



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 21, 2006

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTENTION: Mr. Steve Lund
NCDOT Coordinator

SUBJECT: **Nationwide Permit 23 and 33 Applications** for the proposed replacement of Bridge No. 116 over Third Creek on SR 1521 (Lippard Farm Road) in Iredell County. Federal Aid Project No. BRZ-1521(4), State Project No. 8.2822401, WBS Element 33503.1.1, Division 12, TIP No. B-4155.

Dear Sir:

Please see the enclosed Pre-Construction Notification (PCN), Ecosystem Enhancement Program mitigation acceptance letter, Programmatic Categorical Exclusion, permit drawings and design plans for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace the 81-foot, two-span Bridge No. 116 with a new 105-foot, two-span, cored slab bridge. The existing bridge will be replaced in place on the existing alignment, with an off-site detour. There is one jurisdictional wetland within the project area. This project will result in 0.005 acre of permanent wetland impacts due to excavation and mechanized clearing in addition to 0.0004 acre of permanent surface water impacts due to the construction of the new bent. There will be 0.018 acre of temporary surface water impacts due to the temporary causeway/ditch tie-in.

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

IMPACTS TO WATERS OF THE UNITED STATES

General Description:

The water resource impacted for project B-4155 is Third Creek. Third Creek is located in the Yadkin-Pee Dee River basin (DWQ subbasin 03-07-06). The DWQ Index number for this section of Third Creek is 12-108-20-4 and the Hydrological Cataloguing Unit is 03040102. The North Carolina Department of Environment and Natural Resources classifies Third Creek as "Class C". There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, WS-II, or watershed Critical Area (CA), within 1 mile upstream or downstream of the project study area.

Permanent Impacts:

There will be a total of 0.005 acre of permanent impacts to wetlands. These impacts are due to excavation and mechanized clearing for the workpad. There will be 0.0004 acre of permanent stream impacts from the two drill shafts of the new bent.

Temporary Impacts:

There will be 0.018 acre of temporary impacts in Third Creek. These impacts are due to the temporary causeway/ditch tie-in. There will be no temporary wetland impacts.

Bridge Demolition:

The existing bridge is a two-lane beam type structure, of two spans with an overall length of 81 feet, and a roadway width of 19 feet. It was constructed in 1956 and spans approximately 40 feet of stream. The existing bridge has an asphalt wearing surface. The superstructure is a timber floor and deck on steel I-beams. The substructure consists of all timber components. The asphalt surface will be removed prior to demolition. The remainder of the bridge will be removed without dropping it into Waters of the U.S. All measures will be taken to avoid any temporary fill from entering Waters of the U.S. NCDOT shall adhere to Best Management Practices for the protection of Surface Waters, as supplemented with Best Management Practices for Bridge Demolition and Removal.

Utility Impacts:

There will be no jurisdictional impacts associated with relocation of utility lines on the project site. Existing utilities will be spanned aerially or directionally bored. In addition, there will be no relocation of water or sewer lines due to the construction on this project site.

Schedule:

The project schedule calls for a May 15, 2007 LET date with a date of availability on June 26, 2007.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), Proposed Threatened (PT), are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of August 9, 2006, the United States Fish and Wildlife Service lists one federally protected species for Iredell County (**Table 1**). A description of this species is provided in the referenced CE document. The Bog Turtle is listed as Proposed Threatened due to similarity of appearance to other rare species that are listed for protection. This species is not biologically endangered or threatened and is not subject to Section 7 consultation. Therefore, no biological conclusion is required.

Table 1. Federally Protected Species for Iredell County.

Common Name	Scientific Name	Status	Biological Conclusion
Bog turtle	<i>Clemmys muhlenbergii</i>	T(S/A)	N/A

KEY:

Status Definition
T(S/A) - Threatened due to similarity of appearance - a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

AVOIDANCE, MINIMIZATION AND MITIGATION

Avoidance and Minimization:

NCDOT has minimized impacts to the fullest extent practicable. An off-site detour will be used to avoid construction of a temporary on-site structure. Water will not be directly discharged into Third Creek via deck drains. Best Management Practices will be followed as outlined in “NCDOT’s Best Management Practices for Construction and Maintenance Activities”.

Mitigation:

The Ecosystem Enhancement Program (EEP) will provide wetland mitigation for the 0.005 acre of wetland impacts. (Please see attached EEP Mitigation Acceptance Letter dated August 1, 2006.)

REGULATORY APPROVALS

Section 404 Permit:

It is anticipated that the temporary dewatering of Third Creek be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing the temporary dewatering of Third Creek. All other 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 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit:

We anticipate 401 General Certification numbers 3403 and 3366 will apply to this project. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their records.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Erin Schubert at ekschubert@dot.state.nc.us or (919) 715-5529.

Sincerely,



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

Cc: W/attachment

Mr. John Hennessy, NCDWQ (2 Copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. M.L. Holder, P.E. Division Engineer
Ms. Trish Simon, DEO

W/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Carl Goode, PE, Human Environment Unit Head
Mr. Dennis Pipkin, P.E., PDEA Project Planning Engineer

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: NW 23 and NW 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: ekschubert@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: B-4155, Replacement of Bridge 116 carrying SR 1521 over Third Creek
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4155
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Iredell Nearest Town: Statesville
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): See attached permit drawings.
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°48'33.17" °N 81°00'06.88" °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Fourth Creek
8. River Basin: Yadkin – Pee Dee
(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: General land use is 60% agriculture, 20% residential, 10% urban and 10% forested.

10. Describe the overall project in detail, including the type of equipment to be used: The project entails replacement of a substandard structure. Backhoes, bulldozers, cranes and other heavy machinery will be used.

11. Explain the purpose of the proposed work: To replace existing, obsolete 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. JD requested for this project 9/6/01. JD received 9/27/01 (action ID#200131375)

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.

N/A

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: In order to accommodate the construction of a temporary workpad, there will be 0.001 acre of wetland excavation and 0.004 acre of mechanized clearing in wetlands (for a total of 0.005 acre of permanent wetland impacts). Construction of the new bent will result in 0.0004 acre of permanent SW impacts as a result of the two new drill shafts. Due to a temporary causeway/ditch tie-in there will be 0.018 acre of temporary SW 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)
2	Excavation (0.001acre) and mechanized clearing (0.004acre)	Riparian	Yes	adjacent	0.005
Total Wetland Impact (acres)					0.005

3. List the total acreage (estimated) of all existing wetlands on the property: 0.02 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)
1	Third Creek	Temporary SW from temp. causeway/ditch tie-in	Perennial	20 ft	74	0.018
New bridge bent	Third Creek	Permanent SW from drill shafts of new bent	Perennial	20 ft.	N/A	0.0004
Total Permanent Stream Impact (by length and acreage)					N/A	0.0004

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)
No open water impacts				
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.018 acre temporary 0.0004 acre permanent (new bent)
Wetland Impact (acres):	0.005 acre permanent (workpad)
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.018 acre temporary 0.0054 acre permanent (workpad and bent)
Total Stream Impact (linear feet):	74 ft 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.

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.): _____

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. The bridge will be replaced in place with an offsite detour. No deck drains will be used. Best Management Practices will be followed.

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.

EEP will be handling 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): _____

Amount of buffer mitigation requested (square feet): _____

Amount of Riparian wetland mitigation requested (acres): 0.005 acre _____

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. Impervious surfaces will not significantly increase as a result of this project. There will be no deck drains installed. NCDOT's Best Management Practices will be followed throughout the construction of the project.

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/nwetlands>. If no, please provide a short narrative description:
The new bridge will be constructed in approximately the same location and alignment as the old bridge.

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



8-25-06

Applicant/Agent's Signature

Date

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



August 1, 2006

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4155, Replace Bridge Number 116 over Third Creek on SR 1521,
Iredell County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riparian wetland mitigation for the subject project. Based on the information supplied by you in a letter dated July 7, 2006, and additional information provided on August 1, 2006, the impacts are located in CU 03040102 of the Yadkin River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Riparian Wetlands: 0.005 acre

Mitigation for this project will be provided in accordance with the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers signed on July 22, 2003. EEP will commit to implementing sufficient compensatory riparian wetland mitigation to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impacts amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Steve Lund, USACE-Asheville
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-4155

Restoring... Enhancing... Protecting Our State



CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>B-4155</u>
State Project No.	<u>8.2822401</u>
Federal Project No.	<u>BRZ-1521(4)</u>

A. Project Description:

NCDOT will replace Bridge No.116 on SR 1521, over Third Creek, in Iredell County. Replacement will be at approximately the same location with a new bridge 105 feet in length and 30 feet in width. The new bridge will have a 24 foot travelway. The offset of the bridge will be 3 feet on each side.

The approach paved roadway will be 24 feet in width. Turf shoulders will be 8 feet in width. Shoulder width will be increased by at least 3 feet where guardrail is warranted.

Traffic will be detoured over existing secondary roads.

B. Purpose and Need: Replace obsolete bridge.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
 - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
 - b. Widening roadway and shoulders without adding through lanes
 - c. Modernizing gore treatments
 - d. Constructing lane improvements (merge, auxiliary, and turn lanes)
 - e. Adding shoulder drains
 - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
 - g. Providing driveway pipes
 - h. Performing minor bridge widening (less than one through lane)

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

- a. Installing ramp metering devices
- b. Installing lights
- c. Adding or upgrading guardrail
- d. Installing safety barriers including Jersey type barriers and pier protection
- e. Installing or replacing impact attenuators
- f. Upgrading medians including adding or upgrading median barriers
- g. Improving intersections including relocation and/or realignment
- h. Making minor roadway realignment
- i. Channelizing traffic
- j. Performing clear zone safety improvements including removing hazards and flattening slopes
- k. Implementing traffic aid systems, signals, and motorist aid
- l. Installing bridge safety hardware including bridge rail retrofit

3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

- a. Rehabilitating, reconstructing, or replacing bridge approach slabs
- b. Rehabilitating or replacing bridge decks
- c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
- d. Replacing a bridge (structure and/or fill)

- 4. Transportation corridor fringe parking facilities.
- 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.

D. Special Project Information

Estimated Costs:

Total Construction Cost	\$1,100,000
Right-of-Way and Utilities	<u>57,000</u>
Total Project Cost	\$1,157,000

Estimated Traffic:

Current - 1400 VPD
Year 2025 - 2600 VPD

Proposed Typical Roadway Section:

The approach roadway will be 24 feet wide with at least an 8 foot grassed shoulder on each side. Shoulder width will be increased to at least 3 feet where guardrail is warranted.

Design Speed:

The design speed will be 50 mph.

Functional Classification:

SR 1521 is classified as a Rural Local facility in the Statewide Functional Classification System.

Division Office Comments:

The Division Engineer supports road closure and replacement at the existing location.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions.

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(2) Does the project involve any habitat where federally listed endangered or threatened species may occur?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Will the project require use of U. S. Forest Service lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(7) Does the project involve waters classified as Outstanding Resource Waters (ORW) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

PERMITS AND COORDINATION

YES **NO**

- (10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)? X
- (11) Does the project involve Coastal Barrier Resources Act resources? X
- (12) Will a U. S. Coast Guard permit be required? X
- (13) Will the project result in the modification of any existing regulatory floodway? X
- (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?
- (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?
- (26) Is there substantial controversy on social, economic and environmental grounds concerning aspects of the action?
- (27) Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?
- (28) Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?
- (29) Will the project affect any archaeological remains which are important to history or pre-history?
- (30) Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)?
- (31) Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?
- (32) Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the natural Wild and Scenic Rivers?

F. Additional Documentation Required for Unfavorable Responses in Part E

None.

G. CE Approval

TIP Project No.	<u>B-4155</u>
State Project No.	<u>8.2822401</u>
Federal Project No.	<u>BRZ-1521(4)</u>

Project Description:

NCDOT will replace Bridge No.116 on SR 1521, over Third Creek, in Iredell County. Replacement will be at approximately the same location with a new bridge 105 feet in length and 30 feet in width. The new bridge will have a 24 foot travelway. The offset of the bridge will be 3 feet on each side.

Categorical Exclusion Action Classification: (Check one)

TYPE II(A)
 TYPE II(B)

Approved:

10/27/03 Jessie Hart
Date Manager
Project Development and Environmental Analysis Branch

10/27/03 William F. Horch
Date Project Planning Unit Head
Project Development and Environmental Analysis Branch

10-27-03 Dennis Pipkin
Date Project Planning Engineer
Project Development and Environmental Analysis Branch

For Type II(B) projects only:

Date Division Administrator
Federal Highway Administration

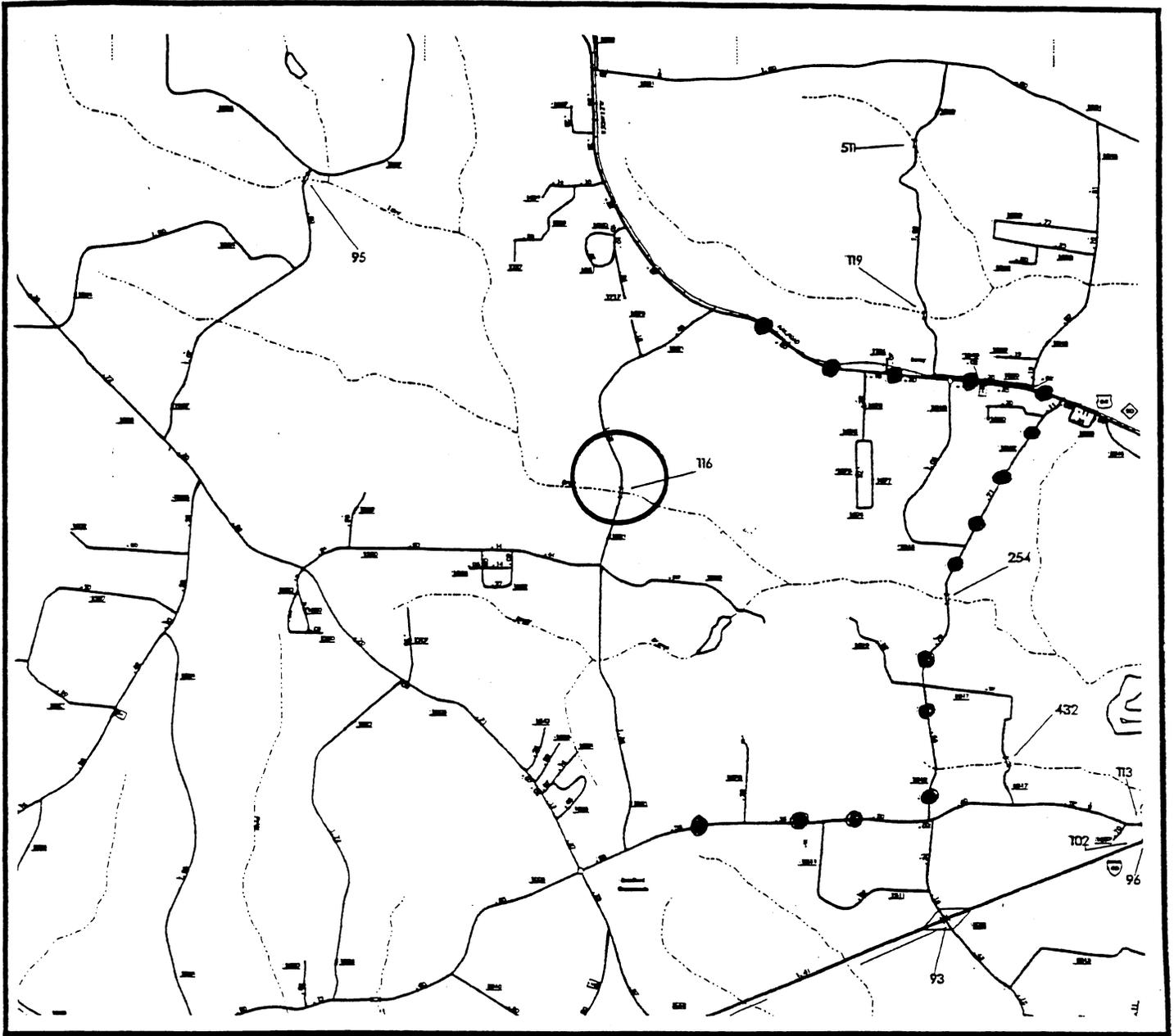
ENVIRONMENTAL COMMITMENTS:

Iredell County
Bridge No. 116 on SR 1521
over Third Creek
Federal Aid Project No. BRZ-1521(4)
State Project No. 8.2822401
T.I.P. No. B-4155

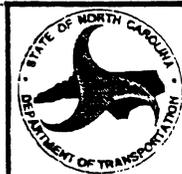
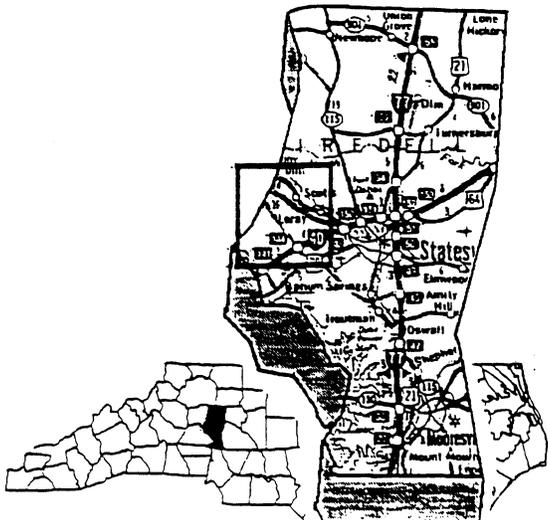
1. Roadway Design Unit, Structure Design Unit, Project Development & Environmental Analysis Branch (Permits), Resident Engineer:

Bridge Demolition:

The existing bridge has an asphalt wearing surface, and the remainder of the bridge, both superstructure and substructure, is composed of timber and steel. The asphalt surface will be removed prior to demolition. The remainder of the bridge will be removed without dropping into Waters of the U.S. During construction, Best Management Practices for Bridge Demolition and Removal will be followed.



Studied Detour Route 



NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

IREDELL COUNTY
REPLACE BRIDGE NO. 116 ON SR 1521
OVER THIRD CREEK
B-4155

Figure 1



Piplin

North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

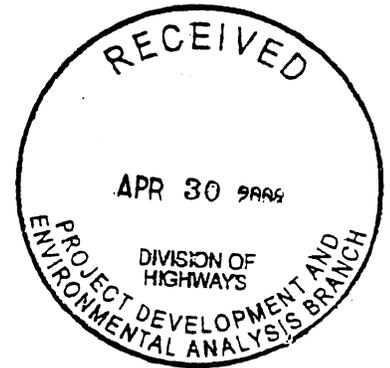
April 24, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*

SUBJECT: Replace Bridge No. 116 on SR 1521 over Third Creek, TIP No. B-4155, Iredell County, ER 02-8589



Thank you for your letter of September 25, 2001, concerning the above project.

We appreciate the project being plotted on the USGS quadrangle. This facilitated our review.

If the bridge is replaced on existing location, we recommend no archaeological survey. However, we recommend that an archaeological survey be conducted if the bridge or a temporary detour is constructed on new location.

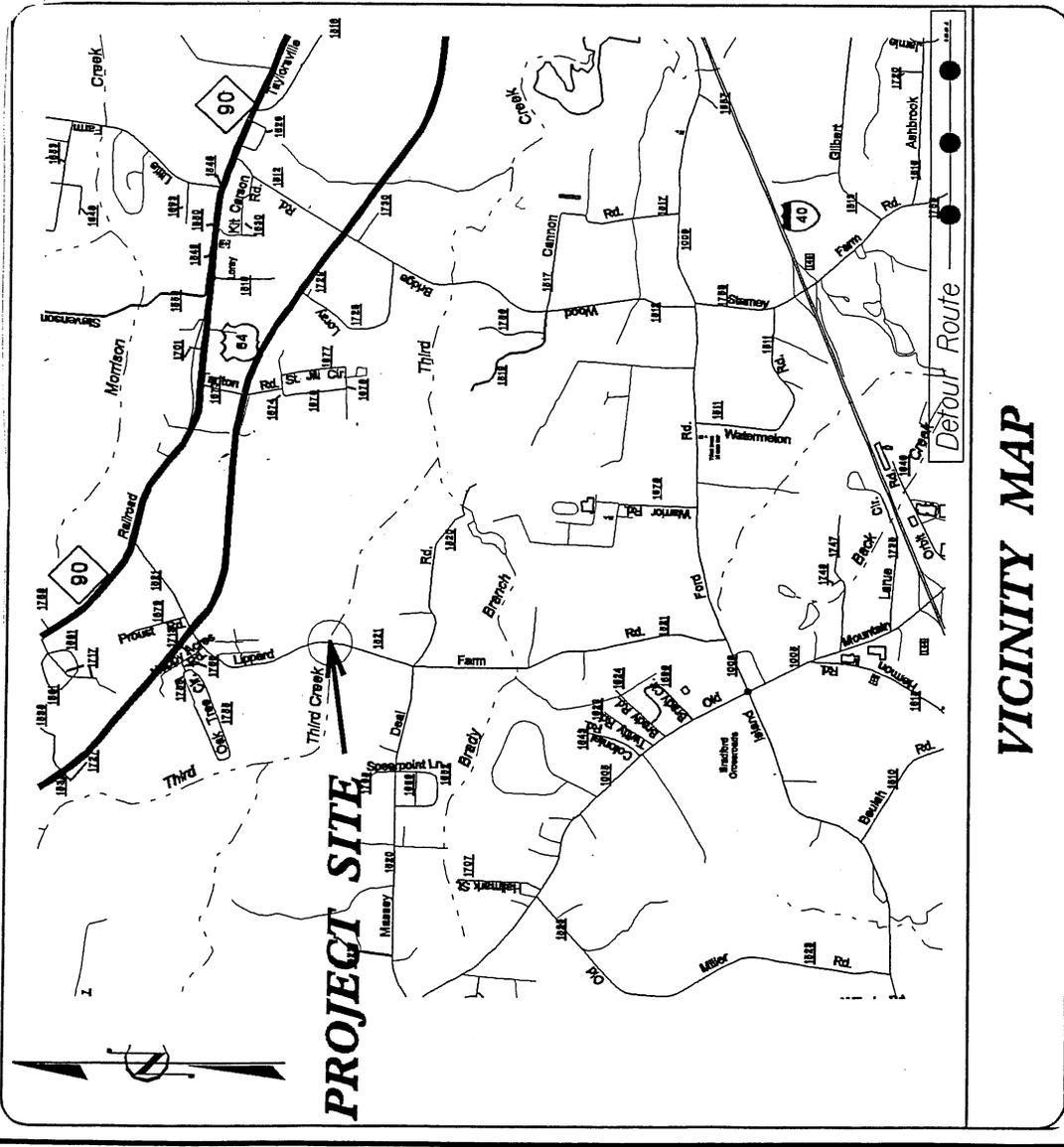
The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc

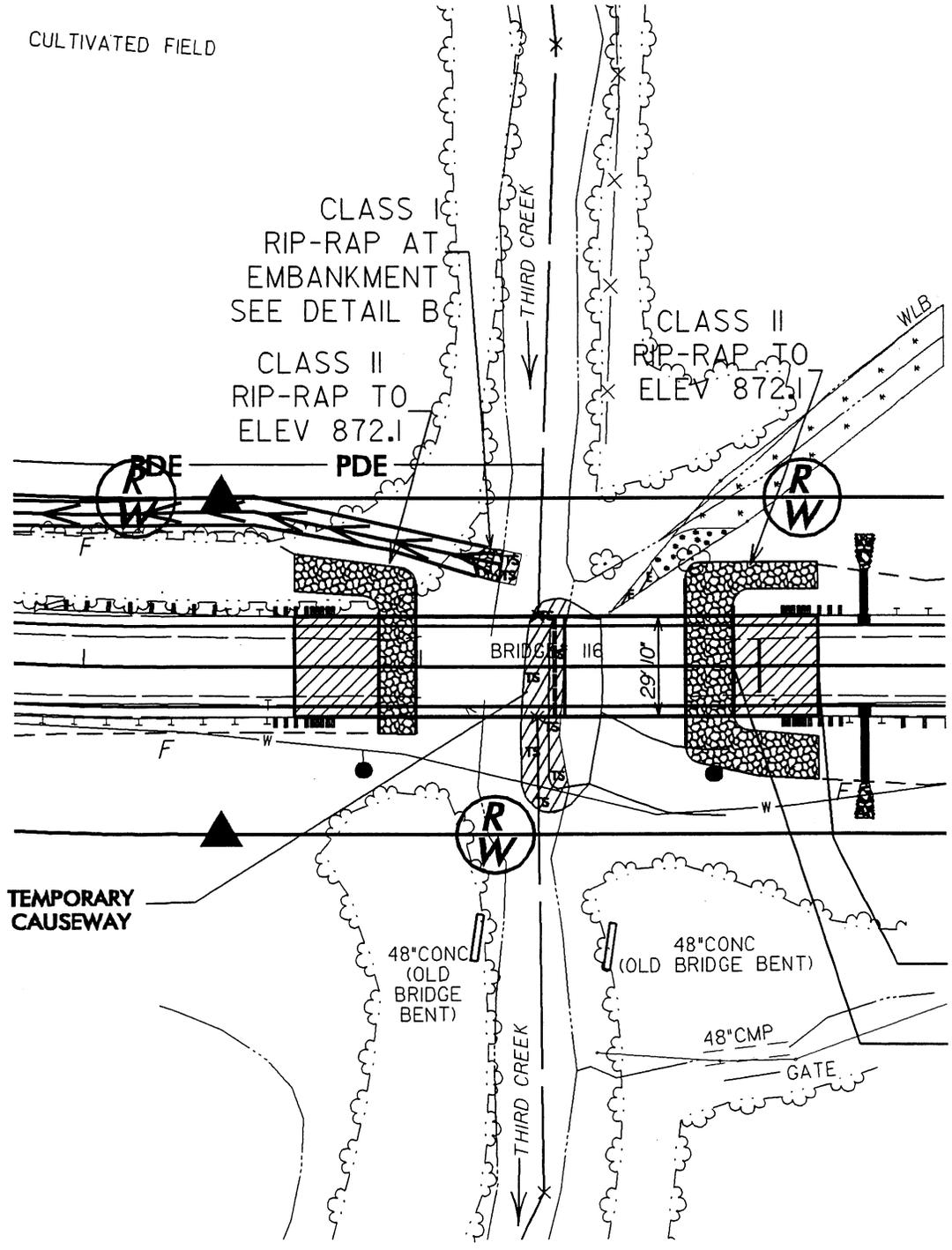
cc: Matt Wilkerson, NCDOT

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
IREDELL COUNTY
33503.1.1 (B-4155)
Replace Br # 116 Over
Third Creek
Sheet 1 of 8



PROJECT SITE

VICINITY MAP

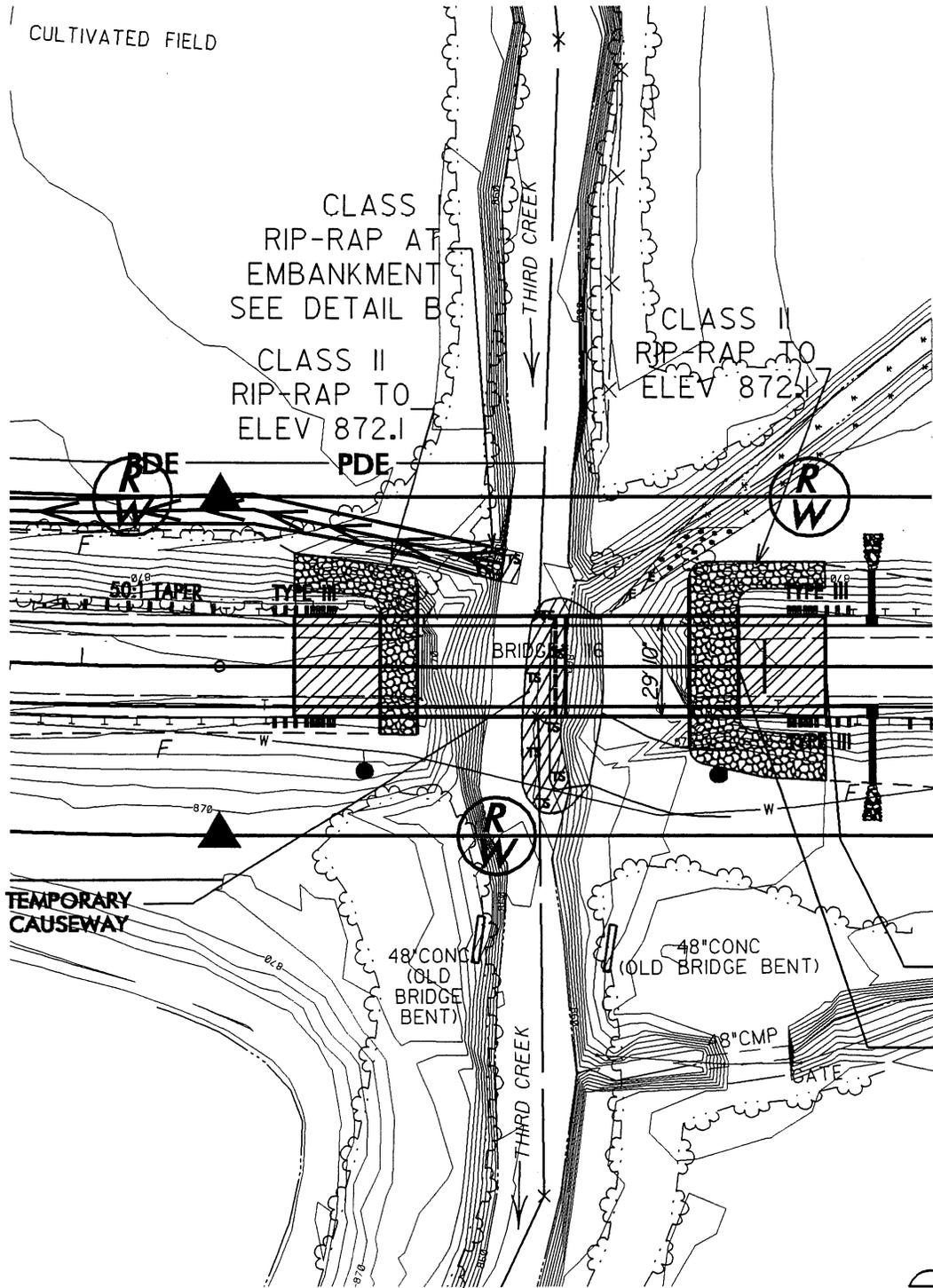


PLAN VIEW

Permit Drawings Sheet 2 of 8

NCDOT
 DIVISION OF HIGHWAYS
 IREDELL COUNTY
 PROJECT: 33503.1.1 (B-4155)
 REPLACE BRIDGE #116
 OVER THIRD CREEK
 ON SR 1521

SHEET OF



PLAN VIEW

Permit Drawings Sheet 3 of 8

NCDOT
 DIVISION OF HIGHWAYS
 IREDELL COUNTY
 PROJECT: 33503.L1 (B-4155)
 REPLACE BRIDGE #116
 OVER THIRD CREEK
 ON SR 1521

SHEET OF

List of Property Owners:

<u>PARCEL #</u>	<u>PROPERTY OWNER</u>	<u>ADDRESSES</u>
2	Keith G. Lackey	453 Lippard Farm Rd Statesville, NC 28625
4	Kenneth A. Gray	2767 Old Mountain Rd Statesville, NC 28625
5	James Gray, Sr.	182 Grayhouse Rd Stoney Point, NC 28678

Permit Drawings Sheet 4 of 8

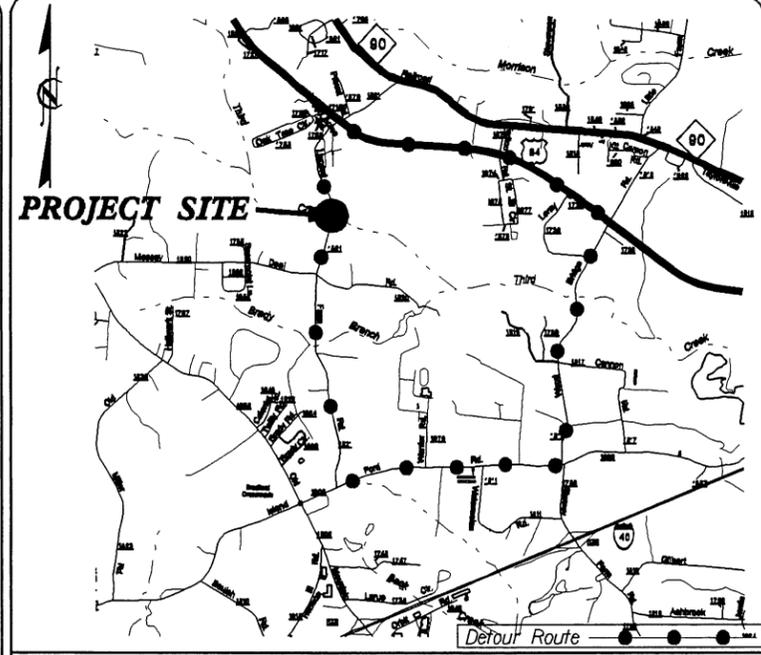
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
IREDELL COUNTY
33503.1.1 (B-4155)
Replace Br # 116 Over
Third Creek
Sheet of

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4155	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33503.1.1	BRZ-1521(4)	PE	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

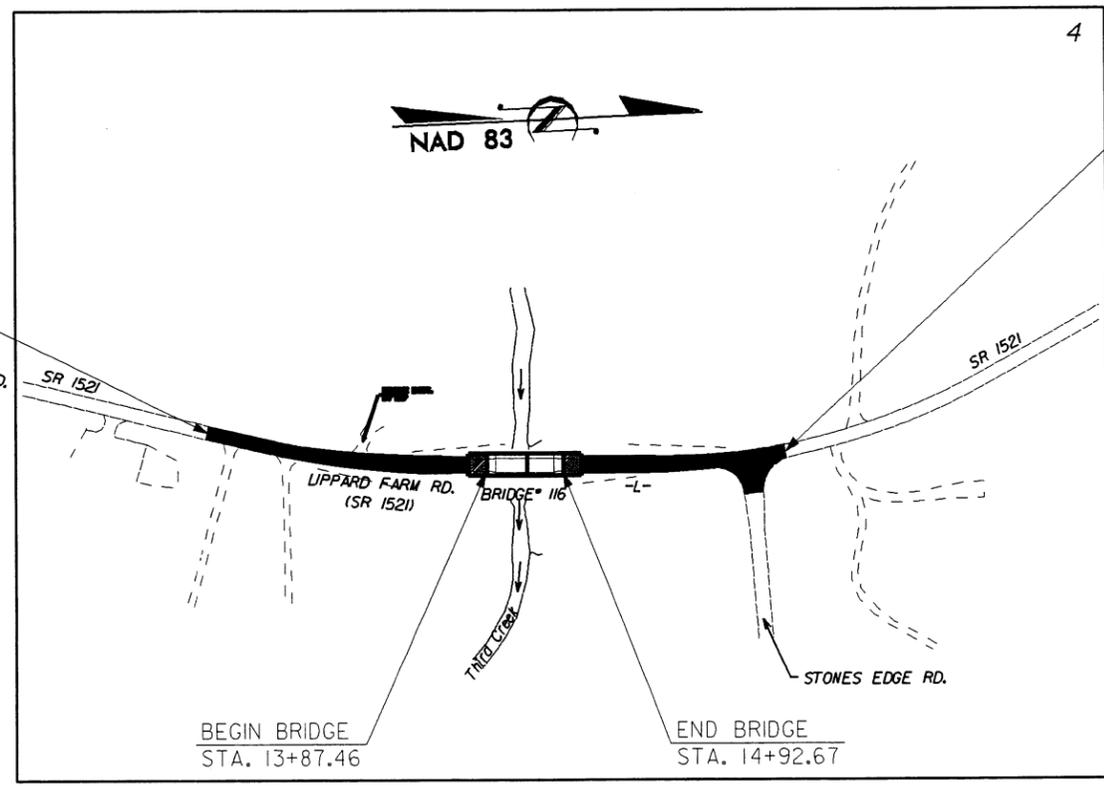
LOCATION: Bridge NO. 116 over Third Creek on SR 1521 (Lippard Farm Road)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



VICINITY MAP

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

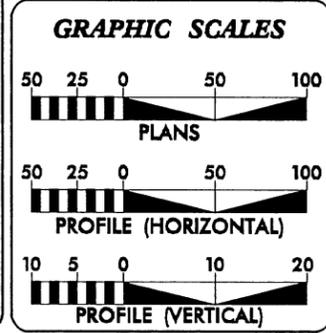
STA. 10+00.00 -L- BEGIN TIP PROJECT B-4155



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

**DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT

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



DESIGN DATA

ADT 2006 = 1650
ADT 2026 = 2650
DHV = 12 %
D = 60 %
T = 5 % *
* (TTST 1% & DUAL 4%)
V = 50 MPH**

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4155 0.131 MI
LENGTH STRUCTURE TIP PROJECT B-4155 0.020 MI
TOTAL LENGTH TIP PROJECT B-4155 0.151 MI

PLANS PREPARED BY:

Mattern & Craig
CONSULTING ENGINEERS & SURVEYORS
12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28806
PHONE 252-251-2500
FAX 252-251-0422

FOR
DIVISION OF HIGHWAYS

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE:
JUNE 20, 2006

NCDOT CONTACT: Scott Blevins, P.E.
Project Engineer - Roadway Design

JAMES B. POSO, P.E.
PROJECT ENGINEER

W. AUSTIN COLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SIGNATURE: _____ P.E.

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

TIP PROJECT: B-4155

PROJECT:

31-JAN-2006 16:22 \\p4155_rdy_tsh.dgn

10/29/03

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	-----
Property Monument	□
Parcel/Sequence Number	⑫③
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing High Quality Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⋈
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	-----

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	-----
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equallity Symbol	-----
Pavement Removal	-----

VEGETATION:

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

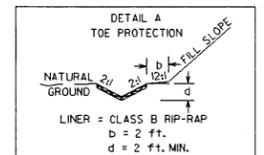
SANITARY SEWER:

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

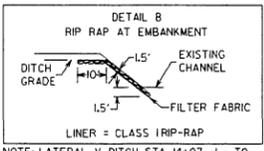
MISCELLANEOUS:

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

PROJECT REFERENCE NO. B-4155	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

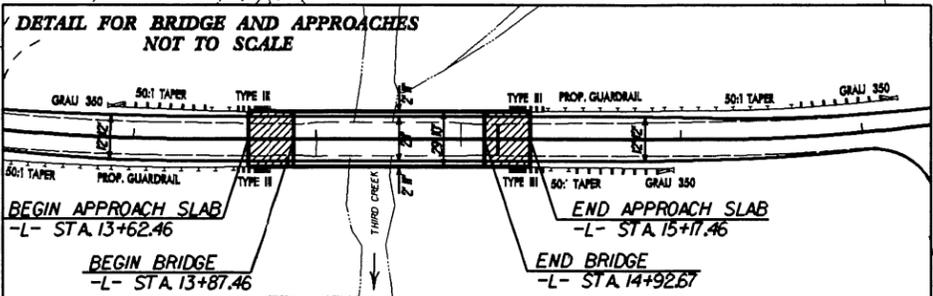
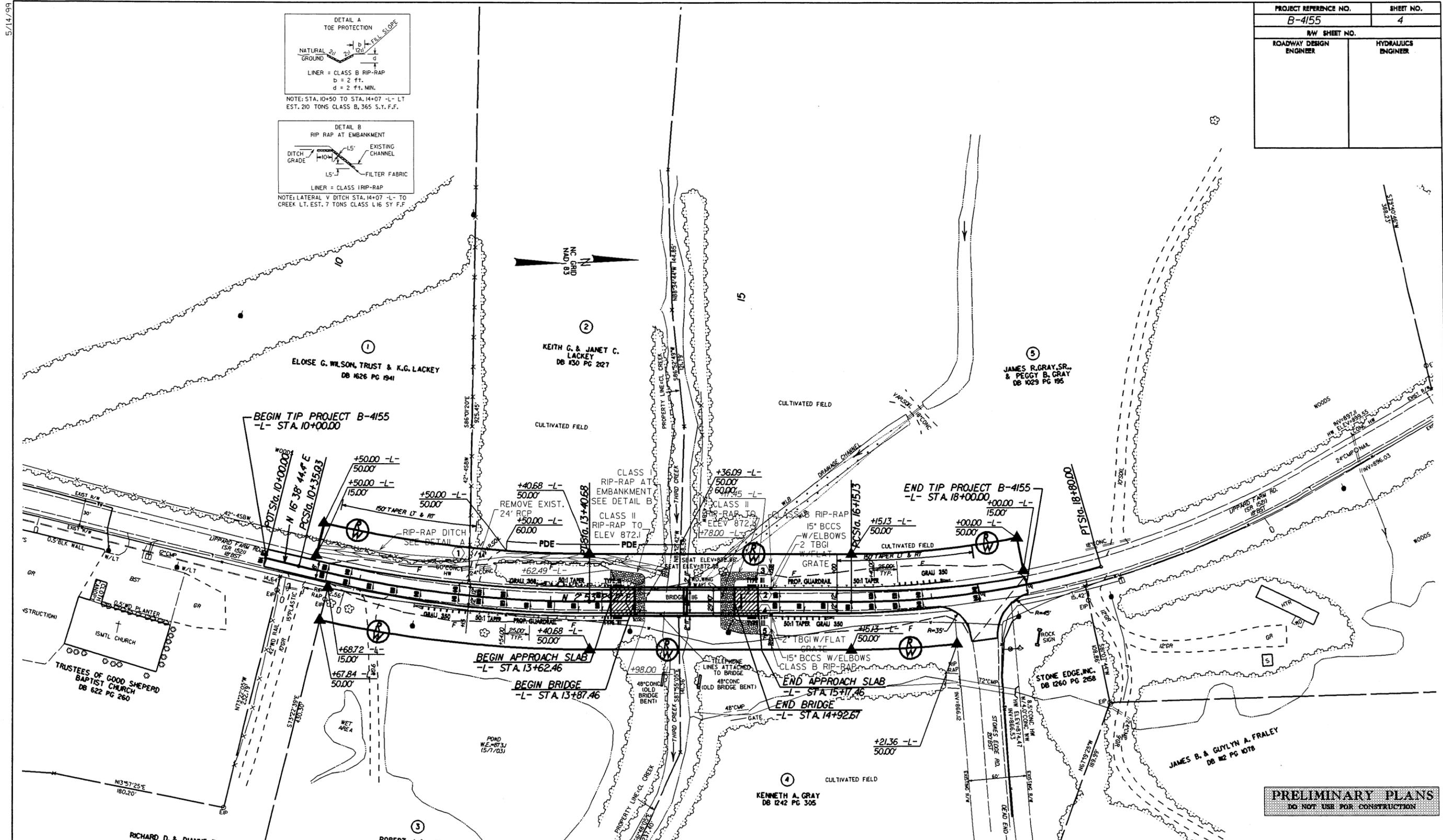


NOTE: STA. 10+50 TO STA. 14+07 -L- LT
EST. 210 TONS CLASS B, 365 S.Y.F.F.



NOTE: LATERAL V DITCH STA. 14+07 -L- TO
CREEK LT. EST. 7 TONS CLASS I, 16 SY.F.F.

5/14/99



-L- P1 Sta 11+88.59 $\Delta = 13^{\circ} 45' 15.2" (LT)$ $D = 4^{\circ} 30' 00.0"$ $L = 305.65'$ $T = 153.56'$ $R = 1273.24'$ $RO = 150'$ $S.E. = 40\%$ $DS = 50 \text{ mph}$	-L- P1 Sta 17+48.43 $\Delta = 15^{\circ} 53' 32.0" (LT)$ $D = 6^{\circ} 00' 00.0"$ $L = 264.87'$ $T = 133.29'$ $R = 954.93'$ $RO = 150'$ $S.E. = 40\%$ $DS = 50 \text{ mph}$
--	---

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 5 FOR -L- PROFILE

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

PLANS PREPARED BY:

Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS
12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2200
FAX (828) 254-4562

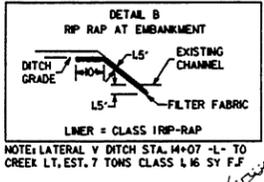
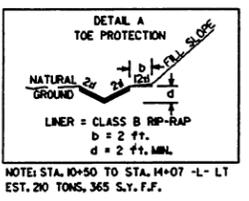
FOR
DIVISION OF HIGHWAYS

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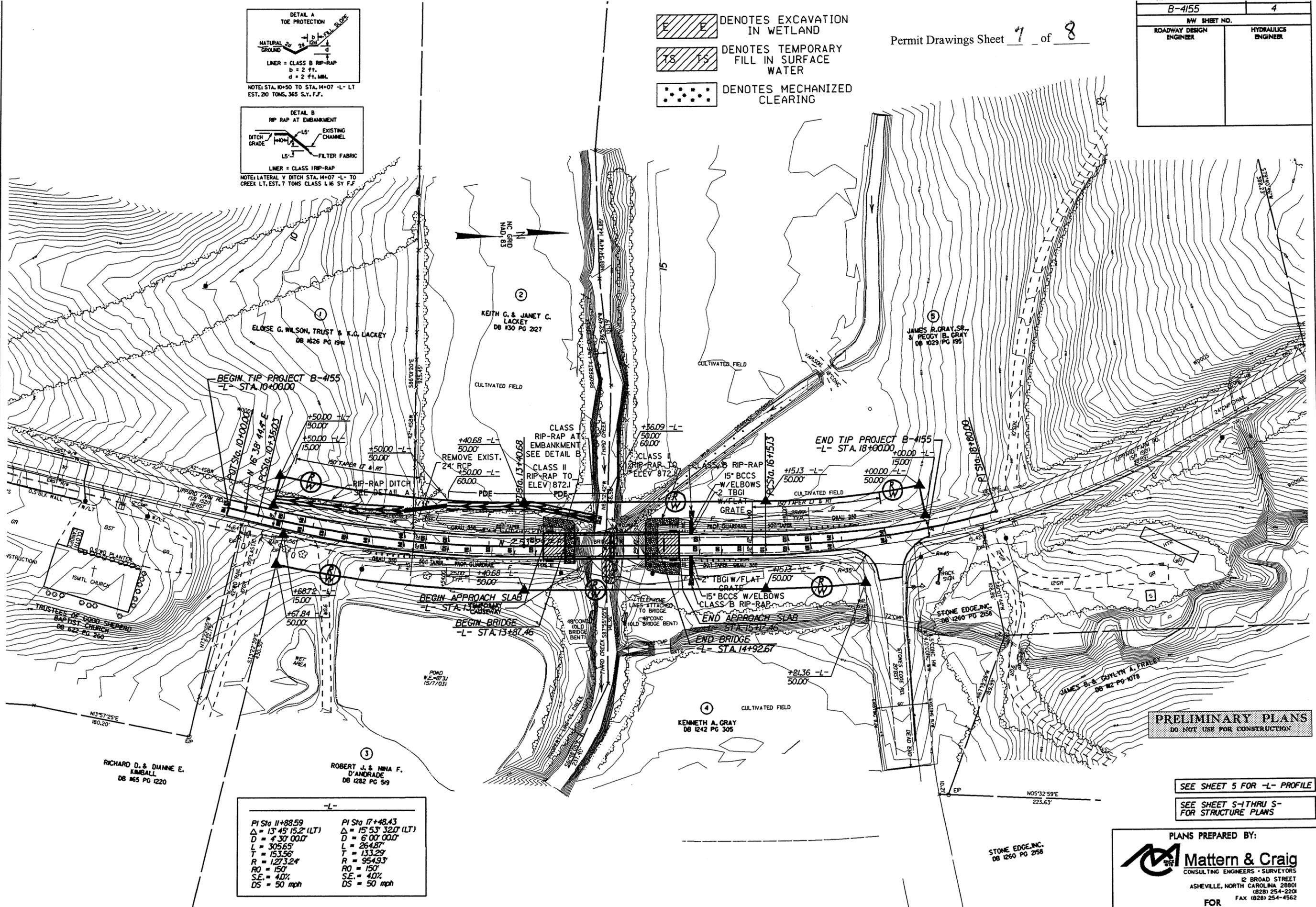
5/14/98

B-4155		4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

Permit Drawings Sheet 7 of 8



- DENOTES EXCAVATION IN WETLAND
- DENOTES TEMPORARY FILL IN SURFACE WATER
- DENOTES MECHANIZED CLEARING



-L-	
PI Sta 11+88.59	PI Sta 17+48.43
Δ = 13° 45' 15.2" (LT)	Δ = 15° 53' 32.0" (LT)
D = 4' 30' 00.0"	D = 6' 00' 00.0"
L = 305.65'	L = 264.87'
T = 153.56'	T = 133.29'
R = 1273.24'	R = 954.93'
RO = 150'	RO = 150'
S.E. = 4.0%	S.E. = 4.0%
DS = 50 mph	DS = 50 mph

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 5 FOR -L- PROFILE

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

PLANS PREPARED BY:

Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS
12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

FOR
DIVISION OF HIGHWAYS

30-JAN-2005 16:45
projects\design\4155_r.dj_psh_s04.dgn
ocal AT 11:22:54

5/14/9

PROJECT REFERENCE NO. B-4155	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

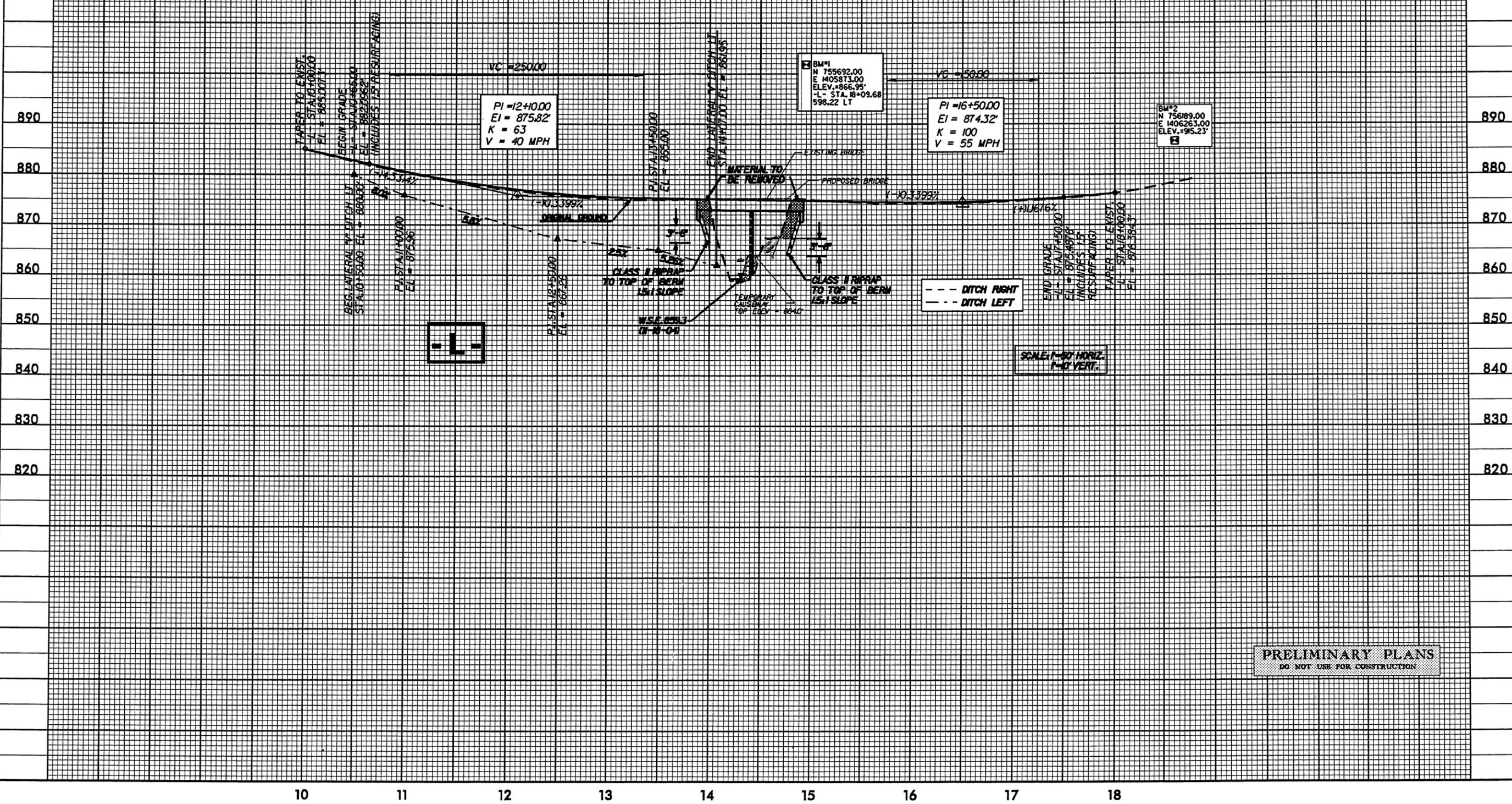
BRIDGE DATA
BRIDGE NO.116 OVER
THIRD CREEK

DESIGN DISCHARGE: = 2786 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN ELEVATION = 8711 FT
BASE FLOOD DISCHARGE: = 4128 CFS
BASE FLOOD FREQUENCY = 100 YRS
BASE FLOOD ELEVATION = 8726 FT
OVERTOPPING DISCHARGE: = 6085 CFS
OVERTOPPING FREQUENCY = 500 YRS
OVERTOPPING ELEVATION = 8747 FT

DESIGN EXCEPTIONS REQUIRED FOR SAG VERTICAL CURVE.

Permit Drawings Sheet 8 of 8

2' CORED SLAB BRIDGE
SPANS: 1655' ; 1650'



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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gallen