STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

January 4, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

Attention: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **Application for Nationwide Permits 23 and 33, Water Quality Certification, and Neuse Riparian Buffer Authorization,** for the proposed replacement of Bridge No. 95 on SR 1151 over Turkey Creek in Nash County. Federal Aid Project No. BRZ-1151(4), State Project No. 8.2322501, TIP No. B-4210. Debit $240 from WBS 33556.1.1

Please find enclosed the permit drawings, Pre-Construction Notification form (PCN), and half-size plan sheets for the above referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project on June 23, 2005, and distributed shortly thereafter. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 95 on SR 1151 over Turkey Creek in Nash County. The project involves the replacement of the existing 91 foot bridge structure with a 100 foot concrete box beam bridge at approximately the same location, and at a slightly higher roadway elevation, as the existing structure using top-down construction. Permanent impacts will consist of 0.07 acre to wetlands adjacent to Turkey Creek and 9,623 ft^2 of riparian buffer. Traffic will be detoured off-site along surrounding roads during construction.

Impacts to Waters of the United States

General Description: The project is located in the Neuse River Basin (Hydrologic Unit 03020203). A best usage classification of "C NSW" has been assigned to Turkey Creek [DWQ Index # 27-86-3-(1)]. Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area. Turkey Creek is not

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

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Additionally, Turkey Creek is not listed on the Final 2006 303(d) list of impaired waters due to sedimentation for the Neuse River Basin, nor does it drain into any Section 303(d) waters within 1.0 mile of the project study area.

Permanent Impacts: Wetlands adjacent to Turkey Creek will be impacted by the proposed project. Construction of the proposed project will result in permanent impacts of 0.07 acre due to fill material (see permit drawings).

Temporary Impacts: This project will result in 0.03 acre of temporary fill in wetlands in the Hand Clearing areas for the installation of erosion control measures, including some or all of the following: Temporary Silt Fence, Special Sediment Control Fence, and/or Temporary Rock Silt Checks.

Hand Clearing: Hand clearing of 0.11 acre in wetlands will be necessary for project construction outside of the new fill slope (see additional hand clearing in Utility Impacts section).

Utility Impacts: The relocation of one power pole in the southwest quadrant of project area will result in 4 ft^2 fill in wetlands. Installation of a powerline will result in 0.06 acre of hand clearing, 0.02 acre of which are in addition to the hand cleared area resulting from clearing around fill slopes.

Bridge Demolition: The existing bridge is a three-span structure consisting of a pre-stressed concrete channel superstructure with an asphalt-wearing surface. The substructure is composed of pre-stressed/pre-cast concrete caps on timber piles. Best Management Practices for Bridge Demolition and Removal will be followed to prevent any temporary fill from entering Waters of the United States.

Neuse River Basin Buffer Rules

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 9,623 ft^2 of impacts to riparian buffers. This includes 7,399 ft^2 (7,252 ft^2 in Zone 1 and 147 ft^2 in Zone 2) due to the bridge crossing. According to the buffer rules, bridges are allowable. In addition, 2,224 ft^2 (156 ft^2 in Zone 1 and 2,068 ft^2 in Zone 2) of impacts will occur from approach fill and hand clearing activities due to road crossings. This Road Crossing activity is allowable because impacts are less than the 150-foot/0.3 acre threshold, for which mitigation is required. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this rule.

There are also a total of 1,722 ft^2 of impacts to riparian buffers from hand clearing activities due to the relocation of a powerline (see utility drawings). This includes 1,106 ft^2 in Zone 1 (599 ft^2 in Site 3 and 507 ft^2 in Site 4) and 616 ft^2 in Zone 2 (310 ft^2 in Site 2 and 306 ft^2 in

Site 5). These impacts are considered exempt, and completely overlap riparian buffer impacts resulting from the bridge and road crossings.

Federally Protected Species

As of November 11, 2007 the US Fish and Wildlife Service (USFWS) listed three federally protected species for Nash County (Table 1). The bald eagle was removed from the Endangered Species List on August 8, 2007. A biological conclusion of "no effect" remains valid for red-cockaded woodpecker due to lack of suitable habitat. NCDOT received concurrence from USFWS for a Biological Conclusion of May Affect, Not Likely to Adversely Affect for the dwarf wedgemussel and Tar River spinymussel on September 3, 2004. A resurvey for these species was conducted on August 27, 2007 (see attached survey report), and the Biological Conclusions will remain the same.

Table 1. Federally protected species of Nash County.

Common Name	Scientific Name	Federal Status	Habitat	Biological Conclusion
Red-cockaded woodpecker	*Picoides borealis*	E	No	No Effect
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Yes	MANLAA
Tar River spinymussel	*Elliptio steinstansana*	E	Yes	MANLAA

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species Act as of August 8, 2007. However, it is still protected under the Bald and Golden Eagle Protection Act. No suitable habitat exists within 660 feet of the project area. Therefore, this project will have no adverse effect on the bald eagle.

In-Stream Work Moratorium

Turkey Creek falls under the jurisdiction of the NC Wildlife Resources Commission (NCWRC). Per letter from NCWRC on December 21, 2007, no moratorium is required for this project.

Avoidance and Minimization

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Due to the presence of surface waters and wetlands within the project study area, avoidance of all impacts is not possible. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures incorporated as part of the project design included:

- Fill slopes in wetlands will be at a 3:1 ratio
- Use of an off-site detour during construction
- Construction of a 9-foot longer bridge

- The new structure will span the creek, therefore there will be no interior bents in the water
- Measures used to minimize impacts to the buffer zone include using the existing alignment
- Best Management Practices will be utilized during demolition of the existing bridge and construction of the new bridge
- Design Standards in Sensitive Watersheds will be utilized during demolition of the existing bridge and construction of the new bridge

Mitigation

Due to the limited amount of impacts to jurisdictional wetlands, and because impacts to riparian buffers have not exceeded the threshold requiring compensatory mitigation, NCDOT is not proposing mitigation for this project.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23. We are also requesting the issuance of a Nationwide Permit 33 for the temporary fill due to the installation of erosion control measures. (72 CFR; 11092-11198, March 12, 2007).

Section 401 Certification: We anticipate 401 General Certification numbers 3701 and 3688 will apply to this project, and are requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Quality. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their review and approval. Authorization to debit the $240 Permit Application Fee from WBS Element 33388.1.1 is hereby given.

Neuse River Basin Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Neuse Riparian Buffer Authorization.

A copy of this application will be posted on the NCDOT website at: http://www.doh.dot.state.nc.us/preconstruct/pe/neu/permit.html

Thank you for your time and assistance with this project. Please contact David E. Bailey at debailey@dot.state.nc.us or (919) 715-7257 if you have any questions or need additional information.

Sincerely,

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

cc:

w/attachment:

Mr. Brian Wrenn, NCDWQ (5 Copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS

w/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Richard E. Greene , P.E., Div. 4 Engineer
Mr. Jamie Guerrero, Div. 4 Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. John L. Williams, P.E., PDEA

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:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NWP 23 and 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
   _____
   _____
   _____
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: _____

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. 95 on SR 1151 over Turkey Creek in Nash County

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4210

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Nash Nearest Town: Samaria
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): Take US 264 to NC 97 East and turn left onto SR 1151 (Bryantown Rd). You will come to bridge 95 after approximately 0.5 miles.

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): 35.862047 °N 78.195951 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Contentnea Creek

8. River Basin: Neuse
   (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: The project is located in a rural area in Nash county. Land around the site is mostly forested or under agricultural cultivation.

10. Describe the overall project in detail, including the type of equipment to be used: The existing bridge, constructed in 1969, is a three-span structure consisting of a pre-stressed concrete channel superstructure with an asphalt-wearing surface. The substructure is composed of pre-stressed/pre-cast concrete caps on timber piles. The proposed project will replace the exisiting bridge in place with a new bridge that is 100 feet long. Standard NCDOT construction equipment will be used.

11. Explain the purpose of the proposed work: The purpose of the project is to replace a structurally deficient bridge to ensure the safety of those traveling over the bridge.

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. Wetlands have not as yet been verified by the Corps. The jurisdictional determination information packet will be included in the permit application packet.

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 future permit requests are anticipated for this project.

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: Construction of the proposed project will result in permanent impacts of 0.07 acre to wetlands due to fill material (see

permit drawings). This project will result in 0.03 acres of temporary fill in wetlands in the Hand Clearing areas for the installation of erosion control measures

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	forested	yes	abuting	0.07
1	Temporary Fill	forested	yes	abuting	0.03
Total Wetland Impact (acres)					0.10

3. List the total acreage (estimated) of all existing wetlands on the property: 6.0 acre

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)
N/A						
Total Stream Impact (by length and acreage)					0.0	0.0

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)
N/A				
Total Open Water Impact (acres)				0.0

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

Stream Impact (acres):	0.0
Wetland Impact (acres):	0.10
Open Water Impact (acres):	0.0
Total Impact to Waters of the U.S. (acres)	0.10
Total Stream Impact (linear feet):	0.0

. 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.

N/A

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.): N/A

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

Current land use in the vicinity of the pond: N/A

Size of watershed draining to pond: N/A Expected pond surface area: N/A

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. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures incorporated as part of the project design included fill slopes in wetlands will be at a 3:1 ratio, use of an off-site detour during construction, construction of a 9 foot longer bridge, the new structure will span the creek, therefore there will be no interior bents in the water. Measures used to minimize impacts to the buffer zone include using the existing alignment. Design Standards in Sensitive Watersheds will be utilized during demolition of the existing bridge and construction of the new bridge

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.
   Due to the limited amount of impacts to jurisdictional wetlands, and because impacts to riparian buffers have not exceeded the threshold requiring compensatory mitigation, NCDOT is not proposing mitigation for this project.

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): N/A
   Amount of buffer mitigation requested (square feet): N/A
   Amount of Riparian wetland mitigation requested (acres): N/A
   Amount of Non-riparian wetland mitigation requested (acres): N/A
   Amount of Coastal wetland mitigation requested (acres): N/A

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 Neuse)? 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	7,399	3 (2 for Catawba)	0
2	2,224	1.5	0
Total	9,623		0

* 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. N/A

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. N/A

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:
N/A

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).
N/A

E. L. Lupk 12-31-07

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-4210**
State Project No.	**8.2322501**
W.B.S. No.	**33556.1.1**
Federal Project No.	**BRZ-1151(4)**

A. Project Description:

This project proposes to replace Bridge No. 95 on SR 1151 over Turkey Creek in Nash County (see Figure 1). The new structure will be approximately 100 feet in length and will be located in approximately the same location. The roadway elevation of the proposed bridge will be raised slightly to accommodate the new structure.

The proposed structure will have a typical section that, at a minimum, will accommodate two 11-foot lanes and 3-foot offsets to the face of the bridge rail. The approach roadway will be widened to accommodate, at a minimum, two 11-foot lanes with 6-foot grass shoulder that will be widened as required where guardrail is warranted. The approach roadway work will consist of some grading and paving to tie back into the existing roadway for 290 feet to the west and 500 feet to the east of the proposed structure.

The total project length is approximately 890 feet. Traffic will be detoured offsite during construction (see Figure 1 and Section D, Studied Offsite Detour). No improvements will be needed to the roads on the offsite detour.

B. Purpose and Need:

Bridge No. 95 is a three-span structure with an asphalt overlay prestressed concrete channels (STD BMD-13). The substructure is composed of prestressed precast concrete caps on timber piles. The existing bridge is 91 feet in length and was built in 1969.

Bridge Maintenance Unit Records state the bridge's sufficiency rating as 26.9 out of a possible 100 for a new structure. The bridge is currently posted at 17 tons for single vehicles. Bridge No. 95 is considered structurally deficient due to a structural appraisal rating of two out of a possible nine for a new structure according to Federal Highway Administration (FHWA) guidelines. Therefore, the bridge is eligible for the FHWA's Highway Bridge Replacement and Rehabilitation Program due to its low sufficiency and structural appraisal rating.

The prestressed concrete channels are spalling and cracking, which leads to delamination of the prestressing strands and reduces the members ability to perform as expected. Timber piles typically, do not last beyond 40 to 50 years of age 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. However, past a certain degree of deterioration, timber members become impractical to maintain and upon eligibility are programmed for replacement.

5. Construction of new truck weigh stations or rest areas.

6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.

10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.

11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

13. Acquisition and construction of wetland, stream and endangered species mitigation sites.

14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

Division Office Comments:

Division Four concurs with the recommended alternate for replacing Bridge No. 95.

Bridge Demolition:

Using current bridge demolition techniques and guidelines, the bridge can be removed without dropping any components into Turkey Creek. Therefore, there is no anticipated temporary fill from the removal of Bridge No. 95.

Alternatives Discussion:

The no-build alternate is not feasible. The bridge will continue to deteriorate and eventually need to be closed down. This is unacceptable due to the traffic SR 1151 serves.

Rehabilitation of the existing bridge is not a feasible alternate. Timber structures typically do not last beyond 40 to 50 years of age 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. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement.

Replacing the structure on existing location while maintaining traffic onsite is not practical. There is a feasible offsite detour available for this project. A temporary onsite detour would increase the construction costs of the project as well as the environmental impacts.

(14)	Will the project require any stream relocations or channel changes?		X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES		YES	NO
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		X
(16)	Will the project require the relocation of any family or business?		X
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		X
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	X	
(19)	Will the project involve any changes in access control?		X
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		X
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		X
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	X	
(23)	Is the project anticipated to cause an increase in traffic volumes?		X
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	X	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	X	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		X
(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	X	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?		X

G. CE Approval

TIP Project No.	**B-4210**
State Project No.	**8.2322501**
W.B.S. No.	**33556.1.1**
Federal Project No.	**BRZ-1151(4)**

Project Description:

This project proposes to replace Bridge No. 95 on SR 1151 over Turkey Creek in Nash County (see Figure 1). The new structure will be approximately 100 feet in length and will be located in approximately the same location. The roadway elevation of the proposed bridge will be raised slightly to accommodate the new structure.

The proposed structure will have a typical section that, at a minimum, will accommodate two 11-foot lanes and 3-foot offsets to the face of the bridge rail. The approach roadway will be widened to accommodate, at a minimum, two 11-foot lanes with 6-foot grass shoulder that will be widened as required where guardrail is warranted. The approach roadway work will consist of some grading and paving to tie back into the existing roadway for 290 feet to the west and 500 feet to the east of the proposed structure.

The total project length is approximately 890 feet. Traffic will be detoured offsite during construction (see Figure 1 and Section D, Studied Offsite Detour). No improvements will be needed to the roads on the offsite detour.

Categorical Exclusion Action Classification: (Check one)

____ TYPE II(A)
X TYPE II(B)

Approved:

6/23/05 _____
Date
Project Engineer
Project Development & Environmental Analysis Branch

6/23/05 _____
Date
Project Development Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

6/23/05 _____
Date
for John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS

Nash County
Bridge No. 95 on SR 1151 Over Turkey Creek
Federal Aid Project No. BRZ-1151(4)
State Project No. 8.2322501
WBS No. 33556.1.1
T.I.P. No. B-4210

Project Development and Environmental Analysis Branch, Roadway Design Unit, Structure Design Unit, Roadside Environmental Unit, Hydraulics Unit

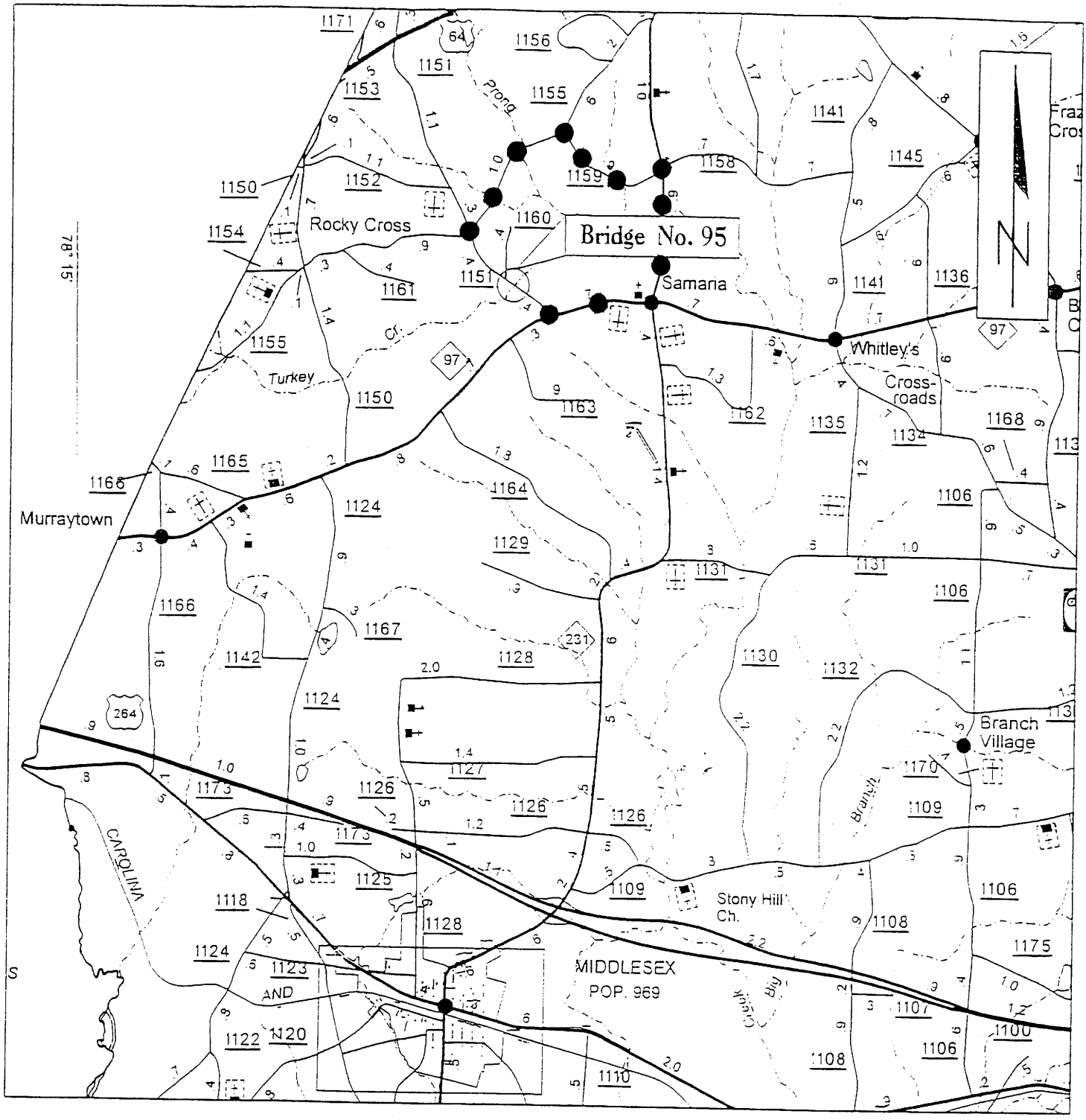
There are wetlands in the project vicinity. However, at this time the impacts are less than 0.1 of an acre based on preliminary design plans. A final estimate of the impacts will be done during the permitting phase when the final design plans are more advanced. NCDOT will avoid and minimize impacts to these wetlands to the extent practical. Any mitigation required will be done according to USACOE criteria.

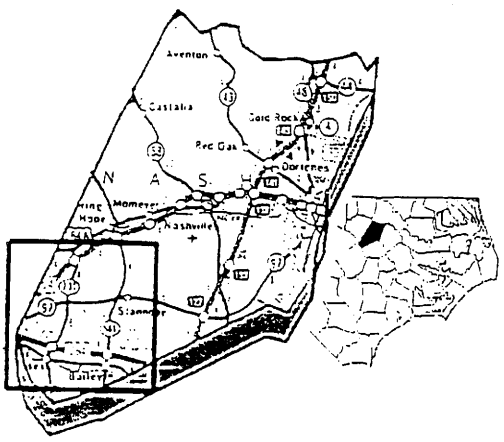
The mussel survey for the dwarf wedgemussel and the Tar spinymussel is valid until July 2, 2006.

Nash County Emergency Management Services has stated that they do have concerns over the use of an offsite detour. They have requested that the length of road closure be kept to a minimum because this is a heavily populated area. Therefore, where practical, the final design for the bridge and the roadway approaches should incorporate construction techniques that expedite construction. The contractor will be alerted to the need to expedite construction in the contract documents.

Division Four Resident Engineer

Advanced notice of road closure for SR 1151 will be given to Nash County Emergency Management Services and to the Nash County School Transportation office in order for them to facilitate their services during construction.





Studied Detour Route

North Carolina
Department of Transportation
Division of Highways
Project Development &
Environmental Analysis Branch

Nash County
Replace Bridge No. 95 on SR 1151 Over Turkey Creek
B-4210

SCALE: 1 in = 1 mi

Figure 1

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

September 3, 2004

Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of August 24, 2004 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 95 on SR 1151 over Turkey Creek in Nash County (TIP No. B-4210) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and the Tar spinymussel (*Elliptio steinstansana*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a mussel survey was conducted at the project site on July 2, 2004. The survey extended 100 meters upstream and 400 meters downstream of SR 1151. Neither of the federally listed species was found. Although the dwarf wedgemussel has been observed several miles downstream in Turkey Creek, the project site is well above the known range of the species in this stream. Based on the information provided and other information available, the Service concurs with your determination that the proposed bridge replacement may affect, but is not likely to adversely affect the dwarf wedgemussel and Tar spinymussel. We believe that the requirements of section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Tom Augspurger
Acting Ecological Services Supervisor

cc: Mike Bell, USACE, Washington, NC
Nicole Thomson, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

Johnson

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
January 16, 2001

Division of Archives and History
Jeffrey J. Crow, Director

MEMORANDUM

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

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

Re: Replacement of Bridge No. 95 on SR 1151 over Turkey Creek, TIP No. B-4210, Nash County, ER 01-7933

On December 5, 2000, April Montgomery of our staff met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

Based upon our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources we are aware of no historic structures located within the area of potential effect. We recommend that no historic architectural survey be conducted for this project.

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

Having provided this information, we look forward to the receipt of either a Categorical Exclusion or Environmental Assessment, which indicates how NCDOT addressed our comments.

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

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

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 27, 2007,

Memorandum to: David Bailey, Project Manager
NEU Project Management Group, Eastern Unit

From: Mike Sanderson, Environmental Senior Specialist
Natural Environment Unit, Biological Surveys Group

Subject: Freshwater mussel survey update for proposed replacement of Bridge No. 95 over Turkey Creek, Nash County; TIP # **B-4210**.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 95 over Turkey Creek on SR 1151 in Nash County in the Neuse River basin.

The dwarf wedgemussel (*Alasmidonta heterodon*) and Tar River spinymussel (*Elliptio steinstansana*), which are both federally endangered, are listed by the U. S. Fish and Wildlife Service as occurring in Nash County. Prior to conducting in-stream surveys, a review of the NC Natural Heritage Program database was conducted to determine if there were any records of rare mussels within the proposed project study area or receiving waters. This review indicated that **the dwarf wedgemussel has been found approximately 5 miles downstream of the project site** on Turkey Creek near the crossing of US 264 highway. The last known observation of dwarf wedgemussel at this site was in 1996.

The dwarf wedgemussel inhabits stable areas of creeks and rivers of varying sizes with slow to moderate flow. A variety of preferred substrates for dwarf wedgemussel have been described that range from coarse sand and pebble/gravel, to firm muddy sand to submerged root mats along stable stream banks. The Tar River spinymussel prefers relatively swiftly flowing, well oxygenated, nearly neutral waters that are subject to fluctuations in velocity. Preferred substrates are course sand and pea-gravel or gravelly substrate.

The original survey for this project was conducted on July 2, 2004 (see attached report from Alderman Environmental Services, Inc.) The biological conclusion at that time was "May Affect, Not Likely to Adversely Affect." Concurrence was received from the USFWS on September 3, 2004.

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

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

FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

A second site visit was conducted at the project site (B-4210) on August 27, 2007 by Karen M. Lynch (Permit No. NC-2007-ES-165), Logan Williams (Permit No. NC-2007-es-165), Jason Mays, Neil Medlin and Mike Sanderson. An unusually prolonged drought this year has dried up extensive stretches of Turkey Creek, most notably in areas where abundant mussels have been found in prior surveys. In these dried up stretches, numerous mussels (*Elliptio complanata)* were found in the substrate, high and dry.

The following conservation measures will be implemented for avoidance and minimization of impacts to Waters of the United States.

- Fill slopes in wetlands will be at a 3:1 ratio
- Use of an off-site detour during construction
- Construction of a 9-foot longer bridge
- The new structure will span the creek, therefore there will be no interior bents in the water
- Measures used to minimize impacts to the buffer zone include using the existing alignment
- Best Management Practices will be utilized during demolition of the existing bridge and construction of the new bridge
- Design Standards in Sensitive Watersheds will be utilized during demolition of the existing bridge and construction of the new bridge

As a result of these surveys and a review of historical data, it appears extremely unlikely that dwarf wedgemussel and/or Tar River spinymussel will be adversely affected in this watershed or in this creek by bridge replacement. **The biological conclusion for dwarf wedgemussel and Tar River spinymussel for this project remains "may affect-not likely to adversely affect"**. This biological conclusion received concurrence from the U.S. Fish and Wildlife Service on September 3, 2004.

enc.

Alderman Environmental Services, Inc.

August 2, 2004

PROJECT: Freshwater mussel survey for B-4210 on SR 1151; Turkey Creek, Nash County, NC

TARGET SPECIES: Federally listed endangered dwarf wedgemussel (*Alasmidonta heterodon*), federally listed endangered tar spinymussel (*Elliptio steinstansana),* federally listed species of concern atlantic pigtoe (*Fusconaia masoni),* green floater (*Lasmigona subviridis),* yellow lance (*Elliptio lanceolata)* and yellow lampmussel (*Lampsilis cariosa).*

BIOLOGISTS: John Alderman
Karen Lynch
Logan Williams
Jason Mays
Mike Sanderson

N.C. WILDLIFE RESOURCES COMMISSION ES PERMIT: NC – 2004 ES 09

U.S. FISH AND WILDLIFE SERVICE ES PERMIT: TE065756-0

STATION 20040702.1jma

LOCATION: Turkey Creek, Neuse River Basin, Nash County, North Carolina; Location: 35.86147 N, 78.19592 W; **see associated map at end of report.**

SURVEY DATES: July 2, 2004

SITE COMMENTS: no comments

HABITAT:

WATERBODY TYPE:	Creek
FLOW:	Slack, pool
RELATIVE DEPTH:	Shallow

HABITAT (CONTINUED):

DEPTH (%<2 FEET):	20
SUBSTRATE:	Clay, silt, sand, gravel, cobble, boulder
COMPACTNESS:	Normal and **unconsolidated**
SAND/GRAVEL BARS:	None
WOODY DEBRIS:	High
BEAVER ACTIVITY:	Evidence (gnawed sticks)
WINDTHROW:	Low
TEMPORARY POOLS:	Present
CHANNEL WIDTH:	~8 meters
BANK HEIGHT:	<1 meter
BANK STABILITY:	Very stable
BUFFER WIDTH:	Wide
RIPARIAN VEGETATION:	Wooded, shrub-brush
LAND USE:	Natural, timber, rural
PERCENT COVER:	85
WOODLAND EXTENT:	Extensive
NATURAL LEVEES:	At least one
VISIBILITY:	Turbid
WATER LEVEL:	Low
WEATHER:	Sun-cloud, hot

TECHNIQUES AND SURVEY TIME:

TECHNIQUES:	Visual; tactile; SCUBA
SURVEY TIME:	4.7 person hours

FRESHWATER MUSSELS:

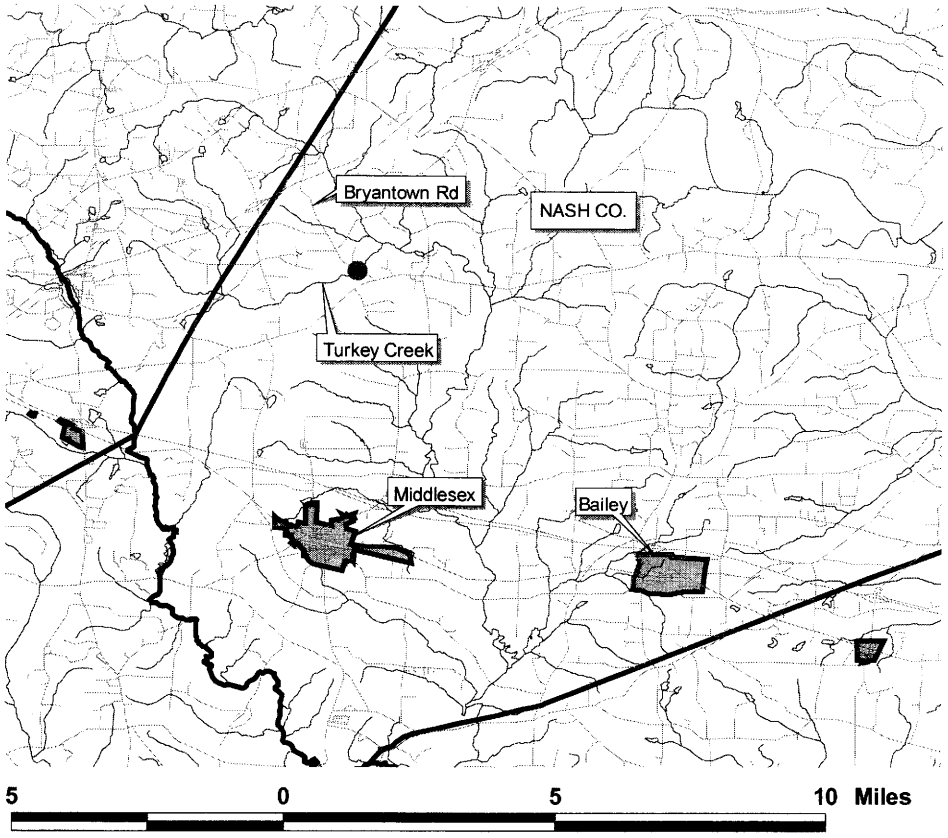
Elliptio complanata – 7 live
Elliptio fisheriana – 1 live
Utterbackia imbecillis – 1 live

OTHER TAXA:

Campeloma decisum - present

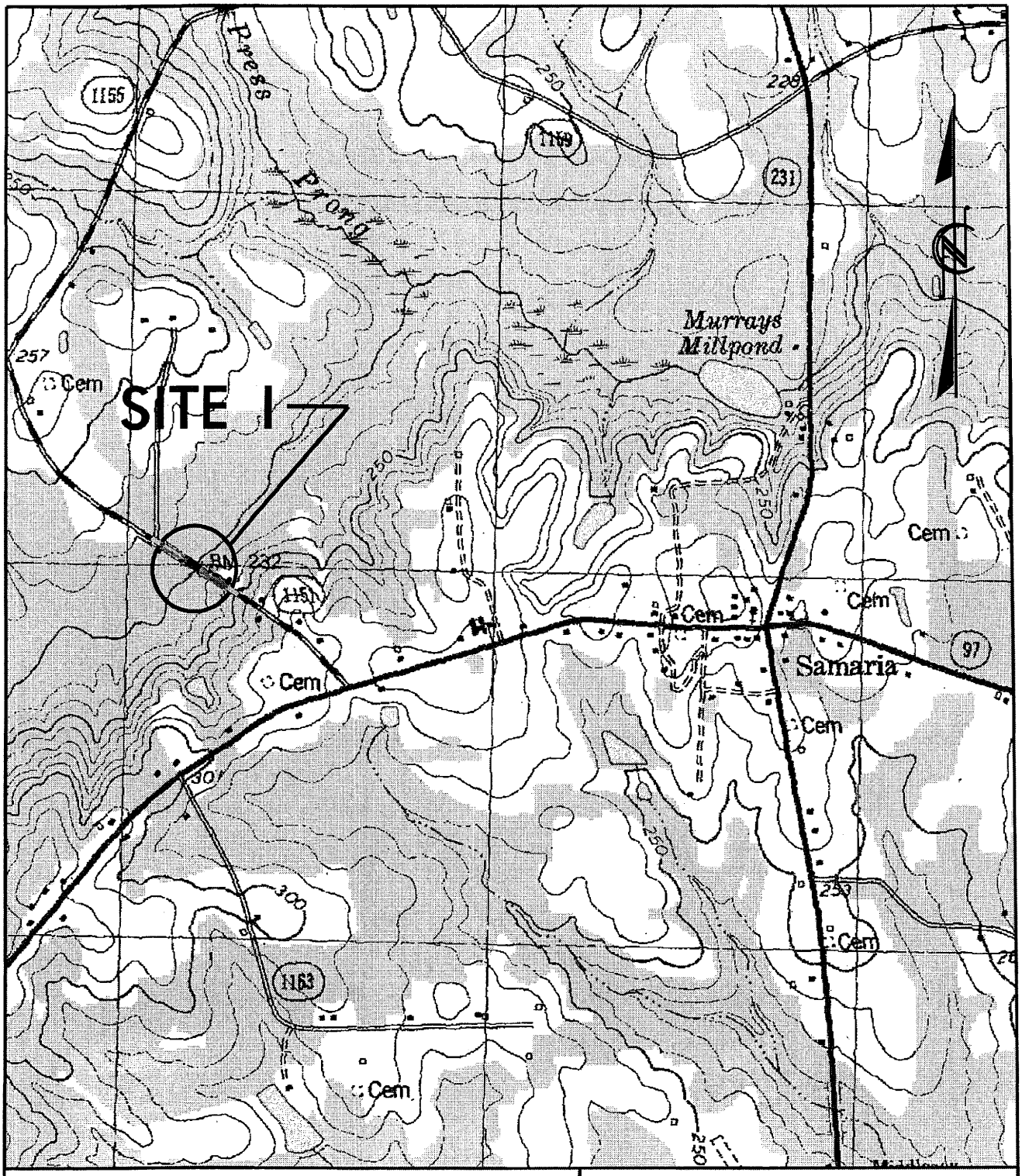
BIOLOGICAL DETERMINATION: May affect, not likely to adversely affect if HQW water quality protection measures are implemented during all phases of this project

B-4210, SR 1151, NASH CO., NC
TURKEY CREEK



MAJOR STREAMS
ROADS
MUNICIPALITIES
COUNTY LINE

N
W
E
S



VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 33856.1.1 (B-4210)

REPLACE BRG# 95 OVER TURKEY CREEK ON SR 1151

SHEET OF

Permit Drawing
Sheet 1 of 12

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	KIRK STRICKLAND	3008 PRONG CREEK ROAD MIDDLESEX, N.C. 27557
2	DONNIE R. CONE	3550 BRYANTOWN ROAD MIDDLESEX, N.C. 27557

NCDOT

DIVISION OF HIGHWAYS

NASH COUNTY

PROJECT: 33556.1.1 (B-4210)

REPLACE BRIDGE 95 OVER
TURKEY CREEK ON SR 1151

SHEET OF

Permit Drawing
Sheet 2 of 12

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	9+95-L- TO 15+70-L-	1@ 100'	0.070				0.110					
		39" BOX BEAM										
TOTALS:			0.070				0.110					

NOTE: 0.03 AC. OF TEMPORARY FILL IN WETLANDS IN THE HAND CLEARING AREAS FOR EROSION CONTROL MEASURES.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NASH COUNTY
WBS - 33556.1.1 (B-4210)
REVISED
SHEET 11/13/2007

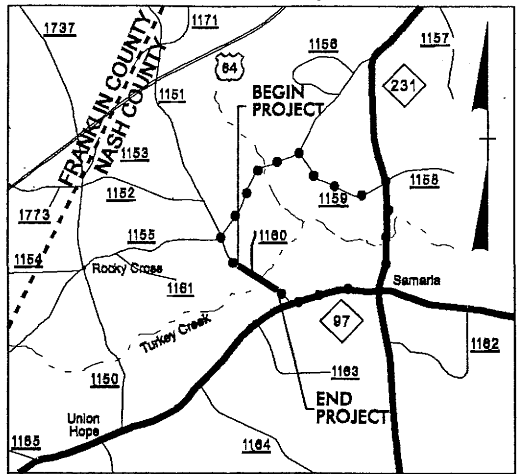
ATN Revised 3/31/05

Permit Drawing
Sheet 2 of 12

TIP PROJECT: B-4210

CONTRACT: C201854

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



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

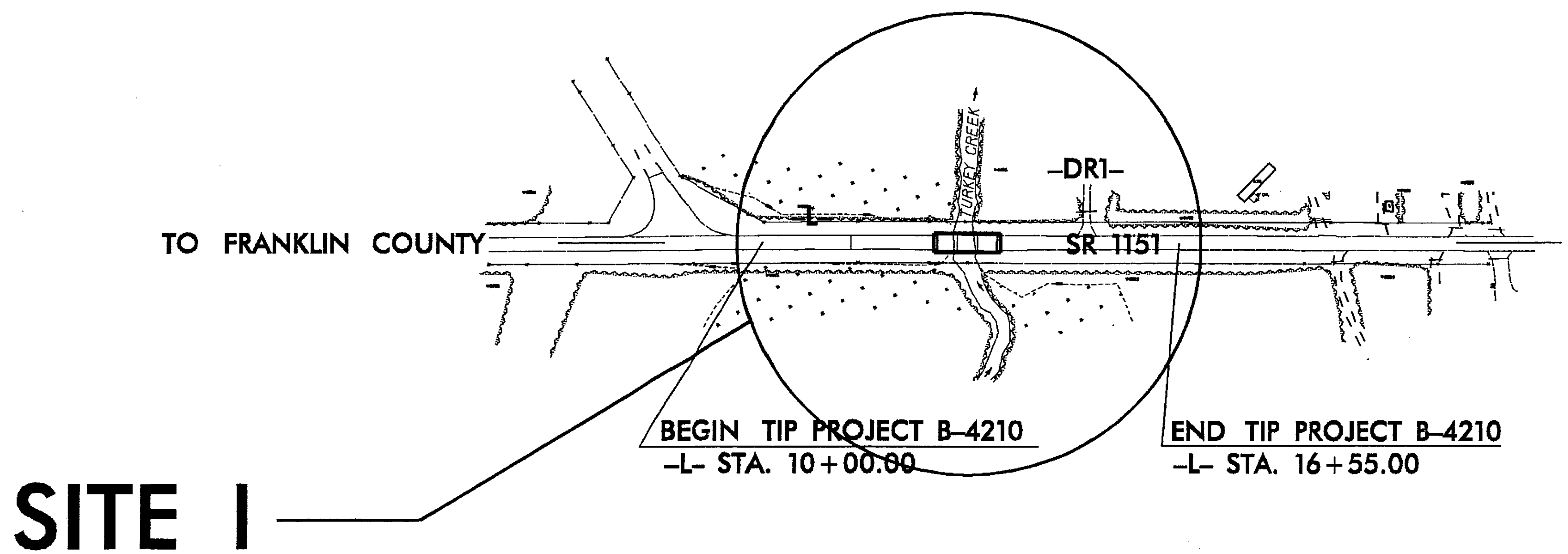
NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4210	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33556.1.1	BRZ-1151(4)	P.E.	
33556.3.1	BRZ-1151(4)	ROW, UTIL	

LOCATION: BRIDGE NO. 95 OVER TURKEY CREEK ON SR 1151

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

WETLAND PERMIT



Permit Drawing Sheet 4 of 12

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 730
ADT 2028 = 1050
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% + DUAL 2%

** DESIGN EXCEPTION REQUIRED FOR THE SAG VERTICAL CURVE (50 MPH)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4210	=	0.105 MI
LENGTH STRUCTURES TIP PROJECT B-4210	=	0.019 MI
TOTAL LENGTH TIP PROJECT B-4210	=	0.124 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2007

LETTING DATE: JUNE 17, 2008

BRENDA MOORE, P.E.
PROJECT ENGINEER

THAD F. DUNCAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY DESIGN ENGINEER P.E.

22-AUG-2007 08:30
r:\hydraulics\permit\b4210_hyd_wet_tsh.dgn
rlassiter AT HY221542

09/08/99

6/2/99

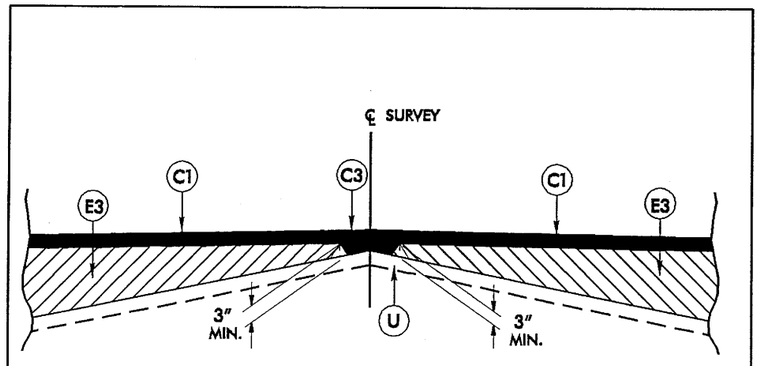
PROJECT REFERENCE NO.	SHEET NO.
B-4210	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

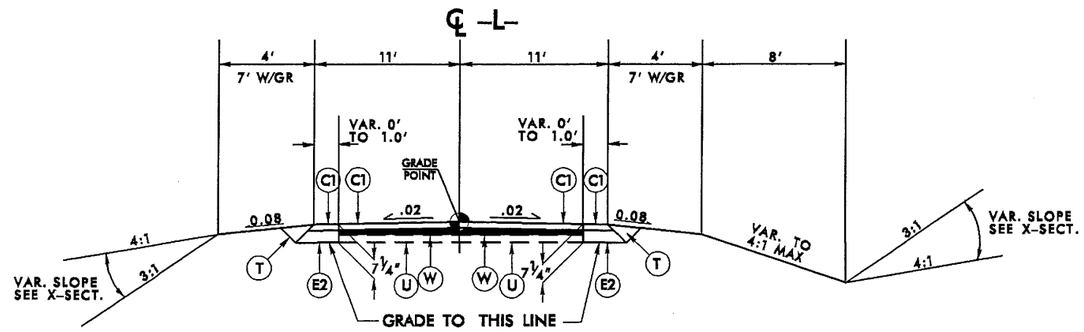
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

A1	6" JOINTED CONCRETE REINFORCED WITH WIRE MESH.
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 4" AGGREGATE BASE COURSE.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

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



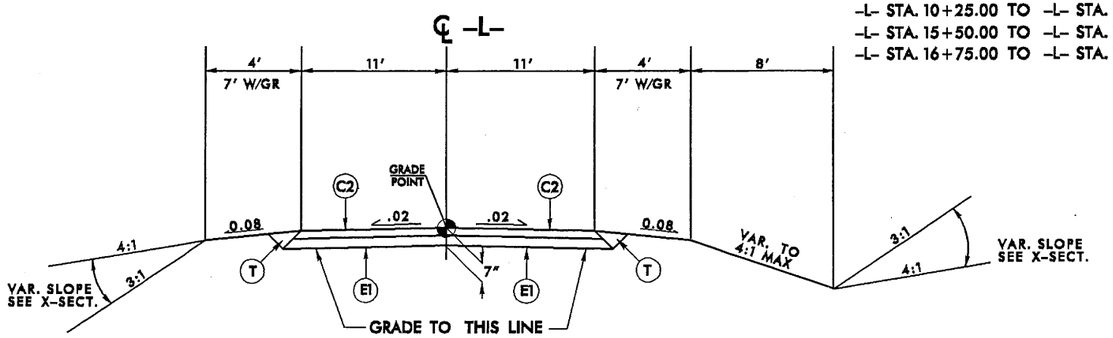
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

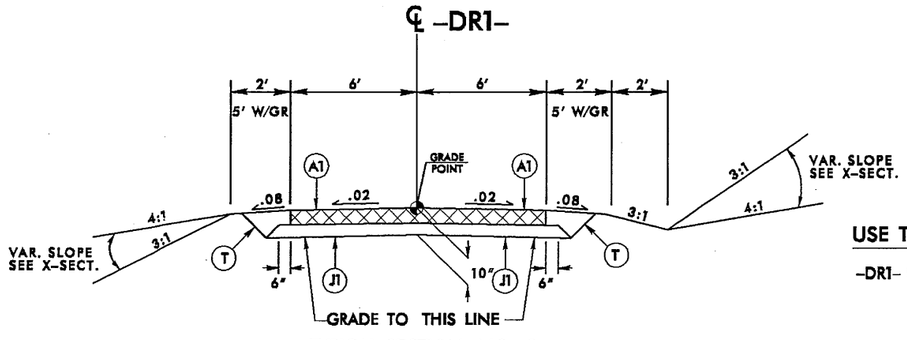
–L– STA. 10+00.00 TO –L– STA. 10+25.00 TAPER FROM EXIST.
–L– STA. 10+25.00 TO –L– STA. 12+50.00
–L– STA. 15+50.00 TO –L– STA. 16+75.00
–L– STA. 16+75.00 TO –L– STA. 17+00.00 TAPER TO EXIST.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

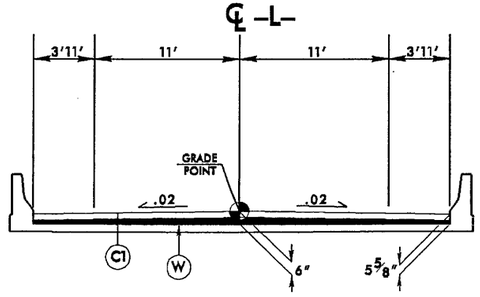
–L– STA. 12+50.00 TO –L– STA. 13+00.00 (BEG. BRIDGE)
–L– STA. 14+00.00 (END BRIDGE) TO –L– STA. 15+50.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–DR1– STA. 10+00.00 TO –DR1– STA. 10+53.59



TYPICAL BRIDGE DETAIL NO. 1

–L– STA. 13+00.00 TO STA. 14+00.00

Permit Drawing Sheet 5 of 12

21-AUG-2007 10:17
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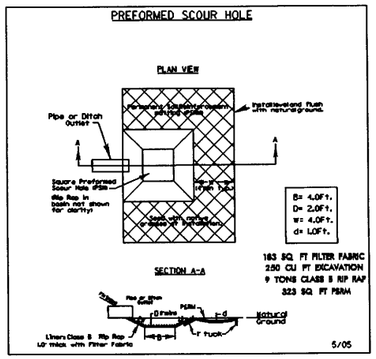
$$$$USERNAME$$$$

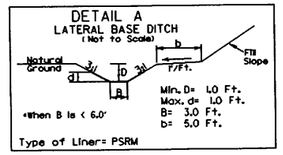
PROJECT REFERENCE NO.	SHEET NO.
B-4210	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS



STA. 10+50 -L- LT.



FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY

NAD 83

STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210

CAROLINA POWER AND LIGHT COMPANY EASEMENT

BEGIN CONSTRUCTION
-L- STA. 9+50.00

PC Sta. 11+88.98

PT Sta. 12+91.97

CL OF CREEK IS PROPERTY LINE

TURKEY CREEK

-DRI- POT Sta. 10+00.00

BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00

END CONSTRUCTION
-L- STA. 18+10.00

END MIN. RESURF. DEPTH
-L- STA. 17+00.00

3' LATERAL BASE DITCH W/PSRM SEE DETAIL 'A'

CL B RIP RAP EST 5 TONS 16 S.Y. FF

CL B RIP RAP EST 1 TON 5 S.Y. FF

PSH SEE DETAIL

SPAN CONC. AND WOOD BRIDGE WITH WOOD WING WALLS

BRIDGE #95

KIRK STRICKLAND

BARBARA KAY JOHNSON CONE

DONNIE R. CONE

MANUEL C. CARTER, JR.

CAROLYN C. BRYANT

JANET LOU CONE CURTIS

GLADYS B. LAMM, HEIRS

DAVID A. RIDGWAY

-DRI- POT Sta. 10+84.39
-L- POT STA. 15+21.08

S 57°08'51" E 101.37' 46.50' 53.79'

N 23°45'32" E 6.27' EIP TO R/W

N 23°32'46" E 111.92'

N 22°07'38" E 119.29'

S 46°02'49" W 104.80'

S 44°59'38" W 28.73'

S 53°42'44" E 201.01'

S 00°26'53" W 707.44'

S 30°01'55" W 385.68'

S 03°52'34" W 209.63'

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

SITE 1

STA. 16+55.00 -L-

END STATE PROJECT B-4210

Permit Drawing

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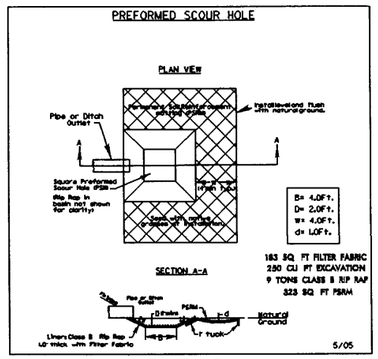
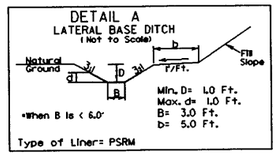
PROJECT REFERENCE NO.	SHEET NO.
B-4210	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS



STA. 10+50 -L- LT.



FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY

NAD 83

CAROLINA POWER AND LIGHT COMPANY EASEMENT

STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210

BEGIN CONSTRUCTION
-L- STA. 9+50.00

PC Sta. 11+88.98

PT Sta. 12+91.97

-DRI- POT Sta. 10+00.00

-DRI- POT Sta. 10+84.39
-L- POT STA. 15+21.08

BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00

END CONSTRUCTION
-L- STA. 18+10.00

END MIN. RESURF. DEPTH
-L- STA. 17+00.00

STA. 16+55.00 -L-
END STATE PROJECT B-4210

KIRK STRICKLAND

BARBARA KAY JOHNSON CONE

DONNIE R. CONE

MANUEL C. CARTER, JR.

CAROLYN C. BRYANT

JANET LOU CONE CURTIS

GLADYS B. LAMM, HEIRS

DAVID A. RIDGWAY

CL OF CREEK IS PROPERTY LINE
TURKEY CREEK

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

SITE 1

Permit Drawing
Sheet 7 of 12

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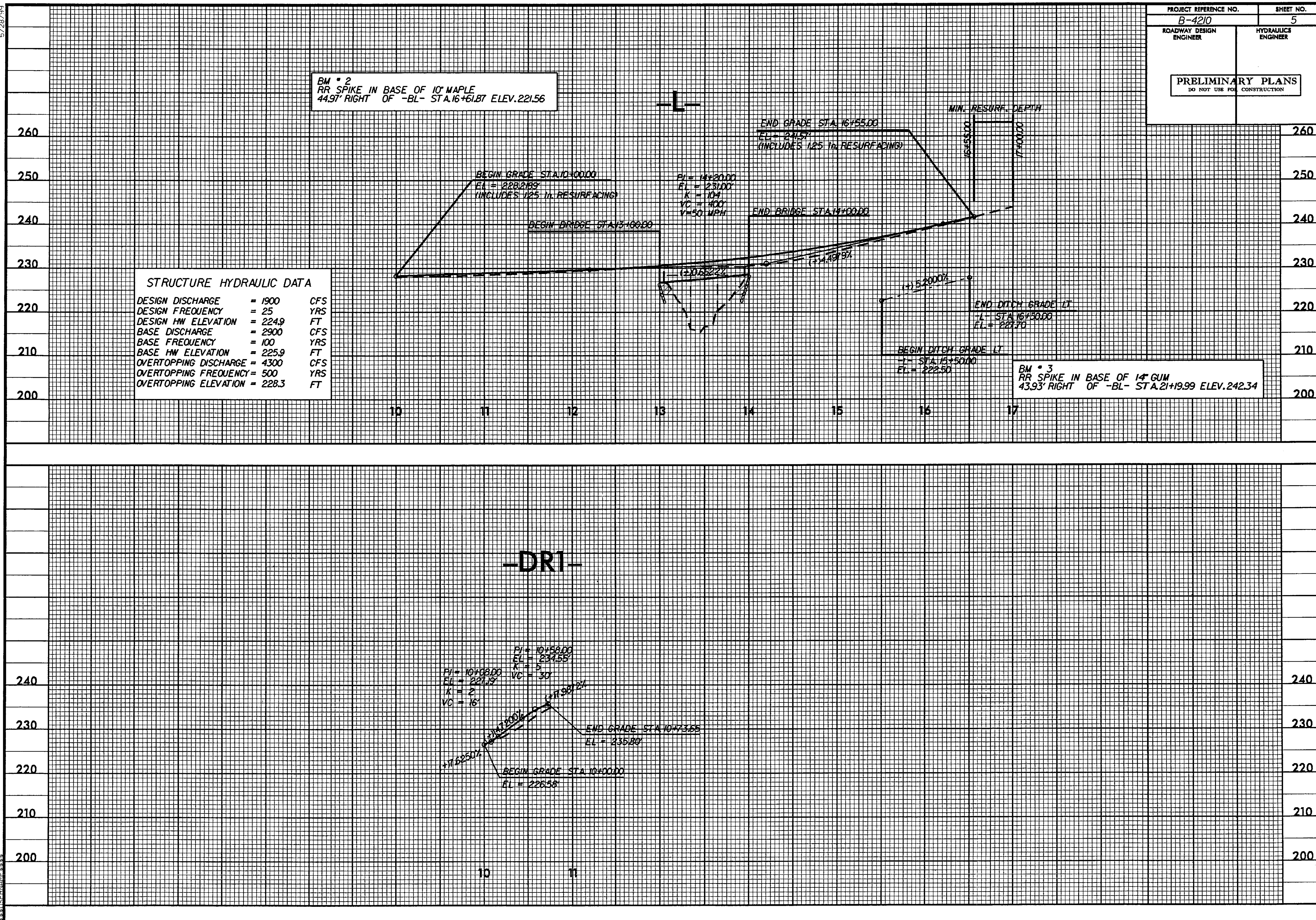
5/28/99


PROJECT REFERENCE NO. B-4210
SHEET NO. 5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-L-
BM • 2
RR SPIKE IN BASE OF 10" MAPLE
44.97' RIGHT OF -BL- STA.16+61.87 ELEV.221.56
BEGIN GRADE STA.10+00.00
EL = 228.2189'
(INCLUDES 1.25 In. RESURFACING)
BEGIN BRIDGE STA.13+00.00
PI = 14+20.00
EL = 231.00'
K = 104
VC = 400'
V=50 MPH
END BRIDGE STA.14+00.00
END GRADE STA. 16+55.00
EL = 241.57'
(INCLUDES 1.25 In. RESURFACING)
MIN. RESURF. DEPTH
16+55.00
17+00.00
(+)0.6522%
(+)4.4979%
(+)5.2000%
END DITCH GRADE LT
-L- STA.16+50.00
EL = 227.70
BEGIN DITCH GRADE LT
-L- STA.15+50.00
EL = 222.50
BM • 3
RR SPIKE IN BASE OF 14" GUM
43.93' RIGHT OF -BL- STA.21+19.99 ELEV.242.34
260
250
240
230
220
210
200
10
11
12
13
14
15
16
17
-DR1-
PI = 10+58.00
EL = 234.55'
K = 5
VC = 30'
PI = 10+08.00
EL = 227.19'
K = 2
VC = 16'
+17.9812%
(+)14.7200%
+17.6250%
END GRADE STA.10+73.65
EL = 235.80'
BEGIN GRADE STA.10+00.00
EL = 226.58'
240
230
220
210
200
10
11

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1900	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	224.9	FT
BASE DISCHARGE	=	2900	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	225.9	FT
OVERTOPPING DISCHARGE	=	4300	CFS
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING ELEVATION	=	228.3	FT

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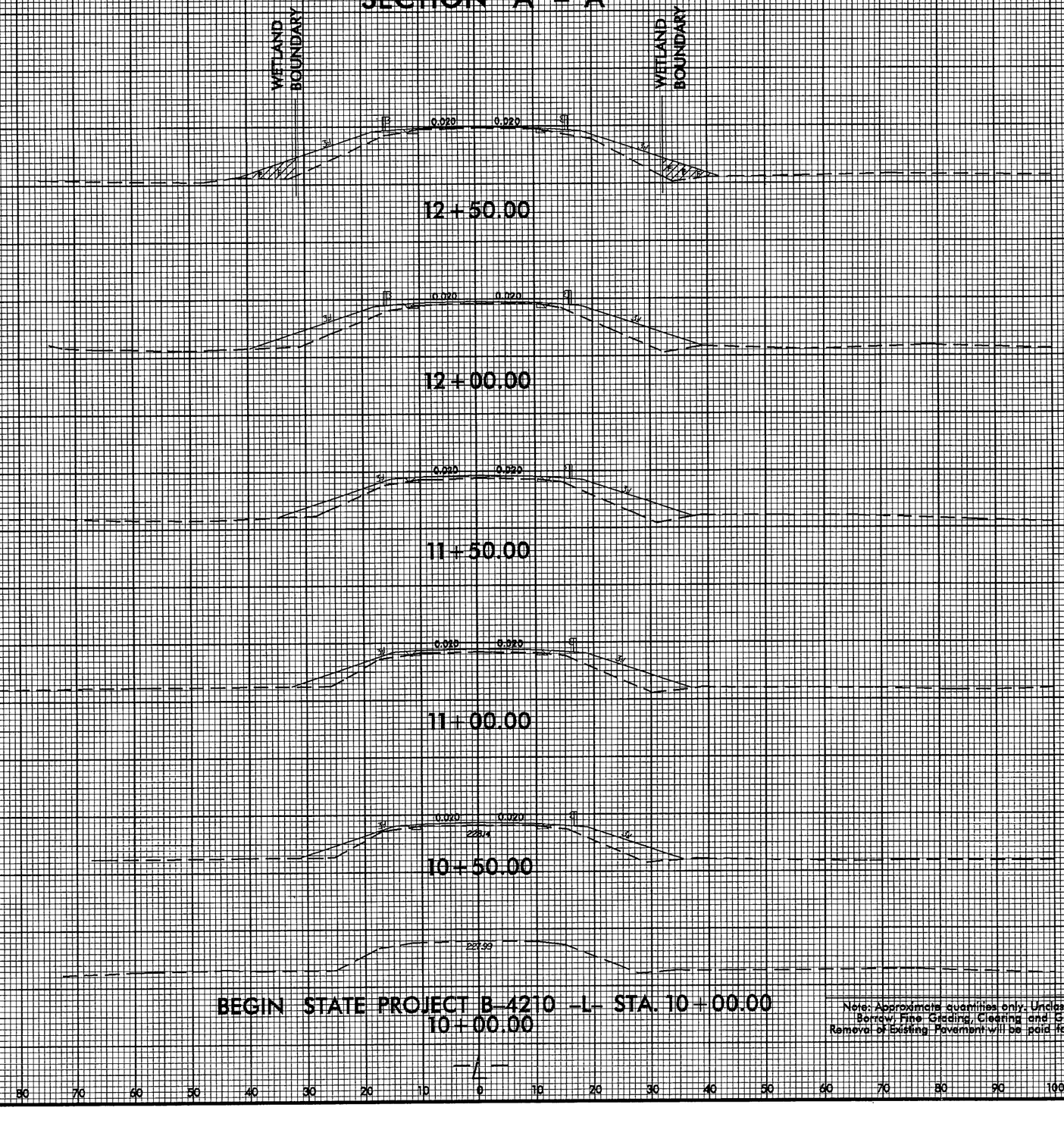
Permit Drawing

SECTION A – A



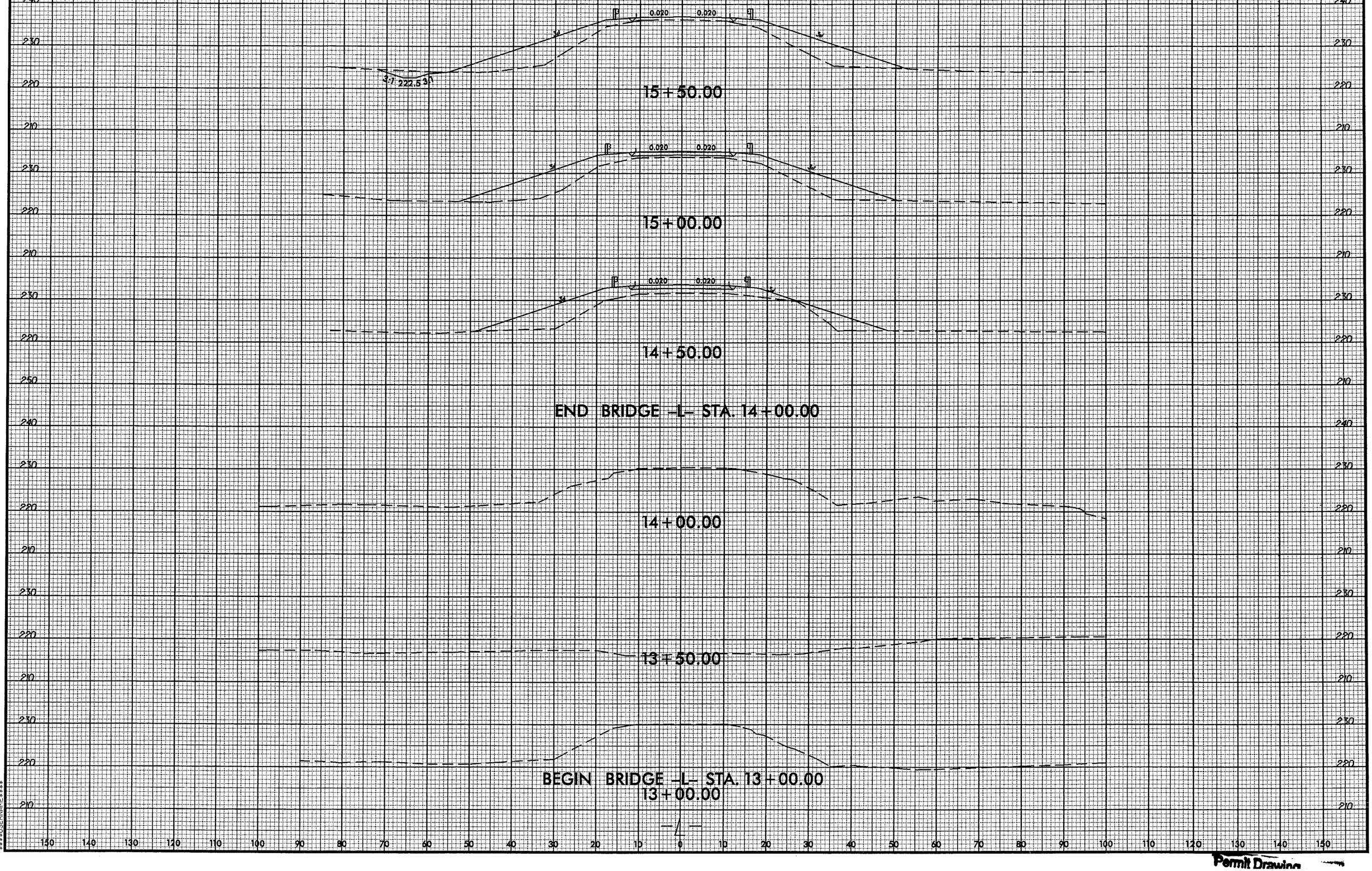
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

Permit Drawing Sheet 9 of 12

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4210	X-2



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Permit Drawing

8/23/99

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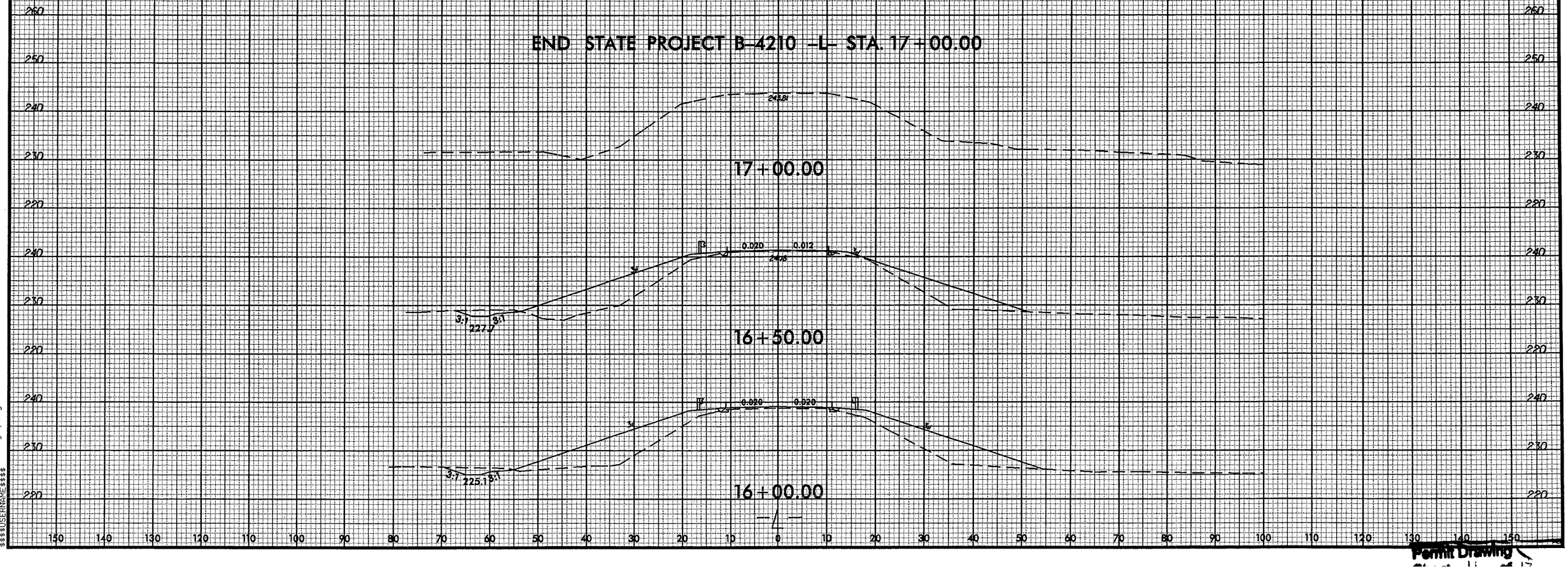
	B-4210	X-3

END STATE PROJECT B-4210 -L- STA. 17+00.00



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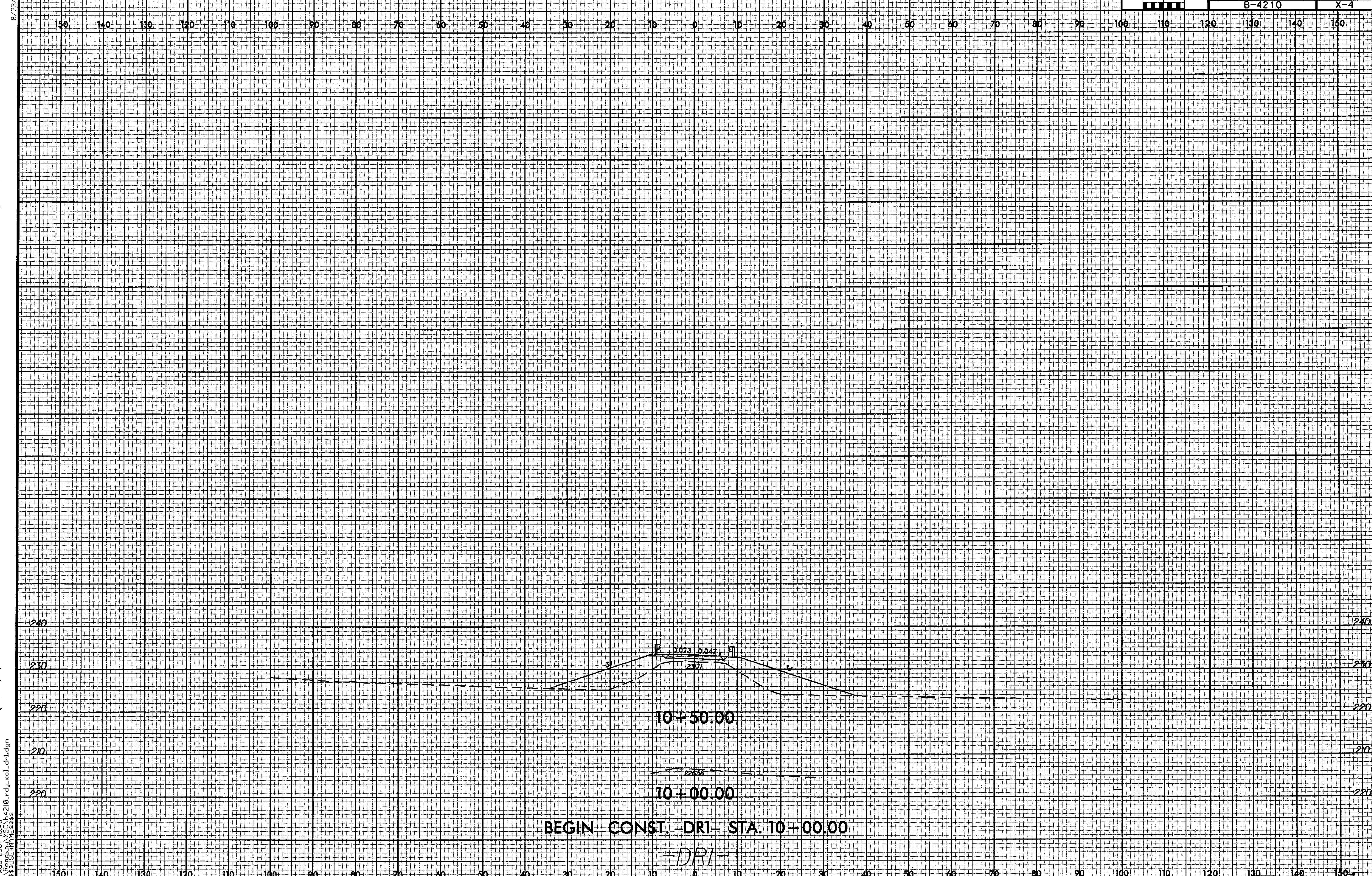
	B-4210	X-4



8/23/99

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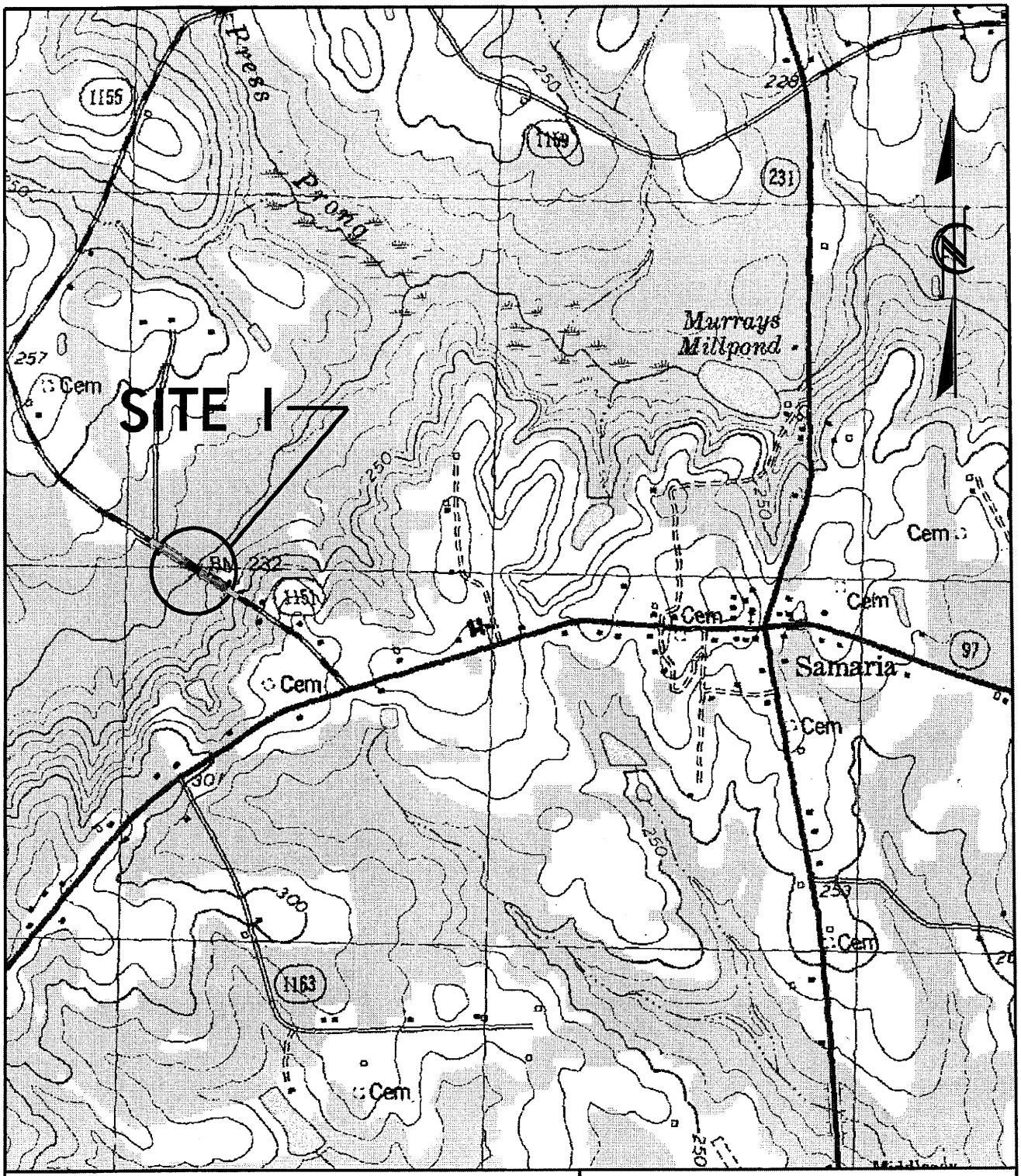
Permit Drawing
Sheet 17 of 17



NEUSE RIVER BUFFER
VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 33556.1.1 (B-4210)

REPLACE BRG[#] 95 OVER TURKEY CREEK ON SR 1151

SHEET OF

Buffer Drawing
Sheet 1 of 5

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	1@ 100' 39" Box Beam	12+80-L- TO 14+00-L-		X		7252.0	147.0	7399.0					
			X			156.0	2068.0	2224.0					
TOTAL:						7408.0	2215.0	9623.0	0.0	0.0	0.0	0.0	0.0

Total length of up and down stream buffer impact = 125 ft.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

NASH COUNTY
PROJECT: 33556.1.1 (B-4210)

SHEET OF

Rev. May 2006

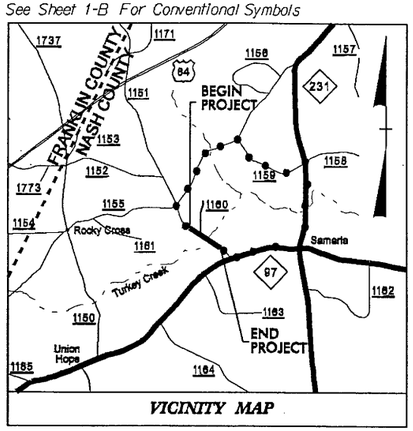
Buffer Drawing Sheet 2 of 5

09/08/99

TIP PROJECT: B-4210

CONTRACT: C201854

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



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

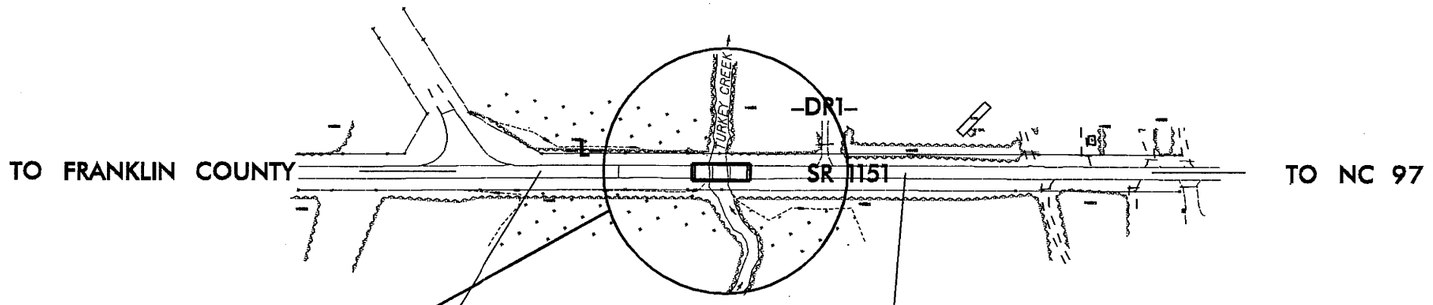
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4210	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33556.1.1	BRZ-1151(4)	P.E.
33556.3.1	BRZ-1151(4)	ROW, UTIL

LOCATION: BRIDGE NO. 95 OVER TURKEY CREEK ON SR 1151

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

BUFFER PERMIT



SITE 1

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

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 730
ADT 2028 = 1050
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% + DUAL 2%
** DESIGN EXCEPTION REQUIRED FOR THE SAG VERTICAL CURVE (50 MPH)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4210	=	0.105 MI
LENGTH STRUCTURES TIP PROJECT B-4210	=	0.019 MI
TOTAL LENGTH TIP PROJECT B-4210	=	0.124 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2007

LETTING DATE: JUNE 17, 2008

BRENDA MOORE, P.E.
PROJECT ENGINEER

THAD F. DUNCAN, P.E.
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.

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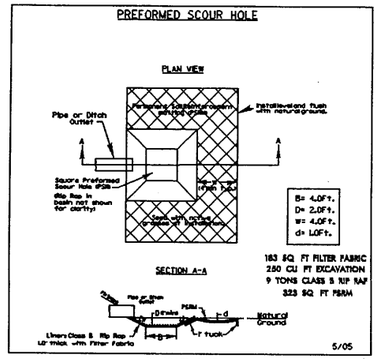
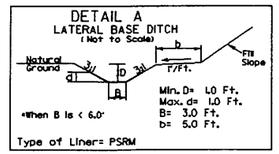
rlassiter AT HY221542

Buffer Drawing



STA. 10+50 -L- LT.

183 SQ FT FILTER FABRIC
250 CU FT EXCAVATION
9 TONS CLASS B RIP RAP
323 SQ FT PSRM



FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY

B-4210 | 4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

REVISIONS

REVISING ROW, TCE, & PDE ON PARCELS 1 (KIRK STRICKLAND), 2 (DONNIE R. CONE), & 3 (MANUEL C. CARTER, JR.) 8/21/07 RWB

CAROLINA POWER AND LIGHT COMPANY EASEMENT

BEGIN CONSTRUCTION
-L- STA. 9+50.00

STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210

CL OF CREEK IS PROPERTY LINE
TURKEY CREEK

-DR1- POT Sta. 10+00.00

KIRK STRICKLAND
1

PCSta. 11+88.98
PTSta. 12+91.97

3' LATERAL BASE DITCH W/PSRM SEE DETAIL 'A'

BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00

MANUEL C. CARTER, JR.
3

END CONSTRUCTION
-L- STA. 18+10.00

END MIN. RESURF. DEPTH
-L- STA. 17+00.00

CAROLYN C. BRYANT
JANET LOU CONE CURTIS
GLADYS B. LAMM, HEIRS
MANUEL C. CARTER, JR.

+98 EX. R/W
+45 59' & PROF. R/W
PSH SEE DETAIL
SR 1160 27' BST
65' X 65' SIGHT DIST.
70'
80'
EXISTING R/W
65' GRAVEL RD.
BST
WOODS
15" CSP W/ELBOW
15" RCP
CL B RIP RAP
10 CONC. DR.
15" CSP W/ELBOWS
GRAY 430
EXISTING R/W
30" CMP
HTR
6' CHL
L32' EIP TO R/W
11' GRAVEL DR.
12' GRAVEL DR.
10' GRAVEL DR.
12' GRAVEL DR.
0.07' R/W TO EIP
15" RCP
20' CONC. DR.
22' CONC. DR.
13' GRAVEL DR.
20' BST SR 1151
0.32' R/W TO EIP
0.13' EIP TO R/W
EIP
S 57°08'51" E
101.37'
46.50'
53.79'
N 23°07'38" E
119.29'
N 23°15'52" E
6.38' EIP TO R/W
N 23°52'44" E
171.92'
S 46°02'49" W
104.89'
S 44°59'38" W
26.12'
201.01'
S 53°42'44" E
S 30°05'59" W
385.58'
S 03°52'24" W
230.62'

BARBARA KAY JOHNSON CONE

KIRK STRICKLAND
1

DONNIE R. CONE
2

-DR1- POT Sta. 10+84.39
-L- POT STA. 15+21.08

DONNIE R. CONE

DAVID A. RIDGWAY

S 00°25'53" W
707.44'

TURKEY CREEK
CL OF CREEK IS PROPERTY LINE

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

STA. 16+55.00 -L-
END STATE PROJECT B-4210

FOR -L- PROFILE SEE SHEET 5
FOR -DR1- PROFILE SEE SHEET 5
FOR STRUCTURE SEE SHEETS S1-SX

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mdavis

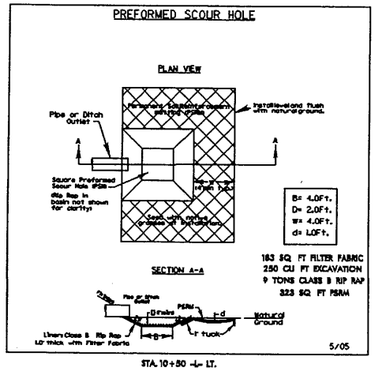
Buffer Drawing
Sheet 4 of 5

B-4210	4
NW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

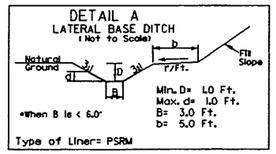
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/21 REVISING ROW, TCE. & PDE ON PARCELS 1 (KIRK STRICKLAND), 2 (DONNIE R. CONE), & 3 (MANUEL C. CARTER, JR.) 8/21/07 RWB



STA. 10+50 -L- LT.



FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY

NAD 83

STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210

15

CAROLINA POWER AND LIGHT COMPANY EASEMENT

BEGIN CONSTRUCTION
-L- STA. 9+50.00

CL OF CREEK IS PROPERTY LINE
TURKEY CREEK
-DRI- POT Sta. 10+00.00

KIRK STRICKLAND (1)

PCSta. 11+88.98
PTSta. 12+91.97

3' LATERAL BASE DITCH W/PSRM SEE DETAIL 'A'

BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00

MANUEL C. CARTER, JR. (3)

END CONSTRUCTION
-L- STA. 18+10.00

END MIN. RESURF. DEPTH
-L- STA. 17+00.00

CAROLYN C. BRYANT
JANET LOU CONE CURTIS
GLADYS B. LAMM, HEIRS
MANUEL C. CARTER, JR.

BARBARA KAY JOHNSON CONE
KIRK STRICKLAND (1)
DONNIE R. CONE (2)
DAVID A. RIDGWAY

-DRI- POT Sta. 10+84.39
-L- POT STA. 15+21.08

TURKEY CREEK
CL OF CREEK IS PROPERTY LINE

ASEMENT

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

STA. 16+55.00 -L-
END STATE PROJECT B-4210

FOR -L- PROFILE SEE SHEET 5
FOR -DRI- PROFILE SEE SHEET 5
FOR STRUCTURE SEE SHEETS S1-SX

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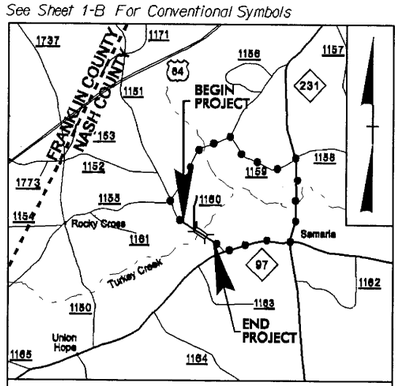
rbell

Buffer Drawing
Sheet 5 of 5

09/08/99

TIP B-4210

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



VICINITY MAP

OFFSITE DETOUR

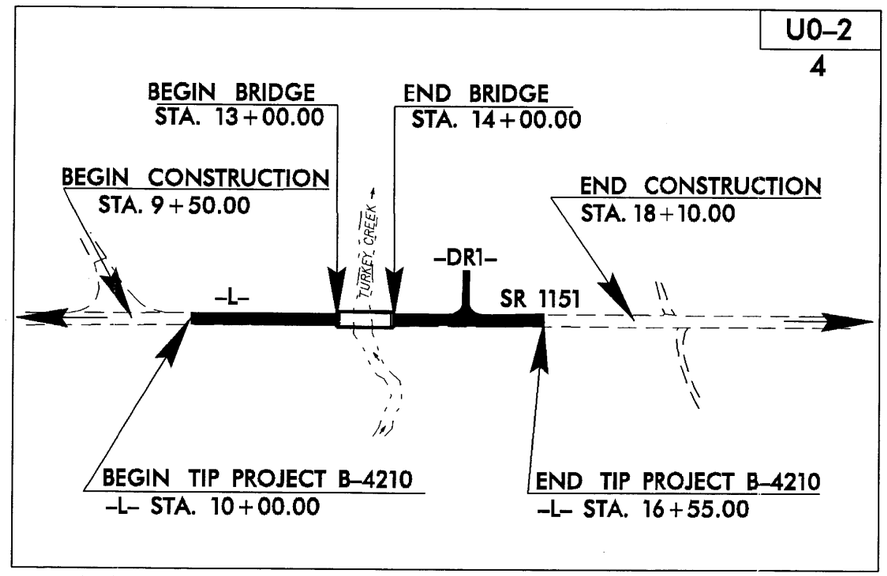
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
B-4210	PO-1

PERMIT DRAWING
NASH COUNTY

LOCATION: BRIDGE NO. 95 OVER TURKEY CREEK ON SR 1151

TYPE OF WORK: UTILITIES



NAD 83

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
PO-1	TITLE SHEET
PO-2	PERMIT DRAWING

UTILITY OWNERS ON PROJECT

(1) PROGRESS ENERGY
(2) EMBARQ
(3) TIME WARNER

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Steve Mckee, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
Alonna Yancey — UTILITIES PROJECT DESIGNER

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	11+12 TO 12+86	POWER LINE					0.017					
TOTALS:							0.017					

4 square feet of fill in wetlands due to relocation of one power pole

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

COUNTY
WBS 33556.1.1 (B-4210)

SHEET 12/7/2007

ATN Revised 3/31/05

UTILITY BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE		IMPACT ALLOWABLE			MITIGABLE		BUFFER REPLACEMENT			
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1	ZONE 2	TOTAL	(ft2)	TOTAL	ZONE 1	ZONE 2	(FT.2)
2	POWER LINE	12 + 72 TO 12 + 99			X		310	310					
5	POWER LINE	14 + 03 TO 14 + 23			X		306.2	306.2					
TOTAL								616.2	(ft.2)				
3	POWER LINE	12 + 99 TO 13 + 43			X	599.44		599.44					
4	POWER LINE	13 + 69 TO 14 + 03			X	506.51		506.51					
TOTAL:								1105.95	(ft.2)				

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

NASH COUNTY
PROJECT: 33556.1.1 B-4210

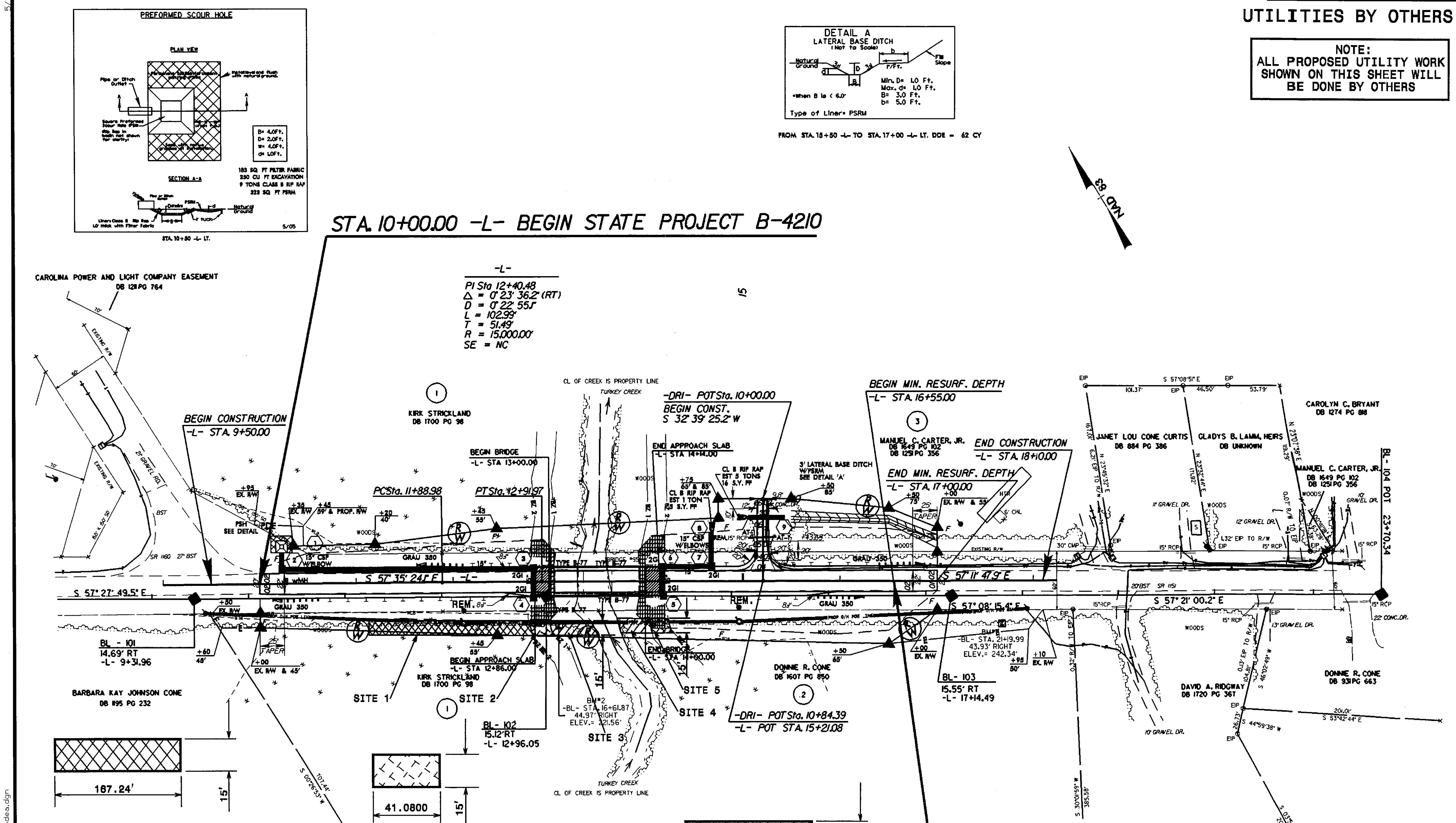
11/14/2007

SHEET OF

PROJECT REFERENCE NO.	SHEET NO.
B-4210	PO-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



PREFORMED SCOUR HOLE
PLAN VIEW
SECTION A-A
B= 4.0Ft.
D= 2.0Ft.
W= 4.0Ft.
d= 1.0Ft.
183 SQ. FT FILTER FABRIC
250 CU. FT EXCAVATION
9 TONS CLASS B RIP RAP
323 SQ. FT PSRM
STA. 10+80 -L- LT.
DETAIL A
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft.
Type of Liner= PSRM
FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY
NAD 83
STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210
CAROLINA POWER AND LIGHT COMPANY EASEMENT
DB 1211 PG 764
-L-
PI Sta 12+40.48
Δ = 0° 23' 36.2" (RT)
D = 0° 22' 55.1"
L = 102.99'
T = 51.49'
R = 15,000.00'
SE = NC
CL OF CREEK IS PROPERTY LINE
TURKEY CREEK
-DRI- POT Sta. 10+00.00
BEGIN CONST.
S 32° 39' 25.2" W
BEGIN MIN. RESURF. DEPTH
-L- STA 16+55.00
BEGIN CONSTRUCTION
-L- STA 9+50.00
KIRK STRICKLAND
DB 1700 PG 98
BEGIN BRIDGE
-L- STA 13+00.00
END APPROACH SLAB
-L- STA 14+14.00
3' LATERAL BASE DITCH
W/PSRM
SEE DETAIL 'A'
MANUEL C. CARTER, JR.
DB 1649 PG 102
DB 1251 PG 356
END CONSTRUCTION
-L- STA 18+10.00
END MIN. RESURF. DEPTH
-L- STA 17+00.00
JANET LOU CONE CURTIS
DB 884 PG 386
GLADYS B. LAMM, HEIRS
DB UNKNOWN
CAROLYN C. BRYANT
DB 1274 PG 818
BL-104 POT 23+70.34
PC Sta. 11+88.98
PT Sta. 12+91.97
PSH
SEE DETAIL
S 57° 35' 24.1" E
S 57° 27' 49.5" E
S 57° 11' 47.9" E
S 57° 08' 15.4" E
S 57° 21' 00.2" E
S 57°08'51" E
SR 1160
SR 1151
BL - 101
14.69' RT
-L- 9+31.96
BARBARA KAY JOHNSON CONE
DB 1195 PG 232
BEGIN APPROACH SLAB
-L- STA 12+86.00
SITE 1
SITE 2
SITE 3
SITE 4
SITE 5
BL- 102
15.12' RT
-L- 12+96.05
BM#2
-BL- STA. 16+61.87
44.97' RIGHT
ELEV.= 221.56'
END BRIDGE
-L- STA 14+00.00
DONNIE R. CONE
DB 1607 PG 850
-DRI- POT Sta. 10+84.39
-L- POT STA. 15+21.08
BM#3
-BL- STA. 21+19.99
43.93' RIGHT
ELEV.= 242.34'
BL- 103
15.55' RT
-L- 17+14.49
DAVID A. RIDGWAY
DB 1720 PG 367
DONNIE R. CONE
DB 931 PG 663
STA. 16+55.00 -L-
END STATE PROJECT B-4210

167.24' — 15'

DENOTE IMPACT AREA
IN WETLAND FOR PROPOSED
POWER POLE LINE
AREA = 0.0576 ACRES
(NON - MECHANIZED CLEARING)

41.0800 — 15'

DENOTE IMPACT AREA
IN BUFFER ZONE BZ 2 FOR
PROPOSED POWER POLE LINE
AREA = 658.43 SQ.FT.
(NON - MECHANIZED CLEARING)

73.73' — 15'

DENOTE IMPACT AREA
IN BUFFER ZONE BZ 1 FOR
PROPOSED POWER POLE LINE
AREA = 1,447 SQ.FT.
(NON - MECHANIZED CLEARING)

SBG: SHOULDER BERM GUTTER
BEGIN SBG 12+83 TO BEGIN BRIDGE LT & RT.
BEGIN SBG END BRIDGE TO 15+00 LT.
BEGIN SBG END BRIDGE TO 15+65 RT.

5/14/99

05-NOV-2007 10:58
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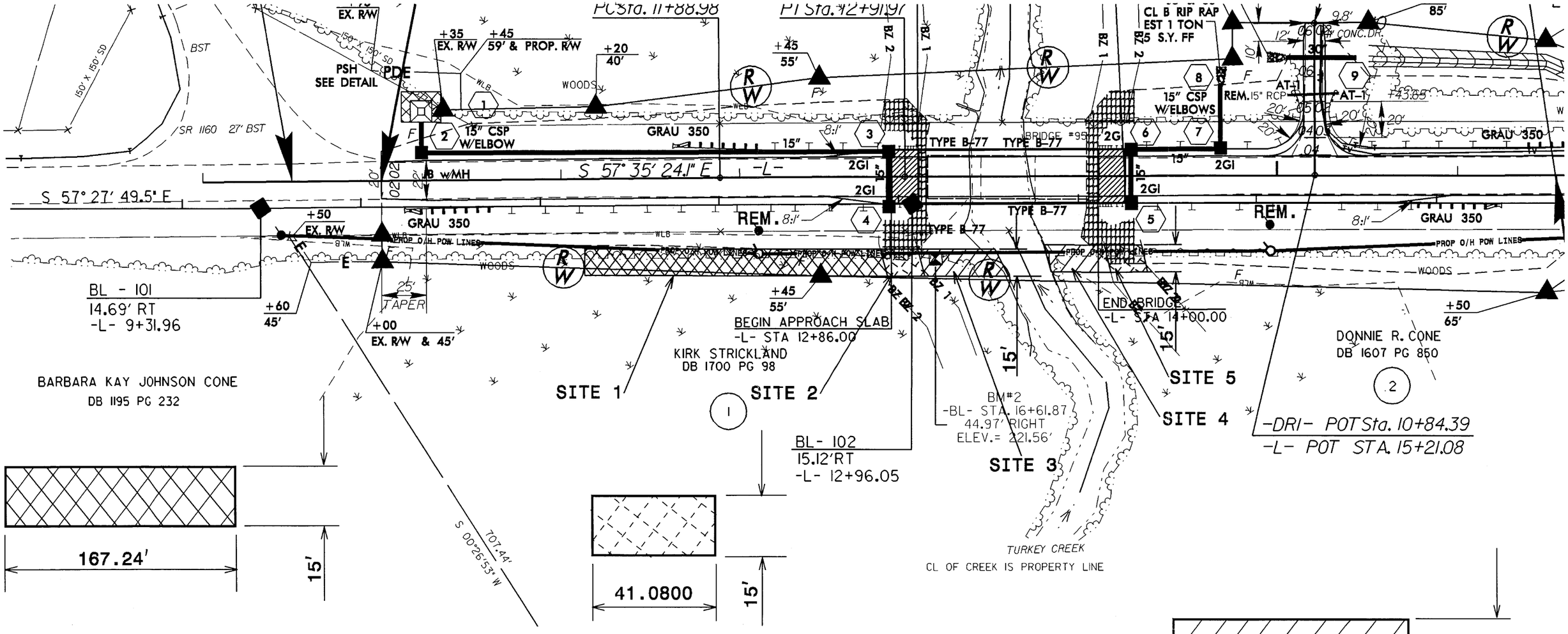
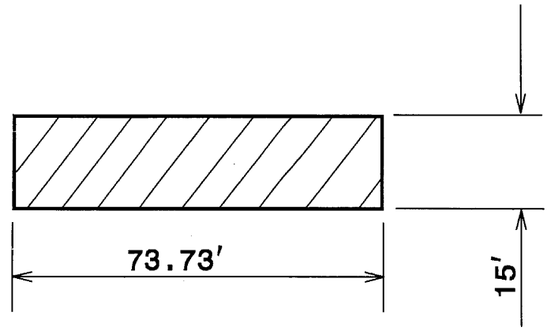


DENOTE IMPACT AREA
IN WETLAND FOR PROPOSED
POWER POLE LINE
AREA = 0.0576 ACRES
(NON - MECHANIZED CLEARING)

DENOTE IMPACT AREA
IN BUFFER ZONE BZ 2 FOR
PROPOSED POWER POLE LINE
AREA = 658.43 SQ.FT.
(NON - MECHANIZED CLEARING)

SBG: SHOULDER BERM GUTTER

BEGIN SBG 12+83 TO BEGIN BRIDGE LT & RT.
BEGIN SBG END BRIDGE TO 15+00 LT.
BEGIN SBG END BRIDGE TO 15+65 RT.

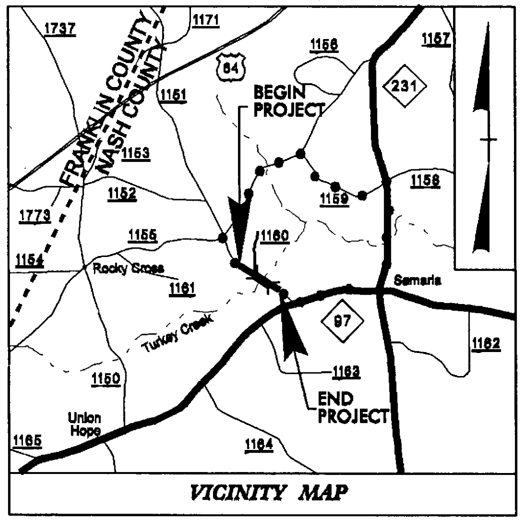


DENOTE IMPACT AREA
IN BUFFER ZONE BZ 1 FOR
PROPOSED POWER POLE LINE
AREA = 1,447 SQ.FT.
(NON - MECHANIZED CLEARING)

TIP PROJECT: B-4210

CONTRACT: C201854

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



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

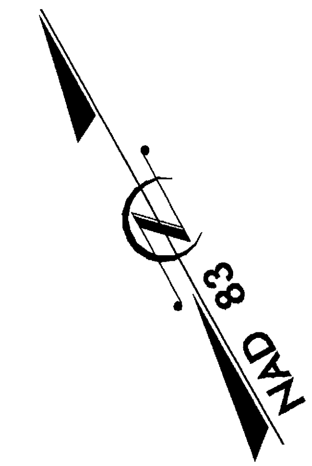
NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4210	1	

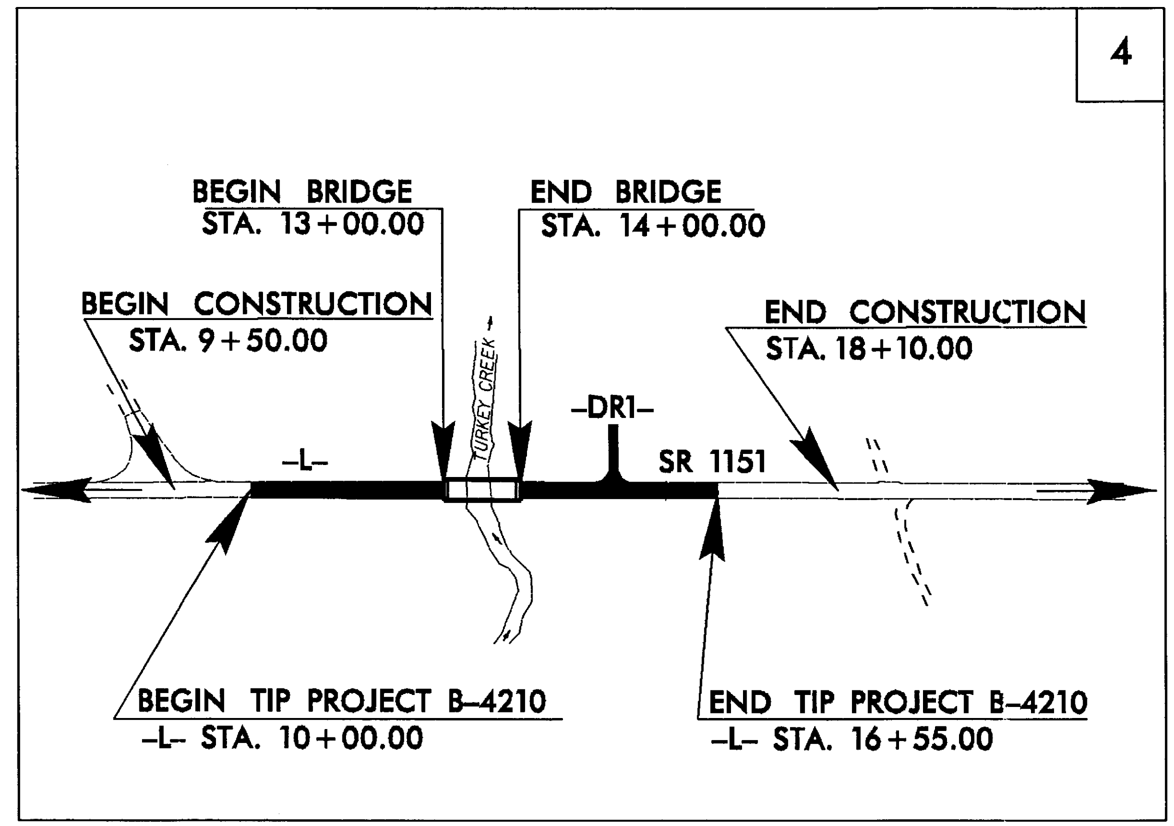
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33556.1.1	BRZ-1151(4)	P.E.
33556.3.1	BRZ-1151(4)	ROW, UTIL

LOCATION: BRIDGE NO. 95 OVER TURKEY CREEK ON SR 1151

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



TO FRANKLIN COUNTY



TO NC 97

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 730
ADT 2028 = 1050
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% + DUAL 2%

** DESIGN EXCEPTION REQUIRED FOR THE SAG VERTICAL CURVE (50 MPH)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4210 = 0.105 MI
LENGTH STRUCTURES TIP PROJECT B-4210 = 0.019 MI
TOTAL LENGTH TIP PROJECT B-4210 = 0.124 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2007
BRENDA MOORE, P.E. PROJECT ENGINEER

LETTING DATE: JUNE 17, 2008
THAD F. DUNCAN, P.E. 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.

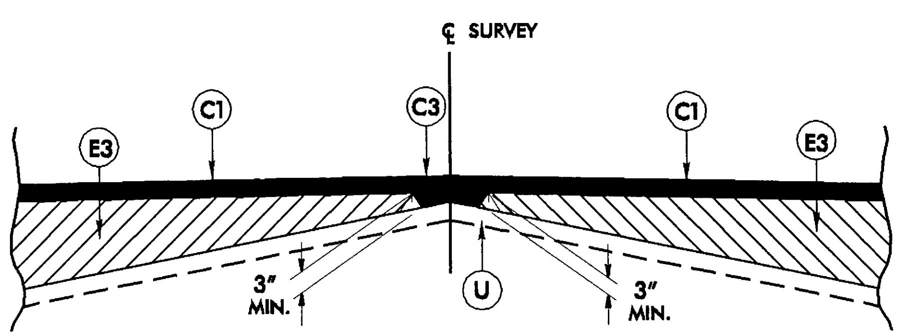
PROJECT REFERENCE NO.	SHEET NO.
B-4210	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

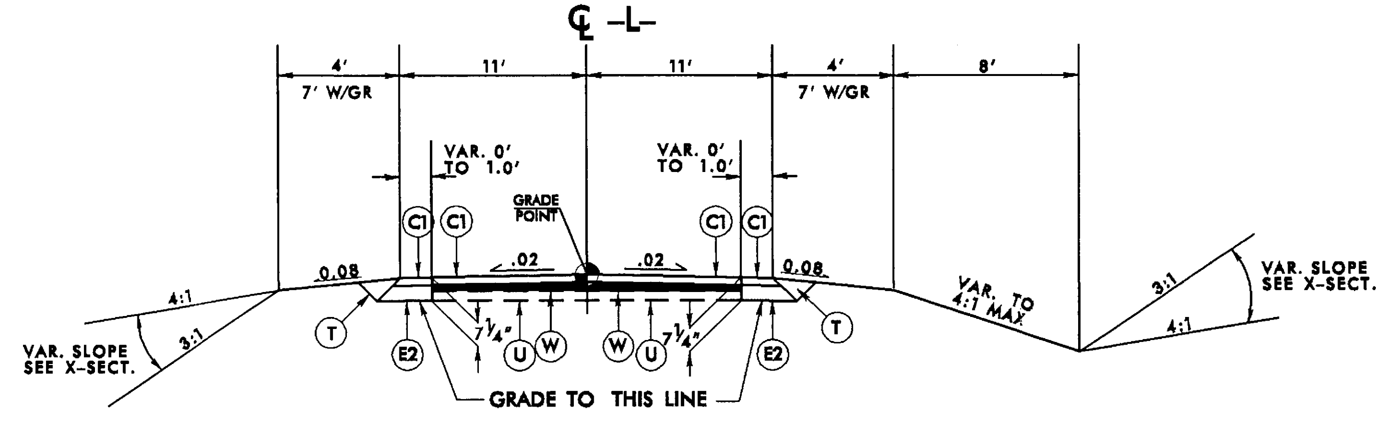
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

A1	6" JOINTED CONCRETE REINFORCED WITH WIRE MESH.
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 4" AGGREGATE BASE COURSE.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET.)

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



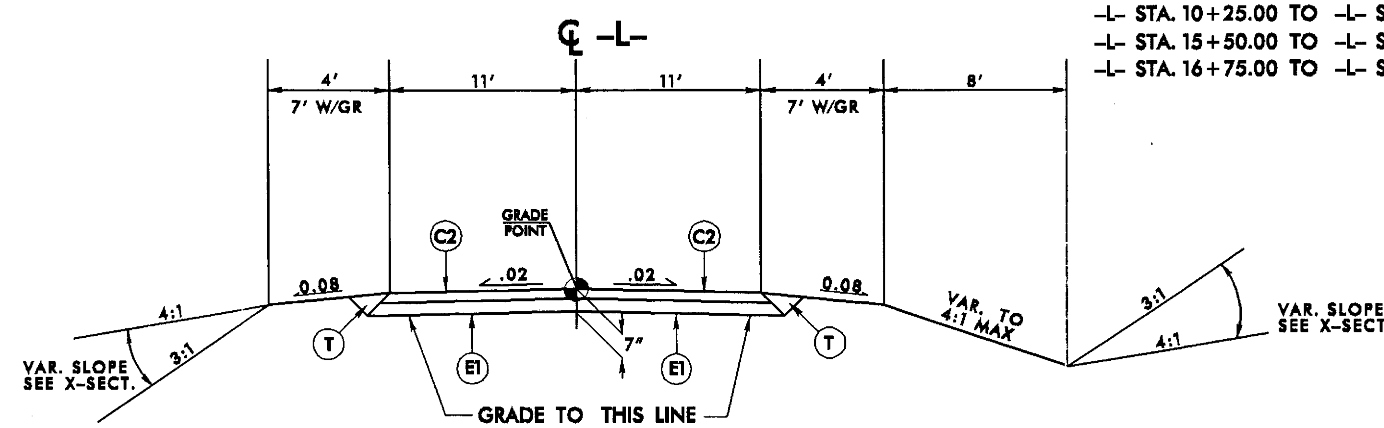
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

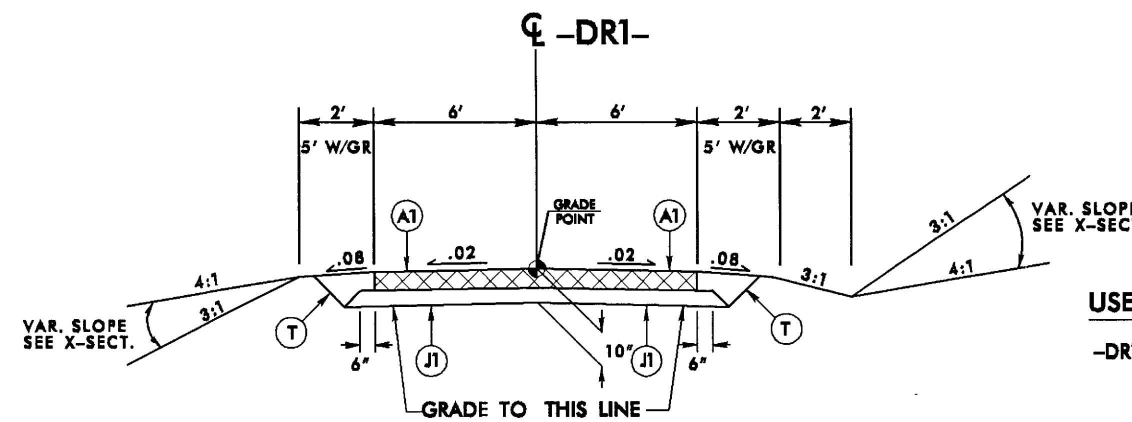
-L- STA. 10+00.00 TO -L- STA. 10+25.00 TAPER FROM EXIST.
-L- STA. 10+25.00 TO -L- STA. 12+50.00
-L- STA. 15+50.00 TO -L- STA. 16+75.00
-L- STA. 16+75.00 TO -L- STA. 17+00.00 TAPER TO EXIST.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

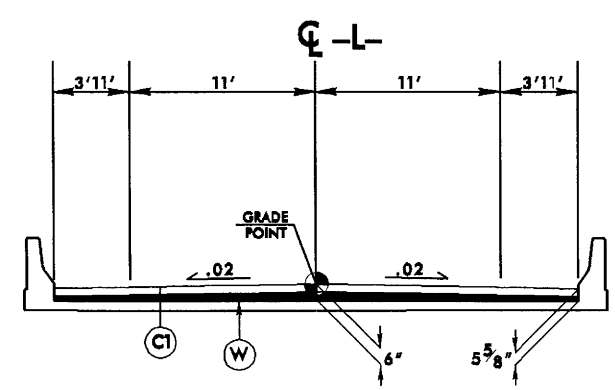
-L- STA. 12+50.00 TO -L- STA. 13+00.00 (BEG. BRIDGE)
-L- STA. 14+00.00 (END BRIDGE) TO -L- STA. 15+50.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-DR1- STA. 10+00.00 TO -DR1- STA. 10+53.59



TYPICAL BRIDGE DETAIL NO. 1

-L- STA. 13+00.00 TO STA. 14+00.00

6/2/99

21-SEP-2007 08:11
r:\roadway\proj\b4210_rdy_typ.dgn
$$$$USERNAME$$$$

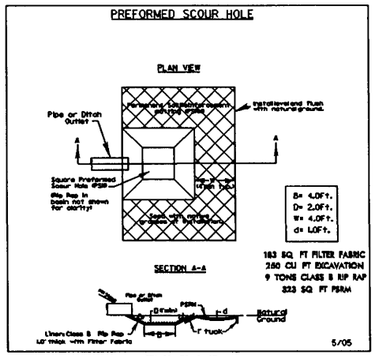
8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4210	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

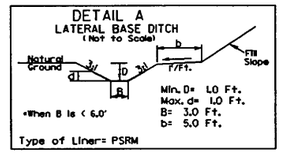
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PREFORMED SCOUR HOLE



STA. 10+50 -L- LT.

DETAIL A
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 15+50 -L- TO STA. 17+00 -L- LT. DDE = 62 CY

NAD 83

CAROLINA POWER AND LIGHT COMPANY EASEMENT
DB 1218 PG 764

STA. 10+00.00 -L- BEGIN STATE PROJECT B-4210

-L-
PI Sta 12+40.48
Δ = 0° 23' 36.2" (RT)
D = 0° 22' 55.1"
L = 102.99'
T = 51.49'
R = 15,000.00'
SE = NC

15

BEGIN CONSTRUCTION
-L- STA. 9+50.00

CL OF CREEK IS PROPERTY LINE

-DRI- POT Sta. 10+00.00
BEGIN CONST.
S 32° 39' 25.2" W

BEGIN MIN. RESURF. DEPTH
-L- STA. 16+55.00

END CONSTRUCTION
-L- STA. 18+10.00

END MIN. RESURF. DEPTH
-L- STA. 17+00.00

KIRK STRICKLAND
DB 1700 PG 98

BEGIN BRIDGE
-L- STA 13+00.00

END APPROACH SLAB
-L- STA 14+14.00

3' LATERAL BASE DITCH W/PSRM SEE DETAIL 'A'

MANUEL C. CARTER, JR.
DB 1649 PG 102
DB 1251 PG 356

CAROLYN C. BRYANT
DB 1274 PG 868

JANET LOU CONE CURTIS
DB 884 PG 386

GLADYS B. LAMM, HEIRS
DB UNKNOWN

PC Sta. 11+88.98

PT Sta. 12+91.97

BL - 104 POT 23+70.34

BL - 101
14.69' RT
-L- 9+31.96

BARBARA KAY JOHNSON CONE
DB 1195 PG 232

BEGIN APPROACH SLAB
-L- STA 12+86.00

KIRK STRICKLAND
DB 1700 PG 98

BM#2
-BL- STA. 16+61.87
44.97' RIGHT
ELEV.= 221.56'

BL - 102
15.12' RT
-L- 12+96.05

END BRIDGE
-L- STA 14+90.00

DONNIE R. CONE
DB 1607 PG 850

-DRI- POT Sta. 10+84.39
-L- POT STA. 15+21.08

BL - 103
15.55' RT
-L- 17+14.49

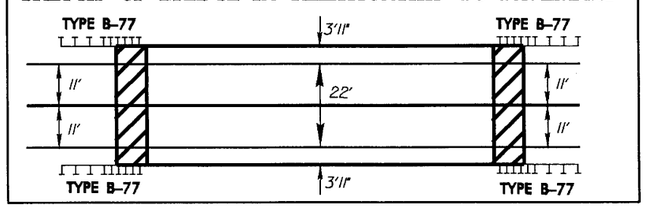
BM#E
-BL- STA. 21+19.99
43.93' RIGHT
ELEV.= 242.34'

DAVID A. RIDGWAY
DB 1720 PG 367

DONNIE R. CONE
DB 931 PG 663

TURKEY CREEK
CL OF CREEK IS PROPERTY LINE

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT



SBG: SHOULDER BERM GUTTER
BEGIN SBG 12+83 TO BEGIN BRIDGE LT & RT.
BEGIN SBG END BRIDGE TO 15+00 LT.
BEGIN SBG END BRIDGE TO 15+65 RT.

STA. 16+55.00 -L-
END STATE PROJECT B-4210

FOR -L- PROFILE SEE SHEET 5
FOR -DRI- PROFILE SEE SHEET 5
FOR STRUCTURE SEE SHEETS S1-SX

21-SEP-2007 08:39
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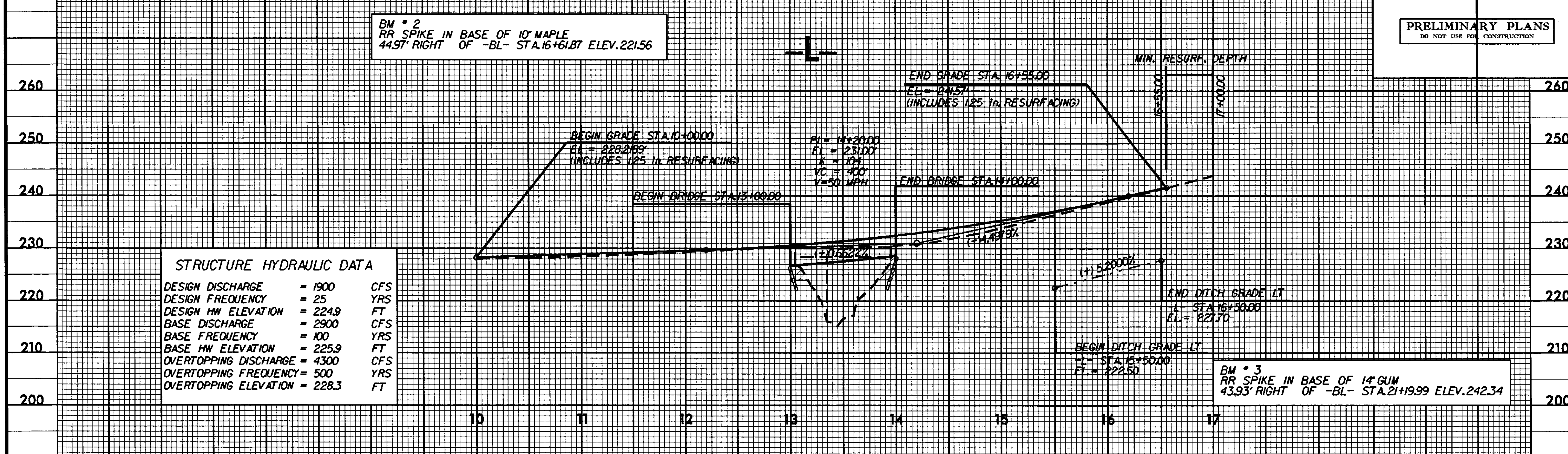
PROJECT REFERENCE NO.	SHEET NO.
B-4210	5

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

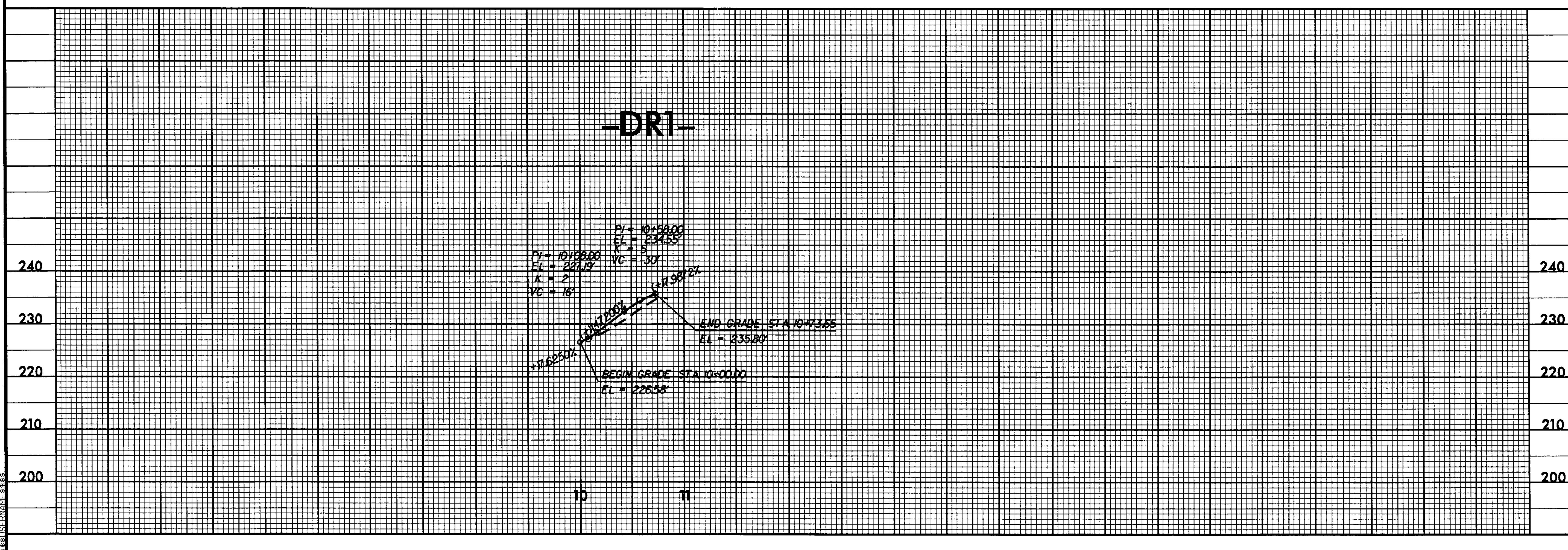
5/28/99



BM • 2
RR SPIKE IN BASE OF 10" MAPLE
44.97' RIGHT OF -BL- STA.16+61.87 ELEV.221.56
-L-
MIN. RESURF. DEPTH
END GRADE STA. 16+55.00
EL = 241.57'
(INCLUDES 1.25 In. RESURFACING)
16+55.00
17+00.00
BEGIN GRADE STA.10+00.00
EL = 228.2189'
(INCLUDES 1.25 In. RESURFACING)
PI = 14+20.00
EL = 231.00'
K = 104
VC = 400'
V=50 MPH
BEGIN BRIDGE STA.13+00.00
END BRIDGE STA.14+00.00
(+)0.6522%
(+)4.4979%
(+)5.2000%
END DITCH GRADE LT
-L- STA.16+50.00
EL = 227.70
BEGIN DITCH GRADE LT
-L- STA.15+50.00
EL = 222.50
BM • 3
RR SPIKE IN BASE OF 14" GUM
43.93' RIGHT OF -BL- STA.21+19.99 ELEV.242.34
260
250
240
230
220
210
200
10
11
12
13
14
15
16
17

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1900	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	224.9	FT
BASE DISCHARGE	=	2900	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	225.9	FT
OVERTOPPING DISCHARGE	=	4300	CFS
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING ELEVATION	=	228.3	FT



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