

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

December 1, 2006

MEMORANDUM TO: Mr. Jon G. Nance, PE  
Division Five Engineer

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

SUBJECT: Wake County, Replace Bridge No.255 over an Unnamed  
Tributary to Swift Creek; T.I.P. Number B-4299; State  
Project 8.2408401

Attached is the DWQ 401 Water Quality Certification and the Neuse Buffer Authorization for the above referenced project. All environmental permits have been received.

PSH/gyb

Attachment

Cc:

Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Jay Bennett, P.E., Roadway Design  
Dr. David Chang, P.E., Hydraulics  
Mr. Randy Garris, P.E. State Contract Officer  
Mr. Art McMillan, P.E., Highway Design  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. John F. Sullivan, FHWA  
Mr. Eric Midkiff, P.E., PDEA Central Region Unit Head  
Mr. Chris Murray, Division Environmental Officer

# PROJECT COMMITMENTS

**Wake County  
Replacement of Bridge No. 255 over  
an Unnamed Tributary to Swift Creek  
State Project 8.2408401  
WBS No. 33636.1.1  
TIP No. B-4299**

In addition to the NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, and Neuse Buffer Certification Conditions, the following special commitments have been agreed to by NCDOT:

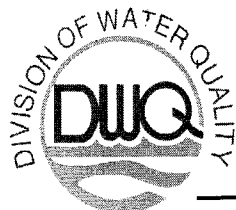
## **Commitments Developed Through Project Development and Design**

### ***Project Development & Environmental Analysis and Roadway Design Unit***

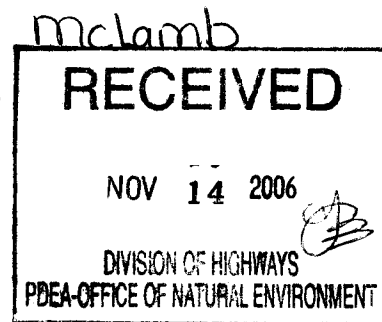
The Neuse River Riparian Buffer Rules will be implemented during the design, construction, and maintenance of the project.

## **Commitments Developed Through Neuse Buffer Certification**

No new special conditions are contained in the Neuse Buffer Certification. All standard conditions apply.



November 9, 2006  
 Wake County  
 DWQ Project No. 20061671  
 Bridge 255 on SR 1006  
 TIP No. B-4299



**APPROVAL of NEUSE BUFFER AUTHORIZATION with ADDITIONAL CONDITIONS**

Dr. Gregory J. Thorpe, Ph.D.  
 NCDOT, Project Development and Environmental Analysis  
 1598 Mail Service Center  
 Raleigh, NC 27699-1598

Dear Dr. Thorpe:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of replacing Bridge 255 in Wake County:

**Neuse Riparian Buffer Impacts**

Site	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	6,286	0	6,286	N/A	3,065	0	3,065	N/A
<b>Totals</b>	<b>6,286</b>	<b>0</b>	<b>6,286</b>	<b>0</b>	<b>3,065</b>	<b>0</b>	<b>3,065</b>	<b>0</b>

\* n/a = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

**Total Buffer Impact for Project: 9,351 square feet.**

The project shall be constructed in accordance with your application dated received October 24, 2006. After reviewing your application, we have decided that these impacts are covered by the Neuse Riparian Buffer Rules (15A NCAC 2B.0233). In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire after five years from the issue date.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certification.



**Conditions of Certification:**

1. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.
2. Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.
3. All stormwater runoff shall be directed as sheetflow through stream buffers at nonerosive velocities, unless otherwise approved by this certification.
4. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular DOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated, with native woody species before the next growing season following completion of construction.
5. Pursuant to NCAC15A 2B.0233(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by the NCDWQ. At this time, the NCDWQ has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.
6. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
7. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
8. The dimension, pattern and profile of the stream above and below the crossing should not be modified. Disturbed floodplains and streams should be restored to natural geomorphic conditions.
9. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.
10. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.
11. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
12. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
13. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.



14. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.

15. A copy of this Certification shall be posted on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.

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

17. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the Certification has been completed.

18. Native riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

19. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this certification without appropriate modification. Should waste or borrow sites be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.

20. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:

- a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
- b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
- c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

21. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored upon completion of the project.



Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director  
Division of Water Quality

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699. This certification and its conditions are final and binding unless you ask for a hearing. This letter completes the review of the Division of Water Quality under Section 401 of the Clean Water Act. If you have any questions, please contact Rob Ridings at (919) 733-9817.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alan W. Klimek".

Alan W. Klimek, P.E.

Attachment (Certificate of Completion form)

cc: Chris Murray, Division 5 Environmental Officer  
Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Travis Wilson, NC Wildlife Resources Commission  
DWQ Raleigh Regional copy  
File Copy



DWQ Project No.: \_\_\_\_\_ County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

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

**Applicant's Certification**

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Agent's Certification**

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

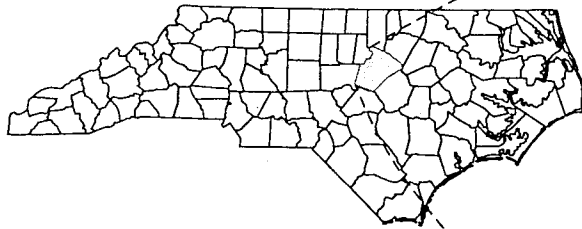
**Engineer's Certification**

\_\_\_\_\_ Partial \_\_\_\_\_ Final

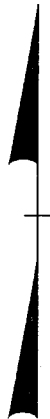
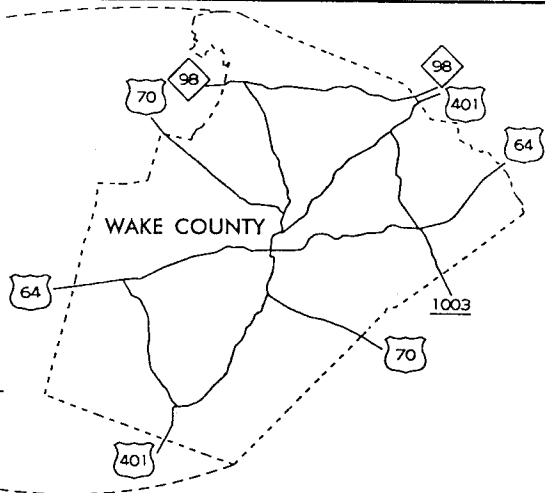
I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation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

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_

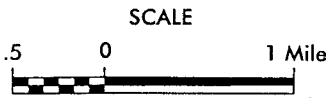
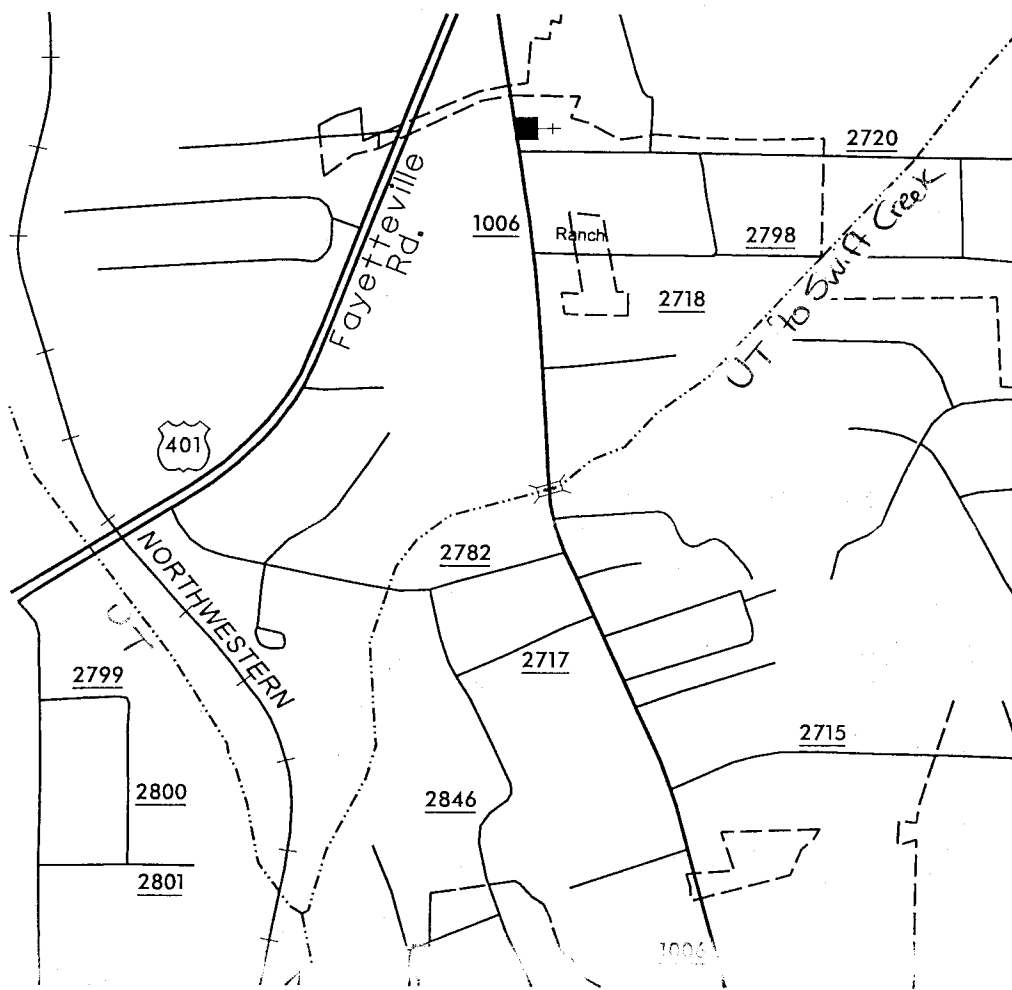
Date \_\_\_\_\_



SEE INSET BELOW



WAKE COUNTY



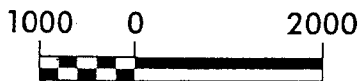
N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
WAKE COUNTY

PROJECT: 33636.1.1 (B-4299)  
BRIDGE NO. 255 OVER  
UT to Swift Creek  
ON SR 1006

SHEET 1 OF 3

01 / 27 / 05



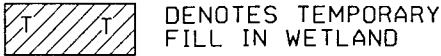
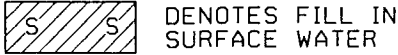
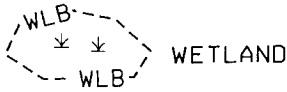


N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 33636.1.1 (B-4299)  
 BRIDGE NO. 255 OVER  
 UT to Sw. Ft Creek  
 ON SR 1006  
 SHEET 2 OF 8

01 / 27 / 05

# LEGEND

---WLB--- WETLAND BOUNDARY



— BZ — RIPARIAN BUFFER ZONE

← ← 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

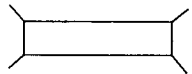
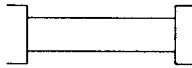
--- EPB --- PLANT BOUNDARY

--- ∇ --- WATER SURFACE

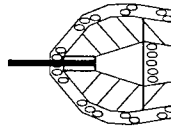
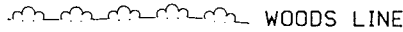
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X X

BOULDER

--- COIR FIBER ROLLS



(DASHED LINES DENOTE EXISTING STRUCTURES)



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

**WAKE COUNTY**

**PROJECT: 33636.1.1 (B-4299)**

**BRIDGE NO. 255 OVER**

*UT to Swift Creek*

ON SR 1006

SHEET 3 OF 8

01 / 27 / 05

Project No. 33636.1.1 (B-4299)

**Property Owner List**

Parcel Number	Name	Address
2	John Henry Battz	5500 Old Stage Road Raleigh, NC 27603
5	Richard D. Abernathy	5616 Old Stage Road Raleigh, NC 27603
6	George F. Horton	5412 Old Stage Road Raleigh, NC 27603

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WAKE COUNTY

PROJECT: 33636.1.1 (B-4299)

BRIDGE NO. 255 OVER

*UT to Swift Creek*

ON SR 1006

SHEET 4 OF 8

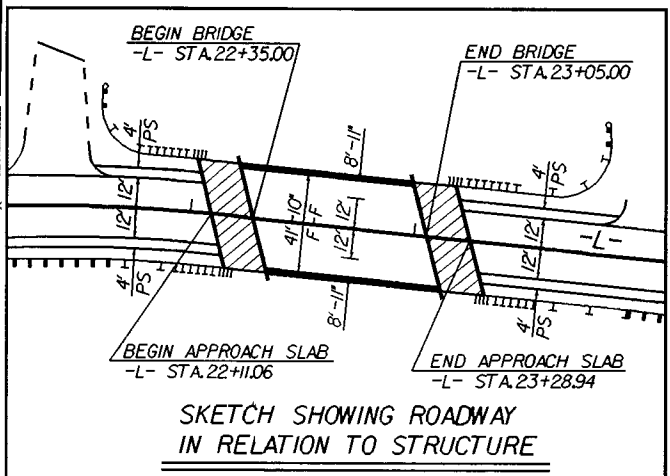
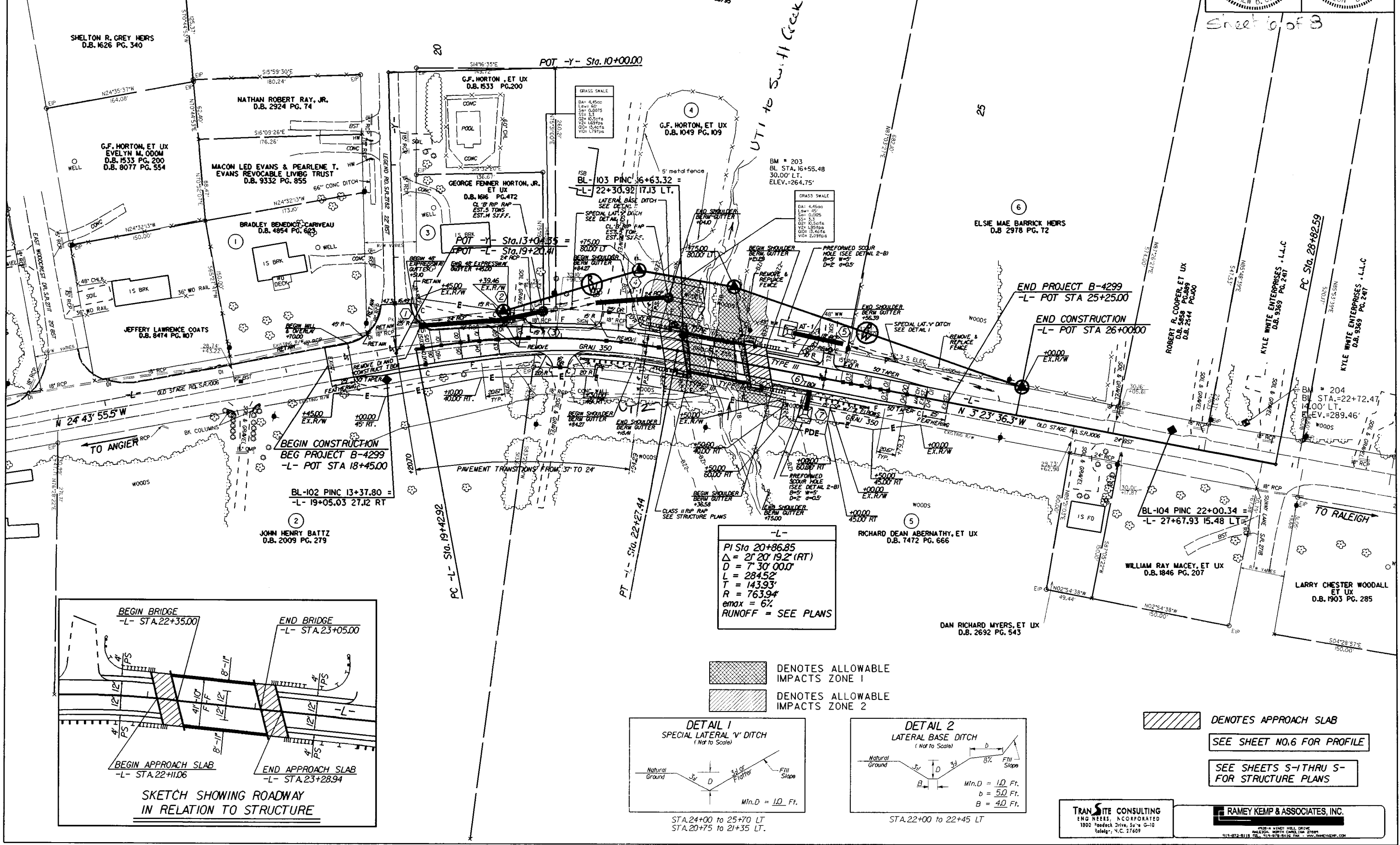
01 / 27 / 05



REVISIONS
5-8-06 -ADDITION OF RIGHT-OF-WAY PROPERTY TIES

PROJECT REFERENCE NO. B-4299	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 27771 MATTHEW B. COPPLE	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 18442 RICHARD LEON BOLLINGER, JR.

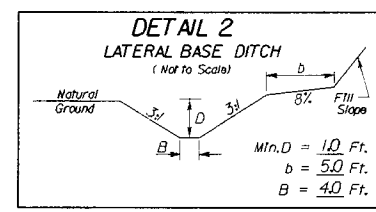
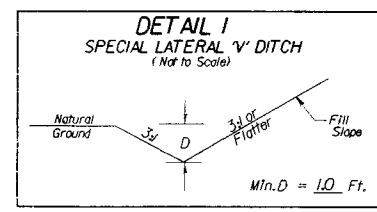
Sheet 4 of 3



**-L-**  
 PI Sta 20+86.85  
 $\Delta = 21' 20" 19.2" (RT)$   
 $D = 7' 30" 00.0"$   
 $L = 284.52'$   
 $T = 143.93'$   
 $R = 763.94'$   
 $e_{max} = 6\%$   
 RUNOFF = SEE PLANS

- DENOTES ALLOWABLE IMPACTS ZONE 1
- DENOTES ALLOWABLE IMPACTS ZONE 2

- DENOTES APPROACH SLAB
- SEE SHEET NO. 6 FOR PROFILE
- SEE SHEETS S-1 THRU S-4 FOR STRUCTURE PLANS



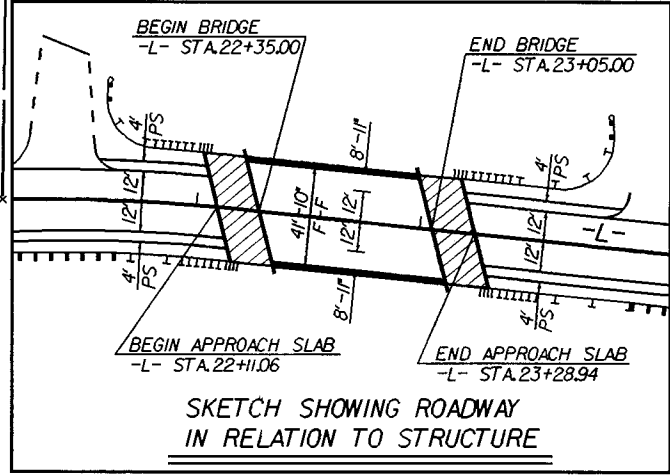
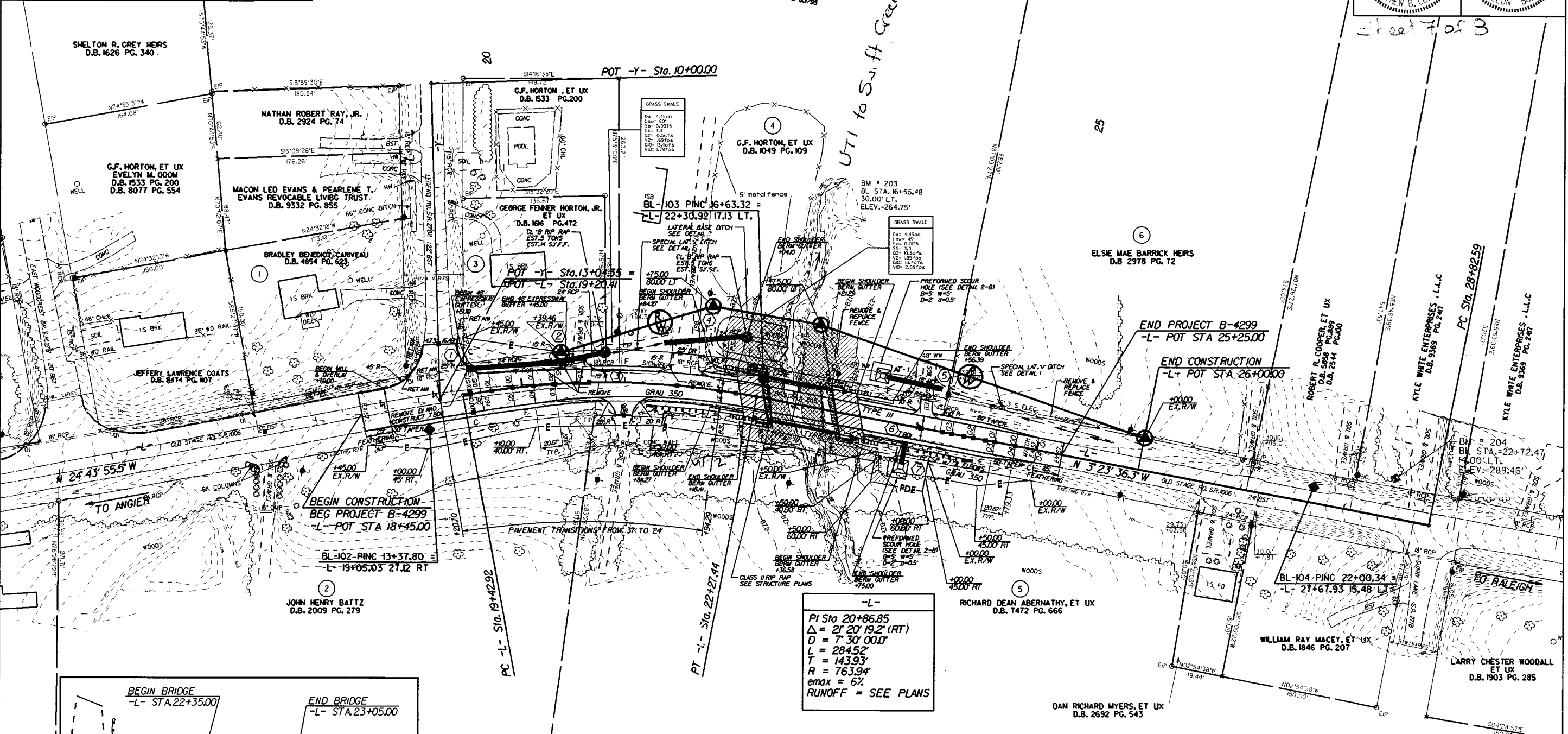
**TRANSITE CONSULTING**  
 ENG'NEERS, INCORPORATED  
 1800 Foodock Drive, Suite G-10  
 Raleigh, N.C. 27609

**RAMEY KEMP & ASSOCIATES, INC.**  
 4504 WINDY HILL DRIVE  
 RALEIGH, NORTH CAROLINA 27609  
 313-872-8111 FAX: 313-872-2432 WWW: WWW.RAMEYKEMP.COM

REVISIONS
5-8-06 -ADDITION OF RIGHT-OF-WAY PROPERTY TIES

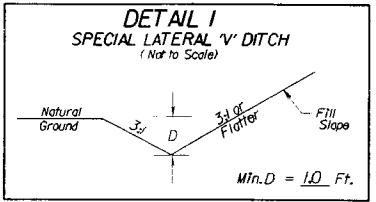
PROJECT REFERENCE NO. B-4299	SHEET NO. 4
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ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 27171 MATTHEW B. COPPE	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 18442 ROBERT LEON BOLLINGER, JR.

Sheet 4 of 3

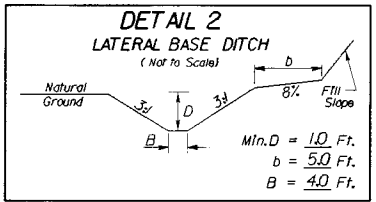


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PI Sta 20+86.85  
 $\Delta = 21' 20'' 19.2'' (RT)$   
 $D = 7' 30'' 00.0''$   
 $L = 284.52'$   
 $T = 143.93'$   
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 $e_{max} = 6\%$   
RUNOFF = SEE PLANS

- DENOTES ALLOWABLE IMPACTS ZONE 1
- DENOTES ALLOWABLE IMPACTS ZONE 2
- DENOTES APPROACH SLAB



STA. 24+00 to 25+70 LT  
STA. 20+75 to 21+35 LT.



STA. 22+00 to 22+45 LT

SEE SHEET NO. 6 FOR PROFILE

SEE SHEETS S-1 THRU S-4 FOR STRUCTURE PLANS

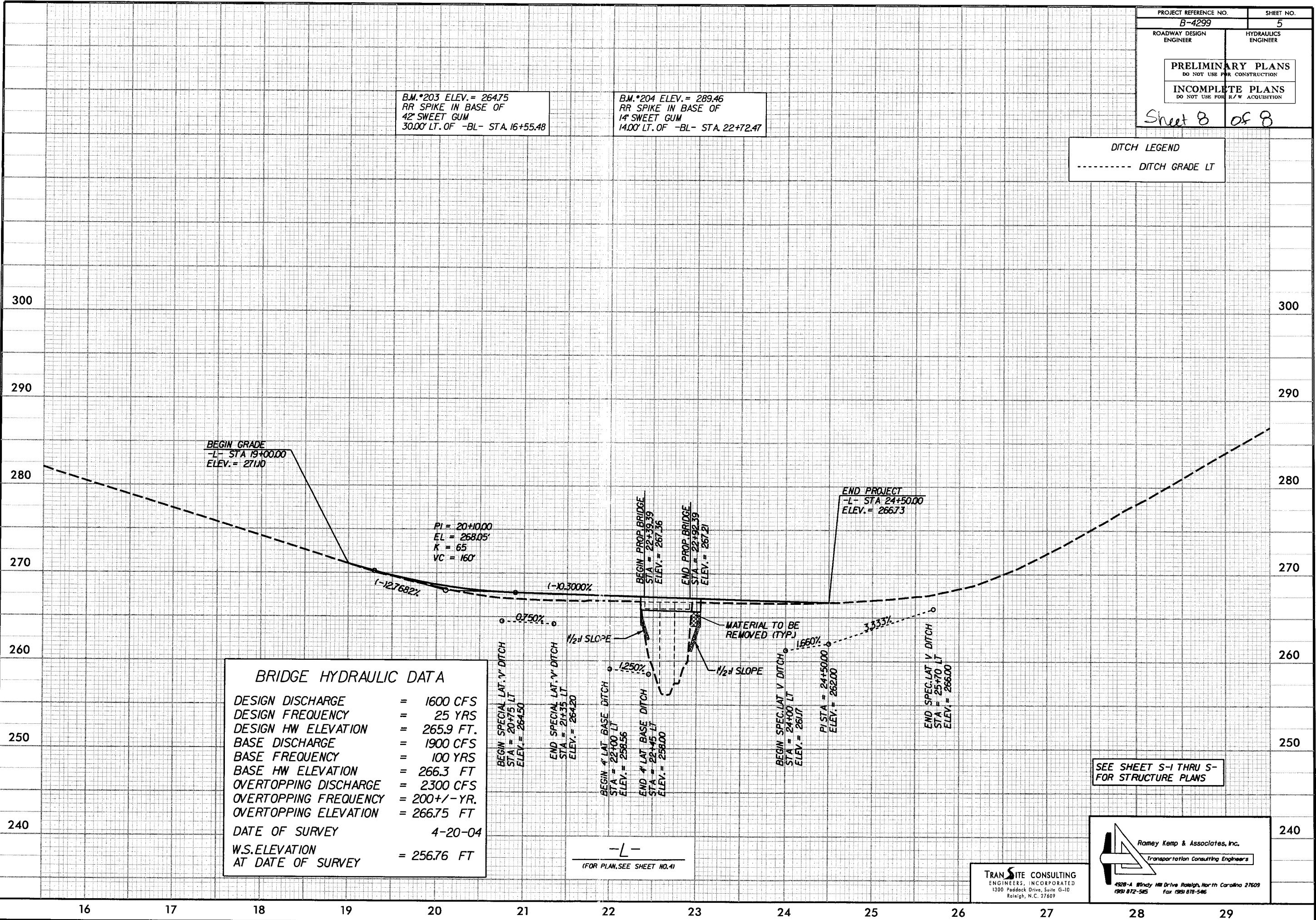
TRANSITE CONSULTING  
ENGINEERS, INCORPORATED  
1800 Woodcock Drive, Suite 50-10  
Raleigh, N.C. 27609

RAMEY KEMP & ASSOCIATES, INC.  
1000 W. WOOD HILL DRIVE  
RALEIGH, NORTH CAROLINA 27607  
311-872-5115 TEL. 311-878-8426 FAX 311-872-5111

DITCH LEGEND  
----- DITCH GRADE LT

B.M.\*203 ELEV. = 264.75  
RR SPIKE IN BASE OF  
42" SWEET GUM  
30.00' LT. OF -BL- STA. 16+55.48

B.M.\*204 ELEV. = 289.46  
RR SPIKE IN BASE OF  
14" SWEET GUM  
14.00' LT. OF -BL- STA. 22+72.47



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 1600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 265.9 FT.
BASE DISCHARGE	= 1900 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 266.3 FT
OVERTOPPING DISCHARGE	= 2300 CFS
OVERTOPPING FREQUENCY	= 200 +/- YR.
OVERTOPPING ELEVATION	= 266.75 FT
DATE OF SURVEY	4-20-04
W.S.ELEVATION AT DATE OF SURVEY	= 256.76 FT

SEE SHEET S-1 THRU S-  
FOR STRUCTURE PLANS

TRANSITE CONSULTING  
ENGINEERS, INCORPORATED  
1300 Paddeck Drive, Suite G-10  
Raleigh, N.C. 27609

Ramey Kemp & Associates, Inc.  
Transportation Consulting Engineers  
4528-A W. Windy Hill Drive Raleigh, North Carolina 27609  
(919) 872-5415 Fax (919) 878-5485

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