



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 9, 2008

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

ATTN: Mr. David Baker
NCDOT Coordinator

SUBJECT: **Nationwide 23 and 33 Permit Application** for the proposed replacement of Bridge No. 42 over Second Broad River on SR 1163. McDowell County, Federal Aid Project No. BRZ-1163(3), Division 13, T.I.P. No. B-4195, Debit \$240 from WBS Element 33544.1.1

Dear Mr. Baker:

Please find enclosed the Preconstruction Notification, permit drawings, and half-size design plans for the above-mentioned project. A Categorical Exclusion (CE) was completed for this project in June 2006 and distributed shortly thereafter. Additional copies of the CE are available upon request. The North Carolina Department of Transportation (NCDOT) plans to replace the existing 57-foot long bridge, with a new 80-foot by 32-foot bottomless pre-cast reinforced concrete culvert. Traffic will use an offsite detour during construction. Project impacts total 90 feet of permanent fill and 0.05 acre of temporary fill in the Second Broad River.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Broad River Basin (HUC 03050105) and will impact the Second Broad River. The Second Broad River (Index # 9-41-(0.5)) is assigned a best usage classification of WS-V, by the N.C. Division of Water Quality (DWQ). The Second Broad River 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. The project does not drain to a 303(d) stream within one mile of the project limits. No designated High Quality Waters (HQW), Outstanding Resource Waters (ORW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project. No wetlands occur on the project.

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

Permanent Impacts: Permanent stream impacts will total 90 feet from the installation of the bottomless culvert in the Second Broad River. Installation of the bottomless culvert will disturb portions of the stream channel and banks.

Temporary Impacts: Temporary impacts of 0.05 acre of fill are expected from construction access and dewatering needed to construct the culvert in the Second Broad River.

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

Bridge Demolition: Bridge No. 42 consists of a timber floor on I beams and channels with an asphalt wearing surface. The end bents are composed of reinforced concrete abutments and the interior bent consists of a reinforced concrete cap on a concrete pile. Removal of the old bridge is not expected to result in any fill in the Second Broad River. NCDOT's Best Management Practices for Bridge Demolition and Removal will be implemented.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The U.S. Fish and Wildlife Service (FWS) lists 4 federally protected species that occur in McDowell County (Table 1). A resurvey of the project area on September 13, 2007 confirmed there is no habitat available for any federally protected species.

Table 1: Federally Protected Species of McDowell County

Scientific Name	Common Name	Federal Status	Biological Conclusion	Habitat Present
<i>Clemmys muhlenbergii</i>	Southern bog turtle	T (S/A)	Not Required	No
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	E	No Effect	No
<i>Hudsonia montana</i>	Mountain golden heather	T	No Effect	No
<i>Isotria medeoloides</i>	Small whorled pogonia	T	No Effect	No

The bald eagle was delisted as of August 8, 2007 and is no longer protected by the Endangered Species Act. It is, however, protected under the Bald and Golden Eagle Protection Act. Surveys conducted in September 2007 confirmed that and no nests or individuals are present 660 feet of the project area and no foraging habitat is present within one mile of the project area.

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:

- An offsite detour will be used.
- Best Management Practices for Bridge Demolition and Removal will be followed.
- Best Management Practices for the protection of Surface Waters will be enforced during the construction of the project.
- A bottomless culvert will be installed.

MITIGATION

Mitigation is not proposed because impacts are minimal. Additionally, no high quality resources or special aquatic habitat will be impacted by the proposed project.

PROJECT SCHEDULE

The project is scheduled to let September 16, 2008 and has a review date of July 29, 2008.

REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion." NCDOT hereby requests that the construction be authorized under Clean Water Act Section 404 Nationwide Permits 23 and 33.

Section 401 Permit: We anticipate 401 General Certification numbers 3701 and 3688 will apply to this project. All general conditions of the Water Quality Certifications will be adhered to, however permanent stream impacts total greater than 40 feet, therefore requiring a minor certification and written concurrence. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the DWQ for their records and \$240 to act as payment for processing the permit application (See subject line).

This project is located in a trout county, therefore comments from the WRC will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests WRC Review. NCDOT requests that WRC forward their comments to the Corps of Engineers and the 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,



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

cc: w/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Marla Chambers, NCWRC

Ms. Marella Buncick, USFWS

w/o attachment (see website for attachments)

Mr. Art McMillan, P.E., Highway Design
Mr. Majed Alghandour, P.E., Prog. and TIP
Mr. Hank Schwab, PDEA
Mr. Roger Bryan, Div 13 DEO
Mr. JJ Swain, P.E. Division 13 Engineer
Mr. Greg Perfetti, P.E., Structure Design

Mr. Jay Bennett, P.E., Roadway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Victor Barbour, P.E. Project Services
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental

Office Use Only:

Form Version March 05

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 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. 42 over Second Broad River
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4195
3. Property Identification Number (Tax PIN): N/A
4. Location
County: McDowell Nearest Town: Sugar Hill
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 1163 over Second Broad 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): 35.5888°N, 82.0189°W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Second Broad River
8. River Basin: Catawba 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

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, 90 feet of permanent stream impacts, 0.05 acre of temporary stream impacts

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)
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	Second Broad River	Temporary	Perennial	25	69	0.05
Site 1-	Second Broad River	Permanent	Perennial	25	90	0.07
Total Stream Impact (by length and acreage)					159	0.12

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):	0.12
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.12
Total Stream Impact (linear feet):	90 Permanent /69 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 and BMP's for Bridge Demolition and Removal.

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 Second Broad River.

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)

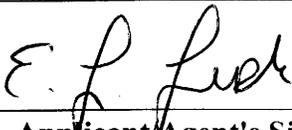
Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

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: _____

Replace 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).



4-11-08

Applicant/Agent's Signature

Date

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4195	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33542.1.1	BRZ-1163(3)	P.E.	
33542.2.1	BRZ-1163(3)	R/W & UTIL	

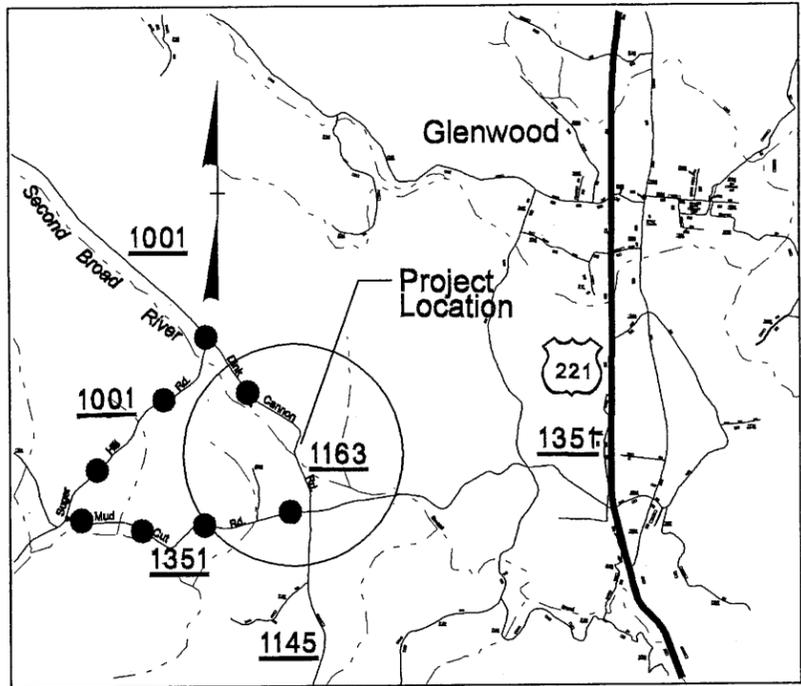
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

LOCATION: BRIDGE #42 OVER THE SECOND BROAD RIVER ON SR 1163

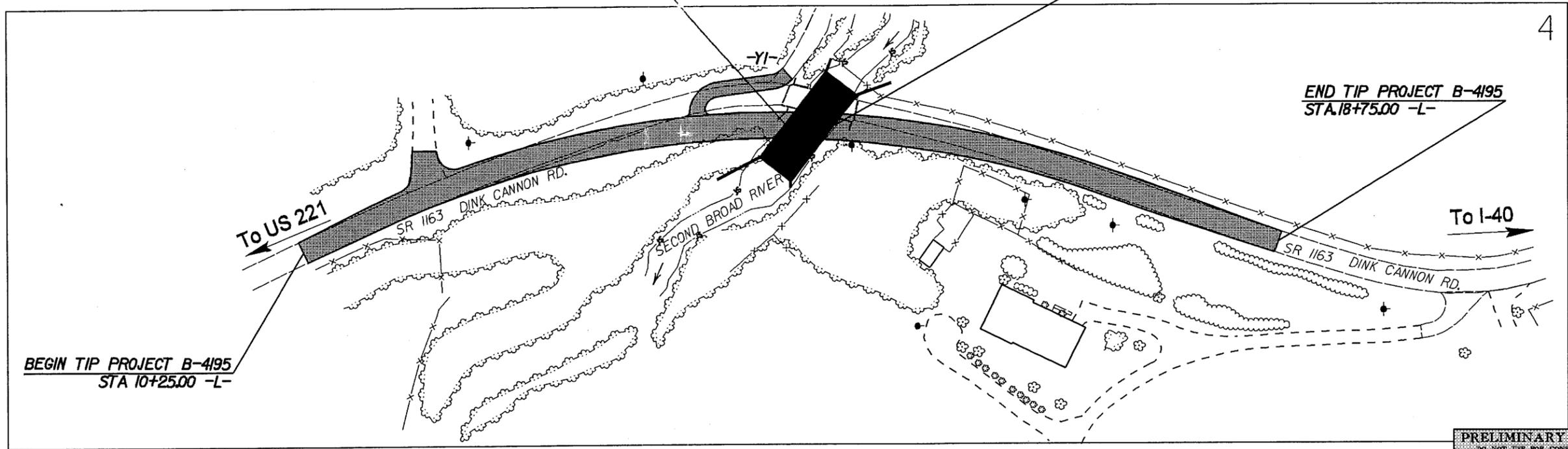
TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT

See Sheet 1-A For Index of Sheets



BEGIN CULVERT
STA. 14+48.00 -L-

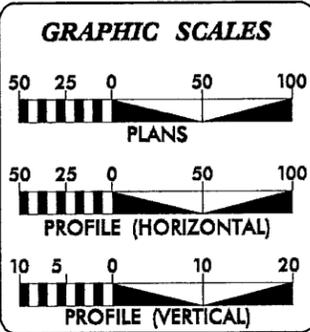
END CULVERT
STA. 14+87.00 -L-



4

NOTE: This project is not within the limits of any municipality. **Design Exception required for 45 mph Design Speed & Horizontal Stopping Sight Distance. METHOD OF CLEARING II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2006 = 700 vpd
ADT 2025 = 1100 vpd
DHV = 12 %
D = 65 %
T = 3 %*
**V = 45 MPH
* TTST 1 % * DUAL 2 %

PROJECT LENGTH

Length of Roadway TIP Project B-4195 = 0.154 Mi.
Length of Structure TIP Project B-4195 = 0.007 Mi.
Total Length TIP Project B-4195 = 0.161 Mi.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 23, 2007

LETTING DATE:
SEPTEMBER 16, 2008

JAMES SPEER, PE
PROJECT ENGINEER

JOHN LANSFORD, PE
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

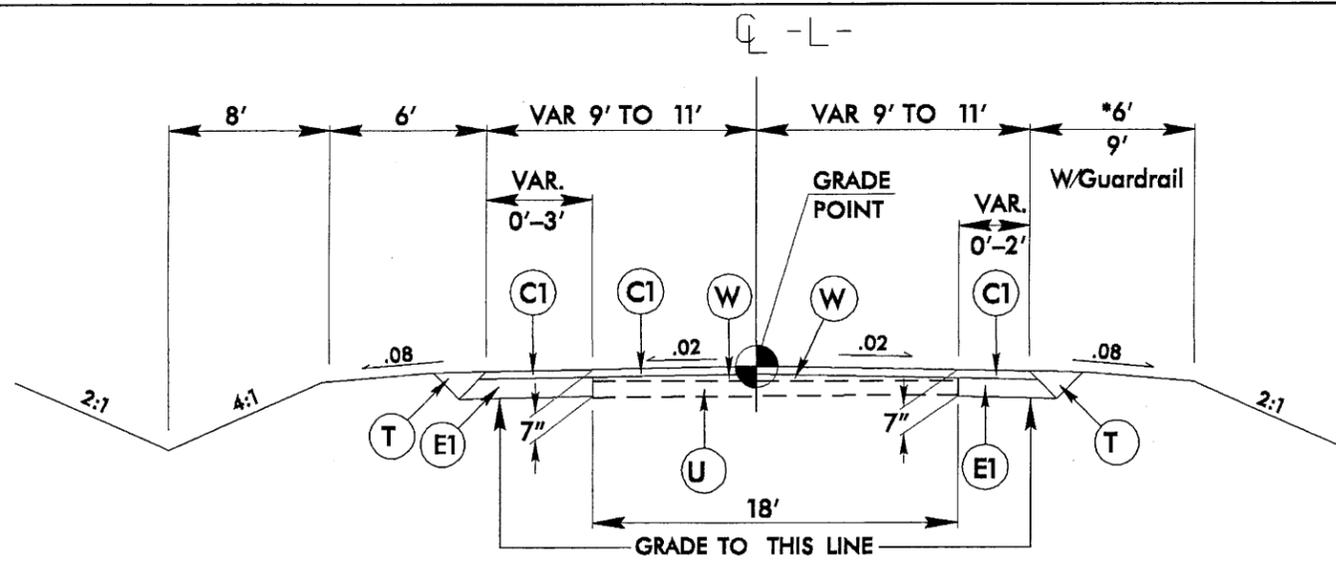
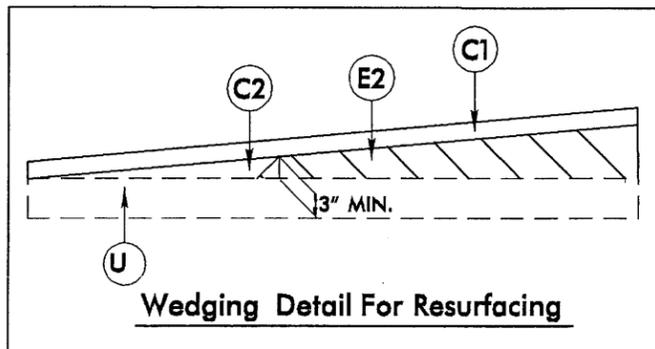
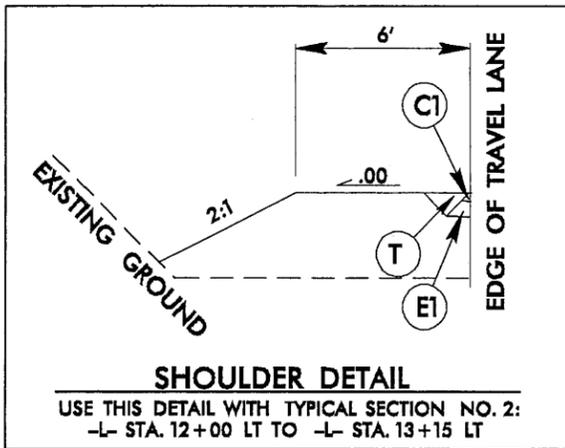
PROJECT: C201926 TIP: B-4195

19-NOV-2007 08:29 4195_rdy_tsh.dgn

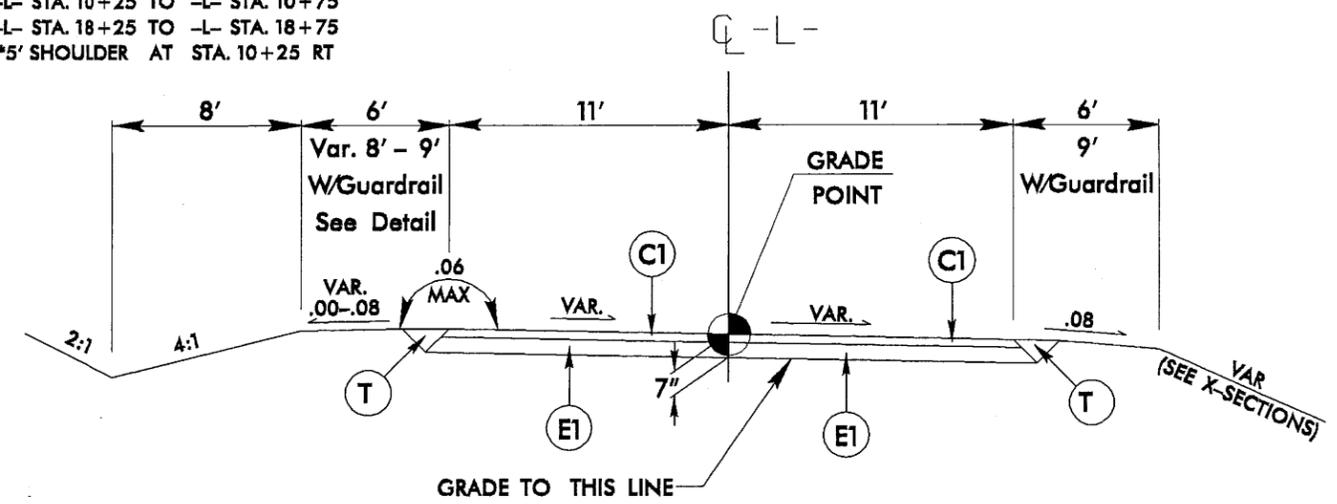
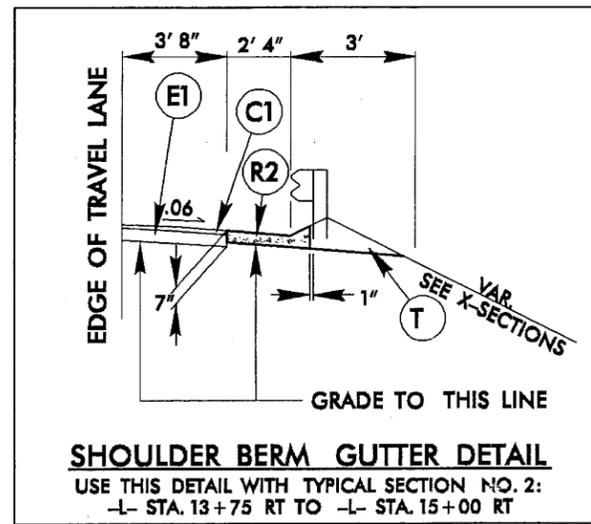
PAVEMENT SCHEDULE

C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A. AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD. IN EA. OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A. AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NO LESS THAN 1 1/4" IN DEPTH.
E1	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B. AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B. AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT GREATER THAN 5 1/2" IN DEPTH OR LESS THAN 3" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
R1	PROP EXPRESSWAY GUTTER
R2	PROP SHOULDER BERM GUTTER
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

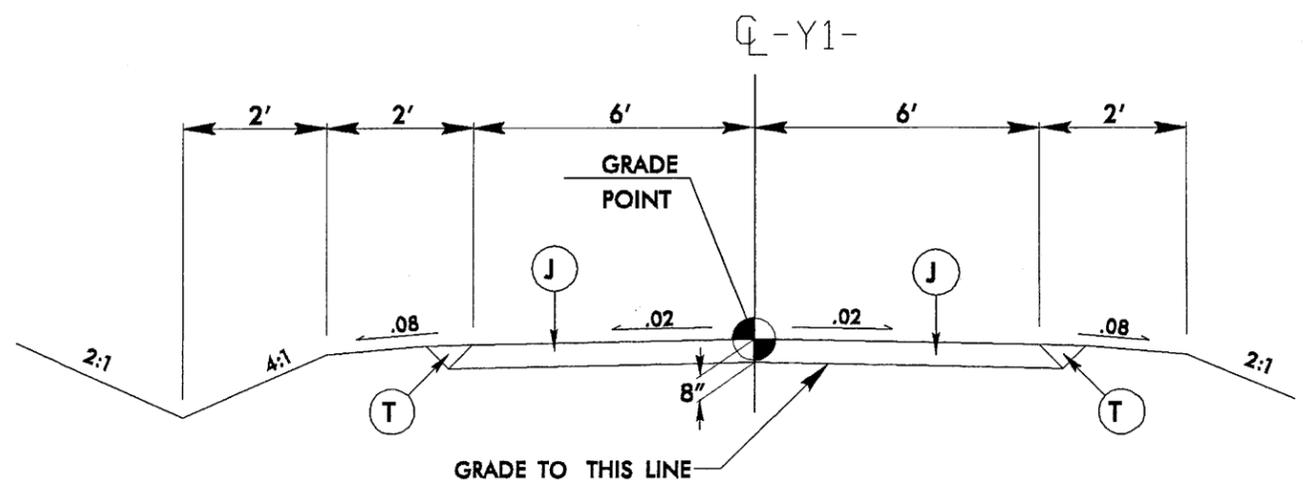
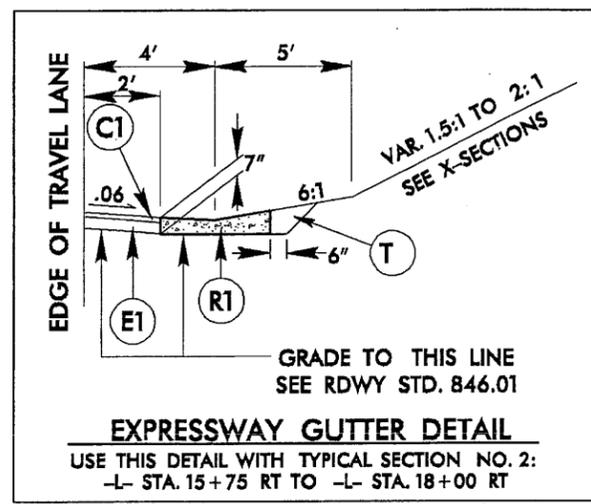
NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+25 TO -L- STA. 10+75
 -L- STA. 18+25 TO -L- STA. 18+75
 *5' SHOULDER AT STA. 10+25 RT



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+75 TO -L- STA. 18+25



USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:
 -Y1- STA. 10+21.56 TO -Y1- STA. 11+02.00

PROJECT REFERENCE NO. B-4195	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAYMENT DESIGN ENGINEER
PRELIMINARY PLANS	
<small>DO NOT USE FOR CONSTRUCTION</small>	

5/14/99

PROJECT REFERENCE NO. B-4195	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

STA 14+67.00 -L-
32' X 12' BOTTOMLESS CULVERT
DIAL = 90' SKEW = 125'

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 1095 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1319.36 FT
BASE DISCHARGE	= 1670 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1320.62 FT
OVERTOPPING DISCHARGE	= N/A CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1329.20 FT

BEGIN GRADE
STA 10+25.00 -L-
EL 1335.57

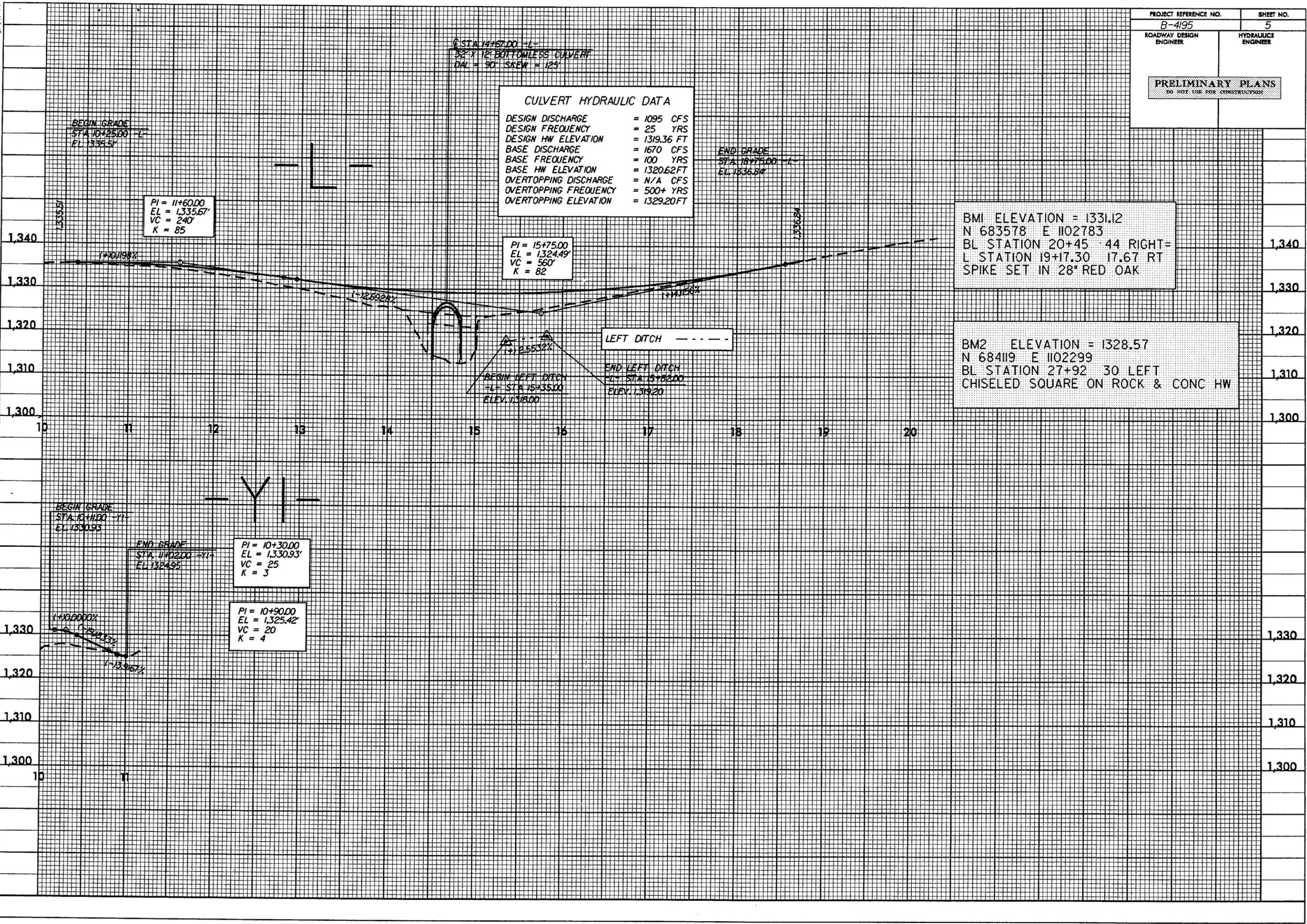
END GRADE
STA 18+75.00 -L-
EL 1336.84

PI = 11+60.00
EL = 1335.67
VC = 240'
K = 85

PI = 15+75.00
EL = 1324.49
VC = 560'
K = 82

BMI ELEVATION = 1331.12
N 683578 E 1102783
BL STATION 20+45 44 RIGHT-
L STATION 19+17.30 17.67 RT
SPIKE SET IN 28" RED OAK

BM2 ELEVATION = 1328.57
N 684119 E 1102299
BL STATION 27+92 30 LEFT
CHISELED SQUARE ON ROCK & CONC HW



BEGIN GRADE
STA 10+11.00 -Y1-
EL 1330.93

END GRADE
STA 11+02.00 -Y1-
EL 1324.95

PI = 10+30.00
EL = 1330.93'
VC = 25
K = 3

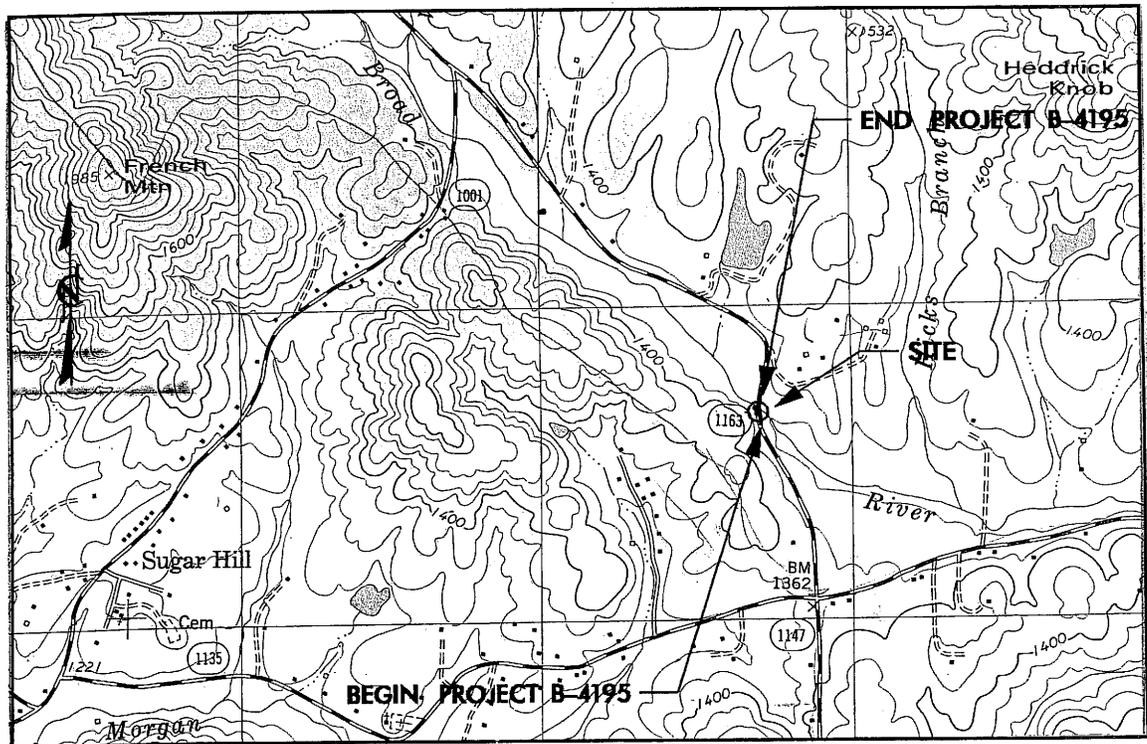
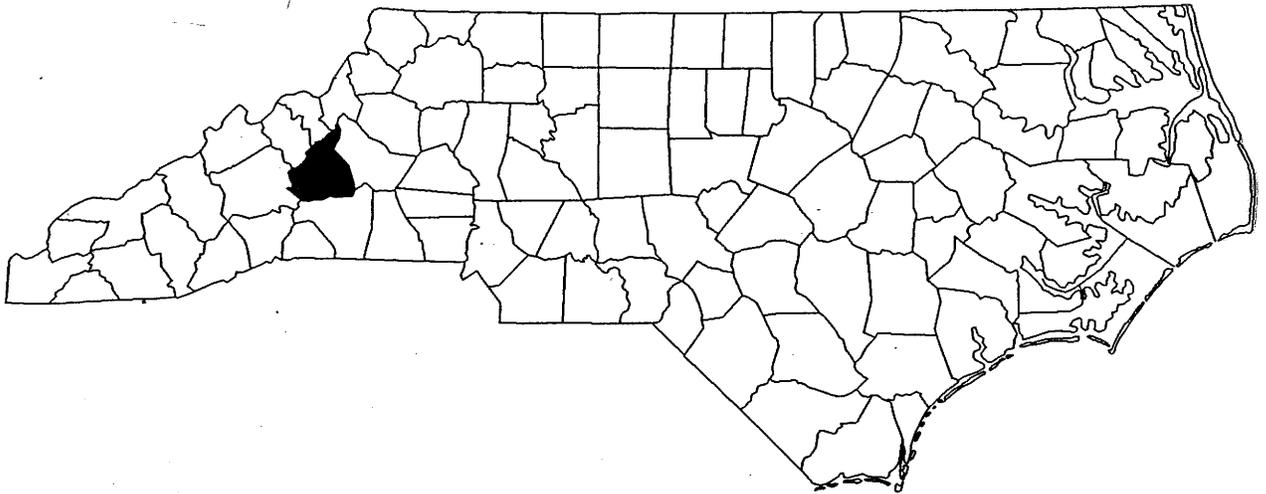
PI = 10+90.00
EL = 1325.42'
VC = 20
K = 4

BEGIN LEFT DITCH
-L- STA 15+35.00
ELEV 1318.00

END LEFT DITCH
-L- STA 15+82.00
ELEV 1319.20

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NORTH CAROLINA



USGS SUGARHILL, NC QUAD MAP

VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
McDOWELL COUNTY
WBS NO: 33542.1.1 (B-4195)
BRIDGE NO. 42 ON SR 1163
OVER SECOND BROAD RIVER

Parcel No.	Property Owner Name	Property Owner Address
1	Jan A. Thomas, et ux	100 Autumn Ridge, Marion, NC 28752
2	Jerry Pritchard	1323 Dink Cannon Rd., Marion, NC 28752
3	Aubrey Wylie, et ux	P.O. Box 871, Rutherfordton, NC 28139
4	Donald W. Estes, et ux	17 Madeira Ct., Palm Coast, FL 32137
5	Michael W. Ray, et ux	50 Hal Drive, Marion, NC 28752

List of Property Owners

NC Dept. of Transportation
 Division of Highways
 McDowell County
 WBS No.: 33542.1.1 (B-4195)
 Bridge No. 42 On SR 1163 Over Second Broad River

9/18/09/09

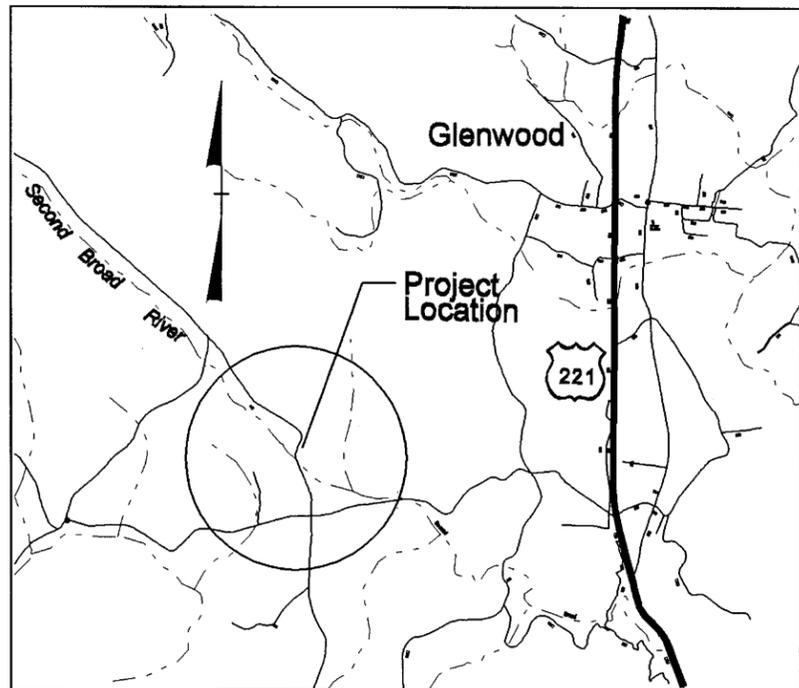
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

McDOWELL COUNTY

WETLAND/SURFACE WATER IMPACTS

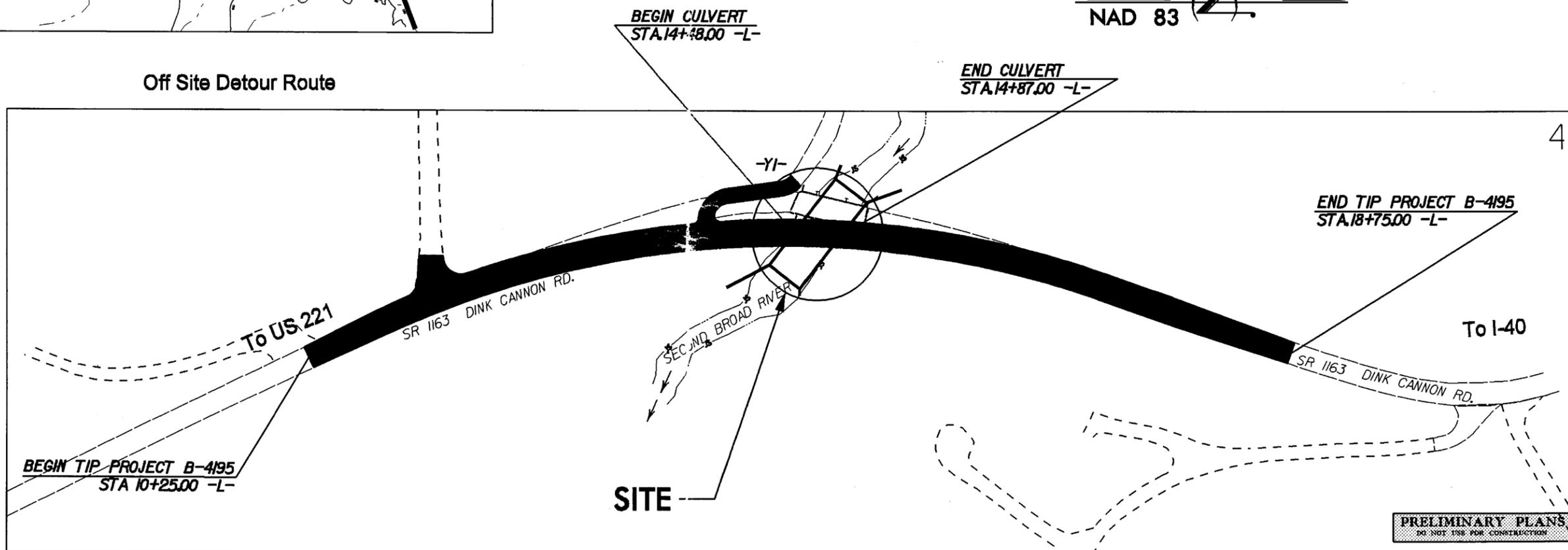
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4195	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33542.1.1	BRZ-1163(3)	P.E.	
33542.2.1	BRZ-1163(3)	R/W & UTIL	



TIP: B-4195

PROJECT: C201926

Off Site Detour Route



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: This project is not within the limits of any municipality.

**Design Exception required for 45 mph Design Speed & Horizontal Stopping Sight Distance.

METHOD OF CLEARING II

Permit Drawing
Sheet 4 of 2

GRAPHIC SCALES



ADT 2006 = 700 vpd
 ADT 2025 = 1100 vpd
 DHV = 12 %
 D = 65 %
 T = 3 %*
 **V = 45 MPH

* TTST 1 % * DUAL 2 %

Length of Roadway TIP Project B-4195 = 0.134 Mi.
 Length of Structure TIP Project B-4195 = 0.027 Mi.
 Total Length TIP Project B-4195 = 0.161 Mi.

APRIL 23, 2007

JAMES SPEER, PE
PROJECT ENGINEER

SEPTEMBER 16, 2008

JOHN LANSFORD, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.
STATE HIGHWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

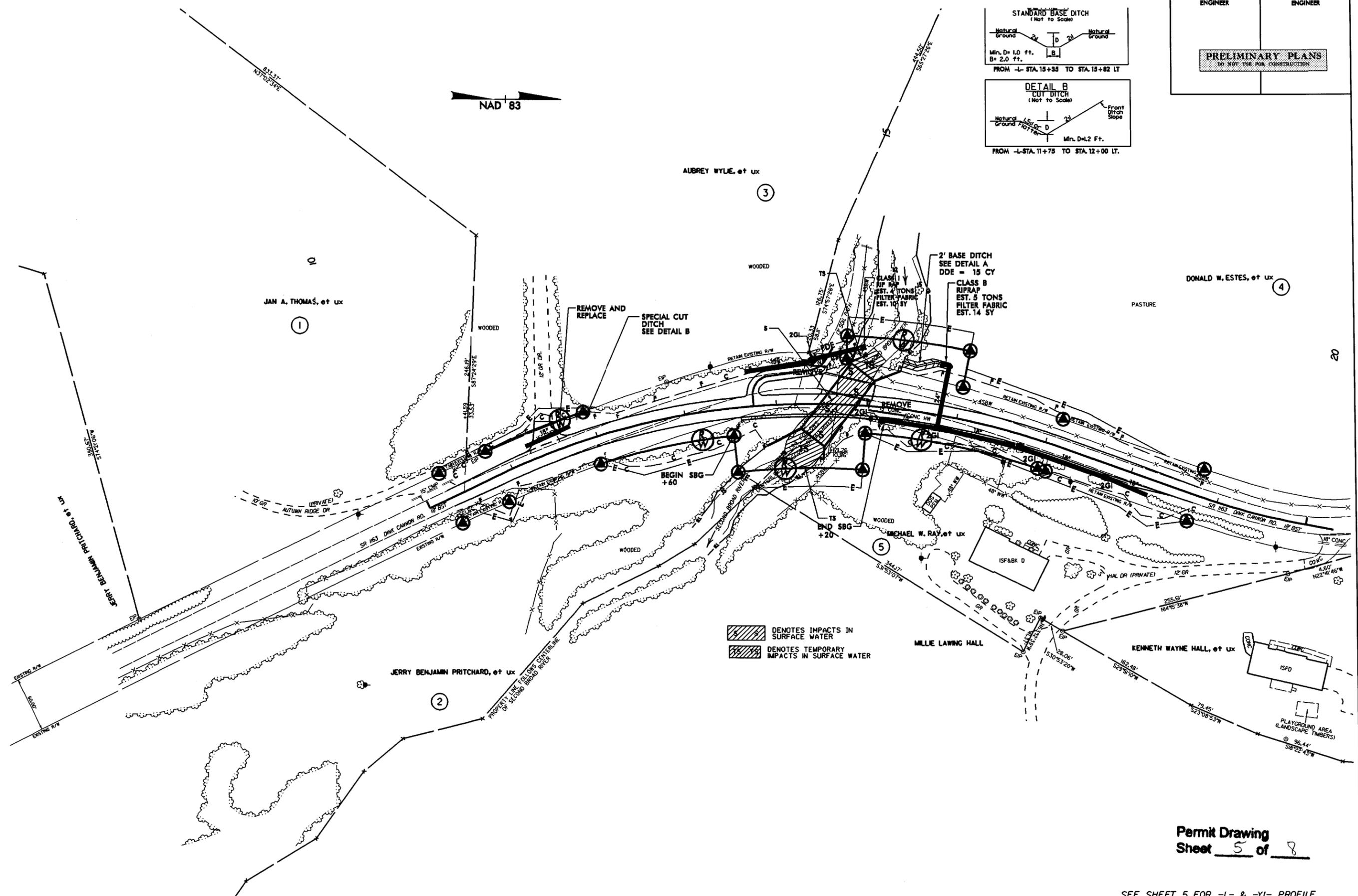
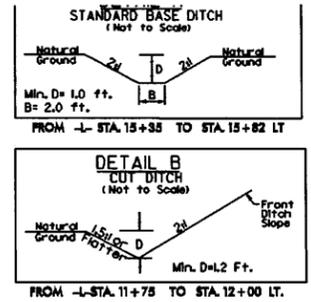


STATE HIGHWAY DESIGN ENGINEER

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Author: AL HY221538

5/14/99

PROJECT REFERENCE NO. B-4195	SHEET NO. 4
NW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



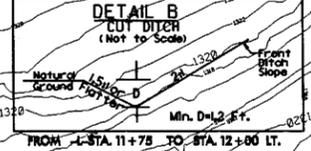
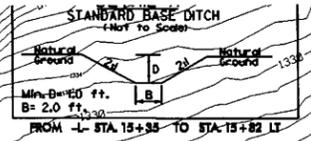
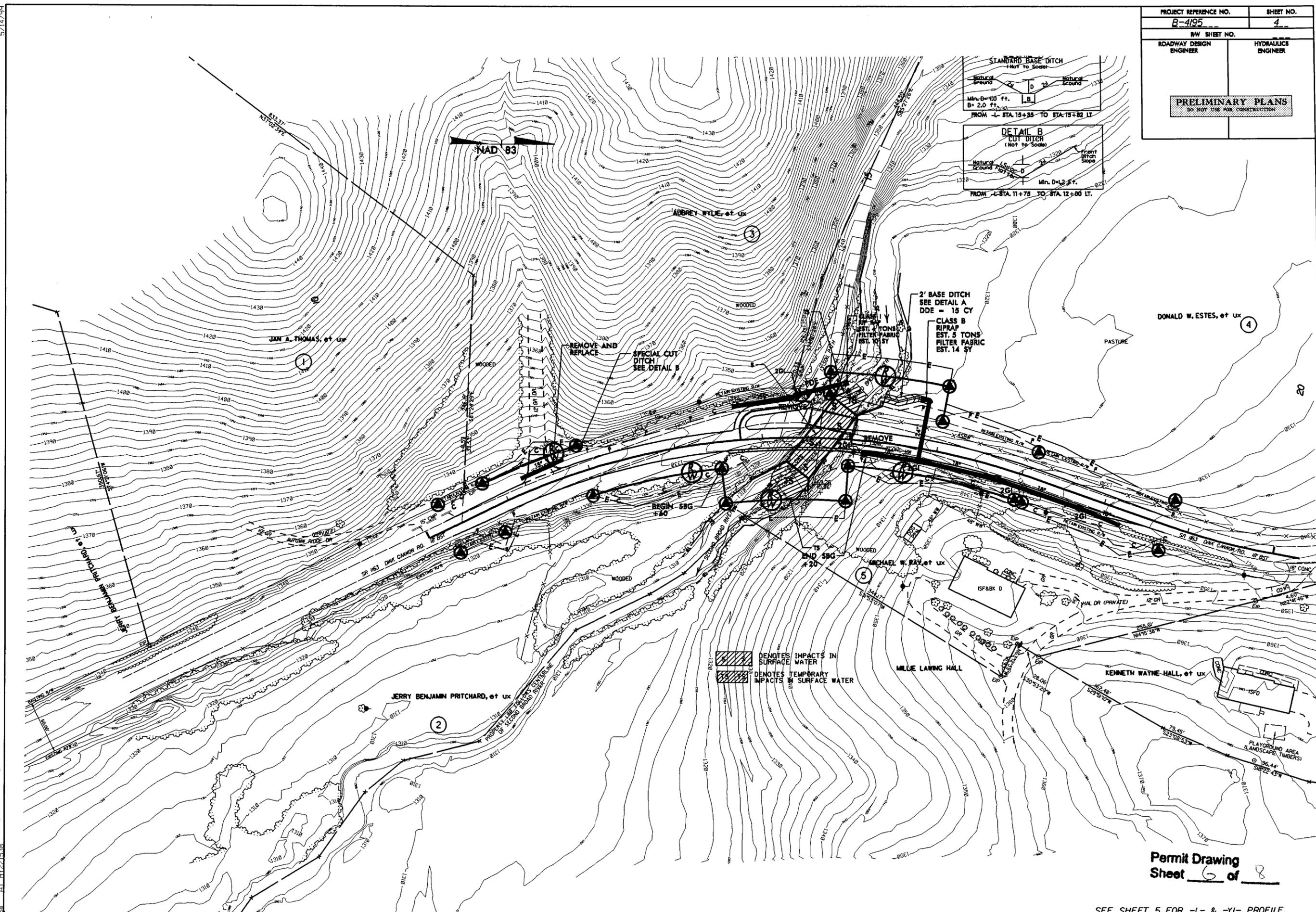
Permit Drawing
Sheet 5 of 8

SEE SHEET 5 FOR -L- & -YI- PROFILE.
SEE SHEETS C-1 THRU C FOR CULVERT PLANS.

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL STOPPING SIGHT DISTANCE.

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11/15/07 11:38

PROJECT REFERENCE NO. B-4195	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

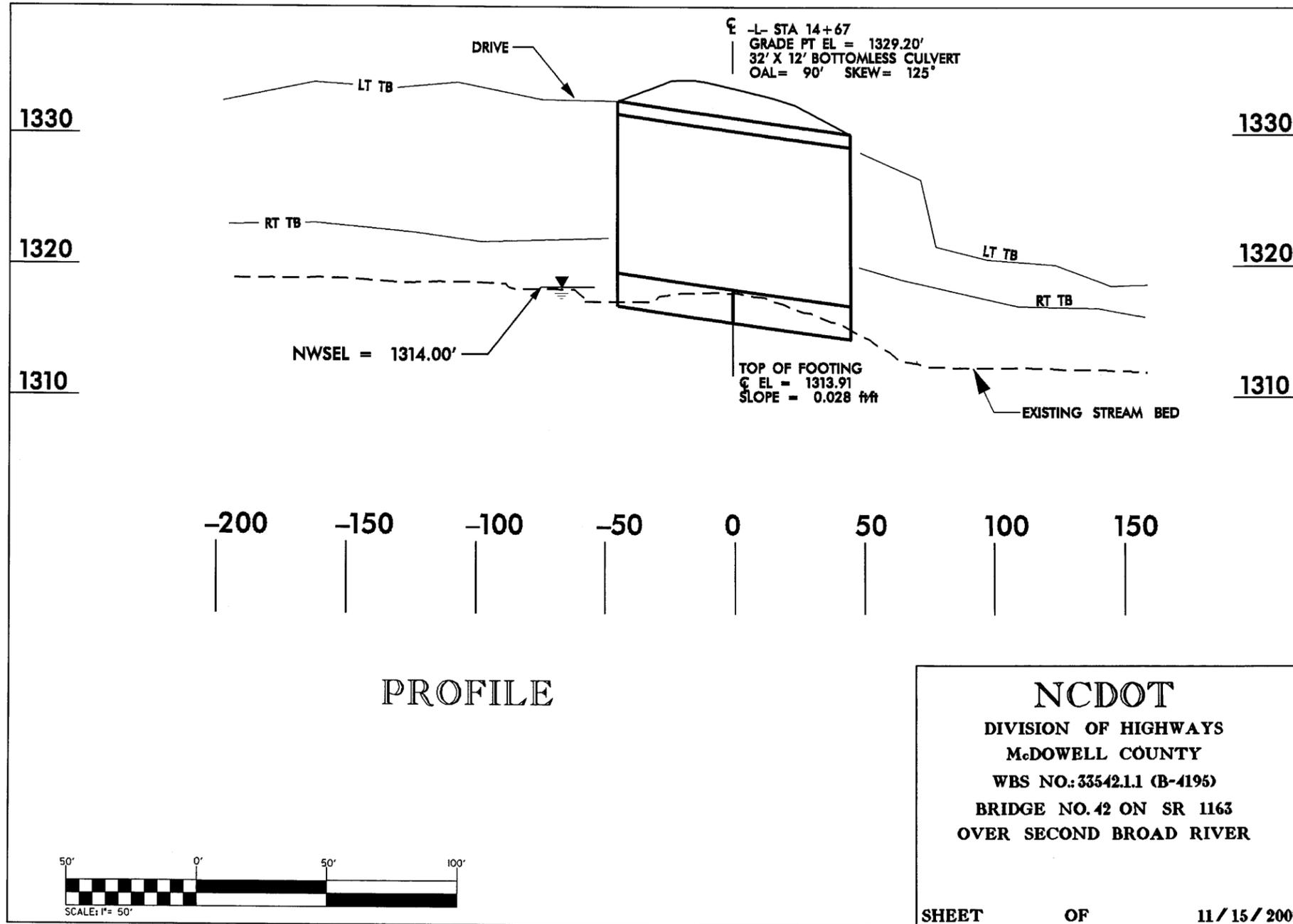


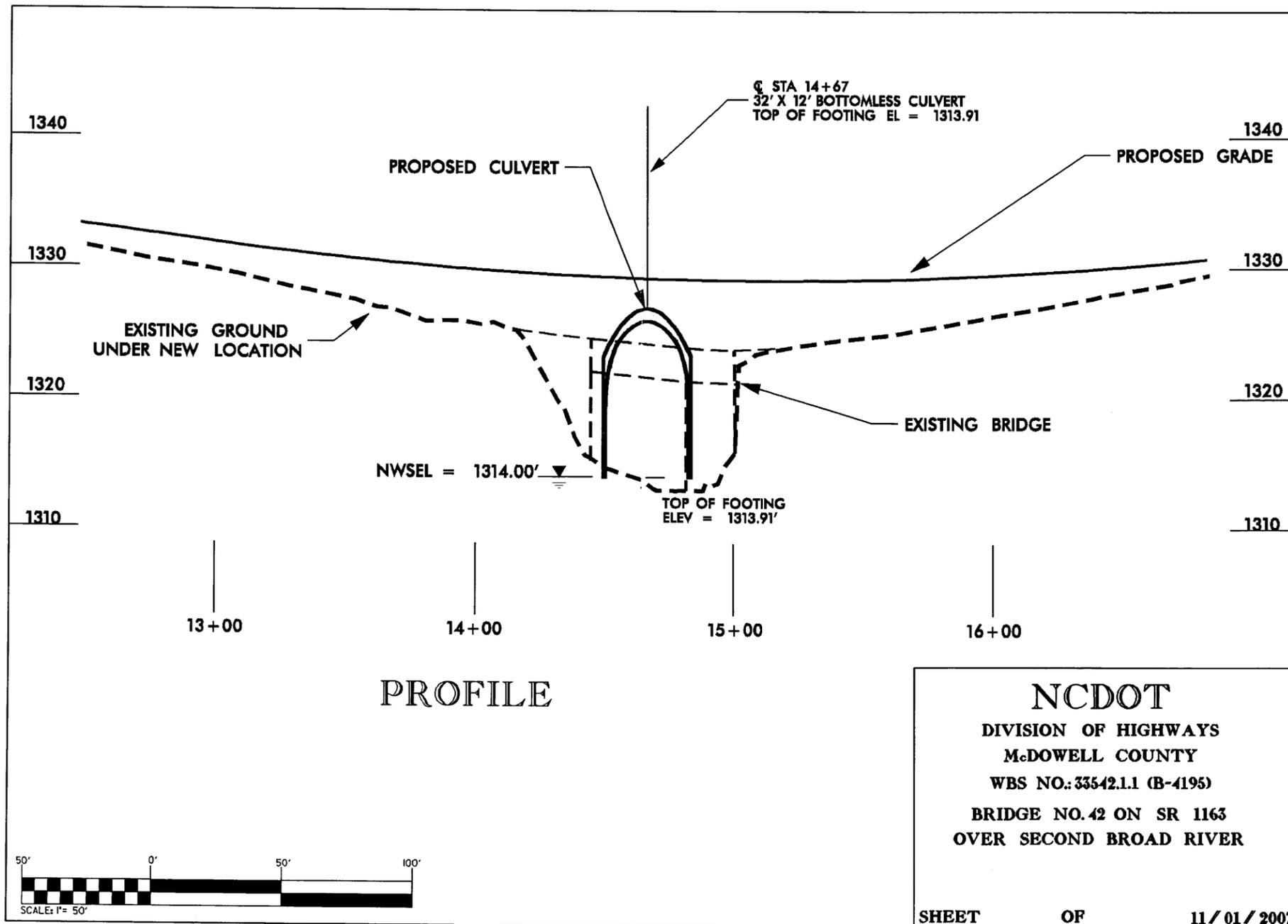
 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Permit Drawing
Sheet **6** of **8**

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL STOPPING SIGHT DISTANCE.
SEE SHEET 5 FOR -L- & -YI- PROFILE.
SEE SHEETS C-1 THRU C- FOR CULVERT PLANS.

5/14/99
 16-NOV-2007 13:09
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Permit Drawing
 Sheet 8 of 8