



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

August 22, 2008

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

ATTENTION: Mr. Andy Williams  
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit 23 and Nationwide Permit 13** for the replacement of Bridge No. 7 on SR 1504 (Elon Ossipee Road) over Tickle Creek, Alamance County. Federal Aid Project Number BRZ-1504(9), WBS No. 33682.1.1, State Project No. 8.2474001, Division 7, T.I.P. No. B-4402

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 7 on SR 1504 (Elon Ossipee Road) over Tickle Creek. The project involves removing the old bridge and constructing a new bridge on the existing alignment. During construction, traffic will be maintained with an off-site detour. The existing bridge is currently in poor condition and in need of replacement. The new bridge is intended to provide a safer bridge structure consistent with federal and state standards.

The proposed bridge will be a single span box beam structure 100 feet in length supported by end bents consisting of concrete caps on steel piles. The bridge will provide a clear roadway width of 32 feet 10 inches consisting of two 11 foot travel lanes with shoulders of 5 feet 5 inches. Please find the enclosed permit drawings and design plans for the subject project. A Categorical Exclusion (CE) was completed for this project in March 2007 and distributed shortly thereafter. Additional copies are available upon request.

**IMPACTS TO WATERS OF THE UNITED STATES**

The project is located in the Cape Fear River Basin, sub-basin 03-06-02, hydrologic unit 03030002. Waters of the U.S. within the project study area include three perennial streams: Tickle Creek [DWQ Index # 16-12-1], two unnamed tributaries to Tickle Creek (UT3 and UT4), and three riverine wetlands. Tickle Creek is assigned a Best Usage Classification of "C, NSW".

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

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

FAX: 919-715-5501

WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**  
2728 CAPITAL BLVD. SUITE 240  
RALEIGH NC 27604

There are no High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), or Outstanding Resource Waters (ORW) within 1.0 mile of the project study area. No streams within the project study area or within 1.0 mile downstream of the project study area are included on the 2006 Final 303(d) list of impaired waters. John Thomas of the U.S. Army Corps of Engineers (USACE) issued a written Jurisdictional Determination (JD) for Waters of the U.S. within the project study area on 3/8/2005. This JD will expire on 3/8/2010.

### Permanent Impacts

#### Site 1:

There will be 0.03 acres of permanent wetland impacts due to mechanized clearing in the wetland. The mechanized clearing is necessary due to the close proximity of the wetland to the fill slope.

#### Site 2:

There will be a total of 18 linear feet of permanent stream impacts. Six linear feet of permanent stream impacts to UT 3 will be for the use of rip rap for bank stabilization where UT 3 ties into the lateral base ditch. There will be 12 linear feet of permanent stream impacts where UT 3 ties into the main channel of Tickle Creek. Rip Rap will be used for bank stabilization where UT 3 ties into Tickle Creek.

### Temporary Impacts

There are no temporary stream or wetland impacts resulting from this project.

### Utility Impacts

There are existing underground telephone lines running along the east and west sides of SR 1504. Both of these lines will be abandoned in place. An existing aerial telephone line and poles on the west side will be removed. These will be replaced with a new telephone line installed by directional bore under Tickle Creek. An existing power pole on the east side of SR 1504 will remain in place. There are no utility impacts associated with this project.

### Bridge Demolition

The existing two-span bridge totaling 70 ft in length has a bituminous wearing surface on a timber deck with steel beams. End bents consist of timber caps and piles. The interior bent contains a timber cap and posts on a concrete sill. NCDOT will remove the existing structure without dropping any components into the creek. Best Management Practices for Bridge Demolition and Removal will be implemented during removal of the bridge.

## **FEDERALLY PROTECTED SPECIES**

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed

Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act (ESA) of 1973, as amended. The United States Fish and Wildlife Service (USFWS) list no species for Alamance County.

## **MITIGATION OPTIONS**

### *Avoidance and Minimization and Compensatory Mitigation*

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

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

### Avoidance/Minimization

- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of Best Management Practices (BMPs).
- Old approach fill material will be excavated, thereby restoring a greater area of the floodplain in the vicinity of the crossing to its original elevation.
- The proposed bridge will have no bents in Tickle Creek.
- The bridge and roadway will be constructed on the existing alignment, minimizing impacts to adjacent wetlands.
- A preformed scour hole will be installed just west of the northern bridge approach to slow and diffuse stormwater flows.
- An off-site detour will be utilized during construction.

### Compensatory Mitigation:

No mitigation is proposed for the 18 linear feet of permanent stream impacts to UT 3 and Tickle Creek. These impacts are minimal and will only occur on the banks of the streams. No mitigation is proposed for the 0.03 acres of wetland impacts because these impacts are minimal.

## **SCHEDULE**

The project calls for a letting of 20 January 2009 (review date of 2 December 2008) with a date of availability of 3 March 2009. It is expected that the contractor will choose to start construction in March 2009.

## REGULATORY APPROVALS

Section 404 Permit: The project has been processed by the Federal Highway Administration as a “Categorical Exclusion” in accordance with 23 CFR 771.115(b). The NCDOT requests that the impacts to the wetland be authorized by Nationwide Permit 23 and the bank stabilization to UT 3 and Tickle Creek be authorized by Nationwide Permit 13 (72 FR 11092; March 12, 2007).

Section 401 Permit: We anticipate that Section 401 General Water Quality Certification (WQC) 3626 for NW23 and 3689 for NW13 will apply to this project. The NCDOT will adhere to all general conditions of these WQCs. Written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H, Section .0500 (a) and 15A NCAC 2B, Section .0200, we are providing two copies of this notice to the North Carolina Department of Environment and Natural Resources (NCDENR), NCDWQ, as notification.

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please call Sara Easterly at 919-715-5499.

Sincerely,



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

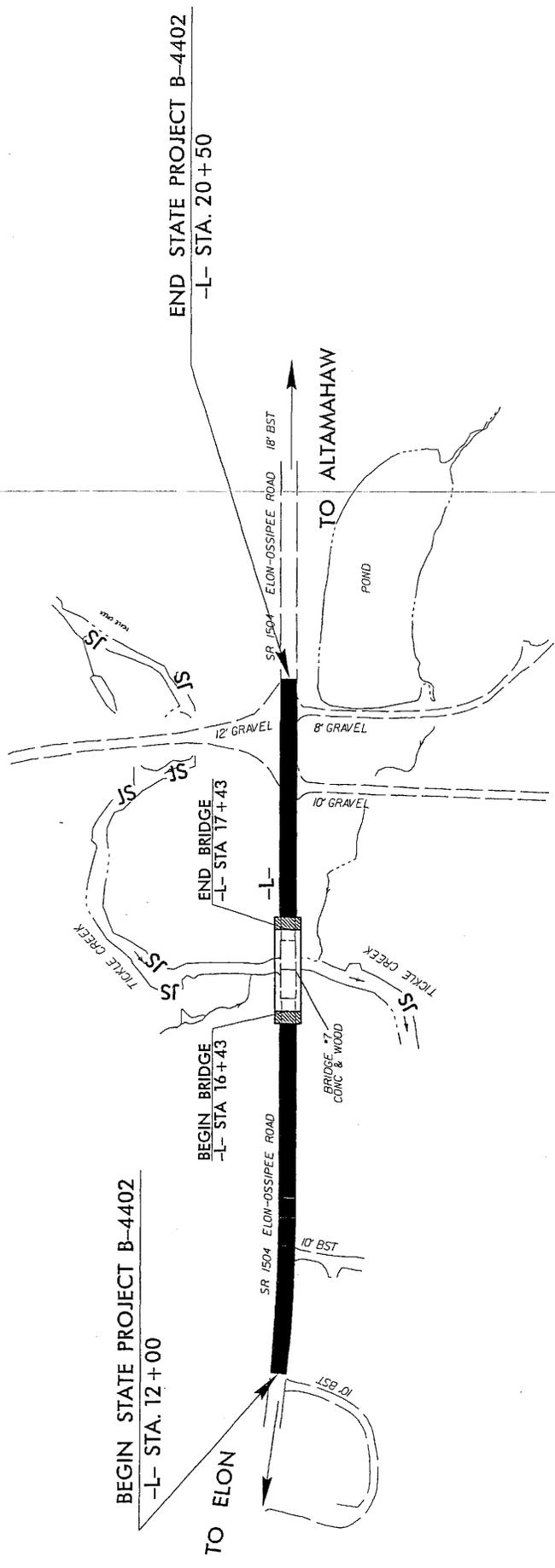
w/attachment

Mr. Brian Wrenn, NCDWQ (2 Copies)

w/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Mark Staley, Roadside Environmental  
Mr. J. M. Mills, P.E., Division 7 Engineer  
Mr. Jerry Parker, Division 7 Environmental Officer  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Ms. Pam Williams, PDEA  
Mr. Scott McLendon, USACE, Wilmington  
Mr. Gary Jordan, USFWS  
Mr. Travis Wilson, NCWRC





BEGIN STATE PROJECT B-4402  
-L- STA. 12 + 00

BEGIN BRIDGE  
-L- STA 16 + 43

END BRIDGE  
-L- STA 17 + 43

END STATE PROJECT B-4402  
-L- STA. 20 + 50

SR 1504 ELON-OSSIPEE ROAD

SR 1504 ELON-OSSIPEE ROAD

10' BST

10' BST

10' GRAVEL

8' GRAVEL

12' GRAVEL

TO ALTAMAHAW

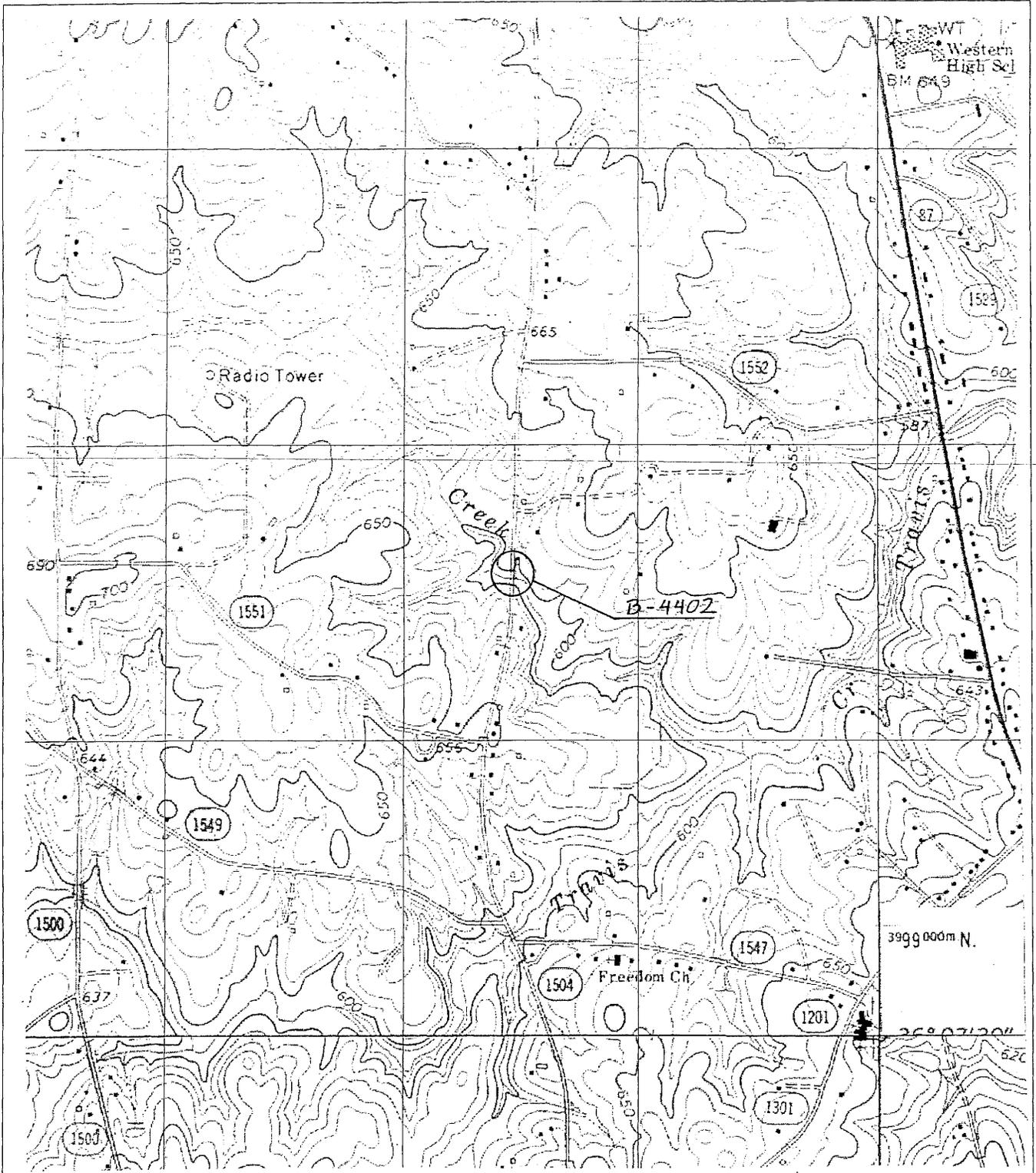
TO ELON

POND

BRIDGE CONC & WOOD

NCDOT  
DIVISION OF HIGHWAYS  
ALAMANCE COUNTY  
PROJECT: B-4402  
BRIDGE NO. 7 OVER  
TICKLE CREEK  
ON SR 1504  
(ELON-OSSIPEE ROAD)

SITE MAP  
NOT TO SCALE



# TOPO MAP

SCALE: 1" : 1500'

**NCDOT**  
 DIVISION OF HIGHWAYS  
 ALAMANCE COUNTY  
 PROJECT: B-4402  
 BRIDGE NO. 7 OVER  
 TICKLE CREEK  
 ON SR 1504  
 (ELON-OSSIPEE ROAD)

PROPERTY OWNERS  
NAMES AND ADDRESSES

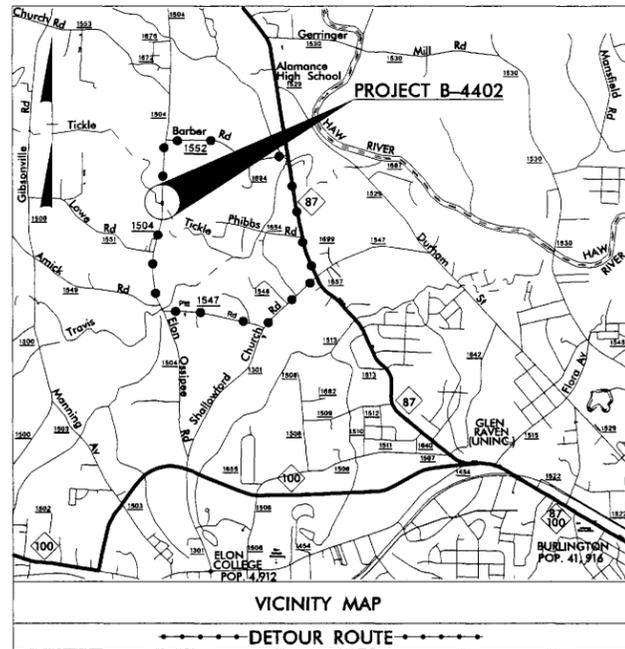
	NAMES	ADDRESSES
2	Suk Tae and Sook Nyo Kang	1633 Elon-Ossipee Road Elon, NC 27244
3	William and Kitty Apple	2920 Lowe Road Elon, NC 27244
4	Horace and Patricia Talley	1679 Elon-Ossipee Road Elon, NC 27244

NCDOT  
DIVISION OF HIGHWAYS  
ALAMANCE COUNTY  
PROJECT: B-4402  
BRIDGE NO. 7 OVER  
TICKLE CREEK  
ON SR 1504  
(ELON-OSSIPEE ROAD)



09/08/99

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

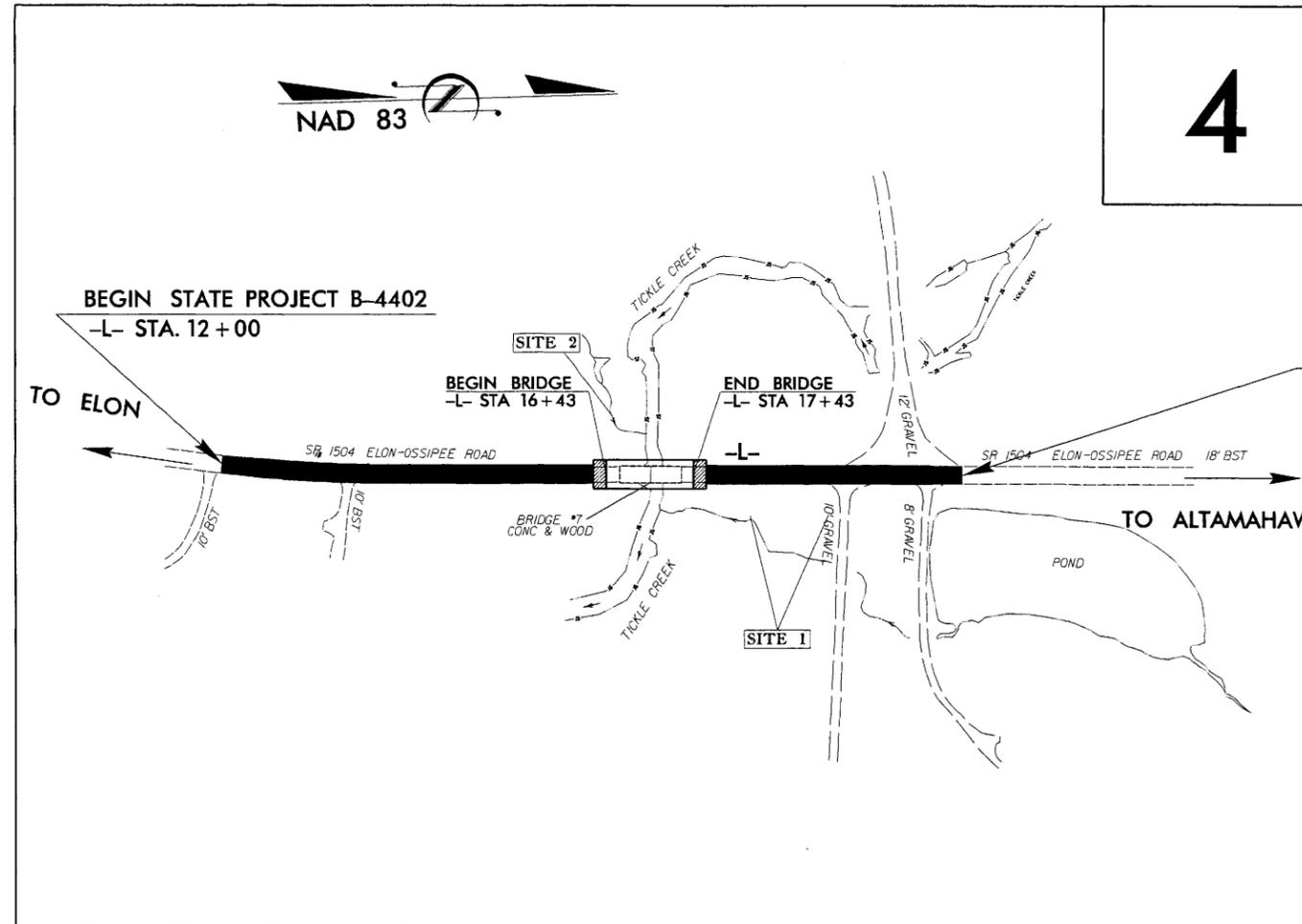
LOCATION: BRIDGE #7 OVER TICKLE CREEK ON SR 1504

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4402	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33682.1.1	BRZ-1504(9)	P.E.	
Permit Drawing			
Sheet <u>6</u> of <u>9</u>			

STREAM &  
WETLAND IMPACTS

**TIP PROJECT: B-4402**



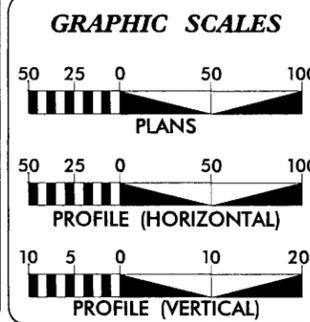
END STATE PROJECT B-4402  
-L- STA. 20+50

RECEIVED  
APR 08 2008  
DIVISION OF HIGHWAYS  
HYDRAULICS UNIT

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

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

**CONTRACT:**



**DESIGN DATA**

ADT 2007 =	2,370
ADT 2030 =	4,500
DHV =	13 %
D =	60 %
T =	3 % *
V =	50 MPH
* TTST 1% DUAL 2%	
FUNC. CLASS =	LOCAL

**PROJECT LENGTH**

LENGTH OF ROADWAY STATE PROJECT B-4402 =	0.142 MI.
LENGTH OF STRUCTURE STATE PROJECT B-4402 =	0.019 MI.
TOTAL LENGTH OF STATE PROJECT B-4402 =	0.161 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 18, 2008	JIMMY GOODNIGHT, PE PROJECT ENGINEER
LETTING DATE: JANUARY 20, 2009	MARK HUSSEY PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

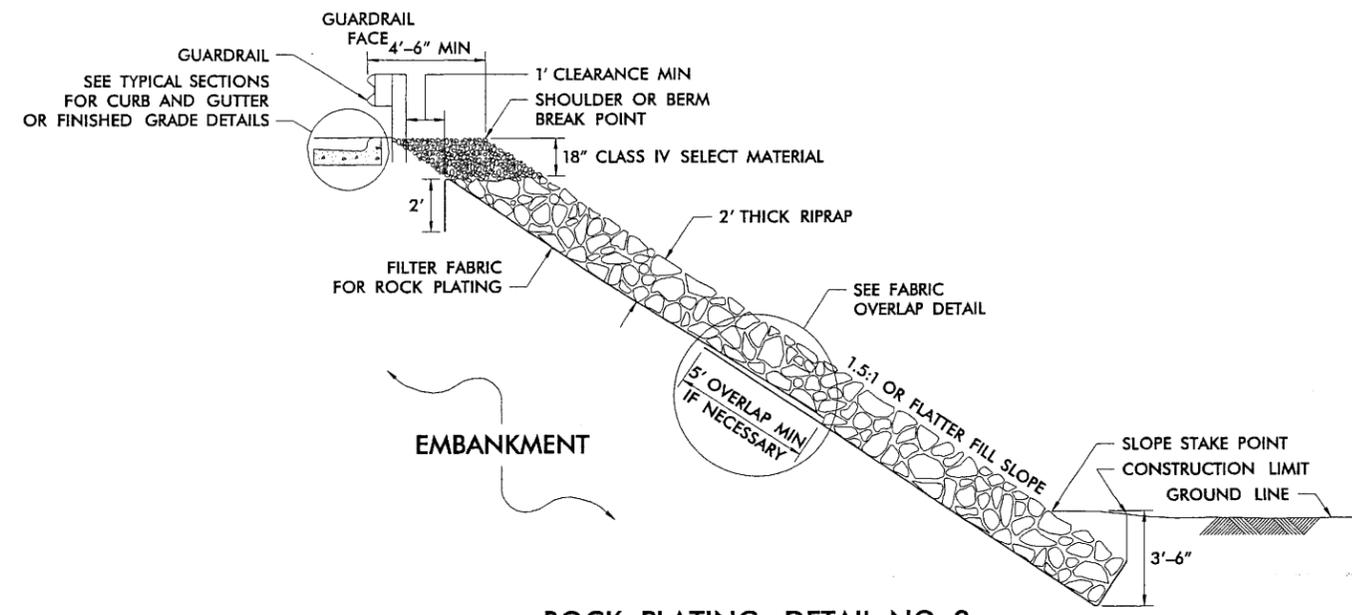
4/8/2008 R:\Hydro\cadd\Permit\b4402\_nyd\_prm\_tsh.dgn 11:54:30 AM





6/2/99

PROJECT REFERENCE NO. B-4402	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>Permit Drawing</b>	
Sheet <u>9</u> of <u>9</u>	



**ROCK PLATING DETAIL NO. 2**

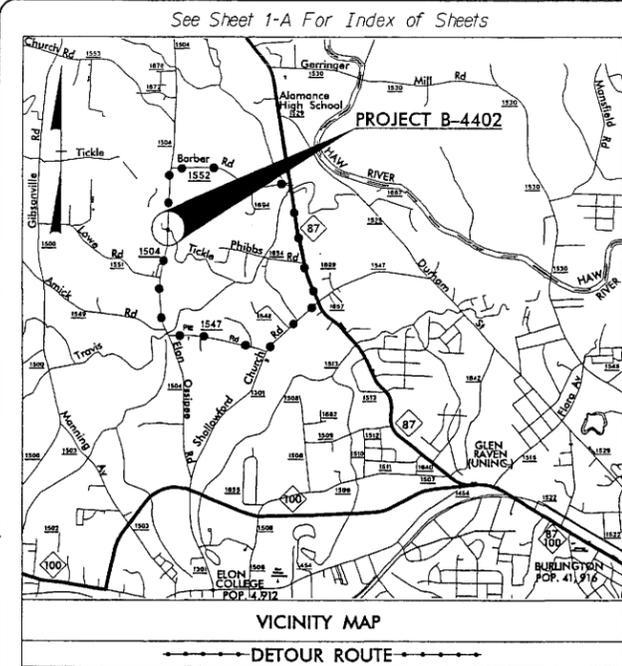
USE ROCK PLATING DETAIL NO. 2  
 AT THE FOLLOWING LOCATIONS:  
 -L- STA 17+57 RT + TO -L- STA 18+25 RT +  
 EXTEND ROCK PLATING LIMITS TO 2:1 SLOPES.

AGELIN  
 MAR 26 2008  
 10:30 AM

01/08/09

**TIP PROJECT: B-4402**

**CONTRACT:**



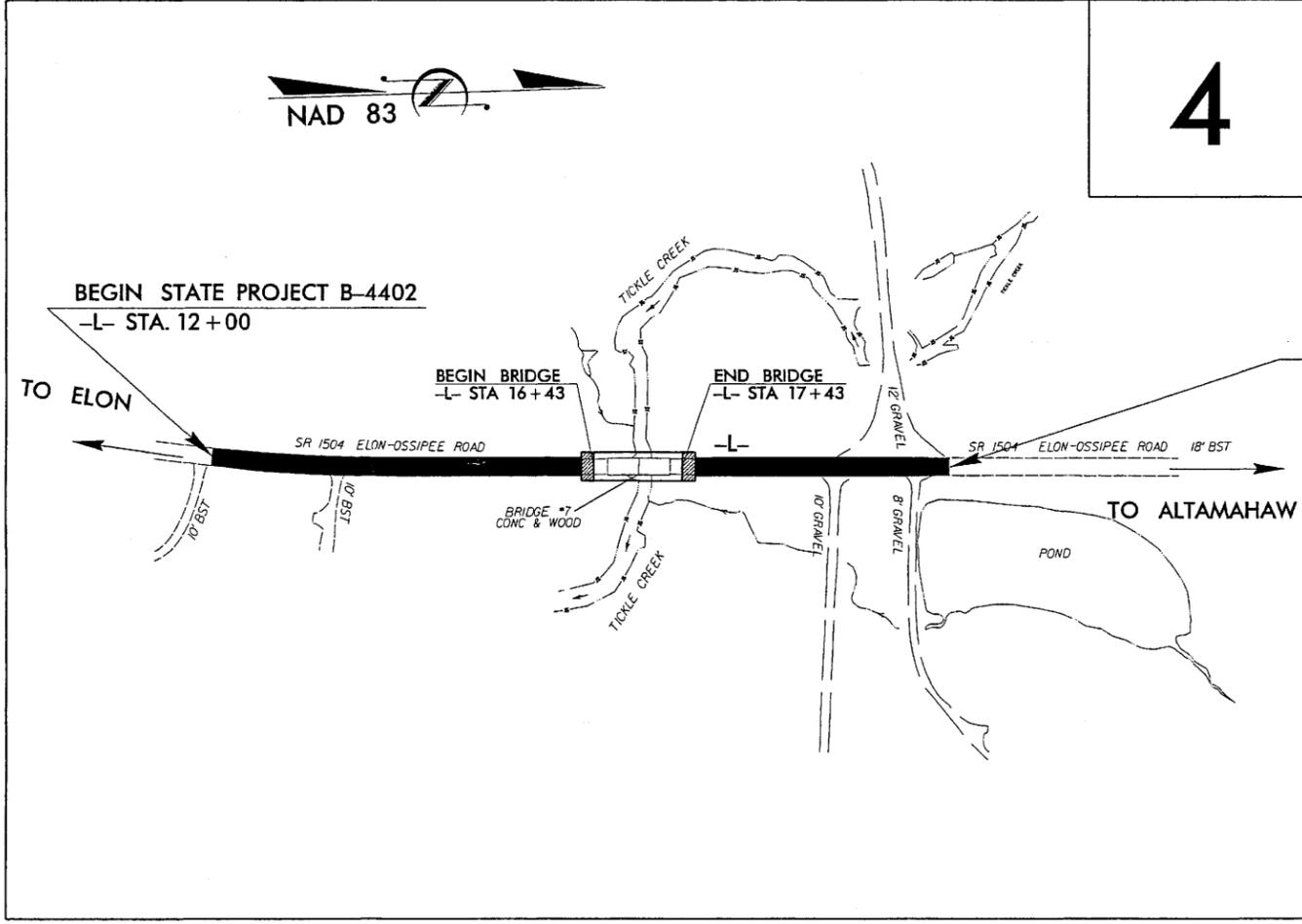
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE COUNTY**

LOCATION: BRIDGE #7 OVER TICKLE CREEK ON SR 1504

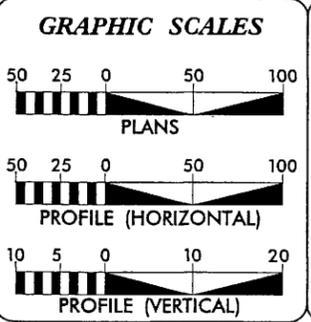
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33682.1.1	BRZ-1504(9)	P.E.	



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

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DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
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JIMMY GOODNIGHT, PE  
PROJECT ENGINEER

MARK HUSSEY  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

1/18/2008 R:\goodway\proj\b4402\_rdy\_tsh.dgn 02:1:50 AM

3/15/06

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	✕
Property Monument	◻ EDM
Parcel/Sequence Number	⑫③
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	✕
Foundation	◻
Area Outline	◻
Cemetery	⊕
Building	◻
School	◻
Church	⊕
Dam	⊕

### HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	◻ SWITCH
RR Abandoned	-----
RR Dismantled	-----

### RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite Marker	○
Existing Control of Access	⊕
Proposed Control of Access	⊕
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Utility Easement	----- PUE

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Wheel Chair Ramp	⊕ WCR
Proposed Wheel Chair Ramp Curb Cut	⊕ WCC
Curb Cut for Future Wheel Chair Ramp	⊕ CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

### VEGETATION:

Single Tree	⊕
Single Shrub	⊕
Hedge	-----
Woods Line	-----
Orchard	⊕
Vineyard	⊕ Vineyard

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	⊕ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	-----

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
U/G Power Cable Hand Hole	⊕
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	⊕
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

### WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊕
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

### TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

### GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	----- A/G Gas

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

### MISCELLANEOUS:

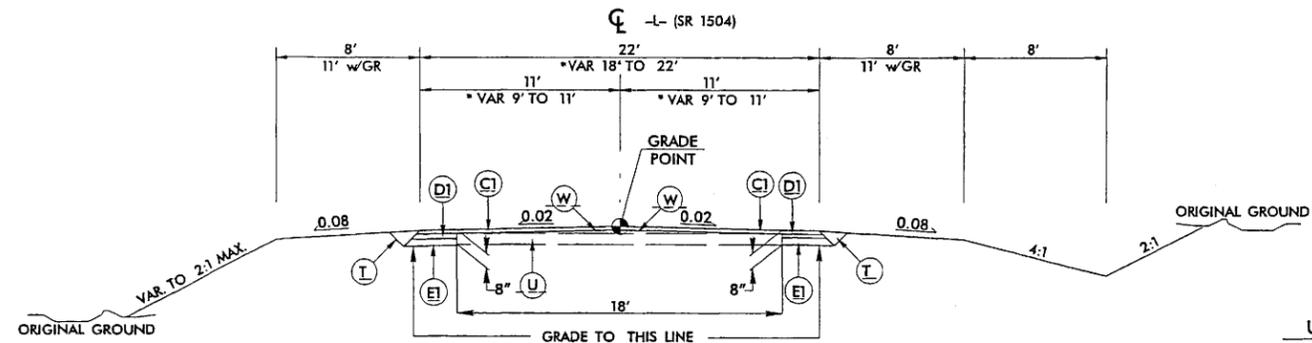
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊕
A/G Tank; Water, Gas, Oil	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/2/99

PROJECT REFERENCE NO. B-4402	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

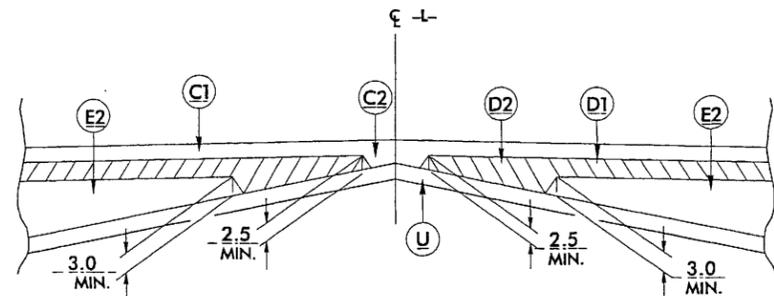
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 275 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 2-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE 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 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

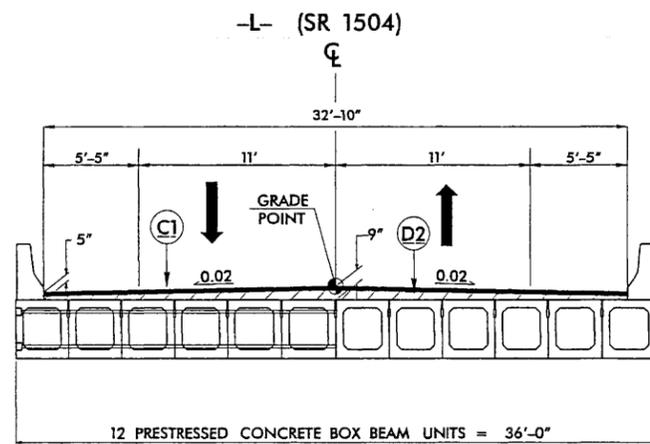


**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
 \*L- STA. 12+00 TO -L- STA. 12+50  
 \*L- STA. 20+50 TO -L- STA. 21+00  
 -L- STA. 12+50 TO -L- STA. 15+00  
 -L- STA. 18+00 TO -L- STA. 20+50

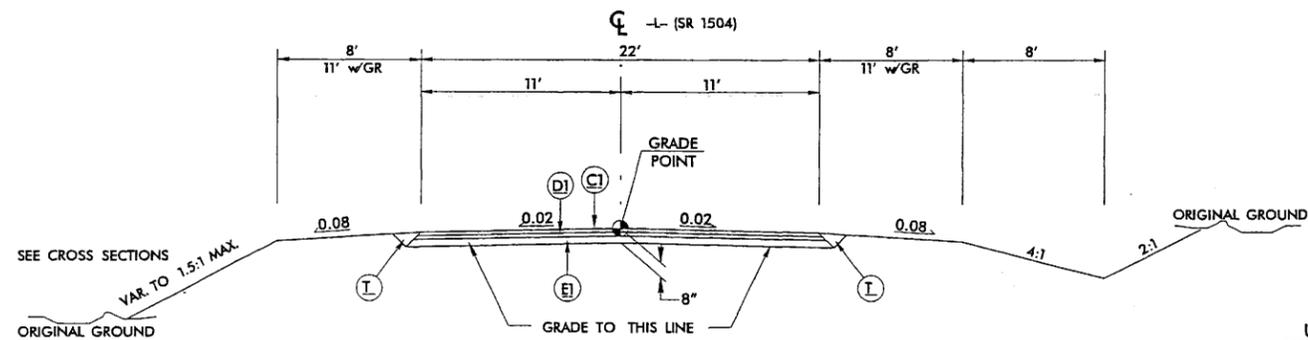


**Detail Showing Method of Wedging**



**BRIDGE TYPICAL SECTION**

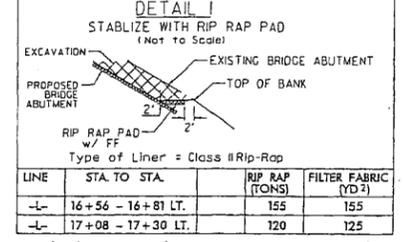
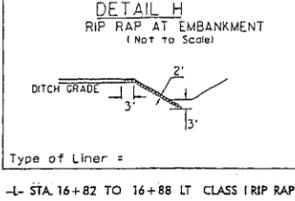
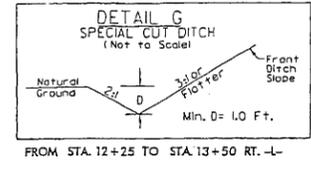
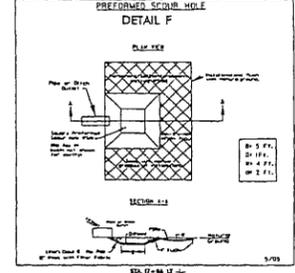
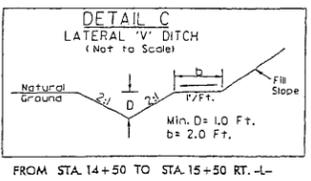
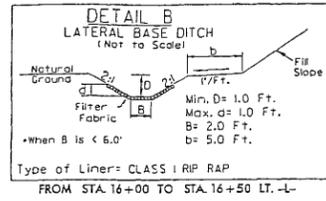
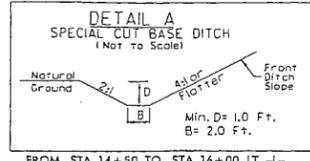
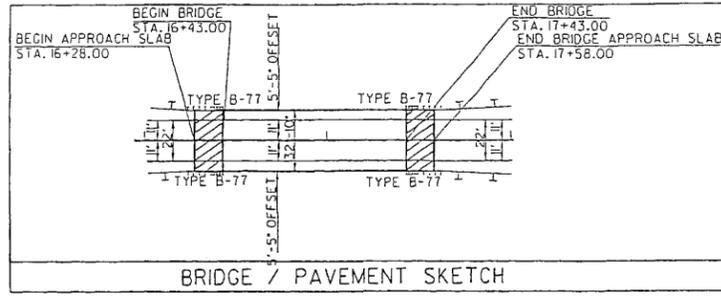
\*BRIDGE RAIL TO BE DETERMINED BY THE STRUCTURE DESIGN UNIT



**TYPICAL SECTION NO. 2**

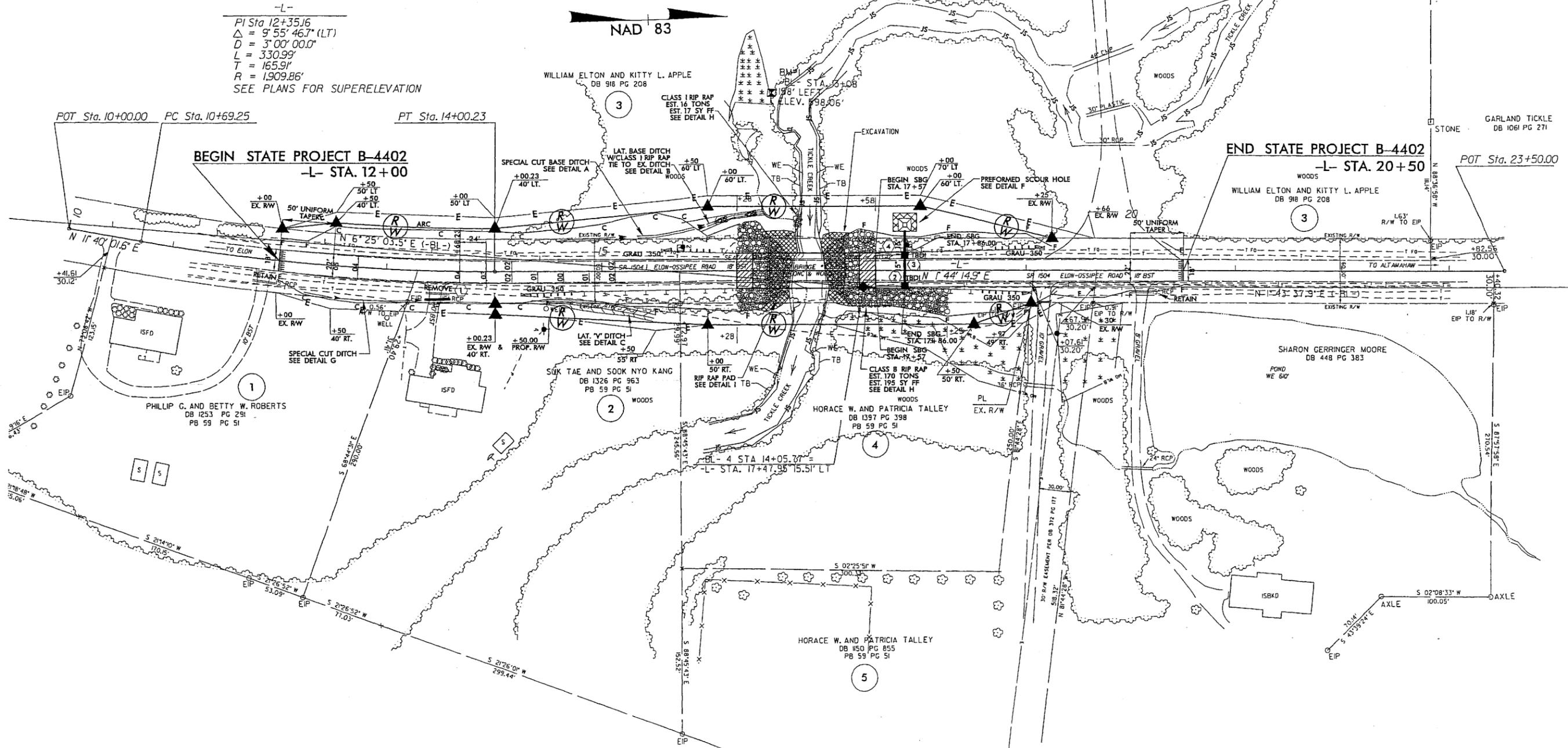
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SEE SHEET 5 FOR -L- PROFILE

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 SEE PLANS FOR SUPERELEVATION



REVISIONS



Alamance County  
Bridge No. 7 on SR 1504 (Elon Ossipee Road)  
over Tickle Creek  
Federal-Aid Project No. BRZ-1504(9)  
State Project No. 8.2474001  
W.B.S. No. 33682.1.1  
T.I.P. Project No. B-4402

CATEGORICAL EXCLUSION  
UNITED STATES DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
AND  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED:

3/30/07  
DATE

*for*   
Gregory J. Thorpe, PhD.  
Environmental Management Director  
Project Development & Environmental Analysis Branch,  
North Carolina Department of Transportation

3/30/07  
DATE

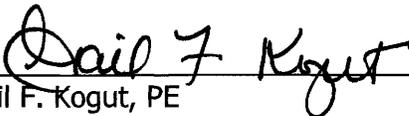
*for*   
John F. Sullivan III, PE  
Division Administrator  
Federal Highway Administration

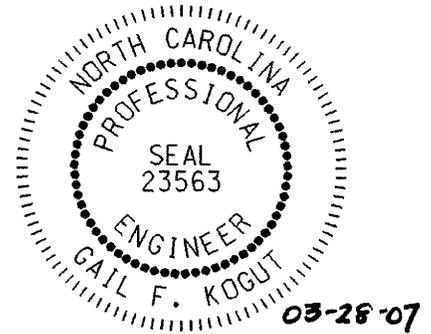
**Alamance County**  
**Bridge No. 7 on SR 1504 (Elon Ossipee Road)**  
**over Tickle Creek**  
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**CATEGORICAL EXCLUSION**

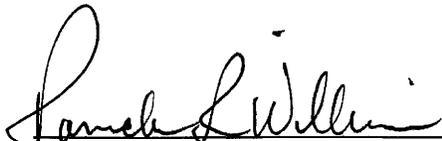
**March 2007**

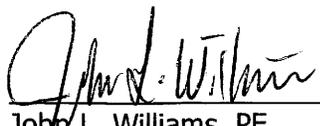
**Document Prepared By:**  
**MA Engineering Consultants, Inc.**  
**598 East Chatham Street, Suite 137**  
**Cary, NC 27511**

  
\_\_\_\_\_  
Gail F. Kogut, PE  
Project Manager



**For the North Carolina Department of Transportation:**

  
\_\_\_\_\_  
Pamela R. Williams  
Bridge Project Planning Engineer

  
\_\_\_\_\_  
John L. Williams, PE  
Bridge Project Engineer  
Project Development & Environmental Analysis Branch

## PROJECT COMMITMENTS

**Alamance County  
Bridge No. 7 on SR 1504 (Elon Ossipee Road)  
over Tickle Creek  
Federal-Aid Project No. BRZ-1504(9)  
State Project No. 8.2474001  
W.B.S. No. 33682.1.1  
T.I.P. Project No. B-4402**

### **Bridge Demolition**

#### **Office of Natural Environment**

The existing superstructure consists of a timber deck with an asphalt wearing surface on steel beams. The end bents consist of timber caps and piles. The superstructure and end bents will be removed without dropping components into Waters of the United States. The interior bent consists of a timber cap, posts and a concrete sill. There is the potential that portions of the concrete sill and footings may enter the stream upon removal. The maximum resulting temporary fill associated with the removal of the interior bent is 12 cubic yards.

### **Offsite Detour**

#### **Division 7 Construction, Resident Engineer's Office**

Alamance County Emergency Services and Fire Marshall will be contacted at (336) 227-1365 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

NCDOT Division 7 will notify Division Bridge Maintenance two weeks prior to placing traffic on the detour to allow for inspection and maintenance of the Bridge No. 270 on Barber Road.

### **Length of Construction**

#### **Division 7 Construction, Resident Engineer's Office and Project Services Unit**

In order to address specific requests from the School Transportation Director for Alamance-Burlington School System, NCDOT will set the contract to achieve **minimum** reasonable road closure time. In addition, NCDOT will construct school bus turn-arounds at the locations indicated in the plans.

**Alamance County  
Bridge No. 7 on SR 1504 (Elon Ossipee Road)  
over Tickle Creek  
Federal-Aid Project No. BRZ-1504(9)  
State Project No. 8.2474001  
W.B.S. No. 33682.1.1  
T.I.P. Project No. B-4402**

**INTRODUCTION:** The replacement of Bridge No. 7 is included in the 2007-2013 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**

The NCDOT Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 32.8 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to the structural evaluation rated 2 out of 9. This appraisal rating is according to Federal Highway Administration (FHWA) standards and therefore is eligible for FHWA's Bridge Replacement Program.

The posted weight limit on the bridge is down to 15 tons for single vehicles (SV) and 18 tons for truck-tractor semi-trailers (TTST). By comparison, a new bridge would be designed for 25 tons SV and 45 tons TTST.

Bridge No. 7 has a fifty-one year old timber deck and substructure with a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 7 is approaching the end of its useful life.

**II. EXISTING CONDITIONS**

Bridge No. 7 is located on SR 1504, Elon Ossipee Road, in Alamance County over Tickle Creek (Figure 1). SR 1504 is classified as Rural Local Route in the Statewide Functional Classification System.

Bridge No. 7 was constructed in 1955. The existing structure is a two-lane, two-span bridge with an overall length of 70.0 ft. and a clear roadway width of 19.1 feet. The bridge consists of steel beams and a timber deck with a bituminous wearing surface. The end bents consist of timber caps and piles. The interior bents consist of timber caps, post and concrete sills. Bridge No. 7 currently has posted weight limits of 15 tons for single vehicle (SV) and 18 tons for truck-tractor semi-trailer (TTST). The posted

speed limit in the vicinity of this bridge is 45 mph. The approach roadway for Bridge No. 7 is a two-lane 20.0 ft. wide road with 5.0 ft. grassed shoulders.

The creek bed to roadway crown point height is 14.0 ft. and the normal depth of Tickle Creek is 2.0 ft.

Aerial power and telephone lines run along the east and west sides of SR 1504, respectively.

The 2007 estimated average daily traffic (ADT) volume is 2370 vehicles per day (vpd). The projected ADT is 4500 vpd by the design year 2030. The percentages of truck traffic are 2% dual-tired vehicles and 1% TTST. SR 1504 is a two-lane facility that traverses Alamance County between SR 1301 at Elon College and SR 1558 at Ossipee.

SR 1504 is not a part of a designated bicycle route nor is it listed in the Transportation Improvement Program (TIP) as needing bicycle accommodations. There is no indication that an unusual number of bicyclists use this roadway.

No accidents were reported in the vicinity of the bridge during a recent three year period.

Five school buses cross Bridge No. 7 for a total of 10 trips per day.

Land use within the project area is forested, cultivated, or pastureland with scattered residential.

There are no U.S. Geological Survey (USGS) markers located in the project vicinity.

### **III. ALTERNATIVES**

#### **A. Project Description**

The proposed structure will provide a 38-foot minimum clear roadway width to allow for two 11-foot travel lanes and 8-foot shoulders on each side. The approach roadway will consist of two 11-foot travel lanes with 8-foot shoulders as per NCDOT Division of Highways' *Resurfacing, Restoration, and Rehabilitation of Highways and Streets* (3R Guidelines). The proposed structure will be on a tangent alignment. The design speed will be 50 mph to match existing conditions.

The estimated structure requirements are based on the historic performances of the existing structure and field observations of the site. Based on field reconnaissance of the site and a preliminary hydraulic investigation, the existing structure will be replaced with a bridge approximately 80 feet long and an approximate skew of 90 degrees. The length and width of the proposed bridge may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis to be performed during the final design phase of the project. A minimum gradient of 0.3% will

be utilized to facilitate deck drainage and deck drains should not be placed over the stream channel.

## **B. Reasonable and Feasible Alternatives**

### **Alternative 1**

Alternative 1 proposes to construct the proposed bridge at the existing location while traffic is maintained on an off-site detour during construction. There are no anticipated design exceptions.

NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include SR 1504, SR-1552, NC 87, and SR 1547. The majority of traffic on the road is through traffic. The detour for the average road user would result in 3.6 minutes additional travel time (1.64 miles additional travel). Up to a 10-month duration of construction is expected on this project. During final design, this project will be considered for accelerated construction.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone the detour is acceptable. Alamance County Emergency Services along with Alamance-Burlington School System Transportation Department have also indicated that the detour is acceptable. NCDOT Division 7 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurs with the use of the detour.

### **Alternative 2**

Alternative 2 proposed the use of an on-site detour temporary bridge to the west side of the existing bridge while replacing Bridge No. 7 in the same location. The temporary bridge length and skew would be approximately 100 feet and 90°, respectively. There are no anticipated design exceptions.

According the NCDOT Geotechnical Unit, a preliminary investigation revealed that construction of the on-site detour bridge has the potential to encounter soft alluvial foundation soils.

## **C. Alternatives Eliminated from Further Consideration**

The "do-nothing" alternative will eventually necessitate removal of the bridge effectively removing this section of SR 1504 from traffic service.

Investigation of the existing structure by the Bridge Maintenance Unit indicates that rehabilitation of the old bridge is not feasible due to its age and deteriorated condition.

#### **D. Preferred Alternative**

Alternative 1, replacing the existing bridge at existing location while traffic is maintained on an off-site detour during construction is the preferred alternative. Alternative 1 was selected because it has the lowest total cost of all of the alternatives and has the least impacts to the natural environment.

NCDOT Division 7 concurs with the selection of Alternative 1 as the preferred alternative.

Alamance County EMS and the Alamance County Fire Marshall have indicated that the use of an off-site detour would have a minimal impact on emergency services but request advance notice before temporarily removing the bridge from service. However, the Alamance-Burlington School System has requested the use of an on-site detour bridge. Therefore, in order to address specific requests from the School Transportation Director for Alamance-Burlington School System, NCDOT will set the contract to achieve minimum reasonable road closure time. In addition, to facilitate the existing school bus routes, NCDOT will construct school bus "turn-arounds" on both ends of the project as shown on Figure 2-1.

#### **IV. ESTIMATED COSTS**

The estimated costs, based on 2006 prices, are shown in Table 1:

**Table 1: Estimated Costs**

	Alternative 1	Alternative 2
Structure Removal (existing)	20,000	20,000
Structure (temporary)	0	208,000
Structure (proposed)	373,000	373,000
Roadway Approaches	273,000	423,000
Miscellaneous and Mobilization	182,000	281,000
Engineering and Contingencies	152,000	195,000
Total Construction Cost	\$ 1,000,000	\$ 1,500,000
ROW/Const. Easements/Utilities	33,500	37,500
<b>TOTAL</b>	<b>\$ 1,033,500</b>	<b>\$ 1,537,500</b>

#### **V. NATURAL ENVIRONMENT**

##### **A. Physical Characteristics**

The project study area (PSA) is an area of thirty acres centered about the intersection of Tickle Creek and Bridge No. 7. Not all of the PSA will be affected by the project. The project will permanently impact less than 2 acres of the PSA for either Alternative 1 or 2.

However, due to the on-site detour bridge, Alternative No. 2 would have an additional 0.5 acres of temporary impacts.

## 1. Water Resources

The proposed project falls within the Cape Fear River Basin, within the NC Department Water Quality (NCDWQ) subbasin designated 03-06-02 and the US Geological Survey 8-digit Hydrologic Cataloging Unit Code 03030002. Tickle Creek (Stream Index No. 16-12-1) and four small unnamed tributaries (UT1, UT2, UT3, and UT4) are the lotic systems within the PSA. Tickle Creek and the four unnamed tributaries are perennial streams.

**Table 2: Water Resources in Project Study Area**

<b>Aquatic Community</b>	<b>Approximate Length in PSA (feet)</b>	<b>Approximate Surface Area in PSA (acre)</b>
Tickle Creek	1,350.0	1.5
UT1	10.0	< 0.01
UT2	70.0	0.04
UT3	220.0	0.2
UT4	520.0	0.4
Pond	----	1.0

Tickle Creek has a classification of "C, NSW". Class "C" waters are suitable for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture. "NSW" is a supplemental classification intended for waters needing additional nutrient management due to the potential for excessive growth of micro- or macroscopic organisms. Tickle Creek has a use support rating of "Not Rated". All tributaries to Tickle Creek will have the same classification and use support rating. No waters classified as Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds), Outstanding Resource Waters (ORW), or designated as an impaired water body under Section 303(d) of the Clean Water Act occur within 1.0 mile of the project study area. At the time of this report, the Cape Fear River Basin is not subject to riparian buffer regulations.

## 2. Biotic Resources

Land use and land cover classifications for the natural vegetative communities occurring in the PSA include Basic Mesic Forest, Piedmont/Low Mountain Alluvial Forest, Cropland and Pasture, and Residential. Cropland/pasture and residential, the most human influenced communities, account for approximately 57 percent of the total land use within the PSA. Actual community impacts are not known and will be presented as part of the design process.

**Table 3: Natural Communities in Project Study Area**

Natural Community	Area Within Project Limits (acre)	Percent of Total Area*
Basic Mesic Forest	4.0	13.3
Piedmont/Low Mountain Alluvial Forest	7.0	23.3
Cropland and Pasture	5.0	16.7
Residential	10.0	33.3

\* Tickle Creek, roadsides and other impervious surfaces account for the remainder.

## B. Jurisdictional Topics

### 1. Surface Waters and Wetlands

Three small jurisdictional wetlands were identified within the PSA. Two of these are located east of Bridge No. 7 within the powerline right-of-way and are bisected by a private road (W1 and W2). The third wetland is located west of the bridge near the genesis of UT3 (W3). All wetlands were located in the field using a mapping grade Global Positioning System (GPS) unit. A jurisdictional determination was received from the U.S. Army Corps of Engineers (USACE) on March 21, 2005.

North Carolina Department of Transportation (NCDOT) will ensure that preventative and control Best Management Practices (BMPs) are employed to prevent or reduce water pollution as described in the NCDOT handbook Best Management Practices for the Protection of Surface Waters. Alamance County is not a Mountain Trout County. Anadromous fish are not known to utilize Tickle Creek or its tributaries.

**Table 4: Wetlands Impacts**

Wetland Identification	Approximate Area in PSA (acres)	Direct Impacts (acres)	
		Alternative 1	Alternative 2
W1	0.10	0.03	0.03
W2	0.15	0.01	0.01
W3	0.06	0	0

**Table 5: Stream Impacts in Project Study Area**

Stream Identification	Approximate Length in PSA (feet)	Direct Impacts (feet)	
		Alternative 1	Alternative 2
Tickle Creek	350	40	65
UT1	10	0	0
UT2	60	0	0
UT3	175	30	50
UT4	515	115	115

### 2. Permits

A Nationwide Permit No. 23 (Approved Categorical Exclusion) will be applicable for the proposed project. A Nationwide Permit No. 33 (Temporary Construction, Access and Dewatering) may be required if a temporary construction platform is needed during

construction of Bridge No. 7. Should the discharge of fill material become necessary, a 401 Water Quality Certification, administered through the NCDWQ, will be required. Applicable General Certifications (GC) may include GC 3403 and GC 3366 for the corresponding USACE Nationwide Permit 23 and Nationwide Permit 33, respectively.

Once final right-of-way widths are established based on final design of the preferred alternative, specific impact calculations for stream impacts can be determined and mitigation requirement can be further evaluated. Compensatory mitigation is not anticipated for this project. However, final permit/mitigation decisions will be made by USACE.

### **3. Federally Protected Species**

The US Fish and Wildlife Service (USFWS) list does not list any federally-protected species for Alamance County as of the December 11, 2006 listing which was last reviewed on January 25, 2007. However, six Federal Species of Concern (FSC) species have been identified to occur in Alamance County. A review of the NC Natural Heritage Program (NCNHP) database of rare species and unique habitats shows no recorded occurrences of FSC species within a 1-mile radius of the PSA.

### **4. Bridge Demolition**

Dropping any portion of the structure into the Waters of the United States will be avoided unless there is no practical method of removal. In the event that there is no practical method is feasible, a worst-case scenario is assumed for calculations of fill entering Waters of the United States. The existing structure consists of a timber deck with an asphalt wearing surface on steel beams. The end bents consist of timber caps and piles. The interior bent consists of a timber cap, posts and a concrete sill. The superstructure will be removed without dropping components into Waters of the United States. The removal of the concrete sill and footing of the interior bent will be the worst impact. There is the potential that portions of the concrete sill and footings may enter the stream upon removal. The maximum resulting temporary fill associated with the removal of the interior bent is 12 cubic yards.

## **VI. HUMAN ENVIRONMENT**

### **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 at 36 CFR Part 800. Section 106 requires that 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 afford the Advisory Council a reasonable opportunity to comment on such undertakings.

## **Historic Architecture**

In a memorandum dated October 31, 2005 the State Historic Preservation Office (HPO) conducted a search of their files and stated that they were aware of no structures of historical or architectural importance located within the planning area. Therefore, no further compliance with Section 106 is required. See memorandum dated October 31, 2005 included in the attachments.

## **Archaeology**

The State Historic Preservation Office (HPO), in a memorandum dated October 31, 2005 noted that they are "aware of no historic resources that would be affected by the project". A copy of the HPO memorandum is included in the attachments.

## **B. Community Impacts**

No adverse impact on families or communities is anticipated. Right of way acquisition will be limited. No relocatees are expected with implementation of the proposed 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 studied route does not contain any bicycle accommodations nor is it a designated bicycle route; therefore no bicycle accommodations have been included as part of this project.

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

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). There are no soils classified as prime, unique or having state or local importance in the vicinity of the proposed bridge.

The project will not have a disproportionately high and adverse human health and environmentally effect on any minority or low income population.

## **C. Noise and Air Quality**

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air

quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

## **VII. GENERAL ENVIRONMENTAL EFFECTS**

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

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 proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966. There are no publicly owned recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

An examination of North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality (DWQ), Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section records by the NCDOT GeoEnvironmental Section revealed no hazardous waste sites nor groundwater contamination incidents in the project area.

A field investigation by the NCDOT GeoEnvironmental Section and an examination of records of DENR's Division of Waste Management, Underground Storage Tank Section, revealed that no regulated underground storage tanks exist in the project study area.

Alamance County is a participant in the National Flood Insurance Program. Tickle Creek is included in a detailed FEMA flood study. Areas inundated by the 100-year flood are determined by the methods of the detailed study. Since the project is in detailed flood study, a FEMA Conditional Letter of Map Revision (CLOMR) must be issued for the proposed project. The NCDOT Hydraulics Unit will coordinate with the Federal Emergency Management Agency and local authorities in the final design stage to ensure compliance with applicable floodplain management ordinances.

No geodetic monuments will be impacted during construction of this project.

## **VIII. COORDINATION AND AGENCY COMMENTS**

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, US Environmental Protection Agency, U.S. Fish & Wildlife Service, NC Department of Natural Resources, N.C Wildlife Resource Commission, North Carolina State Historic Preservation Office, the Alamance County Planning Department, and the Town of Elon.

The N.C. Wildlife Resource Commission and U.S. Fish & Wildlife Service in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

**Response:** Bridge No. 7 will be replaced with a bridge.

U.S. Army Corps of Engineers and the NC Department of Natural Resources had no special concerns for this project.

## **IX. PUBLIC INVOLVEMENT**

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters. A newsletter was sent to property owners in the project vicinity. No comments have been received to date.

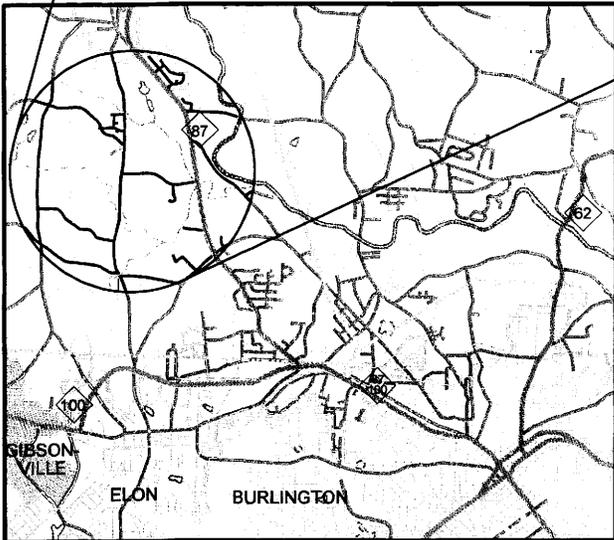
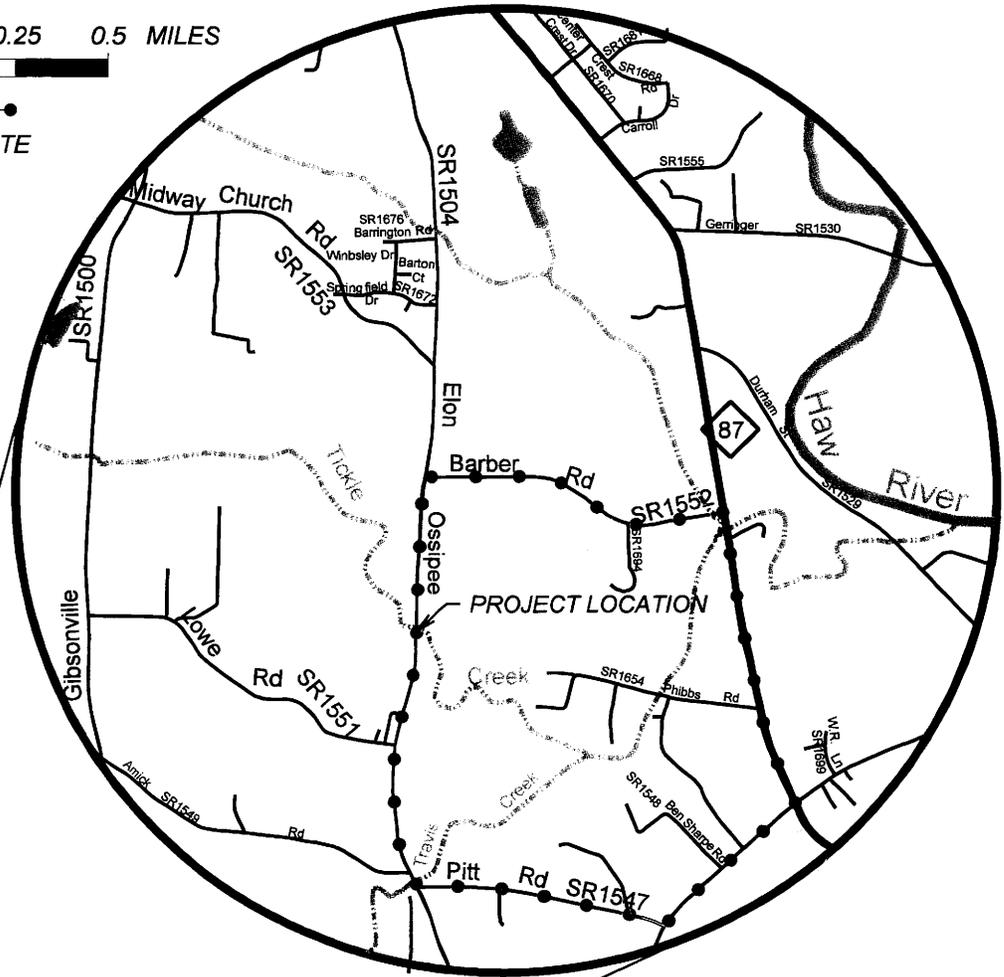
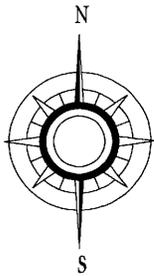
## **X. CONCLUSION**

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from implementation of the project. The project is therefore considered to be a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

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DETOUR ROUTE



1 0 1 2 MILES



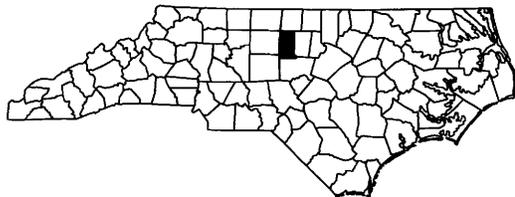
**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH**

**ALAMANCE COUNTY TIP NO. B-4402**

**BRIDGE NO. 7 ON SR 1504  
(Elon Ossipee Road)  
OVER TICKLE CREEK**

**VICINITY MAP**

**FIGURE 1**





PROPOSED  
LOCATION OF  
SCHOOL BUS  
TURN-AROUND

Remove Existing Bridge

PROPOSED  
LOCATION OF  
SCHOOL BUS  
TURN-AROUND

Elon-Ossipee Road

SR 1504

Tickle Creek

UT2

UT1

W3

UT3

W2

W1

UT4



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH

ALAMANCE COUNTY TIP NO. B-4402

BRIDGE NO. 7 ON SR 1504  
(Elon-Ossipee Rd) OVER TICKLE CREEK

ALTERNATIVE 1 (PREFERRED)



FIGURE 2-1

NAD 83/95

UT2  
UT1

W3  
UT3

SR 1504  
Elon-Ossipee Road

TEMPORARY BRIDGE

W2  
W1

Tickle Creek

UT4

Remove Existing Bridge #



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH

ALAMANCE COUNTY TIP NO. B-4402

BRIDGE NO. 7 ON SR 1504  
(Elon-Ossipee Rd) OVER TICKLE CREEK

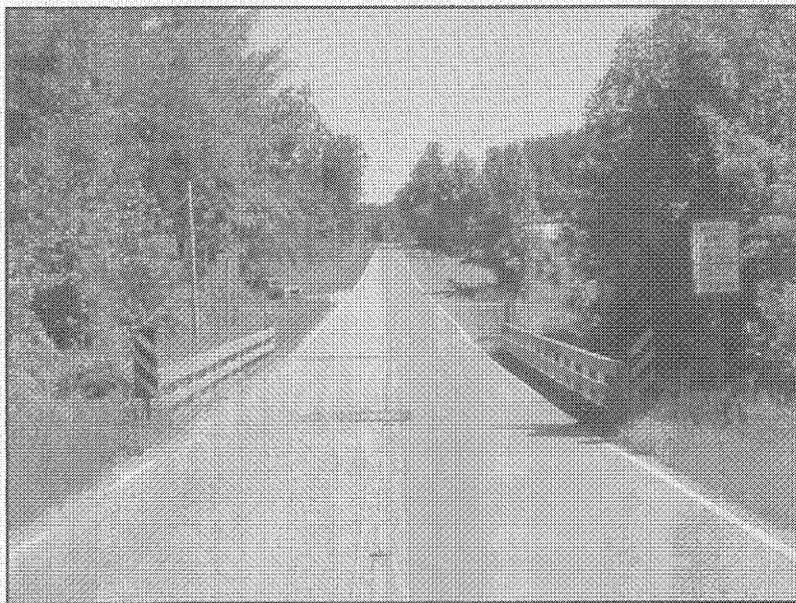
ALTERNATIVE 2



FIGURE 2-2



VIEW LOOKING  
SOUTH



VIEW LOOKING  
NORTH



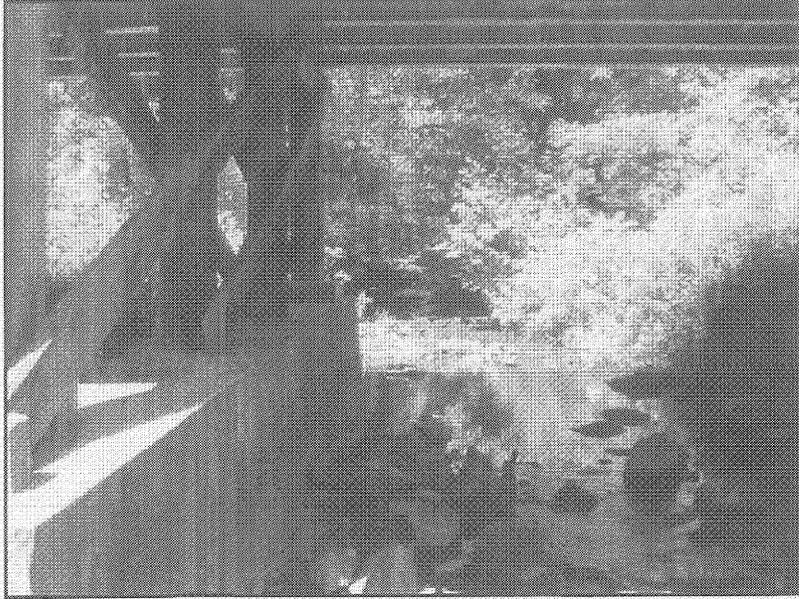
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS

ALAMANCE COUNTY TIP NO. B-4402

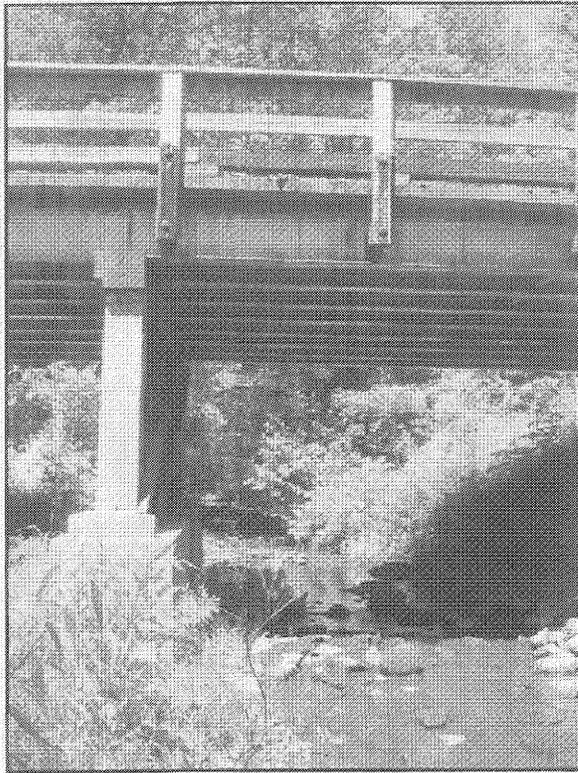
REPLACEMENT BRIDGE NO. 7  
OVER TICKLE CREEK  
on SR 1504 (Elon Ossipee Road)

PHOTOGRAPHS

*Figure 3-1*



VIEW OF UPSTREAM  
FACE OF BRIDGE  
(LOOKING NORTH  
EAST)



VIEW OF DOWNSTREAM FACE OF  
BRIDGE (LOOKING NORTHWEST)



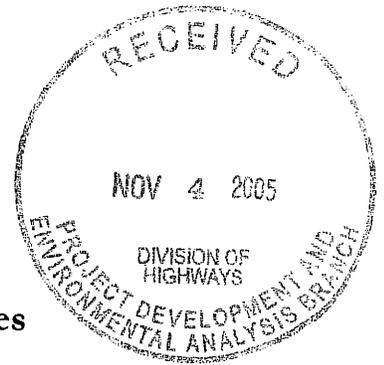
NORTH CAROLINA  
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ENVIRONMENTAL ANALYSIS

ALAMANCE COUNTY TIP NO. B-4402

REPLACEMENT BRIDGE NO. 7  
OVER TICKLE CREEK  
on SR 1504 (Elon Ossipee Road)

PHOTOGRAPHS

Figure 3-2



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

October 31, 2005

MEMORANDUM

TO: Greg Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

FROM: Peter Sandbeck *RS for Peter Sandbeck*

SUBJECT: Bridge #7 over Tickle Creek, SR 1504, TIP No. B-4402, Alamance County, ER 05-2406

Thank you for your letter of September 5, 2005, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources that would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

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 questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT  
Matt Wilkerson, NCDOT