STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 22, 2005

US Army Corps of Engineers
Raleigh Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

ATTENTION: Mr. Eric Alsmeyer
Regulatory Specialist

Subject: **Nationwide Permit 23 Application for Replacement of Bridge No. 37 over Interstate 40 in Davie County**, State Project No. 8.1611501, Federal Aid Project No. BRSTP-801(2), TIP No. B-3637, WBS Element 33185.1.1 Division 9

Dear Mr. Alsmeyer:

Please see the enclosed, Ecosystem Enhancement Program (EEP) acceptance letter, Categorical Exclusion, permit drawings, half size plans, and Jurisdictional Determination for the subject project. The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 37 over Interstate 40 in Davie County. The bridge is considered an inadequate structure receiving a sufficiency rating of 41.5 out of 100 by the NCDOT Bridge Maintenance Unit. Replacement of Bridge No. 37 incorporates modifications to the existing diamond interchange. Modifications will be made to the Interstate 40 westbound off-ramp to provide free flow for Highway 801 northbound traffic. A loop will be added in the northwest quadrant to provide free flow for Highway 801 southbound traffic, to eliminate the existing left turn and the need for a traffic signal at the ramp terminus. In addition, the Interstate 40 eastbound on-ramp is proposed to be widened to two lanes tapering to one before merging onto Interstate 40. The bridge replacement and diamond interchange modifications are proposed to increase the capacity and safety of this facility.

Bridge construction will be staged in order to maintain traffic on-site. Initially, two lanes will be constructed east of the existing bridge. Traffic will then be shifted to the new bridge, the existing structure will be removed, and the remaining structure will be constructed.

Schedule: The project is a design build project with a contract let of June 21, 2005. Actual construction dates are not currently know because this project will be handled under Design Build. Construction date will be determined after the project is awarded the Design Build Firm.

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
PLB SUITE 168
RALEIGH NC 27604

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Yadkin River basin (HUC 03040101). The project will impact one unnamed intermittent tributary of Smith Creek and associated wetlands. This site is described as System 1 in the attached planning document and stream impacts will not require mitigation according to Eric Alsmeyer of the USACE. Smith Creek has been assigned a best usage classification of **C**, by the Division of Water Quality.

Bridge Demolition: Bridge No. 37 is located on Highway 801 over Interstate 40 in Davie County. Bridge No. 37 is a two-lane, four-span, 231-feet long, steel beam structure with a reinforced concrete floor on reinforced concrete caps on prestressed concrete pile. The bridge currently does not have posted weight limits. Bridge No. 37 spans Interstate 40; therefore, it will be removed without dropping any components into waters of the United States.

Temporary Impacts: No temporary impacts are anticipated.

Permanent impacts: Construction of the new on ramp (Ramp C) will result in the following impacts to System 1

- 0.03 acre of permanent fill within riverine bottomland hardwood wetlands due to Ramp C Construction
- 186 linear feet of permanent fill within an unimportant intermittent stream due to Ramp C Construction

Avoidance, Minimization, and Compensatory Mitigation

NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional area impacts, and to provide full compensatory mitigation for all remaining jurisdictional area impacts. Avoidance measures were taken during the planning and National Environmental Policy Act (NEPA) phases, and minimization measures were incorporated as part of the project design. Avoidance and minimization efforts include the following.

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- In order to minimize potential impacts to water resources in the project area NCDOT's Best Management Practices for the Protection of Surface Waters will be strictly enforced during the construction phase of the project.

In accordance with the Memorandum of Agreement (MOA) signed July 22, 2003 by the United States Army Corps of Engineers (USACE), the North Carolina Department of Environment and Natural Resources (NCDENR), and the NCDOT, it is understood that the NCDENR Ecosystem Enhancement Program (EEP) will assume responsibility for satisfying the Clean Water Act. EEP will therefore fulfill compensatory mitigation requirements for NCDOT projects listed in Exhibit 1 of the MOA during the EEP transition period which ends on June 30, 2005.

Since the subject project is listed in Exhibit 1, the necessary compensatory mitigation to offset unavoidable impacts to waters jurisdictional under the Clean Water Act will be provided by EEP. Compensatory mitigation will derive from an inventory of assets already in place within the

same 8-digit cataloguing unit (Hydrologic Catalog Unit 03040101). NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The remaining unavoidable impacts will be offset as follows.

- Compensatory mitigation for impacts to 0.03 acre of jurisdictional wetlands will be provided by the EEP program.
- Impacts to 186 linear feet of unimportant intermittent stream will not require compensatory mitigation as determined by USACE representative Eric Alsmeyer.

FEDERALLY PROTECTED SPECIES

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists 1 species for Davie County as of January 29, 2003 as federal protected. A field survey was conducted in 2001 and a biological conclusion of no effect was rendered for Michaux's sumac. During the field survey it was determined that the project site does have habitat for the Michaux's. Re-surveys will be conducted during the survey window between May and October of 2005. The NC Natural Heritage database of rare species and unique habitats was reviewed in February 2005 and there is no documentation of federally protected species within 1 mile of the project area.

Table 1. Species Under Federal Protection in Davie County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Michaux's sumac	*Rhus michauxii*	Endangered	Yes	No Effect

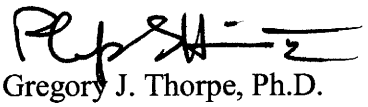
REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certification number 3403 will apply to this project. The NCDOT will adhere to all general conditions of these WQCs. Therefore, written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200 we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their notification.

A copy of this permit application will be posted on the NCDOT website at: http://www.ncdot.org/planning/pe/naturalunit/Permit.html. If you have any questions or need additional information please call Mr. Brett Feulner at (919) 715-1488.

Sincerely,



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

Cc with attachment
Mr. John Hennessy, NCDWQ (2 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Greg Perfetti, P.E., Structure Design
Dr. David Chang, P.E., Hydraulics Unit
Mr. S.P. Ivey, P.E., Div. 9 Engineer
Mr. Mark Staley, Roadside Environmental
Ms. Dianne Hampton, Division 9, DEO
Mr. Rodger Rochelle, Alternative Delivery Systems (2 copies)

w/o attachment
Mr. David Franklin, USACE
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Project Management/ Scheduling Unit
Mr. Art McMillian, P.E., Highway Design
Ms. Beth Harmon, EEP
Ms. Laurie P. Smith, CPA, NCDOT
Mr. Elmo Vance, PDEA

Ecosystem Enhancement PROGRAM

February 14, 2005

Mr. Eric Alsmeyer
U. S. Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

Dear Mr. Alsmeyer:

Subject: EEP Mitigation Acceptance Letter:

B-3637, Bridge Number 37 over I-40, Davie County; Yadkin River Basin (Cataloging Unit 03040101); Central Piedmont (CP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide mitigation for the 0.03 acre of unavoidable riverine wetland impacts associated with the above referenced project.

The subject project is not listed in Exhibit 2 of 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 dated July 22, 2003. The EEP is only committed to provide the mitigation needs for projects listed on Exhibit 2 during the first two years of the program; however Amendment 1 details how non-Exhibit 2 projects may be swapped for an appropriate project included on the Exhibit 2 list. Specifically, Amendment 1 states that:

> "Exhibit 2 may be modified if requested jointly by NCDENR and NCDOT, and approved in writing by the USACE. In no event may the total projected impacts of projects per cataloging unit on Exhibit 2 exceed the total projected impacts of projects per cataloging unit on Exhibit 2 as it existed at the time of the original execution of the MOA, July, 2003."

In this case, the NCDOT has not proposed to swap this project for an appropriate project included on the Exhibit 2 list. However, EEP currently has surplus riverine wetland and stream mitigation with sufficient assets to cover this years projected mitigation requirements plus the mitigation for the above referenced project. Therefore, the EEP intends to provide compensatory riverine wetland and stream mitigation up to a

2:1 ratio in Cataloging Unit 03040101 of the Yadkin River Basin. Mitigation sites currently containing surplus mitigation assets consists of, but not inclusive of, the Fisher River and Deep River Mitigation Sites.

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

Sincerely,

James B Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Phil Harris, Office of Natural Environment, NCDOT
John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3637

Ecosystem Enhancement PROGRAM

February 14, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-3637, Bridge Number 37 over I-40, Davie County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide riverine wetland mitigation for the subject project. Based on the information supplied by you in a letter dated February 7, 2005, the impacts are located in CU 03040101 of the Yadkin River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Riverine Wetland Impacts: 0.03 acre

The subject project is not listed in Exhibit 2 of 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 dated July 22, 2003. The EEP is only committed to provide the mitigation needs for projects listed on Exhibit 2 during the first two years of the program; however Amendment 1 details how non-Exhibit 2 projects may be swapped for an appropriate project included on the Exhibit 2 list. Specifically, Amendment 1 states that:

> "Exhibit 2 may be modified if requested jointly by NCDENR and NCDOT, and approved in writing by the USACE. In no event may the total projected impacts of projects per cataloging unit on Exhibit 2 exceed the total projected impacts of projects per cataloging unit on Exhibit 2 as it existed at the time of the original execution of the MOA, July, 2003."

In this case, the NCDOT has not proposed to swap this project for an appropriate project included on the Exhibit 2 list. However, EEP currently has surplus riverine

wetland and stream mitigation with sufficient assets to cover this years projected mitigation requirements plus the mitigation for the above referenced project. Therefore, the EEP agrees to accept this project and will provide compensatory riverine wetland and stream mitigation up to a 2:1 ratio in Cataloging Unit 03040101 of the Yadkin River Basin.

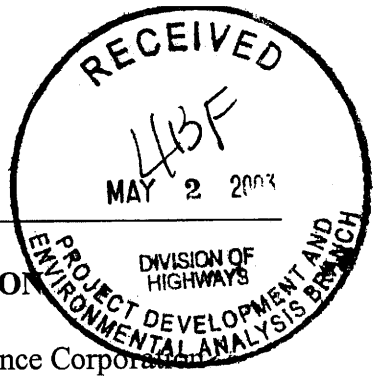
If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

James B. Stanfill Jr

William D. Gilmore, P.E.
EEP Director

cc: Mr. Eric Alsmeyer, USACE-Raleigh
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3637



U.S. ARMY CORPS OF ENGINEERS
Wilmington District

Action ID: 200120223 (TIP B-3637) **County:** Davie

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Project Proponent:	NCDOT	**Agent:**	EcoScience Corporation
Address:	ATTN: Gregory J. Thorpe, Ph.D. Environmental Management Director, PDEA 1548 Mail Service Center Raleigh, NC 27699-1548		ATTN: Mr. Alexander Smith 612 Wade Avenue Raleigh, North Carolina 27605
Telephone No.:	(919) 733-7844, x237 (B. Goodwin)		(919) 828-3433

Location of Property (waterbody, Highway name/number, town, etc.): Study area for replacement of Bridge No. 37 on NC 801 over I –40 (study area includes entire interchange area), northwest of Hillsdale, North Carolina (TIP B-3637).

Basis for Determination: The site contains stream channels of unnamed tributaries of Smith Creek and the Yadkin River, with indicators of ordinary high water marks, and wetlands adjacent to the tributaries.

Indicate Which of the Following Apply:

____ There are waters of the U.S., to include wetlands, on the above described property which we strongly suggest should be delineated and surveyed. The surveyed wetland lines must be verified by our staff before the Corps will make a final jurisdictional determination on your property.

____ Because of the size of your property and our present workload, our identification and delineation of your wetlands cannot be accomplished in a timely manner. You may wish to obtain a consultant to obtain a more timely delineation of the wetlands. Once the consultant has flagged a wetland line on the property, Corps staff will review it, and, if it is accurate, we strongly recommend that you have the line surveyed for final approval by the Corps. The Corps will not make a final jurisdictional determination on your property without an approved survey.

__X__ The waters of the U.S., to include wetlands, within the study area limits, have been delineated by your consultant, the delineation has been reviewed in the office by the Corps, and the delineation as shown on the attached drawings (Figs. 1 –3) has been determined by the Corps to be accurate, based on the information available at this time. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

____ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

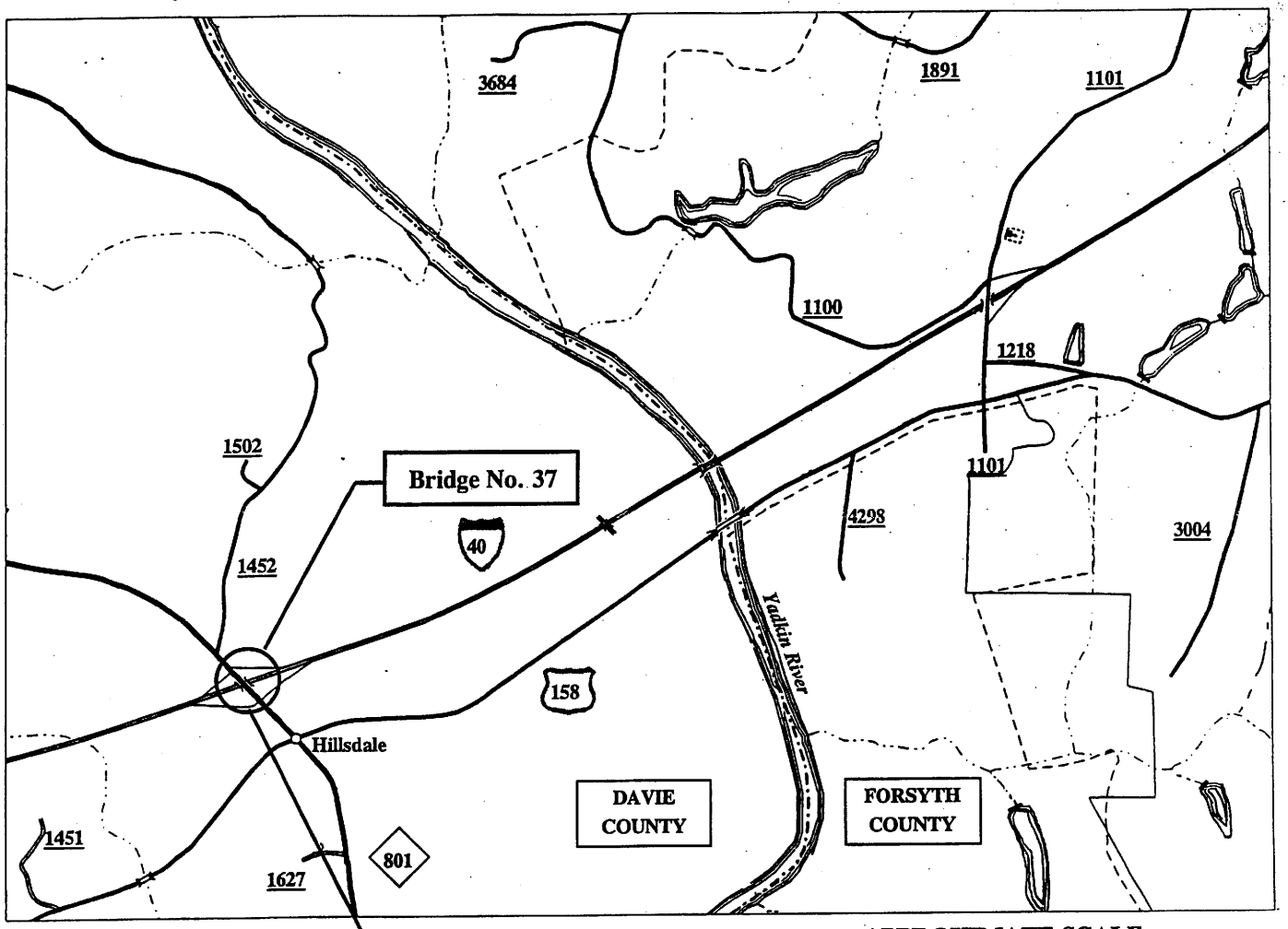
Placement of dredged or fill material in wetlands on this property without a Department of the Army Permit is in most cases a violation of Section 301 of the Clean Water Act (33 USC 1311). A permit is not required for work on the property restricted entirely to existing high ground. If you have any questions regarding the Corps of Engineers regulatory program, please contact Eric Alsmeyer **at telephone number** (919) 876 - 8441 extension 23.

Project Manager Signature Eric Alsmeyer

Date April 30, 2003 **Expiration Date** April 30, 2008

SURVEY PLAT OR FIELD SKETCH OF THE DESCRIBED PROPERTY AND THE WETLAND DELINEATION FORM MUST BE ATTACHED TO THE FILE COPY OF THIS FORM.

CF: Agent - ESC

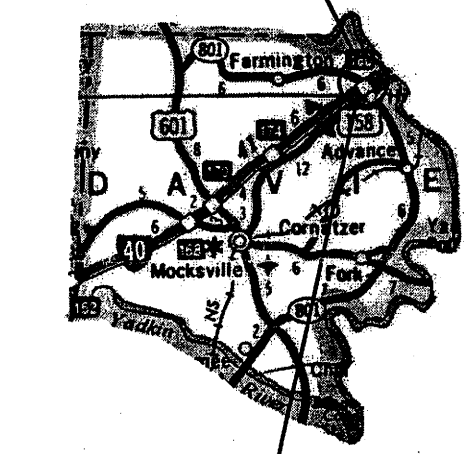


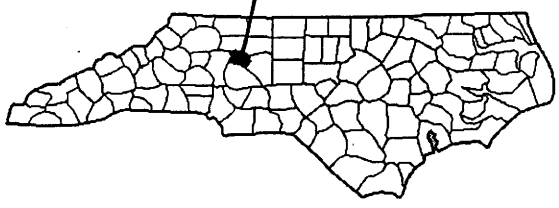
APPROXIMATE SCALE

0 .5

MILES

N



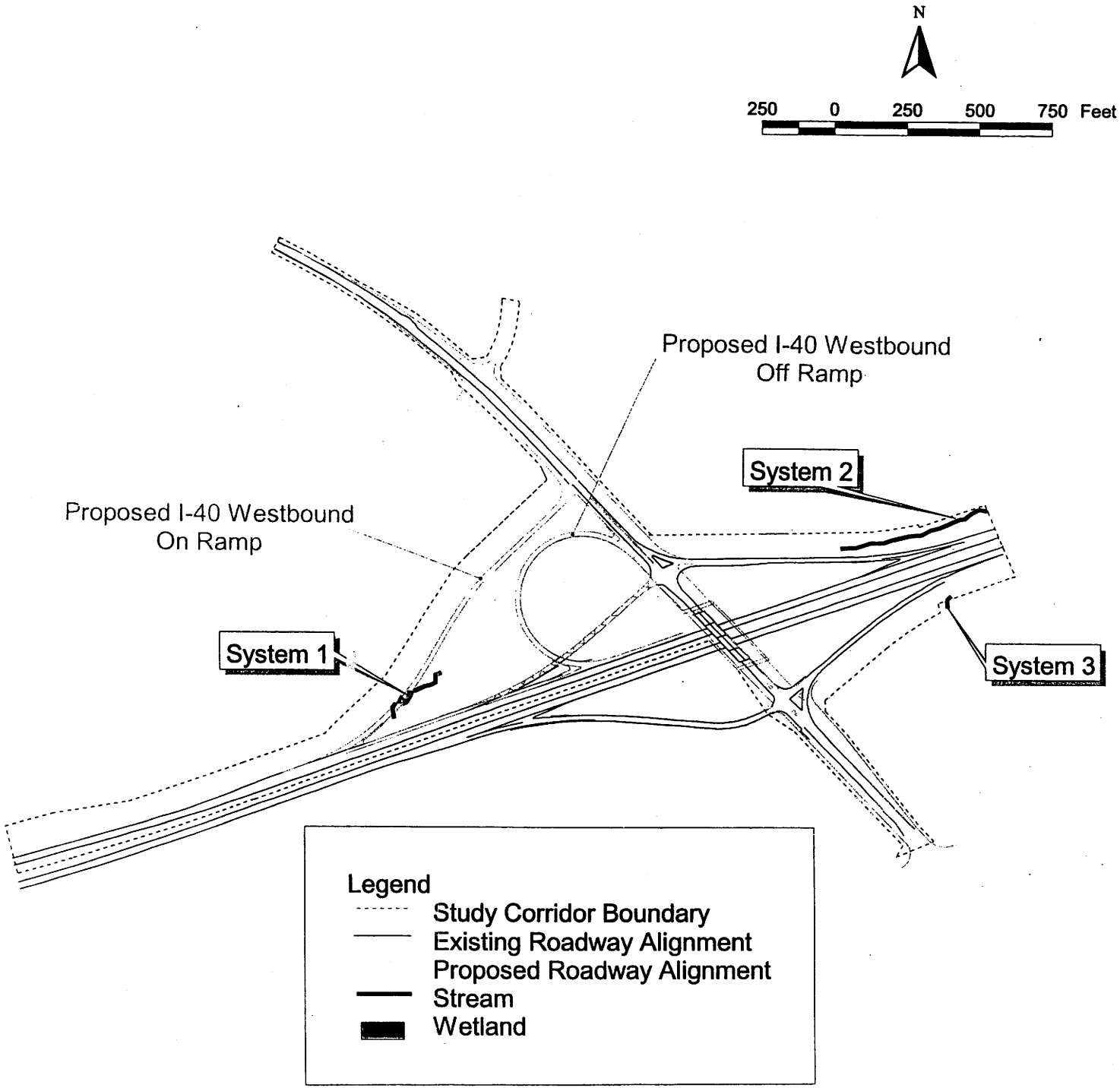


North Carolina
Department of Transportation
Project Development
& Environmental Analysis Branch

DAVIE COUNTY
Bridge No. 37
on NC 801
over I-40
TIP No. B-3637

November, 2000

Figure 1



EcoScience
Corporation
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
Ph: 919 828 3433
Fax: 919 828 3518

Client:

TGS
Engineers

Project:

Replacement of Bridge No. 37
NC 801 over Interstate 40
Davie County, North Carolina

Title:

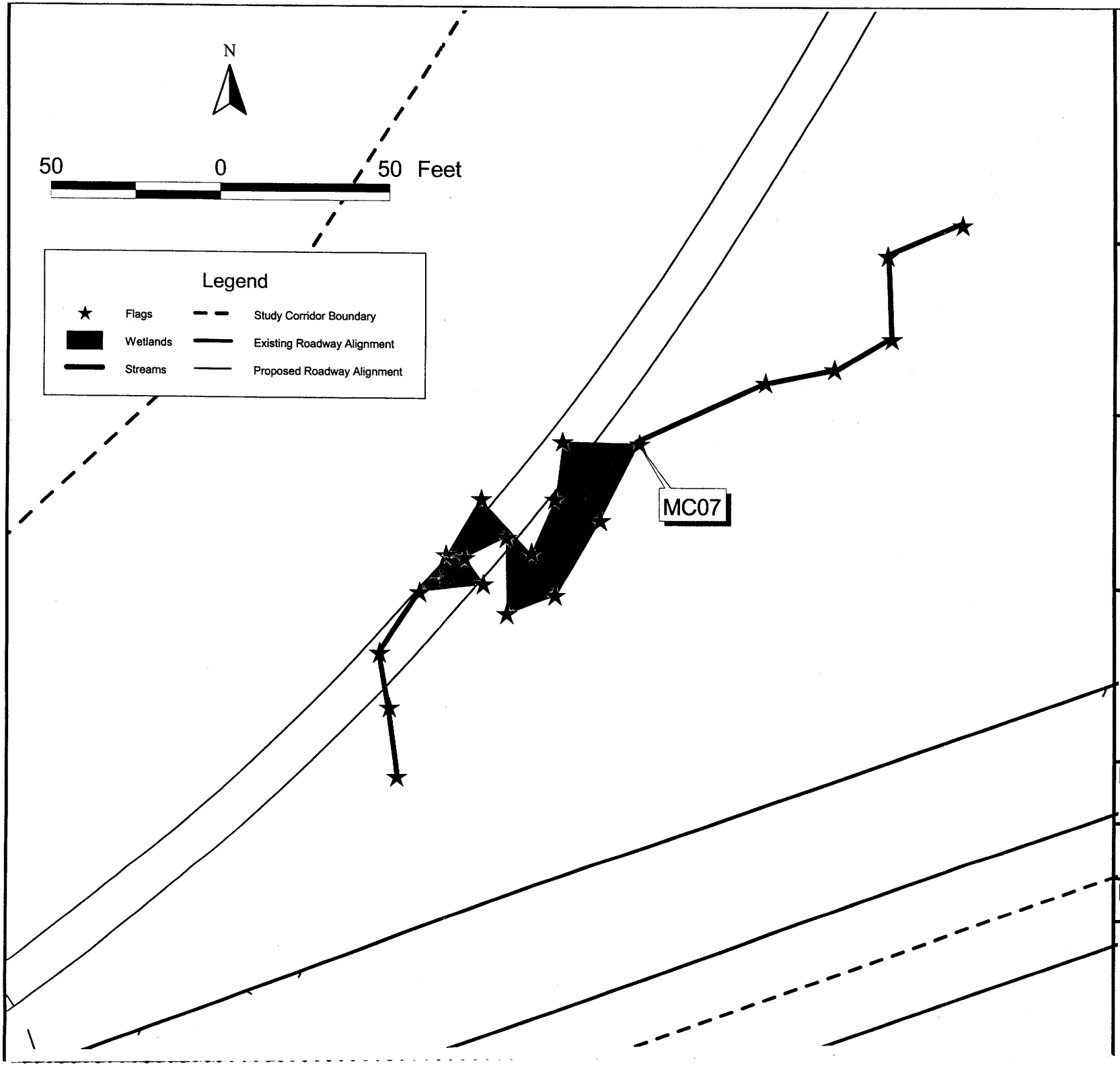
Proposed Alternative
and
Jurisdictional Systems

Dwn By:	Date:
BRB	Oct 200
Ckd By:	Scale:
APS	As Shown

ESC Project No: 01-074

FIGURE

2



EcoScience
EcoScience Corporation
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
Ph: 919 828 3433
Fax: 919 828 3518

Client:
TGS Engineers

Project:
Replacement of Bridge No. 37
NC 801 over Interstate 40
Davie County, North Carolina

Title:
System 1
Routine Wetland Determination
Plot ID Location

Dwn By:	Date:
BRB	Oct 2002
Ckd By:	Scale:
APS	As Shown

ESC Project No: 01-074

FIGURE
3

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

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

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

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Mr. Eric C. Alsmeyer, Regulatory Project Manager U.S. Army Corps of Engineers, Wilmington District Raleigh Regulatory Field Office 6508 Falls of Neuse Road, Suite 120 Raleigh, North Carolina 27615-6814	If you only have questions regarding the appeal process you may also contact: Mr. Arthur Middleton, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

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

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

DIVISION ENGINEER:
Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-3490

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: NCDOT, Division of Highways	File Number: 200120223/B-3637	Date: April 30, 2003
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

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

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

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

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

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

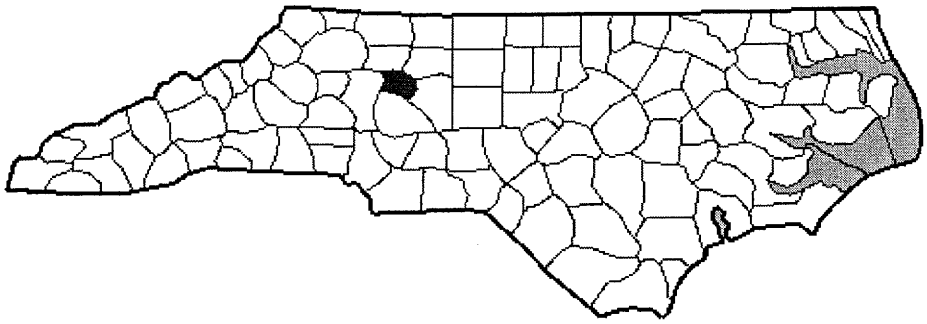
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

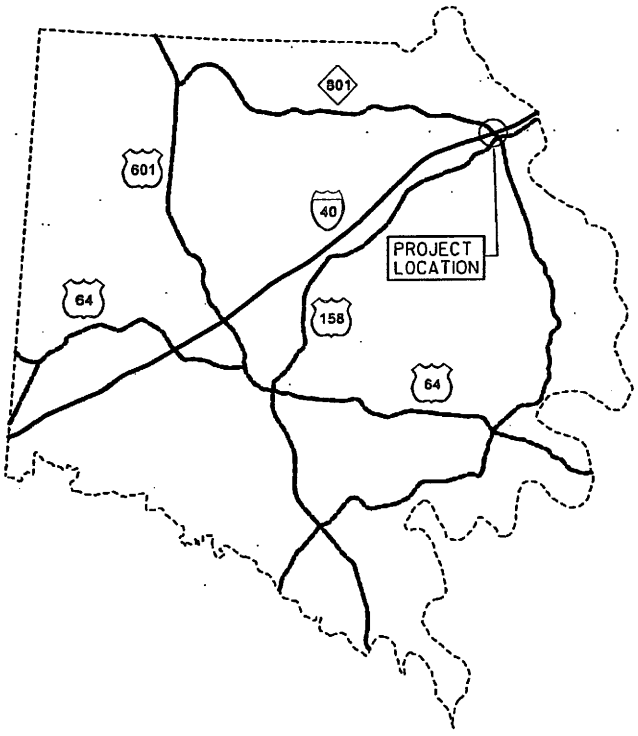
D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

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

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

NORTH CAROLINA





VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
PROJECT: 8.1611501 (B-3637)
DAVIE COUNTY

BRIDGE NO. 37
OVER I-40 ON NC 801

SHEET 1 OF 10 **NOVEMBER 2004**

WETLAND LEGEND

WLB — WETLAND BOUNDARY

WLB / WLB — WETLAND

F / F — DENOTES FILL IN WETLAND

S / S — DENOTES FILL IN SURFACE WATER

P / P — DENOTES FILL IN SURFACE WATER (POND)

T / T — DENOTES TEMPORARY FILL IN WETLAND

E / E — DENOTES EXCAVATION IN WETLAND

TS / TS — DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

NCDOT

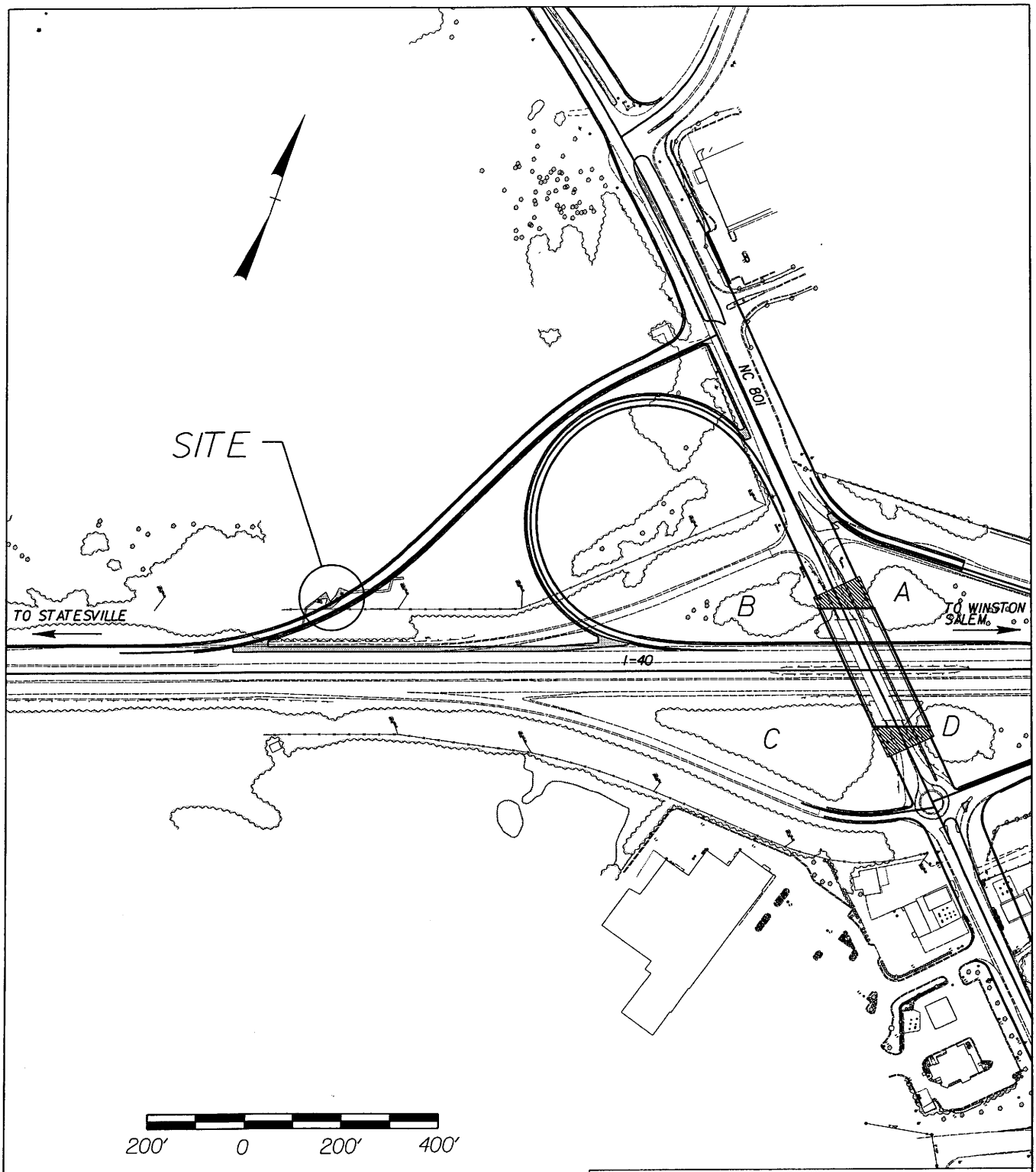
DIVISION OF HIGHWAYS

DAVIE COUNTY

PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37

OVER I-40 ON NC 801



SITE MAP

NCDOT

DIVISION OF HIGHWAYS

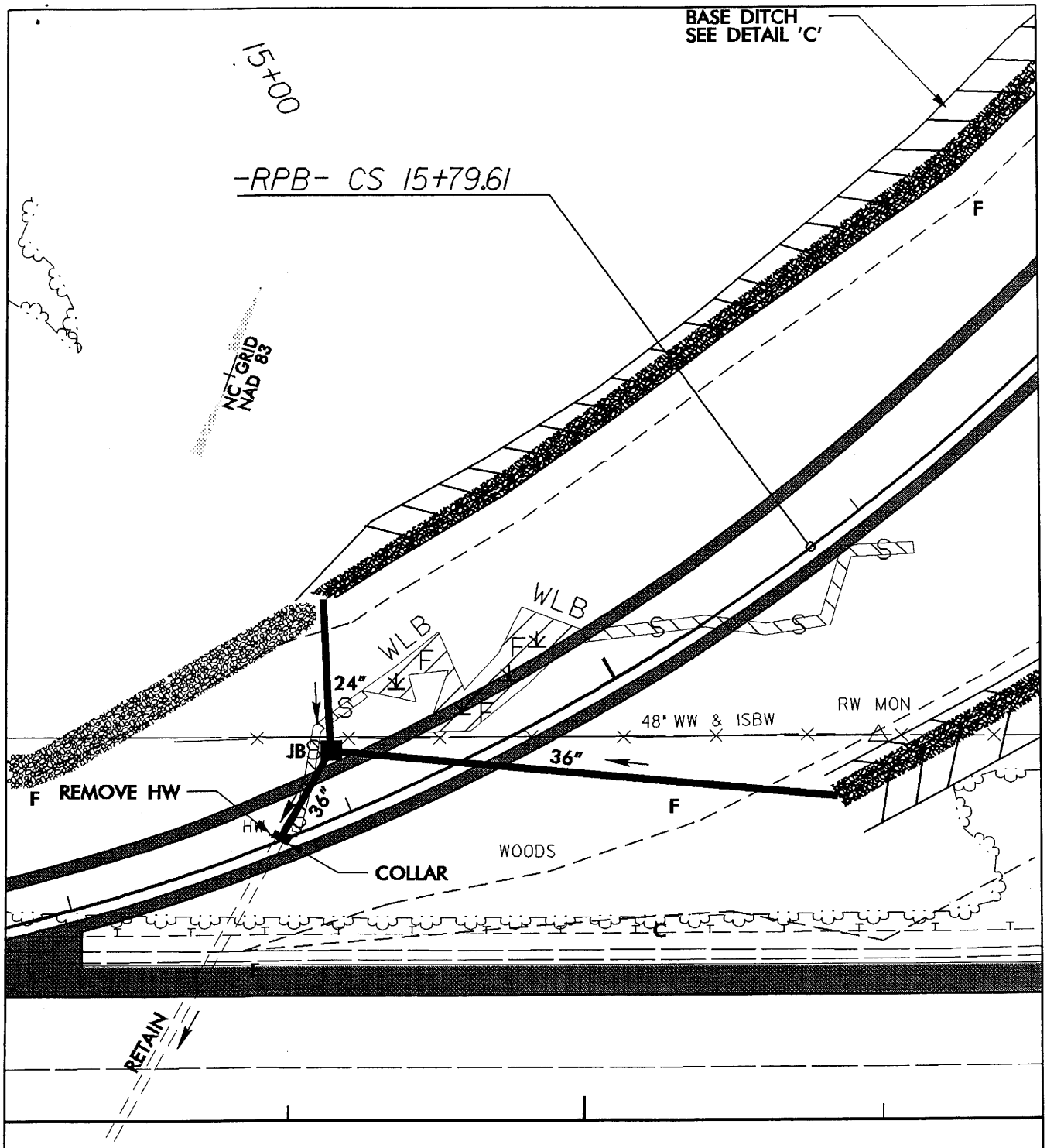
DAVIE COUNTY

PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37

OVER I-40 ON NC 801

SHEET 3 OF 10 **NOVEMBER 2004**



F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

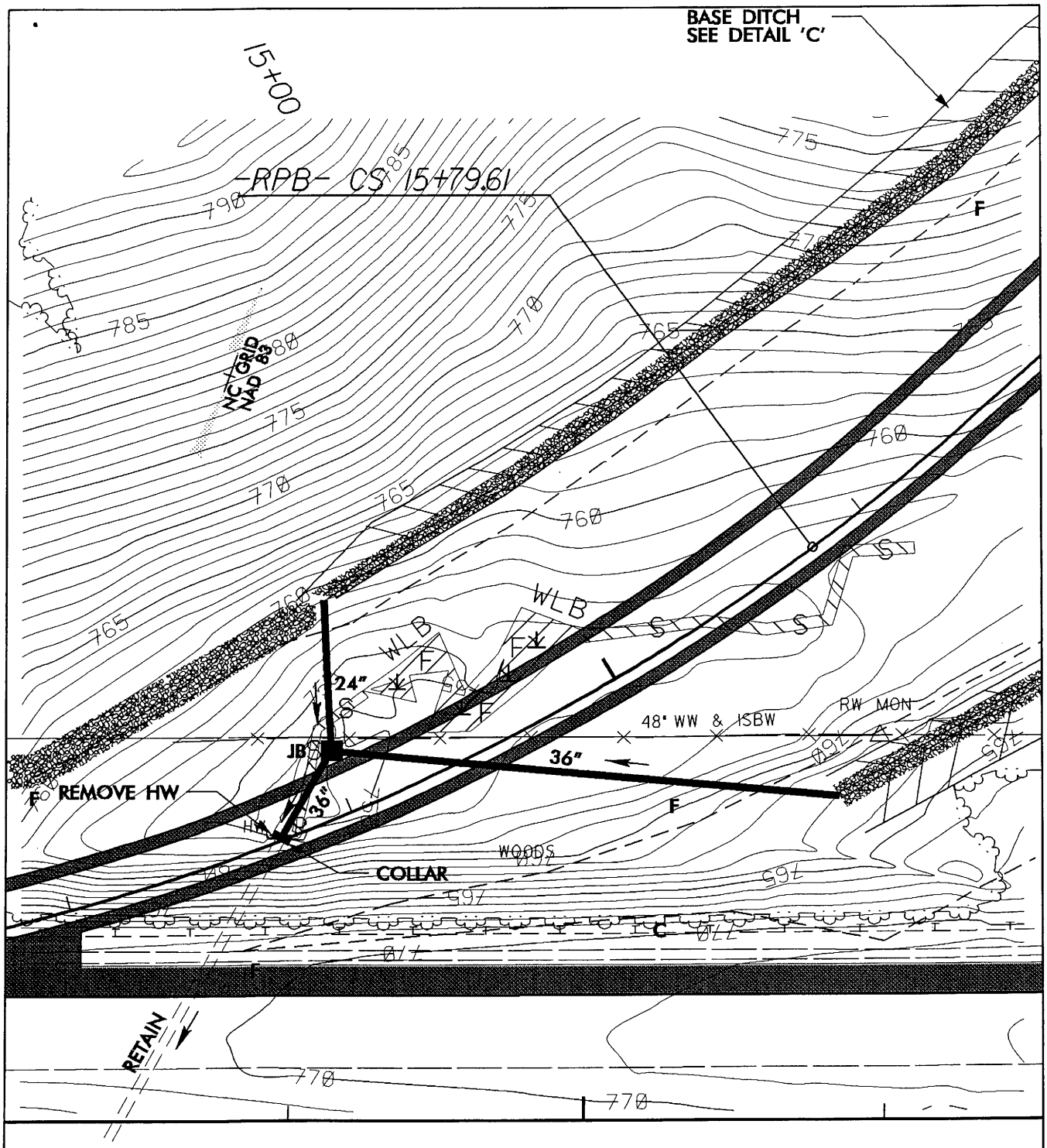
SCALE: 1" = 50'

NCDOT

DIVISION OF HIGHWAYS
DAVIE COUNTY
PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37
OVER I-40 ON NC 801

SHEET 4 OF 10



F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

SCALE: 1" = 50'

NCDOT

DIVISION OF HIGHWAYS

DAVIE COUNTY

PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37

OVER I-40 ON NC 801

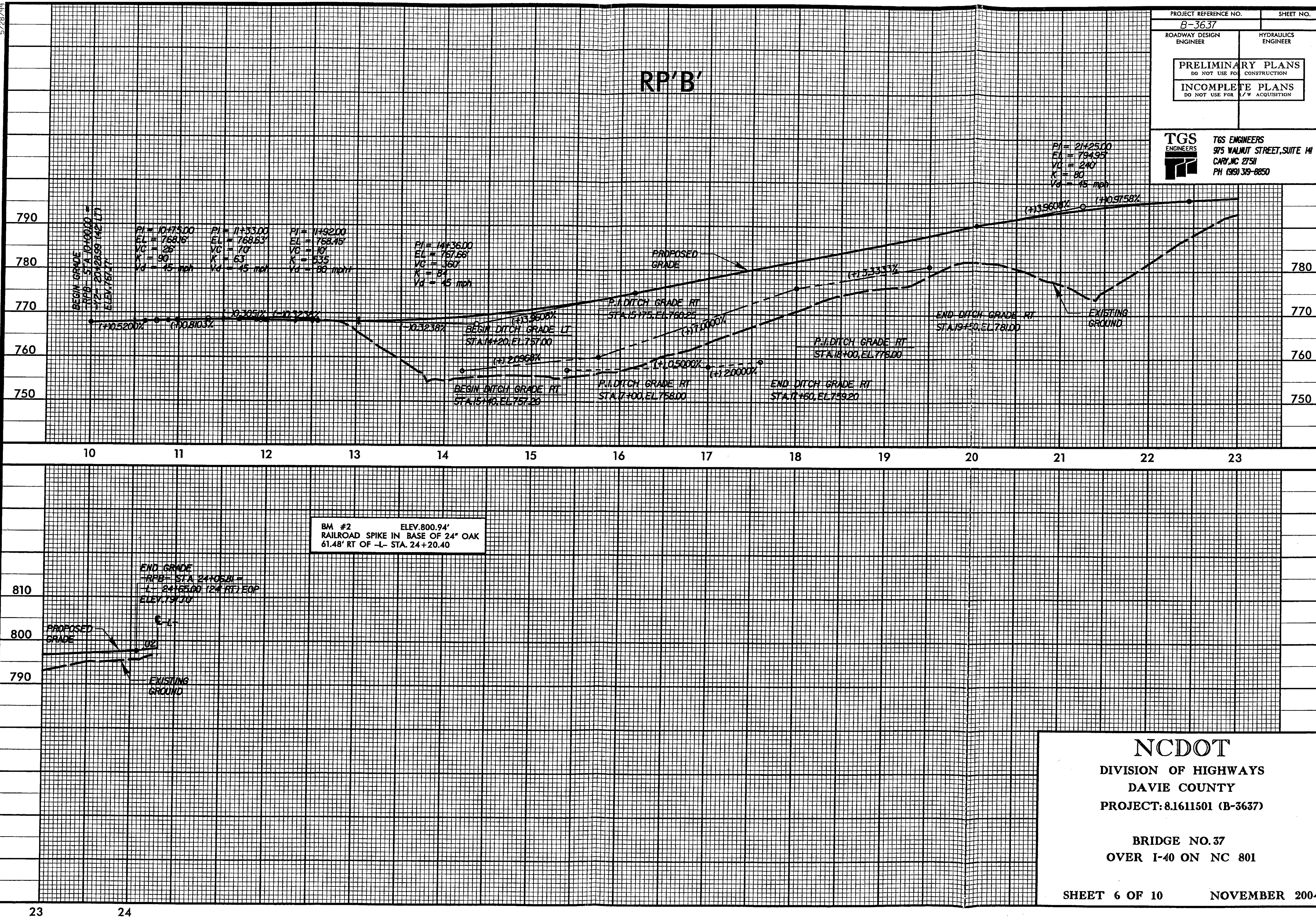
SHEET 5 OF 10

PROJECT REFERENCE NO. B-3637 | SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



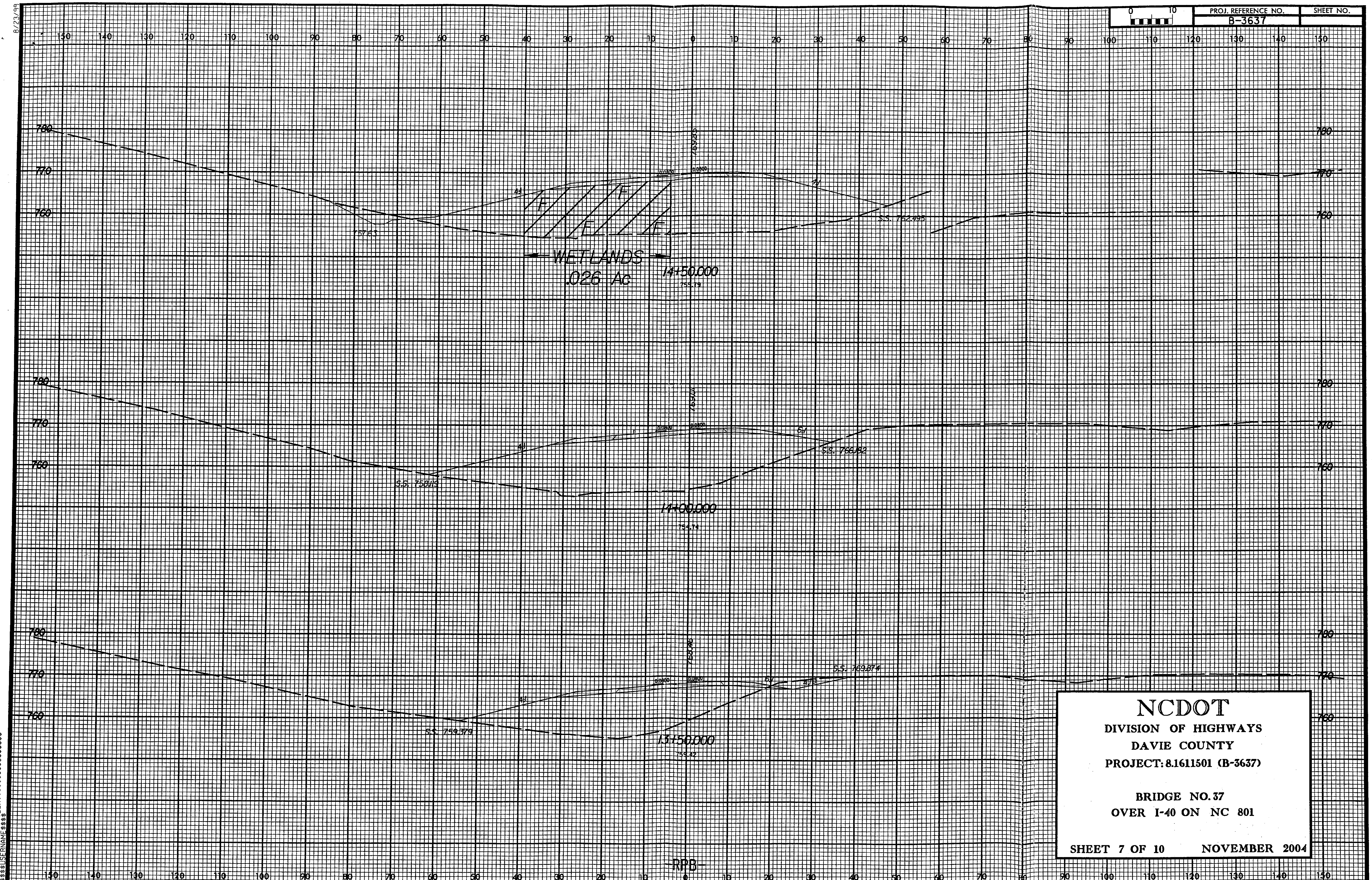
TGS ENGINEERS
975 WALNUT STREET,SUITE 141
CARY,NC 27511
PH (919) 319-8850

NCDOT
DIVISION OF HIGHWAYS
DAVIE COUNTY
PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37
OVER I-40 ON NC 801

SHEET 6 OF 10 NOVEMBER 2004

$$$$SYSTIME$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



NCDOT
DIVISION OF HIGHWAYS
DAVIE COUNTY
PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37
OVER I-40 ON NC 801

SHEET 7 OF 10 NOVEMBER 2004

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-3637	

16+00.000
754.08

15+50.000
755.78

15+00.000
755.92

NCDOT

DIVISION OF HIGHWAYS
DAVIE COUNTY
PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37
OVER I-40 ON NC 801

SHEET 8 OF 10 NOVEMBER 2004

RPB

$$$$$$SYSTIME$$$$$
$$$$$$USERNAME$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

MATCHLINE -L- STA. 23+00.00 MATCH TO SHEET NO. 4

MATCHLINE -Y2- STA. 20+00.00 MATCH TO SHEET NO. 7

MATCHLINE -L- STA. 37+00.00 MATCH TO SHEET NO. 6

SITE 1

A

B

C

D

BRIDGE/ROADWAY RELATIONSHIP SKETCH
(NOT TO SCALE)

TYPE I & II

4' MONOLITHIC CONC. ISLAND

-L- S 43°49'55.8" E

TYPE III

GRAU 350

NC 801

2005 ADT (in hundreds)
2025 ADT (in hundreds)

NC GRID NAD 83

SEE SHEET 8 FOR LINE -L- PROFILE AND GRADE
SEE SHEET 9 FOR LINE -LPA- PROFILE AND GRADE
SEE SHEET 10 FOR LINE -LPB- PROFILE AND GRADE
SEE SHEET 11 FOR LINES -LPB-, -RPC- & -RPD- PROFILES AND GRADES

TGS ENGINEERS
575 WALNUT STREET, SUITE M
CARY, NC 27511
PH (919) 363-8850

PRELIMINARY PLANS
NOT FOR CONSTRUCTION
INCOMPLETE PLANS
NOT FOR BID OR CONSTRUCTION

PROJECT REFERENCE NO. B-3637
SHEET NO. 5A

DAVIE COUNTY

BRIDGE NO. 37
OVER LOG ON NC 801

B-3637 DAVIE

SGM

NOVEMBER 2004

WCP FEB. 2004

GRAPHIC SCALE
PLANS 50 25 0 50 100
PROFILE 50 0 50 100

REVISIONS

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

MATCHLINE -L- STA. 23+00.00 MATCH TO SHEET NO. 4

MATCHLINE -Y2- STA. 20+00.00 MATCH TO SHEET NO. 7

MATCHLINE -L- STA. 37+00.00 MATCH TO SHEET NO. 6

SITE 1

A

B

C

D

BRIDGE/ROADWAY RELATIONSHIP SKETCH
(NOT TO SCALE)

PRELIMINARY PLANS
NOT FOR CONSTRUCTION
INCOMPLETE PLANS
NOT FOR BID OR CONSTRUCTION

TGS ENGINEERS
515 WALNUT STREET, SUITE 101
CARY, NC 27511
PH (919) 319-8800

PROJECT REFERENCE NO. B-3637
SHEET NO. 5A
R/W SHEET NO.

SEE SHEET 8 FOR LINE -L- PROFILE AND GRADE
SEE SHEET 9 FOR LINE -LPA- PROFILE AND GRADES
SEE SHEET 10 FOR LINE -RPB- PROFILE AND GRADE
SEE SHEET 11 FOR LINES -LPB-, -RPC- & -RPD- PROFILES AND GRADES

NC DOT
DIVISION 13
DAVIE COUNTY

PROJECT: B-3637 (B-3637)

BRIDGE NO. 37
OVER SR 1402 ON NC 801

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE & SIGNALS

B-3637 DAVIE

DESIGNED BY SGM NOVEMBER, 2004

DRAWN BY WCP FEB. 2004

GRAPHIC SCALE
80 40 0 80 160 0 100 200
PLANS PLANS

NC GRID NAD 83

2005 ADT (in hundreds)
2025 ADT (in hundreds)

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	14+25-15+06 -RPB-	36" RCP	0.03				0.009			186	
TOTALS:			0.03	0	0	0	0.009	0	0	186	0

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DAVIE COUNTY
PROJECT: 33185.1.1 (B-3637)
BRIDGE #37 OVER I-40
ON NC 801

November-04

Form Revised 3/22/01

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
4	J.B. HARRISON PROPERTIES	P.O. BOX 1282 MOCKSVILLE, NC 27028

NCDOT

DIVISION OF HIGHWAYS

DAVIE COUNTY

PROJECT: 8.1611501 (B-3637)

BRIDGE NO. 37

OVER I-40 ON NC 801

TIP PROJECT: B-3637

CONTRACT:

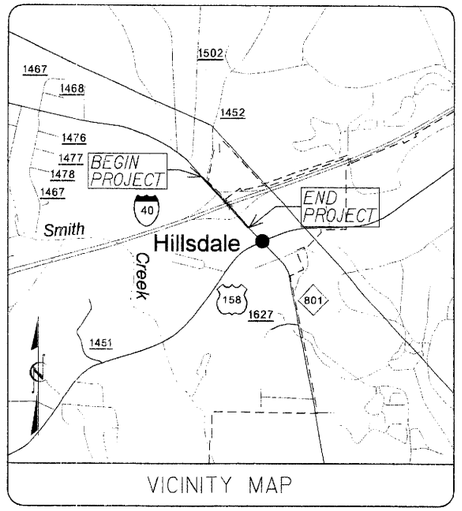
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

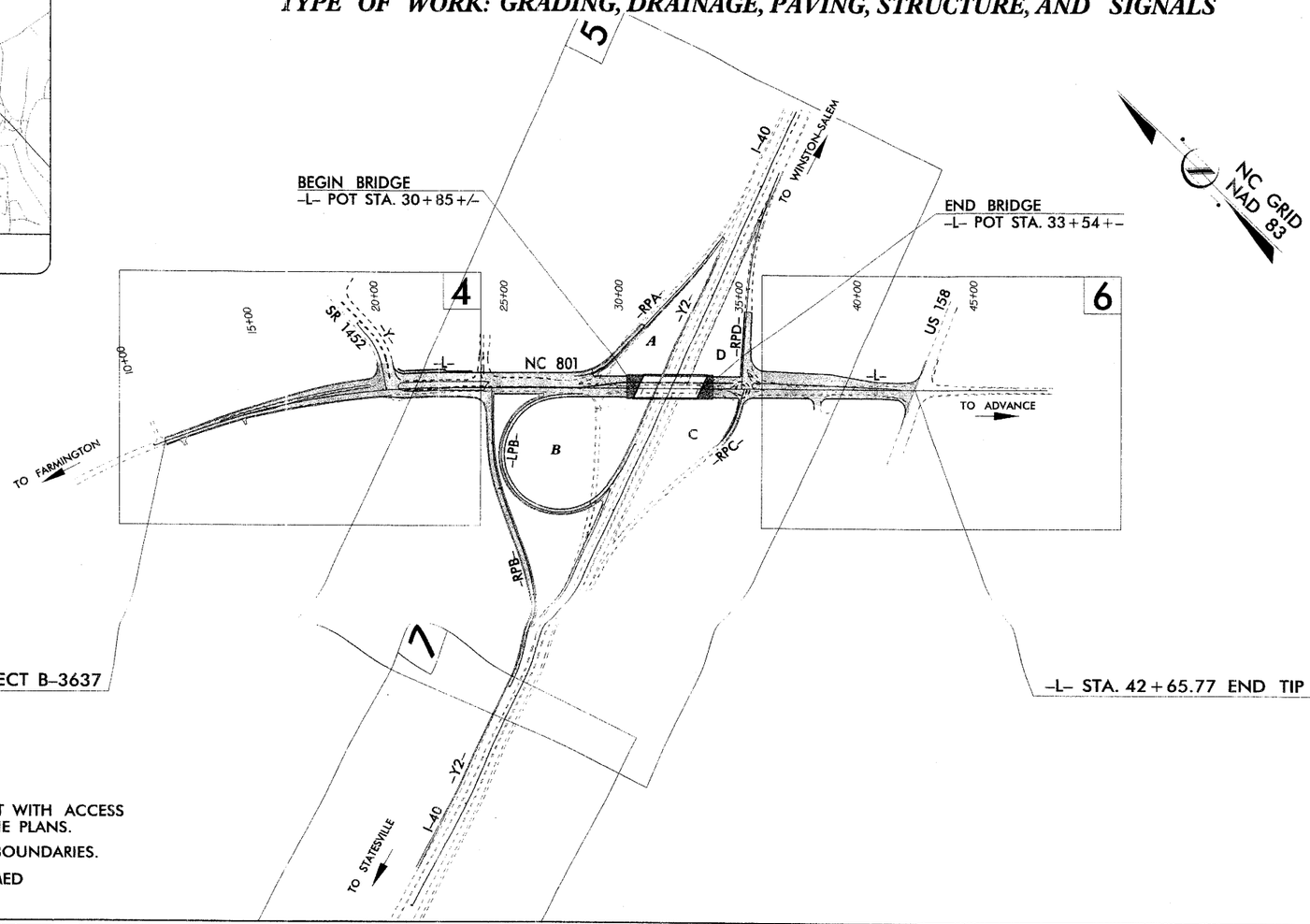
DAVIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3637	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33185.1.1	BRSTP-801(2)	PE	

LOCATION: BRIDGE NO. 37 OVER I-40 ON NC 801
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE, AND SIGNALS



VICINITY MAP



-L- STA. 10+50.00 BEGIN TIP PROJECT B-3637

-L- STA. 42+65.77 END TIP PROJECT B-3637

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005	=	20,270
ADT 2025	=	29,655
DHV	=	11 %
D	=	65 %
T	=	5 % *
V	=	40 MPH

* (TTST 1% + DUAL 4%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3637 =	*0.558 MI*
LENGTH STRUCTURE TIP PROJECT B-3637 =	*0.051 MI*
TOTAL LENGTH TIP PROJECT B-3637 =	*0.609 MI*

PLANS PREPARED BY:	PLANS PREPARED FOR:
TGS ENGINEERS 975 WALNUT STREET, SUITE 141 CARY, NC 27511 PH (919) 319-8850	DIVISION OF HIGHWAYS 1000 Birch Ridge Dr. Raleigh, NC 27610
2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	CHARLES L. FLOWE, P.E. PROJECT ENGINEER
LETTING DATE:	W. CRAIG PARKER, P.E. PROJECT DESIGN ENGINEER
NCDOT CONTACT:	TERESA BRUTON, PE PROJECT ENGINEER - DESIGN SERVICES

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

PROJECT REFERENCE NO.	SHEET NO.
B-3637	1-B

*S.U.E = SUBSURFACE UTILITY ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement
Curb
Prop. Slope Stakes Cut
Prop. Slope Stakes Fill
Prop. Woven Wire Fence
Prop. Chain Link Fence
Prop. Barbed Wire Fence
Prop. Wheelchair Ramp
Curb Cut for Future Wheelchair Ramp
Exist. Guardrail
Prop. Guardrail
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
Prop. Control of Access Line
Exist. Easement Line
Prop. Temp. Construction Easement Line
Prop. Temp. Drainage Easement Line
Prop. Perm. Drainage Easement Line

HYDROLOGY

Stream or Body of Water
River Basin Buffer
Flow Arrow
Disappearing Stream
Spring
Swamp Marsh
Shoreline
Falls, Rapids
Prop Lateral, Tail, Head Ditches

STRUCTURES

MAJOR
Bridge, Tunnel, or Box Culvert
Bridge Wing Wall, Head Wall and End Wall

MINOR
Head & End Wall
Pipe Culvert
Footbridge
Drainage Boxes
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
U/G Telephone Cable Hand Hold
Cable TV Pedestal
U/G TV Cable Hand Hold
U/G Power Cable Hand Hold
Hydrant
Satellite Dish
Exist. Water Valve
Sewer Clean Out
Power Manhole
Telephone Booth
Cellular Telephone Tower
Water Manhole
Light Pole
H-Frame Pole
Power Line Tower
Pole with Base
Gas Valve
Gas Meter
Telephone Manhole
Power Transformer
Sanitary Sewer Manhole
Storm Sewer Manhole
Tank; Water, Gas, Oil
Water Tank With Legs
Traffic Signal Junction Box
Fiber Optic Splice Box
Television or Radio Tower
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement

Recorded Water Line
Designated Water Line (S.U.E.*)
Sanitary Sewer
Recorded Sanitary Sewer Force Main
Designated Sanitary Sewer Force Main(S.U.E.*)
Recorded Gas Line
Designated Gas Line (S.U.E.*)
Storm Sewer
Recorded Power Line
Designated Power Line (S.U.E.*)
Recorded Telephone Cable
Designated Telephone Cable (S.U.E.*)
Recorded U/G Telephone Conduit
Designated U/G Telephone Conduit (S.U.E.*)
Unknown Utility (S.U.E.*)
Recorded Television Cable
Designated Television Cable (S.U.E.*)
Recorded Fiber Optics Cable
Designated Fiber Optics Cable (S.U.E.*)
Exist. Water Meter
U/G Test Hole (S.U.E.*)
Abandoned According to U/G Record
End of Information

BOUNDARIES & PROPERTIES

State Line
County Line
Township Line
City Line
Reservation Line
Property Line
Exist. Iron Pin
Property Corner
Property Monument
Property Number
Parcel Number
Fence Line
Existing Wetland Boundaries
High Quality Wetland Boundary
Medium Quality Wetland Boundaries
Low Quality Wetland Boundaries
Proposed Wetland Boundaries
Existing Endangered Animal Boundaries
Existing Endangered Plant Boundaries

BUILDINGS & OTHER CULTURE

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

TOPOGRAPHY

Loose Surface
Hard Surface
Change in Road Surface
Curb
Right of Way Symbol
Guard Post
Paved Walk
Bridge
Box Culvert or Tunnel
Ferry
Culvert
Footbridge
Trail, Footpath
Light House

VEGETATION

Single Tree
Single Shrub
Hedge
Woods Line
Orchard
Vineyard

RAILROADS

Standard Gauge
RR Signal Milepost
Switch

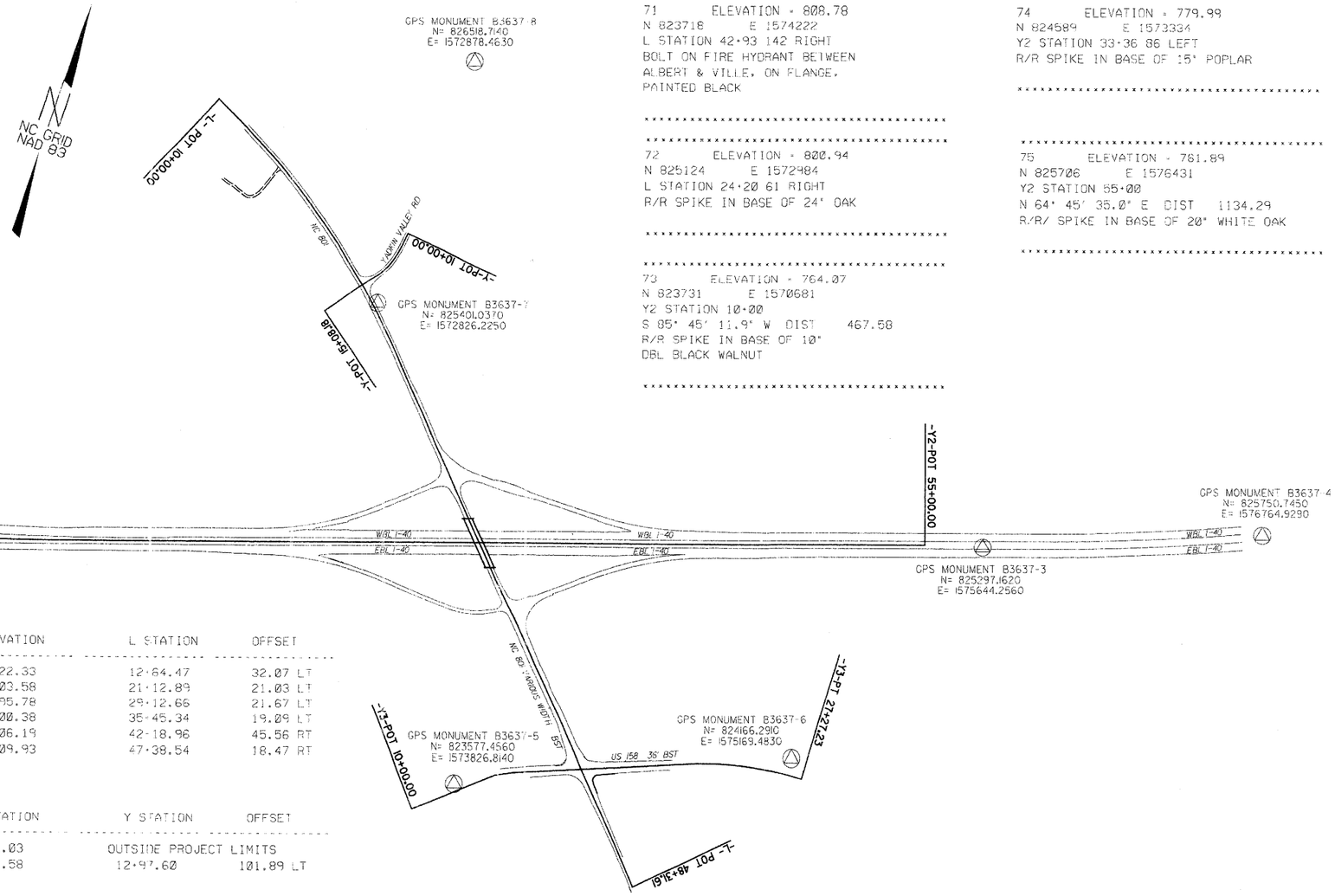
revised 02/02/00

PROJECT REFERENCE NO.	SHEET NO.
B-3637	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-3637

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "I2102-8"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 828802.9093(ft) EASTING: 1584445.7714(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99993054
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"I2102-8" TO -L- STATION 10+00.00 IS
S 77° 24'03.70" W 12867.96'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29



71 ELEVATION = 808.78
N 823718 E 1574222
L STATION 42+93 142 RIGHT
BOLT ON FIRE HYDRANT BETWEEN
ALBERT & VILLE, ON FLANGE,
PAINTED BLACK

72 ELEVATION = 800.94
N 825124 E 1572984
L STATION 24+20 61 RIGHT
R/R SPIKE IN BASE OF 24" OAK

73 ELEVATION = 764.07
N 823731 E 1570681
Y2 STATION 10+00
S 85° 45' 11.9" W DIST 467.58
R/R SPIKE IN BASE OF 10"
DBL BLACK WALNUT

74 ELEVATION = 779.99
N 824589 E 1573334
Y2 STATION 33+36 86 LEFT
R/R SPIKE IN BASE OF 15" POPLAR

75 ELEVATION = 781.89
N 825706 E 1576431
Y2 STATION 55+00
N 64° 45' 35.0" E DIST 1134.29
R/R/ SPIKE IN BASE OF 20" WHITE OAK

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
13	BL-13	825908.2807	1572140.4662	822.33	12+64.47	32.07 LT
7	B3637-7	825401.0370	1572826.2250	803.58	21+12.89	21.03 LT
12	BL-12	824826.9258	1573384.5094	795.78	29+12.66	21.67 LT
11	BL-11	824368.7390	1573820.8134	800.38	35+45.34	19.09 LT
10	BL-10	823838.0319	1574240.6904	806.19	42+18.96	45.56 RT
9	BL-9	823481.9865	1574620.0605	809.93	47+38.54	18.47 RT

BY

POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
8	B3637-8	826518.7140	1572878.4630	821.03	OUTSIDE PROJECT LIMITS	
7	B3637-7	825401.0370	1572826.2250	803.58	12+97.60	101.89 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
4	B3637-4	825750.7450	1576764.9290	755.21	OUTSIDE PROJECT LIMITS	
3	B3637-3	825297.1620	1575644.2560	776.98	OUTSIDE PROJECT LIMITS	
19	BY1-19	825076.3823	1575002.6000	785.13	50+72.42	5.10 RT
18	BY1-18	824849.4541	1574352.0973	782.92	43+85.47	4.68 RT
17	BY1-17	824561.1538	1573523.9085	776.42	35+04.54	3.56 RT
16	BY1-16	824364.8537	1572939.5077	772.43	28+90.10	3.97 LT
15	BY1-15	824044.7889	1572024.4618	765.88	19+26.69	3.76 LT
2	B3637-2	823761.5890	1571082.7900	761.20	OUTSIDE PROJECT LIMITS	
14	BY1-14	823537.5086	1570292.0033	765.88	OUTSIDE PROJECT LIMITS	
1	B3637-1	823344.8480	1569558.1040	771.98	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	NC158 STATION	OFFSET
6	B3637-6	824166.2910	1575169.4830	799.94	26+63.27	69.56 LT
10	BL-10	823838.0319	1574240.6904	806.19	13+04.5	48.47 LT
5	B3637-5	823577.4560	1573826.8140	809.21	12+09.41	31.80 LT

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

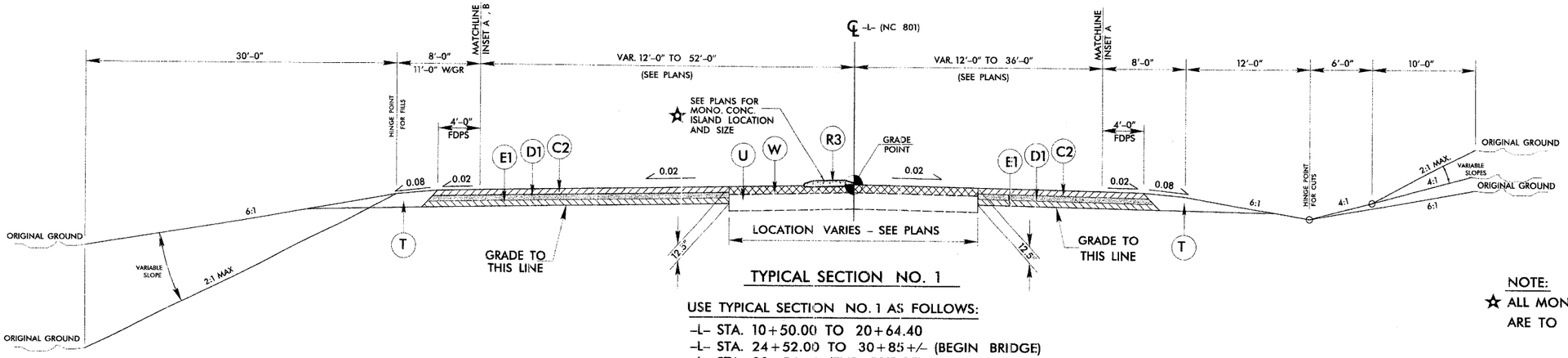
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-3637	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

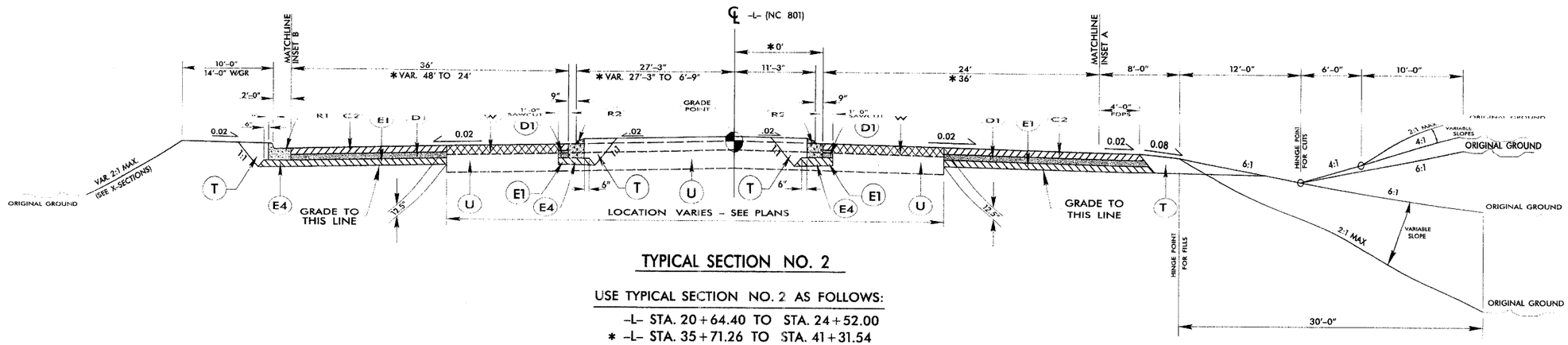


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

-L- STA. 10+50.00 TO 20+64.40
-L- STA. 24+52.00 TO 30+85+/- (BEGIN BRIDGE)
-L- STA. 33+54+/- (END BRIDGE) TO 35+71.26
-L- STA. 41+31.54 TO 42+65.77

NOTE:
☆ ALL MONOLITHIC CONCRETE ISLANDS ARE TO BE KEYED-IN.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

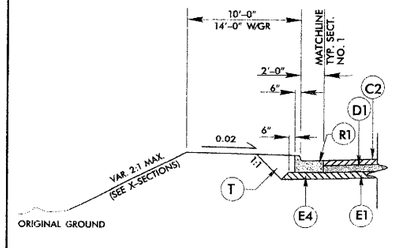
-L- STA. 20+64.40 TO STA. 24+52.00
* -L- STA. 35+71.26 TO STA. 41+31.54

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E3	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	E4	PROP. VAR. DEPTH ASPHALT BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	E5	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1¼" IN DEPTH OR GREATER THAN 1½" IN DEPTH.	R1	2'-6" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R2	1'-6" CONCRETE CURB AND GUTTER.
D2	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
D3	PROP. VAR. DEPTH ASPHALT INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.	T	EARTH MATERIAL
D4	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	W	VAR. DEPTH ASPHALT PAVEMENT (SEE STD. WEDGING DETAILS, SHEET 2-A)
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

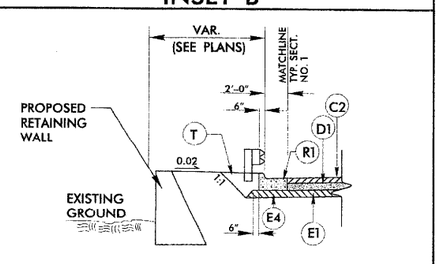
INSET A



USE INSET 'A' AS FOLLOWS:

-L- STA. 24+93.68 LT TO 30+85+/- LT (BEGIN BRIDGE)
-L- STA. 28+52.96 RT TO 30+85+/- RT (BEGIN BRDGE)
-L- STA 33+54+/- (END BRIDGE) TO STA. 42+65.77

INSET B



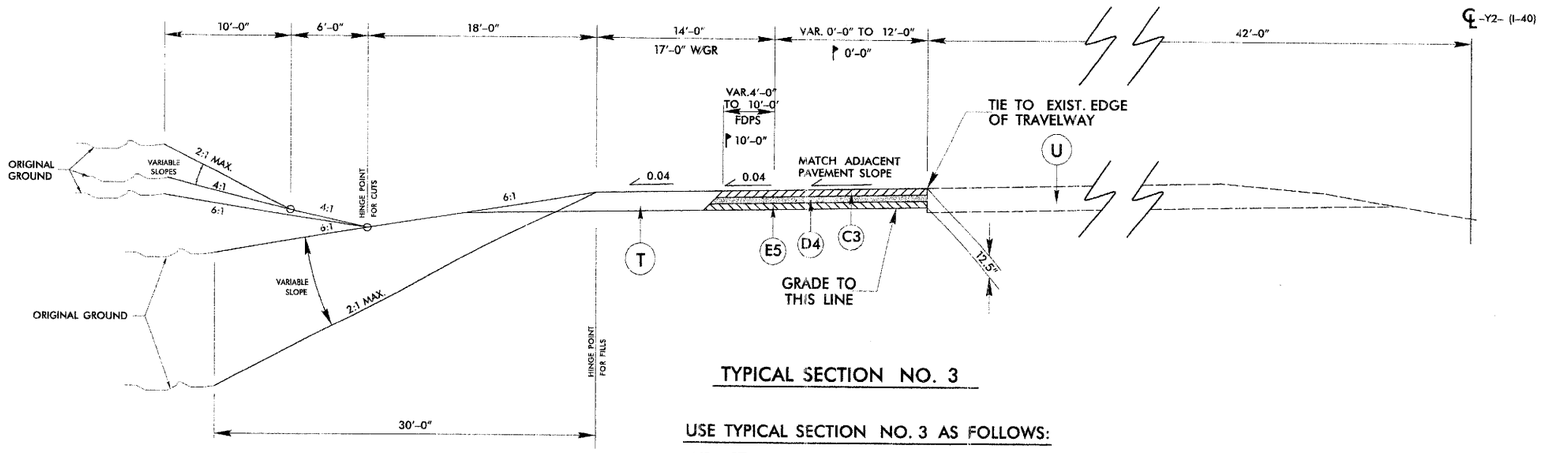
USE INSET 'B' AS FOLLOWS:

-L- STA. 20+68+/- LT TO 23+80+/- LT

PROJECT REFERENCE NO.	SHEET NO.
B-3637	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850



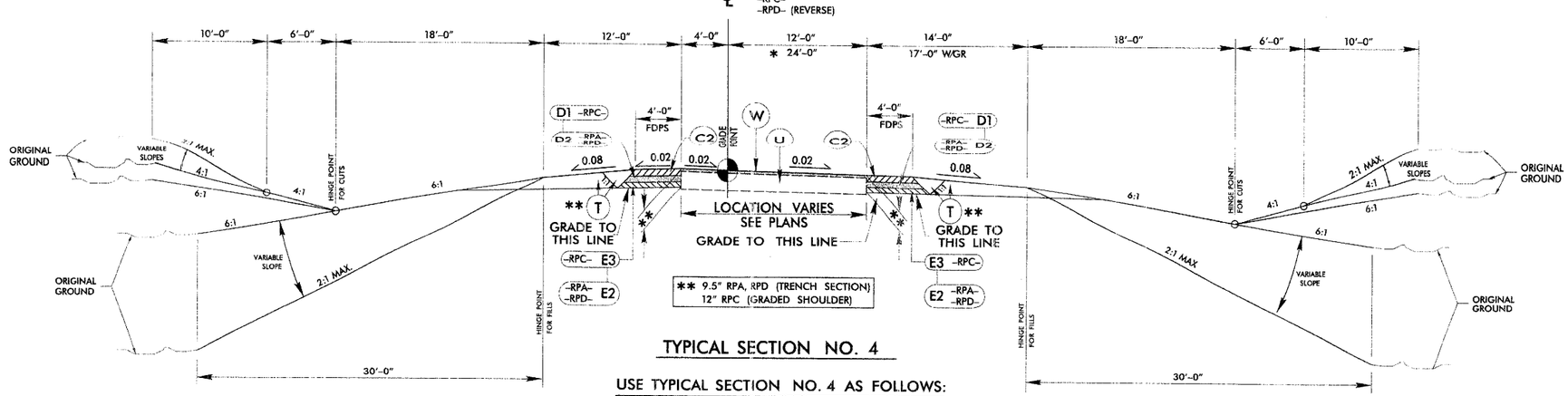
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

-Y2- STA.11+48.99 TO STA. 20+28.99
-Y2- STA.23+30.16 TO STA. 30+15.83
-Y2- STA.33+00.37 TO STA. 41+50.00

	PAVEMENT SCHEDULE
C1	1½", TYPE S9.5B.
C2	3", TYPE S9.5B.
C3	3", TYPE S9.5C.
C4	VAR., TYPE S9.5B.
D1	4", TYPE I19.0B.
D2	2½", TYPE I19.0B.
D3	VAR. DEPTH, TYPE I19.0B.
D4	4", TYPE I19.0C.
E2	4", TYPE B25.0B.
E3	5", TYPE B25.0B.
E4	VAR. DEPTH, TYPE B25.0B.
E5	5½", TYPE B25.0C.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

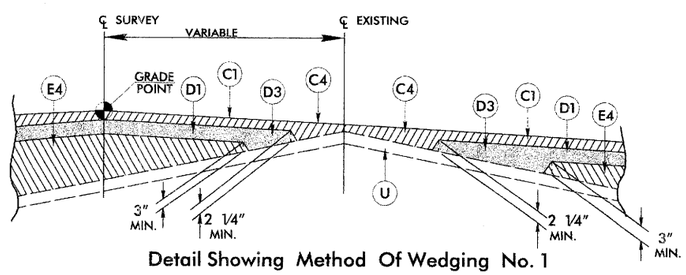
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
SEE SHEET 2 FOR DETAILED PAVEMENT SCHEDULE.



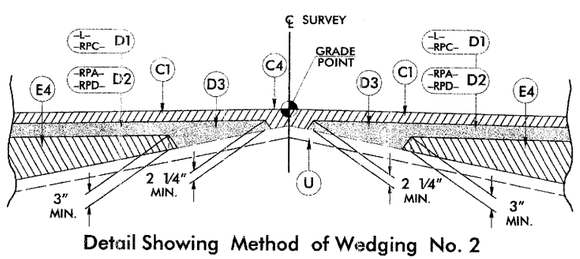
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS:

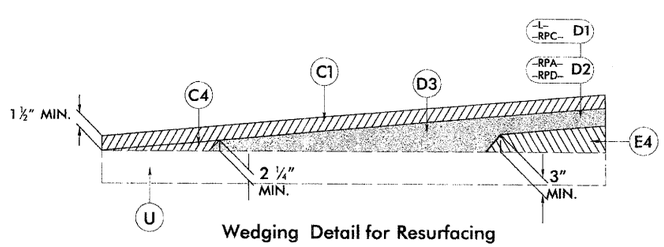
-RPA- STA. 15+00.00 TO STA. 17+95.12
-RPC- STA. 10+50.00 TO STA. 12+02.99
* -RPD- STA. 16+00.00 TO STA. 17+80.89



Detail Showing Method Of Wedging No. 1



Detail Showing Method of Wedging No. 2

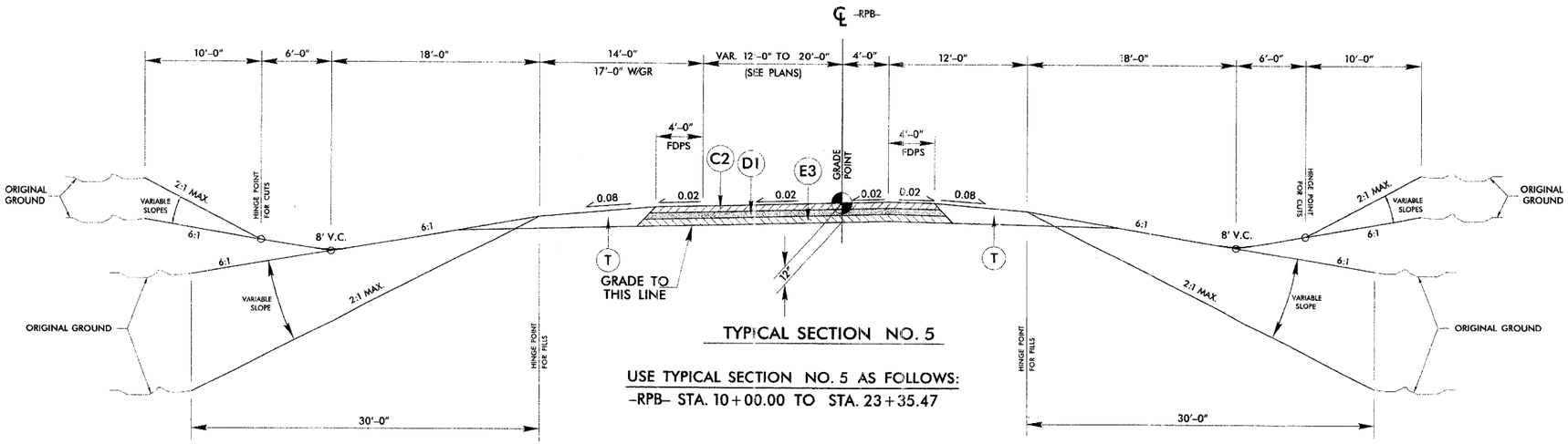


Wedging Detail for Resurfacing

PROJECT REFERENCE NO.	SHEET NO.
B-3637	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

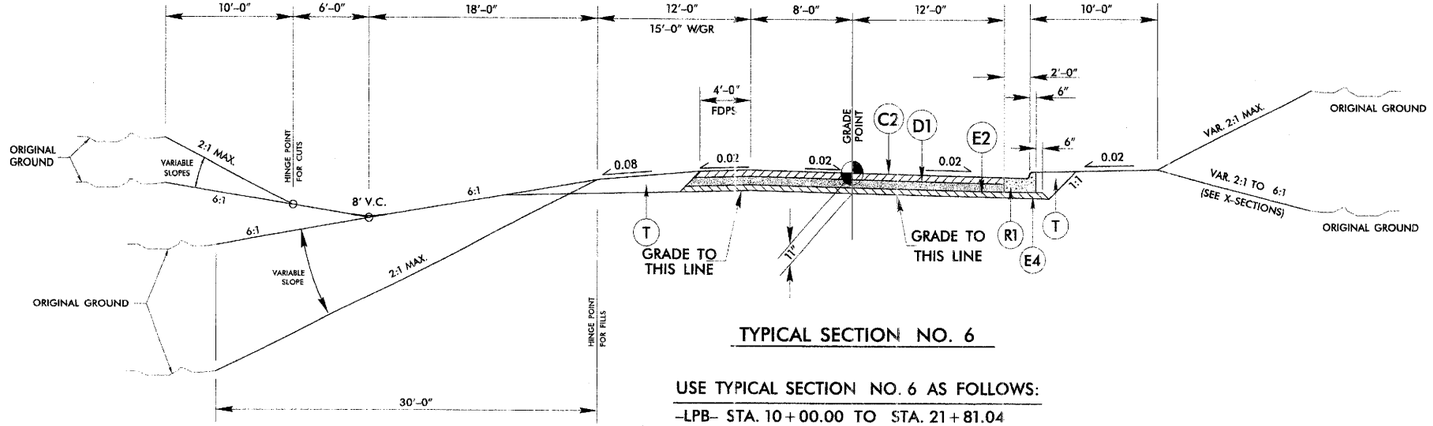
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AS FOLLOWS:
-RPB- STA. 10+00.00 TO STA. 23+35.47



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AS FOLLOWS:
-LPB- STA. 10+00.00 TO STA. 21+81.04

PAVEMENT SCHEDULE

C2	3", TYPE S9.5B.
D1	4", TYPE I19.0B.
E2	4", TYPE B25.0B.
E3	5", TYPE B25.0B.
E4	Var Depth, TYPE B25.0B.
R1	2'-6" CONC. CURB & GUTTER.
T	EARTH MATERIAL.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
SEE SHEET 2 FOR DETAILED PAVEMENT SCHEDULE.

PROJECT REFERENCE NO.	SHEET NO.
B-3637	2-C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

-L- PT 22+83.75

-L- POT 24+65.00 =
-RPB- POT 24+30.81

-RPB- ST 13+31.13

-RPB- CS 21+36.13

-RPB- SC 20+73.08

-RPB- TS 18+78.08

-RPB- ST 17+74.61

-RPB- CS 15+79.61

N 46° 10' 04.0" E

N 26° 27' 16.2" E

-L- (NC 801)

S 43° 49' 55.8" E

-RPA- PT 18+78.51
-L- POT 28+13.18
52' RT

-LPB- CS 21+53.06

-LPB- ST 23+48.06 =
-L- POT 28+52.96 (24.00' RT)

-LPB- PCC 12+77.15

-LPB- SC 12+15.00

-Y2- POT 33+00.37 (42.00' LT) =
-LPB- ST 10+00.00

N 70° 44' 00.0" E

-Y2- (I-40)

-LPB-

-RPB-

B

SP#1
SP #2
SP#3
SP #4
SP #5
SP #6
SP#7
SP#8
SP#9
SP#10
SP#11
SP#12
SP#13
SP#14
SP#15
SP#16
SP#17
SP#18
BP#1
BP#2

20+00
15+00
25+00
30+00
35+00

NC GRID
NAD 83

SHEAR POINT DIAGRAM

I-40/NC 801 INTERCHANGE

COMPUTED BY: SGM	DATE: 12/10/2004
CHECKED BY: WCP	DATE: 12/22/2004

PROJECT NO.	SHEET NO.
B-3637	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

LINE	Station	Station	Uncl. Excav.	Undercut Excav.	Embank. +15%	Borrow	Waste
-L-	10+50.00	31+00.00	3,351		17,584	14,233	
-RPA-	15+00.00	18+78.51	536		1,635	1,099	
-RPB-	10+00.00	24+06.81	3,033		39,406	36,373	
-LPB-	10+00.00	23+48.06	1,398		46,244	44,846	
-Y2-	11+48.99	41+50.00	9,492		360		9,132
SUBTOTAL 1:			17,810		105,229	96,551	9,132
-L-	33+50.00	42+65.77	358		9,683	9,325	
-RPC-	10+50.00	12+36.60	918		49		869
-RPD-	16+00.00	18+67.87	233		1,590	1,357	
SUBTOTAL 2:			1,509		11,322	10,682	869
PROJECT TOTALS			19,319		116,551	107,233	10,001
Loss Due To Clearing and Grubbing			-966			966	
Earth Waste to Replace Borrow						-10,001	-10,001
Shoulder Material					4,370	4,370	
PROJECT TOTALS			18,353		120,921	102,568	0
Est. 5% to replace Topsoil on Borrow Pits						5,128	
GRAND TOTALS			18,353		120,921	107,696	
SAY			**18,900**			**110,900**	

Pavement Structure Volume = 3,449 yd3 DDE = 2,400 yd3

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	SY
-L-	10+51	15+02	RT	60.90
-L-	20+64	24+52	CL	1,871.40
-L-	Driveway @ 24+25		LT	113.90
-L-	25+00	25+50	RT & LT	323.30
-L-	30+39	31+11	RT & LT	200.20
-L-	33+40	34+04	RT & LT	197.60
-L-	34+50	35+18	RT	144.00
-L-	35+42	38+50	CL	1638.6
-L-	38+50	41+31.53	LT	462.50
-Y2-	11+48.99	41+50	LT	1,801.80
-RPA-	10+00	17+00	LT	556.60
-RPA-	15+00	17+00	RT	178.20
Old Rp'B'			RT & LT	356.00
-RPC-	10+50	12+27	RT	104.20
-RPD-	16+00	17+50	RT	35.80
-RPD-	16+00	17+50	LT	35.70
			TOTAL:	8,080.70
			SAY:	**8,300**

SUMMARY OF EXISTING CONCRETE PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT/CL	SY
Old Rp'B'				1,255.80
-Y2-	16+55	26+22	LT	1,026.30
			TOTAL	2,282.10
			SAY	**2,350**

SUMMARY OF BREAK-UP OF EXISTING ASPHALT

LINE	Station	Station	LOC LT/RT/CL	SY
-L-	25+50	30+39	RT & LT	3,448.80
-L-	34+04	34+50	RT & LT	169.30
-L-	34+50	36+50	LT	426.40
-RPA-	17+00	18+71	RT & LT	353.70
-RPD-	17+50	18+68	RT & LT	586.20
			TOTAL	4,984.40
			SAY	**5,100**

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPR. END	WARRANT POINT TRAIL. END	"N" DIST FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH APPR. END	FLARE LENGTH TRAIL. END	W APPR. END	W TRAIL. END	ANCHORS GRAU 350	ANCHORS CAT-1	ANCHORS AT-1	ANCHORS III	ANCHORS B-77	IMP. ATTEN. TYPE 350 EA	IMP. ATTEN. TYPE 350 G	IMP. ATTEN. TYPE 350 NG	REMOVE EXISTING GRDRAIL	REMARKS
-L-	20+60+/-	23+94.25	LT	312.5	43.75		23+80	20+68	2'	10' BERM	50'		1'		1	1								
-L-	29+08.39	30+64.64	RT	156.25				BRIDGE	7.5'	10' BERM	137.5'		2.75'		1			1					255	
-L-	33+34.07	34+52.82	RT	118.75			BRIDGE	34+50+/-	7.5'	10' BERM		100'		2'	1			1					152	
-L-/RPD	33+81.15	18+17+/-	LT/RT	106.25	56.25		BRIDGE		7.5'	10' BERM	87.5'		1.75'				1	1					152	
-Y2-	11+49+/-	17+62+/-	LT	612.5			16+75+/-		14'	17'	50'		1'		1								618	TIE TO EXISTING GUARDRAIL
-Y2-	22+96+/-	24+50+/-	LT	6.25					20.5'							1							154	TIE TO EXISTING GUARDRAIL
-Y2-	36+08+/-	36+77+/-	LT	68.75			36+08+/-		12'		50'		1'		1				1				151	TIE TO PROPOSED PRECAST CONCRETE BARRIER
-Y2-	34+79+/-	35+48+/-	RT	68.75			35+48+/-		12'		50'		1'		1				1				145	TIE TO PROPOSED PRECAST CONCRETE BARRIER
-RPB-	19+88	22+31.75	RT	118.75		125					50'		1'		1	1								
-LPB-	17+06.73	19+21	LT	106.25							50'		1'		1*	1								* SHOP CURVED TYPE 350 ANCHOR UNIT
		SUB-TOTALS:		1,675.00	100.00	125.00									8	4	1	3	2				1,627	
	LESS ANCHOR DEDUCTIONS																							
	GRAU-350	8@50 ft		400																				
	TYPE AT-1	1@6.25 ft			6.25																			
	TYPE III	3@ 18.75 ft		56.25																				
	CAT-1	4@6.25 ft		18.75	6.25																			
	B-77	2@18.75ft		37.5																				
	ANCHOR TOTALS			512.5	12.5	0																		
		GRAND TOTALS		1,162.50	87.50	125.00									5	3	1	3	2				1,627	
		SAY		1,200.00	100	125									8	4	1	3	2				1,627	

ADDITIONAL GUARDRAIL POSTS = 5 EA

COMPUTED BY: SGM DATE: 10/26/2004

CHECKED BY: WCP DATE: 12/14/2004

PROJECT NO.	SHEET NO.
B-3637	3-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE # FROM	STRUCTURE # TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE 5 (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) R.C.P.	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL LENGTH PAY QUANTITY (INCL. 'A' + (1.3 * CL 'B') LIN. FT. A 5.0' THRU 10.0'	*TOTAL LENGTH PAY QUANTITY (INCL. 'A' + (1.3 * CL 'B') LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "B" STD. 840.16 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.25	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.30	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B. M.D.I. TYPE "B"	M.H. FRAME AND COVER STD. 840.54	CONV. 2GI TO JB	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
-L- 13+78	RT	1		813.90	811.15																																														
	RT	1	2		811.15	810.00			60																																										
-L- 16+12	CL	3		-	807.00	805.50							116																3.4																						
-L- 16+59	LT	4		-							24																																							
-L- 19+50	LT	5		805.58	801.66																																													
		5	6		801.76	802.00				40																				1																					
		5	7		801.66	800.80				116																																								
-Y- 12+00	RT	6		805.00	802.00																																												
-L- 19+50	RT	7		803.70	800.70																								1																					
	RT	7	8		800.70	800.00				48																				1																					
-L- 20+63	LT	9		-	805.60	EXIST.																																												
																													1																					
-L- 20+61	LT	10		805.08	800.00																																												
-L- 20+61	RT	11		-	COLLAR	796.90				16																				1	0.08																					
-L- 22+66	LT	12		801.87	795.49																																										0.4465			
-L- 22+66	CL	13		801.46	797.15																								1	1.38																					
																													1		1		1																		
-L- 24+00	RT	14		795.55	792.80																																												
	RT	14	15		792.80	792.00				108																				1																					
-L- 25+02	LT	16		797.22	791.66																																												
	LT	16	17		792.92	793.32			24																					1	0.56																					
-L- 25+02	LT	17		796.52	793.32																																												
	LT	17	18		793.42	793.69			4																					1																					
-L- 25+06	LT	18		796.52	793.69																																												
-L- 25+40	LT	19		-					12																					1																					
-L- 26+64	LT	20		798.48	780.81																																										0.798			
	LT	20	21		790.65	790.90				24																				1	5	7.87																					
-L- 26+62	LT	21		797.79	790.90																																												
	LT	21	22		791.00	791.20				20																				1	1.65																					
-L- 26+62	LT	22		793.70	791.20																																												
-L- 29+00	RT	23		800.03	796.69																								1																					
	RT	23	24		796.69	787.00																								1																					
	CL	23	25		796.79	797.27			104																																									
	RT	23	27		796.79	797.59			136																																									
-L- 29+36	LT	25		800.10	797.27																																												
	LT	25	26		797.37	798.23			100																					1																					
-L- 30+36	LT	26		801.06	798.23																																												
																													1																					
-L- 30+38	RT	27		800.42	797.59																																												
-L-33+60	RT	28		801.66	797.78																								1																					
		28	29		797.78	797.45			12																					1																					
		28	32		797.88	798.12			48																																								
SHEET 3-A TOTALS									608	264	24		116						52									3.4			20	8.87	7.87	8	2	4	2	1	1	5		1	5		5		1	4							
SAY																																19.10																	1.2445		364	
																																															1.25			

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: SGM DATE: 10/25/2004

CHECKED BY: WCP DATE: 12/14/2004

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
B-3637	3-C

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) SIZE	12"	15"	18"	24"	30"	36"	42"	48"
								THICKNESS OR GAUGE								
-L- 33+60	RT	29		801.00	797.35											
		29	30		797.35	772.70										
-Y2- 35+42	RT	30		776.40	772.60											
-L- 34+10	LT	31		802.19	799.36											
	CL	31	32		799.36	798.22				96						
-L- 34+10	RT	32		801.55	798.12											
		32	33		798.22	799.06				172						
-L- 35+80	RT	33		802.07	799.06											
	RT	33	34		799.16	799.26				4						
-L- 35+86	RT	34		802.09	799.26											
-L- 36+26	LT	35		801.44	798.60											
	LT	35	36		798.60	794.48				88						
	LT	35	39		798.70	799.12				132						
-RPD- 17+90	LT	36		797.21	794.38											
	LT	36	37		794.38	785.29				92						
-RPD- 16+85	LT	37		787.94	785.19											
	LT	37	38		785.19	783.00				164						
-L- 37+60	LT	39		801.95	799.12											
-L- 38+30	RT	40		800.00	797.00											
	RT	40	41		797.00	796.86				32						
-L- 38+60	RT	41		800.00	796.76											
	RT	41	43		796.76	796.56				36						
-L- 38+98	RT	42		803.03	796.26											
	RT	42	43		796.36	796.46				12						
	CL	42	45		796.26	795.46						104				
	RT	42	46		796.36	800.50					212					
-L- 38+98	RT	43		802.00	796.46											
	RT	43	44		796.56	796.90				8						
-L- 39+00	RT	44		799.90	796.90											
-L- 39+00	LT	45		802.47	795.36											
	LT	45	46		795.36	794.00						40				
	LT	45	47		799.50	800.63				132						
-L- 40+30	LT	47		803.46	800.63											
	LT	47	49		800.73	801.99				132						
-L- 41+08	RT	48		804.23	800.50											
-L-41+62	LT	49		804.82	801.99											
SHEET 3-B TOTALS										1100	212	144				
SAY																

BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE) THICKNESS OR GAUGE	12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109
-L- 33+60								
		96						
-Y2- 35+42								
-L- 34+10								
-L- 34+10								
-L- 35+80								
-L- 35+86								
-L- 36+26								
-RPD- 17+90								
-RPD- 16+85								
-L- 37+60								
-L- 38+30								
-L- 38+60								
-L- 38+98								
-L- 38+98								
-L- 39+00								
-L- 39+00								
-L- 40+30								
-L- 41+08								
-L-41+62								
SHEET 3-B TOTALS		96						
SAY								

	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE
-L- 33+60			
-Y2- 35+42			
-L- 34+10			
-L- 34+10			
-L- 35+80			
-L- 35+86			
-L- 36+26			
-RPD- 17+90			
-RPD- 16+85			
-L- 37+60			
-L- 38+30			
-L- 38+60			
-L- 38+98			
-L- 38+98			
-L- 39+00			
-L- 39+00			
-L- 40+30			
-L- 41+08			
-L-41+62			
SHEET 3-B TOTALS			
SAY			

ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
-L- 33+60	
-Y2- 35+42	
-L- 34+10	
-L- 34+10	
-L- 35+80	
-L- 35+86	
-L- 36+26	
-RPD- 17+90	
-RPD- 16+85	
-L- 37+60	
-L- 38+30	
-L- 38+60	
-L- 38+98	
-L- 38+98	
-L- 39+00	
-L- 39+00	
-L- 40+30	
-L- 41+08	
-L-41+62	
SHEET 3-B TOTALS	
SAY	

QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE
-L- 33+60		
1		
-Y2- 35+42		
1		
-L- 34+10		
1		
-L- 34+10		
1		
-L- 35+80		
1		
-L- 35+86		
1		
-L- 36+26		
1		
-RPD- 17+90		
1		
-RPD- 16+85		
1		
-L- 37+60		
1		
-L- 38+30		
1		
-L- 38+60		
1		
-L- 38+98		
1	1.77	
-L- 38+98		
1		
-L- 39+00		
1		
-L- 39+00		
1	2.11	
-L- 40+30		
1		
-L- 41+08		
1		
-L-41+62		
1		
SHEET 3-B TOTALS		
SAY		

C.B. STD. 840.01 OR STD. 840.02
-L- 33+60
-Y2- 35+42
-L- 34+10
1
-L- 34+10
1
-L- 35+80
1
-L- 35+86
1
-L- 36+26
1
-RPD- 17+90
1
-RPD- 16+85
1
-L- 37+60
1
-L- 38+30
1
-L- 38+60
1
-L- 38+98
1
-L- 38+98
1
-L- 39+00
1
-L- 39+00
1
-L- 40+30
1
-L- 41+08
1
-L-41+62
1
SHEET 3-B TOTALS
SAY

FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE m	F	G
-L- 33+60		
-Y2- 35+42		
-L- 34+10		
	1	
-L- 34+10		
		1
-L- 35+80		
		1
-L- 35+86		
		1
-L- 36+26		
	1	
-RPD- 17+90		
	1	
-RPD- 16+85		
-L- 37+60		
	1	
-L- 38+30		
	1	
-L- 38+60		
	1	
-L- 38+98		
		1
-L- 38+98		
-L- 39+00		
	1	
-L- 39+00		
		1
-L- 40+30		
	1	
-L- 41+08		
		1
-L-41+62		
	1	
SHEET 3-B TOTALS		
SAY		

D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "S" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.29	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B. M.D.I. TYPE "S"	M.H. FRAME AND COVER STD. 840.54	CONV. 2SI TO JB
-L- 33+60												
											1	
-Y2- 35+42												
-L- 34+10												
-L- 34+10												
-L- 35+80												
-L- 35+86												
-L- 36+26												
-RPD- 17+90												
-RPD- 16+85												
-L- 37+60												
-L- 38+30												
-L- 38+60												
-L- 38+98												
-L- 38+98												
-L- 39+00												
-L- 39+00												
-L- 40+30												
-L- 41+08												
-L-41+62												
SHEET 3-B TOTALS											1	
SAY												

CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
-L- 33+60				
-Y2- 35+42				
2 @ 15"				
-L- 34+10				
-L- 34+10				
-L- 35+80				
-L- 35+86				
			216	REM 2 D.I.'s, REM. M.H.
-L- 36+26				
-RPD- 17+90				
			57	
-RPD- 16+85				
				FALSE SUMP
-L- 37+60				
-L- 38+30				
-L- 38+60				
-L- 38+98				
-L- 38+98				
-L- 39+00				
-L- 39+00				
			173	
-L- 40+30				
-L- 41+08				
-L-41+62				REM D.I.
SHEET 3-B TOTALS				
2 @ 15"		0.13	658	

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

COMPUTED BY: SGM DATE: 10/25/2004

CHECKED BY: WCP DATE: 12/14/2004

PROJECT NO.	SHEET NO.
B-3637	3-D

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT, RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)							BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)							15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	QUANTS FOR DRAINAGE STRUCTURES			C.B. GRATE AND FRAME STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03			D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "C" STD. 840.19 OR 840.28	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.29	M.D.I. FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	T.B.D.I. STD. 840.34	T.B.D.I. STD. 840.35	T.B.M.D.I. TYPE "B"	M.H. FRAME AND COVER STD. 840.54		CONC. COLLAR	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. JUNCTION PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"					PER EACH (0' THRU 5.0')	LIN. FT. A (5.0' THRU 10.0')	LIN. FT. B (10.0' AND ABOVE)		TYPE OF GRATE E	F	G																							
THICKNESS OF PLATING		FROM	TO																																																			
-RPB- 14+00	LT	50		757.30	752.50																					1																													
	LT	50	51		752.50	COLLAR							32																																									
	LT	50	52		753.00	757.00					52																																										
	CL	50	53		753.00	757.20							172																																								
-Y2-29+46	LT	54		772.62	769.35																																																
	LT	54	55		769.35	769.95				212																																											
-Y2-31+55	LT	55		772.12	769.95																					1																													
	LT	55	70		769.95	771.55			236																																													
-LPB-13+13	RT	56		771.97	769.14																					1			1	1																										
	RT	56	57		769.14	768.85			24																																													
-LPB-13+38	RT	57		772.02	768.75																					1			1	1																										
	RT	57	58		768.75	768.07				68																																												
	CL	57	59		768.85	771.80				20																																												
-LPB-15+45	CL	60		-	763.46	760.00						200																																											
-LPB-16+00	RT	61		778.44	775.61																					1			1		1																									
	RT	61	62		775.61	766.00											72																																					
-LPB-18+62	CL	63		-	777.93	768.00					252																																											
-LPB-19+50	RT	64		793.68	790.85																					1			1		1																									
	RT	64	65		790.85	771.00											112																																					
-LPB-20+50	CL	66		-	789.50	772.00				184																																												
-LPB-21+36	RT	67		781.50	777.22																					1																													
	RT	67	68		777.22	773.50					108																																											
-Y2-31+55	LT	69		-	-	-																																																
-Y2-33+90	LT	70		774.30	771.55																					1																													
		70	72		771.65	773.25			248																																													
Y2-35+92	RT	71		776.12	773.10																					1																													
		71	73		773.2	774.27			68																																													
-Y2-36+35	LT	72		776.00	773.25																					1																													
-Y2-36+60	CL	73		777.02	774.27																					1																													
SHEET 3-C TOTALS									576	484	412	200	204				184																																								
SAY																										11			4	1		3		3	1	4		2	1				1									
SHEET 3-A TOTALS									608	264	24		116				52								3.4	20	8.87	7.87	8	2	4	2	1	1	5		1	5		5		1	4											
SAY																											19.10																											
SHEET 3-B TOTALS									1100	212	144						96									19	3.88		15	3	7	5		1		1		2	1		2											
SAY																											3.88																											
TOTALS									2284	960	580	200	320				280	52							3.4	50	22.98		27	6	11	10	1	1	9	1	5	1	5	4	7		1	6		1								

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I.(N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

REMARKS
REM. H.W.
REM. D.I.
REM. 2 D.I.s

TGS ENGINEERS
SUITE 141
975 WALNUT STREET
CARY, NC 27511
PH (919) 319-8850

PROJECT REFERENCE NO.	SHEET NO.
B-3637	3-E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	4	WILBURN P. WALKER
2	4	JOHN V. WALKER
3	4	TRAVCO-BRT LIMITED PARTNERSHIP
4	4,5,&7	J.B. HARRISON PROPERTIES, LLC
5	4&5	BURNETTE KELLY PARTNERS, LLC
6	5	UNKNOWN
7	5	801 ATHENA, LLC
8	5&6	UNKNOWN
9	5	JAMES R. OWENS & DAVID G. HARMON
10	6	RUTH MILLER BROWN
11	6	S & G INVESTMENTS, INC.
12	6	LEWIS J. MILLER, JR.
13	6	HARRISON FAMILY PROPERTIES, LLC
14	6	QUALITY OIL COMPANY

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "12102-8" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 828802.9093(1) EASTING: 1584445.771(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993054 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "12102-8" TO -L- STATION 10+50.00 IS S 77° 16' 02.1" 12,827.36 FT ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

CURVE -L-	CURVE -Y-
PI Sta 16+59.00	PI Sta 11+48.52
Δ = 22° 08' 45.2" (RT)	Δ = 30° 05' 37.3" (RT)
D = 1° 45' 00.0"	D = 16° 25' 00.0"
L = 1,265.48'	L = 183.31'
T = 640.74'	T = 93.82'
R = 3,274.04'	R = 349.01'
SE = 0.025	SE = See Plans
RUNOFF = See Plans	RUNOFF = See Plans
Vd = 40 mph	Vd = 15 mph

PROJECT REFERENCE NO.	SHEET NO.
B-3637	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

NC GRID NAD 83

-L- POC 10+50.00
BEGIN TIP PROJECT B-3637

-L- POT 10+00.00

-L- PC 10+18.27

-Y- POT 10+00.00

-Y- PC 10+54.69

-Y- POC 11+91.00
BEGIN CONSTRUCTION

-Y- PT 12+38.01

-L- POC 20+12.97 =
-Y- POT 13+07.91

-L- PT 22+83.75

BL-13 POT 5+00.00
-L- STA. 12+64.47 (32.07' LT)

BL-7 (GPS B3637-7) PINC 13+52.97
-L- STA. 21+12.89 (21.03' LT)
= -BY- POT 16+18.90
-Y- STA. 12+97.60 (101.89' LT)

S 65°58'40"E

S53°30'37.2"E

S2°40'33.4"W

S16°08'25.5"W

750' TAPER

320' LANE DROP TAPER

330' LEFT TURN LANE

100' TAPER

TAPER TO EXIST.

4' FDPS

MONOLITHIC CONCRETE ISLAND

PROP. CONC. ISLAND

PROP. CONC. RETAINING WALL

PROP. 2'-6" C&G

PROP. 1'-6" C&G

GRASSED MEDIAN

BASE DITCH SEE DETAIL 'A'

TAIL DITCH SEE DETAIL 'B'

CL 'B' RIP RAP: EST. 2 TONS FILTER FABRIC: EST. 7 SY

CL 'B' RIP RAP: EST. 11 TONS FILTER FABRIC: EST. 28 SY

CL 'B' RIP RAP: EST. 3 TONS FILTER FABRIC: EST. 10 SY

CL 'B' RIP RAP: EST. 3 TONS FILTER FABRIC: EST. 10 SY

TIE TO EXIST

REMOVE

RETAIN

FALSE SUMP

60' ACCESS POINT

SECONDARY GROWTH

GRAVEL

WOODS

MATCHLINE STA. 23+00.00 MATCH TO SHEET NO. 5

1 WILBURN P. WALKER
DB 177 PG 189
DB 161 PG 296
DB 62 PG 636

2 JOHN V. WALKER
DB 161 PG 309
DB 62 PG 635
DB 61 PG 330

3 TRAVCO-BRT LIMITED PARTNERSHIP
DB 208 PG 171

4

5 BURNETTE KELLEY PARTNERS, LLC
DB 420 PG 752
PB 7 PG 225

BANK OF AMERICA, NATIONAL ASSOCIATION
DB 417 PG 388
PB 7 PG 225

AARON LEE WALKER
DB 126 PG 829

DETAIL A
LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 2% — 10 — 2% — b — F/W Slope — P/Ft. — Filter Fabric

Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

* When B is < 5.0'

Type of Liner = CL 'B' RIP RAP

-L- 14+00 TO -L- 16+50, LT
CL 'B' RIP RAP: EST. 115 TONS
FILTER FABRIC: EST. 320 SY
DDE: EST. 170 CY

-L- 14+35 TO -L- 16+10, RT
CL 'B' RIP RAP: EST. 80 TONS
FILTER FABRIC: EST. 225 SY
DDE: EST. 140 CY

-L- 20+00 TO -L- 21+50, RT
CL 'B' RIP RAP: EST. 70 TONS
FILTER FABRIC: EST. 195 SY
DDE: EST. 50 CY

DETAIL B
STANDARD BASE DITCH
(Not to Scale)

Natural Ground — 2% — 10 — 2% — Natural Ground — B

Min. D = 1.0 Ft.
B = 2.0 Ft.

CLEAN-OUT TAIL DITCH -L- 16+12 +/-, RT
DITCH GRADE: 0.5% +/-
DDE: EST. 30 CY

NOTE:
ALL PIPES ARE RC CLASS III, UNLESS OTHERWISE INDICATED ON PLANS.

2GI W/NSG = 2GI W/NARROW SLOT GRATE

SEE SHEET 8 FOR LINE -L- PROFILE AND GRADE

REVISIONS

MATCHLINE -L- STA. 23+00.00 MATCH TO SHEET NO. 4

MATCHLINE -Y2- STA. 20+00.00 MATCH TO SHEET NO. 7

MATCHLINE -L- STA. 37+00.00
MATCH TO SHEET NO. 6

A

B

C

D

NC GRID
NAD 83

BRIDGE/ROADWAY RELATIONSHIP SKETCH
(NOT TO SCALE)

SEE SHEET 8 FOR LINE -L- PROFILE AND GRADE
SEE SHEET 9 FOR LINE -RPA- PROFILE AND GRADE
SEE SHEET 10 FOR LINE -RPB- PROFILE AND GRADE
SEE SHEET 11 FOR LINES -LPB-, -RPC- & -RPD- PROFILES AND GRADES

NOTE:
ALL PIPES ARE RC CLASS III, UNLESS OTHERWISE INDICATED ON PLANS.

3GI WMBG = 3GI W/ARROW SLOT GRATE
3GI WMBG = 3GI W/NARROW SLOT FLAT GRATE

PROJECT REFERENCE NO.	SHEET NO.
B-3637	5
S/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS NOT FOR CONSTRUCTION	

TGS ENGINEERS
975 WALNUT STREET, SUITE 140
CARY, NC 27511
PH (919) 319-8850

LOCATION:	BRIDGE NO. 37 OVER I-40 ON NC 801
TIP NO.: B-3637	COUNTY: DAVIE
DESIGNED BY: SGM	
CHECKED BY: WCP	DATE: FEB. 2004

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO.	SHEET NO.
B-3637	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

NC GRID NAD 83

MATCHLINE -L- STA. 37+00.00 MATCH TO SHEET NO. 5

-L- POT 42+65.77
END TIP PROJECT B-3637

-L- POT 48+31.61

BL-9 POT 39+83.46
-L- STA. 47+38.53 (18.47' RT)

BL-10 PINC 34+63.18
-L- STA. 42+18.96 (45.56' RT)
= -BY2- PINC 14+85.09

BY2-5 (GPS B3637-5)
POT 19+74.17

BM #1 ELEVATION = 808.78'
-BY2- STATION 15+65.92' LEFT
-L- STA. 42+92.55 / 142.27' RT

S10°32'07.0"W -BY2-

S 43°49'55.8" E

S46°48'59.8"E
-BL-

S38°20'59.1"E

S57°48'19.9"W
-BY2-

10 RUTH MILLER BROWN

8 UNKNOWN

232.00 FT @ EXIST. ℄

38+70.00
235.00 FT

TAIL DITCH SEE DETAIL 'A'

CL 'B' RIP RAP: EST. 5 TONS
FILTER FABRIC: EST. 14 SY

37+00.00
130.00 FT

113.08 FT @ EXIST. ℄

37+50.00
92.00 FT

38+50.00
92.00 FT

39+00.00
128.00 FT

39+50.00
125.00 FT

BASE DITCH SEE DETAIL 'B'

40+05.00
107.00 FT

40+50.00
70.00 FT

41+00.00
55.00 FT

42+00.00
55.00 FT

640' TAPER

200' TAPER

150' TAPER

TIE TO EXIST. @EXIST. R/W END C/A
84.29 FT

55' R
3' OFFSET

45' R
40' OFFSET

REMOVE

PROP. 2'-6" C&G

PROP. 1'-6" C&G

GRASSED MEDIAN

MONOLITHIC CONC. ISLAND

REM. DI

JB W/ NMC

60' ACCESS POINT

RETAIN

PLUG

39+10.00
60.00 FT

41+70.00
60.00 FT

63.00 FT @EXIST R/W END CHL FENCE END C/A

75.00 FT @EXIST. R/W BEG. CHL FENCE BEG. C/A

88.95 FT @EXIST. R/W END CHL FENCE END C/A

TIE TO EXIST.

HARRISON FAMILY PROPERTIES, LLC
DB 106 PG 101
DB 186 PG 334

DAVIE COUNTY HOSPITAL FOUNDATION, INC.
DB ME PG 5 PG 5

SUZANNE HESS, M.D.
DB 177 PG 5 PG 5

JAMES P. OWINGS
DB 89 PG 90

LEWIS W. MILLER, JR.
DB 65 PG 257
DB 65 PG 180

RUTH MILLER BROWN
DB 65 PG 180

QUALITY OIL COMPANY

LEWIS W. MILLER, JR.
DB 65 PG 257

CEMENTS, INC.

COMMERCIAL OIL COMPANY, INC.
DB PG 476
PB PG 59

H & V CONSTRUCTION CO.
DB 164 PG 32
PB 2 PG 59

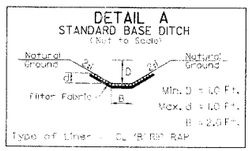
PREFCO V LIMITED PARTNERSHIP
DB 156 PG 125

HILLSDALE INVESTORS, LLC
DB 191 PG 566

J.B. HARRISON PROPERTIES, LLC
DB 55 PG 244

J.B. HARRISON PROPERTIES, L.L.C.
DB 204 PG 335
DB 186 PG 341
DB 186 PG 337

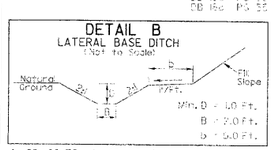
DETAIL A
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
Type of Liner = CL 'B' RIP RAP

-L- 39+00 +/- LT
CL 'B' RIP RAP: EST. 55. TONS
FILTER FABRIC: EST. 160 SY
DDE: EST. 30 CY

DETAIL B
LATERAL BASE DITCH
(Not to Scale)

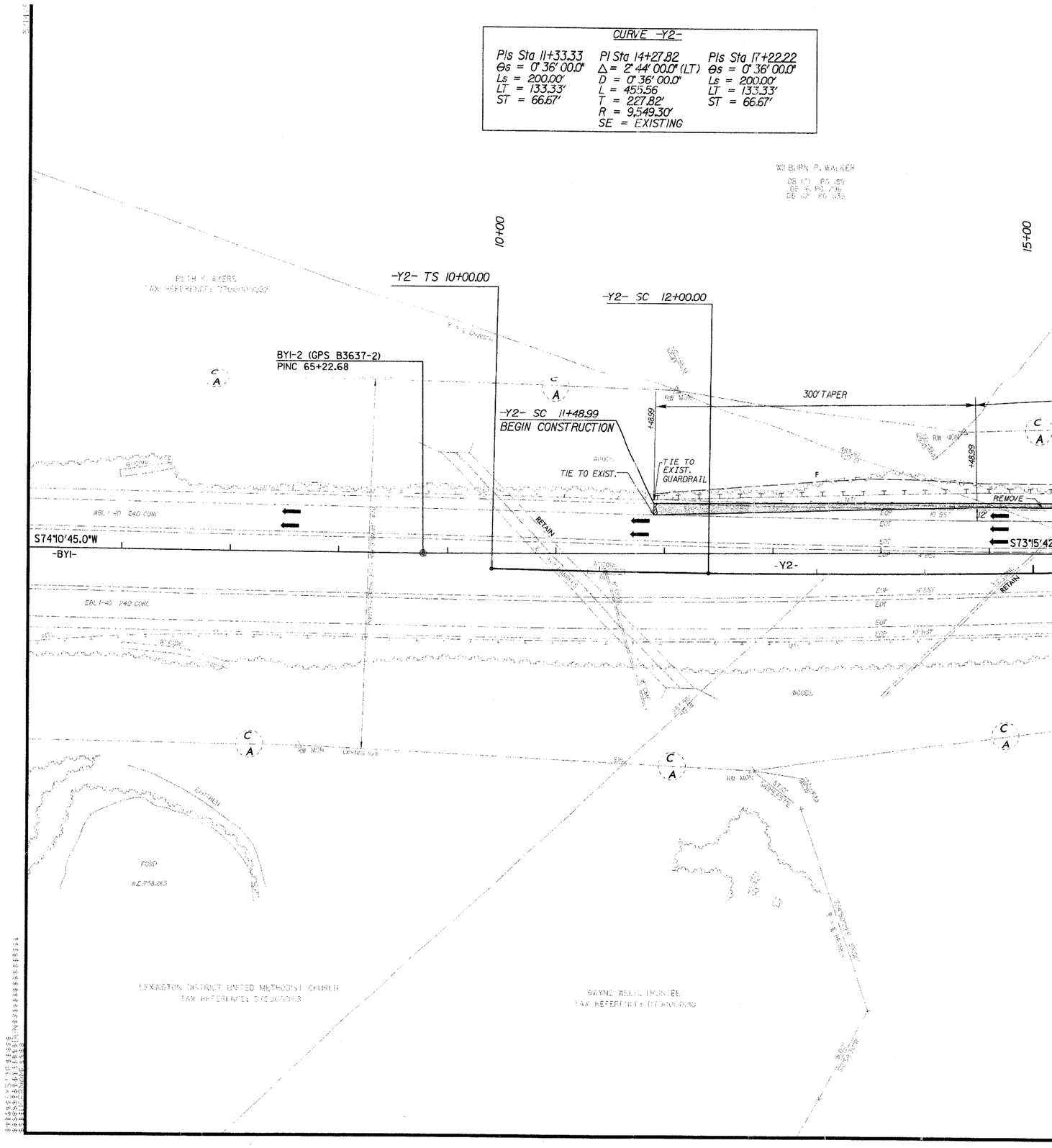


Min. D = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.

-L- 39+00 TO -L- 40+00 +/- LT
DDE: EST. 70 CY

NOTE:
ALL PIPES ARE RC CLASS III, UNLESS OTHERWISE INDICATED ON PLANS.

SEE SHEET 9 FOR LINE -L- PROFILE AND GRADE


CURVE -Y2-
PIs Sta 11+33.33
Θs = 0° 36' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
PI Sta 14+27.82
Δ = 2° 44' 00.0" (LT)
D = 0° 36' 00.0"
L = 455.56
T = 227.82'
R = 9,549.30'
SE = EXISTING
PIs Sta 17+22.22
Θs = 0° 36' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
WILBURN P. WALKER
10+00
15+00
-Y2- TS 10+00.00
-Y2- SC 12+00.00
BYI-2 (GPS B3637-2)
PINC 65+22.68
300' TAPER
-Y2- SC 11+48.99
BEGIN CONSTRUCTION
TIE TO EXIST.
TIE TO EXIST. GUARDRAIL
REMOVE
RETAIN
S74°10'45.0"W
-BYI-
-Y2-
S73°15'42
EBL 1-40 2AD CONC
WOODS
FORD
W.C. 798/365
LEXINGTON DISTRICT UNITED METHODIST CHURCH
TAX REFERENCE: 005000-03-003
WAYNE WELLS, TRUSTEE
TAX REFERENCE: 005000-03-010

PROJECT REFERENCE NO.	SHEET NO.
B-3637	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

Mtn. Resurfacing
-L- Sta. 10+50.00
Begin Grade -L- Sta. 11+00.00 Elev. 821.51'
(-)11.7498%
BEGIN DITCH GRADE LT STA. 14+00, EL. 814.50
BEGIN DITCH GRADE RT STA. 14+35, EL. 810.00
(+)3.4762%
(-)2.5714%
(+)1.2500%
END DITCH GRADE RT STA. 16+10, EL. 805.50
END DITCH GRADE LT STA. 16+50, EL. 807.50
P.I. DITCH GRADE LT STA. 16+10, EL. 807.00
PROPOSED GRADE
EXISTING GROUND
-L- Sta. 20+62.97 = -Y- Sta. 13+07.91
(-)11.7498%
(-)5.5000%
(-)1.0000%
BEGIN DITCH GRADE RT STA. 20+00, EL. 800.00
P.I. DITCH GRADE RT STA. 21+00, EL. 794.50
END DITCH GRADE RT STA. 21+50, EL. 794.00

SEE SHEET 4 FOR LINE -L- PLAN

BM #2 ELEV. 800.94'
RAILROAD SPIKE IN BASE OF 24" OAK
61.48' RT OF -L- STA. 24+20.40

-L- Sta. 24+28.66 = -Y- Sta. 12+00.00
PI = 24+75.00
EL = 797.45'
VC = 200'
K = 73
Vd = 40 mph
(-)11.7498%
-L- Sta. 24+65.00 = -RPB- Sta. 24+30.81'
PROPOSED GRADE
(+)1.0000%
EXISTING GROUND
DITCH GRADE RT -L- STA. 28+52.96 = -LPB- STA. 23+48.06 EL. 783.10
SEE SHT 11 FOR -LPB- PROFILE
EL. 783.10
10.61FT.
END DITCH GRADE RT STA. 28+85, EL. 786.50
PI = 28+05.00
EL = 800.75'
VC = 150'
K = 214
Vd = 65 mph
(+)0.3000%
BEGIN BRIDGE -L- Sta. 30+85+/-
END BRIDGE -L- Sta. 33+54+/-
-L- Sta. 32+25.27 = -Y2- Sta. 35+12.90
-L- Sta. 35+25.78 = -RPD- Sta. 19+19.98
-L- Sta. 35+38.96 = -RPC- Sta. 12+47.19
1 1/2
1

SEE SHEET 5 FOR LINE -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
B-3637	9

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

-L-

PI = 40+08.33
EL = 804.36'
VC = 150'
K = 214
Vd = 75 mph+

Min. Resurfacing

End Grade -L- Sta. 42+43.20 Elev. 806.49'

-L- Sta. 42+65.77

PROPOSED GRADE

EXISTING GROUND

(+)0.3000%

(+)0.8813%

(+) 2.0000%

BEGIN DITCH GRADE LT
STA. 39+00, EL. 794.00

END DITCH GRADE LT
STA. 40+00, EL. 796.00

SEE SHEET 6 FOR LINE -L- PLAN

BM #4 ELEV. 779.99'
RAILROAD SPIKE IN BASE OF 15" POPLAR
85.53' LT OF -Y2- STA. 33+36.06

-RPA-

END GRADE -RPA- STA. 18+79.51 = -L- 28+13.18 EP (52' LT)
ELEV. 799.63'

PI = 18+24.00
EL = 799.51'
VC = 51'
K = 56
Vd = 35 MPH

PI = 17+26.00
EL = 797.07'
VC = 26'
K = 19
Vd = 30 MPH

PI = 16+38.00
EL = 792.64'
VC = 86'
K = 49
Vd = 35 MPH

MIN. RESURF. & WIDEN.

BEGIN GRADE -RPA- STA. 15+60.00 ELEV. 790.09

-RPA- STA. 15+00.00

(-)0.7024%

(+)0.5053%

(+)1.3683%

(+)5.0314%

(+)3.2692%

PI = 18+60.00
EL = 799.76'
VC = 26'
K = 19
Vd = 30 MPH

PI = 17+86.00
EL = 799.28'
VC = 58'
K = 19
Vd = 30 MPH

PROPOSED GRADE

EXISTING GROUND

SEE SHEET 5 FOR LINE -RPA- PLAN

PROJECT REFERENCE NO.	SHEET NO.
B-3637	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

BM #2 ELEV.800.94'
RAILROAD SPIKE IN BASE OF 24" OAK
61.48' RT OF -L- STA. 24+20.40

BEGIN GRADE
-RPB- STA 10+00.00 =
-Y2- 204289 (42' LT)
ELEV.767.17'

(+)0.5200%

P.I. = 10+75.00
EL = 768.16'
VC = 26'
K = 90
Vd = 35 mph

(+)0.8103%

P.I. = 11+33.00
EL = 768.63'
VC = 70'
K = 63
Vd = 45 mph

10.3054% (-)10.3238%

P.I. = 11+92.00
EL = 768.45'
VC = 10'
K = 535
Vd = 60 mph

P.I. = 14+36.00
EL = 767.66'
VC = 360'
K = 84
Vd = 45 mph

(-)10.3238%

BEGIN DITCH GRADE LT
STA.14+20, EL.757.00

(+)3.9608%

PROPOSED GRADE

P.I. DITCH GRADE RT
STA.15+75, EL.760.25

(+)1.0000%

BEGIN DITCH GRADE RT
STA.15+40, EL.757.20

(+)2.0968%

P.I. DITCH GRADE RT
STA.17+00, EL.758.00

(+)0.5000%

(+)2.0000%

END DITCH GRADE RT
STA.17+60, EL.759.20

P.I. DITCH GRADE RT
STA.18+00, EL.776.00

(+)3.3333%

END DITCH GRADE RT
STA.19+50, EL.781.00

P.I. = 21+25.00
EL = 794.95'
VC = 240'
K = 80
Vd = 45 mph

(+)3.9608%

(+)0.9758%

EXISTING GROUND

-RPB-

SEE SHEET 5 FOR LINE -RPB- PLAN

END GRADE
-RPB- STA 24+06.81 =
-L- 24+65.00 (24' RT) EOP
ELEV.797.70'

PROPOSED GRADE
(+)0.9758%

℄ -L-

Q2

EXISTING GROUND

-RPB-

SEE SHEET 5 FOR LINE -RPB- PLAN

PROJECT REFERENCE NO.	SHEET NO.
B-3637	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
TGS ENGINEERS
975 WALNUT STREET, SUITE 141
CARY, NC 27511
PH (919) 319-8850

BM #4 ELEV.779.99'
RAILROAD SPIKE IN BASE OF 15" POPLAR
85.53' LT OF -Y2- STA. 33+36.06

-LPB-

BEGIN GRADE -LPB- STA 10+00.00 = -Y2- 33+40.37 (42' LT) ELEV.776.50

PI = 11+06.00
EL = 775.86'
VC = 205'
K = 200
Vd = 65 mph

(-)0.6066%

(-)1.6299%

(-)0.7143%

BEGIN DITCH GRADE RT
STA.12+45, EL.772.50

END DITCH GRADE RT
STA.13+15, EL.772.00

(-)1.6299%

(+)5.6528%

PROPOSED GRADE

PI = 14+41.00
EL = 770.40'
VC = 465'
K = 64
Vd = 40 mph

BEGIN DITCH GRADE RT
STA.15+90+/-, EL.763.46

PI = 18+50.00
EL = 793.62'
VC = 180'
K = 44
Vd = 40 mph

(+)5.6528%

(+)1.5298%

EXISTING GROUND

(+)1.4000%

P.I. DITCH GRADE RT
STA.19+50, EL.768.50

PI = 22+69.00
EL = 799.93'
VC = 50'
K = 53
Vd = 40 mph

(+)1.5298%

(+)0.5945%

P.I. DITCH GRADE RT
STA.22+00, EL.773.00

(+)5.0000%

(+)10.8111%

P.I. DITCH GRADE RT
STA.23+00 EL.778.00

END GRADE -LPB- STA 23+48.06 = -L- 28+52.96 (24' RT) ELEV.800.40'

DITCH GRADE RT
-LPB- STA 23+48.06 = -L- STA.28+52.96
EL.783.10

SEE SHT 8 FOR -L- PROFILE

SEE SHEET 5 FOR LINE -LPB- PLAN

BM #4 ELEV.779.99'
RAILROAD SPIKE IN BASE OF 15" POPLAR
85.53' LT OF -Y2- STA. 33+36.06

-RPC-

BEGIN GRADE -RPC- STA 10+50.00 = ELEV.779.96'

PI = 11+00.00
EL = 794.09'
VC = 100'
K = 60
Vd = 35 mph

(+)4.2600%

(+)5.9310%

PROPOSED GRADE

END GRADE -RPC- STA 12+36.60 = -L- 35+28.17 (136' RT) EOP ELEV.802.20'

EXISTING GROUND

-RPD-

-L-

END GRADE -RPD- STA 18+67.87 = 35+29.22 (52' LT) EOP ELEV.865.54'

PI = 18+00.00
EL = 799.55'
VC = 100'
K = 54
Vd = 40 mph

(+)5.8799%

(+)7.2280%

PI = 16+75.00
EL = 789.89'
VC = 150'
K = 40
Vd = 30 mph

PROPOSED GRADE

EXISTING GROUND

(+)4.0000%

BEGIN GRADE -RPD- STA 16+40.00 ELEV.786.89'

-Y2-

EXISTING GRADE

(+)0.5660%

BEGIN DITCH GRADE LT
STA.26+30, EL.766.50

END DITCH GRADE LT
STA.29+15, EL.768.00

SEE SHEET 5 FOR LINE -RPC- PLAN
SEE SHEET 5 FOR LINE -RPD- PLAN
SEE SHEET 5 FOR LINE -Y2- PLAN

NC 801
Davie County
Bridge No. 37 over I-40
Federal Aid Project No. BRSTP-801(2)
State Project No. 8.1611501
T.I.P. No. B-3637

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

12.18.03
DATE

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

12/18/03
DATE

for John F. Sullivan, III, PE
Division Administrator, FHWA

NC 801
Davie County
Bridge No. 37 over I-40
Federal Aid Project No. BRSTP-801(2)
State Project No. 8.1611501
T.I.P. No. B-3637

CATEGORICAL EXCLUSION

December 2003

Documentation Prepared by:
TGS Engineers

12/11/03

J. Kenneth Burleson, PE
Project Manager

Date

For the North Carolina Department of Transportation

Elmo E. Vance
Project Manager
Consultant Engineering Unit

SUMMARY OF ENVIRONMENTAL COMMITMENTS

NC 801
Davie County
Bridge No. 37 over I-40
Federal Aid Project No. BRSTP-801(2)
State Project No. 8.1611501
T.I.P. No. B-3637

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Design Standards for Sensitive Wetlands, Best Management Practices for Bridge Demolition and Removal , General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Geotechnical Unit

The NCDOT Geotechnical Unit will perform a final investigation of UST locations relative to the Quick- Pix Food Mart #3 (now Wendys) and 801 Shell Service facilities prior to the acquisition of any required right of way along NC 801 south of I-40.

Roadway Design Branch and Project Development and Environmental Analysis Branch

The Roadway Design Branch in cooperation with the Project Development and Environmental Analysis Branch will prepare an Interchange Modification Study to address the change in access points along I-40 at the NC 801 interchange. The study will be done concurrently with the final design for the project.

NC 801
Davie County
Bridge No. 37 over I-40
Federal Aid Project No. BRSTP-801(2)
State Project No. 8.1611501
T.I.P. No. B-3637

INTRODUCTION: Bridge No. 37 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate that Bridge No. 37 has a sufficiency rating of 41.5 out of a possible 100 for a new structure. The bridge is considered functionally obsolete. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

The replacement of Bridge No. 37 incorporates modifications of the existing diamond interchange. The interchange modifications are in response to the growing traffic demand in the east-south movements along I-40 and NC 801. The I-40 westbound off-ramp is proposed to be modified to provide free flow for NC 801 northbound traffic and a loop added in the northwest quadrant to provide free flow for NC 801 southbound traffic. This modification will eliminate the existing left turn movement and the need for a signal at the ramp terminus. The I-40 eastbound on-ramp is proposed to be widened to two lanes tapering to one lane before merging with I-40. Both safety and operating level of service are expected to be improved by the replacement of Bridge No. 37 and modifications to the existing interchange ramps.

II. EXISTING CONDITIONS

Davie County Bridge No. 37 is a two-lane, four-span, 231-foot (70.4-meter) long, steel beam structure with reinforced concrete floor on reinforced concrete caps on prestressed concrete piles. The existing structure has a 28-foot (8.5-meter) clear roadway width. The bridge currently does not have posted weight limits. Bridge No. 37 was constructed in 1959 and provides access across I-40 on NC 801.

NC 801 is classified as a Rural Major Collector in the North Carolina Statewide Classification System. NC 801 currently serves approximately 10,400 to 14,000 vehicles per day (vpd) and is estimated to serve approximately 23,200 to 31,400 vpd by the design year 2030. The daily traffic volumes include 3 percent dual-tired trucks (DTT) and 4 percent truck-tractor semi-trailers (TTST). The posted speed limit along NC 801 in the project area is 35 miles per hour (56 kilometers per hour).

The existing land use along NC 801 is heavily developed mixed commercial and residential. There are many businesses including restaurants, gas stations, and shopping centers on NC 801 south of I-40. The Bermuda Run development is an expansive area of upscale homes and is undergoing further expansion south on NC 801. Some homes are located to the north of the bridge. To the north and south of I-40 and east of Bridge No. 37, a large mixed use development called Kinderton is under development and is anticipated to generate as many as 30,000 trips per day at buildout. This development is a mix of retail, business and residential components.

Immediately south of the eastbound ramp terminals (currently a roundabout), the Quick-Pix Food Mart #3 (now Wendys) has had and the 801 Shell Service currently has underground tank storage facilities. The Quick-Pix operated as a convenience store/gas station on the southwest side of NC 801 at I-40 on a site now occupied by Wendys. The Division of Waste Management registry shows three (3) 10,000 gallon gasoline UST's and one (1) 6,000 gallon diesel UST and one (1) 2,000 gallon kerosene UST were on this site. The tank area was approximately 39 feet (12 meters) from the centerline of NC 801. There were several monitoring wells at the site and at one time, the site appeared to be under remediation, but no incident number could be located. The disposition of the UST's is unknown. The 801 Shell Service currently operates as a gas station located on the southeast side of NC 801 at I-40. The Division of Waste Management registry shows three (3) gasoline UST's (2 @ 10,000 and 1 @ 8,000 gallons). The tank area is approximately 36 feet (11 meters) from the edge of pavement of NC 801. No superfund sites have been identified.

The "intersection" of I-40 and NC 801 is a conventional diamond interchange. The north ramp terminals are signalized. The south ramp terminals and NC 801 are currently controlled with a roundabout. This roundabout is a temporary feature that will be replaced with the implementation of this bridge replacement project. There are no utilities attached to the existing structure, but power and telephone lines are overhead to the west. Utility impacts are expected to be moderate.

Twenty five (25) accidents occurred on NC 801 in the vicinity of Bridge No. 37 between June 2000 and May 2003. Of the 25 total accidents 9 involved personal injury and 16 were property damage only accidents. The total crash rate was 757.00 accidents per 100 million vehicle miles of travel compared to a statewide average of 239.16 acc/100mvmt for all numbered North Carolina routes.

The Davie County Schools reports that two (2) busses cross Bridge No. 37 twice daily.

III. ALTERNATIVES

A. Project Description

This project replaces Bridge No. 37 with a new bridge. The project limits are the US 158/ NC 801 intersection south of I-40 and the NC 801/SR 1452 (Yadkin Valley Road) intersection north of I-40. The proposed bridge structure is 260 feet

(79.3 meters) long with 92 feet (28 meters) clear roadway width. The proposed width accommodates seven (7) 12-foot (3.7-meter) travel lanes, a 4-foot (1.2-meter) monolithic island separating the center left turn lanes, 2-foot (0.6-meter) offsets to face of curbs and 5.5-foot (1.7-meter) sidewalks along both sides. The additional length anticipates the addition of an additional travel lane in each direction on I-40. The approach cross sections are variable width curb and gutter sections tapering to the existing north of Yadkin Valley Road (SR 1452) and to the existing south at the intersection with US 158.

Due to increasing traffic demand in the east-south movements, it is necessary to modify the existing diamond interchange. The westbound off-ramp terminus will be modified to accommodate northbound NC 801 traffic and a loop will be added in the northwest quadrant to accommodate the heavy southbound NC 801 traffic. The eastbound on-ramp will be widened to two (2) lanes which will taper to a single lane before merging with eastbound I-40.

B. Build Alternatives

Alternative 1 (Preferred) is the only construction alternative evaluated due to land use constraints posed by the developed and developing NC 801 corridor and the existing interchange with I-40. Alternative 1 will replace existing Bridge No. 37 over I-40 with a new seven (7) lane structure with improved approaches between US 158 to the south and SR 1452 (Yadkin Valley Road) to the north. The westbound off-ramp will be modified to serve northbound NC 801 traffic and a loop will be provided in the northwest quadrant to serve southbound NC 801 traffic.

Bridge No. 37 will be replaced utilizing staged construction in order to maintain traffic on-site. Initially, two (2) lanes will be constructed east of the existing bridge. Once this portion of the new structure is completed, traffic will be shifted to the new lanes, the existing structure will be removed and the remaining structure will be constructed.

The existing structure has a substandard 15-foot 7-inch (4.75-meter) vertical clearance. The replacement structure will meet the current Interstate Standards for vertical clearance.

C. Alternatives Eliminated from Further Study

The "do-nothing" or no-build alternative will eventually necessitate closure of the bridge. Due to the overall traffic service and connectivity provided by Bridge No. 37, closure is not acceptable to the residents, businesses and recreational opportunities along NC 801.

"Rehabilitation" of the old bridge is not feasible due to its age and deteriorated condition. The latest inspection report indicates widespread cracking and spalling

of the concrete and rusting beams, inadequate design load, and inadequate vertical clearance (15 feet 7 inches under the westbound lanes).

D. Preferred Alternative

Alternative 1 (Preferred) replaces the existing Bridge No. 37 with a new bridge seven lanes wide at the existing location (with the current centerline shifted eastward). The project limits are the US 158/NC 801 intersection south of I-40 and of the NC 801/SR 1452 (Yadkin Valley Road) intersection north of I-40.

An Interchange Access Modification study will be completed concurrent with the final design phase of this project.

The Division 9 Division Engineer concurs with Alternative 1 as the Preferred Alternative.

IV. ESTIMATED COSTS

The estimated costs for the studied alternative, based on current prices, are as follows:

	Alternative 1
Structure	$ 2,355,000
Roadway Approaches	4,412,890
Structure Removal	72,310
Miscellaneous & Mobilization	1,449,800
Engineering & Contingencies	110,000
Total Construction Cost	$ 8,400,000
Right-of-way Costs	3,470,000
Total Project Cost	$ 11,870,000

The estimated cost of the project, shown in the 2004-2010 NCDOT Transportation Improvement Program (TIP), is $5,500,000, including $200,000 spent in prior years and $500,000 for right-of-way and $4,800,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Materials and research data in support of this investigation have been derived from a number of sources including applicable U.S. Geological Survey (USGS) topographic mapping (Clemmons, NC 7.5 minute quadrangle, 1994), U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) mapping, and aerial photographs (scale: 1 inch=100 feet).

The site was visited on October 16, 2002. The study corridor was walked and visually surveyed for significant features. For purposes of this evaluation, the study corridor is defined by all areas that may potentially be impacted by construction activities. Plant community impact calculations provided in this report are based on the area within the study corridor. Actual impacts will be limited to areas within cut-fill boundaries and are expected to be less than the study corridor area. Special concerns evaluated in the field include 1) potential protected species habitat and 2) wetlands and water quality protection in the watershed.

Plant community descriptions are based on a classification system utilized by North Carolina Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968), with adjustments made to reflect more current nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (COE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979). Geographical distribution and habitat requirements of terrestrial wildlife and aquatic organisms mentioned in this document were obtained by supportive literature (Webster *et al.* 1985, Potter *et al.* 1980, Hamel 1992, Martof *et al.* 1980, Rohde *et al.* 1994, Menhinick 1991, Palmer and Braswell 1995). Fish and wildlife nomenclature follow current standards. Water quality information for area streams and tributaries was derived from available sources (DWQ 1997, DWQ 1999). Quantitative sampling was not undertaken to support existing data.

The US Fish and Wildlife Service (FWS) listing of federally protected species with ranges extending into Davie County was obtained prior to initiation of the field investigation. In addition, Natural Heritage Program (NHP) records documenting presence of federally or state listed species were consulted before commencing the field investigation.

B. Physiography and Soils

The study corridor is located in the Charlotte Belt geologic formation within the Southern Outer Piedmont ecoregion of North Carolina. The landscape is characterized by broad, gently sloping uplands, narrow convex ridges, and moderately steep valley slopes. Also

located within the Piedmont soil region, the study corridor is included in the felsic crystalline soil system. Soil systems in this central, western portion of the Piedmont are determined by the local bedrock which is granite, granite gneiss, mica gneiss, and mica schist (Daniels *et al.* 1999). Within the study corridor, elevations range from approximately 775 feet (236.2 meters) National Geodetic Vertical Datum (NGVD) to approximately 805 feet (245.4 meters) NGVD (USGS Clemmons, NC quadrangle).

The Natural Resource Conservation Service (NRCS) indicates the following soils within the study corridor: Udorthents (loamy, *Udorthents*) found in the area defined by the on/off ramps, Gaston clay loam (clayey, mixed, thermic *Humic Hapludults*) found in the southern portion of the corridor along NC 801, Enon (fine, mixed, thermic *Ultic Hapludalfs*) found in the northern portion of the corridor along NC 801, Mecklenburg clay loam (fine, mixed, thermic *Ultic Hapludalfs*) in the northeastern portion of the corridor adjacent to the off ramp, and Mocksville sandy loam (fine-loamy, mixed, thermic *Typic Hapludalfs*) in the western portion of the corridor adjacent to I-40 (SCS 1995). None of these soils are considered hydric by the NRCS (NRCS 1996). During the site visit, however, a small pocket (0.03 acre [0.01 hectare]) of hydric soils were found within the Mocksville sandy loam soil unit.

Udorthents consist of well-drained to moderately well-drained areas where the natural soil has been altered by excavation or covered by earthy fill material. In most areas the exposed, underlying material of the excavated soil is loam, sandy loam, or sandy clay loam. At least 20 inches (50.8 centimeters) of the loamy, earthy fill material covers the natural soil. The fill material ranges in depth from 20 inches (50.8 centimeters) to 30 feet (9.1 meters).

The Gaston series consists of well-drained, moderately permeable soils formed in on side slopes and ridges in uplands. Erosion can be a severe hazard in areas that are not protected by vegetation or mulch. Depth to the water table is more than 6 feet (1.8 meters).

The Enon series consists of well-drained, slowly permeable soils formed in material weathered from mafic or intermediate crystalline rocks. These soils form on side slopes and ridges in uplands. Erosion can be a severe hazard in areas that are not protected by vegetation or mulch. Depth to the water table is more than 5 feet (1.5 meters).

The Mecklenburg series consists of well-drained, slowly permeable soils formed in weathered material from intermediate or mafic crystalline rocks. These soils are found on ridges and side slopes in uplands. Erosion can be a severe hazard in areas that are not protected by vegetation or mulch. Depth to the water table is more than 6 feet (1.8 meters).

The Mocksville series consists of well-drained, moderately permeable soils formed in weathered material from mafic and intermediate crystalline rocks. These soils are found on ridges and side slopes in uplands. Erosion can be a severe hazard in areas not covered by vegetation or mulch. Depth to the water table is more than 6 feet (1.8 meters).

C. Water Resources

1. Waters Impacted

The study corridor is located within sub-basin 03-07-02 of the Yadkin-Pee Dee River Basin (DWQ 1997). This area is part of USGS Hydrologic Unit 03040101 of the South Atlantic-Gulf Coast Region. Drainage flowing west of Bridge No. 37 discharges into Smith Creek which is approximately 1,184 feet (360.9 meters) downstream of the study corridor boundary. Smith Creek has been assigned Stream Index Number 12-93-1 by the N.C. Division of Water Quality (DWQ 1997). Drainage flowing east of Bridge No. 37 discharges into the Yadkin River which is approximately 1.2 miles (1.9 kilometers) downstream of the study corridor boundary. The Yadkin River has been assigned Stream Index Number 12-(86.7) by the N.C. Division of Water Quality (DWQ 1997).

Field investigations revealed three unnamed tributaries within the study corridor, hereafter referred to as Systems 1, 2, and 3, respectively. System 1 is located in the northwest quadrant of the study corridor, System 2 is located in the northeast quadrant of the study corridor, and System 3 is located in the southeast quadrant of the study corridor (Figure 2).

2. Stream Characteristics

System 1 is a first-order, intermittent stream with a bankfull width of 3 to 4 feet (0.9 to 1.2 meters). The headwaters of this stream form in the northwest quadrant of the study corridor. System 1 flows for 128.8 feet (39.3 meters) at which point stream channel geometry has been destroyed (possibly due to logging skid-trails) and the system becomes a small wetland (0.03 acre [0.01 hectare]). This wetland may have resulted from the loss of stream geometry in conjunction with the placement of a rip-rap impoundment placed in the stream channel. Below the impoundment, the stream reforms and flows for 56.9 feet (17.3 meters) where it leaves the project corridor through a culvert under I-40. The channel has moderately defined bed and banks with a substrate of sand and gravel. The channel exhibits low to moderate sinuosity.

The headwaters of System 3 form outside the boundaries of the southeast quadrant of the study corridor. This first-order stream enters the corridor as a northeast flowing, perennial stream with a bankfull width of 7 feet (2.1 meters) and a bed of sand and gravel. This system appears to be degrading as evidenced by active bank erosion and bank collapse. After flowing for 23.2 feet (7.1 meters) through the southeast study quadrant, the stream enters a culvert and flows under I-40 for 270 feet (82.3 meters) before entering the northeast quadrant.

System 2 originates north of the I-40 westbound off ramp in a mature forest. It flows for 322 feet (98.1 meters) as a first-order, intermittent stream with low sinuosity and a bankfull width ranging from 2 to 4 feet (0.6 to 1.2 meters).

System 2 emerges from the wooded area into a power line corridor where riparian vegetation is continually disturbed. Due to the lack of vegetative buffer, this portion of the stream is extremely degraded and entrenched, exhibiting banks up to 15 feet (4.6 meters) in height and cutting down sufficiently to become a perennial stream. System 2 has virtually no sinuosity as it has become a step-pool system, cascading over bedrock into deep, silt filled pools. The stream flows in this condition for 125 feet (38.1 meters) at which point it is met by the culvert carrying System 3, thus becoming a second-order stream. It flows as a second-order, highly degraded stream for 90 feet (27.4 meters) when it exits the study corridor.

3. Best Usage Classification and Water Quality

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A best usage classification of C has been assigned to Smith Creek. The designation C denotes waters protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture, and other uses. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development activities. No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile (1.6 kilometers) of the study corridor. No watershed Critical Area (CA) occurs within 1.0 mile (1.6 kilometers) of the study corridor.

A best usage classification of WS-IV has been assigned to the Yadkin River. Class WS-IV denotes protected water supply waters that are generally in moderately to highly developed watersheds; point source discharges of treated wastewater are permitted under certain restrictions, and local programs to control non-point source and stormwater discharge of pollution are required. Class WS-IV waters are suitable for aquatic life propagation and survival, fishing, wildlife, agriculture, and secondary recreation. Secondary recreation refers to wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis.

The DWQ has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed study corridor is summarized in the Yadkin-Pee Dee River basin management plan. Water quality in Smith Creek currently has a use support rating of Fully Supporting. Water quality in the Yadkin River currently has a use support rating of Fully Supporting. Sub-basin 03-07-02 supports 30 minor and three major point-source dischargers, discharging 1.92 million gallons per day (MGD) (7.27 million liters per day [MLD]) and 8.3 MGD (31.4 MLD) respectively (DWQ 1997). Non-point sources in the area include land development, construction, agriculture, roads, and parking lots.

4. Anticipated Impacts to Water Resources

Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of best management practices. The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled "Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation.

During removal of the existing bridge, no components of the existing deck and rails to be dropped into waters of the United States.

D. Biotic Resources

1. Plant Communities

Four distinct plant communities were identified within the study corridor: Piedmont/Mountain Bottomland Forest, Dry-Mesic Oak–Hickory Forest, early-succession mixed pine forest, and disturbed/maintained land. These communities are described below. Communities designated by capital letters approximate descriptions provided by Schafale and Weakley (1990).

Disturbed/Maintained Land - Within the study corridor, Disturbed/Maintained Land occurs within the power line corridor, along road shoulders, on residential lots, and commercial lots. Disturbed/Maintained Land includes 15.5 acres (6.3 hectares), or approximately 46 percent of the study corridor. Roadsides and lawns are planted with grasses, including Bermuda grass (*Cynodon dactylon*), and also contain weedy species such as goldenrod (*Solidago* sp.), blackberry *(Rubus argutus*), honeysuckle (*Gleditsia triancanthos*), Queen Anne's lace (*Daucus carota)*, wooly mullein (*Verbascum thapsus)*, wild onion (*Allium canadense*), and horse nettle (*Solanum carolinense*).

Early-Succession Mixed Pine Forest - The Early Succession Mixed Pine Forest occurs in the northwestern portion of the project corridor, east of System 1. This community is relatively young and consists of pioneer species common throughout the Piedmont. Early-Succession Mixed Pine Forest includes 7.0 acres (2.8 hectares), or approximately 21 percent of the study corridor. No distinction can be made between canopy and sub-canopy species, owing to the lack of vertical stratification. Trees found in this community are loblolly pine (*Pinus*

taeda) and sweetgum (*Liquidambar styraciflua*), with a few scattered shortleaf pine (*Pinus echinata*), Virginia pine (*Pinus virginiana*), and red maple (*Acer rubrum*). The herbaceous layer is sparse and contains mainly blackberry, poison ivy (*Toxicodendron radicans*), muscadine grape (*Vitis rotundifolia*), and greenbrier (*Smilax rotundifolia*).

Piedmont/Mountain Bottomland Forest - Riparian areas adjacent to Systems 1, 2, and 3 and the floodplain of Smith Creek, located in the western portion of the study corridor adjacent to I-40, exhibit characteristics of a Piedmont/Mountain Bottomland Forest. This community includes 3.1 acres (1.3 hectares), or approximately 9 percent of the study corridor. Within the study corridor, the Piedmont/Mountain Bottomland Forest exhibits age classes ranging from intermediate to mature. Canopy species include honeylocust (*Gleditsia triancanthos*), pignut hickory (*Carya glabra*), tulip poplar (*Liriodendron tulipifera*), white oak (*Quercus alba*), white ash (*Fraxinus americana*), black cherry (*Prunus serotina*), red maple, and blackgum (*Nyssa sylvatica*). In some areas where well-drained soils result in dryer conditions, Virginia pine, black oak (*Q. velutina*), and southern red oak (*Q. falcata*) are present. Shrubs include eastern red cedar (*Juniperus virginiana*), red mulberry (*Morus rubra*), redbud (*Cercis canadensis*), persimmon (*Diospyros virginiana*), and box elder (*A. negundo*). Vines proliferate in sunny areas and edges, and include poison ivy, honeysuckle, trumpet creeper (*Campsis radicans*), Carolina jessamine (*Gelsemium sempervirens*), and passion vine (*Passiflora incarnata* and *P. lutea*). The herb layer is sparse and includes common blue violets (*Viola* spp.), Indian strawberry (*Duchesnea indica*), pipsissewa (*Chimaphila maculata*), and bedstraw (*Galium* sp.).

Dry-Mesic Oak–hickory forest - This community occurs in fragmented patches within the intersection on and off-ramps. Dry-Mesic Oak–Hickory Forest includes 1.1 acres (0.4 hectare), or approximately 3 percent of the study corridor. These are islands of mature forest surrounded by disturbed/maintained land. Canopy species include white oak, southern red oak, shortleaf pine, Virginia pine, sweetgum, and tulip poplar. Understory species found within this community type are dogwood (*Cornus florida*), red maple, sourwood *(Oxydendrum arboreum*), and eastern red cedar. Shrubs include blackberry, redbud, and mimosa (*Albizia julibrissin*). Vines present include poison ivy, honeysuckle, trumpet creeper, Carolina jessamine, and passion vine. The herb layer is sparse and includes common blue violets, Indian strawberry, pipsissewa, and bedstraw.

2. Plant Community Impacts within the Study Corridor

Plant community impacts are estimated based on the amount of each plant community present within the study corridor. Permanent impacts are considered to be those impacts that occur within the cut-fill limits that will permanently alter current plant communities. Temporary impacts are those impacts that occur between cut-fill limits and the proposed right-of-way. Portions of a specific plant

community which are to be impacted but restored following construction will also be considered temporary impacts. A summary of plant community impacts within the study corridor is presented in the following table.

Plant Community Impacts within the Study Corridor.
Measurements are given in acres (hectares).

Community Type	Area	Percent of Study Corridor
Disturbed/Maintained Land	15.5 (6.3)	46.0
Early Succession Mixed Pine Forest	7.0 (2.8)	21.0
Piedmont/Mountain Bottomland Forest	3.1 (1.3)	9.0
Dry-Mesic Oak-Hickory Forest	1.1 (0.4)	3.0
Total	26.7 (10.8)	79.0

From an ecological perspective, impacts of upgrading existing road facilities are relatively minimal. Permanent impacts to natural plant communities resulting from the proposed alternative are expected to be restricted to the northwest quadrant of the study corridor. Long term impacts to natural plant communities can be minimized if temporarily impacted areas are restored to natural contours and planted with native vegetation.

3. Wildlife

a. Terrestrial

No signs of mammals were observed during the site visit. Mammal species which are expected to occur in the study area include those adapted to urbanized environments such as eastern cottontail (*Sylvilagus floridanus*), Virginia opossum (*Didelphis virginiana*), eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), white-footed mouse (*Peromyscus leucopus*), house mouse (*Mus musculus*), eastern mole (*Scalopus aquaticus*), and Norway rat (*Rattus norvegicus*).

Birds observed within or adjacent to the corridor were Carolina wren (*Thryothorus ludovicianus*), northern cardinal (*Cardinalis cardinalis*), American crow (*Corvis americana*), rock dove (*Columba livia*), and bluejay (*Cyanocitta cristata*). Other avian species expected to occur in the study corridor are mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), American robin (*Turdus migratorius*), and house finch (*Carpodacus mexicanus*).

No terrestrial reptile or amphibian species were observed during the site visit. Some terrestrial reptiles and amphibians which may occur within the

study corridor include eastern box turtle (*Terrapene carolina*), Carolina anole (*Anolis carolinensis*), eastern fence lizard (*Sceloporus undulatus*), rough green snake (*Opheodrys aestivus*), worm snake (*Carphophis amoenus*), rat snake (*Elaphe obsoleta*), eastern garter snake (*Thamnophis sirtalis*), copperhead (*Agkistrodon contortrix*), and American toad (*Bufo americanus*).

b. Aquatic

No aquatic species were observed during the site visit. Aquatic and semi-aquatic reptiles expected in this habitat include painted turtle (*Chrysemys picta*) and eastern musk turtle (*Sternotherus odoratus*). Typical amphibian species for this habitat include green frog (*Rana clamitans*) and pickerel frog (*Rana palustris*). No sampling was undertaken in the study corridor to determine fishery potential.

4. Anticipated Impacts to Wildlife

Due to the limited extent of infringement on adjacent natural communities and the terrestrial and animal populations, no substantial habitat fragmentation is expected since most improvements will extend out from existing roadside margins. Construction noise and associated disturbances will have short-term impacts on avifauna and migratory wildlife movement patterns. However, long-term impacts are expected to be negligible. If the proposed alternative is implemented, construction impacts will be limited to a short, man-altered, intermittent stream and a small, man-induced wetland with limited to no surface water expression. Temporary impacts to downstream habitats from increased sediment during construction will be minimized by the implementation of stringent erosion control measures.

E. Special Topics

1. Waters of the United States

Surface waters are subject to jurisdictional consideration under Section 404 of the Clean Water Act as "waters of the United States" (33 CFR section 328.3). Within the study corridor, surface waters include two unnamed tributaries to the Yadkin River and an unnamed tributary to Smith Creek. The waters of the three unnamed tributaries within the project corridor are not depicted by NWI mapping (Clemmons, NC 1994). Observations during the site visit determined that all three unnamed tributaries exhibit evidence of degradation due to anthropogenic activities. At the time of the site visit, System 2 and System 3 contained flowing water, while System 1 did not.

Vegetated wetlands are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for

a portion (12.5 percent) of the growing season (DOA 1987). The field investigation determined that vegetated wetlands subject to jurisdictional consideration under Section 404 of the Clean Water Act as "waters of the United States" (33 CFR section 328.3) occur within the study corridor. Only one area of vegetated wetland was identified within the study corridor, a small area associated with System 1. Vegetation within the wetland consists of a canopy of black willow (*Salix nigra*), green ash (*Fraxinus pennsylvanica*), red maple, and sweetgum. The shrub component is made up of black willow, red maple, and honeylocust. False-nettle (*Boehermia cylindrica*), tear-thumb (*Polygonum sagittatum*), and swamp smartweed (*Polygonum hydropiperoides*) were found in the herb layer. Hydrophytic vegetation was found growing in soils exhibiting values, chromas, and mottles characteristic of hydric soils. Evidence of wetland hydrology included soils saturated to the surface, oxidized rhizoshpheres, and water stained leaves. Jurisdictional areas within the study corridor are presented in the following table.

Jurisdictional Areas within the Study Corridor
Length measurements are given in feet (meters). Area measurements are given in acres (hectares).

Jurisdictional Type	System 1	System 2	System 3	Total
Stream Linear Distance	185.7 (56.6)	531.5 (162.0)	23.2 (7.1)	740.4 (225.7)
Stream Area	0.016 (0.006)	0.061 (0.025)	0.004 (0.002)	0.081 (0.033)
Wetland Area	0.026 (0.010)	----	----	0.026 (0.010)
Total Area	0.042 (0.016)	0.061 (0.025)	0.004 (0.002)	0.107 (0.043)

System 1 lies within the footprint of the proposed I-40 westbound on-ramp. It has a northeast to southwest orientation with flow in the southwest direction. Imbedded within this system is a small wetland which connects the northeastern portion to the southwestern portion. System 1 flows under I-40 through a culvert, at which point it leaves the project corridor and eventually discharges into Smith Creek, approximately 1,184 feet (360.9 meters) to the southwest.

System 2 has a southwest-to-northeast orientation with flow toward the northeast. This system is adjacent to the I-40 westbound off ramp. The proposed alternative is not expected to impact this system.

System 3 has a south-to-north orientation with flow toward the north. It flows under I-40 through a culvert to a confluence with System 2. This unnamed tributary eventually discharges into the Yadkin River, approximately 1.2 miles (1.9 kilometers) outside the study corridor boundary. The proposed alternative is not expected to impact this system.

2. Permits

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The COE has made available Nationwide Permit (NWP) #23 (61 FR 65874, 65916; December 13, 1996) for CEs due to potential impacts. DWQ has made available a General 401 Water Quality Certification for NWP #23. However, authorization for jurisdictional area impacts through use of this permit requires written notice to DWQ. In the event that NWP #23 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under either NWP #14 (transportation crossings) or General Bridge Permit 031 issued by the Wilmington COE District. Notification to the Wilmington COE office is required if these general permits are utilized.

3. Mitigation

Fill or alteration of streams and/or wetlands may require compensatory mitigation in accordance with 15 NCAC 2H .0506(h). Compensatory mitigation is not expected to be offered for this project due to minimal impacts to jurisdictional areas. Utilization of BMPs is recommended in an effort to minimize indirect impacts. A final determination regarding mitigation rests with the COE and DWQ.

F. Protected Species

1. Federally Protected Species

Species with the federal classification of Endangered, Threatened, or officially Proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range", and the term "Threatened species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). Only one federally protected species is listed for Davie County (February 11, 2003 FWS list): Michaux's sumac (*Rhus michauxii).*

Michaux's sumac is a densely pubescent, deciduous, rhizomatous shrub, usually less than 2 feet (0.6 meters) high. The alternate, compound leaves consist of 9 to 13 hairy, round-based, toothed leaflets borne on a hairy rachis that may be slightly winged (Radford *et al.* 1968). Small male and female flowers are produced during June on separate plants; female flowers are produced on terminal, erect clusters followed by small, hairy, red fruits (drupes) in August and September. Michaux's sumac tends to grow in disturbed areas where competition is reduced by periodic fire or other disturbances, and may grow along roadside margins or utility right-of-ways. In the Piedmont, Michaux's sumac appears to prefer clay

soil derived from mafic rocks or sandy soil derived from granite; in the Sandhills, it prefers loamy swales (Weakley 1991). Michaux's sumac ranges from south Virginia through Georgia in the inner Coastal Plain and lower Piedmont.

The study corridor supports areas of maintained, early successional roadside/disturbed land suitable for Michaux's sumac. A systematic survey for Michaux's sumac was conducted within suitable habitat of the study corridor on July 17, 2001. The survey involved establishing transects through suitable habitat and walking the transects while looking for the plant. This survey found no evidence of the presence of this species. All roadsides, meadows, lawns, and woodland edges within the study corridor were surveyed.

BIOLOGICAL CONCLUSION: NHP files have no documentation of this species within 1.0 miles (1.6 kilometers) of the study corridor, and this species was not identified during a survey conducted on July 17, 2001. Based on available information and results of an on-site survey, the proposed project will not affect Michaux's sumac. **NO EFFECT.**

2. Federal Species of Concern

The February 11, 2003 FWS list includes a category of species designated as "Federal species of concern" (FSC). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). The FSC designation provides no federal protection under the ESA for species listed. Three federal species of concern are listed for Davie County: Heller's trefoil *(Lotus helleri),* which is most often found over clay soils in dry woods, clearings, and roadsides; Creamy tick-trefoil *(Desmodium ochroleucum)*, which is found in sandy, rocky woodland openings; and Robust redhorse *(Moxostoma robustum)*, which is found in perennial streams. Habitat for Heller;s trefoil and Creamy tick-trefoil does occur in the study corridor. However, NHP files have no documentation of this species within 1.0 miles (1.6 kilometers) of the study corridor, and no individuals of this species were observed during site visits. Habitat for the Robust redhorse does not occur in the study corridor.

3. State Protected Species

Plant and animal species which are on the North Carolina state list as Endangered, Threatened, Special Concern, Candidate, Significantly Rare, or Proposed (Amoroso 2002, LeGrand and Hall 2002) receive limited protection under the North Carolina Endangered Species Act (G.S. 113-331 *et seq.*) and the North Carolina Plant Protection Act of 1979 (G.S. 106-202 *et seq.*). No species with these designations are documented within 1.0 mile (1.6 kilometers) of the study corridor.

NHP records do not document the occurrence of any Significant Natural Heritage

Area (SNHA) in the immediate vicinity of the study corridor. The nearest SNHA, Carter's Creek Forest, is located approximately 2.0 miles (3.2 kilometers) southeast of the study corridor. This project study corridor has no connection to Carter's Creek Forest, and the proposed project will not affect this SNHA.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

In a memorandum dated March 29, 2001 the State Historic Preservation Officer (SHPO) states "On February 20, 2001 our office requested an architectural survey for the above project. However, on June 1, 2000 April Montgomery of our office signed a concurrence form stating that there were no historic properties with the project's area of potential effect. We stand by our June 1, 2000 determination that there were no historic properties within the project's area of potential effect". The concurrence form and memorandums of March 29, 2001 and February 20, 2001 are included in the Appendix.

C. Archaeology

In a memorandum dated February 20, 2001 the SHPO states "There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources, which may be eligible for inclusion in the National Register of Historic Places, will be affected by the project construction. We, therefore recommend no archaeological investigation be conducted in connection with this project."

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or

natural environment with the use of current NCDOT standards and specifications.

The project is not in conflict with any plan, existing land use, or zoning regulation. No substantial change is land use is expected to result from construction of the project.

No adverse impact on families or communities is anticipated. Right of way acquisition will be minimized by the preferred alternative.

No adverse effect on public facilities or services is anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity as a result of the urban character of the land uses, the Farmland Protection Policy does not apply.

The project is located in Davie County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Parts 51 and 93 are not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

The project does not involve any known Section 4(f) properties. There are no publicly-owned parks, recreational facilities, or wildlife and waterfowl refuges of National, State or local significance in the vicinity of the project.

This project is an air quality "neutral" project, so it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required.

The traffic volumes will not increase or decrease because of this project. The project's impact on noise and air quality will not be substantial.

Noise levels could increase during construction but will be temporary. If any vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

Immediately south of the eastbound ramp terminals (currently a roundabout), the Quick-Pix Food Mart #3 (Now Wendys) has had and the 801 Shell Service currently has underground tank storage facilities. The Quick-Pix operated as a convenience store/gas station on the southwest side of NC 801 at I-40 on a site now occupied by Wendys. The Division of Waste Management registry shows three (3) 10,000 gallon gasoline UST's and one (1) 6,000 gallon diesel UST and one (1) 2,000 gallon kerosene UST were on this

site. The tank area is approximately 39 feet (12 meters) from the centerline of NC 801. There were several monitoring wells at the site and at one time, the site appeared to be under remediation, but no incident number could be located. The disposition of the UST's is unknown. The 801 Shell Service currently operates as a gas station located on the southeast side of NC 801 at I-40. The Division of Waste Management registry shows three (3) gasoline UST's (2 @ 10,000 and 1 @ 8,000 gallons). The tank area is approximately 36 feet (11 meters) from the edge of pavement of NC 801. No superfund sites have been identified. Additionally, no landfills or dumpsites are known within the project limits. The NCDOT Geotechnical Unit will perform a final investigation of UST locations relative to the Quick Pix Food Mart #3 (now Wendys) and the 801 Shell Service facilities prior to the acquisition of any required right of way along NC 801 south of I-40.

Davie County is a participant in the National Flood Insurance Regular Program. However, this project does not impact any stream crossing.

On the basis of the above discussion, it is concluded that no substantial adverse environmental effects will result from implementation of the project.

VIII. PUBLIC INVOLVEMENT

This project was coordinated with local officials and stakeholders at a meeting held on April 23, 2003 in the Village Hall, Village of Clemmons. No comments were received as a result of that meeting. A Citizens' Informational Workshop was held on July 10, 2003. Wendy's Corporation would like a break in the proposed median on NC 801 S. Due to safety concerns, no median break is proposed, as their property is in the southwest quadrant adjoining the signalized intersection of the I-40 ramps at NC 801. The owner/developer of the vacant property in the northwest quadrant would like impacts to his property minimized. Impacts to this property have been minimized through the use of the minimum allowable radius on the proposed loop in this quadrant. One individual is opposed to the project unless the design is roundabout based. A roundabout design was considered but rejected due to the number of lanes needed and the proximity of development. One couple was opposed to the magnitude of the bridge replacement. The project is being designed to accommodate the anticipated growth already occurring in this area. The City of Winston-Salem Transportation Department restated the project specifics and asked that pedestrian access along NC 801 through the project limits be given consideration. Sidewalks are proposed on the replacement structure and a wide berm to accommodate future sidewalks will be provided along the NC 801 approaches. Oral comments from local officials and stakeholders supported the project as proposed.

IX. AGENCY COMMENTS

Comment

The United States Department of the Interior, Fish and Wildlife Service requested

surveying each of the project areas for species prior to any further planning or on-the-ground activities to ensure no adverse impacts occur.

Response

The project area has been surveyed and a Natural Resource Technical Report prepared and approved.

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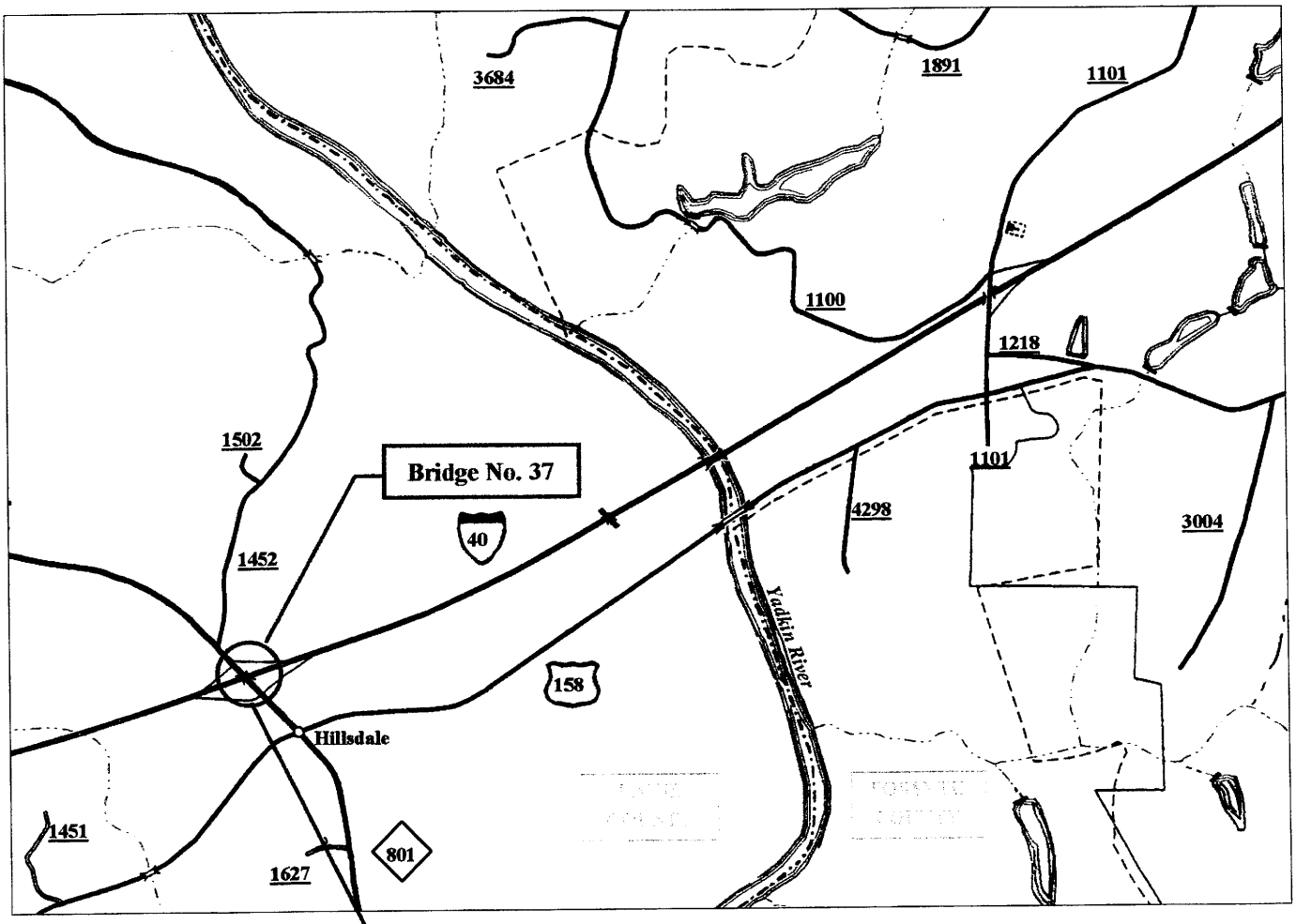
FIGURES



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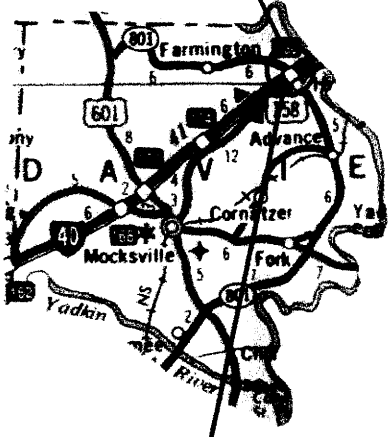
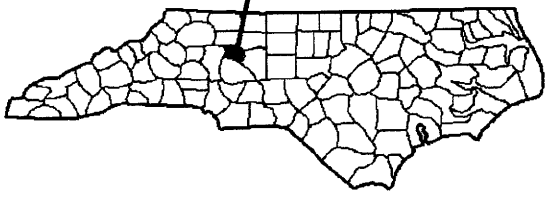
APPROXIMATE SCALE

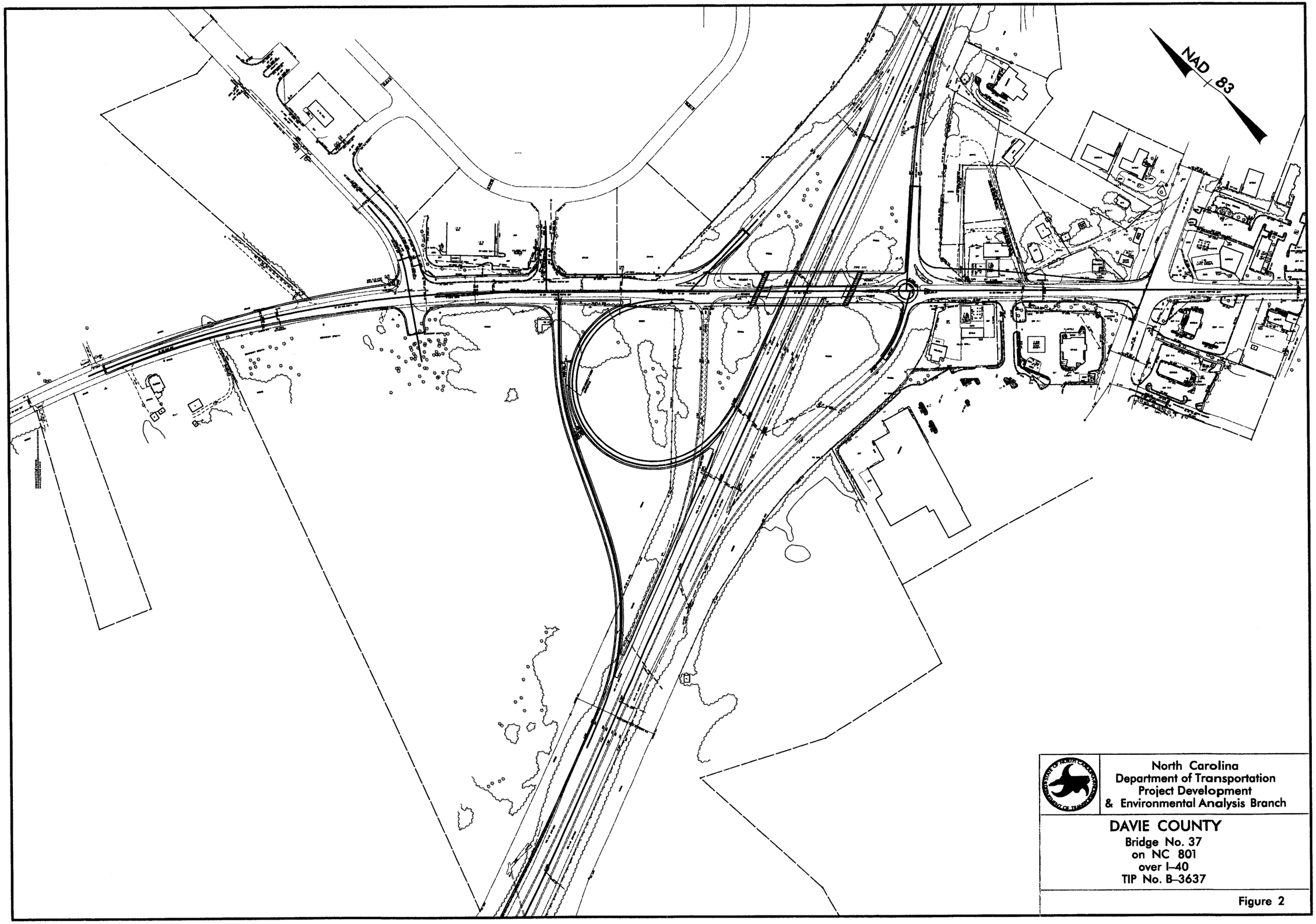




North Carolina
Department of Transportation
Project Development
& Environmental Analysis Branch

DAVIE COUNTY
Bridge No. 37
on NC 801
over I-40
TIP No. B-3637

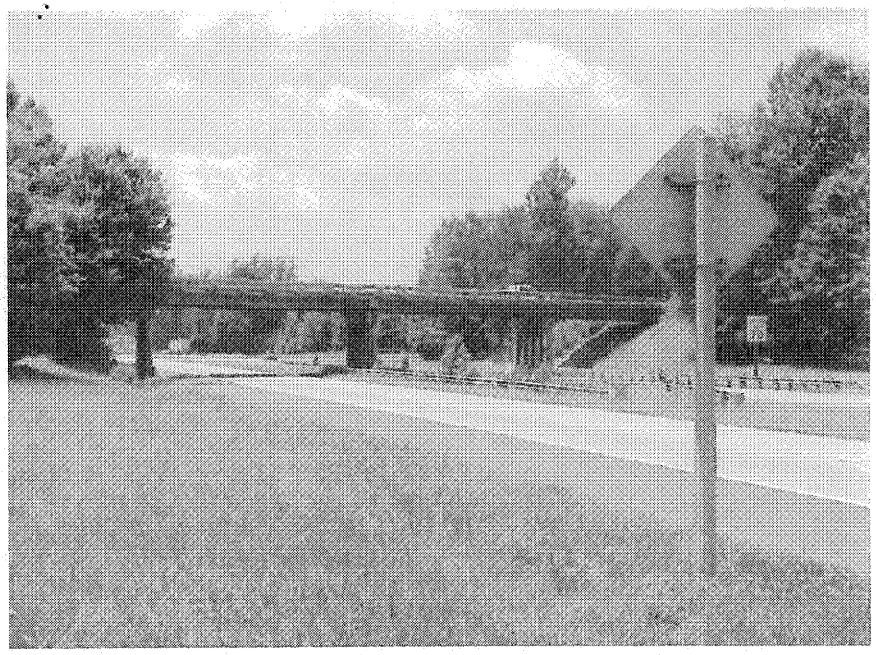
Figure 1



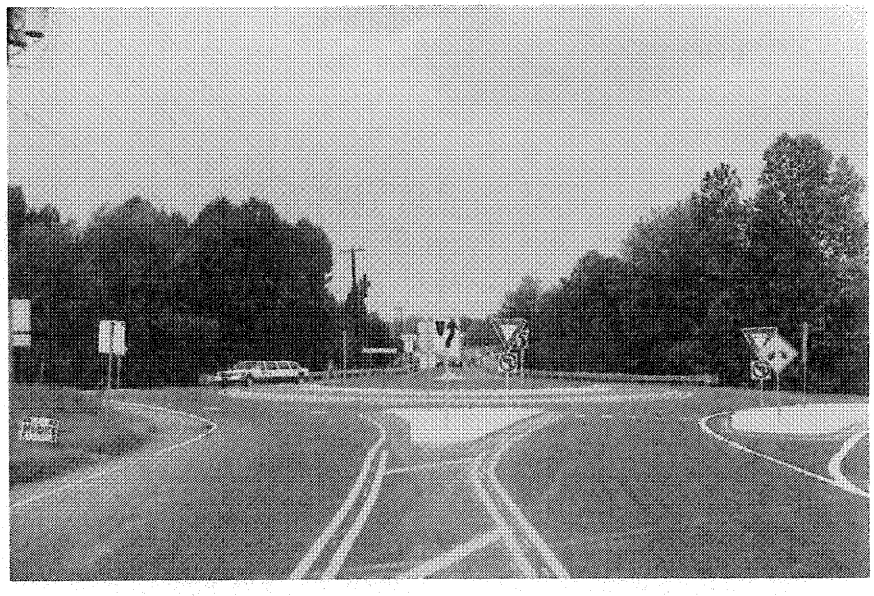
North Carolina
Department of Transportation
Project Development
& Environmental Analysis Branch

DAVIE COUNTY
Bridge No. 37
on NC 801
over I-40
TIP No. B-3637

Figure 2



BRIDGE NO. 37
SIDE VIEW
LOOKING WEST



SOUTH APPROACH
LOOKING NORTH

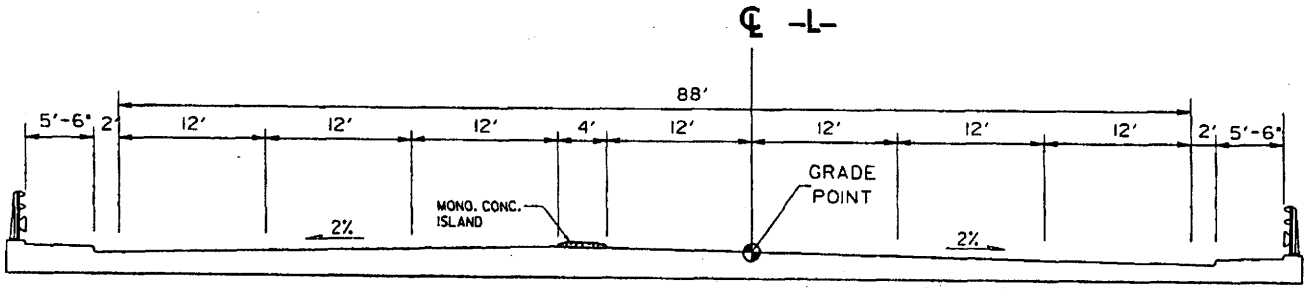
NORTH APPROACH
LOOKING SOUTH

North Carolina Department of Transportation
Project Development & Environmental Analysis Branch

DAVIE/FORSYTH COUNTIES
Davie County Bridge No. 37
on NC 801
over I-40
TIP No. B-3637

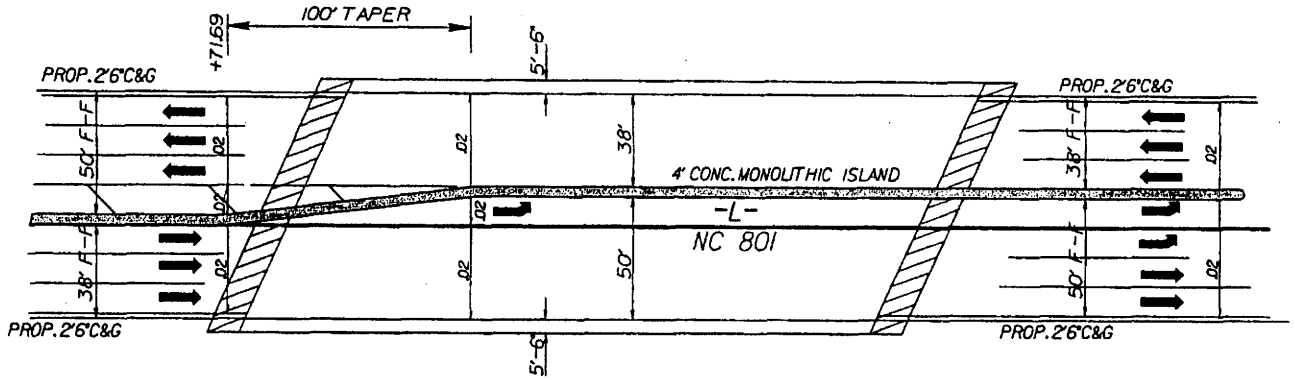
Figure 3

PROJECT: B-3637



TYPICAL SECTION

USE TYPICAL SECTION FOR LINE -L- BRIDGE



BRIDGE SKETCH NO. 1

BRIDGE NO. 37 ON NC 801 (-L-) OVER I-40

North Carolina
Department of Transportation
Project Development
& Environmental Analysis Branch

DAVIE COUNTY
Bridge No. 37
on NC 801
over I-40
TIP No. B-3637

Figure 4

APPENDIX

J. Conforti

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

January 25, 2001

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Gilmore:

Subject: Bridge Replacements: B-3677, Mecklenburg County; B-3822, Catawba County; B-3840, Gaston County; B-3700, Stanly County; B-3828, Cleveland County; B-3839, B-3454, Forsyth County; B-3421, Cabarrus County; B-3637, Davie County; B-3835, Davie-Forsyth Counties; B-3404, Anson County; DOT contractor TGS Engineers

We have reviewed these projects and provide comments in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

The information we received for these 11 projects does not include descriptions of the structures that will replace the existing bridges, nor does it include any environmental information regarding the streams or whether or not habitat assessments or surveys for rare species have been conducted for any of these projects. Therefore, our comments are primarily limited to the known locations of listed species and species of federal concern. When the Categorical Exclusions are prepared and more information is available regarding environmental effects we can offer more substantive comments.

Enclosed are species lists from the nine counties included in this package. These lists provide the names of species that are on the Federal List of Endangered and Threatened Wildlife and Plants, as well as species of federal concern. Species of federal concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species in our response to give you advance notification and to request your assistance in protecting them if any are found in the vicinity of your projects. Our records indicate the following:

1. B-3822, Catawba County; B- 3840, Gaston County; B-3839, B-3454, Forsyth County; B-3421, Cabarrus County; B-3637, Davie County. There are no known locations of species of concern near these projects. However, we recommend surveying each of the project areas for

species prior to any further planning or on-the-ground activities to ensure no adverse impacts occur.

2. B-3677, Mecklenburg County; B-3700, Stanly County; B-3404, Anson County. Our records for these counties indicate known locations for the federally endangered Schweinitz's sunflower (*Helianthus schweinitzii*) in the vicinity of these projects. If this species occurs in the project areas, additional consultation will be required.

3. B-3828, Cleveland County. Our records for Cleveland County indicate there is a known location of the federally threatened dwarf-flowered heartleaf (*Hexastylis naniflora*) near the project. If this species occurs in the project area, additional consultation will be required.

4. B-3835, Davie-Forsyth Counties. Our records indicate there is a known location of the federally endangered Michaux's sumac (*Rhus michauxii*) near the project. If this species occurs in the project area, additional consultation will be required.

We are interested in the types of structures that will replace these existing bridges and would recommend spanning structures, preferably bridges, in all cases. We look forward to reviewing the completed categorical exclusion documents.

If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning these projects, please reference our Log Number 4-2-01-252.

Sincerely,

Brian P. Cole

Brian P. Cole
State Supervisor

Enclosure

cc:
John Conforti, Project Development and Environmental Analysis Branch, North Carolina Department of Transportation, 1548 Mail Service Center, Raleigh, North Carolina 27699-1548
Mr. Ron Linville, Western Piedmont Region Coordinator, North Carolina Wildlife Resources Commission, 3855 Idlewild Road, Kernersville, North Carolina 27284-9180
Ms. Cynthia Van Der Wiele, North Carolina Department of Environment and Natural Resources, Division of Water Quality, Wetlands Section, 1621 Mail Service Center, Raleigh, North Carolina 27699-1621

Invertebrates

Pee Dee crayfish ostracod	*Dactylocythere peedeensis*	FSC*
Carolina heelsplitter	*Lasmigona decorata*	Endangered**

Vascular Plants

Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered
Heller's trefoil	*Lotus helleri*	FSC

CATAWBA COUNTY

Invertebrates

Catawba crayfish ostracod	*Dactyloctythere isabelae*	FSC

Vascular Plants

Dwarf-flowered heartleaf	*Hexastylis naniflora*	Threatened
Sweet pinesap	*Monotropsis odorata*	FSC

CLEVELAND COUNTY

Vascular Plants

Dwarf-flowered heartleaf	*Hexastylis naniflora*	Threatened
Sweet pinesap	*Monotropsis odorata*	FSC
Carolina saxifrage	*Saxifraga caroliniana*	FSC

DAVIE COUNTY

Vascular Plants

Heller's trefoil	*Lotus helleri*	FSC*
Michaux's sumac	*Rhus michauxii*	Endangered

FORSYTH COUNTY

Vertebrates

Bog turtle	*Clemmys muhlenbergii*	T(S/A)[1]
Red-cockaded woodpecker	*Picoides borealis*	Endangered****

Vascular Plants

Small-anthered bittercress	*Cardamine micranthera*	Endangered

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

TO: John Conforti
Project Engineer, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: January 2, 2001

SUBJECT: NCDOT Bridge Replacements in Anson, Cabarrus, Catawba, Cleveland, Davie, Forsythe, Gaston, Guilford, Mecklenburg, Randolph, Rockingham, and Stanly counties of North Carolina. TIP Nos. B-3404, B-3421, B-3822, B-3828, B-3637, B-3835, B-3454, B-3839, B-3840, B-3337, B-3652, B-3851, B-3677, B-3506, B-3694, and B-3700.

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On bridge replacement projects of this scope our standard recommendations are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should

be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for fish passage. Generally, this means that the culvert or pipe invert is buried at least 1 foot below the natural stream bed. If

multiple cells are required the second and/or third cells should be placed so that their bottoms are at stream bankful stage (similar to Lyonsfield design). This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will allow sufficient water depth in the culvert or pipe during normal flows to accommodate fish movements. If culverts are long, notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, to reduce flow velocities, and to provide resting places for fish and other aquatic organisms moving through the structure.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated so that no channel realignment or widening is required. Widening of the stream channel at the inlet or outlet of structures usually causes a decrease in water velocity causing sediment deposition that will require future maintenance.

4. Riprap should not be placed on the stream bed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-3404 – Anson County – Bridge No. 314 over South Fork Jones Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

2. B-3421 – Cabarrus County – Bridge No. 266 over Norfolk and Southern Railway. No comment.

3. B-3822 – Catawba County – Bridge No. 8 over unnamed tributary to the Catawba River. We request that High Quality Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of WS-IV. We are not aware of any threatened of endangered species in the project vicinity.

4. B-3828 – Cleveland County – Bridge No. 233 over Buffalo Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

5. B-3637 – Davie County – Bridge No. 37 over I-40. No comment.

6. B-3835 – Davie-Forsyth counties – Bridge No. 35 over the Yadkin River. We request that High Quality Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of WS-IV. We request that the new bridge span the adjacent wetlands

entirely. The old fill causeways should then be removed and graded to natural ground level. We are not aware of any threatened of endangered species in the project vicinity.

7. B-3454 – Forsyth County – Bridge No. 260 over Muddy Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

8. B-3839 – Forsyth County – Bridge No.139 over Fishers Branch. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

9. B-3840 – Gaston County – Bridge No. 52 over South Crowders Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

10. B-3337 – Guilford County – Bridge No. 527 over North Buffalo Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

11. B-3652 – Guilford County – Bridge No. 20 over the Deep River. SR 4121 crosses the Deep River just below the dam of High Point City Lake. This area supports good numbers of sunfish and may support a tailrace fishery. Therefore, we request that no in-water work be preformed from April 1 to May 31. We request that High Quality Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of WS-IV. We are not aware of any threatened of endangered species in the project vicinity.

12. B-3851 – Guilford County – Bridge No. 21 over US 29/70. No comment.

13. B-3677 – Mecklenburg County – Bridge No. 36 over Greasy Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

14. B-3506 – Randolph County – Bridge No. 226 over Richland Creek. Richland Creek is a medium sized stream that supports good populations of sunfish. Therefore, we request that no in-water work be preformed from April 1 to May 31. We are not aware of any threatened of endangered species in the project vicinity.

15. B-3694 – Rockingham County – Bridge No. 55 over the Belews Lake Spillway. This bridge appears to be just downstream of the Belews Lake dam. This area supports good numbers of sunfish and may support a tailrace fishery. Therefore, we request that no in-water work be preformed from April 1 to May 31. We request that High Quality Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of WS-IV. We are not aware of any threatened of endangered species in the project vicinity.

16. B-3700 – Stanly County – Bridge No. 187 over Long Creek. This segment of Long Creek may support the state listed Carolina darter. Therefore, we request that High Quality Sedimentation and Erosion Control Measures be used to minimize project impacts to this species.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.

Please respond to Mr. Gallimore.
12/20/00

DAVIE COUNTY
PLANNING & ZONING

JOHN S. GALLIMORE
Director

123 SOUTH MAIN ST., ROOM 307
MOCKSVILLE, NORTH CAROLINA 27028

336-751-3340
FAX: 336-751-4497

December 15, 2000

Mr. William Gilmore, P.E.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

B-3835 B-3637

RE: Bridge Replacements No. 35 and No. 37

Dear Mr. Gilmore,

This letter is in response to your letter requesting comments in regard to the bridge replacements for Bridge No. 35 on US 158 across the Yadkin River and Bridge No. 37 on NC 801 across Interstate 40 both located in the Hillsdale area of northeastern Davie County.

Please refer to an enclosed copy of my letter to Mr. Pat Ivey, Division Engineer in regard to the necessary improvements to NC 801 around the area of Bridge No. 37. In addition, Bridge No. 35 serves as a critical link between Davie County and Forsyth County and is one of only two connections to the east across the Yadkin River. Our understanding is that Bridge No. 35 is scheduled to be replaced within the 2000-2006 TIP with a widened facility to accommodate future traffic. We are anticipating these improvements to the bridge as necessary for the efficient handling of traffic expected to be caused by increasing development in northeastern Davie County. However, we have learned that there are no scheduled improvements to US 158 leading from Bridge No. 35 to NC 801. Effectively, the bridge may be widened with no improvement to the travel lanes of US 158. Improvements to US 158 are necessary to increase safety and reduce accidents at the US 158 entrance to the Town of Bermuda Run. At the exit of the Yadkin River bridge, there is very limited sight distance, a 55 mph speed limit, very minimal shoulders, and no right or left turn lane into the Town's US 158 entrance. At a minimum, we would respectfully request improvements to US 158 by widening or the addition of turn lanes at the Bermuda Run entrance to improve safety and reduce traffic hazards at this location. We also understand the Town of Bermuda Run is willing to provide some participation in the addition of turning lanes to US 158 at the entrance to the Town. In the future, a four lane section with center median may be necessary to limit turn movements and maintain efficiency. These improvements may be necessary through the full length of US 158 from the bridge to NC 801 at Hillsdale. The developer of the Kinderton Village commercial section has improved a section of US 158 along the area of their development. But, this has had no benefit to those vehicles travelling past the entrance to the Town of Bermuda Run or the traffic entering or exiting the Town.

As this area of our County continues to develop and traffic levels increase, we anticipate longer delays and traffic problems should these bridges not be upgraded to multi-lane facilities. We hope you will consider our request to include with these bridge

replacements the necessary improvements to both US 158 and NC 801 as crucial to effectively handling the expected future traffic along these roads.

Thank you in advance for your consideration. I gladly offer our assistance in evaluating the transportation improvements in northeast Davie County as you develop plans for these bridge replacements. Please contact my office for any additional information.

Sincerely,

John Gallimore
Planning Director

cc: Margaret Kluttz, Board of Transportation
Representative Julia Howard
Pat Ivey, Division Engineer
John Davenport, Division Traffic Engineer
Mike Shaffner, District Engineer
Michael Allen, Chairman, County Commissioners
Ed Vogler, Chairman, Davie County Planning Board
Ken Windley, County Manager
Beth Dirks, Bermuda Run Town Manager

DAVIE COUNTY
PLANNING & ZONING

123 SOUTH MAIN ST., ROOM 307
MOCKSVILLE, NORTH CAROLINA 27028

JOHN S. GALLIMORE
Director

336-751-3340
FAX: 336-751-4497

December 14, 2000

Mr. Patrick Ivey, P.E.
Division Engineer
North Carolina Department of Transportation
2125 Cloverdale Avenue
Winston Salem, NC 27103

RE: NC 801 and Project B-3637

Dear Mr. Ivey,

Thank you for the opportunity to meet the other day in regard to roadway improvements and expected construction along Highway 801 in the Hillsdale area of Davie County. I certainly appreciate your assistance as we evaluate the needs of that area.

In that regard, as I look at the development patterns and recent traffic numbers along US 158 and NC 801 between Yadkin Valley Road and south of the Oak Valley development, it appears that future expected traffic will be significant. In researching future road projects and the 2002-2008 TIP, I noticed there is an un-funded project, R-3610 which describes the widening to multi-lanes of NC 801 from SR 1650(Hillcrest Drive) to US 158. It also appears that the Project B-3637(replacement of Bridge No.37 across Interstate 40) has been reduced in estimated construction cost from the previous TIP. While we certainly appreciate the demand on DOT funds and the limitations on bridge replacements through Federal funds, it is imperative that we look at improving Hwy 801 from the area north of Yadkin Valley Road to at least south of the 801 gate into the Town of Bermuda Run. This section of NC 801 is expected to only become more congested and bottle-necked as future planned and expected developments are built. Most notably, the Kinderton Village(currently planned for 715 homes and 220 acres of higher-density commercial), the 34 acres of commercially zoned property opposite Kinderton off the west side of NC 801, the adjoining 115 acres of land to the immediate north being marketed at this time, and approximately 5 acres of commercially zoned property at the northeast intersection of US 158 and NC 801 will drastically impact traffic demands on both NC 801, US 158, and the ramps onto Interstate 40. In addition, Bermuda Run West(153 homes), Oak Valley(750 homes), and several smaller developments around the Advance area and Baltimore Road area(approximately 200 homes) in recent years have created a serious demand on NC 801. Should Bridge No. 37 be widened and no improvements made to NC 801 and the intersection at US 158, severe traffic delays are expected when developments begin to build-out. With no other alternative routes through this area to Forsyth County and Winston Salem to the east, this particular intersection of NC 801 and US 158 and Bridge No. 35(Kathryn Crosby Bridge) across the Yadkin River are critical to transportation in northeast Davie County.

At this time, we would respectfully request that the un-funded project No. R-3610 be funded in part and be phased to coincide with the improvements to the NC 801 bridge.

In addition we would request to expand the scope to include improvements to NC 801 north of Interstate 40 to just north of Yadkin Valley Road and include widening and improvements to NC 801 south of US 158 to below the Town of Bermuda Run--NC 801 gate. By funding this project and coordinating improvements to NC 801 with the bridge replacement, the NCDOT can more efficiently plan and construct the needed improvements along that corridor in a more timely manner. These improvements should also provide a long-term solution to the expected traffic growth in that area.

I am enclosing a map to detail the areas of development along that highway corridor. Please feel free to contact our office for additional information or details concerning development in the Hillsdale area.

Thank you in advance for your consideration.

Sincerely,

John Gallimore
Planning Director

cc: Margaret Kluttz, Board of Transportation
Representative Julia Howard
John Davenport, Division Traffic Engineer
Mike Shaffner, District Engineer
Michael Allen, Chairman, County Commissioners
Ed Vogler, Chairman, Davie County Planning Board
Ken Windley, County Manager

NC 801 Corridor Improvements Request

Davie County, North Carolina

Legend

Davie County Plannin
December 14, 200

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

March 29, 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 37 on NC 801 over I-40,
TIP No. B-3637, Davie County, ER 01-8192

On February 20, 2001 our office requested an architectural survey for the above project. However, on June 1, 2000 April Montgomery of our office signed a concurrence form stating that there were no historic properties within the project's area of potential effect. We stand by our June 1, 2000 determination that there were no historic properties within the project's area of potential effect.

Please disregard our February 20, 2001 letter. We apologize for any inconvenience this may have caused.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919 733-4763.

Cc: M.P. Furr

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801

Williams
3637

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

February 20, 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook for David Brook
Deputy State Historic Preservation Officer

Re: Replace Bridge No. 37 on NC 801 over I-40, TIP No. B- 3637, Davie County, ER 01-8192

Thank you for your letter of November 15, 2000, concerning the above project.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area. However, since a survey has not been conducted in over a decade, there may be structures of which we are unaware located within the planning area.

If there are any structures more than fifty years old on or adjacent to the project site, please send us photographs (Polaroid type snapshots are fine) of each structure. These photographs should be keyed to a map that clearly shows the site location. If there are no building over fifty years old on or adjacent to the project, please notify us of this in writing.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources, which may be eligible for inclusion in the National Register of Historic Places, will be affected by the project construction. We, therefore recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 •733-8653
Restoration	515 N. Blount St, Raleigh , NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 •715-4801
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 •715-4801

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919/733-4763.

DB:pda

cc: Mary Pope Furr, NCDOT

Confort

*Federal Aid #*_____ *TIP* #B-3637 *County*: Davie

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Replace Bridge No. 37 on NC 801 over I-40

On August 3, 2000, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [x] Federal Highway Administration (FHWA)
- [x] North Carolina State Historic Preservation Office (SHPO)

Reviewed the subject project at

- [ ] a scoping meeting
- [x] photograph review session/consultation
- [ ] other

All parties present agreed

- [ ] there are no properties over fifty years old within the project's area of potential effect.
- [x] there are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effect.
- [x] there are properties over fifty years old (list attached) within the project's area of potential effect, but based on the historical information available and the photographs of each property, properties identified as 1-8 are considered not eligible for the National Register and no further evaluation of them is necessary.
- [x] there are no National Register-listed properties located within the project's area of potential effect.

Signed:

Mary Pope Furr — 8:30 0
Representative, NCDOT — Date

Michael C. Dawson — 8/3/00
FHWA, for the Division Administrator, or other Federal Agency — Date

Lori Montgomery — 8/3/00
Representative, SHPO — Date

David Brook — 8/7/00
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

RELOCATION REPORT

MANAGER OF
RIGHT OF WAY BRANCH
North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM
OCT 9 2003
N.C. DEPT. OF TRANSPORTATION

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	33185.1.1	COUNTY	Davie	Alternate	Alternates
I.D. NO.:	B-3637	F.A. PROJECT	BRSTP-801(2)		
DESCRIPTION OF PROJECT:	Bridge #37 over I-40 on NC 801				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	***0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	0	$ 0-150	0
20-40M	0	150-250	0	20-40M	0	150-250	0
40-70M	0	250-400	0	40-70M	0	250-400	0
70-100M	0	400-600	0	70-100M	0	400-600	0
100 UP	0	600 UP	0	100 UP	0	600 UP	0
TOTAL	N/A	[redacted]	N/A		N/A		N/A

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.	
	X	1.	Will special relocation services be necessary?
	X	2.	Will schools or churches be affect by displacement?
X		3.	Will business services still be available after project?
	X	4.	Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5.	Will relocation cause a housing shortage?
		6.	Source for available housing (list).
	X	7.	Will additional housing programs be needed?
	X	8.	Should Last Resort Housing be considered?
	X	9.	Are there large, disabled, elderly, etc. families?
	X	10.	Will public housing be needed for project?
X		11.	Is public housing available?
N/A	N/A	12.	Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13.	Will there be a problem of housing within financial means?
X		14.	Are suitable business sites available (list source).
		15.	Number months estimated to complete RELOCATION? N/A

REMARKS (Respond by Number)

3. General Business services will still be available in the area
11. Davie County Housing Authority
14. Winston Salem Journal, realtor.com

NOTES: The structure in R/W at Ramp B is abandoned ruins.
***

There are no business displacees according to plans. However, the USTs and canopy are in R/W at Quality Oil Co. If the highest and best use of the remainder is altered to due the new R/W, relocation benefits will be offered to Quality Oil Co.
The same situation applies to the tenant business on S & G Investments. The new R/W includes on that parcel includes all of the frontage parking. If highest and best use of remainder changes due to loss of parking, relocation benefits will be offered to L & G Hair Design.

There are no USTs and canopy at RT. of SS 37+30.00.

Heather Fulghum — Right of Way Agent — 10-7-03 — Date

[redacted]

Ann Simpson — Relocation Coordinator — 10-10-03 — Date

Form 15.4 Revised 09-02

Original & Copy 1: Relocation Coordinator
Copy 2: Division Relocation File