



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

EUGENE CONTI
SECRETARY

February 3, 2009

MEMORANDUM TO: Mr. Jerry Jennings, PE
Acting Division One Engineer

FROM: Philip S. Harris, III, P.E., Unit Head
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Camden County, Widenig of US 158 from Elizabeth City to
the separation of US 158 and NC 34; T.I.P. Number
R-2414; Federal Aid Project No. STP-158(2)

E. F. Fush

Attached are the U.S. Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Quality Section 401 Individual Water Quality Certification and N.C. Division Coastal Management CAMA Permit for the above referenced project. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:
<http://www.ncdot.gov/doh/preconstruct/pe/neu/permit.html>

PSH/gyb

Attachment

Cc: W/attachment
Mr. Randy Garris, P.E. State Contract Officer
Ms. Beth Harmon, EEP
Mr. Clay Willis, Division Environmental Officer

Cc: W/o attachment (see website for attachments)
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Art McMillan, P.E., Highway Design
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Mr. Rob Hanson, P.E., PDEA Eastern Region Unit Head

PROJECT COMMITMENTS:

**R-2414, Widening of US 158 from Elizabeth City to the separation of US 158 and NC 34
in Camden County
W.B.S. No. 34430.1.1, Federal Aid Project No. STP-158(2)**

Commitments Developed Through Project Development and Design

Roadside Environmental Unit

NCDOT best management practices will be adhered to during construction to minimize negative environmental impacts.

This is a standard NCDOT practice.

Cleared areas will be revegetated as quickly as possible during construction.

This is a standard NCDOT practice.

Special attention will be given to proper installation and maintenance of all erosion and sedimentation control devices.

This is a standard NCDOT practice.

Project Development and Environmental Analysis Branch/ Right of Way/ Division 1

NCDOT has agreed to move the Creekmore Store during the ROW phase of the project and enlisting the help of a moving contractor specializing in historic structures to the rear of its property for mitigation purposes. NCDOT will coordinate with the SHPO prior to construction so that measures will be taken to preserve the historic character of the Creekmore Store.

This work is currently underway by the Right of Way Branch.

Division 1

There will be an in-water work moratorium for both anadromous and resident fisheries for this project from February 15 to June 15.

This environmental commitment will be implemented during construction phase of the project.

Neither waste sites nor borrow sites will be allowed in wetlands.

This environmental commitment will be implemented during construction phase of the project.

To ensure all borrow and waste activities occur on high ground, NCDOT shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project shall be available to the Corps upon request.

This environmental commitment will be implemented during construction phase of the project.

Roadway Design Unit/ Division 1/ Right of Way Branch

NCDOT will avoid impacting the Sawyer Graveyard.

The Sawyer Graveyard will not be impacted during construction – construction limits have been placed adjacent to the graveyard. NCDOT will mark the graveyard prior to beginning construction activities with orange protective fencing.

NCDOT will avoid impacting the Graveyard located at the intersection of US 158 and SR 1145 (Belcross Road) behind the H & R Block building.

This graveyard is actually located near the intersection of US 158 and NC 343 and is part of R-2414B. NCDOT will move the graveyard prior to beginning construction activities.

Project Development and Environmental Analysis Branch/ Hydraulics Unit/ Structure Design Unit

NCDOT acknowledges the importance of anadromous fish and recognizes the importance of protecting spawning areas. Consequently, NCDOT will coordinate closely with the Division of Marine Fisheries during the design of hydraulic crossings and will adhere to appropriate construction moratoria in these areas.

NCDOT will coordinate with corresponding resource agencies during the design process to identify acceptable types of hydraulics crossings and mitigation.

The NCDOT has coordinated with the environmental agencies to obtain the required concurrence level for this project as set forth in the NEPA/404 merger process. Appropriate hydraulics crossings have been agreed to during approval of design plans. The construction moratorium will be adhered to during construction phase of this project.

Project Development and Environmental Analysis Branch/ Right of Way Branch/ Roadway Design Unit/ Division 1

In accordance with section 4(f) of the National Environmental Policy Act: construction activities in the vicinity of the George Wood Park and the Causeway Park will not permanently affect the functionality, or recreational activities associated with either of the parks. This includes the parking facilities associated with each of the properties.

The current designs have minimized impacts to the two parks. Access to the parks will be maintained during construction.

Commitments Developed During Project Permitting:

Division One Construction Unit:

In accordance with commitments made in your application, mechanized clearing shall not be used for the purpose of clearing vegetation in relocating overhead power lines within jurisdictional wetlands.

Except as noted in Condition #3, the placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a modification to this certification will be required.

The permittee will need to adhere to all appropriate in-water work moratoriums (including the use of pile driving or vibration techniques) prescribed by the NC Wildlife Resources Commission, the US Fish and Wildlife Service, and National Marine Fisheries Service. No in-water work is permitted between February 15 and June 15 of any year, without prior approval from the NC Division of Water Quality and the NC Wildlife Resources Commission. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.

Where the existing culvert at Site 11 on Section A of the project will be removed, the banks shall be graded to match existing bank slopes. Additionally, any open areas shall be planted within two weeks after culvert removal with appropriate vegetation in order to stabilize the banks and surrounding areas.

Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited unless prior written approval is given by DWQ first.

All pile driving or drilling activities shall be enclosed in turbidity curtains unless otherwise approved by DWQ in this certification.

Turbidity curtains shall be used to isolate all work areas from the stream at UT to Pasquotank River at Site 11, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.

No utilities shall be relocated into jurisdictional wetland areas.

All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.

The outside buffer, wetland or water boundary located within the construction corridor approved by this certification shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.

All pipe and culvert bottoms shall be buried at least one foot below normal bed elevation when they are placed within the Public Trust Area of Environmental Concern (AEC) as designated by the Coastal Area Management Act (CAMA). Culverts placed in wetlands are not subject to this burial requirement.

In accordance with commitments made by the permittee, all clearing within wetlands shall be accomplished by hand clearing only. Any other method of clearing within wetlands shall require additional approval from the Division.

Construction or removal of the temporary construction sheeting is prohibited while the moratorium referenced in Condition No. 2 of the CAMA permit is in effect without prior approval of the Division, in consultation with WRC.

The bridge shall be constructed using staged construction or top down construction methodologies. Any other construction method shall require additional authorization from the Division.

The installation practice for the bridge piles and temporary construction sheeting shall be accomplished by driving and/or vibratory hammer. Should the permittee and/or its contractor determine that another type of installation, such as jetting or drilled shaft construction, is preferred, additional authorization from DCM shall be required.

Turbidity curtains and silt fences shall be used to isolate all work areas from the tributary to the Pasquotank River at Site 11 on R-2414A, including installation of bridge piles and temporary construction sheeting, placement of riprap, excavation or filling. The turbidity curtains shall be installed parallel to the banks on each side of the tributary. The turbidity curtains shall extend past the construction limits and be attached to the silt fences containing the work site. The turbidity curtains shall be of sufficient length and effectiveness to prevent a visible increase in the amount of suspended sediments in adjacent waters. The turbidity curtains shall not fully encircle the work area or extend across the tributary. The turbidity curtains shall be properly maintained and retained in the water until construction is complete and all of the work area contained by the turbidity curtains has been stabilized by vegetation or other means. The turbidity curtains shall be removed when turbidity within the curtains reaches ambient levels.

The 10" water line at Site 11 on R-2414 A shall be relocated by directional boring. All utilities shall be relocated aurally. Entry and exit points of the directional boring activity, including

disposal of material from the drilling activity, shall be outside of all wetlands and Waters of the State.

No attempt shall be made by the permittee to prevent the full and free use by the public of Causeway Park, George M. Wood Memorial Park and all navigable waters at or adjacent to the authorized work following completion of construction activities.

During project construction, the permittee shall make every attempt to maintain use by the public of Causeway Park, George M. Wood Memorial Park and all navigable waters at or adjacent to the authorized work. If this is not possible, then adequate notice shall be provided to the public that use of Causeway Park, George M. Wood Memorial Park and/or all navigable waters at or adjacent to the authorized work will be limited during construction. The notice shall include an estimate of the amount of time that the limited use will occur.

Natural Environment Unit

Compensatory mitigation for impacts to 4.36 acres of wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated July 14, 2008 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.

Impacts to wetlands and Waters of the State due to this project are as follows:

CAMA Coastal Wetlands: Permanent impacts of approximately 0.06 acres due to fill; temporary impacts of approximately 0.07 acres due to hand clearing for the roadway work; and temporary impacts of approximately 0.18 acres due to hand clearing for utility work. (Within the hand clearing areas, approximately 0.02 acres will also be temporarily impacted by erosion control measures for the roadway work.) NDCOT shall debit 0.6 acres of CAMA Coastal Wetland restoration credits from the Balance Farm Mitigation Site in Currituck County.

Riparian wetlands: Permanent impacts of approximately 4.29 acres (4.19 acres due to fill and 0.10 acres due to excavation); temporary impacts of approximately 3.73 acres due to hand clearing for the roadway work; and temporary impacts of approximately 6.43 acres due to hand clearing for utility work. (Within the hand clearing areas, approximately 0.77 acres will also be temporarily impacted by erosion control measures for the roadway work.)

Streams: Permanent impacts of approximately 297 linear feet; and temporary impacts of approximately 174 linear feet.

Surface waters: Permanent impacts of approximately 0.11 acres; and temporary impacts of approximately 0.11 acres.

In accordance with the Ecosystem Enhancement Program (EEP) letter dated 7/14/08, compensatory mitigation for permanent impacts of 4.35 acres of riparian wetlands and 247 linear feet of stream associated with the authorized project shall be provided by the EEP. In accordance with the permit application, compensatory mitigation for permanent stream impacts

associated with the authorized project also includes on-site mitigation for 50 linear feet of stream impacts at the culvert-to-bridge replacement location at Site 11 within TIP No. R-2414A.

Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent the temporary Coastal Wetland impact areas from re-attaining pre-project wetland functions, the permittee shall provide an annual update on the Coastal Wetland areas temporarily impacted by this project. This annual update shall consist of photographs and a brief written report on the progress of these temporarily impacted areas in re-attaining their pre-project wetland functions. Within three years after project completion, the permittee shall hold an agency field meeting with DCM to determine if the Coastal Wetland areas temporarily impacted by this project have re-attained pre-project wetland functions. If at the end of three years DCM determines that the Coastal Wetland areas temporarily impacted by the project have not re-attained pre-project wetland functions, DCM will determine whether compensatory wetland mitigation shall be required.

Human Environment Unit/ Division One Construction Unit

Project construction shall not commence for section B of the project until NCDOT has completed all the requirements and implemented the stipulations agreed to by NCDOT, State Historic Preservation Office (SHPO) and the Federal Highway Administration (FHWA) regarding the relocation of the Creekmore Store which is to be relocated to the rear of the property away from US 158/NC 34.

NCDOT will avoid impacting the Sawyer Graveyard. NCDOT will mark the graveyard prior to beginning construction activities with orange protective fencing.

In accordance with Environmental Commitments contained within the Finding of No Significant Impact and Programmatic Section 4(f) Evaluations dated 7/13/98, the permittee shall move the Creekmore Store to the rear of its property for mitigation purposes. The permittee shall coordinate with the State Historic Preservation Officer prior to construction so that measures are taken to preserve the historic character of the Creekmore Store.

In accordance with Environmental Commitments contained within the Finding of No Significant Impact and Programmatic Section 4(f) Evaluations dated 7/13/98, the permittee shall avoid impacting the Sawyer Graveyard.

Permit Class
NEW

Permit Number
03-09

STATE OF NORTH CAROLINA
Department of Environment and Natural Resources
and
Coastal Resources Commission

Permit

for

- Major Development in an Area of Environmental Concern
pursuant to NCGS 113A-118
- Excavation and/or filling pursuant to NCGS 113-229

Issued to N.C. Department of Transportation, 1598 Mail Service Center, Raleigh, NC 27699-1598

Authorizing development in Camden County at unnamed tributary to the Pasquotank River, US 158 widening, as requested in the permittee's application dated 10/14/08 (MP-1 and MP-2) and 10/24/08 (MP-5), including the attached workplan drawings (121) as referenced in Condition No. 1 of this permit.

This permit, issued on 1/12/09, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

TIP No. R-2414, Roadway Widening

- 1) All work authorized by this permit shall be carried out in accordance with the following attached workplan drawing(s), except as modified herein.

Permit drawings (R-2414A): 22 sheets dated 6/18/08; 6 sheets dated 3/3/08; 3 sheets undated

Permit drawings (R-2414B): 2 sheets dated 6/20/08; 3 sheets dated 4/21/08; 18 sheets dated 6/18/08; 3 sheets undated; 5 sheets dated 6/16/08

Utility drawings (R-2414A): 12 sheets dated 4/7/08; 1 sheet dated 7/3/08

Utility drawings (R-2414B): 12 sheets dated 5/14/08; 2 sheets dated 7/3/08

Roadway Design drawings (R-2414A): 17 sheets dated 2/22/08; 1 sheet dated 3/4/08

Roadway Design drawings (R-2414B): 13 sheets dated 5/13/08; 1 sheet dated 5/14/08

(See attached sheets for Additional Conditions)

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or continuance as the case may be.

This permit must be accessible on-site to Department personnel when the project is inspected for compliance.

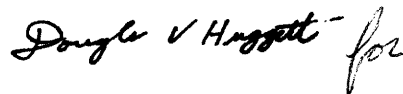
Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

No expiration date, pursuant to GS 136-44.7B

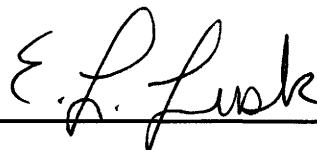
In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission.



James H. Gregson, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.



Signature of Permittee

ADDITIONAL CONDITIONS

- 2) In accordance with commitments made by the permittee, no in-water work shall be conducted between February 15th to June 15th of any year without prior approval of the N.C. Division of Coastal Management (DCM), in consultation with the N.C. Wildlife Resources Commission (WRC).
- 3) All pipe and culvert bottoms shall be buried at least one foot below normal bed elevation when they are placed within the Public Trust Area of Environmental Concern (AEC) as designated by the Coastal Area Management Act (CAMA). Culverts placed in wetlands are not subject to this burial requirement.
- 4) Wetlands shall not be crossed in transporting equipment to the project site, without prior approval from DCM.
- 5) Fill slopes in wetlands and Waters of the State shall be 3:1 or steeper.
- 6) In accordance with commitments made by the permittee, all clearing within wetlands shall be accomplished by hand clearing only. Any other method of clearing within wetlands shall require additional approval from the Division.
- 7) There shall be no clearing of wetlands outside of the areas indicated on the attached workplan drawings, without prior approval from the Division.
- 8) No excavation shall take place at any time in any vegetated wetlands or surrounding waters outside of the alignment of the areas indicated on the attached workplan drawings, without permit modification.
- 9) Material excavated may be used in fill areas associated with the project once properly dewatered or shall be removed from the site and taken to a high ground location.
- 10) The temporary placement or double handling of excavated and/or fill materials within waters or vegetated wetlands is not authorized.
- 11) No excavated or fill material shall be placed at any time in any vegetated wetlands or surrounding waters outside of the alignment of the fill area indicated on the attached workplan drawings.
- 12) All excavated materials shall be confined above normal water level and landward of regularly or irregularly flooded wetlands behind adequate dikes or other retaining structures to prevent spillover of solids into any wetlands or surrounding waters.
- 13) All fill material shall be clean and free of any pollutants, except in trace quantities.
- 14) Placement of riprap shall be limited to the areas as depicted on the attached workplan drawings. The riprap material shall be free from loose dirt or any pollutant. The riprap material shall consist of clean rock or masonry materials such as but not limited to granite or broken concrete.
- 15) Live concrete shall not be allowed to contact the water in or entering into tributaries of the Pasquotank River, or the adjacent wetlands.
- 16) Construction staging areas shall be located only in upland areas, and not in wetlands or Waters of the State.

ADDITIONAL CONDITIONS

- 17) All materials and debris associated with the removal and/or construction of the existing and/or new bridge (including deck components), culverts, roadway asphalt, other existing structures within the Right-of-Way as authorized by this permit and associated materials shall not enter wetlands or Waters of the State, even temporarily. Any such material shall be disposed of at an approved upland site or shall be recycled in an environmentally appropriate manner provided appropriate authorizations from any relevant state, federal, or local authorities are obtained.
- 18) Unless specifically altered herein, any mitigative measures or environmental commitments specifically made by the permittee in the CAMA permit application and/or the Environmental Assessment and Programmatic Section 4(f) Evaluations dated 8/29/97, shall be implemented, regardless of whether or not such commitments are addressed by individual conditions of this permit.

Bridge Construction

- 19) Construction or removal of the temporary construction sheeting is prohibited while the moratorium referenced in Condition No. 2 of this permit is in effect without prior approval of the Division, in consultation with WRC.
- 20) The bridge shall be constructed using top down construction methodologies. Any other construction method shall require additional authorization from the Division.
- 21) The installation practice for the bridge piles and temporary construction sheeting shall be accomplished by driving and/or vibratory hammer. Should the permittee and/or its contractor determine that another type of installation, such as jetting or drilled shaft construction, is preferred, additional authorization from DCM shall be required.
- 22) The permittee did not propose the use of deck drains in the permit application package. Any future proposal to utilize deck drains shall require additional authorization from DCM.

Compensatory Mitigation**NOTE:**

Impacts to wetlands and Waters of the State due to this project are as follows:

- **CAMA Coastal Wetlands:** Permanent impacts of approximately 0.06 acres due to fill; temporary impacts of approximately 0.07 acres due to hand clearing for the roadway work; and temporary impacts of approximately 0.18 acres due to hand clearing for utility work. (Within the hand clearing areas, approximately 0.02 acres will also be temporarily impacted by erosion control measures for the roadway work.)
- **Riparian wetlands:** Permanent impacts of approximately 4.29 acres (4.19 acres due to fill and 0.10 acres due to excavation); temporary impacts of approximately 3.73 acres due to hand clearing for the roadway work; and temporary impacts of approximately 6.43 acres due to hand clearing for utility work. (Within the hand clearing areas, approximately 0.77 acres will also be temporarily impacted by erosion control measures for the roadway work.)
- **Streams:** Permanent impacts of approximately 297 linear feet; and temporary impacts of approximately 174 linear feet.
- **Surface waters:** Permanent impacts of approximately 0.11 acres; and temporary impacts of approximately 0.11 acres.

ADDITIONAL CONDITIONS**NOTE:**

In accordance with the Ecosystem Enhancement Program (EEP) letter dated 7/14/08, compensatory mitigation for permanent impacts of 4.35 acres of riparian wetlands and 247 linear feet of stream associated with the authorized project shall be provided by the EEP. In accordance with the permit application, compensatory mitigation for permanent stream impacts associated with the authorized project also includes on-site mitigation for 50 linear feet of stream impacts at the culvert-to-bridge replacement location at Site 11 within TIP No. R-2414A.

- 23) The permittee shall develop a compensatory mitigation plan for permanent impacts to 0.06 acres (approximately 2,614 square feet) of CAMA Coastal Wetlands as defined by 15A NCAC 07H .0205. The compensatory mitigation plan shall include a minimum of 1:1 restoration of CAMA Coastal Wetlands as defined by 15A NCAC 07H .0205. The mitigation shall be in-kind, i.e. the targeted species composition of the restored wetlands shall approximate the species composition of the impacted wetlands. The mitigation shall be implemented and in place within 3 years of the issuance of this permit. The CAMA coastal wetland species impacted by this project are *Scirpus* and *Typha*.
- 24) Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent the temporary Coastal Wetland impact areas from re-attaining pre-project wetland functions, the permittee shall provide an annual update on the Coastal Wetland areas temporarily impacted by this project. This annual update shall consist of photographs and a brief written report on the progress of these temporarily impacted areas in re-attaining their pre-project wetland functions. Within three years after project completion, the permittee shall hold an agency field meeting with DCM to determine if the Coastal Wetland areas temporarily impacted by this project have re-attained pre-project wetland functions. If at the end of three years DCM determines that the Coastal Wetland areas temporarily impacted by the project have not re-attained pre-project wetland functions, DCM will determine whether compensatory wetland mitigation shall be required.

Sedimentation and Erosion Control

- 25) Turbidity curtains and silt fences shall be used to isolate all work areas from the tributary to the Pasquotank River at Site 11 on R-2414A, including installation of bridge piles and temporary construction sheeting, placement of riprap, excavation or filling. The turbidity curtains shall be installed parallel to the banks on each side of the tributary. The turbidity curtains shall extend past the construction limits and be attached to the silt fences containing the work site. The turbidity curtains shall be of sufficient length and effectiveness to prevent a visible increase in the amount of suspended sediments in adjacent waters. The turbidity curtains shall not fully encircle the work area or extend across the tributary. The turbidity curtains shall be properly maintained and retained in the water until construction is complete and all of the work area contained by the turbidity curtains has been stabilized by vegetation or other means. The turbidity curtains shall be removed when turbidity within the curtains reaches ambient levels.
- 26) The permittee shall follow "Best Management Practices for the Protection of Surface Waters".
- 27) This project shall conform to all requirements of the NC Sedimentation Pollution Control Act and NC DOT's Memorandum of Agreement with the Division of Land Resources.
- 28) In order to protect water quality, runoff from construction shall not visibly increase the amount of suspended sediments in adjacent waters.

ADDITIONAL CONDITIONS

- 29) Appropriate sedimentation and erosion control devices, measures or structures shall be implemented to ensure that eroded materials do not enter adjacent wetlands, watercourses and property (e.g. silt fence, diversion swales or berms, etc.).

Stormwater Management

- 30) The N.C. Division of Water Quality (DWQ) confirmed in a letter dated 11/21/08 that the subject project is excluded from State Stormwater permitting requirements as set forth in Section 2(d)(1) of Session Law 2008-211, effective October 1, 2008, and the stormwater rules under Title 15A NCAC 2H .1000, as amended.

Historical and Cultural Resource Protection

- 31) In accordance with Environmental Commitments contained within the Finding of No Significant Impact and Programmatic Section 4(f) Evaluations dated 7/13/98, the permittee shall move the Creekmore Store to the rear of its property for mitigation purposes. The permittee shall coordinate with the State Historic Preservation Officer prior to construction so that measures are taken to preserve the historic character of the Creekmore Store.
- 32) In accordance with Environmental Commitments contained within the Finding of No Significant Impact and Programmatic Section 4(f) Evaluations dated 7/13/98, the permittee shall avoid impacting the Sawyer Graveyard.

General

- 33) Any relocation of utility lines that is not specifically depicted on the attached workplan drawing(s), or specifically described within the attached permit application, shall require approval from DCM, either under the authority of this permit, or by the utility company obtaining separate authorization.
- 34) Directional boring shall not be used for utility relocations. All utilities shall be relocated aerially.
- 35) No attempt shall be made by the permittee to prevent the full and free use by the public of Causeway Park, George M. Wood Memorial Park and all navigable waters at or adjacent to the authorized work following completion of construction activities.
- 36) During project construction, the permittee shall make every attempt to maintain use by the public of Causeway Park, George M. Wood Memorial Park and all navigable waters at or adjacent to the authorized work. If this is not possible, then adequate notice shall be provided to the public that use of Causeway Park, George M. Wood Memorial Park and/or all navigable waters at or adjacent to the authorized work will be limited during construction. The notice shall include an estimate of the amount of time that the limited use will occur.
- 37) The permittee shall exercise all available precautions in the day-to-day operation of the facility to prevent waste from entering the adjacent wetlands and Waters of the State.

ADDITIONAL CONDITIONS

- 38) If it is determined that additional permanent and/or temporary impacts (such as but not limited to temporary access roads or detours) are necessary that are not shown on the attached workplan drawings or described in the authorized permit application, a permit modification and/or additional authorization from DCM shall be required. In addition, any changes in the approved plan, such as the removal of Underground Storage Tanks, may also require a permit modification and/or additional authorization from DCM. The permittee shall contact a representative of DCM prior to commencement of any such activity for this determination and any permit modification.
- 39) Development authorized by this permit shall only be conducted within NCDOT Right-of-Ways and/or easements.
- 40) The permittee and/or his contractor shall contact the DCM Transportation Project Coordinator in Elizabeth City at (252) 264-3901 to request a preconstruction conference prior to project initiation.
- 41) The N.C. Division of Water Quality has authorized the proposed project under Water Quality Certification No. 003774 (DWQ Project No. 20081602), which was issued on 12/18/08. Any violation of the Certification approved by DWQ shall be considered a violation of this CAMA permit.
- 42) Approval from the N.C. Division of Environmental Health Public Water Supply Plan Review Section is required for the relocation/modification of existing water mains prior to construction. If NCDOT specifications are to be used, only plan submittal and approval is required.

NOTE: The U.S. Army Corps of Engineers has assigned the proposed project COE Action ID. No. 199402124.

NOTE: This permit does not eliminate the need to obtain any additional state, federal or local permits, approvals or authorizations that may be required.

PROJECT REFERENCE NO. R-2411A SHEET NO. LC-8

DESIGNED BY: DMP
 CHECKED BY: DMP
 APPROVED BY: DMP

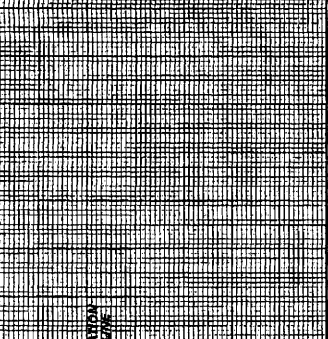
NORTH CAROLINA
 TRANSPORTATION
 PROJECT SERVICES UNIT
 PHONE: 919/256-4128
 FAX: 919/256-4119

UTILITY CONSTRUCTION
 PLANS ONLY

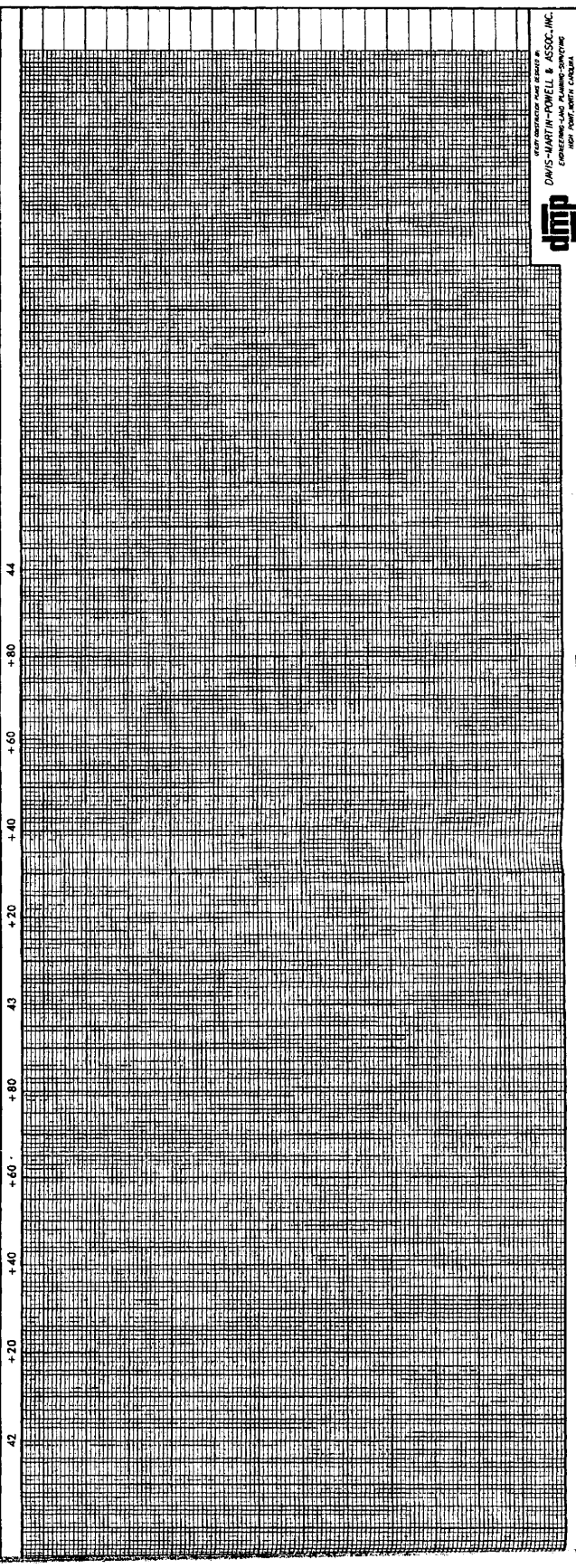
UTILITY CONSTRUCTION

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ATTENTION CONTRACTOR: INTERFERING WITH OTHER UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL MAINTAIN ALL NECESSARY RECORDS AND AS-BUILT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL MAINTAIN ALL NECESSARY RECORDS AND AS-BUILT DRAWINGS.



**TRENCHLESS MAYER MAIN INSTALLATION
 NEAR PROPOSED BRIDGE AT E- STA 43+00**





North Carolina Department of Environment and Natural Resources
Division of Coastal Management

Beverly Eaves Perdue, Governor

James H. Gregson, Director

January 21, 2009

Gregory J. Thorpe, Ph.D.
Project Development and Environmental Analysis
N.C. Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1548

RE: Letter of Refinement, CAMA Major Development Permit No. 03-09, Widening of US 158/NC 34 from East of Pasquotank River to the US 158/NC 34 split, Camden County, TIP No. R-2414.

Dear Dr. Thorpe:

This letter is in response to the N.C. Department of Transportation's (NCDOT's) attached e-mail dated 1/14/09 and attached memorandum dated 1/16/09, including the attached workplan drawings (2): 1 dated 10/14/08; and 1 dated 10/15/08.

Please be advised that through this **Letter of Refinement**, DCM conveys its determination that the above referenced request is consistent with existing State rules and regulations and is in keeping with the original purpose and intent of CAMA Permit No. 03-09 with the following conditions:

1. Condition Number 34 is hereby modified as follows: "34) The 10" water line at Site 11 on R-2414A shall be relocated by directional boring. All other utilities shall be relocated aerially."
2. Entry and exit points of the directional boring activity, including disposal of material from the drilling activity, shall be outside of all wetlands and Waters of the State.
3. NCDOT shall debit 0.6 acres of CAMA Coastal Wetland restoration credits from the Ballance Farm Mitigation Site in Currituck County.
4. Condition Number 20 is hereby modified as follows: "The bridge shall be constructed using staged construction or top down construction methodologies. Any other construction method shall require additional authorization from the Division."
5. This Letter of Refinement does not eliminate the need to obtain any additional state, federal or local permits, approvals or authorizations that may be required.

1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: <http://dcm2.enr.state.nc.us>

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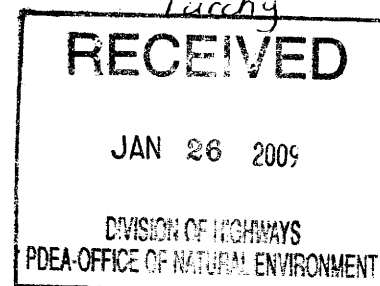
RECEIVED
Division of Highways

JAN 26 2009

Preconstruction

Dee Freeman, Secretary
Project Development and
Environmental Analysis Branch

Turchy



6. This Letter of Refinement shall be attached to the original of CAMA Permit No. 03-09, which was issued on 1/12/09, and both documents shall be readily available on site when a N.C. Division of Coastal Management (DCM) representative inspects the project for compliance.
7. All conditions and stipulations of the active permit remain in force under this Letter of Refinement unless altered herein.

Please contact Jim Hoadley or Cathy Brittingham if you have any questions or concerns. Jim can be reached at (252) 264-3901 or via e-mail at Jim.Hoadley@ncmail.net. Cathy can be reached at (919) 733-2293 x238 or via e-mail at Cathy.brittingham@ncmail.net.

Sincerely,

A handwritten signature in black ink that reads "Doug Huggett". The signature is written in a cursive, flowing style.

Doug Huggett
Major Permits and Consistency Coordinator

Cc: Michael Turchy, NCDOT
Bill Biddlecome, USACE
David Wainwright, NCDWQ
Garcy Ward, DWQ
Beth Harmon, EEP
Jim Hoadley, DCM
Cathy Brittingham, DCM



DEPARTMENT OF THE ARMY PERMIT

Permittee **North Carolina Department of Transportation, Dr. Gregory Thorpe**

Permit No. **SAW 1994-02124**

Issuing Office **CESAW-RG-W**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

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

Project Description: The proposed TIP project R-2414 A & B involves the widening of an existing two lane road facility to a multi-lane facility for approximately 5.5 miles. The project would permanently impact 4.35 acres of wetlands, 0.11 acres of surface waters and 296 linear feet of stream. The project would temporarily impact 10.41 acres of wetlands and 174 linear feet of stream.

Project Location: This project is located along US 158/NC 34 just east of the Pasquotank River to the US 158/NC 34 split in Belcross, adjacent to the Pasquotank River and unnamed tributaries to the Pasquotank River and Sawyers Creek in Camden County, North Carolina.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2013**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:


1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
 5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit, unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


Jan 15, 2009

 (PERMITTEE) **North Carolina Department of Transportation,** (DATE)

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

 (DISTRICT ENGINEER) **JEFFERSON M. RYSCAVAGE, COLONEL** (DATE)

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

 (TRANSFeree) (DATE)

SPECIAL CONDITIONS (Action ID. 199402124; NCDOT/TIP R-2414A&B)



COMPLIANCE WITH PLANS

a) All work must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to the permit plans must be approved by the USACE prior to implementation.

ACTIVITIES NOT AUTHORIZED

b) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, nor shall any activities take place that cause the degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

This permit does not authorize temporary placement or double handling of excavated or fill material within jurisdictional waters, including wetlands, outside the permitted area. Additionally, no construction materials or equipment will be placed or stored within jurisdictional waters, including wetlands.

CONSTRUCTION PLANS

c) The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Washington Regulatory Field Office prior to any active construction in waters or wetlands.

d) Prior to commencing construction within jurisdictional waters of the United States for any portion of the proposed project, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Washington Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings will be acceptable.

POLLUTION SPILLS

e) All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. No equipment staging or storage of construction material will occur in

wetlands. Hydro-seeding equipment will not be discharged or washed out into any surface waters or wetlands. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-5083 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

NOTIFICATION

f) The permittee shall advise the Corps in writing at least two weeks prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

CLEAN FILL MATERIAL

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

IN-WATER MORATORIUM

h) A construction moratorium for anadromous and resident fisheries from February 15 through June 15 of any year will be adhered to for in-water work.

i) The permittee will follow NCDOT adopted anadromous fish stream crossing guidelines.

CONTRACTOR COMPLIANCE

j) The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.

SEDIMENTATION AND EROSION CONTROL MEASURES

k) The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards. Additionally, the project must remain

in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of nonerodable materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

No fill or excavation for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless it is included on the plan drawings and specifically authorized by this permit.

REPORTING OF VIOLATIONS

l) The permittee will report any violation of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act in writing to the Corps of Engineers, Washington Regulatory Field Office NCDOT Regulatory Project Manager, within 24 hours of the permittee's discovery of the violation.

COMPLIANCE WITH SPECIAL CONDITIONS

m) Failure to institute and carry out the details of these special conditions, will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.

WET CONCRETE

n) The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

CULVERTS

o) All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent headcutting of

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

PRECONSTRUCTION MEETING

p) The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Washington Regulatory Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall provide the Corps of Engineers, Washington Regulatory Field Office, NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the preconstruction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

BORROW AND WASTE

q) To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any streams or wetlands. All jurisdictional wetland boundaries on borrow and waste sites shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with Special Condition b) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites

associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the Special Condition b). All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

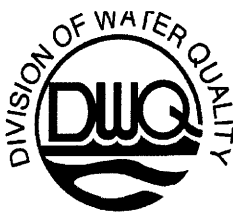
SECTION 106 (NATIONAL HISTORIC PRESERVATION ACT)

r) Project construction shall not commence for section B of the project until NCDOT has completed all the requirements and implemented the stipulations agreed to by NCDOT, State Historic Preservation Office (SHPO) and the Federal Highway Administration (FHWA) regarding the relocation of the Creekmore Store which is to be relocated to the rear of the property away from US 158/NC 34.

s) NCDOT will avoid impacting the Sawyer Graveyard. NCDOT will mark the graveyard prior to beginning construction activities with orange protective fencing.

EEP MITIGATION

t) Compensatory mitigation for the unavoidable impacts to 4.35 acres of riverine wetlands and 246 linear feet of stream associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated July 14, 2008 from William D. Gilmore, EEP Director. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 8.7 acres of restoration equivalent riverine wetlands and 492 linear feet of restoration equivalent warm water stream channel in the Pasquotank River basin (Hydrologic Cataloging Unit 03010205) by one year of the date of this permit. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.



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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 14.79 acres of jurisdictional wetlands, and 545 linear feet of jurisdictional streams in Camden County. The project shall be constructed pursuant to the application dated received October 21, 2008. The authorized impacts are as described below:

Stream Impacts in the Pasquotank River Basin

Site	Permanent Fill in Intermittent Stream (linear ft.)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
R-2414A						
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	75	105	180	0
TOTAL:	0	0	75	105	180	0
R-2414B						
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	121	29	150	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	92	21	113	0
7	0	0	83	19	102	0
TOTAL:	0	0	296	69	365	0
PROJECT TOTAL:	0	0	371	174	545	0

Total Stream Impact for Project: 470 linear feet



Wetland Impacts in the Pasquotank River Basin

Site	Fill (permanent) (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)*	Total Wetland Impact (ac)
R-2414A						
1	0.01	0	0	0	0.19	0.20
2	0	0	0	0	0.07	0.07
3	0.01	0	0	0	0.18	0.19
4	0.03	0	0	0	0.34	0.37
5	0.01	0	0	0	0.07	0.08
6	0.02	0	0	0	2.00	2.02
7	0.12	0	0	0	0.54	0.66
8	1.46	0	0	0	1.96	3.42
9	0.01	0	0	0	0.04	0.05
10	0.18	0	0	0	4.08	4.26
11	0	0	0	0	0.01	0.01
TOTAL:	1.85	0.00	0.00	0.00	9.48	11.33
R-2414B						
1	0	0	0	0	0.01	0.01
2	0.09	0	0	0	0.05	0.14
3	0.95	0	0.09	0	0.26	1.3
4	0.06	0	0	0	0.04	0.1
5	0.08	0	0	0	0.06	0.14
6	0.85	0	0.01	0	0.37	1.23
7	0.38	0	0	0	0.16	0.54
TOTAL:	2.41	0.00	0.10	0.00	0.95	3.46
PROJECT TOTAL:	4.26	0.00	0.10	0.00	10.43	14.79

* Totals include areas to be hand cleared for utility relocations
Total Wetland Impact for Project: 14.79 acres.
Total Wetland Impacts Requiring Mitigation: 4.36 acres

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

This approval is only valid for the purpose and design that you submitted in your application dated received October 21, 2008. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this



project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

Project Specific Conditions

1. In accordance with commitments made in your application, mechanized clearing shall not be used for the purpose of clearing vegetation in relocating overhead power lines within jurisdictional wetlands.
2. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.
3. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
4. Except as noted in Condition #3, the placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a modification to this certification will be required.
5. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
6. The permittee will need to adhere to all appropriate in-water work moratoriums (including the use of pile driving or vibration techniques) prescribed by the NC Wildlife Resources Commission, the US Fish and Wildlife Service, and National Marine Fisheries Service. No in-water work is permitted between February 15 and June 15 of any year, without prior approval from the NC Division of Water Quality and the NC Wildlife Resources Commission. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.
7. Where the existing culvert at Site 11 on Section A of the project will be removed, the banks shall be graded to match existing bank slopes. Additionally, any open areas shall be planted within two weeks after culvert removal with appropriate vegetation in order to stabilize the banks and surrounding areas.



8. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited unless prior written approval is given by DWQ first.
9. All pile driving or drilling activities shall be enclosed in turbidity curtains unless otherwise approved by DWQ in this certification.
10. Turbidity curtains shall be used to isolate all work areas from the stream at UT to Pasquotank River at Site 11, including pile or casement installation, placement of riprap, excavation or filling. Strict adherence to the Construction and Maintenance Best Management Practices will be required.
11. No utilities shall be relocated into jurisdictional wetland areas.
12. Compensatory mitigation for impacts to 4.36 acres of wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated July 14, 2008 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.

General Conditions

13. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
14. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
15. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.
16. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.
17. The Permittee shall ensure that the final design drawings adhere to the certification and to the drawings submitted for approval.
18. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
19. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.
20. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.



21. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
22. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
23. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.
24. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.
25. A copy of this Water Quality Certification shall be maintained on site at the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
26. The outside buffer, wetland or water boundary located within the construction corridor approved by this certification shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
27. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
28. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
29. Upon completion of the project (including any impacts at associated borrow or waste site), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
30. Native riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
31. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this certification without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
32. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
33. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.



34. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
35. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
36. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
37. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.

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

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 18th day of December 2008

DIVISION OF WATER QUALITY

Coleen Sullins
Director

WQC No. 003774



DWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

If this project was designed by a Certified Professional

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

Signature _____ Registration No. _____ Date _____

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	7+00 -L-	18" RCP	<0.01					0.01							
2	10+75 -L- LT							<0.01							
3	12+30 -L- RT	Rip Rap	0.01												
4*	13+80 - 14+63 -L- LT		0.03												
5	15+60 - 15+75 -L- LT		<0.01												
6	16+62 - 18+17 -L- RT		0.02					0.10							
7*	16+79 - 23+30 -L- LT		0.12					0.31							
8*	20+16 - 43+00 -L- RT		1.46					1.51							
9	24+50 - 25+12 -L- LT		0.01					0.03							
10	25+90 - 42+90 -L- LT		0.18					0.89							
11**	43+10 -L-	3 span bridge (Length=100')									0.080		105	50	
TOTALS:			1.83					2.85			0.080		105	50	

* Portion of CAMA Wetland Impacts. Total Listed in Table.

- Site 3 = 0.01 ac (Fill)
- Site 4 = 0.03 ac (Fill)
- Site 7 = 0.01 ac (Fill); 0.05 ac (Hand Clearing)
- Site 8 = <0.01 ac (Fill); 0.02 ac (Hand Clearing)

** 50 ft of existing box culvert to be removed and replaced with open channel and bridged.

NOTE: 0.79 ac of Temp Impacts in Wetlands in the Hand Clearing areas due to erosion control measures. Includes 0.77 ac and 0.02 ac of impact to 404 and CAMA wetlands, respectively.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CAMDEN COUNTY
WBS - 34430.1.1 (R-24.14A)

US 158 Widening

SHEET **2 of 36**

March-08

WETLAND PERMIT IMPACT SUMMARY														
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS							
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Temporary (m)	Natural Stream Design (m)			
1	7+00 -L-	450 RCP	0.001				0.002							
2	10+75 -L- LT						0.001							
3*	12+30 -L- RT	Rip Rap	0.002											
4*	13+80 - 14+63 -L- LT		0.010											
5	15+60 - 15+75 -L- LT		0.001				0.002							
6	16+62 - 18+17 -L- RT		0.009				0.041							
7*	16+79 - 23+30 -L- LT		0.049				0.127							
8*	20+16 - 43+00 -L- RT		0.590				0.611							
9	24+50 - 25+12 -L- LT		0.003				0.012							
10	25+90 - 42+90 -L- LT		0.072				0.361							
11**	43+10 -L-	3 span bridge (Length = 30.4m)										0.033	32	15.2
TOTALS:			0.737				1.157					0.033	32	15.2

* Portion of CAMA Wetland Impacts. Total Listed in Table.

- Site 3 = 0.002 ha (Fill)
- Site 4 = 0.010 ha (Fill)
- Site 7 = 0.003 ha (Fill); 0.022 ha (Hand Clearing)
- Site 8 = 0.001 ha (Fill); 0.006 ha (Hand Clearing)

** 15.2m of existing box culvert to be removed and replaced with open channel and bridged.

NOTE: 0.318 ha of Temp impacts in wetlands in the Hand Clearing areas due to erosion control measures. Includes 0.311 ha and 0.007 ha of impacts to 404 and CAMA wetlands, respectively.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CAMDEN COUNTY
WBS - 34430.1.1 (R-2414A)

US 158 Widening
SHEET 3 of 36 March-08

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	SITE NO.	NAMES	ADDRESSES
1	1	City of Elizabeth City	P.O. Box 347 Elizabeth City, NC 27909
	2, 3, 4, 5, 6, 7, 8, 9, 10, 11	NCDOT	
3	8	C.O. Robinson Trust	201 E. Main Street Elizabeth City, NC 27909

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

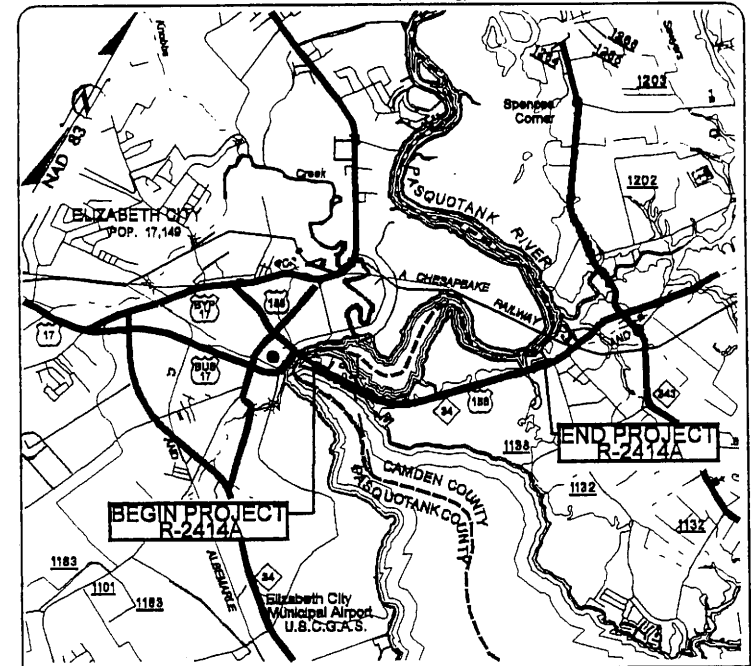
CAMDEN COUNTY
34430.11 (R-2414A)
US 158 WIDENING

89/05/99

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CONTRACT: TIP PROJECT: R-2414A

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbolry



VICINITY MAP

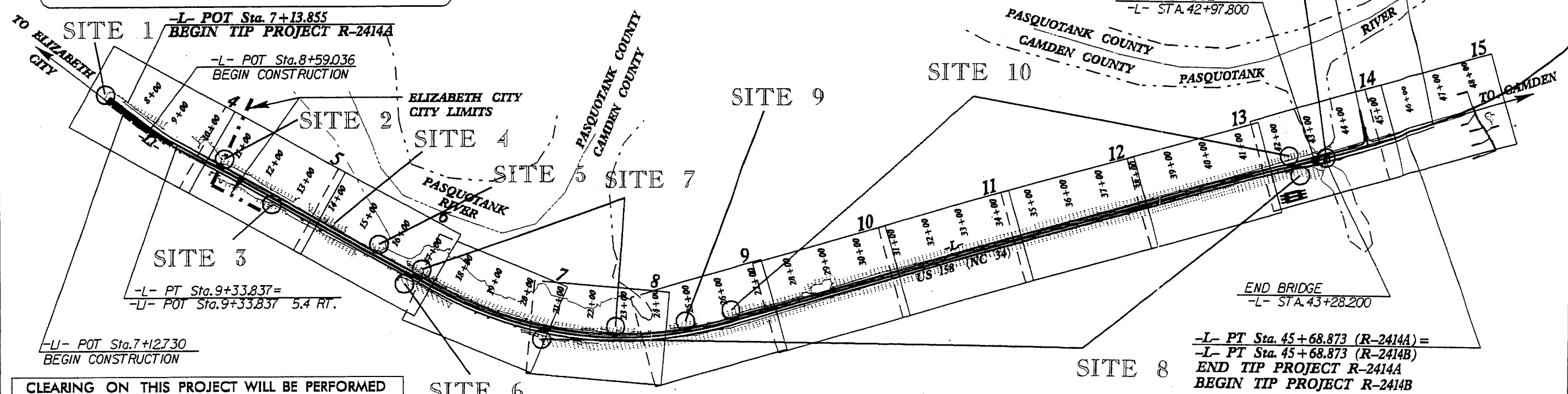
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CAMDEN COUNTY

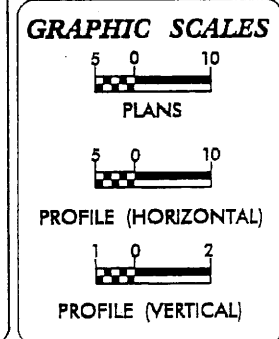
LOCATION: US 158 / NC 34 FROM EAST OF PASQUOTANK RIVER TO NORTH OF SR 1257 (HAVENWOOD DR.) BETWEEN ELIZABETH CITY AND CAMDEN
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

<p>ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN</p>	STATE PROJECT REFERENCE NO.	MSBT NO.	TOTAL SHEETS
	N.C. R-2414A	1	
	STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
	34430.1.1	STP-158(2)	PE
	34430.2.4		ROW & UTILITIES CONST.

Permit Drawing Sheet 5 of 36



CLEARING ON THIS PROJECT WILL BE PERFORMED BY THE LIMITS ESTABLISHED BY METHOD II
A PORTION OF THIS PROJECT IS WITHIN MUNICIPAL BOUNDARIES OF ELIZABETH CITY

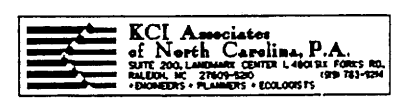


DESIGN DATA

ADT 2008 =	25210
ADT 2028 =	40730
DHV =	12 %
D =	60 %
T =	6 % *
V =	80-100 KMH
* (TTST 2 % + DUAL 4 %)	
FUNC. CLASS. =	ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2414A	=	3.825 KM
LENGTH STRUCTURE TIP PROJECT R-2414A	=	0.030 KM
TOTAL LENGTH TIP PROJECT R-2414A	=	3.855 KM



Prepared in the Office of:

 WETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE STRUCTURE DESIGN
 CIVIL/SITE DESIGN - OS/OPS - CONSTRUCTION OBSERVATION
 For The North Carolina Department Of Transportation
 2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: November 15, 2006
 LETTING DATE: October 21, 2008

NCDOT CONTACT: DOUG TAYLOR, PE
 ROADWAY DESIGN - ENGINEERING
 COORDINATION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

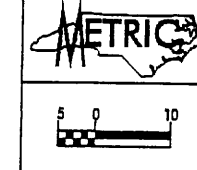
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

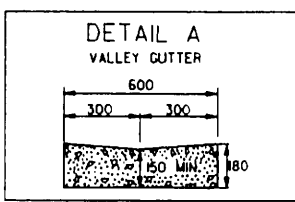


PROJECT REFERENCE NO. R-2414A	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

KCI Associates of North Carolina, P.A.
 SUITE 200, LANDMARK CENTER I, 4601 FORBES RD.
 RALEIGH, NC 27609-5200 (919) 783-5000
 ENGINEERS • PLANNERS • ECOSYSTEMS

W. STERILL ENGINEERING
 ANY STATE PROJECT ROAD
 DATE 11/11/09
 DRAWN BY: J.C. FRYAN
 CHECKED BY: J.P. BATT
 DATE 11/11/09

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - SURVEY - CONSTRUCTION OBSERVATION



- LI- RT 7+25.6 TO 7+35.9
- LI- RT 7+64.5 TO 7+74.7
- LI- RT 7+97.8 TO 8+08.0
- LI- RT 8+55.3 TO 8+65.4
- LI- RT 8+83.3 TO 8+93.5
- LI- RT 8+97.6 TO 9+07.7

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

-L-
 PI Sta. 8+89.622
 $\Delta = 8^\circ 27' 35.5" (LT)$
 $L = 88.591$
 $T = 44.376$
 $R = 600.000$
 $SE = 05$
 $V_{des} = 80 \text{ KPH}$



Permit Drawing
 Sheet 6 of 36

BEGIN TIP PROJECT R-2414A
 -L- POT STA. 7+13.855

CITY OF ELIZABETH CITY
 D.S. 75, PG. 68

SITE 1

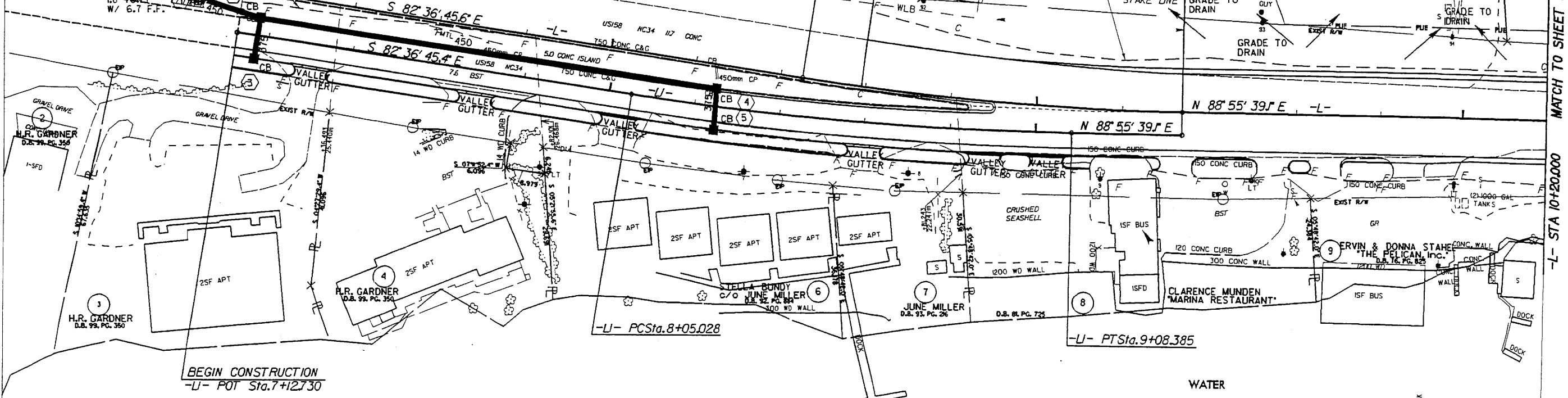
Q10 = 0.067 cms (2.4 cfs)
 V10 = 0.6 m/s (2.0 ft/s)

CLASS I RIP RAP
 18 TONS
 W/ 6.7 F.F.

RUTH M. LOWRY
 D.S. 83, PG. 39

BEGIN CONSTRUCTION
 -L- PC STA. 8+45.246

-L- PT Sta. 9+33.837 =
 -LI- POT Sta. 9+33.837
 5.400 RT.



-LI-
 PI Sta. 8+56.800
 $\Delta = 8^\circ 27' 35.5" (LT)$
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 $T = 51.772$
 $R = 700.000$
 $SE = 05$
 $V_{des} = 80 \text{ KPH}$

REVISIONS

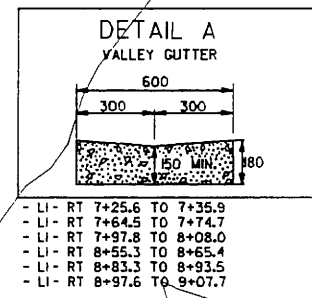
MATCH TO SHEET 5

-L- STA 10+20.000

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PROJECT REFERENCE NO. R-2414A		SHEET NO. 4
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS		
CONST. REV.		
R/W REV.		
 KCI Associates of North Carolina, P.A. SITE 300, LAMAR CENTER I, 4405A FORMS RD. RALEIGH, NC 27607-5200 ENGINEERS • PLANNERS • ECOLOGISTS		
 W. J. ETHRELL ENGINEERING 4405A FORMS ROAD SUITE 104 RALEIGH, NC 27607 TEL: 919 881 8777 FAX: 919 881 8770 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - MS/PS - CONSTRUCTION OBSERVATION		

Permit Drawing Sheet 7 of 36



DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING

- LI- RT 7+25.6 TO 7+35.9
- LI- RT 7+64.5 TO 7+74.7
- LI- RT 7+97.8 TO 8+08.0
- LI- RT 8+55.3 TO 8+65.4
- LI- RT 8+83.3 TO 8+93.5
- LI- RT 8+97.6 TO 9+07.7

-L-
PI Sta. 8+89.622
 $\Delta = 8' 27' 35.5'' (LT)$
L = 88.591
T = 44.376
R = 600.000
SE = 05
V_{DES} = 80 KPH



BEGIN TIP PROJECT R-2414A
-L- POT STA. 7+13.855

SITE 1

1
CITY OF ELIZABETH CITY
D.B. 75, PG. 68

5
RUTH M. LOWRY
D.B. 83, PG. 39

BEGIN CONSTRUCTION
-L- POC STA. 8+59.036

-L- PC Sta. 8+45.246

-L- PT Sta. 9+33.837 =
-L- POT Sta. 9+33.837
5.400 RT.

Q10 = 0.067 cms (2.4 cfs)
V10 = 0.6 m/s (2.0 ft/s)

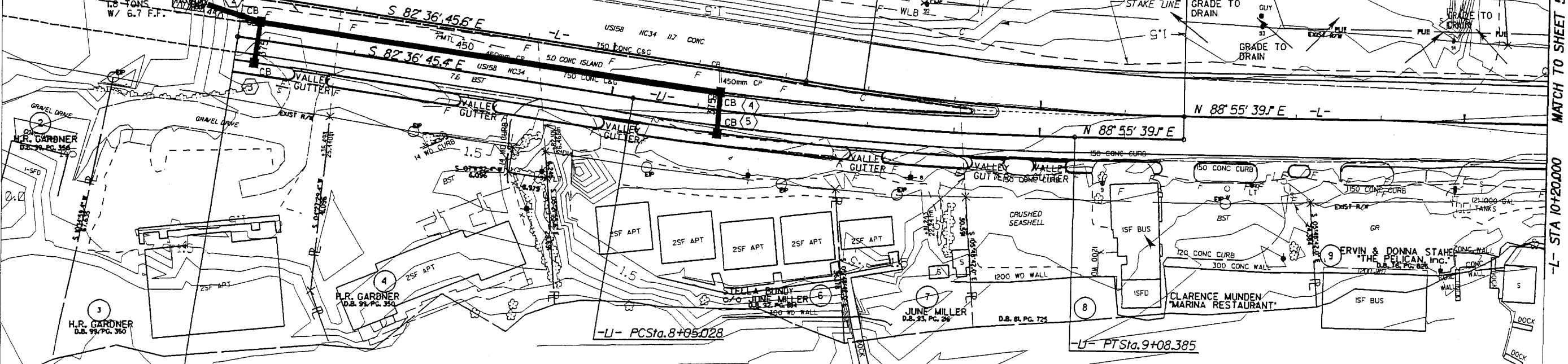
CLASS IRIP RAMP
1.8 TONS
W/ 6.7 F.F.

PROP. SLOPE STAKE
LINE

PROP. SLOPE STAKE
LINE

GRADE TO DRAIN

GRADE TO DRAIN



-L-
PI Sta. 8+56.800
 $\Delta = 8' 27' 35.5'' (LT)$
L = 103.357
T = 51.772
R = 700.000
SE = 05
V_{DES} = 80 KPH

BEGIN CONSTRUCTION
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-L- PC Sta. 8+05.028

-L- PT Sta. 9+08.385

MATCH TO SHEET 5
-L- STA 10+20.000

REVISIONS

6 JUN 2008 13:4
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METRIC

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CONST. REV.
R/W REV.

PROJECT REFERENCE NO. R-2414A SHEET NO. 5
R/W SHEET NO.

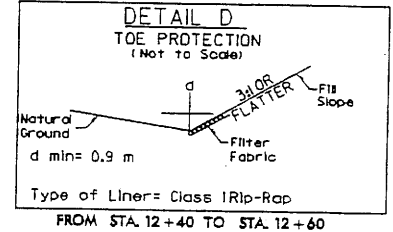
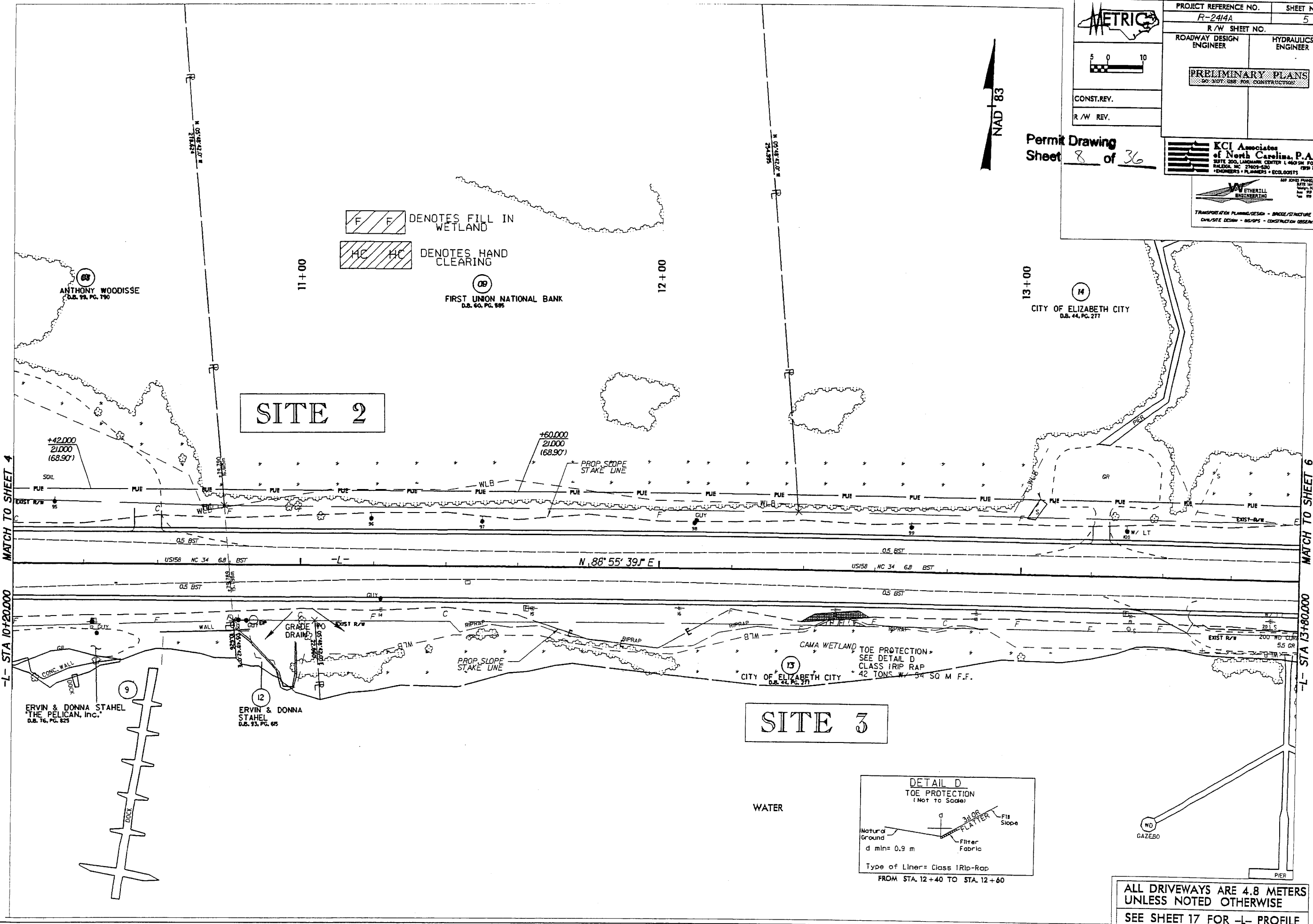
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 8 of 36

KCI Associates of North Carolina, P.A.
SUITE 200, LINDSEY CENTER I, 4401 SHILOH FARM RD.
RALEIGH, NC 27609-5200 (919) 783-9200
ENGINEERS + PLANNERS + ECOLOGISTS

ETHERELL ENGINEERING
10000 PARKWAY ROAD, SUITE 104
RALEIGH, NC 27601 (919) 881-8077
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - DESIGN - CONSTRUCTION OBSERVATION

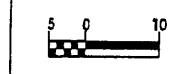


ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 17 FOR -L- PROFILE

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PROJECT REFERENCE NO. R-2414A	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

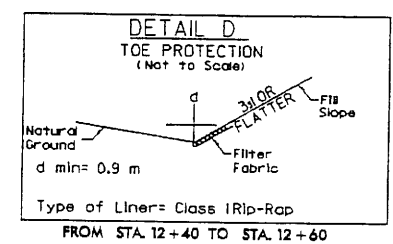
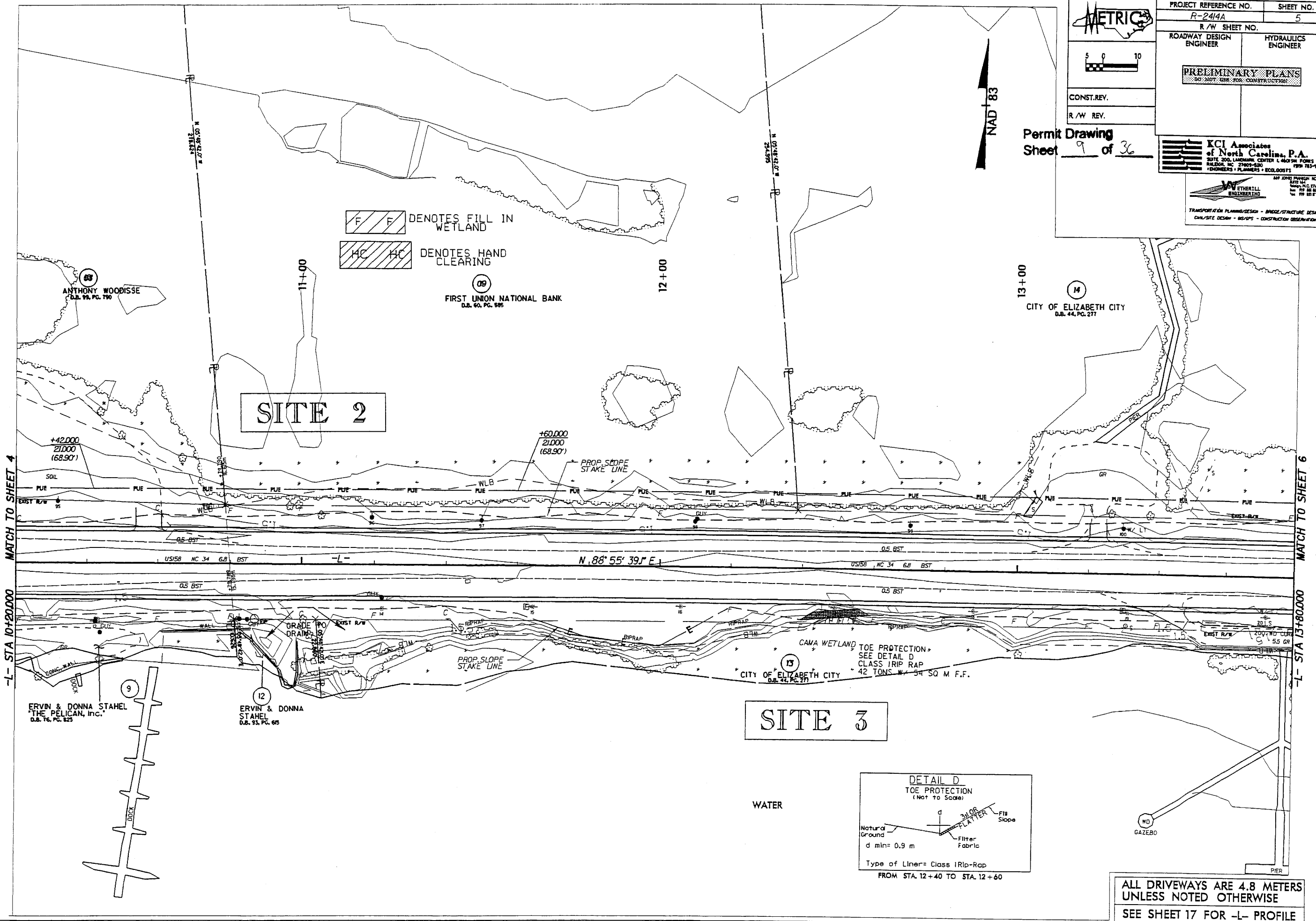


Permit Drawing Sheet 9 of 36

KCI Associates of North Carolina, P.A.
 SUITE 200, LANDMARK CENTER I, 4601 W. FORNES RD., RALEIGH, NC 27607-8200
 (919) 783-1900
 ENGINEERS • PLANNERS • ECOLOGISTS

ETHERTILL ENGINEERING
 1001 W. PARKWAY ROAD, SUITE 104, RALEIGH, NC 27607
 (919) 881-5077

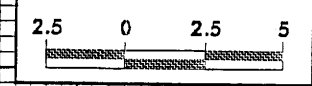
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 CIVIL/SITE DESIGN - RES/PS - CONSTRUCTION OBSERVATION



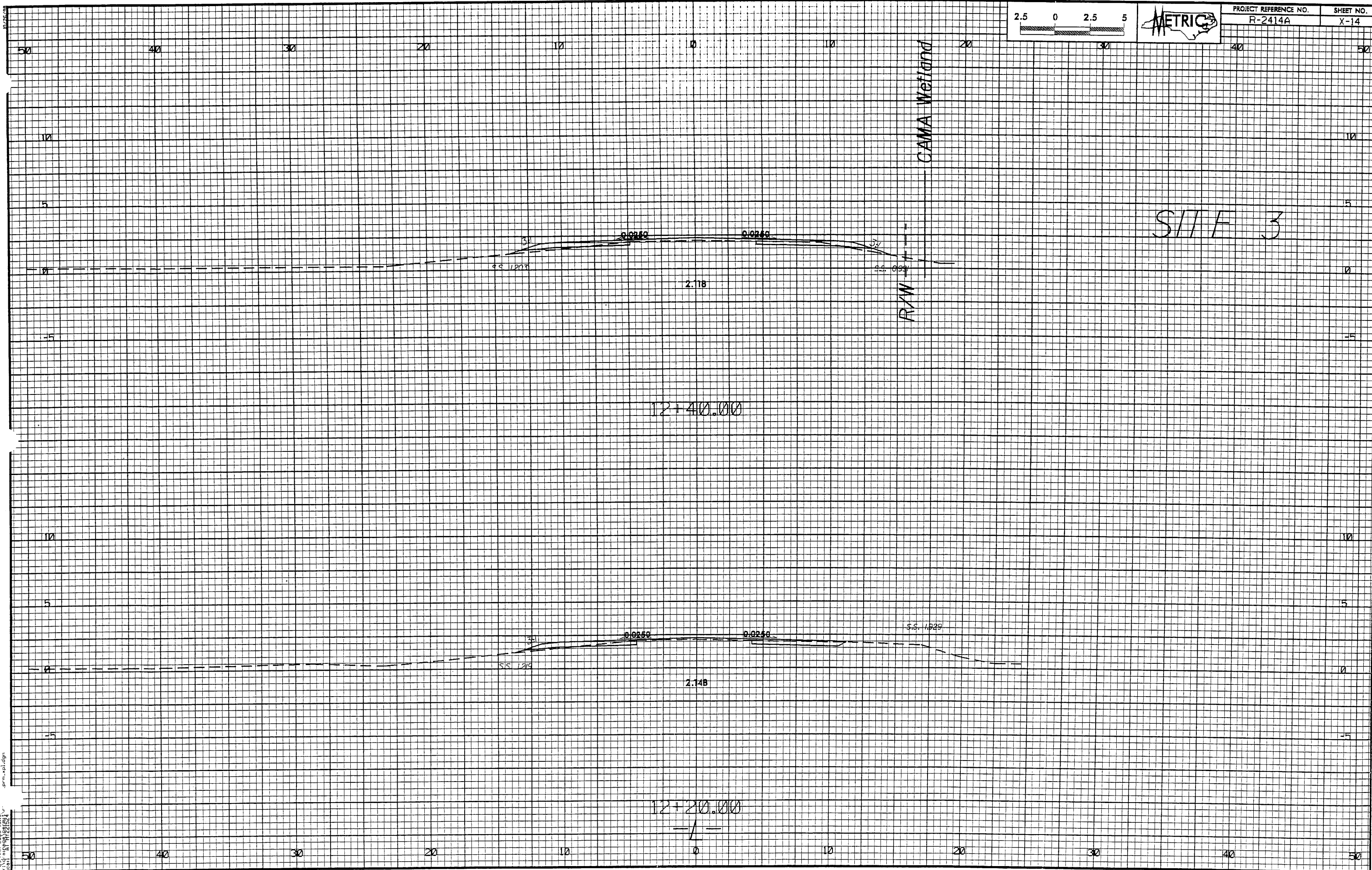
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REVISIONS

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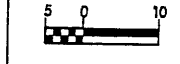
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R-2414A	X-14



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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

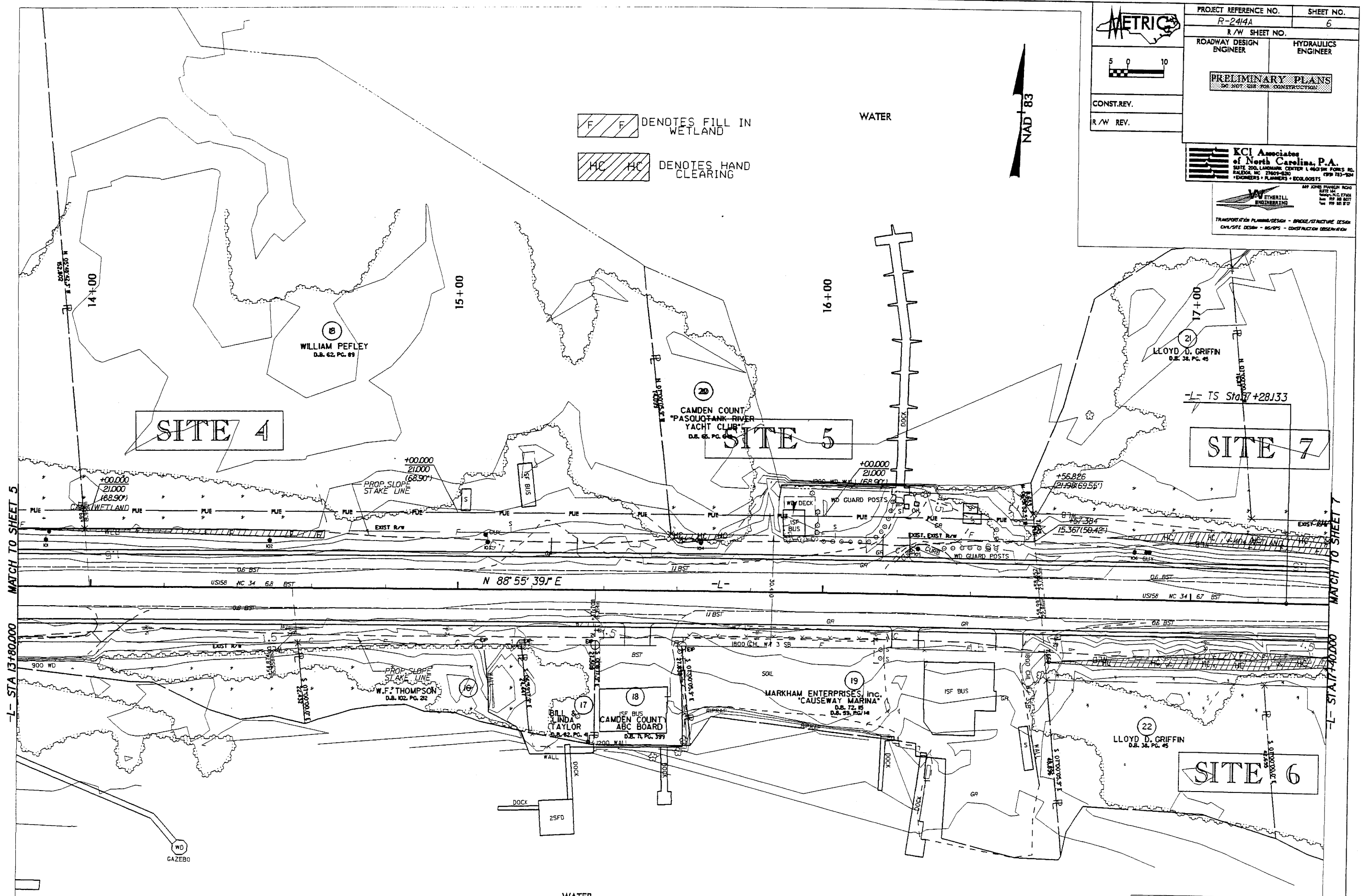


KCI Associates of North Carolina, P.A.
 SITE, 200 LAWRENCE CENTER 1 400 W. FORDS RD.
 RALEIGH, NC 27609-6200 (919) 733-1000
 ENGINEERS • PLANNERS • ECOLOGISTS

ETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - BS/PS - CONSTRUCTION OBSERVATION

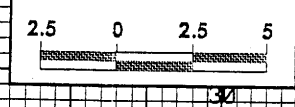
F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

REVISIONS
 R/W REVISION - REVISED PROPOSED STATION AND OFFSETS FOR TEMPORARY CONST. EASEMENT LEFT. BAM

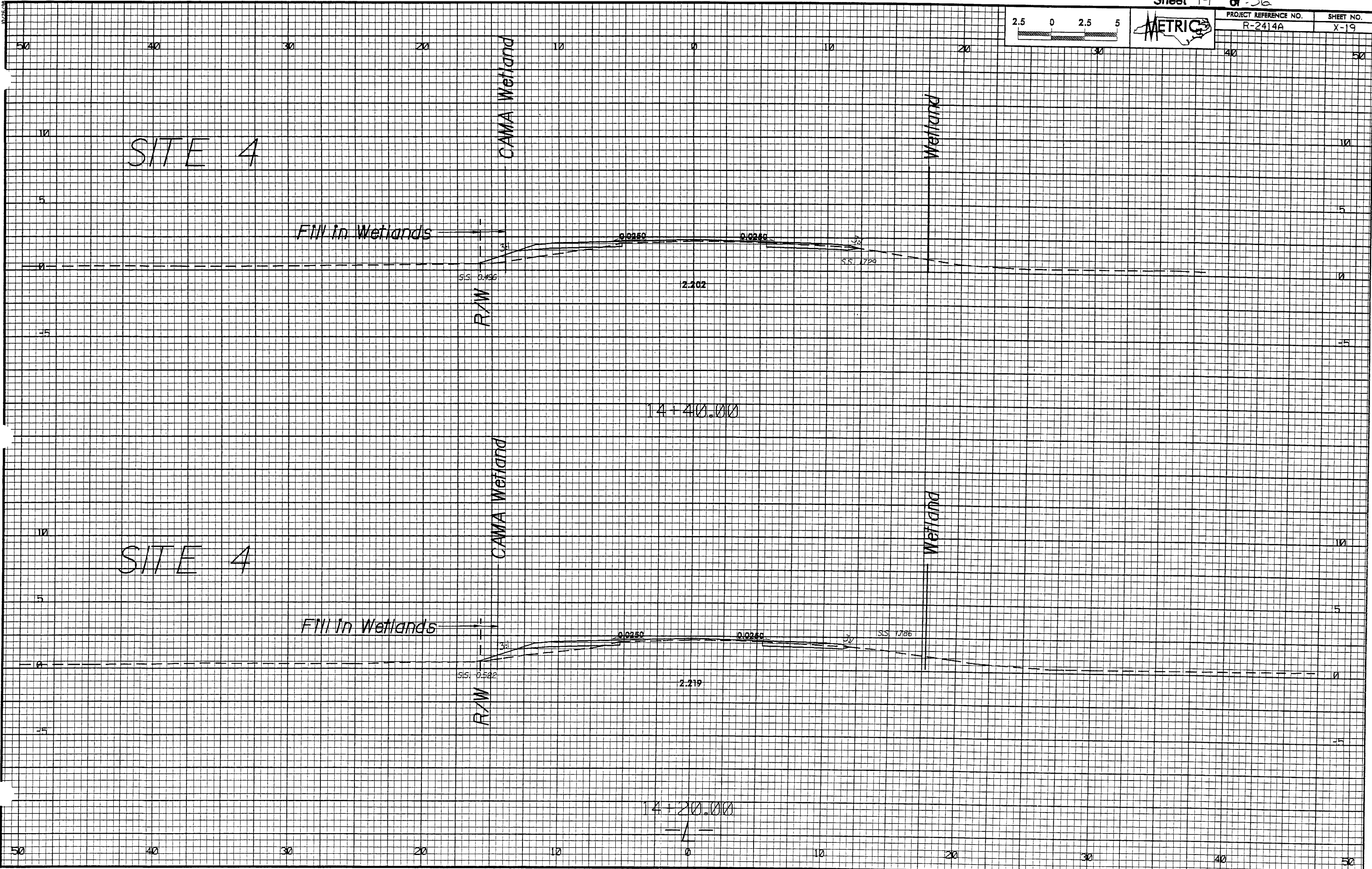


ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 17 FOR -L- PROFILE

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PROJECT REFERENCE NO. R-2414A	SHEET NO. X-19
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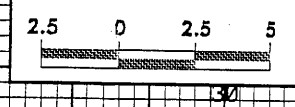
SITE 4

SITE 4

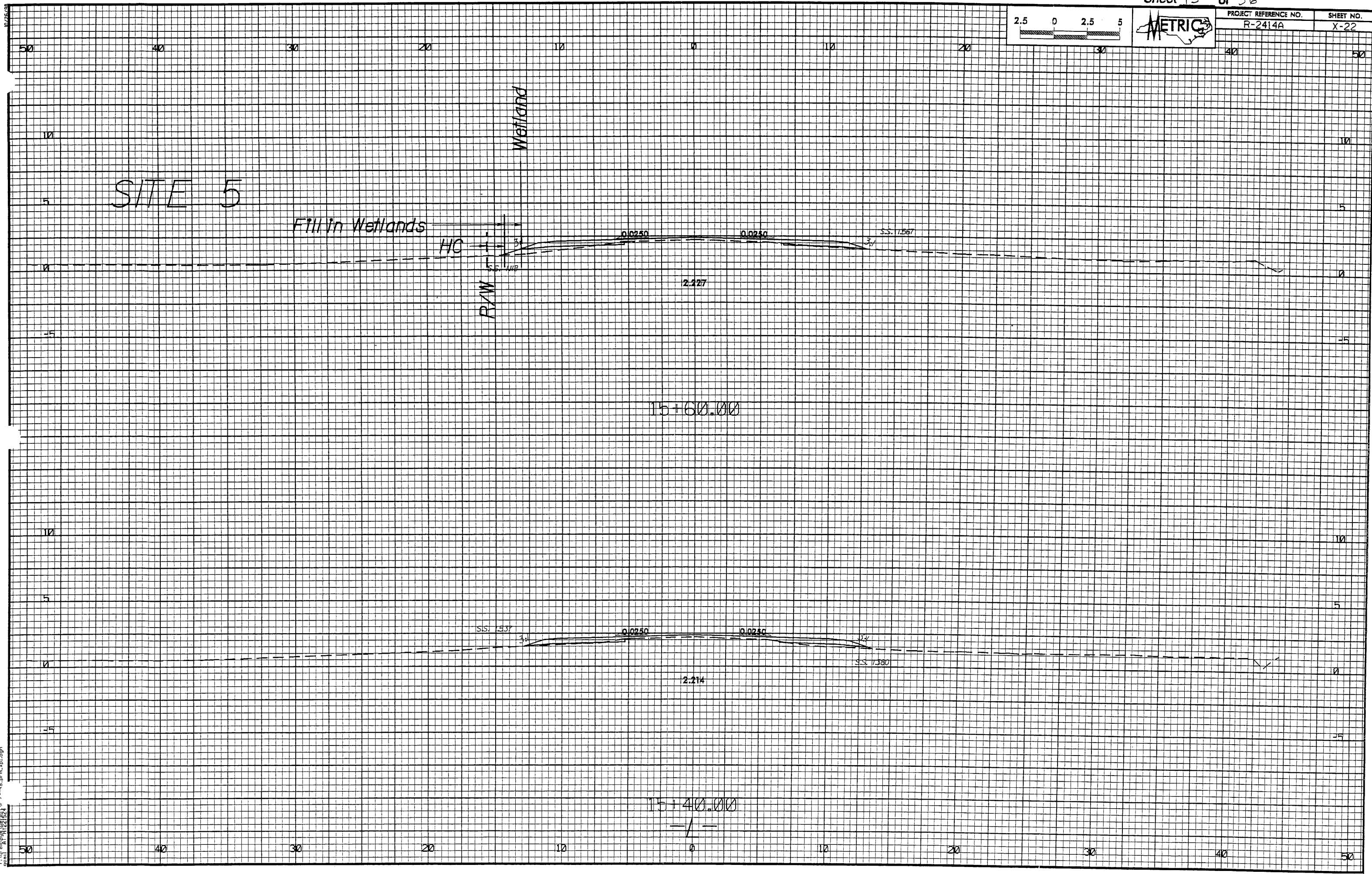
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14+20.00

03-MAR-2008 13:18
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 scale: AT 1/2"=1'



PROJECT REFERENCE NO.	SHEET NO.
R-2414A	X-22



11/16/2008 13:18
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R-2414A_permit.dgn

METRIC

PROJECT REFERENCE NO. R-2414A SHEET NO. 7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

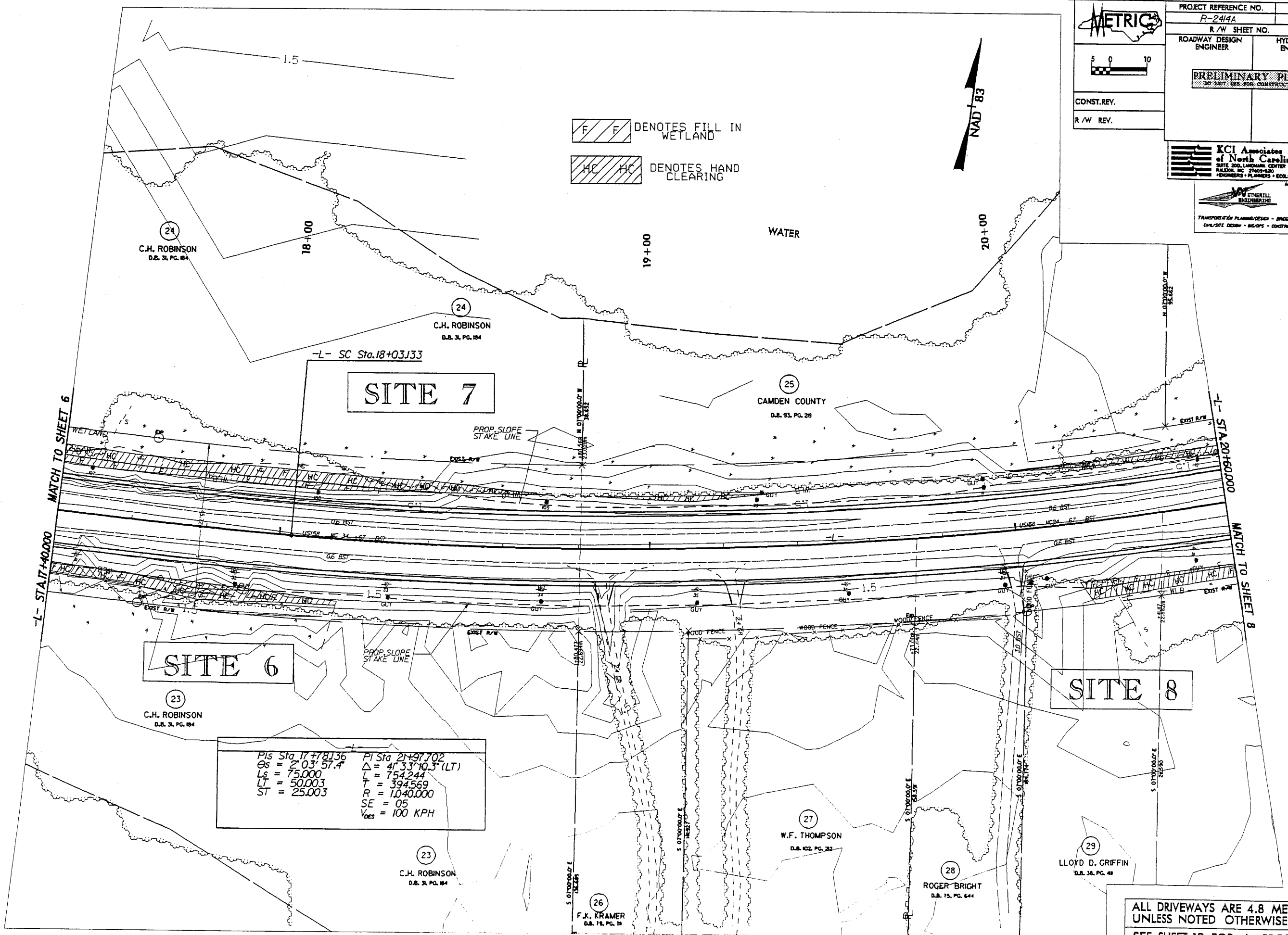
CONST. REV.
R/W REV.

KCI Associates of North Carolina, P.A.
SITE 200, LINDSEY CENTER 1400 IN FORDS RD.
RALEIGH, NC 27601-6200 (919) 783-1904
ENGINEERS - PLANNERS - GEOLOGISTS

ETHERILL ENGINEERING
349 JONES PARKWAY ROAD
SUITE 104
RALEIGH, N.C. 27607
(919) 877-1100

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - SURVEYING - CONSTRUCTION OBSERVATION

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING



SITE 7

SITE 6

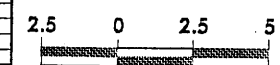
SITE 8

PIs Sta 17+78136	PI Sta 21+97702
Gs = 2'03"57.4	Δ = 41°33'10.3" (LT)
Ls = 75.000	L = 754.244
LT = 50.003	T = 394.569
ST = 25.003	R = 1,040.000
	SE = 05
	V _{DES} = 100 KPH

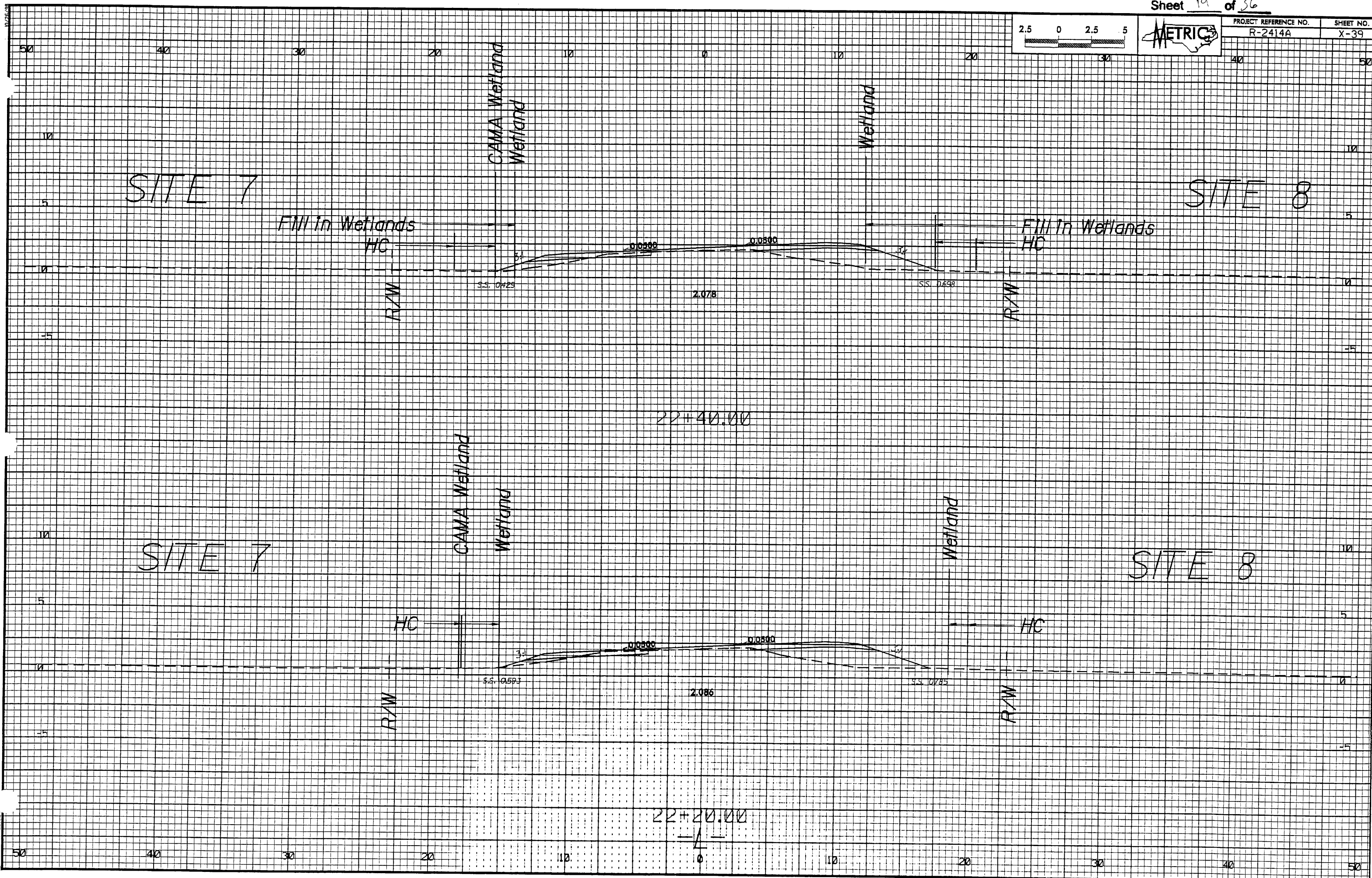
ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 18 FOR -L- PROFILE

REVISIONS

10-24-2008 1328
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PROJECT REFERENCE NO.	SHEET NO.
R-2414A	X-39



03-MAR-2008 13:28
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METRIC

PROJECT REFERENCE NO. R-2414A SHEET NO. 8

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

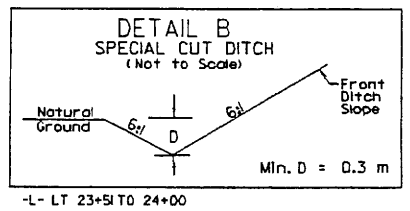
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.
R/W REV.

KCI Associates of North Carolina, P.A.
SUITE 200, LAMAR CENTER I, 4401N. FORNS RD.
RALEIGH, NC 27609-5200 (919) 781-7000
• ENGINEERS • PLANNERS • ECOLOGISTS

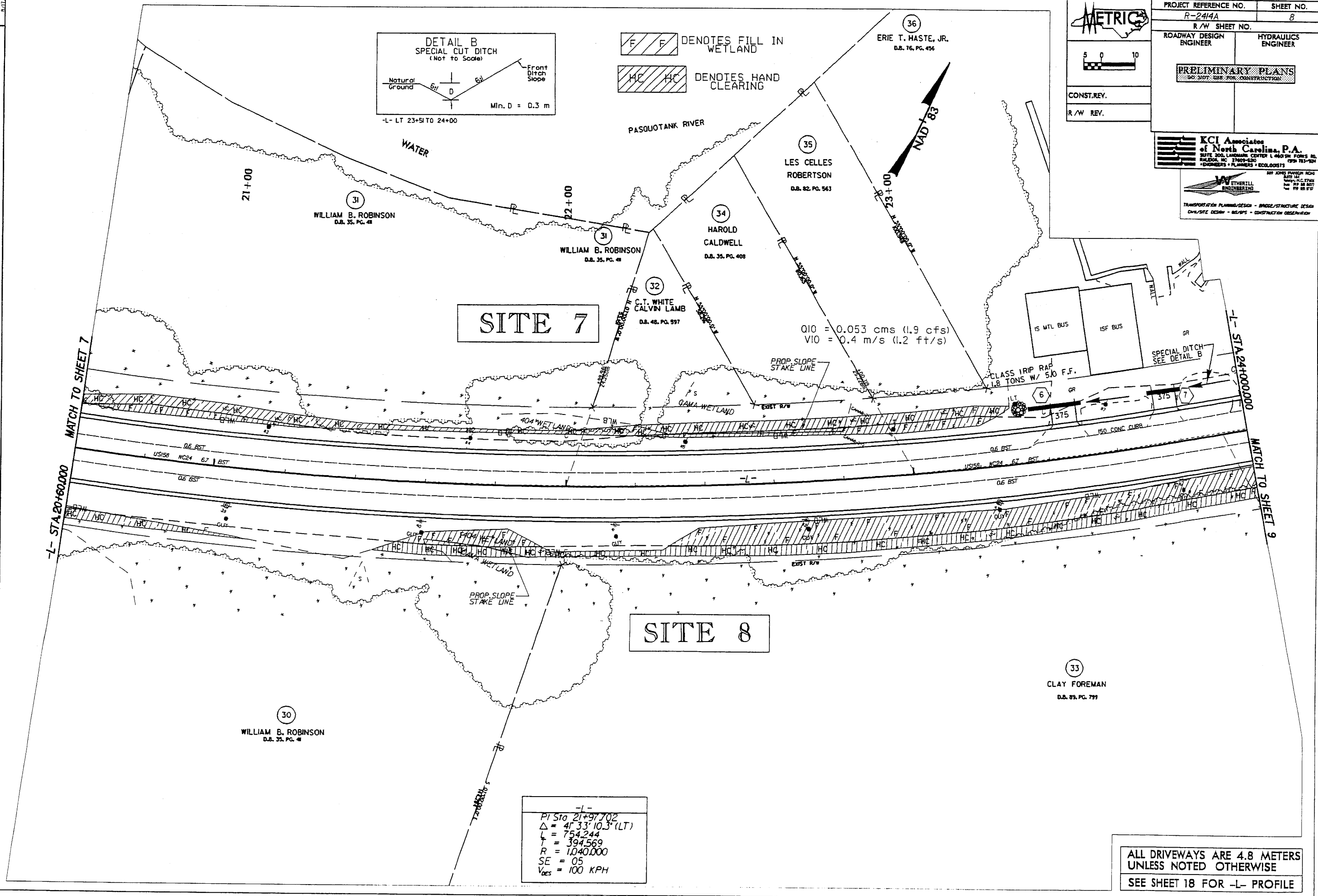
ETHERILL ENGINEERING
407 JONES PARKWAY ROAD
SUITE 104
CARY, NC 27513
TEL: 919 467-7777
FAX: 919 467-9700

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
ON-SITE DESIGN - SURVEY - CONSTRUCTION OBSERVATION



F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING



Q10 = 0.053 cms (1.9 cfs)
V10 = 0.4 m/s (1.2 ft/s)

PI Sta 21+97.702
Δ = 41° 33' 10.3" (LT)
L = 754.244
T = 394.569
R = 1,040.000
SE = 05
V_{DES} = 100 KPH

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 18 FOR -L- PROFILE

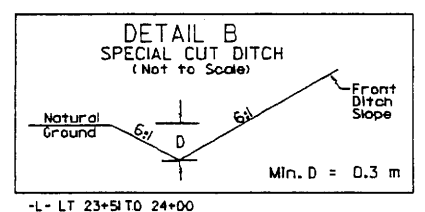
REVISIONS

10/20/08 11:30
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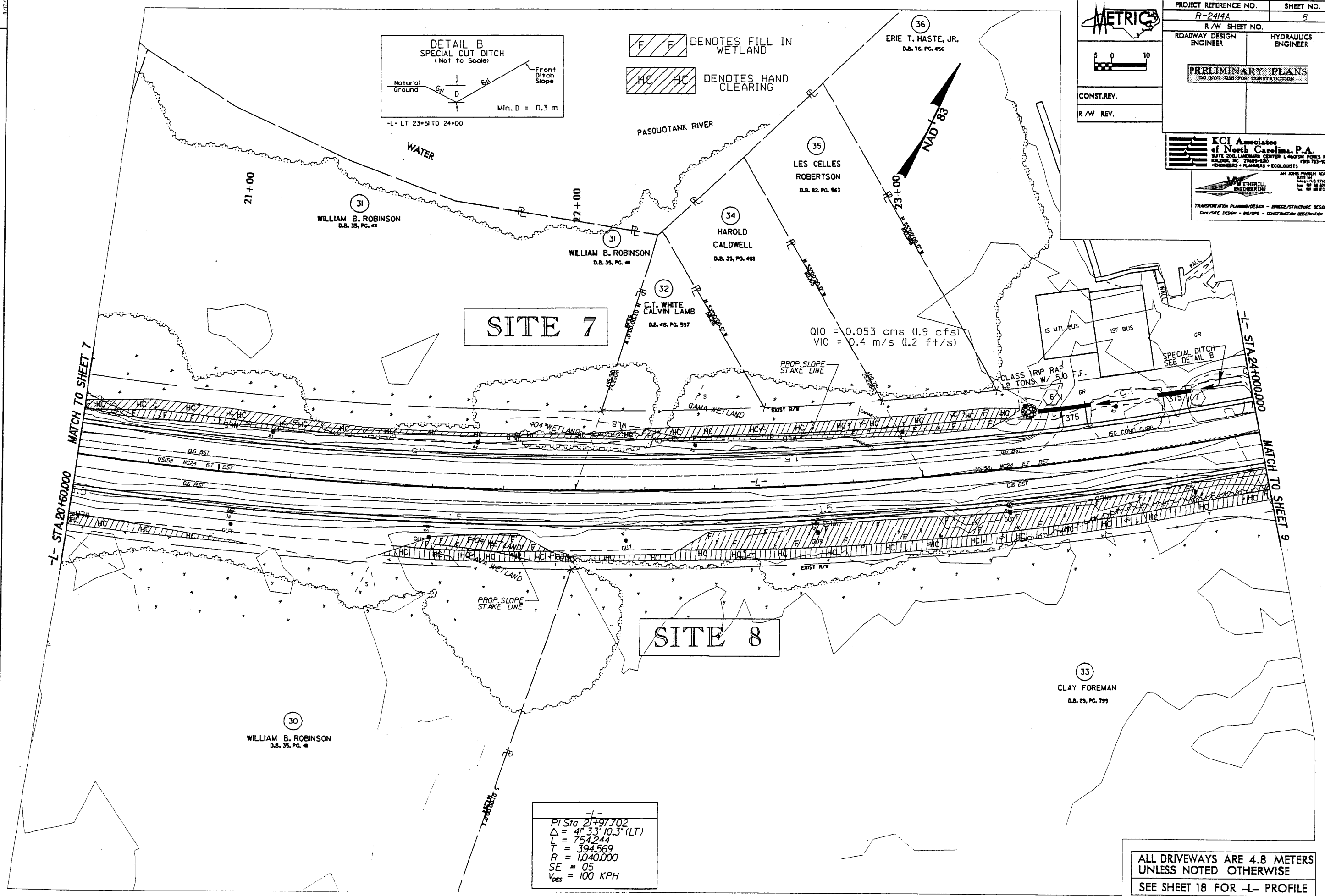
PROJECT REFERENCE NO. R-2414A	SHEET NO. 8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

KCI Associates of North Carolina, P.A.
 SUITE 200, LANHAM CENTER 14050 FORDS RD.
 RALEIGH, NC 27609-8300 TEL: 919 753-7044
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WETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - SURVEYING - CONSTRUCTION OBSERVATION



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING



PI Sta 21+97.702
 $\Delta = 41^{\circ} 33' 10.3''$ (LT)
 $L = 754.244$
 $T = 394.569$
 $R = 1,040.000$
 $SE = 05$
 $V_{DES} = 100$ KPH

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 18 FOR -L- PROFILE

REVISIONS

8/17/2018
 8/17/2018 US30
 8/17/2018 2414A-Environmental Drawings v-2414a.dwg - m.88 - psh.dgn

METRIC

5 0 10

CONST. REV.
R/W REV.

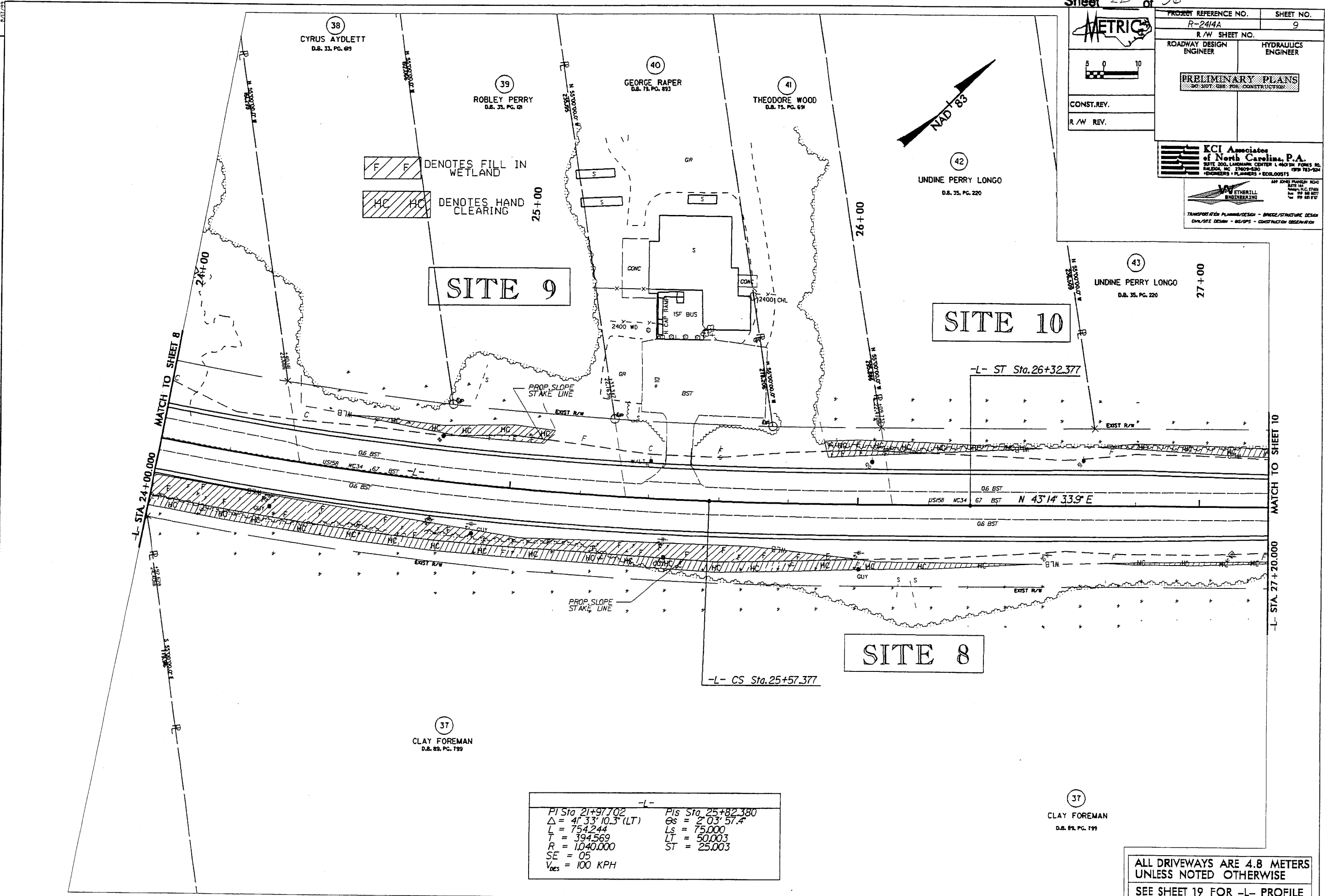
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

KCI Associates of North Carolina, P.A.
SITE 300, LANDMARK CENTER I, 1401 W. FORKES RD.
RALEIGH, NC 27603-5800 199 743-1904
ENGINEERS • PLANNERS • ECOLOGISTS

WATHERALL ENGINEERING
APP JONES FARM RD
SITE 14
WATERGATE, NC 27681
199 86 8777
199 86 8777

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - SURVEY - CONSTRUCTION OBSERVATION

REVISIONS



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

SITE 9

SITE 10

SITE 8

-L-	
PI Sta 21+97.702	PIs Sta. 25+82.380
$\Delta = 41^{\circ}33'10.3"$ (LT)	$\Theta_s = 2^{\circ}03'57.4"$
L = 754.244	Ls = 75.000
T = 394.569	LT = 50.003
R = 1,040.000	ST = 25.003
SE = 05	
V _{DES} = 100 KPH	

37
CLAY FOREMAN
D.B. 89, PG. 199

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 19 FOR -L- PROFILE

11/11/2008 13:35
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 11/11/2008 13:35

METRIC

PROJECT REFERENCE NO. R-2414A SHEET NO. 9

R/W SHEET NO.

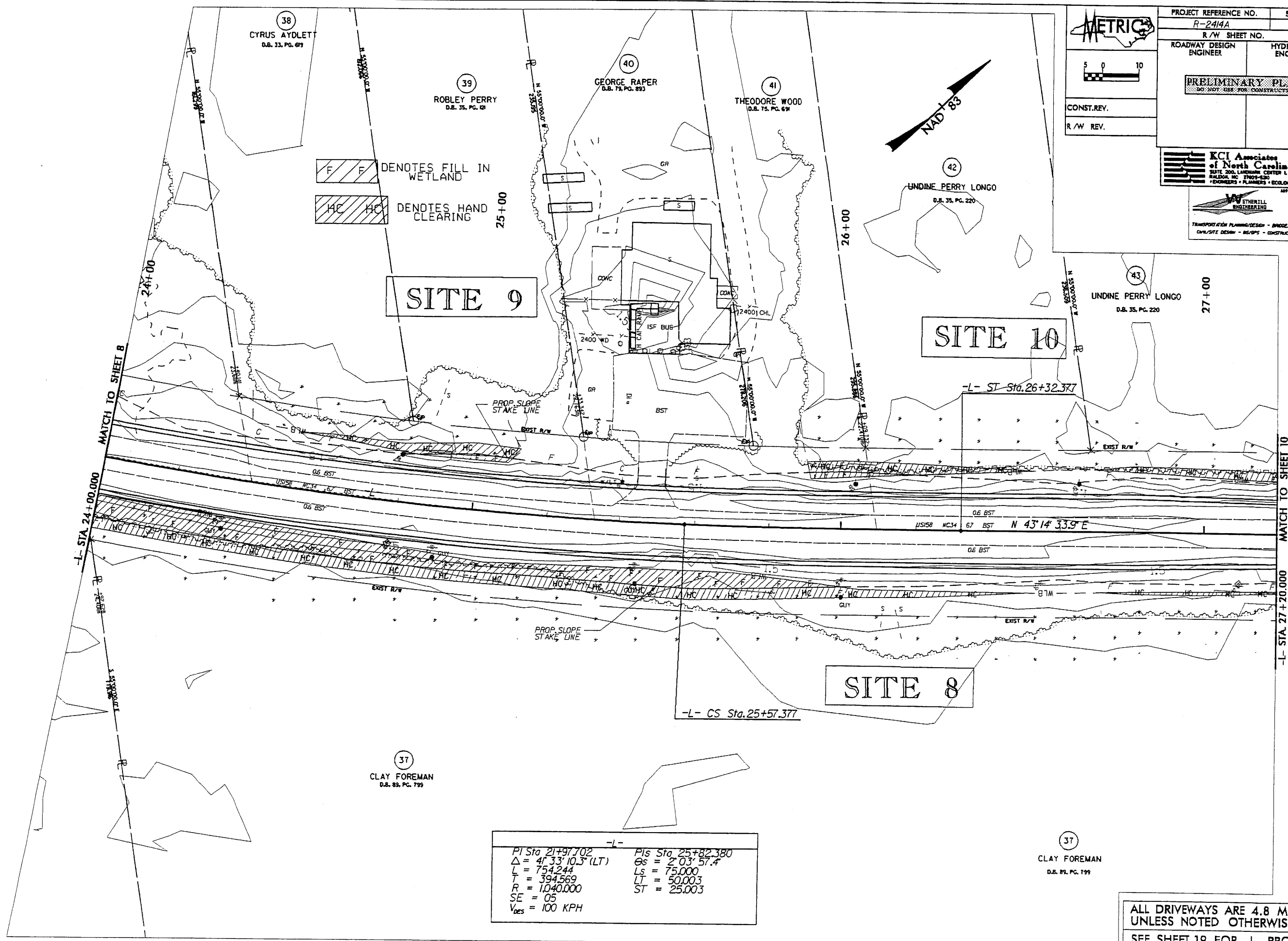
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.
R/W REV.

KCI Associates of North Carolina, P.A.
SITE 200 LINDEN CENTER L. 4501 W. FORNES BL. RALEIGH, NC 27603-5200
ENGINEERS • PLANNERS • ECOLOGISTS

ETHERILL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - SIGNS - CONSTRUCTION OBSERVATION



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

SITE 9

SITE 10

SITE 8

PI Sta 21+97.702	PIs Sta 25+82.380
$\Delta = 41.33' 10.3" (LT)$	$\Theta_s = 2.03' 57.4"$
$L = 754.244$	$L_s = 75.000$
$T = 394.569$	$LT = 50.003$
$R = 1040.000$	$ST = 25.003$
$SE = 05$	
$V_{des} = 100 \text{ KPH}$	

37
CLAY FOREMAN
D.B. 83, PG. 199

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 19 FOR -L- PROFILE

REVISIONS

11-20-2008 13:24
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METRIC

5 0 10

CONST. REV.
R/W REV.

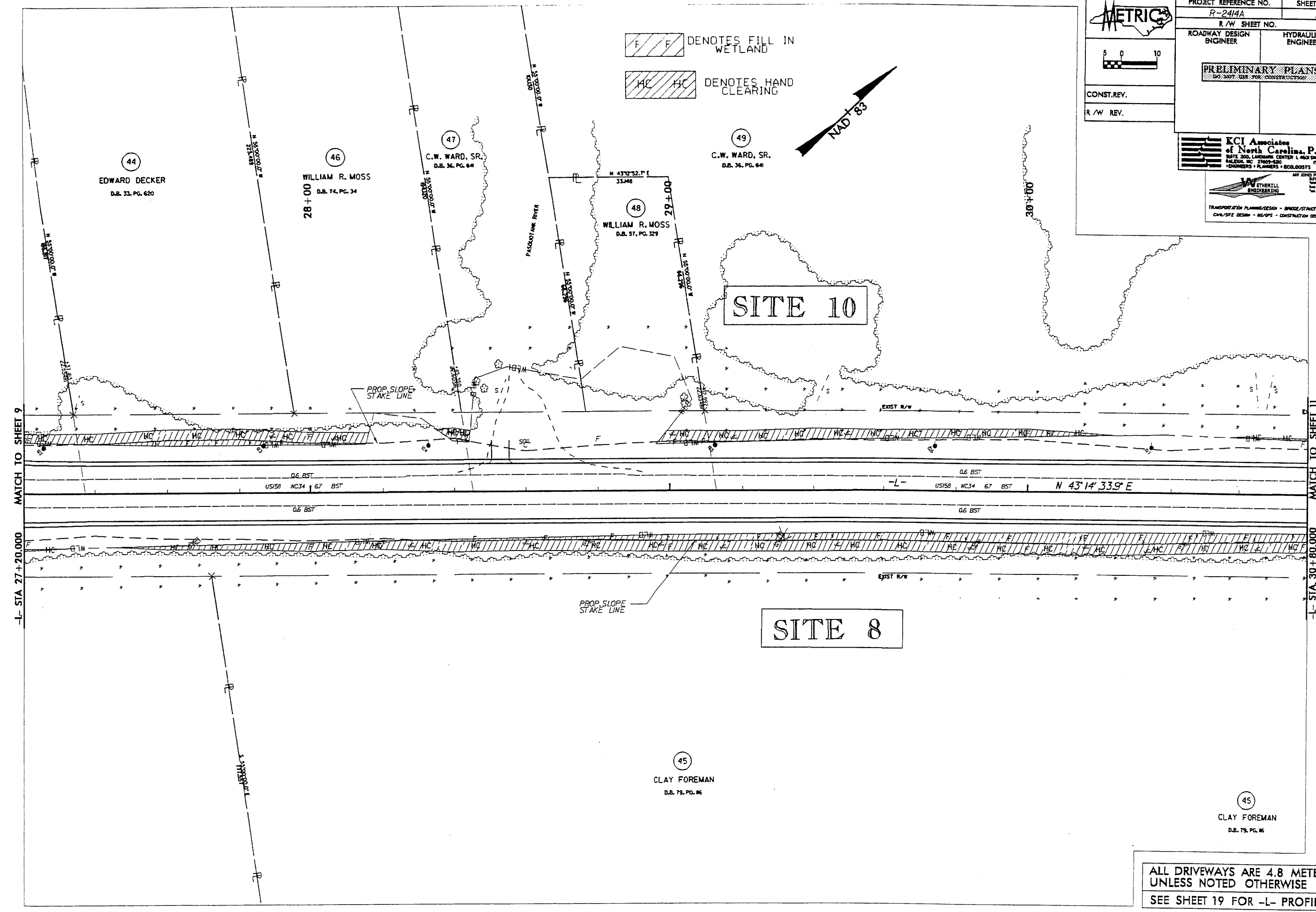
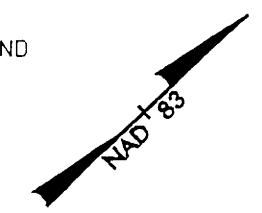
PROJECT REFERENCE NO. R-2414A	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

KCI Associates of North Carolina, P.A.
SITE 200, LINDSEY CENTER, 14601A FORTES RD., RALEIGH, NC 27609-5200
TELEPHONE 781-954-1000
FAX 781-954-1001
ENGINEERS • PLANNERS • ECOLOGISTS

ETHRELL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - MS/OPS - CONSTRUCTION OBSERVATION

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING



SITE 10

SITE 8

44
EDWARD DECKER
D.B. 33, PG. 620

46
WILLIAM R. MOSS
28+00
D.B. 74, PG. 34

47
C.W. WARD, SR.
D.B. 36, PG. 64

48
WILLIAM R. MOSS
D.B. 57, PG. 529

49
C.W. WARD, SR.
D.B. 36, PG. 64

45
CLAY FOREMAN
D.B. 79, PG. 86

45
CLAY FOREMAN
D.B. 79, PG. 86

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 19 FOR -L- PROFILE

REVISIONS

MATCH TO SHEET 9

MATCH TO SHEET 11

-L- STA. 27+20.000

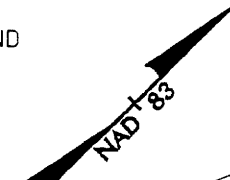
-L- STA. 30+80.000

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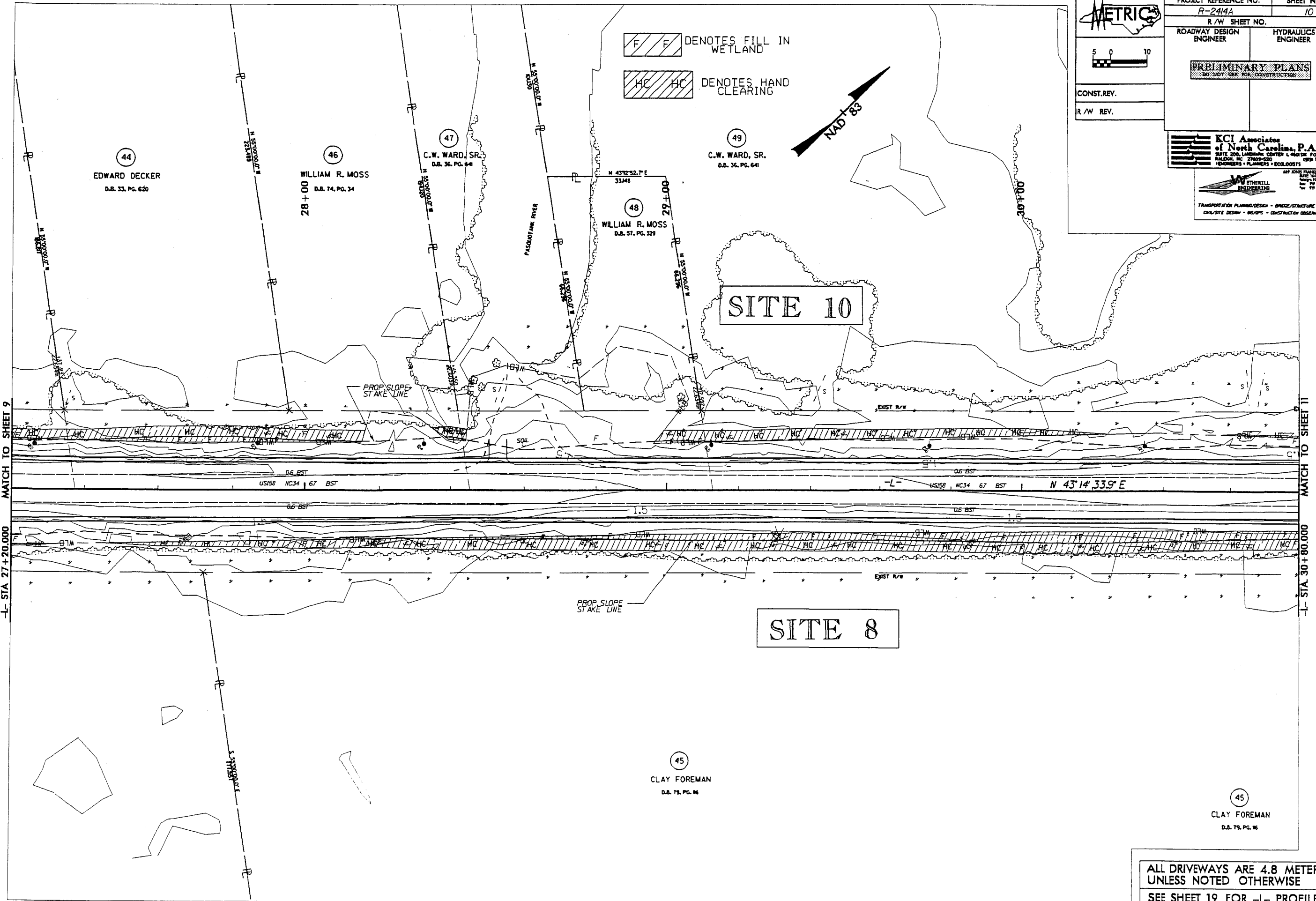
PROJECT REFERENCE NO. R-2414A		SHEET NO. 10
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS		
CONST. REV.		
R/W REV.		

KCI Associates of North Carolina, P.A.
 2015 200 LAMAR CENTER L. 4000 FORBES RD.
 BALDWIN, NC 27603-6200 (919) 783-9200
 ENGINEERS • PLANNERS • ECOLOGISTS

WETHERILL ENGINEERING
 1000 W. HARRIS RD.
 SUITE 100, RALEIGH, NC 27603
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - RESURFS - CONSTRUCTION OBSERVATION



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING



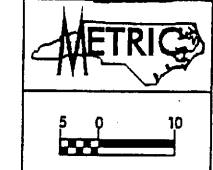
REVISIONS

MATCH TO SHEET 9

MATCH TO SHEET 11

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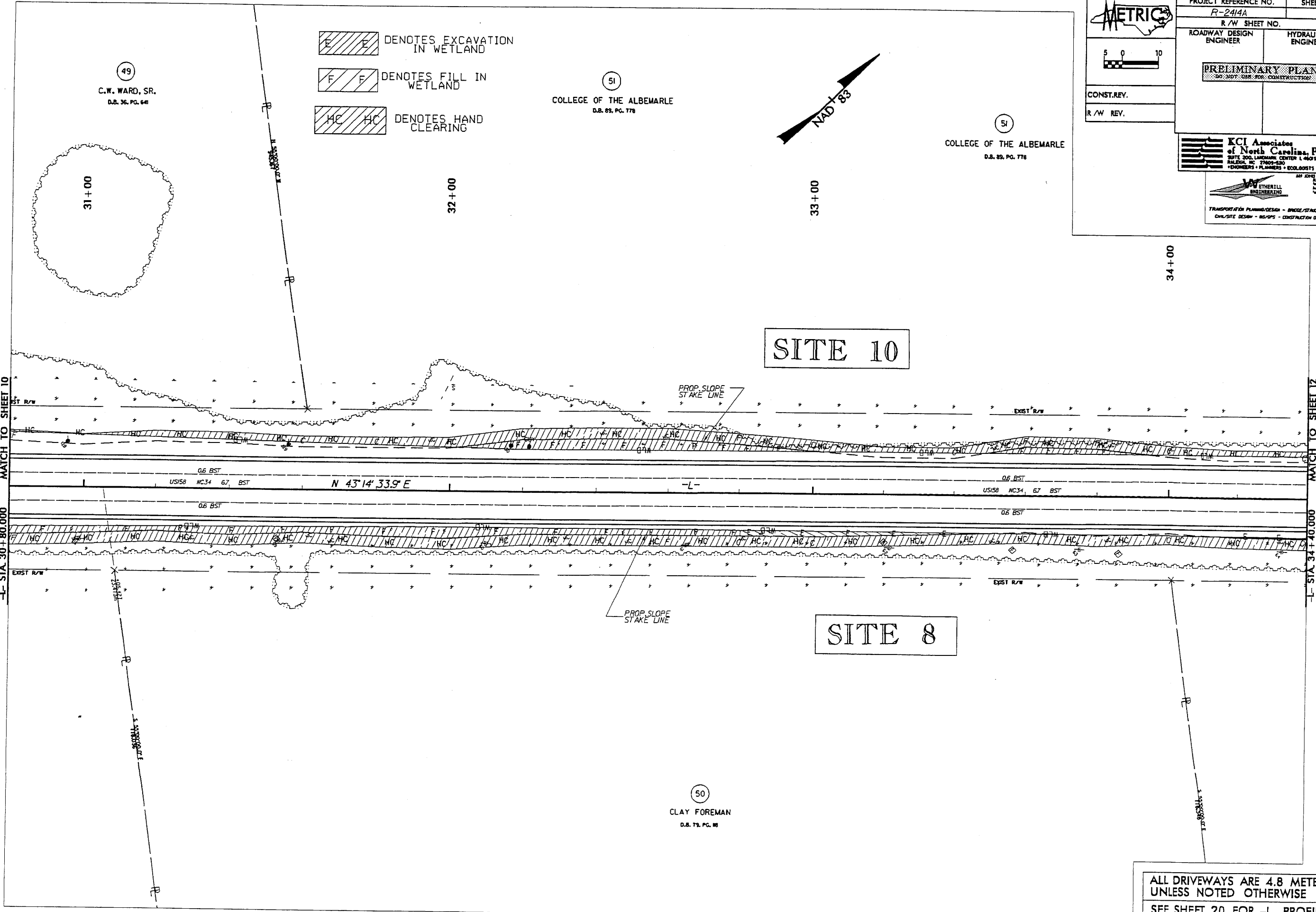
ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 19 FOR -L- PROFILE



PROJECT REFERENCE NO. R-2414A	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
CONST. REV.	
R/W REV.	

KCI Associates of North Carolina, P.A.
 3075 S. LANTANA CENTER LANE, SUITE 200
 RALEIGH, NC 27609-4200
 (919) 793-5044
 ENGINEERS • PLANNERS • ECOLOGISTS

WETHERILL ENGINEERING
 1000 PAVAN ROAD, SUITE 214
 WAKEFIELD, NC 27587
 (919) 853-8100
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - RESURFACING - CONSTRUCTION OBSERVATION



49
 C.W. WARD, SR.
 D.B. 36, PG. 64

51
 COLLEGE OF THE ALBEMARLE
 D.B. 89, PG. 778

51
 COLLEGE OF THE ALBEMARLE
 D.B. 89, PG. 778

50
 CLAY FOREMAN
 D.B. 79, PG. 88

SITE 10

SITE 8

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

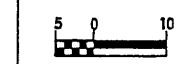
ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 20 FOR -L- PROFILE

REVISIONS

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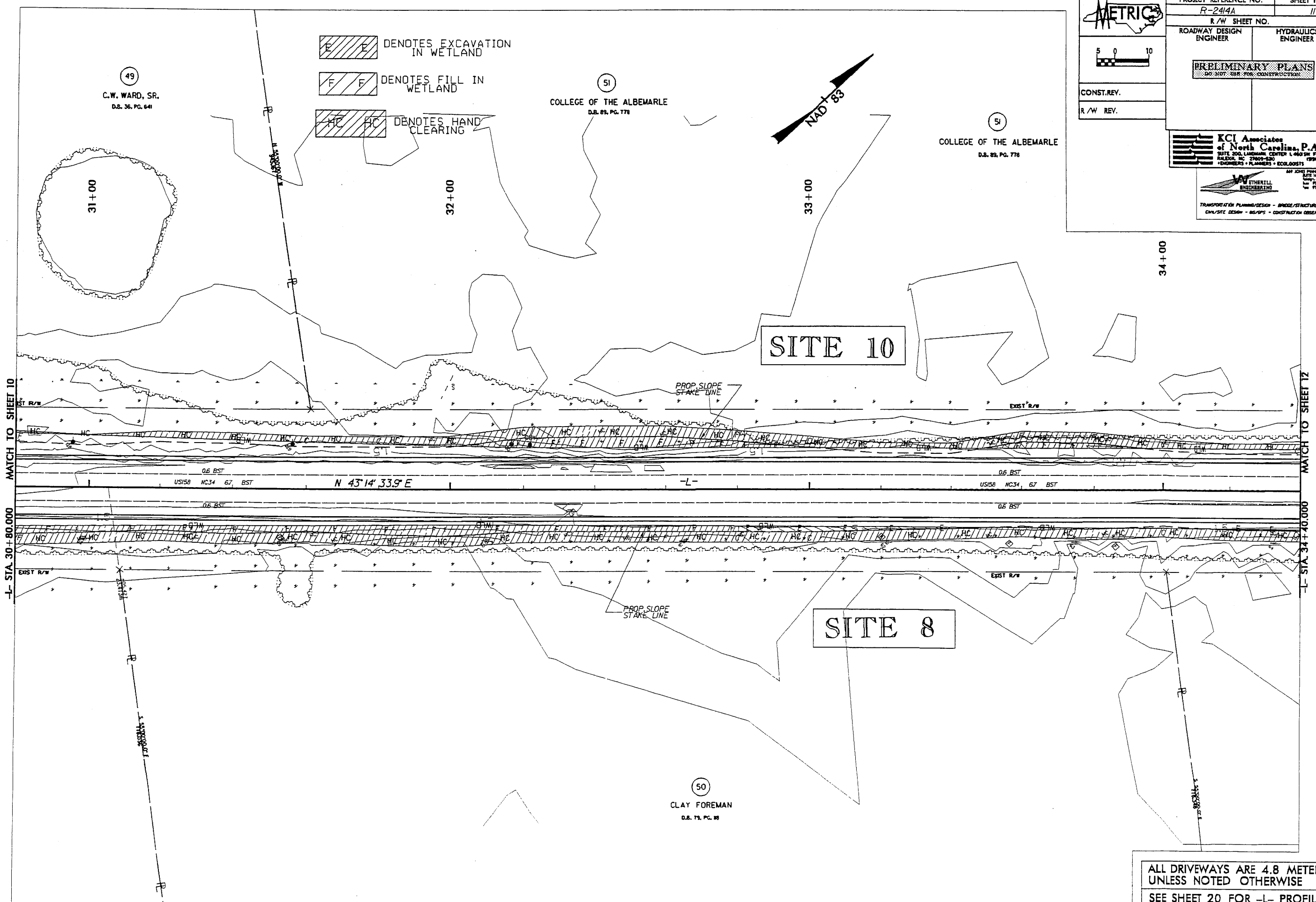
PROJECT REFERENCE NO. R-2414A	SHEET NO. 11
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



KCI Associates of North Carolina, P.A.
 SUITE 200, LANDMARK CENTER 1400 SH FORK RD.
 RALEIGH, NC 27609-5200 (919) 753-1004
 ENGINEERS • PLANNERS • ECOLOGISTS

W. J. EVERETT ENGINEERING
401 JOHN FARMER ROAD
 SUITE 101
 RALEIGH, NC 27608
 (919) 881-8177
 (919) 881-8177

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - RESURFS - CONSTRUCTION OBSERVATION



REVISIONS

MATCH TO SHEET 10

-L- STA. 30+80.000

MATCH TO SHEET 12

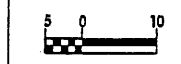
-L- STA. 34+40.000

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 20 FOR -L- PROFILE

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 jld



PROJECT REFERENCE NO. R-2414A	SHEET NO. 12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



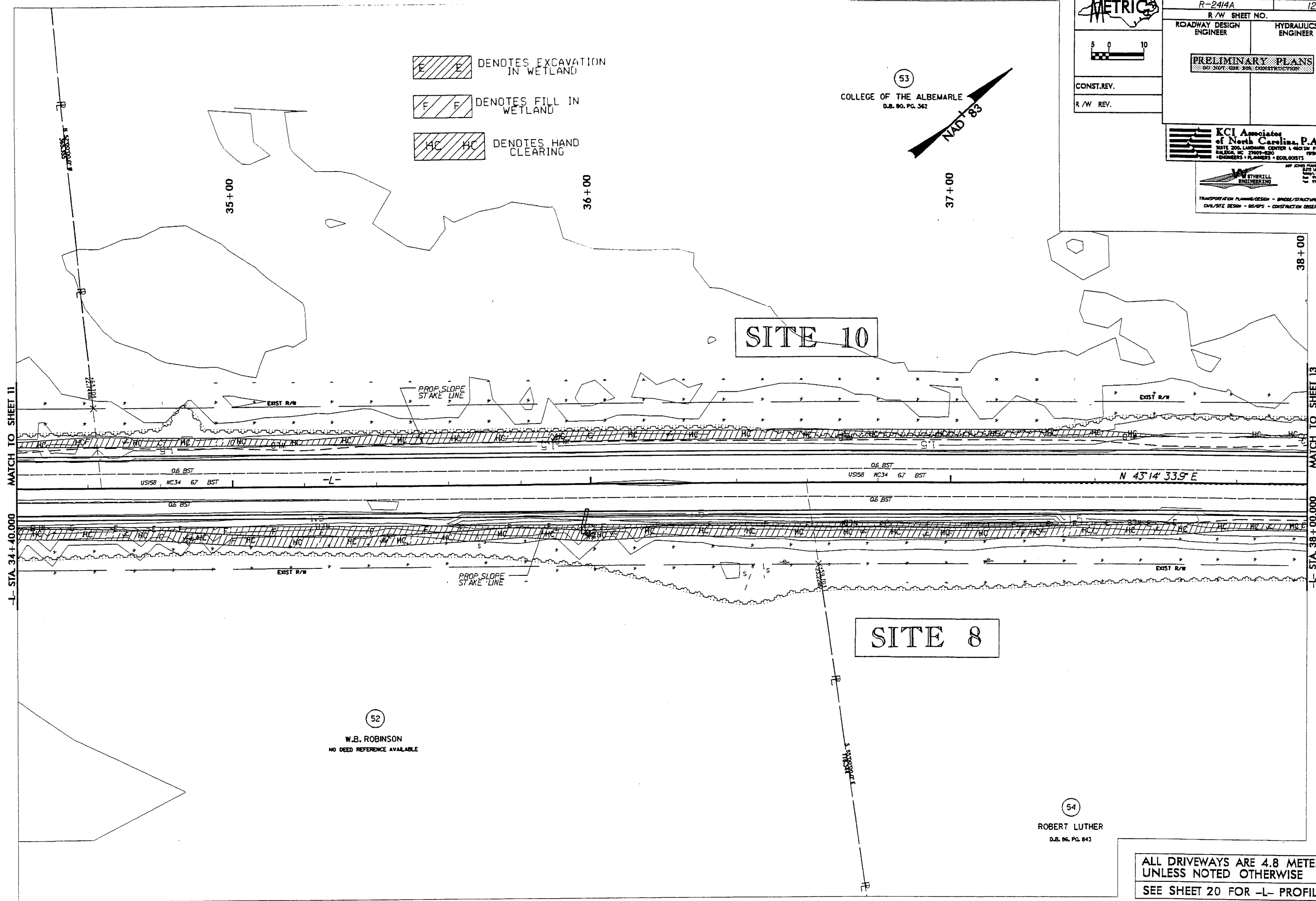
KCI Associates of North Carolina, P.A.
 SUITE 200, LANDMARK CENTER 1401 SW FORTS RD.
 RALEIGH, NC 27607-4200
 (919) 783-1204
 ENGINEERS • PLANNERS • ECOLOGISTS

W. EVERILL ENGINEERING
 400 JOHN HANCOCK ROAD
 SUITE 100, R.F.C. 17406
 RALEIGH, NC 27607
 (919) 881-8777

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - BS/APS - CONSTRUCTION OBSERVATION

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

53
 COLLEGE OF THE ALBEMARLE
 D.B. 90, PG. 362
 NAD 83



SITE 10

SITE 8

MATCH TO SHEET 11

MATCH TO SHEET 13

US158 NC34 67 BST -L- N 43°14' 33.9" E

52

W.B. ROBINSON
 NO DEED REFERENCE AVAILABLE

54

ROBERT LUTHER
 D.B. 06, PG. 843

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 20 FOR -L- PROFILE

REVISIONS

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 12/15/06 11:46

METRIC

PROJECT REFERENCE NO. R-2414A SHEET NO. 13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS

CONST. REV.

R/W REV.

KCI Associates of North Carolina, P.A.

SITE 200, LAMARINE CENTER I, 4603 SHAW FOREST DR., BALDWIN, NC 28007-6500

TELEPHONE 704-763-1000

FAX 704-763-1001

WWW.KCI-NC.COM

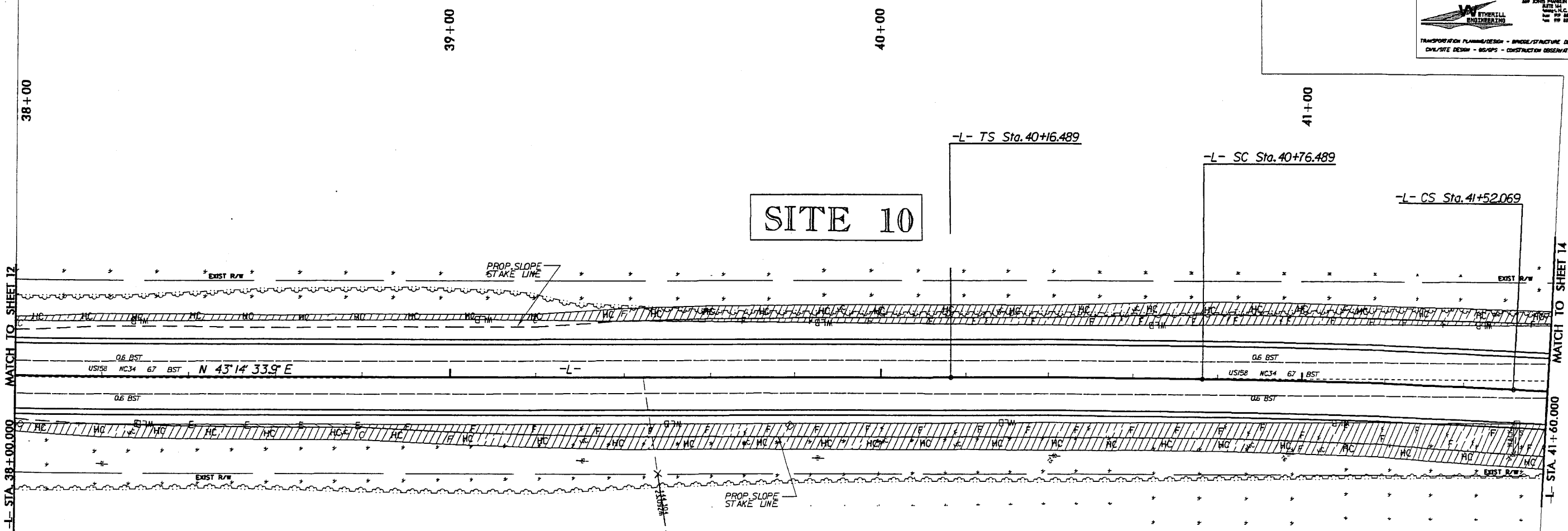
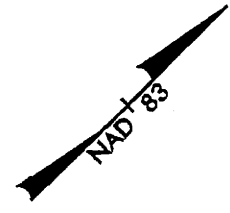
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GEOTECHNICAL - CONSTRUCTION OBSERVATION

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

53
 COLLEGE OF THE ALBEMARLE
 D.B. 80, PG. 362



SITE 8

54
 ROBERT LUTHER
 D.B. 86, PG. 843

85
 PECAN FARMS, LLC
 D.B. 231, PG. 728

PI Sta 40+56.489	PI Sta 41+14.282	PI Sta 41+72.069
Es = 0' 41" 15.2"	Δ = 1' 43" 55.8" (RT)	Es = 0' 41" 15.2"
Ls = 60.000	L = 75.580	Ls = 60.000
LT = 40.000	T = 37.793	LT = 40.000
ST = 20.000	R = 2,500.000	ST = 20.000
	SE = RC	
	V _{DES} = 100 KPH	

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 21 FOR -L- PROFILE

REVISIONS

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DENOTES EXCAVATION IN WETLAND
 DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING

METRIC

5 0 10

CONSTR. REV.
R/W REV.

PROJECT REFERENCE NO. R-2414A SHEET NO. 13

R/W SHEET NO.

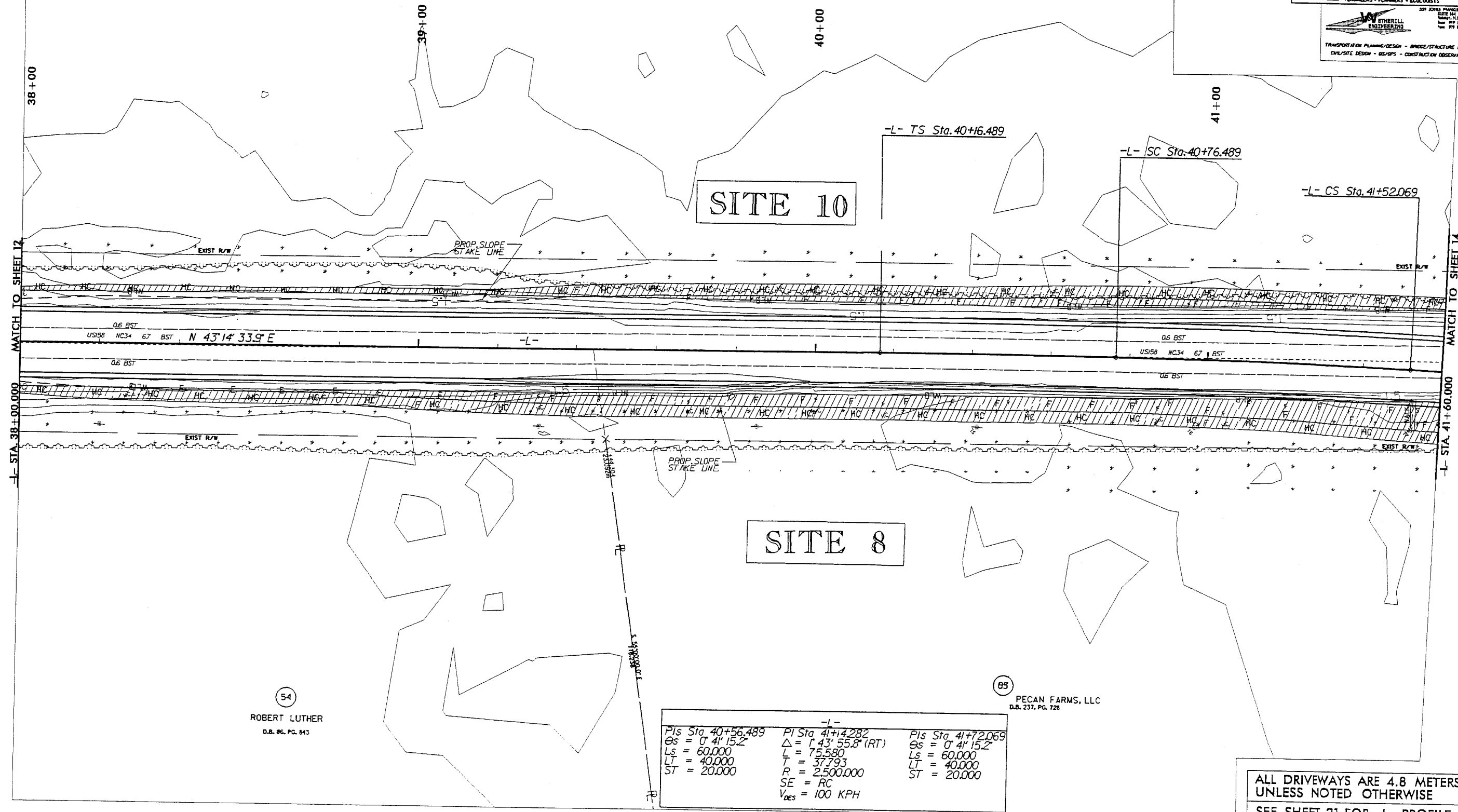
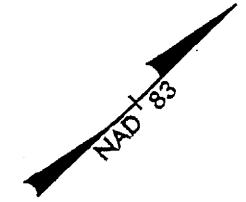
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

KCI Associates of North Carolina, P.A.
SITE 200 LANDMARK CENTER 1 400 SH FORDS RD. RALEIGH, NC 27609-4290 1978-1979-804
ENGINEERS • PLANNERS • ECOLOGISTS

WETHERILL ENGINEERING
539 JONES PARKWAY ROAD SITE 14 RALEIGH, N.C. 27617 919 881 8171
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - DESIGN - CONSTRUCTION OBSERVATION

53
COLLEGE OF THE ALBEMARLE
D.B. 80, PG. 362



SITE 10

SITE 8

54
ROBERT LUTHER
D.B. 96, PG. 843

85
PECAN FARMS, LLC
D.B. 237, PG. 728

PIs Sta. 40+56.489	PI Sta. 41+4.282	PIs Sta. 41+72.069
Os = 0° 41' 15.2"	Δ = 1° 43' 55.8" (RT)	Os = 0° 41' 15.2"
Ls = 60.000	L = 75.580	Ls = 60.000
LT = 40.000	T = 37.793	LT = 40.000
ST = 20.000	R = 2,500.000	ST = 20.000
	SE = RC	
	V _{DES} = 100 KPH	

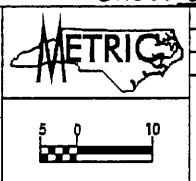
ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
SEE SHEET 21 FOR -L- PROFILE

REVISIONS

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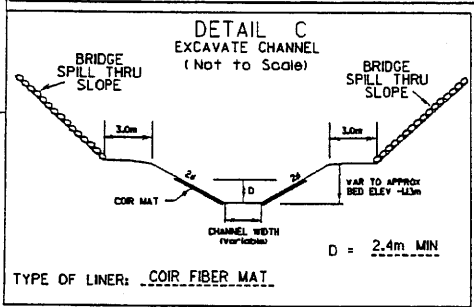
KCI Associates of North Carolina, P.A.
 SUITE 200, LAWRENCE CENTER L. 46036 FARM RD.,
 BULLOCK, NC 27807-6290 (919) 751-5244
 ENGINEERS • PLANNERS • ECOLOGISTS

ETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - SURVEY - CONSTRUCTION OBSERVATION

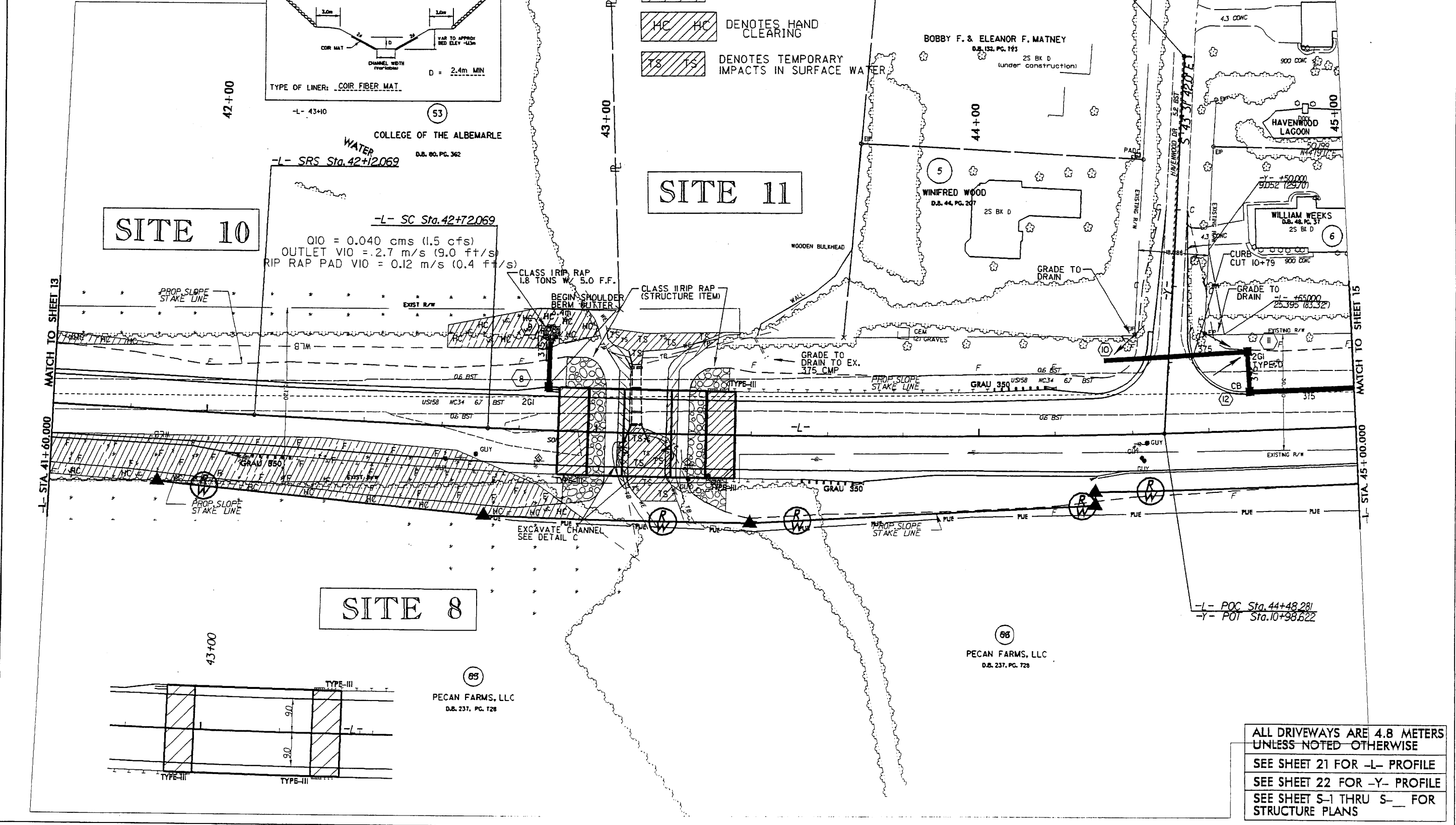
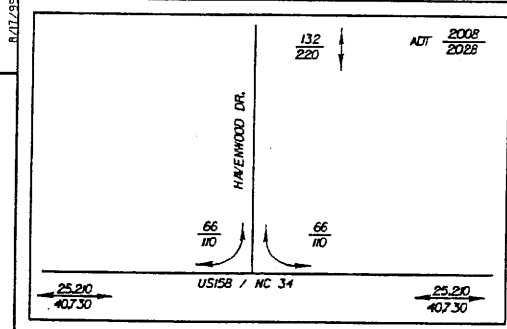


PROJECT REFERENCE NO. R-2414A	SHEET NO. 14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

-L-		
PIs Sta 41+72.069	PIs Sta 42+52.069	PI Sta 44+20.646
Os = 0' 4" 15.2	Os = 0' 4" 15.2	Δ = 6' 48" 08.1 (LT)
Ls = 60.000	Ls = 60.000	L = 296.804
Lt = 40.000	Lt = 40.000	T = 148.577
St = 20.000	St = 20.000	R = 2,500.000
		SE = RC
		V _{DES} = 100 KPH



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



SITE 10

SITE 11

SITE 8

ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 21 FOR -L- PROFILE
 SEE SHEET 22 FOR -Y- PROFILE
 SEE SHEET S-1 THRU S-___ FOR STRUCTURE PLANS

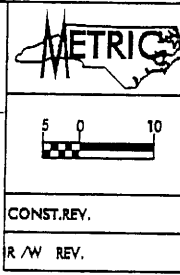
REVISIONS

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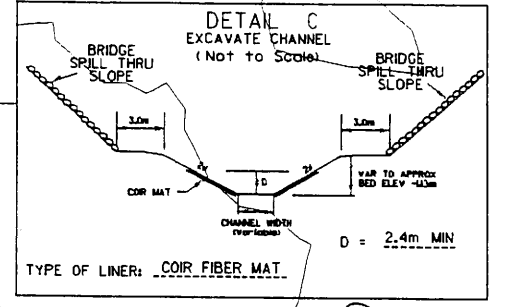
PROJECT REFERENCE NO. R-2414A	SHEET NO. 14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
CONST. REV.	
R/W REV.	

KCI Associates of North Carolina, P.A.
 10101 JAMES ROAD
 SUITE 300, LAYTONS CENTER 1, 4501 S.W. FOREST RD.
 DUBLIN, NC 27809-5201
 ENGINEERS • PLANNERS • ECOLOGISTS

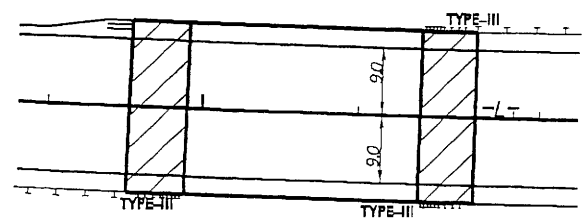
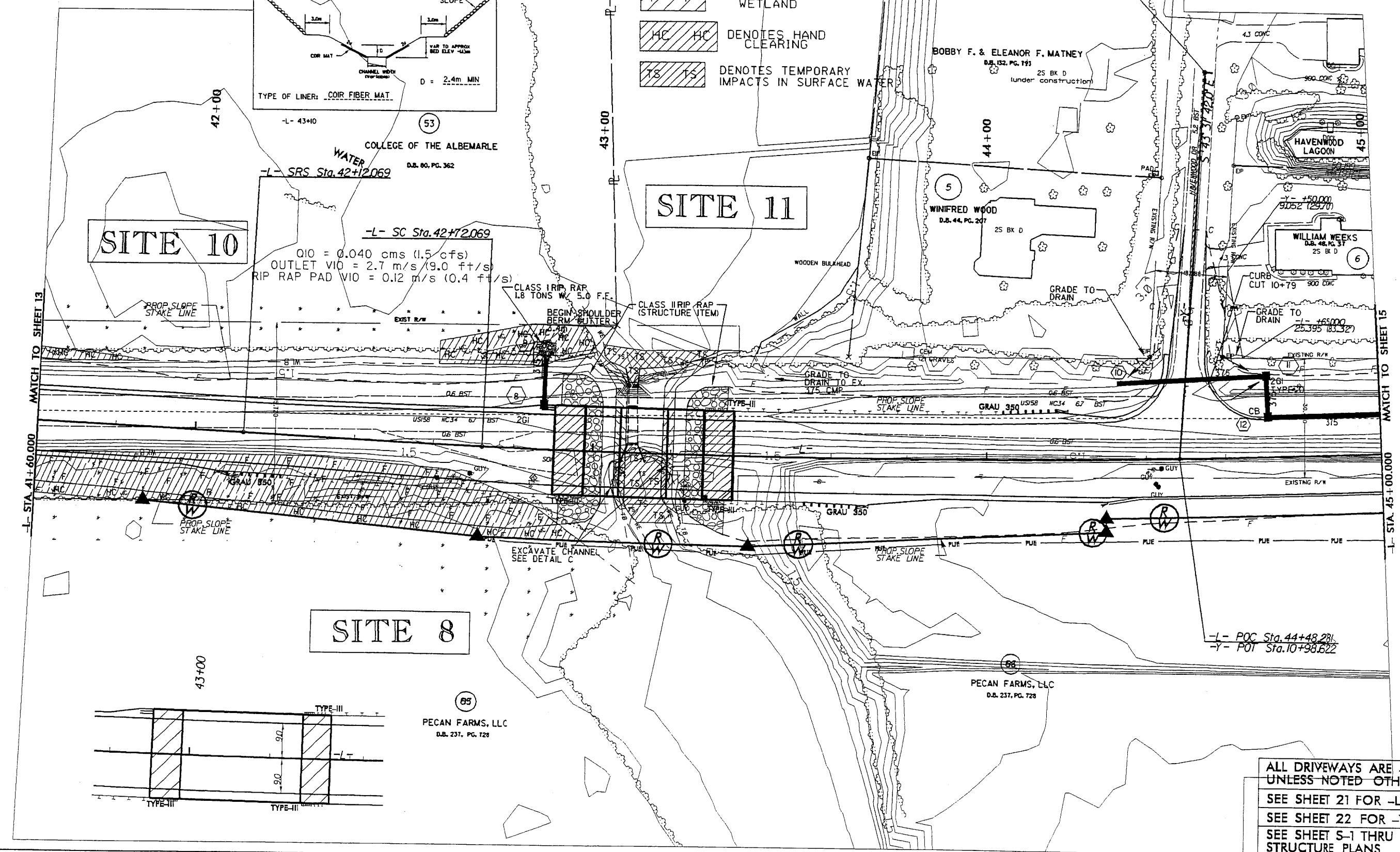
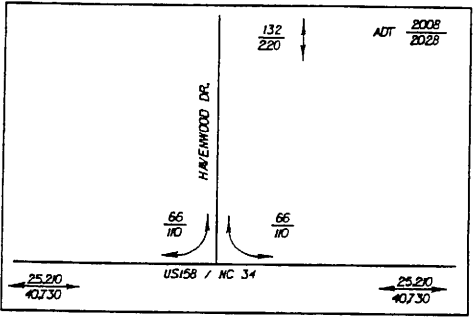
ETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 ENVIRONMENTAL DESIGN - EIS/OPS - CONSTRUCTION OBSERVATION



PIs Sta 41+72.069 Gs = 0' 41" 15.2 Ls = 60.000 LT = 40.000 ST = 20.000	-L- PIs Sta 42+52.069 Gs = 0' 41" 15.2 Ls = 60.000 LT = 40.000 ST = 20.000	PI Sta 44+20.646 Δ = 6' 48" 08.1 (LT) L = 296.804 T = 148.577 R = 2,500.000 SE = RC V _{os} = 100 KPH
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- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



ALL DRIVEWAYS ARE 4.8 METERS UNLESS NOTED OTHERWISE
 SEE SHEET 21 FOR -L- PROFILE
 SEE SHEET 22 FOR -Y- PROFILE
 SEE SHEET S-1 THRU S-___ FOR STRUCTURE PLANS

REVISIONS

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STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	3.3	CMS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	1.71	M
BASE DISCHARGE	=	4.0	CMS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1.86	M
OVERTOPPING DISCHARGE	=	5.9	CMS
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING ELEVATION	=	2.07	M


533 mm CORED SLAB
THREE SPAN - 1 @ 9.1m,
1 @ 12.2, 1 @ 9.1m
LENGTH 30.4m

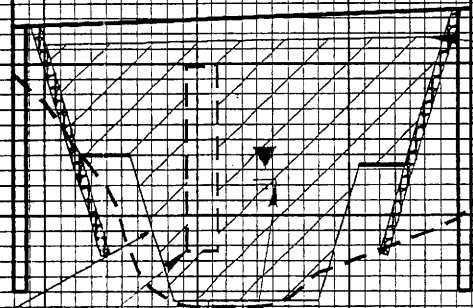
PI = 43+80.000
EL = 4.102 m
VC = 75 m
K = 54.2
V_{DES} = 100 KPH

BEGIN BRIDGE
-L- STA. 42+97.800
EL = 3.492 m

END BRIDGE
-L- STA. 43+28.200
EL = 3.717 m

+0.7420% **-0.6430%**

 **AREAS TO BE EXCAVATED**
EST. 1600 C.M.



EX. CENTERLINE & GROUNDLINE

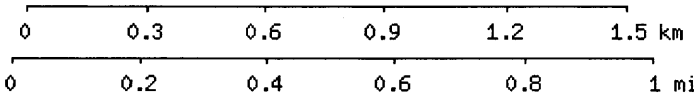
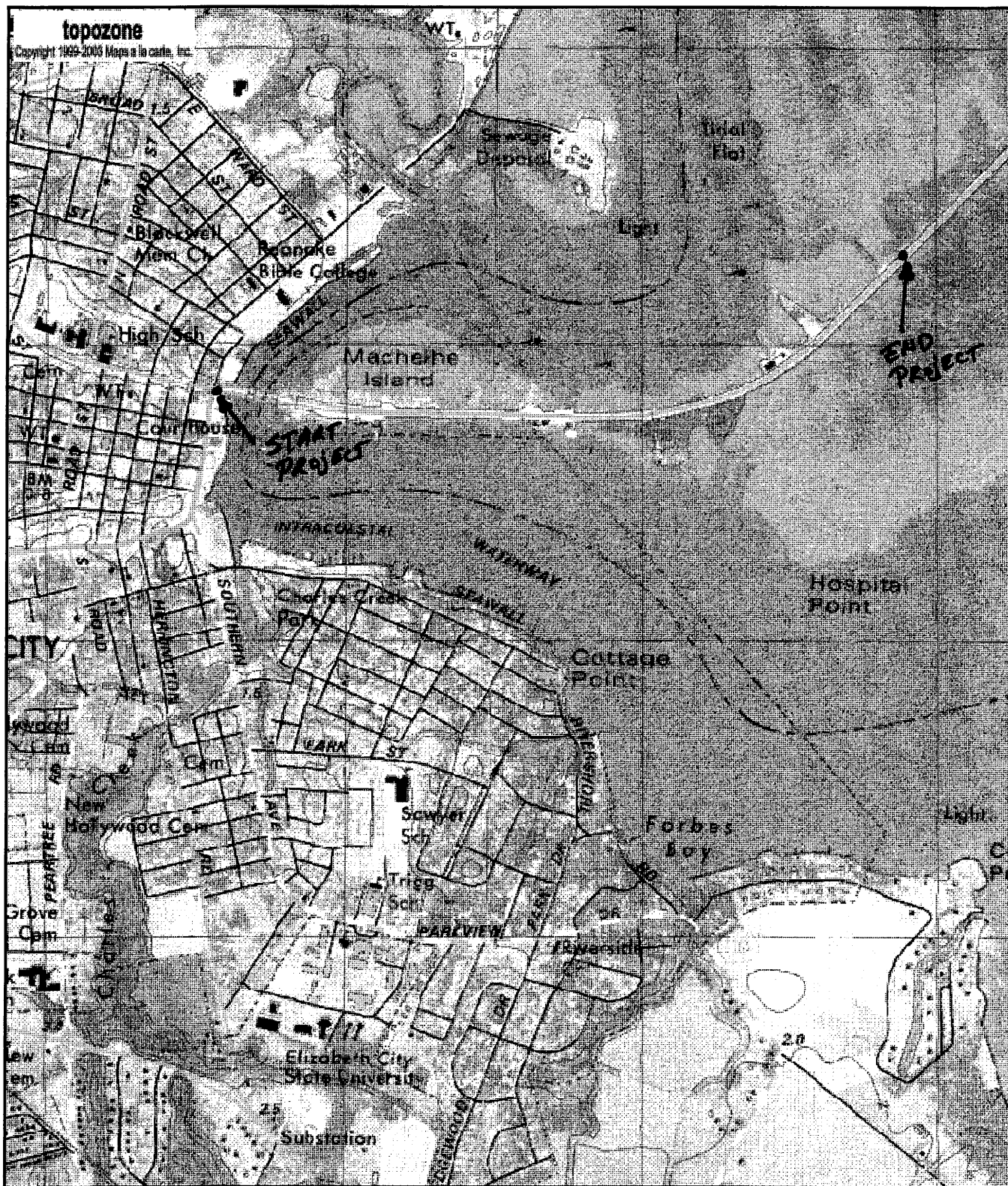
NATURAL GROUND

EXCAVATION

NWS = 0.470

REMOVE EXISTING
2.13m X 2.44m RCBC

VAR. TO APPROX.
BED ELEV. = (-)1.13m



UTM 18 391596E 4017366N (NAD83/WGS84)
Cottage Point, USGS Elizabeth City (NC) Quadrangle
 Projection is UTM Zone 18 NAD83 Datum

M*

 M=-10.555
 G=-0.715

Utility Permit Drawing
 Sheet 1 of 16

R-2414A Utilities

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS					
			Permanent Fill in Wetlands (ha)	Temp. Fill in Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW Impacts (ha)	Temp. SW Impacts (ha)	Existing Channel Impacts Temp (m)	Natural Stream Design (m)			
1	8+11 TO 8+83							0.072						
2	10+70 TO 11+07							0.024						
3	11+83 TO 13+00							0.074						
4	13+48 TO 14+64							0.136						
5	15+51 TO 15+79							0.030						
6	16+57 TO 23+30							0.767						
7	24+36 TO 25+11							0.092						
8	25+89 TO 28+17							0.184						
9	28+31 TO 28+45							0.006						
10	28+99 TO 41+64							1.291						
11	42+80 TO 43+00							0.004						
TOTALS:								2.679			0.000	0		0.0

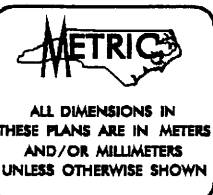
Temporary fill in wetlands for erosion and sediment control measures.

Temporary Stream Impact.
Existing RCBC and Roadway Fill Removed.
Replaced w/ 23.9m of Open Channel.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
CAMDEN COUNTY
WBS - 34430.1.1 (R-2414A)

9/09/99

See Sheet 1-A For Index of Sheets
See Sheet 1-A For Index of Sheets



T.I.P. NO.	SHEET NO.
R-2414A	UO-1

Permit Drawing
Sheet 3 of 16
Utility

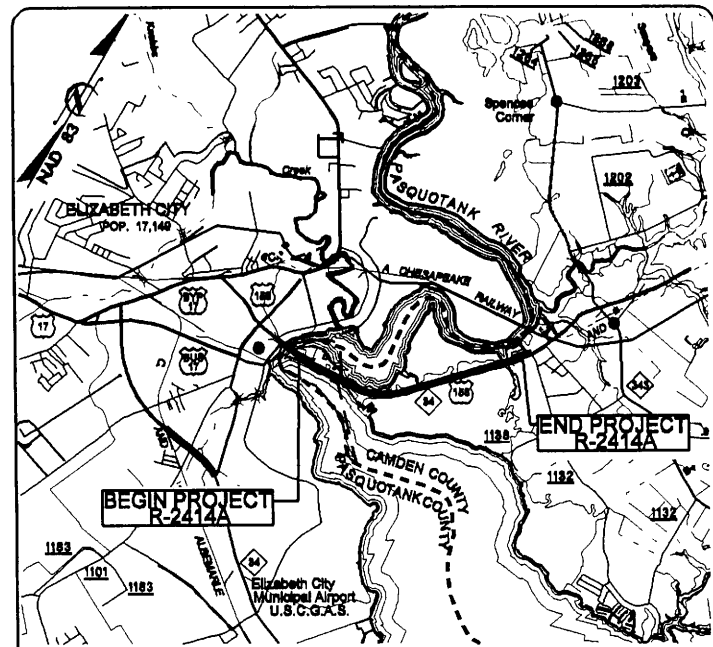
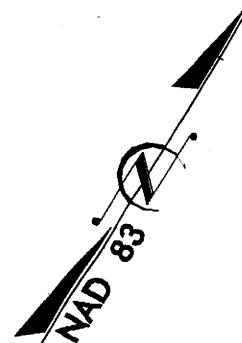
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITY BY OTHERS PLANS CAMDEN COUNTY

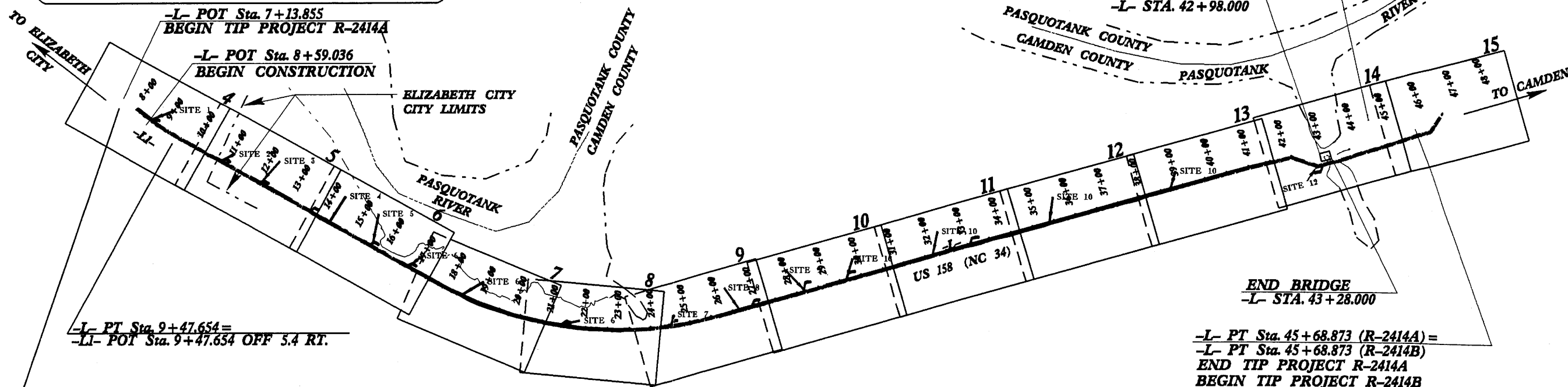
LOCATION: US 158/NC 34 FORM EAST OF PASQUOTANK RIVER TO SOUTH OF SR 1257 (HAVENWOOD DR.) BETWEEN ELIZABETH CITY AND CAMDEN

TYPE OF WORK: POWER, TELEPHONE AND CABLE RELOCATION

-Y- HAVENWOOD DR.
SR 1257



VICINITY MAP



-L- POT Sta. 7+13.855
BEGIN TIP PROJECT R-2414A
-L- POT Sta. 8+59.036
BEGIN CONSTRUCTION

ELIZABETH CITY CITY LIMITS

-L- PT Sta. 9+47.654 =
-L- POT Sta. 9+47.654 OFF 5.4 RT.

BEGIN BRIDGE
-L- STA. 42+98.000

END BRIDGE
-L- STA. 43+28.000

-L- PT Sta. 45+68.873 (R-2414A) =
-L- PT Sta. 45+68.873 (R-2414B)
END TIP PROJECT R-2414A
BEGIN TIP PROJECT R-2414B

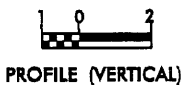
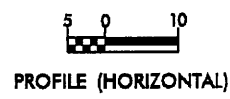
-L- POT Sta. 7+12.730
BEGIN CONSTRUCTION

CLEARING TO BE PERFORMED BY METHOD II

THIS PROJECT IS WITHIN MUNICIPAL BOUNDARIES OF ELIZABETH CITY

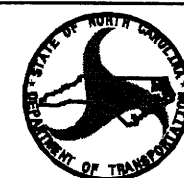
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR A/RW ACQUISITION

GRAPHIC SCALES



PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2414A = 3.825 KM
LENGTH STRUCTURE TIP PROJECT R-2414A = 0.030 KM
TOTAL LENGTH TIP PROJECT R-2414A = 3.855 KM

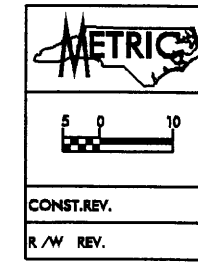


PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Cory Bousquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Britt McCarty UTILITIES PROJECT DESIGNER

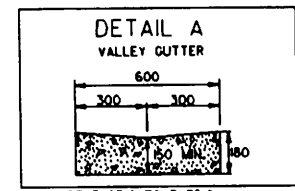
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C:\utl\trgt\05-permits\environmental\1r-2414a-ut-permit.tsh.dgn



UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

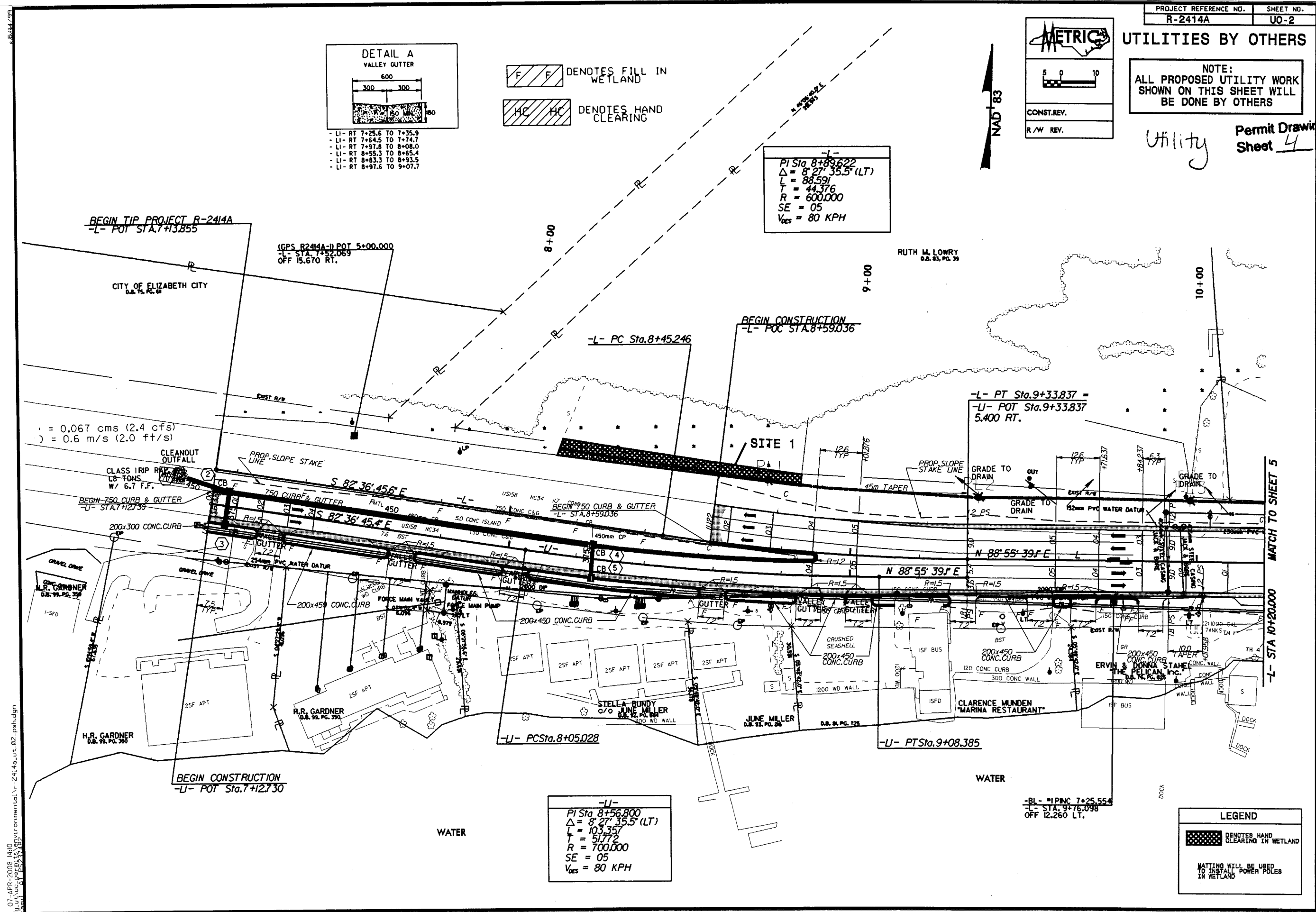
Utility Permit Drawing
Sheet 4 of 16



- LI- RT 7+25.6 TO 7+35.9
- LI- RT 7+64.5 TO 7+74.7
- LI- RT 7+97.8 TO 8+08.0
- LI- RT 8+55.3 TO 8+65.4
- LI- RT 8+83.3 TO 8+93.5
- LI- RT 8+97.6 TO 9+07.7

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

-L-
PI Sta 8+89.622
Δ = 8° 27' 35.5" (LT)
L = 88.591
T = 44.376
R = 600.000
SE = 05
V_{des} = 80 KPH



v = 0.067 cms (2.4 cfs)
Q = 0.6 m/s (2.0 ft/s)

-L-
PI Sta 8+56.800
Δ = 8° 27' 35.5" (LT)
L = 103.357
T = 51.772
R = 700.000
SE = 05
V_{des} = 80 KPH

-BL- *1PINC 7+25.554
-L- STA. 9+76.098
OFF 12.260 LT.

LEGEND

- DENOTES HAND CLEARING IN WETLAND
- MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

07-APR-2008 14:10
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5/14/99

PROJECT REFERENCE NO. R-2414A SHEET NO. UO-3

METRIC

CONST. REV.
R./W. REV.

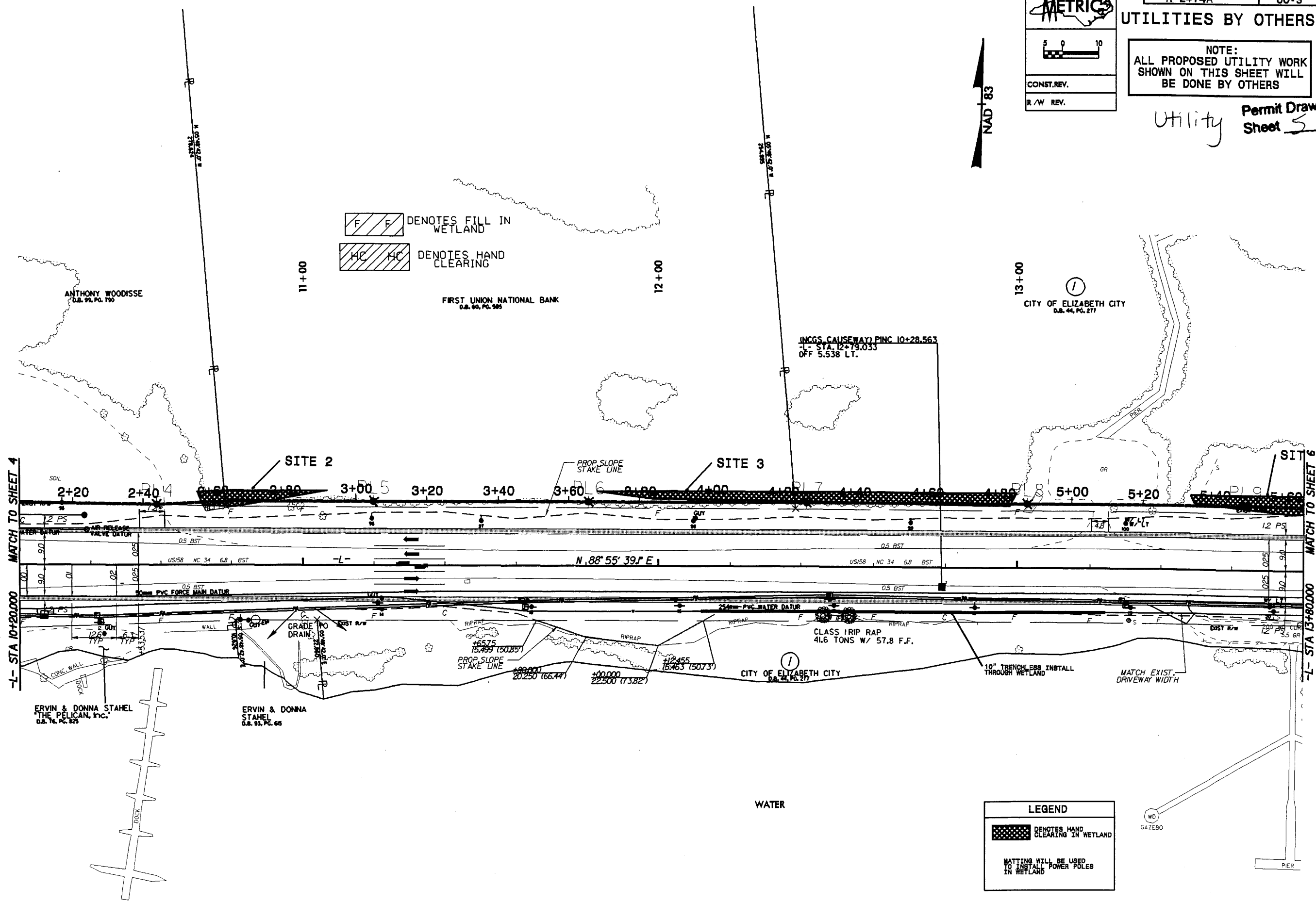
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 5 of 16



DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING



MATCH TO SHEET 4
-L- STA 10+20.000

MATCH TO SHEET 6
-L- STA 13+80.000

REVISIONS

07-APR-2008 14:08
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LEGEND

DENOTES HAND CLEARING IN WETLAND

GAZEBO

PIER

MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

ERVIN & DONNA STAHEL
"THE PELICAN, Inc."
D.B. 76, PG. 325

ERVIN & DONNA STAHEL
D.B. 93, PG. 65

FIRST UNION NATIONAL BANK
D.B. 60, PG. 595

CITY OF ELIZABETH CITY
D.B. 44, PG. 277

INCCS CAUSEWAY PINC 10+28.563
L- STA. 12+79.033
OFF 5.538 LT.

CLASS I RIP RAP
41.6 TONS W/ 57.8 F.F.

WATER

METRIC

5 0 10

CONST. REV.

R/W REV.

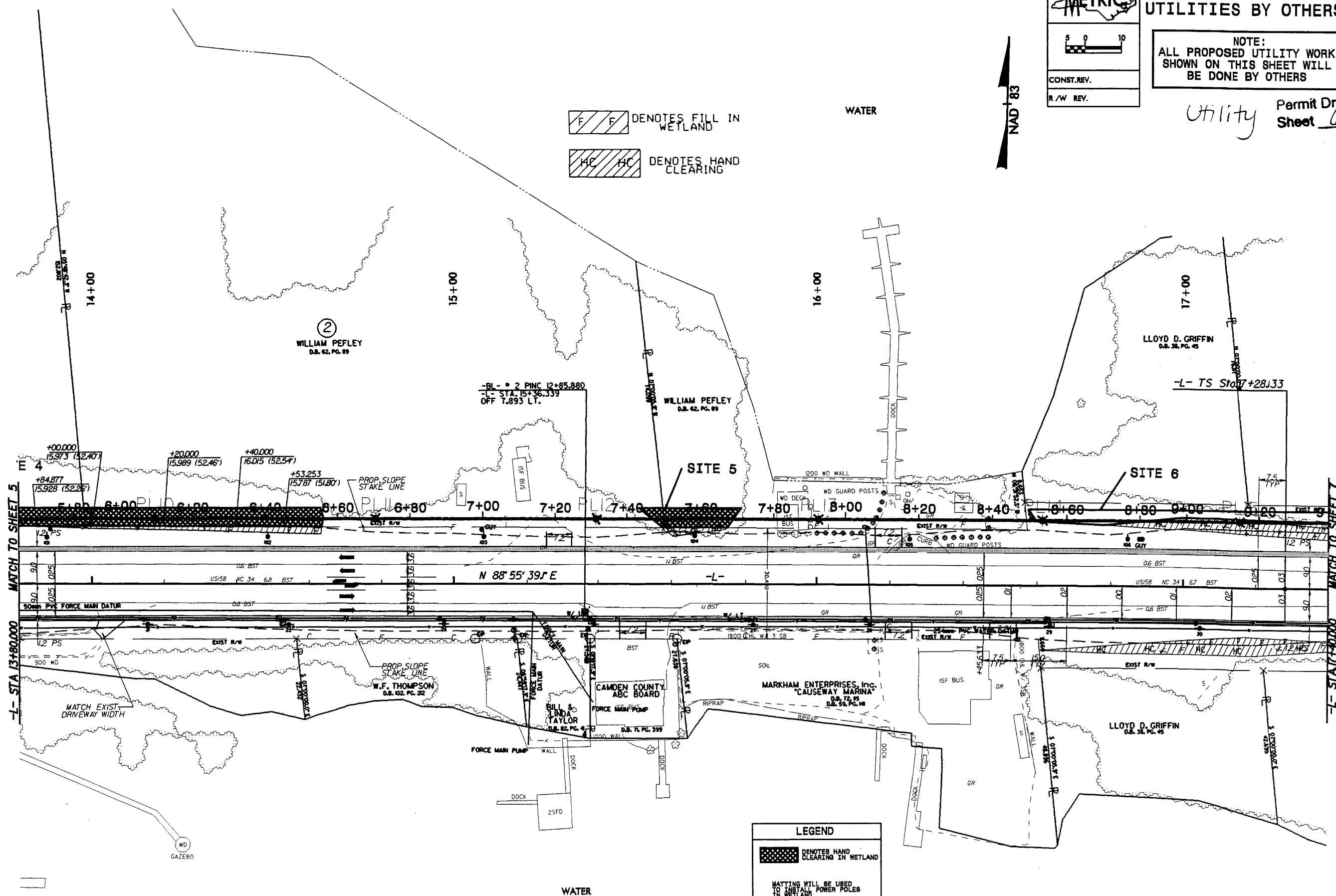
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 6 of 16

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING



LEGEND

DENOTES HAND CLEARING IN WETLAND

MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

SEE SHEET 17 FOR -L- PROFILE

REVISIONS

5/14/99

07-APR-2008 14:06

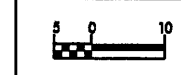
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5/14/99

PROJECT REFERENCE NO. R-2414A SHEET NO. UO-8



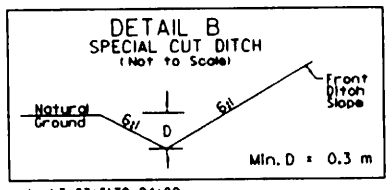
UTILITIES BY OTHERS



NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

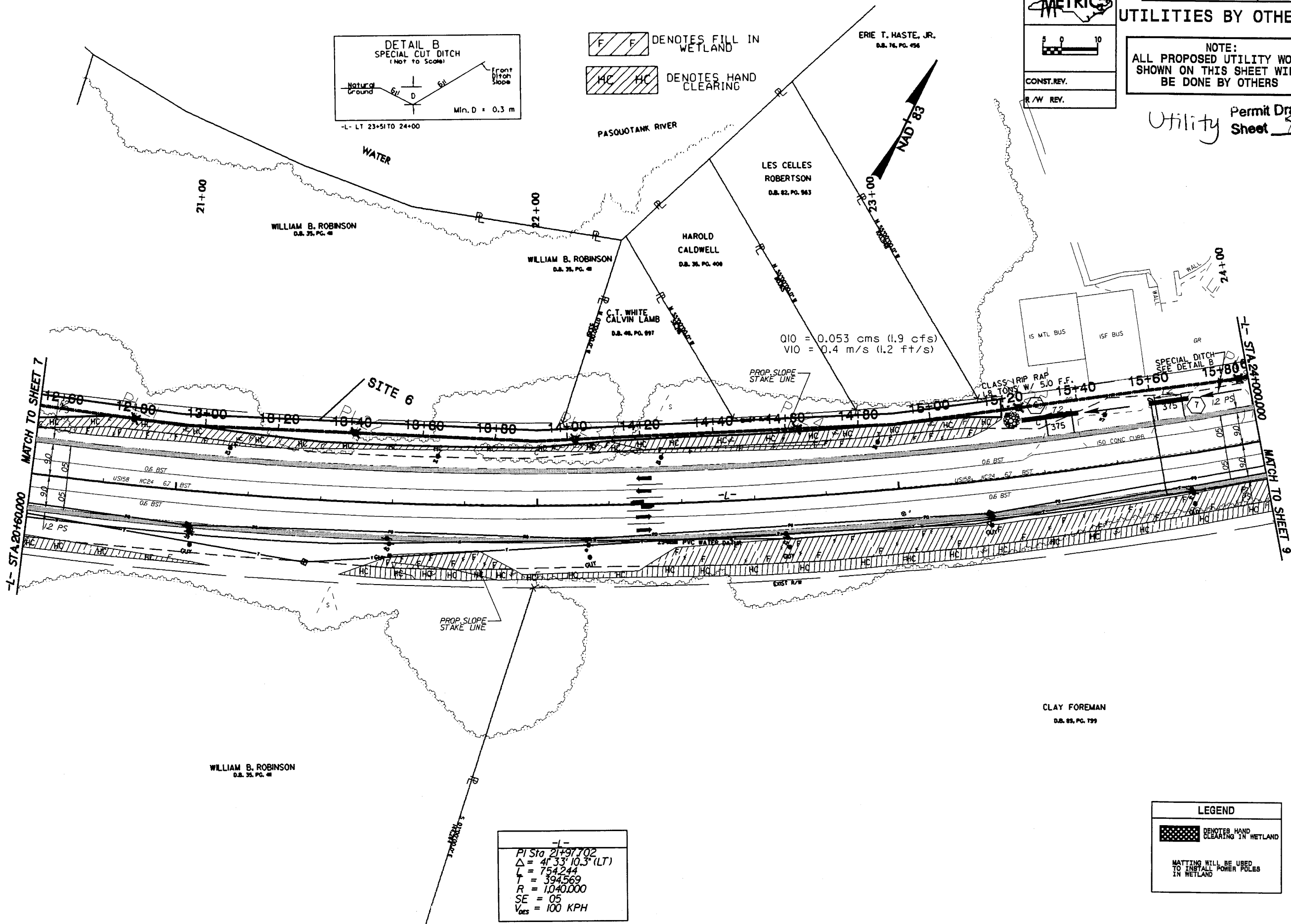
CONST. REV.
R/W REV.

Utility Permit Drawing
Sheet 8 of 16



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

ERIE T. HASTE, JR.
D.B. 16, PG. 456



Q10 = 0.053 cms (1.9 cfs)
V10 = 0.4 m/s (1.2 ft/s)

CLAY FOREMAN
D.B. 83, PG. 199

WILLIAM B. ROBINSON
D.B. 35, PG. 41

-L-
PI Sta 21+97.702
 $\Delta = 41^{\circ} 33' 10.3''$ (LT)
L = 754.244
T = 394.569
R = 1,040.000
SE = 05
V_{DES} = 100 KPH



07-APR-2008 14:04
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5/14/99

07-APR-2008 14:03
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PROJECT REFERENCE NO. R-2414A SHEET NO. UO-7

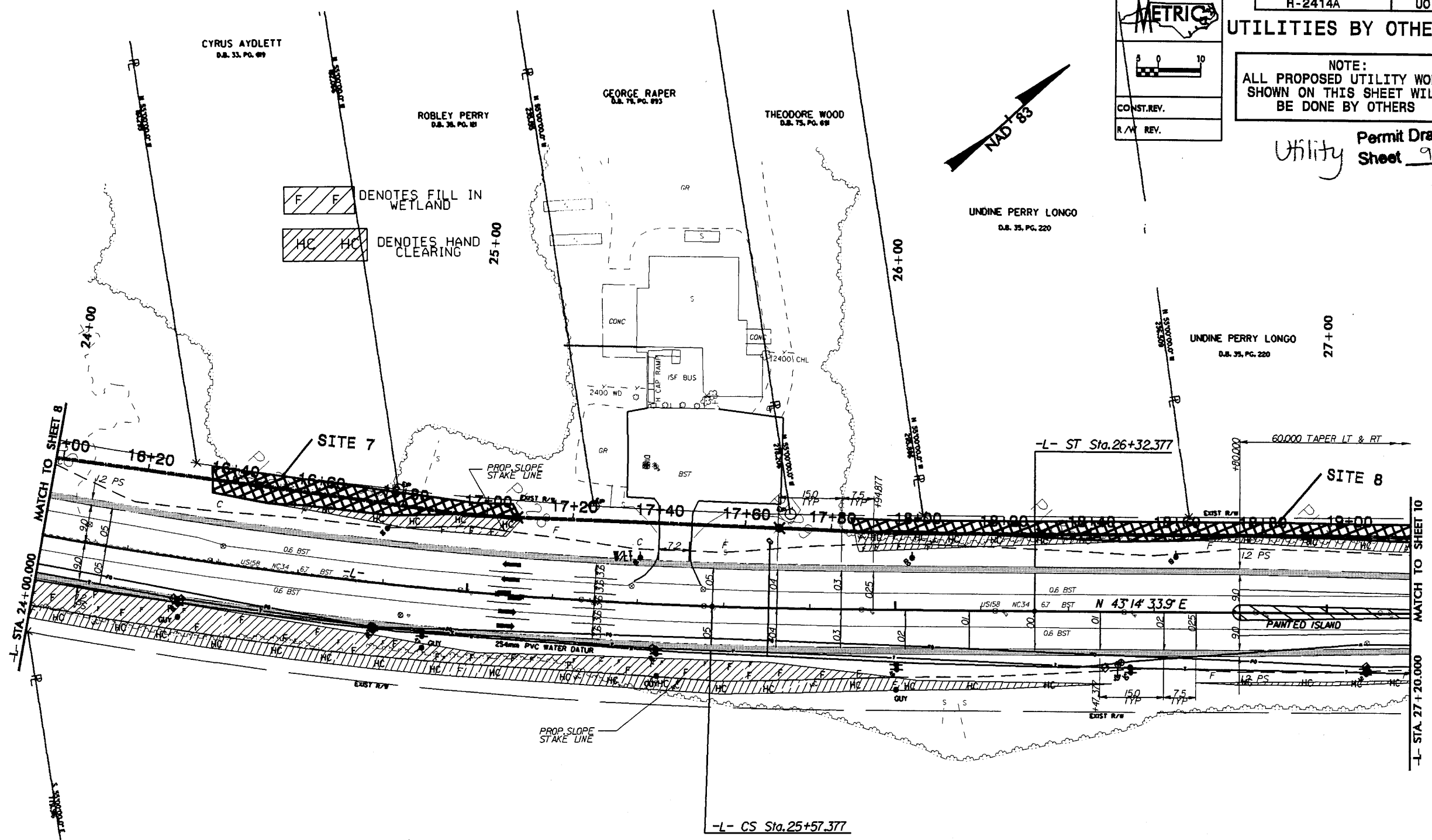
METRIC

CONST. REV.
R./M. REV.

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility Permit Drawing Sheet 9 of 16



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

25+00

26+00

27+00

MATCH TO SHEET 8

MATCH TO SHEET 10

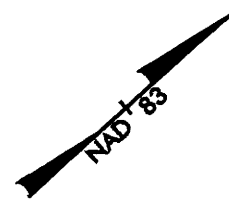
-L-	
PI Sta 21+97.702	PIs Sta 25+82.380
$\Delta = 41^{\circ}33'10.3"$ (LT)	$\Theta_s = 2^{\circ}03'57.4"$
L = 754.244	Ls = 75.000
T = 394.569	LT = 50.003
R = 1040.000	ST = 25.003
SE = 05	
V _{DES} = 100 KPH	

CLAY FOREMAN
D.S. 83, PG. 799

LEGEND

DENOTES HAND CLEARING IN WETLAND

MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND



CYRUS AYDLETT
D.S. 33, PG. 09

ROBLEY PERRY
D.S. 36, PG. 02

GEORGE RAPER
D.S. 74, PG. 075

THEODORE WOOD
D.S. 75, PG. 09

UNDINE PERRY LONGO
D.S. 35, PG. 220

UNDINE PERRY LONGO
D.S. 35, PG. 220

CLAY FOREMAN
D.S. 83, PG. 799

5/14/99

07-APR-2008 14:01
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PROJECT REFERENCE NO. SHEET NO.
R-2414A U0-8

METRIC

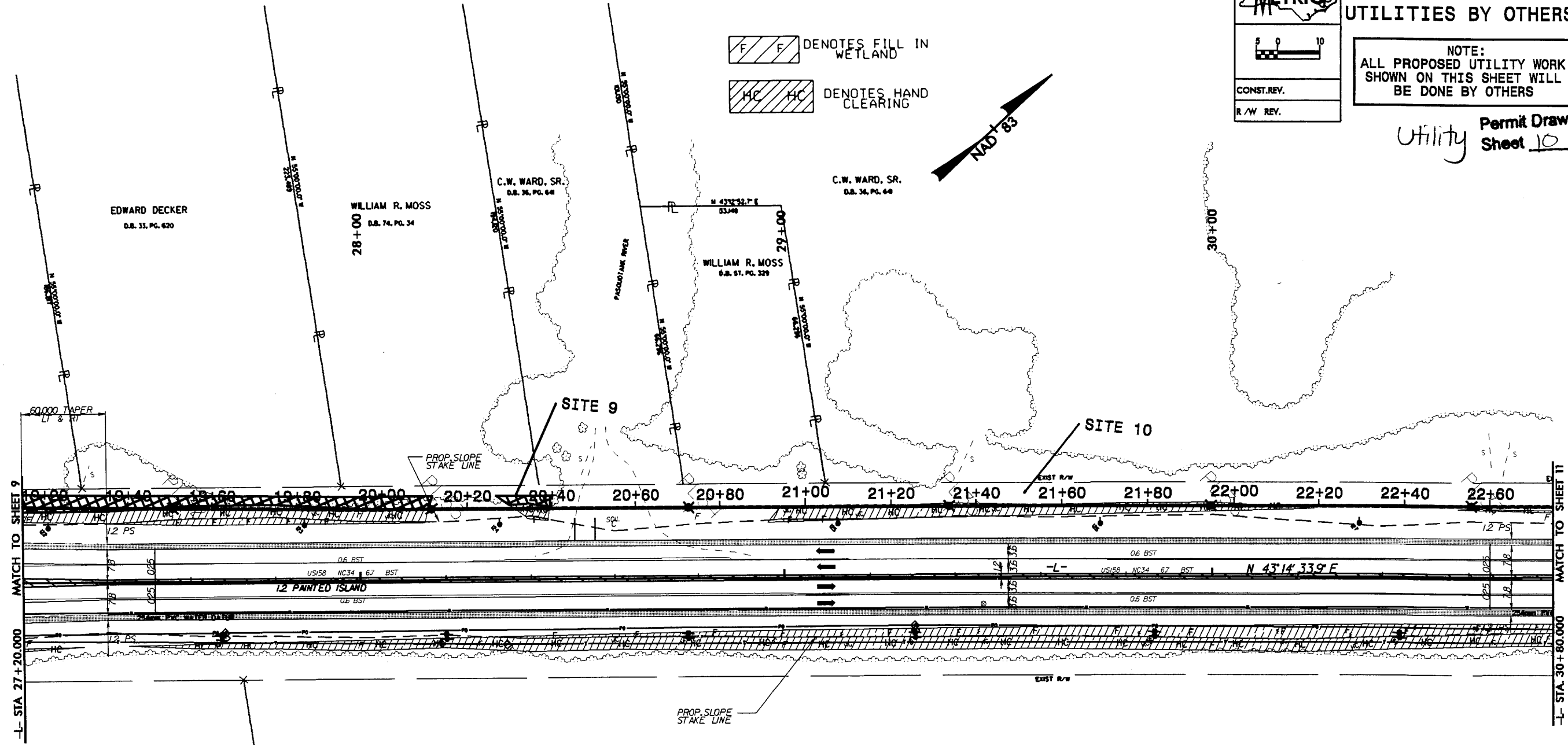
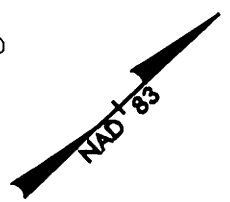
CONST. REV.
R/W REV.

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 10 of 16

DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING



LEGEND

DENOTES HAND CLEARING IN WETLAND

MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

CLAY FOREMAN
D.B. 79, PG. 86

5/14/98

PROJECT REFERENCE NO. R-2414A SHEET NO. U0-9

METRIX

CONST. REV.
R/W REV.

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

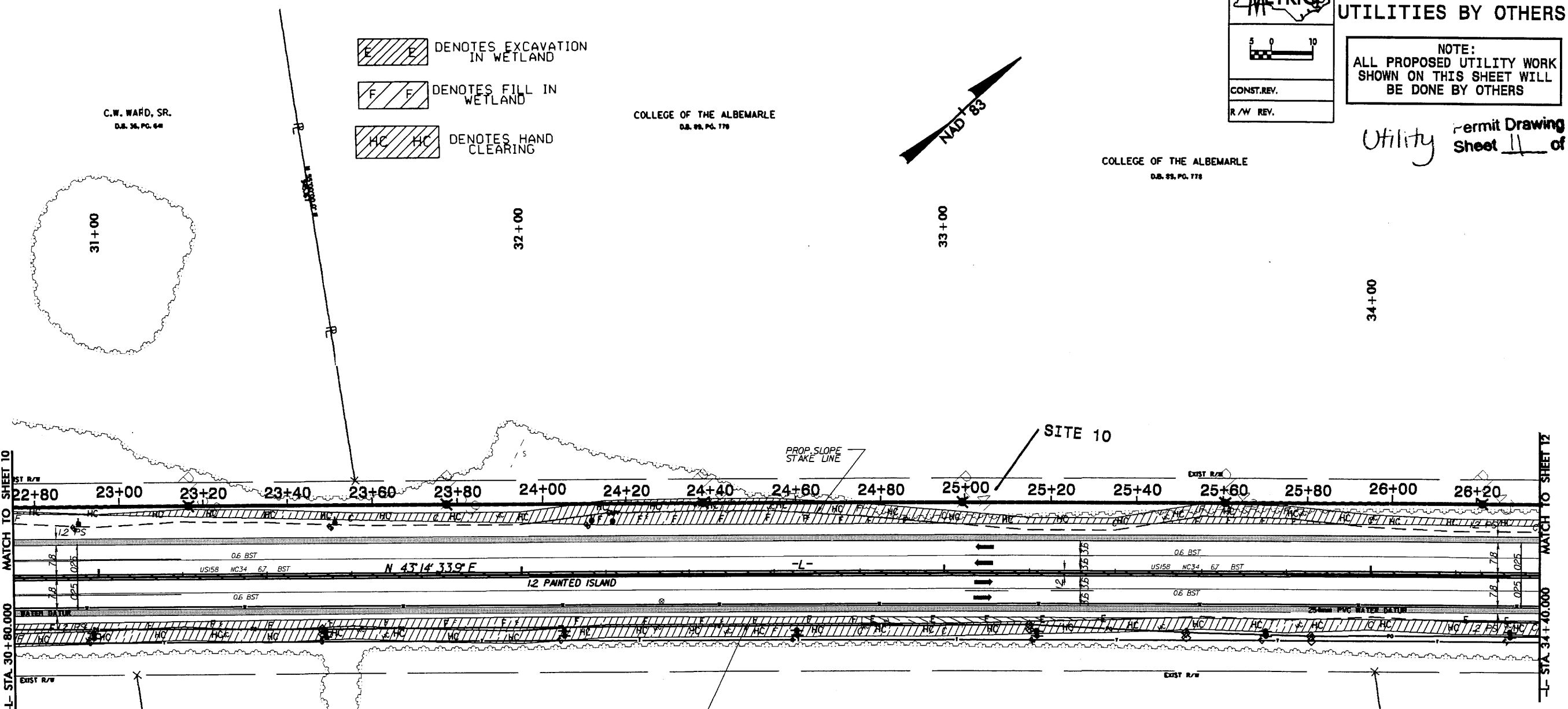
Utility Permit Drawing
Sheet 11 of 16

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

C.W. WAHD, SR.
D.B. 36, PG. 64

COLLEGE OF THE ALBEMARLE
D.B. 99, PG. 178

COLLEGE OF THE ALBEMARLE
D.B. 99, PG. 178



MATCH TO SHEET 10
-L- STA. 30+80.000

MATCH TO SHEET 12
-L- STA. 34+40.000

50
CLAY FOREMAN
D.B. 79, PG. 88

LEGEND

- DENOTES HAND CLEARING IN WETLAND
- MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

ALL DRIVEWAYS ARE 4.8 METERS
UNLESS NOTED OTHERWISE
SEE SHEET 20 FOR -L- PROFILE

07-APR-2008 13:53
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07-APR-2008 13:52
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PROJECT REFERENCE NO. R-2414A	SHEET NO. U0-10
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METRIX

CONST. REV.
R/W REV.

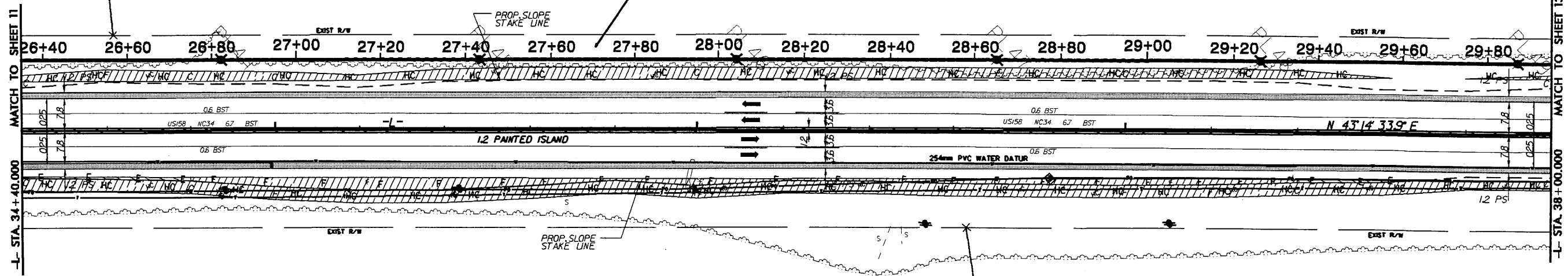
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 12 of 16

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

COLLEGE OF THE ALBEMARLE
D.B. 80, PG. 362

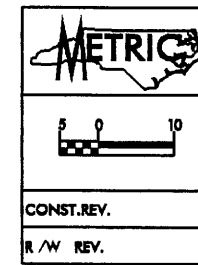


W.B. ROBINSON
NO DEED REFERENCE AVAILABLE

LEGEND

- DENOTES HAND CLEARING IN WETLAND
- MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

ROBERT LUTHER
D.B. 86, PG. 843



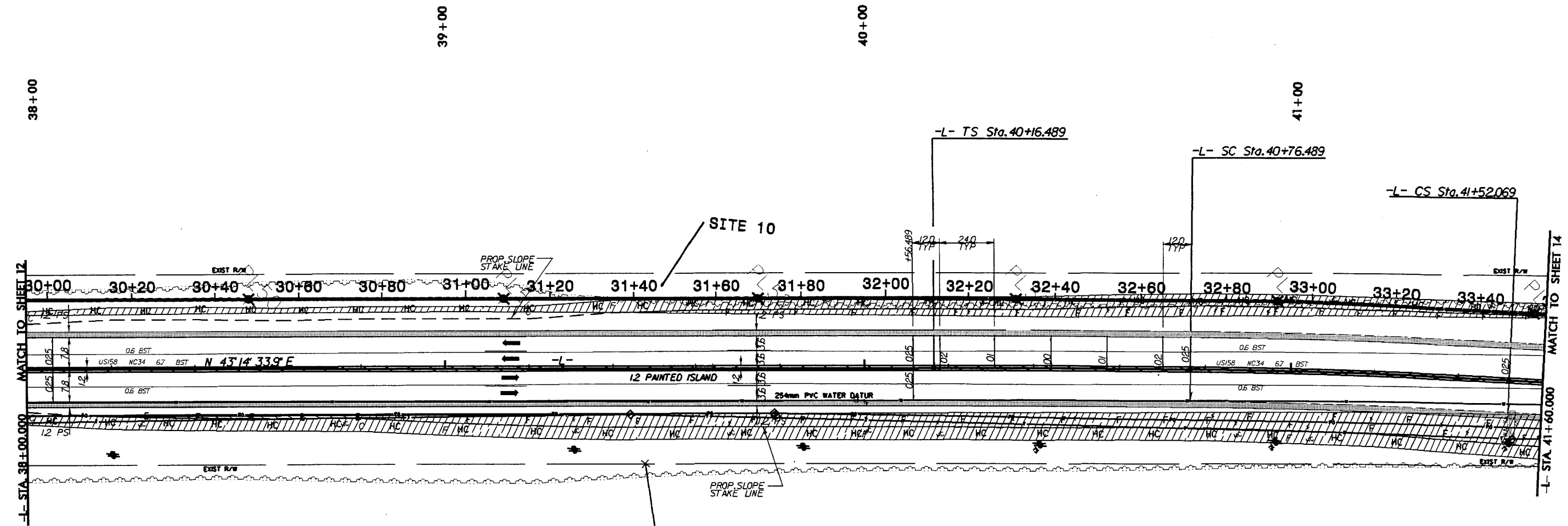
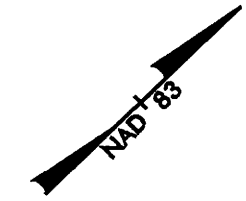
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 13 of 16

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

COLLEGE OF THE ALBEMARLE
D.B. 80, PG. 362



ROBERT LUTHER
D.B. 86, PG. 343

C.O. ROBINSON TRUST
D.B. 105, PG. 293

PIs Sta. 40+56.489	PI Sta. 41+14.282	PIs Sta. 41+72.069
Os = 0° 41' 15.2"	Δ = 1° 43' 55.8" (RT)	Os = 0° 41' 15.2"
Ls = 60.000	L = 75.580	Ls = 60.000
LT = 40.000	T = 37.793	LT = 40.000
ST = 20.000	R = 2,500.000	ST = 20.000
	SE = RC	
	V _{DES} = 100 KPH	

LEGEND

- DENOTES HAND CLEARING IN WETLAND
- MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

5/14/09
 07-APR-2008 13:52
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5/14/09

PROJECT REFERENCE NO. R-2414A SHEET NO. UO-11

METRIC

CONST. REV.
R/W REV.

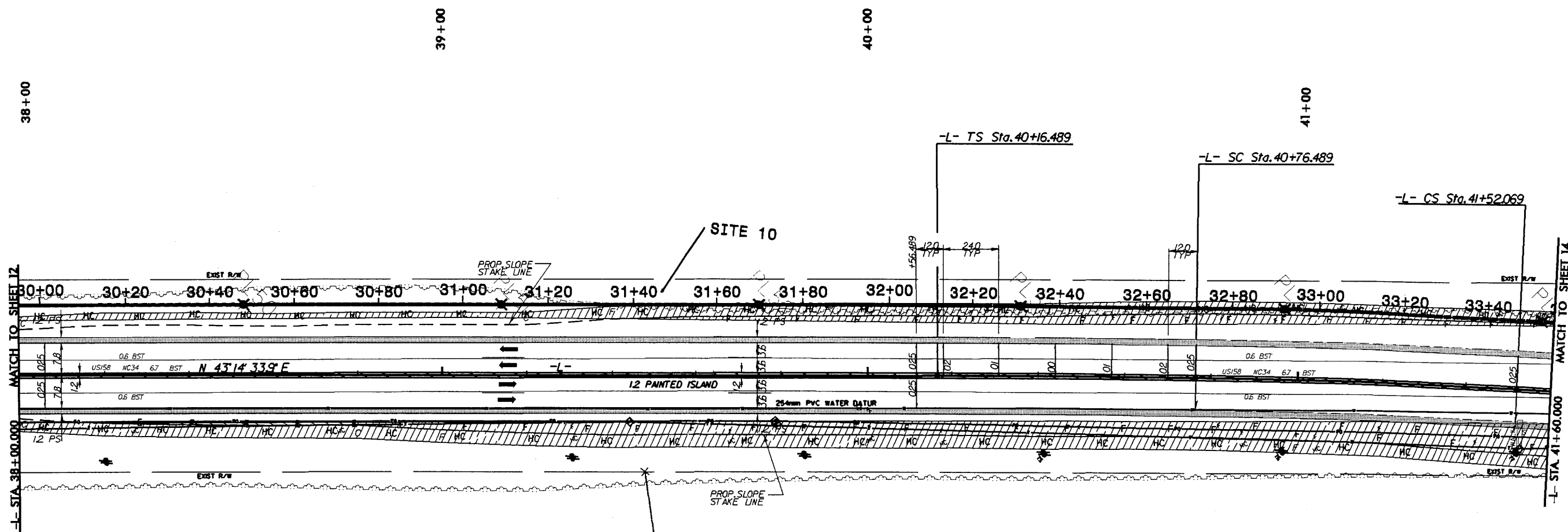
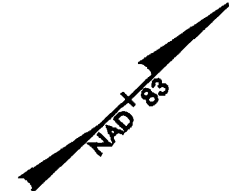
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

Utility Permit Drawing
Sheet 14 of 16

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

COLLEGE OF THE ALBEMARLE
D.B. 00, PG. 342



ROBERT LUTHER
D.B. 96, PG. 843

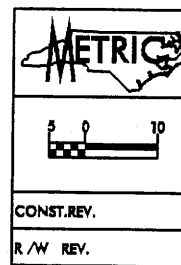
C.O. ROBINSON TRUST
D.B. 105, PG. 293

PIs Sta. 40+56.489	PI Sta. 41+14.282	PIs Sta. 41+72.069
GS = 0' 4" 15.2"	Δ = 1' 43" 55.8" (RT)	GS = 0' 4" 15.2"
Ls = 60.000	L = 75.580	Ls = 60.000
LT = 40.000	T = 37.793	LT = 40.000
ST = 20.000	R = 2,500.000	ST = 20.000
	SE = RC	
	V _{DES} = 100 KPH	

LEGEND

- DENOTES HAND CLEARING IN WETLAND
- MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

07-APR-2008 15:50
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UTILITIES BY OTHERS

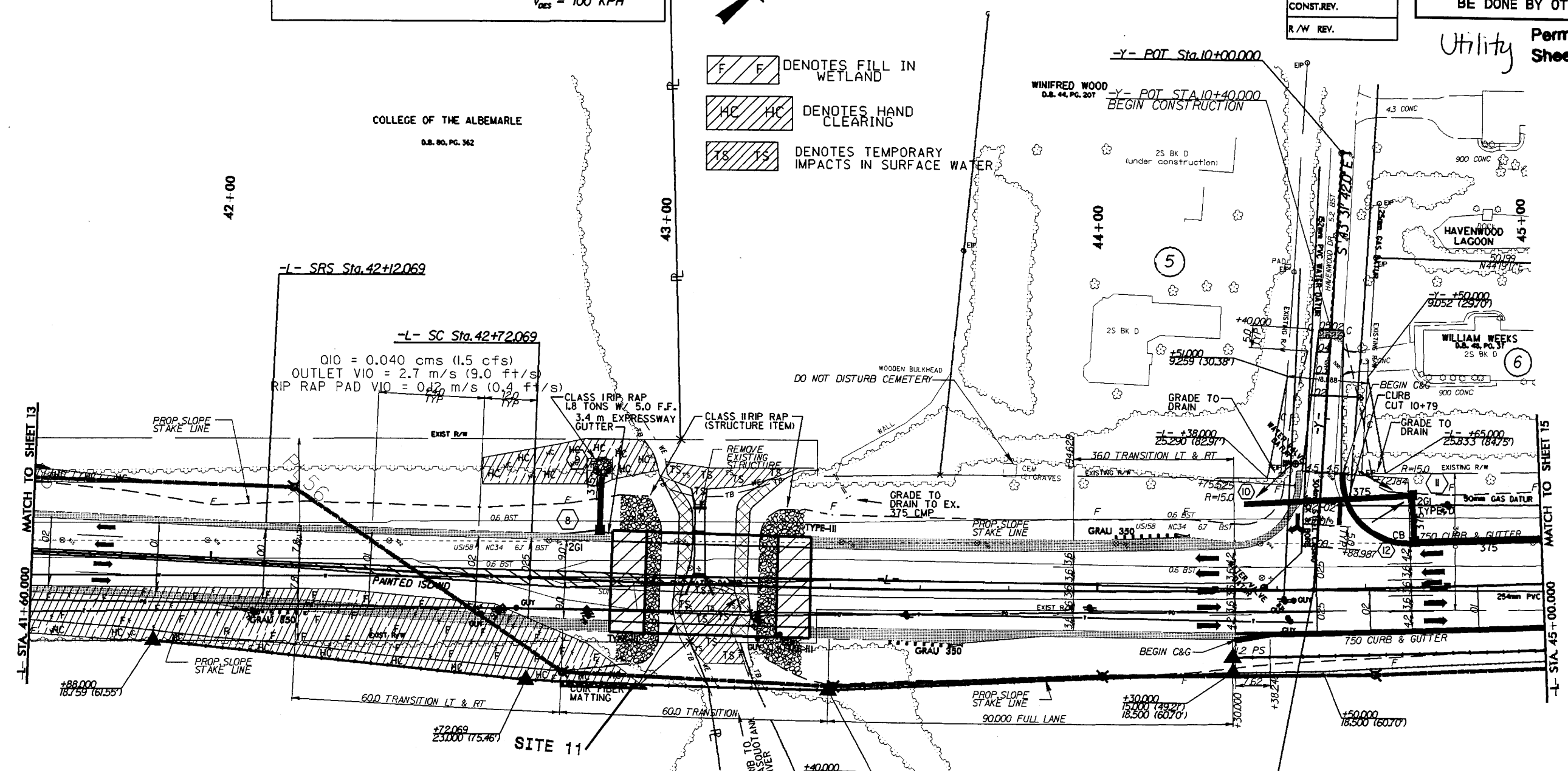
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility Permit Drawing Sheet 15 of 16

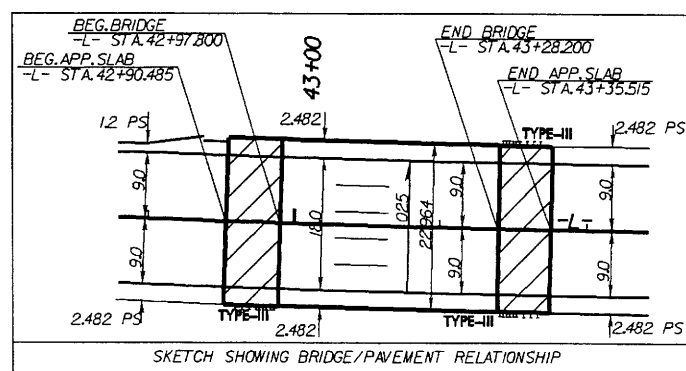
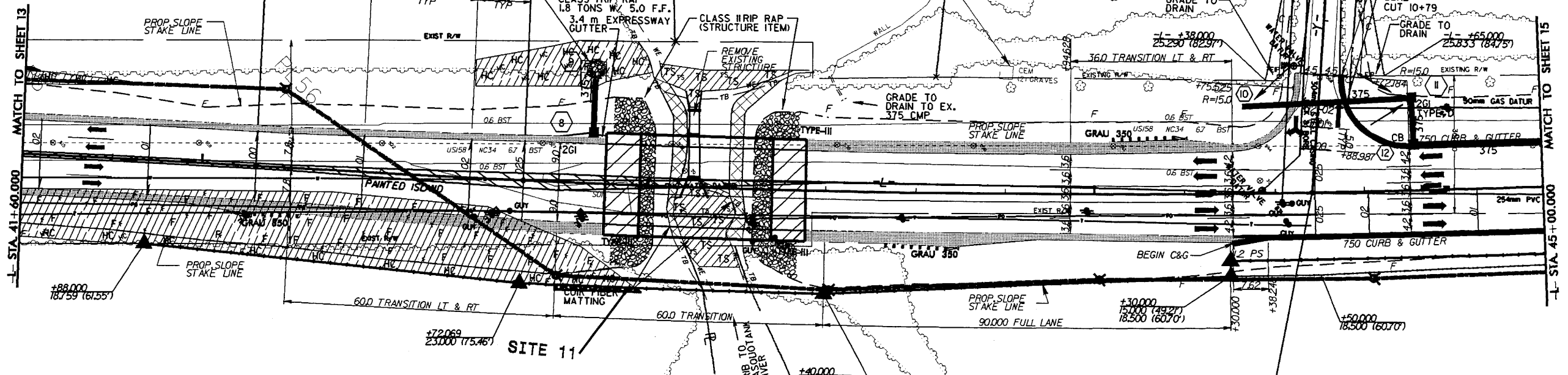
Pls Sta 41+72.069	Pls Sta 42+52.069	Pl Sta 44+20.646
Es = 0' 4" 15.2	Es = 0' 4" 15.2	Δ = 6' 48" 08.7 (LT)
Ls = 60.000	Ls = 60.000	L = 296.804
Lt = 40.000	Lt = 40.000	T = 148.577
ST = 20.000	ST = 20.000	R = 2500.000
		SE = RC
		V _{DES} = 100 KPH



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



-L- SRS Sta. 42+12.069
 -L- SC Sta. 42+72.069
 QIO = 0.040 cms (1.5 cfs)
 OUTLET VIO = 2.7 m/s (9.0 ft/s)
 RIP RAP PAD VIO = 0.2 m/s (0.4 ft/s)



3
C.O. ROBINSON TRUST
D.B. 105, PG. 293

4
C.O. ROBINSON TRUST
D.B. 105, PG. 293

LEGEND
 DENOTES HAND CLEARING IN WETLAND
 MATTING WILL BE USED TO INSTALL POWER POLES IN WETLAND

5/14/08 07-APR-2008 13:49 es:\p\m\c\p\environmental\R-2414A_UT_12.PSH.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)				
1	-L- 47+83 LT / 47+94 RT	1 @ 30" RCP						0.01							
2	-L- 51+60 LT / 51+95 RT	1 @ 30" RCP	0.09					0.05							
3	-L- 55+12 LT / 56+49 RT -L- 57+44 / 59+45 RT	1 @ 8' x 6' RCBC	0.65 0.30		0.09			0.26			0.04	0.01	121		29
4	-L- 62+65 LT / 62+94 RT	1 @ 24" RCP	0.06					0.04							
5	-L- 67+19 LT / 67+70 RT	1 @ 30" RCP	0.08					0.06							
6	-L- 72+48 LT / 74+48 RT	2 @ 6' x 5' RCBC	0.85		0.01			0.37		0.05	0.01	0.01	92		21
Old SITE 7	-L- 82+23 / 82+43 RT	SITE DELETED													
7	-L- 88+60 / 89+28 LT	1 @ 10' x 5' RCBC	0.38					0.16		0.02	0.01	0.01	83		19
TOTALS:			2.42		0.10			0.95		0.11	0.03	297			69

0.22 Ac of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

Permit Drawing
Sheet 1 of 38

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT 8.T020401 (R-2414B)
US 158 - NC 34 WIDENING

SHEET

June-08

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS								
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)					
1	-L- 47+83 LT / 47+94 RT	1 @ 750 RCP						0.003									
2	-L- 51+60 LT / 51+95 RT	1 @ 750 RCP	0.036					0.020									
3	-L- 55+12 LT / 56+49 RT	1 @ 2.4m x 1.8m RCBC	0.265					0.106			0.003				8.8		
	-L- 57+44 RT / 59+45 RT		0.120		0.038												
4	-L- 62+65 LT / 62+94 RT	1 @ 600 RCP	0.026					0.017									
5	-L- 67+19 LT / 67+70 RT	1 @ 750 RCP	0.032					0.024									
6	-L- 72+48 LT / 74+48 RT	2 @ 1.8m x 1.5m RCBC	0.345		0.003			0.151			0.004		28.0		6.5		
Old Site 7	-L- 82+43 / 82+83 RT	SITE DELETED /															
7	-L- 88+60L / 89+28L	1 @ 3.0m x 1.5m RCBC	0.154					0.064			0.004		25.4		5.7		
TOTALS:			0.978		0.041			0.385			0.011		90.4		21.0		

0.087 Ha of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

Permit Drawing
Sheet 2 of 38

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CAMDEN COUNTY
PROJECT 8-T020401 (R-2414B)
US 158 - NC 34 WIDENING

Project No. 8.T020401 (R-2414B)

Property Owner List

Site NO.	Property NO.	Name DB and Pg	Address
1	5	Pecan Farms LLC DB 237 PG 728	203 Dogwood Tr. Elizabeth City NC 27909
2	16	Linda Sue Lamb Hinton WB 99E, PG 22	135 Cottonwood Dr Hertford NC 27944
	14	Fred E. Upton, Jr., ET UX DB 42, Pg 615 DB 111, Pg 278	165 US 158 West Camden NC 27921
	13	Fred E. Upton, Heirs DB 22, Pg 468 DB 111, Pg 401	165 US 158 West Camden NC 27921
3	23	A & S Properties, LLC DB 157, Pg 769	913 Business Park Drive Chesapeake VA 23320
	24	Blue Sky Developments DB 138, Pg 109 PC-3, CL 77-B (PLAT)	300 Bridge Court #101 Camden NC 27921
	22	Ricky and Sheila Edwards DB 142, Pg 536	PO BOX 336 Shiloh NC 27974
	25	Camden County Board of Education DB 31, Pg 419 MB 18, Pg 551A DB 35, Pg 511 DB 62, Pg 15 DB 83, Pg 451	174 North 343 Camden NC 27921

(continued)

Permit Drawing
Sheet 3 of 38

**N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS**

CAMDEN COUNTY

**PROJECT: 8.T020401 (R-2414B)
US 158 - NC 34 WIDENING**

Project No. 8.T020401 (R-2414B)

Property Owner List

Site NO.	Property NO.	Name DB and Pg	Address
4	32	Mary M. Gordon DB 95, Pg 491 DB 116, Pg 890	104 North 343 Camden NC 27921
	34	Glen D. Gordon, ET UX DB 94, Pg 280 DB 83, Pg 679 DB 128, Pg 504 DB 87, Pg 181 (Post Office Lease) DB 132, Pg 160 (Store Leased)	128 Billeet S. Bridge Rd Camden NC 27921
5	32	Mary M. Gordon DB 46, Pg 316A	104 North 343 Camden NC 27921
	39	TIDEWATER Agronomics	1601 N. Road St. Elizabeth City NC 27909
	38	Everything Real Estate LLC	PO Box 310 Camden NC 27921
	36	George Wood Farms, Inc. DB 115, Pg 607 DB 115, Pg 621	PO Box 159 Camden NC 29721
6	36	George Wood Farms, Inc. DB 115, Pg 607 DB 115, Pg 621	PO BOX 159 Camden NC 29721
	43	Albemarle Hospital, ET AL DB 120, Pg 372 DB 113, Pg 670 (MAP)	1144 North Road St. Elizabeth City NC 27909
	42	James Roebuck + Elliot W. Jacobs	PO BOX 1554 Elizabeth City NC 27906

(continued)

Permit Drawing
Sheet 4 of 38

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CAMDEN COUNTY

PROJECT: 8.T020401 (R-2414B)
US 168 - NC 34 WIDENING

SHEET ___ OF ___

9/15/05

REVISED 2/20/05

Project No. 8.T020401 (R-2414B)

Property Owner List

Site NO.	Property NO.	Name DB and Pg	Address
6 (Cont.)	(16A)	Norfolk Southern Railway Co. (Leased to Chesapeake & Albemarle R/R Co)	3 Commercial Place Norfolk VA 23510
	(44)	Brown Farms, Inc. DB 64, Pg 191 DB 54, Pg 175 (MAP)	343 North 34 Camden NC 27921
	(45)	Belcross Properties LLC	PO BOX 26 Camden NC 27921
8	(73)	Doris H. Harris DB 33, Pg 604 PC 1, SL 15A	265 East US 158 Camden NC 27921
	(74)	W. W. Owens + Sons Moving + Storage, Inc	PO BOX 503 Elizabeth City NC 27909
	(71)	Joseph O. Sawyer, ET UX DB 95, Pg 360 PC 1, Pg 12A	640 North 343 Camden NC 27921
	(75)	Linda S. Demuth, ET AL DB 119, Pg 930	Wilhelmshoeh 27A Forchheim GR 91301
	(72)	W.W. Owens & Sons Moving & Storage, Inc. DB 81, Pg 700	PO BOX 503 Elizabeth City NC 27909
	(76)	Horace Melville Cuthrell, Jr., ET UX DB 78, Pg 809 PC 1, 163A	109 North 343 Camden NC 27921
	(77)	Wallace G. Cahoon DB 79, Pg 413 PC 1, SL 1A	1540 Cedar Road Chesapeake VA 23320

Permit Drawing
Sheet 5 of 38

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CAMDEN COUNTY

PROJECT: 8T020401 (R-2414B)
US 158 - NC 34 WIDENING

SHEET ___ OF ___

9/15/03

TIP PROJECT: R-2414B

CONTRACT:

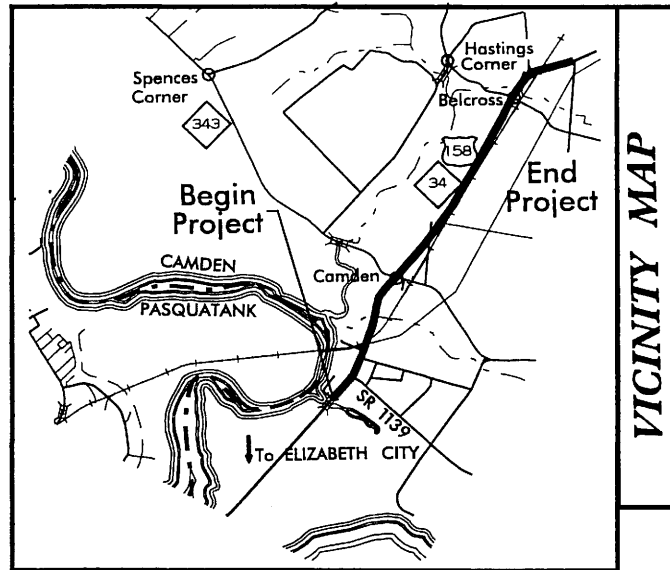
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CAMDEN COUNTY

LOCATION: US 158-NC 34 FROM NORTH OF SR 1257
TO EAST OF NC 34 IN BELCROSS

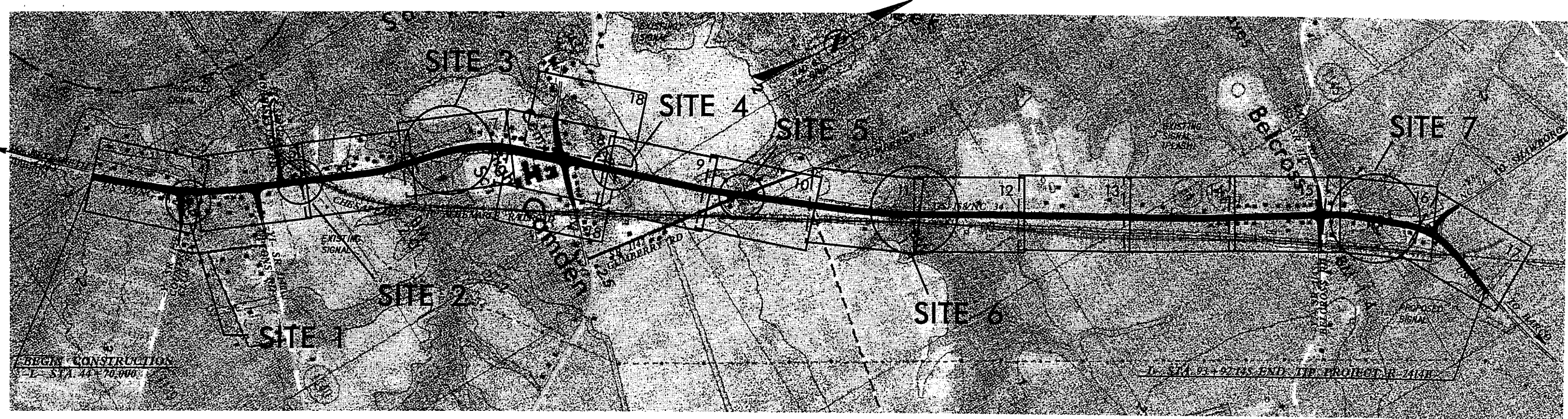
TYPE OF WORK: GRADING, DRAINAGE, PAVING,
CURB & GUTTER, CULVERTS & SIGNALS

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



<p>ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN</p>	STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	N.C.	R-2414B	1	
	STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
	34430.1.1	STP-158(2)	PE	
	34430.2.5		ROW & UTILITIES	

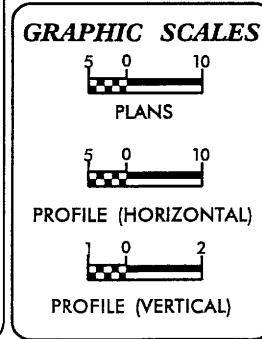
Permit Drawing
Sheet 6 of 38



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT (2009) = 26,000
ADT (2029) = 41,500
DHV = 12%
D = 60%
T = 6% *
V = 80 km/h
* (TTST 2%+ DUAL 4%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2414B =	4.823 Km
TOTAL LENGTH TIP PROJECT R-2414B =	4.823 Km

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 15, 2006	EDWARD G. WETHERILL, PE PROJECT ENGINEER
LETTING DATE: NOVEMBER 17, 2009	
NCDOT CONTACT:	B. DOUG TAYLOR, PE ROADWAY DESIGN PROJECT ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

15-JUN-2008 15:27
C:\p1\2414b\2414b.prm-tah.dgn

REVISIONS

R/W REVISION - REVISED R/W ALONG -L- & -Y- TO SHOW BEING ACQUIRED UNDER NCDOT PROJECT R-2414A, B&M

R/W REVISION - ADDED PARCEL NO.5A & REVISED THE PROPERTY OWNER NAME ON PARCEL NO.5, B&M

WETHERILL ENGINEERING

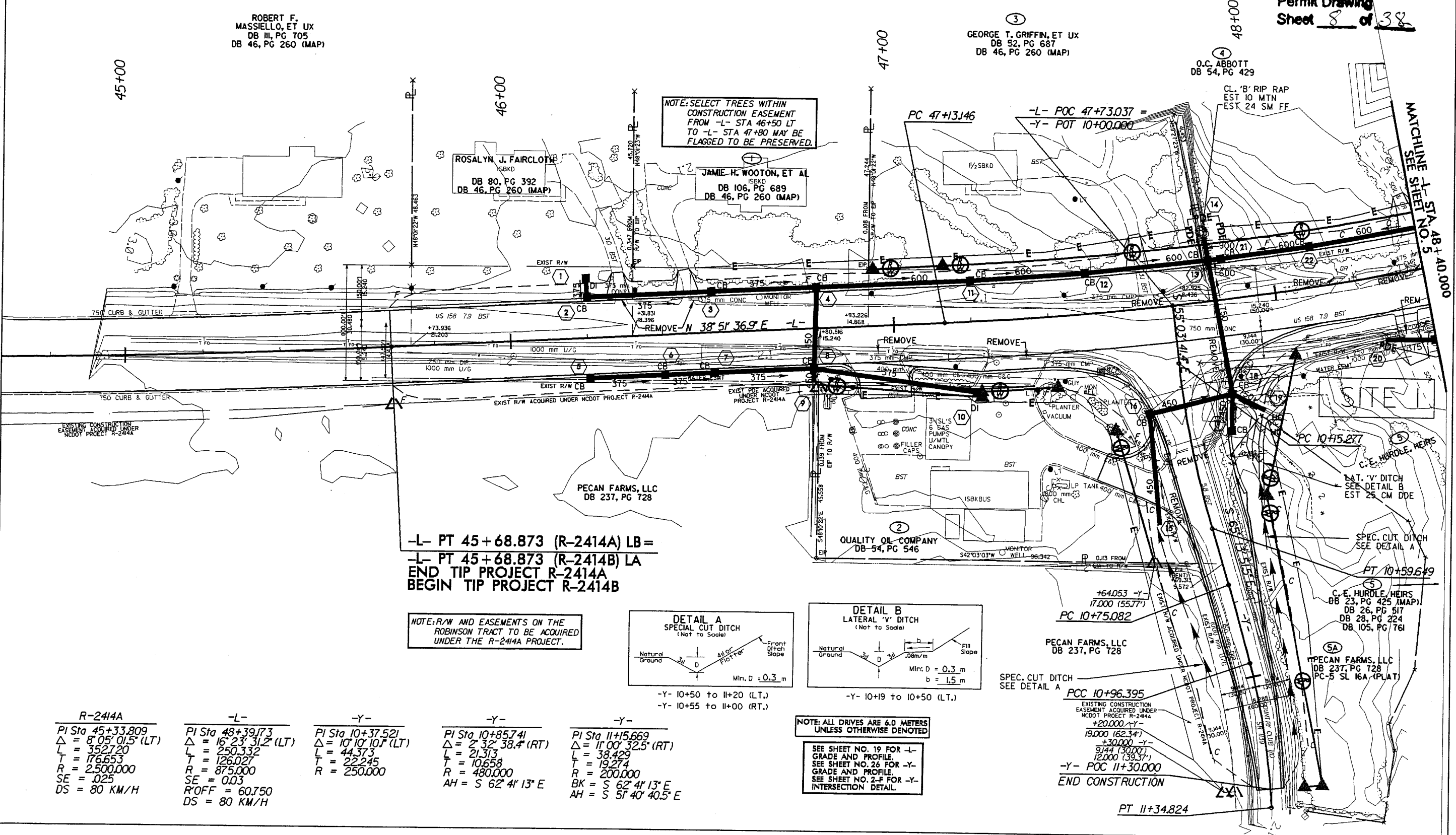
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 CIVIL/SITE DESIGN - GS/OPS - CONSTRUCTION OBSERVATION

TRANSITE CONSULTING

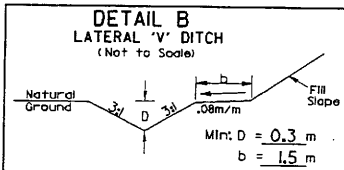
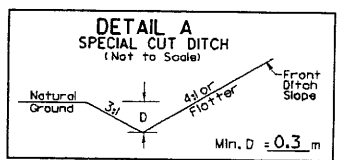
ENGINEERS, INC. (C/O 11/11/13)
 300 Penneck Drive, Suite G-10
 Raleigh, N.C. 27609

PROJECT REFERENCE NO. R-2414B		SHEET NO. 4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

Permit Drawing
 Sheet 8 of 38



**-L- PT 45+68.873 (R-2414A) LB =
 -L- PT 45+68.873 (R-2414A) LA
 END TIP PROJECT R-2414A
 BEGIN TIP PROJECT R-2414B**



R-2414A

PI Sta 45+33.809
 $\Delta = 8^{\circ}05'01.5''$ (LT)
 L = 352.720
 T = 176.653
 R = 2,500.000
 SE = .025
 DS = 80 KM/H

-L-

PI Sta 48+39.773
 $\Delta = 16^{\circ}23'31.2''$ (LT)
 L = 250.332
 T = 126.027
 R = 875.000
 SE = 0.03
 ROFF = 60.750
 DS = 80 KM/H

-Y-

PI Sta 10+37.521
 $\Delta = 10^{\circ}10'10.7''$ (LT)
 L = 44.373
 T = 22.245
 R = 250.000

-Y-

PI Sta 10+85.741
 $\Delta = 2^{\circ}32'38.4''$ (RT)
 L = 21.313
 T = 10.658
 R = 480.000
 AH = S 62° 4' 13" E

-Y-

PI Sta 11+15.669
 $\Delta = 11^{\circ}00'32.5''$ (RT)
 L = 38.429
 T = 19.274
 R = 200.000
 BK = S 62° 4' 13" E
 AH = S 51° 40' 40.5" E

**PECAN FARMS, LLC
 DB 237, PG 728**

PCC 10+96.395

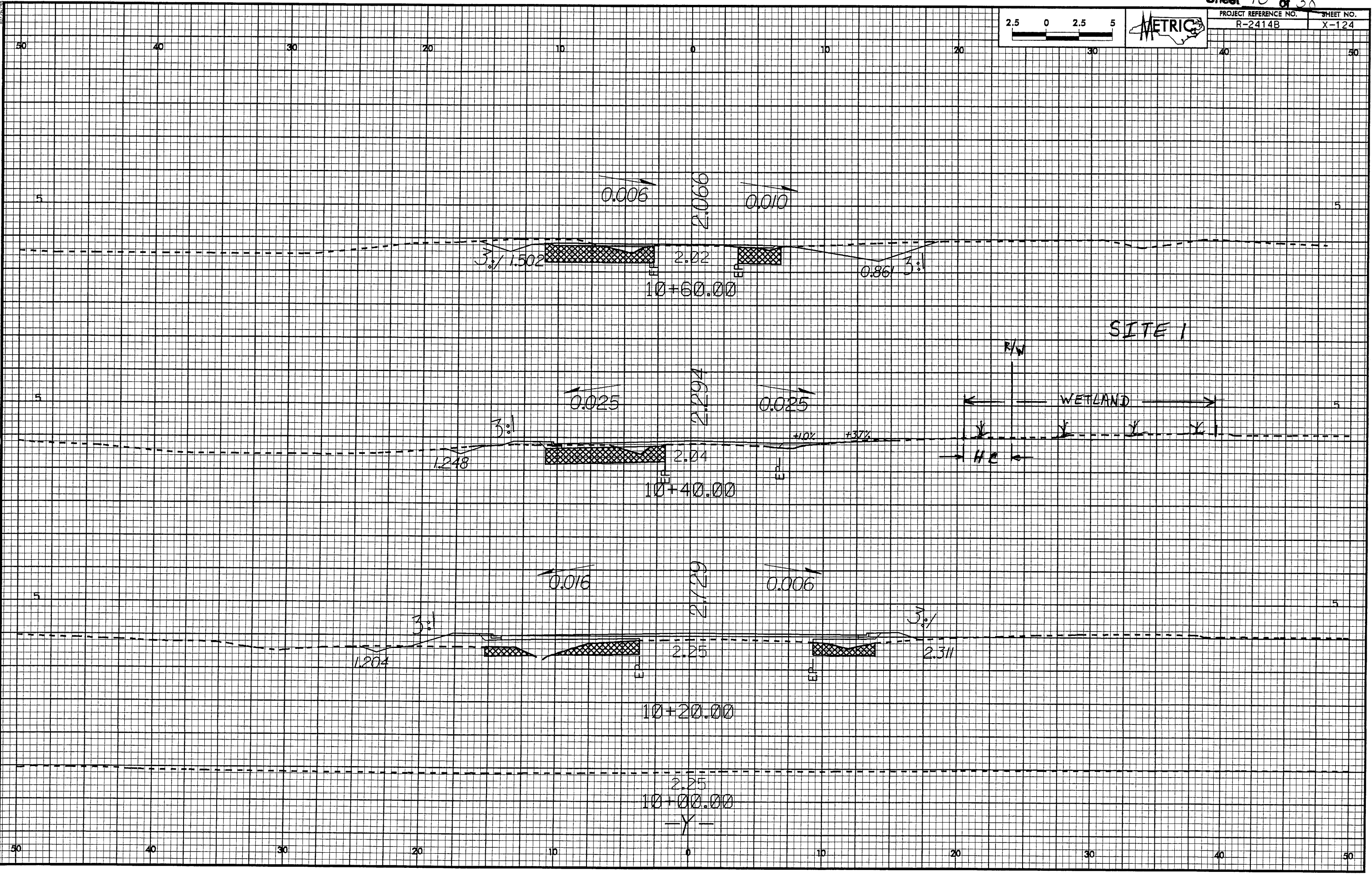
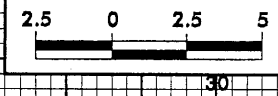
EXISTING CONSTRUCTION EASEMENT ACQUIRED UNDER NCDOT PROJECT R-2414A

+20,000 -Y-
 19,000 (62.34)
 +30,000 -Y-
 9,144 (30.00)
 12,000 (39.37)

-Y- POC 11+30.000

END CONSTRUCTION

24-114-2505-1-000
 Scale: 1" = 100'
 Date: 11/13/13
 File: R-2414B.dwg



21-099-2008_07
 T:\N\cg\2013\25
 25.dwg - rpl.dgn

REVISIONS

R/W REVISION - REVISED PROPERTY OWNER NAMES ON PARCEL NO.5,7,8,9,13,15 & 17. ADDED PARCEL NO.16A, B&M

R/W REVISION - ADDED PARCEL NO.7B & PROPERTY OWNER NAME, B&M

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

TRAN SITE CONSULTING
ENGINEERS, INCORPORATED
1800 Toddock Drive, Suite G-10
Kaleigh, N.C. 27609

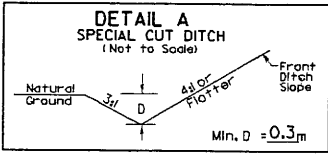
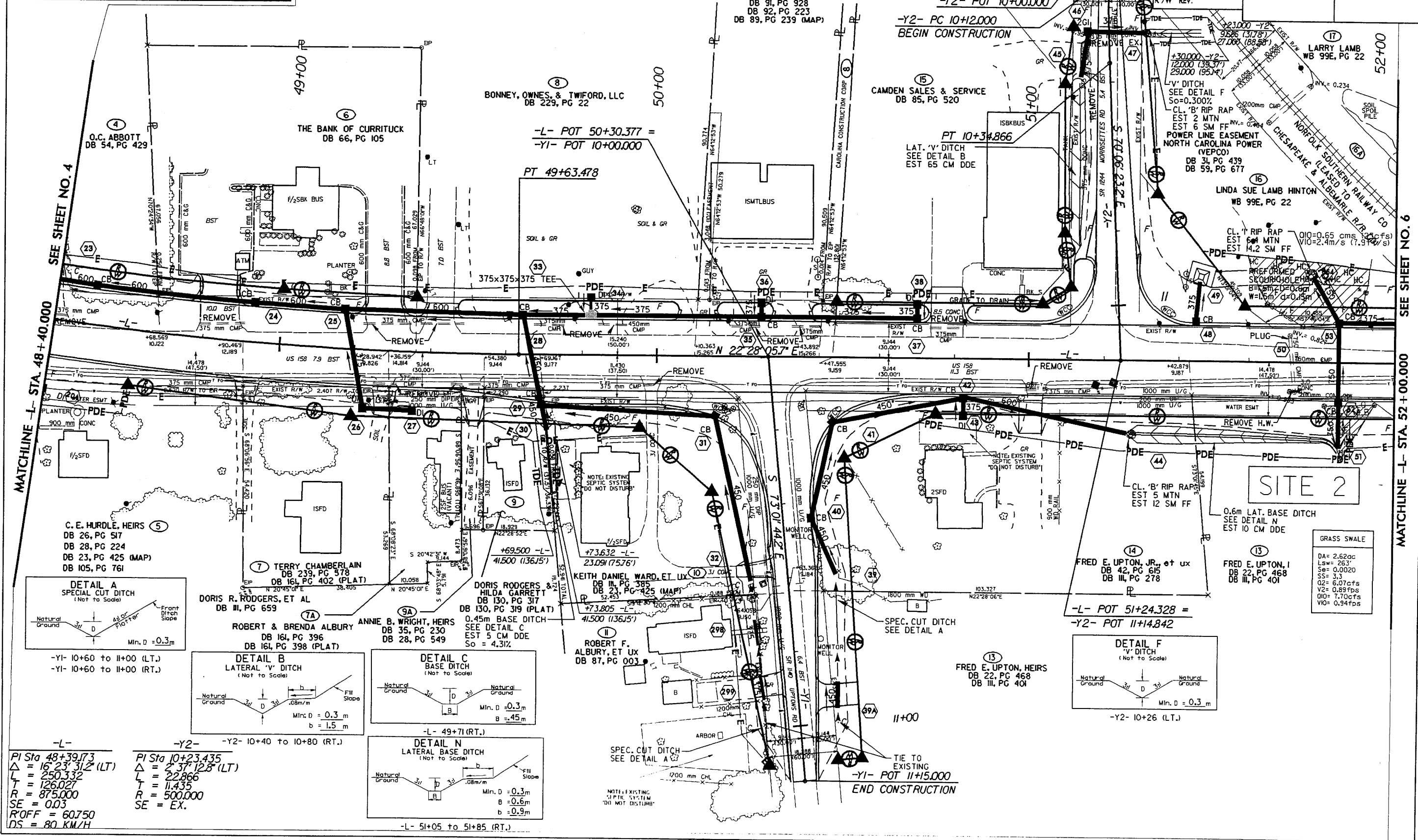
WETTERILL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GPS/S - CONSTRUCTION OBSERVATION

METRIC

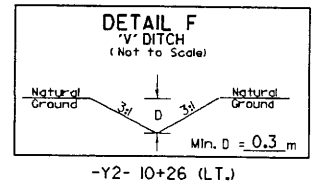
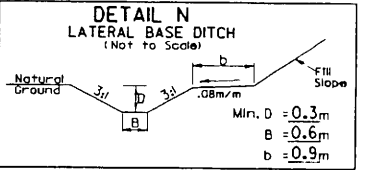
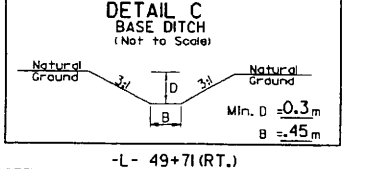
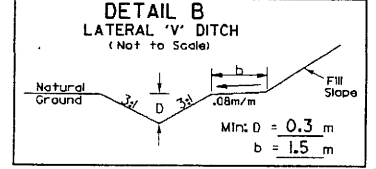
PROJECT REFERENCE NO. R-2414B SHEET NO. 5

R/W SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-Y1- 10+60 to 11+00 (LT.)
-Y1- 10+60 to 11+00 (RT.)



GRASS SWALE

DA = 2.62cc
Lsw = 26.3'
Ss = 0.0020
Ss = 3.3
Q2 = 6.07cfs
V2 = 0.89fps
Q10 = 7.70cfs
V10 = 0.94fps

-L-
PI Sta 48+39.73
Δ = 16.23' 31.2' (LT.)
L = 250.332
T = 126.027
R = 875.000
SE = 0.03
R/OFF = 60.750
DS = 80. KM/H

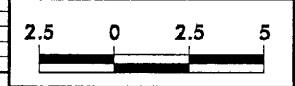
-Y2-
PI Sta 10+23.435
Δ = 2.37' 12.8' (LT.)
L = 22.866
T = 11.435
R = 500.000
SE = EX.

-L- 51+05 to 51+85 (RT.)

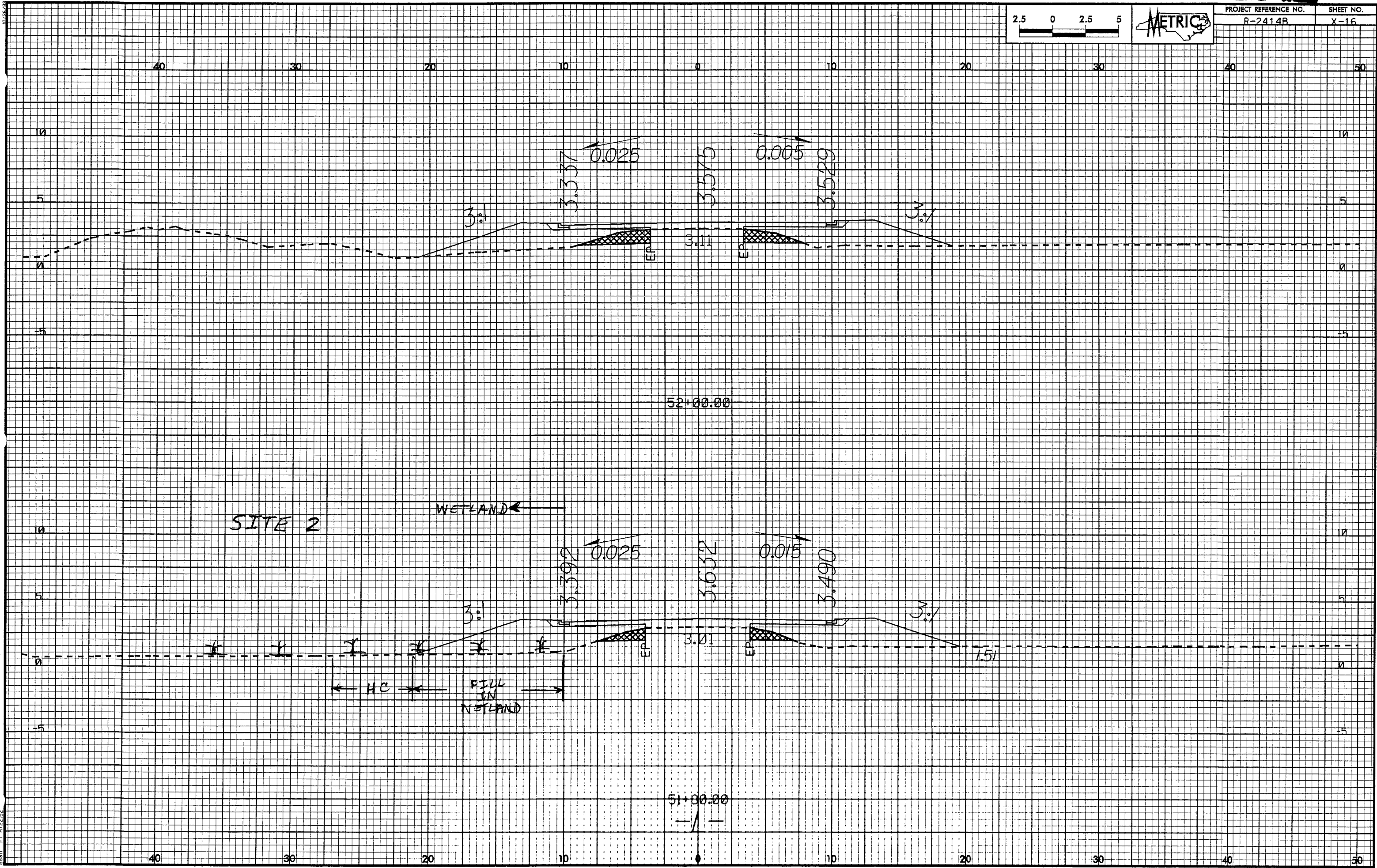
MATCHLINE -L- STA 48+40.000 SEE SHEET NO. 4

MATCHLINE -L- STA 52+00.000 SEE SHEET NO. 6

11/24/2008 09:52 I:\os\con\114\1142408\1142408-v-2414b-prm-phd05.dgn



PROJECT REFERENCE NO.	SHEET NO.
R-2414B	X-16



21-APR-2008 08:00:00
d:\p1\med\dgn

TRAN SITE CONSULTING
ENGINEERS, INCORPORATED
1200 Padcock Drive, Suite G-10
Raleigh, N.C. 27609

WATTS
ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/MS - CONSTRUCTION OBSERVATION

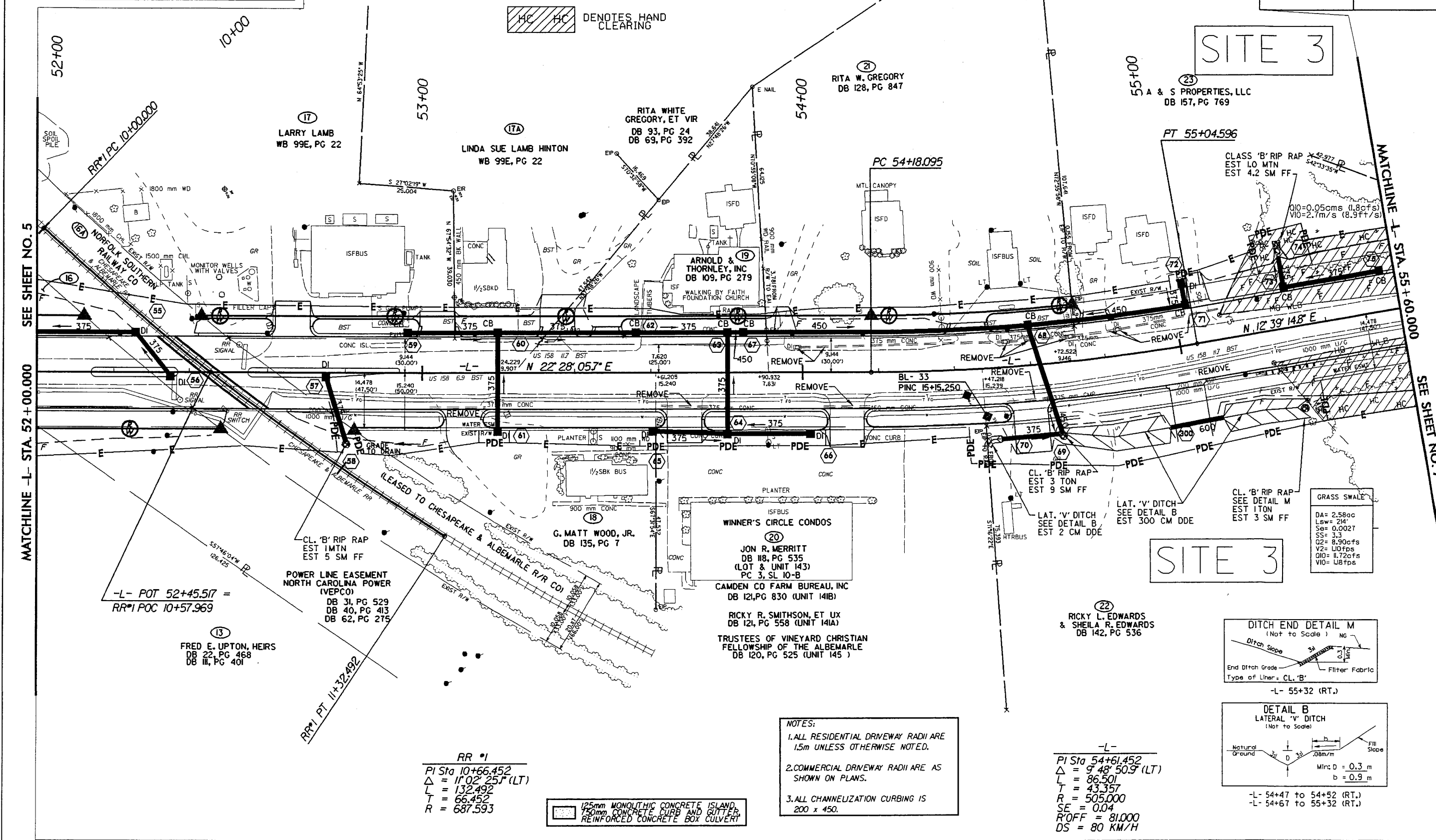


CONST. REV.
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
11/07/06 - REVISED ROW AND TCE ON PARCEL 22.(ABP)
R/W REVISION - REVISED PROPERTY OWNER NAMES ON PARCEL NO.13,17,18,19,20,21 & 23. ADDED PARCEL NO.16A & 17A.BAM
R/W REVISION - REVISED PROPERTY OWNER NAME ON PARCEL NO.22.BAM

DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING



SEE SHEET NO. 5

MATCHLINE -L- STA. 52 + 00.000

SEE SHEET NO. 7

11/07/06 - REVISED ROW AND TCE ON PARCEL 22.(ABP)

-L- POT 52+45.517 =
RR#1 POC 10+57.969

POWER LINE EASEMENT
NORTH CAROLINA POWER
(VEPCO)
DB 31, PG 529
DB 40, PG 413
DB 62, PG 275

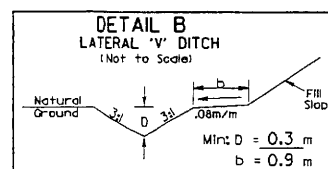
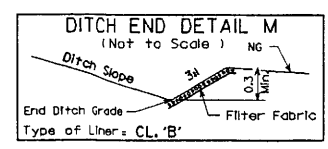
FRED E. UPTON, HEIRS
DB 22, PG 468
DB 11, PG 401

RR #1
PI Sta 10+66.452
Δ = 11° 02' 25" (LT)
L = 132.492
T = 66.452
R = 687.593

125mm MONOLITHIC CONCRETE ISLAND,
150mm CONCRETE CURB AND GUTTER,
REINFORCED CONCRETE BOX CULVERT

NOTES:
1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED.
2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
3. ALL CHANNELIZATION CURBING IS 200 x 450.

-L-
PI Sta 54+61.452
Δ = 9° 48' 50.9" (LT)
L = 86.501
T = 43.357
R = 505.000
SE = 0.04
R/OFF = 81.000
DS = 80 KM/H



GRASS SWALE
DA = 2.58cc
Lsw = 214'
Se = 0.0027
SS = 3.3
Q2 = 8.90cfs
V2 = 1.01fps
Q10 = 11.72cfs
V10 = 1.01fps

SITE 3

SITE 3

A & S PROPERTIES, LLC
DB 157, PG 769

RITA W. GREGORY
DB 128, PG 847

RITA WHITE
GREGORY, ET VIR
DB 93, PG 24
DB 69, PG 392

LINDA SUE LAMB HINTON
WB 99E, PG 22

LARRY LAMB
WB 99E, PG 22

ARNOLD &
THORNLEY, INC
DB 109, PG 279

G. MATT WOOD, JR.
DB 135, PG 7

JON R. MERRITT
DB 118, PG 535
(LOT & UNIT 143)
PC 3, SL 10-B

CAMDEN CO FARM BUREAU, INC
DB 121, PG 830 (UNIT 141B)

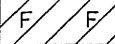
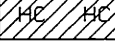
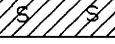
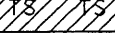
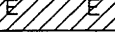
RICKY R. SMITHSON, ET UX
DB 121, PG 558 (UNIT 141A)

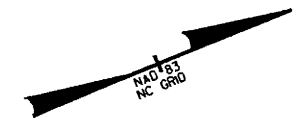
TRUSTEES OF VINEYARD CHRISTIAN
FELLOWSHIP OF THE ALBEMARLE
DB 120, PG 525 (UNIT 145)

RICKY L. EDWARDS
& SHEILA R. EDWARDS
DB 142, PG 536

REVISIONS

11/07/06 - REVISED ROW, TCE & PDE ON PARCEL 25.(ABP)
 R/W REVISION - REVISED PROPERTY OWNER NAMES ON PARCEL NO. 23 & 24. ADDED PARCEL NO. 24A & 25A. CORRECTED PROPERTY OWNER NAMES CHARLES H. HODGES & HOWARD S. STEVENS, HEIRS. BAM
 R/W REVISION - REVISED PROPERTY OWNER NAME ON PARCEL NO. 22. BAM

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



WETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GS/APS - CONSTRUCTION OBSERVATION

TRANSITE CONSULTING ENGINEERS, INCORPORATED
 300 Ponce de Leon Ave., Ste. G-10
 Raleigh, N.C. 27607

METRIC

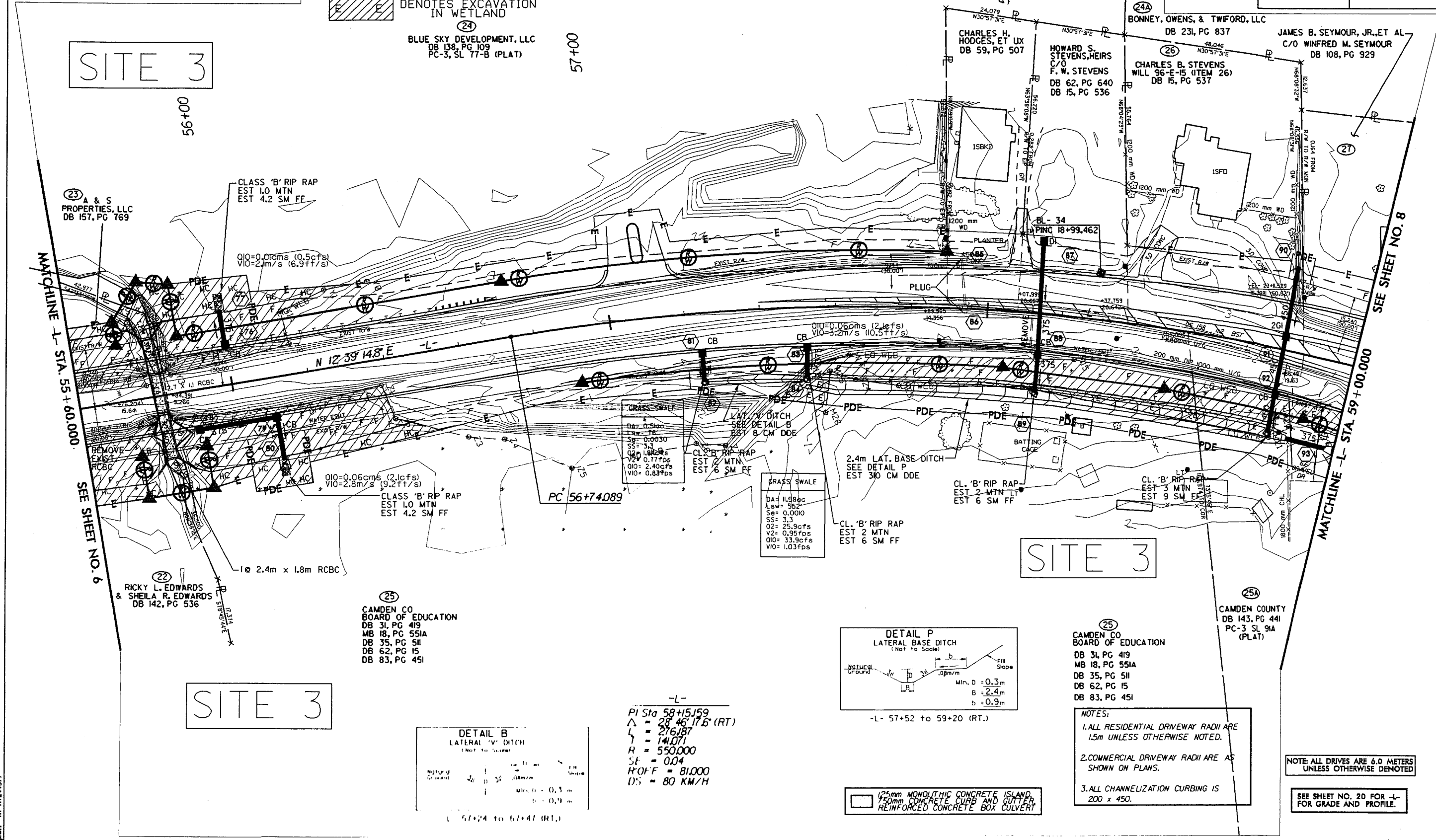
PROJECT REFERENCE NO. R-2414B SHEET NO. 7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. REV.
 R/W REV.



SITE 3

SITE 3

SITE 3

(24)
 BLUE SKY DEVELOPMENT, LLC
 DB 138, PG 109
 PC-3, SL 77-B (PLAT)

(23)
 A & S PROPERTIES, LLC
 DB 157, PG 769

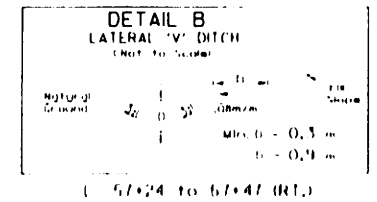
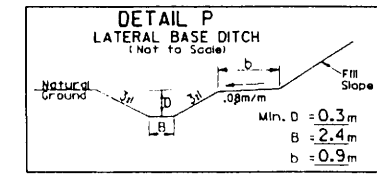
(22)
 RICKY L. EDWARDS & SHEILA R. EDWARDS
 DB 142, PG 536

(25)
 CAMDEN CO BOARD OF EDUCATION
 DB 31, PG 419
 MB 18, PG 551A
 DB 35, PG 511
 DB 62, PG 15
 DB 83, PG 451

(25A)
 CAMDEN COUNTY
 DB 143, PG 441
 PC-3 SL 91A (PLAT)

GRASS SWALE
 DA = 0.5000
 LW = 76
 SW = 0.0030
 SS = 3.1
 Q10 = 0.06cms (2.1cfs)
 V10 = 0.77fps
 Q10 = 2.40cfs
 V10 = 0.83fps

GRASS SWALE
 DA = 11.589c
 LW = 552
 SW = 0.0010
 SS = 3.3
 Q2 = 25.9cfs
 V2 = 0.95fps
 Q10 = 33.9cfs
 V10 = 1.03fps



-L-
 PI Sta 58+15.59
 Δ = 28° 46' 17.6" (RT.)
 L = 276.187
 R = 141.071
 SF = 0.04
 R/OFF = 81.000
 DS = 80 KM/H

125mm MONOLITHIC CONCRETE ISLAND,
 750mm CONCRETE CURB AND GUTTER,
 REINFORCED CONCRETE BOX CULVERT

NOTES:

1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED.
2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
3. ALL CHANNELIZATION CURBING IS 200 x 450.

NOTE: ALL DRIVES ARE 6.0 METERS UNLESS OTHERWISE DENOTED

SEE SHEET NO. 20 FOR -L- FOR GRADE AND PROFILE.

I:\cs\p0605_0609_0000\0609\0609.dwg AT 11/22/07
 I:\cs\p0605_0609_0000\0609\0609.dwg AT 11/22/07

REVISIONS
 R/W REVISION - REVISED PROPERTY OWNER NAME ON PARCEL NO.30. ADDED PARCEL NO.24A & 25A. BAM

TRAN SITE CONSULTING
 ENGINEERS, INCORPORATED
 300 Pasaden Drive, 3rd Fl
 Raleigh, N.C. 27609

METRIC

PROJECT REFERENCE NO. R-2414B SHEET NO. 8

R/W SHEET NO.

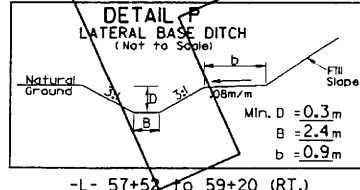
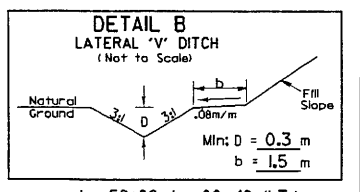
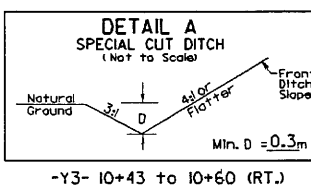
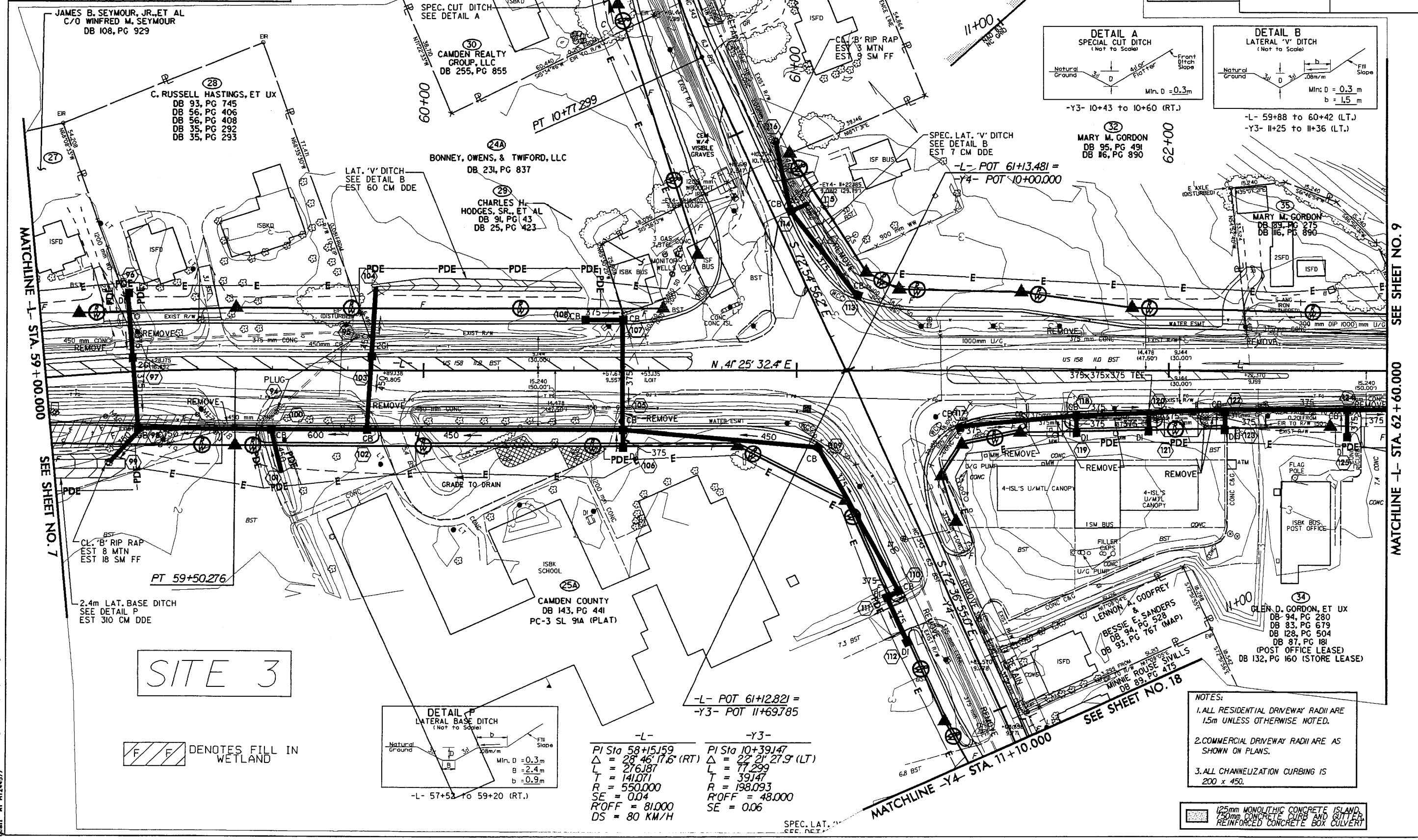
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.

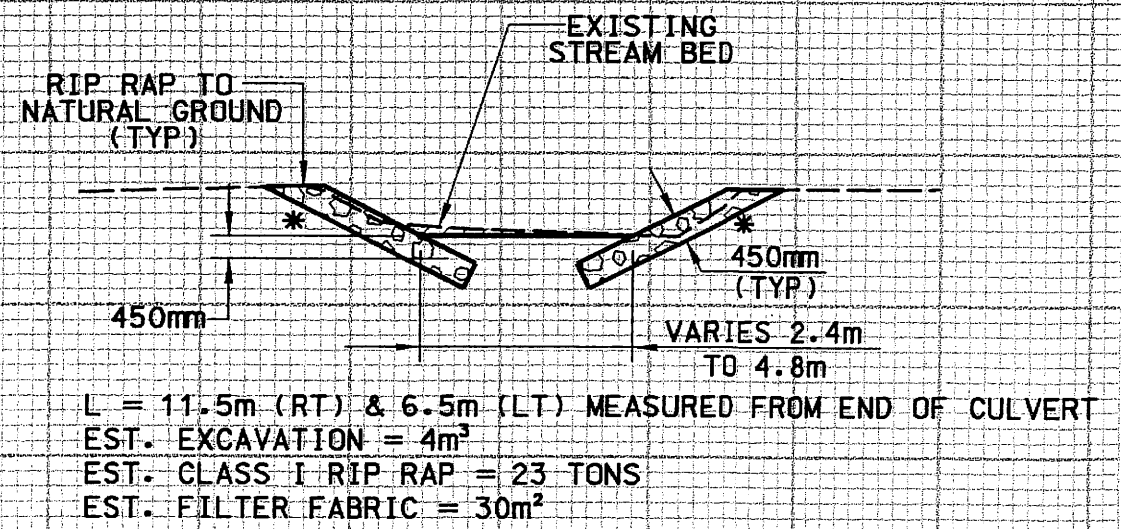
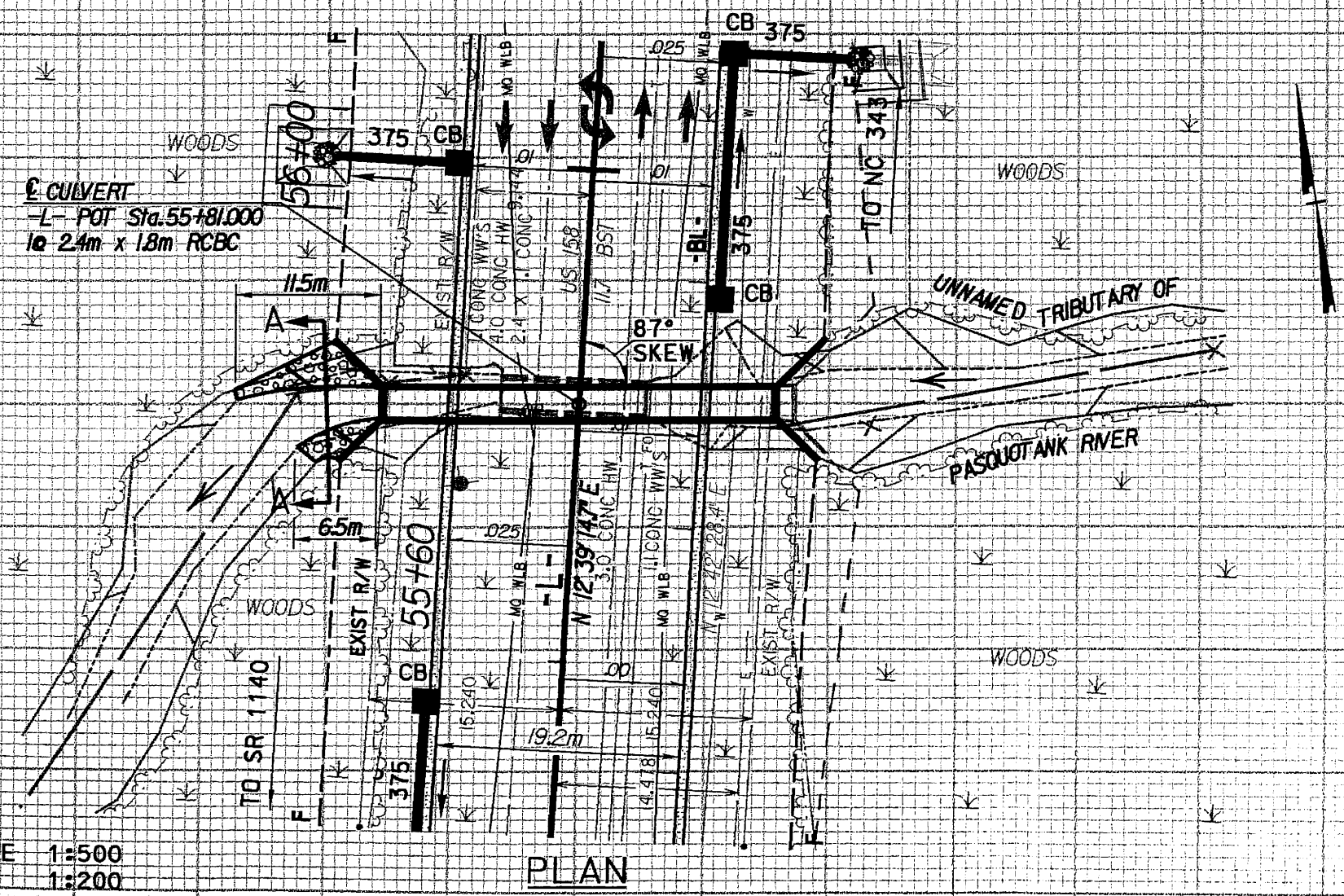
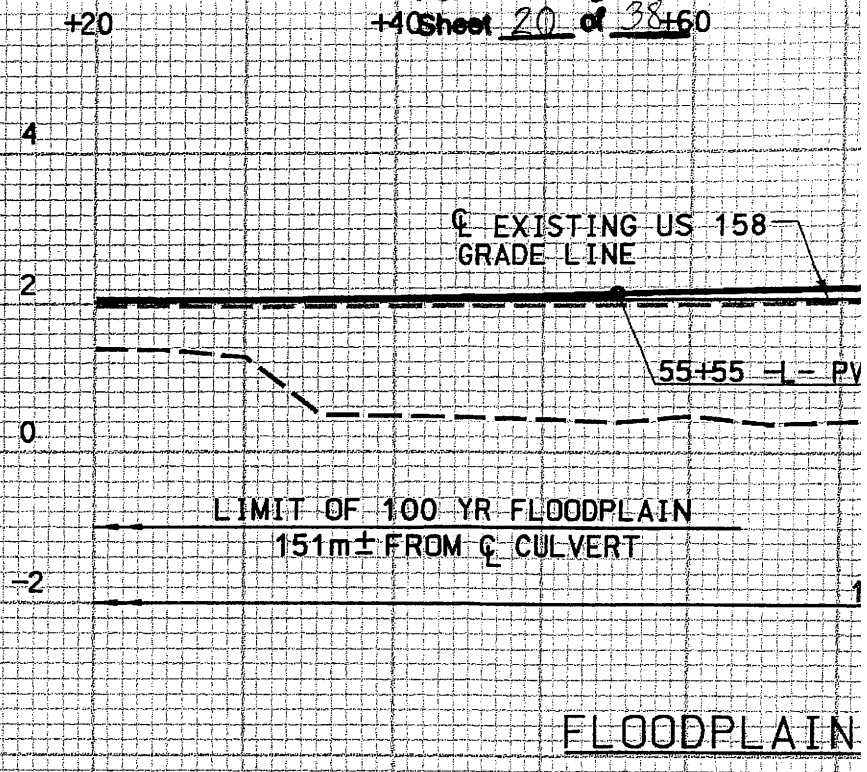
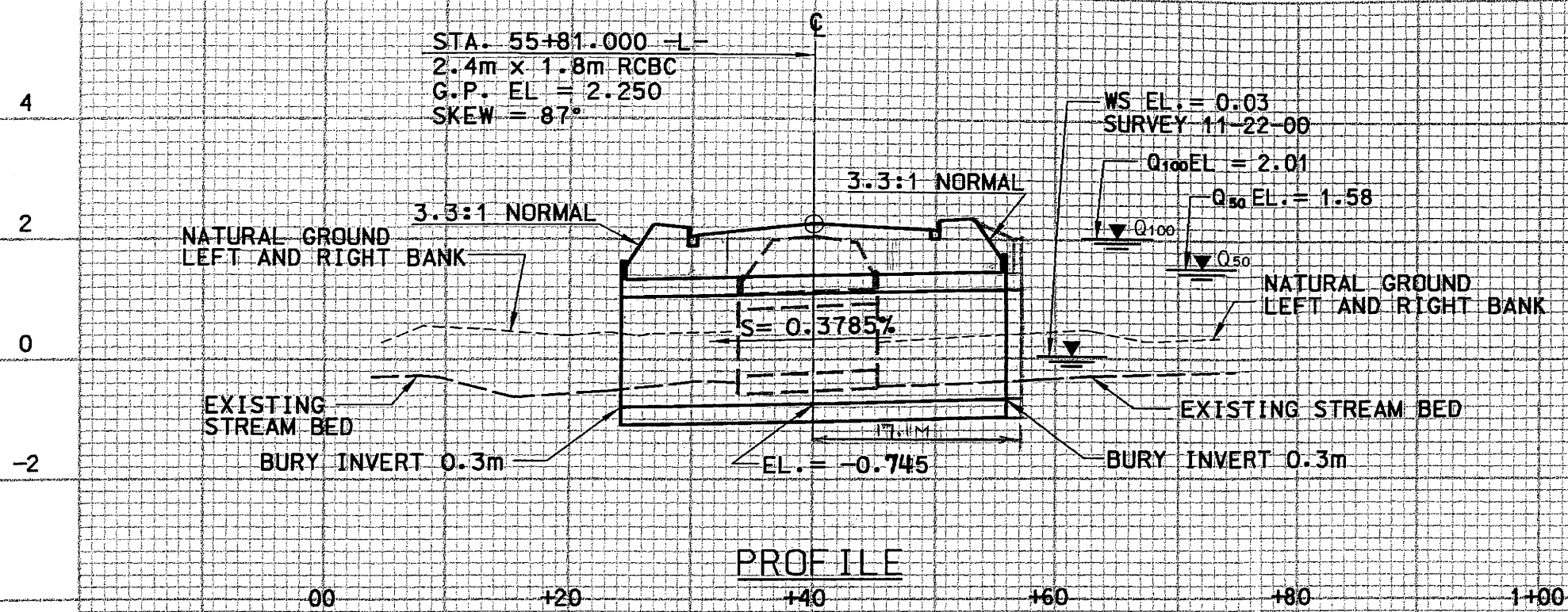


-L-	-Y3-
PI Sta 58+15.59	PI Sta 10+39.47
$\Delta = 28' 46' 17.6''$ (RT)	$\Delta = 22' 21' 27.9''$ (LT)
L = 276.87	L = 17.299
T = 141.071	T = 39.147
R = 550.000	R = 198.093
SE = 0.04	R'OFF = 48.000
R'OFF = 81.000	SE = 0.06
DS = 80 KM/H	

- NOTES:**
1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED.
 2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
 3. ALL CHANNELIZATION CURBING IS 200 x 450.

125mm MONOLITHIC CONCRETE ISLAND,
 150mm CONCRETE CURB AND GUTTER,
 REINFORCED CONCRETE BOX CULVERT

11/25/2008 10:33 AM
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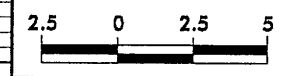


HORIZ. SCALE 1:500
 VERT. SCALE 1:200

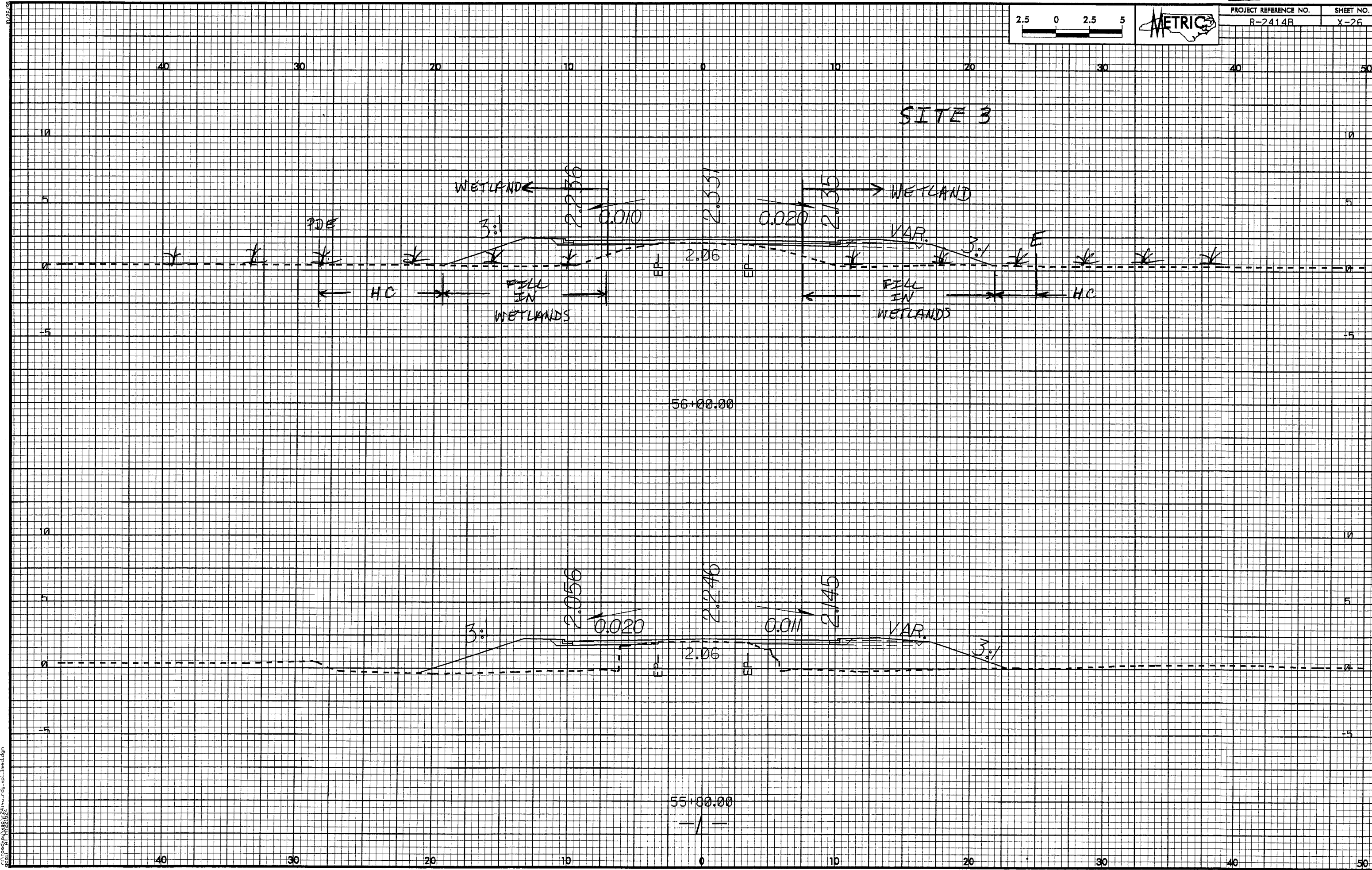
PLAN

SECTION A-A

CHANNEL EXCAVATION
 * SIDE SLOPES VARY FROM 2:1 TO EXISTING



PROJECT REFERENCE NO.	SHEET NO.
R-2414R	X-26

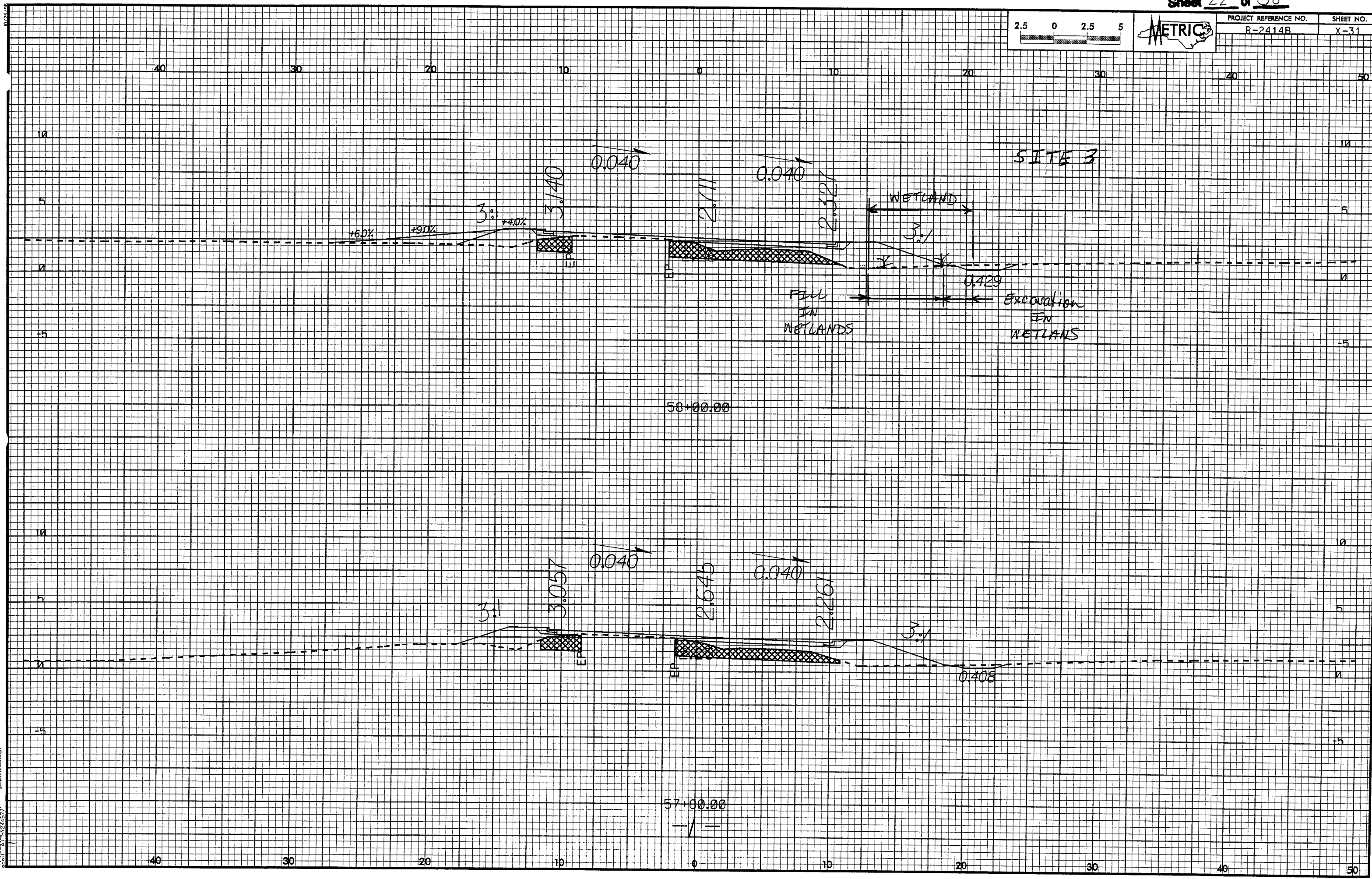
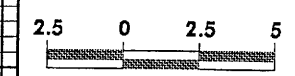


SITE 3

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55+00.00

21-APR-2008 08:14
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SITE 3

58+00.00

57+00.00

15-JUN-2008 12:52
c:\pood\env\2414b\22
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REVISIONS
 R/W REVISION - REVISED THE PROPERTY OWNER NAME AND PARCEL NO. ON PARCEL NO. 34. REVISED PROPERTY OWNER NAME FROM CHARLIE S. BARLETT TO JARED & STEPHANIE DALTON (NO CLAIM), BAM

WETTERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GEOTECHNICAL - CONSTRUCTION OBSERVATION

TRANSITE CONSULTING
 ENGINEERS, INCORPORATED
 100 Pasquot Drive, Suite G-10
 Raleigh, N.C. 27609

METRIC

PROJECT REFERENCE NO. R-2414B SHEET NO. 9

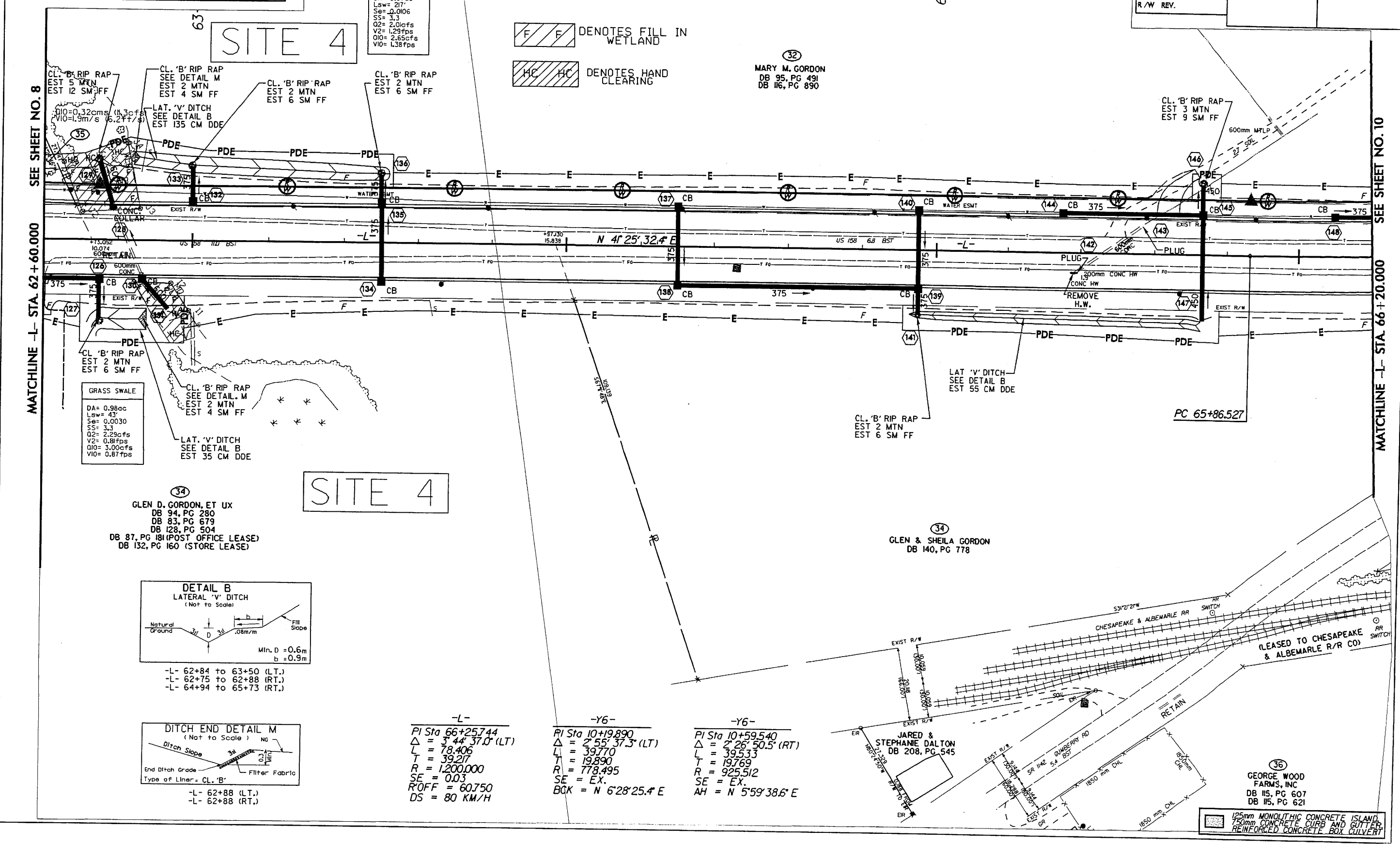
R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

CONST. REV.

R/W REV.

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



10/24/2008 10:52 AM
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 Plot: 10/24/2008 10:52 AM
 Plotter: HP DesignJet 2414

REVISIONS

R/W REVISION - REVISED THE PROPERTY OWNER NAME AND PARCEL NO. ON PARCEL NO. 34. REVISED PROPERTY OWNER NAME FROM CHARLIE S. BARLETT TO JARED & STEPHANIE DALTON (NO CLAIM). BAM

W. ETHRELL ENGINEERING
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CON./SITE DESIGN - GS/RPS - CONSTRUCTION OBSERVATION

TRAN SITE CONSULTING ENGINEERS, INCORPORATED
1300 Fawcett Drive, Suite G-10
Raleigh, N.C. 27609

METRIC

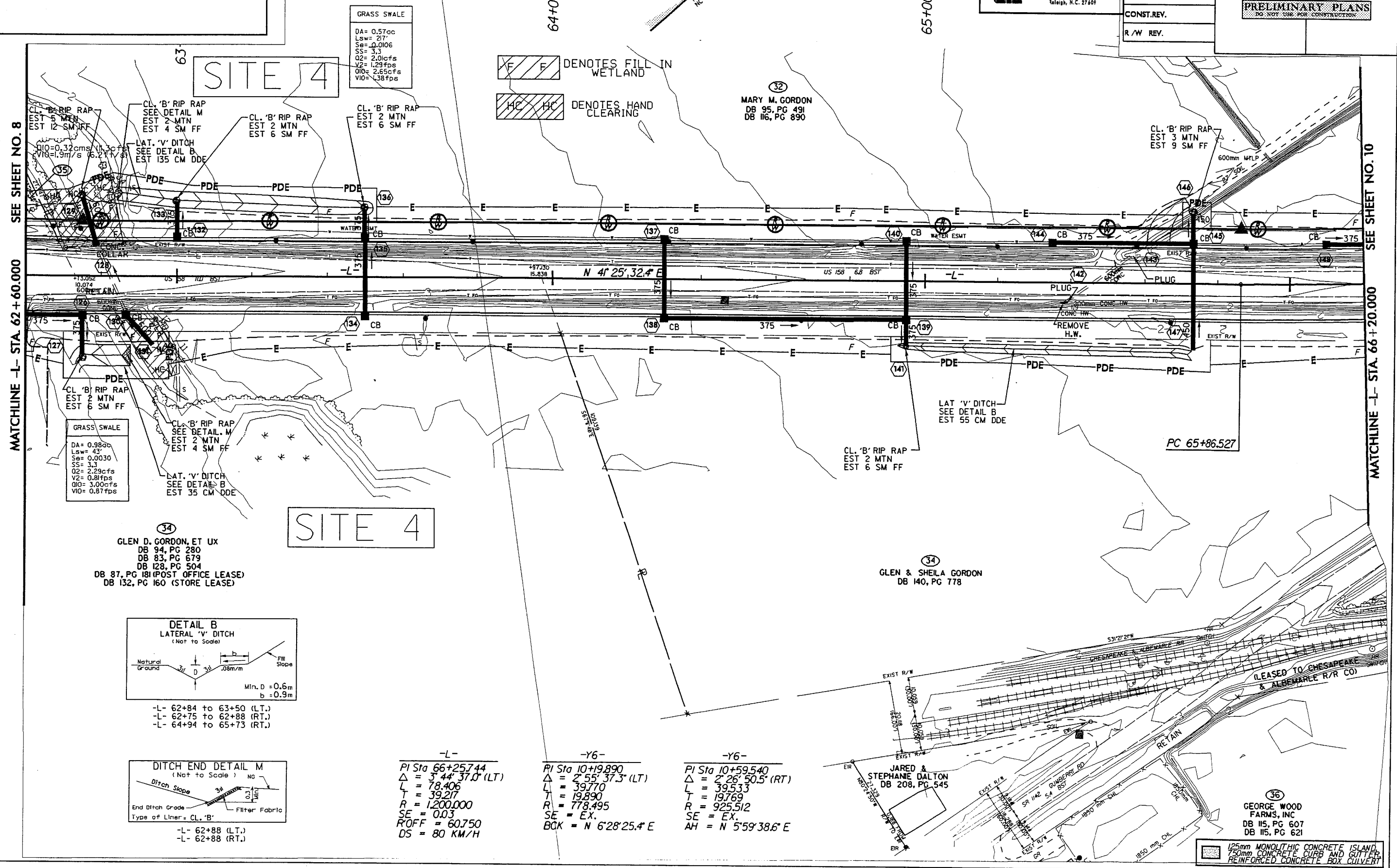
PROJECT REFERENCE NO. R-2414B SHEET NO. 9

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.
R/W REV.



SEE SHEET NO. 8
MATCHLINE -L- STA. 62 + 60.000

SEE SHEET NO. 10
MATCHLINE -L- STA. 66 + 20.000

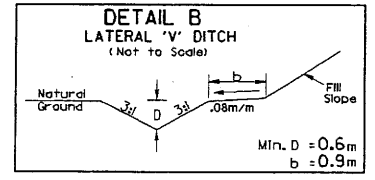
GRASS SWALE
DA= 0.57ac
LSw= 217'
Se= 0.0106
SS= 3.3
Q2= 2.0cfs
V2= 1.29fps
Q10= 2.55cfs
V10= 1.38fps

GRASS SWALE
DA= 0.98ac
LSw= 43'
Se= 0.0030
SS= 3.3
Q2= 2.29cfs
V2= 0.81fps
Q10= 3.00cfs
V10= 0.87fps

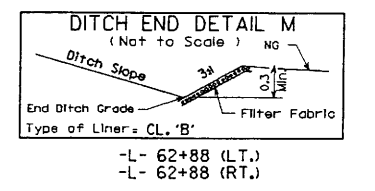
34
GLEN D. GORDON, ET UX
DB 94, PG 280
DB 83, PG 679
DB 128, PG 504
DB 87, PG 181 (POST OFFICE LEASE)
DB 132, PG 160 (STORE LEASE)

34
GLEN & SHEILA GORDON
DB 140, PG 778

36
GEORGE WOOD FARMS, INC
DB 115, PG 607
DB 115, PG 621



- L- 62+84 to 63+50 (LT.)
- L- 62+75 to 62+88 (RT.)
- L- 64+94 to 65+73 (RT.)



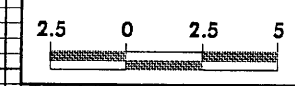
-L-
PI Sta 66+25744
 $\Delta = 3^{\circ} 44' 37.0''$ (LT.)
L = 78.406
T = 39.217
R = 1,200.000
SE = 0.03
ROFF = 60.750
DS = 80 KM/H

-Y6-
PI Sta 10+19.890
 $\Delta = 2^{\circ} 55' 37.3''$ (LT.)
L = 39.770
T = 19.890
R = 778.495
SE = EX.
BCK = N 6^{\circ} 28' 25.4'' E

-Y6-
PI Sta 10+59.540
 $\Delta = 2^{\circ} 26' 50.5''$ (RT.)
L = 39.533
T = 19.769
R = 925.512
SE = EX.
AH = N 5^{\circ} 59' 38.6'' E

125mm MONOLITHIC CONCRETE ISLAND
150mm CONCRETE CURB AND GUTTER
REINFORCED CONCRETE BOX CULVERT

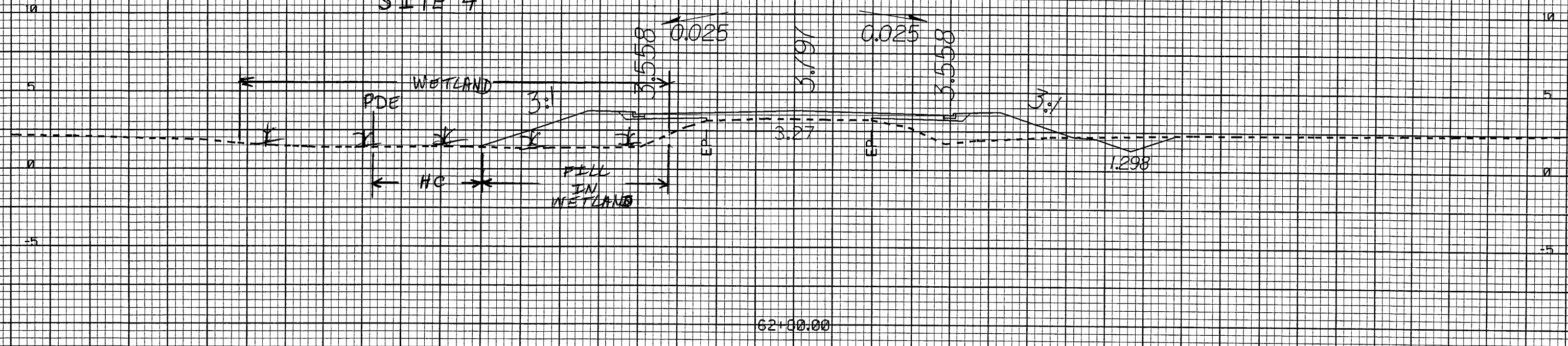
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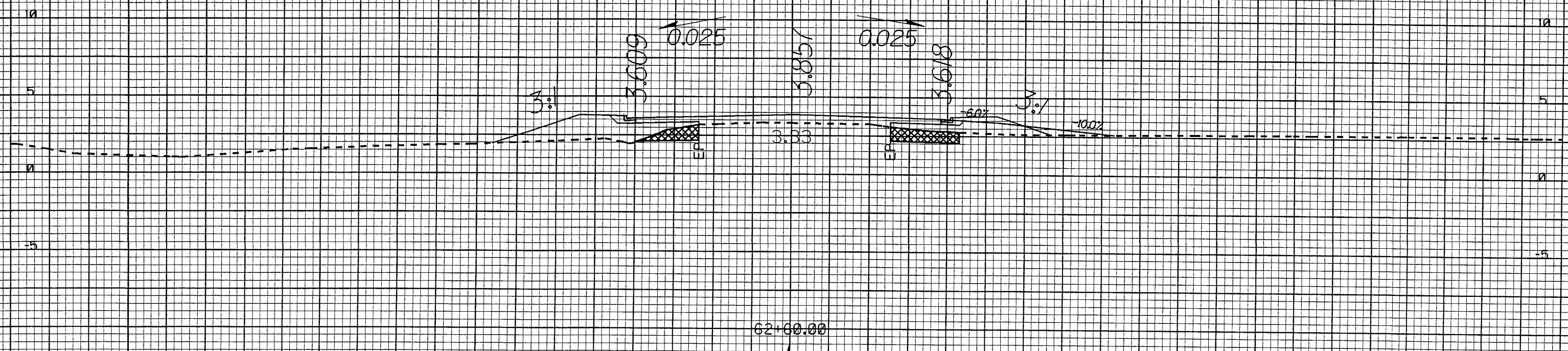
PROJECT REFERENCE NO.	SHEET NO.
R-2414B	X-43

40 30 20 10 0 10 20 30 40 50

SITE 4



62+00.00



62+00.00

40 30 20 10 0 10 20 30 40 50

REVISIONS

R/W REVISION - REVISED PROPERTY OWNER NAME & ELIMINATED PARCEL NO.36 (NO CLAIM), REVISED PROPERTY OWNER NAMES ON PARCEL NO.38,39 & 40. BAM

PROJECT REFERENCE NO. R-2414B	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

TRAN SITE CONSULTING ENGINEERS, INCORPORATED
100 Pascock Drive, Suite G-10
Raleigh, N.C. 27601

METRIC

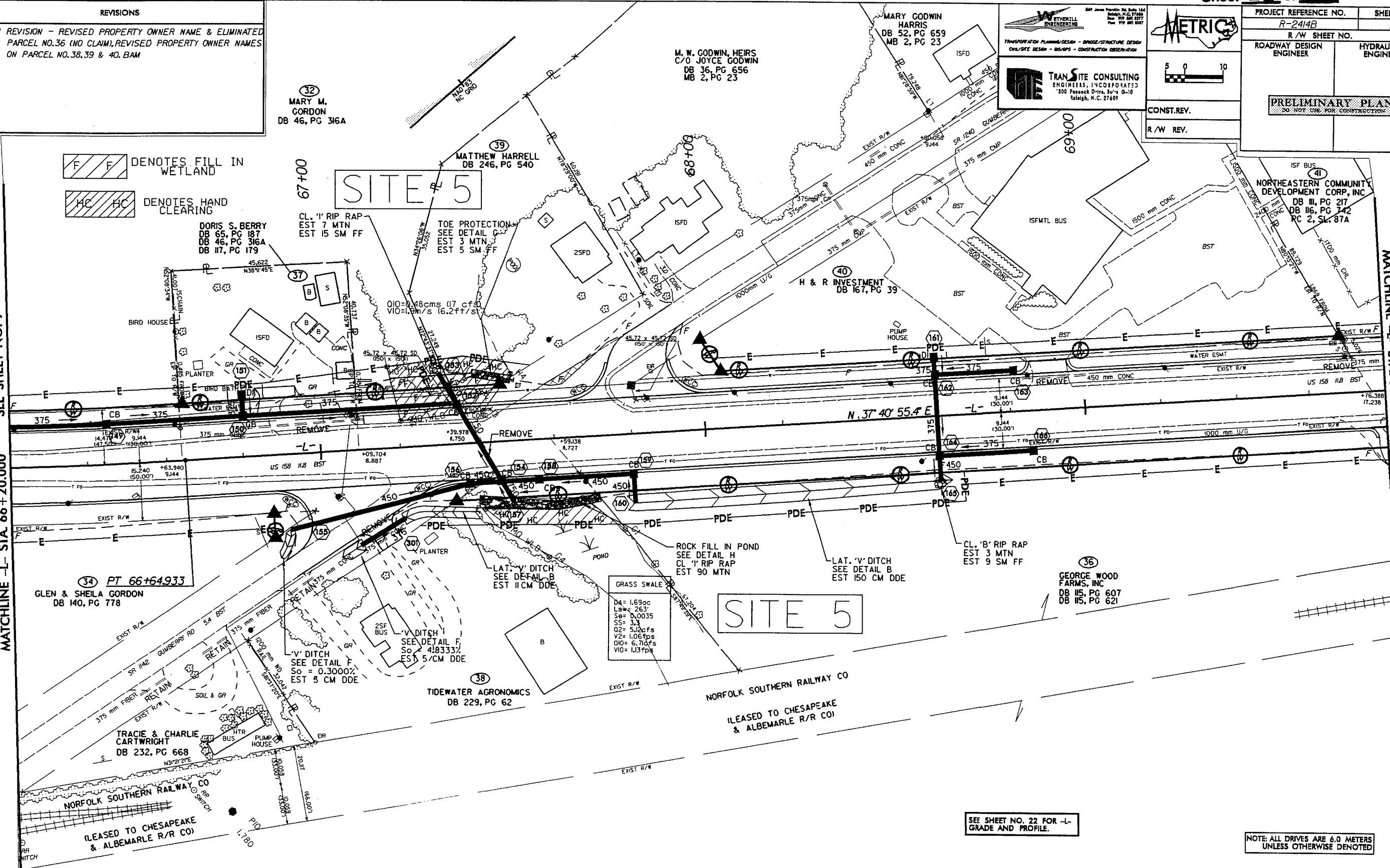
F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

SEE SHEET NO. 9

MATCHLINE -L- STA. 66+20.000

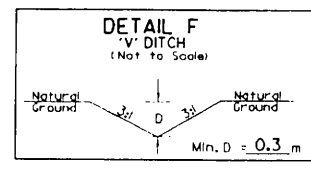
MATCHLINE -L- STA. 69+80.000

SEE SHEET NO. 11

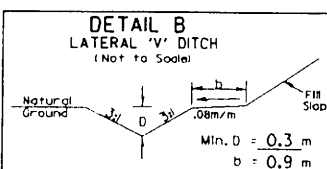


-L-
PI Sta 66+25.744
 $\Delta = 3' 44' 37.0''$ (LT)
 $L = 78.406$
 $R = 39.217$
 $R = 1,200.000$
 $SE = 0.03$
 $R'OFF = 60.750$
 $DS = 80$ KM/H

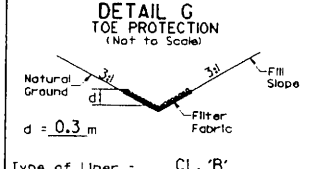
125mm MONOLITHIC CONCRETE ISLAND,
150mm CONCRETE CURB AND GUTTER,
REINFORCED CONCRETE BOX CULVERT



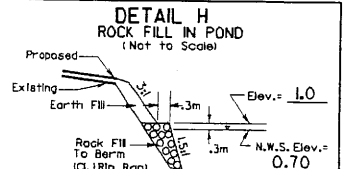
-L- 66+87 (RT.)
-L- 67+06 (RT.)



-L- 67+23 to 67+41 (RT.)
-L- 67+80 to 68+60 (RT.)



-L- 67+40 to 67+50 (LT.)



-L- 67+41 to 67+69 (RT.)

SEE SHEET NO. 22 FOR -L- GRADE AND PROFILE.

NOTE: ALL DRIVES ARE 6.0 METERS UNLESS OTHERWISE DENOTED

11/25/2008 04:44
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 jgall

REVISIONS

R/W REVISION - REVISED PROPERTY OWNER NAME & ELIMINATED PARCEL NO.36 (NO CLAIM), REVISED PROPERTY OWNER NAMES ON PARCEL NO.38,39 & 40. BAM

WETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/SPS - CONSTRUCTION OBSERVATION

TRANSITE CONSULTING ENGINEERS, INCORPORATED
 300 Parnock Drive, Suite G-10
 Raleigh, N.C. 27609

PROJECT REFERENCE NO. R-2414B	SHEET NO. 10
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

F F DENOTES FILL IN WETLAND

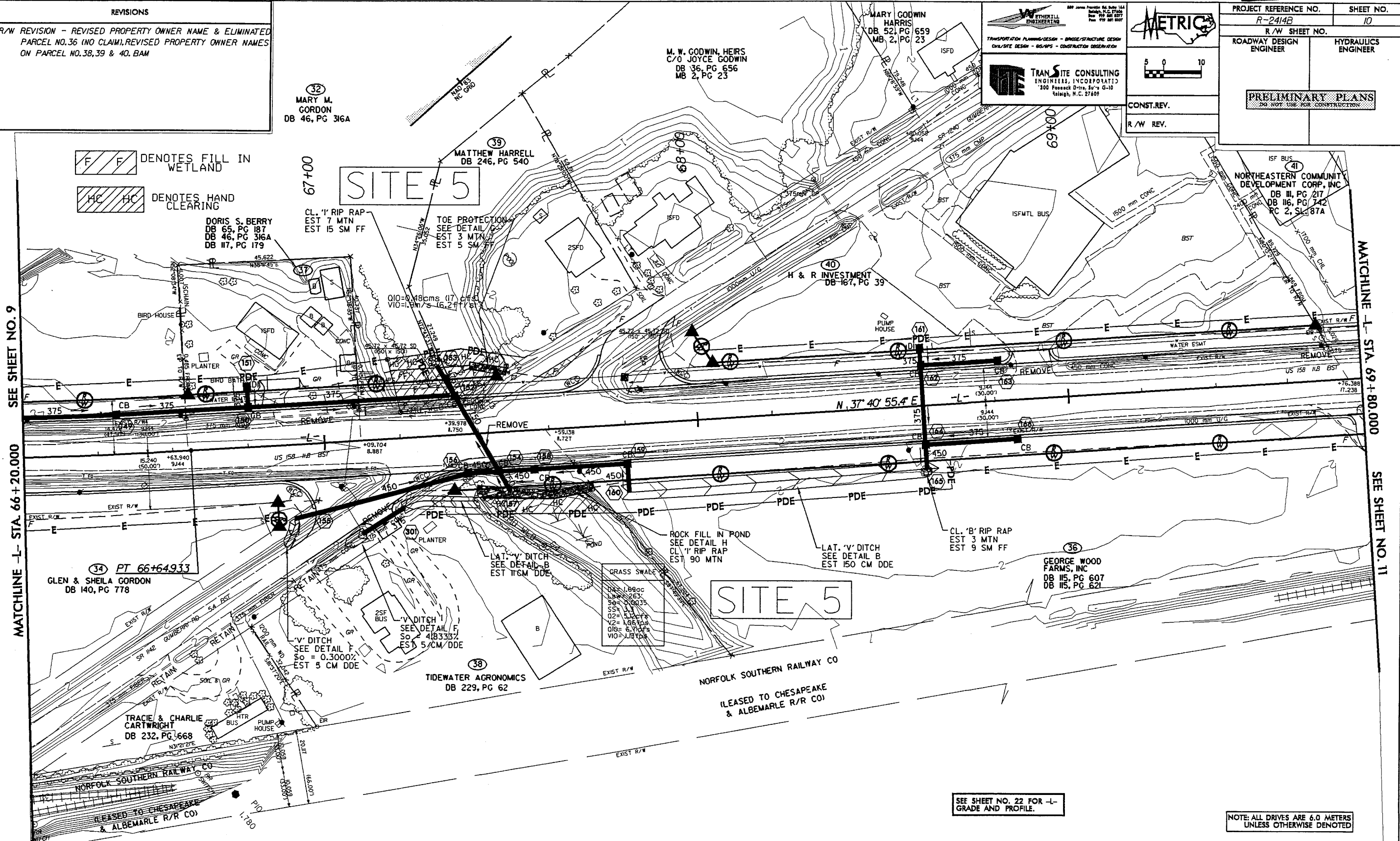
HC HC DENOTES HAND CLEARING

SEE SHEET NO. 9

MATCHLINE -L- STA. 66+20.000

MATCHLINE -L- STA. 69+80.000

SEE SHEET NO. 11

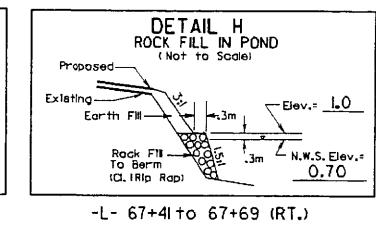
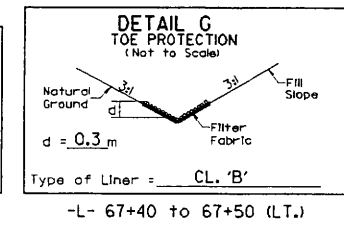
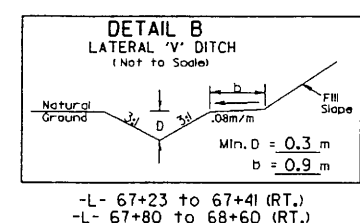
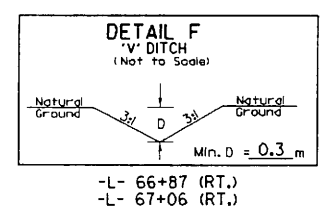


-L-
 PI Sta 66+25.744
 $\Delta = 3' 44" 37.0" (LT)$
 $L = 78.406$
 $T = 39.217$
 $R = 1,200.000$
 $SE = 0.03$
 $R/OFF = 60.750$
 $DS = 80 \text{ KM/H}$

125mm MONOLITHIC CONCRETE ISLAND,
 750mm CONCRETE CURB AND GUTTER,
 REINFORCED CONCRETE BOX CULVERT

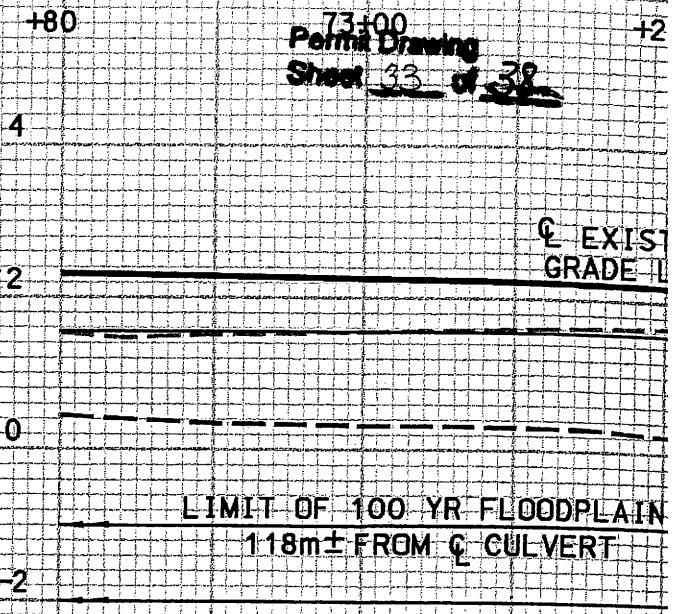
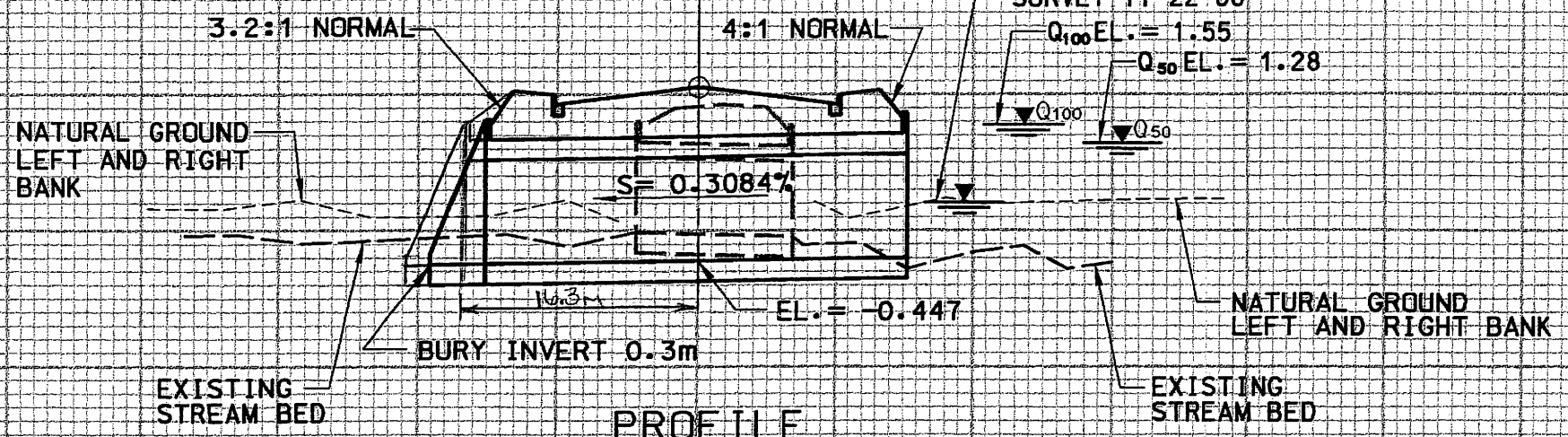
SEE SHEET NO. 22 FOR -L- GRADE AND PROFILE.

NOTE: ALL DRIVES ARE 6.0 METERS UNLESS OTHERWISE DENOTED

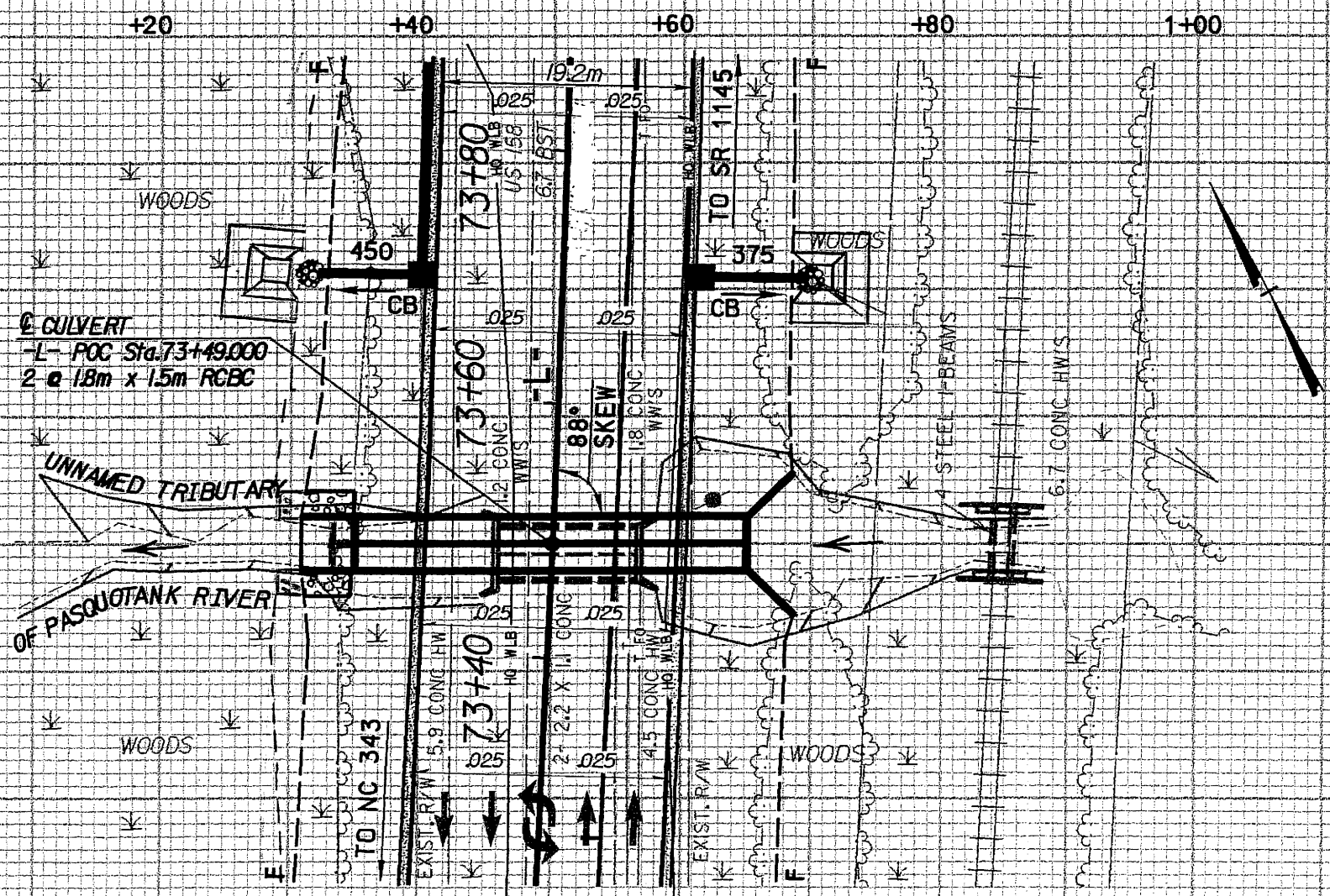


B-2414-2008 10-44
 11/05/2008 11:23:59 AM
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STA. 73+49.000 -L-
 2 @ 1.8 x 1.5m RCBC
 G.P. EL. = 2.103
 SKEW = 88°



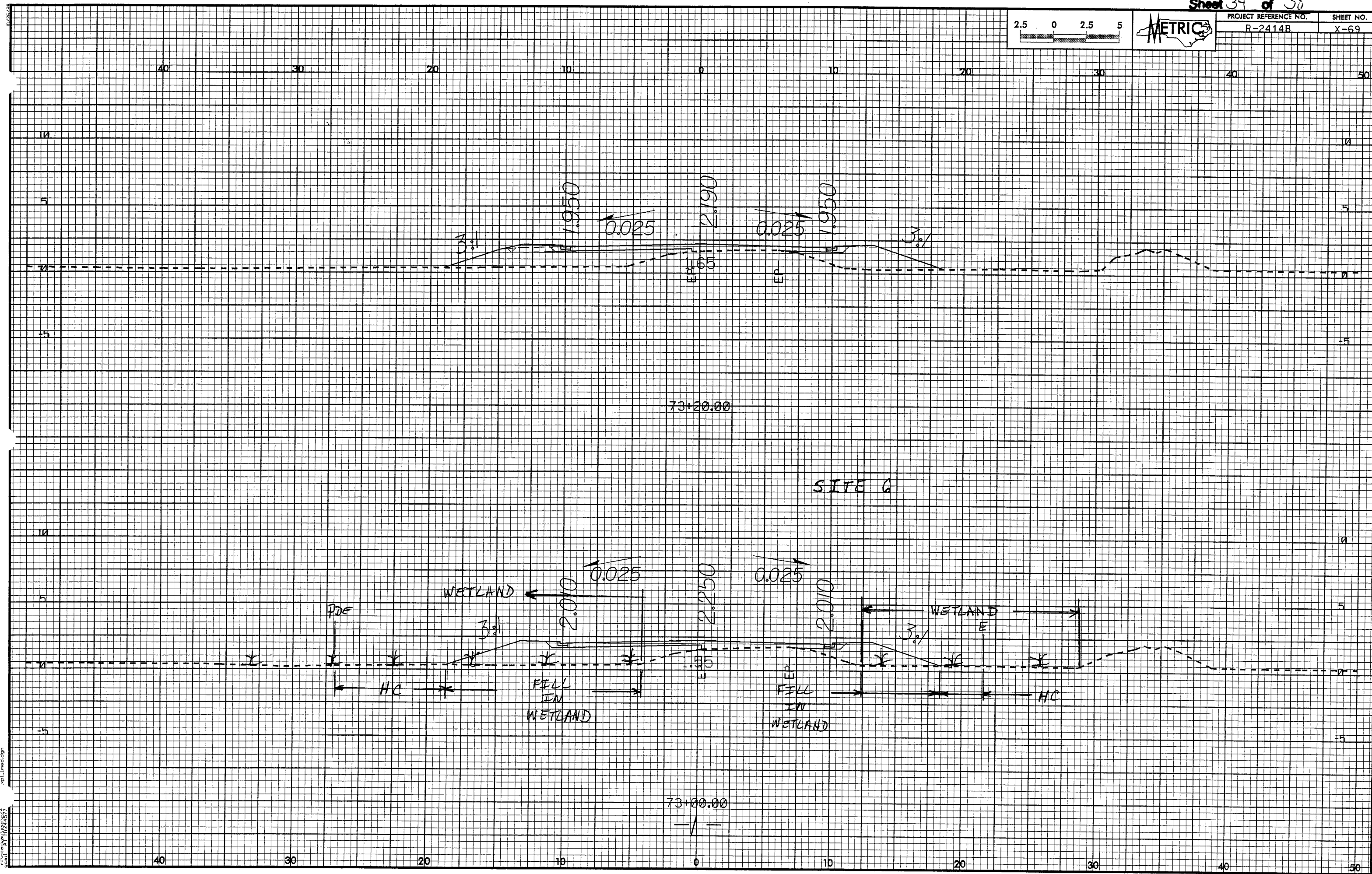
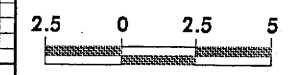
PROFILE



PLAN

HORIZ. SCALE 1:500
 VERT. SCALE 1:200

00 +20 +40 +60 +80 1+00

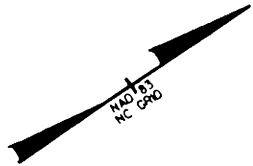


16-JUN-2008 13:57
xp1_lined.dgn

REVISIONS

R/W REVISION - REVISED ROW, PDE & TCE ON PARCEL NOS. 71, 74, 75, 76 & 77. REVISED FLAGGING DUE TO THE ELIMINATION OF EQUATUTY. (BAM)
 R/W REVISION - ADDED PARCEL NO. 71A & REVISED THE PROPERTY OWNER NAMES ON PARCEL NO. 71A & 74. (BAM)

DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING



ETHERILL ENGINEERING
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GEOTECH - CONSTRUCTION OBSERVATION

TRANSITE CONSULTING ENGINEERS, INCORPORATED
 300 Fessenden Drive, Suite G-10
 Raleigh, N.C. 27609

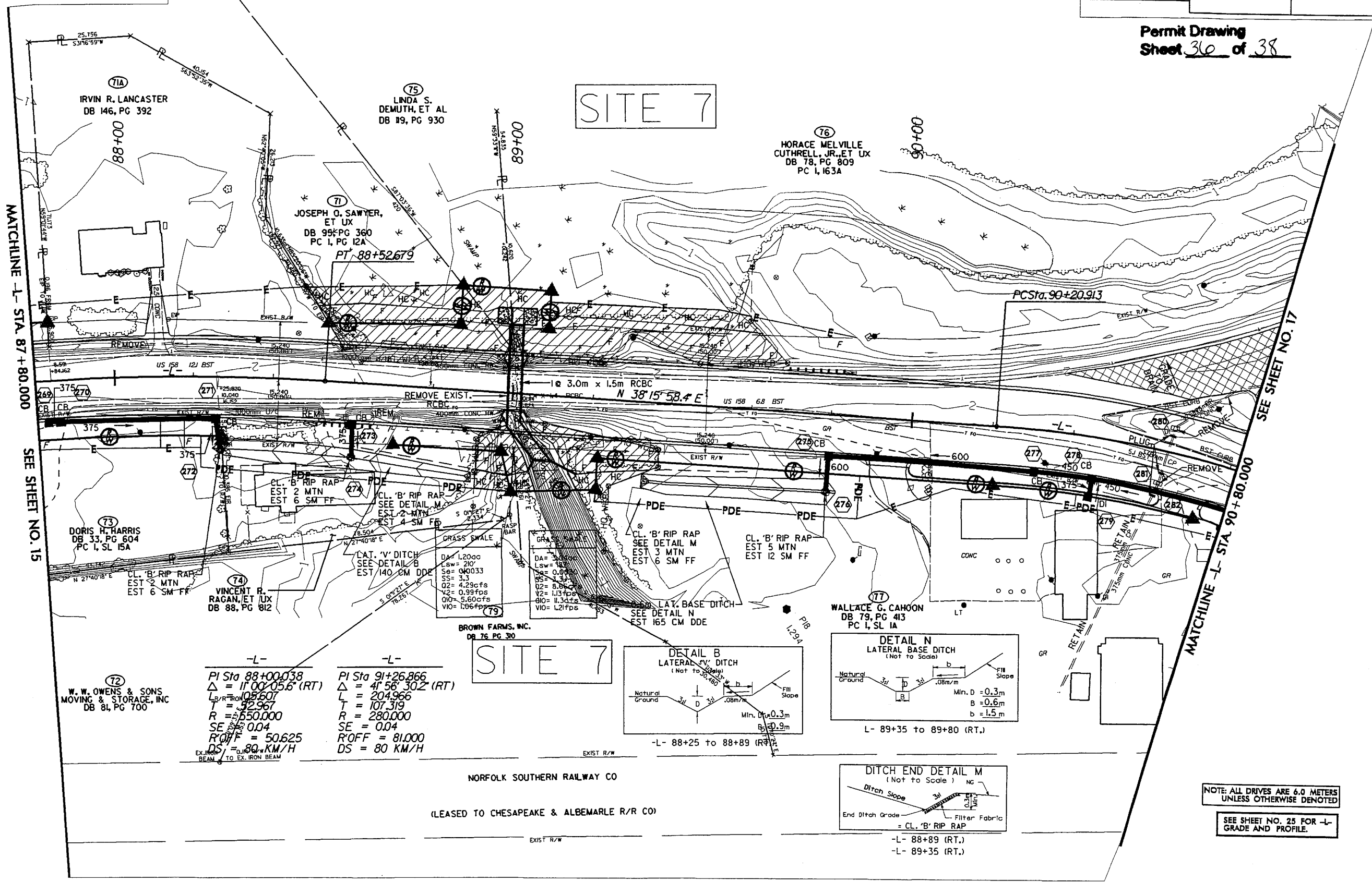
METRIX

5 0 10

CONST. REV.
 R/W REV.

PROJECT REFERENCE NO. R-2414B	SHEET NO. 16
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

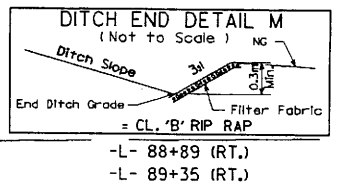
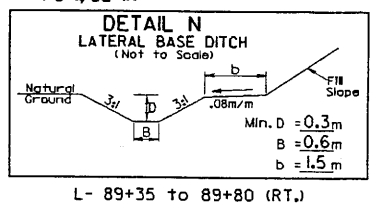
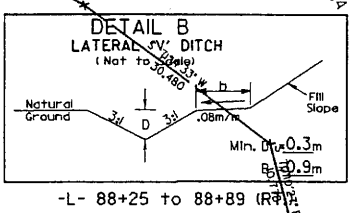
Permit Drawing
 Sheet 36 of 38



W. W. OWENS & SONS MOVING & STORAGE, INC
 DB 84, PG 700

PI Sta 88+00.38
 $\Delta = 11^{\circ}00'05.6"$ (RT)
 L = 109.607
 T = 32.967
 R = 350.000
 SE = 0.04
 R'OFF = 50.625
 DS = 80 KM/H

PI Sta 91+26.866
 $\Delta = 41^{\circ}56'30.2"$ (RT)
 L = 204.966
 T = 107.319
 R = 280.000
 SE = 0.04
 R'OFF = 81.000
 DS = 80 KM/H

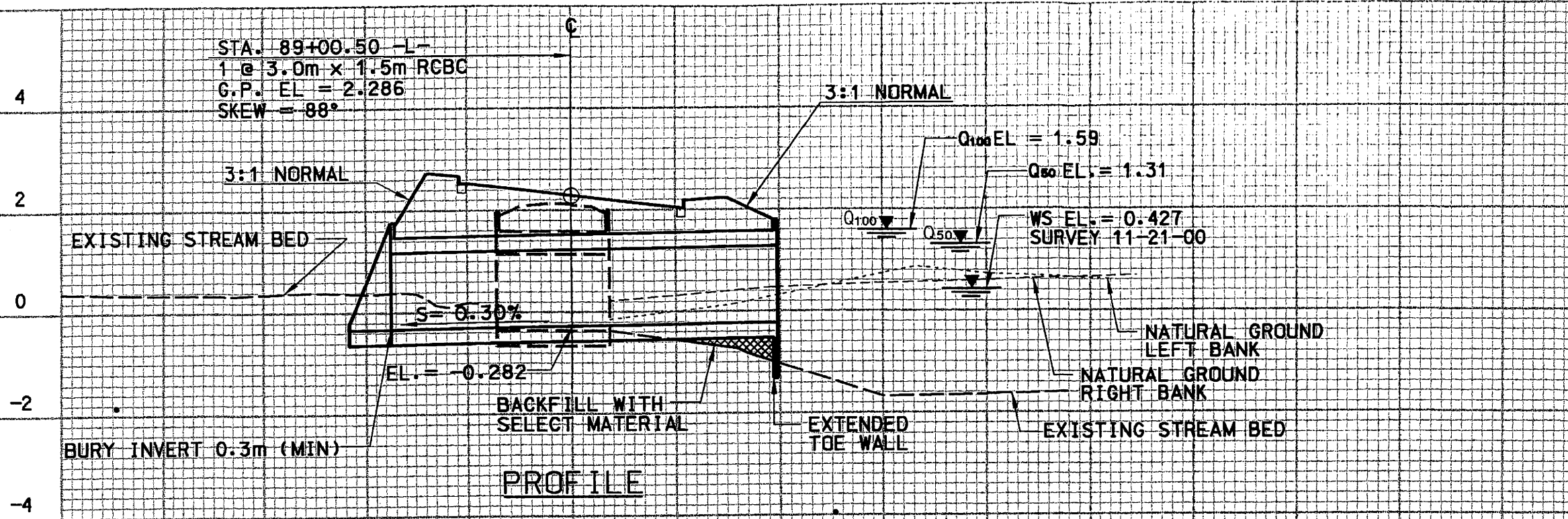


NOTE: ALL DRIVES ARE 6.0 METERS UNLESS OTHERWISE DENOTED

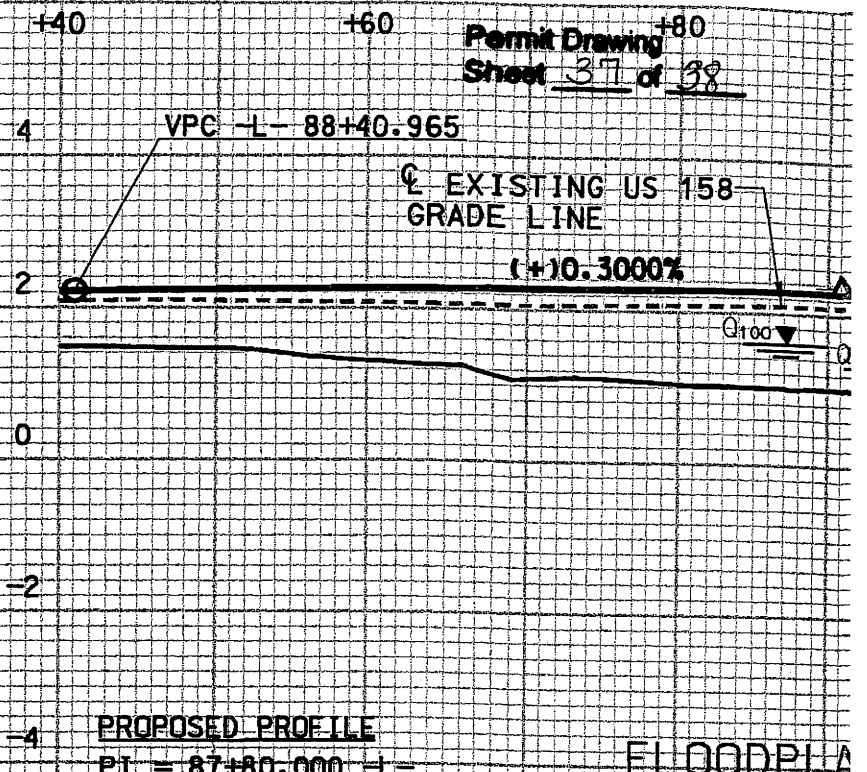
SEE SHEET NO. 25 FOR -L- GRADE AND PROFILE.

11/05/2008 08:59
 C:\AT\TH22897\del\dwg\p2414b-prm-psh16.dwg

STA. 89+00.50 -L-
1 @ 3.0m x 1.5m RCBC
G.P. EL = 2.286
SKEW = 88°



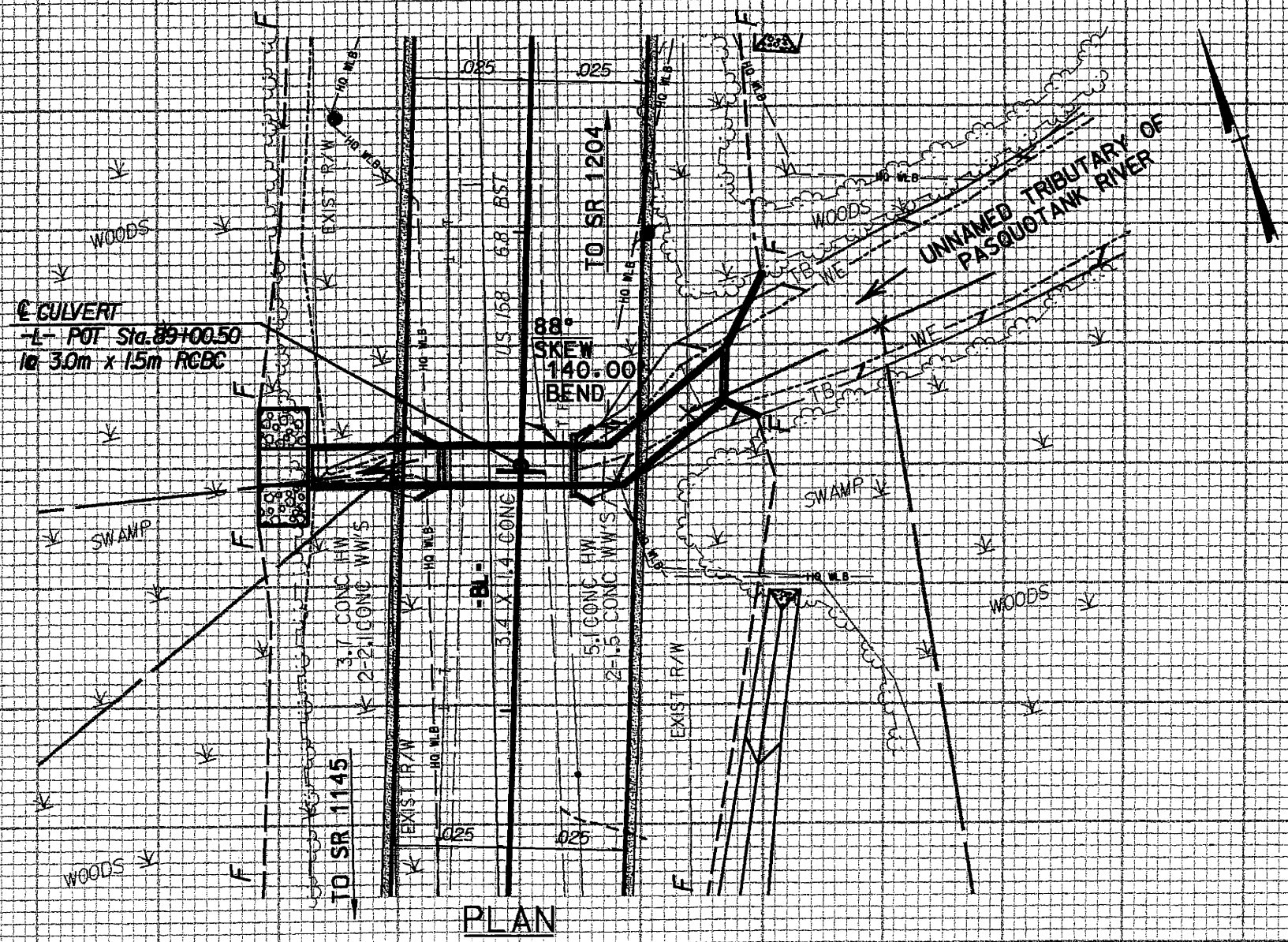
PROFILE



PROPOSED PROFILE

FLOODPLAIN

PI = 87+80.000 -L-
ELEV = 2.031
VC = 46m
G1 = (-) 0.5000%
G2 = (+) 0.3000%
LOW POINT STA = 87+85.750
LOW POINT SHOULDER ELEV. = 1.849



PLAN

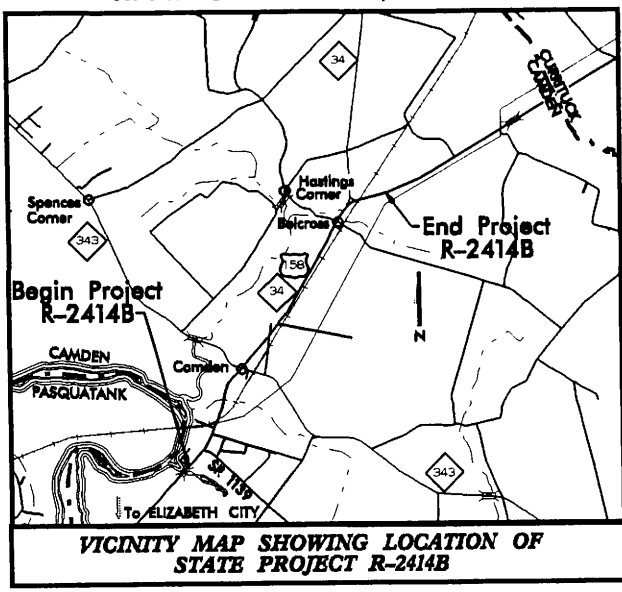
PERFORMANCE CURVE DATA

FREQUENCY (YR)	Q (cms)	W.S. EL. (m)		
		NATURAL	EXISTING	PRO
10	4.16	0.86	0.90	
50	8.18	1.06	1.26	
100	10.50	1.16	1.49	
OT	12.60	1.23	1.70	

09/08/99
14-MAY-2008 12:30
C:\utilities\proj\2414b_ut.uotsh.tsh
KRM:AL P231482

TIP PROJECT: R-2414B

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY BY OTHERS PLANS
CAMDEN COUNTY**

**LOCATION: US 158-NC 34 FROM SOUTH OF SR 1257
TO EAST OF NC 34 IN BELCROSS**

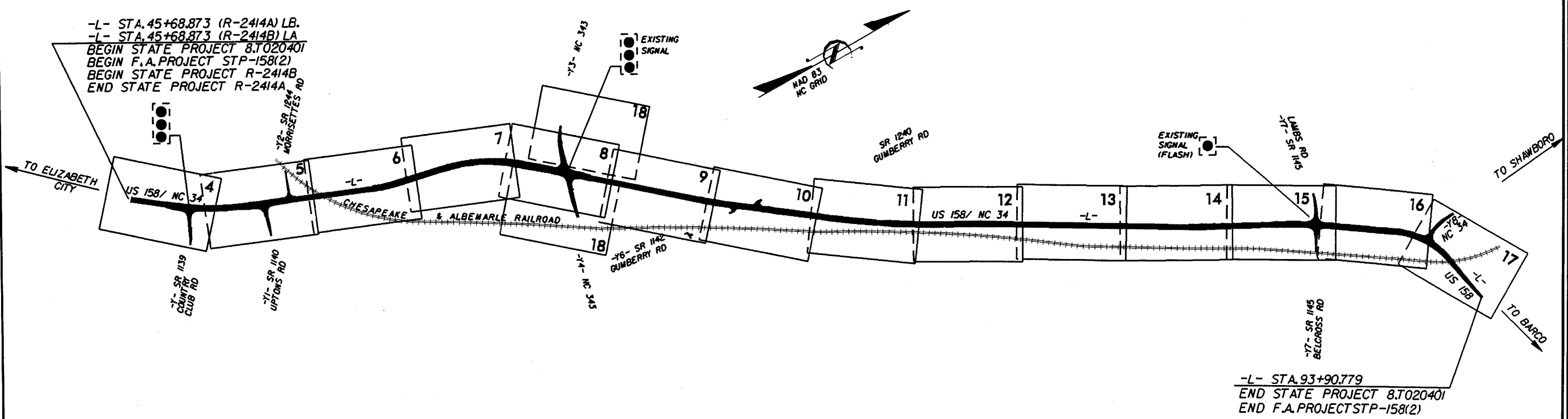
TYPE OF WORK: UTILITIES RELOCATION

METRIC

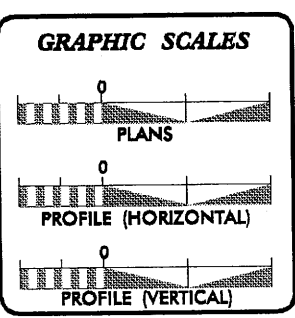
ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN

T.I.P. NO.	SHEET NO.
R-2414B	1

Utility Permit Drawing Sheet 1 of 15



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



INDEX OF SHEETS

SHEET NO.	DESCRIPTION

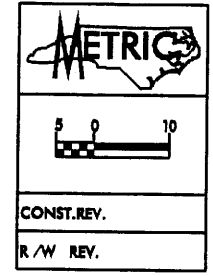
UTILITY OWNERS ON PROJECT

--	--

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 236-4124
FAX (919) 236-4113

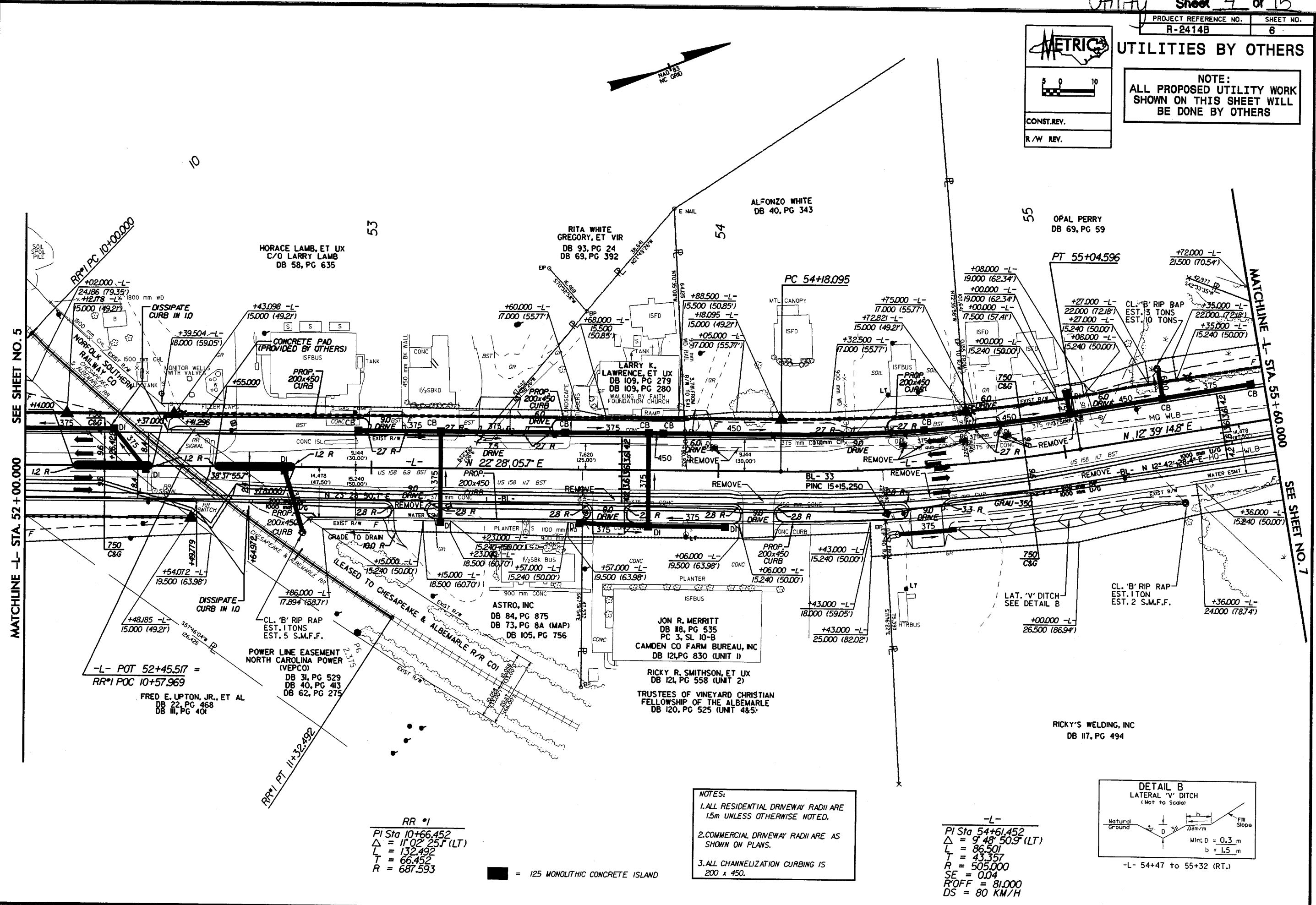
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Corey Housquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Brian McCurry UTILITIES PROJECT DESIGNER



UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

CONST. REV.
R/W REV.



SEE SHEET NO. 5
MATCHLINE L- STA. 52+00.000

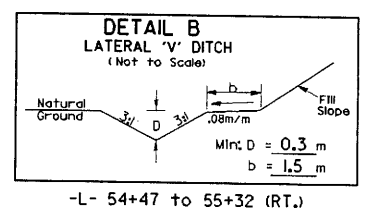
SEE SHEET NO. 7
MATCHLINE L- STA. 55+60.000

RR #1
PI Sta 10+66.452
Δ = 11°02'25" (LT)
L = 132.492
T = 66.452
R = 687.593

■ = 125 MONOLITHIC CONCRETE ISLAND

NOTES:
1. ALL RESIDENTIAL DRIVEWAY RADII ARE 15m UNLESS OTHERWISE NOTED.
2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
3. ALL CHANNELIZATION CURBING IS 200 x 450.

-L-
PI Sta 54+61.452
Δ = 9°48'50.9" (LT)
L = 86.501
T = 43.357
R = 505.000
SE = 0.04
R/OFF = 81.000
DS = 80 KM/H

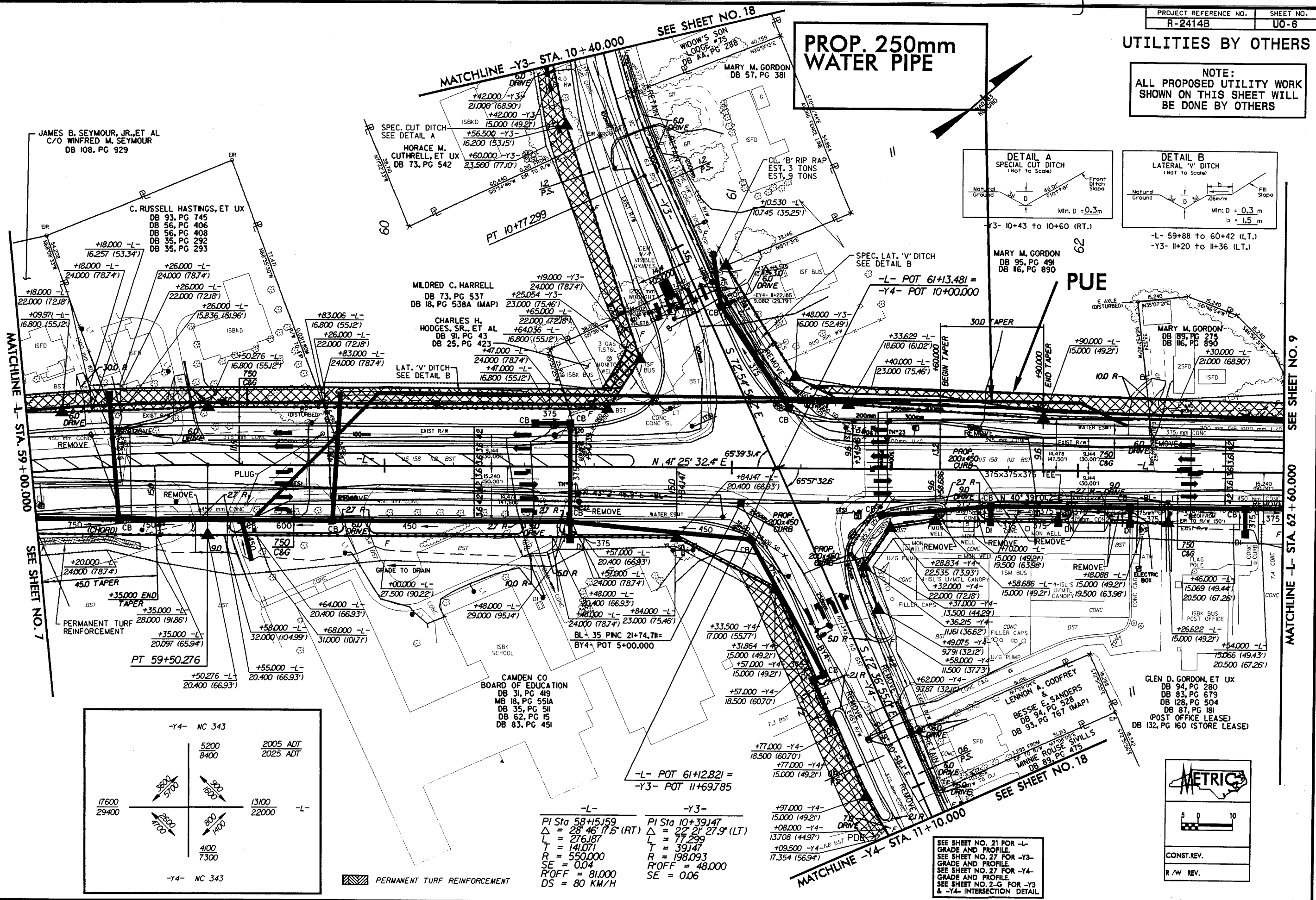
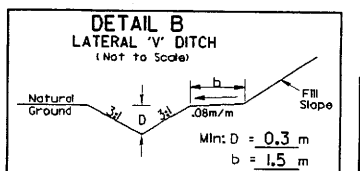
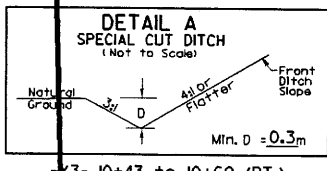


14-MAY-2008 08:24
es v r u u t v r 2414b ut ud4.psh
cmd_permit v r 2414b ut ud4.psh

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

**PROP. 250mm
WATER PIPE**



JAMES B. SEYMOUR, JR., ET AL
C/O WINFRED M. SEYMOUR
DB 108, PG 929

C. RUSSELL HASTINGS, ET UX
DB 93, PG 745
DB 56, PG 406
DB 56, PG 408
DB 35, PG 292
DB 35, PG 293

HORACE M. CUTHRELL, ET UX
DB 73, PG 542

MILDRED C. HARRELL
DB 73, PG 537
DB 18, PG 538A (MAP)

CHARLES H. HODGES, SR., ET AL
DB 91, PG 43
DB 25, PG 423

LAT. 'V' DITCH
SEE DETAIL B

CAMDEN CO BOARD OF EDUCATION
DB 31, PG 419
MB 18, PG 551A
DB 35, PG 511
DB 62, PG 15
DB 83, PG 451

MARY M. GORDON
DB 95, PG 491
DB 16, PG 890

PUE

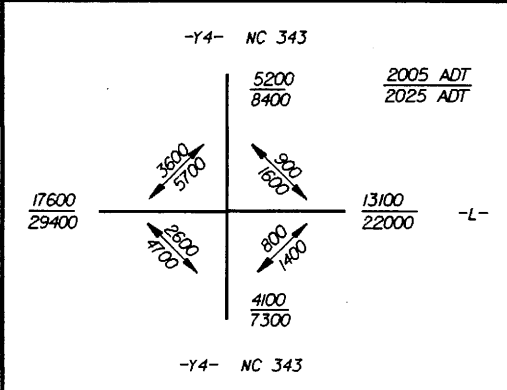
MARY M. GORDON
DB 89, PG 275
DB 116, PG 890

GLEN D. GORDON, ET UX
DB 94, PG 280
DB 83, PG 679
DB 128, PG 504
DB 87, PG 181
(POST OFFICE LEASE)
DB 132, PG 160 (STORE LEASE)

BESSIE E. SANDERS
DB 94, PG 528
DB 93, PG 767 (MAP)

LENNON A. GODFREY
DB 94, PG 528
DB 93, PG 767 (MAP)

MINNIE ROUSE SIVILLS
DB 89, PG 475



-L-
PI Sta 58+15.59
 $\Delta = 28^\circ 46' 17.5''$ (RT)
L = 276.187
T = 141.071
R = 550.000
SE = 0.04
R'OFF = 81.000
DS = 80 KM/H

-Y3-
PI Sta 10+39.147
 $\Delta = 27^\circ 21' 27.9''$ (LT)
L = 77.299
T = 39.147
R = 198.093
R'OFF = 48.000
SE = 0.06





CONST. REV.
R/W REV.

5/14/99
03-JUL-2008 15:03
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UTILITIES BY OTHERS

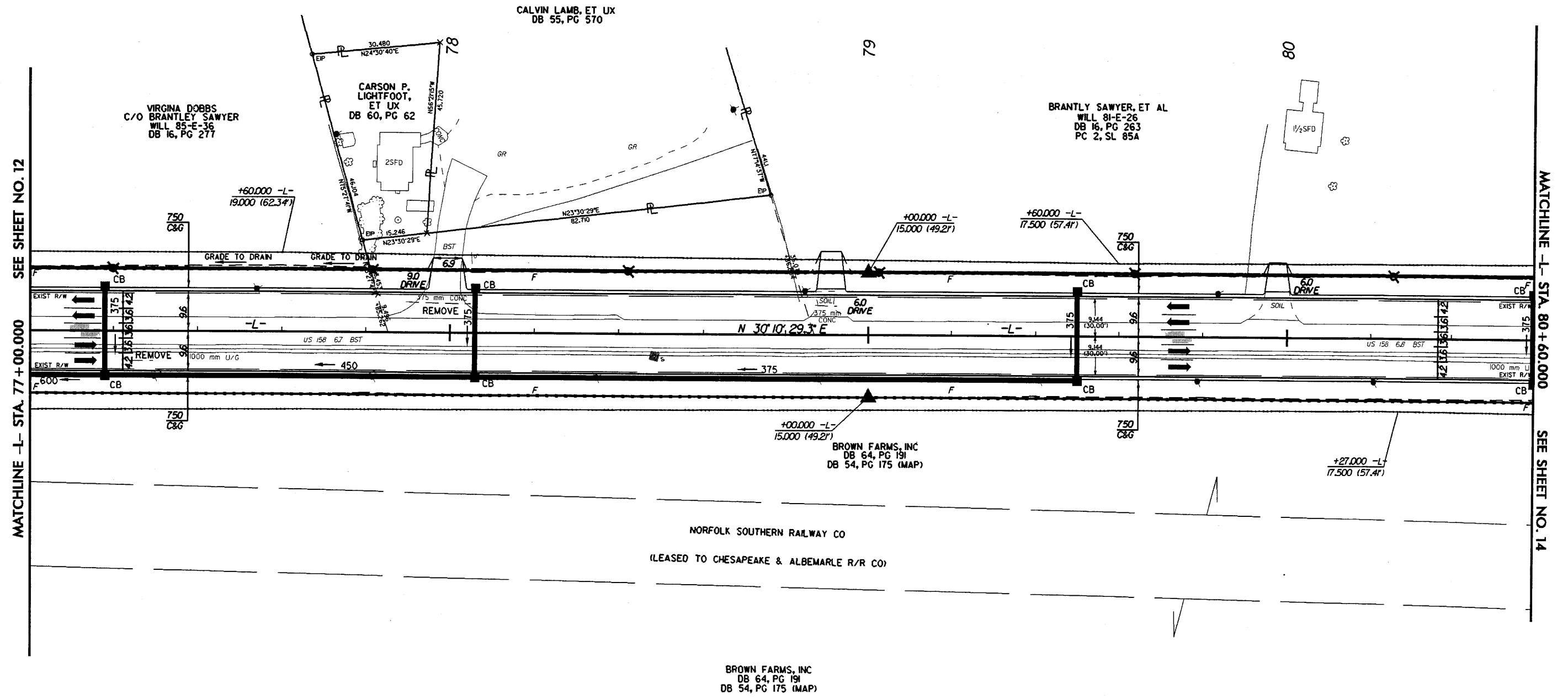
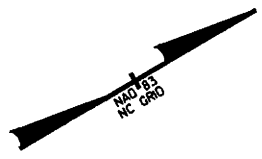
NOTE: ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

UTILITY

CONST. REV.
R/W REV.

NOTES:
 1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED.
 2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
 3. ALL CHANNELIZATION CURBING IS 200 x 450.



5/14/99
 14-MAY-2008 12:20
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UTILITIES BY OTHERS

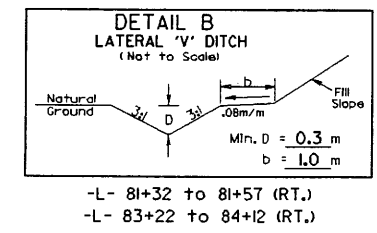
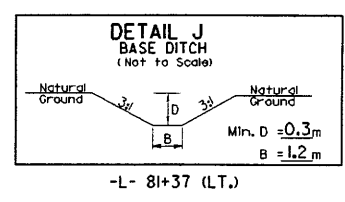
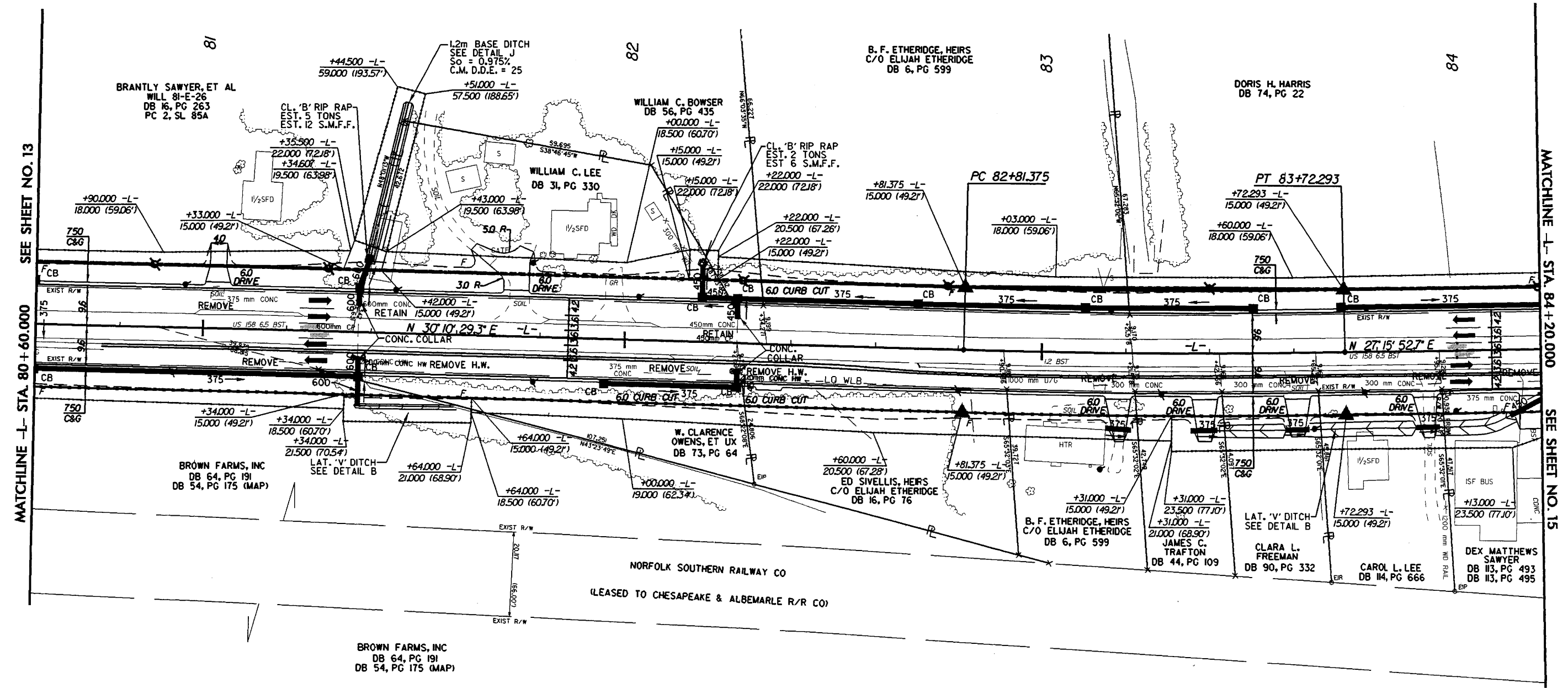
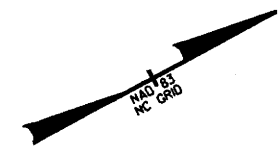
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

METRIC

CONST. REV.

R/W REV.

NOTES:
1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED.
2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS.
3. ALL CHANNELIZATION CURBING IS 200 x 450.



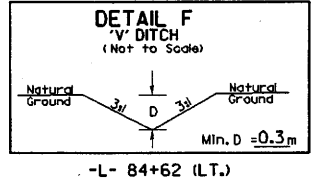
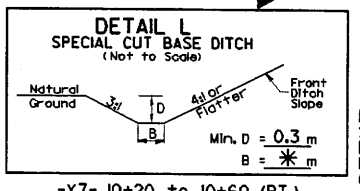
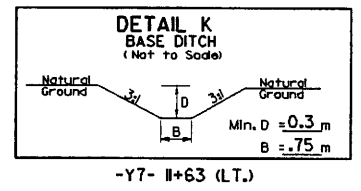
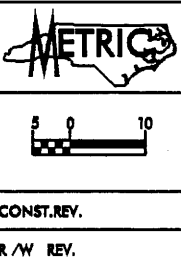
-L-
PI Sta 83+26.844
 $\Delta = 254.366$ (LT)
L = 90.918
T = 45.469
R = 1,790.000
SE = 0.025
ROFF = 50.625
DS = 80 KM/H

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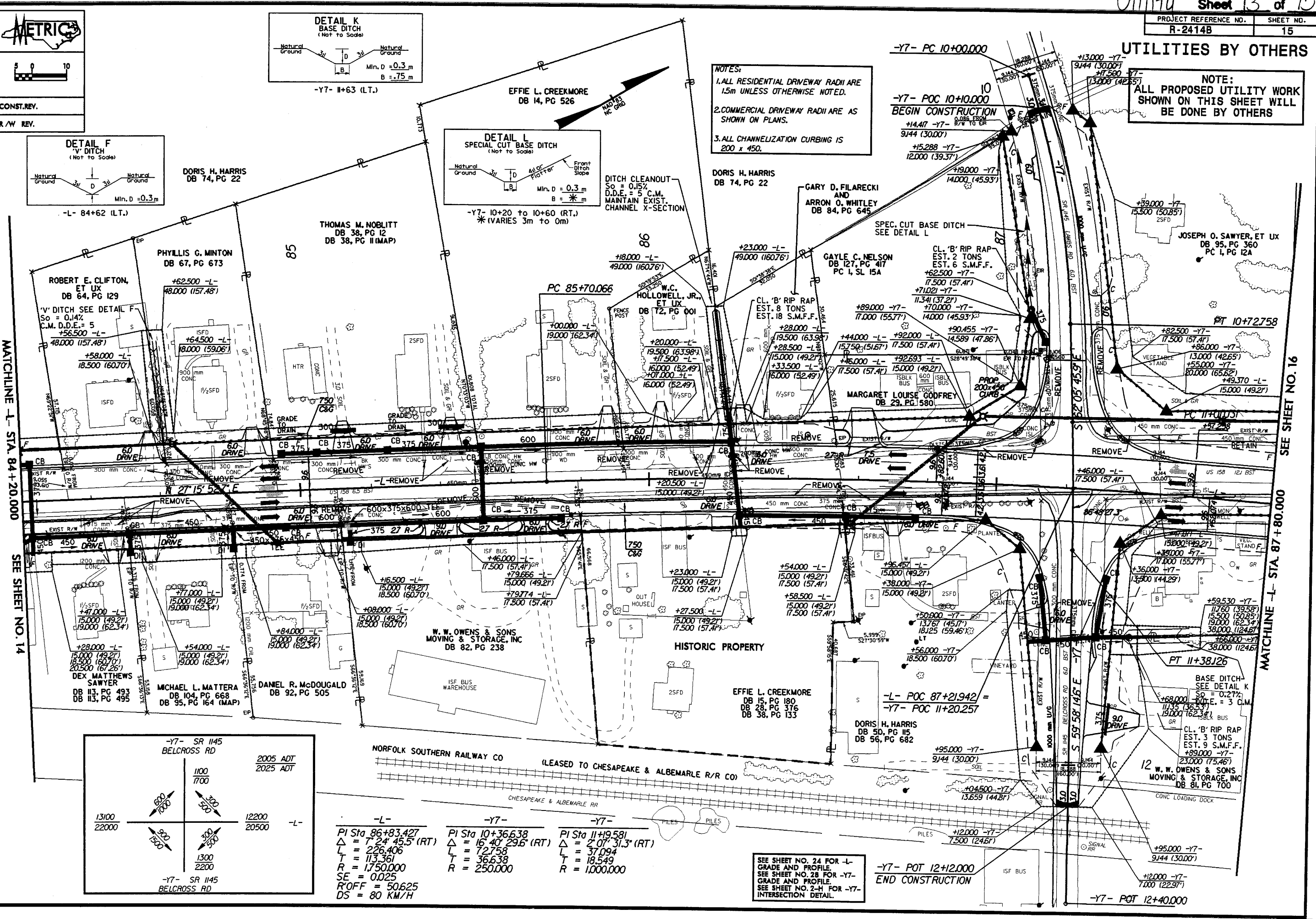
UTILITIES BY OTHERS

NOTE: ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

NOTES: 1. ALL RESIDENTIAL DRIVEWAY RADII ARE 1.5m UNLESS OTHERWISE NOTED. 2. COMMERCIAL DRIVEWAY RADII ARE AS SHOWN ON PLANS. 3. ALL CHANNELIZATION CURBING IS 200 x 450.



DITCH CLEANOUT So = 0.15% D.D.E. = 5 C.M. MAINTAIN EXIST. CHANNEL X-SECTION



MATCHLINE -L- STA. 84+20.000

SEE SHEET NO. 14

SEE SHEET NO. 16

MATCHLINE -L- STA. 87+80.000

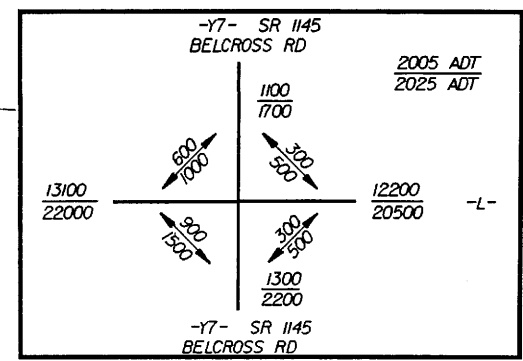


Table with 3 columns: -L-, -Y7-, -Y7-. Rows include PI Sta, Δ, L, T, R, SE, ROFF, DS values for different stationing points.

SEE SHEET NO. 24 FOR -L- GRADE AND PROFILE SEE SHEET NO. 28 FOR -Y7- GRADE AND PROFILE SEE SHEET NO. 2-H FOR -Y7- INTERSECTION DETAIL.

-Y7- POT 12+12.000 END CONSTRUCTION

-Y7- POT 12+40.000

5/14/99

14-MAY-2008 12:24

