



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 18, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of Neuse Road
Raleigh, NC 27615

ATTN: Mr. Monte Matthews
NCDOT Coordinator

SUBJECT: **Nationwide 13, 23 and 33 Permit Application** for the proposed replacement of Bridge No. 456 over Little Phoenix Creek on SR 1573. Federal Project No. BRSTP-1573(2), WBS Element 33262.1.1, T.I.P. No. B-3806, Ashe County.

Debit Work Order 33262.1.1 \$570

Dear Mr. Matthews:

Please find enclosed a Pre-construction notification, Rapanos forms, half-size design plans, and permit drawings for the above referenced project. A Categorical Exclusion was completed for this project in May 2007 and distributed shortly thereafter. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) plans to replace Bridge No. 456 over Little Phoenix Creek with a new 48-foot wide, by 10-foot high bottomless culvert approximately 130-foot long on the existing alignment. Traffic will use a 120-foot long temporary bridge to the north of the existing structure during construction. Project impacts consist of 179 feet of permanent stream impacts, <0.01 acre of temporary stream impacts, and <0.01 acre of permanent wetland impacts.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the New River basin (HUC 05050001) and will impact Little Phoenix Creek and a non-riparian wetland. The wetland is classified as a Palustrine, scrub-shrub, broad leafed deciduous, saturated, according to the Cowardin Wetland Classification System. Little Phoenix Creek (Index # 10-2-23) is assigned a best usage classification of **C Tr+**, by the N.C. Division of Water Quality (DWQ). Little Phoenix Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River, nor is it listed on the 2006 Final 303(d) list. No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW),

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
SUITE 240
RALEIGH, NC 27604

Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project study area. The project does not drain to a 303(d) stream within one mile of the project limits. Little Phoenix Creek is classified as a trout stream by the NC Wildlife Resources Commission (WRC).

Permanent Impacts: Permanent stream impacts consist of 119 feet to Little Phoenix Creek from placement of riprap along the banks that will be spanned by a bottomless culvert (See detail on permit drawing Sheet 13 of 15) and 60 feet of impacts from the placement of Class B riprap on the banks of the channel downstream of the culvert. The bottomless culvert will completely span the channel and no riprap will be placed in the bottom of the channel of Little Phoenix Creek. Construction of the roadway will result in <0.01 acre of impacts from mechanized clearing to a non-riparian wetland.

Temporary Impacts: Temporary impacts to surface waters consist of <0.01 acre to allow for culvert installation.

Utility Impacts: No impacts will occur due to utility relocations.

Restoration Plan: All materials used as temporary fill in the construction of the detour structure will be removed and restored to the original contours.

PROJECT SCHEDULE

The project is scheduled to let February 17, 2009 and has a review date of December 30, 2008.

BRIDGE DEMOLITION

Bridge No. 456 is a single span structure that consists of a timber deck with an asphalt wearing surface on I-beams. The substructure consists of reinforced concrete abutments. The maximum potential fill from bridge demolition is 7 cubic yards. Best Management Practice's for Bridge Demolition and Removal will be followed in addition to Best Management Practices for the Protection of Surface Waters.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008 the Fish and Wildlife Service (FWS) lists seven federally protected species for Ashe County. The bog turtle is listed as threatened due to similarity of appearance and therefore does not require a biological conclusion. A biological conclusion of "No Effect" has been reached for all other federally protected species in the attached CE. All biological conclusions in the CE remain valid. Surveys for the Virginia spiraea were updated on June 27, 2007 and no specimens were found.

Federally Protected Species of Ashe County

Scientific Name	Common Name	Federal Status	Biological Conclusion	Habitat Present
<i>Clemmys muhlenbergii</i>	Southern Bog Turtle	T (S/A)	NA	No
<i>Liatris helleri</i>	Heller's Blazing Star	T	No Effect	No
<i>Hedyotis purpurea var. montana</i>	Roan Mountain Bluet	E	No Effect	No
<i>Geum radiatum</i>	Spreading Avens	E	No Effect	No
<i>Helonias bullata</i>	Swamp Pink	T	No Effect	No
<i>Spiraea virginiana</i>	Virginia Spiraea	T	No Effect	Yes
<i>Gymnoderma lineare</i>	Rock Gnome Lichen	E	No Effect	No

AVOIDANCE AND MINIMIZATION

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

- The new culvert will completely span the channel.
- NCDOT will adhere to Design Standards in Sensitive Watersheds.
- In stream construction will be prohibited from October 15 to April 15 to avoid impacts on trout reproduction.
- The temporary bridge and roadway approaches for the onsite detour will be removed upon completion of the permanent bridge and roadway.

COMPENSATORY MITIGATION

No mitigation is proposed because permanent impacts are minimal. All 179 feet of permanent stream impacts are due to bank stabilization. There will be 119 linear feet of impacts from bank stabilization along the banks of Little Phoenix Creek under the bottomless culvert. There will be only 60 linear feet of riprap on the banks of Little Phoenix Creek downstream of the culvert. In addition, there will be <0.01 acre of impacts to wetlands due to mechanized clearing.

REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion." The NCDOT requests that the bank stabilization, roadway fill and temporary activities associated with the construction of the bottomless culvert be authorized by Nationwide Permits 13, 23 and 33.

Section 401 Permit: NCDOT is hereby applying for a 401 Water Quality Certification from DWQ. We anticipate 401 General Certification number 3689, 3701, and 3688 will apply to this project. This project will impact greater than 40 linear feet of stream,

therefore requiring written notification. All general conditions of the Water Quality Certifications will be met. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the DWQ for their review and approval.

We anticipate that comments from WRC will be requested prior to authorization by the Army Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests WRC review and that WRC forward their comments to the Corps of Engineers and NCDOT within 30 calendar days of receipt of this application.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Brett Feulner at bmfeulner@dot.state.nc.us or (919) 715-1488.

A copy of this permit application will be posted on the DOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>.

Sincerely,



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

cc:w/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Marella Buncick, USFWS

Ms. Marla Chambers, NCWRC

w/o attachment

Dr. David Chang, P.E., Hydraulics
Mr. Scott McLendon, USACE, Wilmington
Mr. Greg Perfetti, P.E., Structure Design
Mr. Heath Slaughter, DEO, Div.11
Mr. Art McMillan, P.E., Highway Design
Mr. Majed Alghandour, P.E., Programming and TIP

Mr. Tracy Walter, PDEA
Mr. Mark Staley, Roadside Environmental
Mr. Michael A. Pettyjohn, P.E. Div 11 Engineer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Victor Barbour, P.E., Project Services

USACE Action ID No. _____ DWQ No. _____

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

I. Processing

- 1. Check all of the approval(s) requested for this project:

<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Riparian or Watershed Buffer Rules
<input type="checkbox"/> Section 10 Permit	<input type="checkbox"/> Isolated Wetland Permit from DWQ
<input checked="" type="checkbox"/> 401 Water Quality Certification	<input type="checkbox"/> Express 401 Water Quality Certification
- 2. Nationwide, Regional or General Permit Number(s) Requested: NW 13, 23 & 33
- 3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:
- 4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here:
- 5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

II. Applicant Information

- 1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director

Mailing Address: 1598 Mail Service Center
Raleigh, NC 27699

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794

E-mail Address: gthorpe@dot.state.nc.us
- 2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____

Company Affiliation: _____

Mailing Address: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

III. Project Information

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

1. Name of project: Replacement of Bridge No. 456 over Little Phoenix Creek
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3806
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Ashe Nearest Town: Jefferson
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): The site is located at the crossing of SR 1573 over Little Phoenix Creek
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): 36.4702°N, 81.4392°W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Little Phoenix Creek
8. River Basin: Broad River
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Forestland and farmland

10. Describe the overall project in detail, including the type of equipment to be used: _____
Standard DOT construction equipment.

11. Explain the purpose of the proposed work: The purpose is to replace the old bridge that is functionally obsolete and structurally deficient.

IV. Prior Project History

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

V. Future Project Plans

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

No

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: The project impacts are as follows, 179 feet of permanent stream impacts, <0.01 acre of temporary stream impacts, 0.01 acre of wetland impact

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

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
1	Permanent/Fill	Marsh	No	50ft	<0.01
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 0

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Site 1	Little Phoenix Creek	Permanent	Perennial	12	179	0.06
Site 1	Little Phoenix Creek	Temporary	Perennial	12	17	<0.01
Total Stream Impact (by length and acreage)					196	0.06

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

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

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

Stream Impact (acres):	0.06
Wetland Impact (acres):	<0.01

Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.07
Total Stream Impact (linear feet):	179 Permanent / 17 Temporary

7. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):

Current land use in the vicinity of the pond:

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Best Management Practices for the Protection of Surface Waters, BMP's for Bridge Demolition and Removal, design standards for sensitive watersheds, a trout moratorium will be observed between October 15 to April 15.

VIII. Mitigation

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

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when

necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

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

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

Mitigation is not proposed

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): _____
Amount of buffer mitigation requested (square feet): _____
Amount of Riparian wetland mitigation requested (acres): _____
Amount of Non-riparian wetland mitigation requested (acres): _____
Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

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

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
 Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
 Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)? Yes No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3 (2 for Catawba)	
2		1.5	
Total			

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

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

XI. Stormwater (required by DWQ)

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

demonstrating total proposed impervious level. Approximately the same as current conditions,
no water will directly discharge into Little Phoenix Creek.

XII. Sewage Disposal (required by DWQ)

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

N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

Yes No

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

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

The project is the replacement of an existing structure.

XV. Other Circumstances (Optional):

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



8-18-08

Applicant/Agent's Signature

Date

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

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8/08/08

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Raleigh, NC

C. PROJECT LOCATION AND BACKGROUND INFORMATION: This form covers Little Buffalo Creek, its UTs and Wetland 100
State: North Carolina County/parish/borough: Ashe City: Jefferson
Center coordinates of site (lat/long in degree decimal format): Lat. 36.4702° **N**, Long. 81.4392° **W**.
Universal Transverse Mercator:

Name of nearest waterbody: Little Phoenix

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: South Fork New River

Name of watershed or Hydrologic Unit Code (HUC): 05050001

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s): Wetlands were delineated in June and September 2005

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: 1163 width (ft) and/or acres.

Wetlands: 0.01 acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: .

Tributary stream order, if known: .

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

- Tributary is:** Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles | <input type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

- Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Bed and banks | |
| <input type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: | |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by: | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

TNWs: linear feet width (ft), Or, acres.
 Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

- Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: LittlePhoenix Creek flows into the North Fork New River, a TNW.
- Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: UTD flows into Little Buffalo Creek, a blue line stream on the USGS .

Provide estimates for jurisdictional waters in the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
- Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
- Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: 0.01 acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain: .
- Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
- Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

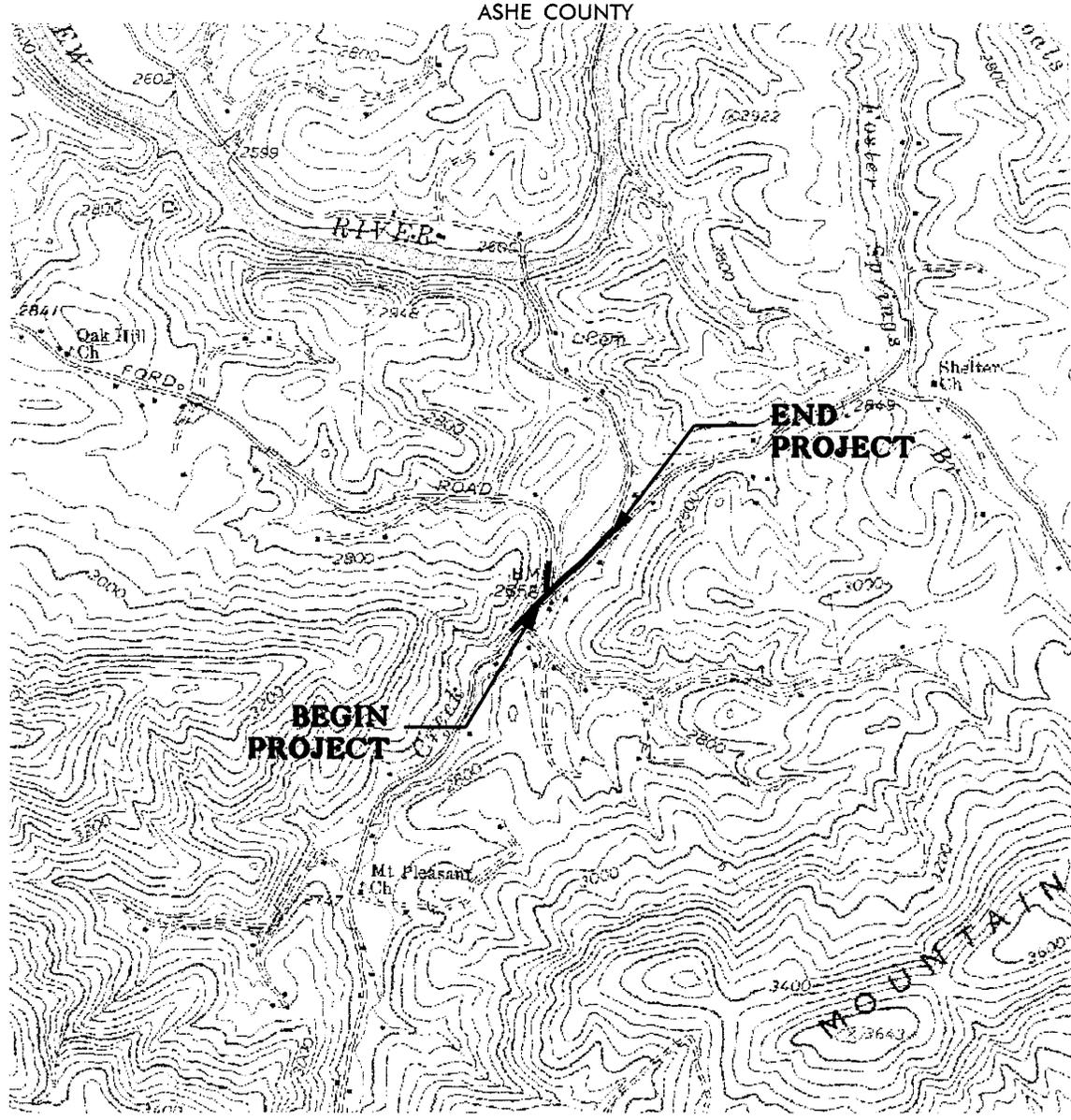
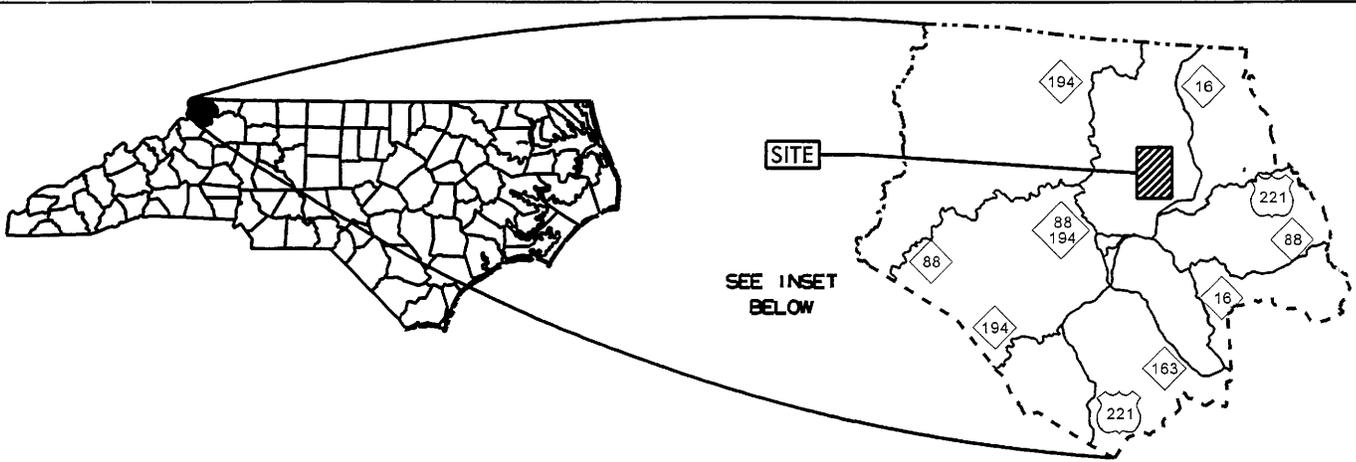
- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1"=1000'- Jefferson.
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
 - or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .



WETLAND/STREAM IMPACTS
VICINITY MAP

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

PROJECT: 33262.1.1 (B-3806)
BRIDGE NO. 456 OVER
LITTLE PHOENIX CREEK
ON SR 1573 (OLD NC 16)

SHEET 1 OF 15 6/18/08

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
3	HENRY T CLAY JR	ADDRESSES
4	JUDSON EZEKIAL BLEVINS ET, AL	ADDRESSES
5	DAVID H BROUCKAERT ET, AL	ADDRESSES

WETLAND/ STREAM IMPACTS

NCDOT
DIVISION OF HIGHWAYS

ASHE COUNTY

PROJECT: 33262.1.1 (B-3806)
BRIDGE NO. 456 OVER
LITTLE PHOENIX CREEK
ON SR 1573 (OLD NC 16)

05/08/09

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

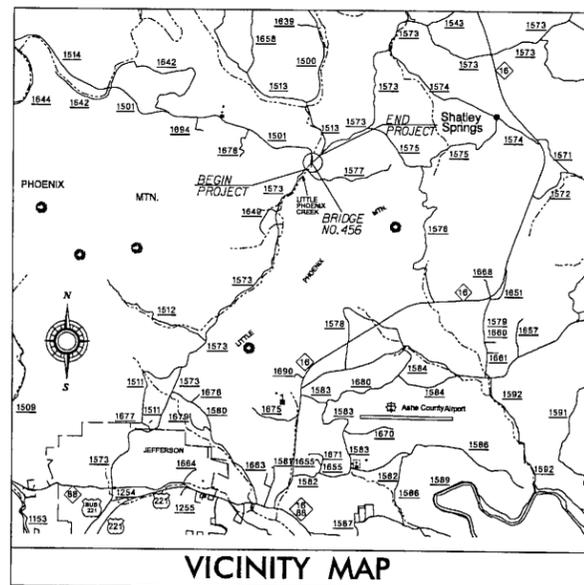
ASHE COUNTY

LOCATION: BRIDGE NO. 456 OVER LITTLE PHOENIX CREEK ON SR 1573

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE, AND PAVING

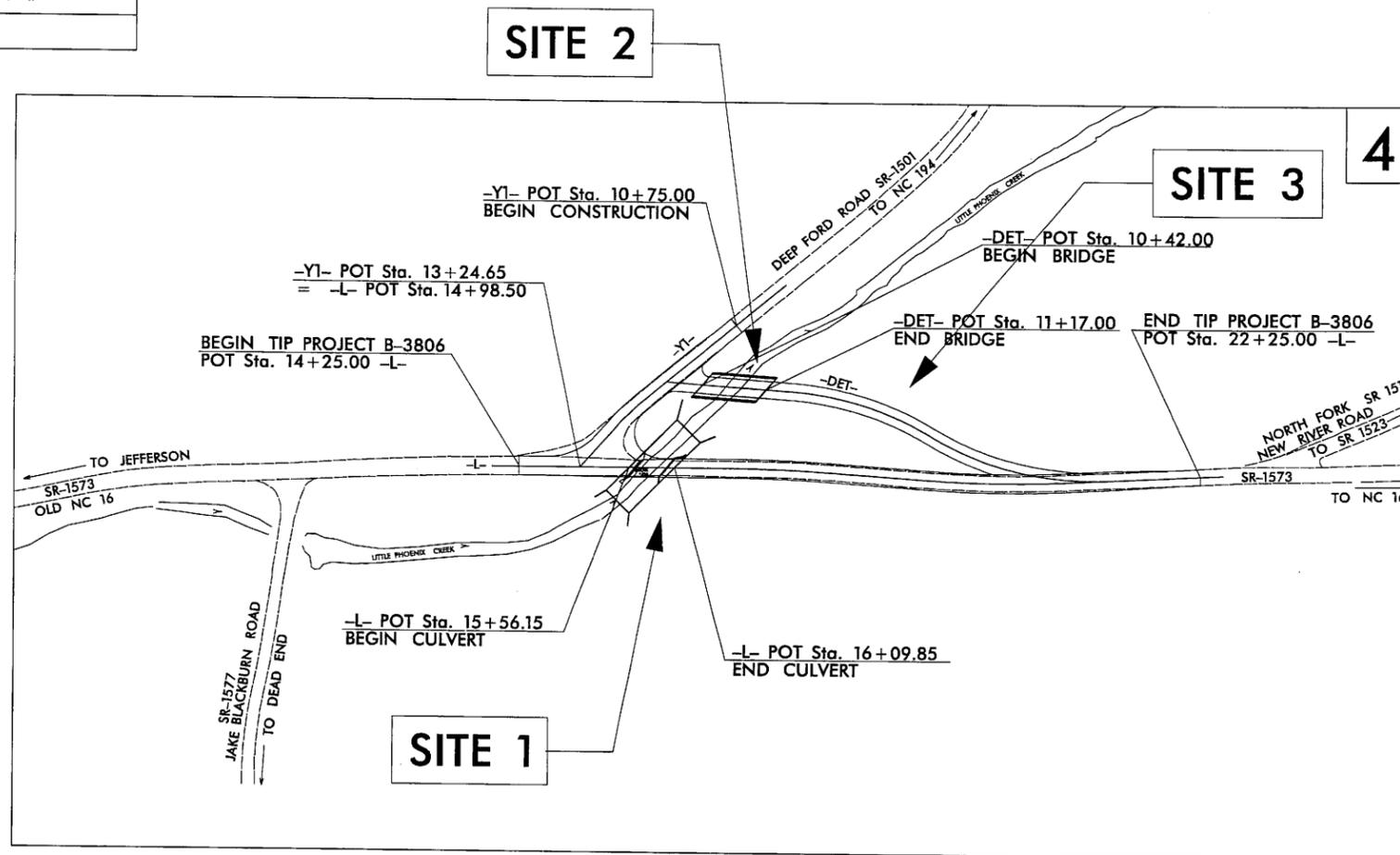
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3806	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33262.1.1	BRSTP-1573(2)	P.E.	
33262.2.1	BRSTP-1573(2)	RW, UTIL.	

TIP PROJECT: B-3806



VICINITY MAP

WETLAND/STREAM IMPACTS



* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, AND SHOULDER WIDTH

Permit Drawing Sheet 4 of 15

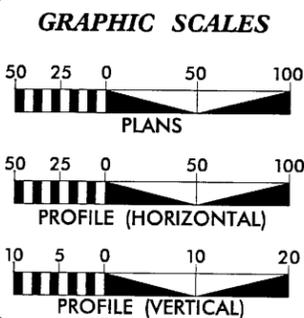
THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NC DOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA	
ADT 2009 =	2,200
ADT 2030 =	3,000
DHV =	9 %
D =	55 %
T =	7 % *
V =	60 MPH
* TTST 1%	DUAL 6%

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-3806	= 0.142 mi.
LENGTH STRUCTURE TIP PROJECT B-3806	= 0.010 mi.
TOTAL LENGTH TIP PROJECT B-3806	= 0.152 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 16, 2008

LETTING DATE: FEBRUARY 19, 2009

JAMES SJ WANG, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
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

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCNS\$\$\$\$\$
\$\$\$\$\$SERNAME\$\$\$\$\$

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER*

-DET-
 PI Sta 12+33.64 Δ = 26°18'29.4" (RT)
 D = 15'16" 43.9"
 L = 172.79'
 T = 87.64'
 R = 375.00'
 DS = 35mph
 e = See Plans

PI Sta 14+30.20 Δ = 33°15'42.8" (LT)
 D = 15'16" 43.9"
 L = 217.70'
 T = 112.01'
 R = 375.00'
 DS = 35mph
 e = See Plans

-YI- 2200			
SR 1501 3000			
2600	650	450	2200
3600	900	600	3000
-L- SR 1573 OLD NC 16 -L-			
SR 1573			
EST. 2009 AADT			
2030			

JANICE T. PROCTOR
STEVE K. OWEN

10+00

15+00

20+00

JUDSON EZEKIAL BLEVINS ET.AL

SPECIAL DITCH GRADE
SEE PROFILE

WOODS

WALNUT HILL
VOTING HOUSE
TAX MAP

ISFD

GRASS

1 TON CLASS 'B'
RIP RAP 4 SY FF

REMOVE

GRASS

GRASS

ROCK BARN

DENNIS JOHNSON
SECOND TRACT

SITE 1

THOMAS KEITH BARKER

GERALD BLACKBURN

JESSIE B. BILLINGS

JERRY BILLING &
LORETTA WALK

DAVID M. COLE

* - DESIGN EXCEPTION REQUIRED FOR
LANE WIDTH, SAG VERTICAL CURVE K
VALUE, VERTICAL STOPPING SIGHT
DISTANCE, AND SHOULDER WIDTH

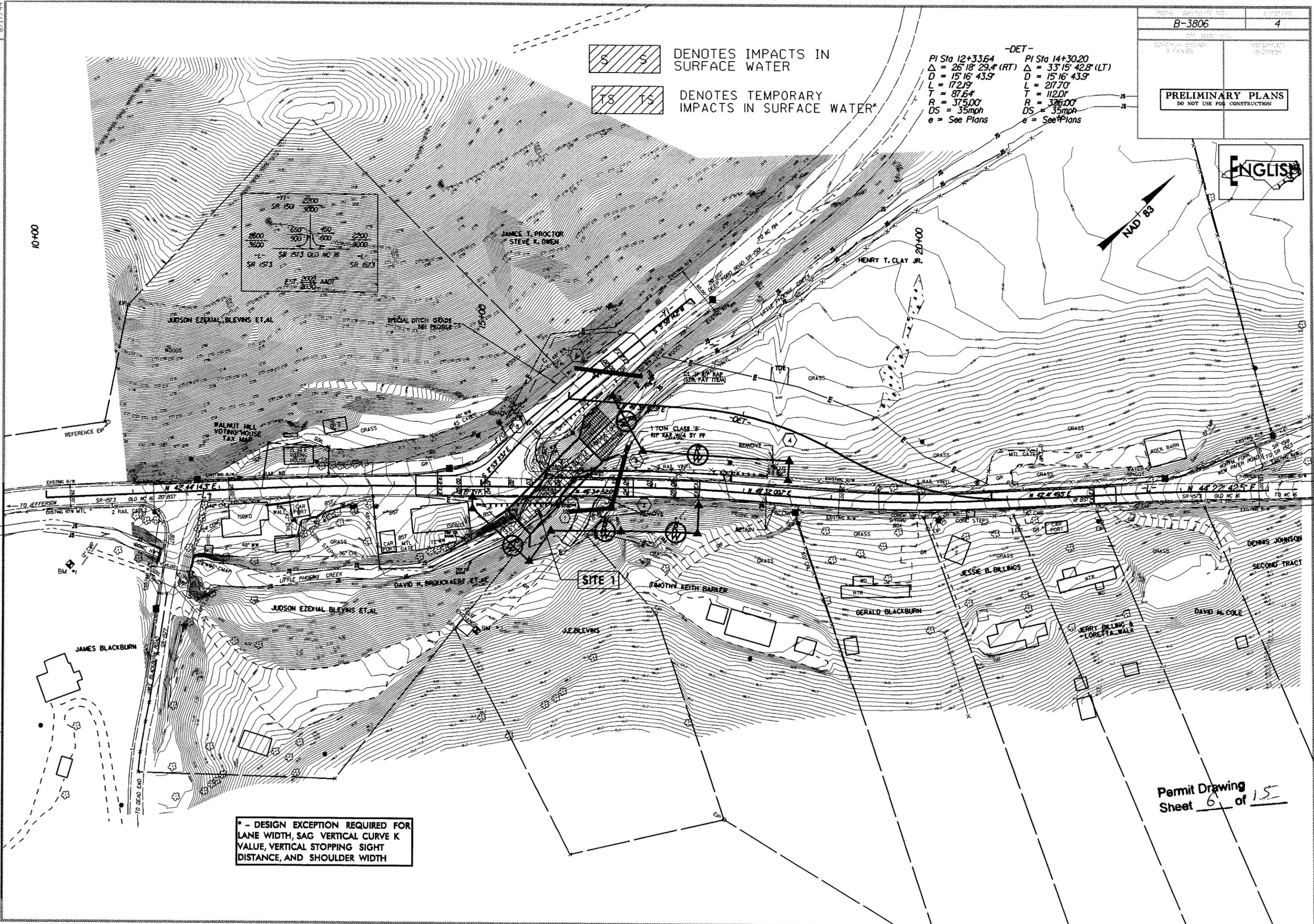
Permit Drawing
Sheet 5 of 15

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER*

-DET-
PI Sta 12+33.64 Δ = 26' 18" 29.4" (RT) D = 15' 16" 43.9" L = 172.19' R = 375.00' DS = 35mph e = See Plans
PI Sta 14+30.20 Δ = 33' 15" 42.8" (LT) D = 15' 16" 43.9" L = 217.70' R = 325.00' DS = 35mph e = See Plans



* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, AND SHOULDER WIDTH

Permit Drawing
Sheet 6 of 15

REVISIONS

10+00

REFERENCE EIP

EXISTING R/W

EXISTING R/W MTL

2 RAIL

TO DEAD END

TO JEFFERSON

SR-1573 OLD NC 16

20' BST

SR-1573 OLD NC 16

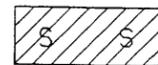
SR-1573 OLD NC

STEVE K. OWEN

B-3806 4

SR 1573 OLD NC 16
-L-
SR 1573

EST. 2009 AADT
2030



DENOTES IMPACTS IN SURFACE WATER

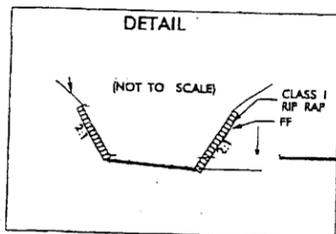


DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

SPECIAL DITCH GRADE
SEE PROFILE



CL 'W' RIP RAP
(STR. PAY ITEM)

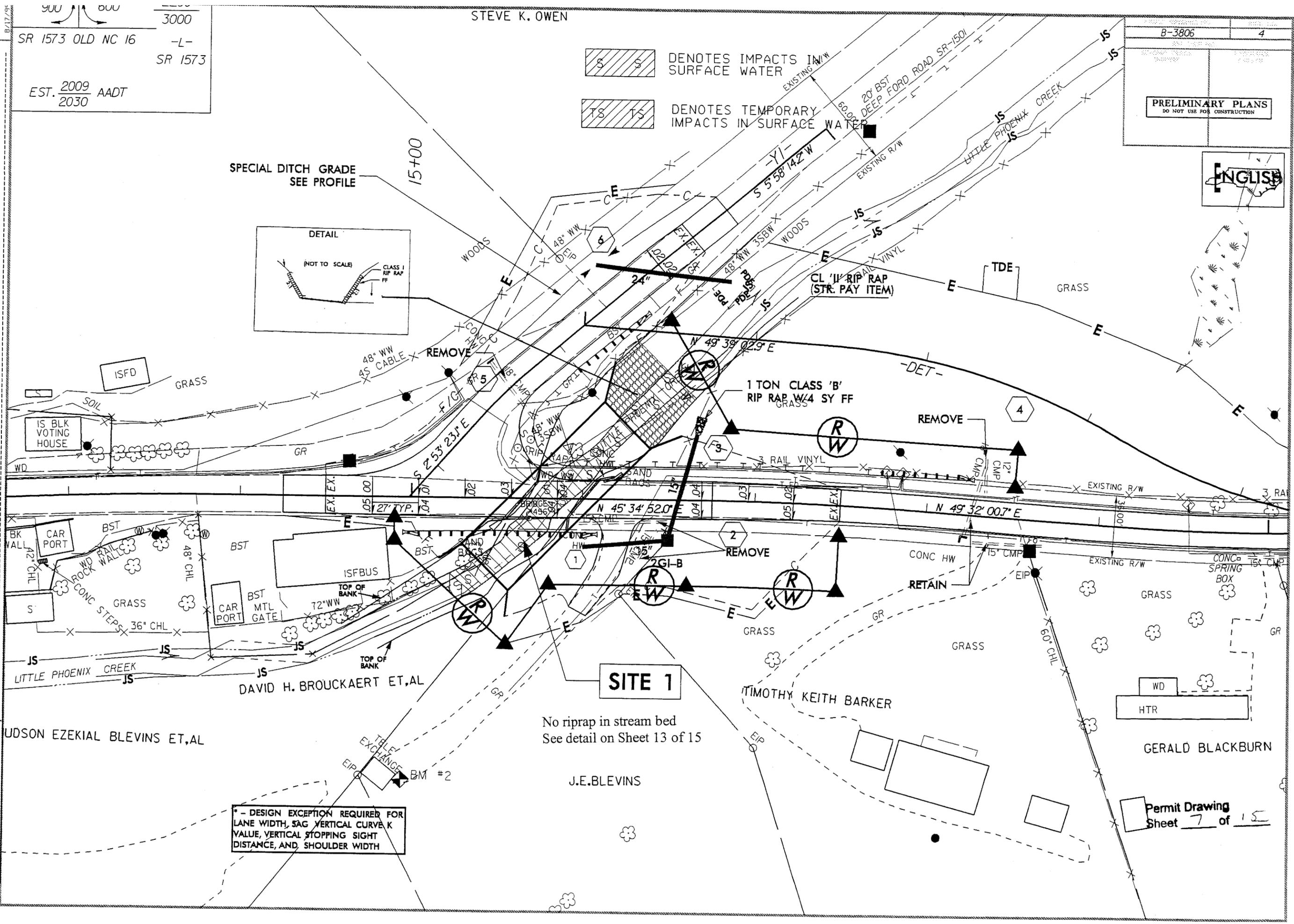
1 TON CLASS 'B'
RIP RAP W/4 SY FF

SITE 1

No riprap in stream bed
See detail on Sheet 13 of 15

* - DESIGN EXCEPTION REQUIRED FOR
LANE WIDTH, SAG VERTICAL CURVE K
VALUE, VERTICAL STOPPING SIGHT
DISTANCE, AND SHOULDER WIDTH

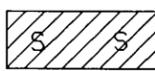
Permit Drawing
Sheet 7 of 15



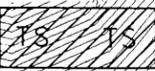
900 600 3000
 SR 1573 OLD NC 16 -L-
 SR 1573
 EST. 2009 AADT
 2030

STEVE K. OWEN

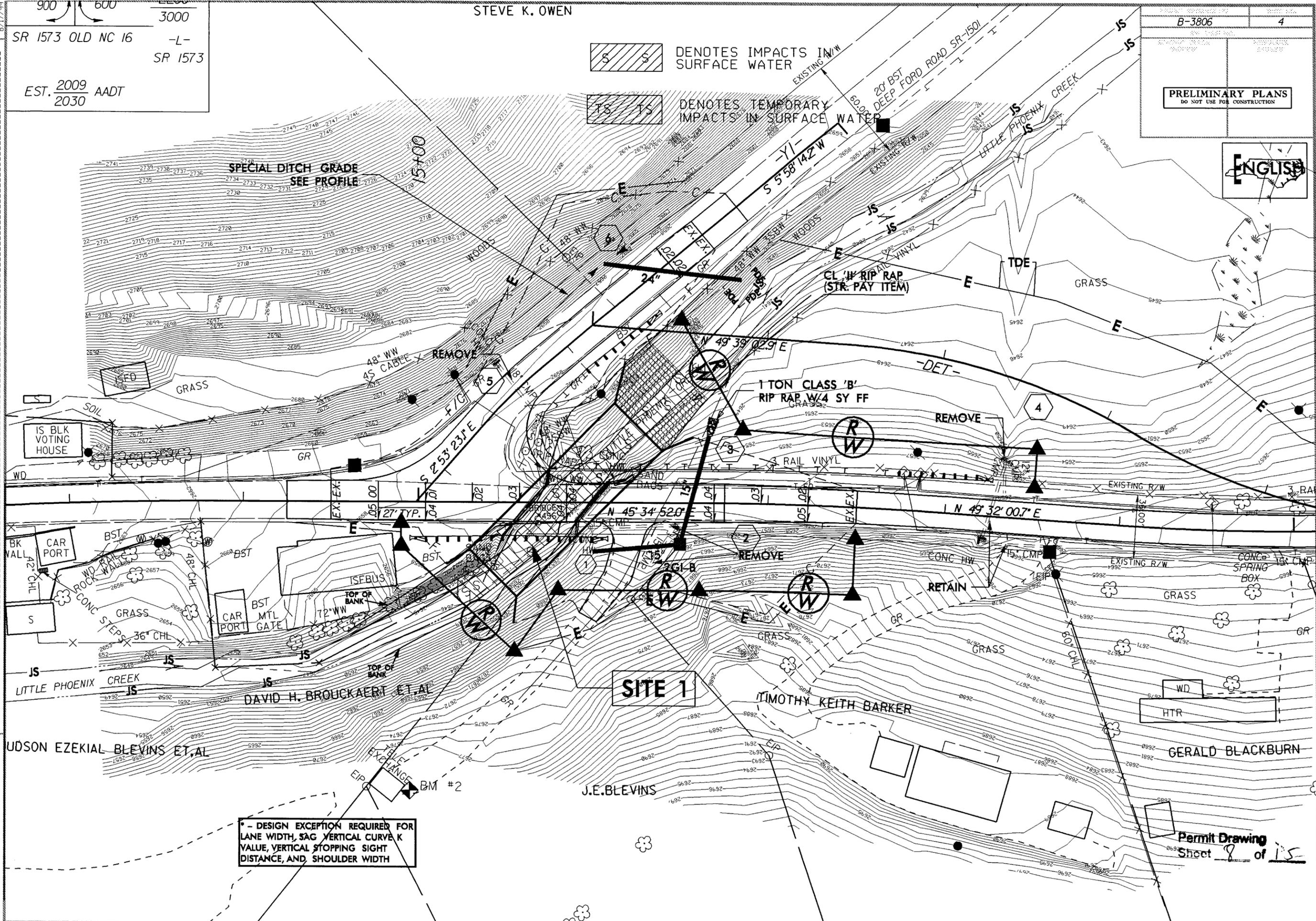
B-3806	4
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



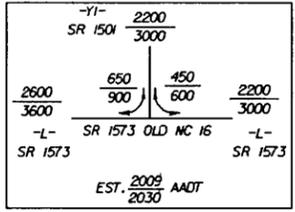
* - DESIGN EXCEPTION REQUIRED FOR
 LANE WIDTH, SAG VERTICAL CURVE K
 VALUE, VERTICAL STOPPING SIGHT
 DISTANCE, AND SHOULDER WIDTH

Permit Drawing
 Sheet 8 of 15

***** DENOTES MECHANIZED CLEARING

-DET-

PI Sta 12+33.64	PI Sta 14+30.20
$\Delta = 26^{\circ}18'29.4"$ (RT)	$\Delta = 33^{\circ}15'42.8"$ (LT)
D = 15'16'43.9"	D = 15'16'43.9"
L = 172.19'	L = 217.70'
T = 87.64'	T = 112.01'
R = 375.00'	R = 375.00'
DS = 35mph	DS = 35mph
e = See Plans	e = See Plans



JAMICE T. PROCTOR
STEVE K. OWEN

-DET- POT Sta. 10+00.00
-YI- POT Sta. 11+81.09

-DET- PC Sta. 11+46.09

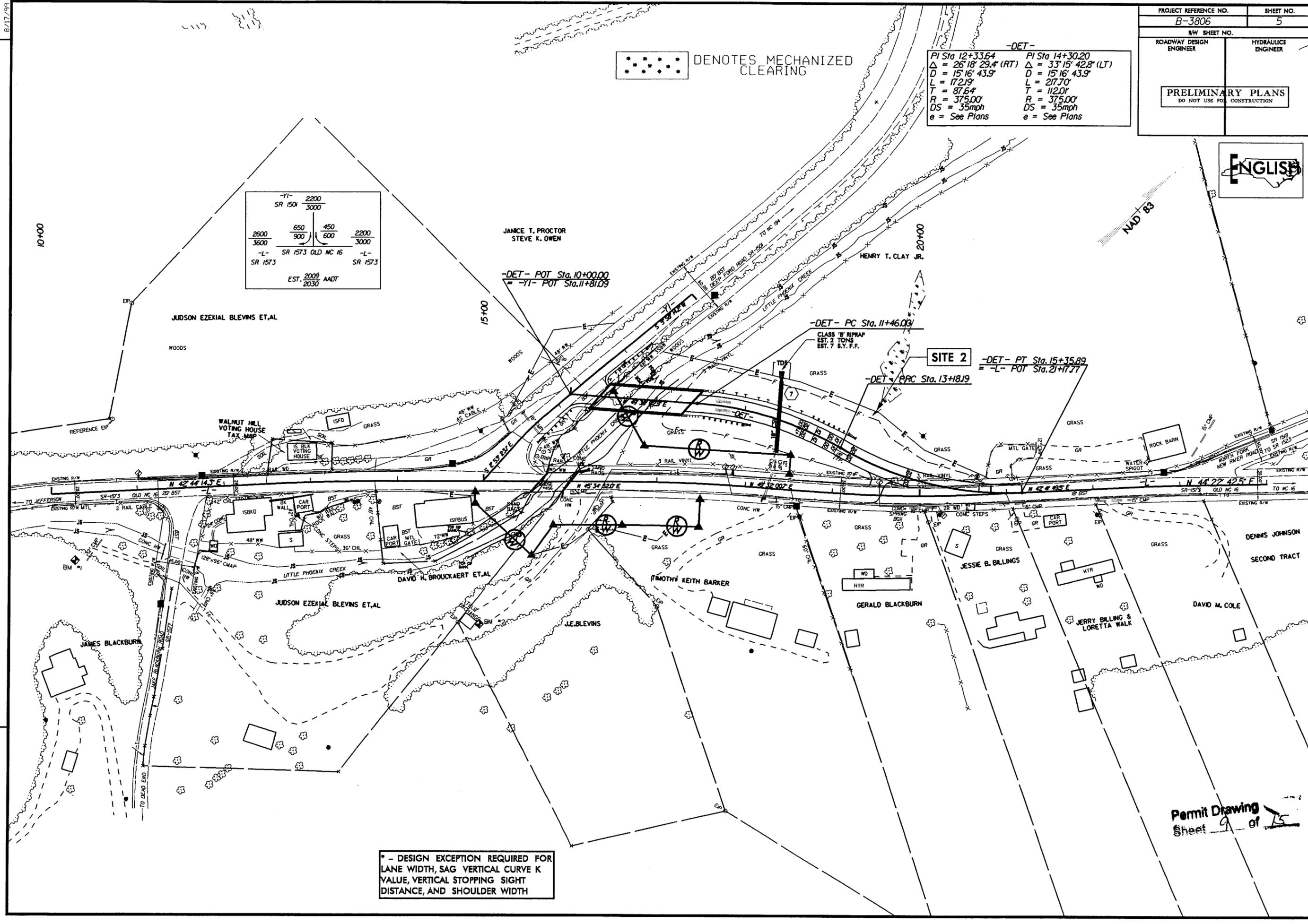
CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.

SITE 2

-DET- PT Sta. 15+35.89
-L- POT Sta. 21+17.77

-DET- PRC Sta. 13+18.19

REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA. 11+32.00 AND ADDED PDE AT OUTLET.



* - DESIGN EXCEPTION REQUIRED FOR
LANE WIDTH, SAG VERTICAL CURVE K
VALUE, VERTICAL STOPPING SIGHT
DISTANCE, AND SHOULDER WIDTH

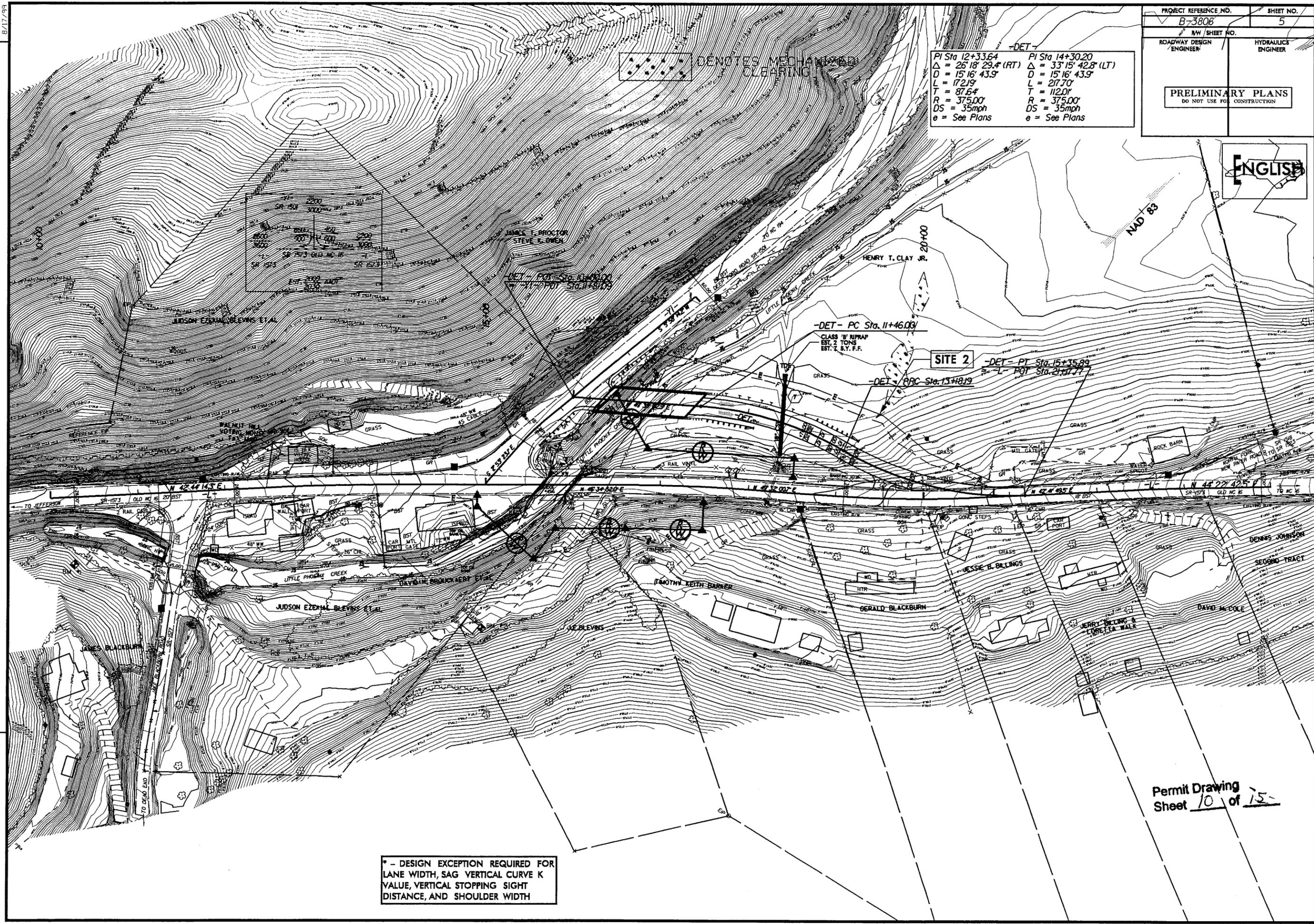
8/17/99

PROJECT REFERENCE NO. B-3806	SHEET NO. 5
R/W / SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PI Sta 12+33.64 Δ = 26' 18" 29.4" (RT) D = 15' 16" 43.9" L = 172.19' T = 87.64' R = 375.00' DS = 35mph e = See Plans	PI Sta 14+30.20 Δ = 33' 15" 42.8" (LT) D = 15' 16" 43.9" L = 27.70' T = 112.01' R = 375.00' DS = 35mph e = See Plans
---	---



REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA 11+32.00 AND ADDED PDE AT OUTLET.



* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, AND SHOULDER WIDTH

Permit Drawing Sheet 10 of 15

8/17/99

STEVE K. OWEN

PROJECT REFERENCE NO. B-3806	SHEET NO. 5
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-DET- POT Sta. 10+00.00
= -YI- POT Sta. 11+81.09

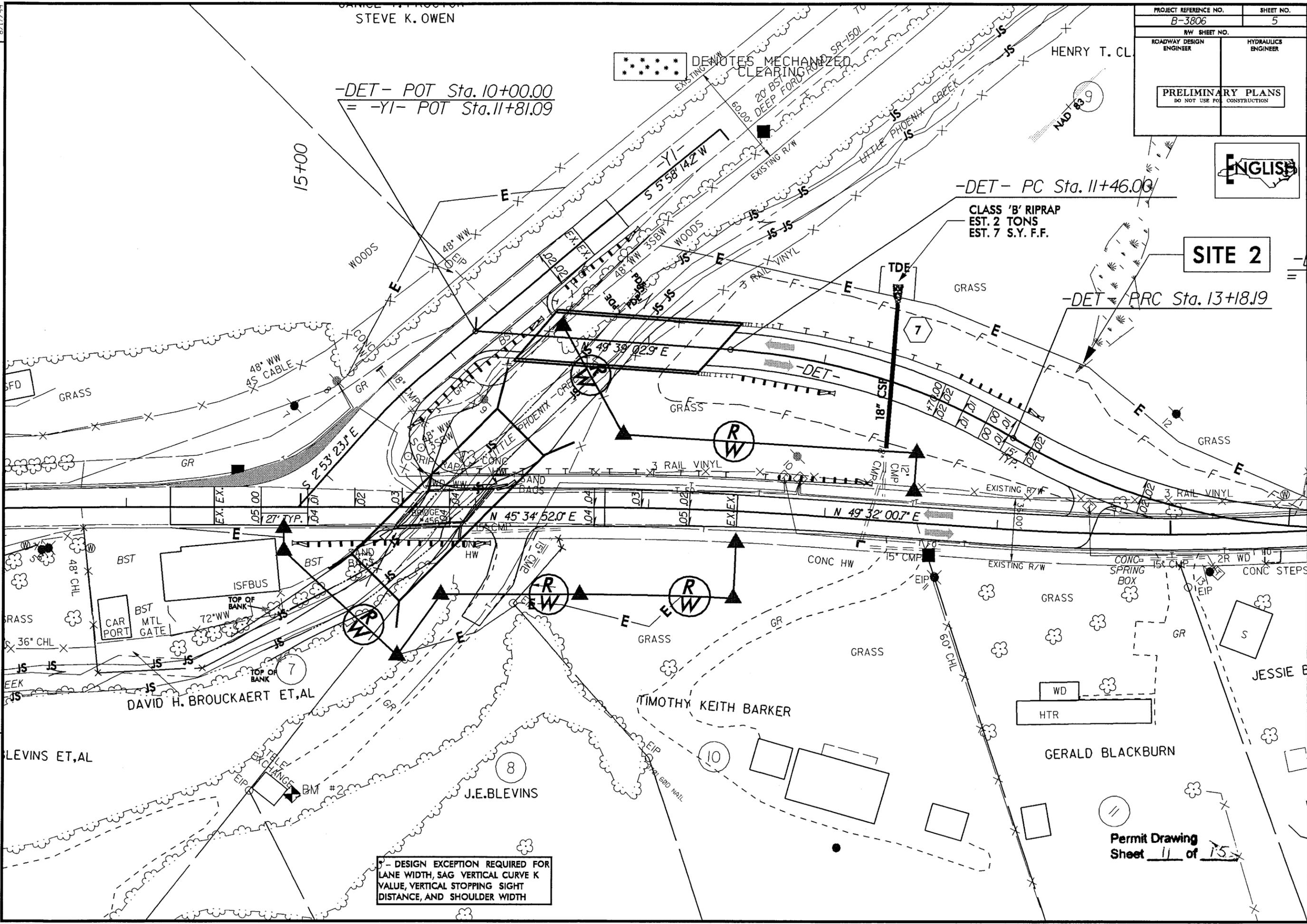
-DET- PC Sta. 11+46.00

CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.

SITE 2

-DET- PRC Sta. 13+18.19

REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA. 11+32.00 AND ADDED PDE AT OUTLET.



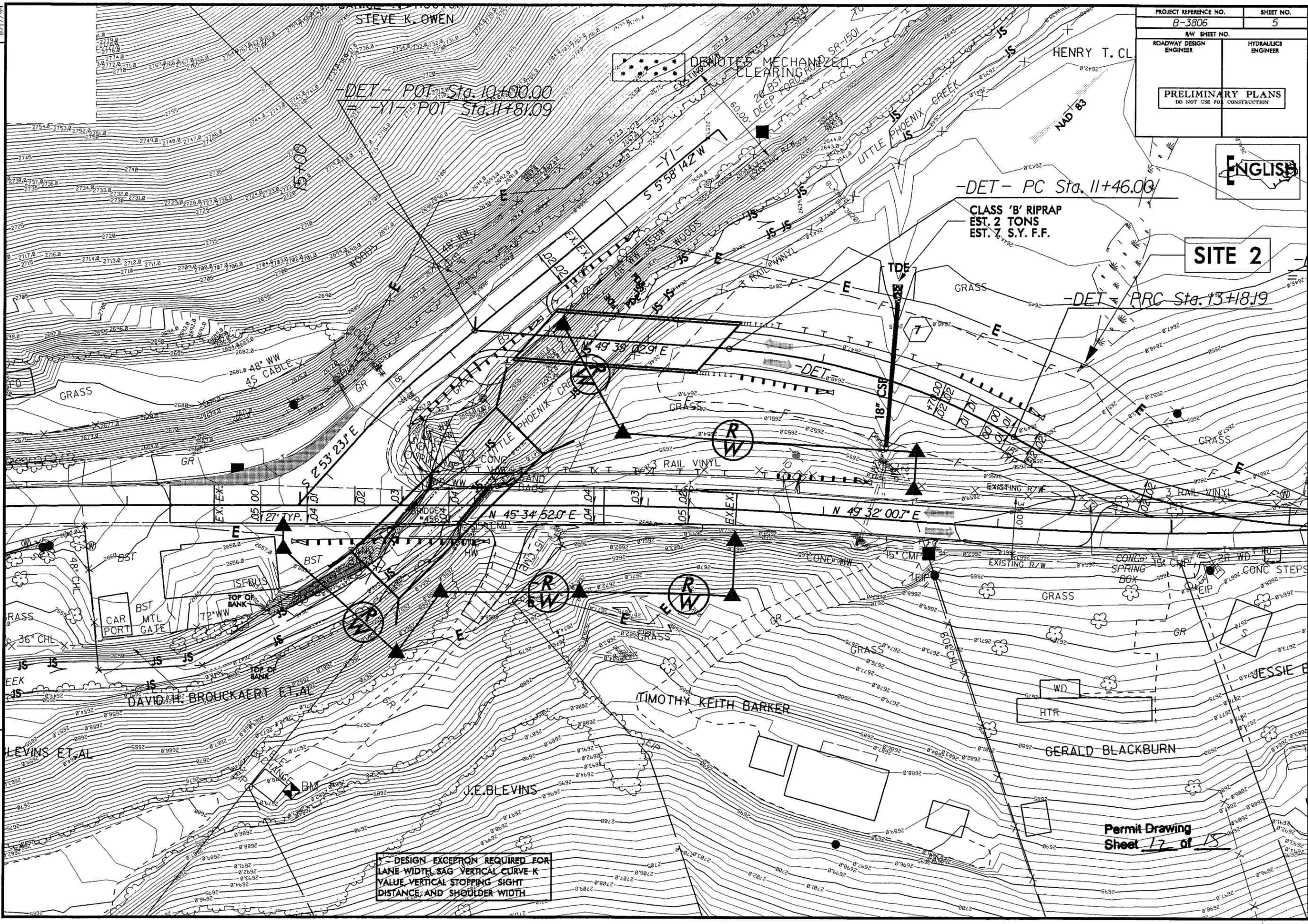
Permit Drawing Sheet 11 of 15

PROJECT REFERENCE NO. B-3806	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



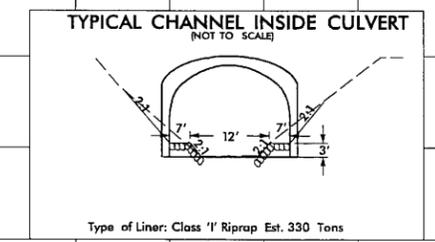
SITE 2

Permit Drawing
Sheet 12 of 15

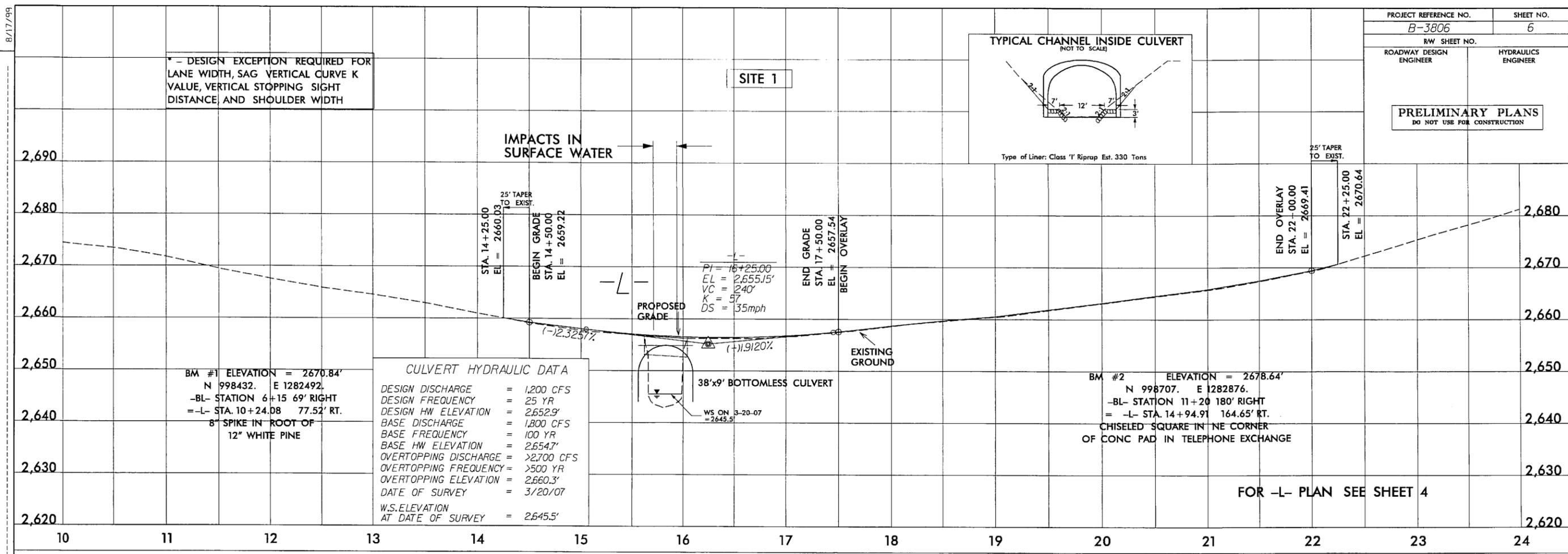


REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA. 11+32.00 AND ADDED PDE AT OUTLET.

8/17/99



* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE AND SHOULDER WIDTH



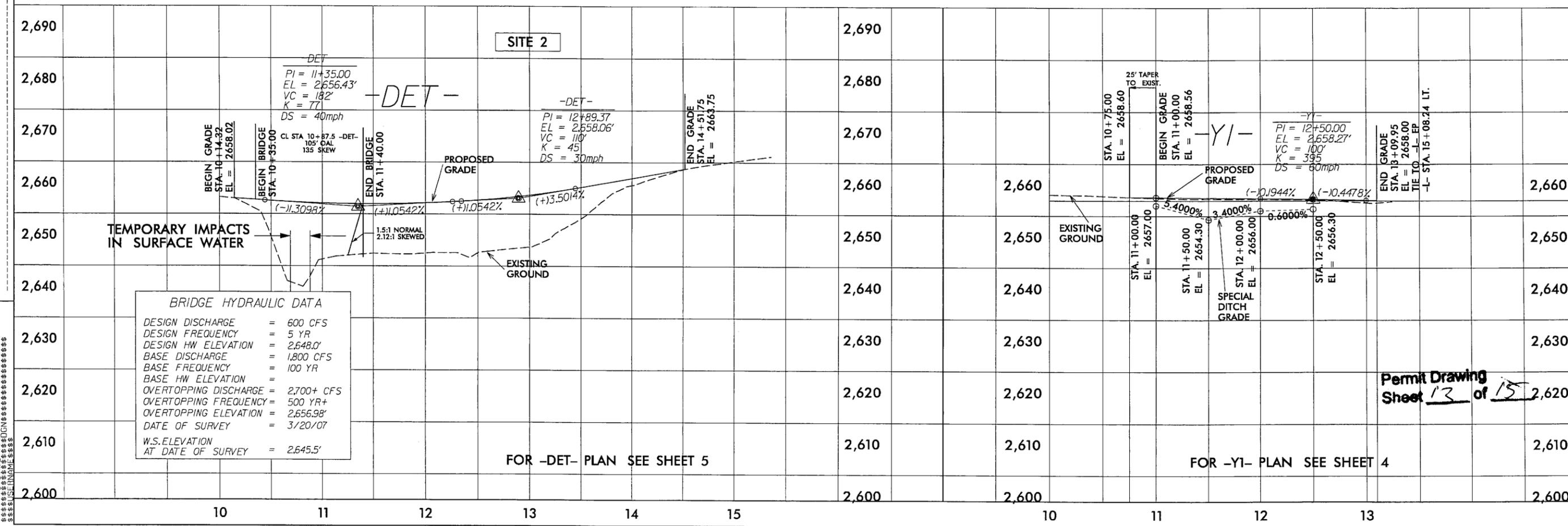
BM #1 ELEVATION = 2670.84'
N 998432. E 1282492.
-BL- STATION 6+15 69' RIGHT
-L- STA. 10+24.08 77.52' RT.
8" SPIKE IN ROOT OF 12" WHITE PINE

CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 1,200 CFS
DESIGN FREQUENCY = 25 YR
DESIGN HW ELEVATION = 2652.9'
BASE DISCHARGE = 1,800 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 2654.7'
OVERTOPPING DISCHARGE = >2,700 CFS
OVERTOPPING FREQUENCY = >500 YR
OVERTOPPING ELEVATION = 2660.3'
DATE OF SURVEY = 3/20/07
W.S. ELEVATION AT DATE OF SURVEY = 2645.5'

BM #2 ELEVATION = 2678.64'
N 998707. E 1282876.
-BL- STATION 11+20 180' RIGHT
-L- STA. 14+94.91 164.65' RT.
CHISELED SQUARE IN NE CORNER OF CONC PAD IN TELEPHONE EXCHANGE

FOR -L- PLAN SEE SHEET 4

REVISIONS



BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 600 CFS
DESIGN FREQUENCY = 5 YR
DESIGN HW ELEVATION = 2648.0'
BASE DISCHARGE = 1,800 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 2654.7'
OVERTOPPING DISCHARGE = 2,700+ CFS
OVERTOPPING FREQUENCY = 500 YR+
OVERTOPPING ELEVATION = 2656.98'
DATE OF SURVEY = 3/20/07
W.S. ELEVATION AT DATE OF SURVEY = 2645.5'

FOR -DET- PLAN SEE SHEET 5

FOR -YI- PLAN SEE SHEET 4

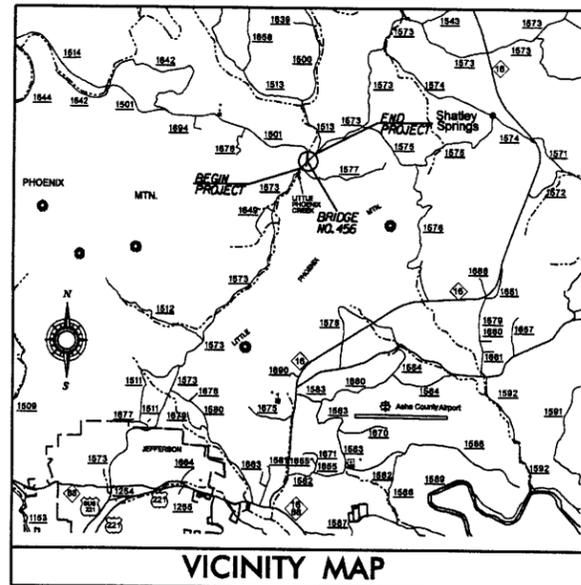
Permit Drawing Sheet 13 of 15

DATE PLOTTED: 03/22/07 10:58 AM
PLOTTER: HPGL-RT
SCALE: 1"=100'
SHEET: 13 OF 15

TIP PROJECT: B-3806

CONTRACT:

See Sheet 1-A For Index of Sheets



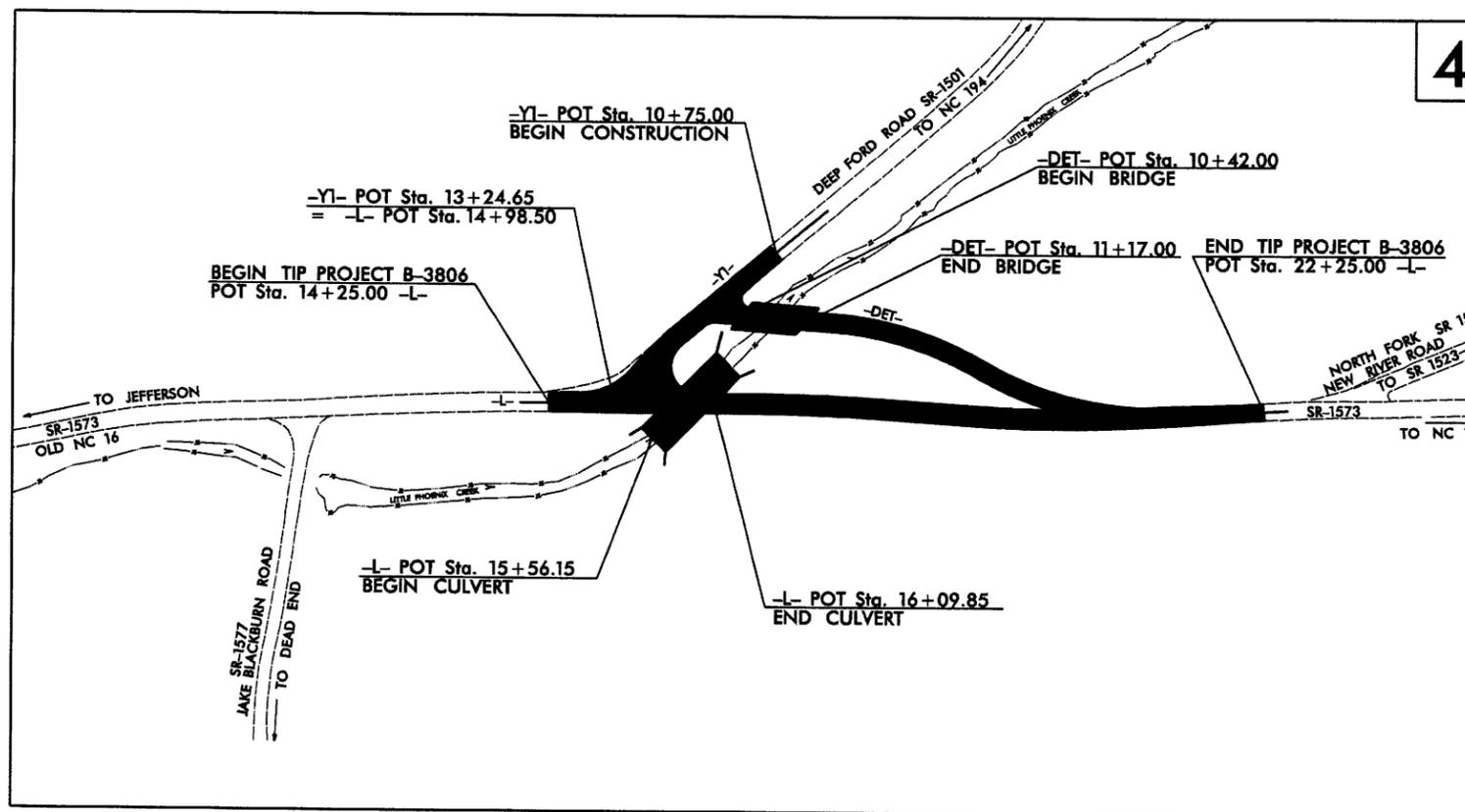
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

LOCATION: BRIDGE NO. 456 OVER LITTLE PHOENIX CREEK ON SR 1573

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3806	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33262.1.1	BRSTP-1573(2)	P.E.	
33262.2.1	BRSTP-1573(2)	RW, UTIL.	



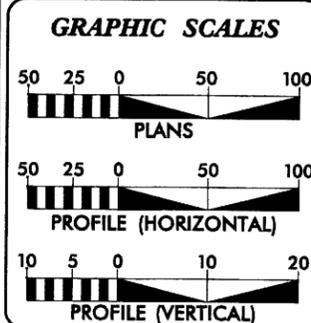
* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, AND SHOULDER WIDTH

THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NCDOT CONTACT: CATHY HOUSER, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2009 =	2,200
ADT 2030 =	3,000
DHV =	9 %
D =	55 %
T =	7 % *
V =	60 MPH
* TTST 1%	DUAL 6%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3806	=	0.142 mi.
LENGTH STRUCTURE TIP PROJECT B-3806	=	0.010 mi.
TOTAL LENGTH TIP PROJECT B-3806	=	0.152 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2008

LETTING DATE:
FEBRUARY 19, 2009

JAMES SJ WANG, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
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.

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	○
Property Corner	⊗
Property Monument	◻
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	W.L.
Proposed Wetland Boundary	W.L.
Existing Endangered Animal Boundary	E.A.B.
Existing Endangered Plant Boundary	E.P.B.

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG 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	W.L.
Proposed Lateral, Tail, Head Ditch	←
False Sump	▭

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	⊕
UG Power Cable Hand Hole	⊕
H-Frame Pole	●
Recorded UG Power Line	-----
Designated UG Power Line (S.U.E.*)	-----

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

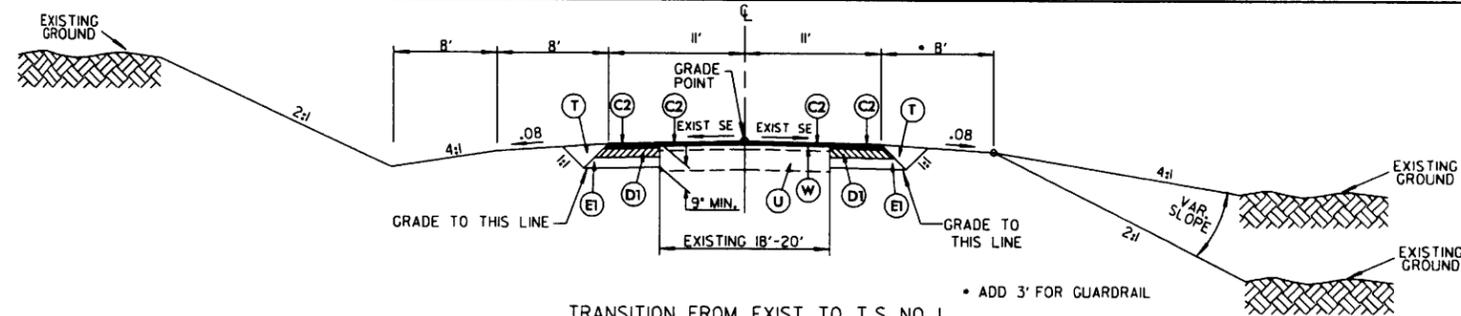
SANITARY SEWER:

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

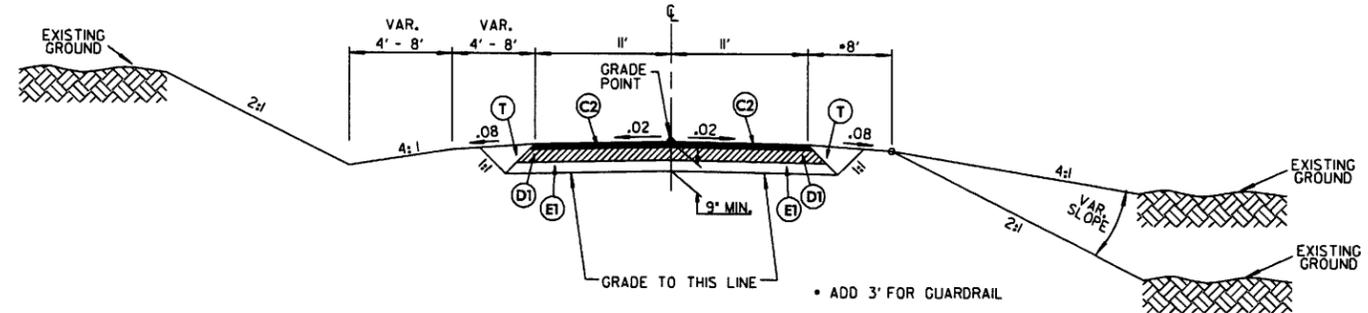
MISCELLANEOUS:

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

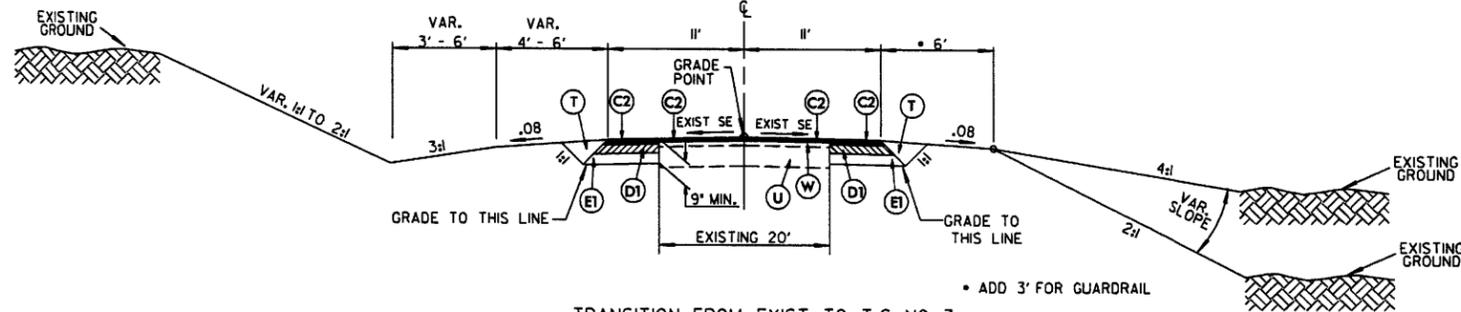
NOTE - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, AND SHOULDER WIDTH



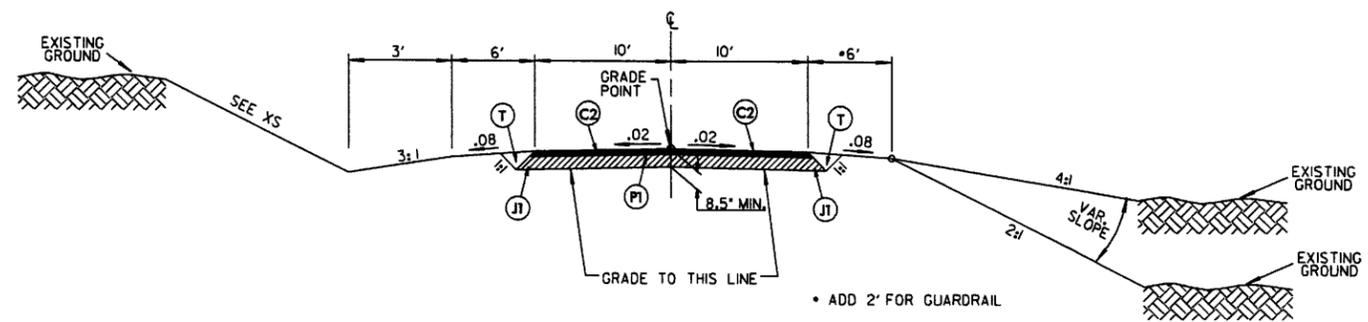
TRANSITION FROM EXIST. TO T.S. NO. 1
 -L- Sta. 14+25.00 to Sta. 14+50.00
TYPICAL SECTION NO. 1
 USE TYPICAL SECTION NO. 1 AS FOLLOWS
 -L- Sta. 14+50.00 to Sta. 15+25.00
 OVERLAY EXISTING AS FOLLOWS:
 -L- Sta. 17+50.00 to Sta. 22+00.00



TYPICAL SECTION NO. 2
 USE TYPICAL SECTION NO. 2 AS FOLLOWS
 -L- Sta. 15+25.00 to Sta. 17+50.00



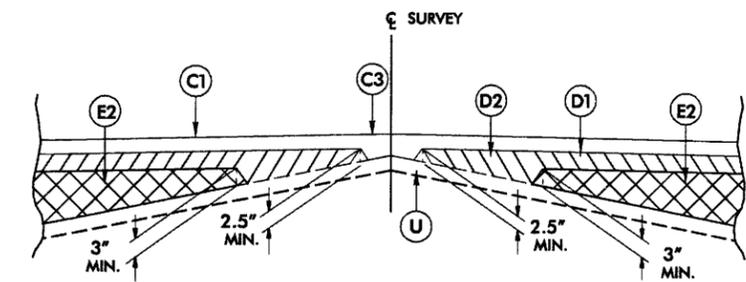
TRANSITION FROM EXIST. TO T.S. NO. 3
 -YI- Sta. 10+75.00 to Sta. 11+00.00
TYPICAL SECTION NO. 3
 USE TYPICAL SECTION NO. 3 AS FOLLOWS
 -YI- Sta. 11+00.00 to Sta. 13+09.95



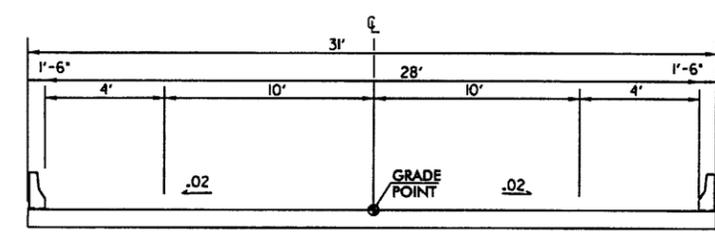
TYPICAL SECTION NO. 4
 USE TYPICAL SECTION NO. 4 AS FOLLOWS
 -DET- Sta. 10+14.32 to Sta. 14+51.75

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 198 LBS PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 275 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS PER SQ. YD.
D2	PROP. VAR. DEPTH ASPH. CONC. 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 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONC. 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" OR GREATER THAN 5.5" IN DEPTH.
J1	PROPOSED 6" AGGREGATE BASE COURSE
P1	PRIME COAT AT A RATE OF .35 GAL. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH PAVEMENT (SEE WEDGING DETAILS)

NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED



Detail Showing Method of Wedging



TYPICAL DETOUR BRIDGE SECTION
 -DET- Sta. 10+35.00 to Sta. 11+40.00

8/17/99

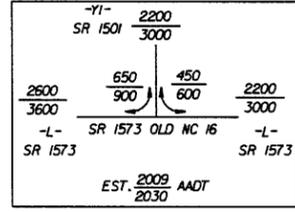
PROJECT REFERENCE NO.		SHEET NO.	
B-3806		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

-L-				-YI-	
PI Sta 13+21.48	PI Sta 17+26.50	PI Sta 19+83.33	PI Sta 22+72.54	PI Sta 12+40.15	PI Sta 12+40.15
$\Delta = 2' 50' 37.7''$ (RT)	$\Delta = 3' 57' 08.7''$ (RT)	$\Delta = 6' 50' 11.1''$ (LT)	$\Delta = 1' 40' 52.9''$ (RT)	$\Delta = 8' 51' 37.3''$ (LT)	$\Delta = 8' 51' 37.3''$ (LT)
D = 2' 00' 00.0'	D = 3' 00' 00.0'	D = 4' 00' 00.0'	D = 4' 00' 00.0'	D = 20' 00' 00.0'	D = 20' 00' 00.0'
L = 142.19'	L = 131.75'	L = 170.91'	L = 42.03'	L = 44.30'	L = 44.30'
T = 71.1'	T = 65.90'	T = 85.56'	T = 21.02'	T = 22.20'	T = 22.20'
R = 2,864.79'	R = 1,909.86'	R = 1,432.39'	R = 1,432.39'	R = 286.48'	R = 286.48'
DS = 60mph			DS = 60mph		
e = See Plans			e = See Plans		

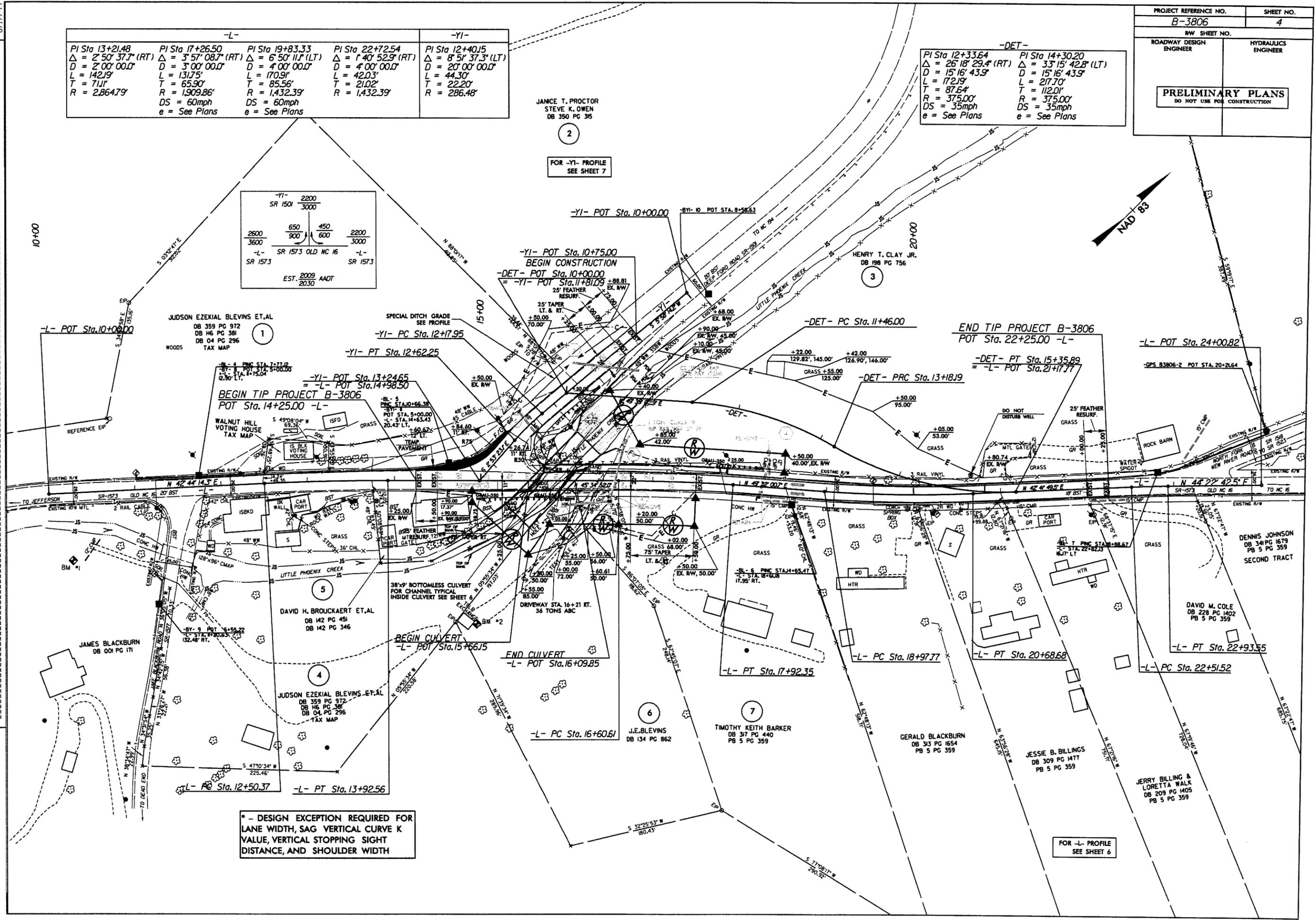
JANICE T. PROCTOR
STEVE K. OWEN
DB 350 PG 315

2
FOR -YI- PROFILE
SEE SHEET 7

-DET-	
PI Sta 12+33.64	PI Sta 14+30.20
$\Delta = 26' 18' 29.4''$ (RT)	$\Delta = 33' 15' 42.8''$ (LT)
D = 15' 16' 43.9'	D = 15' 16' 43.9'
L = 172.19'	L = 217.70'
T = 87.64'	T = 112.01'
R = 375.00'	R = 375.00'
DS = 35mph	DS = 35mph
e = See Plans	



REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA. 11+32.00 AND ADDED PDE AT OUTLET.



* - DESIGN EXCEPTION REQUIRED FOR
LANE WIDTH, SAG VERTICAL CURVE K
VALUE, VERTICAL STOPPING SIGHT
DISTANCE, AND SHOULDER WIDTH

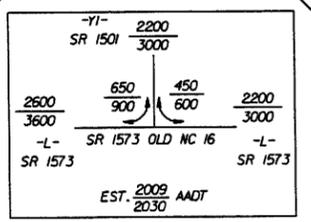
FOR -L- PROFILE
SEE SHEET 6

-L-		-YI-	
PI Sta 13+21.48	PI Sta 17+26.50	PI Sta 19+83.33	PI Sta 22+72.54
$\Delta = 2^{\circ} 50' 37.7''$ (RT)	$\Delta = 3^{\circ} 57' 08.7''$ (RT)	$\Delta = 6^{\circ} 50' 11.1''$ (LT)	$\Delta = 1^{\circ} 40' 52.9''$ (RT)
$D = 2^{\circ} 00' 00.0''$	$D = 3^{\circ} 00' 00.0''$	$D = 4^{\circ} 00' 00.0''$	$D = 4^{\circ} 00' 00.0''$
$L = 142.19'$	$L = 131.75'$	$L = 170.91'$	$L = 42.03'$
$T = 71.11'$	$T = 65.90'$	$T = 85.56'$	$T = 21.02'$
$R = 2,864.79'$	$R = 1,909.86'$	$R = 1,432.39'$	$R = 1,432.39'$
$DS = 60\text{mph}$	$DS = 60\text{mph}$		
$e = \text{See Plans}$	$e = \text{See Plans}$		

-DET-	
PI Sta 12+33.64	PI Sta 14+30.20
$\Delta = 26^{\circ} 18' 29.4''$ (RT)	$\Delta = 33^{\circ} 15' 42.8''$ (LT)
$D = 15^{\circ} 16' 43.9''$	$D = 15^{\circ} 16' 43.9''$
$L = 172.19'$	$L = 217.01'$
$T = 87.64'$	$T = 112.01'$
$R = 375.00'$	$R = 375.00'$
$DS = 35\text{mph}$	$DS = 35\text{mph}$
$e = \text{See Plans}$	$e = \text{See Plans}$

JANICE T. PROCTOR
STEVE K. OWEN
DB 350 PG 315

FOR -YI- PROFILE
SEE SHEET 7

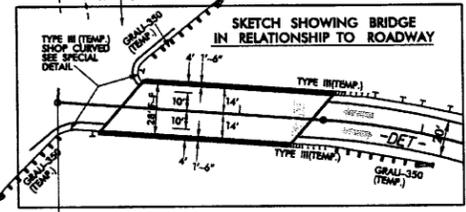
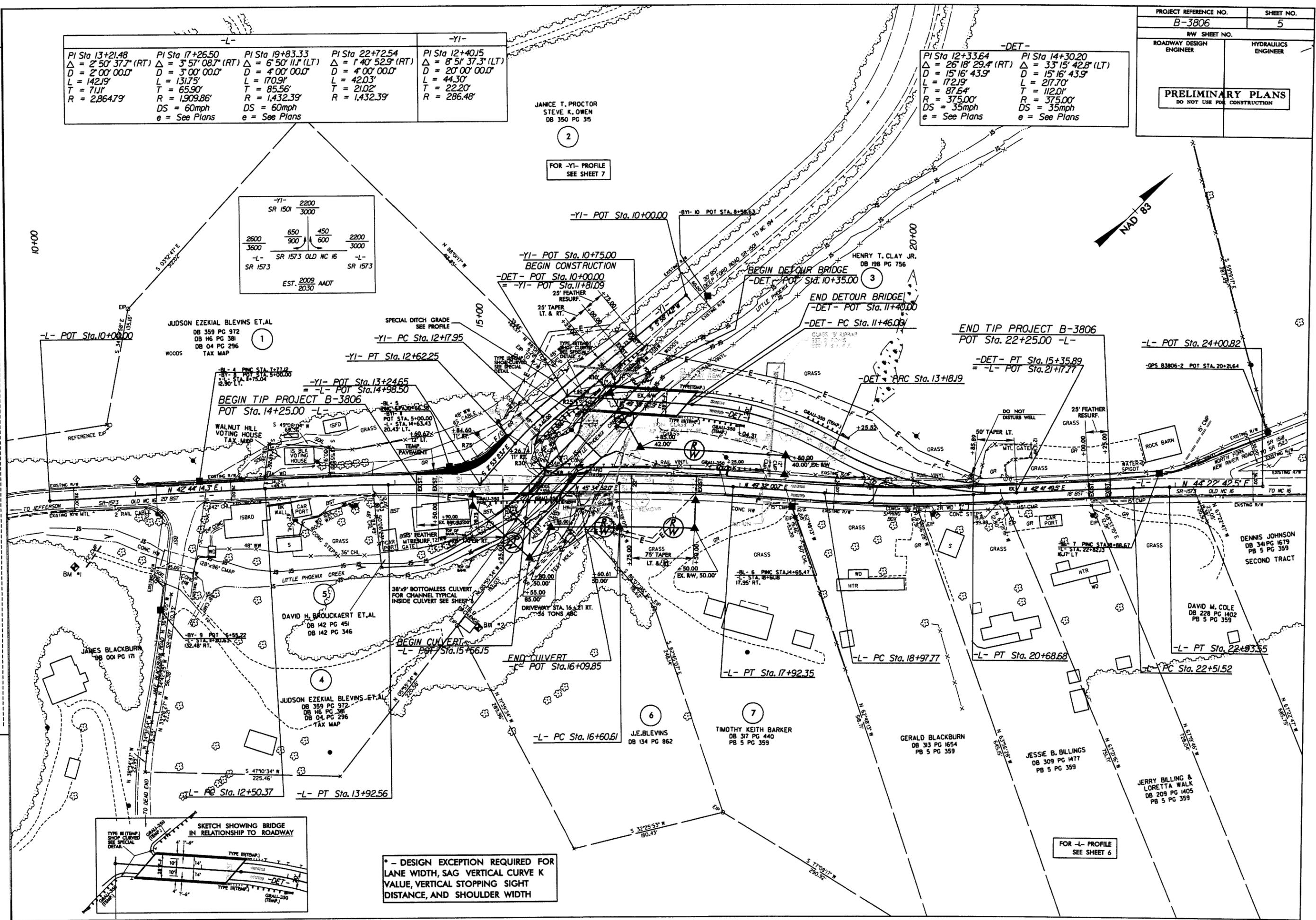


JUDSON EZEKIAL BLEVINS ET.AL
DB 359 PG 972
DB H6 PG 381
DB O4 PG 296
WOODS
TAX MAP

SPECIAL DITCH GRADE
SEE PROFILE

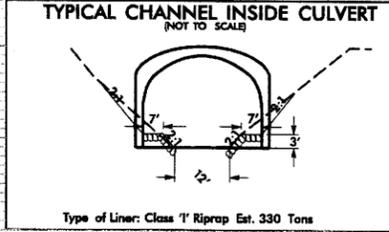
END TIP PROJECT B-3806
POT Sta. 22+25.00 -L-

REVISIONS
1. REVISED SKEW OF CROSS PIPE @ -YI- STA. 11+32.00 AND ADDED PDE AT OUTLET.

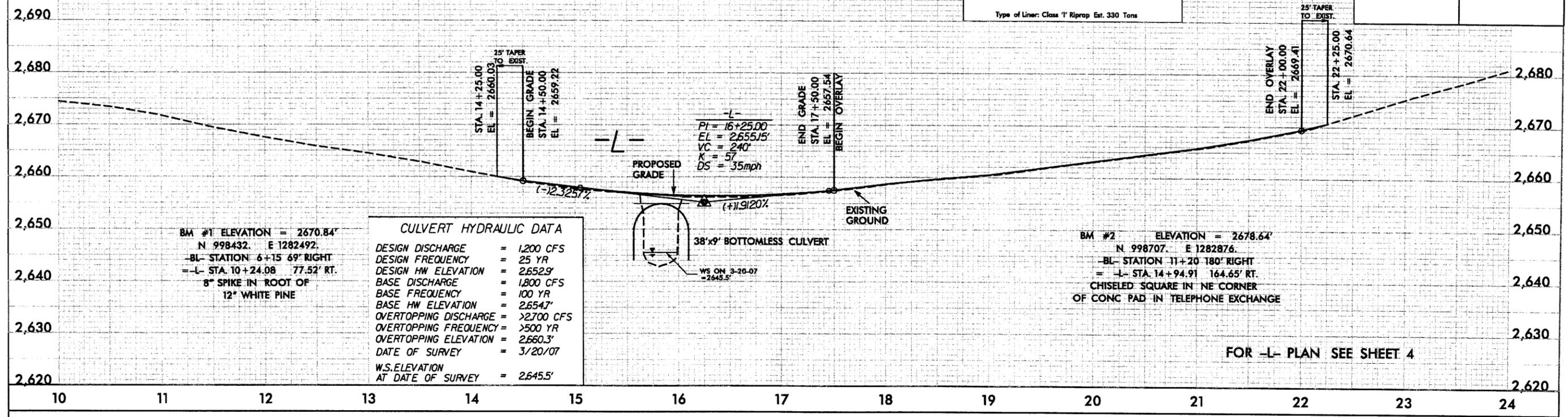


* - DESIGN EXCEPTION REQUIRED FOR
LANE WIDTH, SAG VERTICAL CURVE K
VALUE, VERTICAL STOPPING SIGHT
DISTANCE, AND SHOULDER WIDTH

FOR -L- PROFILE
SEE SHEET 6



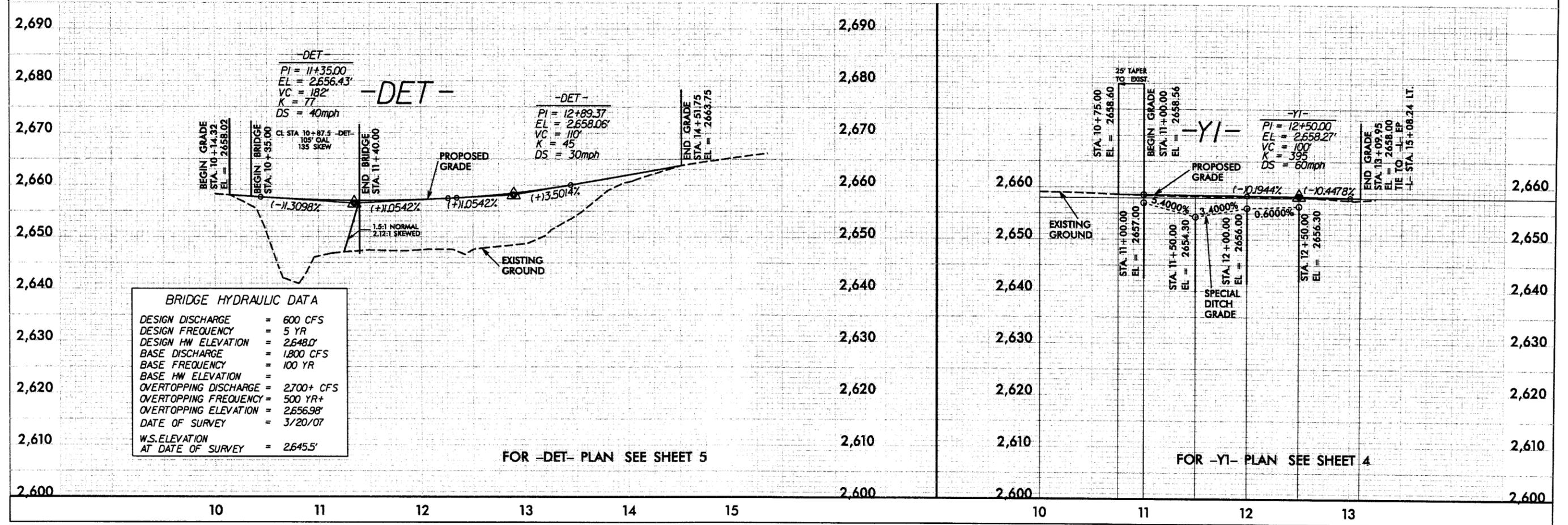
DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE AND SHOULDER WIDTH



DESIGN DISCHARGE	= 1,200 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 2,652.9'
BASE DISCHARGE	= 1,800 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 2,654.7'
OVERTOPPING DISCHARGE	= >2,700 CFS
OVERTOPPING FREQUENCY	= >500 YR
OVERTOPPING ELEVATION	= 2,660.3'
DATE OF SURVEY	= 3/20/07
W.S. ELEVATION AT DATE OF SURVEY	= 2,645.5'

BM #1 ELEVATION = 2670.84'
N 998432. E 1282492.
-BL- STATION 6+15 69' RIGHT
-L- STA. 10+24.08 77.52' RT.
8" SPIKE IN ROOT OF
12" WHITE PINE

BM #2 ELEVATION = 2678.64'
N 998707. E 1282876.
-BL- STATION 11+20 180' RIGHT
-L- STA. 14+94.91 164.65' RT.
CHISELED SQUARE IN NE CORNER
OF CONG PAD IN TELEPHONE EXCHANGE



DESIGN DISCHARGE	= 600 CFS
DESIGN FREQUENCY	= 5 YR
DESIGN HW ELEVATION	= 2,648.0'
BASE DISCHARGE	= 1,800 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 2,650.0'
OVERTOPPING DISCHARGE	= 2,700+ CFS
OVERTOPPING FREQUENCY	= 500 YR+
OVERTOPPING ELEVATION	= 2,656.98'
DATE OF SURVEY	= 3/20/07
W.S. ELEVATION AT DATE OF SURVEY	= 2,645.5'

-DET-
PI = 11+35.00
EL = 2,656.43'
VC = 182'
K = 77
DS = 40mph

-DET-
PI = 12+89.37
EL = 2,658.06'
VC = 110'
K = 45
DS = 30mph

-YI-
PI = 12+50.00
EL = 2,658.27'
VC = 100'
K = 395
DS = 60mph

FOR -DET- PLAN SEE SHEET 5

FOR -YI- PLAN SEE SHEET 4

Ashe County
Bridge No. 456 on SR 1573 (Old Highway 16)
Over Little Phoenix Creek
Federal-Aid Project No. BRSTP-1573(2)
W.B.S. No. 33262.1.1
T.I.P. Project No. B-3806

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

5/9/07
DATE

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

5/8/07
DATE

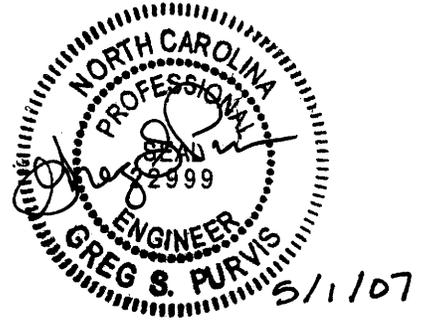
for John F. Sullivan, III
John F. Sullivan, III, P. E.
Division Administrator, FHWA

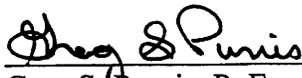
Ashe County
Bridge No. 456 on SR 1573 (Old Highway 16)
Over Little Phoenix Creek
Federal-Aid Project No. BRSTP-1573(2)
W.B.S. No. 33262.1.1
T.I.P. Project No. B-3806

CATEGORICAL EXCLUSION

May 2007

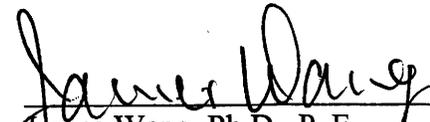
Document Prepared by:
Wang Engineering Company, Inc.





Greg S. Purvis, P. E.
Project Manager

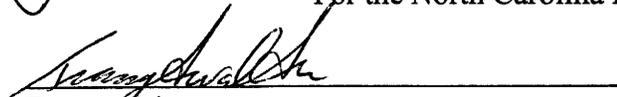
5/1/07
DATE



James Wang, Ph.D., P. E.
Principal

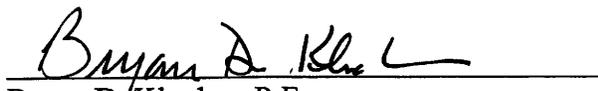
5-1-07
DATE

For the North Carolina Department of Transportation



Tracy Walter
Project Manager
Bridge Project Development Unit

5/7/07
DATE



Bryan D. Kluchar, P.E.
Project Engineer
Bridge Project Development Unit

5/7/07
DATE

PROJECT COMMITMENTS

**Ashe County
Bridge No. 456 on SR 1573 (Old Highway 16)
Over Little Phoenix Creek
Federal-Aid Project No. BRSTP-1573(2)
W.B.S. No. 33262.1.1
T.I.P. Project No. B-3806**

Roadside Environmental Unit, Division Eleven Resident Engineer – Sensitive Watersheds

Little Phoenix Creek is classified, as Class C (Tr+) Waters and will be subject to the Design Standards in Sensitive Watersheds.

Division Eleven Resident Engineer – Trout Issues

Little Phoenix Creek is populated with Brook Trout. An in-water work moratorium is required from October 15 to April 15.

Division Eleven Resident Engineer

Dr. Hank Clay Jr.'s office at (336) 982-2158 needs to be contacted prior to beginning construction.

Ashe County
Bridge No. 456 on SR 1573 (Old Highway 16)
Over Little Phoenix Creek
Federal-Aid Project No. BRSTP-1573(2)
W.B.S. No. 33262.1.1
T.I.P. Project No. B-3806

INTRODUCTION: The replacement of Bridge No. 456 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and is eligible for 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

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 4.0 out of a possible 100, a structural appraisal of 2 out of a possible 9, and a deck geometry appraisal of 2 out of a possible 9. Therefore, based on Federal Highway Administration (FHWA) standards, the bridge is considered functionally obsolete and structurally deficient.

Bridge No. 456 is composed of timber, concrete and steel. Timber typically does not last beyond 40 to 50 years due to the natural deterioration rates of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. The condition of Bridge No. 456, built in 1962, has deteriorated to the point that makes rehabilitation impractical. Replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located just east of the intersection with SR 1501 (see Figure 1). Land use in the project area is predominantly woodlands, light residential and farmland. Undeveloped woodlands are adjacent on the north side of the study area. There is farmland to the northeast of the existing bridge. Blevin's Store is located in the southeast quadrant with a well casing located in the parking lot. Dr. Hank Clay Jr. Family Physicians office is located immediately to the northwest of the project.

SR 1573 is classified as a rural minor collector in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use the roadway.

In the vicinity of the bridge, SR 1573 has a variable pavement width of 17 – 20 foot with four-foot grass shoulders (see Figures 3). The roadway grade has a sag vertical curve at the existing bridge. The existing bridge on SR 1573 is on a tangent. There is an approximate 3,100-foot radius curve located approximately 54 feet northeast of the existing structure and an approximate 5,000-foot radius curve located approximately 18 feet southwest of the existing structure. The roadway is situated approximately 13 feet above the creek bed.

Bridge No. 456 is a single-span structure that consists of a timber deck with asphalt wearing surface on I-beams. The substructure consists of reinforced concrete abutments. The existing bridge (see Figure 3) was constructed in 1962. The overall length of the structure is 41 feet. The clear roadway width is 18-feet 10-inches. The posted weight limit on this bridge is 15 tons for single vehicles and 19 tons for TTST's.

There are no utilities attached to the existing structure. In addition, there are aerial power lines on the north and south sides of the existing bridge. There is fiber optic cable on the north side of the existing bridge. Utility impacts are anticipated to be low.

The current traffic volume of 2,000 vehicles per day (VPD) is expected to increase to 3,000 VPD by the year 2030. The projected volume includes one percent truck-tractor semi-trailer (TTST) and six percent dual-tired vehicles (DT). The speed limit in the vicinity of the bridge is not posted and therefore a statutory 55 miles per hour (mph) is assumed. There is a 35 mph advisory sign for the horizontal curve to the southwest. SR 1501, which intersects SR 1573 to the southwest, is posted at 45 mph. Three school buses cross this bridge daily four times each for a total of 12 trips.

There were three accidents reported during a recent three-year period. Two of the crashes involved vehicles failing to yield to traffic approaching from the bridge while turning left from SR 1501. The proximity of the existing bridge to the intersection with SR 1501 impedes sight distance and this may have contributed to the accidents.

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of an approximate 48-foot wide by 10-foot high bottomless culvert approximately 130-foot long. The culvert size is based on preliminary design information and is set by hydraulic requirements. The opening size of the proposed structure 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. This structure will be of sufficient length to provide two 11-foot lanes with 11-foot shoulders. The roadway grade of the new structure will be approximately the same as the existing grade.

The existing roadway will be widened to a 22-foot pavement width to provide two 11-foot lanes. Eight-foot shoulders will be provided on each side in accordance with the current NCDOT Design Policy. This roadway will be designed as a rural minor collector. The proposed design speed is 60 mph.

B. Build Alternatives

Two (2) build alternatives studied for replacing the existing bridge are described below.

Alternate A replaces the bridge on new alignment north of the existing bridge. During construction, traffic will be maintained on the existing bridge. The length of project will be approximately 1,088 feet. The replacement structure will consist of an approximate 48-foot wide by 10-foot high bottomless culvert approximately 138-foot long. This alternate would require the removal of a bluff adjacent to SR 1573 and SR 1501 that would involve a substantial amount of excavation.

Alternate B (Preferred) replaces the bridge on existing alignment. During construction, traffic will be maintained by an on-site temporary detour structure located north of the existing bridge. The length of project will be approximately 825 feet. The replacement structure will consist of an approximate 48-foot wide by 10-foot high bottomless culvert approximately 130-foot long. The temporary detour structure will be an approximate 120-foot bridge. The elimination of the existing bridge rail will help improve the sight distance from the intersection with SR 1501.

C. Alternatives Eliminated From Further Study

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge and closing of the road. This is not desirable due to the traffic service provided by SR 1573.

An alternative that replaces the bridge in the existing location with an offsite detour is not feasible because the offsite detour is not satisfactory. The offsite detour for this project would include SR 1574 (Shatley Springs Road), NC 16 and SR 1580 (Wade Bare Road) approximately 9.51 miles in length. The detour for the average road user would result in 20 minutes additional travel time (4.91 miles additional travel). Up to a nine-month duration of construction is expected on this project. Based on the NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects, the criteria above indicate that a delay of 20 minutes over nine months is unacceptable. In addition, local residents have also advised that the available detour is not well suited for adverse weather travel. NCDOT Division 11 has also indicated that an offsite detour is unacceptable. While project costs and environmental impacts will be higher, maintenance of traffic onsite during construction is mandatory.

Staged Construction is not feasible for this bridge because of the poor condition of the structure and the substructure configuration will not support removal of a portion and maintenance of traffic on the remaining portion.

"Rehabilitation" of the existing bridge is not practical due to being composed mainly of timber and the natural deterioration of timber.

D. Preferred Alternative

Alternate B, replacing the existing bridge at the existing location, while maintaining traffic by an on-site temporary detour is the preferred alternate. Alternate B was selected because of the comparatively lower construction cost, lower environmental impacts, and lesser construction time associated with it.

The Division Engineer concurs with Alternate B as the preferred alternative.

Alternate B is estimated to cost \$1,645,000. A breakdown of the estimated cost is shown in Item V (Table 1).

IV. DESIGN EXCEPTIONS ANTICIPATED

A design exception will be required for the horizontal alignment for Alternate A. The radii for the horizontal curves for Alternate A meet a design speed of 35 mph. A design exception would also be required for the vertical alignment for Alternate A because it meets a design speed of 40 mph.

In order to match the existing vertical alignment for Alternate B it will require a design exception for the vertical alignment, which meets a design speed of 35 mph.

V. ESTIMATED COSTS

The estimated costs, based on current 2007 prices, are as follows:

Table 1. – Estimated Costs

	Alternate A	Alternate B (Preferred)
Structure Removal (existing)	\$ 11,400	\$ 11,400
Culvert (proposed)	760,100	716,000
Detour Structure and Approaches	0	198,000
Roadway Approaches	780,100	177,200
Miscellaneous and Mobilization	467,400	240,400
Engineering and Contingencies	331,000	207,000
Total Construction Costs	2,350,000	1,550,000
ROW/Const. Easements:	96,000	66,000
Utilities	29,000	29,000
	-----	-----
TOTAL	\$ 2,475,000	\$ 1,645,000

VI. NATURAL RESOURCES

A. Physical Characteristics

1. Water Resources

The project study area is located within sub-basin 05-07-02 of the New River Basin (NCDWQ 2000). Within the project study area there are two jurisdictional streams: Little Phoenix Creek, and an unnamed tributary (UT) to Little Phoenix Creek. This area is part of USGS Hydrologic Unit 05050001 (Seaber et al. 1987) of the Ohio Region. Bridge No. 456 spans Little Phoenix Creek. The portion of Little Phoenix Creek that lies within the project study area has been assigned Stream Index Number 10-2-23 by North Carolina Division of Water Quality (NCDWQ) (NCDWQ 2004a). Little Phoenix Creek is designated as a cold water stream (USACE et al. 2003).

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 Little Phoenix Creek along with the supplemental classification of Trout Waters (**Tr**) and the special designation “+”. Class **C** waters are suitable for aquatic life propagation and protection, agriculture, and secondary recreation. Secondary recreation includes wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis. The supplemental classification of Trout Waters (**Tr**) indicates waters that are suitable for trout propagation and maintenance of stocked trout. The special designation, “+”, indicates that Little Phoenix Creek is subject to a special management strategy specified by NCDWQ (15A NCAC 2B .0225), the Outstanding Resource Waters (**ORW**) rule, in order to protect downstream waters designated as **ORW**. UT to Little Phoenix Creek has not been assigned a classification; therefore, it receives the same classification, **C**, **Tr**, and “+” as the stream it flows into. No High Quality Waters (**HQW**), Water Supply I (**WS-I**), Water Supply II (**WS-II**), or watershed Critical Areas (**CA**) occur within 1.0 mile of the project study area (NCDWQ 2000). **ORW** occur approximately 13.0 miles downstream of Little Phoenix Creek.

Little Phoenix Creek is not listed on any section of the N.C. 2004 draft Section 303(d) list (NCDWQ 2004b).

2. Biotic Resources

Plant communities within the project study area were delineated to determine the approximate area and location of each (Figure 2). A summary of the plant community areas within alternative cut-fill limits is presented in Table 2.

Table 2. Plant Community Impacts within Proposed Cut-Fill Limits

Plant Community	Alternate A Permanent Impacts (acres)	Alternate B	
		Permanent Impacts (Acres)	Temporary Impacts (Acres)
Disturbed/Maintained Land	1.4	0.8	0.5
Acidic Cove Forest	1.8	0.0	0.0
Totals	3.2	0.8	0.5

B. Jurisdictional Topics

1. Surface Waters and Wetlands

Within the project study area, there are two jurisdictional streams (Little Phoenix Creek and UT to Little Phoenix Creek) and one small, low-quality vegetated wetland. Surface waters within the project study area are subject to jurisdictional consideration under Section 404 of the Clean Water Act. Potential impacts to waters of the United States resulting from replacement of this bridge are limited to the fill associated with bridge demolition. The maximum potential fill that may be deposited into Little Phoenix Creek during bridge demolition is approximately 7 cubic yards. The replacement of Bridge No. 456 can be classified as Case 2, which allows no work at all in the water during moratorium periods associated with fish migration, spawning, and larval recruitment into nursery areas. Little Phoenix Creek receives a NCDWQ supplemental classification of Trout Water (Tr+) (NCDWQ 2004a); therefore, NCDOT should follow all stream crossing guidelines for trout waters, including an in-water work moratorium from October 15 to April 15. There may be additional restrictions beyond those outlined in *Best Management Practices for Protection of Surface Waters*.

2. Permits

USACE Nationwide Permit 23 is expected to be used to authorize proposed impacts. Potential impacts to waters of the United States resulting from replacement of this bridge are limited to the potential fill associated with bridge demolition. The maximum potential fill that may be deposited into Little Phoenix Creek during bridge demolition is approximately 7 cubic yards.

3. Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), Threatened due to Similarity of Appearance (T [S/A]), or officially Proposed (P) 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). The term “Threatened due to Similarity of Appearance” is defined as a species which is not “Endangered” or “Threatened,” but “closely resembles an Endangered or Threatened species” (16 U.S.C. 1532).

USFWS lists seven federally protected species for Ashe County (USFWS January 29, 2007, see Table 3).

Table 3. Federally Protected Species Listed for Ashe County (USFWS January 29, 2007)

Common Name	Scientific Name	Status*
Bog turtle	<i>Glyptemys (Clemmys) muhlenbergii</i>	T (S/A)
Heller’s blazing star	<i>Liatris helleri</i>	T
Roan Mountain bluet	<i>Hedyotis purpurea</i> var. <i>montana</i>	E
Rock gnome lichen	<i>Gymnoderma lineare</i>	E
Spreading avens	<i>Geum radiatum</i>	E
Swamp pink	<i>Helonias bullata</i>	T
Virginia spiraea	<i>Spiraea virginiana</i>	T

*Federal Status: E--Endangered; a taxon “in danger of extinction throughout all or a significant portion of its range;” T--Threatened; a taxon “likely to become endangered within the foreseeable future throughout all or a significant portion of its range;” T (S/A) – Threatened, due to similarity of appearance.

HELLERS BLAZING STAR

BIOLOGICAL CONCLUSION: NO EFFECT

Within the higher elevations of the project study area there are no granitic outcrops, ledges, or cliff faces that receive full sun and in turn would provide suitable habitat for Heller's blazing star. NCNHP records (reviewed June 2005) document no occurrence of Heller's blazing star within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have No Effect on Heller's blazing star.

ROAN MOUNTAIN BLUET

BIOLOGICAL CONCLUSION: NO EFFECT

The majority of the project study area is disturbed/maintained and the wooded portion does not contain exposed rocky outcrops and is also below 4200 feet in elevation; therefore, the project study area does not contain suitable habitat for Roan Mountain bluet. NCNHP records (reviewed June 2005) document no occurrence of Roan Mountain bluet within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have No Effect on Roan Mountain bluet.

ROCK GNOME LICHEN

BIOLOGICAL CONCLUSION: NO EFFECT

The project study area does not contain any suitable habitat in the form of high elevation rock outcrops containing seepages. NCNHP records (reviewed June 2005) document no occurrence of rock gnome lichen within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have No Effect on rock gnome lichen.

SPREADING AVENS

BIOLOGICAL CONCLUSION: NO EFFECT

The project study area does not contain any suitable habitat in the form of high elevation, full sunlight rock outcrops or heath balds. NCNHP records (reviewed June 2005) document no

occurrence of spreading avens within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have No Effect on spreading avens.

SWAMP PINK

BIOLOGICAL CONCLUSION: NO EFFECT

There are no mountain swamps or bogs within the project study area; therefore, there is no suitable habitat for swamp pink. NCNHP records (reviewed June 2005) document no occurrence of swamp pink within 2.0 miles of the project study area. Based on NCNHP records, field observations, and habitat characteristics, this project will have No Effect on swamp pink.

VIRGINIA SPIRAEA

BIOLOGICAL CONCLUSION: NO EFFECT

Within the project study area there is suitable habitat for Virginia spiraea along scoured portions of the stream banks. A systematic plant-by-plant survey was conducted on September 23, 2005 by EcoScience biologist, Elizabeth Scherrer. No specimens of Virginia spiraea were found. NCNHP records (reviewed June 2005) document no occurrence of the Virginia spiraea within 2.0 miles of the project study area. Based on the survey results and NCNHP records, this project will have No Effect on Virginia spiraea.

VII. HUMAN ENVIRONMENT

Section 106 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 projects) on properties listed in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on November 22, 2004. All structures within the APE were photographed, and later an NCDOT staff architectural historian reviewed these photographs. There are no structures within the APE over fifty years of age. The photographs were shown to the State Historic Preservation Office (HPO) in a meeting on May 31, 2005. At that meeting HPO staff concurred that none of the structures were eligible for the National Register and a form was signed that reflects these findings. Therefore there are no National Register listed or National Register eligible properties within the APE for this project. Copies of all correspondence and the concurrence form are included in Appendix A.

Archaeology

The State Historic Preservation Office (SHPO) reviewed the subject project. There are no known archaeological sites within the proposed project area, and no archaeological investigation needed to be conducted (see letter dated August 2, 2005 included in Appendix A).

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 project is not in conflict with any plan, existing land use, or zoning regulation. No substantial change in land use is expected to result from construction of the 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). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

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

Noise & 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.

VIII. 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 (49 U.S.C. 303).

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no hazardous waste sites, no regulated or unregulated landfills or dumpsites within the project area. No facility with underground storage tanks (UST) was identified in the project vicinity.

Ashe County is a participant in the Federal Flood Insurance Program. The bridge is located within an Approximate Study area. The new structure should be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for Bridge No. 456 would be a

structure similar in waterway opening size, it is not anticipated that it will have any significant adverse impact on the existing floodplain and floodway. The proposed alternatives will not modify flow characteristics and will have a minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

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

IX. OTHER AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, N. C. Department of Cultural Resources, U. S. Fish & Wildlife Service, N. C. Division of Water Quality, N. C. Wildlife Resources Commission, Tennessee Valley Authority, U. S. Geologic Survey, U. S. Environmental Protection Agency, Eastern Band of Cherokee Indians, U. S. Coast Guard, Ashe County Emergency Services and the Ashe County Public Schools.

The **U.S. Fish & Wildlife Service** in a standardized letter provided a request that they prefer any replacement structure to be a spanning structure.

Response: In this case a culvert is preferable to a spanning structure because of design issues.

The **N.C. Wildlife Resource Commission** requested that sedimentation and erosion control measures adhere to the design standards for sensitive watersheds. They also noted that a trout moratorium will be required for brook trout. The stream is a known spawning area for brook trout.

Response: This is included in the project commitments.

The **North Carolina Division of Water Quality** requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in *Best Management Practices for the Protection of Surface Waters*.

Response: This is included in the project commitments.

The **Ashe County Public Schools and Ashe County Emergency Services** did not have any issues with an offsite detour.

The **U.S. Coast Guard** had no special concerns for this project.

X. PUBLIC INVOLVEMENT

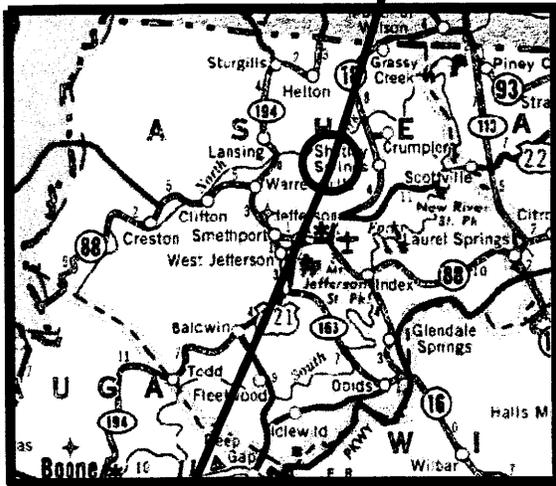
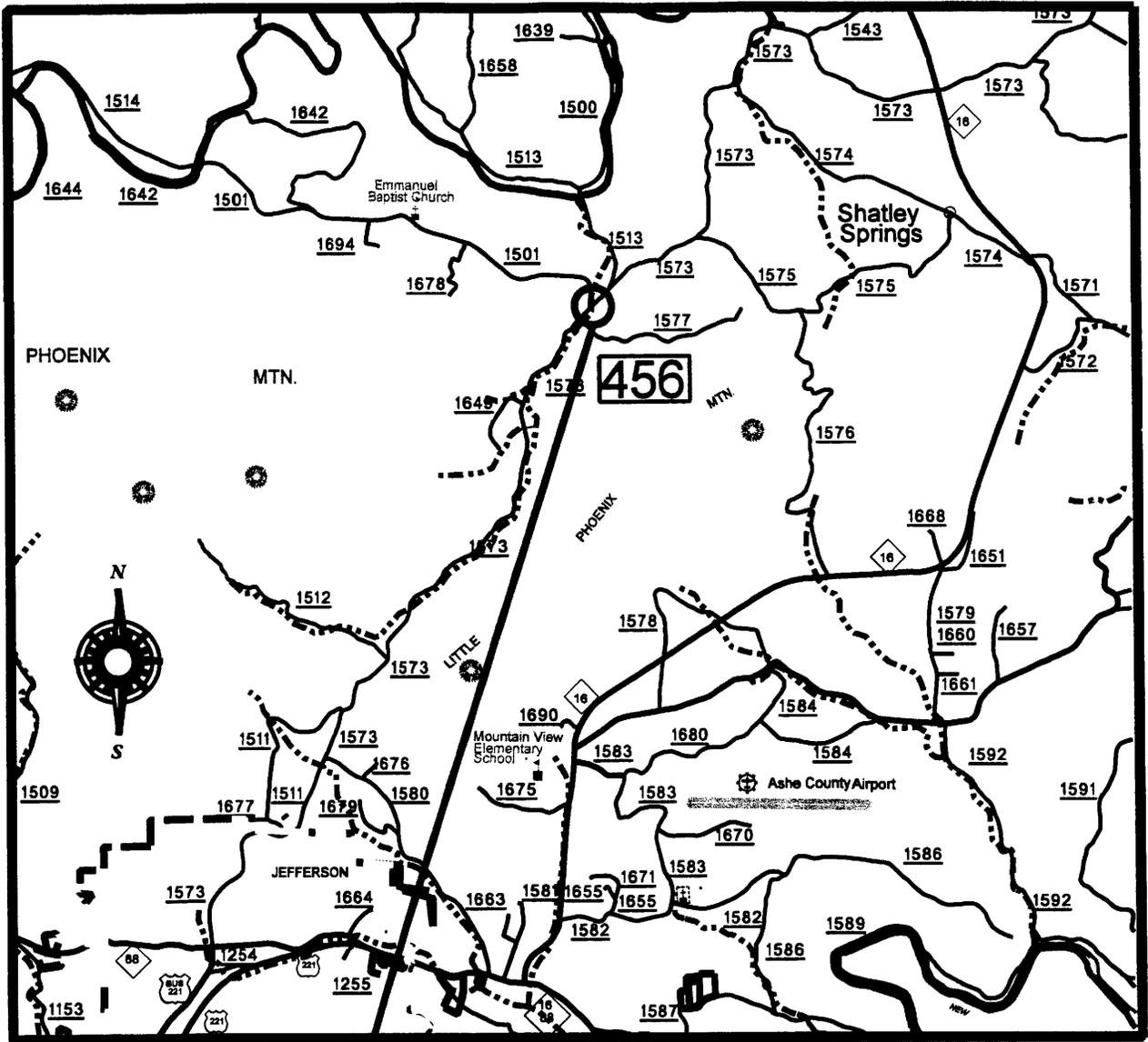
A newsletter was distributed to a five mile radius around the project site listing two possible alternatives for this project; replace in-place road closure and replace in-place with temporary structure. The majority of those responding stated their preference for Alternate B. Travel time, road conditions, economy and health were the main concerns expressed against an off-site detour. Two separate petitions were also received expressing opposition to closing the road. Based on responses to the newsletter, a Citizen's Informational Workshop was determined unnecessary.

XI. CONCLUSION

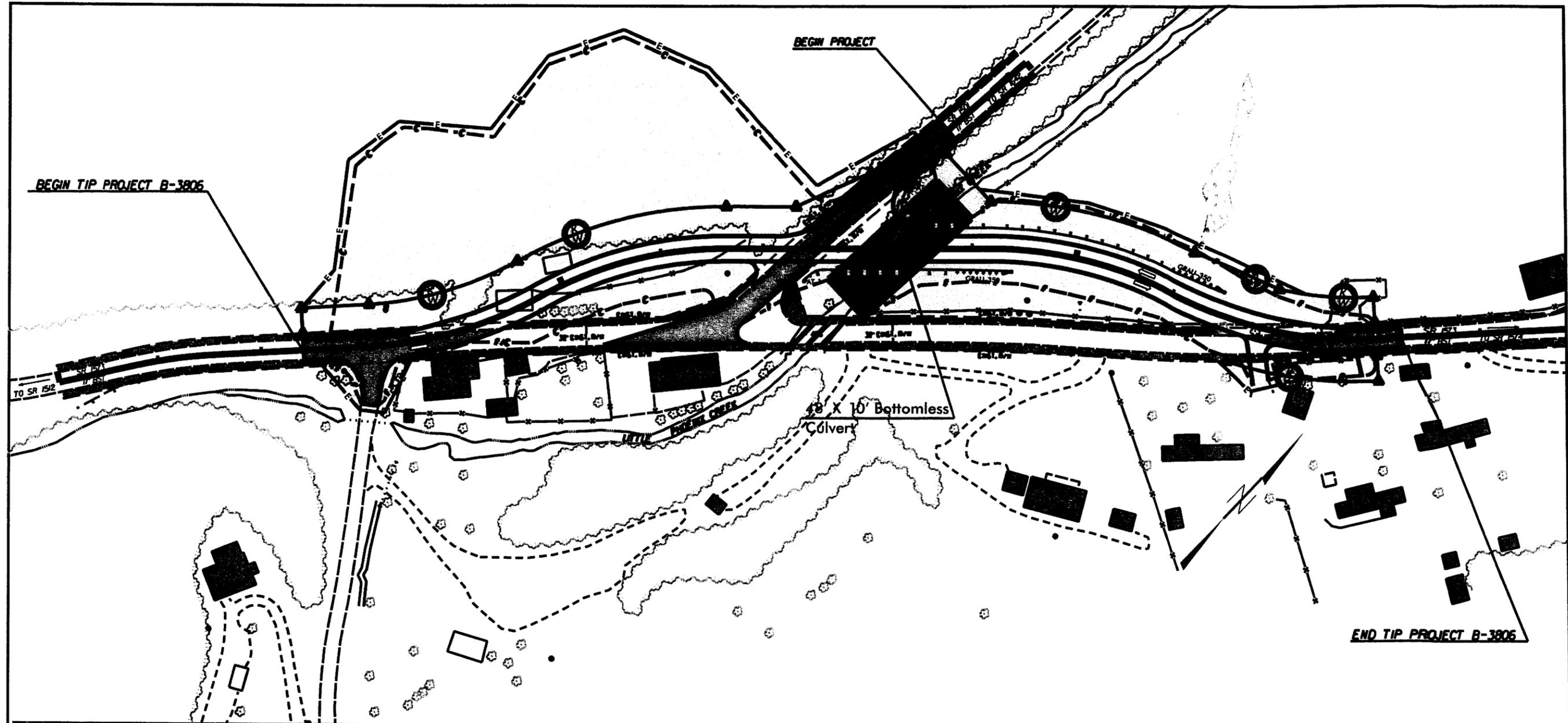
On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

FIGURES

- Figure 1 - Vicinity Map**
- Figure 2 - Alternate A**
- Figure 2A - Alternate B (Preferred)**
- Figure 3 - Photographs of Bridge No. 456**

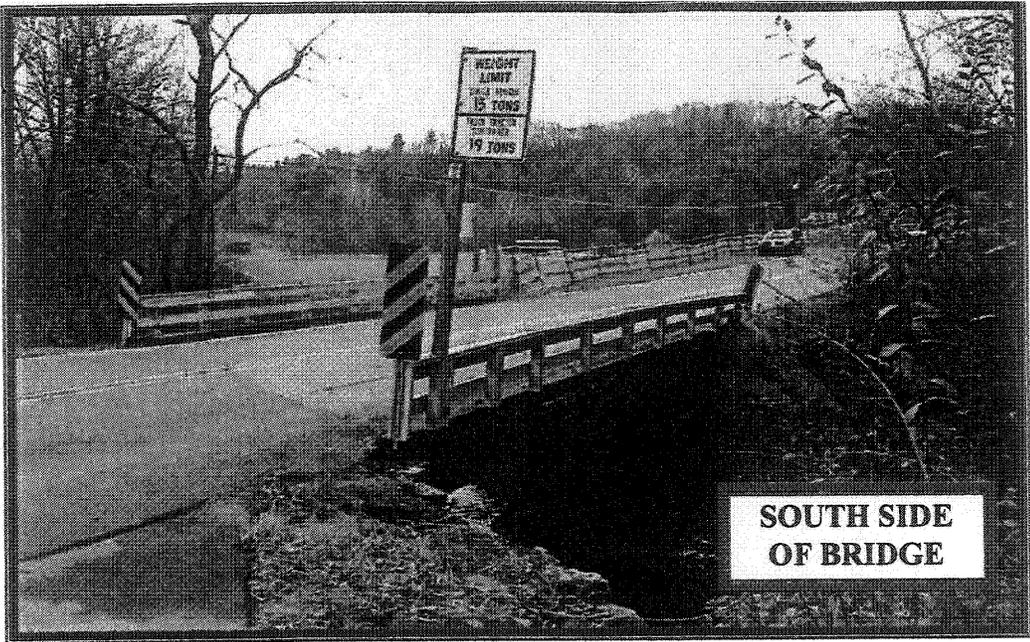


	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS</p>
	<p>ASHE COUNTY BRIDGE NO. 456 ON SR 1573 OVER LITTLE PHOENIX CREEK TIP NO. B-3806</p>
<p>VICINITY MAP FIGURE 1</p>	

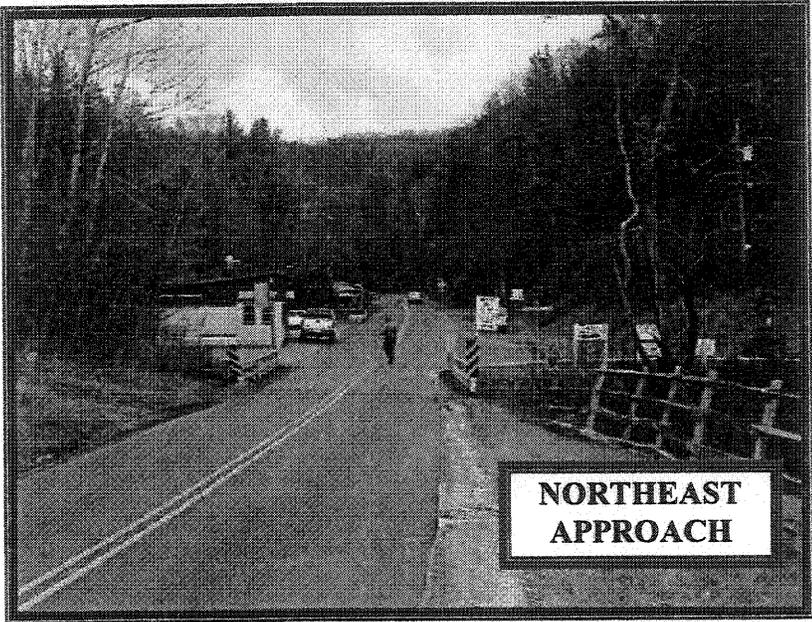


LEGEND	
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	ALL EASEMENTS
	EXISTING ROADWAY
	EXISTING ROADWAY TO BE RESURFACED
	PROPOSED ROADWAY
	PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
	EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
	LAKES, RIVER, STREAMS, AND PONDS
	BUILDINGS

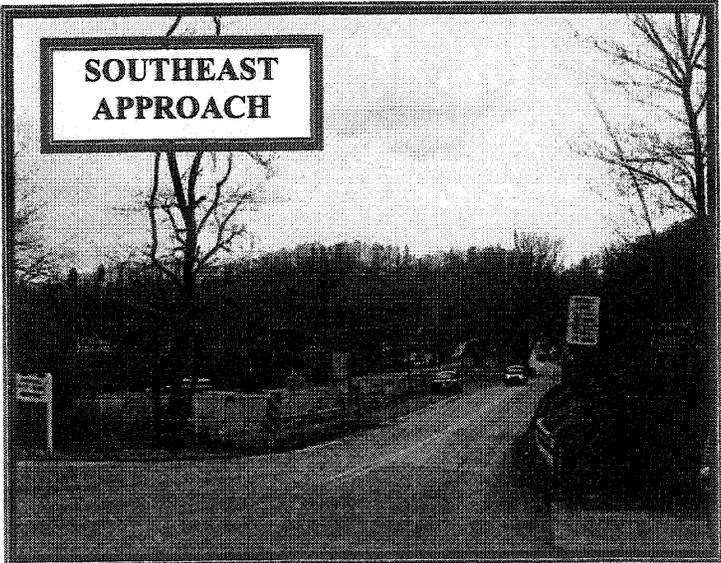
	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
	<p>ASHE COUNTY BRIDGE NO. 456 ON SR 1573 OVER LITTLE PHOENIX CREEK TIP NO. B-3806</p>
<p>ALTERNATE A FIGURE 2</p>	



**SOUTH SIDE
OF BRIDGE**



**NORTHEAST
APPROACH**



**SOUTHEAST
APPROACH**

**B-3806
Replacement of Bridge
No. 456 on SR 1573
Over Little Phoenix Creek
Ashe County**



FIGURE 3

APPENDIX A

Comments received from Federal, State, and Local Agencies



**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

August 2, 2005

MEMORANDUM

To: Greg Thorpe, PhD
Project Development and Environmental Analysis Branch
NC Department of Transportation

Chavonda Brown
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch
NC Department of Transportation

From: Peter Sandbeck *PBS for Peter Sandbeck*

Re: 35 bridge replacement projects, Multi County

Attached please find a spreadsheet that contains our comments on thirty-five (35) bridge replacement projects throughout North Carolina. For the projects shown in bold we are requesting that either a better map be provided or an historic architectural or archaeological survey be undertaken. A memorandum for each of these projects is also attached for your use. The remainder of the projects is unlikely to affect historic properties, and we are making no recommendations for them.

Our records show that we have received at least seventy-five (75) bridge projects to review since January 2005. Most of these are bridge replacements that have been submitted in rather large lots with no indication of any priority whatsoever. While we are amenable to receiving the projects in batches, the lack of any indication of a priority for these reviews creates a workload that is often in conflict with other transportation projects we are called upon to review. Thus, we would very much appreciate your indicating the priority you would like us to place upon this type of project until such time as your staff begins to handle them under a programmatic agreement.

Attachments

cc: Mary Pope Furr w/ attachments
Matt Wilkerson w/ attachments

Bridge comments Survey and Planning and Office of State Archaeology

ER05-0874	Bridge No. 52	SR 1445 Reedy Creek	B-4694	Davidson County	S&P Survey Grimes-Crotts Mill (NR)	No survey needed
ER05-0883	Bridge No. 80	SR 1929 Wolf Island Creek	B-4624	Rockingham County	No S&P Survey	No survey needed
ER05-0856	Bridge No. 279	SR 1831, Livingston Creek	B-4481	Columbus County	No S&P Survey	No survey needed
ER05-0857	Bridge No. 278	SR 1824 Livingston Creek	B-4480	Columbus County	No S&P Survey	No survey needed
ER05-0855	Bridge No. 46	SR 1932 Creek	B-4482	Columbus County	No S&P Survey	No survey needed
ER05-0879	Bridges No. 29 & 30	US 52	B-4645	Stokes County	No S&P Survey	No survey needed
ER05-0864	Bridge No. 20	SR 1152 South Deep Creek	B-4683	Yadkin County	No S&P Survey	Needs survey
ER05-0868	Bridge No. 149	SR 1744	B-4448	Burke County	No S&P Survey	No survey needed
ER05-0881	Bridge No. 3	NC 49 Yadkin River	B-4626	Davidson-Rowan Counties	No S&P Survey	No survey needed
ER05-0878	Bridge No. 44	US 1	B-4653	Vance County	No S&P Survey	No survey needed
ER05-1050	Bridge No. 456	SR 1573	B-3806	Ashe County	Previously Surveyed	No survey needed
ER05-1043	Bridge No. 99	SR 1317 Creek	B-4677	Wilkes County	No S&P Survey	No survey needed
ER05-1044	Bridge No. 29	SR 1001 Cub Creek	B-4676	Wilkes County	No S&P Survey	Needs survey
ER05-0885	Bridge No. 150	US 220 BUS.	B-4621	Rockingham County	No S&P Survey	No survey needed
ER04-0102	Bridge No. 104	Broad Creek	B-4018	Beaufort County	No S&P	No survey

Bridge comments Survey and Planning and Office of State Archaeology

					HD (SL) (DOE)	
ER05-0873	Bridge No. 55	SR 1600	B-4697	Wake County	Survey Green Level HD (NR)	No survey needed
ER04-0103	Bridge No. 103	NC 32	B-4019	Beaufort County	Previously Surveyed	No survey needed
ER05-0888	Bridge No. 369	SR 1005	B-4505	Forsythe County	Survey S. Main St. HD	No survey needed
ER05-0890	Bridge No. 160	SR 1122	B-4400	Alamance County	No S&P Survey	No survey needed
ER05-0858	Bridge No. 216	SR 1700	B-4478	Columbus County	No S&P Survey	No survey needed
ER05-0875	Bridge No. 74	SR 1641	B-4667	Warren County	No S&P Survey	No survey needed
ER04-0103	Bridge No. 103	NC 32	B-4019	Beaufort	Washington Park DOE HD Adverse Effect	No survey needed

If project is shown in **bold** there is a recommendation for a better map being provided or for an historic structures or archaeological survey.

Federal Aid #: BRSTP-1573(2)

TIP #: B-3608

County: Ashe

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

Project Description: Replace Bridge No. 456 on SR 1573 over Asheworth Creek in Ashe County

On May 31, 2005, representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (HPO)
- Other

Reviewed the subject project at

- Scoping meeting
- Historic architectural resources photograph review session/consultation
- Other

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as (List below) are considered not eligible for the National Register and no further evaluation of them are necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. *(Attach any notes or documents as needed)*

Signed:

Jennife - Cathy 5/31/05
 Representative, NCDOT Date

 FHWA, for the Division Administrator, or other Federal Agency Date

[Signature] 5/31/05
 Representative, HPO Date

[Signature] 5/31/05
 State Historic Preservation Officer Date