 MILES
TOTAL LENGTH TIP PROJECT R-5311A =	1.116 MILES

Prepared for the North Carolina Department of Transportation  
In the office of:

**ICA Engineering**  
5121 Kingdom Way, Suite 100  
Raleigh, NC 27607  
NC License No: F-0288

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JUNE 17, 2016

LETTING DATE:  
JUNE 20, 2017

DENA C. SNEAD, PE  
PROJECT ENGINEER

JORDAN C. BOND  
PROJECT DESIGN ENGINEER

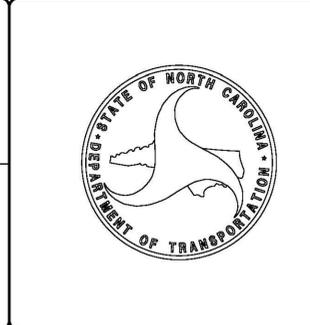
GARY LOVERING, PE  
ROADWAY DESIGN - PROJECT ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



09/28/19 02\_AUG\_2016 15:15 R:\Users\jca\OneDrive\Engineering\NEU\Permit Plans and Narrative\160601\_75% Plans For Review\R5311A\_UT\_UE\_01.dgn

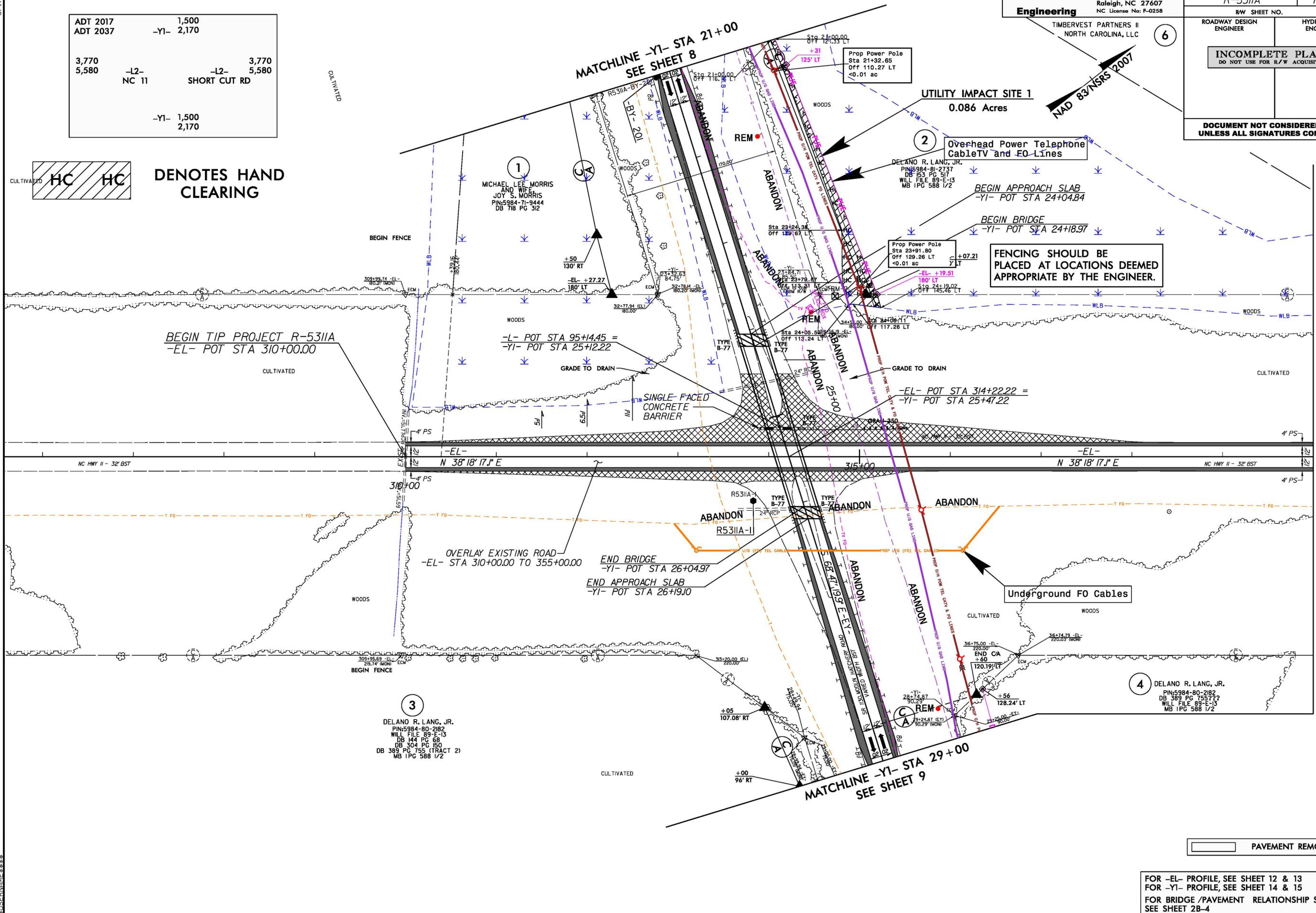
8/17/99

ADT 2017	1,500
ADT 2037	-Y1- 2,170
3,770	
5,580	
-L2-	
NC 11	
-L2-	
SHORT CUT RD	
3,770	
5,580	
-Y1-	1,500
	2,170

Engineering  
 5121 Kingdom Way,  
 Suite 100  
 Raleigh, NC 27607  
 NC License No: F-0258  
 TIMBERVEST PARTNERS II  
 NORTH CAROLINA, LLC

PROJECT REFERENCE NO. R-5311A	SHEET NO. NES-02
R/W SHEET NO. 6	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

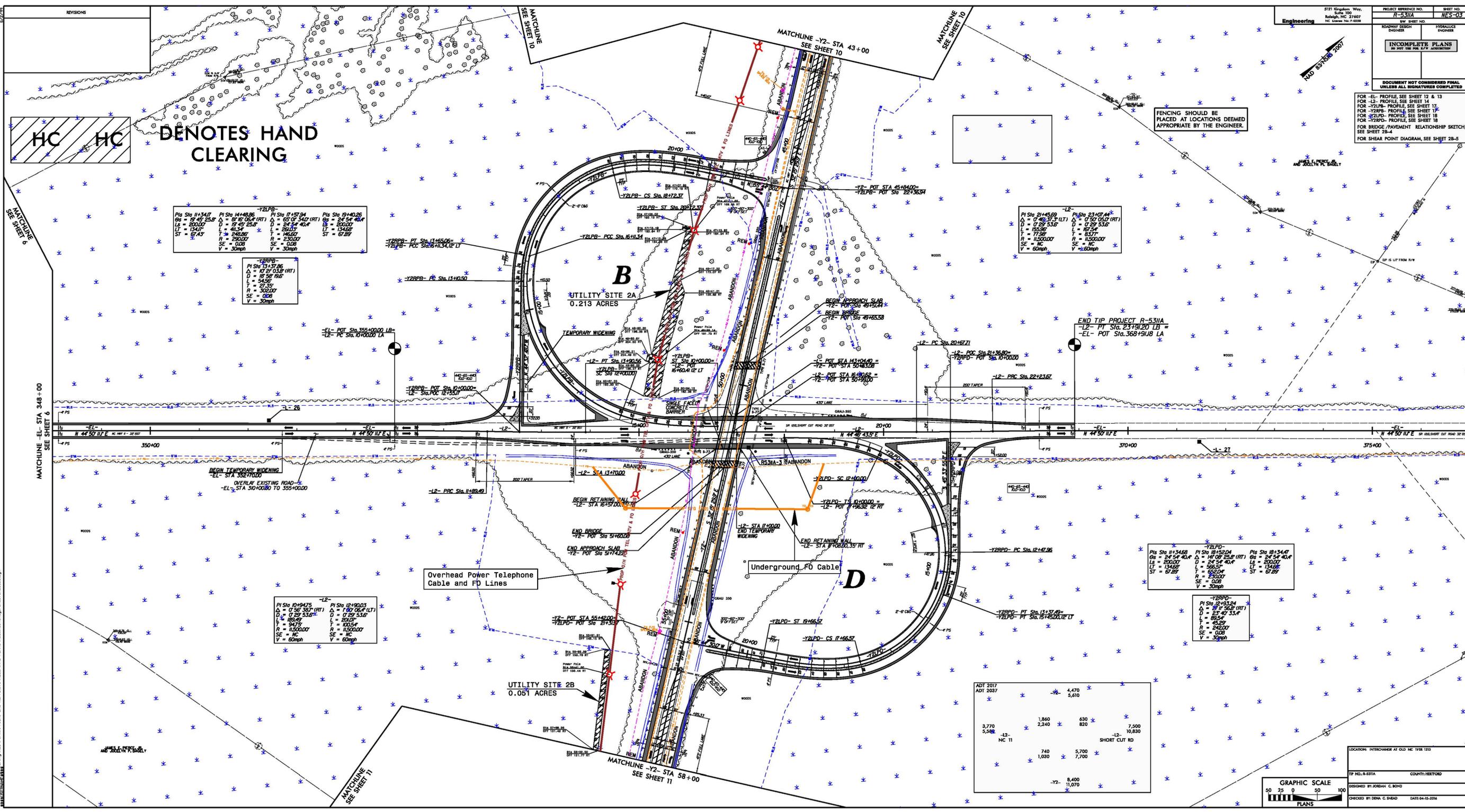
**HC HC**  
**DENOTES HAND CLEARING**



21-OCT-2016 11:17 Engineering\NEU\Permit Plans and Narrative\NES\_FINAL PLANS\R5311A\_UT\_Rdy\_PSH\_04\_NES\_02.dgn  
 \$\$\$\$\$\$  
 \$\$\$\$\$\$

**PAVEMENT REMOVAL**

FOR -EL- PROFILE, SEE SHEET 12 & 13  
 FOR -Y1- PROFILE, SEE SHEET 14 & 15  
 FOR BRIDGE /PAVEMENT RELATIONSHIP SKETCH,  
 SEE SHEET 2B-4



REVISIONS


**HC HC**  
DENOTES HAND CLEARING

**-Y2LPB-**  
 PI Sta 11+34.7  
 Δ = 19°45'25.8" (RT)  
 D = 200.00'  
 L = 134.54'  
 T = 67.45'  
 R = 290.00'  
 SE = 0.08  
 V = 30mph

**-Y2RPP-**  
 PI Sta 13+37.86  
 Δ = 107°57'03.8" (RT)  
 D = 18'58'16"  
 L = 54.55'  
 T = 30.22'  
 R = 302.00'  
 SE = 0.08  
 V = 30mph

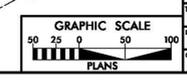
**-L2-**  
 PI Sta 21+45.89  
 Δ = 0°29'53.6" (LT)  
 D = 0'29'53.6"  
 L = 55.58'  
 T = 17.58'  
 R = 11500.00'  
 SE = NC  
 V = 60mph

**-L2-**  
 PI Sta 10+94.75  
 Δ = 0°29'53.6" (RT)  
 D = 0'29'53.6"  
 L = 55.58'  
 T = 17.58'  
 R = 11500.00'  
 SE = NC  
 V = 60mph

**-Y2LPD-**  
 PI Sta 11+34.68  
 Δ = 19°45'25.8" (RT)  
 D = 200.00'  
 L = 134.54'  
 T = 67.45'  
 R = 290.00'  
 SE = 0.08  
 V = 30mph

**-Y2RPP-**  
 PI Sta 12+93.24  
 Δ = 107°57'03.8" (RT)  
 D = 18'58'16"  
 L = 54.55'  
 T = 30.22'  
 R = 302.00'  
 SE = 0.08  
 V = 30mph

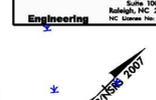
ADT 2017	4,470	5,610
ADT 2037	1,840	2,240
	630	820
	7,500	10,830
	740	5,700
	1,030	7,700
	8,400	11,070



PROJECT REFERENCE NO. **R-531A**  
 SHEET NO. **NES-03**  
 ROADWAY DESIGN ENGINEER  
 PROJECT ENGINEER  
**INCOMPLETE PLANS**  
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

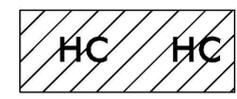
FOR -EL- PROFILE SEE SHEET 12 & 13  
 FOR -L2- PROFILE SEE SHEET 14  
 FOR -Y2LPB- PROFILE SEE SHEET 17  
 FOR -Y2RPP- PROFILE SEE SHEET 17  
 FOR -Y2LPD- PROFILE SEE SHEET 18  
 FOR -Y2RPPD- PROFILE SEE SHEET 18  
 FOR BRIDGE PAVEMENT RELATIONSHIP SKETCH, SEE SHEET 28-5  
 FOR SHEAR POINT DIAGRAM, SEE SHEET 28-5

FENCING SHOULD BE PLACED AT LOCATIONS DEEMED APPROPRIATE BY THE ENGINEER.



PROJECT NO. R-531A  
 SHEET NO. NES-03  
 DATE: 04-15-2016  
 DRAWN BY: JORDAN C. BOND  
 CHECKED BY: DENA C. DENO

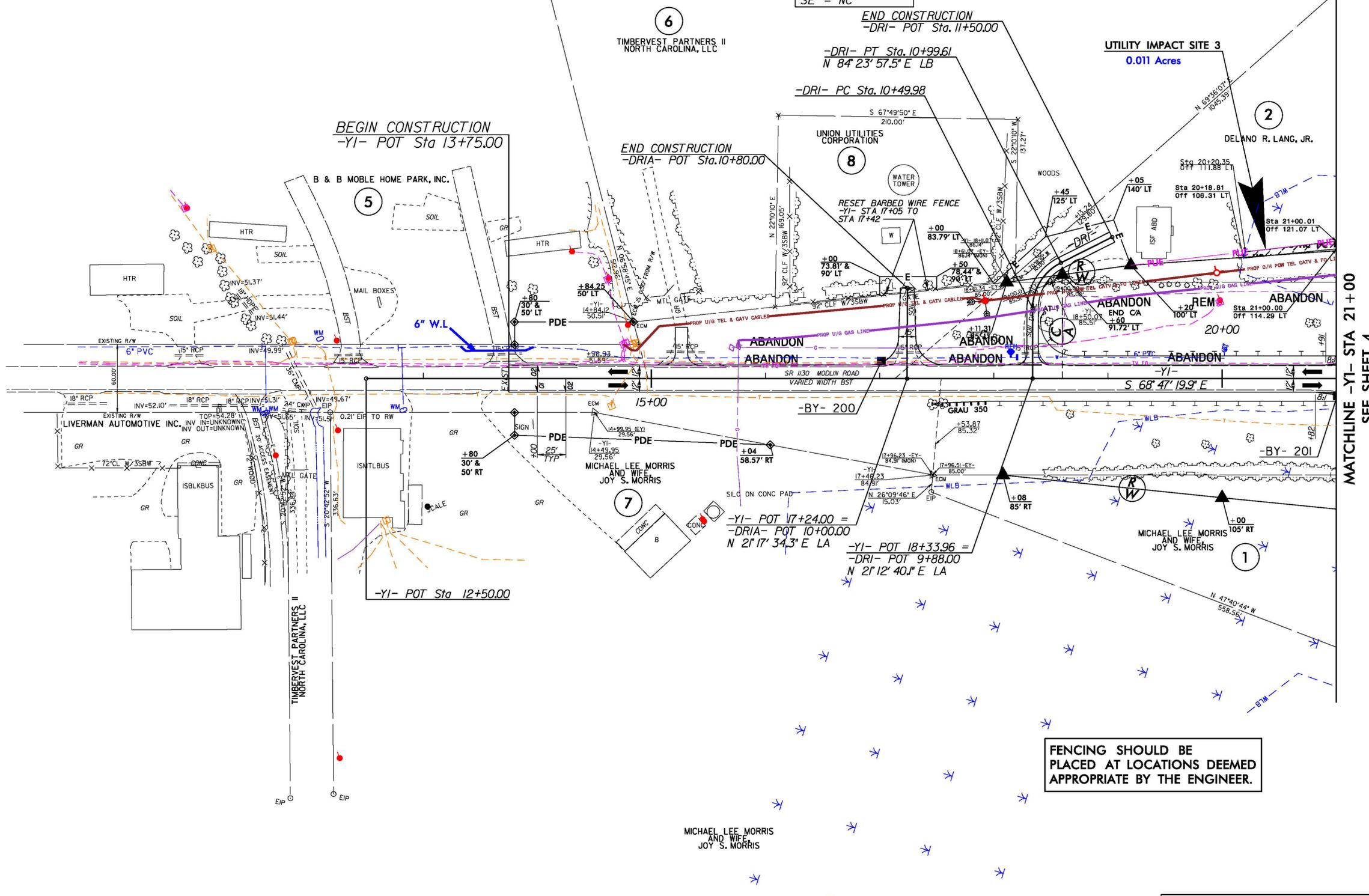
PROJECT REFERENCE NO. R-5311A	SHEET NO. NES-04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	



**HC HC**  
**DENOTES HAND CLEARING**



-DRI-  
PI Sta 10+77.66  
 $\Delta = 63' 11'' 17.5'' (RT)$   
 $D = 127' 19'' 26.2''$   
 $L = 49.63'$   
 $T = 27.68'$   
 $R = 45.00'$   
SE = NC



**BEGIN CONSTRUCTION**  
-YI- POT Sta 13+75.00

**END CONSTRUCTION**  
-DRIA- POT Sta. 10+80.00

**END CONSTRUCTION**  
-DRI- POT Sta. 11+50.00

**UTILITY IMPACT SITE 3**  
0.011 Acres

MATCHLINE -YI- STA 21+00  
SEE SHEET 4

**FENCING SHOULD BE PLACED AT LOCATIONS DEEMED APPROPRIATE BY THE ENGINEER.**

FOR -YI- PROFILE, SEE SHEETS 14 & 15  
FOR -DRI- PROFILE, SEE SHEET 19  
FOR -DRIA- PROFILE, SEE SHEET 18

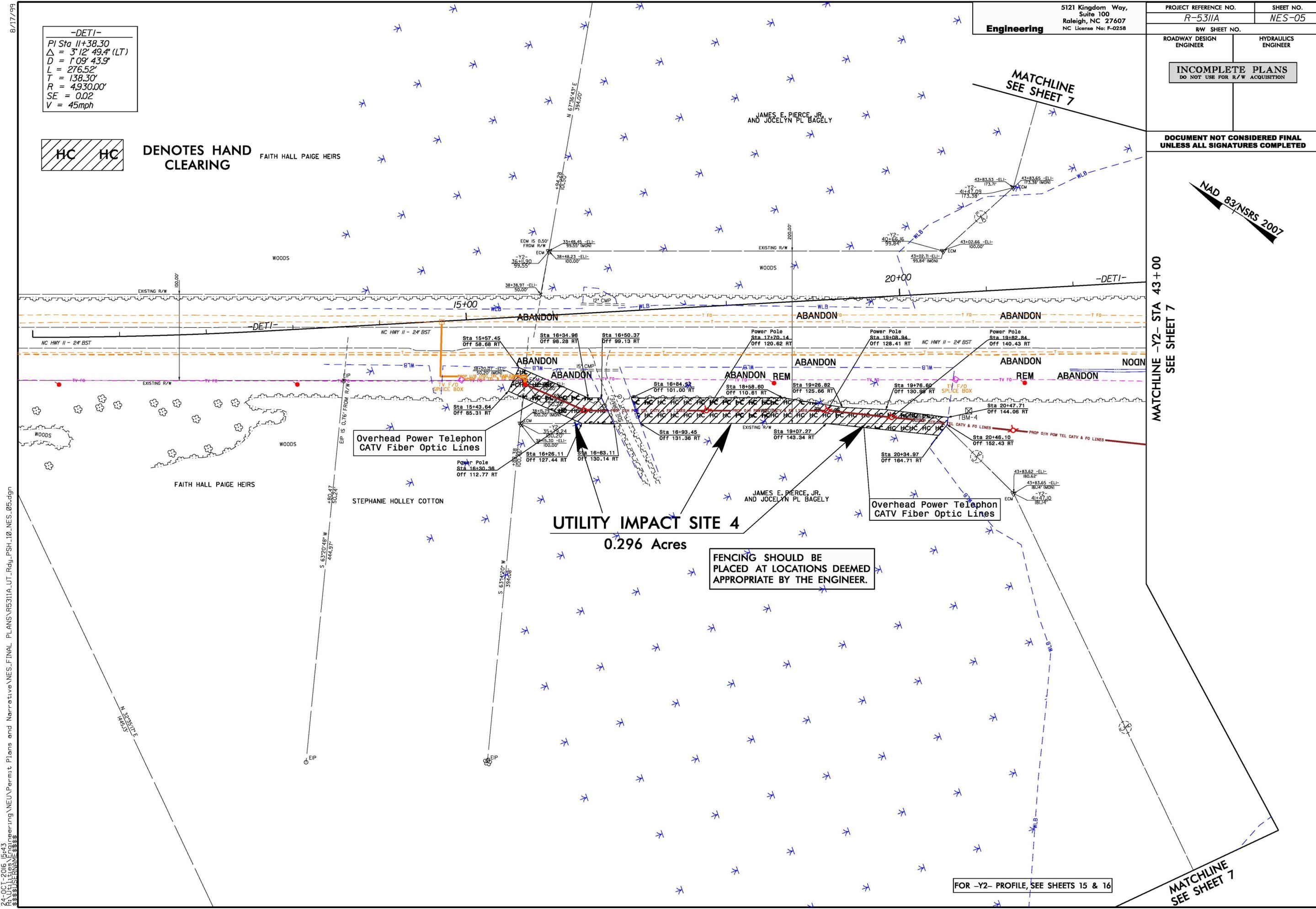
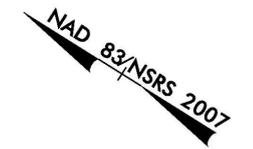
8/17/99

**-DET1-**  
 PI Sta 11+38.30  
 $\Delta = 3^{\circ}12'49.4''$  (LT)  
 $D = 1^{\circ}09'43.9''$   
 $L = 276.52'$   
 $T = 138.30'$   
 $R = 4,930.00'$   
 $SE = 0.02$   
 $V = 45\text{mph}$



**DENOTES HAND CLEARING**  
 FAITH HALL PAIGE HEIRS

<b>Engineering</b>	PROJECT REFERENCE NO. R-5311A	SHEET NO. NES-05
	5121 Kingdom Way, Suite 100 Raleigh, NC 27607 NC License No. F-0258	
ROADWAY DESIGN ENGINEER	RW SHEET NO.	
	HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION		
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED		



MATCHLINE -Y2- STA 43+00  
SEE SHEET 7

FOR -Y2- PROFILE, SEE SHEETS 15 & 16

MATCHLINE  
SEE SHEET 7

24-OCT-2016 15:43 Engineering\NEU\Permit Plans and Narrative\NES\_5311A\_UT\_Rdy\_PSH\_10\_NES\_05.dgn  
 \$\$\$\$\$\$  
 \$\$\$\$\$\$  
 \$\$\$\$\$\$

**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-Y1- Sta 21+32.65	Power Pole	<0.01									
1	-Y1- Sta 23+91.80	Power Pole	<0.01									
1	-Y1- Sta 21+00.00 to Sta 24+19.02	Maintained Utility Easement					0.086					
2	-Y2- Sta 47+11.66	Power Pole	<0.01									
2	-Y2- Sta 49+88.14	Power Pole	<0.01									
2	-Y2- Sta 56+41.50	Power Pole	<0.01									
2A	-Y2- Sta 47+05.02 to Sta 50+67.20	Maintained Utility Easement					0.213					
2B	-Y2- Sta 55+91.91 to Sta. 58+00.00	Maintained Utility Easement					0.051					
3	-Y1- Sta 20+18.81 to Sta 21+00.01	Maintained Utility Easement					0.011					
4	-DET1- Sta 15+43.64 to Sta 16+63.11	Maintained Utility Easement					0.080					
4	-DET1- Sta 16+84.52 to Sta 20+47.71	Maintained Utility Easement					0.216					
4	-DET1- Sta 16+30.36	Power Pole	<0.01									
4	-DET1- Sta 17+70.14	Power Pole	<0.01									
4	-DET1- Sta 19+08.94	Power Pole	<0.01									
4	-DET1- Sta 19+82.84	Power Pole	<0.01									
<b>TOTALS*:</b>			<0.01				0.66					

\*Rounded totals are sum of actual impacts

NOTES: 6.25 sqft of permanent fill per power pole. 9 proposed poles located within wetland boundaries.  
 Total: 56.25 sqft = 0.001 ac.  
 <0.01

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

October 24, 2016  
 Hertford County  
 R-5311A  
 45449.1.2

09/08/09

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

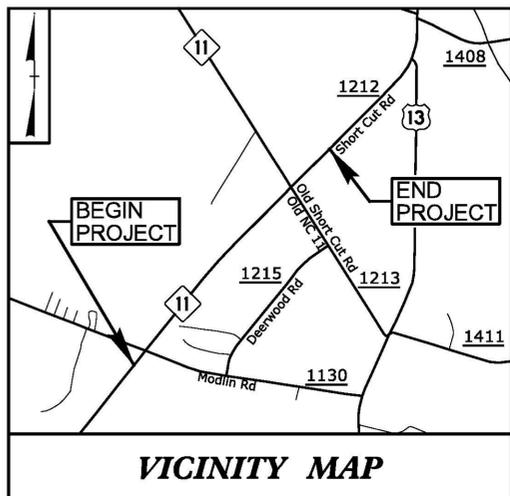
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**HERTFORD COUNTY**

**LOCATION: WEST OF MODLIN ROAD TO EAST OF NC 11/SR 1213 (OLD NC 11 ROAD). CONSTRUCT GRADE SEPARATION AT SR 1130 (MODLIN ROAD) AND INTERCHANGE AT OLD NC 11/SR 1213 (OLD NC 11 ROAD).**  
**TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES**

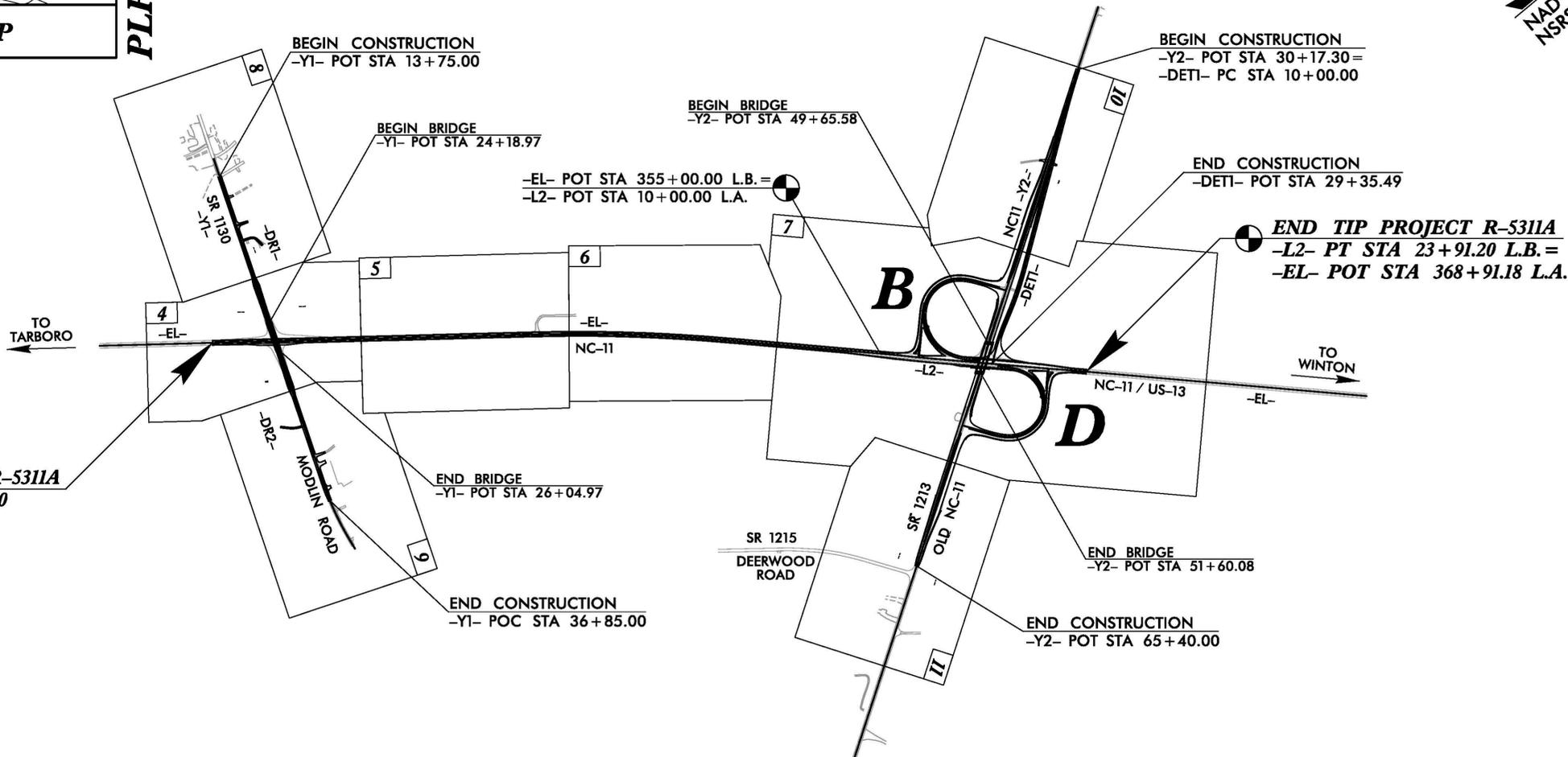
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5311A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45449.1.2	NHF-0013(37)	P.E.	
45449.2.FS1	NHF-0013(37)	RW	

**TIP PROJECT: R-5311A**



VICINITY MAP

**PLFI PLANS**

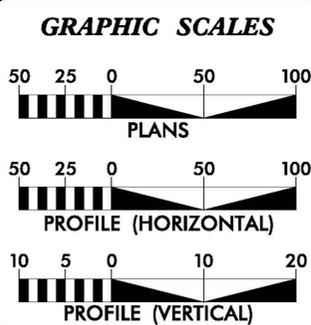


**NOTES:**

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**CONTRACT:**



**DESIGN DATA**

ADT (2017) =	7,500
ADT (2037) =	10,830
K =	10 %
D =	55 %
T =	26 % *
V =	60 MPH
* TTST = 22% DUAL 4%	
FUNC CLASS = ARTERIAL REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-5311A =	1.116 MILES
TOTAL LENGTH TIP PROJECT R-5311A =	1.116 MILES

Prepared for the North Carolina Department of Transportation In the office of:

**ICA Engineering** 5121 Kingdom Way, Suite 100, Raleigh, NC 27607, NC License No. P-0988

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 17, 2016

LETTING DATE: JUNE 20, 2017

DENA C. SNEAD, PE PROJECT ENGINEER

JORDAN C. BOND PROJECT DESIGN ENGINEER

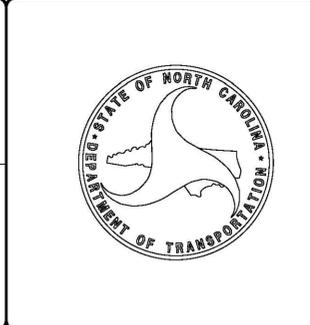
GARY LOVERING, PE ROADWAY DESIGN - PROJECT ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



11/16/2016 11:30:41 AM P:\Projects\N5311A.RDY\_1\SH.dgn ICA ENGINEERING, INC.

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

## CONVENTIONAL PLAN SHEET SYMBOLS

*Note: Not to Scale*      \*S.U.E. = *Subsurface Utility Engineering*

### BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ EIP
Property Corner	_____
Property Monument	□ EDM
Parcel/Sequence Number	123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	--- WLB ---
Proposed Wetland Boundary	--- WLB ---
Existing Endangered Animal Boundary	--- EAB ---
Existing Endangered Plant Boundary	--- EPB ---
Existing Historic Property Boundary	--- HPB ---
Known Contamination Area: Soil	--- X X ---
Potential Contamination Area: Soil	--- X X ---
Known Contamination Area: Water	--- X X ---
Potential Contamination Area: Water	--- X X ---
Contaminated Site: Known or Potential	☠ ?

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	□
Dam	▬

### HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	□
Jurisdictional Stream	--- JS ---
Buffer Zone 1	--- BZ 1 ---
Buffer Zone 2	--- BZ 2 ---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	⋆
Proposed Lateral, Tail, Head Ditch	▬
False Sump	▽

### RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	_____
RR Dismantled	_____

### RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	_____
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite RW Marker	▲
Proposed Control of Access Line with Concrete C/A Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	--- E ---
Proposed Temporary Construction Easement	--- E ---
Proposed Temporary Drainage Easement	--- TDE ---
Proposed Permanent Drainage Easement	--- PDE ---
Proposed Permanent Drainage / Utility Easement	--- DUE ---
Proposed Permanent Utility Easement	--- PUE ---
Proposed Temporary Utility Easement	--- TUE ---
Proposed Aerial Utility Easement	--- AUE ---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	--- C ---
Proposed Slope Stakes Fill	--- F ---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	▬
Proposed Guardrail	▬
Existing Cable Guiderail	▬
Proposed Cable Guiderail	▬
Equality Symbol	⊕
Pavement Removal	▬

### VEGETATION:

Single Tree	⊕
Single Shrub	⊕
Hedge	▬
Woods Line	▬

Orchard	⊕
Vineyard	□ Vineyard

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	▬ CONC
Bridge Wing Wall, Head Wall and End Wall	▬ CONC WW ▬
MINOR:	
Head and End Wall	▬ CONC HW ▬
Pipe Culvert	▬
Footbridge	▬
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	▬
Storm Sewer Manhole	⊕
Storm Sewer	▬ S

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
U/G Power Cable Hand Hole	●
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	--- P ---
U/G Power Line LOS C (S.U.E.*)	--- P ---
U/G Power Line LOS D (S.U.E.*)	--- P ---

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	●
U/G Telephone Cable LOS B (S.U.E.*)	--- T ---
U/G Telephone Cable LOS C (S.U.E.*)	--- T ---
U/G Telephone Cable LOS D (S.U.E.*)	--- T ---
U/G Telephone Conduit LOS B (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS C (S.U.E.*)	--- TC ---
U/G Telephone Conduit LOS D (S.U.E.*)	--- TC ---
U/G Fiber Optics Cable LOS B (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS C (S.U.E.*)	--- T FO ---
U/G Fiber Optics Cable LOS D (S.U.E.*)	--- T FO ---

### WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊕
Water Hydrant	⊕
UG Water Line LOS B (S.U.E.*)	--- W ---
UG Water Line LOS C (S.U.E.*)	--- W ---
UG Water Line LOS D (S.U.E.*)	--- W ---
Above Ground Water Line	--- A/G Water ---

### TV:

TV Pedestal	⊕
TV Tower	⊕
UG TV Cable Hand Hole	●
UG TV Cable LOS B (S.U.E.*)	--- TV ---
UG TV Cable LOS C (S.U.E.*)	--- TV ---
UG TV Cable LOS D (S.U.E.*)	--- TV ---
UG Fiber Optic Cable LOS B (S.U.E.*)	--- TV FO ---
UG Fiber Optic Cable LOS C (S.U.E.*)	--- TV FO ---
UG Fiber Optic Cable LOS D (S.U.E.*)	--- TV FO ---

### GAS:

Gas Valve	◇
Gas Meter	⊕
UG Gas Line LOS B (S.U.E.*)	--- G ---
UG Gas Line LOS C (S.U.E.*)	--- G ---
UG Gas Line LOS D (S.U.E.*)	--- G ---
Above Ground Gas Line	--- A/G Gas ---

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	--- SS ---
Above Ground Sanitary Sewer	--- A/G Sanitary Sewer ---
SS Forced Main Line LOS B (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS C (S.U.E.*)	--- FSS ---
SS Forced Main Line LOS D (S.U.E.*)	--- FSS ---

### MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	--- ?UTL ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	●
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

04/26/15  
1/16/2016  
C:\Users\NBP\OneDrive\Documents\BES11A-RDY-TSH-01B.dgn



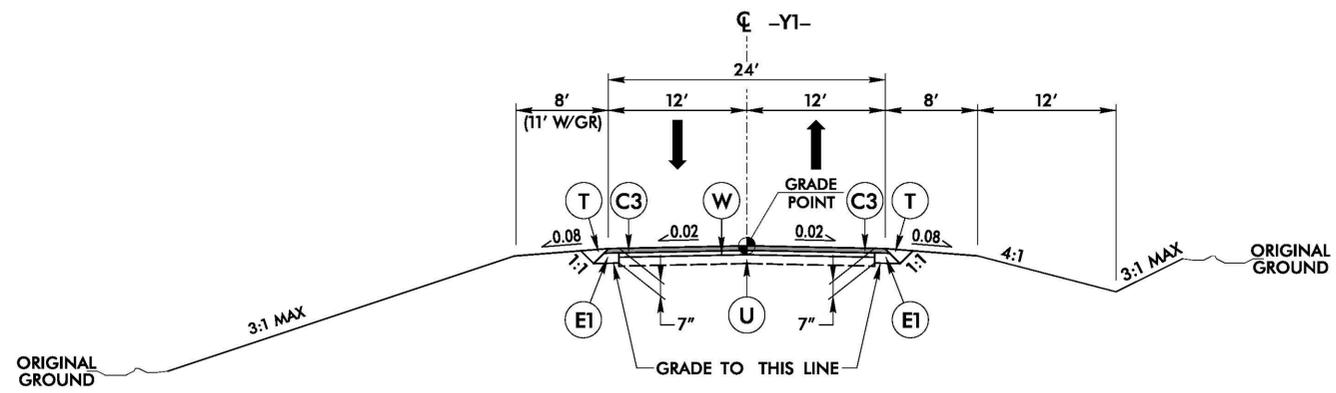
6/2/99

1/16/2006 10:51:11 AM P:\R5311A-RDY\_TYP.dgn

C1	1 1/2" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR S9.5B
C5	1 1/2" S9.5C
C6	3" S9.5C
C7	VAR S9.5C
D1	2 1/2" I19.0B
D2	4" I19.0B
D3	VAR I19.0B
D4	2 1/2" I19.0C
D5	3" I19.0C
D6	VAR I19.0C
E1	4" B25.0B
E2	VAR B25.0B
E3	4" B25.0C
E4	4 1/2" B25.0C
E5	VAR B25.0C
R1	2'-6" C&G
R2	MONO. CONC. ISLAND
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	VAR WEDGING

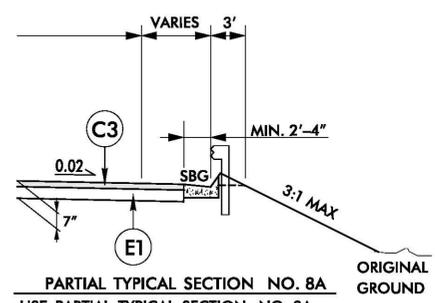
**ICA Engineering**  
 5121 Kingdom Way,  
 Suite 100  
 Raleigh, NC 27607  
 NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
R-5311A	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

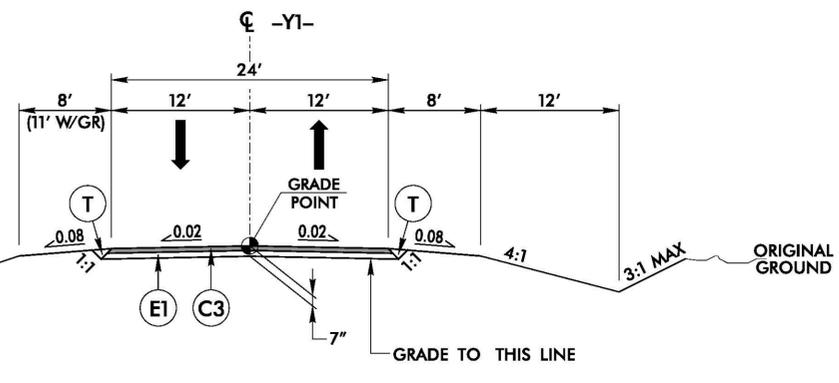


**TYPICAL SECTION NO. 7**  
 SR 1130 MODLIN RD

**USE TYPICAL SECTION NO. 7 FOR:**  
 -Y1- STA 13+75.00 TO STA 14+75.00  
 -Y1- STA 35+50.00 TO STA 36+85.00

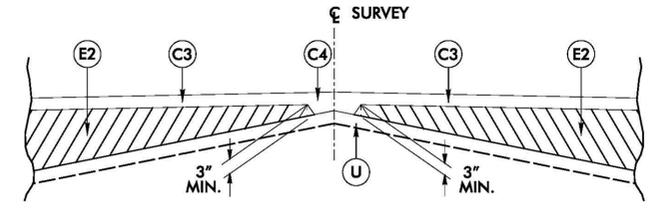


**PARTIAL TYPICAL SECTION NO. 8A**  
 USE PARTIAL TYPICAL SECTION NO. 8A  
 IN CONJUNCTION WITH TYPICAL  
 SECTION NO. 8 AS FOLLOWS:  
 -Y1- STA 23+84 TO -Y1- STA 24+01 RT  
 AND -Y1- STA 23+84 TO -Y1- STA 24+09 LT

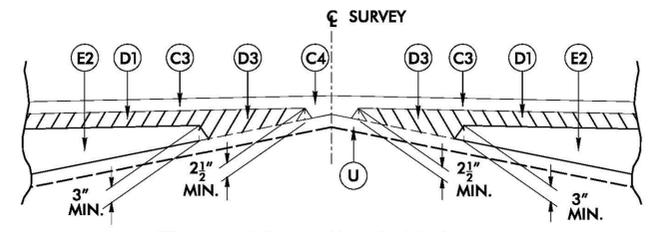


**TYPICAL SECTION NO. 8**  
 SR 1130 MODLIN HATCHERY RD

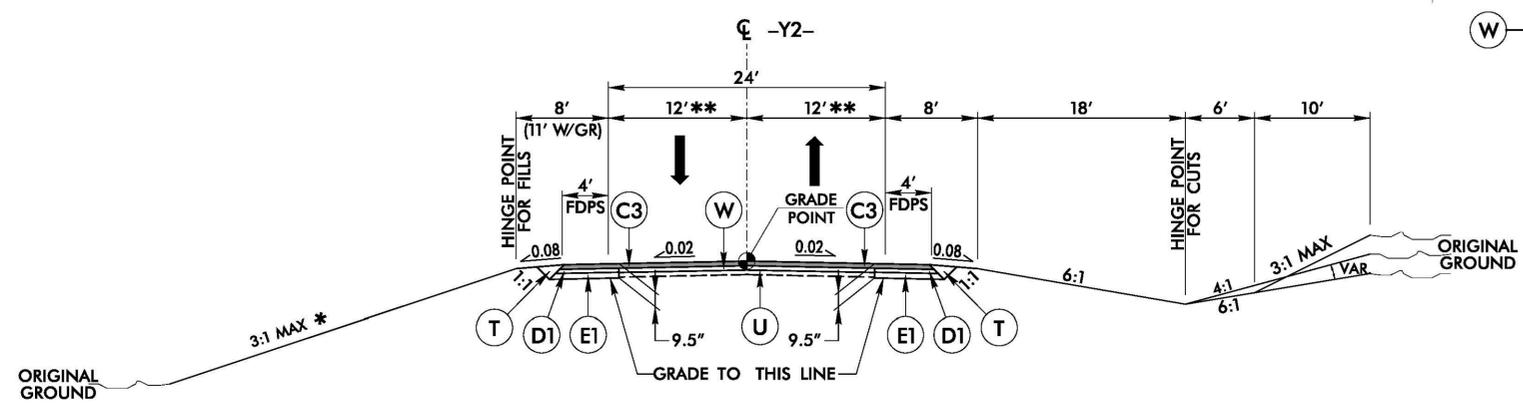
**USE TYPICAL SECTION NO. 8 FOR:**  
 -Y1- STA 14+75.00 TO STA 24+18.97 (BEGIN BRIDGE)  
 -Y1- STA 26+04.97 (END BRIDGE) TO STA 35+50.00



**W Detail Showing Method of Wedging FOR -Y1-**



**W Detail Showing Method of Wedging FOR -Y2-**



**TYPICAL SECTION NO. 9**  
 NC11VOLD NC 11

**USE TYPICAL SECTION NO. 9 FOR:**  
 -Y2- STA 35+00.00 TO STA 37+00.00  
 -Y2- STA 63+50.00 TO STA 65+40.00

\*\* -Y2- STA 30+17.30 TO STA 35+00.00  
 RESURFACE ONLY

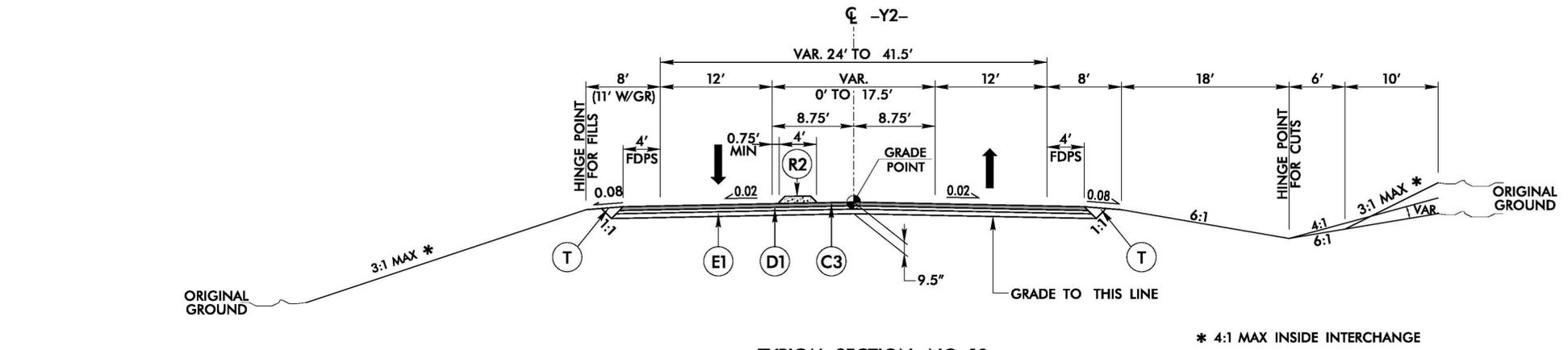
\* 4:1 MAX INSIDE INTERCHANGE

6/2/99

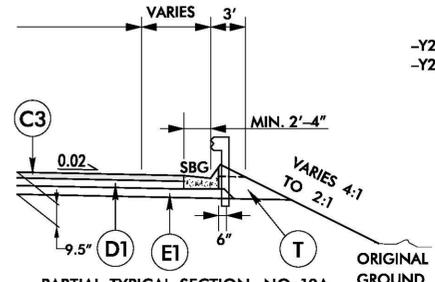
I:\6/2006\PA\ENR\311A-RDY\_TYP.dgn

C1	1 1/2" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR S9.5B
C5	1 1/2" S9.5C
C6	3" S9.5C
C7	VAR S9.5C
D1	2 1/2" I19.0B
D2	4" I19.0B
D3	VAR I19.0B
D4	2 1/2" I19.0C
D5	3" I19.0C
D6	VAR I19.0C
E1	4" B25.0B
E2	VAR B25.0B
E3	4" B25.0C
E4	4 1/2" B25.0C
E5	VAR B25.0C
R1	2'-6" C&G
R2	MONO. CONC. ISLAND
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	VAR WEDGING

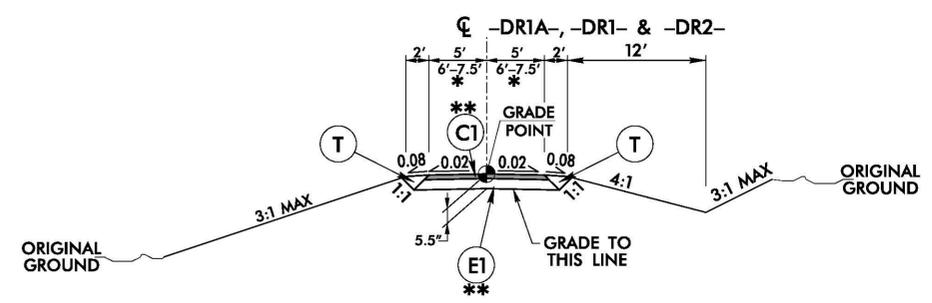
PROJECT REFERENCE NO. <i>R-5311A</i>	SHEET NO. <i>2A-4</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



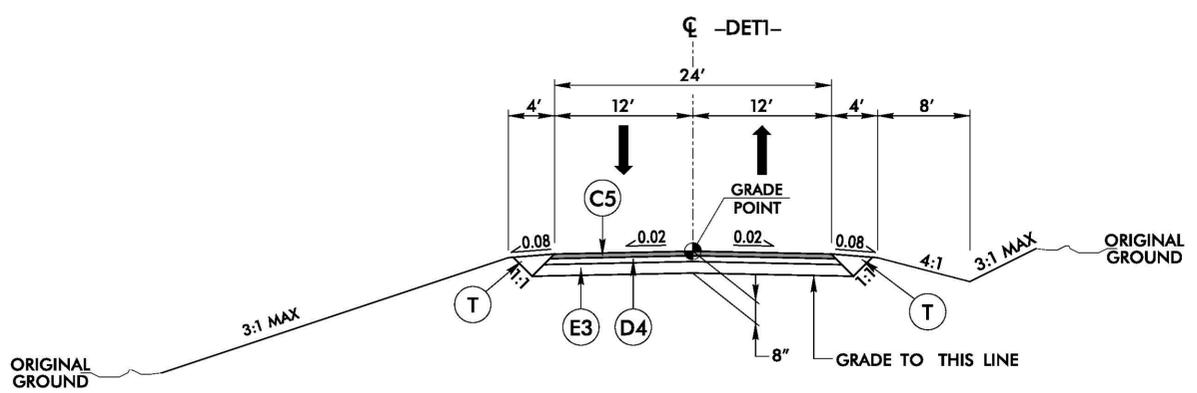
**TYPICAL SECTION NO. 10**  
 NCI/OLD NC 11  
 USE TYPICAL SECTION NO. 10 FOR:  
 -Y2- STA 37+00.00 TO STA 49+65.58 (BEGIN BRIDGE)  
 -Y2- STA 51+60.08 (END BRIDGE) TO STA 63+50.00



**PARTIAL TYPICAL SECTION NO. 10A**  
 USE PARTIAL TYPICAL SECTION NO. 10A  
 IN CONJUNCTION WITH TYPICAL  
 SECTION NO. 10 AS FOLLOWS:  
 -Y2- STA 41+25 TO -Y2- STA 49+46 LT  
 -Y2- STA 41+25 TO -Y2- STA 45+11 RT  
 -Y2- STA 49+14 TO -Y2- STA 49+56 RT  
 -Y2- STA 51+69 TO -Y2- STA 52+00 LT  
 -Y2- STA 51+79 TO -Y2- STA 60+45 RT  
 -Y2- STA 56+24 TO -Y2- STA 60+85 LT



**TYPICAL SECTION NO. 11**  
 -DRIA-, -DRI- AND -DR2-  
 USE TYPICAL SECTION NO. 11 FOR:  
 \*-DRIA- STA 10+12.00 TO STA 10+80.00  
 -DRI- STA 10+00.00 TO STA 11+50.00  
 -DR2- STA 10+00.00 TO STA 11+44.56  
 \*\* USE PAVEMENT DESIGN FOR DRIVEWAY LOCATED AT:  
 -Y1- STA 33+65 LT



**TYPICAL SECTION NO. 12**  
 -DET1-  
 USE TYPICAL SECTION NO. 12 FOR:  
 -DET1- STA 10+00.00 TO STA 29+11.11

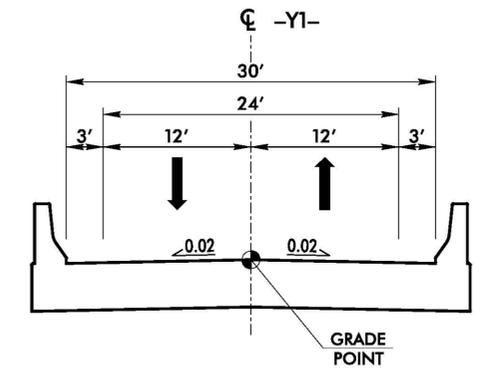
5/28/09

PROJECT REFERENCE NO. <i>R-5311A</i>	SHEET NO. <i>2B-1</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

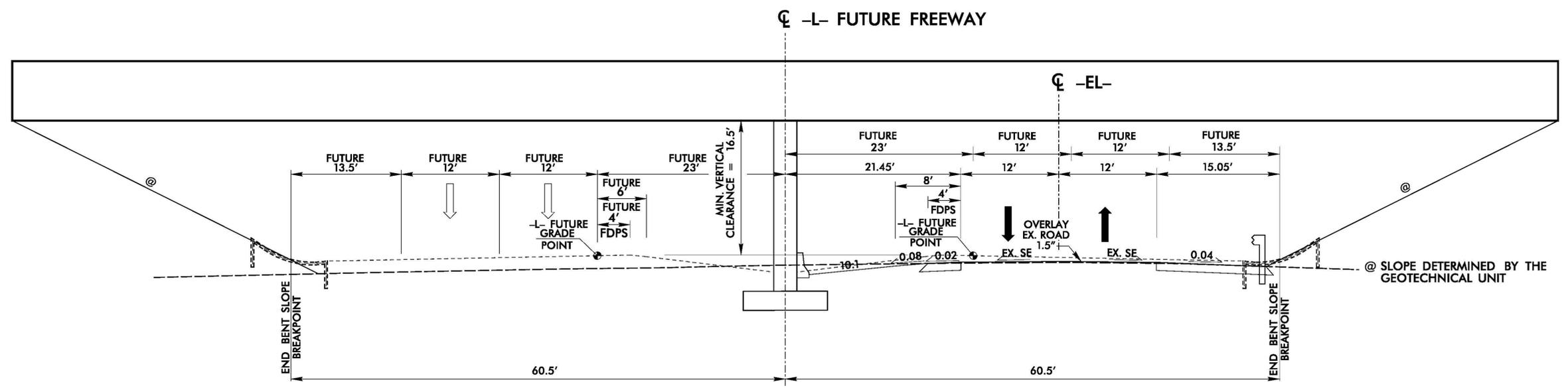
# STRUCTURE TYPICAL SECTIONS

SITE 1 : -Y1- (SR 1130 /MODLIN RD.) STRUCTURE OVER  
 -L- FUTURE FREEWAY NC 11 /SR 1212 (NC 11 /SHORT CUT RD.)

FOR BRIDGE /PAVEMENT RELATIONSHIP SKETCH,  
 SEE SHEET 2B-4



**TYPICAL SECTION ON STRUCTURE**  
 (LOOKING STATIONS AHEAD)



**TYPICAL SECTION ON ROADWAY UNDER STRUCTURE**  
 (LOOKING STATIONS AHEAD)

**DESIGN DATA -Y1- (SR 1130 /MODLIN RD.)**

ADT 2017 = 1500  
 ADT 2037 = 2170  
 DHV = 10%  
 D = 55%  
 T = 3%\*  
 V = 50 MPH  
 \*(TTST = 2% + DUAL = 1%)

FUNCT. CLASS : MINOR COLLECTOR

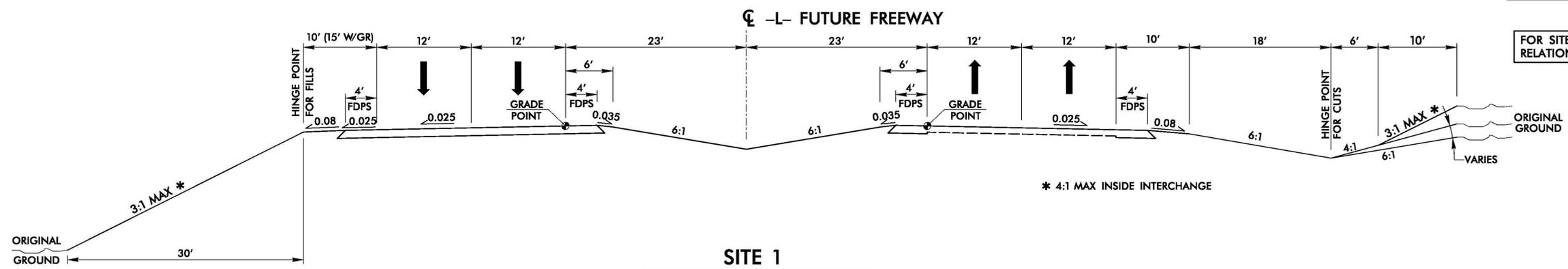
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 PLOTTER: HP DesignJet 500



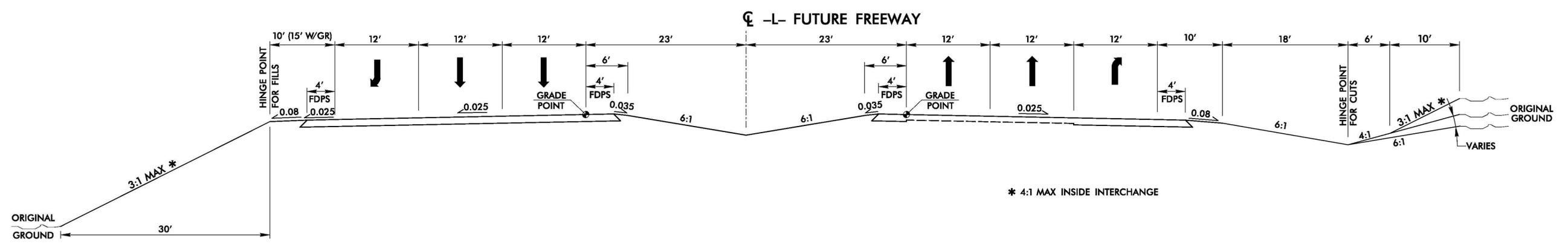
5/28/09

PROJECT REFERENCE NO. <i>R-5311A</i>	SHEET NO. <i>2B-3</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

FOR SITES 1 & 2 BRIDGE PAVEMENT RELATIONSHIP SKETCH, SEE SHEET 2B-4



**SITE 1**  
 TYPICAL SECTION OF  
 -L- FUTURE FREEWAY (NC 11/SR 1212) APPROACHING OVERHEAD  
 STRUCTURE AT -Y1- (SR 1130 / MODLIN ROAD)  
 (FOR REFERENCE ONLY)



**SITE 2**  
 TYPICAL SECTION OF  
 -L- FUTURE FREEWAY (NC 11 / SR 1212) APPROACHING OVERHEAD  
 STRUCTURE AT -Y2- (NC 11 / OLD NC 11)  
 (FOR REFERENCE ONLY)

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5/28/09

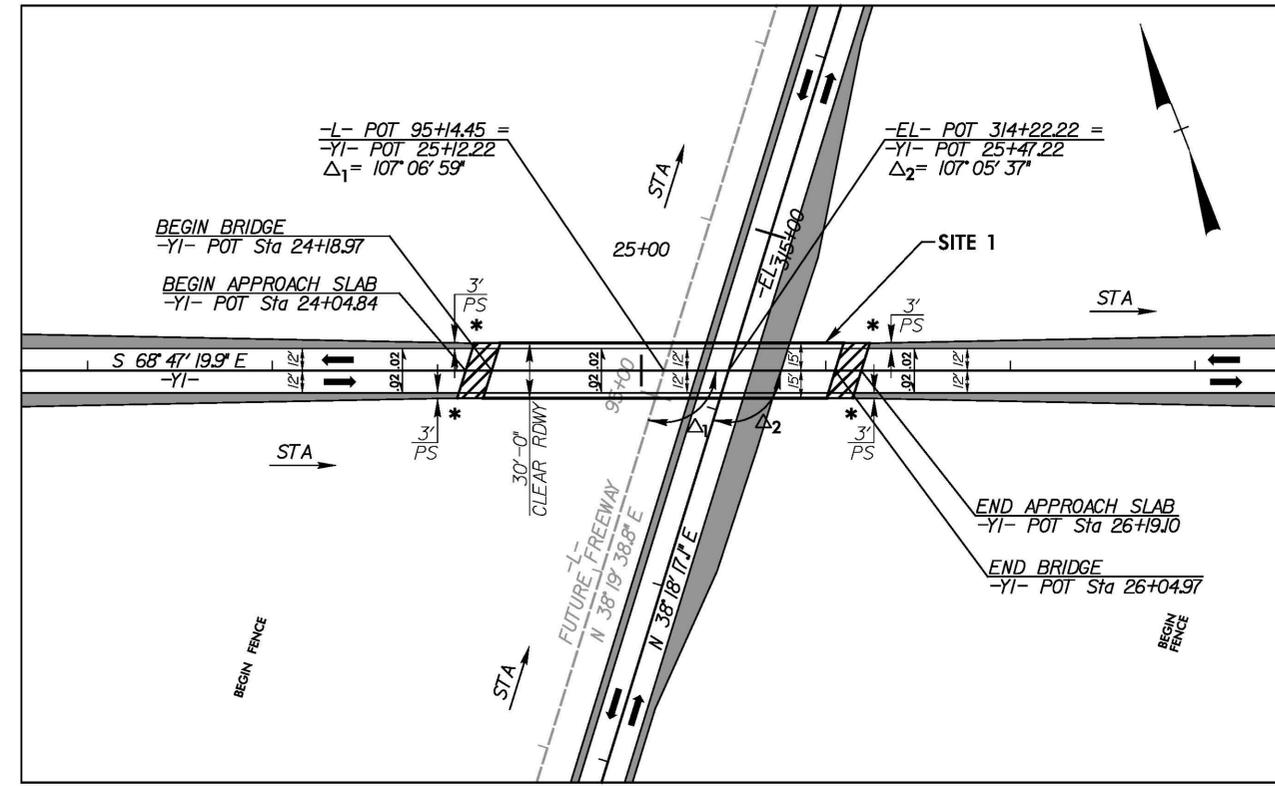
**ICA Engineering**  
5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No: F-0258

PROJECT REFERENCE NO. <i>R-5311A</i>	SHEET NO. <i>2B-4</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

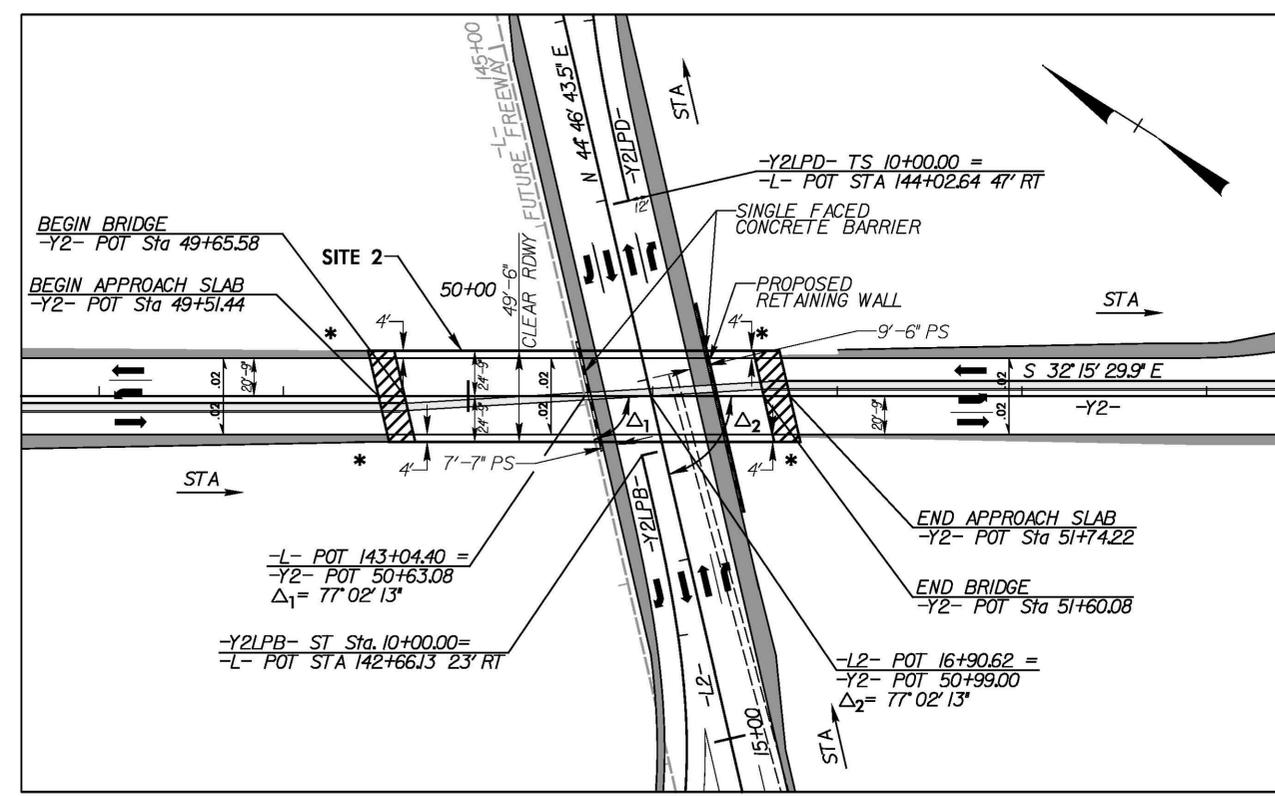
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

FOR TYPICAL SECTIONS OF SITES 1 & 2,  
SEE SHEET 2B-3

FOR PLANS, SEE SHEETS 4 & 7



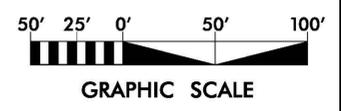
**PAVEMENT-BRIDGE RELATIONSHIP SKETCH**  
-Y1- (SR 1130 - MODLIN HATCHERY RD) OVER -EL- (NC 11 - SHORT CUT RD)



**PAVEMENT-BRIDGE RELATIONSHIP SKETCH**  
-Y2- (NC11/OLD NC11) OVER -L2- (NC 11 - SHORT CUT RD)

\* GUARDRAIL ANCHOR UNIT REQUIRED

BRIDGE APPROACH SLAB

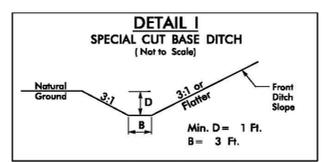
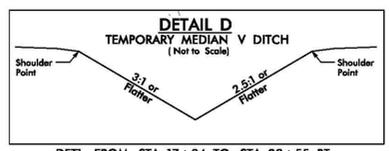


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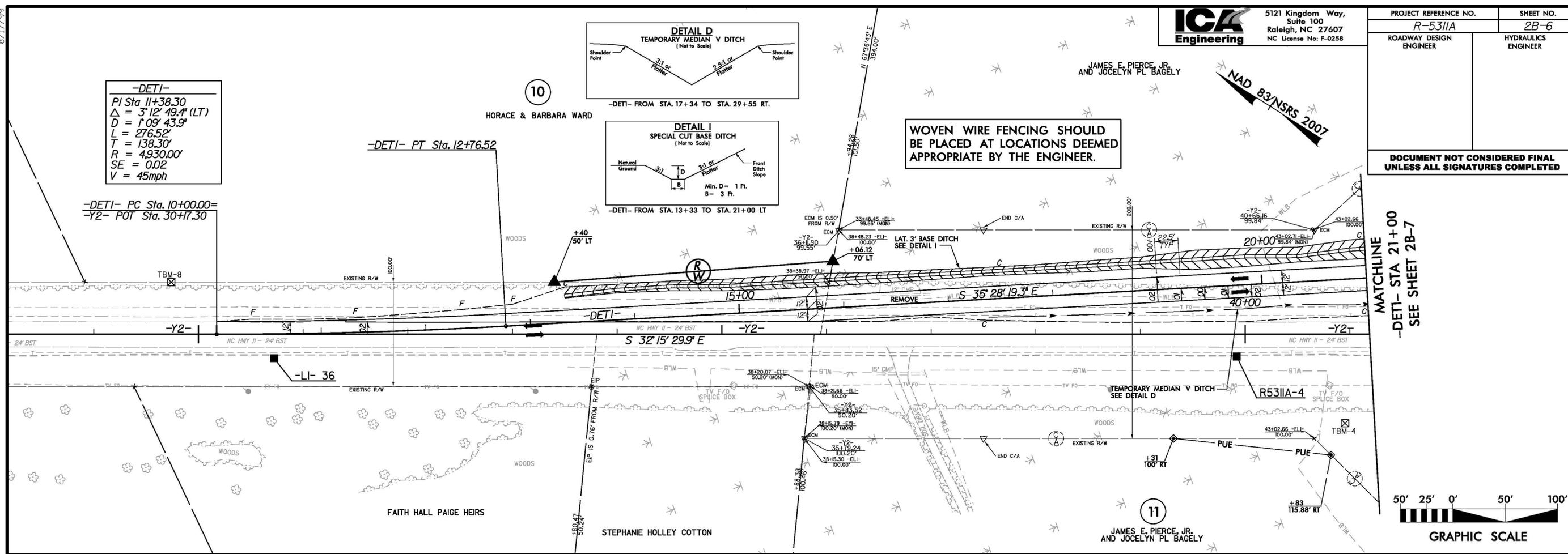


**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

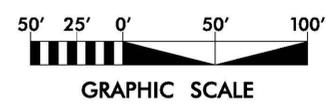
**-DET1-**  
 PI Sta. 11+38.30  
 $\Delta = 3^{\circ}12'49.4''$  (LT)  
 $D = 1^{\circ}09'43.9''$   
 $L = 276.52'$   
 $T = 138.30'$   
 $R = 4,930.00'$   
 $SE = 0.02$   
 $V = 45\text{mph}$



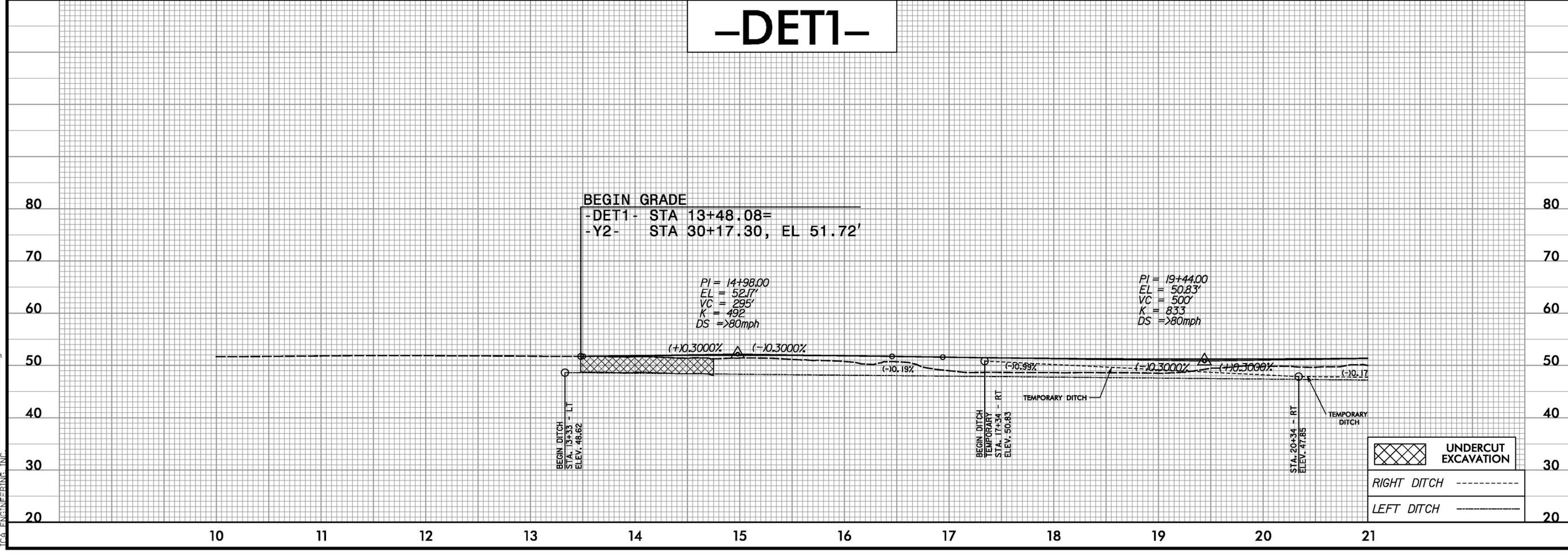
**WOVEN WIRE FENCING SHOULD  
 BE PLACED AT LOCATIONS DEEMED  
 APPROPRIATE BY THE ENGINEER.**



**MATCHLINE  
 -DET1- STA 21+00  
 SEE SHEET 2B-7**



**-DET1-**



**UNDERCUT EXCAVATION**  
 RIGHT DITCH  
 LEFT DITCH

8/17/09  
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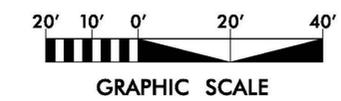
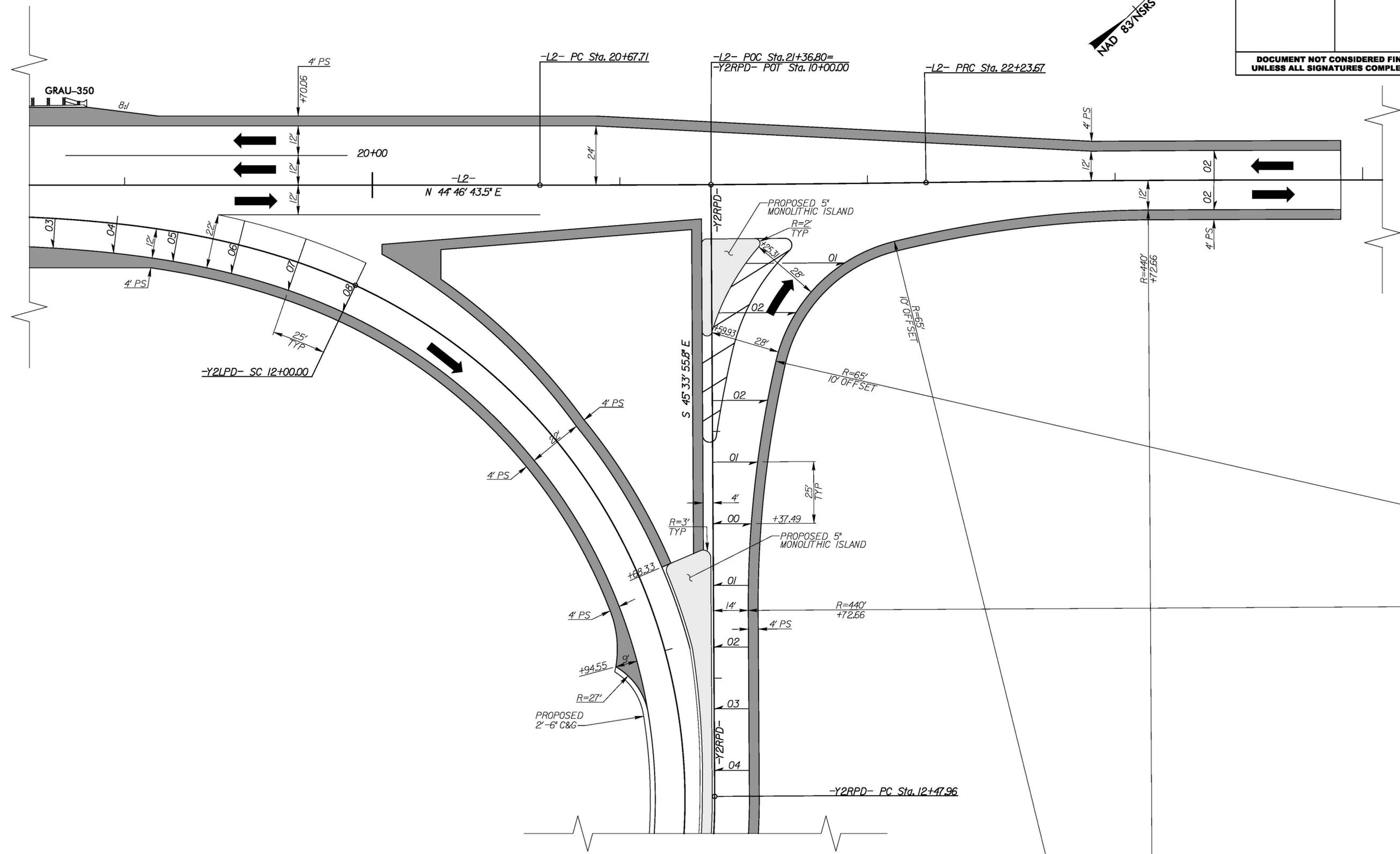


8/17/99

# -L2- & -Y2RPD-

**ICA Engineering**  
 5121 Kingdom Way,  
 Suite 100  
 Raleigh, NC 27607  
 NC License No: F-0258

PROJECT REFERENCE NO. <i>R-5311A</i>	SHEET NO. <i>2B-9</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



FOR PLAN VIEW, SEE SHEET 7

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 ICA ENGINEERING, INC.

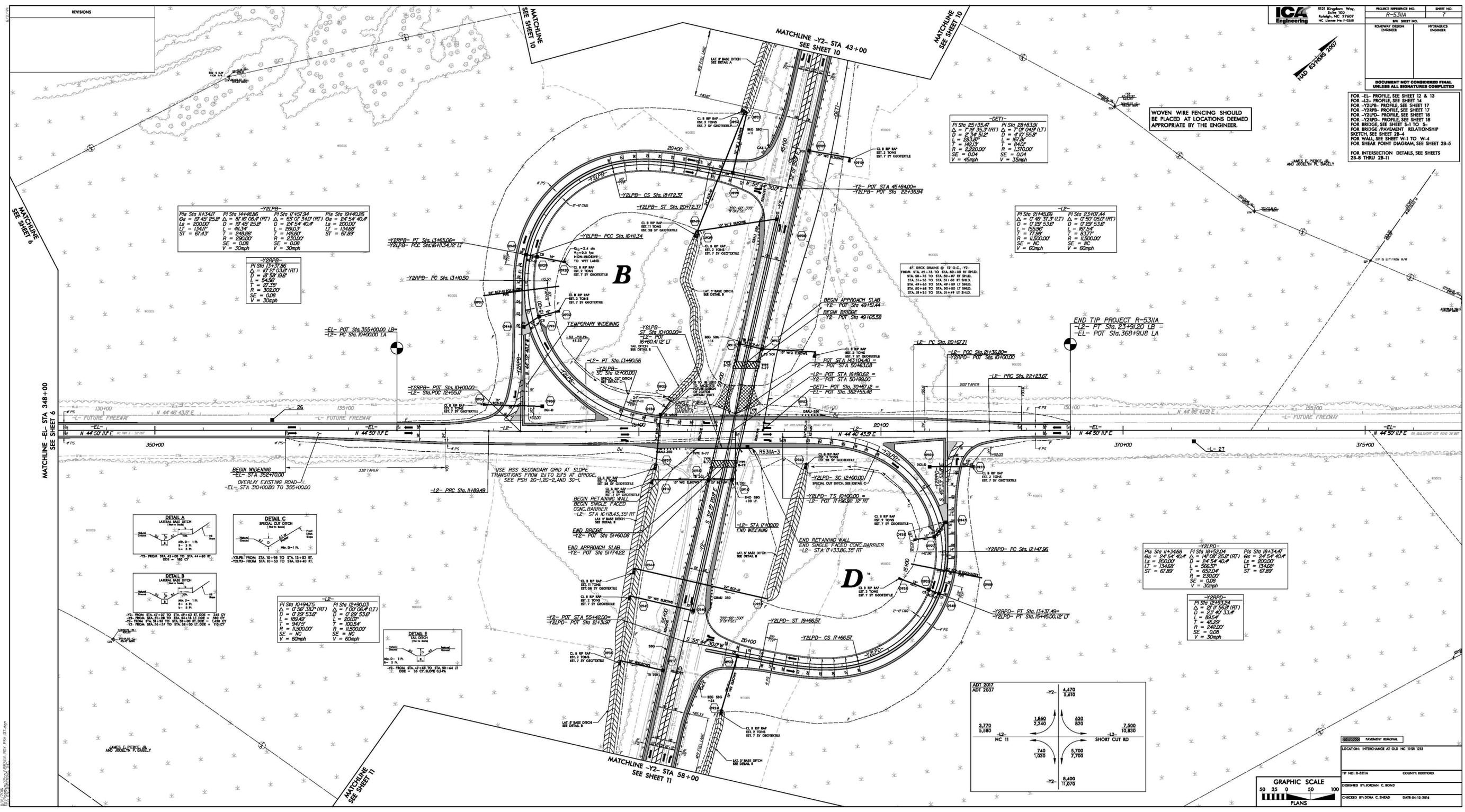












REVISIONS

NO.	DATE	DESCRIPTION

**ICA Engineering**  
 8021 Kingshain Way,  
 Raleigh, NC 27607  
 NC License No. F-0268

PROJECT REFERENCE NO. **R-5311A** SHEET NO. **7**  
 RWY SHEET NO.   
 ROADWAY DESIGN ENGINEER  HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

FOR -EL- PROFILE SEE SHEET 12 & 13  
 FOR -L2- PROFILE SEE SHEET 14  
 FOR -Y2L2PB- PROFILE SEE SHEET 17  
 FOR -Y2L2PB- PROFILE SEE SHEET 17  
 FOR -Y2L2PD- PROFILE SEE SHEET 18  
 FOR -Y2L2PD- PROFILE SEE SHEET 18  
 FOR BRIDGE SEE SHEET 8-1 TO 8-5  
 FOR BRIDGE PAYMENT RELATIONSHIP SEE SHEET 28-4  
 FOR WALL SEE SHEET W-1 TO W-4  
 FOR SHEAR POINT DIAGRAM SEE SHEET 28-5  
 FOR INTERSECTION DETAILS, SEE SHEETS 28-8 THRU 28-11

**-Y2L2PB-**

PI Sta 113417	PI Sta 144836	PI Sta 174594	PI Sta 194026
G <sub>1</sub> = 15.45 25.2'	G <sub>2</sub> = 19.40 25.2'	G <sub>3</sub> = 24.54 40.4'	G <sub>4</sub> = 24.54 40.4'
L <sub>1</sub> = 200.00'	L <sub>2</sub> = 200.00'	L <sub>3</sub> = 200.00'	L <sub>4</sub> = 200.00'
LT = 134.07'	LT = 134.07'	LT = 134.07'	LT = 134.07'
ST = 67.89'	ST = 67.89'	ST = 67.89'	ST = 67.89'
R = 230.00'	R = 230.00'	R = 230.00'	R = 230.00'
SE = 0.08	SE = 0.08	SE = 0.08	SE = 0.08
V = 30mph	V = 30mph	V = 30mph	V = 30mph

**-Y2R2PB-**

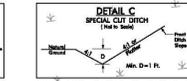
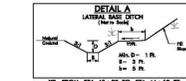
PI Sta 131376	PI Sta 174594
G <sub>1</sub> = 10.52 03.8' (RT)	G <sub>2</sub> = 24.54 40.4'
L <sub>1</sub> = 54.58'	L <sub>2</sub> = 200.00'
L <sub>2</sub> = 21.35'	L <sub>3</sub> = 134.68'
R = 302.00'	R = 230.00'
SE = 0.08	SE = 0.08
V = 30mph	V = 30mph

**-DET-**

PI Sta 25135.4'	PI Sta 28183.9'
G <sub>1</sub> = 7.59 35.7' (RT)	G <sub>2</sub> = 7.07 04.9' (LT)
D = 2' 34.512'	D = 2' 34.512'
L = 283.97'	L = 161.24'
T = 142.99'	T = 80.62'
R = 2,220.00'	R = 1,370.00'
SE = 0.04	SE = 0.04
V = 45mph	V = 35mph

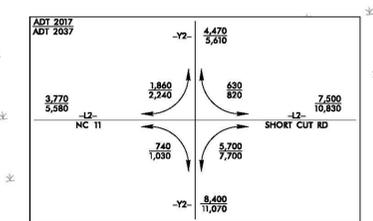
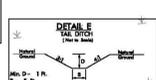
**-L2-**

PI Sta 21445.83	PI Sta 23407.44
G <sub>1</sub> = 0.49 37.3' (LT)	G <sub>2</sub> = 0.29 53.6'
D = 0' 29.536'	D = 0' 29.536'
L = 192.54'	L = 192.54'
T = 71.26'	T = 83.27'
R = 11,500.00'	R = 11,500.00'
SE = NC	SE = NC
V = 60mph	V = 60mph



**-L2-**

PI Sta 10194.75	PI Sta 12490.03
G <sub>1</sub> = 0.56 30.7' (RT)	G <sub>2</sub> = 1.00 05.4' (LT)
D = 0' 29.536'	D = 0' 29.536'
L = 188.89'	L = 200.00'
L <sub>2</sub> = 34.75'	L <sub>3</sub> = 60.54'
R = 11,500.00'	R = 11,500.00'
SE = NC	SE = NC
V = 60mph	V = 60mph



**GRAPHIC SCALE**  
 50 25 0 50 100  
 PLANS

LOCATION: INTERCHANGE AT OLD NC 158 1313

TP NO. R-5311A COUNTY: HERTFORD  
 DESIGNED BY: JORDAN C. BOND  
 CHECKED BY: DENA C. SHAW DATE: 04-15-2016



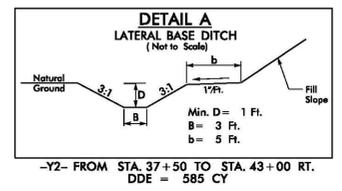


DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

**-DETI-**  
 PI Sta 11+38.30  
 $\Delta = 3^\circ 12' 49.4" (LT)$   
 $D = 1^\circ 09' 43.9"$   
 $L = 276.52'$   
 $T = 138.30'$   
 $R = 4,930.00'$   
 $SE = 0.02$   
 $V = 45\text{mph}$

**BEGIN CONSTRUCTION**  
 -Y2- POT Sta. 30+17.30 =  
 -DETI- PC Sta. 10+00.00



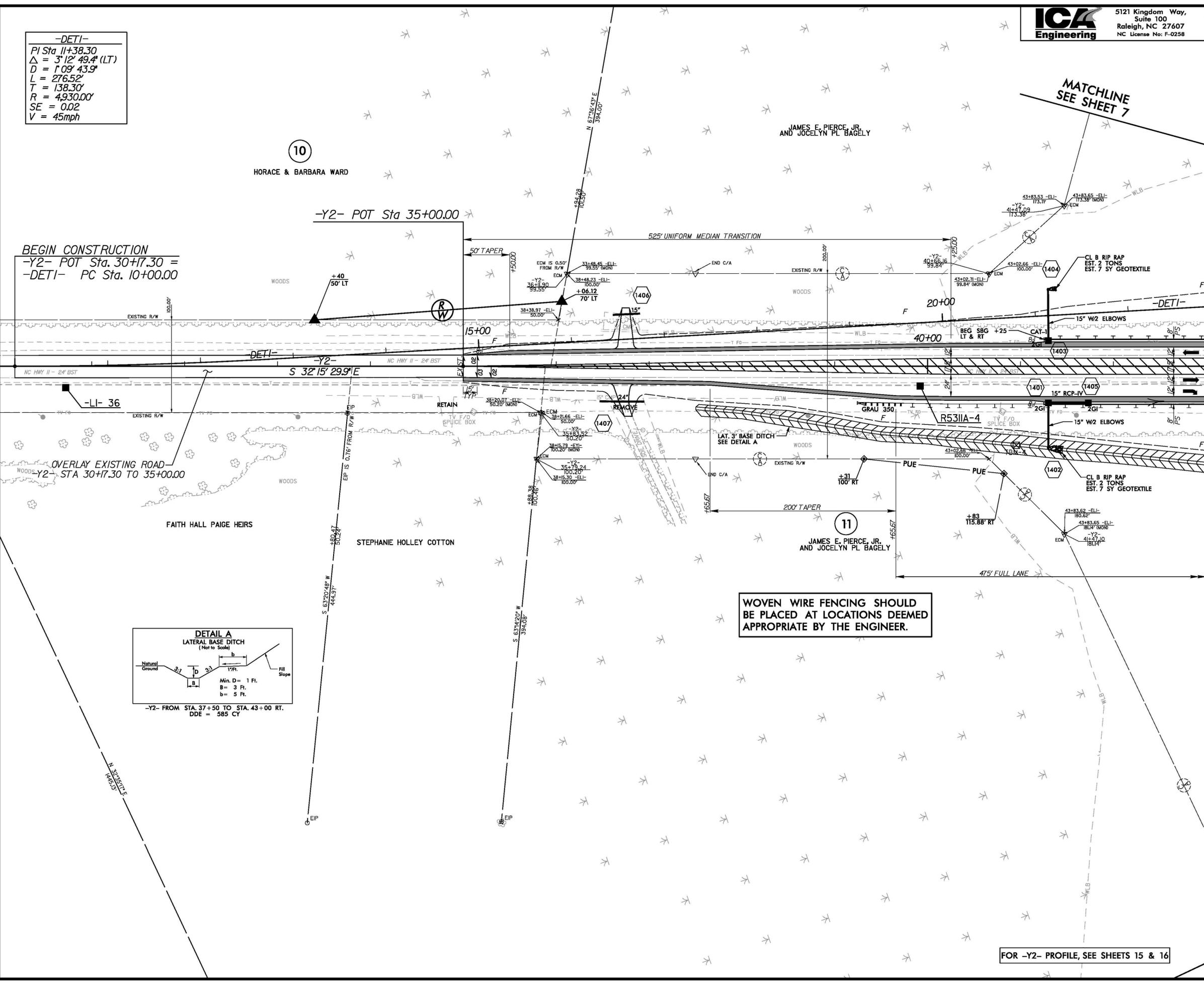
WOVEN WIRE FENCING SHOULD  
 BE PLACED AT LOCATIONS DEEMED  
 APPROPRIATE BY THE ENGINEER.

FOR -Y2- PROFILE, SEE SHEETS 15 & 16

R/W REV.10/31/16) - CHANGED PROPERTY OWNER NAME ON PARCEL #10, CHANGED PROPOSED C/A TO EXISTING C/A ON PARCEL #11. DCS

8/17/99

1/16/2016 P:\Projects\114-RDY\_PSH\_12.dgn  
 11/16/2016 P:\Projects\114-RDY\_PSH\_12.dgn  
 11/16/2016 P:\Projects\114-RDY\_PSH\_12.dgn



MATCHLINE -Y2- STA 43+00  
 SEE SHEET 7

MATCHLINE  
 SEE SHEET 7

