STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 21, 2007

U.S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of Neuse Road
Suite 120
Raleigh, NC 27615

ATTENTION: Mr. John T. Thomas, Jr.
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide Permit 23 and Nationwide Permit 33 Application** for the proposed replacement of Bridge Nos. 128 and 130 on I-85 Business over Abbotts Creek, Davidson County, Federal Aid Project No. BRSTP-29 (19), State Project 8.1602001, WBS Element 33453.1.1, TIP No. B-4095

Please see the enclosed Pre-Construction Notice (PCN), permit drawings, design plans and Categorical Exclusion (CE) for the subject project. The North Carolina Department of Transportation (NCDOT) plans to replace Bridge Nos. 128 and 130 with new three span bridges with a minimum length of 220 feet. The new bridges will be constructed in place. The existing bridges will be used as detours. Bridge No. 128 will be used as a two-lane detour (one lane of traffic in each direction) while Bridge No. 130 is being replaced in place. The new Bridge No. 130 will then be used as a two lane detour (one lane of traffic in each direction) while Bridge No. 128 is replaced in place. During the construction period, the speed limit in the project area will be lowered to 45 mph because of the two-lane detour and to meet the temporary detour design requirements. In addition, wide load vehicles will be directed to off-site detour routes.

The typical section for the structures includes two 12-foot travel lanes with 8-foot outside shoulders and a 4-foot inside shoulders. The typical section for the approach roadway for the permanent replacement structures consists of four 12-foot travel lanes and 4-foot outside paved shoulders and 2-foot inside paved shoulders. The approach roadways will extend approximately 1500 east and approximately 1500 west of the new bridges. The design speed of the roadway is 60 mph. The elevation of the new structures will be approximately the same as the existing structures. The replacement structures are bridges with a minimum grade to facilitate drainage.

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

TELEPHONE: 919-715-1334
FAX: 919-715-5501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD.
SUITE 240
RALEIGH NC 27604

IMPACT TO WATERS OF THE UNITED STATES

General Description: The project is located in the Yadkin River basin (Sub-basin 03-07-07), Hydrologic Unit Code 03040103. The jurisdictional resource in the project area is Abbotts Creek. Abbotts Creek is a perennial stream. The Division of Water Quality stream index number for Abbotts Creek is 12-119-(6). The channel of Abbotts Creek at the bridges is approximately 45 feet wide and has an average depth of 1.5 feet. The creek appeared to have an E5 Rosgen classification (stream with gentle slopes, and sandy bed with some gravel and silt/clay deposits) although this was difficult to determine due to high turbidity. From the upstream side of the bridges to the Abbotts Creek arm of High Rock Lake, Abbotts Creek has a best usage classification of C. Upstream of the bridges the best usage classification is WS-III, CA [stream index number 12-119-(4.5)].

According to the City of Lexington Utilities Water Resource section, there are two water valves located upstream of the bridges (west of Abbotts Creek) and immediately north of the study area. These water valves are from the water plant and one serves as a drain structure and the other serves as an intake structure. A valid permit is maintained for these structures. The intake structure is not being used at this time and has not been used for a long time. The drain structure is used periodically.

No Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, or WS-II Waters occur within 1.0 mile of the project study area.

Design Standards in Sensitive Watersheds are listed on the CE Greensheet. The study area is not located in a ORW, HQW, WS-I or WS-II. The site is located in a critical area (CA) because it is near two water valves that are not currently being used as intake structures (see above paragraph). Project construction will occur downstream of the water valves. Because of these reasons NCDOT will use Best Management practices for this project and not Design Standards in Sensitive Watersheds.

Permanent Impacts: There will be 0.01 acres of permanent surface water impacts associated with the project. The permanent impacts are resulting from fill in surface waters due to construction of the proposed substructures (bents) of each bridge (0.0007 acre). The project will not impact wetlands.

The CE states that no bents will be placed in the creek. Bents are now proposed because the bridge structure could not be adjusted to keep the bents out of the creek.

Temporary Impacts: There will be 0.04 acres of temporary surface water impacts due to installation of two temporary work pads for each bridge (0.02 acres). No temporary wetland impacts are associated with this project.

Bridge Demolition: Bridge No. 128 carries I-85 Business – US 29/70 northbound traffic. Bridge No. 128 was built in 1951. The overall bridge length is 200 feet. Bridge No. 128 has four spans, each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a reinforced concrete cap on a spread footing at end bent 1, a reinforced concrete cap on timber piles at end bent 2 and reinforced concrete post and web interior bents.

Bridge No. 130 carries I-85 Business- US 29/70 southbound traffic and was built in 1946. The overall bridge length is 200 feet. The bridge has four spans, each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a spill through concrete abutment at End Bent 1, a reinforced concrete cap on steel piles at End Bent 2, and reinforced concrete post and web interior bents.

For each bridge, the roadway width, including paved shoulders, is 30 feet and the total deck width is 33.3 feet. The existing approach roadway width, including paved shoulders is approximately 30 feet for each bridge. The height of each bridge (from crown to bed) is 26 feet. The existing median width is 24 feet. The existing right of way includes the maintained area and is 260 feet. There are no posted weight limits. The posted speed limit is 55 mph.

Bridges No. 128 and 130 will be removed without dropping components into Waters of the United States. Best Management Practices for the Protection of Surface Waters and Bridge Demolition and Removal guidelines will be followed.

Utility Impacts: There will be no utility relocation impacts to jurisdictional resources. An overhead electrical line crosses the roadway immediately southwest of the bridges. There is a sanitary sewer line that runs parallel to the roadway and crosses the creek approximately 100 feet upstream of the bridges. An underground gas line and overhead telephone line also are located approximately 120 feet upstream. There are three water lines in the study area. Two of the water lines and the aerial line have conflicts with the project.

The water line that runs diagonally across the study area (at the bridges) will be relocated. This water line will be relocated by putting bends in the line. These bends will be installed on the bank away from the bridge. A second water line is located east of US 29/70 Business and old highway US 29. This line will be relocated further away from the road but will remain inside the right-of-way. No utility impacts to jurisdictional areas are anticipated from the relocation of both utility lines (water).

Two aerial poles located in the southeast and northeast quadrants will be removed and the line reattached to existing poles. No utility impacts to jurisdictional areas are anticipated from the pole removal and reattachment of the overhead aerial line.

FEDERALLY PROTECTED SPECIES

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists 3 federally – protected species, as of December 11, 2006, for Davidson County. The Endangered and Threatened species in North Carolina web-site was checked on December 20, 2006 for any changes and the list remains the same. The species under federal protection are listed in Table 1.

Table 1. Federally Protected Species for Davidson County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Bald eagle	*Haliaeetus leucocephalus*	Threatened	No	No Effect
Bog turtle	*Clemmys muhlenbergii*	T(S/A)	No	N/A
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered	No	No Effect

No suitable habitat for the bald eagle, bog turtle and Schweinitz's sunflower are located in the study area according to the CE. The Biological Conclusion of No Effect remains valid for all three species.

RESTORATION PLAN

Following construction of the bridge, all material used in the construction of the structure will be removed. The impact area associated with the bridge is expected to recover naturally, since the natural streambed and plant material will not be removed. NCDOT does not propose any additional planting in this area. Class I riprap and filter fabric will be used for bank stabilization. Pre-project elevations will be restored. NCDOT will restore stream to its pre-project contours.

Schedule: The project calls for a letting of August 21, 2007 with a date of availability of October 2, 2007. It is expected that contractor will choose to start construction in October 2007.

Removal and Disposal Plan: The contractor will be required to submit a reclamation plan for the removal of and disposal of all material off-site at an upland location. The contractor will use excavation equipment for removal of any earthen material. Heavy–duty trucks, dozers, cranes and various other pieces of mechanical equipment necessary for construction of roadways and bridges will be used on site. All material placed in the stream will be removed from the stream at that time. The contractor will have the option of reusing any of the materials that the engineer deems suitable in the construction of project. After the erosion control devices are no longer needed, all temporary materials will become the property of the contractor.

AVOIDANCE, MINIMIZATION and MITIGATION

Avoidance and Minimization:
Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the US". The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to minimize impacts as part of the project design. Practical means to minimize impacts to surface waters temporarily impacted by the project include:

Project Specific Measures-

- During construction road closure is planned for one bridge and traffic will diverted to the other bridge.
- The bridges are to be replaced in the same location
- The existing bridges can be removed without any debris falling into the water.

Standard Measures-

- Best Management Practices will be followed for this project as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities"

Mitigation: No mitigation is proposed because of minimal impacts.

REGULATORY APPROVALS

Section 404 Permit: It is anticipated that impacts from construction of the new bridges will be authorized under Section 404 Nationwide Permits 23 and 33. We are therefore requesting the issuance of a Nationwide Permit 23 and 33 for the bridge construction.

Section 401 Permit: We anticipate 401 General Certification number 3403 and 3366 will be applicable to this project. All general conditions of the Water Quality Certification will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B .0200 we are providing 2 copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality for their notification.

Thank you for your time and assistance with this project. A copy of this permit application will be posted on the NCDOT website at http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. Please contact Susan Thebert at (919) 715-1461 or sthebert@dot.state.nc.us if you have any questions or need any additional information.

Sincerely,

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

w/attachment
Mr. John Hennessy, NCDWQ (2 Copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. S. P. Ivey, P.E., Division Engineer
Ms. Diane Hampton, P.E., 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. Stacy Baldwin, PDEA Project Planning Engineer

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: 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 Nos. 128 and 130 on I-85 Bus. over Abbotts Creek

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4095

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

4. Location
   County: Davidson Nearest Town: Lexington
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): I-85 Business US 29/70 bridges over Abbotts Creek northeast of Lexington

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): _____ °N _____ °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Abbotts 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: I-85 Business is a 4-lane facility. Bridge No. 128 carries northbound traffic. Bridge No. 130 carries southbound traffic. Lexington Water works is

northwest of the bridges. Land use in the project vicinity is residential, commercial and institutional.

10. Describe the overall project in detail, including the type of equipment to be used: Bridge No. 128 will be used as a two lane detour (one lane of traffic ineach direction) while bridge No. 130 is being replaced in place. The new bridge No. 130 then will be used as a two lane detour (one lane of traffic in each direction) while bridge No. 128 is replaced in place. During construction the speed limit in the project area will be lowered to 45 mph and wide load vehicles will be directed to off-site conditions.

11. Explain the purpose of the proposed work: The existing structures are considered functionally obsolete and structurally deficient. Bridge replacement will result in safer and more efficient traffic operations.

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.

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.

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: Permanent fill in surface waters due to bent construction. Temporary fill in surface waters due to temporary work pads.

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

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

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

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)
Bridge 128	Abbotts Creek	fill	perennial			0.0007
Bridge 130	Abbotts Creek	fill	perennial			0.0007
Bridge 128	Abbotts Creek	temp work pad	perennial			0.02
Bridge 130	Abbotts Creek	temp work pad	perennial			0.02
Total Stream Impact (by length and acreage)						0.0414

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

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

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

Stream Impact (acres):	0.0414
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	0.0414
Total Stream Impact (linear feet):	

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes ☒ No
Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

_____

_____

8. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):_____
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):_____
Current land use in the vicinity of the pond:_____
Size of watershed draining to pond:_____ Expected pond surface area:_____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts

were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. During construction road closure is planned for one bridge and traffic will diverted to the other bridge. The bridges are to be replaced in the same location The existing bridges can be removed without any debris falling into the water

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.

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

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

IX. Environmental Documentation (required by DWQ)

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

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☐ No ☒

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

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

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

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

XI. Stormwater (required by DWQ)

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

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:_____

_____

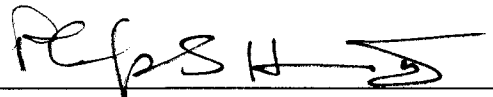
_____

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).

_____

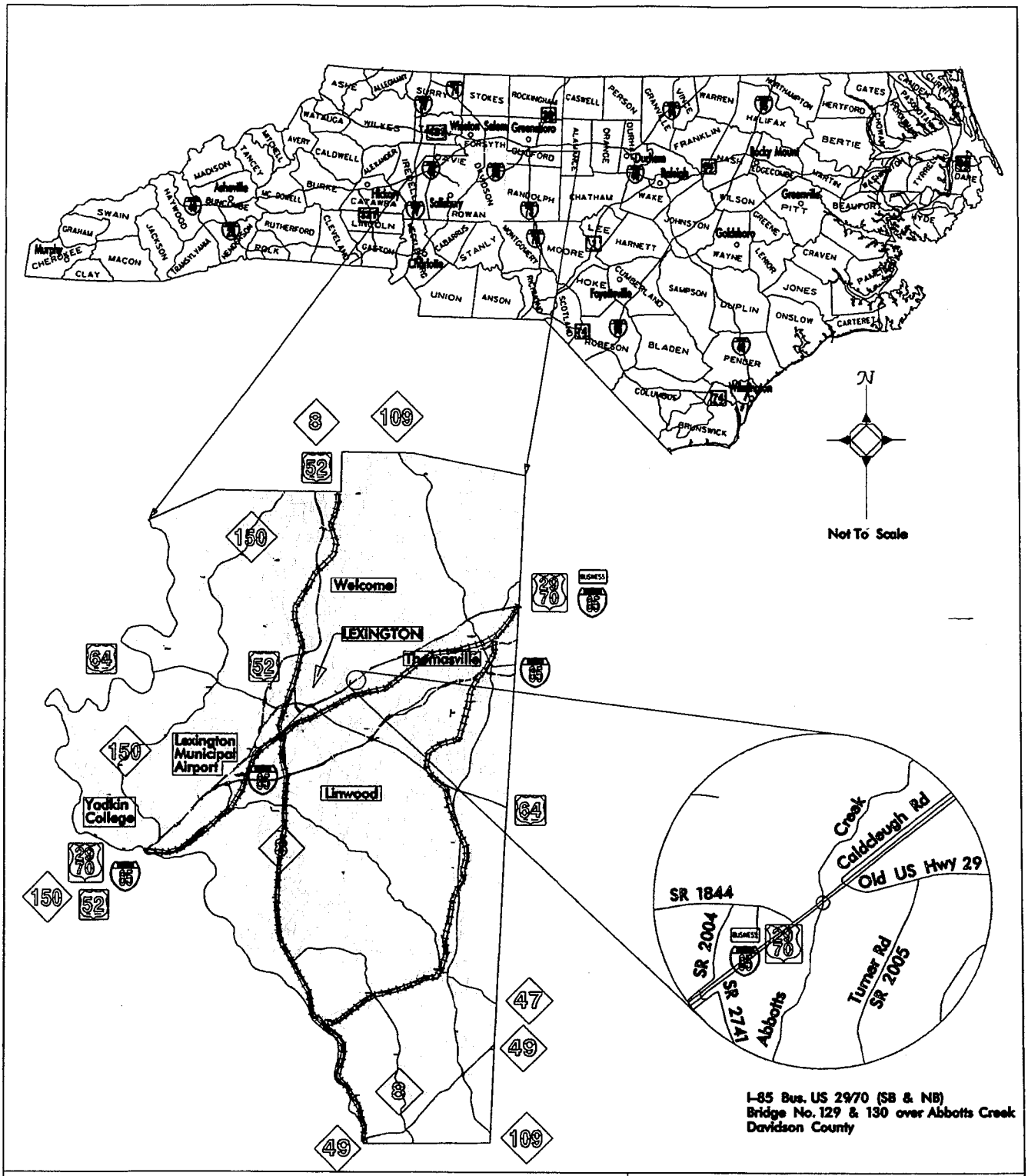
_____



2/21/07

Applicant/Agent's Signature **Date**

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



VICINITY MAP

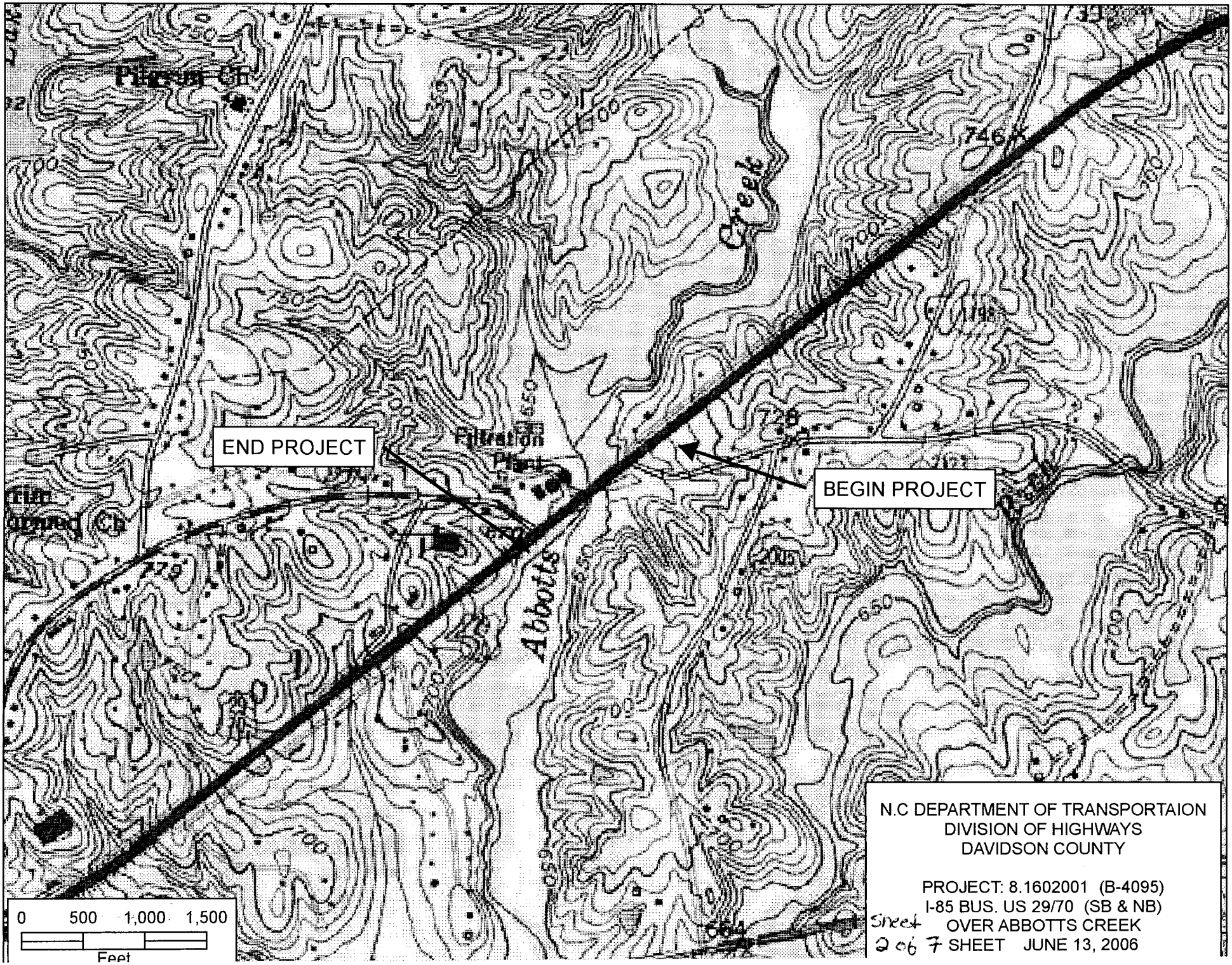
N. C. DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

DAVIDSON COUNTY

PROJECT: 8.1602001 (B-4095)
I-85 BUS. US 29/70 (SB & NB)
OVER ABBOTTS CREEK

SHEET 1 OF 7 June 12, 2006



N.C DEPARTMENT OF TRANSPORTAION
DIVISION OF HIGHWAYS
DAVIDSON COUNTY

PROJECT: 8.1602001 (B-4095)
I-85 BUS. US 29/70 (SB & NB)
OVER ABBOTTS CREEK
Sheet 2 of 7 SHEET JUNE 13, 2006

PROPERTY OWNER

NAME AND ADDRESS

PARCEL NO.	OWNER'S NAME & ADDRESS
(1)	City of Lexington 22 W. Center St. Lexington, NC 27293-316
(2)	Sarah C. Beck 2389 Greensboro St. Ext. Lexington, NC 27292

N. C. DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

DAVIDSON COUNTY
PROPERTY OWNERS
PROJECT: 8.1602001 (B-4095)
I-85 BUS. US 29/70 (NB AND SB)
OVER ABBOTTS CREEK

SHEET 3 OF 7 April 28, 2006

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Fill In Wetlands Permanent (ac)	WETLAND IMPACTS: Fill In Wetlands Temporary (ac)	WETLAND IMPACTS: Excavation In Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing (Method III) (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) Permanent (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) Temporary (ac)	SURFACE WATER IMPACTS: Existing Channel Impacted Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacted Temporary (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	25+74 to	220' Three-Span (70',80',70')						0.02			
	26+35 -L- SB	High-Strength 54" Prestressed									
		Concrete Girder with									
		Spillthrough Abutments									
2	25+60 to	220' Three-Span (70',80',70')						0.02			
	26+15 -L- NB	High-Strength 54" Prestressed									
		Concrete Girder with									
		Spillthrough Abutments									
PROJECT TOTALS:								**0.04**			

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DAVIDSON COUNTY
IMPACT SUMMARY
PROJECT: 8.1602001 (B-4095)
I-85 BUS. US 29/70 (NB & SB)
OVER ABBOTTS CREEK

Form Revised 3/22/01

PROJECT REFERENCE NO.	SHEET NO.
B-4095	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

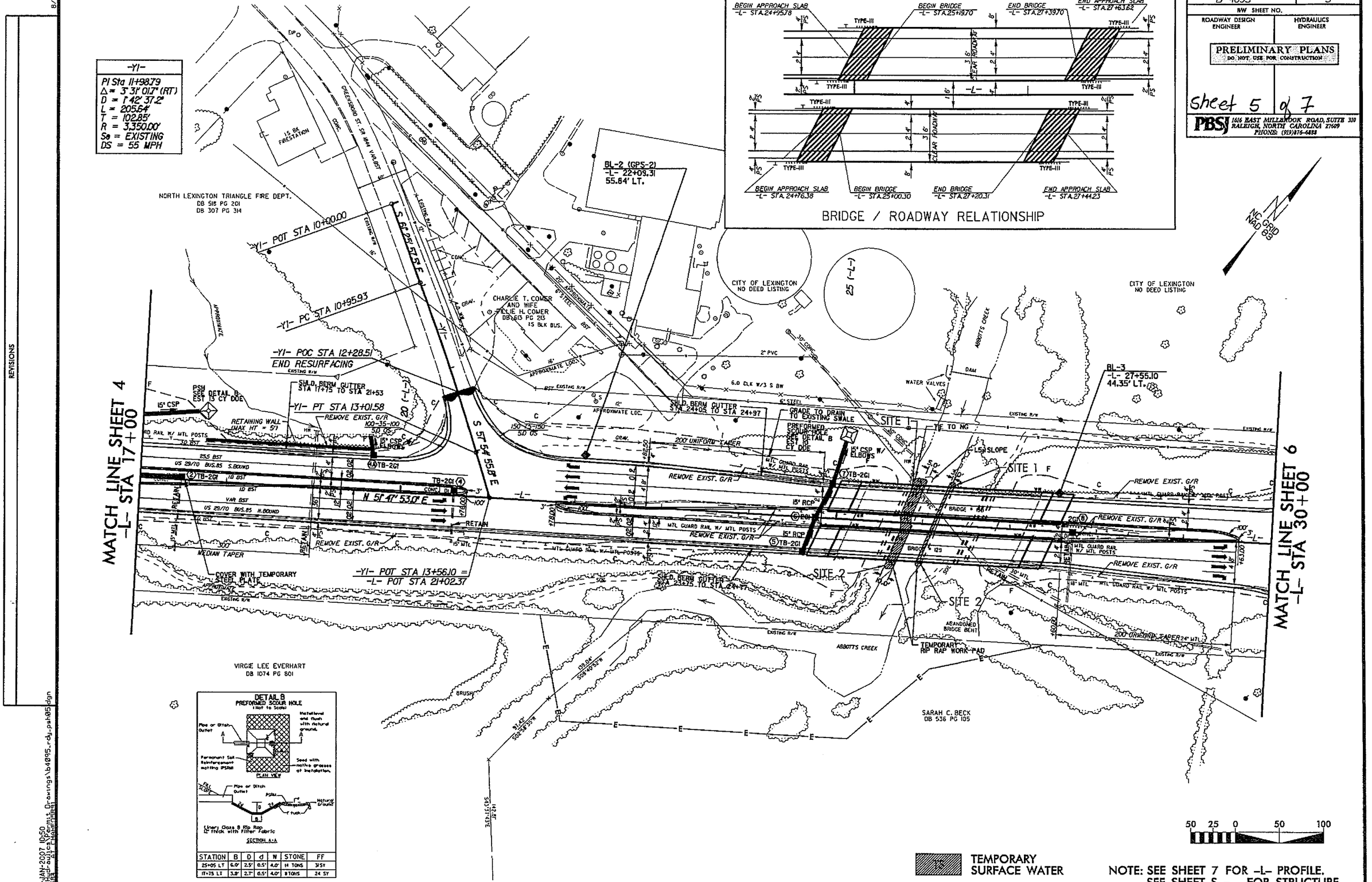
Sheet 5 of 7

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

REVISIONS

-Y1-
PI Sta 11+98.79
Δ = 3° 31' 01.7" (RT)
D = 1° 42' 37.2"
L = 205.64'
T = 102.85'
R = 3,350.00'
Se = EXISTING
DS = 55 MPH

BRIDGE / ROADWAY RELATIONSHIP



DETAIL B
PREFORMED SCOUR HOLE
(Not to Scale)

STATION	B	D	d	W	STONE	FF
25+05 LT	6.0'	2.5'	0.5'	4.0'	14 TONS	31 SY
17+75 LT	3.8'	2.7'	0.5'	4.0'	8 TONS	24 SY

TEMPORARY SURFACE WATER

NOTE: SEE SHEET 7 FOR -L- PROFILE.
SEE SHEET S - FOR STRUCTURE.

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jlsmith

PROJECT REFERENCE NO.	SHEET NO.
B-4095	5

NW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Sheet 6 of 7

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

REVISIONS 8/17/9

-Y1-
PI Sta 11+98.79
Δ = 3°31'01.7" (RT)
D = 1°42'37.2"
L = 205.64'
T = 102.85'
R = 3,350.00'
Se = EXISTING
DS = 55 MPH

BEGIN APPROACH SLAB -L- STA 24+95.78 | BEGIN BRIDGE -L- STA 25+19.70 | END BRIDGE -L- STA 27+39.70 | END APPROACH SLAB -L- STA 27+63.62
BEGIN APPROACH SLAB -L- STA 24+76.38 | BEGIN BRIDGE -L- STA 25+00.30 | END BRIDGE -L- STA 27+20.31 | END APPROACH SLAB -L- STA 27+44.23
TYPE-III | TYPE-II | CLEAR ROADWAY | -L-

BRIDGE / ROADWAY RELATIONSHIP

NC GRID NAD 83

MATCH LINE SHEET 4 -L- STA 17+00

MATCH LINE SHEET 6 -L- STA 30+00

BL-2 (GPS-2) -L- 22+09.31 55.84' LT.

BL-3 -L- 27+55.10 44.35' LT.

-Y1- POT STA 10+00.00

-Y1- PC STA 10+95.93

-Y1- ROC STA 12+28.51 END RESURFACING

-Y1- PT STA 13+01.58

-Y1- POT STA 13+56.10 = -L- POT STA 21+02.37

S 57° 54' 55.8" E

N 51° 41' 53.0" E

NORTH LEXINGTON TRIANGLE FIRE DEPT. DB 516 PG 201 DB 307 PG 314

CHARLIE T. COMER AND WIFE MILLIE H. COMER DB 613 PG 213 15 BLK/BUS.

CITY OF LEXINGTON NO DEED LISTING

VIRGIE LEE EVERHART DB 1074 PG 801

SARAH C. BECK DB 536 PG 105

ABBITTS CREEK

SHLD. BERM GUTTER STA 11+75 TO STA 21+53

SHLD. BERM GUTTER STA 24+04 TO STA 24+49 ft

GRADE TO DRAIN TO EXISTING SWALE

PREFORMED SCOUR HOLE SEE DETAIL B EST 15 CY DDE

RETAINING WALL

REMOVE EXIST. G/R

MTL GUARD RAIL W/ MTL POSTS

COVER WITH TEMPORARY STEEL PLATE

TEMPORARY RIP RAP WORK PAD

ABANDONED BRIDGE BENT

SITE 1 | SITE 2 | SITE 3

DETAIL B
PREFORMED SCOUR HOLE
(Not to Scale)

Pipe or Ditch Outlet | Interlevel and Push with natural ground. | Permanent Soil Reinforcement matting (PSRM) | Seed with native grasses at installation.

PLAN VIEW

Pipe or Ditch Outlet | PSRM | Natural Ground | Fill | Compacted Soil

Linear Class B Rip Rap 12" thick with Filter Fabric

SECTION A-A

STATION	B	D	d	W	STONE	FF
25+05 LT	6.0'	2.5'	0.5'	4.0'	M TONS	31 SY
17+75 LT	3.8'	2.1'	0.5'	4.0'	# TONS	24 SY

50 25 0 50 100

TEMPORARY SURFACE WATER

NOTE: SEE SHEET 7 FOR -L- PROFILE.
SEE SHEET S - FOR STRUCTURE.

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IRSHAD AHMED

B-4095 | 7

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Sheet 7 of 7

PBSJ
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

5/28

BMK1 - ELEVATION = 685.03
N = 760994.15 E = 1594112.23
LT. STA 111+85.22 - 87.05' LT
AN SPIKE SET IN BASE OF 18" MAPLE
36' RT OF NORTH EDGE OF SR 48 (OLIVE BUS. 85)

100' FEATHER TO EXISTING

BEGIN GRADE
-L- STA 111+00.00
ELEV 683.16

PI = 14+25.00
EL = 679.65
VC = 250'
K = 364

PI = 17+50.00
EL = 674.79
VC = 250'
K = 455

(-)1.0880%

(-)1.4939%

(-)1.4939%

690 680 670 660 650 640

10 11 12 13 14 15 16 17

NOTE: SEE SHEET 4 FOR -L- PLAN VIEW

PI = 17+50.00
EL = 674.79
VC = 250'
K = 455

PI = 24+26.00
EL = 668.62
VC = 175'
K = 141

BEGIN BRIDGE
-L- STA 25+10.00
EL = 666.66

FOR BRIDGE STATIONING SEE PLAN SHEET 6

END BRIDGE
-L- STA 27+30.00
EL = 665.34

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 8,500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 659.6	FT
BASE DISCHARGE	= 10,600	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 660.0	FT
OVERTOPPING DISCHARGE	= 30,200	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 668.1	FT

(-)1.4939%

(-)1.0944%

(+)0.0030%

(+)0.0030%

BRIDGE

NWSEL = 645.2

TEMPORARY RIP RAP WORK PAD

690 680 670 660 650 640

17 18 19 20 21 22 23 24 25 26 27 28 29 30

NOTE: SEE SHEET 5 FOR -L- PLAN VIEW

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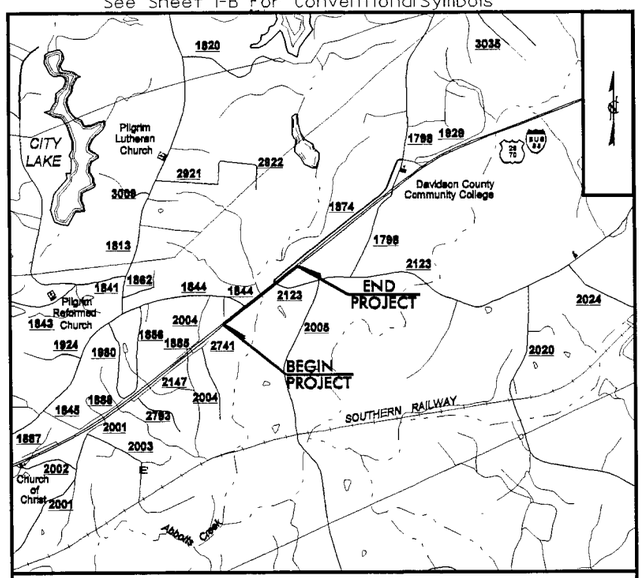
CONTRACT: TIP PROJECT: B-4095

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIDSON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4095	1	

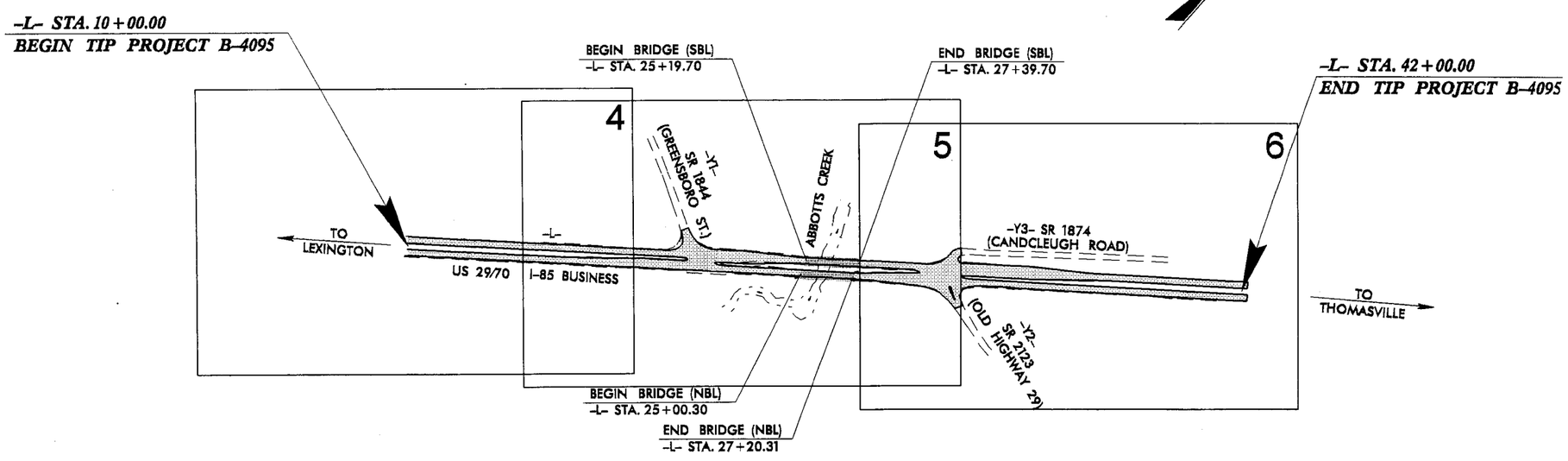
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33453.1.1	BRSTP-29(19)	PE
33453.2.2	BRSTP-29(19)	R /W & UTILITIES

LOCATION: BRIDGE NO. 129 (NBL) & NO. 130 (SBL) OVER ABBOTTS CREEK ON US 29 /70 AND I-85 BUSINESS LOOP

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES, PAVING, WIDENING AND RESURFACING

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NC NAD GRID 83



NCDOT CONTACT: CATHY S. HOUSER, PE
PROJECT ENGINEER
ROADWAY DESIGN

GRAPHIC SCALES

PLANS 50 25 0 50 100
PROFILE (HORIZONTAL) 50 25 0 50 100
PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2006 = 25,820
ADT 2026 = 39,900
DHV = 10 %
D = 60 %
T = 16 % *
V = 60 MPH
* TTST 6% DUAL 10%
FUNC CLASS= RURAL
MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4095 = 0.564 MILES
LENGTH STRUCTURES TIP PROJECT B-4095 = 0.042 MILES
TOTAL LENGTH OF TIP PROJECT B-4095 = 0.606 MILES

Prepared In the Office of:
PBSJ *1616 EAST MILLBROOK ROAD, SUITE 310*
RALEIGH, NORTH CAROLINA 27609
PHONE: (919) 876-6888

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 30, 2005

LETTING DATE: MARCH 20, 2007

DAVID W. BASS, PE
PROJECT ENGINEER

RHONDA B. EARLY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER *P.E.*

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

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5/26/99

PROJECT REFERENCE NO.	SHEET NO.
B-4095	1-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ROADS & RELATED ITEMS

- Edge of Pavement
- Curb
- Prop. Slope Stakes Cut — C
- Prop. Slope Stakes Fill — F
- Prop. Woven Wire Fence
- Prop. Chain Link Fence
- Prop. Barbed Wire Fence
- Prop. Wheelchair Ramp — WCR
- Exist. Guardrail
- Prop. Guardrail
- Equality Symbol
- Pavement Removal

RIGHT OF WAY

- Baseline Control Point
- Existing Right of Way Marker
- Exist. Right of Way Line w/Marker
- Prop. Right of Way Line with Proposed R/W Marker (Iron Pin & Cap)
- Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker
- Exist. Control of Access Line — CA
- Prop. Control of Access Line — CA
- Exist. Easement Line — E
- Prop. Temp. Construction Easement Line — E
- Prop. Temp. Drainage Easement Line — TDE
- Prop. Perm. Drainage Easement Line — PDE

HYDROLOGY

- Stream or Body of Water
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Shoreline
- Falls, Rapids
- Prop Lateral, Tail, Head Ditches — FLOW

STRUCTURES

MAJOR

- Bridge, Tunnel, or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR

- Head & End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Boxes — CB
- Paved Ditch Gutter

UTILITIES

- Exist. Pole
- Exist. Power Pole
- Prop. Power Pole
- Exist. Telephone Pole
- Prop. Telephone Pole
- Exist. Joint Use Pole
- Prop. Joint Use Pole
- Telephone Pedestal — T
- Cable TV Pedestal — C
- Hydrant
- Satellite Dish
- Exist. Water Valve
- Sewer Clean Out
- Power Manhole — P
- Telephone Booth
- Water Manhole — W
- Light Pole
- H-Frame Pole
- Power Line Tower
- Pole with Base
- Gas Valve
- Gas Meter
- Telephone Manhole — T
- Power Transformer
- Sanitary Sewer Manhole
- Storm Sewer Manhole — S
- Tank; Water, Gas, Oil
- Water Tank With Legs
- Traffic Signal Junction Box — S
- Fiber Optic Splice Box — F
- Television or Radio Tower

- Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement — TS TS
- Water Line — W W
- Sanitary Sewer — SS SS
- Sanitary Sewer Force Main — FSS FSS
- Gas Line — G G
- Storm Sewer — S S
- Power Line — P P
- Telephone Cable — T T
- U/G Telephone Conduit — TC TC
- Unknown Utility — ?UTL ?UTL
- Television Cable — TV TV
- Fiber Optics Cable — FO FO
- Exist. Water Meter — 0
- Drawn According to U/G Records — DATUR
- Abandoned According to U/G Records — AATUR
- End Of Information — E.O.I.

BOUNDARIES & PROPERTIES

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Property Line Symbol — PL
- Exist. Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Property Number — 123
- Parcel Number — 6
- Fence Line — WW & ISBW
- Existing Wetland Boundaries — WLB
- Proposed Wetland Boundaries — WLB
- Existing Endangered Animal Boundaries — EAB
- Existing Endangered Plant Boundaries — EPB

BUILDINGS & OTHER CULTURE

- Buildings
- Foundations
- Area Outline
- Gate
- Gas Pump Vent or U/G Tank Cap
- Church
- School
- Park
- Cemetery
- Dam
- Sign — S
- Well — W
- Small Mine
- Swimming Pool

TOPOGRAPHY

- Loose Surface
- Hard Surface
- Change in Road Surface
- Curb
- Right of Way Symbol — R/W
- Guard Post — GP
- Paved Walk
- Bridge
- Box Culvert or Tunnel
- Ferry
- Culvert
- Footbridge
- Trail, Footpath
- Light House

VEGETATION

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

RAILROADS

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH

revised 02/25/97

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4095	1C
Location and Surveys	

SURVEY CONTROL SHEET B-4095

NC GRID
NAD 83

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
5001	BL-1(B4095-1)	766347.1100	1643604.1380	690.62	OUTSIDE PROJECT LIMITS	
5002	BL-2(B4095-2)	767538.3920	1644953.2910	669.44	22+09.31	55.84 LT
5023	(NOT SET)	767775.0124	1645267.3507	UNKNOWN	26+02.44	47.56 LT
5003	BL-3	767866.8920	1645389.3000	668.85	27+55.10	44.35 LT
5004	BL-4	768048.6320	1645771.8750	669.74	31+68.13	49.43 RT
5005	BL-5	768485.4370	1646243.4170	678.44	38+08.82	2.21 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
5006	BY1-6	767699.7550	1644309.3790	692.67	OUTSIDE PROJECT LIMITS	
5021	BL-2(B4095-2)	767538.3920	1644953.2910	669.44	13+39.60	119.51 LT

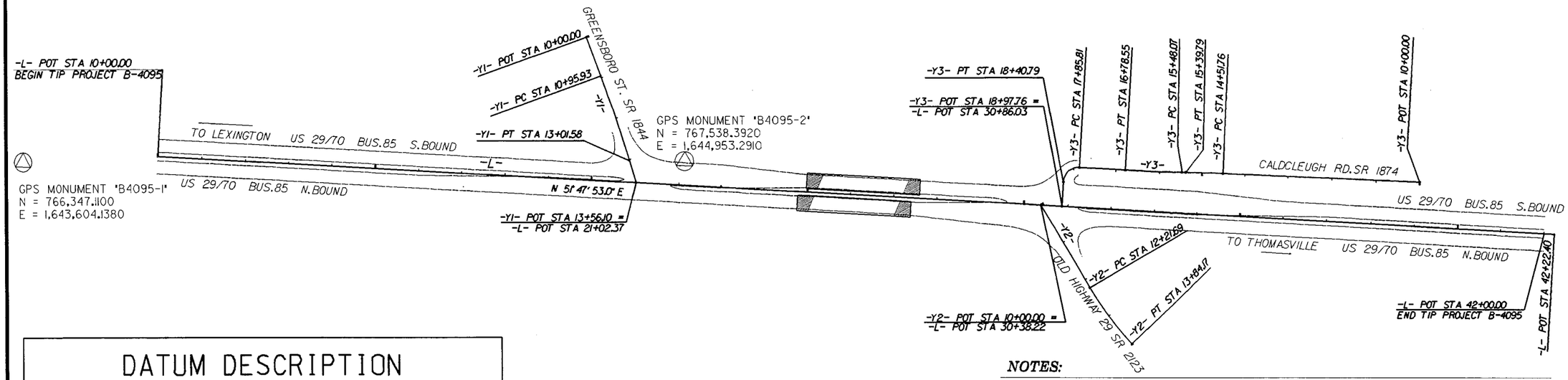
BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
5008	BL-4	768048.6320	1645771.8750	669.74	11+13.32	80.49 LT
5007	BY2-7	767935.3530	1646133.3590	681.35	OUTSIDE PROJECT LIMITS	

BM-1 ELEVATION = 689.33'
N 766904 E 1644129
L STATION 11+69 67 LEFT
R/R SPIKE SET IN BASE OF 18" MAPLE. 35' RT. OF NORTH EDGE OF S. BOUND US 29/70 BUS. 85.

BM-2 ELEVATION = 691.77'
N 768519 E 1646425
L STATION 39+72 84 RIGHT
R/R SPIKE SET IN BASE OF 30" FORKED BERCH. 40' RT OF SOUTH EDGE OF N. BOUND US 29/70 BUS. 85.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4095-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 766347.1100(ft) EASTING: 1643604.1380(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989887 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4095-1" TO -L- STATION 10+00.00 IS N 47°19'39" E 589.43'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   TIP4096_LS_CONTROL_DATE.HTML

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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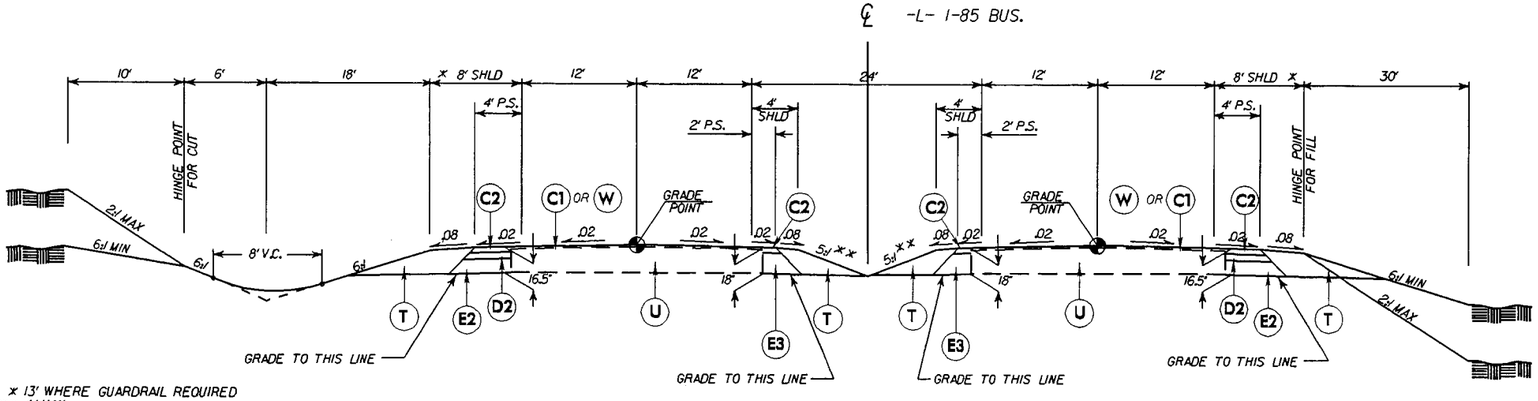
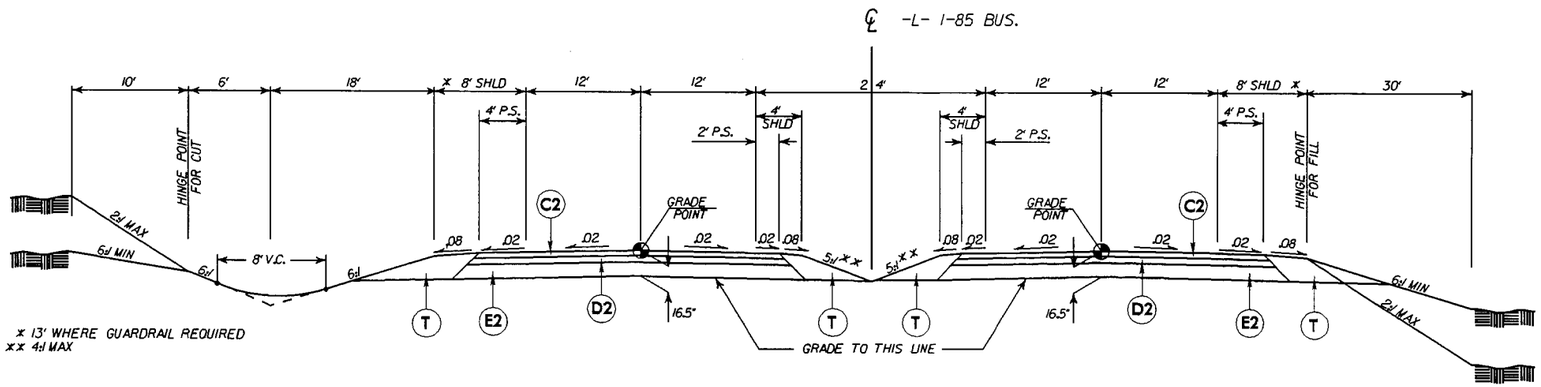


TYPICAL SECTION NO. 1

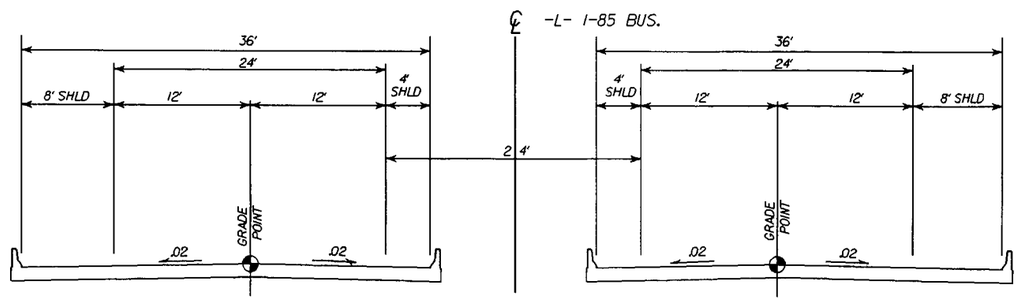
USE TYPICAL SECTION NO.1 AS FOLLOWS:
-L- NBL/SBL STA.10+00.00 TO STA. 21+75.00
-L- NBL/SBL STA.28+50.00 TO STA. 42+00.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO.2 AS FOLLOWS:
-L- NBL STA 21+75.00 TO STA 24+76.38 (APPROACH SLAB)
-L- NBL STA 27+44.23 (APPROACH SLAB) TO STA 28+50.00
-L- SBL STA 21+75.00 TO STA 24+95.78 (APPROCH SLAB)
-L- SBL STA 27+44.23 (APPROACH SLAB) TO STA 28+50.00

x 13' WHERE GUARDRAIL REQUIRED



BRIDGE TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO.3 AS FOLLOWS:
-L- NBL STA 25+00.30 (BEGIN BRIDGE) TO STA 27+20.31 (END BRIDGE)
-L- SBL STA 25+19.70 (BEGIN BRIDGE) TO STA 27+39.70 (END BRIDGE)

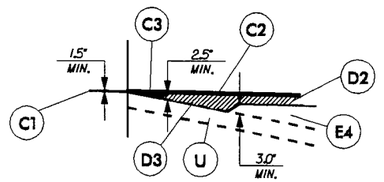
PROJECT REFERENCE NO.	SHEET NO.
B-4095	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2.0" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5 " ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. APPROX. 8.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 541.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. APPROX. 15" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD. IN EACH OF THREE LAYERS.
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING DETAIL.

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



WEDGING DETAIL (W) FOR -L- LINE

REVISIONS

8/17/99

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8/17/99

REVISIONS

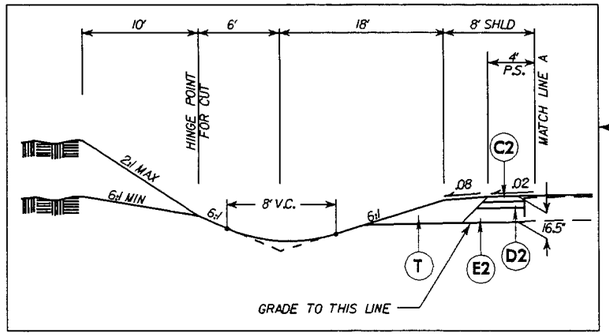
TRAFFIC CONTROL TYPICAL SECTIONS

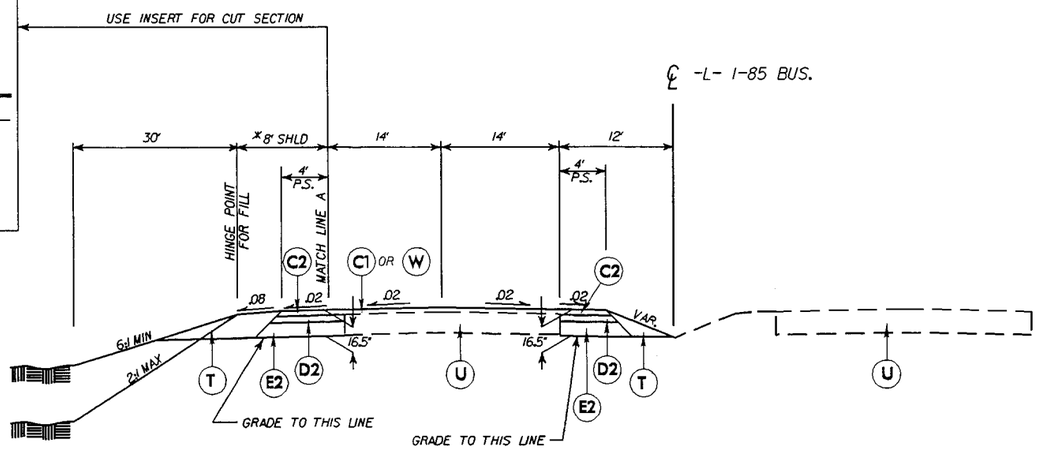
(USE IN CONJUNCTION WITH TRAFFIC CONTROL PLANS AND PLAN SHEETS 2-B THRU 2-E)

PROJECT REFERENCE NO.	SHEET NO.
B-4095	2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888





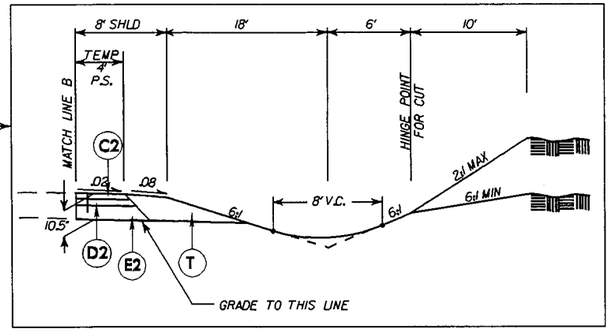
13' WHERE GUARDRAIL REQUIRED *

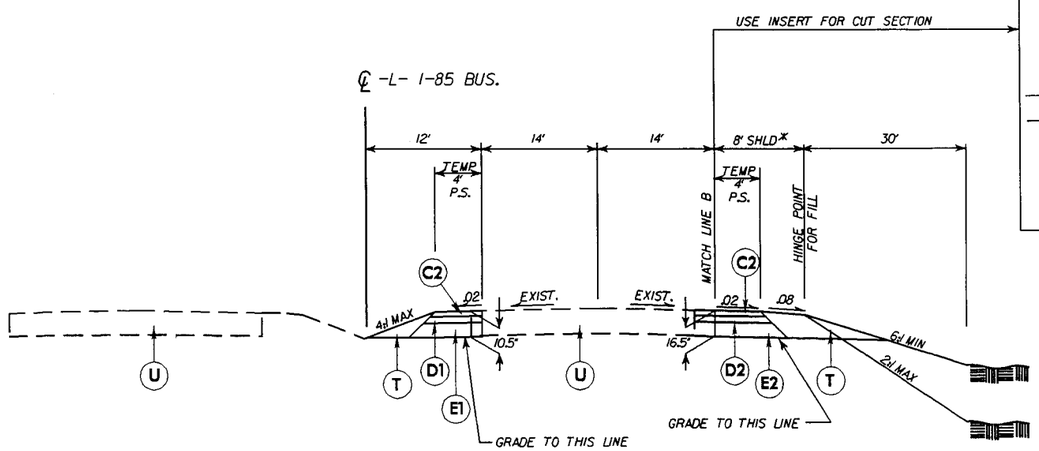
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO.4 AS FOLLOWS:
-L- STA. 10+00.00 TO STA. 22+25.00 (SBL)
-L- STA. 28+50.00 TO STA. 42+00.00 (SBL)

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5C
C2	3" TYPE S9.5C (TWO LAYERS)
C3	VAR. DEPTH TYPE S9.5C
D1	2.5" TYPE I19.0C
D2	4" TYPE I19.0C
D3	VAR. DEPTH TYPE I19.0C
E1	5" TYPE B25.0C
E2	9.5" TYPE B25.0C (TWO LAYERS)
E3	15" TYPE B25.0C, (THREE LAYERS)
E4	VAR. DEPTH TYPE B25.0C
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING DETAIL.

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

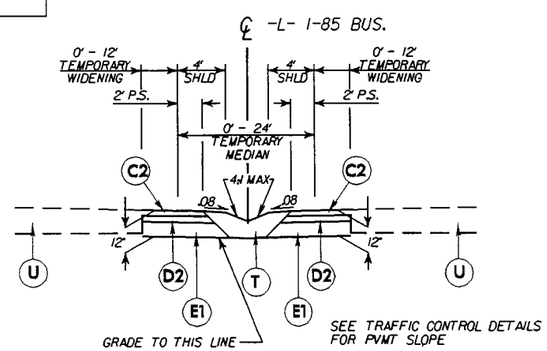




* 13' WHERE GUARDRAIL REQUIRED

TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO.5 AS FOLLOWS:
-L- STA. 14+00.00 TO STA. 25+15.00 (NBL)
-L- STA. 31+88.00 TO STA. 36+78.00 (NBL)



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO.6 AS FOLLOWS FOR TEMPORARY MEDIAN CROSS-OVERS:
-L- STA. 13+53.74 TO STA. 20+44.86
-L- STA. 31+20.41 TO STA. 36+78.22

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

REVISIONS

8/17/99

NAD 83

-L- POT STA 10+00.00

POWER & TELEPHONE SUPPLY COMPANY
DB 591PG 594

NORTH LEXINGTON TRIANGLE FIRE DEPT.
DB 518 PG 201
DB 307 PG 314

NORTH LEXINGTON TRIANGLE FIRE DEPT.
DB 518 PG 201
DB 307 PG 314

15 (-L-)

BST

EXISTING R/W

TEMPORARILY GRADE MEDIAN TO DRAIN TO INLET AT 14+00.

GSG

13+50

10

-S2N10-

N 51° 47' 53" E

25.5 BST

TO LEXINGTON US 29/70 BUS.85 S.BOUND

TB-2GI

US 29/70 BUS.85 N.BOUND

30 BST

10 BST

-L- POT STA 10+50.00 =
-S2N10- PC STA 5+00.00
(24.00' OFFSET LT)

VIRGIE LEE EVERHART
DB 1074 PG 801

-S2N10- PRC STA 10+25.52

APPROXIMATE

ADJUST GRATE

MTL GUARD RAIL W/ MTL POSTS

HW

20 (-L-)

TB-2GI (4A)
15" CSP W/ ELBOWS

R=50'

TB-2GI (4)

CONC.

20'

20'

TEMPORARY 4' PAVED SHOULDER

R=50'

-S2N10-

-15-

N 51° 47' 53" E

RETAIN

15" MTL

MTL GUARD RAIL W/ MTL POSTS

4' PAVED SHOULDER

PRECAST CONCRETE BARRIER

COVER WITH TEMPORARY STEEL PLATE

-L- POT STA 20+99.71 =
-S2N10- PT STA 15+51.05
(22.00' OFFSET RT)

VIRGIE LEE EVERHART
DB 1074 PG 801

BRUSH

139.04'
S08°40'05"W

91.42'
S04°58'35"W

S43°57'34"E
152.58'

GREENSBORO ST. SR 1844 VAR.BST

EXISTING R/W

CONC.

15' BK FIRESTATION

E/P

CHARLIE T. COMER AND WIFE
WILLIE H. COMER
DB 2613 PG 213
1 S BLK BUS.

200' APPROXIMATE 6" STEEL

GRAV.

16' APPROXIMATE LOC.

GST EXISTING R/W

12" APPROXIMATE LOC.

GRAV.

BREAK LINE

SEE SHEET 2C

-S2N10-	
PI Sta 7+62.93	PI Sta 12+88.46
Δ = 5° 01' 06.2" (RT)	Δ = 5° 01' 06.2" (LT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 525.52'	L = 525.52'
T = 262.93'	T = 262.93'
R = 6,000.00'	R = 6,000.00'
SE = EXIST	SE = EXIST
DS = 50	DS = 50

CROSS-OVER DETAIL
SBL TO NBL (-L- 10+00 +/-)
-S2N10-

NOTE:
SEE SHEETS 4 & 5 FOR -L- PLAN VIEW
SEE TRAFFIC CONTROL PLANS FOR TEMPORARY WIDENING

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 320 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

REVISIONS 8/17/99

NAD 83

NC GRID NAD 83

SEE SHEET 2B FOR LINE BREAK

NO DEED LISTING

30 (-L-)

DB 1009 PG 167

35 (-L-)

40 (-L-)

-L- POT STA 29+25.00 = -N2S40- PC STA 5+00.00 (22.00' OFFSET RT)

-N2S40- PRC STA 10+25.52

1 S F BUS

2 S F D

DB 928 PG 304

18" CONC.

RETAIN

4.0 WW

CABLE FENCE

6" STEEL

APPROXIMATE LOC.

EXISTING R/W

12"

CALOCLEUGH RD.SR 1174

20.5 BST

GRAVEL

6.0 CHLK W/ 3 S BW

TELEPHONE MARKER

MTL GUARD RAIL W/ MTL POSTS

15" CONC.

APPROX. LOC. JB

R=150'

R=55'

COVER WITH TEMP. STEEL PLATE

N 51° 47' 53" E

-N2S40-

-L-

TB-26G

TB NB W/ MH COVER

15" RCP

TB-26I

3.5 BST

10 BST

25.0 BST TO THOMASVILLE US 29/70 BUS.85 N.BOUND

PRECAST CONCRETE BARRIER

4' PAVED SHOULDER

TEMPORARILY GRADE MEDIAN TO DRAIN TO INLET AT 36+25

36+78

24" MTL

18" MTL MTL GUARD RAIL W/ MTL POSTS

50'L

2" PVC APPROXIMATE LOC.

EXISTING R/W

60.00'

25.0 BST

OLD HIGHWAY 29 SR 2823 TO KANOY RD.

SCRAP PILE

-L- POT STA 39+74.71 = -N2S40- PT STA 15+51.05 (24.00' OFFSET LT)

-N2S40-	
PI Sta 7+62.93	PI Sta 12+88.46
Δ = 5° 01' 06.2" (LT)	Δ = 5° 01' 06.2" (RT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 525.52'	L = 525.52'
T = 262.93'	T = 262.93'
R = 6,000.00'	R = 6,000.00'
SE = EXIST	SE = EXIST
DS = 50	DS = 50

CROSS-OVER DETAIL
NBL TO SBL (40+00+/-)
-N2S40-

NOTE:
SEE SHEETS 5 & 6 FOR -L- PLAN VIEW
SEE TRAFFIC CONTROL PLANS FOR TEMPORARY WIDENING

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ
1616 EAST MILLBROOK ROAD, SUITE 316
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

REVISIONS
8/17/99

NAD 83

-L- POT STA 10+00.00

-L- POT STA 10+50.00 = -N2S10- PC STA 5+00.00 (24.00' OFFSET RT)

-N2S10- PRC STA 10+25.52

845.05' S02°44'20"W

POWER & TELEPHONE SUPPLY COMPANY
DB 591PG 594

15 (-L-)

BST

EXISTING R/W

TEMPORARILY GRADE MEDIAN TO DRAIN TO INLET AT 14+00

GRAD

NORTH LEXINGTON TRIANGLE FIRE DEPT.
DB 518 PG 201
DB 307 PG 314

PRECAST CONCRETE BARRIER

12"SD

ADJUST GRATE

4' PAVED SHOULDER

20 (-L-)

MTL GUARD RAIL W/ MTL POSTS

TO LEXINGTON US 29/70 BUS.85 S.BOUND

25.5 BST

30 BST

N 51° 47' 53" E
-N2S10-

TB-2GI (1)

US 29/70 BUS.85 N.BOUND

10

360.00'

-N2S10- ELBOWS

TB-2GI (4)

CONC.

10 BST

RETAIN

15" MTL

COVER WITH TEMPORARY STEEL PLATE

APPROXIMATE

VIRGIE LEE EVERHART
DB 1074 PG 801

-N2S10-

PI Sta 7+62.93	PI Sta 12+88.46
Δ = 5° 01' 06.2" (LT)	Δ = 5° 01' 06.2" (RT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 525.52'	L = 525.52'
T = 262.93'	T = 262.93'
R = 6,000.00'	R = 6,000.00'
SE = EXIST	SE = EXIST
DS = 50	DS = 50

-L- POT STA 20+99.71 = -N2S10- PT STA 15+51.05 (22.00' OFFSET LT)

BRUSH

158.04' S08°40'52"W

97.42' S02°38'35"W

142.81' S14°57'35"E

EIP

15 BY FIRE STATION

CONC.

GREENSBORD ST. SR 1844 VAR.BST

EXISTING R/W

CHARLIE T. COMER AND WIFE FILLIE H. COMER
DB 1613 PG 213
15 BLK BUS.

20' APPROXIMATE 6" STEEL

APPROXIMATE LOC.

12"

GRAV.

BREAK LINE

SEE SHEET 2E

CROSS-OVER DETAIL
NBL TO SBL (-L- 10+00 +/-)
-N2S10-

NOTE:
SEE SHEETS 4 & 5 FOR -L- PLAN VIEW
SEE TRAFFIC CONTROL PLANS FOR TEMPORARY WIDENING

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

REVISIONS

8/17/98

NAD 83

SEE SHEET 2D

BREAK LINE

CITY OF LEXINGTON
NO DEED LISTING

BRUCE TERRY ESSICK
AND WIFE
JEAN ROWE ESSICK
DB 1009 PG 167

CITY OF LEXINGTON
NO DEED LISTING

CTC INVESTMENTS
DB 928 PG 304

PHOEBE S. CURRY
NO DEED LISTING

SARAH C. BECK
DB 536 PG 105

-L- POT STA 29+25.00 =
-S2N40- PC STA 5+00.00
(22.00' OFFSET LT)

-L- POT STA 39+74.71 =
-S2N40- PT STA 15+51.05
(24.00' OFFSET RT)

-S2N40- PRC STA 10+25.52

TEMPORARILY GRADE MEDIAN
TO DRAIN TO INLET AT 36+25

-S2N40-	
PI Sta 7+62.93	PI Sta 12+88.46
Δ = 5° 01' 06.2" (RT)	Δ = 5° 01' 06.2" (LT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 525.52'	L = 525.52'
T = 262.93'	T = 262.93'
R = 6,000.00'	R = 6,000.00'
SE = EXIST	SE = EXIST
DS = 50	DS = 50

CROSS-OVER DETAIL
SBL TO NBL (40+00+/-)
-S2N40-

NOTE:
SEE SHEETS 5 & 6 FOR -L- PLAN VIEW
SEE TRAFFIC CONTROL PLANS FOR TEMPORARY WIDENING

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

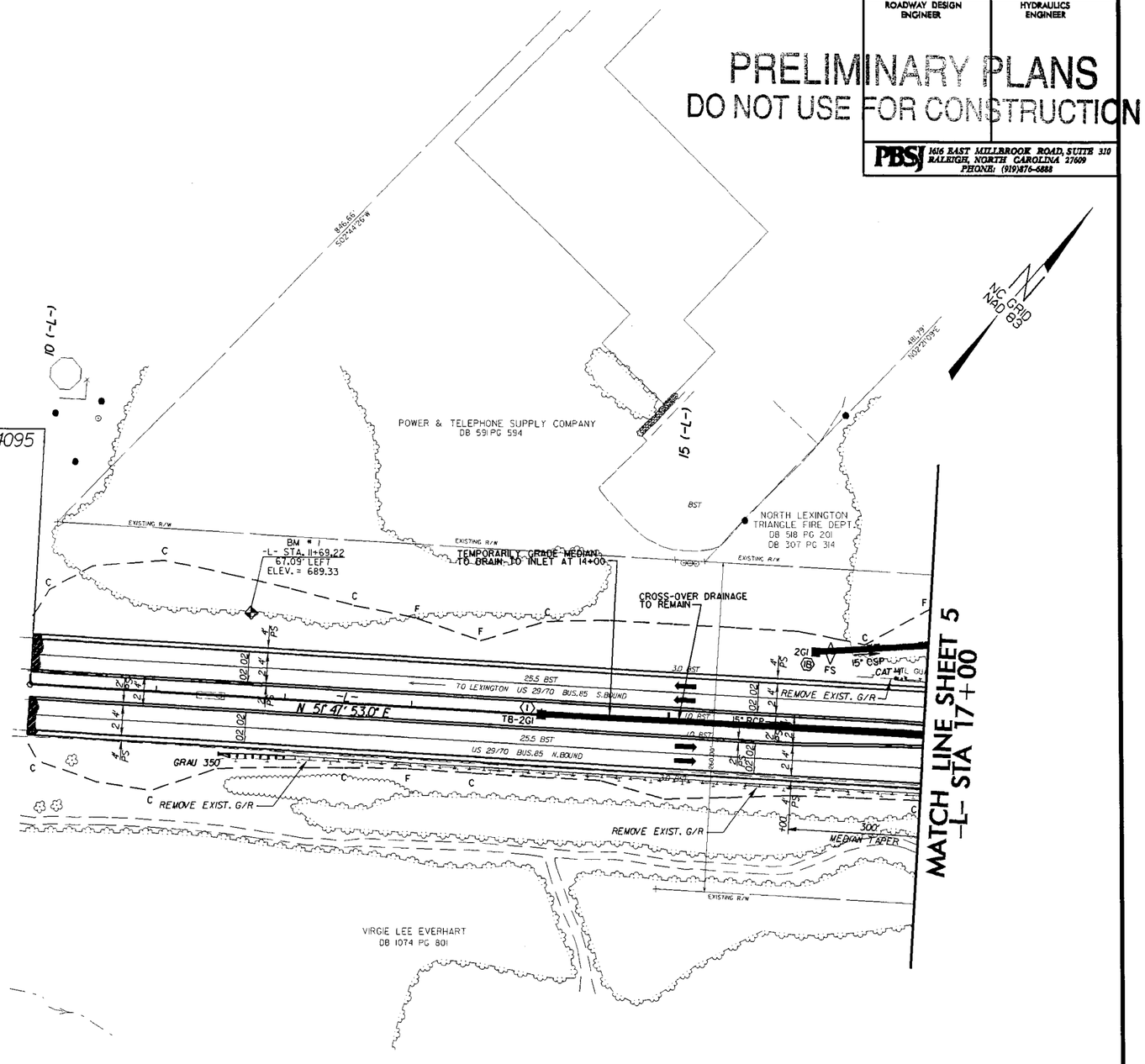
PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

REVISIONS

8/17/99

BL-1 (GPS-1)

-L- POT STA 10+00.00
BEGIN TIP PROJECT B-4095



NOTE: SEE SHEET 7 FOR -L- PROFILE.

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

REVISIONS

8/17/99

-Y1-
PI Sta 11+98.79
Δ = 3° 31' 01.7" (RT)
D = 1° 42' 37.2"
L = 205.64'
T = 102.85'
R = 3,350.00'
Se = EXISTING
DS = 55 MPH

ADT 2006 2026

SR 1844 GREENSBORO ST

2530 4290 | 270 510 | 2260 3780

-L- US 29/70 & I-85 (BUS) 25820 39900

BRIDGE / ROADWAY RELATIONSHIP

BEGIN APPROACH SLAB -L- STA. 24+95.78 | BEGIN BRIDGE -L- STA. 25+19.70 | END BRIDGE -L- STA. 27+39.70 | END APPROACH SLAB -L- STA. 27+63.62

TYPE-III | 8" | 4" PS | 2.4" | 3.6' CLEAR ROADWAY | 2" PS | 1'6" | 4' | -L-

BEGIN APPROACH SLAB -L- STA. 24+76.38 | BEGIN BRIDGE -L- STA. 25+00.30 | END BRIDGE -L- STA. 27+20.31 | END APPROACH SLAB -L- STA. 27+44.23

NC GRID NAD 83

BL-2 (GPS-2) -L- 22+09.31 55.84' LT.

BL-3 -L- 27+55.10 44.35' LT.

NORTH LEXINGTON TRIANGLE FIRE DEPT. DB 518 PG 201 DB 307 PG 344

-Y1- POT STA 10+00.00

-Y1- PC STA 10+95.93

-Y1- POC STA 12+28.51 END RESURFACING

-Y1- PT STA 13+56.10

S 61° 25' 57.5" E

S 57° 54' 55.8" E

N 51° 47' 58.8" E

-Y1- POT STA 13+56.10 = -L- POT STA 21+02.37

CHARLIE T. COMER AND WIFE TILLIE H. COMER DB 1258 PG 213

1S BK FRESTATION

1S BLK BUS.

GREENSBORO ST., SR 1844 VARIES

CONC.

GRAV.

BST

EIP

20' APPROXIMATE 6" STEEL

APPROXIMATE LOC.

16" APPROXIMATE LOC.

2" PVC

6.0 CLK W/ 3 S BW

12" APPROXIMATE LOC.

150'-75'-150' 5.0 DS

200' UNIFORM TAPER

SHLD. BERM GUTTER STA. 23+75 TO STA. 24+97

GRADE TO DRAIN TO EXISTING SWALE

30' CONC.

6" STEEL

ABBOTTS CREEK

DAM

WATER VALVES

GRAV. VENT

PSH SEE DETAIL B

15" CSP

RETAINING WALL (MAX HT = 5')

REMOVE EXIST. G/R TOP ELEV.= 658.35-100 INV. ELEV.= 654.15 DS

TB-2GI

15" CSP W/ ELBOWS

TB-2GI CONC 3'

RETAIN

ADJUST GRATE

MEDIAN TAPER

INV. ELEV. = 663.07 END BROKEN

INV. ELEV. = 650.17

COVER WITH TEMPORARY STEEL PLATE

REMOVE EXIST. G/R

WTL GUARD RAIL W/ WTL POSTS

ATTENUATOR

15" RCP

TB-2GI

SEAT ELEV. = 664.89

SEAT ELEV. = 664.76

SEAT ELEV. = 664.90

SEAT ELEV. = 664.78

TEST HOLE #1

TEST HOLE #2

TEST HOLE #3

BRIDGE = 130

18" WTL

INV. ELEV. = 667.24

INV. ELEV. = 663.93

INV. ELEV. = 652.14

INV. ELEV. = 650.17

INV. ELEV. = 647.93

30" WTL

CAT-I

ABANDONED BRIDGE BENT

200' UNIFORM TAPER 24" WTL

UNCOVERED RIBS

BRUSH

VIRGIE LEE EVERHART DB 1074 PG 801

SARAH C. BECK DB 536 PG 105

2.5 CI APPROXIMATE LOCATION

139.04' S08°40'52"W

91.42' S06°38'35"W

142.28' S43°57'47"E

MATCH LINE SHEET 4 -L- STA 17+00

MATCH LINE SHEET 6 -L- STA 30+00

DETAIL B
PREFORMED SCOUR HOLE
(NOT to Scale)

Pipe or Ditch Outlet | Install level and flush with natural ground. | Permanent Soil Reinforcement matting (PSRM) | Seed with native grasses at installation.

PLAN VIEW

Pipe or Ditch Outlet | PSRM | Natural Ground | Tuck | Fill Slope | Liner Class B Rip Rap 12" thick with Filter Fabric

SECTION A-A

STATION	B	D	d	W	STONE	FF
25+05 LT	6.0'	2.5'	0.5'	4.0'	14 TONS	31 SY
17+75 LT	3.8'	2.7'	0.5'	4.0'	8 TONS	24 SY

NOTE: SEE SHEET 7 FOR -L- PROFILE.
SEE SHEET S - FOR STRUCTURE.

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

-Y2-
PI Sta 13+03.30
Δ = 13° 17' 58.7" (LT)
D = 8° 11' 06.4"
L = 162.49'
T = 81.61'
R = 700.00'
Se = EXISTING
DS = 45 MPH

-Y3-		
PI Sta 14+95.78	PI Sta 16+13.32	PI Sta 18+20.81
Δ = 1° 21' 12.7" (LT)	Δ = 2° 09' 10.8" (RT)	Δ = 89° 59' 27.0" (LT)
D = 1° 32' 15.0"	D = 1° 39' 00.0"	D = 163° 42' 08.0"
L = 88.03'	L = 130.48'	L = 54.97'
T = 44.02'	T = 65.25'	T = 34.99'
R = 3,726.55'	R = 3,472.47'	R = 35.00'
Se = EXISTING	Se = EXISTING	Se = EXISTING
DS = 55 MPH	DS = 55 MPH	DS = 15 MPH

NC GRID NAD 83

ADT 2006 / 2026	SR 1874 CALDCLEUGH RD	
120 / 200	100 / 100	220 / 300
	-L-	
25820 / 39900	1980 / 3850	1140 / 1620
	US 29/70 & I-85 (BUS)	
3130 / 4890	SR 2123 OLD HIGHWAY 29	

NC GRID NAD 83

-Y3- PT STA 18+40.79

-Y3- POT STA 18+97.76 = -L- POT STA 30+86.03

-Y3- POC STA 17+90.00 END RESURFACING

MATCH LINE SHEET 5 -L- STA 30+00

-Y3- PC STA 17+66.81

-Y3- PT STA 16+38.55

-Y3- PC STA 15+40.00

-Y3- PT STA 15+39.79

-Y3- PC STA 14+45.76

-Y3- POT STA 10+00.00

BRUCE TERRY ESSICK AND WIFE JEAN ROWE ESSICK DB 1006 PG 167

CTC INVESTMENTS DB 926 PG 304

PHOEBE S. CURRY NO DEED LISTING

RUINS

-Y2- PC STA 12+21.69

-Y2- POT STA 10+00.00 = -L- POT STA 30+38.22

-Y2- POT STA 11+46.68 END RESURFACING

-Y2- PT STA 13+84.17

BL-4 -L- 31+68.13 49.43' RT.

BL-5 -L- 38+08.82 2.21' LT.

BM # 2 -L- STA. 39+72.27 83.72' RIGHT ELEV. = 691.77

-L- POT STA 42+00.00 END TIP PROJECT B-4095

-L- POT STA 42+22.40

CONCRETE COLLAR

CROSS OVER DRAINAGE TO REMAIN

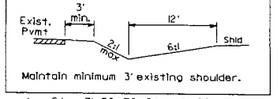
TEMPORARILY GRADE MEDIAN TO DRAIN TO INLET AT 36+25

SPECIAL DITCH GRADE REFER TO PROFILE & DITCH DETAIL "A"

REMOVE EXIST. G/R

TO KANOY RD.

DETAIL C
SPECIAL DETAIL
(Not to Scale)



Maintain minimum 3' existing shoulder.

-L- Sta. 33+33 TO Sta. 35+00 RT

-L- Sta. 31+50 TO Sta. 41+00 LT
REFER TO CROSS SECTIONS

NOTE: SEE SHEET 8 FOR -L- PROFILE.

REVISIONS

8/17/9

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PROJECT REFERENCE NO.	SHEET NO.
B-4095	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 PHONE: (919)876-6888

BM#1 ELEVATION = 689.33
N = 766804 E = 1644129
-L- STA 11+69.22 67.09' LT
RR SPIKE SET IN BASE OF 18" MAPLE
35' RT OF NORTH EDGE OF SB US 29/70 BUS. 85

100' FEATHER TO EXISTING

BEGIN GRADE
-L- STA 11+00.00
Elev. 683.16

PI = 14+25.00
EL = 679.65'
VC = 250'
K = 604

PI = 17+50.00
EL = 674.79'
VC = 250'
K = 455

(-)1.0800%

(-)1.4939%

(-)1.4939%

-L-

NOTE: SEE SHEET 4 FOR -L- PLAN VIEW

PI = 17+50.00
EL = 674.79'
VC = 250'
K = 455

(-)1.4939%

(-)0.9444%

PI = 24+25.00
EL = 668.62'
VC = 175'
K = 141

(-)0.9444%

(+)0.3011%

BEGIN BRIDGE
-L- STA. 25+10.00
EL = 666.28'

FOR BRIDGE STATIONING SEE PLAN SHEET 5

END BRIDGE
-L- STA. 27+30.00
EL = 665.34'

(+)0.3011%

BRIDGE

1.5:1

1.5:1

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 8,500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 659.6	FT
BASE DISCHARGE	= 10,600	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 660.0	FT
OVERTOPPING DISCHARGE	= 30,200	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 668.1	FT

-L-

NOTE: SEE SHEET 5 FOR -L- PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4095	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PBSJ
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
PHONE: (919)876-6888

BM#2 ELEVATION = 691.77
N = 788519 E = 1648425
-L- STA 39+72.27 83.72' RT
RR SPIKE SET IN BASE OF 30" FORKED BIRCH
40' RT OF SOUTH EDGE OF NB US 29/70 BUS. 85

PI = 33+50.00
EL = 671.21'
VC = 350'
K = 227

PI = 37+00.00
EL = 677.65'
VC = 200'
K = 502

PI = 39+00.00
EL = 682.13'
VC = 200'
K = 1053

END GRADE
-L- STA 41+00.00
Elev. 686.23

100' FEATHER TO EXISTING

(+)0.30%
(+)1.84%
0.47%
(+)1.84%
(+)2.24%
(+)2.26%
(+)2.05%

BEGIN SIDE RT
STA 33+93
EL 669.56

END SIDE RT
STA 35+00
EL 670.34

690 680 670 660 650 640

30 31 32 33 34 35 36 37 38 39 40 41 42

---- DENOTES RIGHT DITCH GRADE

-L-

NOTE: SEE SHEET 6 FOR -L- PLAN VIEW

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Rev 3/6/01

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4095	X-1

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INDEX TO CROSS-SECTIONS

ALIGNMENT	SHEETS
VOLUME SUMMARY	X-1A
-L-	X-2 TO X-17

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8/23/99

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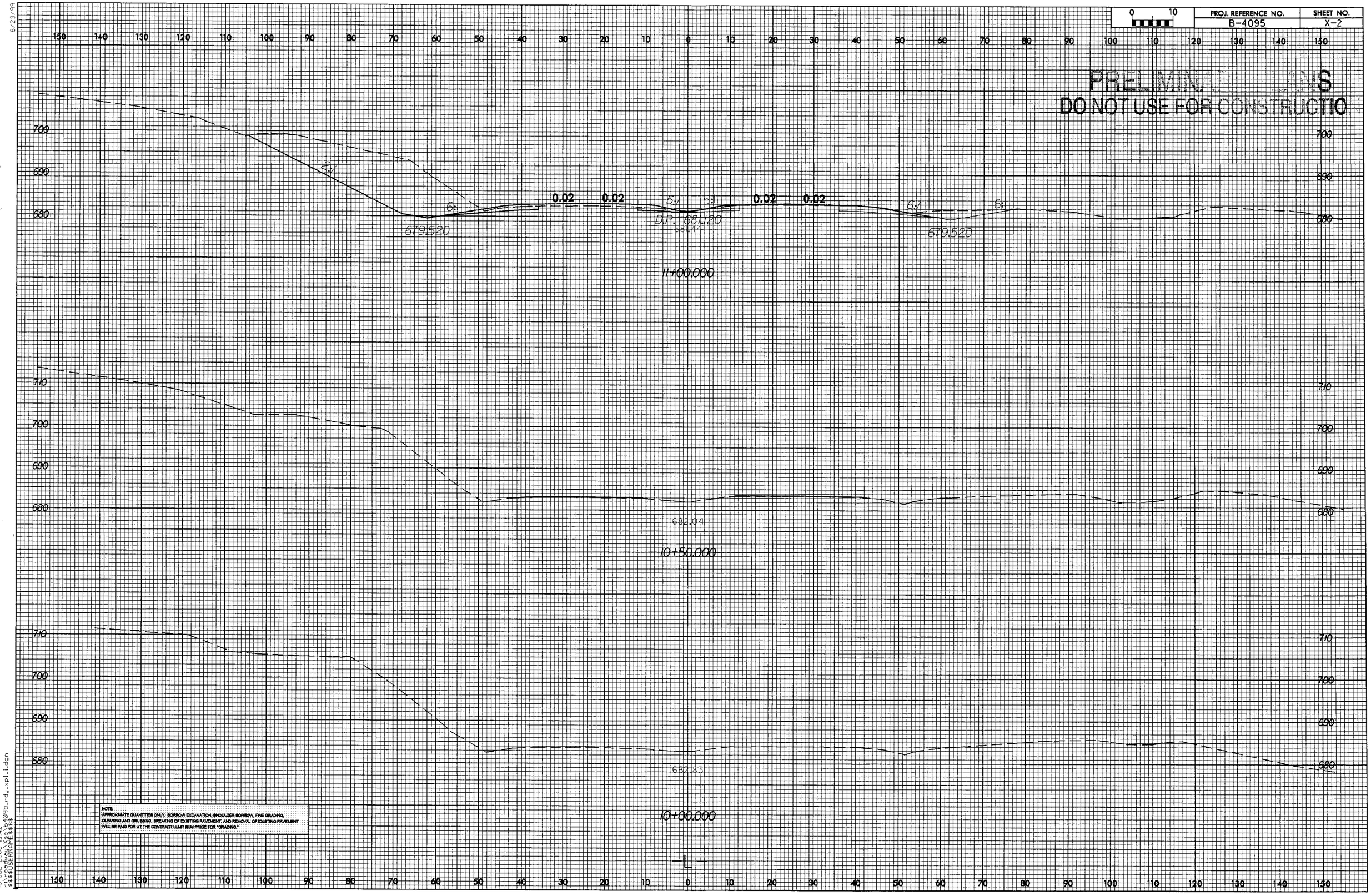
	B-4095	X-2



NOTE:
APPROXIMATE QUANTITIES ONLY. 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."

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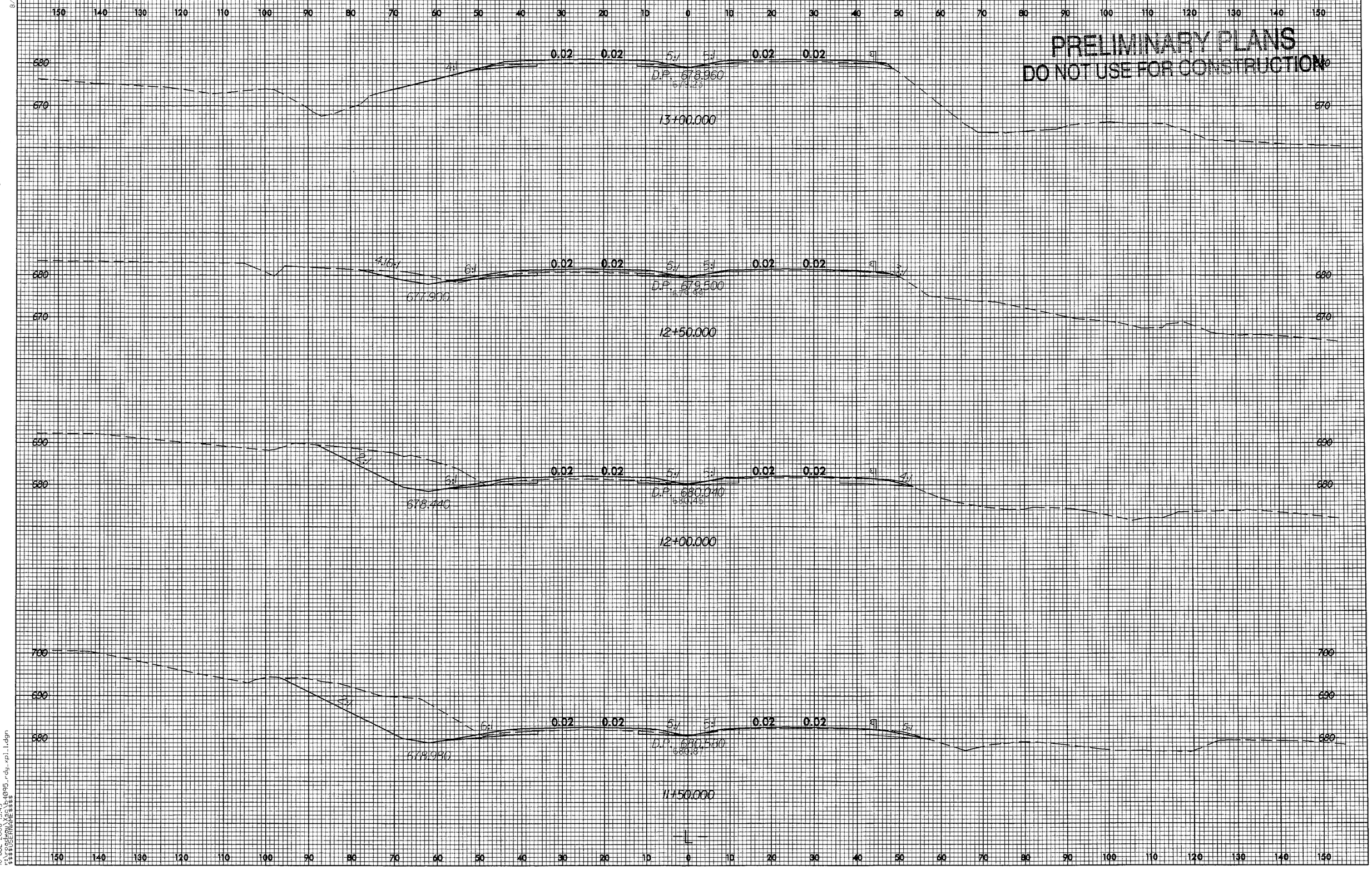
	B-4095	X-3

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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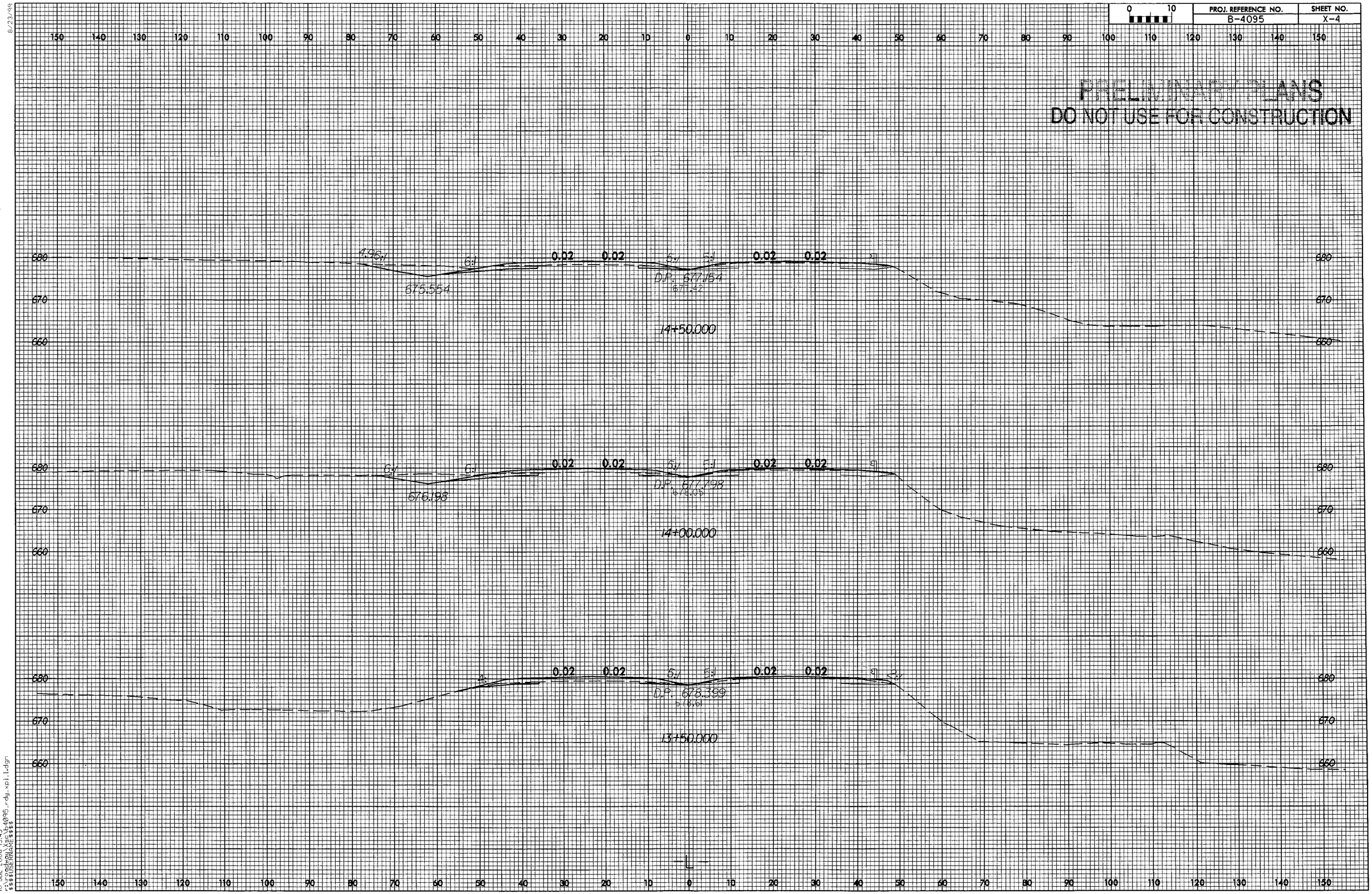
	B-4095	X-4

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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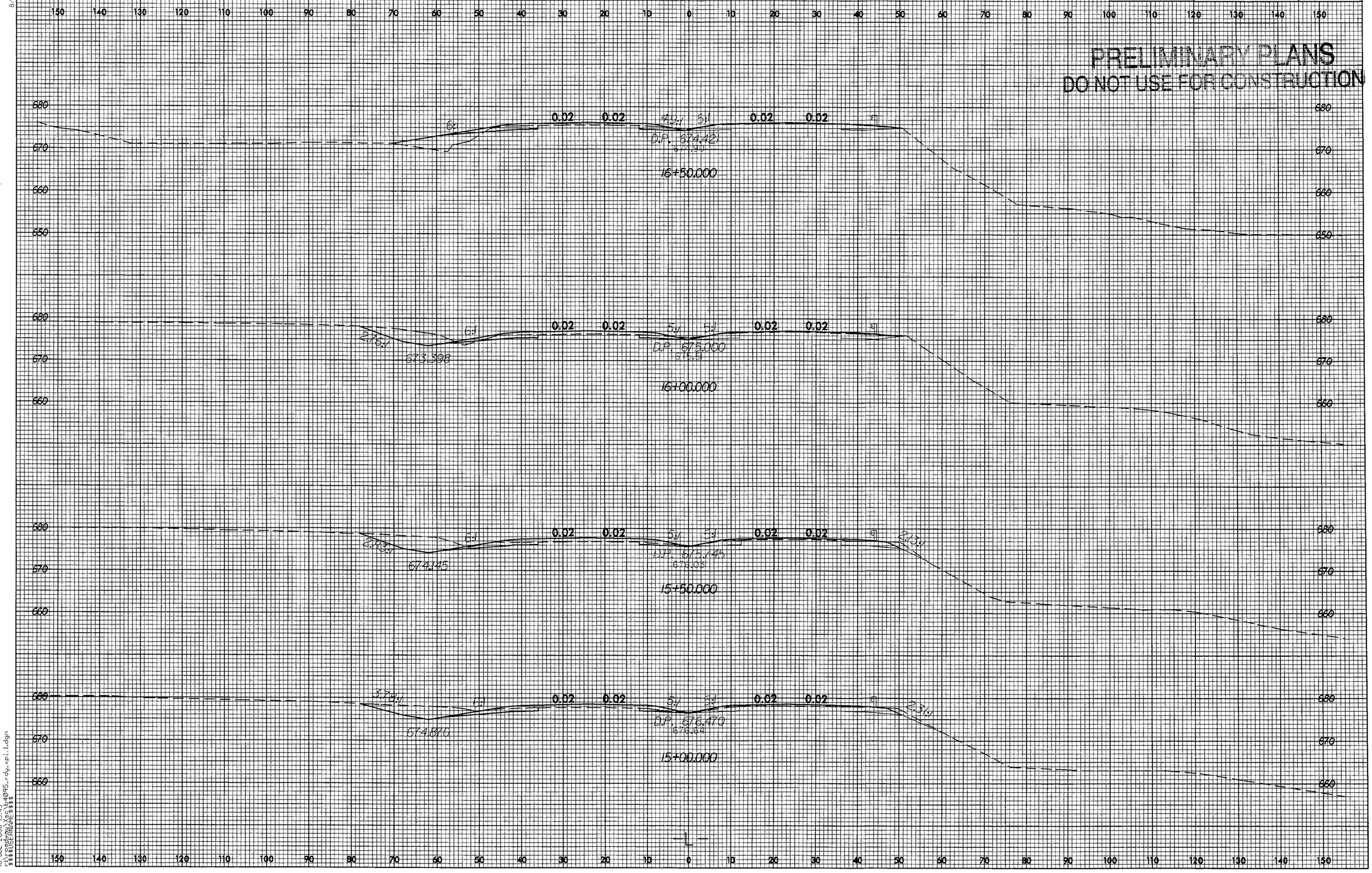

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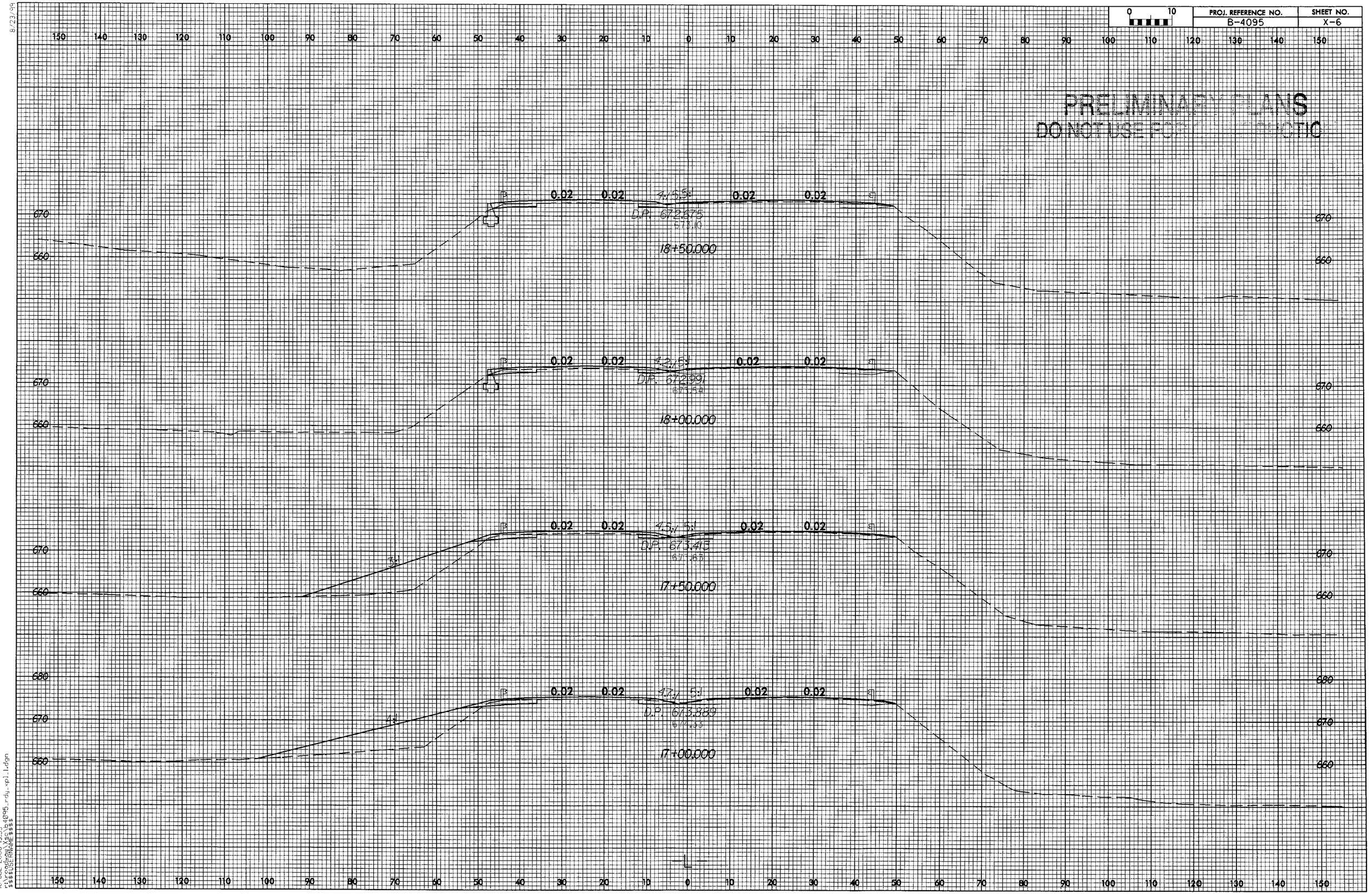

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	B-4095	X-7

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

670
660
650

554.1
668.08Y
6%
0.02 0.02
4%
7.7%
0.02 0.02
2%
P.I. 671.028
671.8
20+50.000

670
660

4%
3%
0.02 0.02
4%
7.7%
0.02 0.02
2%
P.I. 671.490
671.66
20+00.000

670
660

0.02 0.02
4%
7.7%
0.02 0.02
2%
P.I. 671.971
671.12
19+50.000

670
660

0.02 0.02
4%
7.7%
0.02 0.02
2%
P.I. 672.443
671.61
19+00.000

670
660

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	B-4095	X-8

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670
660
650

5.64%
6%
666.198
0.02
0.02
10%
10%
0.02
0.02
6%
D.P. 669.115
669.39
22+50.000

4.96%
6%
666.670
0.02
0.02
10%
10%
0.02
0.02
6%
D.P. 669.63
670.07
22+00.000

5.01%
6%
667.142
0.02
0.02
0.02
0.02
6%
6%
670.10
21+50.000

6%
6%
667.614
0.02
0.02
0.02
0.02
6%
6%
671.2
21+00.000

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B-4095	X-9

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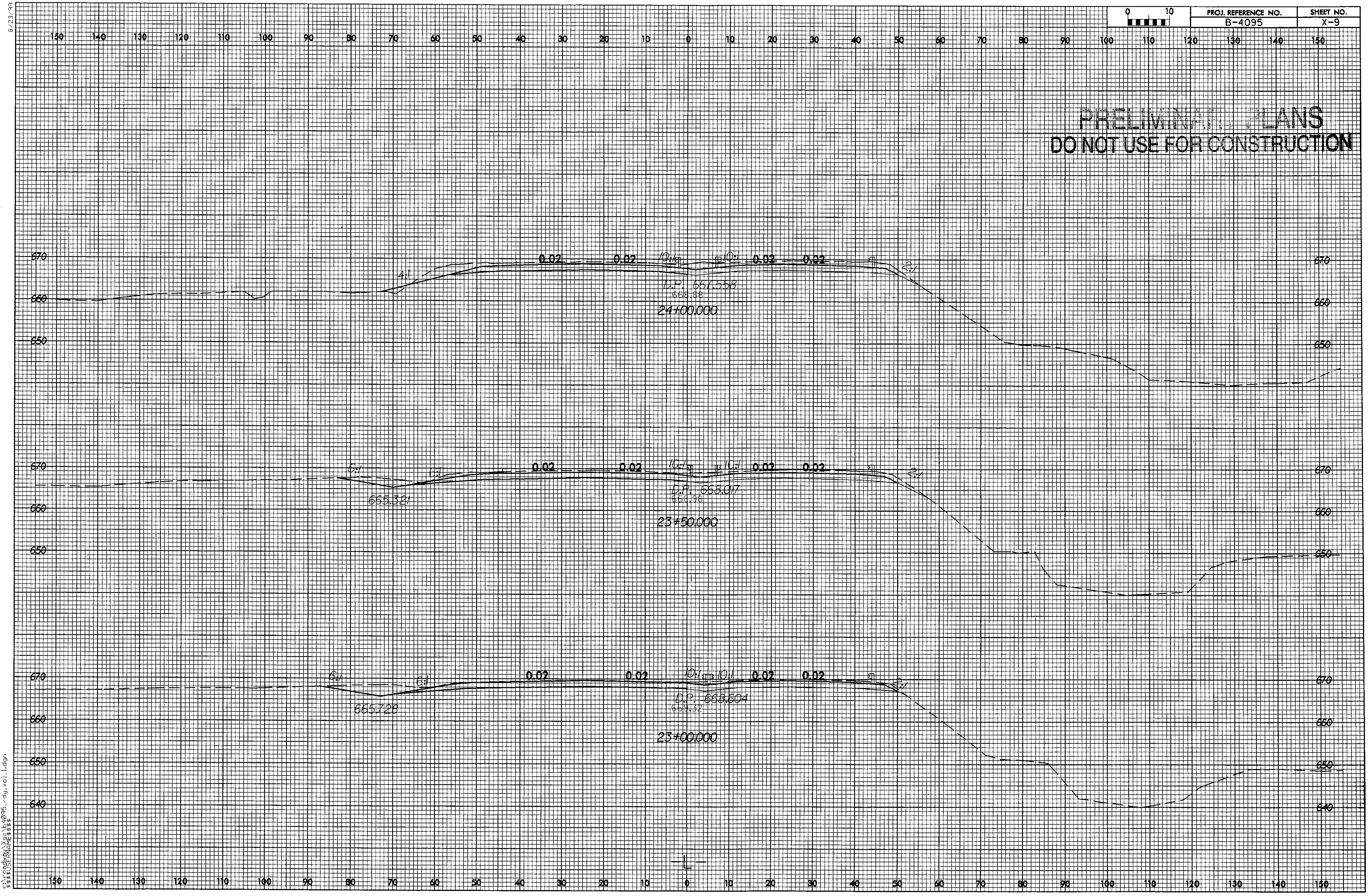

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PRELIMINARY PLANS
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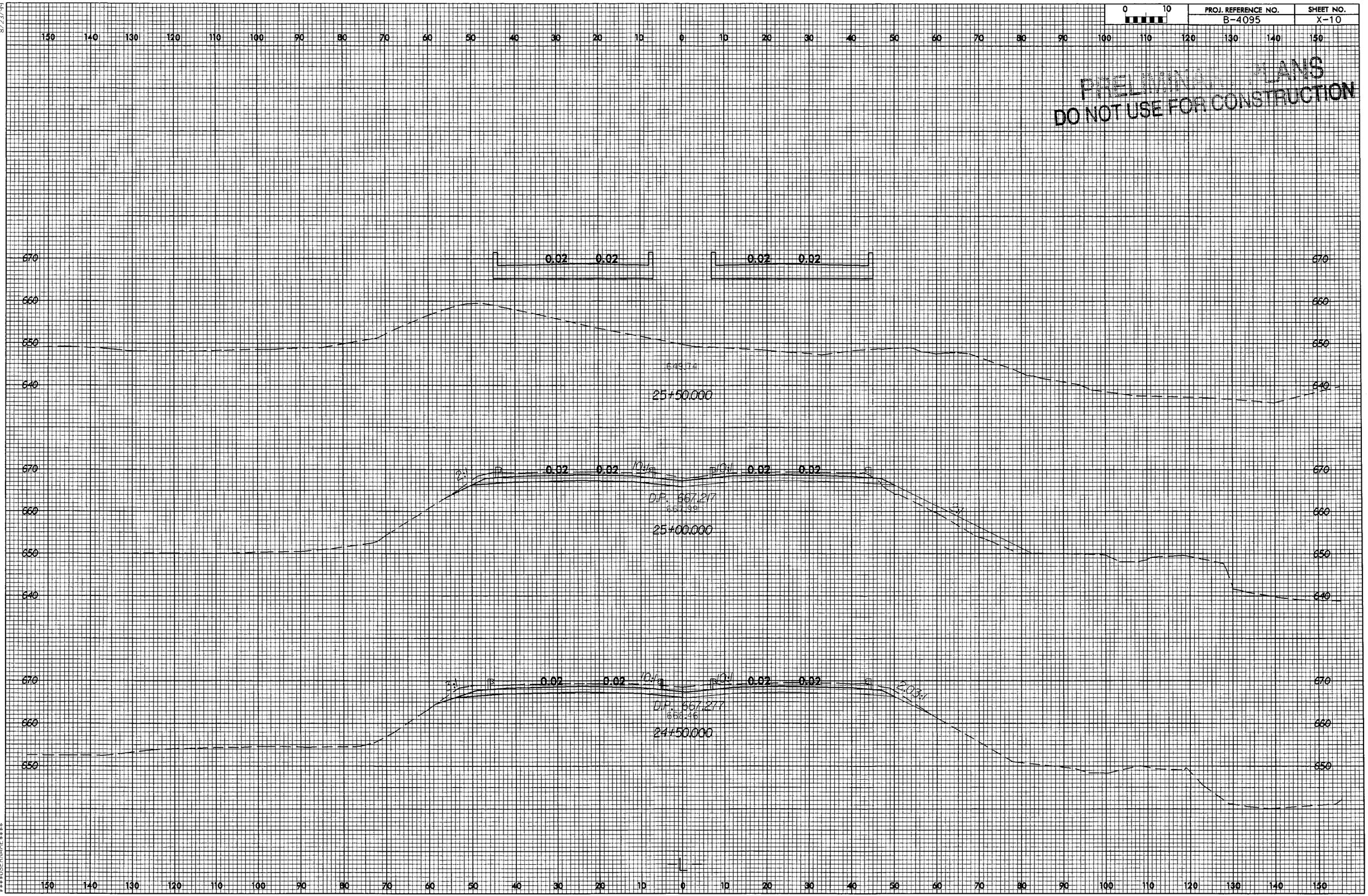

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670 660 650

2:1 0.02 0.02 10:1 10:1 0.02 0.02 2:1

D.P. 667.422
658.86

27+50.000

0.02 0.02 0.02 0.02

658.72

27+00.000

0.02 0.02 0.02 0.02

640

641.73

26+50.000

0.02 0.02 0.02 0.02

641.92

26+00.000

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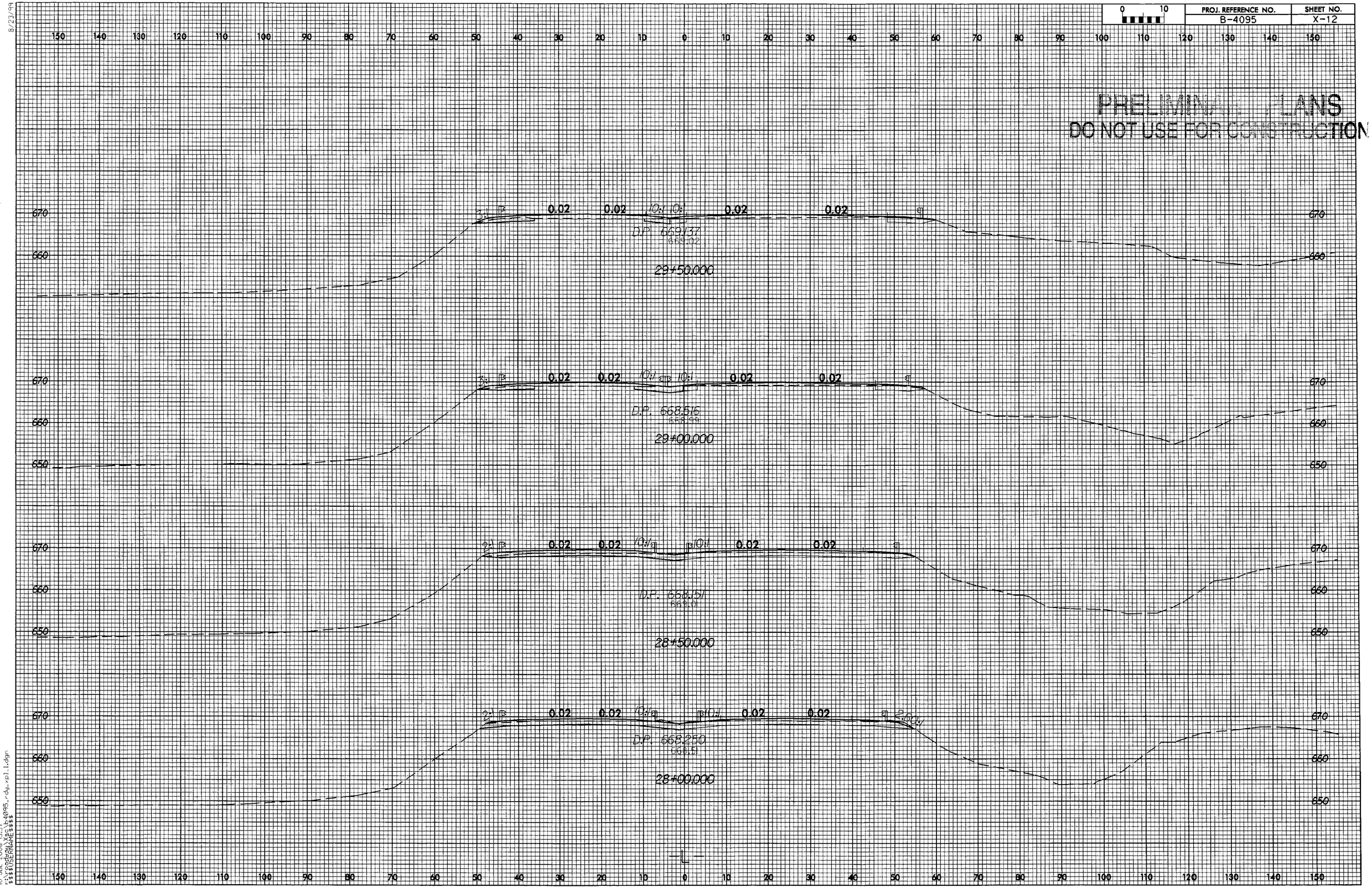

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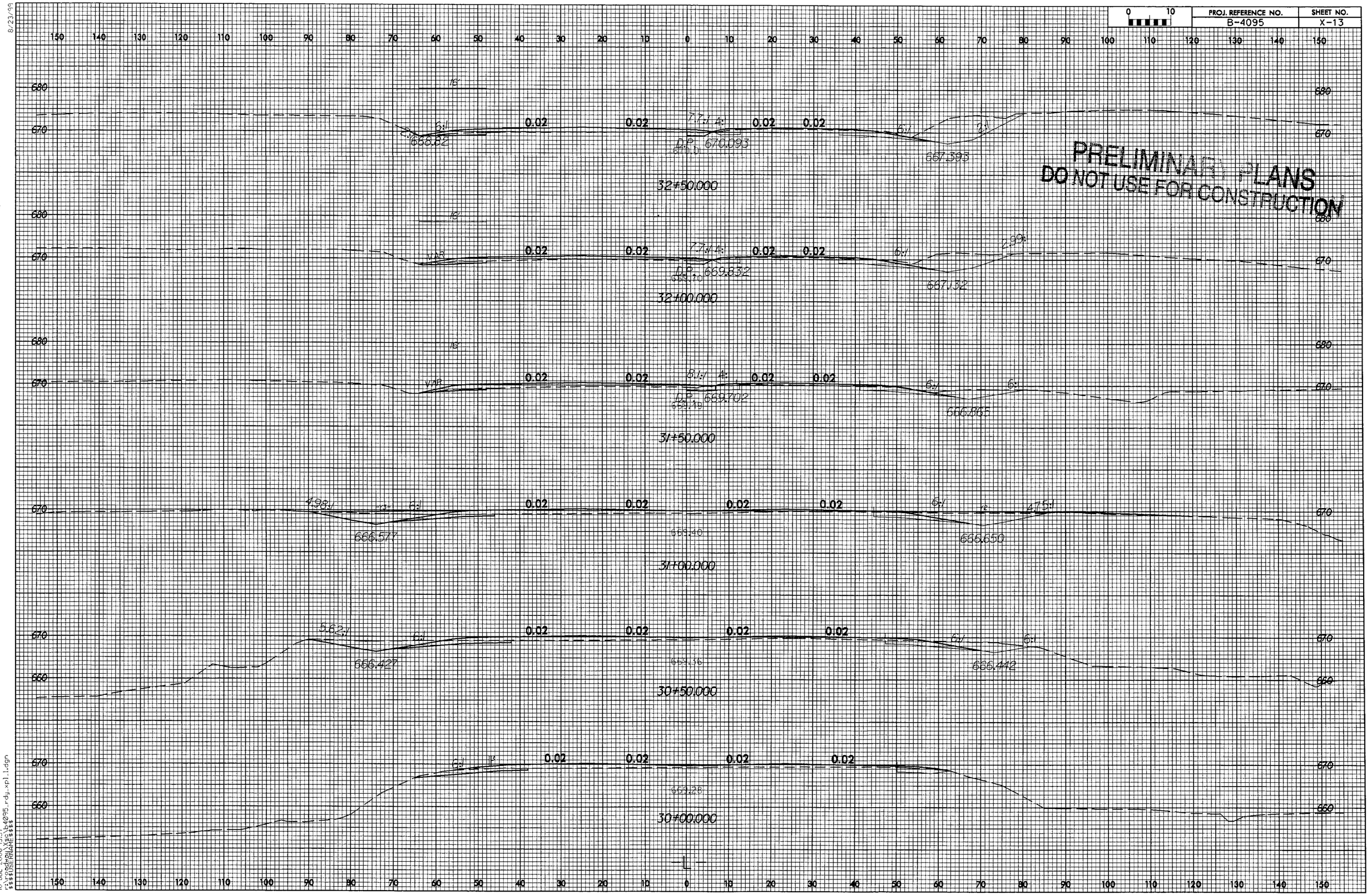

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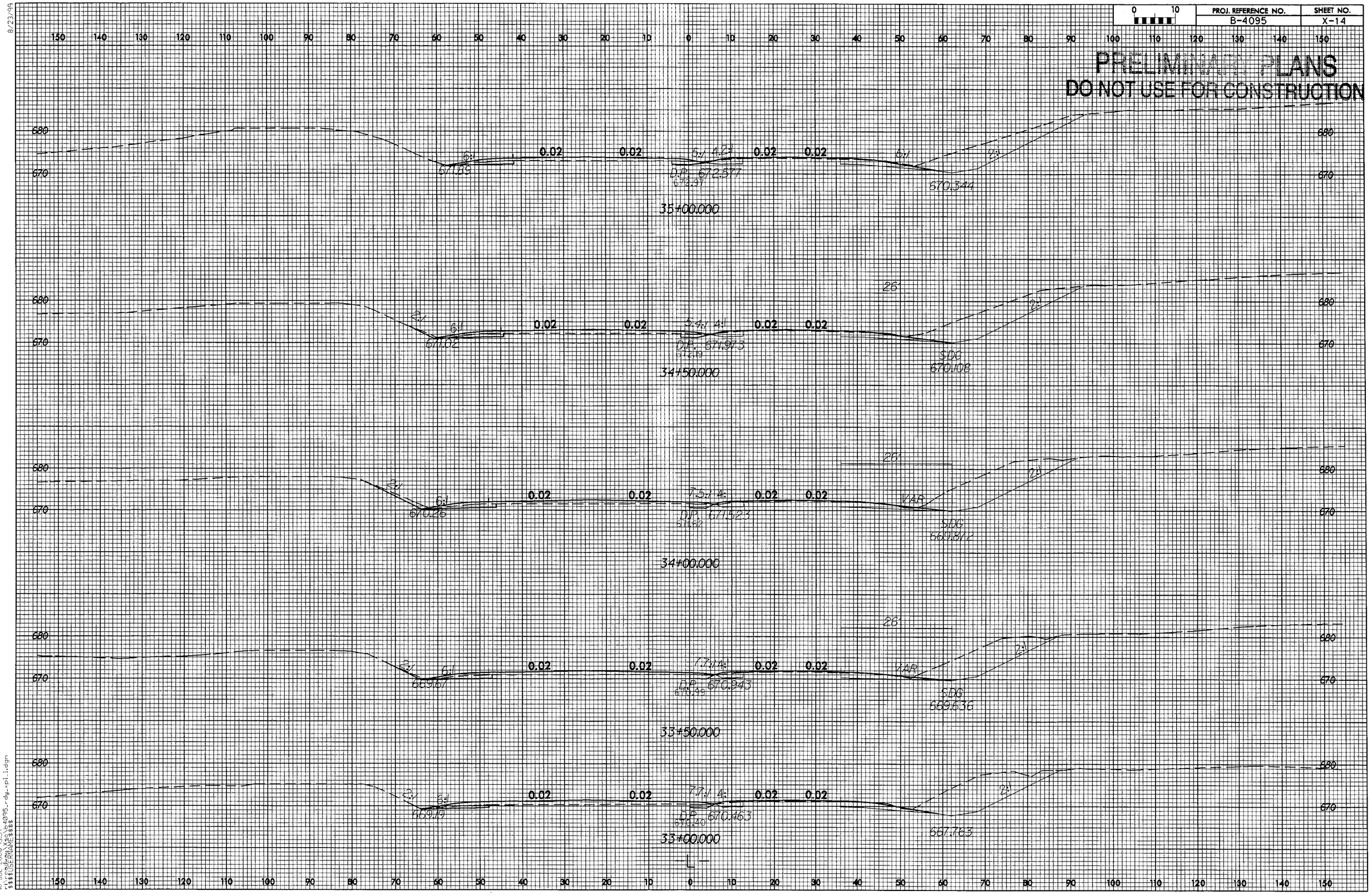

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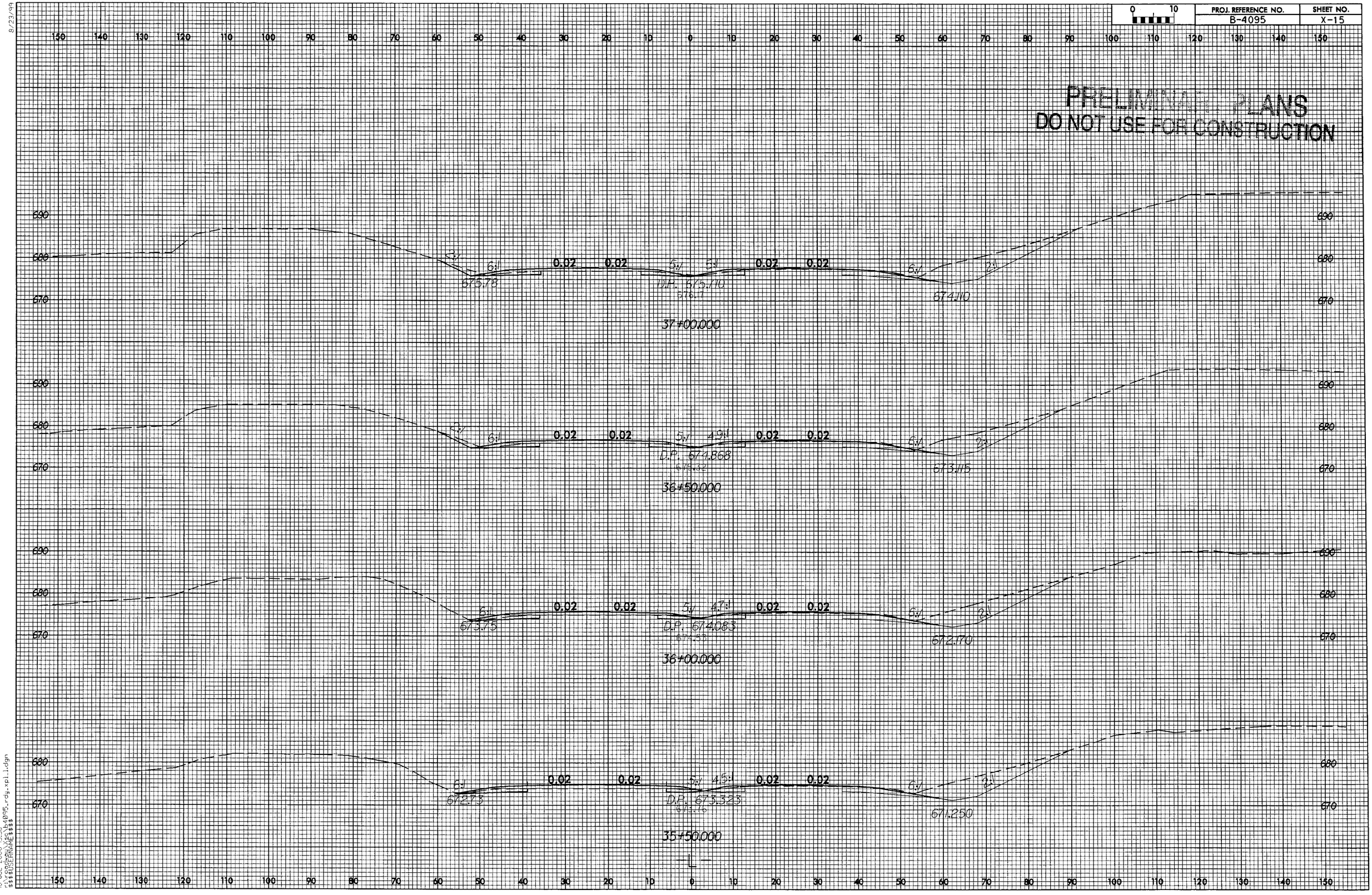

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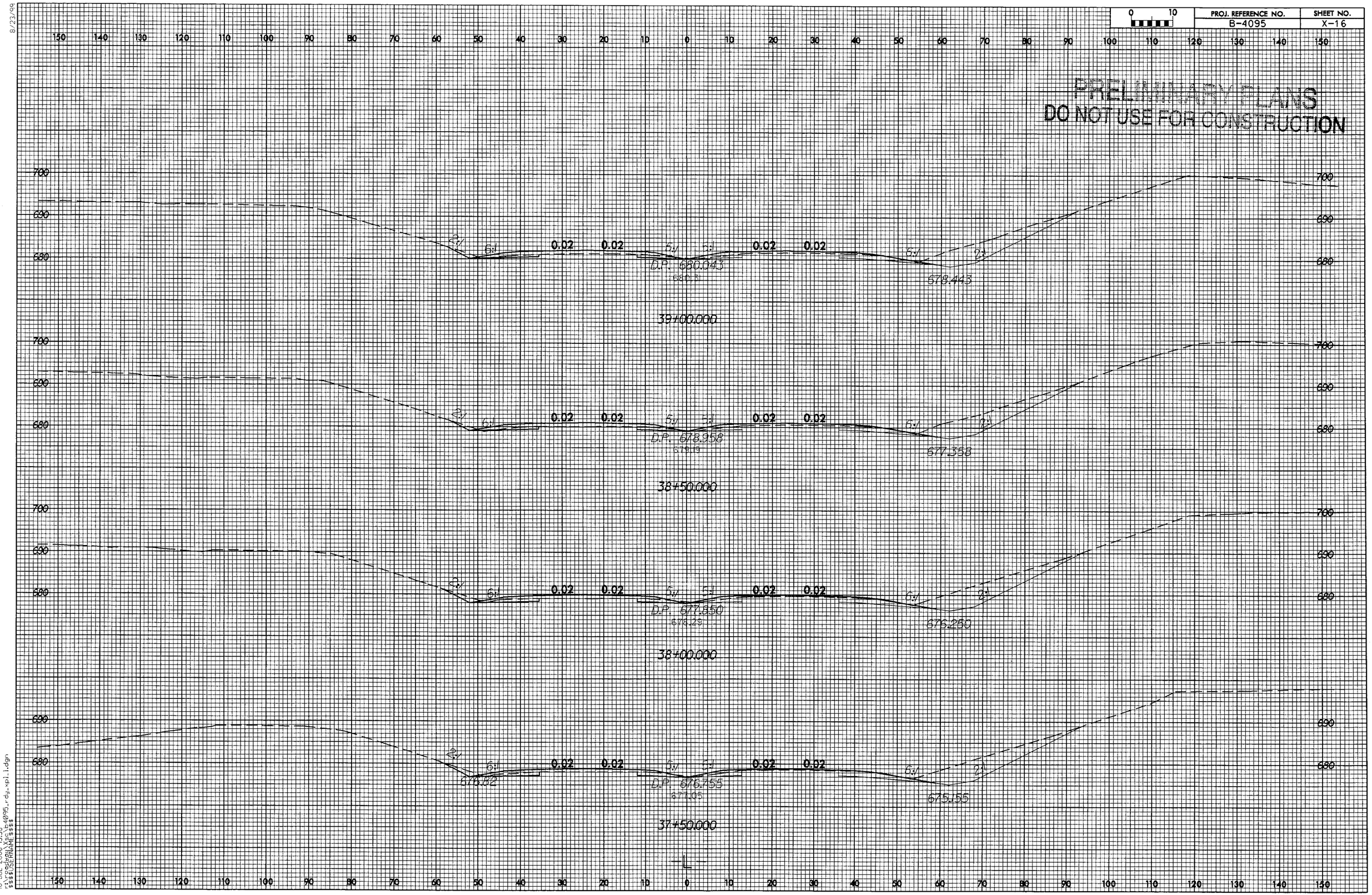

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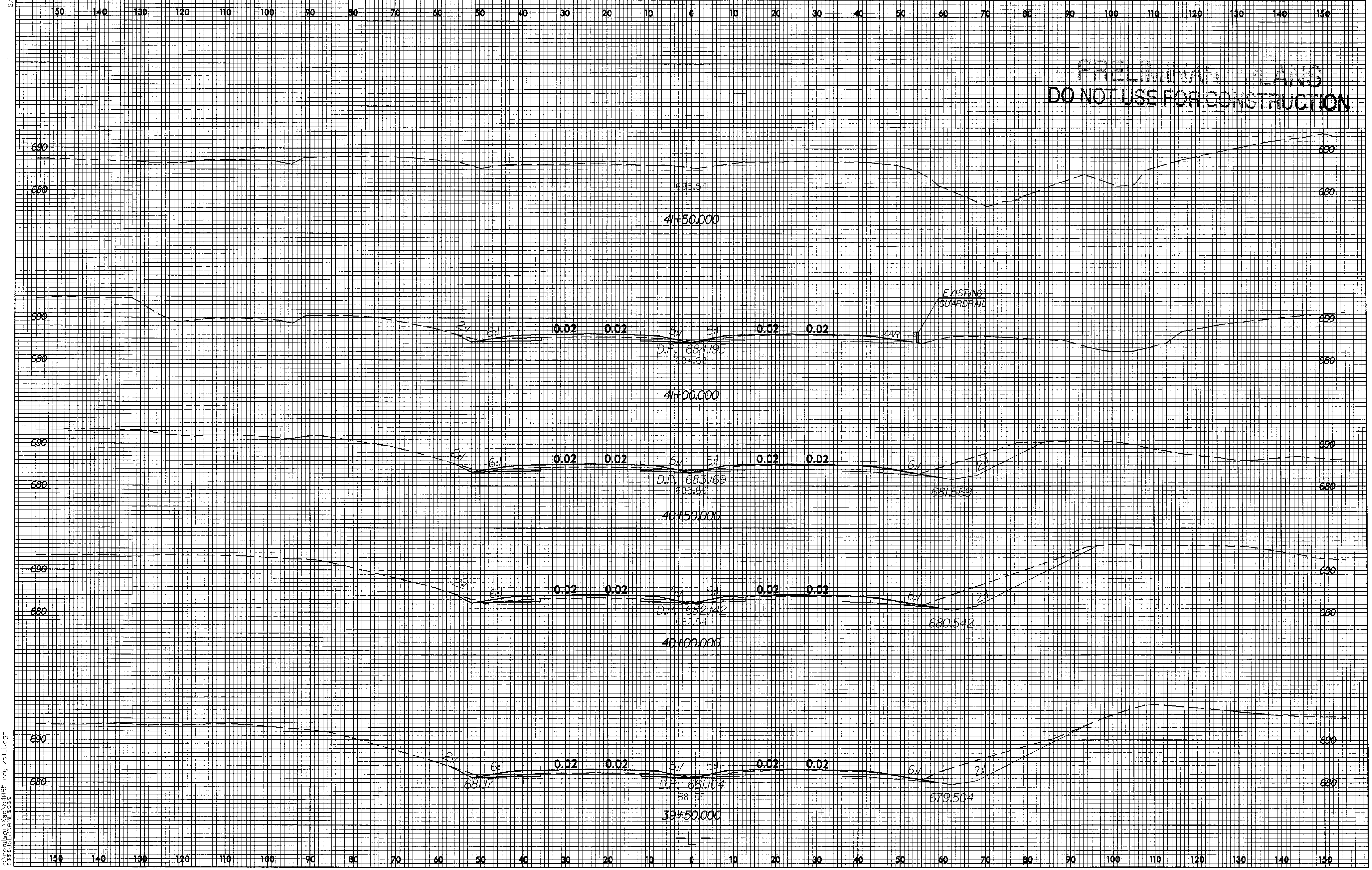

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I-85 Business – US 29/70 Southbound
Bridge Nos. 128 & 130 over Abbotts Creek
Davidson County
Federal-Aid Project No. BRSTP-29(19)
State Project No. 8.1602001
WBS No. 33453.1.1
TIP No. B-4095

CATEGORICAL EXCLUSION

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

APPROVED:

11·30·04
DATE

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

11/30/04
DATE

for John F. Sullivan, III, PE
Division Administrator, FHWA

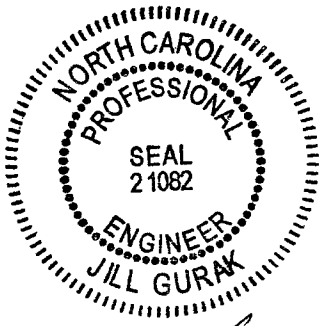
I-85 Business – US 29/70 Southbound
Bridge Nos. 128 & 130 over Abbotts Creek
Davidson County
Federal-Aid Project No. BRSTP-29(19)
State Project No. 8.1602001
WBS No. 33453.1.1
TIP Project No. B-4095

CATEGORICAL EXCLUSION

NOVEMBER 2004

Documentation Prepared by:

PBS&J



Date: 11/29/04

Jill S. Gurak, PE, AICP
Project Manager - NEPA

Date: 11/29/04

David Bass, PE
Project Manager – Roadway Design

For the North Carolina Department of Transportation

Khaled Al-Akhdar 11/30/04

Khaled Al-Akhdar
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

I-85 Business – US 29/70 Southbound
Bridge Nos. 128 & 130 over Abbotts Creek
Davidson County
Federal-Aid Project No. BRSTP-29(19)
State Project No. 8.1602001
WBS No. 33453.1.1
TIP Project No. B-4095

In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, Design Standards for Sensitive Watersheds, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

No special project commitments.

I-85 Business – US 29/70 Southbound
Bridge Nos. 128 & 130 over Abbotts Creek
Davidson County
Federal-Aid Project No. BRSTP-29(19)
State Project No. 8.1602001
WBS No. 33453.1.1
TIP Project No. B-4095

INTRODUCTION: The replacement of Bridge Nos. 128 & 130 is included in the North Carolina Department of Transportation Improvement Program (TIP) and in the Federal-Aid Bridge Replacement Program. The location of the bridges is shown in **Figure 1**. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED FOR PROJECT

NCDOT Bridge Maintenance Unit records indicate that Bridge No. 128 has a sufficiency rating of 41.0 out of a possible 100 for a new structure, and Bridge No. 130 has a sufficiency rating of 37.8. These bridges are considered functionally obsolete and structurally deficient. The replacement of these inadequate structures will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Project Setting. **Figure 1** shows the project location in relation to the county and state. The project is located in the piedmont area of the central part of the state. I-85 Business – US 29/70, which is a north/south roadway, runs east/west in the project area.

I-85 Business – US 29/70 is classified as a rural minor arterial. It is a four-lane median divided facility. Land use in the project area is mixed. Rural residential and agricultural land use is predominant south of I-85 Business – US 29/70.

Photograph 1: View of Bridge Nos. 128 & 130 looking west.

Lexington Water Works, a public water treatment facility, is just northwest of the bridges. There is

some wooded land, a barn, and a portable restroom business in the area northeast of the bridges. Davidson County Community College is approximately one mile northwest of the bridges on I-85 Business – US29/70.

An overhead electrical line crosses the roadway immediately southwest of the bridges. There is a sanitary sewer line that runs parallel to the roadway and crosses the creek approximately 100 feet upstream of the bridges. An underground gas line and overhead telephone line also are located approximately 120 feet upstream. The utility conflicts for this bridge project are considered medium.

Existing Bridge Data. Bridge No. 128 carries I-85 Business – US 29/70 northbound traffic. Bridge No. 128 was built in 1951. The overall length of the bridge is 200 feet. The bridge has four spans, each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a reinforced concrete cap on a spread footing at End Bent 1, a reinforced concrete cap on timber piles at End Bent 2, and reinforced concrete post and web interior bents.

Photograph 2: Bridge Nos. 128 & 130 facing upstream (North).

Bridge No. 130 carries I-85 Business – US 29/70 southbound traffic and was built in 1946. The overall length of the bridge is 200 feet. The bridge has four spans, each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a spill through concrete abutment at End Bent 1, a reinforced concrete cap on steel piles at End Bent 2, and reinforced concrete post and web interior bents.

The existing drainage area for Abbotts Creek is 70.7 square miles.

For each bridge, the roadway width, including paved shoulders, is 30 feet and the total deck width is 33.3 feet. The existing approach roadway width, including paved shoulders is approximately 30 feet for each bridge. The height of each bridge (from crown to bed) is 26 feet. The existing median width is 24 feet. The existing right of way includes the maintained area and is 260 feet. There are no posted weight limits. The posted speed limit is 55 miles per hour (mph).

Traffic Information. Traffic volumes at this bridge project location are 23,700 vehicles per day (vpd) for the year 2003 and 42,700 vpd for the design year 2030. The projections estimate six (6) percent truck-tractor semi-trailer (TTST) and ten (10) percent dual-tired (DT) vehicles.

Twenty-one accidents were reported in the vicinity of these bridges during the period from July 1, 2000 to June 30, 2003. Eight of these crashes occurred in the southbound lanes in the vicinity of Bridge No. 130 and thirteen of these crashes occurred in the northbound lanes in the vicinity of Bridge No. 128.

Fourteen Davidson County school busses cross Bridge Nos. 128 & 130 once each day.

This section of I-85 Business – US 29/70 in Davidson County is a highway where bicycling and walking are not allowed. This section of I-85 Business – US 29/70 is not part of a designated bicycle route nor is it listed in the TIP as needing incidental bicycle accommodations.

III. ALTERNATIVES

A. Project Description

Bridge Nos. 128 & 130 will be replaced with new bridges. The typical section for these structures is shown in **Figure 2**. Each new structure will be a three span bridge with a minimum length of 220 feet. None of the bents will be in the creek. The typical section for the structures includes two 12-foot travel lanes with 8-foot outside shoulders and a 4-foot inside shoulders. The typical section for the approach roadway for the permanent replacement structures consists of four 12-foot travel lanes and 4-foot outside paved shoulders and 2-foot inside paved shoulders. The approach roadways will extend approximately 780 feet east and approximately 670 feet west of the bridges. The design speed for the roadway is 60 miles per hour.

Based on the preliminary hydraulic analysis, the elevation of the new structures will be approximately the same as the existing structures. The replacement structures are bridges with a minimum grade to facilitate drainage. The length and opening of the new bridge structures may increase or decrease as necessary to accommodate peak flows, which will be determined from detailed hydraulic analysis during final design.

B. Build Alternatives

Two alternatives were evaluated for the replacement of Bridge Nos. 128 & 130. These alternatives are shown in **Figures 3a-g** and described below.

Alternative 1 – Temporary Realignment Upstream (North)
This alternative will involve building a temporary detour structure upstream (north) and constructing the replacement bridges at the existing location. The detour bridge will be approximately 200 feet long and 28 feet wide. The detour bridge will be offset a distance of approximately 72 feet upstream of the existing bridge. During construction, traffic will be maintained on the temporary detour bridge. Upon completion of the new bridges, the temporary bridge and approaches will be removed.

During the construction period, the Caldcleugh Road/I-85 Business intersection east of the bridges will be closed. Caldcleugh Road can be accessed by another intersection with I-85 Business approximately 1 mile northeast. The Caldcleugh Road/I-85 Business intersection near the bridge will be reopened when the replacement bridges are completed.

Alternative 1 was not selected because it is more costly and has more impacts to biotic communities when compared to Alternative 3.

Alternative 3 – Temporary Median Cross-Overs (Preferred)
This alternative will use the existing bridges as detours. Bridge No. 130 will be used as a two lane detour (one lane of traffic in each direction) while Bridge No. 128 is being replaced in place. The new Bridge No. 128 then will be used as a two lane detour (one lane of traffic in each direction) while Bridge No. 130 is replaced in place.

During the construction period, the speed limit in the project area will be lowered to 45 miles per hour because of the two lane detour and to meet the temporary detour design requirements. In addition, wide load vehicles will be directed to off-site detour routes.

C. Alternatives Eliminated from Further Study

The "do-nothing" alternative will eventually necessitate removal of the existing structures. This is not desirable due to the service provided by Bridge Nos. 128 & 130.

Rehabilitation of the existing structures is not feasible due to their age and deteriorated condition.

A road closure alternative is not feasible due to the volume of traffic using I-85 Business – US 29/70.

Alternative 2 – Temporary Realignment Downstream

This alternative involves building a temporary detour structure downstream (south) and constructing the permanent replacement bridges at the existing location. The detour bridge will be approximately 200 feet long and 28 feet wide. The approach roadway will extend approximately 780 feet east and approximately 670 feet west of the bridge. The detour bridge will be offset a distance of approximately 72 feet downstream of the existing bridge. During construction, traffic will be maintained on the detour bridge.

Upon completion of the new bridges, the temporary detour bridge and approaches will be removed.

Alternative 2 was eliminated from further study because it would relocate approximately 415 feet of Abbotts Creek.

D. Preferred Alternative

Alternative 3 is the Preferred Alternative. Alternative 3 uses each bridge as a detour while the other bridge is replaced in place. Alternative 3 was selected as the Preferred Alternative because it is the least expensive alternative and has the least impacts to biotic communities when compared to Alternative 1. Both structures will be designed and constructed to allow for a future six-lane facility.

The Division 9 Engineer concurs with the selection of Alternative 3 as the Preferred Alternative.

IV. ESTIMATED COSTS

The estimated costs, based on current prices, are shown in **Table 1**.

Table 1
Estimated Costs

Cost Item	Alternative 1	Alternative 3 (Preferred)
Structure Removal (Existing)	$132,000	$132,000
Structure (proposed)	$1,136,000	$1,136,000
Detour Structure and Approaches	$389,100	$70,900
Roadway Approaches	$586,200	$621,900
Miscellaneous and Mobilization	$570,700	$502,200
Engineering and Contingencies	$436,000	$387,000
ROW/Construction Easements/Utilities	$79,400	$79,400
Total	**$3,329,400**	**$2,929,400**

The estimated cost of the project as shown in the *2004-2010 Transportation Improvement Program* is $3,030,000; including $30,000 for right-of-way and $2,800,000 for construction. Right-of-way acquisition is scheduled for 2005, with construction to follow in 2006.

V. NATURAL RESOURCES

Definitions for area descriptions used in this report are as follows: **Project Study Area** denotes the area bounded by proposed construction limits; and **Project Vicinity** describes an area extending 0.5 mile on all sides of the Project Study Area.

A. Methodology

Background research on soils, water resources, wetlands, protected species and other area features were conducted prior to field investigations. Information sources used in this pre-field investigation of the study area included:

- US Geological Survey (USGS) quadrangle map (High Point West)

- US Fish and Wildlife Service (USFWS) National Wetland Inventory Map (High Point West)
- Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) soil maps, and
- NCDOT aerial photographs of project area (scale 1" = 100').

Water resource information was obtained from the following source:

- Department of Environment and Natural Resources Division of Water Quality (NCDWQ)

Information concerning the occurrence of federal and state protected species in the study area was gathered from the following sources:

- US Fish and Wildlife Service (USFWS) website list of Davidson County Endangered Species, Threatened Species, and Federal Species of Concern
- NC Natural Heritage Program (NHP) database of rare species and unique habitats

General field surveys were conducted along the proposed alignment April 12, 2001, September 18, and October 31, 2001. Plant communities and their associated wildlife were identified and recorded. Wildlife identification involved using one or more of the following observation techniques: active searching and capture, visual observations, and identifying characteristic signs of wildlife (sounds, scat, tracks and burrows).

Jurisdictional wetland determinations were performed using delineation criteria prescribed in the 1987 *Corps of Engineers Wetland Delineation Manual* (USACE, 1987).

Estimated impacts were derived using the construction limits shown on the functional designs for each alternative. The estimated construction limits on the functional designs were developed based on site visits, aerial photography, and USGS topographic mapping.

B. Physiography and Soils

The Project Study Area denotes the area bounded by proposed construction limits. It lies within the Piedmont Physiographic Province. The topography in this section of Davidson County is characterized by gently rolling hills, dissected by wide floodplains. Topography in the Project Study Area includes moderate slopes leading down to a relatively wide and flat floodplain associated with Abbotts Creek. The project elevation is approximately 650 feet above mean sea level (msl).

Land use in the project vicinity is residential, commercial, and institutional.

One soil phase occurs within the project boundaries: Chewacla loam, 0-2 percent slopes. Chewacla loam is a deep, rather poorly drained soil commonly found on floodplains and adjoining upland sideslope depressions. Permeability is moderate, and the seasonal high water table is located 0.5 foot-1.5 feet below the surface. Chewacla loam is frequently flooded, and is listed as a hydric soil because of saturation for a substantial period during the growing season.

The forest potential on Chewacla loam is listed as high, although excessive water can be a substantial limitation. Wetness may impede equipment use. (US Department of Agriculture, Soil Survey of Davidson County, 1976).

C. Water Resources

1. Waters Impacted

Abbotts Creek will be the only surface water resource temporarily impacted by the proposed project. Abbotts Creek is located in sub-basin 07 of the Yadkin-Pee Dee River Basin (03-07). **Figure 4a-b** shows the various resources in the project study area.

2. Water Resource Characteristics

Abbotts Creek at Bridge Nos. 128 & 130 is approximately 45 feet wide and has an average depth of 1.5 feet. The creek appeared to have an E5 Rosgen classification (stream with gentle slopes, and sandy bed with some gravel and silt/clay deposits), although this was difficult to determine due to high turbidity. The drainage area for Abbotts Creek is 70.7 square miles.

There is a small dam approximately 200 feet upstream (north) of the bridges. A public water treatment facility, Lexington Water Works, is located northwest of the existing bridge about 300 feet upstream. It has a discharge pipe in Abbotts Creek located approximately 40 feet upstream of the dam (240 feet upstream of the existing bridge). The dam stands about 3 feet high and is used to pool water for the discharge. The water passed freely over the dam on the days of the site visits. The Public Works Manager for the City of Lexington was contacted and had no concerns regarding the project in relation to the water treatment facility.

3. Best Usage Classification and Water Quality

Best Usage Classification. Streams are assigned a best usage classification by the NCDWQ. The classification of Abbotts Creek [Index No. 12-119-(6)] is C. The Class C listing indicates that the water uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture.

Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) nor Outstanding Resource Waters (ORW) occur within one mile downstream of the Project Study Area.

Water Quality Monitoring. The Benthic Macroinvertebrate Ambient Network (BMAN) is managed by NCDWQ and is part of an ongoing ambient water quality monitoring program which addresses long-term trends in water quality. The program assesses water quality by sampling for selected benthic macroinvertebrate organisms at fixed monitoring sites. Some macroinvertebrates are sensitive to very subtle changes in water quality; thus, the species richness and overall biomass of these organisms are reflections of water quality. There is a BMAN station on Bridge No. 130. It was sampled in 1985, and received a rating of Fair.

The overall support rating for this section of Abbotts Creek is support-threatened (ST). This rating indicates that while the creek is currently capable of supporting activities indicated by its best usage classification (Class C), it may not be able to support these activities in the future without pollution prevention or a control action. (NCDWQ 1998).

NPDES Permitted Dischargers. There are 19 major and 41 general NPDES permitted dischargers in the subbasin (NCDENR-DWQ 1998). It is not anticipated that the project will impact any of these facilities, including the water treatment plant (Lexington Water Works) about 300 feet upstream from the bridge. The Public Works Manager for the City of Lexington was contacted and had no concerns regarding the project in relation to the water treatment facility.

Non-Point Source Dischargers. Non-point source dischargers cause water problems in sub-basin 07. Major sources in this basin include; agriculture, especially cattle and poultry production, urban/residential areas, construction, timber harvesting, onsite wastewater disposal, generally from septic systems, and solid waste disposal.

4. Anticipated Impacts to Water Resources

Alternative 3 (Preferred) is a bridge without bents in the creek; therefore, there will be no permanent impacts to Abbotts Creek.

Impacts to water resources can occur during construction. NCDOT, in cooperation with NCDWQ, has developed a sedimentation control program for highway projects, which adopts formal best management practices (BMPs) for the protection of surface waters.

5. Impacts Related to Bridge Demolition and Removal

The superstructure should be removed without any resulting fill. Since the substructures of the existing bridges are made of concrete, there is a potential for some of this material to be dropped into Waters of the United States during removal. The substructures of Bridge No. 128 and Bridge No. 130 each are made up of 277 cubic yards of concrete. Therefore, the removal of the substructure will likely result in 554 cubic yards of temporary fill dropped into the water during removal of Bridge Nos. 128 & 130.

D. Biotic Resources

Biotic resources include aquatic and terrestrial ecosystems. This section describes those ecosystems encountered in the study area, as well as the relationships between fauna and flora within these ecosystems.

Descriptions of the terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Scientific nomenclature and common names (when applicable) are provided for each plant and animal species described. Plant taxonomy generally follows Radford, et al. (1968). Animal taxonomy follows Martof, et al. (1980); Menhenick (1991); Potter, et al. (1980); and Webster, et al. (1985). Subsequent references to the same organism include the common name only. An asterisk (*) after the faunal species name indicates that an animal or evidence of a particular animal was observed on the site visits (nest, scat, tracks, sound etc).

1. Terrestrial Communities

As shown in **Figure 4**, two distinct terrestrial communities occur in the Project Study Area: Piedmont/Low Mountain Alluvial Forest and Maintained/Disturbed. Community

boundaries within the Project Study Area are well defined, without a substantial transition zone between them.

Piedmont/Low Mountain Alluvial Forest. There is a fringe Piedmont/Low Mountain Alluvial Forest along the Abbotts Creek corridor extending about 20 feet on either side of the stream bank. Southwest and northeast of the project area, there are large areas of alluvial forest, intermixed with disturbed land. The transition from alluvial forest to maintained/disturbed community is abrupt due to road shoulder maintenance activities. Intermittent flooding during high flow periods drives the hydrology of the alluvial forest. Periodic flooding provides nutrient input through sediment deposition, making this system very productive. However, periodic flooding can be a destructive factor during large storm events by undercutting banks and eroding soils.

The canopy of the Piedmont/Low Mountain Alluvial Forest is composed of green ash (*Fraxinus Pennsylvanica*), river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), and red maple (*Acer rubrum*). The understory consists of tag alder (*Alnus serrulata*), silky dogwood (*Cornus amomum*), and red maple saplings. The shrub layer consists of multiflora rose (*Rosa multiflora*), blackberry (*Rubus* sp.), and privet (*Ligustrum sinense*). Herbs in the area include clover (*Trifolium* sp.), bamboo (*Fargesia sp.*), dandelion (*Taraxacum* sp.), violet (*Viola* sp.), and rush (*Juncus effusus).* Japanese honeysuckle (*Lonicera japonica*), poison ivy (*Toxicodendron radicans*), and greenbrier (*Smilax* sp.) comprise the vine layer.

Wildlife associated with the alluvial forest include: raccoon* (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), opossum (*Didelphis virginiana*), and white-tailed deer* (*Odocoileus virginianus*). These species will use this forest community for cover and will forage on twigs and leaves as well as mast. Amphibians and reptiles likely to inhabit this habitat type include the two-lined salamander (*Eurycea bislineata*), spring peeper (*Hyla crucifer*), and snake species such as the northern copperhead (*Agkistrodon contortrix mokasen*) and the black rat snake (*Elaphe obsoleta obsoleta*).

Avian species using the alluvial forest include: song sparrow* (*Melospiza melodia*), tufted titmouse* (*Parus bicolor*), northern mockingbird* (*Mimus polyglottos*), eastern bluebird* (*Sialia sialis*), belted kingfisher (*Megaceryle alcyon*), northern parula (*Parula americana*), and blue-gray gnatcatcher (*Polioptila caerulea*). The barred owl (*Strix varia*) is a permanent resident in this community type. Swallows* (Family Hirundinidae) and pigeons* *(Columbia livia)* are using the current bridge for nesting and roosting.

Maintained/Disturbed Community. The Maintained/Disturbed areas are mowed infrequently and have a variety of early successional species including: multiflora rose, goldenrod (*Solidago* sp.), daisies (Family Compositae), and Japanese honeysuckle. A few sapling sycamores are growing through the herb and shrub layer.

The Maintained/Disturbed Community includes residential and commercial areas. The residential areas are primarily covered with turf grasses, with some planted trees. The area immediately to the west of the project area is in commercial use by the Lexington Water Works and other commercial buildings. Most of the area is maintained in turf grasses (*Festuca* sp. and *Cynodon dactylon*).

The Project Study Area is surrounded by a combination of farmland and alluvial forest. Therefore, faunal species frequenting the maintained community will be species inhabiting the alluvial forest or early successional habitat.

Wildlife associated with the maintained/disturbed community includes: gray squirrel*, opossum*, groundhog (*Marmota monax*), raccoon, and white-tailed deer. Amphibians and reptiles likely to inhabit this habitat type include spring peeper and other frog and toad species as well as snake species such as the northern copperhead and the black rat snake.

Avian species using the maintained/disturbed community include: song sparrow*, tufted titmouse*, northern mockingbird*, eastern bluebird*, blue jay* (*Cyanocitta cristata*), and American robin (*Turdus migratorius*).

2. Aquatic Communities

One aquatic community, Abbotts Creek, will be temporarily impacted by the proposed project. Physical characteristics of the water body and condition of the water resource influence faunal composition of aquatic communities. Terrestrial communities adjacent to a water resource also greatly influence aquatic communities.

Fish associated with the aquatic community include redbreast sunfish (*Lepomis auritus*), gizzard shad (*Dorosoma cepedianum*), bluehead chub (*Nocomis leptocephalus*), redlip shiner (*Notropis chiliticus*), creek chub (*Semotilus atromaculatus*), fantail darter (*Etheostoma flabellare*), and tessellated darter (*Etheostoma olmstedi*) (Tracy, Pers. Comm.). A fisherman in the area stated he had caught catfish (*Ictalurus* sp.) and carp (*Ctenopharyngodon* sp.) at the dam upstream of the bridge (April 12, 2001).

Invertebrates that will be present include: crayfish (Family Cambaridae) and nymphal stages of dragonflies and damselflies (Order Odonata). The bullfrog (*Rana catesbeiana*), pickerel frog (*R. palustris*), snapping turtle (*Chelydra serpentina*), and northern water snake (*Nerodia sipedon*) are common permanent residents in this community.

3. Anticipated Impacts to Biotic Communities

a. Terrestrial Communities

Calculated impacts to biotic resources reflect the relative abundance of each community present within the study area. Project construction will result in clearing and degradation of portions of these communities. **Table 2** summarizes potential quantitative losses to these biotic communities resulting from Alternative 1 (temporary realignment upstream) and Alternative 3 (temporary median crossovers). Estimated impacts are derived using the construction limits (slope stakes) shown on the functional designs for the alternative.

Table 2
Anticipated Impacts to Biotic Communities

Community		Alternative 1	Alternative 3 (Preferred)
Piedmont/Low Mountain Alluvial Forest (acres)		1.46	0.67
Maintained/Disturbed (acres)		1.08	0.81
Abbotts Creek (linear feet)		0	0
Total	**acres of habitat**	**2.54**	**1.48**
	linear feet of creek	**0**	**0**

As indicated in **Table 2**, the total area of impact for Alternative 1 is greater than for Alternative 3 (Preferred). The habitat impacted most will be Piedmont/Low Mountain Alluvial Forest for Alternative 1 and Maintained/Disturbed for Alternative 3. Impacts from Alternative 1 will be temporary since the detour bridge will be removed after the bridges are constructed and the area around the detour bridge will be restored. Impacts from Alternative 3 (Preferred) are caused by construction of the roadway approaches and will be temporary since the existing bridges will be used as detours and will be removed after the bridges are constructed and the area will be restored. Areas modified by construction, but not paved, will become road shoulders and early successional or maintained/disturbed habitat.

Plant communities found within the proposed project area serve as nesting and sheltering habitat for various wildlife species. Due to the size and scope of this project, it is anticipated that impacts to fauna will be minimal.

Invasive species such as Japanese honeysuckle are already prevalent in the area. To avoid further spread of these species, establishment of a hardy groundcover as soon as possible after disturbance is recommended.

b. Aquatic Communities

Aquatic communities are sensitive to even small changes in their environment. Stream channelization, scouring, siltation, sedimentation and erosion from construction-related work will temporarily affect water quality and biological constituents.

Impacts often associated with construction that disturbs streambanks include increased channelization and scouring of the streambed. Construction activities that take place in-stream, such as equipment crossing the stream, alter the stream substrate and may remove streamside vegetation at the site.

The removal of streamside vegetation and placement of fill material at the construction site alters the terrain. Alterations of the streambank increase the likelihood of erosion and sedimentation. Erosion and sedimentation carry soils, toxic compounds and other materials into aquatic communities at the construction site. Revegetation stabilizes and holds the soil, thus mitigating these processes.

Implementation of guidelines and Best Management Practices for surface waters, trout waters, waters classified as ORW, and bridge demolition and removal will result in no notable losses to aquatic species or habitats.

E. Special Topics

1. Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States" as defined in Section 33 of the Code of Federal Regulations (CFR) Part 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). Waters of the United States are regulated by the US Army Corps of Engineers (USACE).

Potential wetland communities were investigated pursuant to the 1987 *Corps of Engineers Wetland Delineation Manual* (USCE, 1987). According to the three-parameter approach outlined in the manual, hydric soils, hydrophytic vegetation and prescribed hydrologic characteristics all must be present for an area to be considered a wetland. No jurisdictional wetlands are present within the Project Study Area.

Abbotts Creek is a Jurisdictional Surface Water under Section 404 of the Clean Water Act (33 USC 1344). Abbotts Creek will not be permanently impacted by the proposed project.

2. Permits

a. Section 404 of the Clean Water Act

It is anticipated that this project will fall under Nationwide Permit 23 (33 CFR 330.5(a)), which is a type of general permit. Nationwide Permit 23 is relevant to Categorical Exclusions. This permit authorizes activities, work, and discharges undertaken, assisted, authorized, regulated, funded or financed in whole, or part, by another Federal agency and that the activity is "categorically excluded" from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment. Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b. Section 401 Water Quality Certification

A Section 401 Water Quality Certification from the North Carolina Division of Water Quality (NCDWQ) is necessary for projects that require Section 404 Permits. Written concurrence/notification is not always required by the State, and varies depending upon the General Certification. If this project qualifies under Nationwide Permit 23, the NCDWQ must be notified, however written concurrence from the NCDWQ is not required.

c. Bridge Demolition and Removal

Since the substructure and superstructure of the existing bridges are made of concrete, there is a potential for some of this material to be dropped into Water of the United States during removal. Permitting will be coordinated such that any permit needed for bridge construction will address issues related to bridge demolition. If the bridge is to be

removed in a fashion such that there is a practical alternative to dropping bridge components into the water, that alternative shall be followed.

3. Avoidance

Bridge Nos. 128 & 130 will be replaced with new bridge structures with no bents in the creek. Therefore, impacts to Abbotts Creek are avoided.

4. Minimization

The Preferred Alternative (Alternative 3) minimizes impacts to the Waters of the United States by replacing Bridge Nos. 128 & 130 at the existing location. Utilization of BMPs will be used in an effort to minimize impacts. No jurisdictional wetlands are present within the Project Study Area.

5. Mitigation

The USACE has adopted, through the CEQ, a wetland mitigation policy which embraces the concepts of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological and physical integrity of Waters of the United States, including wetlands. Mitigation of wetland impacts has been defined by the CEQ to include avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization and compensatory mitigation) must be considered sequentially. There are no wetland impacts associated with this project. Mitigation is not expected for any alternative.

The USACE usually requires compensatory mitigation for activities authorized under Section 404 of the Clean Water Act if unavoidable impacts to Waters of the United States total more than 0.10 acre of wetlands or 500 linear feet of perennial and intermittent streams.

The NCDWQ may require compensatory mitigation for activities authorized under Section 401 of the Clean Water Act if unavoidable impacts to waters of the United States total more than 0.10 acre of wetlands and/or 150 linear feet of perennial streams.

A final determination regarding mitigation requirements rests with the agencies noted above.

F. Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities.

1. Federally Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. **Table 3** includes the federally protected species listed by the USFWS for Davidson County as of October 4, 2004. A brief description of each species' characteristics and habitat follows.

Table 3
Federally-Protected Species for Davidson County

Common Name	Scientific Name	Status	Habitat in Project Study Area
Bald eagle	*Haliaeetus leucocephalus*	Threatened	No
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered	No
Bog Turtle	*Clemmys muhlenbergii*	T(S/A)[1]	No

Endangered species are in danger of becoming extinct throughout all or a significant portion of their range.
Threatened species are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

[1] On November 4, 1997, the northern population of bog turtles (from Maryland to New York) was listed as threatened. The southern population was listed as threatened due to similarity of appearance (T(S/A)). This listing bans collection, interstate and international commercial trade in bog turtles, but it has no effect on private landowners.

Bald Eagle - *(Haliaeetus leucocephalus)* - **Threatened**
Family: Accipitridae
Date Listed: March 11, 1967
BIOLOGICAL CONCLUSION **NO EFFECT**

Adult bald eagles can be identified by their large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. In flight, bald eagles can be identified by their flat wing soar.

Eagle nests are found in proximity to water (within a half mile) with a clear flight path to the water, in the largest living tree in an area, and having an open view of the surrounding land. Human disturbance can cause an eagle to abandon otherwise suitable habitat. The breeding season for the bald eagle begins in December or January. Fish are the major food source for bald eagles. Other sources include coots, herons, and wounded ducks. Food may be live or carrion.

The major reasons for the eagles' decline are habitat loss, direct shooting, and pesticide use. The birds use riparian systems, many of which have been altered for recreational, urban, or agricultural uses. Human disturbance and tree removal, particularly of large trees used for nesting, has further reduced the birds' reproductive abilities. From the 1950's to the 1970's, DDT use was a major cause for the species' decline. Even today, environmental contamination from pesticide use, lead and mercury, is a threat to the species (Sierra Club, Spotlight on the Species website, http://www.sierraclub.org/habitat/species/bald.asp).

Habitat for the bald eagle is not found within the Project Study Area. It is possible that eagles may occasionally fly over the project area. However, the lack of appropriate feeding, roosting and perching habitat or suitable nesting habitat in the form of large trees with a clear flight path to water is not present within the project vicinity. Additionally, the NC Natural Heritage Program database of rare species and unique habitats has no record for the presence of the bald eagle within the project vicinity. Therefore, project construction will not affect the bald eagle.

Schweinitz's sunflower - *(Helianthus schweinitzii)* - **Endangered**
Family: Helianthus
Date Listed: May 7, 1991
BIOLOGICAL CONCLUSION **NO EFFECT**

Schweinitz's sunflower is a perennial plant with a pubescent stem and a head less than 1.4 inches. It is 3.3-6.5 feet tall, often with several flowering stems. The yellow flowers bloom from September to frost, with rays 0.8-1.2 inches long. In September through October, dark brown glabrous nutlets develop. These are rounded at the apex and 0.12-.13 inches long. The stiff pubescent leaves are the plant's most readily identifiable indicator. The upper surface is rough, with broad-based spinose hairs directed towards the leaf tip. The underside is densely covered with soft white hairs that obscure the leaf surface.

The plant is generally found in upland areas, in wood fringes, thickets or pastures in moist to fairly dry clay, clay-loam, or sandy-clay loam soil.

The major threats to Schweinitz's sunflower are habitat destruction, fire suppression, habitat alteration, and highway right-of-way maintenance. Many areas where the plant lives have been developed as cities or suburbs grow. Some known populations have disappeared for unknown reasons (USFWS Endangered Species Program website, http://endangered.fws.gov).

Habitat for the Schweinitz's sunflower is not found within the Project Study Area. A population of Schweinitz's sunflower has been recorded in Davidson County. However, a review of the NC Natural Heritage Program database of rare species and unique habitats revealed no records of North Carolina rare and/or protected species in or near the project study area. Additionally, the soil type in the Project Area is not generally favorable for Schweinitz's sunflower growth. The plants prefer moist to dry clay soils, and the frequent flooding expected in a streambed and common to the Chewacla soils will not be conducive to this plant. No plants were found during site visits on any of the field visits, including September 18, 2001, when the species would have been in bloom. Project construction will not affect the Schweinitz's sunflower.

Bog Turtle - *(Clemmys muhlenbergii)* – T(S/A)
Family: Emydidae
Date Listed: November 4, 1997

Table 3 lists the Federal Threatened Species due to Similarity of Appearance (T(S/A)). These are species that are not Threatened or Endangered themselves, but are listed to protect Threatened or Endangered species that may be difficult to differentiate. These species are not subject to Section 7.

There is one Federal Threatened Species Due to Similarity of Appearance (T(S/A)), the bog turtle (*Clemmys muhlenbergii)*, listed for Davidson County. Directed surveys for the Bog turtle were not conducted during the site visits, nor was this species observed. There is no suitable habitat for this species in the project vicinity. Project construction will not affect the bog turtle.

2. Federal Species of Concern (FSC)

There are three Federal Species of Concern (FSC) listed for Davidson County. Federal Species of Concern are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Federal Species of Concern are defined as those species which may or may not be listed in the future. These species were formally candidate species, or species under consideration for listing for which there was insufficient information to support a listing of Endangered, Threatened, Proposed Endangered or Proposed Threatened.

Table 4 lists Federal Candidate species, the species' state status (if afforded state protection) and the existence of suitable habitat for each species in the study area. This species list is provided for information purposes, as the status of these species may be upgraded in the future.

Table 4
Federal Species of Concern (FSC) for Davidson County

Common Name	Scientific Name	State Status	Habitat
Vertebrates			
Carolina darter	*Etheostoma collis collis*	SR	Yes
Vascular Plants			
Georgia aster[+]	*Aster georgianus*	T	Yes
Heller's trefoil	*Lotus helleri*	C	No

C = Candidate species are very rare in North Carolina and/or throughout their range. These are species whose fate depends largely on their conservation in North Carolina. If present land trends continue, candidate species are likely to be listed as Endangered or Threatened.
SR = Significantly Rare species are very rare in North Carolina. They are generally more common in other parts of their range.
T = Threatened species are likely to become endangered through all or a portion of their range.

[+] No specimen found in Davidson County in 50 years.

Directed surveys for these species were not conducted during the site visits. However, none of these species were observed.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

All structures within the Area of Potential Effects (APE) were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated March 29, 2001, the State Historic Preservation Officer (SHPO) concurred there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the project's area of potential effect. A copy of the concurrence form is included in the **Appendix**.

C. Archaeology

The SHPO, in a memorandum dated June 13, 2001, stated that the agency was "unable to comment on the potential for an effect upon archaeological sites." The SHPO requested that plans be forwarded so that they can continue their review. A map of the Preferred Alternative was sent to the SHPO. In a memorandum dated October 21, 2003, the SHPO stated that an archaeological survey is not necessary. A copy of the memorandums are included in the **Appendix**.

VII. OTHER ENVIRONMENTAL EFFECTS

Summary. The project is a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences. The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations. The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the implementation of current NCDOT standards and

specifications. On the basis of information included in this document, it is concluded that no significant adverse environmental effects will result from implementation of the project.

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

Community Services and Facilities. No adverse effects on public facilities or services are anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area. None of the alternatives require an offsite detour; therefore, school bus or emergency vehicle service should not be disrupted.

Relocations. Right of way acquisition will be limited. No relocatees are expected with implementation of the Preferred Alternative.

Utilities. Major existing utilities within the immediate project study area include a sanitary sewer line and electrical lines. An underground gas line and overhead telephone lines are located approximately 120 feet upstream. All utility providers will be contacted and coordinated with to ensure that the proposed design and construction of the project will not disrupt service.

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

Air Quality. This project is an air quality "neutral" project. Therefore, it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required.

The project is located in Davidson County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR Part 51 is not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520.

This evaluation completes the assessment requirements for air quality (1990 CAAA and NEPA) and no additional reports are required.

Noise. Because traffic volumes will not increase or decrease because of this project and there are no noise sensitive receptors located in the immediate area of this project, no noise impacts attributable to this project are expected.

Noise levels could increase during construction, but this increase will be temporary.

This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and no additional reports are required.

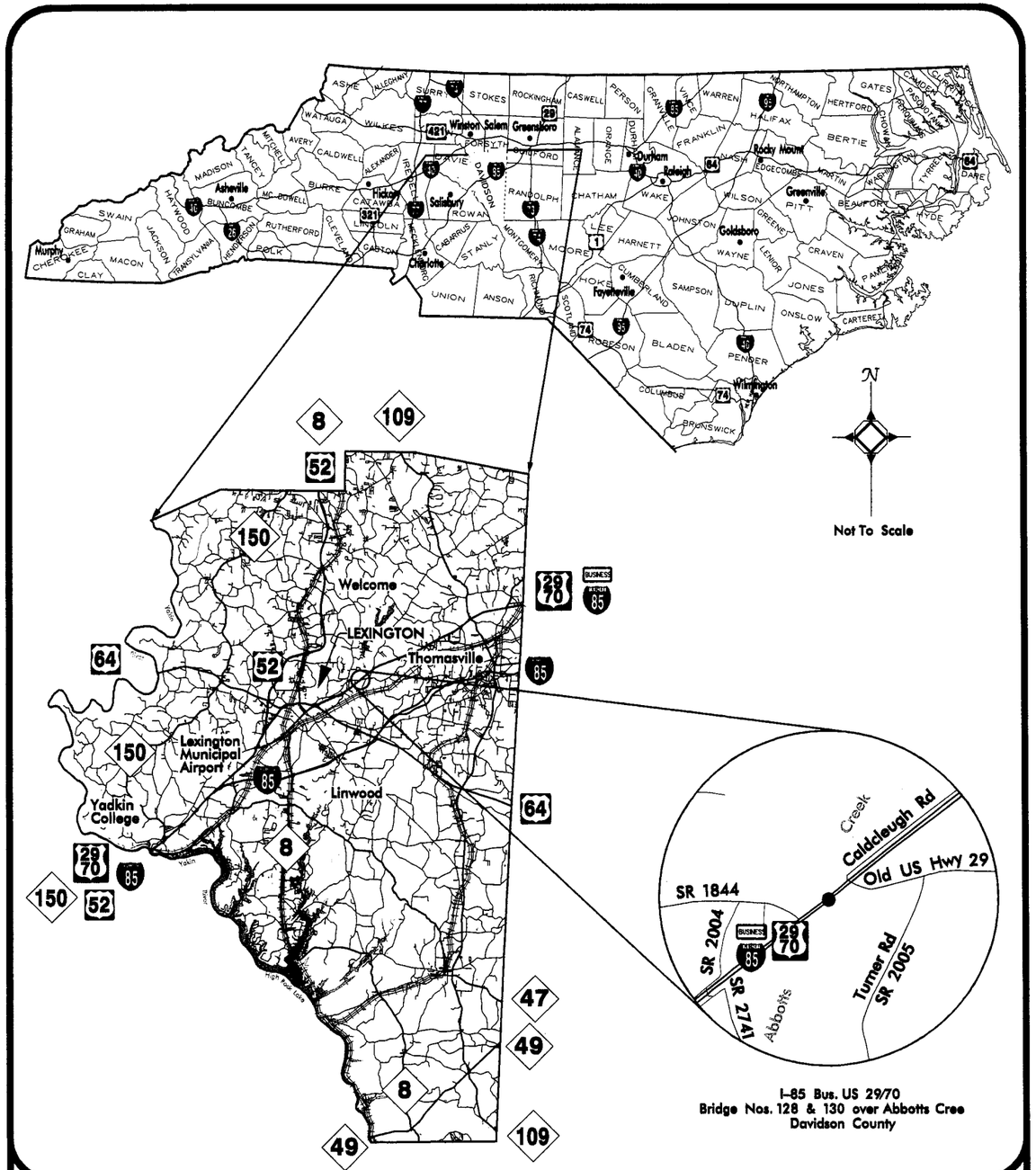
Hazardous Materials. A field reconnaissance survey was conducted in the vicinity of the existing bridges. A file search at the North Carolina Department of Environmental and Natural Resources, Division of Environmental Management, Groundwater Section and the NC Dept of Human Resources, Solid Waste Management Section was conducted to identify any known problem sites along the proposed project alignment. No underground storage tank facilities or hazardous waste sites are known to be present in the Project Study Area.

Prime and Important Farmland. The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS). An assessment was completed using form AD 1006 to determine if the project's impact on Prime and Important Farmland will require consideration of mitigation. This project was not submitted to NRCS for land evaluation due to the low site assessment criteria score. The completed form is included in the **Appendix**.

Floodplains. Abbotts Creek is included in a detailed flood insurance study with regulatory floodway established. The proposed replacement is not anticipated to increase the extent of upstream flood hazard. There are no practical alternatives to crossing the floodplain. All reasonable measures will be taken to minimize harm to the floodplain. A copy of the Flood Insurance Rate Map (see **Figure 5**) shows the approximate limits of the 100-year floodplain in the vicinity of the project.

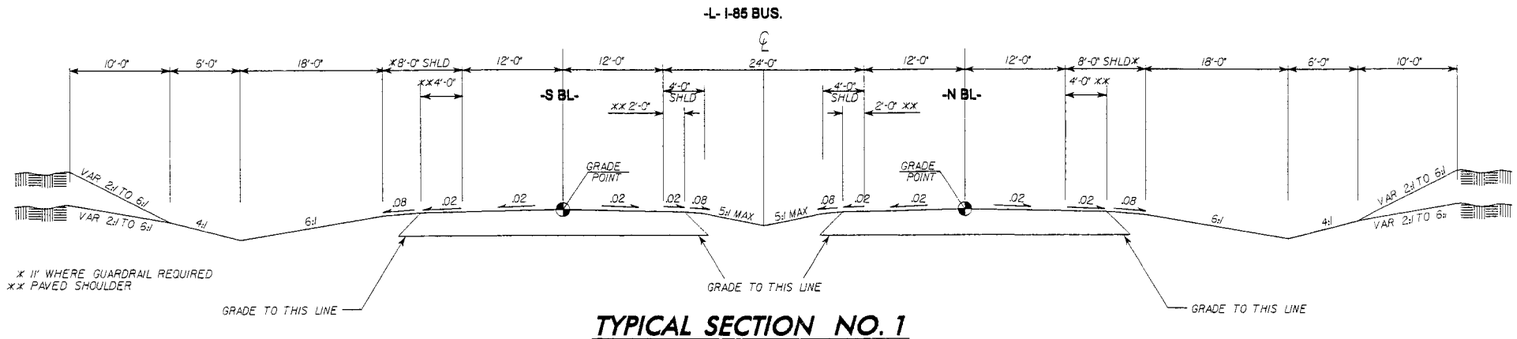
Geodetic Survey Markers. No geodetic survey markers will be impacted.

APPENDIX



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	***TIP NO. B-4095***
I-85 BUS. US 29/70 BRIDGE NOS. 128 & 130 OVER ABBOTTS CREEK DAVIDSON COUNTY	***PROJECT LOCATION MAP*** ***FIGURE 1***

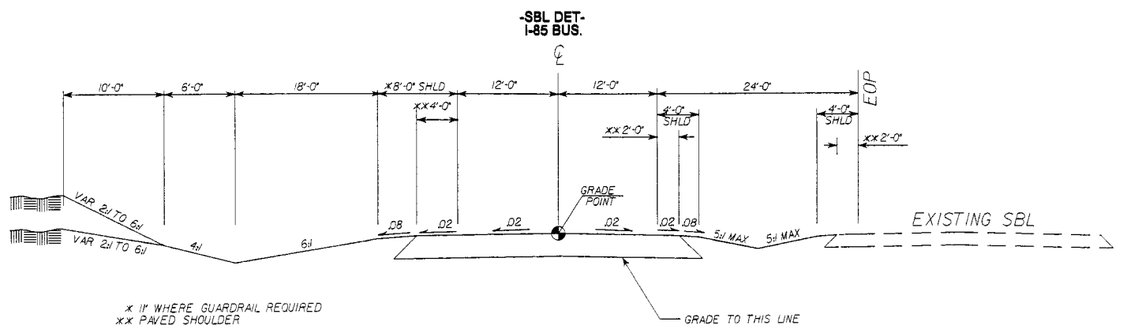
5/28/99



x 11' WHERE GUARDRAIL REQUIRED
xx PAVED SHOULDER

TYPICAL SECTION NO. 1

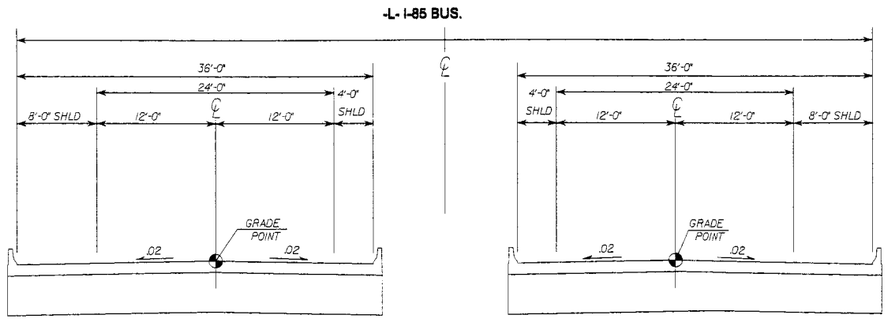
-L- I-85 BUS.



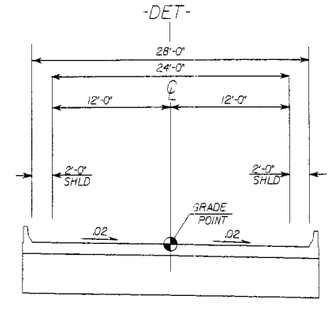
x 11' WHERE GUARDRAIL REQUIRED
xx PAVED SHOULDER

TYPICAL SECTION NO. 2

-MIRROR FOR NBL DETOUR



BRIDGE TYPICAL SECTION NO. 3



BRIDGE TYPICAL SECTION NO. 4

DETOUR I-85 BUS.
SOUTH BOUND BRIDGE
(MIRROR FOR NORTH BOUND BRIDGE)

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO.
B-4095

I-85 BUS. US 29/70 BRIDGE NOS. 128&130
OVER ABBOTTS CREEK
DAVIDSON COUNTY

TYPICALS

FIGURE 2

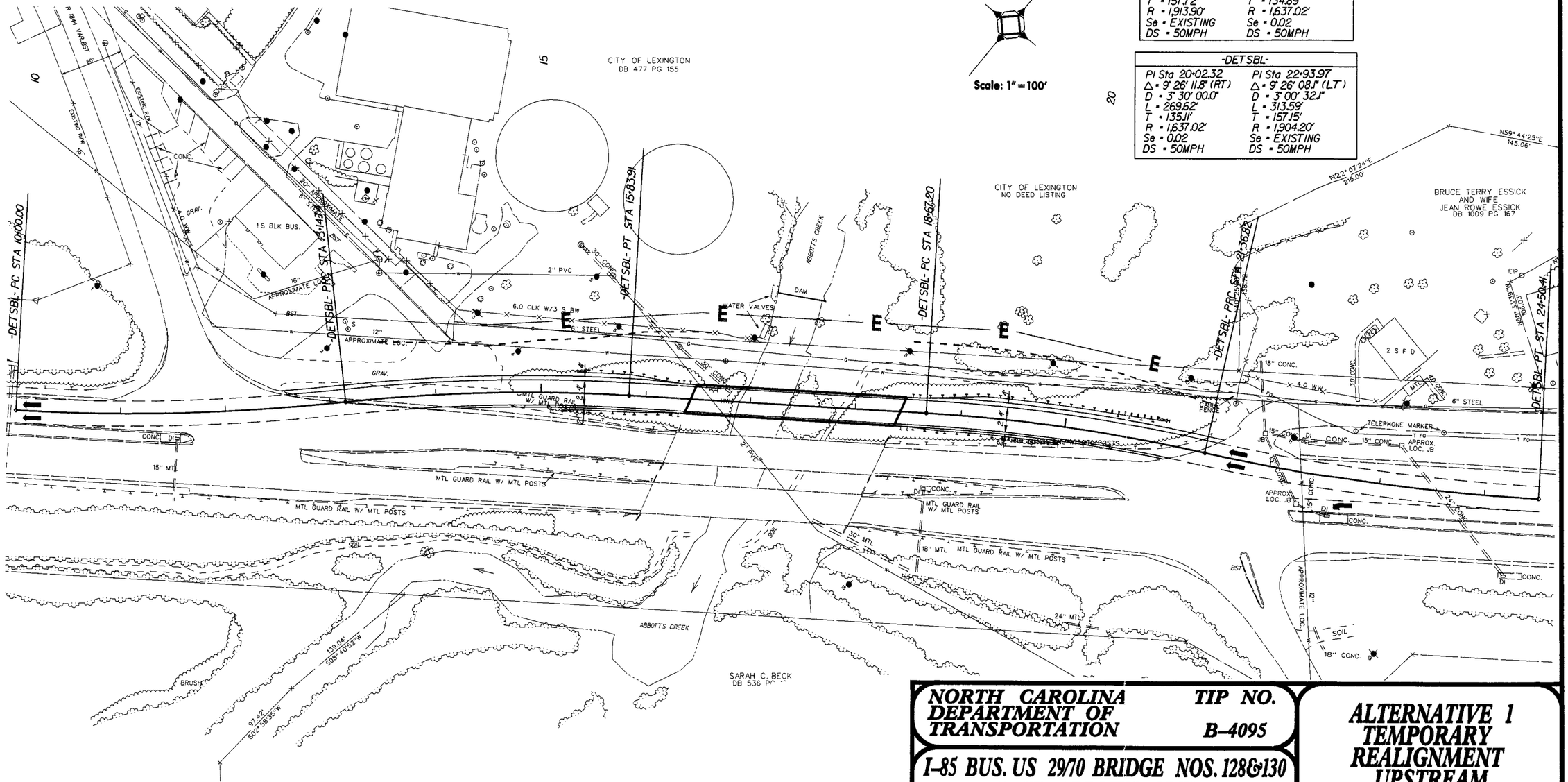
$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DETSBL-	
PI Sta 11+57.72	PI Sta 14+49.63
Δ = 9° 25' 19.8" (LT)	Δ = 9° 25' 16.2" (RT)
D = 2° 59' 37.2"	D = 3° 30' 00.0"
L = 314.74'	L = 269.18'
T = 157.72'	T = 134.89'
R = 1,913.90'	R = 1,637.02'
Se = EXISTING	Se = 0.02
DS = 50MPH	DS = 50MPH

-DETSBL-	
PI Sta 20+02.32	PI Sta 22+93.97
Δ = 9° 26' 11.8" (RT)	Δ = 9° 26' 08.1" (LT)
D = 3° 30' 00.0"	D = 3° 00' 32.1"
L = 269.62'	L = 313.59'
T = 135.11'	T = 157.15'
R = 1,637.02'	R = 1,904.20'
Se = 0.02	Se = EXISTING
DS = 50MPH	DS = 50MPH

Scale: 1" = 100'



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	TIP NO. B-4095
I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY	ALTERNATIVE 1 TEMPORARY REALIGNMENT UPSTREAM
	FIGURE 3A

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Scale: 1" = 100'

BEGIN CONSTRUCTION
PC Sta. 5+00.00

POWER & TELEPHONE SUPPLY COMPANY
DB 591 PG 594

NORTH LEXINGTON TRIANGLE FIRE DEPT.
DB 518 PG 201
DB 307 PG 314

CHARLIE T. COMER
AND WIFE
TILLIE H. COMER
DB 613 PG 213

VIRGIE LEE EVERHART
DB 1074 PG 801

CITY OF LEXINGT
DB 477 PG 155

PRC Sta. 10+28.38

-N2S10-

TO LEXINGTON US 29/70 BUS.85 S.BOUND 25.5 BST

US 29/70 BUS.85 N.BOUND 25.5 BST

GREENSBORO ST. SR 1844 VAR.WDT

1 S BK FIRESTATION

1 S BLK BUS.

MTL GUARD RAIL W/ MTL POSTS

EXISTING R/W

APPROXIMATE

CONC.

GRAV.

BRUSH

ABBOTTS CR

-N2S10-	
PI Sta 7+64.36	PI Sta 12+92.74
Δ = 5° 02' 44.4" (LT)	Δ = 5° 02' 44.5" (RT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 528.38'	L = 528.38'
T = 264.36'	T = 264.36'
R = 6,000.00'	R = 6,000.00'
Se = EXISTING	Se = EXISTING
DS = 50MPH	DS = 50MPH

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO. B-4095

I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTT'S CREEK DAVIDSON COUNTY

ALTERNATIVE 3 TEMPORARY MEDIAN CROSS-OVERS (NORTHBOUND)

FIGURE 3B

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Scale: 1"=100'

CITY OF LEXINGTON
NO DEED LISTING

BRUCE TERRY ESSICK
AND WIFE
JEAN ROWE ESSICK
DB 1009 PG 167

CTC INVESTMENTS
DB 928 PG 304

PHOEBE S. CURRY
NO DEED LISTING

SARAH C. BECK
536 PG 105

ABBOTTS CREEK

DAM

VALVES

ABANDONED BRIDGE BENT

1 S F BUS

2 S F D

GRAV.

CABLE FENCE

6" STEEL

APPROXIMATE LOC.

EXISTING R/W

12"

CALDCLEUGH RD. SR 1874

6.0 CHLK W/ 3 S BW

END CONSTRUCTION
PT Sta. 15+56.78

TELEPHONE MARKER

MTL GUARD RAIL W/ MTL POSTS

BRIDGE # 130

18" MTL

24" MTL

18" CONC.

15" CONC.

24" CONC.

30" CONC.

42" CONC.

4.0 WW

APPROX. LOC. JB

JB

DI

CONC.

SOIL

BST

2" PVC
APPROXIMATE LOC.

PRC Sta. 5+00.00

PRC Sta. 10+28.40

60.00

OLD HIGHWAY 29 SR 1923 TO KANOR RD.

205 BST

3.5 BST

25.0 BST

1.0 BST

1.0 BST

25.0 BST

3.5 BST

US 29/70 BUS. 85 S. BOUND

TO THOMASVILLE US 29/70 BUS. 85 N. BOUND

SCRAP PILES

SCRAP PILE

N01° 30'09"W
13.31'

N59° 44'25"E
145.06'

N22° 07'24"E
215.00'

145.15'
N60° 12'36"E

N33° 57'17"E
127.75'

N26° 43'56"E
88.36'

N36° 20'35"W
76.41'

90.58'
N18° 48'44"E

N39° 51'49"W
295.60'

N60° 25'54"W
268.72'

N38° 33'39"W
86.07'

-S2N40-

PI Sta 7+64.37	PI Sta 12+92.76
Δ = 5° 02' 44.9" (RT)	Δ = 5° 02' 44.5" (LT)
D = 0° 57' 17.7"	D = 0° 57' 17.7"
L = 528.40'	L = 528.38'
T = 264.37'	T = 264.36'
R = 6,000.00'	R = 6,000.00'
Se = EXISTING	Se = EXISTING
DS = 50MPH	DS = 50MPH

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO. B-4095

I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTT'S CREEK DAVIDSON COUNTY

ALTERNATIVE 3 TEMPORARY MEDIAN CROSS-OVERS (NORTHBOUND)

FIGURE 3C

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Scale: 1" = 100'

POWER & TELEPHONE SUPPLY COMPANY
DB 591 PG 594

NORTH LEXINGTON TRIANGLE FIRE DEPT
DB 518 PG 201
DB 307 PG 314

CHARLIE T. COMER
AND WIFE
TILLIE H COMER
DB 613 PG 213

VIRGIE LEE EVERHART
DB 1074 PG 801

CITY OF LE
DB 477 P

S46.68'
S02° 44'26"W

481.79'
N02° 21'09"E

GREENSBORO ST. SR 1844 VAR. EST 60'

EXISTING R/W 12'

EXISTING R/W 15'

1 S BK FIRESTATION

CONC.

1 S BLK BUS.

PT Sta. 13+56.76

20' APPROXIMATE

8" STEEL

BST

16" APPROXIMATE LOC.

2" PVC

30" CONC.

6.0 CLK W/3 S BW

6" STEEL

12" APPROXIMATE LOC.

GRAV.

MTL GUARD RAIL W/ MTL POSTS

-S2N10-

TO LEXINGTON US 29/70 BUS.85 S.BOUND 25.5 BST

30 BST

10 BST

16 BST

US 29/70 BUS.85 N.BOUND 25.5 BST

30 BST

CONC.

CONC. DI

15" MTL

MTL GUARD RAIL W/ MTL POSTS

MTL GUARD RAIL W/ MTL POSTS

EXISTING R/W

APPROXIMATE

50ft

BRUSH

139.04'
S08° 40'52"W

97.43'
S02° 58'35"W

BEGIN CONSTRUCTION
PC Sta. 5+00.00

PRC Sta 10+23.32

-S2N10-	
PI Sta 7+64.36	PI Sta 12+92.74
Δ = 5° 02' 44.3" (RT)	Δ = 5° 02' 44.4" (LT)
D = 0° 57' 17.7"	D = 0° 57' 17.8"
L = 528.38'	L = 528.38'
T = 264.36'	T = 264.36'
R = 6,000.00'	R = 5,999.99'
Se = EXISTING	Se = EXISTING
DS = 50MPH	DS = 50MPH

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO. B-4095

I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY

ALTERNATIVE 3 TEMPORARY MEDIAN CROSS-OVERS (SOUTHBOUND)

FIGURE 3D

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Scale: 1"=100'

CITY OF LEXINGTON
NO DEED LISTING

BRUCE TERRY ESSICK
AND WIFE
JEAN ROWE ESSICK
DB 1009 PG 167

CTC INVESTMENTS
DB 928 PG 304

SARAH C. BECK
DB 536 PG 105

PHOEBE S. CURRY
NO DEED LISTING

ABBOTTS CREEK

DAM

WATER VALVES

BRIDGE # 130

ABANDONED BRIDGE BENT

PC Sta. 5+00.00

PRC Sta. 10+27.33

-N2S40-

END CONSTRUCTION
PT Sta. 15+56.77

N59° 44'25"E 145.06'

N22° 07'24"E 215.00'

145.15'
N60° 12'36"E

N36° 20'35"W 78.41'

N16° 48'44"E 90.58'

N68° 22'36"W 90.58'

N40° 25'54"W 458.72'

N39° 51'49"W 295.60'

N01° 30'09"W 13.31'

N33° 57'17"E 127.75'

N26° 43'56"E 98.38'

S1° 47' 53.0" E

5

10

15

-N2S40-	
PI Sta 7+63.83	PI Sta 12+92.22
Δ = 5° 02' 44.5" (LT)	Δ = 5° 02' 44.5" (RT)
D = 0° 57' 24.6"	D = 0° 57' 10.9"
L = 527.33'	L = 529.44'
T = 263.83'	T = 264.89'
R = 5,988.00'	R = 6,012.00'
Se = EXISTING	Se = EXISTING
DS = 50MPH	DS = 50MPH

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO. B-4095

I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY

ALTERNATIVE 3 TEMPORARY MEDIAN CROSS-OVERS (SOUTHBOUND)

FIGURE 3E

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-
PI Sta 11+98.79
Δ = 3° 31' 01.7" (RT)
D = 1° 42' 37.2"
L = 205.64'
T = 102.85'
R = 3,350.00'
Se = EXISTING
DS = 55 MPH

Scale: 1" = 100'

TO LEXINGTON

EIP

GREENSBORO ST. SR 1844 VAR.WDT

1 S BK FIRESTATION

CONC.

NORTH LEXINGTON TRIANGLE FIRE DEPT.
DB 518 PG 201
DB 307 PG 314

481.79'
N03° 21'09"E

POWER & TELEPHONE SUPPLY COMPANY
DB 591 PG 594

CITY OF LEXINGTON
DB 477 PG 155

-Y1- POT STA 10+00.00

S 61° 25' 57.5" E

EXISTING R/W

-Y1- PC STA 10+95.93

-Y1- POC STA 12+26.86
END RESURFACING

-L- POT STA 10+00.00

-L- POT STA 13+50.00
BEGIN PROJECT B-4095

CHARLIE T. COMER
AND WIFE,
TILLIE H. COMER
DB 613 PG 213

-Y1- PT STA 13+01.58

S 57° 54' 55.8" E

-L-

N 51° 48' 56.8" E

TIE TO EXISTING GUARDRAIL

-Y1- POT STA 13+57.08 =
-L- POT STA 16+04.80

MTL GUARD RAIL W/ MTL POSTS

TO LEXINGTON US 29/70 BUS.85 S.BOUND 25.5 BST

US 29/70 BUS.85 N.BOUND 25.5 BST

10 BST

30 BST

EXISTING R/W

APPROXIMATE

VIRGIE LEE EVERHART
DB 1074 PG 801

1 S BLK BUS.

20' APPROXIMATE 6" STEEL

2" PVC

8.0 CLK W/3 S BW

6" STL

APPROXIMATE LOC.

200' UNIFORM TAPER

AT-1

M-350

MATCH LINE
-L- Sta. 19+50

139.04
S08° 40'52"W

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	TIP NO. B-4095
I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY	ALTERNATIVES 1 & 3 FINAL ROADWAY
	FIGURE 3F

-Y2-
PI Sta 13+01.84
Δ = 13° 17' 58.7" (LT)
D = 8° 11' 06.4"
L = 162.49'
T = 81.61'
R = 700.00'
Se = EXISTING
DS = 45 MPH

-Y3-		
PI Sta 14+95.78	PI Sta 16+13.32	PI Sta 18+20.81
Δ = 1° 21' 12.7" (LT)	Δ = 2° 09' 10.8" (RT)	Δ = 89° 59' 27.0" (LT)
D = 1° 32' 15.0"	D = 1° 39' 00.0"	D = 163° 42' 08.0"
L = 88.03'	L = 130.48'	L = 54.97'
T = 44.02'	T = 65.25'	T = 34.99'
R = 3,726.55'	R = 3,472.47'	R = 35.00'
Se = EXISTING	Se = EXISTING	Se = EXISTING
DS = 55 MPH	DS = 55 MPH	DS = 15 MPH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Scale: 1" = 100'

MATCH LINE
-L- Sta. 19+50

CITY OF LEXINGTON
NO DEED LISTING

BRUCE TERRY ESSICK
AND WIFE
JEAN ROWE ESSICK
DB 1009 PG 167

CTC INVESTMENTS
DB 928 PG 304

SARAH C. BECK
DB 536 PG 105

PHOEBE S. CURRY
NO DEED LISTING

ABBOTTS CREEK

DAM

WATER VALVES

ABANDONED BRIDGE BENT

BRIDGE # 130

200' UNIFORM TAPER

100' UNIFORM TAPER

-Y3- POC STA 18+17.38
END RESURFACING

-Y3- PT STA 18+40.78

-Y3- POT STA 18+98.98 =
-L- POT STA 25+88.13

-Y2- BOT STA 10+00.00 =
-L- POT STA 25+41.13

-Y3- PC STA 13+48.01

-Y3- PT STA 15+39.79

-Y3- PC STA 14+51.76

-Y3- PT STA 16+78.55

-Y3- PC STA 17+85.30

-Y2- PC STA 12+20.23

-L- STA 30+00.00
END PROJECT B-4095

-L- POT STA 29+00.00
END GRADE

-L- POT STA 33+20.00

N22° 07' 24"E
215.00'

N59° 44' 25"E
145.06'

145.15'
N60° 12' 38"E

N33° 57' 17"E
127.75'

N25° 43' 56"E
98.38'

N38° 20' 35"W
76.41'

N39° 51' 49"W
295.60'

S 51° 48' 56.8" E

S 51° 48' 20.1" W

S 49° 39' 09.3" W

S 51° 00' 21.9" W

S 77° 58' 57.2" E

N 51° 48' 56.8" W

N 38° 08' 03.0" E

CALDCLEUGH RD. SR 1874

EXISTING R/W

APPROXIMATE LOC.

2" PVC
APPROXIMATE LOC.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	TIP NO. B-4095
I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY	ALTERNATIVES 1 & 3 FINAL ROADWAY
	FIGURE 3G

-Y2-
PI Sta 13+01.84
Δ = 13° 17' 58.7" (LT)
D = 8° 11' 06.4"
L = 162.49'
T = 81.61'
R = 700.00'
Se = EXISTING
DS = 45 MPH

-Y3-
PI Sta 14+95.78
Δ = 1° 21' 12.7" (LT)
D = 1° 32' 15.0"
L = 88.03'
T = 44.02'
R = 3,726.55'
Se = EXISTING
DS = 55 MPH

-Y3-
PI Sta 16+13.32
Δ = 2° 09' 10.8" (RT)
D = 1° 39' 00.0"
L = 130.48'
T = 65.25'
R = 3,472.47'
Se = EXISTING
DS = 55 MPH

PI Sta 18+20.81
Δ = 89° 59' 27.0" (LT)
D = 16.3° 42' 08.0"
L = 54.97'
T = 34.99'
R = 35.00'
Se = EXISTING
DS = 15 MPH

LEGEND

- Piedmont/Low Mountain Aluvial Forest
- Maintained /Disturbed
- Stream

Scale: 1" = 100'

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE
-L- Sta. 19+50

LEXINGTON
77 PG 155

CITY OF LEXINGTON
NO DEED LISTING

BRUCE TERRY ESSICK
AND WIFE
JEAN ROWE ESSICK
DB 1009 PG 167

CTC INVESTMENTS
DB 928 PG 304

PHOEBE S. CURRY
NO DEED LISTING

SARAH C. BECK
DB 536 PG 105

-Y3 POC STA 18+17.38
END RESURFACING

-Y3- PT STA 18+40.78

-Y3- POT STA 18+98.98 =
-L- POT STA 25+88.13

-Y2- POT STA 10+00.00 =
-L- POT STA 25+41.13

-Y3- PC STA 16+78.55

-Y3- PT STA 15+48.07

-Y3- PC STA 15+39.79

-Y3- PT STA 14+51.26

-Y2- PC STA 12+80.27

-L- STA 30+00.00
END PROJECT B-4095

-L- POT STA 29+00.00
END GRADE

-L- POT STA 33+20.00

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	TIP NO. B-4095
I-85 BUS. US 29/70 BRIDGE NOS. 128&130 OVER ABBOTTS CREEK DAVIDSON COUNTY	BIOTIC COMMUNITIES AND ALTERNATIVE 3 FINAL ROADWAY (PREFERRED ALTERNATIVE)
	FIGURE 4B

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 13, 2001

PBS&J
Attention: Suzanna Spence
3214 Spring Forest Rd.
Raleigh, NC 27616

Re: Bridge Replacement, US 70/29 over Abbotts Creek,
TIP Number B-4095, Davidson County, ER 01-9366

Dear Ms. Spence:

We have reviewed the proposed undertaking and determined that it will not affect any properties of architectural or historical significance. However, we are unable to comment on the potential for an effect upon archaeological sites. Please forward plans as they become available so that we may continue our review.

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.

Sincerely,

Renee Gledhill-Earley

David Brook
Deputy State Historic Preservation Officer

DB:kgc

cc: William Gilmore, NCDOT
T. Padgett, NCDOT

Federal Aid # **BRSTP-29(19)** *TIP #* **B-4095** *County*: **DAVIDSON**

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

Project Description: Replace Bridge No. 130 on I-85 Business over Abbotts Creek

On 3/29/01, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

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

Signed:

Heather Fennell — 3/29/01
Representative, NCDOT — Date

Michael C Dawn — 4/16/01
FHWA, for the Division Administrator, or other Federal Agency — Date

Claudia B Brown — 3/29/01
Representative, HPO — Date

Renee Gledhill-Earley — 3/30/01
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form will be included.

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

October 21, 2003

MEMORANDUM

To: Stacy Baldwin
Project Development and Environmental Analysis Branch
Department of Transportation

From: David Brook per David Brook

Re: Replacement of Bridge #130 over Abbotts Creek, B-4095, Davidson County, ER01-9366

Thank you for your memorandum of September 4, 2003, transmitting the additional mapping for the above referenced project. We have reviewed the maps and determined that an archaeological survey is not necessary.

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

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

cc: Matt Wilkerson, NCDOT

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of 1
1. Name of Project B-4095	5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Bridge Replacement	6. County and State Davidson, North Carolina	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form) YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	0			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	0	0	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points			
1. Area in Nonurban Use	15	10		
2. Perimeter in Nonurban Use	10	5		
3. Percent Of Corridor Being Farmed	20	0		
4. Protection Provided By State And Local Government	20	0		
5. Size of Present Farm Unit Compared To Average	10	0		
6. Creation Of Nonfarmable Farmland	25	0		
7. Availablility Of Farm Support Services	5	5		
8. On-Farm Investments	20	0		
9. Effects Of Conversion On Farm Support Services	25	0		
10. Compatibility With Existing Agricultural Use	10	0		
TOTAL CORRIDOR ASSESSMENT POINTS	160	20	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	160	20	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	20	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: Ron Elmore
Project Engineer, NCDOT

FROM: Maryellen Haggard, Highway Project Coordinator
Habitat Conservation Program

DATE: June 27, 2001

SUBJECT: NCDOT Bridge Replacements in Buncombe, Burke, Caldwell, Cherokee, Davidson, Haywood, Jackson, and Madison counties of North Carolina. TIP Nos. B-4033, B-3814, B-3818, B-3826, B-3834, B-4095, B-3854, B-3859, B-3860, and B-4184

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On bridge replacement projects of this scope our standard recommendations are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Wet concrete should not be allowed to contact stream water. This will lessen the chance of altering the stream's water chemistry and causing a fish kill.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed

areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. All mechanized equipment operated near surface waters should be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for fish passage. The culvert or pipe invert should be buried at least 1 foot below the natural streambed. The installation of the culvert or pipe should insure that all waters flow without freefalling or damming on either end during low flow conditions. If culverts are long, notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, to reduce flow velocities, and to provide resting places for fish and other aquatic organisms moving through the structure.

2. When two pipes are installed, only the lower pipe should be buried 12" into the substrate so that all base flows continue uninterrupted in the lower pipe during normal and low flow conditions to maintain aquatic life passage. The bottom of the second pipe should be placed at grade or at bankfull elevation. The second pipe should remain dry during normal flows to allow for wildlife passage. Where disrupted, natural floodplain benching should be restored upstream and downstream of the second, "dry", pipe.

3. Culverts or pipes should be situated so that no channel realignment or widening is required. Widening of the stream channel at the inlet or outlet of structures usually causes a decrease in water velocity causing sediment deposition that will require future maintenance.

4. Riprap should not be placed on the streambed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4033 – Buncombe County – Bridge No. 85 over Hominy Creek. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

2. B-3814 – Burke County – Bridge No. 56 over Canoe Creek. Canoe Creek at the bridge replacement is in a designated water supply watershed. NCDOT should adhere to strict erosion control measures.

3. B-3818 – Caldwell County – Bridge No. 3 over Lost Cove Creek. First class trout waters with wild populations of brown and rainbow trout present in both Lost Cove Creek and downstream in Wilson Creek. The area is designated Public Mountain Trout Water. We will require a trout moratorium from Oct. 15th - April 15th. We request that High Quality

Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of ORW (Outstanding Resource Waters).

4. B-3826 – Cherokee County – Bridge No. 166 over Bates Creek. The upper portion of Bates Creek is on gamelands and is designated wild trout. Trout are also likely below the bridge replacement. We will require a trout moratorium from Oct. 15th - April 15th. NCDOT should adhere to strict erosion control measures.

5. B-3834 – Davidson County – Bridge No. 156 over Hanks Creek. No comment.

6. B-4095 – Davidson County – Bridge No. 130 over Abbotts Creek. This Creek flows into High Rock Lake. Abbott Creek supports a diverse fishery including Largemouth bass, redbreast sunfish, bluegill, channel catfish, and crappie. White Bass make a seasonal spring run up the creek to spawn. We request that High Quality Sedimentation and Erosion Control Measures be used due to the DWQ water quality classification of WS-III CA.

7. B-3854 – Haywood County – Bridge No. 329 over Jonathon Creek. Jonathon Creek is designated hatchery supported water. Therefore, Brook, Brown and Rainbow Trout will be present. We will require a trout moratorium from Oct. 15th - April 15th. NCDOT should adhere to strict erosion control measures.

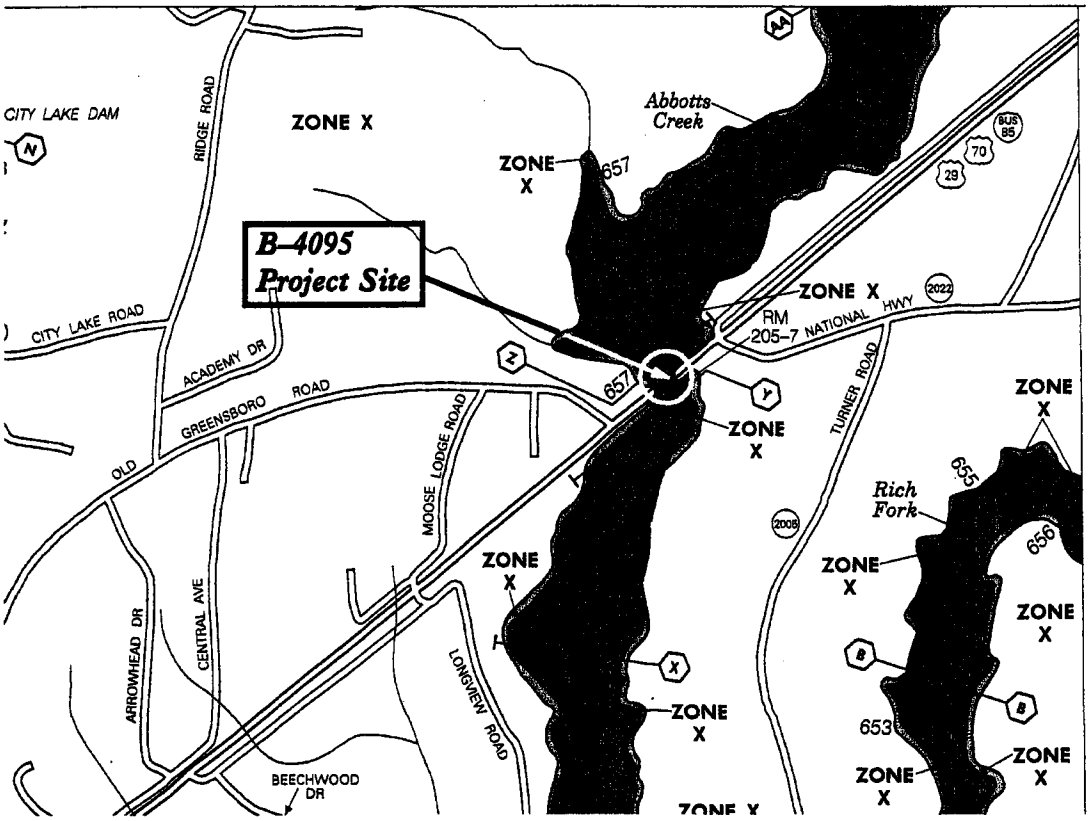
8. B-3859 – Jackson County – Bridge No.138 over Pressley Creek. The upper section of a tributary to Pressley Creek is on game lands and supports wild trout. The lower end of Presley also supports wild trout. Hatchery supported water begins at the confluence with Cullowhee Creek. It looks like this bridge is actually over Tilley Creek. Tilley Creek is considered trout waters. We will require a trout moratorium from Oct. 15th - April 15th. NCDOT should adhere to strict erosion control measures.

9. B-3860 – Jackson County – Bridge No. 33 over Buff Creek. Upper sections of the creek support wild trout. The lower section is designated Hatchery Supported. We will require a trout moratorium from Oct. 15th - April 15th. NCDOT should adhere to strict erosion control measures.

10. B-4184 – Madison County – Bridge No. 4 over Ivy River. We have no specific comments. We are not aware of any threatened of endangered species in the project vicinity.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (336) 527-1549. Thank you for the opportunity to review and comment on these projects.



APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

DAVIDSON COUNTY,
NORTH CAROLINA
AND INCORPORATED AREAS

PANEL 205 OF 400

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DAVIDSON COUNTY	370087	0205	D
LEXINGTON, CITY OF	370081	0205	D

Notice to User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
37057C0205 D

EFFECTIVE DATE:
SEPTEMBER 7, 2000

Federal Emergency Management Agency

N

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP NO. B-4095

I-85 BUS. US 29/70 (SOUTHBOUND) BRIDGE NOS. 128 & 130 OVER ABBOTTS CREEK DAVIDSON COUNTY

FEMA FLOOD MAP

FIGURE 5

5APHOTOS.DGN

Central
Squad Document Review

Project Manager: Susan Thebert

TIP #: B-4095

WBS #: 33453.1.1

Function Code: 2100

Let Date: 08/21/07 Review Date: ___/___/___

Document Type: (circle one)

(Permit Application) Concurrence Letter Other:_____

Date Submitted for Review: 7/14/07 (1st Review) _____ (2nd Review) _____ (3rd Review)

Date Reviewed by Rachelle: _____ (1st Review) _____ (2nd Review) _____ (3rd Review)

Date Document Sent for Distribution:_____

Comments:

- Ready to be signed (NEU + internal NCDOT reviews completed)

- Permanent SW impacts not listed on summary sheet (too small) but stated in Permit appl. + PCN

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 14, 2007

U.S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of Neuse Road
Suite 120
Raleigh, NC 27615

ATTENTION: Mr. John T. Thomas, Jr.
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide Permit 23 and Nationwide Permit 33 Application** for the proposed replacement of Bridge No. 128 and 130 I-85 Business over Abbots Creek, Davidson County, Federal Aid Project No. BRSTP-29 (19), State Project 8.1602001, WBS Element 33453.1.1, TIP No. B-4095

Please see the enclosed Pre-Construction notice (PCN), permit drawings, design plans and Categorical Exclusion (CE) for the subject project. The North Carolina Department of Transportation (NCDOT) plans to replace Bridge Nos. 128 and 130 with new three span bridges with a minimum length of 220 feet. The new bridges will be constructed in place. The existing bridges will be used as detours. Bridge No. 128 will be used as a two lane detour (one lane of traffic in each direction) while Bridge No. 130 is being replaced in place. The new Bridge No. 130 will then be used as a two lane detour (one lane of traffic in each direction) while Bridge No. 128 is replaced in place. During the construction period, the speed limit in the project area will be lowered to 45 mph because of the two lane detour and to meet the temporary detour design requirements. In addition, wide load vehicles will be directed to off-site detour routes.

The typical section for the structures includes two 12-foot travel lanes with 8-foot outside shoulders and a 4-foot inside shoulders. The typical section for the approach roadway for the permanent replacement structures consists of four 12-foot travel lanes and 4-foot outside paved shoulders and 2-foot inside paved shoulders. The approach roadways will extend approximately 1500 east and approximately 1500 west of the new bridges. The design speed of the roadway is 60 mph.

The elevation of the new structures will be approximately the same as the existing structures. The replacement structures are bridges with a minimum grade to facilitate drainage. There will be

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

TELEPHONE: 919-715-1334
FAX: 919-715-5501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD.
SUITE 240
RALEIGH NC 27604

~~0.01 acres of permanent surface water impacts and 0.04 acres temporary surface water impacts associated with the project.~~ stated Below

IMPACT TO WATERS OF THE UNITED STATES

General Description: The project is located in the Yadkin River basin (Sub-basin 03-07-07), Hydrologic Unit Code ~~no.~~ 03040103. The jurisdictional resource in the project area is Abbotts Creek. The Division of Water Quality stream index number for Abbotts Creek is 12-119-(6). The channel of Abbotts Creek at the bridges is approximately 45 feet wide and has an average depth of 1.5 feet. The creek appeared to have an E5 Rosgen classification (stream with gentle slopes, and sandy bed with some gravel and silt/clay deposits) although this was difficult to determine due to high turbidity. From the upstream side of the bridges to the Abbotts Creek arm of High Rock Lake, Abbotts Creek has a best usage classification of C. Upstream of the bridges the best usage classification is WS-III, CA [stream index number 12-119-(4.5)].

According to the City of Lexington Utilities Water Resource section, there are two water valves located upstream of the bridges (west of Abbotts Creek) and immediately north of the study area. These water valves are from the water plant and one serves as a drain structure and the other serves as an intake structure. A valid permit is maintained for these structures. The intake structure is not being used at this time and has not been used for a long time. The drain structure is used periodically.

No Outstanding Resource Waters (ORW), High Quality Waters (HQW), WS-I, or WS-II Waters occur within 1.0 mile of the project study area.

Design Standards in Sensitive Watersheds are listed on the CE Greensheet. The study area is not located in a ORW, HQW, WS-I or WS-II. The site is located in a critical area (CA) because it is near two water valves that are not currently being used as intake structures (see above paragraph). Project construction will occur downstream of the water valves. Because of these reasons NCDOT will use Best Management practices for this project and not Design Standards in Sensitive Watersheds.

Permanent Impacts: There will be 0.01 acres of permanent surface water impacts associated with the project. The permanent impacts are resulting from fill in surface waters due to construction of the proposed substructures (bents) of each bridge (0.0007 acre). The project will not impact wetlands.

The CE states that no bents will be placed in the creek. Bents are now proposed because the bridge structure could not be adjusted to keep the bents out of the creek.

Temporary Impacts: There will be 0.04 acres of temporary surface water impacts due to installation of two temporary work pads for each bridge (0.02 acres). No temporary wetland impacts are associated with this project.

Bridge Demolition: Bridge No. 128 carries I-85 Business – US 29/70 northbound traffic. Bridge No. 128 was built in 1951. The overall bridge length is 200 feet. Bridge No. 128 has four spans,

each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a reinforced concrete cap on a spread footing at end bent 1, a reinforced concrete cap on timber piles at end bent 2 and reinforced concrete post and web interior bents.

Bridge No. 130 carries I-85 Business- US 29/70 southbound traffic and was built in 1946. The overall bridge length is 200 feet. The bridge has four spans, each 50 feet long. The superstructure consists of a reinforced concrete deck with bituminous wearing surface and reinforced concrete deck girders. The substructure consists of a spill through concrete abutment at End Bent 1, a reinforced concrete cap on steel piles at End Bent 2, and reinforced concrete post and web interior bents.

For each bridge, the roadway width, including paved shoulders, is 30 feet and the total deck width is 33.3 feet. The existing approach roadway width, including paved shoulders is approximately 30 feet for each bridge. The height of each bridge (from crown to bed) is 26 feet. The existing median width is 24 feet. The existing right of way includes the maintained area and is 260 feet. There are no posted weight limits. The posted speed limit is 55 mph.

Bridges No. 128 and 130 will be removed without dropping components into Waters of the United States. Best Management Practices for the Protection of Surface Waters and Bridge Demolition and Removal guidelines will be followed.

Utility Impacts: There will be no utility relocation impacts to jurisdictional resources. An overhead electrical line crosses the roadway immediately southwest of the bridges. There is a sanitary sewer line that runs parallel to the roadway and crosses the creek approximately 100 feet upstream of the bridges. An underground gas line and over head telephone line also are located approximately 120 feet upstream. There are three water lines in the study area. Two of the water lines and the aerial line have conflicts with the project.

The water line that runs diagonally across the study area (at the bridges) will be relocated. This water line will be relocated by putting bends in the line. These bends will be installed on the bank away from the bridge. A second water line is located east of US 29/70 Business and old highway US 29. This line will be relocated further away from the road but will remain inside the right-of-way. No utility impacts to jurisdictional areas are anticipated from the relocation of both utility lines (water).

Two aerial poles located in the southeast and northeast quadrants will be removed and the line reattached to existing poles. No utility impacts to jurisdictional areas are anticipated from the pole removal and reattachment of the overhead aerial line.

FEDERALLY PROTECTED SPECIES

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists 3 federally – protected species, as of December 11, 2006, for Davidson County. The Endangered and

Threatened species in North Carolina web-site was checked on December 20, 2006 for any changes and the list remains the same. The species under federal protection are listed in Table 1.

Table 1. Federally Protected Species for Davidson County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Bald eagle	*Haliaeetus leucocephalus*	Threatened	No	No Effect
Bog turtle	*Clemmys muhlenbergii*	T(S/A)	No	N/A
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered	No	No Effect

No suitable habitat for the bald eagle, bog turtle and Schweinitz's sunflower are located in the study area according to the CE. The Biological Conclusion of No Effect remains valid for all three species.

AVOIDANCE, MINIMIZATION and MITIGATION

Avoidance and Minimization:
Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the US". The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to minimize impacts as part of the project design. Practical means to minimize impacts to surface waters temporarily impacted by the project include:

Project Specific Measures-

- During construction road closure is planned for one bridge and traffic will diverted to the other bridge.
- The bridges are to be replaced in the same location
- The existing bridges can be removed without any debris falling into the water.

Standard Measures-

- Best Management Practices will be followed for this project as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities"

Mitigation: No mitigation is proposed because of minimal impacts.

Restoration plan

REGULATORY APPROVALS

Section 404 Permit: It is anticipated that impacts from construction of the new bridges will be authorized under Section 404 Nationwide Permits 23 and 33. We are therefore requesting the issuance of a Nationwide Permit 23 and 33 for the bridge construction.

Section 401 Permit: We anticipate 401 General Certification number 3403 and 3366 will be applicable to this project. All general conditions of the Water Quality Certification will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B .0200 we are providing 2 copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality for their notification.

Thank you for your time and assistance with this project. A copy of this permit application will be posted on the NCDOT website at http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html.

Please contact Susan Thebert at (919) 715-1461 or sthebert@dot.state.nc.us if you have any questions or need any additional information.

Sincerely,

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

w/attachment
- Mr. John Hennessy, NCDWQ (2 Copies)
- Ms. Marla Chambers, NCWRC
- Ms. Marella Buncick, USFWS
- Dr. David Chang, P.E., Hydraulics
- Mr. Mark Staley, Roadside Environmental
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. S. P. Ivey, P.E., Division Engineer
- Ms. Diane Hampton, P.E., 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. Stacy Baldwin, PDEA Project Planning Engineer

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: 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 Nos. 128 and 130 on I-85 Bus. over Abbots Creek

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4095

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

4. Location
   County: Davidson Nearest Town: Lexington
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): I-85 Business US 29/70 bridges over Abbot's Creek northeast of Lexington

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): _____ °N _____ °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Abbot's 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: I-85 Business is a 4-lane facility. Bridge No. 128 carries northbound traffic. Bridge No. 130 carries southbound traffic. Lexington Water works is

northwest of the bridges. Land use in the project vicinity is residential, commercial and institutional.

10. Describe the overall project in detail, including the type of equipment to be used: Bridge No. 128 will be used as a two lane detour (one lane of traffic ineach direction) while bridge No. 130 is being replaced in place. The new bridge No. 130 then will be used as a two lane detour (one lane of traffic in each direction) while bridge No. 128 is replaced in place. During construction the speed limit in the project area will be lowered to 45 mph and wide load vehicles will be directed to off-site conditions.

11. Explain the purpose of the proposed work: The existing structures are considered functionally obsolete and structurally deficient. Bridge replacement will result in safer and more efficient traffic operations.

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.

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.

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: Fill in surface waters (permanent) due to bent construction. Temporary fill in surface waters due to temporary work pads.

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

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

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

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)
Bridge 128	Abbott's Creek	fill	perennial			0.0007
Bridge 130	Abbott's Creek	fill	perennial			0.0007
Bridge 128	Abbott's Creek	temp work pad	perennial			0.02
Bridge 130	Abbott's Creek	temp work pad	perennial			0.02

Total Stream Impact (by length and acreage)		0.0414

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

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

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

Stream Impact (acres):	0.0414
Wetland Impact (acres):	
Open Water Impact (acres):	
Total Impact to Waters of the U.S. (acres)	0.0414
Total Stream Impact (linear feet):	

7. Isolated Waters
   Do any isolated waters exist on the property? ☐ Yes ☒ No
   Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

   _____

   _____

8. Pond Creation
   If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
   Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
   Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):_____
   Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):_____
   Current land use in the vicinity of the pond:_____
   Size of watershed draining to pond:_____ Expected pond surface area:_____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact

site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. During construction road closure is planned for one bridge and traffic will diverted to the other bridge. The bridges are to be replaced in the same location The existing bridges can be removed without any debris falling into the water

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.

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

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

IX. Environmental Documentation (required by DWQ)

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

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☐ No ☒

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

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

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

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

XI. Stormwater (required by DWQ)

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

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:_____

_____

_____

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).

_____

_____

_____

Applicant/Agent's Signature **Date**

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