STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 10, 2008

US Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTENTION: Eric Alsmeyer
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permits 13, 23, 33, Section 401 Water Quality Certification, and Tar-Pamlico Riparian Buffer Authorization** for the replacement of Bridge No. 57 on SR 1419 (Ronald Tharrington Road) over Sycamore Creek, Franklin County. Federal Aid Project Number BRZ-1419(2), WBS No. 33470.1.1, State Project No. 8.2360901, Division 5, T.I.P. No. B-4115

Debit WBS No. 33470.1.1 $570.00

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 57 over Sycamore Creek. The project involves replacing the bridge with a new culvert on the existing alignment, while maintaining traffic with an off-site detour during construction. The existing bridge is currently in poor condition and in need of replacement. The new culvert is intended to provide a safer structure consistent with federal and state standards.

The proposed structure will be a two-barrel reinforced concrete box culvert with a barrel opening of 11 ft x 10 ft and approximately 85 ft long. The bottom of the culvert will be buried 1 ft below the stream bed and have a 2-foot sill in the westernmost barrel entrance. A floodplain bench will be cut upstream and downstream of the culvert to match the sill elevation. A 60-inch diameter pipe will also be installed that will carry flow from an unnamed tributary to Sycamore Creek (UT3) into the middle of the culvert. The proposed roadway over the culvert consists of 32 ft of clear roadway with two travel lanes, each 11 ft wide with 5-foot wide shoulders and a berm gutter. Please find the enclosed permit drawings, design plans, stormwater management plan, Pre-Construction Notification, Stream Mitigation Plan, and Ecosystem Enhancement Program (EEP) Mitigation Acceptance Letter for the subject project. A Categorical Exclusion (CE) and Right of Way Consultation were completed for this project in October 2005 and June 2007, respectively, and distributed shortly thereafter. Additional copies are available upon request.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1334 or
919-715-1335

FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

IMPACTS TO WATERS OF THE UNITED STATES

The project is located in the Tar-Pamlico River Basin, sub-basin 03-03-01, hydrologic unit 03020101. Three perennial streams including Sycamore Creek [DWQ Index # 28-26] and two unnamed tributaries to Sycamore Creek (UT1 and UT3), and one riverine wetland comprise the Waters of the U.S. within the project impact area. Sycamore Creek is assigned a Best Usage Classification of C NSW. There are no High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), or Outstanding Resource Waters (ORW) within 1.0 mile of the project study area. No streams within the project study area or within 1.0 mile downstream of the project study area are included on the 2006 Final 303(d) list of impaired waters. Eric Alsmeyer of the U.S. Army Corps of Engineers (USACE) issued a written Jurisdictional Determination (JD) for Waters of the U.S. within the project study area on November 12, 2003. This JD expires on November 12, 2008.

The wetland immediately northwest of the proposed culvert is an inundated wetland resulting from beaver activity. Rushes and sedges are present in addition to species typically found in mature hardwood forests.

Permanent Impacts

Improvements to the roadway in the vicinity of the new culvert will require extending the base of the fill slope into the wetland on the north side of the road, just west of the culvert (Site 1, Sheet 2 of 7). In order to allow space for equipment to operate, mechanized clearing will be needed from the base of the fill slope to the right-of-way boundary. These activities will result in 0.05 acres of permanent fill and 0.05 acres of mechanized clearing in the wetland.

Placement of the culvert in Sycamore Creek and the 60-inch diameter pipe to convey flow from UT3 will result in 145 linear ft (0.05 ac) of permanent stream impacts (Site 1, Sheet 2 of 7).

Temporary Impacts

There are no temporary wetland impacts.

In order to place the culvert, dewatering activities will need to occur within the permanent drainage easements located just beyond the right-of-way boundaries (Site 1, Sheet 2 of 7). This will result in 43 linear ft (0.01 ac) of temporary stream impacts.

Bank Stabilization Impacts (NWP 13)

Rip rap will be placed on the banks of Sycamore Creek above and below the culvert to provide bank stabilization and prevent scouring (Site 1, Sheet 2 of 7). The rip-rap will extend below the ordinary high water mark, but no material will be placed on the bottom of the creek bed. The bank stabilization will impact a combined 78 linear feet of Sycamore Creek above and below the culvert.

Utility Impacts

An existing aerial telephone cable on the south side of the road will be removed and replaced with a directional bored cable running parallel to the right-of-way boundary and under the culvert. The termini of the bored cable will be located outside of all wetlands and buffer zones. An existing buried telephone cable on the north side of the road will be abandoned in place. There will be no utility impacts resulting from this project.

Bridge Demolition

The existing bridge, built in 1966, consists of a single span and totals 40.5 feet in length. The structure is composed of a steel girder and floor beam system with a steel plank floor and asphalt overlay. The substructure is composed of timber abutments with timber piles. NCDOT will remove the existing structure without dropping any components into the creek. Best Management Practices for Bridge Demolition and Removal will be implemented during removal of the bridge.

IMPACTS TO TAR-PAMLICO RIPARIAN BUFFER

Installation of the culvert, the 60-inch pipe, and improvements to the adjacent roadway will result in impacts to the Tar-Pamlico Riparian Buffers of Sycamore Creek and its tributaries. Buffer impacts are described in Table 1 below. Under the Tar-Pamlico Buffer Rules, impacts to the buffers of Sycamore Creek resulting from the installation of the culvert (road crossing impacts) are allowable since buffer impacts are less than 150 linear feet and one-third of an acre. (The project will result in 135 linear feet of buffer impacts to Sycamore Creek.) Impacts resulting from the installation of the 60-inch pipe on UT3 are considered road impacts other than a crossing of a stream and therefore are allowable with mitigation.

Table 1. Tar-Pamlico Riparian Buffer Impacts

	Zone 1 Impact (sq. ft)	Zone 2 Impact (sq. ft)	Mitigation requirements (exempt, allowable, or allowable with mitigation)
Road Crossing Impacts	4614	2364	Allowable
Road Impacts (other than a crossing)	1207	504	Allowable with mitigation
Totals	5821	2868	

The existing bridge has been determined to be structurally deficient and functionally obsolete. The replacement of this inadequate structure will result in safer and more efficient traffic operations. Because this bridge needs to be replaced, impacts to the riparian buffers are unavoidable, and there are no practicable alternatives.

Utility Impacts to Riparian Buffers

An existing aerial telephone cable on the south side of the road will be removed and replaced with a directional bored cable running parallel to the right-of-way boundary and under the culvert. The termini of the bored cable will be located outside of all wetlands and buffer zones. An existing buried telephone cable on the north side of the road will be abandoned in place. There will be no utility impacts to buffers resulting from this project.

RESTORATION PLAN

Following construction of the culvert and roadway, all material used in construction will be removed. Temporary fill placed in surface waters for access or dewatering will be removed down to the natural streambed, and all temporary erosion control devices will be removed upon completion of construction. Pre-project elevations will be restored.

REMOVAL AND DISPOSAL PLAN

The contractor will be required to submit a reclamation plan for the removal of and disposal of all material off-site at an upland location. The contractor will use excavation equipment for removal of any earthen material. Heavy–duty trucks, dozers, cranes, and various other pieces of mechanical equipment

necessary for construction of roadways and bridges will be used on site. The contractor will have the option of reusing any of the materials that the engineer deems suitable in the construction of project. After the erosion control devices are no longer needed, all temporary materials will become the property of the contractor.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS) lists three species for Franklin County (Table 2).

Table 2. Federally Protected Species in Franklin County, NC

Common Name	Scientific Name	Federal Status*	Biological Conclusion	Habitat Present
Dwarf wedgemussel	*Alasmidonta heterodon*	E	May affect, not likely to adversely affect	Yes
Tar River spinymussel	*Elliptio steinstansana*	E	May affect, not likely to adversely affect	Yes
Michaux's sumac	*Rhus michauxii*	E	No Effect	Yes

*E= endangered

A mussel survey was conducted at the project site on 7/28/2003. No federally protected species of mussels were found. A resurvey for mussels at a NCDOT Division 5 site (Bridge 76 on SR 1600 [East River Rd] over Sycamore Creek, located approximately 3 miles downstream from the B-4115 project site), was conducted on 6/14/2007 and found no federally protected mussels. Since no federally protected mussel species have ever been found in Sycamore Creek, the biological conclusion of "may affect, not likely to adversely affect" remains valid and no additional surveys are required.

The most recent survey for Michaux's sumac was conducted on 5/18/2007 by NCDOT biologists. Potential habitat exists along roadsides and forest edges within the project area. No specimens of Michaux's sumac were found; therefore, the biological conclusion of "No Effect" remains valid. Concurrence on all three species was received from the USFWS in a letter dated 8/29/2005 and included in the CE.

MITIGATION OPTIONS

Avoidance and Minimization and Compensatory Mitigation

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

According to the Clean Water Act (CWA) §404(b)(1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the US. The following is a list of the project's jurisdictional stream, wetlands, and Tar-Pamlico Buffer avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/Minimization

- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of Best Management Practices (BMPs).
- Design Standards in Sensitive Watersheds will be implemented.
- Best Management Practices for Protection of Surface Waters will be implemented.
- 2:1 side slopes will be used to reduce the footprint of the project, minimizing impacts to both wetlands and buffers.
- A preformed scour hole will be constructed on the southeast side of the culvert outside of the buffer zones.
- The culvert and roadway will be constructed on the existing alignment, minimizing impacts to adjacent wetlands and buffers.
- An off-site detour will be utilized during construction.

Compensatory Mitigation:

The project will impact surface waters, wetlands, and riparian buffers. Mitigation is not proposed for the 0.05 acres of permanent fill and 0.05 acres of mechanized clearing in the wetland. These impacts will likely have minimal effects on the structure and function of the wetland as a whole since no more than 10 percent of the entire wetland within the project study area will be impacted and the impacts will be confined to the outer edge of the wetland. The combined total of 0.10 acres of wetland impacts does not exceed the threshold requiring mitigation as stated in the Nationwide Permit General Conditions (72 FR 11092; March 12, 2007) part C.20(c) regarding mitigation: "Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification…."

Mitigation is not proposed for the 78 linear feet of bank stabilization along Sycamore Creek upstream and downstream of the proposed culvert because this action will likely have very minimal impacts to aquatic life since no material will be placed on the stream bed and does not constitute loss of waters of the U.S.

On-site Stream Mitigation

NCDOT has proposed on-site stream mitigation by fencing out livestock and replanting a 50-foot wide buffer along 465 feet of the northern bank of UT1 as described in the Stream Mitigation Plan. This stream enhancement proposal is designed to offset all 145 linear feet of permanent stream impacts associated with this project.

EEP Buffer Mitigation

Buffer mitigation is also proposed for the road impacts (other than a crossing) which are classified as allowable with mitigation (Table 1). Mitigation will be provided by EEP through the Riparian Restoration Buffer Fund for these impacts of 1207 sq ft in Zone 1 and 504 sq ft in Zone 2 as noted in the EEP Mitigation Acceptance Letter dated March 24, 2008.

SCHEDULE

The project calls for a letting of September 16, 2008 (review date of July 29, 2008) with a date of availability of October 28, 2008. It is expected that the contractor will choose to start construction in October 2008.

REGULATORY APPROVALS

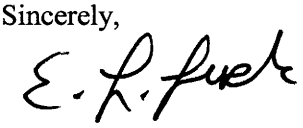
Section 404 Permit: The project has been processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by Nationwide Permits 13, 23, and 33 (72 FR 11092; March 12, 2007).

Section 401 Permit: We anticipate Section 401 General Water Quality Certification (WQC) numbers 3688, 3689, and 3701 will apply to this project. Written concurrence from NCDWQ will be required. In compliance with Section 143-215.3D(e) of the NCAC, we will provide $570.00 as payment for processing the Section 401 permit application as previously noted in this application (see subject line). In accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200 we are providing five copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their review.

Buffer Certification: This project has been designed to comply with the Tar-Pamlico Riparian Buffer Regulations (15A NCAC 2B.0242). NCDOT requests a Tar-Pamlico Riparian Buffer Authorization from the Division of Water Quality.

A copy of this permit application will be posted on the NCDOT website at: http://www.ncdot.org/doh/preconstruct/pe/. If you have any questions or need additional information, please call Duncan Quinn at 919-715-5524.

Sincerely,



Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

w/attachment
Mr. Brian Wrenn, NCDWQ (5 Copies)

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. J. Wally Bowman, PE., Division Engineer
Mr. Chris Murray, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC
Mr. Greg Blakeney, PDEA
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Ms. LeiLani Paugh, NEU
Mr. Randy Griffin, NEU

Office Use Only: Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NWP 13, 23, 33

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here: ☐

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here: ☒

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here: ☐

II. Applicant Information

1. Owner/Applicant Information
   Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: North Carolina Department of Transportation
   1598 Mail Service Center
   Raleigh, NC 27699-1598

   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: _____

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
   Name: _____
   Company Affiliation: _____
   Mailing Address: _____

   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Replacement of Bridge No. 57 on SR 1419 (Ronald Tharrington Road) over Sycamore Creek

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4115

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Franklin Nearest Town: Louisburg
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): From Louisburg, take NC 56-581 east about a half mile and turn left on Ronald Tharrington Road. Continue for approximately 3.5 miles to bridge site.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 36.117115 °N 78.237504 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Sycamore Creek

8. River Basin: Tar-Pamlico
   (Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at http://h2o.enr.state.nc.us/admin/maps/.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: SR 1419 (Ronald Tharrington Road) is classified as a rural minor collector by the statewide functional classification system. Land use includes cultivated and pasture land, forested areas, and few single-family residences.

10. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing the bridge with a new culvert on the existing alignment, while maintaining traffic with an off-site detour during construction. The proposed structure will be a two-barrel reinforced concrete box culvert with a barrel opening of 11 ft x 10 ft and approximately 85 ft long. The bottom of the culvert will be buried 1 ft below the stream bed and have a 2-foot sill in the westernmost barrel entrance. A floodplain bench will be cut upstream and downstream of the culvert to match the sill elevation. A 60-inch diameter pipe will also be installed that will carry flow from an unnamed tributary to Sycamore Creek (UT3) into the middle of the culvert. The proposed roadway over the culvert consists of 32 ft of clear roadway with two travel lanes, each 11 ft wide with 5-foot wide shoulders and a berm gutter. Heavy duty excavation equipment will be used such as trucks, dozers, cranes, and other various equipment necessary for roadway construction.

11. Explain the purpose of the proposed work: The existing bridge, built in 1966 and having a sufficiency rating of 25.5 out of a possible 100 (for a new structure), is considered functionally obsolete and is in need of replacement. The new culvert is intended to provide a safer structure consistent with federal and state standards.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. N/A

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.
N/A

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an

accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: Please refer to cover letter.

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
Site 1	Permanent fill	Forested – beaver pond	yes	0 (abutting)	0.05
Site 1	Mechanized clearing	Forested – beaver pond	yes	0 (abutting)	0.05
Total Wetland Impact (acres)					0.10

3. List the total acreage (estimated) of all existing wetlands on the property: 1.61

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Site 1	Sycamore Creek/UT3	Culvert/Pipe	perennial	20-25 ft	145	0.05
Site 1	Sycamore Creek	Bank Stabilization	perennial	20-25 ft	78	0
Site 1	Sycamore Creek/UT3	Temp. dewatering	perennial	20-25 ft	43	0.01
Total Stream Impact (by length and acreage)					266	0.06

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
Total Open Water Impact (acres)				0

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	0.06
Wetland Impact (acres):	0.10
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.16
Total Stream Impact (linear feet):	266

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes ☒ No
Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

_____

_____

8. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):_____
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):_____
Current land use in the vicinity of the pond:_____
Size of watershed draining to pond:_____ Expected pond surface area:_____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction

techniques to be followed during construction to reduce impacts. Please refer to cover letter.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at http://h2o.enr.state.nc.us/ncwetlands/strmgide.html.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

   NCDOT has proposed on-site stream mitigation by fencing out livestock and replanting a 50-foot wide buffer along 465 feet of the northern bank of UT1 as described in the attached Stream Mitigation Plan. This stream enhancement proposal is designed to offset all 145 linear feet of permanent stream impacts associated with this project.

   Proposed mitigation for buffer impacts will be provided by EEP through the Riparian Restoration Buffer Fund. Please refer to the attached EEP Mitigation Acceptance Letter dated March 24, 2008 and the cover letter for further details.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at

(919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): 0
Amount of buffer mitigation requested (square feet): Zone 1: 1207 sq ft; Zone 2: 504 sq ft
Amount of Riparian wetland mitigation requested (acres): 0
Amount of Non-riparian wetland mitigation requested (acres): 0
Amount of Coastal wetland mitigation requested (acres): 0

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☒ No ☐

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impacts (square feet)	Multiplier	Required Mitigation (square feet)
1	1207	3 (2 for Catawba)	3621
2	504	1.5	756
Total	1711		4377

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. As per EEP Acceptance Letter, EEP will transfer funds into the Riparian Restoration Buffer Fund.

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Please refer to Stormwater Management Plan.

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.
N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes ☐ No ☒

Is this an after-the-fact permit application? Yes ☐ No ☒

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description: N/A

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

N/A

E. L. Lusk 6.10.08

Applicant/Agent's Signature **Date**

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

Stream Mitigation Plan
Bridge No 57 on SR 1419
over Sycamore Creek
Franklin County

TIP B-4115
WBS No. 33470.1.1
March 2008

The North Carolina Department of Transportation will perform on-site mitigation for stream impacts associated with TIP B-4115, replacement of Bridge No. 57 over Sycamore Creek. The mitigation site contains approximately 1.58 acres and occurs within the proposed right of way located in the north-eastern quadrant of the project area.

NCDOT plans to enhance 465 feet of stream by fencing out livestock and replanting the buffer along the tributary that leads to Sycamore Creek. This site is proposed to offset the 145 feet of stream impacts associated with the bridge project.

Existing Conditions

This project is located in the central region of Franklin County on Ronald Tharrington Road about five miles east of Louisburg off Highway 56. Sycamore Creek flows in a southerly direction under the highway. NCDOT plans to replace the bridge with two 9' by 8' concrete box culverts.

An unnamed tributary (UT) enters Sycamore Creek on the northern side of the bridge about thirty yards upstream. Currently, livestock have access to the UT, causing bank erosion and associated water quality degradation. The south side of the UT has a wooded canopy buffer with very little understory. The northern side of the tributary is in pasture and has no wooded buffer.

The site was surveyed for bedrock in the channel to address agency concerns about a potential headcut at the cattle crossing along the mid-section of the UT. Bedrock outcrops were found at 46, 95, 367, and 420 feet from the upper end of the UT. The stream is slightly incised with a 2.5 percent slope through this reach

The Natural Resources Technical Report for TIP B-4115, dated February 2006, provides further details concerning the existing roadway and project study area.

Proposed Conditions

The proposed stream enhancement consists of planting a 50 ft wide wooded buffer along the northern side of the UT and fencing out the livestock. Given the amount of existing bedrock and removal of livestock access, the stream should stabilize without additional grade control.

The buffer will be planted at a density of 680 trees/acre on 8 foot centers with following species as available: American Sycamore (*Planatus Occidentalis*), Green Ash *(Fraxinus Pennsylvanica*) Overcup Oak (*Quercus Lyrata*) and Willow Oak (*Quercus Phellos*). The mitigation site will be purchased fee simple and held in perpetuity.

Monitoring

NCDOT shall monitor the restoration site by visual observation for stability and photo points for the survival and the density of the vegetation. NCDOT will monitor the site for a minimum of three years or until the site is a success.

Ecosystem Enhancement PROGRAM

March 24, 2008

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4115, Replace Bridge Number 57 on SR 1419 (Ronald Tharrington Road) over Sycamore Creek, Franklin County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream and buffer mitigation for the subject project. Based on the information supplied by you on March 19, 2008, the impacts are located in CU 03020101 of the Tar-Pamlico River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Warm Stream:	223 feet
Buffer Zone 1:	1,207 square feet
Buffer Zone 2:	504 square feet

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds from Tri-Party MOA Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP B-4115. Subsequently, EEP will conduct a review of current MOA mitigation projects in the river basin to

determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from Tri-Party MOA Fund.

EEP commits to implementing sufficient stream mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced stream or buffer impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Eric Alsmeyer, USACE – Raleigh
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-4115

Ecosystem Enhancement PROGRAM

March 24, 2008

Mr. Eric Alsmeyer
U. S. Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

Dear Mr. Alsmeyer:

Subject: EEP Mitigation Acceptance Letter:

B-4115, Replace Number 57 over Sycamore Creek on SR 1419 (Ronald Tharrington Road), Franklin County; Tar-Pamlico River Basin (Cataloging Unit 03020101); Central Piedmont (CP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream mitigation and the buffer mitigation for the unavoidable impact associated with the above referenced project. As indicated in the NCDOT's mitigation request dated March 19, 2008, stream mitigation from EEP is required for approximately 223 feet of warm stream impacts.

Also, this project will impact buffers located in CU 03020101 of the Tar-Pamlico River Basin. The total buffer impacts are 1,207 square feet in Zone 1 and 504 square feet in Zone 2 with a total buffer mitigation requirement of 4,377 square feet. If the buffer impacts or the amount of mitigation required from EEP increases or decreases for this project, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required. All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund (Fund 2982).

The NCDOT will be responsible to ensure that the appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds from Fund 2984 (Tri-Party MOA Account) into Fund 2982 and commit to provide the appropriate buffer mitigation to offset the impacts associated with this project.

STORMWATER MANAGEMENT PLAN

B-4115, State Project 33470.1.1 Date:3/12/07
Franklin County
Hydraulics Project Engineer: R.C. Henegar, PE

ROADWAY DESCRIPTION

The project involves replacing Bridge No. 57 over Sycamore Creek on SR 1419 in Franklin County. The overall length of the project is 0.18miles. The existing 18-foot paved road is a two-lane road with 3-foot grass shoulders. The existing structure is a 41.5 ft single span bridge with a clear roadway width of 24 feet. The project will be a two-lane section with 11-foot lanes and 5 foot grassed shoulders. The proposed structure will be a 2 @ 11ft. x 10ft. RCBC with an overall length of 85 ft. An off site detour is proposed for this project.

ENVIRONMENTAL DESCRIPTION

This project is located in the Tar-Pamlico River Basin. There is one stream crossing on this project, which has a C; NSW classification. This stream is not on the 303(d) list. Wetlands will be impacted by the proposed project.

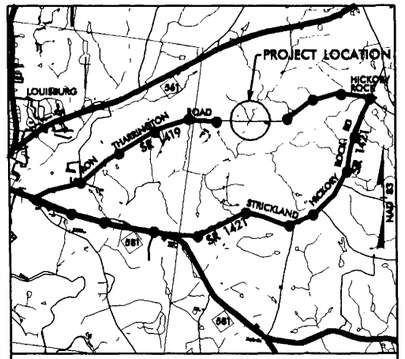
BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The storm drainage is being discharged as far away from the stream as practicable. A preformed scour hole is being used to diffuse the flow in the Southeast quadrant of project. A sill is being placed in the RCBC inlet in order to create floodplain up and downstream and maintain the existing stream width. Grass lined ditches are used wherever practicable.

N.C.	B-4115	NO. 1	SHEET
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33470.1.1	BRZ-1419(2)	PE	
33470.2.1	BRZ-1419(2)	UTIL & ROW	

Buffer Drawing
Sheet 1 of 7

SEE SHEET 1-B FOR CONVENTIONAL SHEET SYMBOLS
SEE SHEET 1-C FOR SURVEY CONTROL SHEETS



VICINITY MAP
DETOUR ROUTE

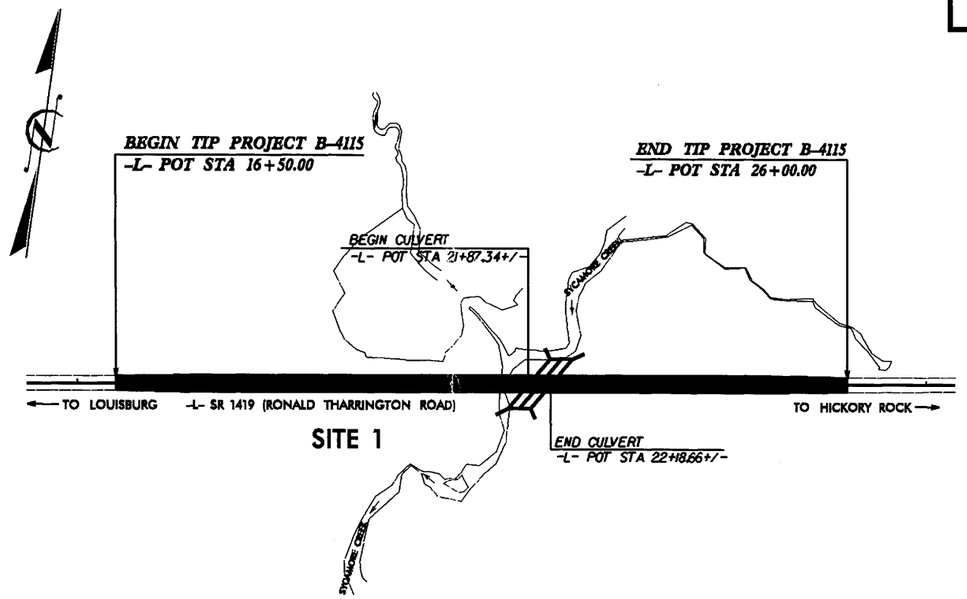
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FRANKLIN COUNTY

LOCATION: BRIDGE NO. 57 OVER SYCAMORE CREEK ON SR 1419

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT

4



SITE 1

BUFFER PERMIT

NOTE:

1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

TIP PROJECT: B-4115

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2008 = 646
ADT 2028 = 1063
DHV = 10 %
D = 60 %
T = 5 % *
V = 60 MPH
RURAL MINOR COLLECTOR
* TTST 3% DUAL 2%

PROJECT LENGTH

ROADWAY LENGTH TIP PROJECT B-4115 = 0.174 MI
STRUCTURE LENGTH TIP PROJECT B-4115 = 0.006 MI
TOTAL LENGTH TIP PROJECT B-4115 = 0.180 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 10, 2007

LETTING DATE:
SEPTEMBER 16, 2008

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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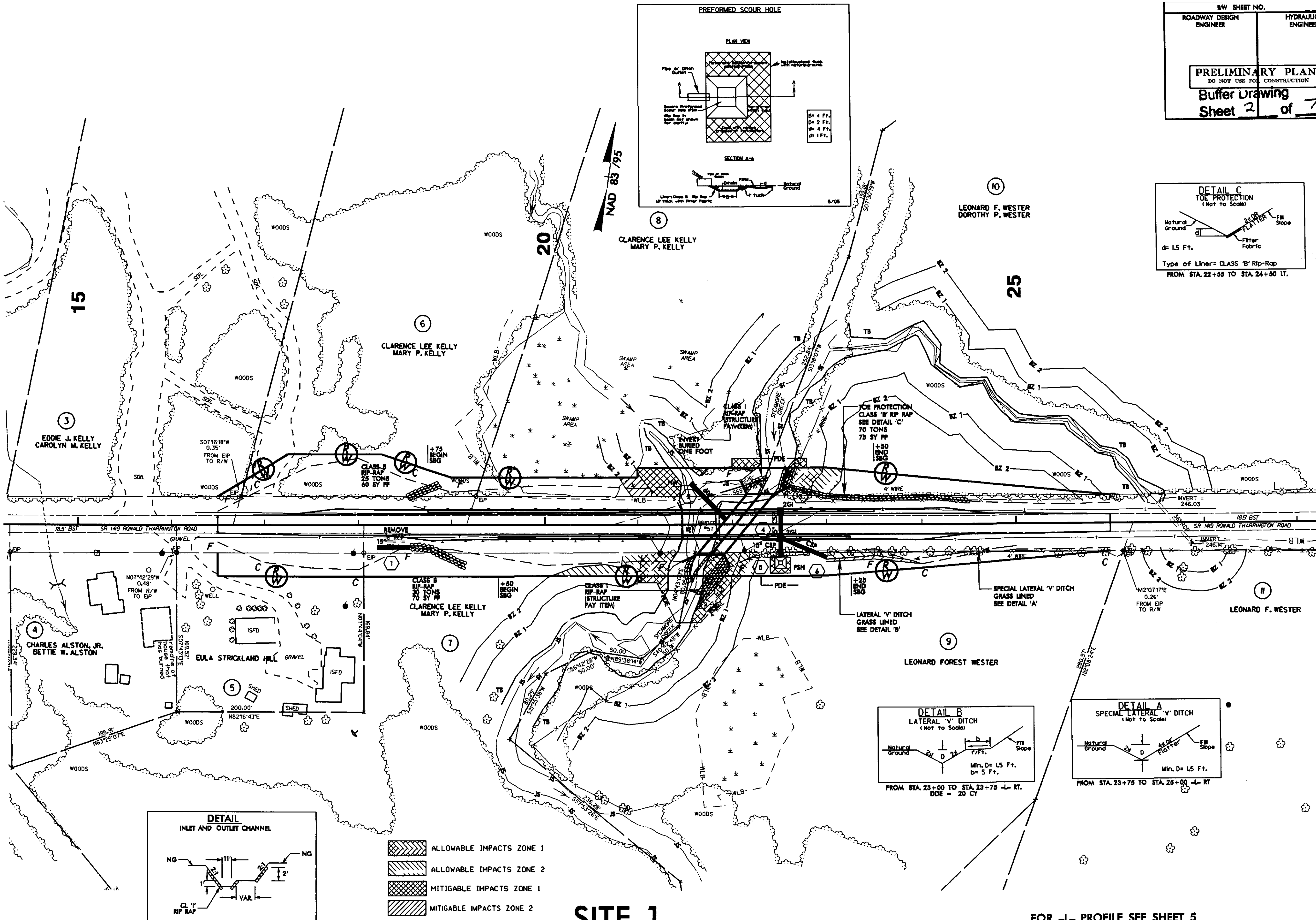
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 2 of 7



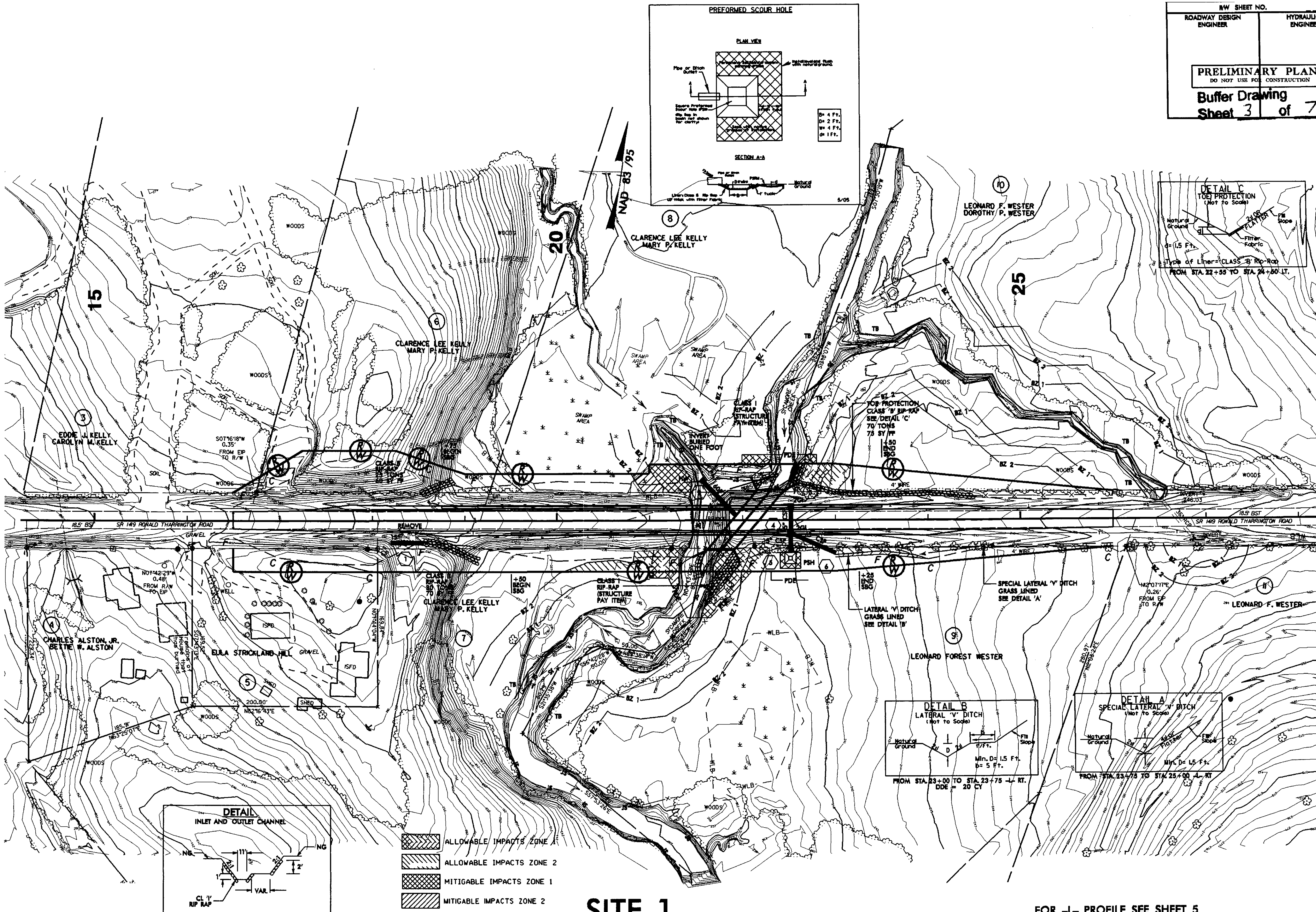
PREFORMED SCOUR HOLE
PLAN VIEW
SECTION A-A
B= 4 Ft.
D= 2 Ft.
W= 4 Ft.
d= 1 Ft.
5/05
NAD 83/95
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
Fill Slope
Filter Fabric
d= 1.5 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 22+55 TO STA. 24+50 LT.
15
20
25
EDDIE J. KELLY
CAROLYN M. KELLY
CLARENCE LEE KELLY
MARY P. KELLY
LEONARD F. WESTER
DOROTHY P. WESTER
CHARLES ALSTON, JR.
BETTIE W. ALSTON
EULA STRICKLAND HILL
LEONARD FOREST WESTER
LEONARD F. WESTER
WOODS
SWAMP AREA
SOIL
GRAVEL
WELL
SHED
SR 1419 RONALD THARRINGTON ROAD
18.5' BST
REMOVE
CLASS B RIP-RAP 25 TONS 60 SY FF
CLASS B RIP-RAP 30 TONS 70 SY FF
CLASS I RIP-RAP (STRUCTURE PAY ITEM)
TOE PROTECTION CLASS 'B' RIP RAP SEE DETAIL 'C' 70 TONS 75 SY FF
INVERT BURIED ONE FOOT
SYCAMORE CREEK
+75 BEGIN SBG
+50 END SBG
+50 BEGIN SBG
+25 END SBG
SPECIAL LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'A'
LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'B'
INVERT = 246.03
4' WIRE
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
b= 5 Ft.
FROM STA. 23+00 TO STA. 23+75 -L- RT.
DDE = 20 CY
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 23+75 TO STA. 25+00 -L- RT
DETAIL
INLET AND OUTLET CHANNEL
NG
CL 'I' RIP RAP
VAR.
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2

SITE 1

FOR -L- PROFILE SEE SHEET 5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-

REVISIONS

19-DEC-2007 15:56


PREFORMED SCOUR HOLE
PLAN VIEW
SECTION A-A
NAD 83/95
CLARENCE LEE KELLY
MARY P. KELLY
LEONARD F. WESTER
DOROTHY P. WESTER
DETAIL C
TOE PROTECTION
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 22+55 TO STA. 24+60 LT.
EDDIE J. KELLY
CAROLYN M. KELLY
SWAMP AREA
TOE PROTECTION
CLASS 'B' RIP RAP
SEE DETAIL 'C'
70 TONS
75 SY FF
SR 1419 RONALD THARRINGTON ROAD
REMOVE
CHARLES ALSTON, JR.
BETTIE W. ALSTON
EULA STRICKLAND HILL
LEONARD FOREST WESTER
LEONARD F. WESTER
SPECIAL LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'A'
LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'B'
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
b= 5 Ft.
FROM STA. 23+00 TO STA. 23+75 -L- RT.
DDE = 20 CY
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 23+75 TO STA. 25+00 -L- RT.
DETAIL
INLET AND OUTLET CHANNEL
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
REVISIONS

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 3 of 7

SITE 1

FOR -L- PROFILE SEE SHEET 5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-

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Buffer Drawing Sheet 4 of 7

WETLAND BOUNDARY
CLEARING LIMITS
0.020
0.020
2H
2H
21+50.00

CLEARING LIMITS
WETLAND BOUNDARY
0.020
0.020
2H
2H
21+00.00

CLEARING LIMITS
WETLAND BOUNDARY
0.020
0.020
2H
2H
20+50.00

CLEARING LIMITS
WETLAND BOUNDARY
0.020
0.020
2H
2H
20+00.00

CLEARING LIMITS
WETLAND BOUNDARY
0.020
0.020
2H
2H
19+50.00

-L-

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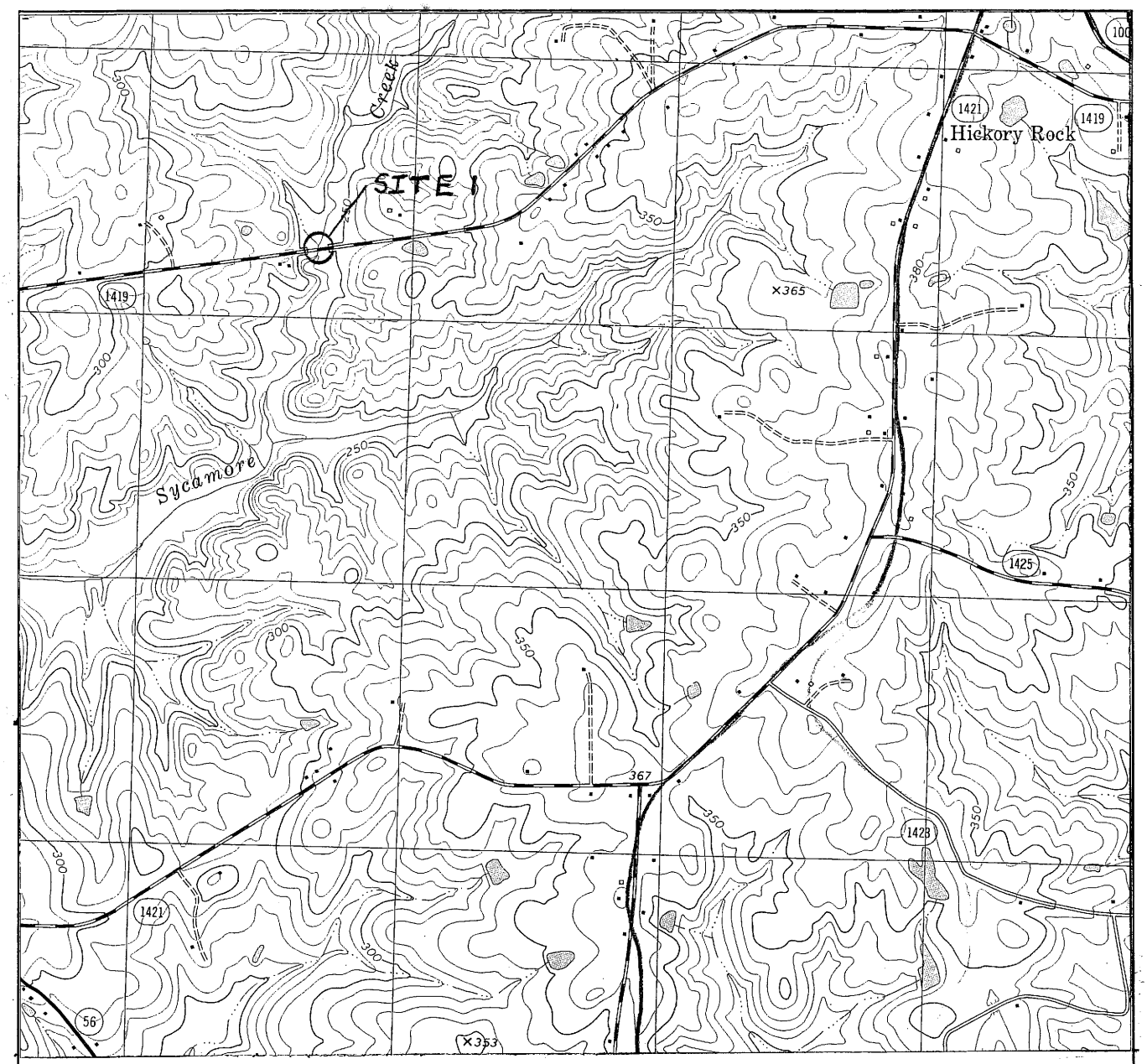
mgowen



NOT TO SCALE

TAR-PAMLICO BUFFER
VICINITY MAPS

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
FRANKLIN COUNTY

PROJECT: 33470.1.1 (B-4115)
BRIDGE NO. 57 OVER
SYCAMORE CREEK
ON SR 1419

SHEET 5 OF 7 11/26/2007

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
7	CLARENCE LEE KELLY	2905 DEEDA CT. RALEIGH, NC 27610
8	CLARENCE LEE KELLY	2905 DEEDA CT. RALEIGH, NC 27610
9	LEONARD F. WESTER	798 WHITE LEVEL ROAD LOUISBURG, NC 27549
10	LEONARD F. WESTER	798 WHITE LEVEL ROAD LOUISBURG, NC 27549

NCDOT

DIVISION OF HIGHWAYS

FRANKLIN COUNTY

PROJECT: 33470.1.1 (B-4115)

BRIDGE NO. 57 OVER

SYCAMORE CREEK

ON SR 1419

11/26/07

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	2@ 11'X10'	22+03 -L-	X		4614.0	2364.0	6978.0	1207.0	504.0	1711.0		
	RCBC											
TOTAL:					4614.0	2364.0	6978.0	1207.0	504.0	1711.0		

LENGTH OF IMPACT TO SYCAMORE CREEK 135 FT.

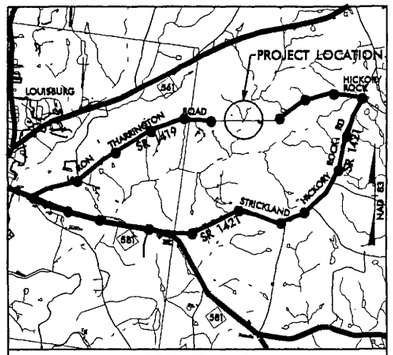
N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

FRANKLIN COUNTY
PROJECT: 33470.1.1. (B-4115)

11/26/2007
SHEET 7 OF 7

N.C.	B-4115	1
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33470.1.1	BRZ-1419(2)	PE
33470.2.1	BRZ-1419(2)	UTIL & ROW
Permit Drawing Sheet 1 of 7		

SEE SHEET 1-C FOR SURVEY CONTROL SHEETS

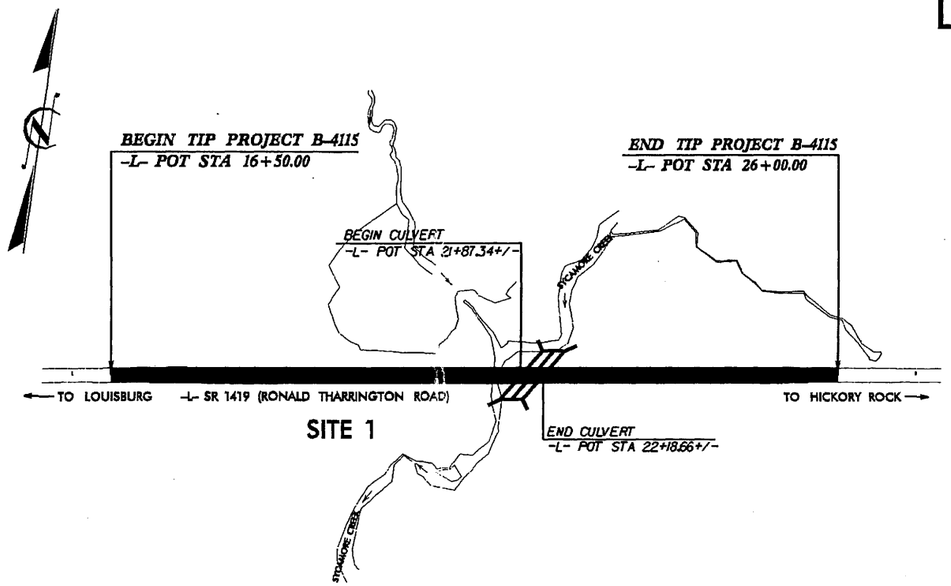


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FRANKLIN COUNTY

LOCATION: BRIDGE NO. 57 OVER SYCAMORE CREEK ON SR 1419
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT

4



WETLAND PERMIT

NOTE:

1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-4115

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 646
ADT 2028 = 1063
DHV = 10 %
D = 60 %
T = 5 % *
V = 60 MPH
RURAL MINOR COLLECTOR
* TTST 3% DUAL 2%

PROJECT LENGTH

ROADWAY LENGTH TIP PROJECT B-4115 = 0.174 MI
STRUCTURE LENGTH TIP PROJECT B-4115 = 0.006 MI
TOTAL LENGTH TIP PROJECT B-4115 = 0.180 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 10, 2007

LETTING DATE: SEPTEMBER 16, 2008

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

PREPARED FOR THE DEPARTMENT OF TRANSPORTATION · STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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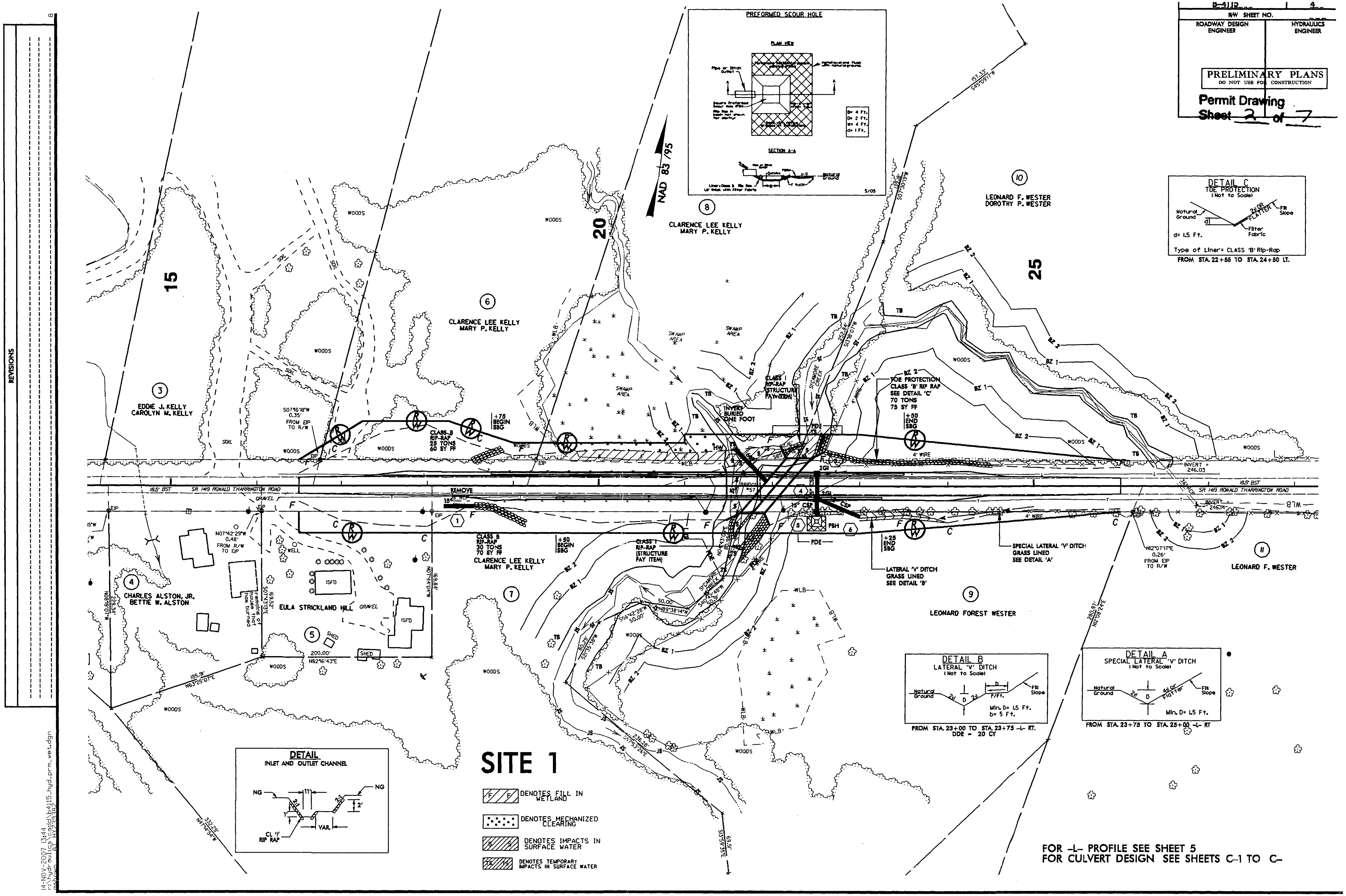

B-4115
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 2 of 7
PREFORMED SCOUR HOLE
PLAN VIEW
SECTION A-A
NAD 83/95
DETAIL C
TOE PROTECTION
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 22+55 TO STA. 24+50 LT.
CLARENCE LEE KELLY
MARY P. KELLY
LEONARD F. WESTER
DOROTHY P. WESTER
EDDIE J. KELLY
CAROLYN M. KELLY
CHARLES ALSTON, JR.
BETTIE W. ALSTON
EULA STRICKLAND HILL
LEONARD FOREST WESTER
LEONARD F. WESTER
SR 1419 RONALD THARRINGTON ROAD
SWAMP AREA
WOODS
TOE PROTECTION
CLASS 'B' RIP RAP
SEE DETAIL 'C'
70 TONS
75 SY FF
SPECIAL LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'A'
LATERAL 'V' DITCH
GRASS LINED
SEE DETAIL 'B'
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
FROM STA. 23+00 TO STA. 23+75 -L- RT.
DDE = 20 CY
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
FROM STA. 23+75 TO STA. 25+00 -L- RT
DETAIL
INLET AND OUTLET CHANNEL
SITE 1
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
FOR -L- PROFILE SEE SHEET 5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-
REVISIONS
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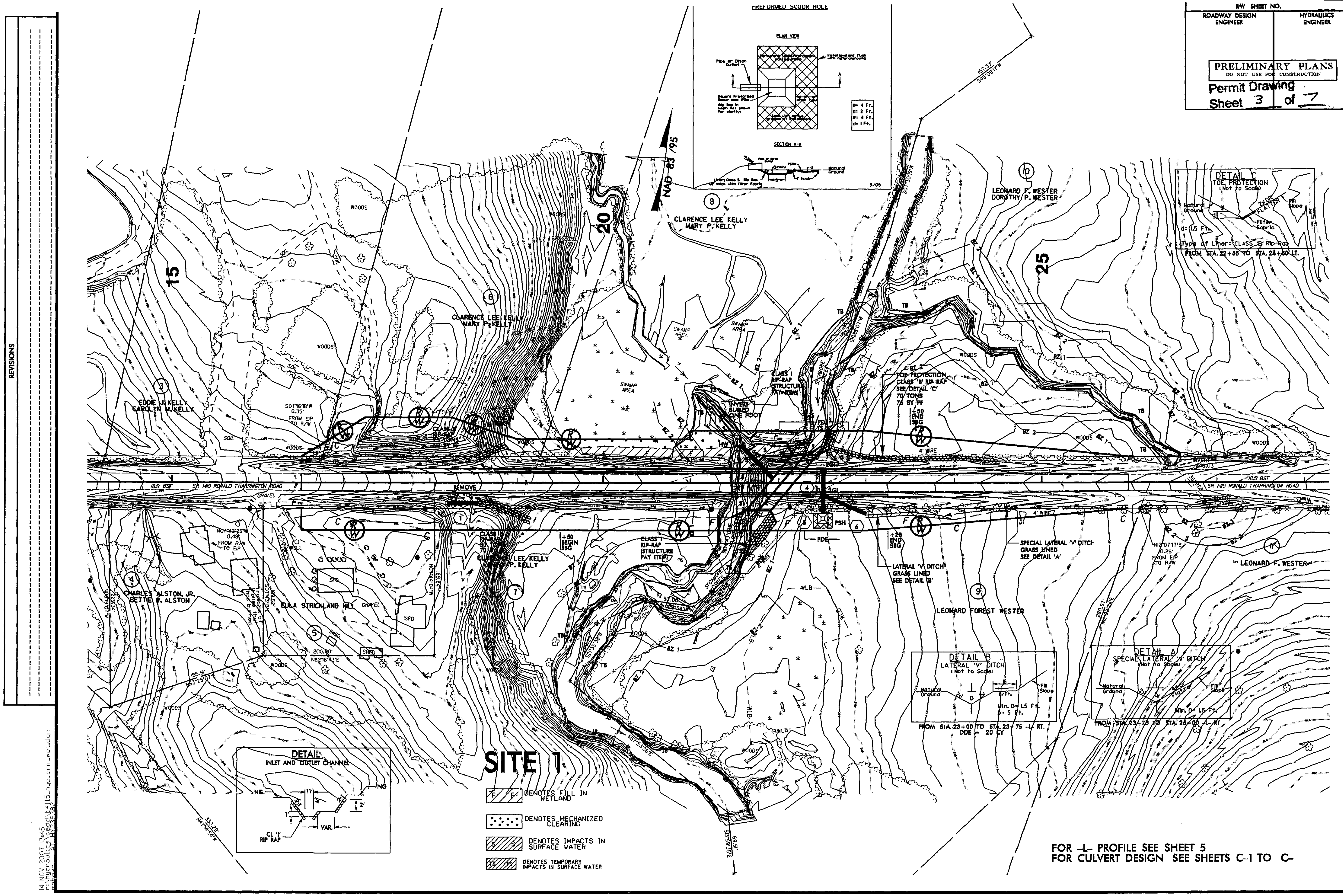
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 3 of 7
REVISIONS
PREFORMED SCOUR HOLE
PLAN VIEW
SECTION A-A
NAD 83/95
15
20
25
CLARENCE LEE KELLY
MARY P. KELLY
LEONARD F. WESTER
DOROTHY P. WESTER
EDDIE J. KELLY
CAROLYN M. KELLY
CHARLES ALSTON, JR.
BETTIE W. ALSTON
EULA STRICKLAND HILL
LEONARD FOREST WESTER
SWAMP AREA
WOODS
SR 1419 RONALD THARRINGTON ROAD
18.5' BST
REMOVE
CLASS I RIP-RAP (STRUCTURE PAY ITEM)
INVERT BURIED ONE FOOT
BZ 2 TOE PROTECTION CLASS 'B' RIP-RAP SEE DETAIL 'C' 70 TONS 75 SY FF
+50 END SBG
+50 BEGIN SBG
+25 END SBG
LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'B'
SPECIAL LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'A'
DETAIL C
TOE PROTECTION
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 22+85 TO STA. 24+60 LT.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
B= 5 Ft.
FROM STA. 23+00 TO STA. 23+75 -L- RT.
DDE = 20 CY
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 23+75 TO STA. 25+00 -L- RT.
DETAIL
INLET AND OUTLET CHANNEL
CL 'I' RIP RAP
SITE 1
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
FOR -L- PROFILE SEE SHEET 5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-
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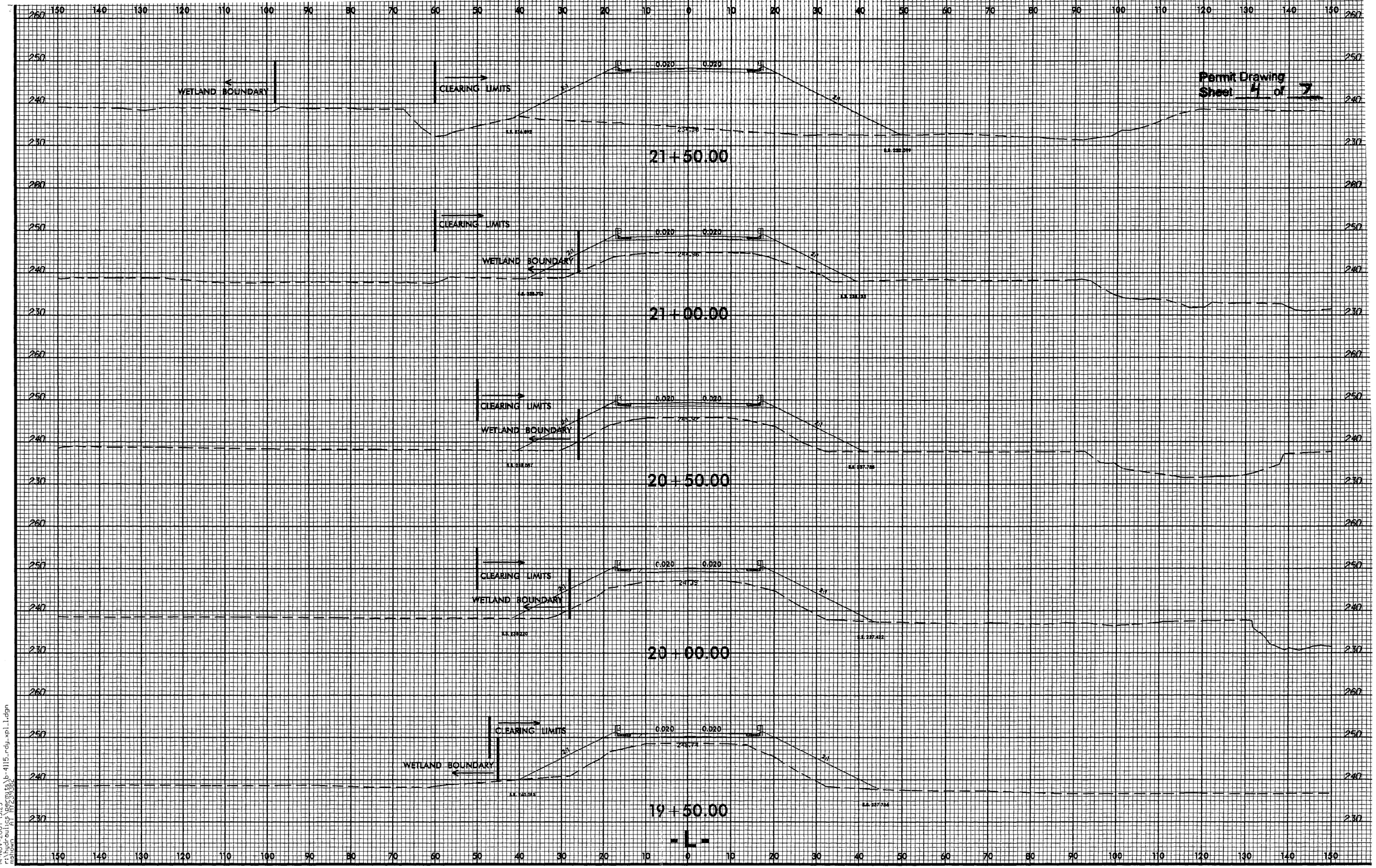
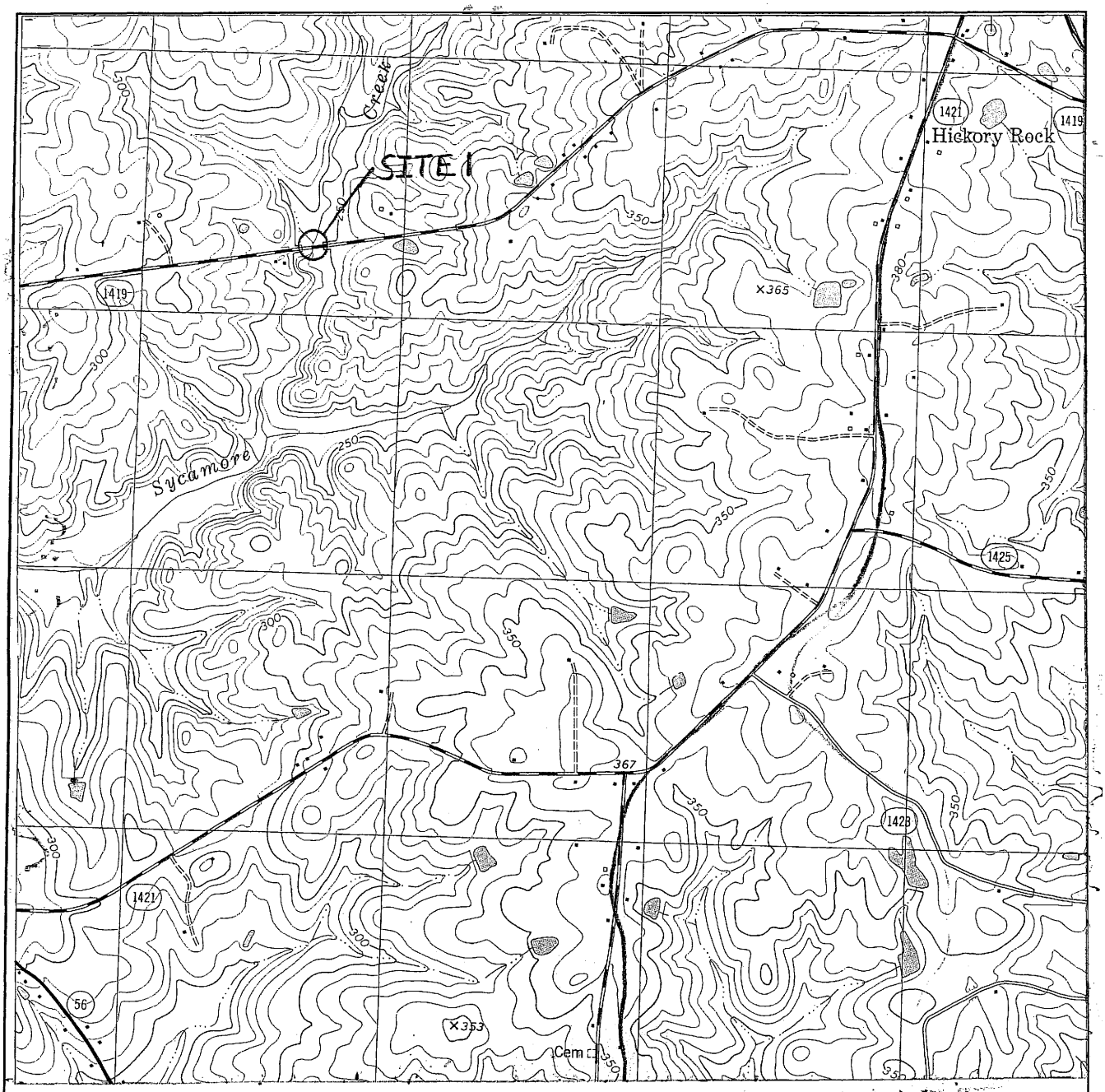
Permit Drawing
Sheet 4 of 7





VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
FRANKLIN COUNTY
PROJECT: 33470.1.1 (B-4115)
BRIDGE NO. 57 OVER
SYCAMORE CREEK
ON SR 1419

SHEET 5 **OF** 7 **11/26/07**

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
7	CLARENCE LEE KELLY	2905 DEEDA CT. RALEIGH, NC 27610
8	CLARENCE LEE KELLY	2905 DEEDA CT. RALEIGH, NC 27610
9	LEONARD F. WESTER	798 WHITE LEVEL ROAD LOUISBURG, NC 27549
10	LEONARD F. WESTER	798 WHITE LEVEL ROAD LOUISBURG, NC 27549

NCDOT

DIVISION OF HIGHWAYS

FRANKLIN COUNTY

PROJECT: 33470.1.1 (B-4115)

BRIDGE NO. 57 OVER

SYCAMORE CREEK

ON SR 1419

11/26/07

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	22+03 -L-	2@11'X10'	0.05			0.05		0.05	0.01	145	43	
		RCBC										
		Bank Stabilization								78		
TOTALS:			0.05			0.05		0.05	0.01	223	43	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FRANKLIN COUNTY
WBS - 33470.1.1 (B-4115)

SHEET 7 of 7

11/26/07

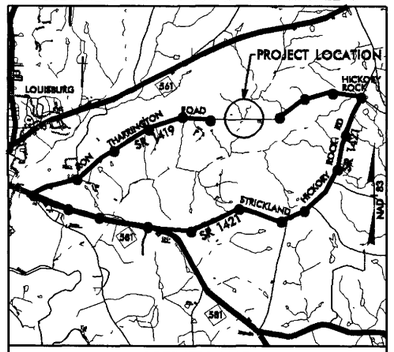
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4115

CONTRACT:

SEE SHEET 1-A FOR INDEX OF SHEETS
SEE SHEET 1-B FOR CONVENTIONAL SHEET SYMBOLS
SEE SHEET 1-C FOR SURVEY CONTROL SHEETS



VICINITY MAP
DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FRANKLIN COUNTY

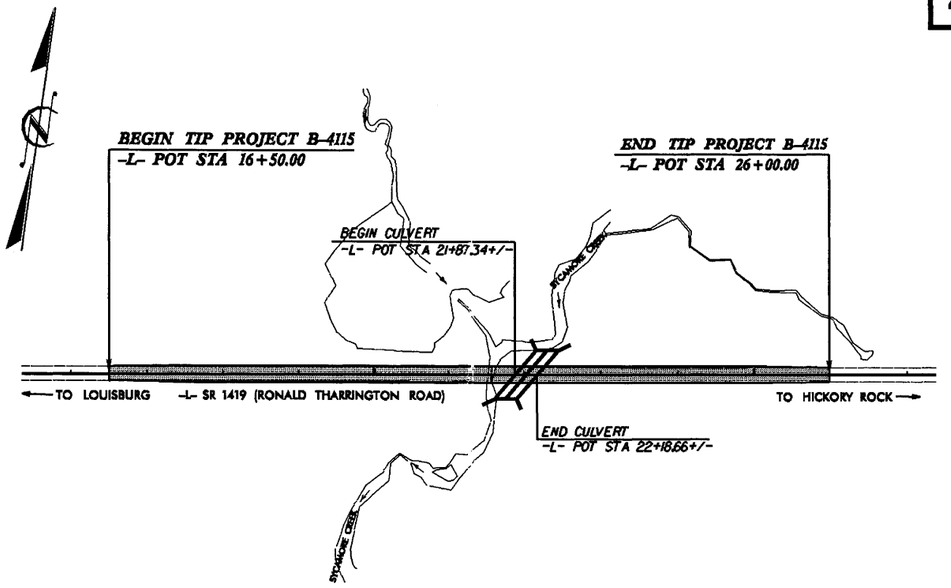
LOCATION: BRIDGE NO. 57 OVER SYCAMORE CREEK ON SR 1419

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4115	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33470.1.1	BRZ-1419(2)	PE
33470.2.1	BRZ-1419(2)	UTIL & ROW

4



NOTE:

1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 646
ADT 2028 = 1063
DHV = 10 %
D = 60 %
T = 5 % *
V = 60 MPH
RURAL MINOR COLLECTOR
* TTST 3% DUAL 2%

PROJECT LENGTH

ROADWAY LENGTH TIP PROJECT B-4115 = 0.174 MI
STRUCTURE LENGTH TIP PROJECT B-4115 = 0.006 MI
TOTAL LENGTH TIP PROJECT B-4115 = 0.180 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 10, 2007

LETTING DATE: SEPTEMBER 16, 2008

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
B-4115	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

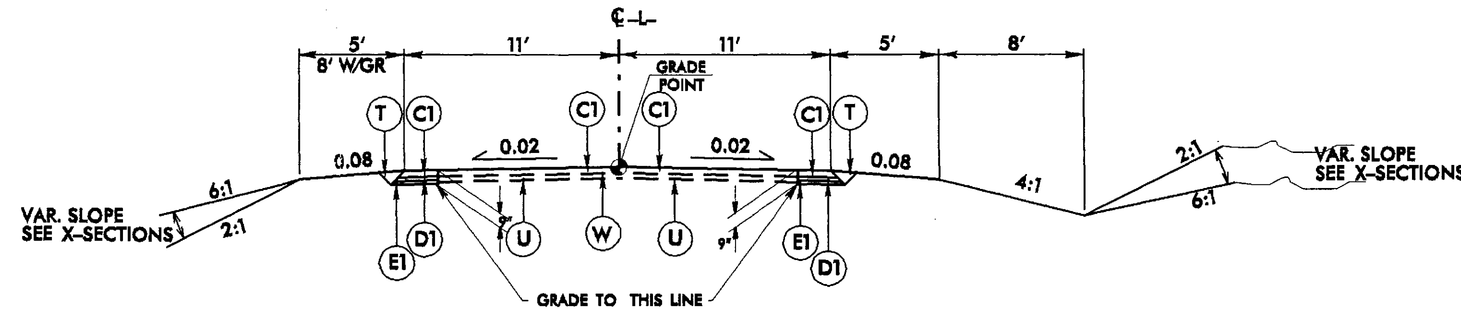
8/17/99

REVISIONS

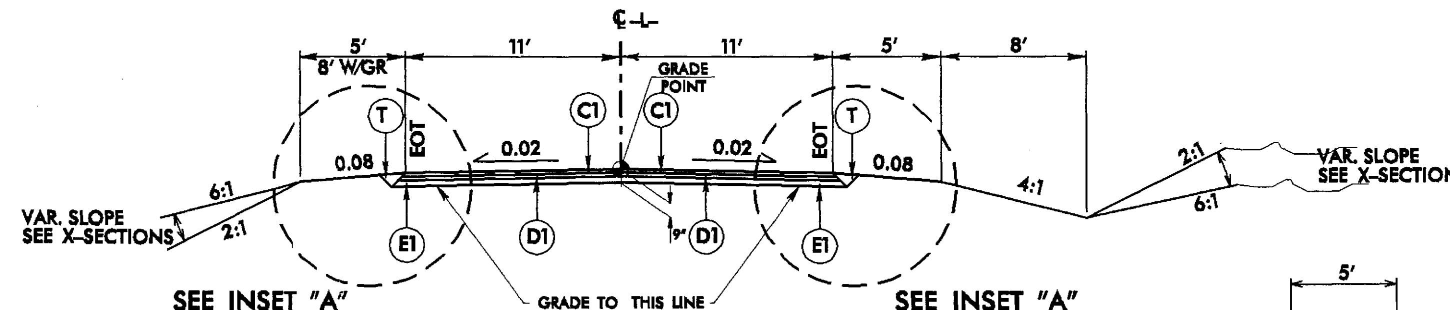
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LIFTS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

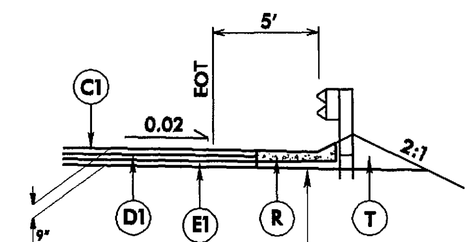
ALL PAVEMENT EDGE SLOPES ARE 1:1



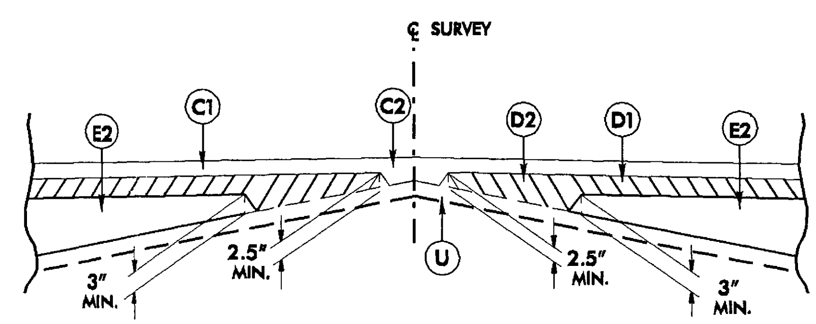
ROADWAY TYPICAL SECTION NO. 1
-L- STA. 16+50.00 TO STA. 18+00.00
-L- STA. 25+00.00 TO STA. 26+00.00



ROADWAY TYPICAL SECTION NO. 2
-L- STA. 18+00.00 TO 25+00.00



INSET "A"
PROPOSED SHOULDER BERM GUTTER
BEGIN SBG -L- STA 19+50 TO 23+25 (RT)
BEGIN SBG -L- STA 18+75 TO 23+50 (LT)



Detail Showing Method of Wedging

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PROJECT REFERENCE NO.	SHEET NO.
B-4115	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 6/17/99

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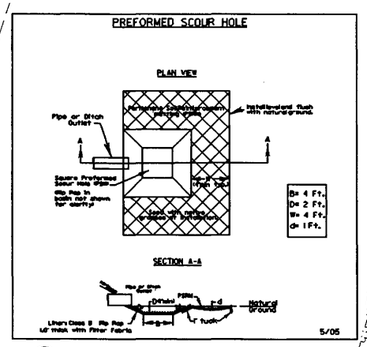
BEGIN TIP PROJECT B-4115
-L- POT STA. 16+50.00

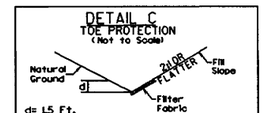
END TIP PROJECT B-4115
-L- POT STA. 26+00.00

NAD 83/95

PREFORMED SCOUR HOLE



DETAIL C
TOE PROTECTION
(Not to Scale)



d= 1.5 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 22+55 TO STA. 24+50 LT.

-BL- 100 STA 9+81.38
-L- STA 15+76.25
18.84 LT.

-BL- 101 STA 15+36.68 =
-L- STA 21+31.55
16.12 LT.

BM 201
-BL- STA.16+67.40
21.34' LEFT
ELEV = 240.55
RR SPIKE IN 20" POPLAR
-L- STA 22+62.44
36.41 LT.

-BL- 102 STA 19+80.31
-L- STA 25+75.17
12.56 LT.

-BL- 1 POT 21+88.61
GPS MON B4115-1
-L- POT STA 27+81.70
14.18' RT

BM 200
-BL- STA. 20+73.58
30.33' RIGHT
ELEV = 255.18
RR SPIKE IN 8" ELM
-L- STA 26+63.77
29.49 RT.

BEGIN CULVERT
-L- POT STA 21+87.34+/-

END CULVERT
-L- POT - STA 22+18.66+/-

℄ 2 -11'x10' RCBC
-L- POT STA 22+03.00

EDDIE J. KELLY
CAROLYN M. KELLY
D.B. 1214, P. 873
B.M. 2001, P. 6

CLARENCE LEE KELLY
MARY P. KELLY
D.B. 1214, P. 879
B.M. 2001, P. 6

CLARENCE LEE KELLY
MARY P. KELLY
D.B. 1214, P. 903
B.M. 2001, P. 6

CLARENCE LEE KELLY
MARY P. KELLY
D.B. 1214, P. 891
B.M. 2001, P. 318

CHARLES ALSTON, JR.
BETTIE W. ALSTON
D.B. 1231, P. 489
B.M. 2001, P. 318

EULA STRICKLAND HILL
D.B. 650, P. 47
B.M. 2001, P. 318

LEONARD F. WESTER
DOROTHY P. WESTER
D.B. 1214, P. 547

LEONARD F. WESTER
D.B. 740, P. 194

LEONARD FOREST WESTER
D.B. 1053, P. 150

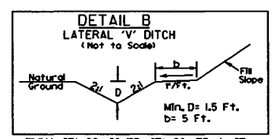
SR 1419 RONALD THARRINGTON ROAD
TO LOUISBURG
TO HICKORY ROCK
N 82° 11' 10.9" E - L -

CLASS I RIP-RAP (STRUCTURE PAY ITEM)
CLASS B RIP-RAP 90 TONS 70 SY FF
CLASS B RIP-RAP 25 TONS 60 SY FF
TOE PROTECTION CLASS 'B' RIP RAP SEE DETAIL 'C' 70 TONS 75 SY FF
INVERT BURIED ONE FOOT
REMOVE
100' TAPER LT & RT
GRAU 350
4' WIRE
PDE
PSH
SBG
EIP
EX.R/W
SOIL
WOODS
GRAVEL
SHED
ISFD
WELL
SWAMP AREA
SWAMP CREEK
TBM
INVERT = 246.03

LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'B'

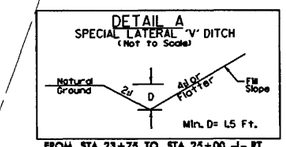
SPECIAL LATERAL 'V' DITCH GRASS LINED SEE DETAIL 'A'

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



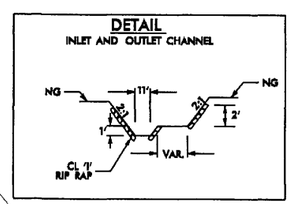
FROM STA. 23+00 TO STA. 23+75 -L- RT.
DDE = 20 CY

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



FROM STA. 23+75 TO STA. 25+00 -L- RT

DETAIL
INLET AND OUTLET CHANNEL



FOR -L- PROFILE SEE SHEET 5
FOR CULVERT DESIGN SEE SHEETS C-1 TO C-

PROJECT REFERENCE NO.	SHEET NO.
B-4115	5

ROADWAY DESIGN ENGINEER

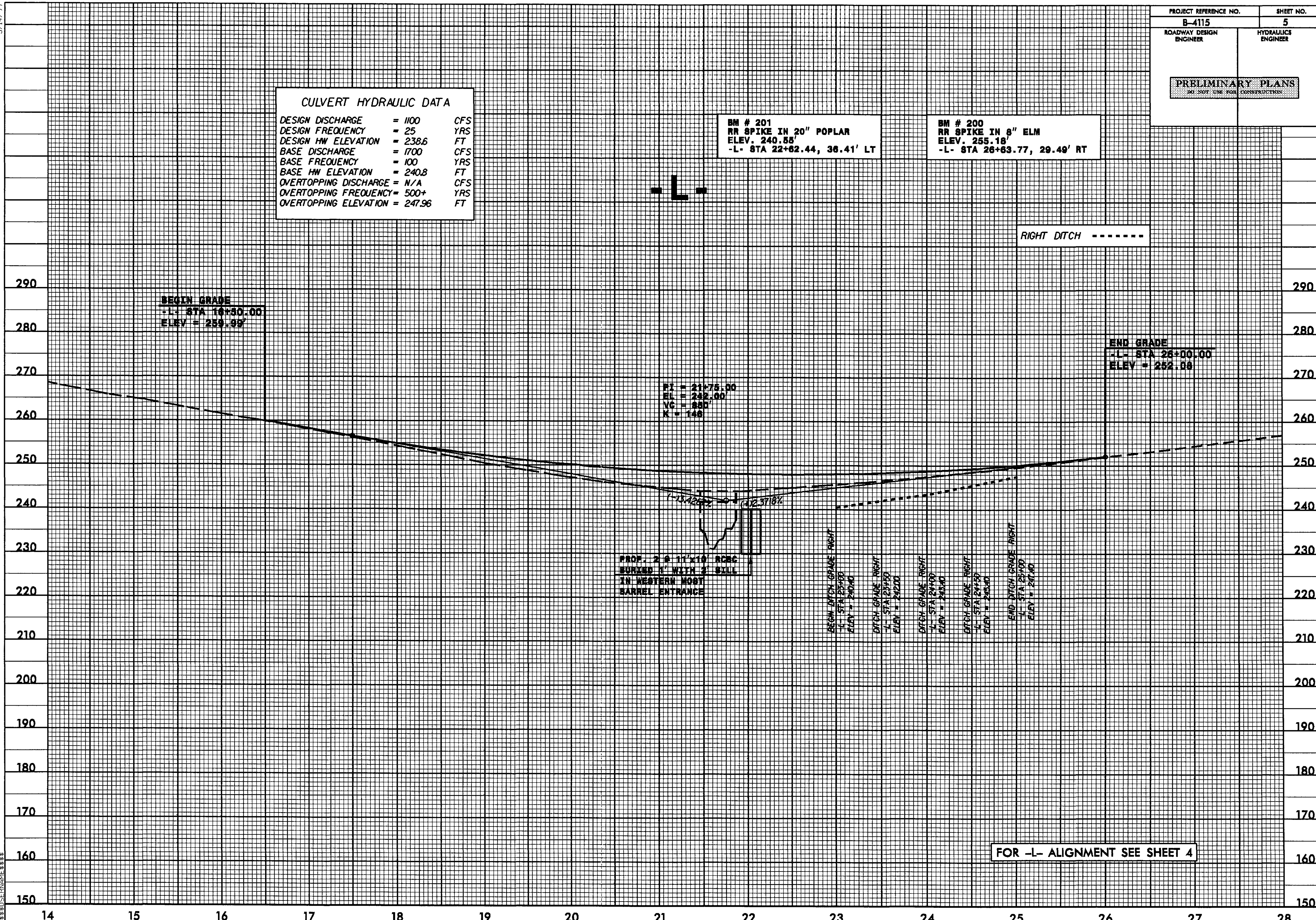
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1100	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 238.6	FT
BASE DISCHARGE	= 1700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 240.8	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 247.96	FT



BM # 201
RR SPIKE IN 20" POPLAR
ELEV. 240.55'
-L- STA 22+62.44, 36.41' LT
BM # 200
RR SPIKE IN 8" ELM
ELEV. 255.18'
-L- STA 26+63.77, 29.49' RT
-L-
RIGHT DITCH
BEGIN GRADE
-L- STA 16+50.00
ELEV = 259.99'
END GRADE
-L- STA 26+00.00
ELEV = 252.08
PI = 21+75.00
EL = 242.00'
VC = 850'
K = 146
(-)3.4267%
(+)2.3718%
PROP. 2 @ 11'x10' RCBC
BURIED 1' WITH 2' SILL
IN WESTERN MOST
BARREL ENTRANCE
BEGIN DITCH GRADE RIGHT
-L- STA 23+00
ELEV = 240.40
DITCH GRADE RIGHT
-L- STA 23+50
ELEV = 242.00
DITCH GRADE RIGHT
-L- STA 24+00
ELEV = 243.40
DITCH GRADE RIGHT
-L- STA 24+50
ELEV = 245.40
END DITCH GRADE RIGHT
-L- STA 25+00
ELEV = 247.40
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
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FOR -L- ALIGNMENT SEE SHEET 4

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