STATE OF NORTH CAROLINA
# DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

June 25, 2004

U.S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Mr. Steve Lund
NCDOT Coordinator

SUBJECT: Individual Permit Application for NC 24/27 widening to a multi-lane facility from east of Big Bear Creek to SR 1963 (Oakboro Road/Saint Martin Road) in Albemarle, Stanly County, TIP No. R-0967CC; State Project No. 6.689004T. Division 10. $475 to Work Order 6.689004T (WBS Element 34355.1.4).

Dear Sir:

The NCDOT proposes to widen a 5.6 miles length of NC 24/27 in Stanly County. A four-lane divided roadway using a 46 feet grassed median is proposed. The proposed right-of-way (ROW) width for the project is 200 feet. Enclosed please find the ENG 4345 Form, 8 ½ x 11 drawings, half-sized plan sheets, and Indirect and Cumulative Effects Report for the subject project.

Summary of Impacts: Impacts on jurisdictional areas consists of a total of 0.18 acres of permanent wetland impacts, of which 0.04 acres are non-riverine (isolated) and 0.14 acres are riverine. There will also be approximately 1,272 linear feet of jurisdictional stream impacts.

Summary of Mitigation: The project has been designed to avoid and minimize impacts to jurisdictional areas throughout the NEPA and design processes. Detailed descriptions of these actions are presented elsewhere in this application. We propose to use the Ecosystem Enhancement Program (EEP) to mitigate for 0.14 acres of wetland impacts and 1,272 linear feet of jurisdictional stream impacts.

## Purpose and Need

The proposed project will improve safety and traffic handling capacity of NC 24/27 by providing motorists a multi-lane thoroughfare from Albemarle to Locust. NC 24/27 is a primary east-west route throughout Stanly County. The project is one of several

**MAILING ADDRESS:**
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794
WEBSITE: WWW.DOH.DOT.STATE.NC.US

**LOCATION:**
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

widening projects on NC 24/27 from Charlotte to Albemarle. Completion of this project and a nearby project in Cabarrus County (TIP No. R-615) will provide a multi-lane corridor from Charlotte to Albemarle. This project is included in the NCDOT's "Transportation 2001" intrastate highway program. This project is scheduled to be let November 16, 2004.

Alternatives: NCDOT investigated several alternatives for this project which were discussed in detail on pages 7 and 8 in the EA.

## Project Schedule

Schedule: Section A of R-967 was completed in February 1992. Section B of R-967 was completed in August 1991. Section CA of R-967 was let to construction in January 2004 and is scheduled for completion in September 2006. Section CB of R-967 was let to construction in January 2004 and is scheduled for completion in July 2007. Table 1 reflects the project breakdown, section limits, and project let dates.

Table 1. Construction limits and schedule

| Sections | Project Limits | Let Date |
|---|---|---|
| R-967A | NC 24/27 from approximately 300 ft west of SR 1142 to approximately 600 ft west of NC 205 | December 1989 |
| R-967B | NC 24/27 from approximately 600 ft west of NC 205 to approximately 750 ft west of SR 1249 | August 1989 |
| R-967CA | NC 24/27 from west of SR 1142 at the western city limits of Locust to east of Island Creek | January 2004 |
| R-967CB | NC 24/27 from east of Island Creek in Locust to east of Big Bear Creek near SR 1253 | January 2004 |
| R-967CC | NC 24/27 from east of Big Bear Creek to SR 1963 in Albemarle | November 2004 |

## Permitting History

Sections A and B have already been constructed. A permit application dated July 21, 2003 was submitted to the USACE and the NCDWQ for Sections CA and CB. A USACE Individual Permit was issued for Sections CA and CB on December 30, 2003 (Action ID. 200331135). A DWQ 401 Water Quality Certification was issued for Sections CA and CB on October 20, 2003 (DWQ Project No. 030891).

## NEPA Document Status

An Environmental Assessment (EA) for R-0967C was approved by PDEA on January 30, 1998. A Finding Of No Significant Impact (FONSI) for R-0967C was approved by the Project Development and Environmental Analysis Branch (PDEA) on December 2, 1998. The EA explains the purpose and need for the project, provides a description of the project and characterizes the social, economic, and environmental effects of the project.

Copies of the EA have been provided to the regulatory agencies involved in the approval process. Additional copies will be provided upon request.

## Independent Utility

According to 23 CFR 771.111(f), "...in order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated...shall:

(1) Connect logical termini and be of sufficient length to address environmental matters on a broad scope;

(2) Have an independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and,

(3) Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements."

The proposed project is needed to connect projects from NC 24/27 in Locust to NC 24/27 in Albemarle that are recently completed or to be completed in the near future. The western terminal will tie into a section of NC 24/27 east of Big Bear Creek that will be completed in 2007 (TIP Project R-967CB). The eastern terminus will tie into a section of NC 24/27 east of SR 1963 (St. Martin Rd.) that is completed (TIP Project R-2530AA). The locations of the proposed project's termini have been coordinated with other programmed TIP projects in the area. The locations of this project's termini do not preclude the development and assessment of multiple alternates for other programmed TIP projects in the area. In this regard, the proposed project demonstrates logical termini and independent utility.

This project can stand alone as a functioning project and is designed to be compatible with other TIP projects in the area. The environmental impacts of the other projects will be fully evaluated in separate environmental documents. NCDOT has determined this project meets the criteria set forth in 23 CFR 771.111(f).

## Resource Status

Delineations: Wetland and stream delineations were conducted on November 13, 2001 by NCDOT biologists using the criteria specified in the 1987 Corps of Engineers Wetland Delineation Manual. Mr. Steve Lund of the USACE Asheville Regulatory Field Office verified the delineations in the field on April 30, 2002. In addition to the delineations, the streams were characterized and data recorded on both the NCDWQ Stream Classification Form and the USACE Intermittent Channel Evaluation Form. The following characterization of the jurisdictional sites summarizes the June 1997 Natural Systems Report including the data form, aforementioned forms, and field notes. R-967CC has 0.18 acres of jurisdictional wetlands (0.04 acres are isolated) and 1,272 feet of jurisdictional streams. The jurisdictional impacts including fill, mechanized clearing, and excavation are summarized in Tables 2 and 3.

Wetlands: There are no temporary wetland impacts or any impacts to ponds.

- Site 1 (sheet 9): small wetland located in an open field and surrounds an old watering hole that is approximately 25 ft by 15 ft with standing water. This wetland is dominated by black needle rush (*Juncus effusus*), Carex species (*Carex* spp.), red maple (*Acer rubrum*), blackberry (*Rubus* sp.), and sweetgum (*Liquidambar styraciflua*).
- Site 2 (sheet 12): small depressional wetland. This wetland is dominated by black needle rush, bulrush (*Scirpus cyperinus*), red maple, and sweetgum.
- Site 9 (sheet 29): small wetland in the floodplain bordering an unnamed tributary to Scaly Bark Creek. This wetland is dominated by black needle rush, Carex species, and cattail (*Typha* sp.).

Table 2. Jurisdictional Wetland Impacts

| **Site** | **Station** | **Wetlands (ac)** | | **Cowardin classification/Wetland type** |
|---|---|---|---|---|
| | | Non-isolated | Isolated | |
| 1 | 172+00 to 172+70 rt. | 0.08 | | PFO1A*/riverine, scrub shrub |
| 2 | 184+00 to 184+20 rt. | | 0.04 | PFO1A/non-riverine, mixed hardwood |
| 9 | 240+95 to 242+20 rt. | 0.06 | | PFO1A/riverine, scrub shrub |
| **Total** | | **0.14** | **0.04** | |

* PFO1A- Palustrine, Forested, Broad-leaved deciduous, temporarily flooded

Streams: The project corridor is located within the Yadkin-Pee Dee River Drainage Basin (DWQ sub-basin 03-07-13). Drainage from the project flows into Little Bear Creek which is a tributary to Long Creek, and Scaly Bark Creek, which is also a tributary to Long Creek. Little Bear Creek, Scaly Bark Creek, and their tributaries are in the Lower Rocky River sub-basin (03-07-13) and are classified as C. Little Bear Creek and Scaly Bark Creek are perennial streams and their tributaries are either perennial streams or intermittent important streams (as classified by the USACE Intermittent Channel Evaluation protocol). Mitigation will be provided for all such stream impacts. No streams on this project are on DWQ's 303(d) list of impaired waters.

Table 3. Jurisdictional Stream Impacts

| Site | Station | Impact | Stream Name | DWQ ID No./Best usage classification | Stream Class./Mitigation Ratio | Mitigation Required |
|---|---|---|---|---|---|---|
| 3 | 192+40 to 193+45 – L- lt. & rt. | 391 ft | Ut Little Bear Creek | 13-17-31-3/C | Intermittent, Perennial/2:1 | 782 ft |
| 4 | 194+50 to 194+80 – L- lt. | 211 ft | Little Bear Creek | 13-17-31-3/C | Perennial/2:1 | 422 ft |
| 5 | 200+10 to 200+60 – L- lt. & rt. | 162 ft | Ut Little Bear Creek | 13-17-31-3/C | Perennial/2:1 | 324 ft |
| 6 | 222+88 – L- lt. | 28 ft | Ut Scaly Bark Creek | 13-17-31-2/C | Intermittent/2:1 | 56 ft |
| 7 | 228+30 to 228+60 – L- rt. & lt. | 155 ft | Ut Scaly Bark Creek | 13-17-31-2/C | Intermittent/2:1 | 310 ft |
| 8 | 234+60 to 234+70 – L- rt. | 133 ft | Scaly Bark Creek | 13-17-31-2/C | Perennial/2:1 | 266 ft |
| 9 | 240+95 to 242+20 –L TRAN- rt. | 192 ft | Ut Scaly Bark Creek | 13-17-31-2/C | Perennial/2:1 | 384 ft |
| **Total** | | **1272** | | | | **2544** |

## Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act. As of January 29, 2003, a total of two federally-protected species are listed for Stanly County (Table 4).

Table 4. Federally-protected species for Stanly County

| Scientific Name | Common Name | Status | Biological Conclusion |
|---|---|---|---|
| *Haliaeetus leucocephalus* | Bald eagle | Threatened (proposed for delisting) | No effect |
| *Helianthus schweinitzii* | Schweinitz's sunflower | Endangered | Unresolved |

A Biological Conclusion of "No Effect" for the bald eagle was issued in several documents including the Environmental Assessment. This conclusion was based on the fact that there is no suitable habitat present for bald eagle in the project area. The last survey for Schweinitz's sunflower was done in September 1996. No specimens of the species were found at that time. Since this survey was done longer than five years ago, a re-survey will be conducted this Fall. Survey results and USFWS concurrence request, if necessary, will be forwarded.

## Cultural Resources

Archaeology: On January 30, 1996 the SHPO concurred that no additional archaeological investigation is warranted in connection with the project. A copy of the January 30, 1996 letter is located in the EA on page A-13.

Historic: On January 22, 1997 the SHPO concurred that there are no properties considered eligible for the National Register and that no further evaluations are required. A copy of the concurrence form is located on page A-16 of the EA.

## FEMA Compliance

Little Bear Creek, an unnamed tributary to Little Bear Creek, and Scaly Bark Creek are carried under NC 24/27 through existing box culverts. These culverts will be extended to accommodate the additional lanes that are proposed for the widening. All three of the proposed replacement structures will provide equal or greater hydraulic conveyance than the respective existing structures. Therefore, since there is no FEMA Detailed Flood Insurance Study Involvement with any of the three major stream crossings, coordination with FEMA for compliance will not be required.

## Wild and Scenic River System

The project will not impact any Designated Wild and Scenic Rivers or any rivers included in the list of study rivers (Public Law 90-542, as amended).

## Indirect and Cumulative Impacts

An Indirect and Cumulative Effects report was completed by HNTB on May 7, 2003. A copy of this report is attached. This report concludes the following:

- R-967C is likely to stimulate land development having complementary functions and is expected to influence intraregional land development location decisions.
- Non-prohibitive growth policies within Stanly County, the presence of water/sewer lines, and a moderately strong market for development are all indicative of a high potential magnitude for induced development.
- Minimal travel time savings, high supply of available land, low forecasted growth, and small changes in property values are all indicative of a low potential magnitude for induced development.
- Although there is some risk of strip development along NC 24/27 with little or no access control, the five-lane section is already well developed, and the median for the four-lane portion will likely limit development to the intersections.
- There will be some residential housing growth mainly focused in the incorporated areas and along major intersecting roadways that will be induced by R-967C, but the growth will be combined with the cumulative effects from R-2123 (Eastern Charlotte Loop of I-485) due to be completed in September 2004. The combination of these two projects will make the commute easier to employment centers in the Charlotte area for people living in Stanly County as far away as Albemarle.

## Utilities

The utility companies involved with this project are Union Power Cooperative, Concord Telephone, Time Warner Cable, and the City of Albemarle (power). As of May 25, 2004, the Utilities Coordination Unit had not received the proposed utility relocation plans. On this project, the utility companies will attempt to relocate their facilities on the same side of the project that they presently maintain. The possible locations of the relocated poles would place them one foot inside the proposed NCDOT right of way. At this time, the utility relocation work on this project should have no impacts concerning environmental issues.

## Mitigation Options

The Corps of Engineers has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the Waters of the United States. Mitigation of wetland and surface water impacts has been defined by the CEQ to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Executive Order 11990 (Protection of Wetlands) and Department of Transportation Order 5660.1A (Preservation of the Nations Wetlands), emphasize protection of the functions and values provided by wetlands. These directives require that new construction in wetlands be avoided as much as possible and that all practicable measures are taken to minimize or mitigate impacts to wetlands.

AVOIDANCE AND MINIMIZATION: 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.

Avoidance: All wetland areas not affected by the project will be protected from unnecessary encroachment. No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.

Minimization: Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts. Minimization techniques were implemented as follows:

- Slopes: Fill slopes in wetlands and streams are at a 2:1 ratio, except at Station 172+00 right (sheet 9), where the wetland is an entire take.
- Pipe Culvert Design: Pipe culvert and box culvert inverts are to be buried one foot below the stream bed where feasible, depending on the relative elevations of the stream bed. All pipe culverts and box culverts will maintain the normal stream flow and channel characteristics. This design will allow unimpeded passage by fish and other aquatic organisms.

- BMP's: In order to minimize potential impacts, NCDOT's Best Management Practices for the Protection of Surface Waters will be enforced during the construction phase of the project. This will include:

    1. installation of temporary silt fences, dikes, and earth berms to control runoff during construction
    2. placement of temporary ground cover or re-seeding of disturbed sites to reduce runoff and decrease sediment loadings
    3. reduction of clearing along streams

- Station 200+25 –L- (sheet 17): The existing 2@ 8 ft x 6 ft reinforced concrete box culvert will be extended on both ends, with bends in the culvert to minimize channel realignment.
- Station 234+60 to 234+70 –L- (sheet 27): The existing culvert will be extended. Baffles and sills will be incorporated into the culvert design to accommodate fish passage.

COMPENSATION: The primary emphasis of the compensatory mitigation is to reestablish a condition that would have existed if the project were not built. As previously stated, mitigation is limited to reasonable expenditures and practicable considerations related to highway operation. Mitigation is generally accomplished through a combination of methods designed to replace wetland functions and values lost as a result of construction of the project. These methods consist of creation of new wetlands from uplands, borrow pits, and other non-wetland areas; restoration of wetlands; and enhancement of existing wetlands. Where such options may not be available, or when existing wetlands and wetland-surface water complexes are considered to be important resources worthy of preservation, consideration is given to preservation as at least one component of a compensatory mitigation proposal.

FHWA STEP DOWN COMPLIANCE: All compensatory mitigation must be in compliance with 23 CFR Part 777.9, "Mitigation of Impacts" that describes the actions that should be followed to qualify for Federal-aid highway funding. This process is known as the FHWA "Step Down" procedures:

1. Consideration must be given to mitigation within the right-of-way and should include the enhancement of existing wetlands and the creation of new wetlands in the highway median, borrow pit areas, interchange areas and along the roadside.
2. Where mitigation within the right-of-way does not fully offset wetland losses, compensatory mitigation may be conducted outside the right-of-way including enhancement, creation, and preservation.

Based upon the agreements stipulated in the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), it is understood that the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP) will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation

requirements for NCDOT projects that are listed in Exhibit 1 of the subject MOA during the EEP transition period which ends on June 30, 2005.

Since R-0967CC is listed in Exhibit 1, the necessary compensatory mitigation to offset unavoidable impacts to waters that are jurisdictional under the federal Clean Water Act will be provided by the EEP. The offsetting mitigation will derive from an inventory of assets already in existence within the same 8-digit cataloguing unit. The Department has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The remaining, unavoidable impacts to 0.14 acre of jurisdictional wetlands and 1,272 feet of jurisdictional streams will be offset by compensatory mitigation provided by the EEP program. A request for mitigation was submitted to EEP on May 11, 2004. A copy of this letter is attached.

**Isolated Wetland Impacts**

An isolated wetland occurs within the project area; therefore the regulations pertaining to the Discharges to Isolated Wetlands and Isolated Waters Rules will apply. The project consists of road widening of approximately 5.5 mi. There will be impacts to an isolated wetland due to road construction. Impacts have been minimized. This wetland is located at Station 184+00 to 184+20 –L- right. The impacts from road construction at Site 2 are 0.04 ac and thus do not require mitigation.

We are providing seven copies of this permit application package to the Division of Water Quality. This application includes all information requested under those regulations and is included on the attached PCN form.

**Regulatory Approvals**

Application is hereby made for a Section 404 Individual Permit as required for the above-mentioned activities. By copy of this letter, we are also requesting a 401 Water Quality Certification and a Discharges to Isolated Wetlands and Isolated Waters Certificate of Coverage. In compliance with Section 143-215.3D(e) of the NCAC we will provide $475 to act as payment for processing the Section 401 permit application as previously noted in this application (see Subject line). Seven copies of the application are being provided to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their review.

Thank you for your assistance with this project. If you have any questions or need any additional information about this project, please contact Mr. Matt Haney at (919) 715-1428.

Sincerely,

Gregory J. Thorpe, Ph.D., Environmental Management Director,
Project Development and Environmental Analysis Branch

GJT/mmh
Enclosure

cc: Mr. John Hennessy, Division of Water Quality
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Ron Hancock, P.E., Bridge Construction
Mr. Mark Staley, Roadside Environmental
Mr. B.G. Payne, P.E., Division 10 Engineer
Mr. Larry Thompson, Division 10 DEO
Mr. David Franklin, USACE, Wilmington
Mr. William D. Gilmore, P.E., EEP, Raleigh
Ms. Becky Fox, USEPA
Mr. John F. Sullivan, III, FHWA
Ms. Beverly Robinson, Project Development Engineer

## APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT (33 CFR 325)

**OMB APPROVAL NO. 0710-003**
**Expires December 31, 2004**

**Public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.**

**PRIVACY ACT STATEMENT**

**Authority: Rivers and Harbors Act, Section 10, 33 USC 403: Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.**

**One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.**

***(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)***

| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED | 4. DATE APPLICATION COMPLETED |
|---|---|---|---|
| | | | |

***(ITEMS BELOW TO BE FILLED BY APPLICANT)***

5. APPLICANT'S NAME
North Carolina Department of Transportation
Project Development & Environmental Analysis

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)

6. APPLICANT'S ADDRESS
1548 Mail Service Center
Raleigh, NC 27699-1548

9. AGENT'S ADDRESS

7. APPLICANT'S PHONE NOs. W/AREA CODE
a. Residence
b. Business 919-733-3141

10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence
b. Business

11. **STATEMENT OF AUTHORIZATION**

I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ APPLICANT'S SIGNATURE

_____ DATE

**NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY**

12. PROJECT NAME OR TITLE (see instructions
NC 24/27 widening from east of Big Bear Creek to SR 1963 (Oakboro Rd/Saint Martin Rd)

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Little Bear Creek, Scaly Bark Creek

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT
Stanly COUNTY NC STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) **Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example.**
See cover letter

17. DIRECTIONS TO THE SITE
See vicinity map associated with permit drawings

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

Widening of NC 24/27, an existing two-lane facility, to a multi-lane facility from east of Big Bear Creek to SR 1963 (Oakboro Rd/Saint Martin Rd) in Stanly County. The project is 5.6 mi in length. A four-lane divided facility with a 46 ft median is proposed. The proposed right of way width for the project is 200 ft.

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

The proposed project will relieve congestion by increasing the safety and traffic capacity of this section of NC 24/27.

**USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

Roadway fill, pipe/culvert construction

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

Roadway fill

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

Wetland impact: 0.14 ac non-isolated, 0.04 ac isolated
Stream impact: 1272 ft
0.19 ac fill in surface waters
Stream impact needing mitigation: 1272 ft

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

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

See listing of property owners associated with permit drawings

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

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

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

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

| SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE |
|---|---|---|---|
| [signature] | 6/21/04 | | |

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

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

File.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

May 11, 2004

Mr. William D. Gilmore, P.E.
EEP Transition Manager
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

Dear Sir:

Subject: Stanly County. NC 24/27 widening to a multi-lane facility from east of Big Bear Creek to SR 1963 in Albemarle. State Project No 6.689004T. TIP No. R-967CC.

The purpose of this letter is to request that the North Carolina Ecosystem Enhancement Program (EEP) provide confirmation that you are willing to provide compensatory mitigation for the project in accordance with the Memorandum of Agreement (MOA) signed July 22, 2003 by the USACE, the NCDENR and the NCDOT.

The North Carolina Department of Transportation proposes to widen a 8.9 km (5.5 mi) length of NC 24/27 in Stanly County. A four-lane divided roadway using a 15 m (46 ft) grassed median is proposed. The proposed right-of-way (ROW) width for the project is 62 m (200 ft) for the four-lane median divided section.

**RESOURCES UNDER THE JURISDICTION OF SECTION 404 AND 401 OF THE CLEAN WATER ACT.**

We have avoided and minimized the impacts to jurisdictional resources to the greatest extent possible as described in the permit application. A copy of the permit application can be found at http://www.ncdot.org/planning/pe/naturalunit/Applications.html. The remaining impacts to jurisdictional resources will be compensated for by mitigation provided by the EEP program. We estimate that 1,272 linear feet of jurisdictional streams and 0.18 acres of wetlands will be impacted.

The project is located in the Piedmont Physiographic Province in Stanly County in the Yadkin River basin in Hydrological Cataloguing Unit 03040105.

- The stream impacts will be to Little Bear Creek [DWQ# 13-17-31-3], a fourth order perennial stream, Scaly Bark Creek [DWQ# 13-17-31-2], a second order perennial stream,

first and/or third order perennial streams and first order intermittent streams that are tributaries to Little Bear Creek and Scaly Bark Creek. We propose to mitigate for the stream impacts by using the EEP for the 1,272 feet of impacts.

- The wetland impacts total 0.14 acres of riverine wetlands and 0.04 acres of non-riverine wetlands. We propose to provide compensatory mitigation for the wetland impacts by using the EEP for the 0.18 acres of impacts.

Please send the letter of confirmation to Steve Lund (USACE Coordinator) at U. S. Army Corps of Engineers Asheville Regulatory Field Office (151 Patton Ave., Room 208 Asheville, NC 28801-5006). Mr. Lund's FAX number is (828) 281-8120. The current let date for the project is November 16, 2004 for which the let review date is September 28, 2004.

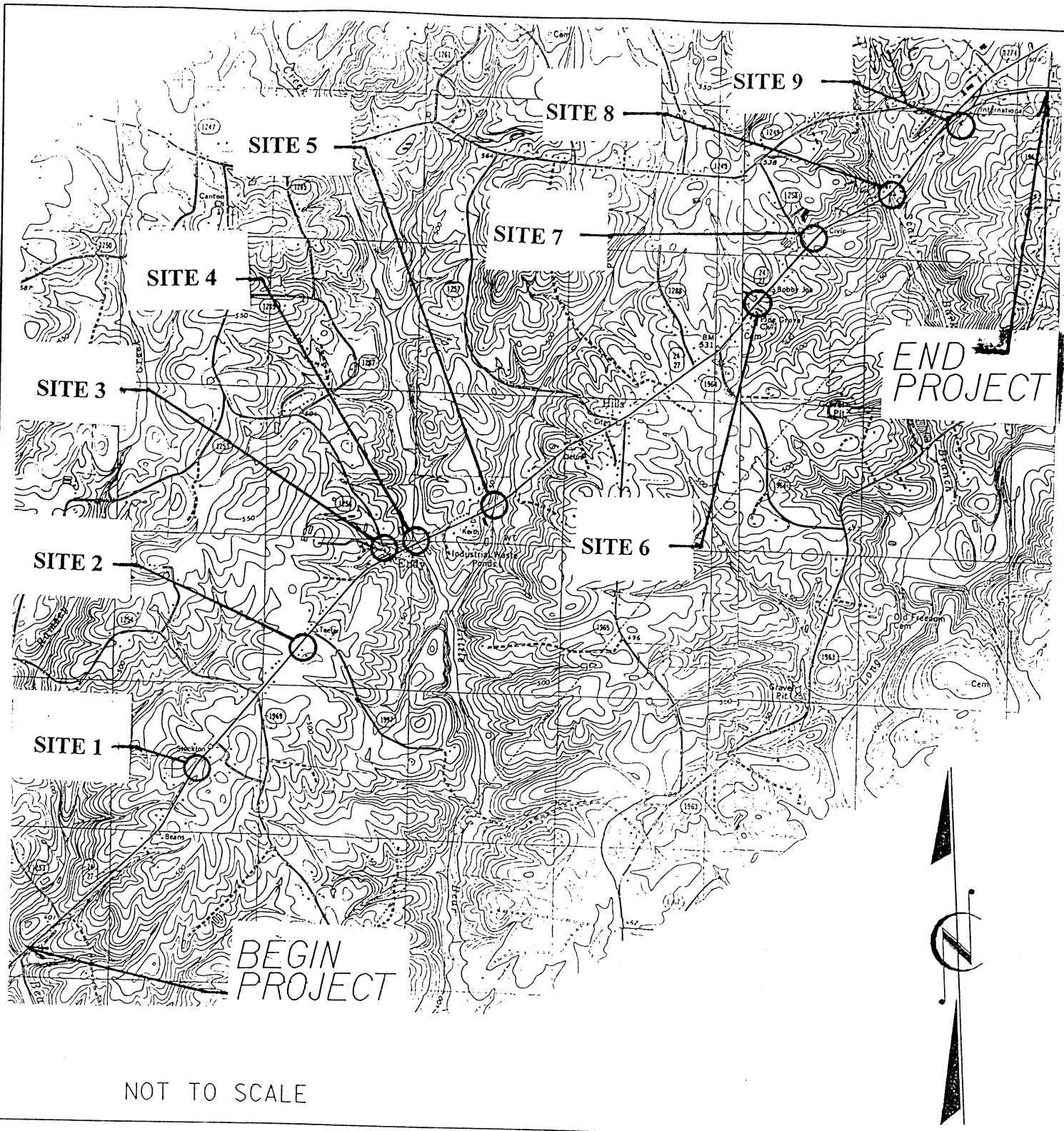
In order to satisfy regulatory assurances that mitigation will be performed; the NCDWQ requires a formal letter from EEP indicating their willingness and ability to provide the mitigation work requested by NCDOT. The NCDOT requests such a letter of confirmation be addressed to Mr. John Hennessy of NCDWQ, with copies submitted to NCDOT.

If you have any questions or need additional information please call Matt Haney at (919) 715-1428

Sincerely,

Gregory J. Thorpe, Ph.D.,
Environmental Management Director
Project Development & Environmental Analysis Branch

cc: Mr. John Hennessy, Division of Water Quality
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. B.G. Payne, P.E., Division 10 Engineer
Mr. Larry Thompson, Division 10 DEO
Mr. David Franklin, USACE, Wilmington
Mr. William D. Gilmore, P.E., EEP, Raleigh
Ms. Becky Fox, USEPA
Mr. John F. Sullivan, III, FHWA




NOT TO SCALE

# SITE MAPS (SITES 1 - 9)

NCDOT
DIVISION OF HIGHWAYS
STANLY COUNTY
PROJECT: 6.689004T (R-0967CC)
NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963
IN ALBEMARLE

SHEET 2 OF 5 6/6/03

## WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fill In Wetlands (ha) | Temp. Fill In Wetlands (ha) | Excavation In Wetlands (ha) | Mechanized Clearing (Method III) (ha) | Fill In SW (Natural) (ha) | Fill In SW (Pond) (ha) | Temp. Fill In SW (ha) | Existing Channel Impacted (m) | Natural Stream Design (m) |
| 1 | 172+00 to | Lateral Encroachment | | | | | | | | | |
| | 172+70 -L- Rt. | (Roadway Cut and Fill) | 0.017 | | 0.017 | | | | | | |
| 2 | 184+00 to | Lateral Encroachment | | | | | | | | | |
| | 184+20 -L- Rt. | (Roadway Fill) | 0.014 | | | | | | | | |
| 3 | 192+40 to | 1 @ 1350 mm RCP and | | | | | | | | | |
| | 193+45 -L- Lt & Rt | 2 @ 1050 mm RCP | | | | | 0.001 | | | 119.2 | |
| 4 | 194+50 to | Channel Change and | | | | | | | | | |
| | 194+80 -L- Lt. | 3 @ 3.0m x 3.4m RCBC | | | | | 0.038 | | | 64.3 | |
| 5 | 200+10 to | Extension of | | | | | | | | | |
| | 200+60 -L- Lt & Rt | 2@ 2.4m x 1.8m RCBC | | | | | 0.017 | | | 49.4 | |
| 6 | 222+88 -L- Lt. | Extension of | | | | | | | | | |
| | | 1350 mm RCP | | | | | 0.001 | | | 8.5 | |
| 7 | 228+30 to | 1 @ 900 mm RCP and | | | | | | | | | |
| | 228+60 -L- Rt & Lt | 1 @ 1350 mm RCP | | | | | 0.008 | | | 47.2 | |
| 8 | 234+60 to | Extension of | | | | | | | | | |
| | 234+70 -L- Rt. | 2 @ 2.4m x 1.8m RCBC | | | | | 0.009 | | | 40.6 | |
| 9 | 240+95 to | Lateral Encroachment | | | | | | | | | |
| | 242+20 -LTRAN Rt- | (Roadway Fill) | 0.012 | | | 0.011 | 0.006 | | | 58.6 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| TOTALS: | | | 0.043 | 0 | 0.017 | 0.011 | 0.080 | 0 | 0 | 387.8 | 0 |

Sites 1 and 9 are riverine wetlands
Site 2 is an isolated wetland

Form Revised 3/22/01

# NCDOT

DIVISION OF HIGHWAYS
STANLY COUNTY
PROJECT 6.689004T (R-0967CC)

NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963 IN ALBEMARLE



6/6/2003

## WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation In Wetlands (ac) | Mechanized Clearing (Method III) (ac) | Fill In SW (Natural) (ac) | Fill In SW (Pond) (ac) | Temp. Fill In SW (ac) | Existing Channel Impacted (ft) | Natural Stream Design (ft) |
| 1 | 172+00 to | Lateral Encroachment | | | | | | | | | |
| | 172+70 -L- Rt. | (Roadway Cut and Fill) | 0.04 | | 0.04 | | | | | | |
| 2 | 184+00 to | Lateral Encroachment | | | | | | | | | |
| | 184+20 -L- Rt. | (Roadway Fill) | 0.04 | | | | | | | | |
| 3 | 192+40 to | 1 @ 1350 mm RCP and | | | | | | | | | |
| | 193+45 -L- Lt & Rt | 2 @ 1050 mm RCP | | | | | 0.002 | | | 391 | |
| 4 | 194+50 to | Channel Change and | | | | | | | | | |
| | 194+80 -L- Lt. | 3 @ 3.0m x 3.4m RCBC | | | | | 0.09 | | | 211 | |
| 5 | 200+10 to | Extension of | | | | | | | | | |
| | 200+60 -L- Lt & Rt | 2@ 2.4m x 1.8m RCBC | | | | | 0.04 | | | 162 | |
| 6 | 222+88 -L- Lt. | Extension of | | | | | | | | | |
| | | 1350 mm RCP | | | | | 0.002 | | | 28 | |
| 7 | 228+30 to | 1 @ 900 mm RCP and | | | | | | | | | |
| | 228+60 -L- Rt & Lt | 1 @ 1350 mm RCP | | | | | 0.02 | | | 155 | |
| 8 | 234+60 to | Extension of | | | | | | | | | |
| | 234+70 -L- Rt. | 2 @ 2.4m x 1.8m RCBC | | | | | 0.02 | | | 133 | |
| 9 | 240+95 to | Lateral Encroachment | | | | | | | | | |
| | 242+20 -LTRAN Rt- | (Roadway Fill) | 0.03 | | | 0.03 | 0.02 | | | 192 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| TOTALS: | | | 0.11 | 0 | 0.04 | 0.03 | 0.194 | 0 | 0 | 1272 | 0 |

**English Equivalence for All Impacts**

Sites 1 and 9 are riverine wetlands
Site 2 is an isolated wetland

Form Revised 3/22/01

# NCDOT

DIVISION OF HIGHWAYS
STANLY COUNTY
PROJECT 6.689004T (R-0967CC)

NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963 IN ALBEMARLE



6/6/2003

# PROPERTY OWNERS

NAMES AND ADDRESSES

| PARCEL NO. | NAMES | ADDRESSES |
|---|---|---|
| (15) | W. R. SWAIN & GRITA E. | 16253 HAZARD RD.<br>OAKBORO, NC 28129 |
| (48) | RUBY D. EFIRD & JANICE D. HOUCK | 24870 NC 24/27 HWY<br>ALBEMARLE, NC 28001 |
| (67) | GARRETT W. &<br>JUDY EFIRD | 24163 CANTON RD.<br>ALBEMARLE, NC 28001 |
| (68) | NCDOT | |
| (70) | GARRETT W. &<br>JUDY EFIRD | 24163 CANTON RD.<br>ALBEMARLE, NC 28001 |
| (73) | BENNIE S. HAHN & WIFE<br>DIANE G. HAHN | 28039 NC 24/27 HWY<br>ALBEMARLE, NC 28001 |
| (81) | METAL MAINTENANCE, INC. | PO BOX 100<br>RAEFORD, NC 28376 |
| (82) | BRUCE G. ALMOND & WIFE<br>GWENDOLYN L. ALMOND | 28153 NC 24/27 HWY<br>ALBEMARLE, NC 28001 |
| (908) | BRUCE G. ALMOND & WIFE<br>GWENDOLYN L. ALMOND | 28153 NC 24/27 HWY<br>ALBEMARLE, NC 28001 |
| (143) | BOWERS FARMS, INC. | 28759 NC 24/27 HWY<br>ALBEMARLE, NC 28001 |

NCDOT

DIVISION OF HIGHWAYS

STANLY COUNTY

PROJECT: 6.689004T (R-0967CC)

NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963 IN ALBEMARLE

 6/6/03

# PROPERTY OWNERS

NAMES AND ADDRESSES

| PARCEL NO. | NAMES | ADDRESSES |
|---|---|---|
| 144 | KATHLEEN EFIRD | 28801 NC 24/27 HWY W<br>ALBEMARLE, NC 28001 |
| 160 | COUNTY OF STANLY | 201 S. 2nd ST.<br>ALBEMARLE, NC 28001 |
| 168 | THE SOUTH ATLANTIC DISTRICT | 10801 JOHNSTON RD. SUITE 125<br>CHARLOTTE, NC 28226 |
| 174 | FRANCHOT PALMER | PO BOX 4321<br>SALISBURY, NC 28144 |
| 175 | CITY OF ALBEMARLE | PO BOX 190<br>ALBEMARLE, NC 28002 |
| 195 | BOY SCOUTS OF AMERICA CENTRAL NC COUNCIL, INC. | PO BOX 250<br>ALBEMARLE, NC 28002 |
| 196 | BOY SCOUTS OF AMERICA CENTRAL NC COUNCIL, INC. | PO BOX 250<br>ALBEMARLE, NC 28002 |

NCDOT

DIVISION OF HIGHWAYS

STANLY COUNTY

PROJECT: 6.689004T (R-0967CC)

NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963

IN ALBEMARLE

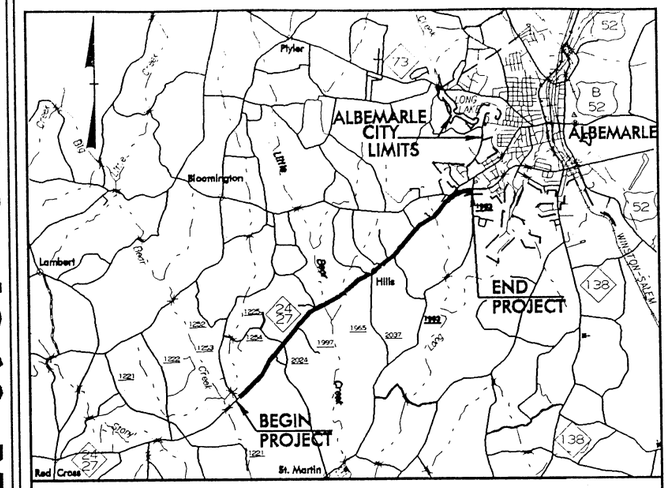
SHEET 5 OF 5 6/6/03

9/89/96

# R-0967 CC

# PROJECT: 6.689002T

See Sheet 1-A For Index of Sheets




VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

# STANLY COUNTY

***LOCATION:*** *NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963 (OAKBORO RD. AND SAINT MARTIN RD.) IN ALBEMARLE.*

***TYPE OF WORK:*** *GRADING, DRAINAGE, PAVING, SIGNING, SIGNALS, CULVERTS, AND GUARDRAIL.*

METRIC

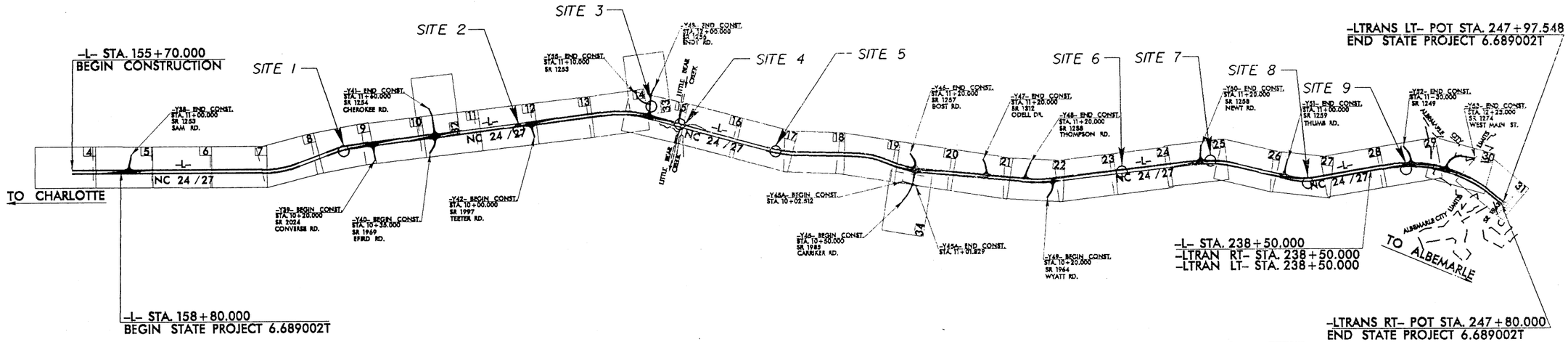
ALL DIMENSIONS IN THESE PLANS ARE IN METERS

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | R-0967 CC | 1 | |

| STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| 6.689002T | | PE |
| 6.689004T | | R/W, UTL |

NAD 83

RECEIVED
JUN 06 2003
DIVISION OF HIGHWAYS
HYDRAULICS UNIT




# PERMIT DRAWINGS 6/6/03

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF ALBEMARLE.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

***GRAPHIC SCALES***

PLANS 5 0 10

PROFILE (HORIZONTAL) 5 0 10

PROFILE (VERTICAL) 1 0 2

***DESIGN DATA***

ADT 2004 = 14,400
ADT 2030 = 28,200
DHV = 10 %
D = 55 %
T = 7 % *
V = 100 km/h

* TTST 4 % DUAL 3 %

***PROJECT LENGTH***

LENGTH ROADWAY STATE PROJECT 6.689002T = 8.900KM
TOTAL LENGTH STATE PROJECT 6.689002T = 8.900KM

NOTE: -L- AND -LTRANS RT- USED TO DETERMINE PROJECT LENGTH

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

*1995 STANDARD SPECIFICATIONS*

*RIGHT OF WAY DATE:* APRIL 30, 2003

*LETTING DATE:* JUNE 21, 2005

RONALD D. ALLEN, P.E.
*PROJECT ENGINEER*

JEANIE TYSON
*PROJECT DESIGN ENGINEER*

*HYDRAULICS ENGINEER*

SIGNATURE: P.E.

*ROADWAY DESIGN ENGINEER*

SIGNATURE: P.E.

*DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA*

STATE DESIGN ENGINEER P.E.

*DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION*

APPROVED
DIVISION ADMINISTRATOR DATE

24-JUN-2003 27:22
P:\NHU\2003\03r0967\roadway\r0967cc_tsh.tsh
roadway default

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 9 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

-5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____

NAD 83

MATCHLINE -L- STA. 171+40.000 SEE SHEET 8

MATCHLINE -L- STA. 174+80.000 SEE SHEET 10

19 20 21 22 23 24 25 26

172 173 174

2SBKD

CONC

MBSTS & WW (1200mm)

3.2 CONC

+74.103
30.480m
(100.00ft)

+10.103
30.480m
(100.00ft)

+60.000
33.528m
(110.00ft)

+75.000
30.480m
(100.00ft)

SPECIAL CUT DITCH
SEE DETAIL L

LATERAL 'V' DITCH
SEE DETAIL F

SPECIAL LATERAL 'V' DITCH
SEE DETAIL K

CHORD

375mm CONC

REM.

NC 24-27 8.4 BST

EXISTING 18.288 (60') RW

1100mm WW & 2SBW

1SBW

450mm CONC

-L- N 27° 53' 07.0" E

0.394 EIP TO RW

FS

2GI

375

CL B RIPRAP

FLATTEN FILL SLOPE TO MAINTAIN 10m MIN. BETWEEN PIPE END & EP

-L- SCSta.172+74.103

-L- TSSta.172+10.103

+94.000
30.480m
(100.00ft)

+80.000
33.528m
(110.00ft)

+60.000
34.442m
(113.00ft)

SPECIAL LATERAL 'V' DITCH
SEE DETAIL K

SPECIAL CUT DITCH
SEE DETAIL G

+54.828
30.480m (100.00ft)
24.518m (87.00ft)
22.860m(75.00ft)

+69.081
22.860m
(75.00ft)

G

CONC

ISFD

GR

1.62m CSX EASEMENT

RET.

375mm CONC

+20.000
24.384m (80.00ft)

+33.081
22.860m
(75.00ft)

EASEMENT OF INGRESS, EGRESS & REGRESS

0.898 EIP TO RW

REM.

300 mm CONC

-L- N 40° 53' 52" E

1800mm WD

900 mm CONC

1200mm WW

300 mm CONC

MTL GATE

POND

ISFD

WD DK

POOL

SPECIAL CUT DITCH
SEE DETAIL L

+68.465
30.480m
(100.00ft)

-L- STSta.174+33.081

-L- CSSta.173+69.081

+69.081
30.480m
(100.00ft)

+33.081
30.480m
(100.00ft)

SITE 1

15

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 37 FOR -L- PROFILE

METRIC

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 9 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____

NAD 83

-L- N 27° 53' 07.0" E

-L- N 40° 53' 52" E

MATCHLINE -L- STA. 171+40.000 SEE SHEET 8

MATCHLINE -L- STA. 174+80.000 SEE SHEET 10

-L- TSSta.172+10.103

-L- SCSta.172+74.103

-L- CSSta.173+69.081

-L- STSta.174+33.081

+60.000 33.528m (110.00ft)

+75.000 30.480m (100.00ft)

+10.103 30.480m (100.00ft)

+74.103 30.480m (100.00ft)

+54.828 30.480m (100.00ft) 4.518m (87.00ft) 22.860m (75.00ft)

+69.081 22.860m (75.00ft)

+20.000 24.384m (80.00ft)

+33.081 22.860m (75.00ft)

+24.000 30.480m (100.00ft)

+60.000 34.442m (113.00ft)

+80.000 33.528m (110.00ft)

+68.465 30.480m (100.00ft)

+33.081 30.480m (100.00ft)

SPECIAL CUT DITCH SEE DETAIL L

SPECIAL LATERAL 'V' DITCH SEE DETAIL K

LATERAL 'V' DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL G

CL B RIPRAP

FLATTEN FILL SLOPE TO MAINTAIN 10m MIN. BETWEEN PIPE END & EP

0.394 EIP TO RW

0.898 EIP TO RW

EASEMENT OF INGRESS, EGRESS, & REGRESS

162m(5FT) EASEMENT

2SBKD

2GI

SITE 1

(15) F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 37 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | X-21 |

2.5 0 2.5 5

METRIC

50 40 30 20 10 0 10 20 30 40 50

160 155

172+60.00

WLB WLB CLEARING LIMITS

172+40.00

172+20.00

172+00.00

171+80.00

04-JUN-2002 14:17
R:\Projects\R0967cc\Design\sht\R0967ccLoop1

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 12 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

MATCHLINE -L- STA. 181+80.000 SEE SHEET 11

MATCHLINE -L- STA. 185+45.000 SEE SHEET 13

NAD 83

43 44 45 46 47 48 49

182 183 184 185

1800 mm CMP

1500 mm W/W & WD

1800 mm WD

1400 mm WD RAIL

900 mm CONC

BLK DK

ISFD

G

GR

CONC

W/LT

+21.864
22.860m
(75.00ft)

EXISTING 18.288 (60')RW

375
7.22 RW TO EIP

300 mm CONC

REM.

NC 24-27 8.4 BST

N 40°53'52"E

1.2m BASE TAIL DITCH
SEE DETAIL Z

+47.000
22.860m(75.00ft)
49.073m(161.00ft)

+00.000
30.480m (100.00ft)

+85.000
22.860m(75.00ft)
27.432m(90.00ft)

+20.000
27.432m(90.00ft)
30.480m (100.00ft)

TDE

PDE

CL B RIPRAP

ICBKD

PLAY AREA

SPECIAL LATERAL 'V' DITCH
SEE DETAIL A1

SPECIAL CUT DITCH
SEE DETAIL B1

+50.000
22.860m(75.00ft)
27.432m(90.00ft)

+70.000
22.860m(75.00ft)

ISFBUS

ISBKD

1200 mm CMP

1200 mm CONC

+40.000
22.860m
(75.00ft)

+20.000
28.344m
(93.00ft)

375
0.349 RW TO EIP

450mm CONC

SPECIAL MEDIAN DITCH SEE DETAIL C1

300mm CONC

GRADE TO DRAIN

CONC R/W

LIB CONC MON TO RW

1.59 CONC MON TO RW

EXISTING 18.288

300 mm CONC

375 mm CMP

WD RAMP

ISBK BUS

S.A.T. DISH

SPECIAL LATERAL 'V' DITCH
SEE DETAIL A1

-L- POT Sta.185+04.737
-Y42- POT Sta.11+01.268

+80.000
30.480m
(100.00ft)

-Y42- +60.394
16.764m
(55.00ft)

-Y42- +55.000
12.192m
(40.00ft)

EXISTING 15.24 ISO RW

N 57°16'46"W -Y42-

+35.000
30.480m
(100.00ft)

-Y42-
+62.228
20.422m
(67.00ft)

+55.000
12.192m
(40.00ft)

L.B. AND WIFE RUTH B. TEETER DB 339 PG 900

-Y42- +00.000
7.482m (24.55ft)
EXIST. R/W
12.192m (40.00ft)

BEGIN CONSTRUCTION
-Y42- POT Sta.10+00.000

-Y42-
+00.000
7.739m (25.45ft)
EXIST. R/W
12.192m (40.00ft)
15.850m (52.00ft)

+00.000
30.480m
(100.00ft)

SITE 2

F F DENOTES FILL IN WETLAND

37

NC 24 / 27

117/230

1/2

AOT 2004
AOT 2030

SR 1997 TEETER ROAD

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 38 AND 39 FOR -L- PROFILE
SEE SHEET 54 FOR -Y42- PROFILE

METRIC

5 0 10

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 12 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

MATCHLINE -L- STA. 181+80.000 SEE SHEET 11

MATCHLINE -L- STA. 185+45.000 SEE SHEET 13

NAD 83

SITE 2

DENOTES FILL IN WETLAND

(37)

(43) (44) (45) (46) (47) (48) (49)

1.2m BASE TAIL DITCH SEE DETAIL Z

SPECIAL LATERAL 'V' DITCH SEE DETAIL A1

SPECIAL CUT DITCH SEE DETAIL B1

SPECIAL MEDIAN DITCH SEE DETAIL C1

SPECIAL LATERAL 'V' DITCH SEE DETAIL A1

-L- POT Sta.185+04.737
-Y42- POT Sta.11+01.268

BEGIN CONSTRUCTION
-Y42- POT Sta.10+00.000

+00.000 30.480m (100.00ft)
+20.000 27.432m(90.00ft) 30.480m (100.00ft)
+47.000 22.860m(75.00ft) 23.073m(161.00ft)
+85.000 22.860m(75.00ft) 27.432m(90.00ft)
+50.000 22.860m(75.00ft) 27.432m(90.00ft)
+70.000 22.860m(75.00ft)
+40.000 22.860m (75.00ft)
+20.000 28.346m (93.00ft)
+21.864 22.860m (75.00ft)
+80.000 30.480m (100.00ft)
-Y42- +60.394 16.764m (55.00ft)
-Y42- +55.000 12.192m (40.00ft)
+35.000 30.480m (100.00ft)
-Y42- +62.228 20.422m (67.00ft)
+55.000 12.192m (40.00ft)
-Y42- +00.000 7.482m (24.55ft) EXIST. R/W 12.192m (40.00ft)
-Y42- +00.000 7.739m (25.45ft) EXIST. R/W 12.192m (40.00ft) 15.850m (52.00ft)

EXISTING 18.288 (60')RW

NC 24-27 8.4 BST

N 40° 53' 52" E

N 57° 18' 46" W -Y42-

EXISTING 6.2A (50')RW

L.B. AND WIFE RUTH B. TEETER DB 339 PG 900

NC 24 / 27 117 230

NC 24 / 27 117 230

AOT 3304 AOT 3305

SR 1307 TEETER ROAD

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 38 AND 39 FOR -L- PROFILE
SEE SHEET 54 FOR -Y42- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 15 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

NC 24 / 27

MATCHLINE -Y55- STA. 10+80.000 SEE SHEET 33

MATCHLINE -Y43- STA.11+00.000 SEE SHEET 33

-Y55- PCSta.10+18.729

-Y43- POTSta.10+83.460
BEGIN CONSTRUCTION
-Y55- POT STA.10+00.000

-Y43- POTSta.192+70.072
-Y43- POTSta.10+00.000

NAD 83

SITE 3

SITE 4

INTERMITTENT STREAM

PERENNIAL STREAM

PERENNIAL STREAM

GRADE TO DRAIN

0.6m BASE HEAD DITCH SEE DETAIL P1

SPECIAL CUT DITCH W/PSRM SEE DETAIL L1

LATERAL 'V' DITCH W/PSRM SEE DETAIL O1

BURY BOTH ENDS 0.3m

CL I RIPRAP

CHANNEL CHANGE SEE DETAIL T1

FILL EX. CHANNEL

LATERAL 'V' DITCH W/PSRM SEE DETAIL R1

BERM W/PSRM SEE DETAIL Q1

CL B RIPRAP

ROOTWAD SEE DETAIL S1

0.6m BASE LATERAL DITCH SEE DETAIL W1

0.9m BASE LATERAL DITCH SEE DETAIL J1

LATERAL 'V' DITCH SEE DETAIL K1

SPECIAL LATERAL 'V' DITCH SEE DETAIL M1

SPECIAL MEDIAN DITCH SEE DETAIL N1

RETAIN & EXTEND 3@3.0m x 3.4m RCBC W/DEBRIS DEFLECTORS

600 CSP W/T ELBOW ROD & LUG W/SLEEVE GASKETS

2@1050 BURY BOTH ENDS 0.3m

STANLEY COUNTY BOARD OF EDUCATION (64)

(67) GLENN T.EFIRD & WIFE DELLIE EFIRD DB 104 PG 7

(913) GLENN T.EFIRD & WIFE DELLIE EFIRD

(73) BENNIE S. HAHN & W. DIANE G. HAHN

RETHA A. HAHN & WIFE LEORA W. HAHN

(63) LUTHER J.& WIFE HELEN H. CRISCO

(68) DAVID S. MORGAN AND WIFE WANDA E. MORGAN

(69) ENDY VOL. FIRE DEPT

(70) GLENN T. & WIFE DELLIE EFIRD

(60) LOIS T. MORTON

LOIS T. MORTON

-L- CSSta.192+32.600

-L- STSta.192+96.600

ENDY ROAD

NC 24 / 27

NC 24 / 27 5.4 BST

DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 54 FOR -Y43- PROFILE
SEE SHEET 60 FOR -Y55- PROFILE

MATCHLINE -L- STA. 191+20.000 SEE SHEET 14

MATCHLINE -L- STA. 194+80.000 SEE SHEET 16

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 15 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

NC 24 / ENDY ROAD

NC 24 / 27

NAD 83

SITE 3

SITE 4

-Y55- PCSta.10+18.729

-Y43- POTSta.10+83.460
BEGIN CONSTRUCTION
-Y55- POT STA.10+00.000

-Y43- POTSta.192+70.072
-Y43- POTSta.10+00.000

MATCHLINE -Y55- STA. 10+80.000
SEE SHEET 33

MATCHLINE -Y43- STA.11+00.000
SEE SHEET 33

MATCHLINE -L- STA. 191+20.000 SEE SHEET 14

MATCHLINE -L- STA. 194+80.000 SEE SHEET 16

INTERMITTENT STREAM

PERENNIAL STREAM

PERENNIAL STREAM

GRADE TO DRAIN

0.6m BASE HEAD DITCH SEE DETAIL P1

SPECIAL CUT DITCH W/PSRM SEE DETAIL L1

-Y55- +28.562
11.857m (38.90ft)
EXIST. R/W

-Y55- +80.000
17.678m (58.00ft)

-Y55- +65.000
18.074m (59.30ft)
EXIST. R/W

STANLEY COUNTY BOARD OF EDUCATION

64

CONC

REM. SYSTEM

+16.381
35.966m (118.00ft)
EXIST. R/W

0.9m BASE LATERAL DITCH SEE DETAIL J1

LATERAL 'V' DITCH SEE DETAIL K1

SEWER TREATMENT

+33.000
30.480m
(100.00ft)

+40.000
35.052m
(115.00ft)

92

SPECIAL LATERAL 'V' DITCH SEE DETAIL W1

SPECIAL MEDIAN DITCH SEE DETAIL N1

HDWL

1500

2GI

375

REM.

EXISTING 18.288 (60"IRW)

REM. 1500mm CONC

SHEET 14

600 CSP W/ ELBOW ROD & LUG W/SLEEVE GASKETS

600

FS

BDO

ISBKD

+10.000
22.860m
(75.00ft)

+32.600
22.860m
(75.00ft)

+38.831
23.019m
(75.52ft)

CL I RIPRAP

63

LUTHER J.& WIFE HELEN H. CRISCO

+45.000
30.480m
(100.00ft)

+65.000
22.860m
(75.00ft)

30.480m
(100.00ft)

+74.000
26.213m
(86.00ft)

97.839
N75°52'21"E

-L- CSSta.192+32.600

+70.809
57.388m
(188.28ft)

37.59
N71°52'34"E

10.925
N69°51'48"E

20.342
N80°01'35"E

6.619
N69°54'45"E

20.214
N69°51'16"E

37.972
N76°17'55"E

122.951
N72°03'24"E

60

LOIS T. MORTON

-L- STSta.192+96.600

69

ENDY VOL. FIRE DEPT

+75.349
53.317m
(174.93ft)

+58.678
23.470m
(76.21ft)

+58.472
25.430m
(116.24ft)

+96.600
22.860m
(75.00ft)

FLAG POLE

RADIO ANT

ISBK VOL FIRE DEPT

1050mm CONC

RET.

+20.000
22.860m (75.00ft)
30.480m (100.00ft)

70

PERENNIAL STREAM

GLENN T. & WIFE DELLIE EFIRD

913

GLENN T.EFIRD & WIFE DELLIE EFIRD

CHANNEL CHANGE SEE DETAIL J1

+42.626
35.052m (115.00ft)
EXIST. PROP. LINE

+42.510
30.480m (100.00ft)
EXIST. PROP. LINE

+42.430
80.570m (264.34ft)

+53.399
62.777m (205.96ft)

ROOTWAD SEE DETAIL S1

+56.668
35.052m (115.00ft)

FILL EX. CHANNEL

LATERAL 'V' DITCH W/PSRM SEE DETAIL R1

+42.464
35.052m
(115.00ft)

CL B RIPRAP

BERM W/PSRM SEE DETAIL Q1

+18.000
41.148m(135.00ft)

+37.976
22.517m
(73.88ft)

+96.603
30.480m
(100.00ft)

193

194

PDE

2@1050
BURY BOTH ENDS 0.3m

BURY BOTH ENDS 0.3m

CL I RIPRAP

DAVID S. MORGAN AND WIFE GR WANDA E. MORGAN

68

ISBKD

BK WALL

450

2GI

N 63°33'32.8"E

-L-

300mm CONC

REM.

PK NAIL

750mm CONC MTL

RETHA A. HAHN & WIFE LEORA W. HAHN

0.6m BASE LATERAL DITCH SEE DETAIL W1

+62.000
60.359m
(198.03ft)

73

BENNIE S. HAHN & W. DIANE G. HAHN

+75.000
35.052m
(115.00ft)

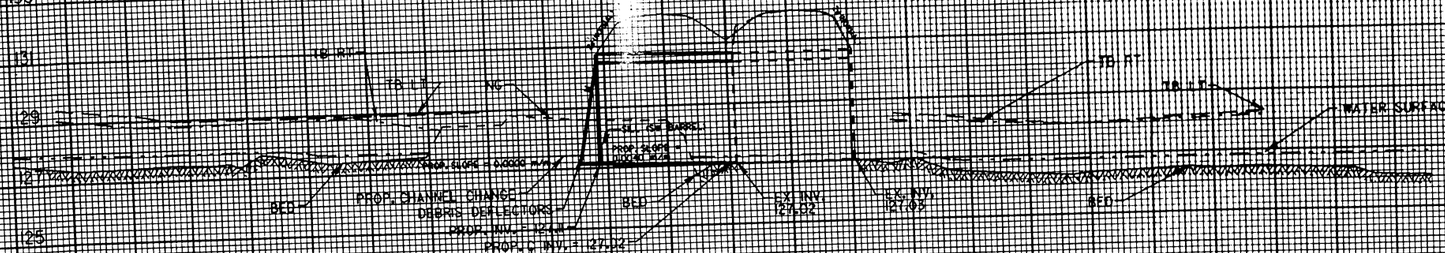
TDE

RETAIN & EXTEND 3@3.0m x 3.4m RCBC W/DEBRIS DEFLECTORS

S/S DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 54 FOR -Y43- PROFILE
SEE SHEET 60 FOR -Y55- PROFILE

| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| | | |
| CONST.REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R/W REV. | | |




SCALE:

HORIZONTAL 1:1000

VERTICAL 1:200

# SITE 4 STREAM PROFILE

03 MAR 2023
H:\284138\cgi-bin\prt-civil.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 17 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

-5 0 10

CONST.REV. _____

R /W REV. _____

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCHLINE -L- STA.198+30.000 SEE SHEET 16

MATCHLINE -L- STA. 201+80.000 SEE SHEET 18

SITE 5

PERENNIAL STREAM

-L- TS Sta. 200+36.53

-L- SC Sta. 201+00.53

RETAIN & EXTEND 2@2.4m x 1.8m RCBC

0.6m BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL Z1

LATERAL BASE DITCH SEE DETAIL X1

CL I RIPRAP

SPECIAL CUT DITCH SEE DETAIL U1

+50.000 30.480m (100.00ft) 35.052m (115.00ft)

+20.000 30.480m (100.00ft)

+60.000 35.966m (118.00ft)

+20.000 32.918m (108.00ft)

+36.153 30.480m (100.00ft)

+83.000 30.480m (100.00ft)

+00.153 34.138m (112.00ft)

+83.000 30.480m (100.00ft)

CHORD

-L- N 63° 33' 32.8" E

EXISTING 18.288 @ 60° RW

REMOVE

PLUG 375mm CONC

RETAIN

SPECIAL CUT DITCH SEE DETAIL Y1

REM. 1.2m +/- COLLAR & EXTEND THROUGH

GRADE TO DRAIN

+17.000 30.480m (100.00ft)

+36.153 35.052m (115.00ft)

+60.000 34.119m (111.94ft)

+36.000 49.987m (164.00ft)

+99.000 30.480m (100.00ft) 49.987m (164.00ft)

+30.000 30.480m (100.00ft) 32.918m (108.00ft)

+00.153 30.480m (100.00ft) 33.528m (110.00ft)

LATERAL 'V' DITCH SEE DETAIL A2

STD. BERM DITCH STA. 201+23 TO STA. 202+20

SPECIAL CUT DITCH W/ PSRM SEE DETAIL B2

CL I RIP RAP EST. 28 TONS 17m FILTER FABRIC

LATERAL BASE DITCH SEE DETAIL X1

ISBLKBUS

ISBKD

DENOTES BILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 41 FOR -L- PROFILE

| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| | R-0967CC | 17 |
| | R/W SHEET NO. | |
| | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| CONST.REV. _____ | PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| R/W REV. _____ | | |

NAD 83

SITE 5

PERENNIAL STREAM

-L- TSSta. 200+36J53

-L- SCSta. 201+00J53

RETAIN & EXTEND 2@2.4m x 1.8m RCBC

0.6m BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL Z1

LATERAL BASE DITCH SEE DETAIL X1

CL I RIPRAP

SPECIAL CUT DITCH SEE DETAIL U1

+50.000 30.480m (100.00ft) 35.052m (115.00ft)

+20.000 30.480m (100.00ft)

+60.000 35.966m (118.00ft)

+40.000 32.918m (108.00ft)

+36.153 30.480m (100.00ft)

+83.000 30.480m (100.00ft)

+00.153 34.138m (112.00ft)

+83.000 30.480m (100.00ft)

CHORD

-L- N 63°33'32.8" E

EXISTING 18.288 (60"RW

REMOVE

PLUG

RETAIN

REM. 1.2m +/-COLLAR & EXPAND THROUGH

SPECIAL CUT DITCH SEE DETAIL Y1

+99.000 30.480m (100.00ft) 49.987m (164.00ft)

+17.000 30.480m (100.00ft)

+36.153 35.052m (115.00ft)

+60.000 34.119m (111.94ft)

+36.000 49.987m (164.00ft)

LATERAL 'V' DITCH SEE DETAIL A2

CL I RIP RAP EST. 28 TONS 17m FILTER FABRIC

GRADE TO DRAIN

+00.153 30.480m (100.00ft) 33.528m (110.00ft)

+30.000 30.480m (100.00ft) 32.918m (108.00ft)

STD. BERM DITCH STA. 201+23 TO STA. 202+20

SPECIAL CUT DITCH W/PSRM SEE DETAIL B2

MATCHLINE -L- STA. 198+30.000 SEE SHEET 16

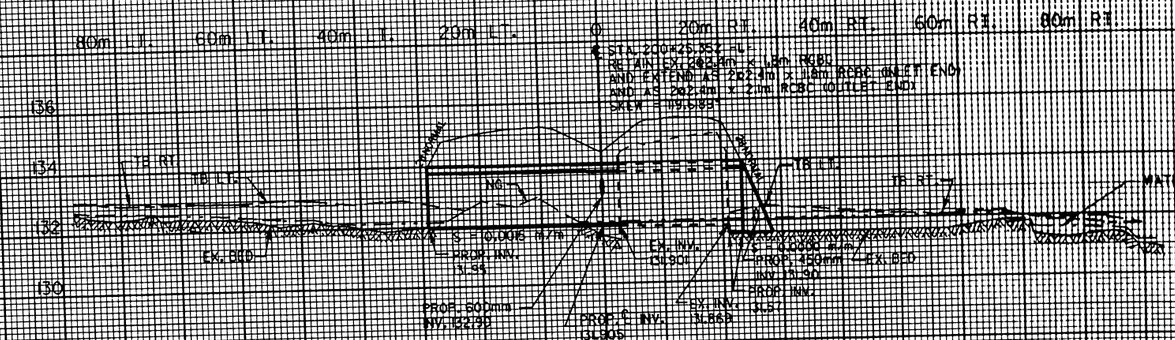
MATCHLINE -L- STA. 201+80.000 SEE SHEET 18

902 908 79 86 84 81 82 83 85

S S DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 41 FOR -L- PROFILE

| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| CONST. REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R/W REV. | | |




SCALE:

HORIZONTAL 1:1000

VERTICAL 1:200

# SITE 6 STREAM PROFILE

2003 Rev3
J:\Projects\1356\Engineering\Hydraulics\Hydraulics Report\Drawings

METRIC

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 24 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____

R/W REV. _____

# SITE 6

INTERMITTENT STREAM

NAD 83

MATCHLINE -L- STA. 222+50.000 SEE SHEET 23

MATCHLINE -L- STA. 226+00.000 SEE SHEET 25

-L- N 41° 35' 21.9" E

143 144 145 147 148 149 150 151 152 153 904 223 224 225

+70.000 30.480m (100.00ft)

+80.000 30.480m (100.00ft)

+20.000 34.138m (112.00ft)

+50.000 34.138m (112.00ft)

+90.000 30.480m (100.00ft)

+00.000 30.480m (100.00ft)

HDWL

REM. EXISTING CULVERT

1 x 1.2 CONC

COLLAR & EXTEND

SPECIAL MED. DITCH SEE DETAIL R2

ISFD

1800 mm WD

600 mm CONC

RIP RAP

6.0m EIP TO RW

L2m x 1.2m CONC

MTL

NC 24-27 8.5 BST

375mm CONC

400 mm CMP

375 mm CMP

300 mm CONC

SSBW & ISELEC

SPECIAL LATERAL 'V' DITCH SEE DETAIL P2

CL I RIPRAP

+25.000 26.518m (87.00ft)

+40.000 26.518m (87.00ft)

+37.000 22.860m (75.00ft) 39.014m (128.00ft)

+00.000 28.042m (92.00ft)

0.6m BASE TAIL DITCH W/PSRM SEE DETAIL S2

+70.000 22.860m (75.00ft)

+25.000 22.860m (75.00ft) 39.014m (128.00ft)

+40.000 22.860m (75.00ft) 64.922m (213.00ft)

+25.000 35.795m (118.00ft) 64.922m (213.00ft)

+80.000 28.042m (92.00ft)

SPECIAL CUT DITCH SEE DETAIL T2

+10.000 30.480m (100.00ft)

+60.000 26.518m (87.00ft)

+60.000 22.860m (75.00ft)

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

ISBKD

1900 mm WD

W/LT

CAR PORT

ARBOR

RETAIN 150 mm PVC

S S DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 44 AND 45 FOR -L- PROFILE

METRIC

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 24 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____
R/W REV. _____

# SITE 6

INTERMITTENT STREAM

NAD 83

STA. 222+50.000 SEE SHEET 23

STA. 226+00.000 SEE SHEET 25

MATCHLINE -L- STA. 222+50.000

MATCHLINE -L- STA. 226+00.000

-L- N 41° 35' 21.9" E

143 144 145 147 148 149 150 151 152 153 904

223 224 225

+70.000 30.480m (100.00ft)

+80.000 30.480m (100.00ft)

+20.000 34.138m (112.00ft)

+50.000 34.138m (112.00ft)

+90.000 30.480m (100.00ft)

+00.000 30.480m (100.00ft)

HDWL

REM. EXISTING CULVERT

COLLAR & EXTEND

SPECIAL MED. DITCH SEE DETAIL R2

1800 mm WD

1900 mm WD

6.0m EIP TO RW

L2m x 1.2m CONC

600 mm CONC

375 mm CONC

375 mm CMP

400 mm CMP

300 mm CONC

NC 24-27 8.5 BST

RIP RAP

CL I RIPRAP

0.6m BASE TAIL DITCH W/PSRM SEE DETAIL S2

SPECIAL LATERAL 'V' DITCH SEE DETAIL P2

SPECIAL CUT DITCH SEE DETAIL T2

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

RETAIN 150 mm PVC

+25.000 26.518m (87.00ft)

+40.000 26.518m (87.00ft)

+37.000 27.860m (75.00ft) 39.014m (128.00ft)

+25.000 27.860m (75.00ft) 39.014m (128.00ft)

+70.000 22.860m (75.00ft)

+40.000 27.860m (75.00ft) 64.922m (213.00ft)

+25.000 35.966m (118.00ft) 64.922m (213.00ft)

+00.000 28.042m (92.00ft)

+80.000 28.042m (92.00ft)

+10.000 30.480m (100.00ft)

+60.000 26.518m (87.00ft)

+60.000 27.860m (75.00ft)

ISBKD

CAR PORT

ARBOR

S W/LT

55BW & 1SELEC

3SBW

5SBW

1SFD

1SBKD

GR

MTL

PDE

TDE

TDL

2GI

FS

S S DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 44 AND 45 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 25 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

-5 0 10

CONST.REV. _____

R/W REV. _____

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SR 1258 / NEWT ROAD

NC 24 / 27 127 251

NC 24 / 27 129 253

ADT 2004
ADT 2030

NAD 83

END CONSTRUCTION
-Y50- POT Sta.11+20.000

-L- POS Sta.228+00.983
-Y50- POT Sta.10+00.000

-Y50- PCS Sta.10+58.329

-L- TS Sta.227+63.952

-L- SC Sta.228+27.952

INTERMITTENT STREAM

SITE 7

RETAIN SYSTEMS

HEAD 'V' DITCH SEE DETAIL U2

SPECIAL LATERAL 'V' DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL W2

SPECIAL CUT DITCH W/PSRM SEE DETAIL X2

SPECIAL CUT DITCH W/PSRM SEE DETAIL V2

LATERAL 'V' DITCH SEE DETAIL Y2

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL CUT DITCH SEE DETAIL Z2

CL I RIPRAP

HDWL

PDE

TDE

-L- N 41° 35' 21.9" E

N 36° 58' 48.3" W

MATCHLINE -L- STA. 226+00.000 SEE SHEET 24

MATCHLINE -L- STA. 229+40.000 SEE SHEET 26

DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 4S FOR -L- PROFILE
SEE SHEET 5S FOR -Y50- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 25 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

-5 0 10

CONST.REV. _____

R/W REV. _____

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SR 1258 / NEWT ROAD

NC 24 / 27 — 127 — 251

NC 24 / 27 — 129 — 253

ADT 2004
ADT 2030

NAD 83

END CONSTRUCTION
-Y50- POC STA. 11+20.000

-L- POS Sta. 228+00.983
-Y50- POT Sta. 10+00.000

-Y50- PC Sta. 10+58.329

-L- N 41°35' 21.9" E

N 38° 58' 48.3" W

INTERMITTENT STREAM

SITE 7

RETAIN SYSTEMS

SPECIAL CUT DITCH W/PSRM SEE DETAIL V2

HEAD 'V' DITCH SEE DETAIL U2

SPECIAL LATERAL 'V' DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL W2

SPECIAL CUT DITCH W/PSRM SEE DETAIL X2

LATERAL 'V' DITCH SEE DETAIL Y2

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL CUT DITCH SEE DETAIL Z2

CL 1 RIPRAP

HDWL

EXISTING 18.288 (60') R/W

-L- TS Sta. 227+63.952

-L- SC Sta. 228+27.952

MATCHLINE -L- STA. 226+00.000 SEE SHEET 24

MATCHLINE -L- STA. 229+40.000 SEE SHEET 26

DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 58 FOR -Y50- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 27 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV. _____
R/W REV. _____

-5 0 10

NAD 83

TOM THUMB ROAD

NC 24 / 27
130
254

ADT 2004
ADT 2030

-Y5I- POT Sta. 11+11.492

END CONSTRUCTION
-Y5I- POT STA. 11+00.000

-L- ST Sta. 235+78.268

PERENNIAL STREAM

-L- CS Sta. 235+14.268

-L- SC Sta. 234+16.606

-L- CS Sta. 233+52.606

-L- POT Sta. 233+38.257
-Y5I- POT Sta. 10+00.000

MATCHLINE -L- STA. 232+80.000 SEE SHEET 26

MATCHLINE -L- STA. 236+20.000 SEE SHEET 28

N 27° 20' 24.5" W

N 38° 21' 00" E

RETAIN

REMOVE

PLUG

REMOVE SYSTEM

GRADE TO DRAIN

SPECIAL CUT DITCH W/PSRM SEE DETAIL A3

LINE CUT DITCH W/PSRM SEE DETAIL B3

SPECIAL LATERAL 'V' DITCH SEE DETAIL C3

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

TIE TO EX. DITCH

CL B RIPRAP

SPECIAL MED. DITCH SEE DETAIL "R2"

RETAIN & EXTEND 2@2.4mx1.8m RCBC

TOE PROTECTION SEE DETAIL E3

CHANNEL CLEANOUT SEE DETAIL D3
CL I RIP RAP
EST. 32 TONS
EST. 49 m² FILTER FABRIC

CHORD

SITE 8

S S DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 58 FOR -Y5I- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 27 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

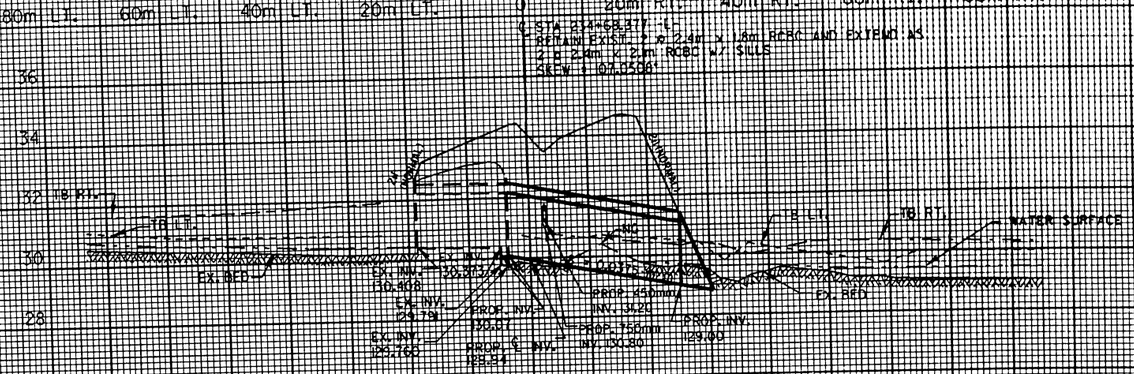
CONST.REV. _____
R/W REV. _____

TOM THUMB ROAD
NC 24 / 27
ADT 2004
ADT 2030
NAD 83

-Y5I- POT Sta. 11+11.492
END CONSTRUCTION -Y5I- POT STA.11+00.000
-L- STSta.235+78.268
-L- CSSta.233+52.606
-L- SCSta.234+16.606
-L- CSSta.235+14.268
-L- POTSta.233+38.257
-Y5I- POTSta.10+00.000
MATCHLINE -L- STA. 232+80.000 SEE SHEET 26
MATCHLINE -L- STA. 236+20.000 SEE SHEET 28
PERENNIAL STREAM
SITE 8
DENOTES FILL IN SURFACE WATER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 58 FOR -Y5I- PROFILE

| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| CONST. REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R/W REV. | | |




# SITE 8 STREAM PROFILE

SCALE:

HORIZONTAL 1:1000

VERTICAL 1:200

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 29 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

END CONSTRUCTION
-Y52- POT STA.11+30.000

-LTRAN LT- TSSta.239+74.533

-LTRAN LT- SCSta.240+46.533

-LTRAN LT- STA. 239+60.000 SEE SHEET 28

MATCHLINE -LTRANS RT- STA. 243+00.000 SEE SHEET 30

-Y52- PTSta.10+85.286

-Y52- PCSta.10+12.163

-LTRAN LT- POCSta.241+55.664
-Y52- POT Sta.10+00.000

-LTRAN RT- TSSta.239+70.901

-LTRAN RT- SCSta.240+42.901

PERENNIAL STREAM

SITE 9

NAD 83

SR 1249 CANTON ROAD

CONVERT TO JB W/MHC

RETAIN

GRADE TO DRAIN

RETAIN SYSTEM

SPECIAL CUT DITCH SEE DETAIL G3

SPECIAL CUT DITCH SEE DETAIL K3

0.9m BASE SPECIAL LATERAL DITCH SEE DETAIL L3

0.6m BASE LATERAL DITCH SEE DETAIL H3

1.2m BASE SPECIAL LATERAL DITCH W/PSRM SEE DETAIL J3

SPECIAL MEDIAN DITCH SEE DETAIL K2

COLLAR W5° BEND

COLLAR

COLLAR & EXTEND

CL B RIPRAP

CL I RIPRAP

HDWL

REM. OTCB & 2m + 600mm CONC

REM. HDWL

REM.

-LTRAN LT- STA 239+74.535 12.800m (42.00ft)

-LTRAN LT- STA 239+95.000 21.031m (69.00ft)

-LTRAN LT- STA 240+80.000 17.069m (56.00ft)

-LTRAN LT- STA 241+21.676 16.368m (53.70ft)

-LTRAN RT- STA 239+70.905 19.880m (65.22ft)

-LTRAN RT- STA 240+42.905 19.880m (65.22ft)

-LTRAN RT- STA 242+00.000 19.880m (65.22ft)

-LTRAN RT- STA 242+34.000 27.432m (90.00ft)

-LTRAN RT- STA 242+40.000 19.880m (65.22ft)

-LTRAN RT- STA 242+80.000 19.880m (65.22ft)

-Y52- +18.081 12.192m (40.00ft)

-Y52- +19.440 14.630m (48.00ft)

-Y52- +00.000 14.630m (48.00ft)

-Y52- +85.286 12.192m (40.00ft)

-Y52- +85.286 21.336m (70.00ft)

-Y52- +73.000 17.981m (48.20ft) 21.336m (70.00ft)

-Y52- +50.000 17.069m (56.00ft)

-Y52- +38.000 12.192m (40.00ft)

-Y52- +31.933 20.736m (68.00ft)

-Y52- +35.000 6.015m (19.38ft) 12.192m (40.00ft)

-Y52- +20.000 16.154m (53.00ft)

-Y52- +05.000 12.192m (40.00ft)

-Y52- +00.000 17.983m (59.00ft)

-Y52- +85.286 14.326m (47.00ft)

-Y52- +80.000 17.983m (59.00ft)

-Y52- +60.000 17.983m (59.00ft)

-Y52- +44.975 18.288m (60.00ft)

CHORD

RETAIN

FUEL-45,456L
FUEL-14,856L
FUEL-10,965L

ISL 3 PUMPS W/MTL CANOPY

ISBKBUS

ISFD

SPRING

CAR PORT

CONC. R/W

REM.

FLAG POLE

SR 1249 / CANTON ROAD
NC 24 / 27

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 48 FOR -LTRANLT- PROFILE
SEE SHEET 50 FOR -LTRANRT- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 29 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

5 0 10

NAD 83

END CONSTRUCTION
-Y52- POT STA.11+30.000

-LTRAN LT- TSSta.239+74.533

-LTRAN LT- SCSta.240+46.533

-LTRAN RT- TSSta.239+70.901

-LTRAN RT- SCSta.240+42.901

-Y52- PTSta.10+85.286

-Y52- PCSta.10+12.163

-LTRAN LT- POCSta.241+55.664
-Y52- POTSta.10+00.000

MATCHLINE -LTRANS RT- STA. 239+60.000 SEE SHEET 28

MATCHLINE -LTRANS RT- STA. 243+00.000 SEE SHEET 30

SITE 9

PERENNIAL STREAM

SR 1249 / CANTON ROAD

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 48 FOR -LTRANLT- PROFILE
SEE SHEET 50 FOR -LTRANRT- PROFILE
SEE SHEET 58 FOR -Y52- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | X-97 |

2.5 0 2.5 5 METRIC

60 50 40 30 20 10 0 10 20 30

LT RANL
241+25.023

LT RANR
241+20.000

WLB

CLEARING LIMITS

WLB

145

142.20

0.0900 m/m

DP. 142.93

141.698

241+20.00

LT RANL
241+02.486

LT RANR
241+00.000

145

140

142.20

0.0743 m/m

DP. 141.92

141.182

241+00.00

LT RANL
240+81.949

LT RANR
240+80.000

145

140

140.894

0.0884 m/m

DP. 140.107

140.512

240+80.00

LT RANL
240+61.414

LT RANR
240+60.000

145

140

139.312

139.944

DP. 140.31

139.911

240+60.00

-LT RANR-

60 50 40 30 20 10 0 10 20 30

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dw_62.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | X-98 |

2.5 0 2.5 5

METRIC

60 50 40 30 20 10 0 10 20 30

150
145

LTRANL
242+05.173

LTRANR
242+00.000

143.446
242+00.00

LTRANL
241+84.636

LTRANR
241+80.000

142.933
241+80.00

LTRANL
241+64.098

LTRANR
241+60.000

142.565
241+60.00

LTRANL
241+43.561

LTRANR
241+40.000

142.243
241+40.00
-LTRANR-

CLEARING LIMITS
WLB
WLB

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dan15cobb

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 37 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

PI = 170+82.000
EL = 151.533 ■
VC = 120 ■
K = 40
V = 90 KPH

153.540

-3.00%

+2.50%

800mm RCP
STA. 170+05.000
EL = 148.900 ■

DITCH GRADE RIGHT
STA 170+00.000
EL = 148.000 ■

DITCH GRADE RIGHT
STA 170+40.000
EL = 151.000 ■

+1.02700%

BEGIN
DITCH GRADE RIGHT
STA 170+82.000
EL = 151.280 ■

END
DITCH GRADE RIGHT
STA 170+93.000
EL = 151.220 ■

BEGIN
DITCH GRADE LEFT
STA 171+20.000
EL = 148.790 ■

-0.24833%

+0.35717%

-2.86000%

900mm RCP
STA. 171+40.000
EL = 150.480 ■

DITCH GRADE LEFT
STA 171+40.000
EL = 148.580 ■

DITCH GRADE RIGHT
STA 171+40.000
EL = 151.000 ■

DITCH GRADE LEFT
STA 171+40.000
EL = 149.610 ■

+1.18427%

+0.64286%

-2.87000%

END
DITCH GRADE LEFT
STA 172+40.000
EL = 153.270 ■

BEGIN
DITCH GRADE LEFT
STA 172+60.000
EL = 153.700 ■

DITCH GRADE RIGHT
STA 172+80.000
EL = 151.900 ■

-2.45333%

152.480

+0.80000%

153.940

NOTE : SEE SHEETS 8 AND 9 FOR PLANS

+60 +80 170 +20 +40 +60 +80 171 +20 +40 +60 +80 172 +20 +40 +60 +80 173

163 162 161 160 159 158 157 156 155 154 153 152 151 150 149 148 147 146

PI = 173+19.000
EL = 157.063 ■
VC = 175 ■
K = 80
V = 110 KPH

STA 173+06.545
EL = 156.000 ■

155.405

154.540

+0.50000%

+1.29133%

END
DITCH GRADE LEFT
STA 173+80.000
EL = 154.300 ■

END
DITCH GRADE RIGHT
STA 173+40.000
EL = 153.660 ■

BEGIN
DITCH GRADE RIGHT
STA 174+20.000
EL = 155.080 ■

+1.07517%

+1.18427%

-0.99693%

END
DITCH GRADE RIGHT
STA 174+90.000
EL = 155.580 ■

-1.17507%

+1.48867%

BEGIN
DITCH GRADE RIGHT
STA 175+30.000
EL = 155.700 ■

750mm RCP
STA. 176+79.000
EL = 154.740 ■

DITCH GRADE RIGHT
STA 175+73.000
EL = 154.930 ■

END
DITCH GRADE RIGHT
STA 176+15.000
EL = 155.530 ■

165.160

NOTE : SEE SHEETS 9 AND 10 FOR PLANS

173 +20 +40 +60 +80 174 +20 +40 +60 +80 175 +20 +40 +60 +80 176 +20 +40

163 162 161 160 159 158 157 156 155 154 153 152 151 150 149 148 147 146

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davidwebb AI

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 39 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

B.M. 30
RR SPIKE IN BASE OF TELEPHONE POLE
N 177211.856 E 493121.710
LOCATED 30.000 RIGHT OF -BL- STA. 183+82.900
EL. 154.817

PI = 185+08.000
EL = 154.253
VC = 48
K = 39
V = 80 KPH

PI = 188+87.000
EL = 144.457
VC = 110
K = 93
V = 130 KPH

BEGIN DITCH GRADE RIGHT STA 183+81.000 EL = 152.930

BEGIN DITCH GRADE LEFT STA 184+08.000 EL = 151.280

BEGIN DITCH GRADE RED. STA 184+00.000 EL = 152.330

BEGIN DITCH GRADE RIGHT STA 184+10.000 EL = 151.500

DITCH GRADE RIGHT STA 184+20.000 EL = 151.930

DITCH GRADE RIGHT STA 184+40.000 EL = 151.030

DITCH GRADE LEFT STA 184+80.000 EL = 150.190

END DITCH GRADE RIGHT STA 184+91.000 EL = 152.780

END DITCH GRADE LEFT STA 184+80.000 EL = 153.130

END DITCH GRADE RED. STA 184+80.000 EL = 152.080

BEGIN DITCH GRADE RIGHT STA 185+92.000 EL = 151.000

BEGIN DITCH GRADE LEFT STA 186+40.000 EL = 148.700

DITCH GRADE LEFT STA 186+40.000 EL = 149.100

NOTE : SEE SHEETS 12 AND 13 FOR PLANS

BEGIN DITCH GRADE RIGHT STA 186+80.000 EL = 148.280

END DITCH GRADE LEFT STA 187+00.000 EL = 147.760

DITCH GRADE RIGHT STA 187+07.000 EL = 147.483

END DITCH GRADE RIGHT STA 187+10.000 EL = 147.470

BEGIN DITCH GRADE LEFT STA 187+80.000 EL = 146.380

BEGIN DITCH GRADE RIGHT STA 187+80.000 EL = 148.300

DITCH GRADE LEFT STA 188+00.000 EL = 145.200

END DITCH GRADE LEFT STA 188+19.000 EL = 148.000

750mm RCP STA 188+45.000 EL = 143.230

END DITCH GRADE RIGHT STA 188+42.000 EL = 144.250

NOTE : SEE SHEETS 13 AND 14 FOR PLANS

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| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| 5 0 10 | R-0967CC | 40 |
| CONST.REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R /W REV. | PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

PT. = 190+92.000
EL. = 142.632 M
VC. = 235 M
K = 68
V = 100 KPH

-.0850%
-.4346%
-.6400%
-.3455%
+.4400%
+.5900%
+.4200%
+.1400%
+.0400%
+.2000%
+.5400%

BEGIN DITCH GRADE LEFT STA. 191+45.000 EL. = 135.230 M

BEGIN DITCH GRADE MED. STA. 191+91.000 EL. = 137.680 M

DITCH GRADE LEFT STA. 192+00.000 EL. = 134.000 M

DITCH GRADE MED. STA. 192+20.000 EL. = 136.800 M

1.500 MM RCP STA. 192+22.800 EL. = 133.430 M

DITCH GRADE MED. STA. 192+25.000 EL. = 136.800 M

END DITCH GRADE MED. STA. 192+95.020 EL. = 138.840 M

END DITCH GRADE LEFT STA. 192+95.000 EL. = 135.140 M

2.438 MM RMC STA. 193+24.000 EL. = 137.560 M

NOTE : SEE SHEETS 14 AND 15 FOR PLANS

190 +20 +40 +60 +80 191 +20 +40 +60 +80 192 +20 +40 +60 +80 193 +20 +40

## STRUCTURE HYDRAULIC DATA

| | | |
|---|---|---|
| DESIGN DISCHARGE | = 59 | CMS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 131.16 | M |
| BASE DISCHARGE | = 71 | CMS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 131.52 | M |
| OVERTOPPING DISCHARGE | = 90 | CMS |
| OVERTOPPING FREQUENCY | = 200+ | YRS |
| OVERTOPPING ELEVATION | = 132.04 | M |

-.6346%
-.3282%
-.3233%
+.2706%
+.3427%
+.4280%
+.2386%

PT. = 193+02.000
EL. = 129.159 M
VC. = 330 M
K = 40
V = 90 KPH

PROP. 393.0m X 3.4m RCBC STA. 194+78.101 EL. = 127.02

BEGIN DITCH GRADE LEFT STA. 194+45.000 EL. = 128.200 M

BEGIN DITCH GRADE LEFT STA. 194+75.000 EL. = 127.700 M

END DITCH GRADE LEFT STA. 194+99.000 EL. = 127.700 M

DITCH GRADE LEFT STA. 195+20.000 EL. = 129.240 M

BEGIN DITCH GRADE RIGHT STA. 196+33.000 EL. = 135.800 M

BEGIN DITCH GRADE RIGHT STA. 196+40.000 EL. = 135.10 M

END DITCH GRADE LEFT STA. 196+40.000 EL. = 136.500 M

NOTE : SEE SHEETS 15 AND 16 FOR PLANS

+40 +60 +80 194 +20 +40 +60 +80 195 +20 +40 +60 +80 196 +20 +40 +60 +80

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| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| 5 0 10 | R-0967CC | 41 |
| CONST.REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R /W REV. | PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

PI = 197+88.000
EL = 141.955 M
VC = 260 M
K = 40
V = 90 KPH

+3.225%

-1.290%

-1.785%

-0.744%

-0.744%

END
DITCH GRADE RIGHT
STA 196+94.000
EL = 137.786 M

BEGIN
DITCH GRADE RIGHT
STA 198+60.000
EL = 138.940 M

END
DITCH GRADE RIGHT
STA 198+88.000
EL = 137.680 M

BEGIN
DITCH GRADE RIGHT
STA 200+12.000
EL = 131.700 M

NOTE : SEE SHEETS 16 AND 17 FOR PLANS

## STRUCTURE HYDRAULIC DATA

| | | |
|---|---|---|
| DESIGN DISCHARGE | = 18 | CMS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 133.68M | |
| BASE DISCHARGE | = 23 | CMS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 134.02M | |
| OVERTOPPING DISCHARGE | = 35 | CMS |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING ELEVATION | = 135.00M | |

BEGIN
DITCH GRADE LEFT
STA 200+20.000
EL = 134.200 M

END
DITCH GRADE LEFT
STA 200+40.000
EL = 134.260 M

-0.320%

-1.290%

-0.744%

-0.744%

-0.317%

262.4m x 1.8m
STA 200+38.932
EL = 131.805 M

BEGIN
DITCH GRADE LEFT
STA 200+55.000
EL = 131.960 M

DITCH GRADE RIGHT
STA 200+40.000
EL = 131.900 M

PI = 201+00.000
EL = 132.050 M
VC = 305 M
K = 38
V = 90 KPH

END
DITCH GRADE LEFT
STA 201+20.000
EL = 132.180 M

END
DITCH GRADE RIGHT
STA 201+09.000
EL = 132.030 M

BEGIN
DITCH GRADE RIGHT
STA 201+23.000
EL = 131.750 M

+1.699%

+2.849%

+2.849%

BEGIN
DITCH GRADE LEFT
STA 201+50.000
EL = 135.830 M

END
DITCH GRADE RIGHT
STA 201+50.000
EL = 135.830 M

+2.350%

+4.260%

+5.000%

+5.000%

BEGIN
DITCH GRADE LEFT
STA 202+26.000
EL = 138.630 M

DITCH GRADE LEFT
STA 202+40.000
EL = 137.000 M

BEGIN
DITCH GRADE RIGHT
STA 202+38.000
EL = 135.090 M

DITCH GRADE LEFT
STA 203+40.000
EL = 141.260 M

NOTE : SEE SHEETS 17 AND 18 FOR PLANS

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dsvidwebb A1

METRIC

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 45 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

PI = 224+80.000
EL = 156.552 m
VC = 160 m
K = 45
V = 90 KPH

-L-

-3.326%
-2.041%
-.750%
-5.700%
-4.125%

BEGIN
DITCH GRADE RIGHT
STA 220+00.000
EL = 165.050 m

DITCH GRADE RIGHT
STA 226+45.000
EL = 155.280 m

DITCH GRADE RIGHT
STA 226+45.000
EL = 159.782 m

BEGIN
DITCH GRADE LEFT
STA 226+40.000
EL = 148.720 m

V.DITCH RPC
STA. 226+51.000
EL = 149.280 m

DITCH GRADE RIGHT
STA 226+80.000
EL = 148.700 m

PI = 228+93.000
EL = 155.200 m
VC = 160 m
K = 131
V = 110 KPH

-2.041%
-.082%
-1.000%
-2.300%
-2.240%
-4.100%
-6.000%

BEGIN
DITCH GRADE RIGHT
STA 227+10.000
EL = 150.700 m

END
DITCH GRADE RIGHT
STA 227+10.000
EL = 150.700 m

DITCH GRADE LEFT
STA 227+00.000
EL = 151.100 m

DITCH GRADE RIGHT
STA 228+80.000
EL = 149.900 m

NOTE : SEE SHEETS 24 AND 25 FOR PLANS

224 +20 +40 +60 +80 225 +20 +40 +60 +80 226 +20 +40 +60 +80 227 +20 +40

B.M. 36
RR SPIKE IN BASE OF 390 MM PINE
N 175438.492 E 498478.584
LOCATED 25.800 LEFT OF -BL- STA. 227+84.500
EL. 148.845

-L- STA. 223+00.000
-L- STA. 240+00.000

PI = 229+72.000
EL = 149.910 m
VC = 180 m
K = 45
V = 90 KPH

-.820%
-.450%
-2.244%
-.583%
-.583%
+.500%
+2.000%
+.402%
+.084%
-.820%
+.265%
-4.200%

BEGIN
DITCH GRADE LEFT
STA 227+40.000
EL = 149.900 m

END
DITCH GRADE LEFT
STA 227+40.000
EL = 149.900 m

END
DITCH GRADE RIGHT
STA 227+65.000
EL = 149.600 m

BEGIN
DITCH GRADE LEFT
STA 228+13.000
EL = 148.200 m

900MM RPC
STA. 228+38.000
L = 46.000 m

DITCH GRADE LEFT
STA 228+40.000
EL = 147.200 m

DITCH GRADE LEFT
STA 228+82.000
EL = 147.130 m

DITCH GRADE LEFT
STA 228+80.000
EL = 147.340 m

BEGIN
DITCH GRADE LEFT
STA 229+40.000
EL = 147.820 m

BEGIN
DITCH GRADE RIGHT
STA 229+20.000
EL = 147.510 m

END
DITCH GRADE RIGHT
STA 229+71.000
EL = 148.050 m

END
DITCH GRADE LEFT
STA 229+60.000
EL = 149.430 m

BEGIN
DITCH GRADE LEFT
STA 230+80.000
EL = 152.500 m

-L-

NOTE : SEE SHEETS 25 AND 26 FOR PLANS

+40 +60 +80 228 +20 +40 +60 +80 229 +20 +40 +60 +80 230 +20 +40 +60 +80

04-JUN-2003 13:10
R:\Proj\R-0967\cc-pf1
davidwbb

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 46 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

B.M. 37
RR SPIKE IN BASE OF 1100 MM OAK
N.175651.337 E.497017.451
LOCATED 78.600 RIGHT OF -BL- STA. 233+50.500
EL. 131.677

STRUCTURE HYDRAULIC DATA

| | | |
|---|---|---|
| DESIGN DISCHARGE | = 18 | CMS |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN HW ELEVATION | = 132.14 M | |
| BASE DISCHARGE | = 22 | CMS |
| BASE FREQUENCY | = 100 | YRS |
| BASE HW ELEVATION | = 132.43M | |
| OVERTOPPING DISCHARGE | = >34 | CMS |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING ELEVATION | = 134.45M | |

PI = 232+47.000
EL = 130.814 M
VC = 370 M
K = 48
V = 100 KPH

PI = 237+55.000
EL = 141.874 M
VC = 185 M
K = 40
V = 90 KPH

-L-

NOTE : SEE SHEETS 26 AND 27 FOR PLANS

NOTE : SEE SHEETS 27 AND 28 FOR PLANS

04-JUN-2003 13:02
R:\Projects\0967cc\c-pf1
davidebo

-LTRAN LT-

STA. 238+50.000

PI = 239+49.500
EL = 139.980 ■
VC = 190 ■
K = 88
V = 110 KPH

-2.657%
-0.383%
100m
+1.865%
+0.500%
100m
+2.365%
BEGIN DITCH GRADE LEFT STA. 238+50.000 EL = 137.880 ■
DITCH GRADE LEFT STA. 239+00.000 EL = 138.440 ■
END DITCH GRADE LEFT STA. 239+08.000 EL = 138.490 ■
DITCH GRADE LEFT STA. 241+00.000 EL = 142.030 ■
END DITCH GRADE LEFT STA. 241+42.000 EL = 142.930 ■
BEGIN DITCH GRADE LEFT STA. 241+58.000 EL = 142.930 ■

NOTE : SEE SHEETS 28 AND 29 FOR PLANS

-LTRAN LT-

PI = 242+00.000
EL = 144.682 ■
VC = 120 ■
K = 574
V = 130 KPH

PI = 244+00.000
EL = 148.800 ■
VC = 120 ■
K = 675
V = 130 KPH

-2.384%
+2.016%
100m
-0.344%
+2.256%
+3.056%
BEGIN DITCH GRADE LEFT STA. 242+59.000 EL = 142.000 ■
END DITCH GRADE LEFT STA. 243+20.000 EL = 142.210 ■
BEGIN DITCH GRADE LEFT STA. 244+03.000 EL = 148.940 ■

NOTE : SEE SHEETS 29 AND 30 FOR PLANS

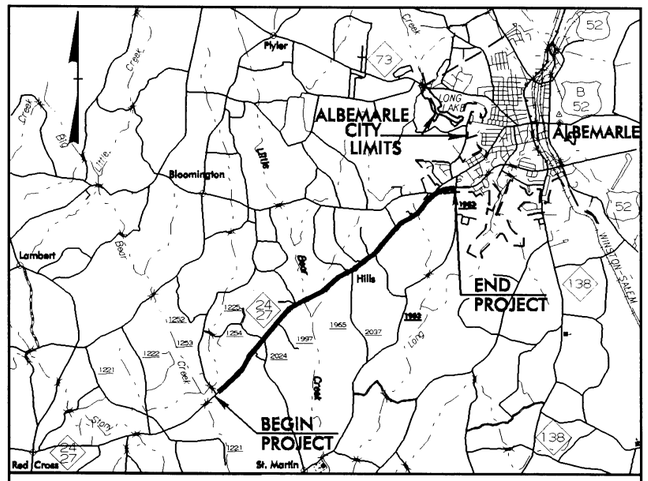
04-JUN-2003 13:03
R:\Projects\0967cc.pfl
davidwebb

9/09/04

# R-0967 CC

# CONTRACT: C20165

See Sheet 1-A For Index of Sheets




VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

# STANLY COUNTY

ALL DIMENSIONS IN THESE PLANS ARE IN METERS

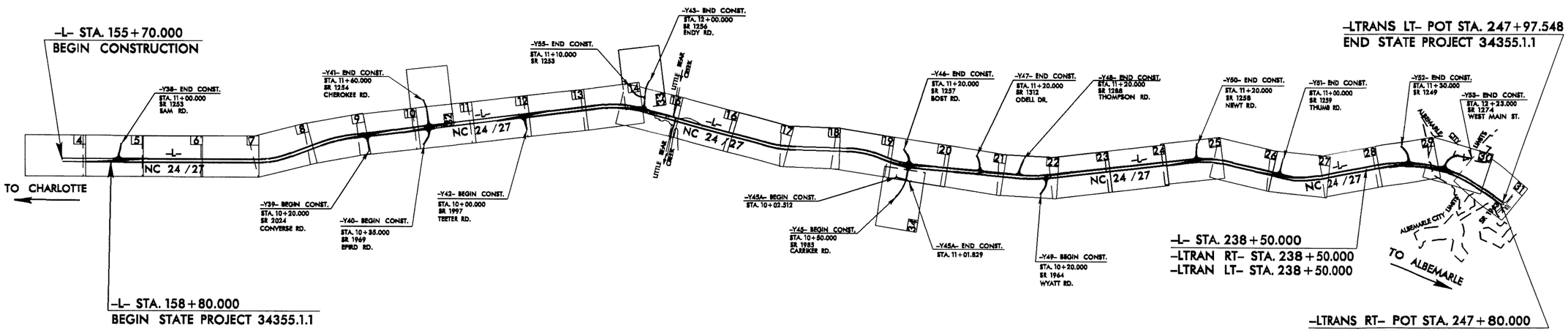
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | R-0967 CC | 1 | |

| STATE PROJ. NO. | F. A. PROJ. NO. | DESCRIPTION |
|---|---|---|
| 34355.1.1 | | PE |
| 34355.2.5 | | R/W, UTL |

***LOCATION:*** *NC 24/27 FROM EAST OF BIG BEAR CREEK TO SR 1963 (OAKBORO RD. AND SAINT MARTIN RD.) IN ALBEMARLE.*

***TYPE OF WORK:*** *GRADING, DRAINAGE, PAVING, SIGNING, SIGNALS, CULVERTS, AND GUARDRAIL.*

NAD 83




A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF ALBEMARLE.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

***GRAPHIC SCALES***

PLANS 5 0 10

PROFILE (HORIZONTAL) 5 0 10

PROFILE (VERTICAL) 1 0 2

***DESIGN DATA***

| | | |
|---|---|---|
| ADT 2004 | = | 14,400 |
| ADT 2030 | = | 28,200 |
| DHV | = | 10 % |
| D | = | 55 % |
| T | = | 7 % * |
| V | = | 100 km/h |

* TTST 4 % DUAL 3 %

***PROJECT LENGTH***

| | | |
|---|---|---|
| LENGTH ROADWAY STATE PROJECT 34355.1.1 | = | 8.900KM |
| TOTAL LENGTH STATE PROJECT 34355.1.1 | = | 8.900KM |

NOTE: -L- AND -LTRANS RT- USED TO DETERMINE PROJECT LENGTH

*Prepared in the Office of:*

***DIVISION OF HIGHWAYS***
*1000 Birch Ridge Dr., Raleigh, NC 27610*

*1995 STANDARD SPECIFICATIONS*

***RIGHT OF WAY DATE:***
MAY 29, 2003

***LETTING DATE:***
NOVEMBER 16, 2004

*PROJECT ENGINEER*

JEANIE TYSON
*PROJECT DESIGN ENGINEER*

***HYDRAULICS ENGINEER***

SIGNATURE: P.E.

***ROADWAY DESIGN ENGINEER***

SIGNATURE: P.E.

***DIVISION OF HIGHWAYS***
***STATE OF NORTH CAROLINA***

P.E.
*STATE DESIGN ENGINEER*

***DEPARTMENT OF TRANSPORTATION***
***FEDERAL HIGHWAY ADMINISTRATION***

*APPROVED*
*DIVISION ADMINISTRATOR* *DATE*

24-MAY-2004 08:39
R:\Roadway\Projects\0967cc\Design\0967cc_sht1.dgn
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$cell_origin 0.000000 0.000000
$cell_array 1 1 0.000000 0.000000
$cell_level_mask 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
$cell_color_mask 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

| PROJ. REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967 CC | 1 - B |

# CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

## ROADS & RELATED ITEMS

- Edge of Pavement
- Curb
- Prop. Slope Stakes Cut (C)
- Prop. Slope Stakes Fill (F)
- Prop. Woven Wire Fence
- Prop. Chain Link Fence
- Prop. Barbed Wire Fence
- Prop. Wheelchair Ramp (WCR)
- Curb Cut For Future Wheelchair Ramp (CCFR)
- Exist. Guardrail
- Prop. Guardrail
- Exist. Cable Guiderail
- Prop. Cable Guiderail
- Equality Symbol
- Pavement Removal

## RIGHT OF WAY

- Baseline Control Point
- Existing Right of Way Marker
- Exist. Right of Way Line w/Marker
- Prop. Right of Way Line with Proposed R/W marker (Iron Pin & Cap)
- Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker
- Exist. Control of Access Line (CA)
- Prop. Control of Access Line (CA)
- Exist. Easement Line (E)
- Prop. Temp. Construction Easement Line (E)
- Prop. Temp. Drainage Easement Line (TDE)
- Prop. Perm. Drainage Easement Line (PDE)

## HYDROLOGY

- Stream or Body of Water
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Shoreline
- Falls, Rapids
- Prop Lateral, Tail, Head Ditches (FLOW)

## STRUCTURES

MAJOR

- Bridge, Tunnel, or Box Culvert (CONC)
- Bridge Wing Wall, Head Wall and End Wall (CONC WW)

MINOR

- Head & End Wall (CONC HW)
- Pipe Culvert
- Footbridge
- Drainage Boxes (CB)
- Paved Ditch Gutter

## UTILITIES

- Exist. Pole
- Exist. Power Pole
- Prop. Power Pole
- Exist. Telephone Pole
- Prop. Telephone Pole
- Exist. Joint Use Pole
- Prop. Joint Use Pole
- Telephone Pedestal (T)
- Cable TV Pedestal (C)
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole (P)
- Telephone Booth
- Water Manhole (W)
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole (T)
- Power Transformer
- Sanitary Sewer Manhole (S)
- Storm Sewer Manhole (S)
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box (S)
- Fiber Optic Splice Box (F)
- Television or Radio Tower
- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement (TS)

- Recorded Water Line (W)
- Designated Water Line (S.U.E.*) (W)
- Sanitary Sewer (SS)
- Recorded Sanitary Sewer Force Main (FSS)
- Designated Sanitary Sewer Force Main(S.U.E.*) (FSS)
- Recorded Gas Line (G)
- Designated Gas Line (S.U.E.*) (G)
- Storm Sewer (S)
- Recorded Power Line (P)
- Designated Power Line (S.U.E.*) (P)
- Recorded Telephone Cable (T)
- Designated Telephone Cable (S.U.E.*) (T)
- Recorded U/G Telephone Conduit (TC)
- Designated U/G Telephone Conduit (S.U.E.*) (TC)
- Unknown Utility (S.U.E.*) (?UTL)
- Recorded Television Cable (TV)
- Designated Television Cable (S.U.E.*) (TV)
- Recorded Fiber Optics Cable (FO)
- Designated Fiber Optics Cable (S.U.E.*) (FO)
- Exist. Water Meter
- U/G Test Hole (S.U.E.*)
- Abandoned According to U/G Record (ATTUR)
- End of Information (E.O.I.)

## BOUNDARIES & PROPERTIES

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Property Line Symbol (PL)
- Exist. Iron Pin (EIP)
- Property Corner
- Property Monument (ECM)
- Property Number (123)
- Parcel Number (6)
- Fence Line (WW & ISBW)
- Existing Wetland Boundaries (WLB)
- Proposed Wetland Boundaries (WLB)
- Existing Endangered Animal Boundaries (EAB)
- Existing Endangered Plant Boundaries (EPB)

## BUILDINGS & OTHER CULTURE

- Buildings
- Foundations
- Area Outline
- Gate
- Gas Pump Vent or U/G Tank Cap
- Church
- School
- Park
- Cemetery
- Dam
- Sign (S)
- Well (W)
- Small Mine
- Swimming Pool

## TOPOGRAPHY

- Loose Surface
- Hard Surface
- Change in Road Surface
- Curb
- Right of Way Symbol (R/W)
- Guard Post (GP)
- Paved Walk
- Bridge
- Box Culvert or Tunnel
- Ferry
- Culvert
- Footbridge
- Trail, Footpath
- Light House

## VEGETATION

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard (VINEYARD)

## RAILROADS

- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (SWITCH)

revised 2/25/97

24-MAY-2004 08:59
RECON11 at NC2126S

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 4 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY USGS FOR MONUMENT "RED CROSS 1948" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 169342.085(m) EASTING: 486371.935(m) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998510 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "RED CROSS 1948" TO -L- STATION (157+20.000) IS N 74 49' 33.798" E 5,045.132 m ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NAD 83

REVISIONS

8/17/99

EXISITNG R/W AND EASEMENTS PURCHASED UNDER PROJECT R-967CB

PETE A. HARWARD
DB 257 PG 883

MAX EUGENE TROUBLEFIELD
DB 186 PG 454
DB 213 PG 177

BIG BEAR CRK

PROP. LINE + CREEK CENTERLINE

EXISITNG R/W AND EASEMENTS PURCHASED UNDER PROJECT R-967CB

EXISTING BERM DITCH

154 155 156 157

62.000 (203.41') EXIST. R/W

72.000 (236.22') EXIST. R/W

EXISTING 600 CSP W/ELBOWS

EXISTING 400 CSP W/ELBOW

EXISTING 2GI

EXISTING 375

EXISTING 450

FS

BDO

TO BE CONSTRUCTED UNDER R-0967CB

-L- N 48° 04' 59.5" E

-BL- N 49° 41' 44.0" E

REMOVE CROSSOVER

EXISTING 400 CSP W/ELBOWS

EXISTING 2GI

EXISTING 450

EXISTING ELBOW

12m P.S.

7.2

02.02

BL-62 152+48.488
-L- POT 153+94.476 OFF 2.836 (RT)

32.524 R/W TO CORS45°36'45"E

48.552 CORS TO CORS50°02'45"E

20.070 CORS TO EIP S38°14'15"E

EIP

226.26

-L- STA.155+70.000
BEGIN CONSTRUCTION R-0967CC

EXISITNG R/W AND EASEMENTS PURCHASED UNDER PROJECT R-967CB

PROJECT R-0967CB
PLANS BEING PREPARED BY PBS&J
NCDOT CONTRACT - CATHY HOUSER, P.E.
ANTICIPATED LET DATE 10/03

1200 mm WD RAIL & 25BW

1200 mm RAIL & 25BW

B (RUINS)

ELTON WHITLEY
DB 130 PG 87

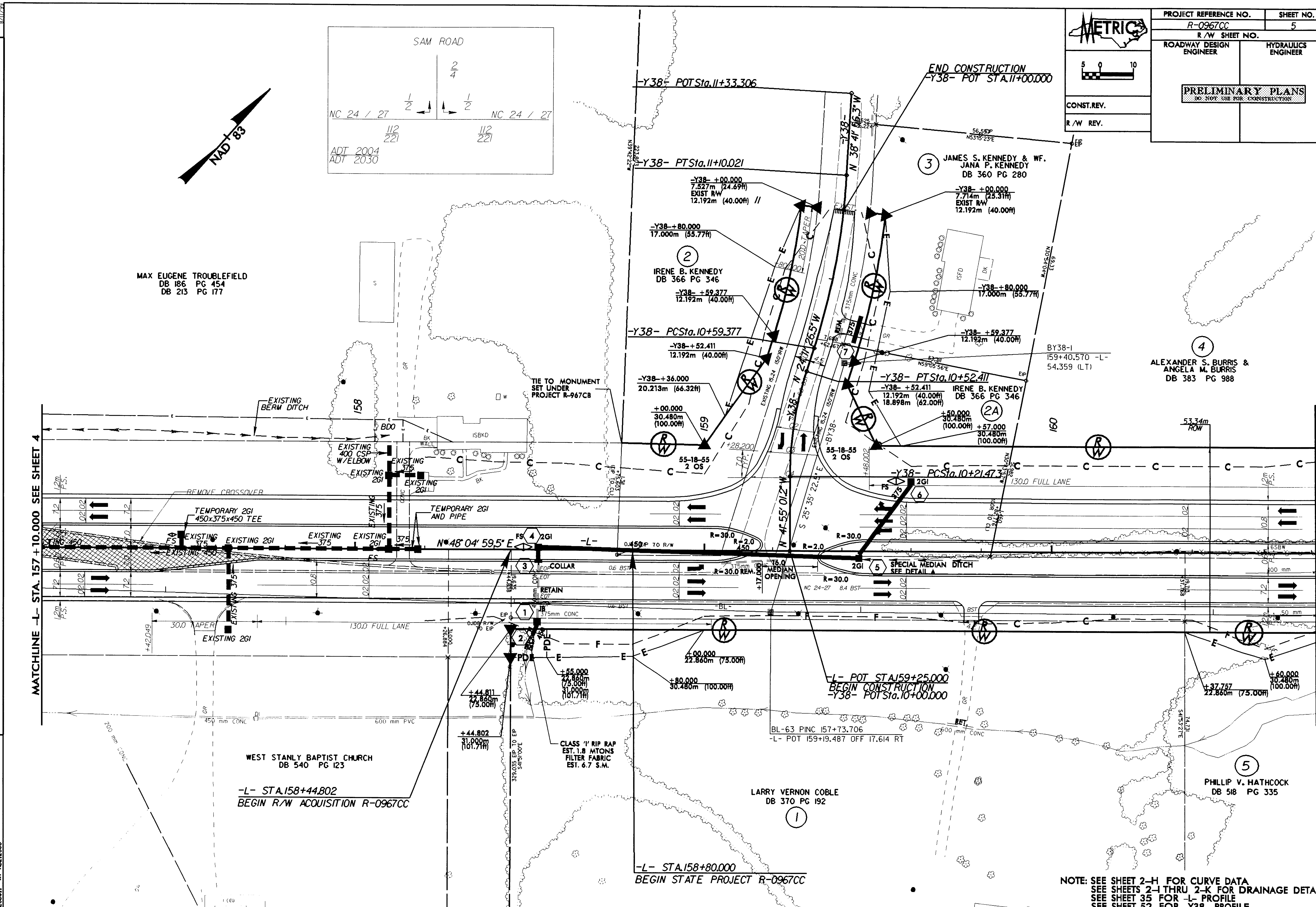
WEST STANLY BAPTIST CHURCH
DB 540 PG 123

SOIL

MATCHLINE -L- STA. 157+10.000 SEE SHEET 5

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 35 FOR -L- PROFILE

24-MAY-2004 08:47
R:\DGN\R-0967CC_04.dgn




REVISIONS

R/W REV. – REMOVED R/W MONUMENTS AT -L- STA. 158+76.775 LT. ADDED NOTE "TIE TO MONUMENT SET UNDER PROJECT R-967CB". ADDED PARCEL 2A. PROPERTY LINE BETWEEN PARCELS 2A AND 3 CORRECTED. 04/02/04 JT

8/17/99

24-MAY-2004 08:47
R0012306

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 6 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

MATCHLINE -L- STA. 160+75.000 SEE SHEET 5

MATCHLINE -L- STA. 164+45.000 SEE SHEET 7

NAD 83

4
ALEXANDER S. BURRIS &
ANGELA M. BURRIS
DB 383 PG 988

8
LOYS P. BOWERS & WF.
LILLIE M. BOWERS
DB 185 PG 367

NANCY E. WHITLEY & HUS.
DONNIE L. WHITLEY
DB 654 PG 229
9

6
CARL P. HATHCOCK & WIFE
EDITH C. HATHCOCK
DB 174 PG 569
DB 370 PG 190

6
CARL P. HATHCOCK & WIFE
EDITH C. HATHCOCK
DB 220 PG 599

6
CARL P. HATHCOCK & WIFE
EDITH C. HATHCOCK
DB 174 PG 569
DB 370 PG 190

7
JEFFERY C. HATHCOCK & WF.
TAMMY L. HATHCOCK
DB 349 PG 395

10
FRED H. WHITLEY
DB 100 PG 260
DB 100 PG 229

+62.000
30.480m (100.00ft)

+20.000
37.186m (122.00ft)

+70.000
30.480m (100.00ft)
38.100m (125.00ft)
40.538m (133.00ft)

+30.000
30.480m (100.00ft)
33.528m (110.00ft)

53.34m ROW

161 162 163 164

STD. BERM DITCH
STA. 162+80 TO
STA. 164+20 -L- LT.

ROADWAY TYP.
CUT DITCH W/PSRM
SEE DETAIL D

30.0 TAPER

EXISTING 18.288 (60')RW

N 48° 04' 59.5" E -L-

N 46° 01' 57.3" E

ROD & LUG W/SLEEVE GASKETS

600 CSP W/1 ELBOW

NO ASSOCIATED PIPING FOUND FOR THIS WM.

0.692 Rw TO EIP

REMOVE

RETAIN

+82.564
22.860m (75.00ft)

+66.000
22.860m (75.00ft)
32.004m (105.00ft)

+55.533
22.860m (75.00ft)

TIE TO EX. DITCH

+33.000
22.860m (75.00ft)
38.100m (125.00ft)

+15.000
44.806m (147.00ft)

+15.000
30.480m (100.00ft)

+37.000
30.480m (100.00ft)

BL-64 PINC 159+86.260
-L- POT 161+32.041 OFF 17.735 RT

CLASS 'I' RIP RAP
EST. 4.5 MTONS
FILTER FABRIC
EST. 13.4 S.M.

CLASS 'B' RIP RAP
EST. 4.5 MTONS
FILTER FABRIC
EST. 11.7 S.M.

0.6m BASE SPECIAL
LATERAL DITCH
SEE DETAIL B

0.6m BASE SPECIAL
LATERAL DITCH W/PSRM
SEE DETAIL C

CLASS 'B' RIP RAP
EST. 4.5 MTONS
FILTER FABRIC
EST. 11.7 S.M.

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 35 and 36 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 7 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

RW REV. - CORRECTED EASEMENT AT -L- STA. 167+23.000, 27.534m RT., TO TIE INTO PROPOSED RIGHT OF WAY LINE. 040204 JT

8/17/99

NAD 83

MATCHLINE -L- STA. 164+45.000 SEE SHEET 6

MATCHLINE -L- STA.168+00.000 SEE SHEET 8

-L- TSSta.167+78.367

9
NANCY E. WHITLEY & HUS.
DONNIE L. WHITLEY
DB 654 PG 229

ROADWAY TYP.
CUT DITCH W/PSRM
SEE DETAIL D

N 48° 04' 59.5" E

COLLAR & EXTEND

450mm CONC
CLEAN OUT

EXISTING 18.288 (60')RW

0.6m BASE SPECIAL
LATERAL DITCH
SEE DETAIL E

+81.000
34.138m (112.00ft)

+60.000
44.500m (146.00ft)

CLASS 'B' RIP RAP
EST. 2.7 MTONS
FILTER FABRIC
EST. 8.4 S.M.

+72.000
22.860m (75.00ft)
25.908m (85.00ft)
34.138m (112.00ft)

10
FRED H. WHITLEY
DB 100 PG 260
DB 100 PG 229

BL-65 PINC 164+63.710
-L- POT 166+09.185
OFF 0.651 RT

PSRM W/0.3m
TUCK ALL SIDES
EST. 31m²

+35.000
25.908m (85.00ft)

11
RALPH S. EUDY & WF.
CAROLYN B. EUDY
DB 592 PG 428

NO ASSOCIATED PIPING
FOUND FOR WMs IN
THIS GENERAL AREA.

375mm CONC

N 53° 30' 26.3" E

50 mm

+00.000
22.860m(75.00ft)

+60.000
28.042m (92.00ft)

+23.000
27.534m (90.33ft)

WD RAMP

ISFD

12
RALPH S. & WF. CAROLYN B. EUDY
DB 286 PG 849

+57.000
30.480m (100.00ft)
35.966m (118.00ft)

CLASS 'B' RIP RAP
EST. 1.8 MTONS
FILTER FABRIC
EST. 5.9 S.M.

+48.000
30.480m (100.00ft)
35.966m (118.00ft)

+78.367
30.480m (100.00ft)

80 TYP.

CONC

ISBKD

13
RALPH M. & WF. LOIS T. SEHORN
DB 293 PG 485

NCGS BEANS PINC 166+49.727
-L- POT 167+94.296 OFF 18.256 RT

CHORD

LATERAL 'V' DITCH
SEE DETAIL F

+60.000
35.052m (115.00ft)

200mm CONC

ISBKD

14
OMA HONEYCUTT
DB 220 PG 27
DB 234 PG 195

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 36 FOR -L- PROFILE

24-MAY-2004 08:48
R:\R0967\Roadway\Plans\R0967pln01.dgn
User:jtaylor

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 8 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

8/17/99

REVISIONS

RW REV. - RELOCATED R/W MONUMENT TO -L- STA. 168+42.367 RT. ADDED PARCEL 15A.
NAME CHANGE ON PARCEL 19. EXISTING PROPERTY LINE CORRECTED ON PARCEL 16. 04/07/04 JT

21-MAY-2004 08:48
R:\DGN\1-0967CC.dgn
RE:DGN\1-0967CC.RY RE0712386

NAD 83

MATCHLINE -L- STA. 168+00.000 SEE SHEET 7

MATCHLINE -L- STA. 171+40.000 SEE SHEET 9

(9) NANCY E. WHITLEY & HUS. DONNIE L. WHITLEY DB 654 PG 229

(17) CHARLES DURANT WHITLEY DB 576 PG 990

(18) TERRELL J. WHITLEY & WIFW BRENDA LEE WHITLEY DB 365 PG 288 DB 274 PG 134

(19) TALLEY FARMS DB 873 PG 955

-L- SCSta.168+42.367

BL-67 PINC 167+87.831
-L- POT 169+29.667 OFF 0.683 LT

-L- CSSta.169+54.627

-L- STSta.170+18.627

+42.367 30.480m (100.00ft)

+05.000 30.936m (101.49ft)

+84.000 30.984m (101.65ft) 35.966m (118.00ft)

+54.627 30.480m (100.00ft)

+15.000 30.556m (100.25ft) 41.148m (135.00ft)

+04.000 30.769m (100.95ft) 36.026m (118.00ft) 41.148m (135.00ft)

+18.627 30.480m (100.00ft)

+08.000 30.480m (100.00ft) 33.838m (110.00ft) 39.929m (131.00ft)

+91.000 30.480m (100.00ft) 39.929m (131.00ft)

+94.000 30.480m (100.00ft)

+42.367 33.223m (109.00ft)

+00.000 35.052m (115.00ft)

+18.627 30.480m (100.00ft)

CLASS 'I' RIP RAP EST. 6.4 MTONS FILTER FABRIC EST. 14.2 S.M.

CLASS 'B' RIP RAP EST. 4.5 MTONS FILTER FABRIC EST. 13.4 S.M.

CLASS 'B' RIP RAP EST. 10.0 MTONS FILTER FABRIC EST. 18.4 S.M.

FLATTEN FILL SLOPE TO MAINTAIN 10m MIN. BETWEEN PIPE END & EP

LATERAL 'V' DITCH W/PSRM SEE DETAIL J

FLATTEN FRONT DITCH SLOPE TO MAINTAIN 10m BETWEEN PIPE END & EP

LATERAL 'V' DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL G

LATERAL 'V' DITCH SEE DETAIL H

LATERAL 'V' DITCH W/PSRM SEE DETAIL I

SPECIAL CUT DITCH SEE DETAIL G

N 34° 05' 08.4" E

N 25° 39' 55.4" E

N 27° 53' 07.0" E

S 87° 58' 34.6" E 87.568

S 64° 54' 21.4" E 166.313

(14) OMA HONEYCUTT DB 220 PG 27 DB 234 PG 195

(15) SHELBY J. TUCKER DB 260 PG 415 DB 568 PG 822 DB 163 PG 473 DB 96 PG 364

(16) GENEVA B. EUDY DB 156 PG 162 DB 162 PG 576 DB 166 PG 411

(15A) W. R. SWAIN & GRITA E. SWAIN DB 873 PG 246

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 36 AND 37 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 9 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 RW REV. – CORRECTED MONUMENT STATION AT –L– STA. 174+80.000 RT. PARCEL NUMBER AND NAME CHANGE ON PARCEL 15A. NAME CHANGE ON PARCEL 19. 04/07/04 JT

NAD 83

NCGS "STOCKTON"
BL-PINC 173+29.278 =
BY39-POT 5+00.000
-L- POT 174+67.059
OFF 17.574 LT

BL-68 PINC 171+41.495
-L- POT 172+82.185 OFF 19.383 LT

-L- TSSta.172+10.103

-L- SCSta.172+74.103

-L- CSSta.173+69.081

-L- STSta.174+33.081

MATCHLINE -L- STA. 171+40.000 SEE SHEET 8

MATCHLINE -L- STA. 174+80.000 SEE SHEET 10

(19) TALLEY FARMS
DB 873 PG 955

(20) JOCEPHUS B. HUNETCUUTT, JR. & JOYCE W. STEELE
DB 319 PG 354

(21) SELMON T. ROGERS
DB 144 PG 20

(22) JOSEPH S. & WF. JOANNE L. ROGERS
DB 613 PG 903

AVERA M. WHITLEY & WIFE NORMA L. WHITLEY
DB 389 PG 450

SELMON T. ROGERS & WIFE RUBY T. ROGERS
DB 315 PG 985 (23)

(24) EUBER A. NORTON
DB 324 PG 688
DB 256 PG 357
DB 311PG 244
DB 382 PG W
DB 620 PG 383

AVERA M. & WF. NORMA L. WHITLEY
DB 328 PG 93
DB 288 PG 593
DB 383 PG 16 (25)

JOSEPH V. & WF. JEANETTE H. MORTON
DB 269 PG 638
DB 166 PG 433
DB 167 PG 107 (26)

(15A) W. R. SWAIN & GRITA E. SWAIN
DB 873 PG 246

JONATHAN R. & WF. WENDY W. DANIELS
DB 588 PG 744

EASEMENT OF INGRESS, EGRESS, & REGRESS

SPECIAL CUT DITCH SEE DETAIL L

SPECIAL LATERAL 'V' DITCH SEE DETAIL K

LATERAL 'V' DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL G

CLASS 'B' RIP RAP EST. 0.9 MTONS FILTER FABRIC EST. 4.2 S.M.

FLATTEN FILL SLOPE TO MAINTAIN 10m MIN. BETWEEN PIPE END & EP

NO ASSOCIATED PIPING FOUND FOR WMs IN GENERAL AREA.

NO ASSOCIATED PIPING FOUND FOR WMs.

N 38° 12' 56.3" E

N 27° 53' 07.0" E

N 40° 53' 52.1" E

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 37 FOR -L- PROFILE

24-MAY-2006 10:48
R:\06CH_ATP_R0972CC\Sheets\R0972CC_Sh9.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 10 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

8/17/93

REVISIONS

R/W REV. - CORRECTED EASEMENT OFFSET AT -L- STA. 177+34.000 LT. ADDED EASEMENT OFFSET AT -L- STA. 177+44.000 LT.
ADDED MISSING EASEMENT STATION AND OFFSET AT -L- STA. 177+80.000 LT. 04/02/04 JT

MATCHLINE 174+80.000 SEE SHEET 9

MATCHLINE -L- STA 178+20.000 SEE SHEET 11

NAD 83

-L- POT STA 175+08.555
END CONSTRUCTION
-Y39- POT Sta. 11+30.602

BL-70 PINC 175+60.366
-L- POT 176+98.147 OFF 17.770 LT

BY39-PINC 5+70.211
-Y39- POT 10+95.718
OFF 5.326 RT

BY39-2 POT 6+59.830
-Y39- POT 10+06.720 OFF 5.263 LT

BEGIN CONSTRUCTION
-Y39- POT STA 10+20.000

(23) SELMON T. ROGERS & WIFE RUBY T. ROGERS DB 315 PG 985

(31) ODESSA R. ADKINS & HUS. REUBEN L. ADKINS DB 144 PG 21

(32) GLENN A. & WF. MYRTLE W. TEETER DB 341 PG 54

(26) JOSEPH V. & WF. JEANETTE H. MORTON DB 269 PG 638 DB 166 PG 433 DB 167 PG 107

(27) JOHNNY G. POPLIN DB 383 PG 735

(28) FARRELL L. SHIMPOCK & WF. DORIS SHIMPOCK DB 332 PG 791

(29) FARRELL L. SHIMPOCK & WF. DORIS SHIMPOCK DB 331 PG 700

(30) LOIS E. EFIRD DB 235 PG 559

DAVID WAYNE ALMOND & WIFE DONNA BURRIS ALMOND DB 325 PG 865 DB 307 PG 84

(33) WILLIE D. & WF. GAIL T. LAWHORN DB 339 PG 154

ODESSA R. ADKINS & HUS. REUBEN L. ADKINS DB 144 PG 21

CLASS 'B' RIP RAP EST. 4.5 MTONS FILTER FABRIC EST. 13.4 S.M.

FLATTEN FILL SLOPE TO MAINTAIN 10m MIN. BETWEEN PIPE END & EP

CLASS 'I' RIP RAP EST. 6.4 MTONS FILTER FABRIC EST. 12.5 S.M.

0.6m BASE TAIL DITCH SEE DETAIL Q

SPECIAL MEDIAN DITCH 2GD SEE DETAIL N

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL P

SPECIAL LATERAL 'V' DITCH SEE DETAIL O

16.0 MEDIAN OPENING

130.0 FULL LANE

30.0 TAPER

60.0 FULL LANE

NO ASSOCIATED PIPING FOUND FOR THIS R/W

SR 2024 / CONVERSE ROAD

ADT 2004
ADT 2030

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 37 AND 38 FOR -L- PROFILE
SEE SHEET 52 FOR -Y39- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 11 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

R/W REV. - R/W MONUMENT MOVED TO -Y40- STA. 10+97.318 RT. EASEMENT LABEL AT -L-/-Y40- INTERSECTION CORRECTED TO -L- STA +25.000, NAME CHANGE ON PARCEL 919. 040204 JT

8/17/99

MATCHLINE -L- STA. 178+20.000 SEE SHEET 10

MATCHLINE TO SHEET 32

MATCHLINE -Y41- STA 10+60.000 SEE SHEET 32

MATCHLINE -L- STA 181+80.000 SEE SHEET 12

NAD 83

-L- POT STA.179+00.133
-Y40- POT Sta.11+76.795
-Y41- POT Sta.10+00.00

-L- +44.948 EXIST. R/W 22.860m (75.00ft)

+60.000 22.860m (75.00ft) 34.442m (113.00ft)
+54.000 22.860m (75.00ft) 34.442m (113.00ft)
+47.000 22.860m (75.00ft) 34.442m (113.00ft)
+44.000 22.860m (75.00ft) 28.956m (95.00ft) 34.442m (113.00ft)

-Y41- +45.000 14.630m (48.00ft)
-Y41- +40.501 19.812m (65.00ft)

+76.000 22.860m (75.00ft) 30.480m (100.00ft) 70.104m (230.00ft)
+32.000 22.860m (75.00ft) 30.480m (100.00ft)
+08.000 47.549m (156.00ft)
+12.000 37.186m (122.00ft)
+22.000 33.223m (109.00ft)
+40.000 30.480m (100.00ft)
+43.000 33.223m (109.00ft)
+55.000 22.860m (75.00ft) 27.432m (90.00ft)
+00.000 22.860m (75.00ft)
+20.000 28.042m (92.00ft)
+80.000 28.042m (92.00ft)

SPECIAL LATERAL 'V' DITCH SEE DETAIL M
SPECIAL CUT DITCH SEE DETAIL T
0.6m LATERAL BASE DITCH SEE DETAIL H1
CLASS 'I' RIP RAP EST. 10.0 MTONS FILTER FABRIC EST. 18.4 S.M.
SPECIAL LATERAL 'V' DITCH SEE DETAIL W
TAIL 'V' DITCH SEE DETAIL V
CLASS 'I' RIP RAP EST. 6.4 MTONS FILTER FABRIC EST. 14.2 S.M.
TIE TO EX. OUTFALL
CLASS 'B' RIP RAP EST. 1.8 MTONS FILTER FABRIC EST. 5.9 S.M.
SPECIAL MEDIAN DITCH SEE DETAIL R
SPECIAL CUT DITCH SEE DETAIL P
SPECIAL CUT DITCH SEE DETAIL S
SPECIAL CUT DITCH SEE DETAIL U

32 GLENN A. & WF. MYRTLE W. TEETER DB 341PG 54

KENNETH L. & HELEN TEETER DB 593 PG 374 DB 341 PG 192 (38)

GLENN A. & WF. MYRTLE W. TEETER DB 162 PG 310 (39)

40 KENNETH L. & HELEN TEETER DB 345 PG 219 DB 198 PG 99

41 GLEN A. TEETER & WIFE MYRTLE W. TEETER DB 341 PG 52

L. TRUETT& WIFE BONNIE S. PRESLAR DB 379 PG 6 (42)

33 WILLIE D. & WF. GAIL T. LAWHORN DB 339 PG 154

34 JAMES L. & WF. NANCY E. HAYWOOD DB 354 PG 752

RAY W. BURRIS DB 193 PG 548 (34)

35 L.B. & WF. RUTH B. TEETER DB 166 PG 125

DAISY P. GREENE DB 294 PG 147 (36)

919 NCDOT DB 907 PG 487

37 BILLY RAY CARELOCK, AND WF MARILYN DB 286 PG 130

PHILLIP L. TEETER DB 375 PG 607

BL-7I
BL-PINC 178+13.889 =
BY40-PINC 6+56.608
-L- POT 179+51.220 OFF 2.666 LT

BY41-1POT 7+68.385
-Y40- POT 10+92.965
OFF 7.255 LT

-Y40- PCSta.10+97.318

BEGIN CONSTRUCTION
-Y40- POT STA.10+35.000

-Y40- +25.000 7.620m (25.00ft) EXIST. R/W
-Y40- +35.000 7.619m (25.00ft) EXIST. R/W 12.192m (40.00ft) 18.288m (60.00ft)
-Y40- +35.000 7.621m (25.00ft) EXIST. R/W 12.192m (40.00ft) 13.716m (45.00ft)
-Y40- +97.318 12.192m (40.00ft)
-Y40- +25.000 30.480m (100.00ft)
-Y40- +21.864 30.480m (100.00ft)
-Y40- +27.814 12.192m (40.00ft)
-Y40- +20.000 22.860m (75.00ft)
-Y40- +25.000 27.432m (90.00ft)
-Y40- +20.000 12.192m (40.00ft)
-Y40- +00.000 17.000m (55.77ft)
-Y40- +97.318 12.192m (40.00ft)
-Y40- +25.000 7.620m (25.00ft) EXIST. R/W

NC 24 / 27 112 222
NC 24 / 27 117 230
ADT 2004
ADT 2030
SR 1969 / EFIRD ROAD

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 53 FOR -Y40- PROFILE
SEE SHEET 53 FOR -Y41- PROFILE

24-MAY-2004 08:50

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 12 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

R/W REV. - CORRECTED R/W MONUMENT STATION AT -L- STA. 182+00.000 LT. 04/02/04 JT

MATCHLINE -L- STA. 181+80.000 SEE SHEET 11

MATCHLINE -L- STA. 185+45.000 SEE SHEET 13

NAD 83

24.386
N40°26'44"E

60.900
S40°11'23"W

76.23
S40°56'0

(43) JOEY N. CARSWELL
DB 579 PG 947

(44) ARTHUR R.TEETER & WIFE
JANICE H. TEETER
DB 540 PG 418

(45) A. RAY TEETER & WIFE
JANICE H. TEETER
DB 220 PG 669

(46) RAYVON C. TEETER & WIFE
MARY J. TEETER
DB 115 PG 192

(47) ARTHUR R.TEETER & WIFE
JANICE H. TEETER
DB 540 PG 418

(48) CHARLES C. & WIFE
EUNICE T. HARRINGTON
DB 339 PG 884
DB 588 PG 515
DB 205 PG 91
DB 576 PG 103

(49) L.B. AND WIFE RUTH B. TEETER
DB 339 PG 900

(37) BILLY RAY CARELOCK, AND WF MARILYN
DB 286 PG 130

NCGS "TEETER"
BL-PINC 183+86.732 =
BY42-POT 5+00.000
-L- POT 185+23.156 OFF 1.839 LT

BL-72 PINC 180+95.089
-L- POT 182+31.982 OFF 18.356 LT

1.2m BASE TAIL DITCH
SEE DETAIL Z

CLASS 'B' RIP RAP
EST. 4.5 MTONS
FILTER FABRIC
EST. 11.7 S.M.

SPECIAL LATERAL 'V' DITCH
SEE DETAIL A1

SPECIAL CUT DITCH
SEE DETAIL B1

SPECIAL MEDIAN DITCH SEE DETAIL C1

GRADE TO DRAIN

14.0 MEDIAN OPENING

NO ASSOCIATED PIPING FOUND FOR WMs IN THIS GENERAL AREA

N 44° 08' 39.8" E
NC 24-27 8.4 BST

N 40° 53' 52" E
-L-

N 57° 16' 46.6" W
-Y42-

-L- POT Sta.185+047.37
-Y42- POT Sta.11+01.268

-Y42- POT Sta.10+00.000
BEGIN CONSTRUCTION

BY42-1POT 6+33.534

NC 24 / 27 — 117/230 — 1/2 — ADT 2004 / ADT 2030 — 2/4 — NC 24 / 27 — 117/230 — 1/2
SR 1997 / TEETER ROAD

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 38 AND 39 FOR -L- PROFILE
SEE SHEET 54 FOR -Y42- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 13 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

R/W REV. - EXISTING RIGHT OF WAY LINES UPDATED AND NAME CHANGE ON PARCEL 921. 040204 JT

R/W REV. - EXISTING PROPERTY LINES CORRECTED ON PARCELS 51, 52, 53, AND 54. PARCEL 52 CHANGED TO 51. JT 04-26-04

8/17/93

24-MAY-2004 08:51
R:\Projects\0967CC\Design\Roadway\Plans\0967cc_rdy_plan_sht13.dgn
RE:\0967CC\Design\Roadway\Plans\0967cc_rdy_plan_sht13.dgn

MATCHLINE -L- STA. 185+45.000 SEE SHEET 12

MATCHLINE -L- STA. 188+80.000 SEE SHEET 14

NAD 83

ARTHUR R. TEETER & WIFE JANICE H. TEETER
DB 540 PG 418
(47)

(50) SHEARON VAN EFIRD & WIFE LYNDA N. EFIRD
DB 279 PG 456
DB 288 PG 756

(51) L.L. EFIRD & WIFE IDA REE EFIRD
DB 112 PG 239
DB 225 PG 721

(53) RUBY B. HATLEY
DB 143 PG 641

(54) JOESEPH H. & WIFE MONTE LEE H. CLEM
DB 387 PG 710

(56) CHARLES BARRETT ALMOND & JENNINGS B. ALMOND
DB 392 PG 810

(57c) ROBERT A. & WIFE TERESA JOHNSON
DB 561 PG 684

(L.B. AND WIFE RUTH B. TEETER
DB 339 PG 900
(49)

(55) TIMOTHY S. GARDNER & TYRA B. GARDNER
DB 607 PG 5
DB 582 PG 518

FLOYD R. BURRIS & WIFE MARGARET T. BURRIS
DB 160 PG 8
DB 339 PG 860
DB 607 PG 7

(921) NCDOT

(58) LOIS T. MORTON
DB 310 PG 603

(59) JOSHUA J. MORTON, JR.
DB 310 PG 605

SPECIAL CUT DITCH SEE DETAIL B1

SPECIAL CUT DITCH SEE DETAIL Y

SPECIAL CUT DITCH SEE DETAIL E1

SPECIAL CUT DITCH SEE DETAIL D1

SPECIAL CUT DITCH SEE DETAIL P

TIE TO EX. DITCH

+80.000 24.384m (80.00ft)

+84.998 (EXIST. R/W) 30.480m (100.00ft) TIE TO EXIST R/W

+69.442 (EXIST. R/W) 30.480m (100.00ft) TIE TO EXIST R/W

+95.000 24.384m (80.00ft)

+20.000 28.042m (92.00ft)

+43.000 31.394m (103.00ft) 47.549m (156.00ft)

+25.000 22.860m (75.00ft) 25.603m (84.00ft)

+33.000 30.480m (100.00ft) 46.939m (154.00ft)

+53.000 30.480m (100.00ft)

+47.000 46.939m (154.00ft)

+70.000 30.480m (100.00ft)

+60.000 22.860m (75.00ft) 25.908m (85.00ft) 31.394m (103.00ft) 35.966m (118.00ft)

0.6m BASE TAIL DITCH SEE DETAIL F1

CLASS 'B' RIP RAP EST. 7.3 MTONS FILTER FABRIC EST. 17.6 S.M.

HEAD 'V' DITCH W/PSRM SEE DETAIL G1 EST. 165m² PSRM

GABLE TO DRAIN TO

TIE TO EXIST R/W

130.0 FULL LANE

130.0 TAPER

NO ASSOCIATED PIPE FILL(S) FOR NMS

N 38° 12' 35.0" E

N 40° 53' 52.5" E

NC 24-27 8.3 BST

NC 24-86 8.4 BST

2GI

450 mm CONC

375 mm CONC

300 mm CONC

400 mm

450mm CONC

2J64 RW TO EIP

0.337 EIP TO RW

2J104 N40°56'32"E

2J92 RW TO EIP

2J92 EIP TO (CBR) 40.294m S39°59'28"E

2J92 EIP TO (CBR) 40.294m S39°59'28"E

2J92 RW TO EIP

2J92 EIP TO (CBR) 40.294m S39°59'28"E

2J92 EIP TO (CBR) 40.294m S39°59'28"E

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 39 FOR -L- PROFILE

| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| 5 0 10 | R-0967CC | 14 |
| | R/W SHEET NO. | |
| CONST.REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| R/W REV. | PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |

REVISIONS

8/17/99

NAD 83

CHARLES BARRETT ALMOND & JENNINGS B. ALMOND
DB 392 PG 810
56

BETTY C. HERLOCKER & HUSBAND J.A. HERLOCKER
DB 339 PG 134
DB 548 PG 618
61

STANLEY COUNTY BOARD OF EDUCATION
DB 324 PG 956
DB 66 PG 392
DB 66 PG 18
64

BETTY C. HERLOCKER & HUSBAND J.A. HERLOCKER
DB 339 PG 134
DB 548 PG 618
62

LUTHER J. & WIFE HELEN H. CRISCO
DB 218 PG 45
63

LOIS T. MORTON
DB 294 PG 805
60

MATCHLINE -L- STA. 188+80.000 SEE SHEET 13

MATCHLINE -L- STA. 191+20.000 SEE SHEET 15

0.6m BASE TAIL DITCH SEE DETAIL F1

+87.000
39.929m (131.00ft)
52.121m (171.00ft)

+55.740
22.860m (75.00ft)
25.908m (85.00ft)

+19.740
22.860m (75.00ft)
30.480m (10.00ft)

TAIL 'V' DITCH SEE DETAIL V

CLASS 'B' RIP RAP
EST. 2.7 MTONS
FILTER FABRIC
EST. 8.4 S.M.

+53.000
30.480m (100.00ft)
33.000m (108.27ft)

+67.000
30.480m (100.00ft)
33.000m (108.27ft)

BL-74 PINC 187+61.463
-L- POT 188+97.475 OFF 19.414 LT

NCGS "ENDY"
PINC 189+61.124
-L- POT 190+94.469
OFF 18.946 LT

-L- SCSta.190+19.740

-L- TSSta.189+55.740

STD. BERM DITCH
STA. 189+60 TO STA. 190+20 -L- RT.

+55.740
30.480m (100.00ft)
35.052m (115.00ft)

+20.000
34.747m (114.00ft)

+19.740
30.480m (100.00ft)
35.052m (115.00ft)

+60.000
39.929m (131.00ft)

NO ASSOCIATED PIPING FOUND FOR WMs IN THIS GENERAL AREA.

400 CSP W/1 ELBOW

ROD & LUG W/SLEEVE GASKETS

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 39 AND 40 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 15 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| CONST.REV. | |
| R/W REV. | |

METRIC

5 0 10

SR 1256 / ENDY ROAD

NC 24 / 27 — 6/8 — 9/19 — NC 24 / 27

117 / 230 — 121 / 241

ADT 2004
ADT 2030

REVISIONS

R/W REV. - PARCEL 73 CHANGED TO PARCEL 72 WITH A NAME CHANGE. CHANGED PARCEL 68 TO 907 WITH A NAME CHANGE.
EXISTING RIGHT OF WAY UPDATED ON PARCEL 913. ADDED CLAIM 9132. SHOWING CORRECT "PROPOSED" RIGHT OF WAY ON PARCEL 913.
GUARDRAIL SHORTENED ON PARCEL 70 TO AVOID DRIVEWAY. 040204 JT

8/17/99

MATCHLINE -Y55- STA. 10+80.000 SEE SHEET 33

MATCHLINE -Y43- STA.11+00.000 SEE SHEET 33

MATCHLINE -L- STA. 191+20.000 SEE SHEET 14

MATCHLINE -L- STA. 194+80.000 SEE SHEET 16

-Y55- PCSta.10+18.729

-Y43- POTSta.10+83.460
BEGIN CONSTRUCTION
-Y55- POT STA.10+00.000

-L- POTSta.192+70.072
-Y43- POTSta.10+00.000

-L- CSSta.192+32.600

-L- STSta.192+96.600

NAD 83

(67) GLENN T.EFIRD & WIFE DELLIE EFIRD DB 104 PG 7

(64) STANLEY COUNTY BOARD OF EDUCATION DB 324 PG 956 DB 66 PG 392 DB 66 PG 18

(913) GLENN T. EFIRD & WIFE DELLIE EFIRD DB 264 PG 192 DB 64 PG 192

(72) BENNIE S. HAHN & WIFE DIANE C. HAHN DB 323 PG 625 DB 492 PG 465 DB 654 PG 394

(63) LUTHER J. & WIFE HELEN H. CRISCO DB 218 PG 45

(60) LOIS T. MORTON DB 294 PG 805

(69) ENDY VOL. FIRE DEPT DB 193 PG 107 DB 185 PG 222 DB 566 PG 657

(907) NCDOT DB 781 PG 393

(70) GLENN T. & WIFE DELLIE EFIRD DB 104 PG 7

LOIS T. MORTON DB 310 PG 603

BY43-2
BY43-PINC 6+66.674 =
BY55-POT 5+97.815
-Y43- POT 10+66.382
OFF 37.714 LT

BL-76
BL-PINC 191+39.591 =
BY43-POT 7+61.028
-L- POT 192+68.665 OFF 22.873 RT

-Y55- +80.000 17.678m (58.00ft)
-Y55- +65.000 18.074m (59.30ft) EXIST. R/W
-Y55- +28.562 11.857m (38.90ft) EXIST. R/W
+16.381 35.966m (118.00ft) EXIST. R/W
+33.000 30.488m (100.00ft)
+60.000 35.052m (115.00ft)
+62.000 60.359m (198.03ft)
+54.452 80.579m (264.37ft)
+42.430 80.570m (264.34ft)
+42.510 30.480m (100.00ft) EXIST. PROP. LINE
+42.626 (EXIST PROP LINE) 35.052m (115.00ft)
+56.668 35.052m (115.00ft)
+42.464 35.052m (115.00ft)
+53.400 62.777m (205.96ft)
+75.000 35.052m (115.00ft)
+18.000 41.148m (135.00ft)
+96.603 30.480m (100.00ft)
-Y43- +37.976 22.517m (73.88ft)
+10.000 22.860m (75.00ft)
+32.600 22.860m (75.00ft)
+38.831 23.019m (75.52ft)
+58.678 23.208m (76.21ft)
+58.472 33.430m (116.24ft)
+96.600 22.860m (75.00ft)
+45.000 30.480m (100.00ft)
+65.000 27.860m (75.00ft) 30.480m (100.00ft)
+74.000 26.213m (86.00ft)
+70.809 57.388m (188.28ft)
+75.349 53.317m (174.93ft)
+20.000 22.860m (75.00ft) 30.480m (100.00ft)

SPECIAL CUT DITCH W/PSRM SEE DETAIL L1
0.6m BASE HEAD DITCH SEE DETAIL P1
LATERAL 'V' DITCH W/PSRM SEE DETAIL O1
BURY BOTH ENDS 0.3m
CLASS 'I' RIP RAP EST. 29.9 MTONS FILTER FABRIC EST. 51.8 S.M.
BERM W/PSRM SEE DETAIL Q1
0.9m BASE LATERAL DITCH SEE DETAIL J1
REM. SYSTEM
LATERAL 'V' DITCH SEE DETAIL K1
SPECIAL LATERAL 'V' DITCH SEE DETAIL W1
ROOTWAD SEE DETAIL S1
CHANNEL CHANGE SEE DETAIL T1
FULL EX. CHANNEL
LATERAL 'V' DITCH W/PSRM SEE DETAIL R1
CLASS 'B' RIP RAP EST. 2.7 MTONS FILTER FABRIC EST. 8.4 S.M.
0.6m BASE LATERAL DITCH SEE DETAIL W1
SPECIAL MEDIAN DITCH SEE DETAIL N1
600 CSP W/1 ELBOW ROD & LUG W/SLEEVE GASKETS
CLASS 'I' RIP RAP EST. 23.6 MTONS FILTER FABRIC EST. 46.8 S.M.
CLASS 'I' RIP RAP EST. 2 X 18.1 MTONS FILTER FABRIC EST. 2 X 32.6 S.M.
RETAIN & EXTEND 3@3.0m x 3.4m RCBC W/DEBRIS DEFLECTORS

PROPOSED GUARDRAIL
REMOVE EXISTING GUARDRAIL
GRADE TO DRAIN
160.0 TAPER
130.0 FULL LANE
30.0 TAPER

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 54 FOR -Y43- PROFILE
SEE SHEET 60 FOR -Y55- PROFILE

24MAY2004 0845
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 16 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

8/17/99

REVISIONS

R/W REV. - PROPERTY LINES ON PARCELS 71 & 72 CORRECTED. PARCEL 73 ELIMINATED.
NAME CHANGES ON PARCELS 77, 906, AND 922. 040204 JT

24-MAY-2004 08:52
R:\ROW\PROJECTS\R-0967CC\ROADWAY\PLANS\R-0967CC_PLAN_SHEET_16.DGN
RESIGN * RP 8021366

MATCHLINE -L- STA. 194+80.000 SEE SHEET 15

MATCHLINE -L- STA. 198+30.000 SEE SHEET 17

NAD 83

72
BENNIE S. HAHN &
WIFE DIANE G. HAHN
DB 323 PG 625
DB 492 PG 465
DB 654 PG 394

0.6m BASE LATERAL DITCH W/PSRM SEE DETAIL W1

0.6m BASE LATERAL DITCH SEE DETAIL X1

+18.000 35.052m (115.00ft)

+50.000 38.100m (125.00ft)

+40.000 38.100m (125.00ft)

+60.000 30.480m (100.00ft)

CLASS 'B' RIP RAP EST. 1.8 MTONS FILTER FABRIC EST. 5.9 S.M.

CLASS 'B' RIP RAP EST. 4.5 MTONS FILTER FABRIC EST. 11.7 S.M.

PROPOSED GUARDRAIL

GRAU-350

-L- N 63° 33' 32.8" E

N 61° 25' 23.4" E

N 79° 55' 38.4" E

EXISTING SR 1188 (60'RW)

3.0 x 2.9 CONC

3 x 2.9 x 3.4 CONC BOX CULVERT

1000mm WW & 2SBW

1200mm WW & 1SBW

600mm CONC

450mm CONC

400 mm

375mm CMP

1200mm CONC

1800mm CONC

ISBKD

ISFD

POND

WD DK

LANDSCAPE TIMBERS

GR

CONC

EIP

EOI

RETHA A. HAHN &
WIFE LEORA W. HAHN
DB 344 PG 95
71

BENNIE S. HAHN &
WIFE DIANE G. HAHN
DB 654 PG 394
77

WILLIAM H. PREVATTE
DB 593 PG 937
78

906
NCDOT
DB 759 PG 682

922
NCDOT
DB 905
PG 044

60.960m ROW

+80.000 35.052m (115.00ft)

+50.000 30.480m (100.00ft)

+00.000 26.213m (86.00ft)

+00.000 22.860m (75.00ft) 30.480m (100.00ft)

+50.000 26.213m (86.00ft)

+80.000 28.956m (95.00ft)

+60.000 26.518m (87.00ft)

+60.000 22.860m (75.00ft) 30.480m (100.00ft)

SPECIAL CUT DITCH SEE DETAIL Y1

JOHN E. BRUTON &
WIFE EDNA K. BRUTON
DB 231 PG 214
74

JEFFREY M. HEATHERLY &
WIFE LINDA M. HEATHERLY
DB 518 PG 626
75

BLANCHE S. ALMOND
DB 150 PG 283
DB 505 PG 860
76

NASH JOHNSON &
SONS FARMS, INC.
DB 263 PG 78
80

BL-77 PINC 196+34.910
-L- POT 197+63.839
OFF 4.493 RT

GRADE TO DRAIN

NO ASSOCIATED PIPING FOUND FOR THIS WM

NO ASSOCIATED PIPING FOUND FOR WMS IN THIS GENERAL AREA.

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 40 AND 41 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 17 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/04 RW REV. - RW MONUMENT STATION CORRECTED AT -L- STA. 201+40.000 LT. EXISTING RIGHT OF WAY AND EASEMENT LINES UPDATED AND NAME CHANGE ON PARCEL 908. NAME CHANGES ON PARCELS 902 & 922. 04/02/04 JT

24-MAY-2004 08:53
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NAD 83

922 NCDOT DB 905 PG 044

902 NCDOT DB 727 PG 094

JIMMY W. AND WIFE ROSA V. BOHANNON DB 354 PG 166

86 RUBY POPLIN TUCKER, CEICIL BENNETT POPLIN, & LOUVINE POPLIN FURR DB 299 PG 833

BRUCE G. ALMOND & WIFE GWENDOLYN L. ALMOND DB 571 PG 441 DB 155 PG 324 DB 179 PG 460

79 FAT CAT CUSTOMS, INC. DB 614 PG 74

908 NCDOT

80 NASH JOHNSON & SONS FARMS, INC. DB 263 PG 78

81 METAL MAINTENANCE, INC. DB 498 PG 660

82 M. GENE ALMOND & WIFE JEANNETTE D. ALMOND DB 542 PG 899 DB 563 PG 832 DB 574 PG 473

83 E. ALLEN & WIFE TRACY A. GADDY DB 550 PG 900

84 DAVID M. AND WIFE ROBIN M. HINSON DB 611PG 968

85 DAVID M. AND WIFE ROBIN M. HINSON DB 342 PG 39 DB 340 PG 346

MATCHLINE -L- STA.198+30.000 SEE SHEET 16

MATCHLINE -L- STA. 201+80.000 SEE SHEET 18

-L- TSSta.200+36.153

-L- SCSta.201+00.153

-L- N 63° 33' 32.8" E

N 54° 18' 36.4" E

PROPOSED GUARDRAIL

REMOVE EXISTING GUARDRAIL

GRADE TO DRAIN

RETAIN & EXTEND 2@2.4m x 1.8m RCBC

0.6m BASE LATERAL DITCH W/CL. I RIP RAP SEE DETAIL Z1

LATERAL BASE DITCH SEE DETAIL X1

SPECIAL CUT DITCH SEE DETAIL U1

SPECIAL CUT DITCH SEE DETAIL Y1

LATERAL 'V' DITCH SEE DETAIL A2

CLASS 'I' RIP RAP EST. 13.6 MTONS FILTER FABRIC EST. 25.1 S.M.

CLASS 'I' RIP RAP EST. 3.6 MTONS FILTER FABRIC EST. 8.4 S.M.

CL. I RIP RAP EST. 28 TONS 17m FILTER FABRIC

STD. BERM DITCH STA. 201+23 TO STA. 202+20

SPECIAL CUT DITCH W/PSRM SEE DETAIL B2

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY DRAINAGE EASEMENT

EXISTING R/W

TIE TO EXISTING RIGHT OF WAY

+50.000 30.480m (100.00ft) 35.052m (115.00ft)

+35.516 (EXIST PROP. LINE) 32.608m (106.98ft)

+20.000 30.480m (100.00ft)

+34.874 (EXIST PROP. LINE) 30.480m (100.00ft)

+55.462 (EXIST PROP. LINE) 30.480m (100.00ft)

+17.000 30.480m (100.00ft)

+36.153 35.052m (115.00ft)

+36.000 49.987m (164.00ft)

+60.000 34.119m (111.94ft)

+99.000 30.480m (100.00ft) 49.987m (164.00ft)

+00.153 30.480m (100.00ft) 33.528m (110.00ft)

+30.000 30.480m (100.00ft) 32.918m (108.00ft)

BL-79 PINC 199+19.965 -L- POT 200+42.488 OFF 2.054 RT

NCGS "KEITH" PINC 197+32.928 -L- POT 198+57.884 OFF 32.115 RT

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 41 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 18 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

8/17/99

REVISIONS
RW REV. - PROPERTY LINES CORRECTED AND NAME CHANGE ON PARCEL 96. EASEMENT LOCATIONS AT -L- STA 204+91.126 RT. DELETED. ADDED "NO CLAIM" TO PARCEL 97. NAME CHANGES ON PARCELS 905 & 912. 04/02/04 JT

24-MAY-2004 08:57
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RECOSH AT R0212386

86
RUBY POPLIN TUCKER, CEICL BENNETT POPLIN, & LOUVINE POPLIN FURR
DB 299 PG 833

87
MICHAEL B. MORGAN
DB 344 PG 98

88
CROPSIE TREECE HOWELL
DB 348 PG 69

89
HUBERT A. MORGAN
DB 169 PG 200

MICHAEL B. MORGAN
DB 344 PG 98

NAD 83

-L- CSSta.201+83.230
-L- STSta.202+47.230

BL-80 PINC 202+74,903
FL- POT 203+99.078 OFF 18.087 LT

N39°43'28"W 1958.809
S40°54'04"E 2001.993
N40°45'59"W 2008.921
N39°43'28"W 652.412
N50°05'00"W 1451.78

TV ANTENNA
ISFD
2SBKAPT
1200 mm CONC
GR

CLASS 'I' RIP RAP
EST. 6.4 MTONS
FILTER FABRIC
EST. 12.5 S.M.

TAIL 'V' DITCH
SEE DETAIL V

+10.000
30.480m (100.00ft)
38.100m (125.00ft)

+89.000
30.480m (100.00ft)
38.100m (125.00ft)

TIE INTO EXISTING DITCH

TDE

+83.230
30.480m (100.00ft)

+47.230
30.480m (100.00ft)

SPECIAL CUT DITCH
SEE DETAIL D1

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL E2

CHORD

900
N 30 10 30.2 E

NO ASSOCIATED PIPING FOUND FOR WMS IN THIS GENERAL AREA

EIP 0.265 EIP TO RW
EXISTING 18.288 (60')RW
0.258 EIP TO RW

400 mm
300mm CONC
450 mm CONC
300 mm CONC
400 mm

REMOVE
NC 24-27 8.4 BST
NC 24-27 8.3 BST
REMOVE
REMOVE
REMOVE

COLLAR & EXTEND
(COR TO CL)
(COR TO CL)
(COR TO CL)
(COR TO CL)
(COR TO CL)
(COR TO CL)
EXISTING 18.288 (60')RW
200 mm CONC CURB
-L-
1.5 x 1.2 600 mm BLK DITCH HW
50 mm CONC
50 mm CONC
600 mm CONC

N 49° 30' 51.7" E

MATCHLINE -L- STA. 201+80.000 SEE SHEET 17

MATCHLINE -L- STA. 205+10.000 SEE SHEET 19

130.0 FULL LANE
CHORD
30.0 TAPER
H=0.3m
HDWL

+90.000
35.966m (118.00ft)

+20.000
35.966m (118.00ft)

STD. BERM DITCH
STA. 201+23 TO
STA. 202+20

+80.000
30.480m (100.00ft)
45.110m (148.00ft)

0.6m BASE HEAD DITCH
SEE DETAIL C2

+05.000
30.480m (100.00ft)
45.110m (148.00ft)

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL D2

ISBKD
HTR
DK
800 mm BLK WALL
SHED
S

+00.000
33.223m (109.00ft)

+80.000
30.480m (100.00ft)

+20.000
30.480m (100.00ft)

TIE TO EXISTING DITCH

+50.000
30.480m (100.00ft)
32.918m (108.00ft)

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL E2

900 mm CONC WALL

ISBKD
CONC
CAR PORT
W/LT
S

NCDOT
DB 781
PG 695

NCDOT
DB 742
PG 708

912
905

SONYA P. TUCKER
DB 846 PG 771

96

60.960m
ROW

NO CLAIM
JIMMY WILLIAM LAMBERT &
BILL H. LAMBERT
DB 337 PG 901

97

85
DAVID M. AND WIFE ROBIN M. HINSON
DB 342 PG 39
DB 340 PG 346

93
M. GENE ALMOND & WIFE
JEANNETTE D. ALMOND
DB 269 PG 125

94
M. GENE ALMOND &
WIFE JEANNETTE
D. ALMOND
DB 243 PG 248

95
M. GENE ALMOND &
WIFE JEANETTE D. ALMOND
DB 376 PG 122

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 41 AND 42 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 19 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

R/W REV. - NAME CHANGE ON PARCEL 905. ADDED "NO CLAIM" ON PARCEL 97. 04/02/04 JT

NAD 83

NCGS "CLETUS" PINC 205+39.601
-L- POT 206+62.968 OFF 1.692 LT

BL-82 PINC 207+16.820
-L- POT 208+37.375
OFF 22.469 LT

MATCHLINE -L- STA. 205+10.000 SEE SHEET 18

MATCHLINE -L- STA. 208+60.000 SEE SHEET 20

MICHAEL B. MORGAN
DB 344 PG 98

(89) HUBERT A. MORGAN
DB 169 PG 200

(90) MICHAEL B. MORGAN
DB 350 PG 798

(91) RAY JUNIOR SMITH
DB 330 PG 770
DB 311 PG 767

(92) RICHARD STEVE PERKINS
DB 619 PG 66

(100) ROBERT P. KELLY & WIFE
CAROLYN M. KELLY
DB 323 PG 303

(101) ROBERT P.KELLY & WIFE CAROLYN KELLY
DB 220 PG 501

(102) BETH K. SPEIGHTS
DB 577 PG 37

(103) OWNER UNKNOWN

(104) RALPH C.& WIFE VIRGINIA C. EUDY
DB 365 PG 251

(905) NCDOT
DB 742 PG 708

(98) JIMMY WILLIAM LAMBERT & BILL H. LAMBERT
DB 337 PG 901

(97) NO CLAIM
JIMMY WILLIAM LAMBERT &
BILL H. LAMBERT
DB 337 PG 901

(99) JIMMY WILLIAM LAMBERT &
ILL H. LAMBERT
DB 337 PG 901

M. GENE ALMOND &
WIFE JEANETTE D. ALMOND
DB 376 PG 122

JIMMY WILLIAM LAMBERT
& BILL H. LAMBERT
DB 337 PG 901

GARY ONEAL KING & WIFE
JOYCE BOONE KING
DB 488 PG 598

WILLIAM D.&WIFE CAROL ANN MARSH FIKA/NF A
BOYD C. MILLER&

JANE CLARK CHEEK
DB 354 PG 567

CLASS 'I' RIP RAP
EST. 10.0 MTONS
FILTER FABRIC
EST. 18.4 S.M.

LATERAL 'V' DITCH
W/CL. 'B' RIP RAP
SEE DETAIL F2

LATERAL 'V' DITCH W/PSRM
SEE DETAIL 01

TIE ROADWAY CUT DITCH
INTO EXISTING DITCH

SPECIAL CUT DITCH
W/PSRM
SEE DETAIL E2

LATERAL
'V' DITCH
SEE DETAIL H

TIE INTO EXISTING
DITCH

-L- TSSta. 205+76.289

-L- SCSta. 206+40.289

-L- CSSta. 207+54.007

-L- SRSSta. 208+18.007

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 42 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 20 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

8/17/99

REVISIONS

RW REV. – PROPERTY LINES CORRECTED ON PARCELS 911, 903, 115, 116, 121, & 122. ADDED PARCELS 115A, 115B, & 115C. NAME CHANGES ON PARCELS 911, 115 & 121. ADDED "NO CLAIM" NOTE TO PARCEL 115. EASEMENT LOCATION AT –Y46– STA. 10+46.875 LT. CORRECTED. TDE STATION AT –L– STA. 208+99.301 RT. CORRECTED. 04/02/04 JT

RW REV. – CHANGED TCE –L– STA. 210+58.314 TO 212+20.000 LT. TO A PUE. JT 05-04-04

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User:jtaylor

MATCHLINE –L– STA 208+60.000 SEE SHEET 19

MATCHLINE –L– STA. 212+20.000 SEE SHEET 21

MATCHLINE –Y45– STA.12+00.000 SEE SHEET 34

BY45-IPOT 5+00.000

-Y46- POT Sta.11+30.319

END CONSTRUCTION
-Y46- POT STA.11+20.000

-L- SCSta.208+82.007

-Y46- PTSta.10+71.336

-Y46- PCSta.10+11.865

-L- STSta.210+58.314

-L- CSSta.209+94.314

POCSta.209+90.618

-Y45- PTSta.12+59.751

-Y46- POTSta.10+00.000

118 DIANE LATON TALBERT
DB 287 PG 716
DB 570 PG 254

119 DIANE LATON TALBERT
DB 547 PG 378
DB 193 PG 700

120 ROY E. DICK & WIFE RUTH L. DICK
DB 130 PG 175

102 BETH K. SPEIGHTS
DB 577 PG 37

121 KAY SELLS EUDY
DB 898 PG 881

122 PANSY EFIRD MORTON
DB 355 PG 808

123 JOSEPH W. KIKER & WIFE DORIS H. KIKER
DB 268 PG 677

124 HUBERT N. RUSSELL & WIFE EDITH W. RUSSELL
DB 518 PG 141

125 ALAN KENT TUCKER
DB 377 PG 672

126 ALAN KENT TUCKER & WIFE CHRISTIH. TUCKER
DB 577 PG 254
DB 651 PG 880

KENNETH D. JONES & WIFE KAY M. JONES
DB 378 PG 778

NCGS "CITGO"
BL-PINC 209+10.964 =
BY45-PINC 6+80.603
-L- POT 210+34.894
OFF 3.689 LT

115A DUSTIL YNN ALEXANDER HANCOCK
DB 778 PG 390

115B DONNIE M. BROOKS & WIFE MERLE A. BROOKS
DB 369 PG 217

115C HORIZON OUTDOOR ADVERTISING, INC.
DB 584 PG 961

911 NCDOT
DB 867 PG 561

903 NCDOT
DB 730 PG 690

214 CLEAN OUT

116 SHELIA T. ALEXANDER, WIDOW
DB 275 PG 337

117 DONNY LANE FESPERMAN
DB 299 PG 365
DB 365 PG 602
DB 489 PG 465

115 THE ESTATE OF WILLIE C. HINSON
DB 244 PG 53
NO CLAIM

105 RALPH C. EURY & WIFE VIRGINIA C. EURY
DB 227 PG 20

106 CLAUDE CLARK & WIFE LEORA CLARK
DB 379 PG 945

107 CONCORD TELEPHONE COMPANY
DB 390 PG 156

JAMES L. LINGERFELT & WIFE SYLVIA BLAKE LINGERFELT
DB 364 PG 644

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 42 AND 43 FOR –L– PROFILE
SEE SHEET 55 FOR –Y45– PROFILE
SEE SHEET 56 FOR –Y46– PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 21 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SR 1312 / ODELL DRIVE

| | |
|---|---|
| ADT 2004 | 2 |
| ADT 2030 | 4 |
| NC 24 / 27 | 1/2 1/2 NC 24 / 27 |
| 125 | 125 |
| 248 | 248 |

REVISIONS

R/W REV. - CHANGED PARCEL 132 TO 920. CORRECTED EXISTING R/W AND PROPERTY LINES ON PARCEL 920. ADDED PARCEL 132. 04/02/04 JT

R/W REV. - CHANGED TCE -L- STA. 212+20.000 TO 214+03.222 AND STA. 214+60.000 TO 215+60.000 LT. TO A PUE. JT 05-04-04

8/17/99

MATCHLINE -L- STA. 212+20.000 SEE SHEET 20

MATCHLINE -L- STA. 215+60.000 SEE SHEET 22

NAD 83

S 50° 16' 18.0" W

-Y47- POT Sta. 11+69.973

-Y47- PT Sta. 11+61.105

-Y47- PCC Sta. 11+24.722

END CONSTRUCTION

-Y47- POC STA. 11+20.000

-Y47- PCS Sta. 10+71.201

-Y47- PCS Sta. 10+15.371

-Y47- PT Sta. 10+32.467

-L- POT Sta. 214+38.130

-Y47- POT Sta. 10+00.000

BY47-IPOT 5+00.000
-Y47- POT II+33.943
OFF 5.904 RT

BL-84 PINC 211+10.348
-L- POT 212+33.691
OFF 19.365 LT

BL-85
BL-PINC 213+23.638 =
BY47-POT 6+33.452
-L- POT 214+46.336
OFF 2.787 LT

ALAN K. & WIFE CHRISTI TUCKER
DB 555 PG 425

ALAN KENT TUCKER
& WIFE CHRISTIH. TUCKER
DB 577 PG 754
DB 651 PG 880

THOMAS C. ALLEN & WIFE LULA V. ALLEN
DB 164 PG 15
DB 137 PG 281

CHRISTOPHER W. & WIFE JO L. BURLESON
DB 640 PG 483

DONALD M. BOWERS
DB 223 PG 274

NCDOT
DB 912 PG 305

LARRY J. & WIFE
KIMBERLY H. MCILWAINE
DB 579 PG 63

GILBERT EDWARD HUNEYCUTT &
WIFE LINDA S. HUNEYCUTT
DB 225 PG 271

THOMAS C. ALLEN &
WIFE LULA V. ALLEN
DB 137 PG 281
DB 164 PG 15

CLAUDE EUGENE HINSON
DB 633 PG 321

CLAUDE EUGENE HINSON
DB 244 PG 115

DONNY LANE FESPERMAN
DB 299 PG 365
DB 453 PG 802
DB 489 PG 465

JOHNNY A. & WIFE CARRIE E. MCILWAINE
DB 393 PG 321

SPECIAL CUT DITCH
SEE DETAIL T

SPECIAL LATERAL 'V' DITCH
SEE DETAIL M

SPECIAL LATERAL
'V' DITCH
SEE DETAIL K2

SPECIAL CUT DITCH
SEE DETAIL Y

REMOVE SYSTEM

REMOVE

RETAIN

CLASS 'B' RIP RAP
EST. 0.9 MTONS
FILTER FABRIC
EST. 4.2 S.M.

CLASS 'B' RIP RAP
EST. 2.9 MTONS
FILTER FABRIC
EST. 9.2 S.M.

MEDIAN DITCH
SEE DETAIL "R"

PSRM W/0.3m TUCK
ALL SIDES
EST. 44m²

FLATTEN FILL SLOPE TO
MAINTAIN 10m MINIMUM
DISTANCE BETWEEN
EP & PIPE END

NO ASSOCIATED PIPING
FOUND FOR WMS IN
THIS GENERAL AREA.

14.0
MEDIAN
OPENING

TIE TO
EXIST. R/W

53.340m
ROW

130.0 FULL LANE

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 56 FOR -Y47- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 22 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/98

REVISIONS

RW REV. - R/W MONUMENT STATION CORRECTED AT -Y49- STA. 10+42.000 LT. PDE STATION CORRECTED AT -L- STA. 216+91.000 RT.
TDE DISTANCES CORRECTED AT -L- STA. 216+79.000 & 216+99.000 RT. 04/02/04 JT

RW REV. - CHANGED TCE -L- STA. 215+60.000 TO 216+56.000 LT. TO A PUE. JT 05-04-04

24-MAY-2004 09:44
R:\Projects\R-0967CC\Design\Roadway\Plans\R-0967CC_Sheet_22.dgn
Bentley MicroStation V8 (SELECTseries 1)
Roadway Design User: jtaylor

TIE INTO EXISTING DITCH
-Y48-+20.000 9.144m(30.00ft) 11.278m(37.00ft) 12.192m(40.00ft)
-Y48-+30.000 9.144m(30.00ft)
SPECIAL CUT DITCH SEE DETAIL S
-Y48-+00.000 15.240m (50.00ft)
-Y48-+00.000 11.278m (37.00ft)
-Y48-+60.000 16.154m (53.00ft)
CROSS-PIPE END MINIMUM 10m FROM -L-EP- FLATTEN FRONT DITCH SLOPE ACCORDINGLY
CLASS 'B' RIP RAP EST. 1.8 MTONS FILTER FABRIC EST. 5.9 S.M.
-Y48-+40.000 15.545m(51.00ft)
(129) DONALD M. BOWERS DB 223 PG 274
BL-86-A
BL-PINC 215+37.211 = BY48-POT 5+74.351
-L- POT 216+59.486 OFF 16.303 LT
-L- TSSta. 216+53.788
+56.000 35.813m (117.50ft)
SPECIAL LATERAL 'V' DITCH SEE DETAIL M
+35.000 22.86m (75.00ft)
+00.000 25.298m (83.00ft)
SPECIAL CUT DITCH SEE DETAIL S
53.340m ROW
PUE
55-18-56 2 OS
55-18-55 2 OS
-L- STA. 215+60.000 SEE SHEET 21
N 53° 35' 10.9" E
REMOVE
239A
238
241A
241
PLUG
2GI
FS
+60.653 (EXP TO CL)
239
375
242
CLASS 'B' RIP RAP EST. 4.5 MTONS FILTER FABRIC EST. 11.7 S.M.
243
CHORD
LATERAL 'V' DITCH SEE DETAIL M2
SPECIAL CUT DITCH SEE DETAIL Y
+53.788 30.480m (100.00ft)
TAIL 'V' DITCH SEE DETAIL L2
+87.000 30.171m (98.99ft) 39.014m (128.00ft)
+79.000 30.19m (99.05ft) 48.158m (158.00ft)
+99.000 30.170m (98.98ft) 34.442m (113.00ft) 48.158m (158.00ft)
+91.000 30.144m (98.90ft) 39.014m (128.00ft)
TIE INTO EXISTING DITCH
ISBKD
-L- POT Sta. 216+80.736
-Y48- POT Sta. 10+00.000
-L- SCSta. 217+17.788
(133) GILBERT EDWARD HUNEYCUT & WIFE LINDA S. HUNEYCUTT DB 225 PG 271
(134) RAPHU A. SPEIGHTS DB 224 PG 223
(135) FRED L. MORGAN & WIFE VIRGINIA F. MORGAN DB 223 PG 278
-Y48-+80.000 18.000m (59.05ft)
BY48-1 POT 5+00.000
-Y48- POT 10+82.556 OFF 5.554 RT
SPECIAL CUT DITCH SEE DETAIL S
-Y48-+50.000 12.192m (40.00ft)
-Y48- PTSta. 10+59.626
-Y48-+46.000 20.025m (65.70ft)
+17.788 30.480m (100.00ft)
-Y48- PCSta. 10+19.494
KIM D. MORGAN DB 315 PG 536
(136) RETAIN
-Y48- POT STA. 11+20.000 END CONSTRUCTION
-Y48-+20.000 9.144m(30.00ft) 11.278m(37.00ft) 12.192m(40.00ft)
-Y48-+00.000 11.278m (37.00ft)
NO ASSOCIATE PIPING IS FOUND FOR THIS WM.
N 41° 15' 4" W
355.00.00"S BK SK
60.94l N12°W-43°E
EP
SR 1288 / THOMPSON ROAD
NC 24 / 27
125 248
126 249
ADT 2004
ADT 2030
BL-87 PINC 216+38.781
-L- POT 217+59.289 OFF 4.453 RT
USGS "WDL 52"
BL-PINC 217+67.266 = BY49-POT 5+00.000
-L- POT 218+87.429 OFF 1.953 RT
-L- STSta. 218+85.297
NAD 83
-L- POSSta. 218+55.806
-Y49- POTSta. 11+56.796
-L- CSSta. 218+21.297
+21.297 30.480m (100.00ft)
+85.297 30.480m (100.00ft)
SPECIAL LATERAL 'V' DITCH SEE DETAIL M
CHORD
14.0 MEDIAN OPENING
GRADE TO DRAIN
SPECIAL MEDIAN DITCH SEE DETAIL Q2 TCDP 15-6
-L- STA. 219+00.000 SEE SHEET 23
MATCHLINE -L- STA. 219+00.000
-Y49- PTSta. 11+42.128
+92.668 22.860m (75.00ft)
+86.812 29.566m (97.00ft)
TIE EXISTING DITCH -Y49-+18.000 22.329m (73.26ft)
-Y49-+15.000 20.552m (67.43ft)
-Y49-+00.000 25.908m (85.00ft)
-Y49-+00.000 32.918m (108.00ft)
247
REMOVE
+24.061 38.100m (125.00ft)
CLASS 'I' RIP RAP EST. 6.4 MTONS FILTER FABRIC EST. 14.2 S.M.
+96.500 30.480m (100.00ft) 37.490m (123.00ft) 43.890m (144.00ft)
+06.500 30.480m (100.00ft) 37.490m (123.00ft) 43.890m (144.00ft)
-Y49-+00.000 16.764m (55.00ft)
-Y49-+80.000 20.117m (66.00ft)
-Y49- PCSta. 10+71.144
-Y49-+70.000 19.202m (63.00ft)
-Y49-+60.000 20.117m (66.00ft)
SPECIAL LATERAL 'V' DITCH SEE DETAIL N2
-Y49-+73.000 22.990m (75.43ft) 27.127m (89.00ft)
CLASS 'I' RIP RAP EST. 9.1 MTONS FILTER FABRIC EST. 19.2 S.M.
SPECIAL LATERAL 'V' DITCH SEE DETAIL M
-Y49-+42.000 13.716m (45.00ft)
-Y49-+40.000 17.000m (55.77ft)
-Y49-+20.000 9.144m(30.00ft) 13.716m(45.00ft)
REMOVE
246
GRADE TO DRAIN
SPECIAL LATERAL 'V' DITCH SEE DETAIL N2
-Y49-+66.000 23.470m (77.00ft) 27.127m (89.00ft)
-Y49-+45.000 13.716m (45.00ft)
245
REMOVE
-Y49-+20.000 9.144m(30.00ft) 13.716m(45.00ft)
BEGIN CONSTRUCTION
-Y49- POT STA. 10+20.000
(138) TOLA I. EFIRD & WIFE DAISY LEE EFIRD DB 125 PG 12 DB 70 PG 227
NC 24 / 27
125 249
127 251
ADT 2004
ADT 2030
SR 1964 / WYATT ROAD

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 43 AND 44 FOR -L- PROFILE
SEE SHEET 57 FOR -Y48- PROFILE
SEE SHEET 57 FOR -Y49- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 23 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

REVISIONS

8/17/99

NAD 83

MATCHLINE -L- STA. 219+00.000 SEE SHEET 22

MATCHLINE -L- STA. 222+50.000 SEE SHEET 24

135
FRED L. MORGAN & WIFE VIRGINIA F. MORGAN
DB 223 PG 278

137
JASON E. THOMPSON & REBA M. THOMPSON
DB 594 PG 110

140
WENDELL DEAN BOWERS & WIFE ROBIN SMITH BOWERS
DB 527 PG 939

141
MARVIN T. BOWERS & WIFE PAULINE L. BOWERS
DB 390 PG 831

142
MARVIN T. BOWERS & WIFE PAULINE L. BOWERS
DB 164 PG 311

138
TOLA I. EFIRD & WIFE DAISY LEE EFIRD
DB 125 PG 12
DB 70 PG 227

139
J. RAYMOND EFIRD & WIFE BERTIE T. EFIRD
DB 162 PG 302
DB 609 PG 841

HOWARD K. SMITH & WIFE VERA M. SMITH
DB 261 PG 576

146
PINE GROVE METHODIST CHURCH
DB 509 PG 80
DB 149 PG 133
DB 174 PG 123
DB 121 PG 32

MURIEL S. BURLESON & WIFE TAMMIE S. BURLESON
DB 504 PG 713

53.340m ROW

SPECIAL LATERAL 'V' DITCH SEE DETAIL P2

SPECIAL CUT DITCH SEE DETAIL Q2

SPECIAL MEDIAN DITCH SEE DETAIL Q2

COLLAR & EXTEND

-L- N 41° 35' 21.9" E

N 46° 49' 28" E

30.0 TAPER

13.0 FULL LANE

CLASS 'B' RIP RAP EST. 1.8 MTONS FILTER FABRIC EST. 5.9 S.M.

+44.000 22.860m (75.00ft) 37.490m (123.00ft) 38.405m (126.00ft)

+20.000 37.490m (123.00ft)

+54.000 22.860m (75.00ft) 38.405m (126.00ft)

+54.000 32.614m (107.00ft)

+90.000 26.822m (88.00ft)

+00.000 29.261m (96.00ft)

BL-89 PINC 219+58.722
-L- POT 220+78.086 OFF 19.423 RT

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 44 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 24 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
8/17/99
R/W REV. - EASEMENT DISTANCES CORRECTED AT -L- STA 223+25.000 RT. NAME CHANGE ON PARCEL 904. EXISTING R/W LINES UPDATED ON PARCEL 904. PROPOSED R/W ADJUSTED TO TIE INTO EXISTING R/W AT PARCEL 904. 04/02/04 JT

NAD 83

MATCHLINE -L- STA. 222+50.000 SEE SHEET 23

MATCHLINE -L- STA. 226+00.000 SEE SHEET 25

143 BOWERS FARMS,INC. DB 338 PG 834

144 KATHLEEN EFIRD DB 162 PG 194

145 J. BRICE BURLESON & WIFE BETTY R. BURLESON, JOHNNY PAUL BURLESON & WIFE CAROL W. BURLESON DB 515 PG 517

JOHNNY PAUL BURLESON & WIFE CAROL W. BURLESON DB 683 PG 102

NCDOT 904 ISBKD

147 KING C. BURLESON & BILLIE E. BURLESON DB 369 PG 367

148 EARL THOMAS CHRISTENBURY, JR. NANCY CHRISTENBURY HIGDON JUDY CHRISTENBURY COTTER DB 639 PG 838

149 BOBBY JOE EUDY & WIFE NANCY L. EUDY DB 217 PG 101

150 F.L. MORGAN & WIFE VIRGINIA L. MORGAN DB 218 PG 150

151 EARL D. TAYLOR WIFE FAYE R. TAYLOR DB 382 PG 821

152 DANNY E. FEATHERSTONE DB 352 PG 132

153 MAX D. THOMPSON & WIFE ANNA A. THOMPSON DB 220 PG 339

MURIEL S. BURLESON & WIFE TAMMIE S. BURLESON DB 504 PG 713

HOWARD K. SMITH & WIFE VERA M. SMITH DB 261 PG 576

-L- N, 41° 35' 21.9" E

N 39° 26' 40.6" E

BL-90 PINC 223+92.850 -L- PDT 225+11.905 OFF 3.049 RT

PROPOSED GUARDRAIL

REMOVE EXISTING GUARDRAIL

SPECIAL LATERAL 'V' DITCH SEE DETAIL P2

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL CUT DITCH SEE DETAIL T2

SPECIAL MED. DITCH SEE DETAIL R2

COLLAR & EXTEND

CLASS 'I' RIP RAP EST. 13.6 MTONS FILTER FABRIC EST. 25.1 S.M.

0.6m BASE TAIL DITCH W/PSRM SEE DETAIL S2

RETAIN

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 44 AND 45 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 25 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
8/17/99
RW REV.- NAME CHANGE ON PARCEL 904. EXISTING R/W LINES UPDATED ON PARCEL 904. PROPOSED R/W ADJUSTED TO TIE TO EXISTING R/W ON PARCEL 904. SECOND PARCEL 904 CHANGED TO 158A. NAME AND DEED BOOK INFO. CHANGE ON PARCEL 161. 04/02/04 JT

SR 1258 / NEWT ROAD
NC 24 / 27
NC 24 / 27
ADT 2004
ADT 2030

NAD 83

END CONSTRUCTION
-Y50- POC STA.11+20.000

-L- POS Sta.228+00.983
-Y50- POT Sta.10+00.000

-Y50- PCSta.10+58.329

-L- TSSta.227+63.952

-L- SCSta.228+27.952

BL-91
BL-PINC 226+84.201 =
BY50-POT 6+30.318
-L- POT 228+03.194 OFF 18.805 RT

BY50-1POT 5+00.000
-Y50- POT 11+11.908
OFF 24.072 RT

MATCHLINE -L- STA. 226+00.000 SEE SHEET 24

MATCHLINE -L- STA. 229+40.000 SEE SHEET 26

JOHNNY PAUL BURLESON & WIFE CAROL W. BURLESON
DB 683 PG 102
158

JOHNNY PAUL BURLESON & WIFE CAROL W. BURLESON
DB 571 PG 195
DB 515 PG 366
158A

JEFFERY N. BURLESON
DB 579 PG 520
159

COUNTY OF STANLY
DB 381 PG 392
160

BOBBY RAY GREENE & WIFE BECKY COTTON GREENE
DB 717 PG 054
161

MAX D. THOMPSON & WIFE ANNA A. THOMPSON
DB 247 PG 609
154

BETTY B. AUSTIN
DB 312 PG 948
155

RODGER DALE JONES
DB 330 PG 157
156

LINDA HENRY & SHARON SHAVER
DB 294 PG 289
157

STANLEY COUNTY NEWSPAPERS, INC.
DB 388 PG 441
168

SPECIAL LATERAL 'V' DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL W2

SPECIAL CUT DITCH W/PSRM SEE DETAIL X2

SPECIAL CUT DITCH W/PSRM SEE DETAIL V2

HEAD 'V' DITCH SEE DETAIL U2

SPECIAL 'V' DITCH SEE DETAIL M

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

LATERAL 'V' DITCH SEE DETAIL Y2

SPECIAL CUT DITCH SEE DETAIL Z2

RETAIN SYSTEMS

PROPOSED GUARDRAIL

REMOVE EXISTING GUARDRAIL

CLASS 'I' RIP RAP EST. 11.8 MTONS FILTER FABRIC EST. 25.1 S.M.

CLASS 'I' RIP RAP EST. 19.1 MTONS FILTER FABRIC EST. 39.3 S.M.

CLASS 'B' RIP RAP EST. 0.9 MTONS FILTER FABRIC EST. 2.2 S.M.

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 58 FOR -Y50- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 26 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

8/17/99

REVISIONS

R/W REV. - CORRECTED R/W MONUMENT STATION AT -L- STA. 232+50.446 RT. CHANGED PARCEL NUMBER 172 TO 909 WITH A NAME CHANGE.
UPDATED EXISTING R/W LINES ON PARCEL 909. PROPOSED R/W ADJUSTED TO TIE INTO EXISTING R/W AT PARCEL 909.
PROPERTY LINE CHANGE BETWEEN PARCELS 161 AND 162. DEED BOOK INFO. AND NAME CHANGE ON PARCEL 161. 04/02/04 JT

R/W REV. - CHANGED TCE -L- STA. 231+00 TO 232+80 LT. TO A PUE. JT 04-26-04

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R:\DGN\R-0967CC_26.dgn

NAD 83

CARL RAY CULP
DB 213 PG 259
162

ELSIE M. BURLESON
DB 102 PG 68
DB 102 PG 130
DB 102 PG 137
164

CARL RAY CULP
DB 104 PG 237
163

MARVIN A. BROOKS & WIFE ANNETTE S. BROOKS
DB 354 PG 372
165

LARRY WAYNE HARWOOD & WIFE JILL C. HARWOOD
DB 255 PG 264
166

BL-92 PINC 228+71.020
-L- POT 229+86.482 OFF 19.936 LT

64.828 N57°50'41"E

140.226 S49°55'01"E

64.967 N49°55'01"W

10.454 S58°23'46"E

BOBBY RAY GREENE & WIFE BECKY COTTON GREENE
DB 717 PG 054
161

+72.521 30.480m (100.00ft)

+36.521 30.480m (100.00ft)

+00.000 23.298m(73.00ft) 25.298m(83.00ft) 30.480m(100.00ft)

+80.000 28.651m(94.00ft)

+60.000 28.042m(92.00ft)

+25.000 25.298m(83.00ft)

CHORD

LATERAL 'V' DITCH SEE DETAIL Y2

SPECIAL CUT DITCH SEE DETAIL P

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

NO ASSOCIATED PIPING FOUND FOR WMs IN THIS GENERAL AREA.

SPECIAL CUT DITCH SEE DETAIL Y

0.120 EIP TO RW

0.643 RW TO EIP

0.222 RW TO EIP

N 64° 33' 23.4" E

N 61° 30' 22.6" E -L-

NC 24-27 82 BST

REMOVE

REMOVE SYSTEM

STONE WALL

EXISTING R/W

130.0' FULL LANE

30.0 TAPER

+55.260

+00.000 37.490m (123.00ft)

-L- CSSta.229+72.521

-L- STSta.230+36.521

SPECIAL CUT DITCH SEE DETAIL Z2

MATCHLINE -L- STA. 229+40.000 SEE SHEET 25

MATCHLINE -L- STA. 232+80.000 SEE SHEET 27

STANLEY COUNTY NEWSPAPERS, INC.
DB 388 PG 441
168

ELVIE THOMPSON CULP
DB 201 PG 98
169

RANDY C. & WIFE BRENDA C. COLE
DB 372 PG 436
170

WILLIAM H. GARLAND & WIFE MONICA GARLAND
DB 297 PG
171

DWIGHT K. EFIRD & WIFE RUTH C. EFIRD
DB 366 PG 872

909

W/L T +50.446 (EXIST. R/W) 30.480m (100.00ft)

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 45 AND 46 FOR -L- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 27 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TOM THUMB ROAD
NC 24 / 27
129
253
ADT 2004
ADT 2030
NC 24 / 27
130
254

REVISIONS

RW REV. - EASEMENT DISTANCES AT -L- STA. 233+00.000 & 233+70.000 RT. CHANGED TO 233+13.738 RT. 040204 JT

RW REV. - CHANGED TCE -L- STA. 232+80 TO 233+13.738 LT. TO A PUE. JT 04-26-04

9/17/99

LEITA GAY LOVE
DB 330 PG 835

EARLENE M. MANNIE
DB 298 PG 67

BILLY JOE MURRAY
DB 345 PG 835

-Y5I- POT Sta. 11+11.492

RETAIN

MORTON RD BST

BY5I-IPOT 5+00.000
-Y5I- POT 11+07.906
OFF 3.412 RT

178
DONNIE D. HATLEY
DB 535 PG 927

END CONSTRUCTION
-Y5I- POT STA. 11+00.000

PAUL J. SMITH
DB 341 PG 530

167

-Y5I- +90.000
9.144m(30.00ft)
12.802m(42.00ft)

-Y5I- +05.000
9.144m(30.00ft)

BL-93
BL-PINC 232+08.459 =
BY5I-POT 6+08.360
-L- POT 233+22.799
OFF 1.426 LT

CLARENCE D. HINSON & WIFE ETHEL B. HINSON
DB 126 PG 288

176

-Y5I- +90.000
9.144m(30.00ft)
12.802m(42.00ft)

-Y5I- +80.000
17.069m(56.00ft)

GRADE TO DRAIN

SPECIAL CUT DITCH W/SRM SEE DETAIL A3

LINE CUT DITCH W/SRM SEE DETAIL B3

177
BOBBY RAY MCLESTER & WIFE ALLENE M. MCLESTER
DB 534 PG 850

-L- SCSta. 234+16.606

-L- TSSta. 233+52.606

-Y5I- +45.000
12.802m (42.00ft)

-Y5I- +36.607
18.676m (61.273ft)

+13.738
28.042m
(92.00ft)

+10.000
22.860m
(75.00ft)

-Y5I- +40.000
12.802m (42.00ft)

-Y5I- +38.000
22.250m (73.00ft)

+65.000
30.480m
(100.00ft)

+65.000
22.860m
(75.00ft)

+23.364
30.480m
(100.00ft)

+24.503
22.860m
(75.00ft)

CLARENCE CROWELL & WIFE DORIS CROWELL
DB 285 PG 897

179

-L- STSta. 235+78.268

RAYMOND S. BURLESON & WIFE BEULAH B. BURLESON
DB 370 PG 673
DB 285 PG 900
DB 174 PG 617
DB 131 PG 434

181

CLASS 'B' RIP RAP
EST. 1.8 MTONS
FILTER FABRIC
EST. 5.9 S.M.

-L- CSSta. 235+14.268

CLARENCE CROWELL & WIFE DORIS CROWELL
DB 366 PG 130
DB 166 PG 472

180

+14.268
30.480m
(100.00ft)

+78.267
30.480m
(100.00ft)

REMOVE EXISTING GUARDRAIL

SPECIAL LATERAL 'V' DITCH
SEE DETAIL C3

SPECIAL LATERAL 'V' DITCH
SEE DETAIL M

REMOVE SYSTEM

PROPOSED GUARDRAIL
TIE TO EX. DITCH

GRADE TO DRAIN

REMOVE SYSTEM

N 38° 21' 00" E

MATCHLINE -L- STA. 232+80.000 SEE SHEET 26

MATCHLINE -L- STA. 236+20.000 SEE SHEET 28

NAD 83

CHORD

PROPOSED GUARDRAIL

SPECIAL MED. DITCH
SEE DETAIL "R2"

RETAIN & EXTEND
2@2.4m×1.8m RCBC

TOE PROTECTION
SEE DETAIL E3

175
CITY OF ALBEMARLE
DB 376 PG 821

-L- POTSta. 233+38.257
-Y5I- POTSta. 10+00.000

MALCOLM F. PALMER HEIRS
DB 124 PG 581
174

BAXTER R. HOWELL & WIFE
GLADYS HILL HOWELL
DB 165 PG 216
DB 366 PG 874
173

CHANNEL CLEANOUT
SEE DETAIL D3
CL. I RIP RAP
EST. 32 TONS
EST. 49 m² FILTER FABRIC

BL-94 PINC 233+87.263
-L- POT 235+03.416 OFF 4.314 LT

MALCOLM F. PALMER HEIRS
DB BK 124 PG 581
174

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 58 FOR -Y5I- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 28 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R /W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

NAD 83

MATCHLINE -L- STA. 236+20.000 SEE SHEET 27

MATCHLINE -LTRANS RT- STA. 239+60.000 SEE SHEET 29

MICHAEL A.WILLIAMS &WIFE LISA H. WILLIAMS DB 658 PG 59 (182)

IRVIN V. DEGGELLER & WIFE EVELYN DEGGELLER DB 357 PG 604 (183)

RAYMOND S.BURLESON & WIFE BEULAH B. BURLESON DB 370 PG 673, DB 285 PG 900, DB 174 PG 617, DB 131 PG 434 (181)

RAYMOND BURLESON & WIFE BEULAH MAE BURLESON DB 285 PG 900, DB 370 PG 673 (184)

WAYNE B. KING & TAMMY L. KING DB 618 PG 49

STEVEN R. BOWERS DB 504 PG 889 (186)

TERI KING PADEN DB 504 PG 16

BETTY A. KING & ROBERT L. KING DB 578 PG 870 (185)

CLAUDINE B. HINSON DB 523 PG 128 (187)

MALCOLM F. PALMER HEIRS DB BK 124 PG 581 (174)

MALCOLM F. PALMER HEIRS (174)

CAR PORT

ISBK&FBUS

ISFD

LANDSCAPE TIMBERS

NCGS "GARDEN" PINC 236+84.654
-L- POT 1238+01.144 OFF 18.243 LT

-L- POT Sta.238+50.000
-LTRAN LT- POT Sta.238+50.000 OFF -10.6
-LTRAN RT- POT Sta.238+50.000 OFF 10.6

-LTRAN LT- STA 238+92.370
19.880m (65.22ft)

-LTRAN LT- STA 238+92.930
12.800m (42.00ft)

-L- STA 238+50.000
30.480m (100.00ft)

-LTRAN LT- STA 238+92.544
17.678m (58.00ft)

-LTRAN LT- STA 239+20.000
17.374m (57.00ft)

-LTRAN LT- STA 239+00.000
21.031m (69.00ft)

-LTRAN RT- STA. 239+04.000
19.880m (65.22ft)
27.127m (89.00ft)

-LTRAN RT- STA. 239+13.000
19.880m (65.22ft)
27.127m (89.00ft)

-L- STA 238+50.000
30.480m (100.00ft)
-LTRAN RT- STA 238+50.000
19.880m (65.22ft)

+08.000
30.480m
(100.00ft)

+19.000
38.710m
(127.00ft)

+40.000
40.538m
(133.00ft)

+38.000
34.138m
(112.00ft)

+70.000
30.480m
(100.00ft)

60.960m ROW

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL LATERAL 'V' DITCH W/PSRM SEE DETAIL L1

SPECIAL CUT DITCH SEE DETAIL W2

SPECIAL MEDIAN DITCH SEE DETAIL F3

RETAIN

REMOVE SYSTEM

GRADE TO EXISTING SWALE

GRADE TO DRAIN

NO ASSOCIATED PIPING FOUND FOR THIS WM.

0.049 RW TO EIP

0.000 EIP TO RW

400 mm PVC

1200 mm WD RAIL & ISELEC

1200mm CONC

1500mm CONC

700mm BLK WALL

300mm CONC

375mm CONC

450mm CONC

600mm CONC

EXISTING 18.288 (60') RW

CLASS 'I' RIP RAP EST. 6.4 MTONS FILTER FABRIC EST. 14.2 S.M.

NC 24-27 8.5 BST

NC 24-27 8.2 BST

N 36° 11' 06.3" E

N 41° 36' 09.7" E

N 38° 21' 00.1" E

-L-

-LTRAN LT-

-LTRAN RT-

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 46 AND 47 FOR -L- PROFILE
SEE SHEET 48 FOR -LTRANLT- PROFILE
SEE SHEET 50 FOR -LTRANRT- PROFILE

24-MAY-2004 08:57
R-0967CC_1.dgn
RECTOR1 dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 29 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

9/17/99 R/W REV. - ADDED EASEMENT DISTANCE AT -Y52- STA. 11+00.000 LT. CORRECTED R/W MONUMENT STATIONS AT -LTRAN RT- STA. 239+70.901 & 240+42.901 RT. CORRECTED R/W MONUMENT STATIONS AT -LTRAN LT- STA. 239+74.533 & 240+46.533 LT. INCREASED DRIVEWAY WIDTH AT -LTRAN RT- STA. 242+35 RT FROM 7.2 m TO 9.0 m. 04/02/04 JT

24-MAY-2004 09:57
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R:\0967cc\RDY\0967CC29.DGN

-LTRAN RT- SCSta.240+46.533 SEE SHEET 28

MATCHLINE -LTRANS RT- STA. 239+60.000

MATCHLINE -LTRANS RT- STA. 243+00.000 SEE SHEET 30

END CONSTRUCTION
-Y52- POT STA.11+30.000

-LTRAN LT- TSSta.239+74.533

-LTRAN LT- SCSta.240+46.533

-LTRAN RT- TSSta.239+70.901

-LTRAN RT- SCSta.240+42.901

-LTRAN LT- POCSta.241+55.664
-Y52- POTSta.10+00.000

-Y52- PTSta.10+85.286

-Y52- PCSta.10+12.163

BL-96
BL-PINC 240+44.021= BY52-PINC 7+07.234
-LTRANRT- POC 24N56.616 OFF 23.075

BY52-2 PINC 6+29.901
-Y52- POT 10+75.292
OFF 10.279 RT

ROSS ALEXANDER HUNEYCUTT
DB 613 PG 269

JOHN E. EUDY & WIFE DEBBIE H. EUDY
DB 504 PG 74

TERIKING PADEN
DB 504 PG 16

DOUGLAS E. LEVY & WIFE JANET LEVY
DB 313 PG 602

FRANK E. HATLEY & WIFE WILMA W. HATLEY
DB 164 PG 265

WILLIAM L. FAULKNER & WIFE CAROLYN S. FAULKNER
DB 263 PG 900

DAVID J. HATLEY & WIFE JEANETTE HATLEY
DB 225 PG 328

CLAUDINE B. HINSON
DB 523 PG 128

MAX M. HINSON & WIFE CLAUDINE B. HINSON
DB 167 PG 175

HUBERT L. ALMOND & WIFE HELEN G. ALMOND
DB 176 PG 31

AUBREY H. EFIRD CO., INC.
DB 257 PG 994

AUBREY H. EFIRD CO., INC.
DB 258 PG 91

DOUGLAS D. STOKES
DB 375 PG 494
DB 206 PG 509

GEORGE T. WINECOFF
DB 488 PG 61
DB 210 PG 90

SOUTH CENTRAL OIL CO., INC.
DB 340 PG 978

MALCOLM F. PALMER HEIRS
DB BK 124 PG 581

BOY SCOUTS OF AMERICA
CENTRAL N.C. COUNCIL, INC
DB 691 PG 950

BOY SCOUTS OF AMERICA
CENTRAL N.C. COUNCIL, INC
DB 241 PG 58

HARVEY W. GOUCH & WIFE LOUISE G. GOUCH
DB 334 PG 524

MAGGIE LOWDER
DB 93 PG 221

CLASS 'I' RIP RAP
EST. 3.6 MTONS
FILTER FABRIC
EST. 10.0 S.M.

CLASS 'B' RIP RAP
EST. 4.5 MTONS
FILTER FABRIC
EST. 11.7 S.M.

CLASS 'I' RIP RAP
EST. 2.7 MTONS
FILTER FABRIC
EST. 5.9 S.M.

CLASS 'I' RIP RAP
EST. 36.3 MTONS
FILTER FABRIC
EST. 62.7 S.M.

0.6m BASE LATERAL DITCH
SEE DETAIL H3

1.2m BASE SPECIAL LATERAL DITCH
W/PSRM
SEE DETAIL J3

0.9m BASE SPECIAL LATERAL DITCH
SEE DETAIL L3

SPECIAL CUT DITCH
SEE DETAIL G3

SPECIAL CUT DITCH
SEE DETAIL K3

SPECIAL MEDIAN DITCH
SEE DETAIL R2

RETAIN SYSTEM
NO ASSOCIATED PIPING FOUND FOR WMs IN THIS GENERAL AREA.

GRADE TO DRAIN

CONVERT TO JB W/MHC

COLLAR W5° BEND

COLLAR & EXTEND

REM. OTCB & 2m + 600mm CONC

REM. HDWL

HDWL

16.0 MEDIAN OPENING

160.0 FULL LANE

130.0 FULL RIGHT TURN LANE

300.0 TAPER

120.0 TYP.

SR 1260 CANTON HEIGHTS RD

SR 1249 CANTON ROAD

ADT 2004
ADT 2030

NAD 83

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 48 FOR -LTRANLT- PROFILE
SEE SHEET 50 FOR -LTRANRT- PROFILE
SEE SHEET 59 FOR -Y52- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 30 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

CONST.REV.

R/W REV.

REVISIONS

8/17/99 R/W REV. - ADDED R/W MONUMENT SYMBOL AT -Y53- STA. 11+46.173 LT. 04/02/04 JT

24-MAY-2004 08:58 R:\R0967CC\Design\Roadway\Plans\Sheet30.dgn

MATCHLINE -LTRANS RT- 243+00.000 SEE SHEET 29

MATCHLINE -LTRANS RT- STA 246+00.000 SEE SHEET 31

-LTRAN LT- POC Sta.243+80.983
-Y53- POT Sta.10+00.000

-LTRANRT- POC 243+70.908
OFF 12.264 LT

BY53-1 PINC 6+41.245
-Y53- POT 11+32.974
OFF 16.804 LT

BY53-2 POT 7+65.004
-Y53- POT 12+54.155
OFF 9.062 LT

-Y53- PC Sta.10+14.314

-Y53- PT Sta.11+46.137

-Y53- +00.000 31.080m(102.00ft)

-Y53- +20.000 28.042m(92.00ft)

-Y53- +40.000 25.603m(84.00ft)

-Y53- +46.137 18.288m (60.00ft)

-Y53- +70.000 25.231m(82.78ft)

-Y53- +80.018 30.785m(101.00ft)

-Y53- +87.824 21.031m(69.00ft)

-Y53- +88.300 18.288m (60.00ft)

-Y53- +43.200 26.855m(88.11ft)

-LTRAN LT- STA 244+92.572 19.262m (63.19ft)

-LTRAN RT- STA 244+00.000 25.603m (84.00ft)

-LTRAN RT- STA 244+45.000 19.880m (65.22ft)

-LTRAN RT- STA 244+62.163 15.162m (49.75ft)

-LTRAN RT- STA 244+59.901 19.880m (65.22ft)

-LTRAN LT- STA 245+12.000 28.042m (92.00ft)

-LTRAN LT- STA 245+75.000 24.079m (79.00ft)

-LTRAN LT- STA 245+92.000 19.507m (64.00ft)

BL-9B PINC 244+59.767
-LTRANRT- POC 245+66.817
OFF 6.332 RT

END CONSTRUCTION
-Y53- POT STA.12+23.000

POT Sta.13+10.214

N 58° 48' 01.4" E

N 16° 48' 40.3" E

NAD 83

GEORGE T. WINECOFF
DB 488 PG 61
DB 210 PG 90

STANLEY COMMUNITY COLLEGE FOUNDATION, INC.
DB 533 PG 522
198

STANLEY COMMUNITY COLLEGEFOUNDATION INC.
DB 275 PG 945
DB 296 PG 841
199

STANLEY COMMUNITY COLLEGE FOUNDATION, INC.
DB 275 PG 945
DB 296 PG 841

JEHU F.HILL AND WIFE MAGGIE A.HILL
DB 198 PG 33
200

JEHU F. AND WIFE MAGGIE A.HILL
DB 223 PG 77

R.L. KISER & WIFE OLIVIA KISER
DB 95 PG 140
201

ROBERT L. GREEN & WIFE LINDA KAY M. GREEN
DB 342 PG 560
202

RAYMOND POPLIN
DB 95 PG 145

HARVEY W. GOUCH & WIFE LOUISE G. GOUCH
DB 334 PG 524
197

SAMUEL G. GRIFFIN, DBA ALBEMARLE ANIMAL CLINIC & WIFE KATHRYN P. GRIFFIN
DB 368 PG 190

NCGS "INTERNATIONAL"
BL-PINC 242+62.756 =
BY53-POT 5+00.000

CLASS 'I' RIP RAP EST. 9.1 MTONS FILTER FABRIC EST. 19.2 S.M.

CLASS 'I' RIP RAP EST. 19.1 MTONS FILTER FABRIC EST. 39.3 S.M.

CLASS 'B' RIP RAP EST. 1.8 MTONS FILTER FABRIC EST. 5.9 S.M.

0.6m BASE SPECIAL LATERAL DITCH SEE DETAIL N3

0.9m BASE SPECIAL LATERAL DITCH SEE DETAIL L3

0.6m BASE SPECIAL LATERAL DITCH SEE DETAIL O3

0.9m BASE HEAD DITCH SEE DETAIL M3 EST. 375m² RSRM

SPECIAL LATERAL 'V' DITCH SEE DETAIL M

SPECIAL CUT DITCH SEE DETAIL Y1

SPECIAL MEDIAN DITCH SEE DETAIL R2

SPECIAL MEDIAN DITCH SEE DETAIL R

RETAIN SYSTEM

RETAIN EX. DITCH

REMOVE 13m+/-

REMOVE 4m+/-

FILL EX. DITCH

REM. SYSTEM

TIE TO EX. DITCH

CITY OF ALBEMARLE (APPROX. LIMITS)

NO ASSOCIATED PIPING FOUND FOR THIS WM.

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEETS 48 AND 49 FOR -LTRANLT- PROFILE
SEE SHEETS 50 AND 51 FOR -LTRANRT- PROFILE
SEE SHEET 59 FOR -Y53- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 31 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC

5 0 10

CONST.REV.

R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

W.MAIN ST T.D. BST

JOHNNY GASKIN POPLIN
DB 383 PG 736

NAD 83

JAMES EDDIE POPLIN & WIFE JANE EFIRD POPLIN
DB 383 PG 434

MARSHALL BUDDIE POPLIN
DB 383 PG 733

RAYMOND POPLIN
DB 95 PG 145
203

BETTIE JEAN BURRIS
DB 387 PG 979

J. BRICE BURLESON & WIFE BETTY R. BURLESON
DB 232 PG 133

-LTRAN LT- CSSta.246+73.178

-LTRAN LT- STA 247+26.416
13.961m (45.80ft)

-LTRAN LT- STSta.247+45.178

-LTRAN LT- POT Sta.247+97.548
END STATE PROJECT R-0967CC

-LTRAN LT- STA 246+73.178
19.812m (65.00ft)

MATCHLINE -LTRANS RT- STA. 246+00.000 SEE SHEET 30

SPECIAL CUT DITCH SEE DETAIL Y1

-LTRAN. LT-

-LTRAN RT-

REMOVE

SPECIAL CUT DITCH SEE DETAIL Y1

-LTRAN RT- CSSta.246+69.546

-LTRAN RT- STSta.247+41.546

-LTRAN RT-POT Sta.247+80.000
END STATE PROJECT R-0967CC

NCGS "HANDI"
BL-PINC 247+37.081 L.B. =
BY56-PINC 6+24.557 =
BL-POT 5+00.000 L.A. (R-2530-AA)
-LTRANRT- POT 248+41.838 OFF 28.904 LT

-BY56- S 6°08'53.2" E

N 88°23'12.5" E

N 87°53'20" E 120.396

EXISTING 45.72 (150') R/W

0.700 RW TO CONC.

1.455 RW TO EIP

3.136m EIP TO RW

0.382 RW TO CONC.

0.377 RW TO EIP

S 9°03'25.6" W

S 86°39'36" W 103.53

OSCAR LEE SHELTON
DB 380 PG 81

STEVE MARTIN LOWDER & WIFE KAREN S. LOWDER
DB 312 PG 785

STEVE MARTIN & KAREN S. LOWDER
DB 259 PG 138

JIMMY HAROLD LOWDER
DB 259 PG 144

RAYMOND POPLIN HEIRS
DB 95 PG 145
DB 212 PG 517

CITY OF ALBEMARLE (APPROX. LIMITS)

OVERHEAD MTL CANOPY
4-ISL'S
4 GAS PUMP

U/G TANK CONC
2 GAS-20,000 GAL
1 DIESEL-6,000 GAL
1 KEROSENE-4,000 GAL

1 FUEL-3,788L
2 FUEL-18,939L
2 FUEL PUMPS
U/MTL CANOPY

NO ASSOCIATED PIPING FOUND FOR THIS WM.

ISBKBUS

ISBKD

1-SBKB

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 49 FOR -LTRANLT- PROFILE
SEE SHEET 51 FOR -LTRANRT- PROFILE

24-MAY-2006 08:58
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| METRIC | PROJECT REFERENCE NO. | SHEET NO. |
|---|---|---|
| 5 0 10 | R-0967CC | 32 |
| CONST.REV. | R /W SHEET NO. | |
| R /W REV. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

RW REV. – EXTENDED EXISTING TCE TO PDE AT –Y41– STA. 10+80 LT. ADJUSTED TDE TO TIE TO TCE. JT 04-26-04

24-MAY-2004 08:58
R:\Scm*.dgn 30.0 ph
RE:\Scm*.dgn 30.0 ph
ATT REF:*.dgn

NAD 83

(38)
KENNETH L. & HELEN TEETER
DB 593 PG 374
DB 341 PG 192

–Y41–PCSta.10+89.078

–Y41– +95.848
21.252m(69.72ft)
–Y41– +97.427
27.026m(88.67ft)

CLASS 'B' RIP RAP
EST. 6.4 MTONS
FILTER FABRIC
EST. 14.2 S.M.

SPECIAL
CUT DITCH
SEE DETAIL T

–Y41– +30.000
15.850m (52.00ft)
–Y41– +06.220
24.414m(80.10ft)
–Y41– +04.836
18.504m(60.71ft)

PSRM W0.3m TUCK ALL SIDES
EST. 25m²

END CONSTRUCTION
–Y41– POC STA.11+60.000

BY40-IPOT 5+00.000
–Y41– POT 11+47.592
OFF 6.240 LT

–Y41– +50.000
13.716m (45.00ft)

–Y41– +65.000
9.136m (29.97ft)

PDE
PDE
PDE
65
S 75° 12' 43.4" E
450mm CONC
60 BST
BY40
CHEROKEE
SR 1254
GRADE TO DRAIN
–Y41–
60.0 TAPER
–Y41– +00.000
9.144m (30.00ft)
–Y41– +00.000
12.192m (40.00ft)
N 69° 45' 54.8" W
TIE TO EXISTING
DITCH
SPECIAL LATERAL 'V' DITCH
SEE DETAIL M
SPECIAL CUT DITCH
SEE DETAIL Y
–Y41– +89.000
14.630m (48.00ft)
20.117m (66.00ft)
FLATTEN FRONT DITCH SLOPE
TO MAINTAIN 10m MIN.
BETWEEN PIPE END & EP
–Y41– +89.000
45.720m (150.00ft)
0.6m BASE
HEAD DITCH
SEE DETAIL X
TDE
TDF
PDE
MATCHLINE –Y41– STA 10+60.000 SEE SHEET 11
(32)
GLENN A. & WF. MYRTLE W. TEETER
DB 341PG 54
600 mm PVC
SOIL
RET.
–Y41– PTSta.11+79.239
–Y41– +64.442
9.144m (30.00ft)
–Y41– POTSta.12+19.960
MBS2 % MIN
600 mm PVC
ASBAND
–Y41– +80.000
14.630m
(48.00ft)
20.117m
(66.00ft)
–Y41– +61.000
19.970m (65.52ft)
45.720m (150.00ft)

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 53 FOR –Y41– PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 33 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

REVISIONS

R/W REV. - EASEMENT DISTANCE AT -Y55- STA. 11+20.000 RT. CORRECTED. 040204 JT

8/17/99

LARRY MORGAN & WIFE PATSY L. MORGAN
DB 220 PG 193

JOEY P. EFIRD & WIFE KAREN T. EFIRD
DB 554 PG 267

DOLORES EFIRD FURR
DB 391 PG 856

G. CHAD EFIRD & WIFE FAYE C. EFIRD
DB 157 PG 68
DB 198 PG 379

JOHN W. LISK & WIFE BILLIE D. LISK
DB 206 PG 298

RR SPIKE
49.073 S42°46'24"E
30.505 N38°56'10"W
22.86 N35°26'17"W
98.079 S42°15'15"W
55.191 S54°46'48"W
58.186 N81°51'18"W
55.536 S68°07'22"E
42.425 S58°57'59"E
35.71 N46°50'58"W
42.203 N54°58'21"W
15.939 N70°20'04"W
29.489 S84°38'8"E
39.444 N38°18'38"W
79.999 N46°51'32"W
35.668 N63°03'03"W
8.708 N76°19'17"W
600mm CONC
300mm CONC
1000mm CONC
SBKD
SFD
ABANDONED POULTRY HOUSE

BY43-1POT 5+00.000
-Y43- POT 12+23.498
OFF 3.700 RT

END CONSTRUCTION
-Y43- POC STA.12+00.000

-Y43- PTSta.11+93.097

NAD +83

GLENN T. EFIRD & WIFE DELLIE EFIRD
DB 104 PG 7

67

-Y43- +10.000
9.178m (30.11ft)

-Y43- +00.000
16.459m (54.00ft)

-Y43- +93.097
9.143m (30.00ft)
17.374m (57.00ft)

-Y43- N 28°16'27.0"W

-BY43-

128

-Y43- +10.000
9.110m (29.89ft)

-Y43- PTSta.12+51.309

-Y43- POTSta.12+57.982

127

-Y43- +00.000
16.154m (53.00ft)

-Y43- N 12°07'35.8"W

SPECIAL CUT DITCH
SEE DETAIL U1

-Y43- PCSta.11+16.592

+16.592
17.374m
(57.00ft)

RW

2GI
126
FS

-Y43- +70.000
17.983m (59.00ft)

SPECIAL CUT DITCH
SEE DETAIL Y

-Y43- +46.105
13.716m (45.00ft)
TIE TO EX. DITCH

GRADE TO DRAIN

-Y43- PCSta.11+97.836

66

PRICE A. EFIRD & WIFE DELLIE EFIRD
DB 157 PG 68
DB 166 PG 193
DB 206 PG 293
DB 264 PG 110

CLASS 'B' RIP RAP
EST. 1.8 MTONS
FILTER FABRIC
EST. 5.9 S.M.

TAIL 'V' DITCH
SEE DETAIL V1
TIE TO EX. DITCH

125

124

-Y43- STA.11+00.000 SEE SHEET 15

-Y55- POT STA.10+99.405

-Y55- +99.405
9.177m (30.11ft)
11.857m (38.90ft)

END CONSTRUCTION
-Y55- POT STA.11+10.000

-Y55- +20.00
9.150m (30.02ft)
EXIST. RW

65

STANLEY COUNTY BOARD OF EDUCATION
DB 66 PG 18
DB 66 PG 392
DB 324 PG 956

BY55-1POT 5+00.000
-Y55- POT 11+24.967
OFF 5.248 RT

-Y55- POTSta.11+25.079

-BY55-

N 69°17'30.4"W

-Y55-

MATCHLINE -Y55- SEE SHEET 15 STA. 10+80.000

NO ASSOCIATED PAVING FOUND FOR THIS R/W AND R/W.

-Y55- +20.00
9.144m (30.00ft)
EXIST. RW

-Y55- +00.000
17.678m (58.00ft)

SPECIAL CUT DITCH
SEE DETAIL Y

STANLEY COUNTY BOARD OF EDUCATION
DB 66 PG 18
DB 66 PG 392
DB 324 PG 956

64

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 54 FOR -Y43- PROFILE

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| R-0967CC | 34 |
| R /W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

METRIC 5 0 10

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.

R /W REV.

REVISIONS

8/17/99

R/W REV. – ADDED STATION AND OFFSET FOR PDE AT –L– STA. 209+22.842 RT. LOCATED EASEMENT POINT AT –Y45A– STA. 11+80.605 RT. CORRECTED OFFSET DISTANCES AT –Y45– STA. 10+85.000 & 10+92.000 RT. CORRECTED TDE STATION AND OFFSET AT –L– STA. 209+23.282 RT. ELIMINATED R/W BREAK POINT AND MONUMENT AT –Y45– STA. 11+00.000 LT. PARCEL 115 CHANGED TO PARCEL 115A. ADDED PARCEL 115B. 04/02/04 JT

NAD 83

MATCHLINE –Y45– STA.12+00.000 SEE SHEET 20

115A DUSTY LYNN ALEXANDER HANCOCK DB 778 PG 390

MABON F. KIMREY & WIFE BERTHA H. KIMREY DB 225 PG 432 DB 246 PG 811

JONAH LAVERNE FRALEY & WIFE TORA ANNE FRALEY DB 225 PG 175 — 114

END CONSTRUCTION –Y45A– POT STA.11+01.829

115B DONNIE M. BROOKS & WIFE MERLE A. BROOKS DB 369 PG 217

BRIAN R. WILKINSON & WIFE BRENDA M. WILKINSON DB 504 PG 610 — 113

–Y45– POC Sta.11+65.899
–Y45A– POT Sta.10+71.389

BY46-1POT 8+38.841
–Y45– POT 11+16.466
OFF 3.875 RT

–Y45– PT Sta.11+95.240

BEGIN CONSTRUCTION –Y45– POT STA.10+30.000

GROVER LAMBERT & WIFE WILMA LAMBERT DB 164 PG 605 — 112

CERTRUDE WISE DB 202 PG 298

108 BOBBY DEAN SMART & WIFE BESSIE D. SMART DB 268 PG 704

CONCORD TELEPHONE COMPANY DB 390 PG 156 — 107

TOMMY HUNEYCUTT & WIFE BEVERLY L. HUNEYCUTT DB 297 PG 617 — 109

110 DEAN SMART & WIFE LOUISE D. SMART DB 184 PG 101

–Y45– PCS Sta.10+41.688

–Y45– POT Sta.10+00.000

GROVER LAMBERT & WIFE WILMA LAMBERT DB 187 PG 448 — 111

CLAUDE CLARK & WIFE LEORA CLARK DB 379 PG 945 — 106

BEGIN CONSTRUCTION –Y45A– POT STA.10+02.512

JOHN P. HATLEY & JODIE M. HAYNES DB 379 PG 945

HENRY LEE CURRIE & WIFE JOYCE H. CURRIE DB 381PG 395

RETAIN

SPECIAL CUT DITCH SEE DETAIL H2

FLATTEN FRONT DITCH SLOPE TO MAINTAIN 10m MINIMUM DISTANCE BETWEEN EP & CROSS-PIPE

SPECIAL LATERAL 'V' DITCH SEE DETAIL J2

REMOVE 10m+/- 450mm CONC COLLAR & EXTEND 45° +/- BEND

FLATTEN FRONT DITCH SLOPE TO MAINTAIN 10m MINIMUM DISTANCE BETWEEN EP & CROSS-PIPE

GRADE TO DRAIN

PLUG

CLASS 'B' RIP RAP EST. 2.7 MTONS FILTER FABRIC EST. 8.4 S.M.

TAIL 'V' DITCH SEE DETAIL V

FILL IN EXISTING DITCH

NOTE: SEE SHEET 2-H FOR CURVE DATA
SEE SHEETS 2-I THRU 2-K FOR DRAINAGE DETAILS
SEE SHEET 55 FOR –Y45– PROFILE
SEE SHEET 55 FOR –Y45A– PROFILE

# INDIRECT AND CUMULATIVE EFFECTS ASSESSMENT

## TIP R-0967C

## NC 24/27 Widening

## Stanly County, North Carolina

Prepared for

North Carolina Department of Transportation

Office of Human Environment

***Prepared by:***

***HNTB North Carolina, PC***

*2108 South Boulevard*

*Suite 108*

*Charlotte, North Carolina 28203*

*May 7, 2003*

HNTB

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# North Carolina Department of Transportation
# Office of Human Environment

## Indirect and Cumulative Effects (ICE) Report
TIP R-0967C
NC 24/27 Widening
Stanly County, North Carolina

## I. EXECUTIVE SUMMARY

### Growth and Development

- North Carolina's population grew by 21.4% between 1990 and 2000, whereas Stanly County's population only grew by 12.2%.

- The Demographic Area's growth rate was higher than that of Stanly County between 1990 and 2000 at 14.8%, but it was less than the State, which was at 21.4%.

- Census tracts in the western portion of Stanly County had a higher growth rate than the State (Tract 9908 at 26.8% and Tract 9907 at 22.9% compared to the State at 21.4%). This higher growth rate can be attributed to these tracts being close in proximity to the City of Charlotte.

- In terms of employment growth, Stanly County gained a minimal amount of jobs, growing from 20,942 jobs in 1990 to 21,325 jobs in 2000, a growth rate of only 1.8%. This small increase in the number of jobs compared to the larger increase of population indicates that Stanly County is becoming a bedroom community for the Charlotte area.

### Existing Plans and Regulations

- Stanly County has a recently adopted land use plan (2002) as well as zoning throughout the County. The County's plan shows growth areas along approximately 75% of TIP R-0967C's length.

- TIP R-0967C is not located within a Water Supply Watershed. A small portion of a 303(d) Stream, Little Long Creek, is located within the Potential Growth Impact Area.

- The Primary and Secondary Growth Areas in Stanly County's Land Use Plan and Oakboro's plan are consistent with TIP R-0967C. The Agriculture Conservation Areas shown on Stanly County's Long-Range Plan that are within the Impact Area may pose some conflict. These areas may see some growth because of their close

proximity to the project; therefore, the County may need to implement regulations in order to limit growth within these Agriculture Conservation Areas.

**Environmental Reports Conclusions**

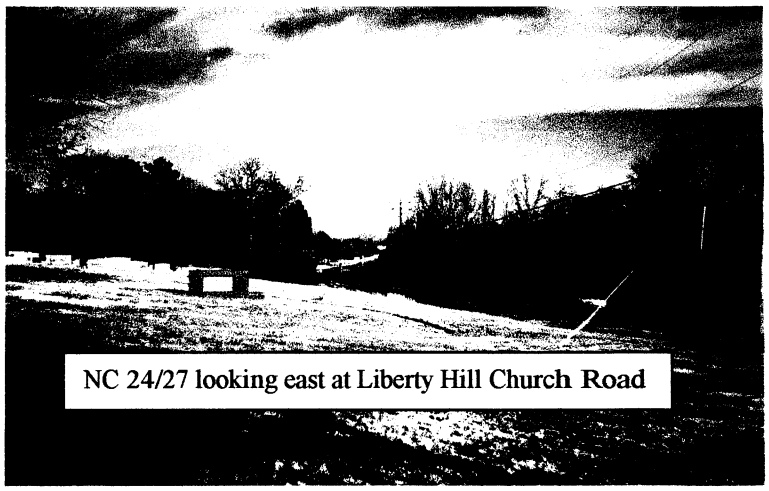
- The 1998 Environmental Assessment determined that there would no adverse impacts upon communities or neighborhoods, cultural resources, existing farmland, or existing land use policies/regulation as a result of R-0967C. There are no anticipated minority residential or business relocations.

- According to the 1998 *Finding of No Significant Impact*, approximately 70 residences and 22 businesses could be relocated as a result of TIP R-0967C. and the project "will not have a significant impact on the quality of the human or natural environment".

**Potential for Induced Development**

- TIP R-0967C is likely to stimulate land development having complementary functions and is expected to influence intraregional land development location decisions.

- Non-prohibitive growth policies within Stanly County, the presence of water/sewer lines, and a moderately strong market for development are all indicative of a high potential magnitude for induced development.


NC 24/27 looking east at Liberty Hill Church Road

- Minimal travel time savings, high supply of available land, low forecasted growth, and small changes in property values are all indicative of a low potential magnitude for induced development.

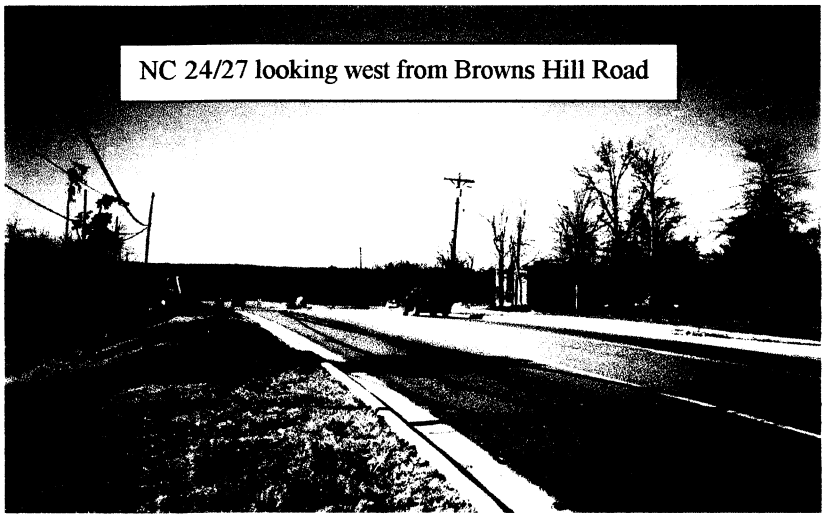
- Although there is some risk of strip development along NC 24/27 with little or no access control, the five-lane section is already well developed, and the median for the four-lane portion will likely limit development to the intersections.

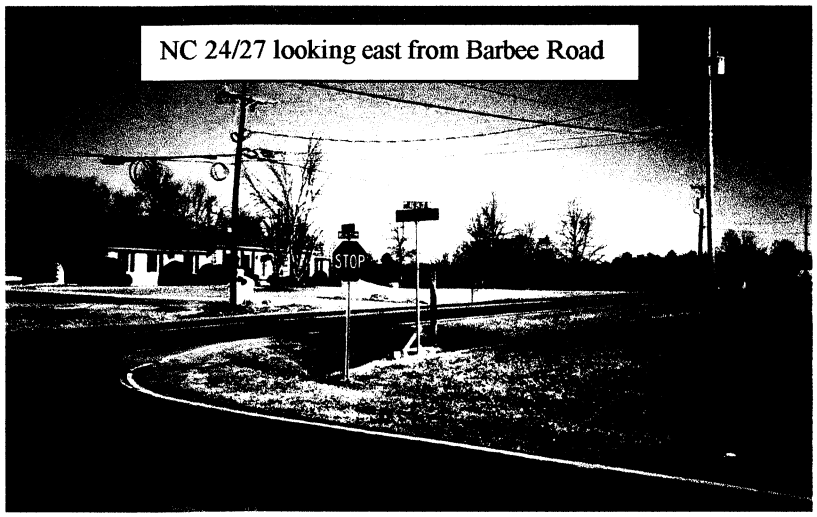
- There will be some residential housing growth mainly focused in the incorporated areas and along major intersecting roadways that will be induced by TIP R-0967C,

but the growth will be combined with the cumulative effects from TIP R-2123 (Eastern Charlotte Loop of I-485) due to be completed in July of 2003. The combination of these two projects will make the commute easier to employment centers in the Charlotte area for people living in Stanly County as far away as Albemarle.

## II. PROJECT DESCRIPTION

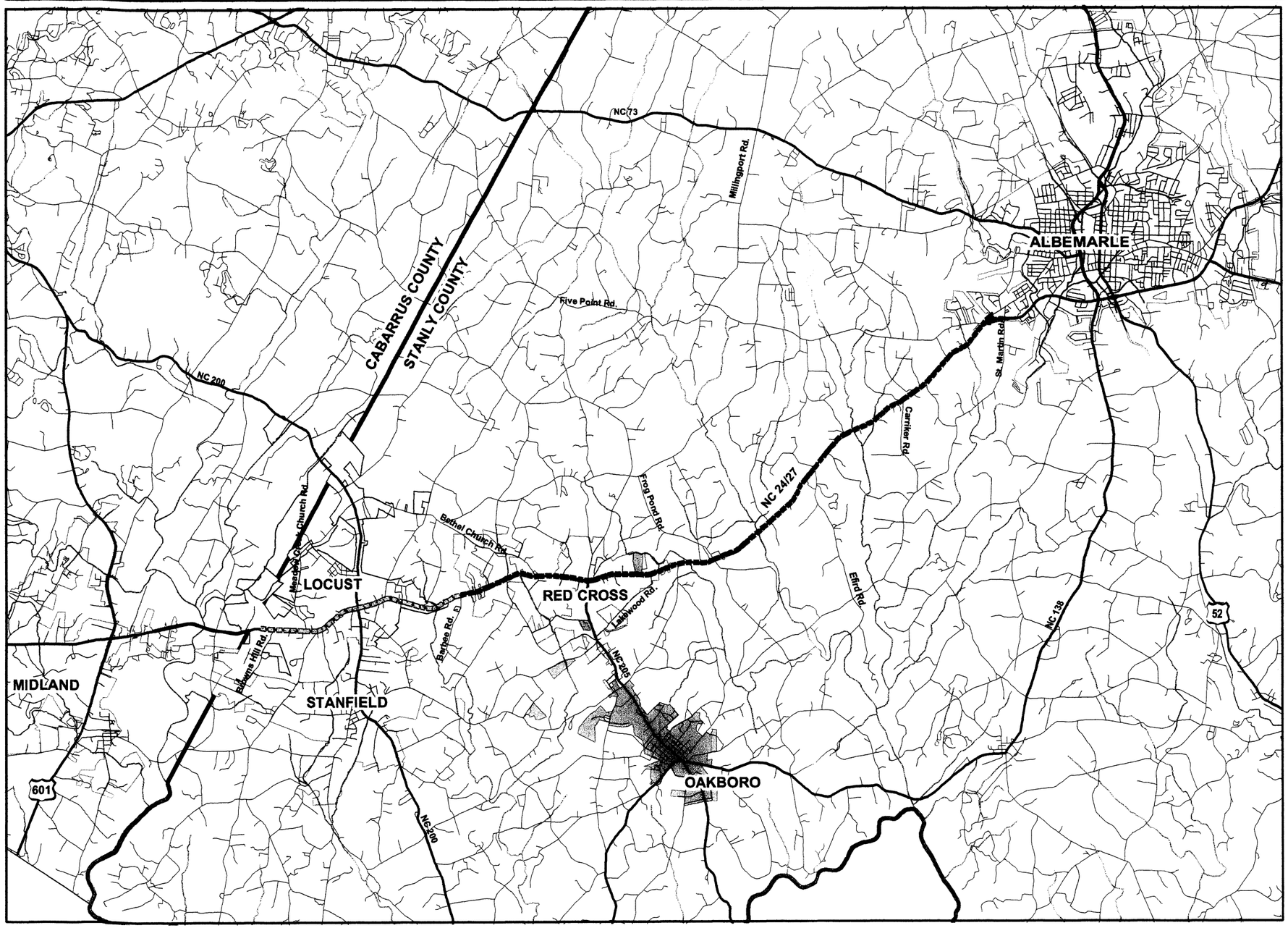
The North Carolina Department of Transportation (NCDOT) plans to widen a 15.1-mile stretch of NC 24/27 in southwestern Stanly County from a two-lane road to a multi-lane roadway. The project will start from the western edge of the City of Locust and terminates at the western edge of the City of Albemarle (see Figure 1). A five-lane facility with curb and gutter and a 100-foot right-of-way is proposed from the western limit of Locust to Barbee Road. East of Barbee Road, a four-lane roadway with a 46-foot grass median is proposed to the western edge of Albemarle close to the intersection of NC 24/27 and SR 1963 (Oakboro Road/Saint Martin Road). The right-of-way for the four-lane widening is 200 feet.


NC 24/27 looking west from Browns Hill Road



NC 24/27 looking east from Barbee Road

The purpose of TIP R-0967C is to improve safety and traffic handling capacity by providing a multi-lane highway from Locust to Albemarle. NC 24/27 is the main east-west route in Stanly County, and TIP R-0967C is among several other projects that have widened NC 24/27 from the City of Albemarle to the City of Charlotte.




## FIGURE 1 - ALIGNMENT

**TIP R-0967C**

- 5 LANES
- 4 LANES/MEDIAN
- MINOR ROADS
- MAJOR ROADS
- RIVERS
- WATER BODIES

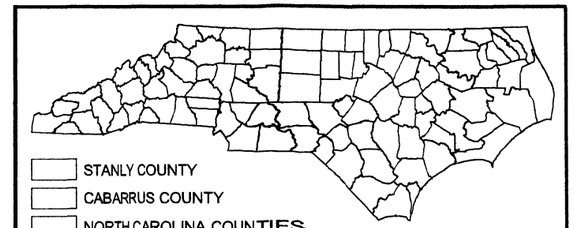
**MUNICIPALITIES**

- CITY OF ALBEMARLE
- CITY OF LOCUST
- TOWN OF OAKBORO
- TOWN OF RED CROSS
- TOWN OF STANFIELD
- TOWN OF MIDLAND
- STANLY COUNTY
- CABARRUS COUNTY

2.5 1.25 0 2.5 Miles

N

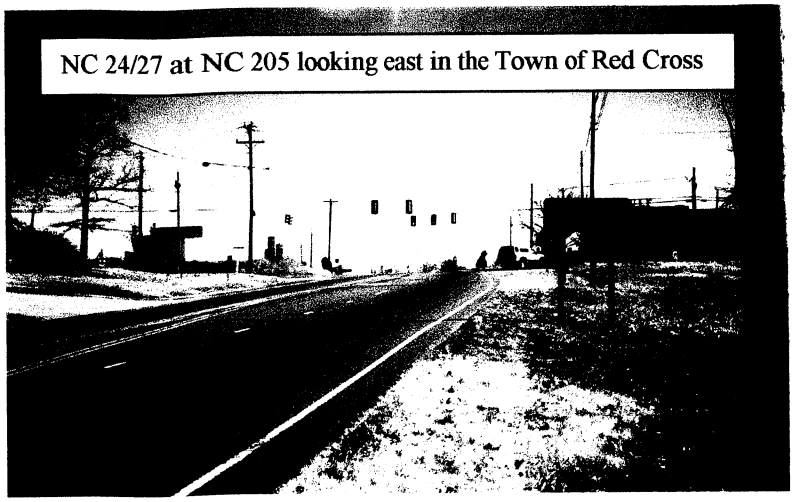
MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
US CENSUS
STANLY COUNTY
CABARRUS COUNTY



## III. POTENTIAL GROWTH IMPACT AREA AND IMPACT AREA

### Identification of Potential Growth Impact Area

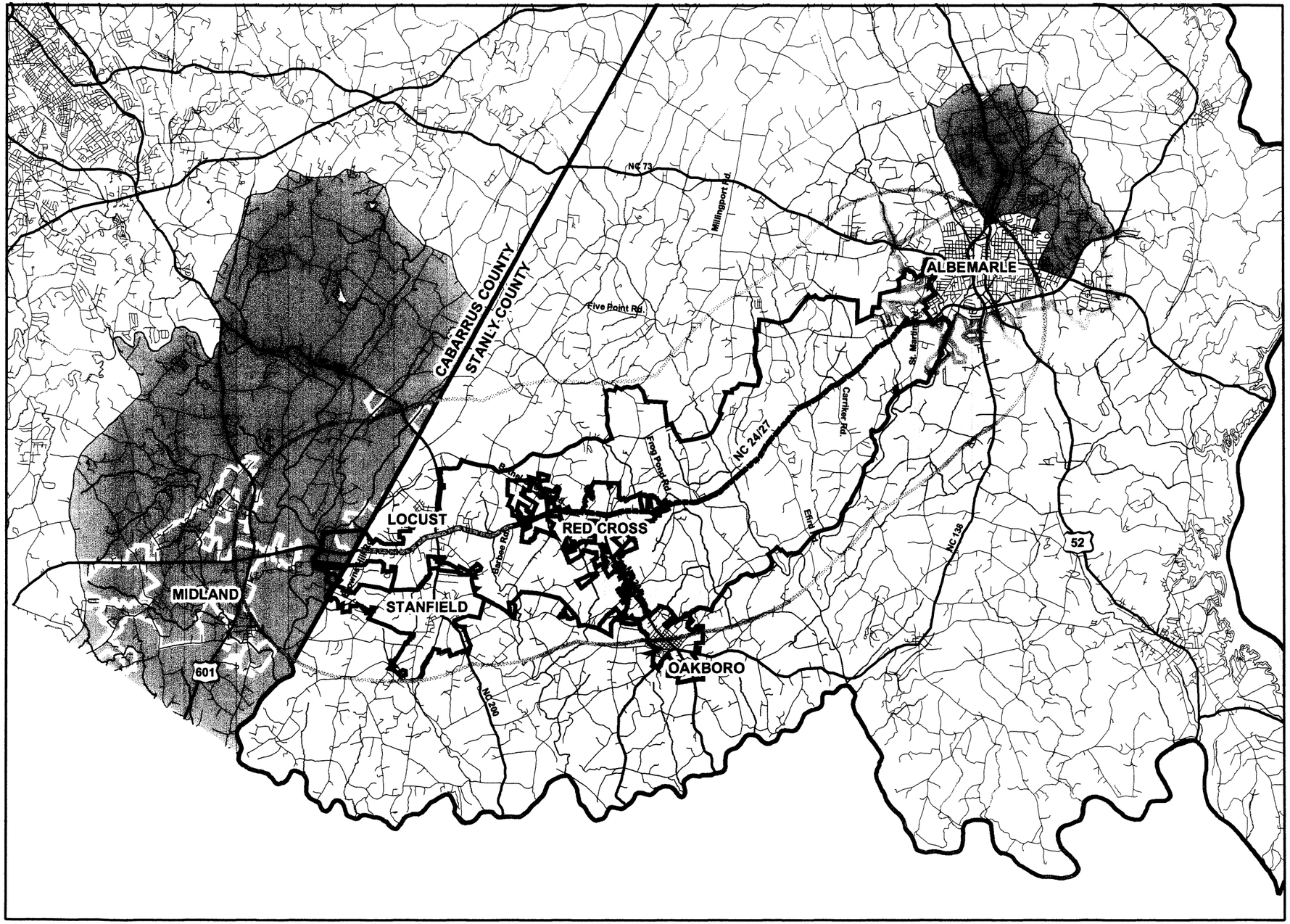
TIP R-0967C is located in the southwestern portion of Stanly County, extending through the City of Locust, the Town of Red Cross, and ending at the western edge of the City of Albemarle. North Carolina's Department of Transportation and Department of Environment and Natural Resources' (DENR) *Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina* indicates the development effects of a new highway facility are most often found up to one mile around a freeway interchange, and up to two to five miles along major feeder roadways to the interchange. Based on this guidance, an initial review of project area conditions, and our own professional judgment, it was determined the potential for growth impact, as a result of this project, would mostly be within a three-mile radius of the project. This three-mile radius, referred to as the Potential Growth Impact Area (PGIA), will determine the data collection and analysis area but will not necessarily be the extent of growth impact that is expected to occur (see Figure 2).



NC 24/27 at NC 205 looking east in the Town of Red Cross

### Identification of Impact Area

The Impact Area was created by analyzing different factors that will determine where growth is most likely to occur as a result of the road being widened. Those areas that are already heavily developed, such as portions of Albemarle, Locust, Stanfield, and Oakboro, were not included within the Impact Area. Land within Cabarrus County, as well as the western portion of Stanly County, was considered to have little benefit with respect to development from NC 24/27. This is taking into account that most of the people in that area are traveling to the City of Charlotte for employment, so there may not be much time savings from TIP R-0967C. The locations of current water and sewer lines, as well as future lines, were taken into account. Accessibility along surrounding roadways and the location of rivers/creeks and their floodplains were also examined.




## FIGURE 2 - DEMOGRAPHIC AREA & IMPACT AREAS

**TIP R-0967C**

- 5 LANES
- 4 LANES/MEDIAN
- MINOR ROADS
- MAJOR ROADS
- RIVERS
- WATER BODIES
- POTENTIAL GROWTH IMPACT AREA
- IMPACT AREA
- STANLY COUNTY
- CABARRUS COUNTY

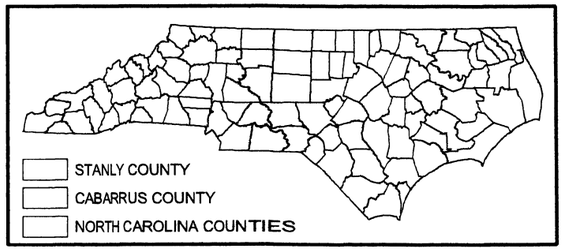
**DEMOGRAPHIC AREA**

- CENSUS TRACT 9903
- CENSUS TRACT 9904
- CENSUS TRACT 9905
- CENSUS TRACT 9906
- CENSUS TRACT 9907
- CENSUS TRACT 9908
- CENSUS TRACT 9909
- CENSUS TRACT 9910, BLOCK GROUP 1
- CENSUS TRACT 9910, BLOCK GROUP 2
- CENSUS TRACT 9910, BLOCK GROUP 3
- CENSUS TRACT 9910, BLOCK GROUP 4
- CENSUS TRACT 416

3 1.5 0 3 Miles

N

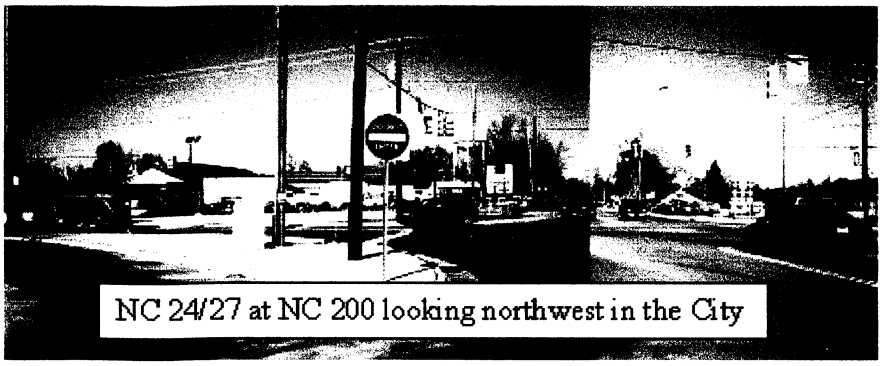
MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
US CENSUS
STANLY COUNTY
CABARRUS COUNTY



## Demographic Area and Community Description

In order to characterize population growth within the area surrounding TIP R-0967C, a Demographic Area was established using data from the 2000 Census for Census Tracts and/or Block Groups that entirely encompass the PGIA.

Stanly County is located in south central North Carolina. It is characterized by a predominantly rural landscape with an abundance of open space and forested areas. The community within the PGIA is also rural with some limited urban development in Locust, Stanfield, Red Cross, and Oakboro. The City of Albemarle is on the eastern edge of the project and is the largest city within the county with 15,680 residents in 2000. Farming, pastureland, and low-density single family residential are the predominant land uses in the surrounding area along with some small amounts of commercial land use along NC 24/27 and within the cities and towns. The City of Albemarle has a larger mix of land uses including office, industrial, retail and residential. According to the *Finding of No Significant Impact* (FONSI), approximately 22 businesses and 70 residences will have to be relocated as a result of TIP R-0967C. The downtown portion of the City of Locust will be further divided by the widening of the road. Many businesses will lose parking lots along NC 24/27.


NC 24/27 at NC 200 looking northwest in the City

## Growth and Development

Based on the data in Table 1, the population within both the Demographic Area and the surrounding counties has been increasing. North Carolina's population grew by 12.8% between 1980 and 1990 and 21.4% between 1990 and 2000. Cabarrus County grew by 32.5% between 1990 and 2000, much higher than the State (21.4%) and Stanly County (12.2%). Stanly County's percentage of growth doubled in the last decade compared to the previous decade from 6.7% between 1980 and 1990 to 12.2% between 1990 and 2000.

These higher growth percentages can be attributed to growth from the City of Charlotte that has been spilling over into the surrounding counties. Since Cabarrus County is closer to Charlotte, its growth has been higher than that of Stanly County. Similar to the State, population growth projections during the next two decades for Cabarrus and Stanly Counties show a slight decline in the growth rate percentage.

**Table 1. Population Growth Trends and Projections, 1980 - 2020**

| | Demographic Area | Cabarrus County | Stanly County | North Carolina |
|---|---|---|---|---|
| **Population:*** | | | | |
| 1980 | N/A | 85,895 | 48,517 | 5,880,095 |
| 1990 | 40,965 | 98,935 | 51,765 | 6,632,448 |
| Percentage Growth 1980-1990 | N/A | 15.2% | 6.7% | 12.8% |
| 2000 | 47,047 | 131,063 | 58,100 | 8,049,313 |
| Percentage Growth 1990-2000 | 14.8% | 32.5% | 12.2% | 21.4% |
| **Population Projections:**** | | | | |
| 2010 | N/A | 166,897 | 64,281 | 9,491,374 |
| Percentage Growth 2000-2010 | N/A | 27.3% | 10.6% | 17.9% |
| 2020 | N/A | 205,495 | 70,662 | 10,966,138 |
| Percentage Growth 2010-2020 | N/A | 23.1% | 9.9% | 15.5% |

Source: *US Census Bureau
**North Carolina State Demographics, May 30, 2002, Internet accessed 12/21/02, http://demog.state.nc.us/

The population within the Demographic Area, which encompasses the PGIA as well as much of the surrounding area, grew by 14.8% between 1990 and 2000, which was similar to Stanly County. Due to the close proximity of the City of Charlotte, population growth in the western TIP R-0967C project area occurred at a higher rate in comparison to the census tract populations of eastern Stanly County (See Figure 2). Stanly County Census Tract 9908 and Cabarrus County Census Tract 416 had the experienced the highest growth at 26.8% and 26.3% respectively. Census Tract 9907 (Stanly County) also showed higher growth in comparison to the county as a whole and the state (26.2%). Population projections for 2010 and 2020 for Census Tracts and Block Groups are not available.

Stanly County added 383 jobs during the 1990s, going from 20,942 jobs in 1990 to 21,325 jobs in 2000 (see Table 2). This increase occurred despite the loss of 3,473 manufacturing jobs. The services industry added the most employment with 1,728 jobs followed by retail trade with 809 new jobs. Manufacturing was still the largest employment industry in the county in 2000 with 7,047 jobs, followed by retail trade with 4,012 jobs and services with 3,974 jobs. The slight increase in jobs but larger increase in population indicates there are a growing number of people who live in Stanly County but do not work there; therefore, it appears as though Stanly County is becoming a bedroom community for Charlotte.

**Table 2. Employment By Industry, Persons 16 Years and Older**
**Stanly County, 1990-2000**

| Sector | Employment | | Change | |
|---|---|---|---|---|
| | 1990 | 2000 | # | % |
| Construction | 1,155 | 1,315 | 160 | 13.9% |
| Agriculture | 112 | 168 | 56 | 50.0% |
| Mining | N/A | N/A | N/A | N/A |
| Manufacturing | 10,520 | 7,047 | -3,473 | -33.0% |
| Transportation/PublicUtilities | 240 | 208 | -32 | -13.3% |
| Wholesale Trade | 564 | 926 | 362 | 64.2% |
| Retail Trade | 3,203 | 4,012 | 809 | 25.3% |
| FIRE | 407 | 415 | 8 | 2.0% |
| Services | 2,246 | 3,974 | 1,728 | 76.9% |
| Government | 2,495 | 3,260 | 765 | 30.7% |
| **Total:** | **20,942** | **21,325** | **383** | **1.8%** |

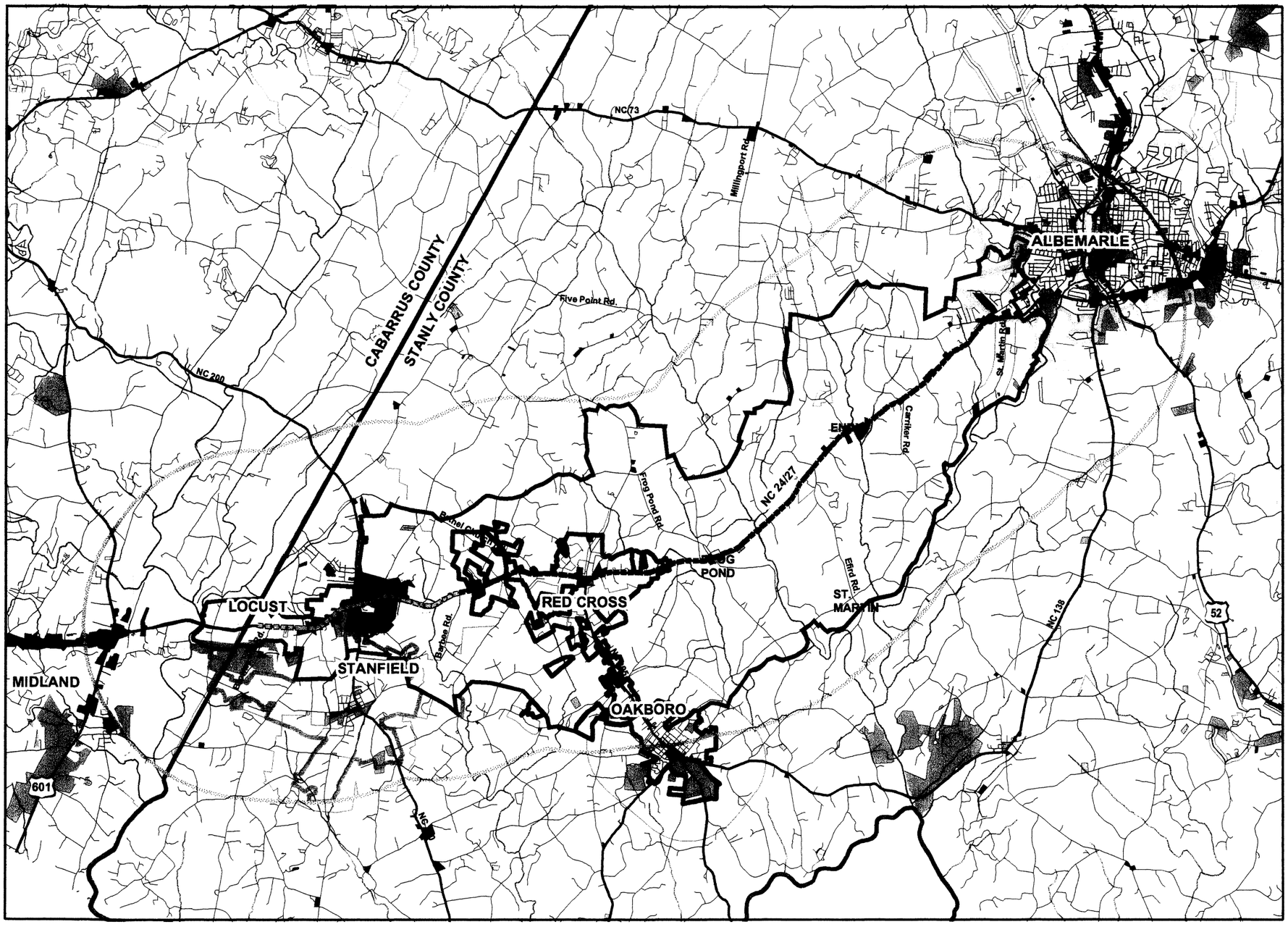
The Employment Security Commision of North Carolina, Internet accessed April 14, 2003: http://jobs.esc.state.nc.us/lmi/ew/EW2000A/c167.htm

## IV. EXISTING PLANS AND REGULATIONS

### Current Land Use

Stanly County adopted a Land Use Plan in 2002, as did the Town of Oakboro. The City of Albemarle, Town of Red Cross, and the Town of Stanfield have not adopted land use plans at this point in time; however, the County's Land Use Plan includes Red Cross, which was unincorporated at the time it was adopted. Stanly County's Land Use Plan does not specifically identify different land uses but instead identifies Primary and Secondary Growth areas with the remaining land shown as Agriculture Conservation Areas. Primary and Secondary Growth areas are shown around Locust, Albemarle, Stanfield, Oakboro, and Red Cross along with the unincorporated areas of Frog Pond, Endy, and St. Martin (see Figure 3). These growth areas encompass about 75% of the TIP R-0967C corridor along NC 24/27. The Stanly County Land Use Plan incorporates the growth areas defined by the Town of Oakboro's Land Use Plan. Oakboro also proposes growth areas from their downtown to the town limits of Red Cross.

The City of Locust adopted their Zoning Ordinance and Master Plan in April 1997. The City has been working with the NCDOT to generate a design plan for NC 24/27 through the center of its downtown area. Locust is planning on creating a new downtown on a parcel north of NC 24/27. For the portion of NC 24/27 that runs through Locust, the NCDOT, in conjunction with Locust, are combining funds to pay for a sidewalk to line both sides of the corridor.




## FIGURE 3 - ZONING

**TIP R-0967C**

- 5 LANES
- 4 LANES/MEDIAN
- MINOR ROADS
- MAJOR ROADS
- RIVERS
- WATER BODIES
- FLOOD ZONES
- POTENTIAL GROWTH IMPACT AREA
- IMPACT AREA
- STANLY COUNTY
- CABARRUS COUNTY

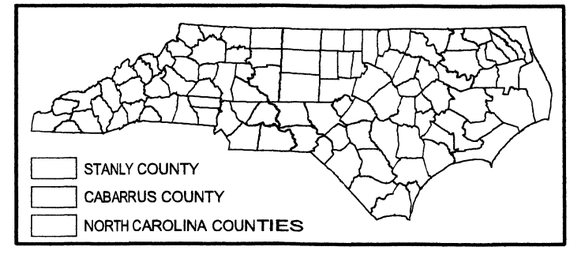
**ZONING**

- BUSINESS
- INDUSTRIAL
- OFFICE
- RESIDENTIAL MANUFACTURED HOUSING
- RESIDENTIAL MULTI-FAMILY
- RESIDENTIAL OFFICE
- R-6 TO R-12
- R-15 TO R-20
- RESIDENTIAL LOW DENSITY
- RESIDENTIAL AGRICULTURE
- PARK

2.5 1.25 0 2.5 Miles

MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
US CENSUS
STANLY COUNTY
CABARRUS COUNTY

N



The Primary and Secondary Growth Areas in Stanly County's Land Use Plan and Oakboro's plan are consistent with TIP R-0967C. The Agriculture Conservation Areas shown on Stanly County's Long-Range Plan that are within the Impact Area may pose some conflict. These areas may see some growth because of their close proximity to the project; therefore, the County may need to implement regulations in order to limit growth within these Agriculture Conservation Areas.

**Zoning Plans**

All related jurisdictions have zoning regulations (see Figure 3). The area east of the Town of Red Cross and west of the City of Albemarle is predominantly zoned Residential Agriculture, allowing for a maximum density of one unit per every 30,000 square feet. The City of Albemarle's zoning consists of predominantly high density housing of R-6 (1 unit per 6,000 square feet) to R-12 (1 unit per 12,000 square feet) throughout its city limits. Residential Office and a mixture of Business and Industrial zoning exist in the downtown area as well as along major thoroughfares. The Town of Red Cross is mostly zoned Residential Agriculture with some R-15 to R-20 zoning north of NC 24/27. Business and Industrial zoning is focused at the intersection of NC 205 and NC 24/27. With the recent incorporation of the Town of Red Cross the zoning may change to allow for higher density housing. The Town of Oakboro is mainly zoned R-15 to R-20. Higher density residential (R-6 to R-12) zoning is located in the downtown area. NC 205 is the main business corridor in Oakboro.

The City of Locust, whose core Business, Office, and Industrial center is affected greatly by the widening of NC 24/27, has a new City Center District proposed on a 20 acre lot northwest of the intersection of NC 24/27 and NC 200. The district will include a mixture of office and retail land uses with the potential for residential on the second floor of buildings. A mixture of single and multi-family land use is proposed on an adjacent parcel of 100 acres. The rest of Locust is mainly zoned R-16 to R-20 with some R-6 to R-12 closer to NC 24/27.

Zoning within the Town of Stanfield is mostly R-15 to R-20 with a large portion of Industrial zoning along Browns Hill Road near the Stanly/Cabarrus County border just south of NC 24/27. Stanfield's downtown along NC 200 also has a mixture of Industrial and Business, as well as some R-6 to R-12 zoning.

In Cabarrus County, Midland's zoning along NC 24/27 is mostly Business with some Residential Low Density. Within unincorporated areas of Cabarrus County, the zoning is split between Residential Low Density and Residential Agriculture.

Because the zoning along NC 24/27 and within the Impact Area consists mainly of business, office, industrial, and higher density housing, the zoning is not in conflict with the proposed widening of NC 24/27. Again, there are some areas in between these zones that are zoned as residential agriculture that may need additional controls by the County to limit sprawl type development.

## Current Transportation Plans

TIP R-0967C is included in the 2004-2010 North Carolina Transportation Improvement Program. Other transportation plans include TIP R-2530 B (the widening of NC 24/27 east of NC 740 to the Montgomery County line) and TIP R-2123 (a proposed portion of the I-485 loop in Mecklenburg County). I-485 intersects with NC 24/27 approximately 12 miles from the Stanly County border. There may be a cumulative effect resulting from the TIP R-2123 and TIP R-0967C projects.

## Environmental Regulations

Neither TIP R-0967C nor the entire PGIA is located within a Water Supply Watershed. Just east of the PGIA is the Lake Tillery Water Supply Watershed IV (see Figure 4). Water resources within the PGIA all flow into Rocky River south of NC 24/27, which is part of the Yadkin-Pee Dee drainage basin.

North Carolina's 303(d) list (2000), a product of the Clean Water Act which requires States to identify those waters that do not meet water quality standards or which have impaired uses, was reviewed to determine if any water bodies within the Demographic Area of TIP R-0967C are listed. Excluded from this list are water bodies that include control strategies for point and non-point source pollution. There is a small portion of a 303(d) Stream (Little Long Creek) that is within the PGIA. Little Long Creek is located southeast of TIP R-0967C, just south of the City of Albemarle. The cause of impairment is unknown at this time with potential sources listed as urban runoff/storm sewers. According to the North Carolina DENR, the current priority for the stream is low.

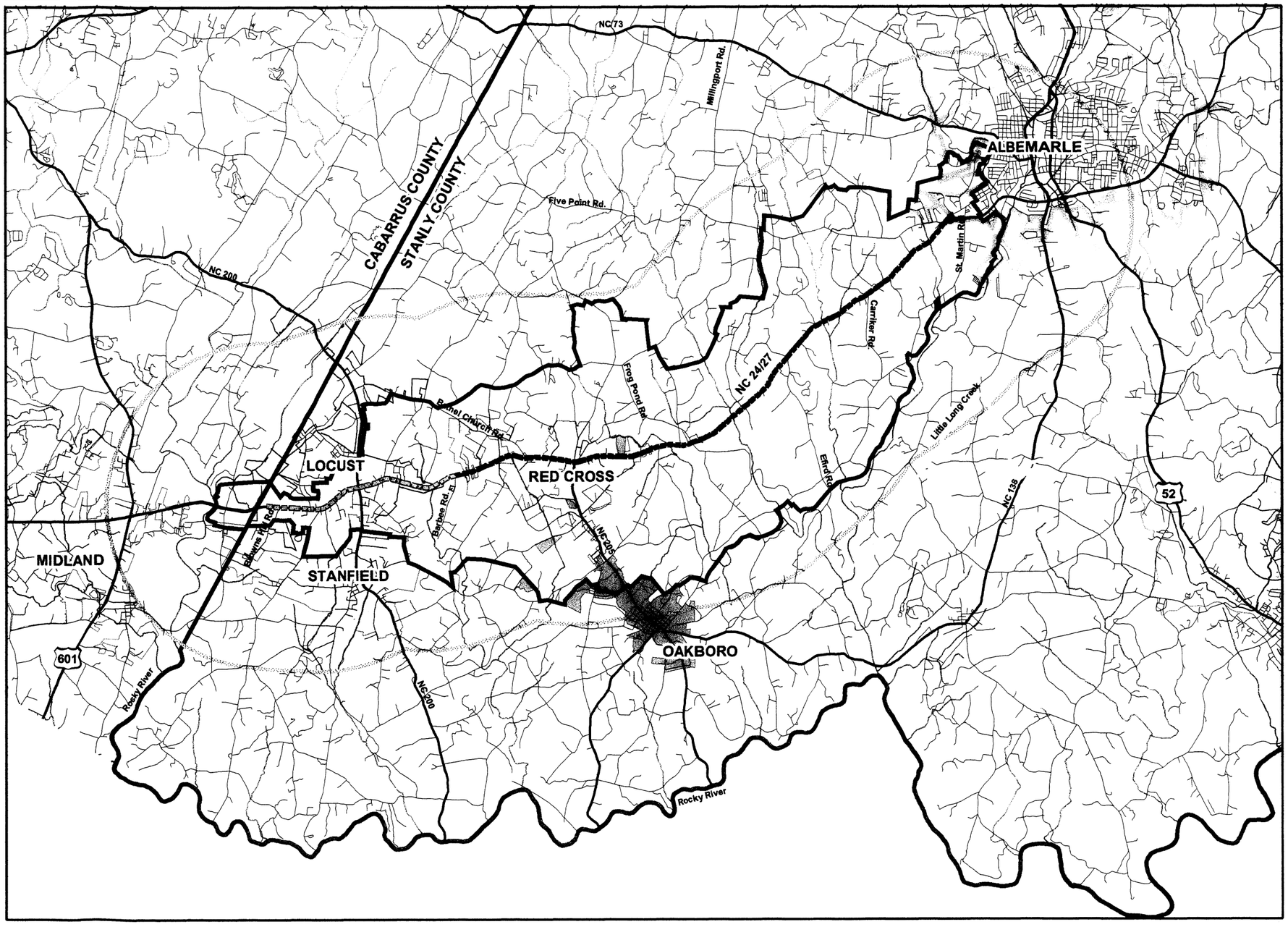
# V. EXISTING REPORTS

## Previous Conclusions

### Environmental Assessment

The Environmental Assessment (EA) for TIP R-0967C, dated January 26, 1998, determined the NC 24/27 widening project would not have adverse impacts on communities or neighborhoods, cultural resources, existing farmland, or existing land use policies/regulations. There are no low-income or minority residences or business owners that are being relocated.

According to the assessment there will be 9 intermittent streams, one unnamed tributary, 5 named creeks, and one headwater that will be impacted by TIP R-0967C. These environmental impacts relate to increased sedimentation and storm water runoff from construction and/or erosion. Total impacts from the project are expected to be minor and should decrease dramatically after construction is complete, allowing for vegetation to grow back and reduce erosion. The NCDOT's Best Management Practices will be utilized during construction to minimize impacts.




## FIGURE 4 - WATER RESOURCES

**TIP R-0967C**

- 5 LANES
- 4 LANES/MEDIAN
- MINOR ROADS
- MAJOR ROADS
- RIVERS
- 303D LIST STREAMS
- WATER BODIES
- POTENTIAL GROWTH IMPACT AREA
- IMPACT AREA
- STANLY COUNTY
- CABARRUS COUNTY

**WATERSHED**

- LAKE TILLERY WATER SUPPLY IV
- CRITICAL AREA

2.5 1.25 0 2.5 Miles

MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
US CENSUS
STANLY COUNTY
CABARRUS COUNTY

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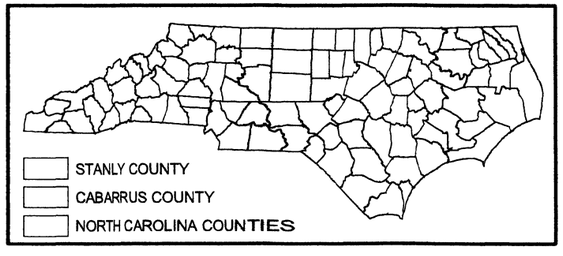


NC 24/27 looking south at West Stanly High School

In addition, the EA determined that, as a result of the construction of TIP R-0967C, approximately 13 acres of dry secondary Mixed Hardwood forest and 0.4 acres of alluvial forest will be cleared and degraded if the entire right of way is needed. Less than 1/3 of an acre of wetlands will be impacted. In Stanly County, Federally-protected species include the Bald Eagle and Schweinitz's sunflower. There is no record of occurrence for either species in or near the project study area for the EA.

There are three State listed/non Federal Species of Concern (FSC) within 1.0 mile of the project area that are either downstream of the site or on site. The species include Eastern Creekshell and Notched Rainbow on Big Bear Creek and Carolina Creekshell on Stony Run. Work to be performed in the water should not be allowed during April or May for Big Bear Creek and Stony Run Creek as requested by Wildlife Resource Commission (WRC).

Based on the EA for the same project, and upon comments from other governmental agencies, the NCDOT and the Federal Highway Administration determined the project "will not have a significant impact on the quality of the human or natural environment. Therefore, an Environmental Impact Statement is not required."

**Finding of No Significant Impact**

The *Finding of No Significant Impact* (FONSI) was prepared and signed in December 1998. According to this document, an estimated 70 residences and 22 businesses could be relocated.

Special Project Commitments were made to coordinate with the local government to design access to West Stanly High School and Locust Elementary. Coordination with the City of Locust also took place during the design phase for Locust's central business district.

**Water resources and protected species review for a Federal Highway Administration (FHWA) Right-of-Way Consultation for NC 24-27**

This report, an update of the EA and the FONSI, was completed in May of 2000. According to its findings, water resource classifications remain the same and there are no High Quality Waters (HQW), Water Supplies (WS-I or WS-II), nor Outstanding

Resource Waters (ORW) within one mile of the project area. Furthermore, there are no changes to the federally protected species list for Stanly County since the EA and the conclusion of "No Effect" remains valid for all species.

**NCDOT Project Environmental Consultation Form**
The FONSI was re-evaluated in November of 2002 and the original EA/FONSI Administrative Action remains valid. Driveway access for Locust Elementary School has been discussed between Design Engineers and local officials. The NCDOT coordinated with the City of Locust for design of the project in its central business district.

## VI. POTENTIAL FOR INDUCED DEVELOPMENT

The Louis Berger Group Inc., in their April 2001 handbook titled *Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina*, outline a set of factors that need to be evaluated to determine whether or not a detailed indirect and cumulative impact analysis (ICI) is required for specific projects.

The following is an assessment of those factors for TIP R-0967C.

### Assessment Factors

**Conflict with local plan: (no)**
Although it may conflict with Agricultural Conservation Areas shown on Stanly County's Long Range Plan, overall, TIP R-0967C is consistent with the Land Use Plan for the Town of Oakboro and the City of Locust Zoning Ordinance and Master Plan. The Town of Red Cross is newly incorporated and does not have a Land Use Plan of its own, but the area is covered under the Land Use Plan for Stanly County.

**Explicit economic development purpose: (no)**
The purpose and need of TIP R-0967C is to provide a multi-lane highway from Locust to Albemarle that will improve safety and traffic flow along NC 24/27. TIP R-0967C is not intended to promote the economic development of the surrounding area.

**Planned to serve specific development: (no)**
The construction of TIP R-0967C is not planned to serve any specific development, but rather to provide a better east/west connection through Stanly County. So this is not a factor.

**Likely to stimulate land development having complementary functions: (yes)**
The answer to this question involves an evaluation of a set of factors commonly used to determine induced growth including:

- Distance to a major urban center
- Traffic volumes on intersecting roadways
- Presence of frontage roads
- Availability of water/sewer

TIP R-0967C is close to a major urban center, being approximately 25 miles from downtown Charlotte, 12 miles from the I-485 loop around the City of Charlotte, and 13 miles from the city limits of Charlotte. Traffic volumes along NC 24/27 vary. In 2002 they ranged from a low of 6,400 average daily trips (ADT), east of Lakewood Road (see Figure 1), to a high of 13,100 ADT just west of NC 200. Capacity for a suburban arterial with signals is approximately 7,000 ADT for level D service, while capacity for a two-lane rural highway is approximately 9,750 ADT. Therefore ADT along NC 24/27 are high, if not over capacity.

Frontage roads are not planned as part of TIP R-0967C widening. There will be no access control for the 5-lane section west of Barbee Road but there will be partial access control for the 4-lane with median section. There is no access control along the five-lane segment to allow access to the existing developments within the City of Locust; therefore, the potential for induced growth is much less along this area. As the four lane segment with a median will restrict accessibility along the corridor, it is likely that future development will be concentrated at the intersections with NC 24/27. Even with little or no access control, there are limits for development as a result of existing development and creation of a median.

Water and sewer services are available in some areas of the PGIA, which may attract opportunities for development. Based on this evaluation, TIP R-0967C should stimulate land development having complementary functions.

**Likely to influence intraregional land development location decisions: (yes)**
Typically, if conditions are favorable for development and/or a region is currently undergoing urbanization, an improvement in the transportation infrastructure is likely to influence "where" development will occur not necessarily "if" it will occur. In this circumstance, conditions within the Demographic Area as well as the PGIA are favorable for development (i.e. some water/sewer service, high population growth, close major urban center destination, etc.), and it is undergoing an urbanization process in the western part of the county.

**Notable feature present in impact area: (yes)**
Notable features relate to the natural environment, historic and cultural properties, wildlife habitat, etc. Based on the 1998 Environmental Assessment, there are three state listed/non Federal Species of Concern (FSC) within one mile of the TIP project area; the Eastern Creekshell and Notched Rainbow.

## Magnitude of Land Use Change

To further determine what the indirect and cumulative impacts would be as a result of TIP R-0967C, an analysis of a set of quantitative factors was conducted. The result of this analysis helps to determine the potential level of indirect and cumulative impacts related to this project. Table 3 below indicates the results of this rating analysis:

**Table 3. Potential For Land Use Change, 2000-2020**

| Rating | Change in Accessibility | Change in Property Values | Forecasted Growth | Land Supply vs. Land Demand | Water/Sewer Availability | Market For Development | Public Policy |
|---|---|---|---|---|---|---|---|
| **Strong** | *Travel time savings greater than 10 mins.* | *Greater than 50% increase* | *Greater than 3% annual population growth* | *Less than 10-yr supply of available land* | *Available now* | *Strong market* | *No growth management policy; weak enforcement* |
| * | | | | | | | X |
| * | | | | | | | |
| * | | | | | X | X | |
| * | | X | X | | | | |
| * | X | | | X | | | |
| **Weak** | *Travel time savings less than 2 mins.* | *No change* | *Less than 1% annual growth* | *Greater than 20-yr supply of available land* | *Not available, and difficult to provide* | *Weak market* | *Growth management policy in place; strong enforcement* |

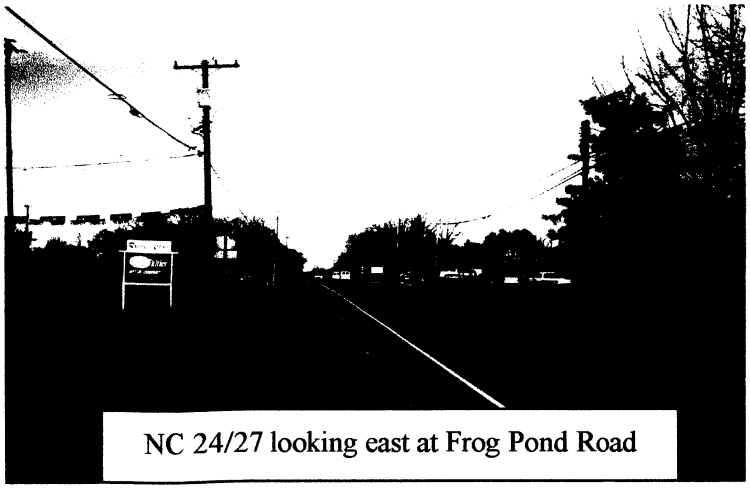
In terms of positive indications of growth magnitude, Stanly County has no growth management policy; therefore, this factor ranks strongly. There are two factors that rank moderately, including water/sewer availability and the market for development.

In terms of negative indications of growth magnitude, change in accessibility is weak with a travel savings that is forecasted to be less than 2 minutes, and there is a greater than 20-year supply of land. Property values are not expected to increase substantially because there is no new access to NC 24/27 or interchanges. Also, projected annual growth for Stanly County is low at 1.02% over the next ten-year period.

## Conclusions

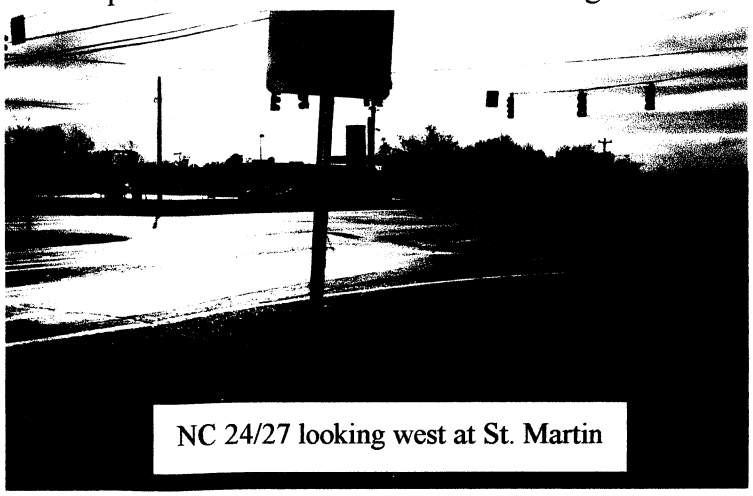
Since TIP R-0967C is not on new location, it will not provide any new access to land that previously did not have access. With a four-lane, median divided road east of Barbee Road along NC 24/27, as is proposed by the project, commercial development will be focused at major intersections. The reason for the five-lane section west of Barbee Road is to allow access to the many "existing" businesses and developments in the City of Locust; therefore, the potential for induced growth along the corridor in Locust is less because it is already mostly developed. There will be some residential housing growth mainly focused in the incorporated areas and along major intersecting roadways that will be induced by TIP R-0967C, but the growth will be combined with the cumulative effects from TIP R-2123 (Eastern Charlotte Loop of I-485) due to be completed in July of 2003. The combination of these two projects will make the commute easier to employment

centers in the Charlotte area for people living in Stanly County as far away as Albemarle. TIP R-2123 is going to have a major influence on growth regardless of the NC 24/27 widening. However, the two projects together will allow for improved access and mobility from Albemarle to Charlotte and its eastern periphery; therefore, the effect of TIP R-0967C on growth is expected to be more at the eastern portion of the project. Even without the widening of NC 24/27 growth would still occur in the western portion of Stanly County because of the R-2123 Eastern Charlotte Loop completion. As a result of TIP R-967 there will be an increase in commuters to Charlotte from Albemarle because of improved mobility.



NC 24/27 looking east at Frog Pond Road

The widening of NC 24/27 could allow for some industries to locate in Stanly County that require access to a four-lane road leading to an interstate. Thus, this could induce some industrial job growth on the western edge of Albemarle. Without TIP R-0967C development would most likely continue within the western portion of the county, which is in close proximity to I-485 and Charlotte. However, with the added widening of NC 24/27, residential development would be able to spread further to the east as far as Albemarle. There is some potential for conflict with the existing Stanly County Comprehensive plan that shows those areas outside the Primary and Secondary Growth Areas as Agriculture Conservation Areas. Some of these Conservation Areas are within the PGIA. Induced growth may occur there because of the close proximity to TIP R-0967C. The County may need to implement regulations in order to limit growth within these Agriculture Conservation Areas.



NC 24/27 looking west at St. Martin

# HYDRAULIC DESIGN AND PERMIT REVIEW MEETINGS FOR R-0967CC, STANLY COUNTY

PREPARED BY DAVID WEBB
SEPTEMBER 10, 2003

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I. **Minutes of the Interagency "4B" Meeting on 7/25/02**

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III. **Agency Comments and Post-Meeting Activities**

IV. **Attachments: Stormwater Management Plan**


## I. MINUTES OF THE INTERAGENCY "4B" MEETING ON 7/25/02

**Team Members:**
Jay Twisdale, NCDOT Hydraulics (PRESENT)
Steve Lund, USACE (PRESENT)
Cynthia Van Der Wiele, NCDWQ (PRESENT)
Marella Buncick, USFWS (PRESENT)
David Cox (for Marla Chambers), NCWRC (PRESENT)
Chris Milischer, EPA (ABSENT)
Matt Haney, NCDOT PD&EA (PRESENT)

**Participants**:
Paul Atkinson, NCDOT Hydraulics
David Webb, NCDOT Hydraulics
David Chang, NCDOT Hydraulics
Aldie Whitmore, NCDOT Division 10
Larry Thompson, NCDOT Division 10
Ron Allen, NCDOT Roadway Design
Jeanie Tyson, NCDOT Roadway Design

Jay Twisdale began the meeting with a brief overview of the project, which is a divided four-lane widening of an existing two-lane road in the Yadkin-Pee Dee watershed.

Specific comments are listed below by plan sheet number:

**Sheets 4-8:** No comments.

**Sheet 9, Wetland/Pond:** Steve Lund commented that the wetland/pond (172+40 –L- Rt.) is a livestock pond with a wetland fringe. David Cox indicated that the wetland should be counted as a total loss.

**Sheets 10-13:** No comments.

**Sheet 14, Dry Bed Channel:** Jay Twisdale questioned the non-jurisdictional status of the existing channel (-L- Lt.) that ties to the inlet of the existing 1050mm cross-pipe at 192+40 –L- Lt. Steve Lund confirmed that the channel (which is badly disturbed and was dry at the time of his visit) was non-jurisdictional.

**Sheet 15, Stream at –Y- line Realignment:** The impacts to the jurisdictional stream under the proposed realignment of –Y43- and –Y55- were discussed. Jay Twisdale mentioned that several ideas were looked at during the design, including construction of some new channel at the outlet of a realigned proposed cross-pipe, but that steep terrain in this area prevented that realignment. The proposed design reflects two cross-pipes (one under –Y43/-Y55-, one under –L-) tying directly to the stream at both ends of each pipe. It was agreed that there was no other feasible design. Steve Lund commented that the stream between the –Y- lines and the –L- line had been disturbed at some point in time. Cynthia Van Der Wiele questioned whether the section of stream between the proposed pipe under –Y55- and the proposed pipe under –L- would be included in the project impacts. Jay responded that the impacts to the stream would stretch from the pipe inlet to end of rip rap pad for each pipe, and would not include the section of stream in between the two pipes since that area will not be impacted. The proposed design is preliminary at this point, and some changes may be made as the design is finalized.

**Sheet 15, Box Culvert:** Jay Twisdale explained that the extension of the existing 3 @ 3.0m x 3.4m (3 @ 10' x 11') reinforced concrete box culvert (Sta. 194+76 –L- on jurisdictional Little Bear Creek) will include debris deflectors on the inlet end due to the existing debris problem at the culvert. Marella Buncick questioned whether one of the culvert's interior walls could be removed to make a wider opening that would more closely match the channel width to reduce the debris problem. Jay and David Chang replied that since this was an extension of an existing box culvert, and not an entirely new culvert on new location, it was not structurally possible to modify the existing culvert in this manner. Jay did mention that the intent of the debris deflector was to help orient the debris with the direction of flow to facilitate passage of the debris. Paul Atkinson also pointed out that the sharp channel bend that exists at the culvert inlet will be reduced significantly with the proposed culvert extension and channel realignment. Jay also mentioned that a 0.6m (2') sill will be placed in one of the barrels to help maintain normal depth of flow through the culvert, and that rootwads will be utilized in the channel realignment to protect the proposed fill in the existing channel where the proposed channel realignment begins.

**Sheet 16:** No comments.

**Sheet 17, Box Culvert:** The existing 2@ 2.4m x 1.8m (2 @ 8' x 6') reinforced concrete box culvert (Sta. 200+25 –L- on jurisdictional tributary to Little Bear Creek) will be extended on both ends, with bends in the culvert to minimize channel realignment. The proposed design includes a proposed system tying into the culvert, and roadside ditches tying to the stream at the proposed inlet end of the culvert. There were no comments on the drainage design.

**Sheets 18-23:** No comments.

**Sheet 24, Pipe Extension:** Jay Twisdale noted that the proposed design is in the process of being revised to reduce impacts to the jurisdictional stream (Sta. 222+90 –L-). With the fill slopes revised to 2:1 (currently 4:1), it is anticipated that there will be roughly 5m-10m (15'-30') of stream impacts. There were no other comments on the drainage design.

**Sheet 25, System Outfall:** Steve Lund noted that the jurisdictional stream (Sta. 228+40 –L-) had been disturbed at some point in the past. David Cox asked that NCDOT try to avoid placing rip rap in the stream bed at the 1350mm system outlet (Sta. 228+38 –L- Rt.). Jay Twisdale replied that the rip rap was required due to the high outlet velocities.

**Sheet 26:** No comments.

**Sheet 27, Box Culvert:** Due to the steep grade (3.75%) of the proposed extension of the outlet end of the existing 2 @ 2.4m x 1.8m (2 @ 8' x 6') reinforced concrete box culvert (Sta. 234+68 –L- on jurisdictional Scaly Bark Branch), David Cox asked that baffles and sills be added in the extension to help hold some of the bed material in the culvert and to provide resting places for the fish. The existing culvert has a perched outlet. The proposed design includes two systems tying into the proposed culvert extension.

**Sheet 28, System Outfall:** The proposed design shows a system tying to an existing swale that drains into a jurisdictional stream (Sta. 239+00 –L- Rt.). There were no comments on the proposed design. The proposed design is preliminary at this point, and some changes may be made as the design is finalized.

**Sheet 29, Lateral Encroachment:** The jurisdictional status of the channel begins at the outlet of the existing 1500mm pipe (Sta. 242+20 –L- Rt.). The proposed design calls for extension of the pipe, and approximately 60m (200') of trapezoidal channel realignment where the proposed fill slope encroaches on the existing ditch. Jay Twisdale mentioned that due to the existing terrain there is not enough room to do a natural stream design in this area. He also stated that the existing channel is essentially a straightened trapezoidal ditch alongside the existing roadway. Steve Lund commented that a wetland area in the channel (Sta. 241+20 –L- Rt.) looked like the remnant of an old sediment basin. After some discussion, it was decided that the portion of wetland not under the proposed fill slope would continue to function and would not be considered a total loss (since the supply and discharge points of the wetland were not being impacted). There were no other comments. The proposed design is preliminary at this point, and some changes may be made as the design is finalized.

**Sheets 30-34:** No comments.

## II. MINUTES OF THE INTERAGENCEY PERMIT REVIEW MEETING ON 7/24/03

**Team Members:**

| | |
|---|---|
| Steve Lund-USACE | (present) |
| Cynthia Van Der Wiele-NCDWQ | (present) |
| Marla Chambers-NCWRC | (present) |
| Marella Buncick-USFWS | (present) |
| Chris Militscher-EPA | (present) |
| Matt Haney-PD&EA | (present) |
| Ron Allen-Roadway | (present) |
| Jay Twisdale-Hydraulics | (present) |

**Participants:**
David Webb, NCDOT, Hydraulics
Charles Hunt, NCDOT, Structures
Beth Barnes, NCDWQ

Jay Twisdale opened the meeting with introductions and a brief description of the project. He mentioned that the Hydraulic Design for the project was reviewed by the agencies on 7/25/02.

Jay presented the permit drawings site by site for review by the team members in attendance. Site 1 or Site 2 were reviewed and since there were no comments, no further action will be required.

Upon review of Site 3, Jay mentioned that removal of the proposed riprap from the bed of jurisdictional streams was not in effect when the drainage design was completed for this project. He was hesitant to remove the riprap at these locations due to high outlet velocities and opened the floor for discussion. Marla Chambers had no problem with keeping the standard riprap pad at the outlet of the 1350-mm pipe upstream that outlets in the intermittent portion of the stream. Velocities at this outlet were in excess of 10 ft/s. Everyone was in agreement to keep the design as it is at this location. However, the downstream pipes (2 @ 1050-mm) emptied into the perennial portion of the jurisdictional waters and also had high outlet velocities. The overall concern at this location was the presence of a sand channel and the possibility for large amounts of scour. It was agreed that Hydraulics would look into a creative solution to stabilize this outlet without using the standard riprap outlet pad. A "depressed riprap stabilization" was discussed to dissipate the energy from the outlets of these dual 1050's. Jay mentioned that the plans, permit drawings, and their respective summary sheets would be updated to reflect any changes.

Jay moved on to discuss Site 4, 5, and 6 with no comments being made on these three sites and no further action will be required.

After presenting and discussing Site 7, it was agreed to look into similar creative outlet protection designs for this 1350-mm pipe. Any changes will be reflected on final plans, permit drawings, and summary sheets.

The box culvert extension at Site 8 was presented and discussed as a best effort to retain bed material in the downstream extension with the use of sills placed on 5m increments throughout. Jay explained that the existing culvert outlet was perched and we are attempting to match the existing stream gradient as bed material settles in the culvert. Marla Chambers wants to confirm

David Cox's comments from the 4B meeting in regard to our sill design. She will email Jay with any further information regarding this culvert extension.

Site 9 was explained to be a loss of jurisdictional status from the outlet of the 1500-mm pipe to the end of the lateral tail ditch. The steep terrain and lack of room for natural channel design in this area were the controlling factors in our design. As far as the standard riprap pad at this location, Marella Buncick had no problem with keeping the design as is since this area will require mitigation anyway. All were in agreement to this, and no further action will be required.

## III. AGENCY COMMENTS AND POST-MEETING ACTIVITIES

Draft meeting minutes for "4B" Meeting on 7/25/02 were sent out to the agencies for review and comment on 7/31/02. No comments were received as of 8/14/02.

Draft meeting minutes for the Interagency Permit Review Meeting on 7/24/03 were sent out to the agencies for review and comment on 7/28/03. Marla Chambers responded with comments on 8/18/03 and 8/28/03. The following comments are from Marla and are in reference to the Site 8 culvert extension.

"I checked with David Cox regarding the baffle design at Site 8. The baffles within the culvert need to have notches or openings at alternating sides of the culvert so flow is directed in a meandering pattern in order to function properly." —*From 8/18/03 email message to Team Members*

"After additional conversations with Jay Twisdale and David Cox, I believe we have come up with a workable solution regarding the baffle design at Site 8. Installing baffles with a standard 6-inch deep notch would allow an existing drop near the end existing pipe, that they were trying to correct, to continue to exist as a 6-inch drop. This was a concern for fish passage. Instead, we would like to make a better transition by cutting the first baffle notch in the new pipe 3 inches and the next 6 inches. (Or a similar transition design) This would incorporate the meandering flow pattern (decreasing velocities) and improve fish passage potential." —*From 8/28/03 email message to Team Members*

As mentioned in the above response to concerns about fish passage, the culvert extension at **Site 8** was redesigned to reflect these changes.

In addition to the changes to the box culvert extension, a special detail reflecting a trial method for installation of riprap at jurisdictional stream pipe outlets has been developed. This effort began with brainstorming in the 4C meeting about new ways to control outlet pipe velocities while trying to maintain some existing bed material in the channel during low-flow storms. The new special detail has been noted on the Roadway plans for the outlet of the 2 @ 1050mm RCP at **Site 3** and the outlet of the 1350mm RCP at **Site 7**.

## IV. ATTACHMENTS

### STORMWATER MANAGEMENT PLAN

Project: 6.689004T, TIP R-0967CC June 19, 2003
Stanly County
Hydraulics Designers: Paul Atkinson, P.E. and David Webb, E.I.
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### ROADWAY DESCRIPTION

This roadway project will widen existing NC 24/27 in Stanly County from east of Big Bear Creek to SR 1963 (Oakboro Road and St. Martin Road) in Albemarle. The existing two-lane facility will be widened to a four-lane divided highway with a 14-meter (46-ft.) median. Widening will be asymmetrical to avoid impacts to adjacent development and to improve horizontal alignment. Total length is 9.06 km (5.63 miles). The terrain in the vicinity of the project is rolling with natural draws and streams located along the corridor. Three major stream crossings are present on this project.

### ENVIRONMENTAL DESCRIPTION

Land Use

The project location is in a mostly rural area along NC 24/27, which runs through the community of Endy to the Albemarle city limits. There is a mixture of small industrial, residential, and commercial sites throughout the project corridor. During construction of the proposed project, access to the Endy Volunteer Fire Department will be maintained. According to local planning officials, the potential for residential growth along the project corridor is high due to the close proximity to Charlotte. Commercial growth is not expected to be as significant, except for the area close to Albemarle. Some scattered industrial and institutional uses are possible.

Topography and Water Resources

The project is located within the Yakin-Pee Dee River Basin. This river basin is not currently governed by buffer rules; however, a best effort was made to insure minimal impact to wetlands and jurisdictional surface waters. All streams and tributaries within this project area have been assigned a DWQ best usage classification of Class C. Jurisdictional stream crossings are listed in Table 1. Wetlands along the project corridor are listed in Table 2.

**Table 1. Jurisdictional Streams**

| Station | Stream Name | Type | Structure |
|---|---|---|---|
| 192+40 to 193+45 -L- Lt. & Rt. **Site 3** | Tributary to Little Bear Creek | Intermittent/ Perennial (D/S) | 1 @ 1350 mm pipe and 2 @ 1050 mm pipe |
| 194+50 to 194+80 -L- Lt. **Site 4** | Little Bear Creek | Perennial | 3 @ 3.0m x 3.4m Box Culvert Extension |
| 200+10 to 200+60 -L- Lt. & Rt. **Site 5** | Tributary to Little Bear Creek | Intermittent | 2@ 2.4m x 1.8m Box Culvert Extension |
| 222+88 -L- Lt. **Site 6** | Unnamed tributary to Scaly Bark Branch | Intermittent | 1350 mm pipe Extension |

| | | | |
|---|---|---|---|
| 228+40 -L- Rt. & Lt. **Site 7** | Unnamed tributary to Scaly Bark Branch | Intermittent | 1 @ 900 mm pipe and 1 @ 1350 mm RCP |
| 234+60 to 234+70 -L- Rt. **Site 8** | Scaly Bark Branch | Intermittent | 2 @ 2.4m x 1.8m Box Culvert Extension |
| 242+20 -LTRAN RT- Rt. **Site 9** | Unnamed tributary to Scaly Bark Branch | Perennial (below ext. pipe outlet) | 1500 mm pipe Extension |

**Table 2. Wetlands**

| Station | Type of Impact | Minimization of Impact |
|---|---|---|
| 172+00 to172+70 -L- Rt. **Site 1** | Lateral Encroachment (Roadway Cut and Fill) | No feasible avoidance of wetland |
| 184+00 to184+20 -L- Rt. **Site 2** | Lateral Encroachment (Roadway Fill) | No feasible avoidance of wetland |
| 240+95 to 241+45 -LTRAN RT- Rt. **Site 9** | Lateral Encroachment (Roadway Fill) | Reduced fill slopes to 2:1 to minimize lateral encroachment |

## BEST MANAGEMENT PRACTICES

The primary goal of Best Management Practices (BMP's) is to prevent degradation of the state's surface waters by the location, construction, and operation of the highway system. BMP's are activities, practices, and procedures taken to prevent or reduce stormwater pollution. For this project, the most extensive BMP used is the design of burying cross pipes on jurisdictional crossings 20% up to one foot (0.3m). This is to accommodate an adequate passage for aquatic life through pipe culverts with natural bed material. Box culverts throughout the project have also been buried one foot to accommodate aquatic passage. Fill slopes in wetlands and along lateral jurisdictional streams have been changed to 2:1 to decrease the amount of impacts to the greatest extent practical.

The following is a summary of the BMP's used on this project.

*BURY BOTH ENDS OF THREE CROSS-PIPES 0.3m*
*SITE 3*
200+10 to 200+60 -L- Lt. & Rt.

*PLACE 0.6m SILL IN THE SOUTHWEST BARREL AND BURY CULVERT EXTENSION 0.3 m*
*SITE 4*
194+50 to 194+80 -L- Lt.

*PLACE 0.3m SILLS THROUGHOUT NORTHEASTERN BARREL OF CULVERT EXTENSION WHILE PLACING MEANDERING LOW FLOW SILLS (BAFFLES) IN THE SOUTHWESTERN BARREL TO CREATE A LOW FLOW CHANNEL*
*SITE 8*
234+60 to 234+70 -L- Rt.

Beyond the above mentioned BMP's, the presence of a 14-meter (46-ft.) grassed median will provide treatment of pavement runoff before entering into our storm drain systems. Grass lined roadway ditches are also used extensively throughout this project.

These design features will aid in conveying stormwater from the roadway surface to the receiving streams with minimal environmental impacts.