STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI
SECRETARY

March 12, 2012

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. Andy Williams
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 13 and 33, Section 401 Water Quality Certification, and Jordan Lake Riparian Buffer Authorization** for the Replacement of Bridge No. 162 on SR 1113 (Kimesville Rd.) over South Prong Stinking Quarter Creek in Alamance County, North Carolina. TIP No. B-4955. Federal Aid Project No. BRSTP-1113(6)

Debit $240.00 from WBS Element 40057.1.1.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 162 over South Prong Stinking Quarter Creek on SR 1113 in Alamance County. The project involves replacement of the existing 81-foot structure with a 122-foot long bridge in the same location. There will be 13 feet of bank stabilization, 0.03 acre of temporary impacts for a work pad, and 10,469 square feet of riparian buffer impacts on this project.

Please find enclosed the Pre-Construction Notification (PCN) form, EEP acceptance letter, stormwater management plan, permit drawings, and design plans for the above referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project on May 13, 2011 and distributed shortly thereafter. Additional copies are available upon request.

The proposed let date for the project is November 20, 2012 with a review date of October 2, 2012. However, the let date may advance as additional funds become available.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.ORG

LOCATION:
CENTURY CENTER BUILDING B
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

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

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Amy James at aejames@ncdot.gov or (919) 707-6129.

Sincerely,

E. L. Lusk

for Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Unit

cc: NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 13 33	or General Permit (GP) number:
1c. Has the N WP or GP number been verified by the Corps?	☐ Yes ☒ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☒ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.		☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		☐ Yes ☒ No

2. Project Information

2a. Name of project:	Replacement of Bridge No. 162 over South Prong Stinking Quarter Creek on SR 1113.
2b. County:	Alamance
2c. Nearest municipality / town:	Kimesville
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4955

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Respon sible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6129
3g. Fax no.:	(919) 212-5785
3h. Email address:	aejames@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	*not applicable*
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	*not applicable*
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History		
1. Property Identification		
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*	
1b. Site coordinates (in decimal degrees):	Latitude: 35.967109 (DD.DDDDDD)	Longitude: - 79.530335 (-DD.DDDDDD)
1c. Property size:	1.9 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	South Prong Stinking Quarter Creek	
2b. Water Quality Classification of nearest receiving water:	C; NSW	
2c. River basin:	Cape Fear	
3. Project Description		
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Land use in the project vicinity consists primarily of agricultural and forested land with a few widely scattered homes.		
3b. List the total estimated acreage of all existing wetlands on the property: 0.0		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 1,160		
3d. Explain the purpose of the proposed project: To replace a structurally deficient bridge.		
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 81-foot bridge with a 122-foot, 2-span cored slab bridge on the existing alignment with an off-site detour using a temporary workpad. Standard road building equipment, such as trucks, dozers, and cranes will be used.		
4. Jurisdictional Determinations		
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: A request for a final JD was sent to the USACE on August 3, 2010. No written JD was received.	☒ Yes ☐ No ☐ Unknown	
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final	
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.		
5. Project History		
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown	
5b. If yes, explain in detail according to "help file" instructions.		
6. Future Project Plans		
6a. Is this a phased project?	☐ Yes ☒ No	
6b. If yes, explain.		

C. Proposed Impacts Inventory

1. Impacts Summary

1a. Which sections were completed below for your project (check all that apply):

☐ Wetlands ☒ Streams - tributaries ☒ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	X Permanent X Temporary

2h. Comments:

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact size
Site 1 ☒ P ☐ T	Bank stabilization	South Prong Stinking Quarter Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	17.5	<0.01 acre (13 linear ft.)
Site 2 ☐ P ☒ T	Temporary workpad	South Prong Stinking Quarter Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	17.5	0.03 acre
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	<0.01 Perm 0.03 Temp

3i. Comments:

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	X Permanent X Temporary

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
	5f. Total							

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?			☐ Neuse ☐ Tar-Pamlico ☒ Other: Jordan Lake ☐ Catawba ☐ Randleman		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☒ P ☐ T	Bridge	South Prong Stinking Quarter Creek	☐ Yes ☒ No	6,218	634
B2 ☒ P ☐ T	Road impacts other than crossings w/streams	UT to South Prong Stinking Quarter Creek	☒ Yes ☐ No	1,972	1,645
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**	8,190	2,279
6i. Comments:					

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

The proposed bridge is 41 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade and alignment as the existing structure; and the implementation of Design Standards in Sensitive Watersheds.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

NCDOT Best Management Practices for Bridge Demolition, Removal and Construction will be followed, as well as those for Sedimentation and Erosion Control; the shoulder berm and gutter system will drain to an existing depression instead of S. Prong Stinking Quarter Creek; and the utilization of an off-site detour.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☐ Yes ☒ No If no, explain: This project will not result in the loss of waters of the U.S., therefore no mitigation is proposed.
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps
2c. If yes, which mitigat ion option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank: not applicable

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.	☒ Yes
4b. Stream mitigation requested:	linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	8,384 square feet Zone 1: 5,916 sqft Zone 2: 2,468 sqft
4e. Riparian wetland mitigation requested:	acres
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	acres

4h. Comments:

5. Complete if Using a Permittee Responsible Mitigation Plan

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?	☒ Yes ☐ No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1	Parallel impact	1,972	3 (2 for Catawba)	5,916
Zone 2	Parallel impact	1,645	1.5	2,468
		6f. **Total buffer mitigation required:**		8,384

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

See attached EEP acceptance letter.

6h. Comments: While the 0.3 acre mitigation threshold is not met, the impact length exceeds 150 feet.

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☒ Yes ☐ No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments: see attached buffer permit drawings.	☒ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☒ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.		
4. Sewage Disposal (DWQ Requirement)		
4a. 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. not applicable		

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes	☒ No
5c. If yes, ind icate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? USFWS county list.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	3.9.12 Date

Ecosystem Enhancement PROGRAM

March 6, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4955, Replace Bridge Number 162 on SR 1113 (Kimesville Road) over South Prong of Stinking Quarter Creek, Alamance County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the buffer mitigation for the subject project. Based on the information supplied by you on March 2, 2012, the buffer impacts are located in CU 03030002 of the Cape Fear River basin (Haw Arm) in the Central Piedmont (CP) Eco-Region and are as follows:

Buffer	River Basin	CU Location	Eco-Region	Buffer (in square feet)		
				Zone 1	Zone 2	TOTAL
Impacts	Cape Fear – Haw Arm	03030002	CP	1,694	279	1,973

This mitigation acceptance letter replaces the mitigation acceptance letter issued on January 31, 2012. All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP number B-4955. Subsequently, EEP will conduct a review of current NCDOT ILF Program mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from NCDOT ILF Program. EEP commits to implementing sufficient buffer mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required.

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

Sincerely,

Michael Ellison
EEP Deputy Director

Cc: Mr. Andy Williams, USACE – Raleigh Regulatory Field Office
Mr. Brian Wrenn, NC Division of Water Quality
File: B-4955 Revised

NCDOT Highway Stormwater PROGRAM

Released: July 2010 (DRAFT)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

Version 1.1

General Project Information

Project No.:	40057.1.1		**Date:**	10/6/2010		
City/Town:	Liberty/Kimesville		**Designer:**	PA/ddc		
County(ies):	Alamance County		**Project Manager:**	JWT		
River Basin(s):	**Cape Fear**		**CAMA County?**	no	**TVA County?**	no
Primary Receiving Water:	S. Prong Stinking Quarter Creek		**NCDWQ Stream Index:**	16-19-8-2-(2)		
NCDWQ Surface Water Classification for Primary Receiving Water		**Primary:**	Water Supply V (WS-V)			
		Supplemental:	Nutrient Sensitive Waters (NSW)			
Other Stream Classification:						
303(d) Stream?	no	**Type(s) of Impairment:**				
State Stormwater Permit Required?	no	**If yes, why?**				
Could the Project Impact Threatened or Endangered Species?			no			
Description:						
Anadromous Fish Present?	**no**					
Description:						
Buffer Rules in Effect?	yes		**Buffer Rules:**	Jordan Lake Watershed		

Existing Site

Description of Existing Project Area:	Secondary subregional tier rural road (25yr design).
Average Daily Traffic (existing):	ADT 2012: 1480vpd
Existing Cross Section:	(2) 10 ft. lanes (no paved shoulder); Ditch section (Typ.)
Surrounding Land Use:	Rural farmland/fields intermixed with forested area with residential development intermixed along roadway corridors
General Comments:	Some dump truck traffic present. Bridge is set near a sag on SR1113. Noted from field interviewees that dump truck traffic is problematic in deteriorating the wearing surface on the bridge. Existing Bridge: 1@40'5", 1@40'2" Timber Deck on Steel Girders; 90 deg. Skew

Project Description

Description of Proposed Project:	Bridge replacement project and widening in the vicinity of the bridge.		
Average Daily Traffic (proposed):	ADT 2035: 2300vpd T=4%; V=55mph		
Proposed Cross-Section:	(2) 11 ft. lanes with paved shoulders on the approaches. Ditch section.		
Interchange Modification:	no	**Median Type:**	N/A
Terminus:	Approximately 200 ft. south of crossing		
Terminus:	Approximately 200 ft. north of crossing		
Project Length (lin. miles/feet):	0.076 Miles	**Added Impervious Area (ac.):**	0.04 Ac.
General Comments:	Proposed Bridge (Replace-in-place): 1@70', 1@50' 24" Cored Slab; 75 deg. Skew. No BMPs incorporated on project. Although BMPs were not used on this project, the proposed bridge does not incorporate deck drains.		

Environmental Summary

Riparian Buffer and Jurisdictional Stream Impacts and Associated SCMs

Station	Stream Name	Stream Type	Jurisdict. Stream	Buffer?	Classific-ation?	Proposed Structure	SCM Type	Checklist Complete?	DA (ac.)	Q_2 (ft^3/s)	Q_{10} (ft^3/s)	WQv^c (ft^3)
-L- 14+43.5	S. Prong Stinking Quarter Creek	Perennial	RPW	No	Water Supply V (WS-V)	1@70',1@50' 24" Cored Slab	no					

General Comments: Shoulder berm gutter system drainage outlets to an existing/natural depression instead of outletting directly into S. Prong of Stinking Quarter Creek.

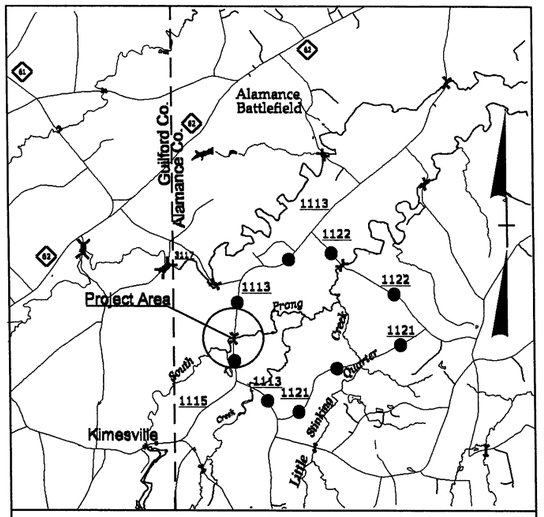
09/08/99

TIP PROJECT: B-4955

CONTRACT: C202958

$$$$USERNAME$$$$ $$$$SYSTIME$$$$

See Sheet 1-A For Index of Sheets



Vicinity Map

Offsite Detour Route

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALAMANCE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4955	1	

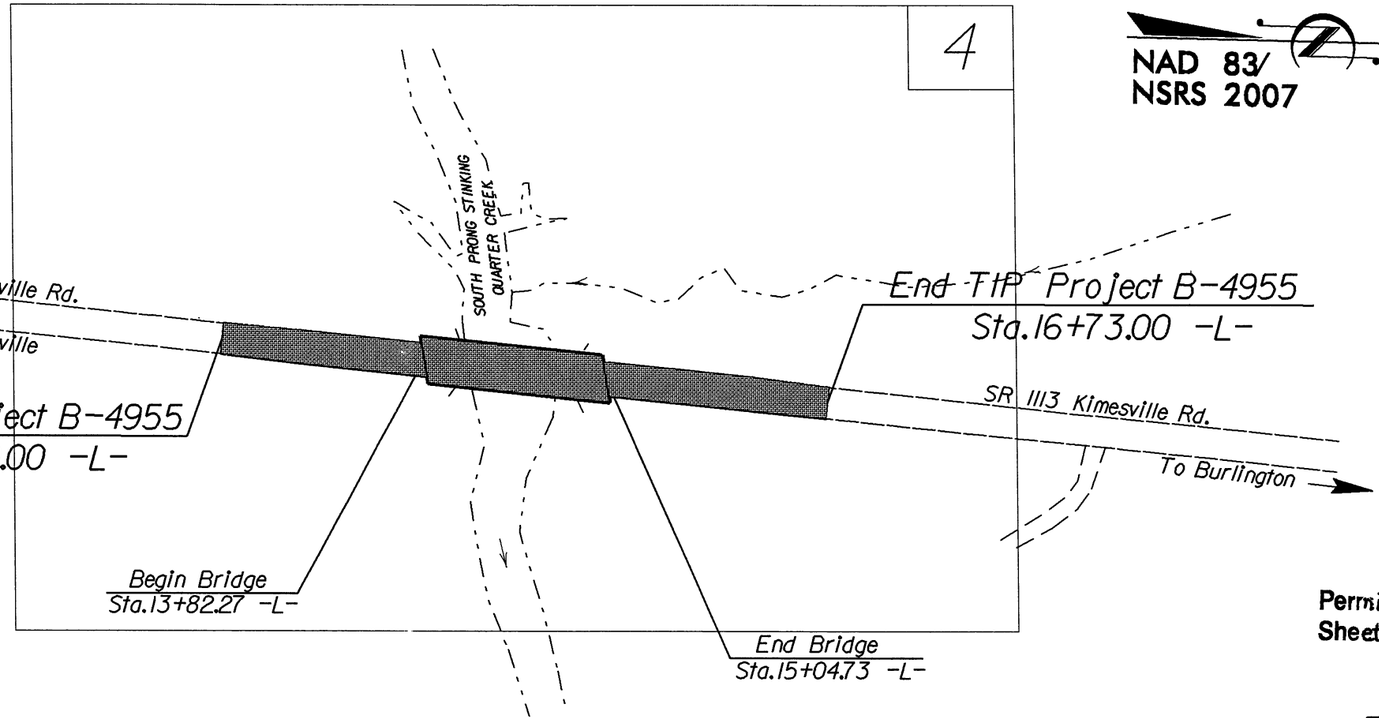
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40057.1.1	BRSTP-1113(6)	PE
40057.2.1	BRSTP-1113(6)	R/W, UTL.
40057.3.1	BRSTP-1113(6)	CONST.

ENGLISH

***LOCATION:** Bridge #162 on SR 1113 (Kimesville Rd) over South Prong Stinking Quarter Creek*

***TYPE OF WORK:** Grading, Paving, Drainage and Structure*

WETLAND/SURFACE WATER PERMIT DRAWING



Permit Drawing
Sheet 1 of 6

This Project is not in the Limits of any Municipality
Design Exception Required for Sag Vertical Curve K Factor and Stopping Sight Distance
Clearing and Grubbing on this project should be performed to the limits established by Method II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2012 = 1480 vpd
ADT 2035 = 2300 vpd
DHV = 13 %
D = 60 %
T = 4 % *
V = 60 MPH
* TTST =1% DUAL 3%
Func Class =
Local
Subregional Tier

PROJECT LENGTH

Length Roadway TIP Project B-4955 = 0.057 Miles

Length Structure TIP Project B-4955 = 0.023 Miles

Total Length TIP Project B-4955 = 0.080 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
September 26, 2011

LETTING DATE:
November 20, 2012

James Speer, PE
PROJECT ENGINEER

John Lansford, PE
PROJECT DESIGN ENGINEER

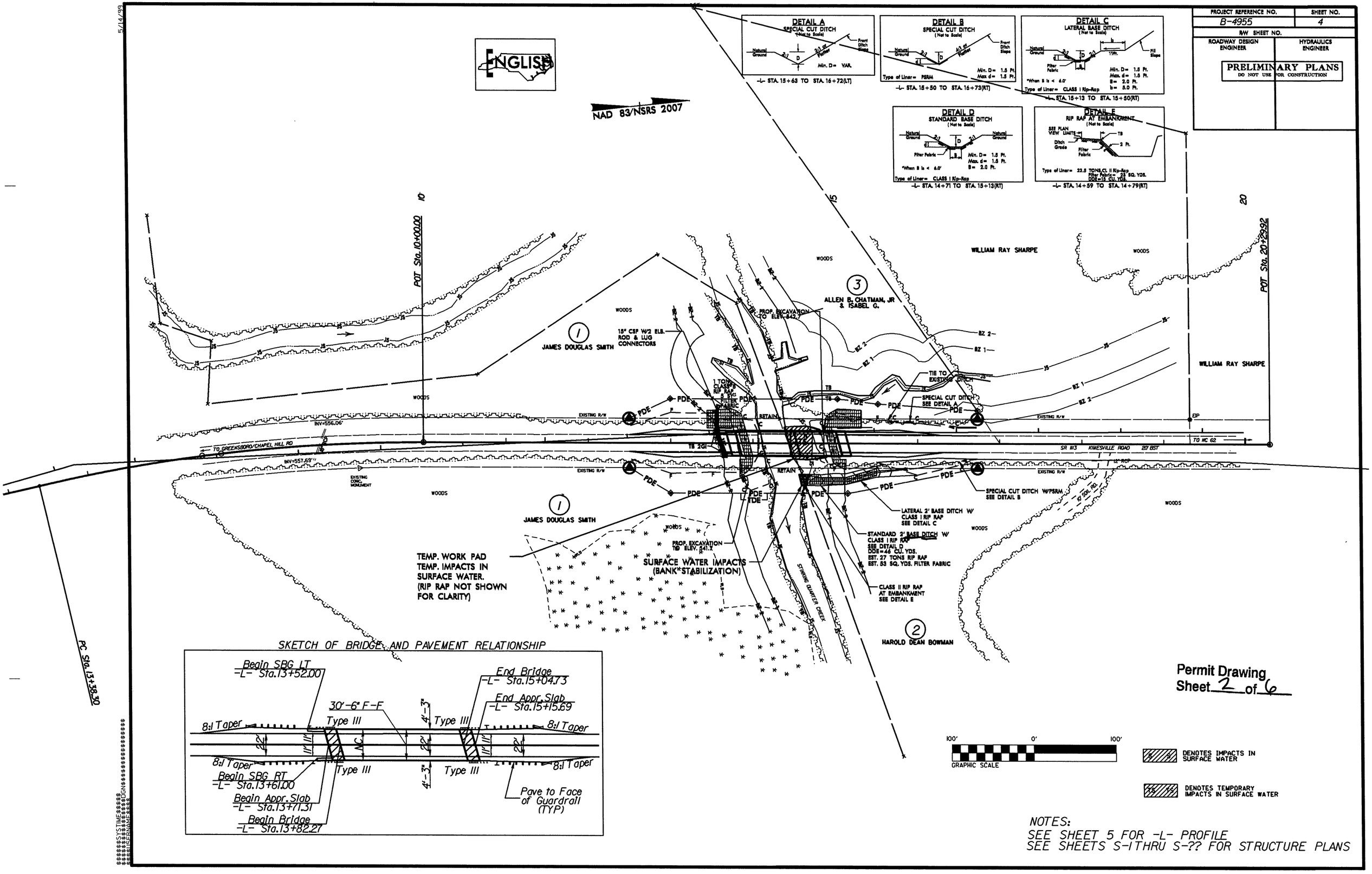
HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •



PROJECT REFERENCE NO.	SHEET NO.
B-4955	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

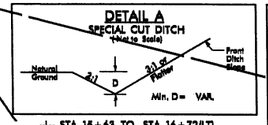
SKETCH OF BRIDGE AND PAVEMENT RELATIONSHIP

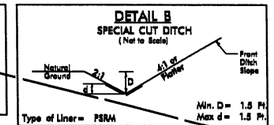
Permit Drawing
Sheet 2 of 6

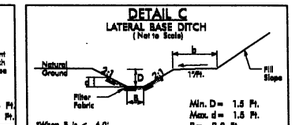
▨ S	DENOTES IMPACTS IN SURFACE WATER
▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

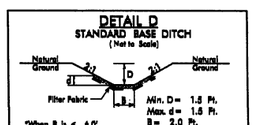
NOTES:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS S-1THRU S-?? FOR STRUCTURE PLANS

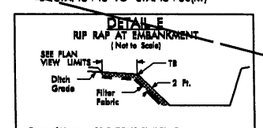
$$$$SYSTIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

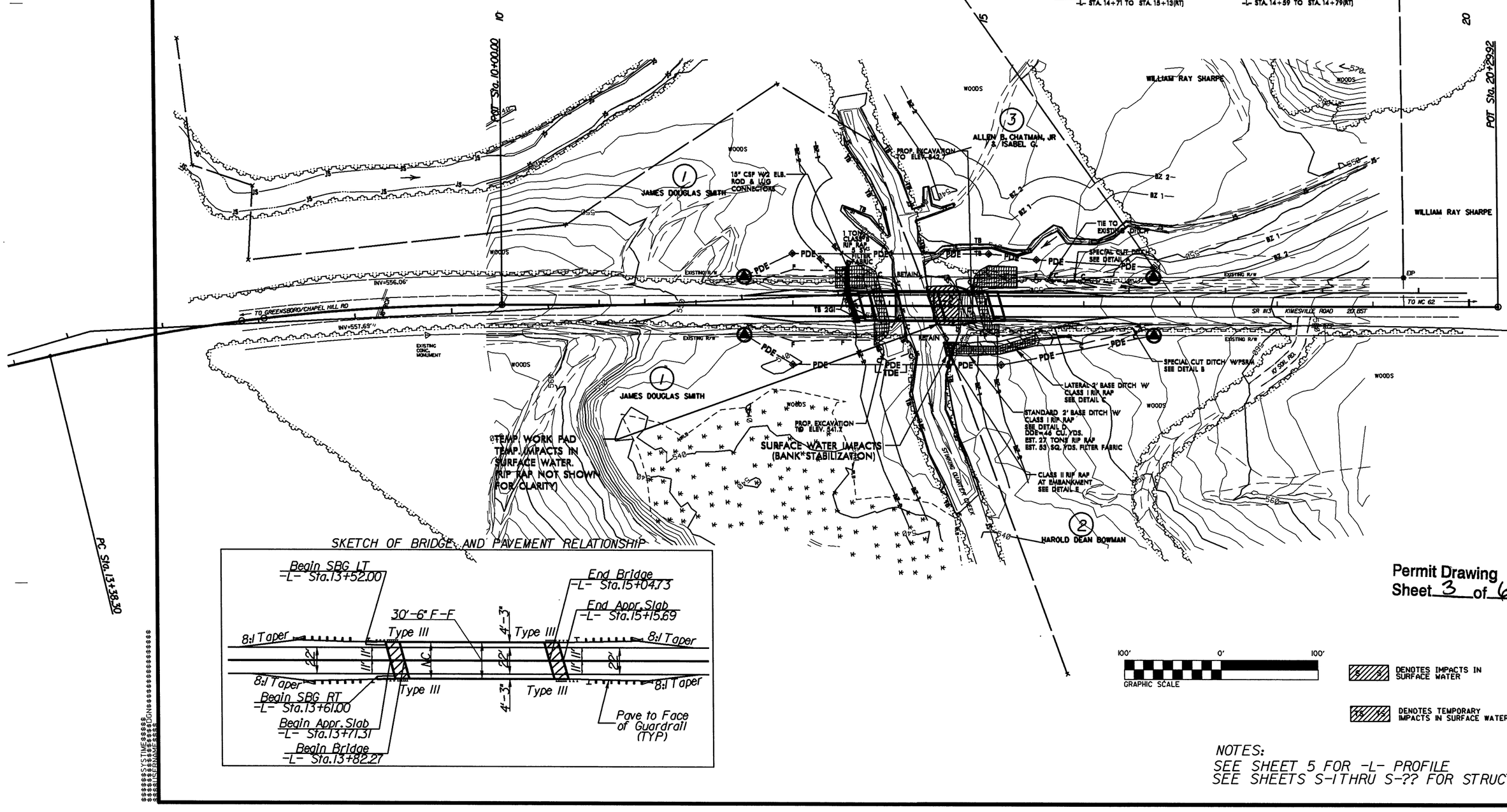












PROJECT REFERENCE NO.	SHEET NO.
B-4955	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

ENGLISH

NAD 83/NSRS 2007

-L- STA. 15+63 TO STA. 16+72(LT)

-L- STA. 15+50 TO STA. 16+73(RT)

-L- STA. 15+13 TO STA. 15+50(RT)

-L- STA. 14+71 TO STA. 15+13(RT)

-L- STA. 14+59 TO STA. 14+79(RT)

SKETCH OF BRIDGE AND PAVEMENT RELATIONSHIP

Permit Drawing
Sheet 3 of 6

▨ DENOTES IMPACTS IN SURFACE WATER

▨ DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTES:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS S-1THRU S-?? FOR STRUCTURE PLANS

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

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4955	5

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 3,600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 548.1	FT
BASE DISCHARGE	= 5,270	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 549.9	FT
OVERTOPPING DISCHARGE	= 5,300+/-	CFS
OVERTOPPING FREQUENCY	= 100+/-	YRS
OVERTOPPING ELEVATION	= 549.3+/-	FT
DATE OF SURVEY	= 7/14/2010	
W.S.ELEVATION AT DATE OF SURVEY	= 540.2	FT

BM#2 ELEVATION = 581.32'
N 807148 E 1842827
BL STATION 41+05.00 210' LEFT
-L- STATION 12+42.01 215.86' LEFT
RR SPIKE IN BASE OF 18 INCH SWEET GUM

X DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K FACTOR AND STOPPING SIGHT DISTANCE

G Bridge 14+43.50 2 Spans @ 70',50',75' Skew

MIN. ELEV. 542.0

Begin Bridge
-L- Sta.13+88.27

PI = 16+00.00
EL = 551.48'
VC = 100'
K = 50 X

End Bridge
-L- Sta.15+04.73

End Grade 16+50.00 -L-
El.553.43'

Begin Resurfacing 12+50.00 -L-
El.549.27'

(+)0.60.47%

(+)3.9000%

(+)2.67.5%

(+)4.1.39%

(+)6.09.37%

Begin Grade 13+00.00
El.549.67'

NWS = 540.2
(FIELD OBS. 07/14/2010)

BED AT UPSTREAM FACE

BEGIN DITCH RIGHT
PI =15+51.00
El = 542.72

BEGIN DITCH LEFT
PI =15+53.00
El = 548.20

PI =16+00.00 (LT)
El = 549.19

END DITCH LEFT
PI =16+72.00 El = 552.7

END DITCH RIGHT
PI =16+73.00 El = 552.47

TEMPORARY IMPACTS
IN SURFACE WATER;
TEMPORARY WORK PAD

DITCH LEGEND

LEFT DITCH	— - - — -
RIGHT DITCH	- - - - - -

Permit Drawing
Sheet 4 of 6

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

580 570 560 550 540 530

10 11 12 13 14 15 16 17 18 19 20

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

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: CAMA Permanent Fill In Wetlands (ac)	404 Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+60 -L-	Bank Stabilization							<0.01		13		
1	14+60 -L-	Temp. Work Pad								0.03			
TOTALS:			0.00	0.00	0.00	0.00	0.00	0.00	<0.01	0.03	13	0.00	0.00

N.C.D.O.T.
DIVISION OF HIGHWAYS
ALAMANCE COUNTY
PROJECT: 40057.1.1 (B-4955)
BRIDGE #162 on SR 1113 (Kimesville Rd)
over South Prong Stinking Quarter Creek

SHEET 5 of 6 (11/29/2011)

ATN Revised 3/31/05

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	JAMES DOUGLAS SMITH	5624 Foster Store Rd. Liberty, NC 27298
3	ALLEN B.CHATMAN JR. & ISABEL G.	P.O. Box 1803 Burlington, NC 27215
2	HAROLD DEAN BOWMAN	5718 Kimesville Rd. Liberty NC 27298

NCDOT

DIVISION OF HIGHWAYS

ALAMANCE COUNTY

PROJECT: 40057.1.1 (B-4955)

BRIDGE #162 ON SR 1113

OVER SOUTH PRONG

STINKING QUARTER CREEK

09/08/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ENGLISH

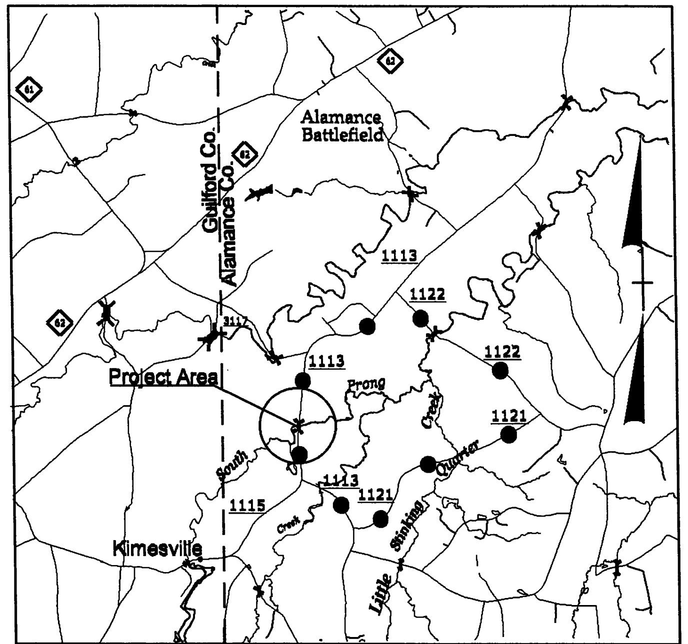
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4955	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
40057.1.1	BRSTP-1113(6)	PE
40057.2.1	BRSTP-1113(6)	R/W, UTL.
40057.3.1	BRSTP-1113(6)	CONST.

TIP PROJECT: B-4955

CONTRACT: C202958

See Sheet 1-A For Index of Sheets



Vicinity Map

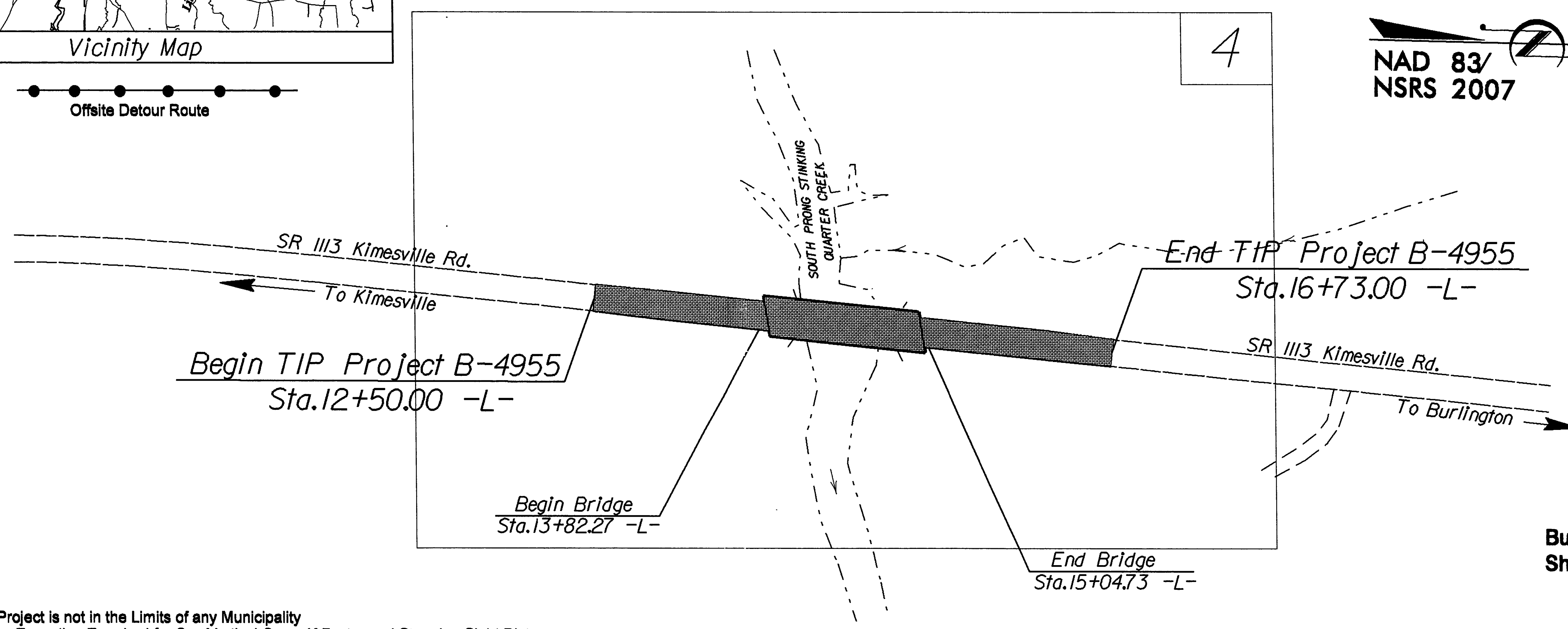
Offsite Detour Route

ALAMANCE COUNTY

***LOCATION:* Bridge #162 on SR 1113 (Kimesville Rd) over South Prong Stinking Quarter Creek**

***TYPE OF WORK:* Grading, Paving, Drainage and Structure**

BUFFER PERMIT DRAWING



NAD 83/
NSRS 2007

Buffer Drawing
Sheet 1 of 3

This Project is not in the Limits of any Municipality
Design Exception Required for Sag Vertical Curve K Factor and Stopping Sight Distance
Clearing and Grubbing on this project should be performed to the limits established by Method II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 1480 vpd
ADT 2035 = 2300 vpd
DHV = 13 %
D = 60 %
T = 4 % *
V = 60 MPH
* TTST =1% DUAL 3%
Func Class =
Local
Subregional Tier

PROJECT LENGTH

Length Roadway TIP Project B-4955 = 0.057 Miles
Length Structure TIP Project B-4955 = 0.023 Miles
Total Length TIP Project B-4955 = 0.080 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
September 26, 2011

LETTING DATE:
November 20, 2012

James Speer, PE
PROJECT ENGINEER

John Lansford, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

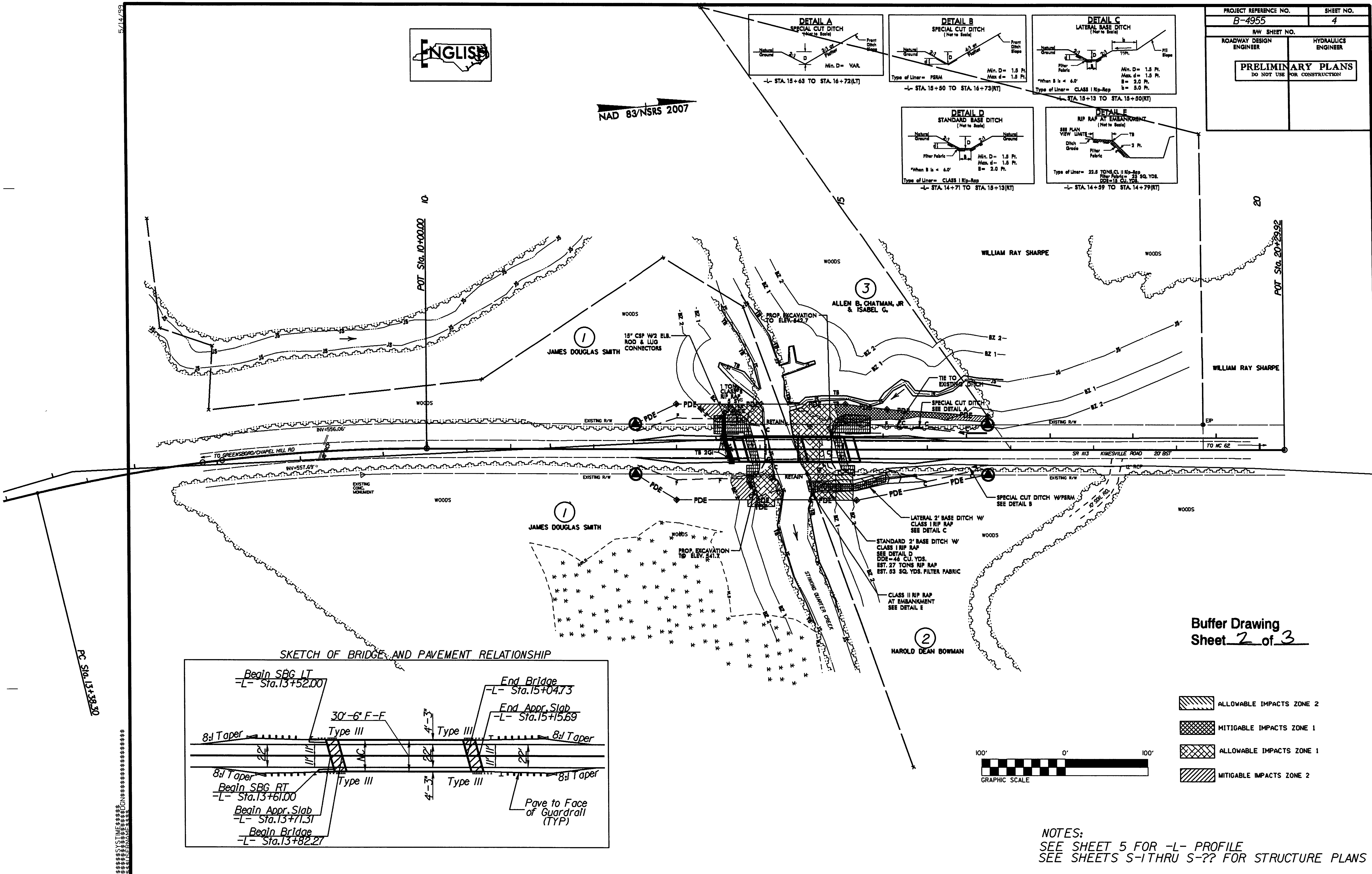
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

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


5/14/99
PROJECT REFERENCE NO.
SHEET NO.
B-4955
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ENGLISH
NAD 83/NSRS 2007
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)
Min. D= VAR.
-L- STA. 15+63 TO STA. 16+72(LT)
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
Type of Liner= PSRM
Min. D= 1.5 Ft.
Max d= 1.5 Ft.
-L- STA. 15+50 TO STA. 16+73(RT)
DETAIL C
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS I Rip-Rap
-L- STA. 15+13 TO STA. 15+50(RT)
DETAIL D
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= CLASS I Rip-Rap
-L- STA. 14+71 TO STA. 15+13(RT)
DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)
-L- STA. 14+59 TO STA. 14+79(RT)
POT Sta. 10+00.00
POT Sta. 20+29.92
PC Sta. 13+38.30
WOODS
JAMES DOUGLAS SMITH
ALLEN B. CHATMAN, JR & ISABEL G.
WILLIAM RAY SHARPE
HAROLD DEAN BOWMAN
15" CSP W/2 ELB. ROD & LUG CONNECTORS
PROP. EXCAVATION TO ELEV. 542.7
PROP. EXCAVATION TO ELEV. 541.7
TIE TO EXISTING DITCH
SPECIAL CUT DITCH SEE DETAIL A
SPECIAL CUT DITCH W/PSRM SEE DETAIL B
LATERAL 2' BASE DITCH W/ CLASS I RIP RAP SEE DETAIL C
STANDARD 2' BASE DITCH W/ CLASS I RIP RAP SEE DETAIL D DDE=46 CU. YDS. EST. 27 TONS RIP RAP EST. 53 SQ. YDS. FILTER FABRIC
CLASS II RIP RAP AT EMBANKMENT SEE DETAIL E
TO GREENSBORO/CHAPEL HILL RD
SR 1113 KIMESVILLE ROAD 20' BST
TO NC 62
EXISTING R/W
EXISTING CONC. MONUMENT
STINKING QUARTER CREEK
Buffer Drawing
Sheet 2 of 3
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
GRAPHIC SCALE
SKETCH OF BRIDGE AND PAVEMENT RELATIONSHIP
Begin SBG LT -L- Sta.13+52.00
End Bridge -L- Sta.15+04.73
End Appr. Slab -L- Sta.15+15.69
30'-6" F-F
Type III
8:1 Taper
Begin SBG RT -L- Sta.13+61.00
Begin Appr. Slab -L- Sta.13+71.31
Begin Bridge -L- Sta.13+82.27
Pave to Face of Guardrail (TYP)
NOTES:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	BRIDGE	14+50		X		6218	634	6852					
1	Road	15+00 to 16+75			X				1972	1645	3617		
TOTAL:						6218	634	6852	1972	1645	3617		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALAMANCE COUNTY
PROJECT: 40057.1.1 (B-4955)
Bridge #162 on SR 1113 (Kimesville Rd) over
South Prong Stinking Quarter Creek
11/29/2011
SHEET 3 OF 3

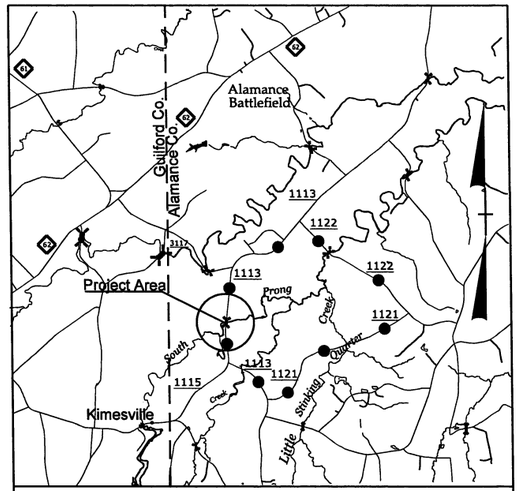
Rev. May 2006

09/08/99

TIP PROJECT: B-4955

CONTRACT:

See Sheet 1-A For Index of Sheets



Vicinity Map

Offsite Detour Route

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALAMANCE COUNTY

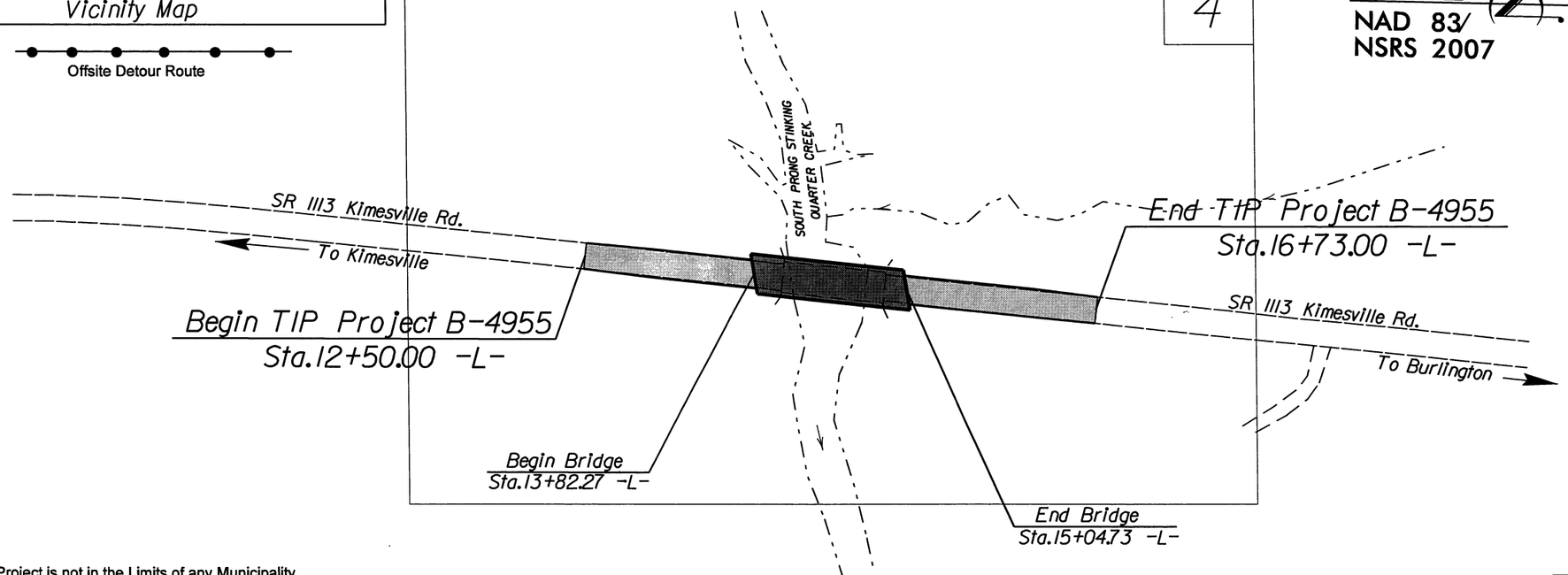
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4955	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40057.1.1	BRSTP-1113(6)	PE
40057.2.1	BRSTP-1113(6)	R/W, UTL.

***LOCATION:** Bridge #162 on SR 1113 (Kimesville Rd) over South Prong Stinking Quarter Creek*

***TYPE OF WORK:** Grading, Paving, Drainage and Structure*

4



NAD 83/
NSRS 2007

This Project is not in the Limits of any Municipality
Design Exception Required for Sag Vertical Curve K Factor and Stopping Sight Distance
Clearing and Grubbing on this project should be performed to the limits established by Method II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2012 = 1480 vpd
ADT 2035 = 2300 vpd
DHV = 13 %
D = 60 %
T = 4 % *
V = 60 MPH
* TTST =1% DUAL 3%
Func Class =
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Subregional Tier

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Length Structure TIP Project B-4955 = 0.023 Miles

Total Length TIP Project B-4955 = 0.080 Miles

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SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

26-SEP-2011 13:52
R:\Roadway\Proj\b4955_rdy_tsh.dgn
$$$$USERNAME$$$$

04/16/11

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
B-4955	1-B

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Boundary or Site
- Potential Soil Contamination: Boundary or Site

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Curb Cut Future Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

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

MINOR:
- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

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

TELEPHONE:
- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth — $
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

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

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

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

SANITARY SEWER:
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?U/L
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
B-4955	1C
Location and Surveys	

B-4955 SURVEY CONTROL SHEET

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:
   b4955_ls_control.txt

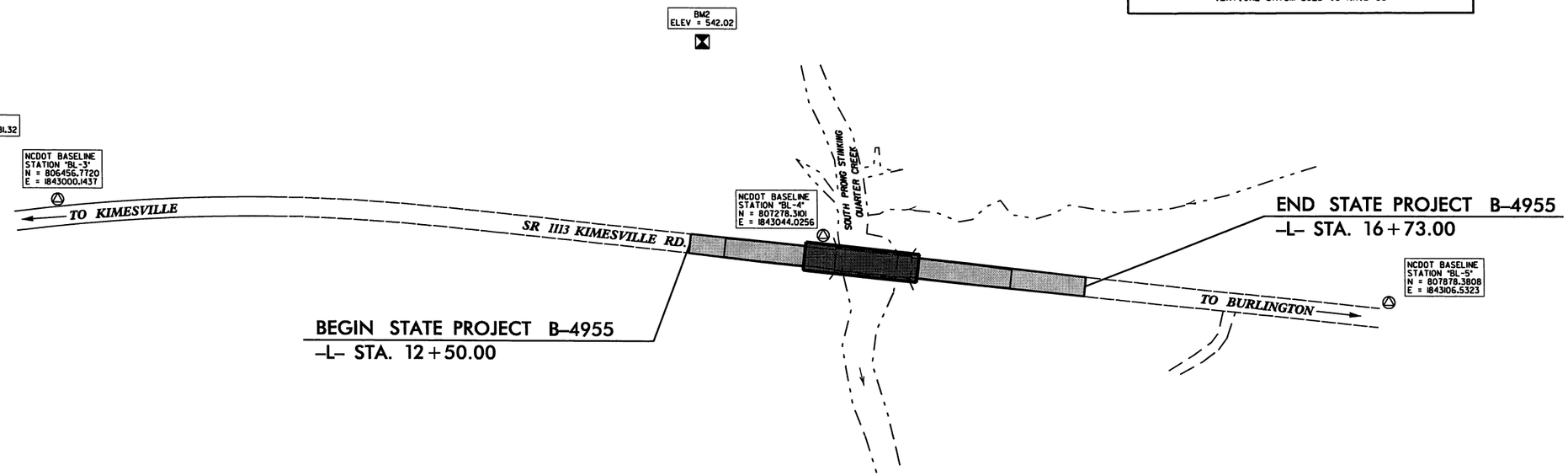
   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ *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 NGS ONLINE POSITIONING SERVICE (OPUS)

NAD 83/
NSRS 2007

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4955-2"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 804454.161(ft) EASTING: 1842774.784(ft)
ELEVATION: 640.66(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999228472
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"B4955-2" TO -L- STATION 12+50.00 IS
N 5°42'28" E 2,692.31 ft
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4955-1	803999.2720	1842129.0880	648.63	OUTSIDE PROJECT LIMITS	
2	B4955-2	804454.1610	1842774.7840	640.66	OUTSIDE PROJECT LIMITS	
11	BL-1	804949.4944	1843139.9982	621.40	OUTSIDE PROJECT LIMITS	
12	BL-2	805701.6425	1843134.0633	603.38	OUTSIDE PROJECT LIMITS	
13	BL-3	806456.7720	1843000.1437	574.64	OUTSIDE PROJECT LIMITS	
14	BL-4	807278.3101	1843044.0256	549.27	13+94.54	13.74 LT
15	BL-5	807878.3808	1843106.5323	568.54	19+97.86	14.45 LT

BENCHMARK DATA

BM1 ELEVATION = 581.32
N 806381 E 1842944
L STATION 10+00.00
S 08°11'56.22" W DIST 508.90
RR SPIKE IN BASE OF 15 INCH PINE

BM2 ELEVATION = 542.02
N 807148 E 1842827
L STATION 12+42.00 216 LEFT
RR SPIKE IN BASE OF 18 INCH SWEET GUM

NOTE: DRAWING NOT TO SCALE

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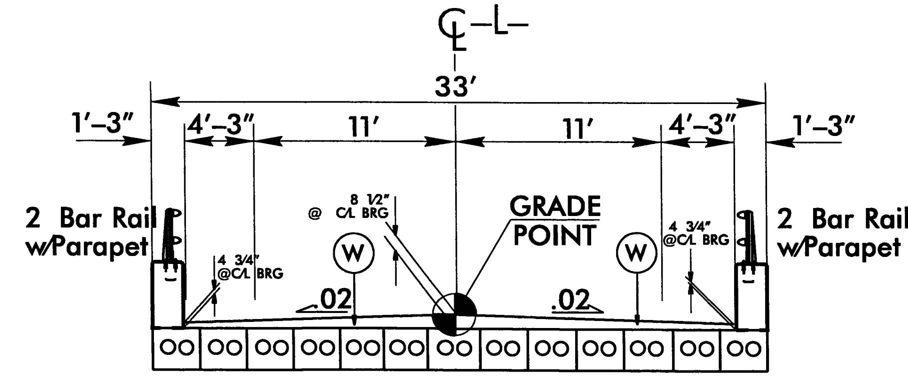
PROJECT REFERENCE NO.	SHEET NO.
B-4955	2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

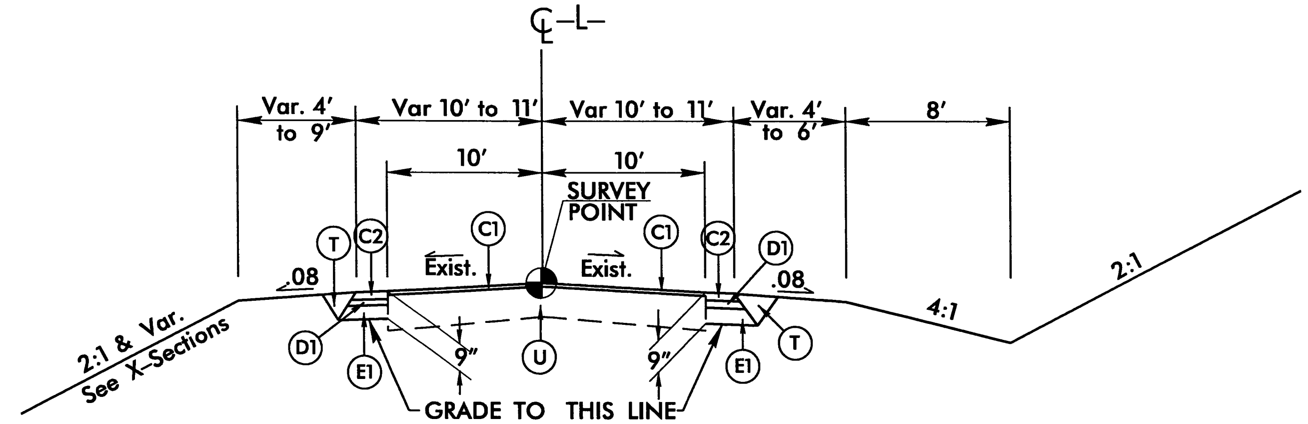
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



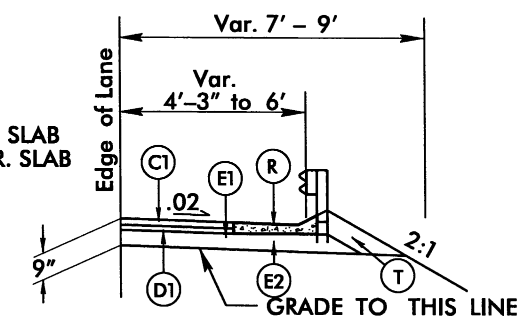
TYPICAL SECTION ON CORED SLAB BRIDGE
-L- Sta. 13+82.27 to 15+04.73



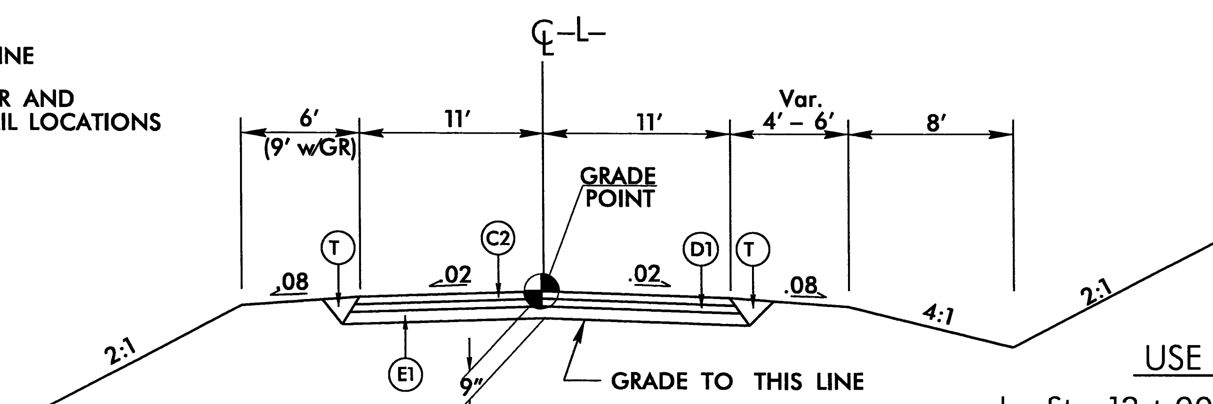
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO.1:
-L- Sta. 12+50.00 to 13+00.00
-L- Sta. 16+50.00 to 16+73.00

USE SHOULDER BERM GUTTER
LEFT - -L- Sta. 13+52 to BEGIN APPR. SLAB
RIGHT - -L- Sta. 13+61 to BEGIN APPR. SLAB

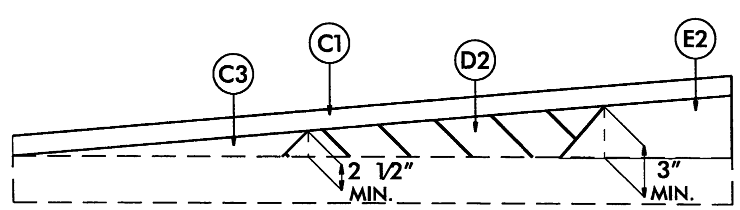


TYPICAL SECTION OF PAVED SHOULDER AND SHOULDER BERM GUTTER AT GUARDRAIL LOCATIONS



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO.2:
-L- Sta. 13+00.00 to Sta. 13+82.27 (Begin Bridge)
-L- 15+04.73 (End Bridge) to Sta. 16+50.00



Wedging Detail For Resurfacing

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12/06/07

COMPUTED BY: AEV	DATE: 7/28/2011
CHECKED BY:	DATE:

PROJECT REFERENCE NO.	SHEET NO.
B-4955	3-A

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 12+50.00	-L- 13+83.50	77	262	185	
SUBTOTALS:		77	262	185	
-L- 15+03.50	-L- 16+50.00	240	65		175
SUBTOTALS:		240	65		175
TOTALS:		317	327	185	175
LOSS DUE TO C & G		-150		150	
WASTE IN LIEU OF BORROW				-175	-175
PROJECT TOTALS:		167		160	
5% TOPSOIL FOR BORROW PIT				8	
GRAND TOTALS:		167		168	
SAY:		200		200	

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SQ. YDS.
-L-	13+00	14+06	LT/RT/CL	242
-L-	14+86	16+50	LT/RT/CL	373
		TOTAL		615
		SAY		620

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specification For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 13+66	RT		401												
		401	402												
-L- 13+57	LT		402												
-L- 13+57	LT	402	403												
PROJECT TOTAL															

STATION	LOCATION	FROM	TO	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"
-L- 13+66	RT		401																
		401	402																
-L- 13+57	LT		402																
-L- 13+57	LT	402	403		28'														
PROJECT TOTAL					28'														

STATION	LOCATION	FROM	TO	15" RC PIPE (CLASS V)	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	
-L- 13+66	RT		401								1							
		401	402	28'														
-L- 13+57	LT		402								1							
-L- 13+57	LT	402	403															
PROJECT TOTAL				28'							2							

STATION	LOCATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.D.I. STD. 840.31 OR 840.35							CSP ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 13+66	RT		401									1		1											
		401	402																						
-L- 13+57	LT		402									1		1											
-L- 13+57	LT	402	403																		2@15°				ROD & LUG CONNECTORS
PROJECT TOTAL												2		2							2@15°				

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	SHOP CURVED	DOUBLE FACED	WARRANT POINT APPROACH END	TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	TRAILING END	W APPROACH END	TRAILING END
-L-	13+05	13+86 (BRIDGE)	RT	81.25'					4'-6'	7'-9'	62.5'		1.25'	
-L-	12+97	13+78 (BRIDGE)	LT	81.25'					4'-6'	7'-9'		62.5'		1.25'
-L-	15+09 (BRIDGE)	15+90	RT	81.25'					4'-6'	7'-9'		62.5'		1.25'
-L-	15+01 (BRIDGE)	15+82	LT	81.25'					4'-6'	7'-9'	62.5'		1.25'	
			TOTAL	325'										
			4 TYPE 350 @ 50'	-200'										
			4 TYPE III @ 18.75'	-75'										
			PROJECT TOTAL	50'										
			SAY	62.5'										

SURVEY LINE	BEG. STA.	END STA.	LOCATION	ANCHORS XI MOD	TYPE III	GRAU 350	M-350 XI	XIII	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	13+05	13+86 (BRIDGE)	RT		1	1													
-L-	12+97	13+78 (BRIDGE)	LT		1	1													
-L-	15+09 (BRIDGE)	15+90	RT		1	1													
-L-	15+01 (BRIDGE)	15+82	LT		1	1													
			TOTAL		4	4													
			4 TYPE 350 @ 50'																
			4 TYPE III @ 18.75'		4	4													
			PROJECT TOTAL		4	4													
			SAY	ADDITIONAL GUARDRAIL POSTS: 5 EACH															

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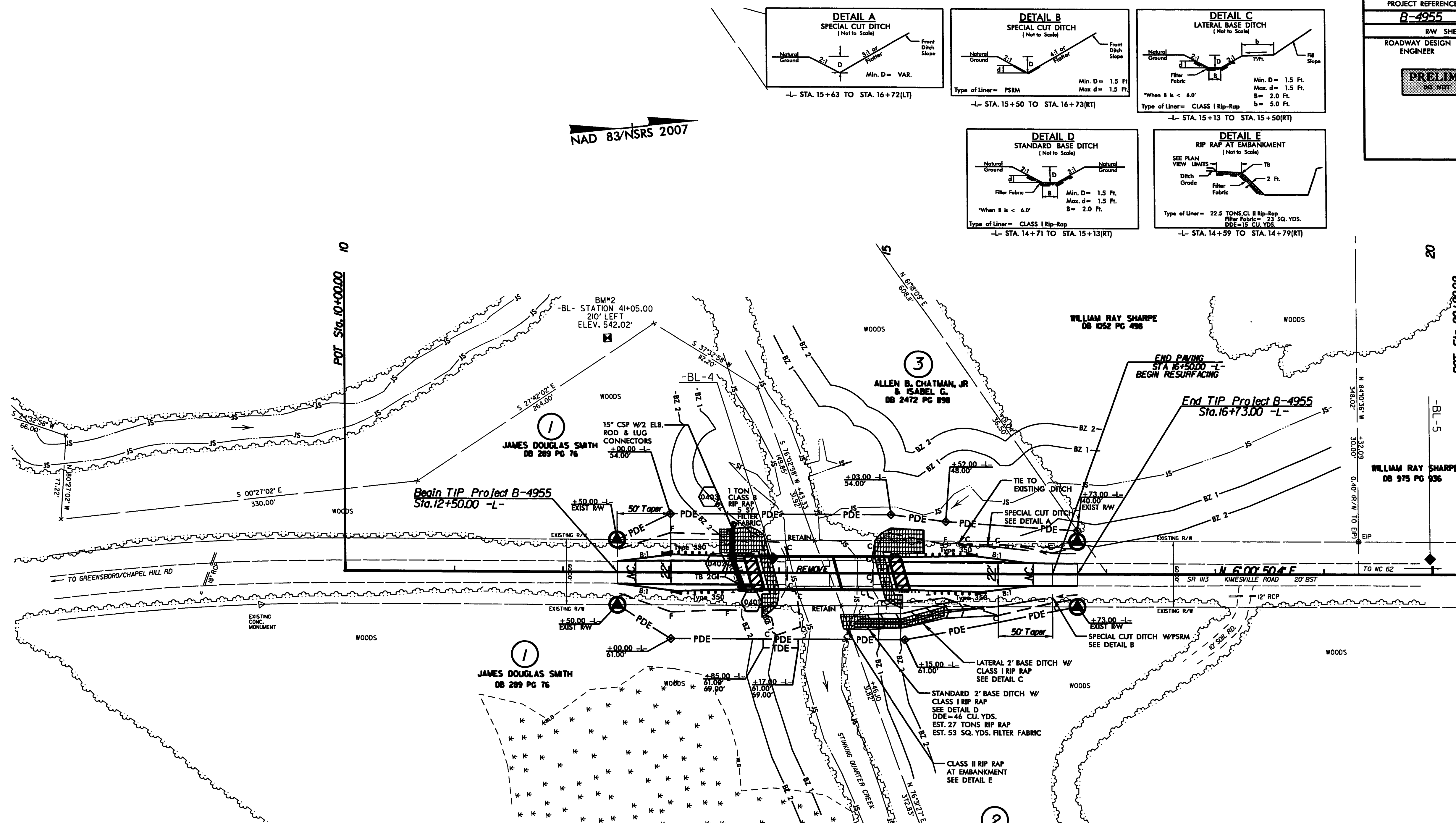
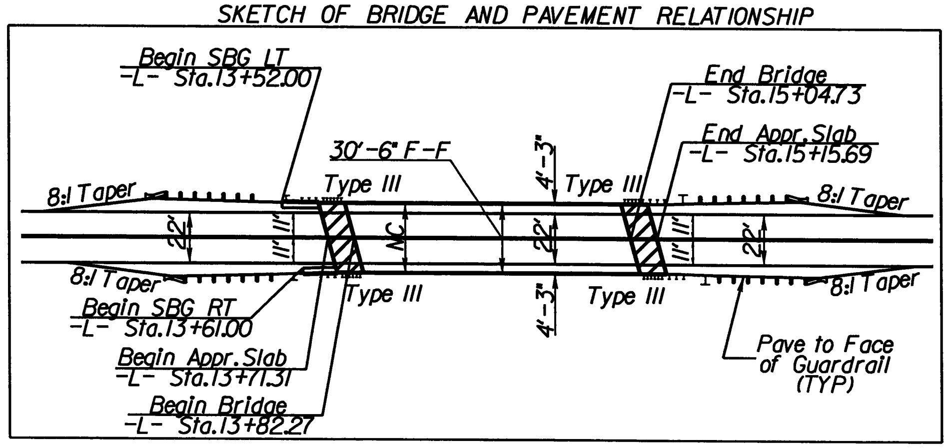
PROJECT REFERENCE NO.	SHEET NO.
B-4955	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SKETCH OF BRIDGE AND PAVEMENT RELATIONSHIP



NOTES:
SEE SHEET 5 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

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PROJECT REFERENCE NO.	SHEET NO.
B-4955	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

—L—

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 3,600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 548.1	FT
BASE DISCHARGE	= 5,270	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 549.9	FT
OVERTOPPING DISCHARGE	= 5,300±	CFS
OVERTOPPING FREQUENCY	= 100±/-	YRS
OVERTOPPING ELEVATION	= 549.3±	FT
DATE OF SURVEY	= 7/14/2010	
W.S. ELEVATION AT DATE OF SURVEY	= 540.2	FT

BM#2 ELEVATION = 581.32'
N 807148 E 1842827
BL STATION 41+05.00 210' LEFT
-L- STATION 12+42.01 215.86' LEFT
RR SPIKE IN BASE OF 18 INCH SWEET GUM

* DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K FACTOR AND STOPPING SIGHT DISTANCE

℄ Bridge 14+43.50 2 Spans @ 70',50',75' Skew

PI = 16+00.00
EL = 551.48'
VC = 100'
K = 30 *

Begin Bridge
-L- Sta. 13+82.27

End Bridge
-L- Sta. 15+04.73

End Grade 16+50.00 -L-
El. 553.43'

Begin Resurfacing 12+50.00 -L-
El. 549.27'

Begin Grade 13+00.00'
El. 549.67'

+0.64%

+3.00%

-6.00%

+6.00%

BEGIN DITCH RIGHT
Sta. 13+82.27
El. 548.20

BEGIN DITCH LEFT
Sta. 13+82.27
El. 548.20

END DITCH LEFT
Sta. 15+04.73
El. 548.20

END DITCH RIGHT
Sta. 15+04.73
El. 548.20

DITCH LEGEND	
LEFT DITCH	— - - — -
RIGHT DITCH	- - - - - - -

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580 570 560 550 540 530

10 11 12 13 14 15 16 17 18 19 20

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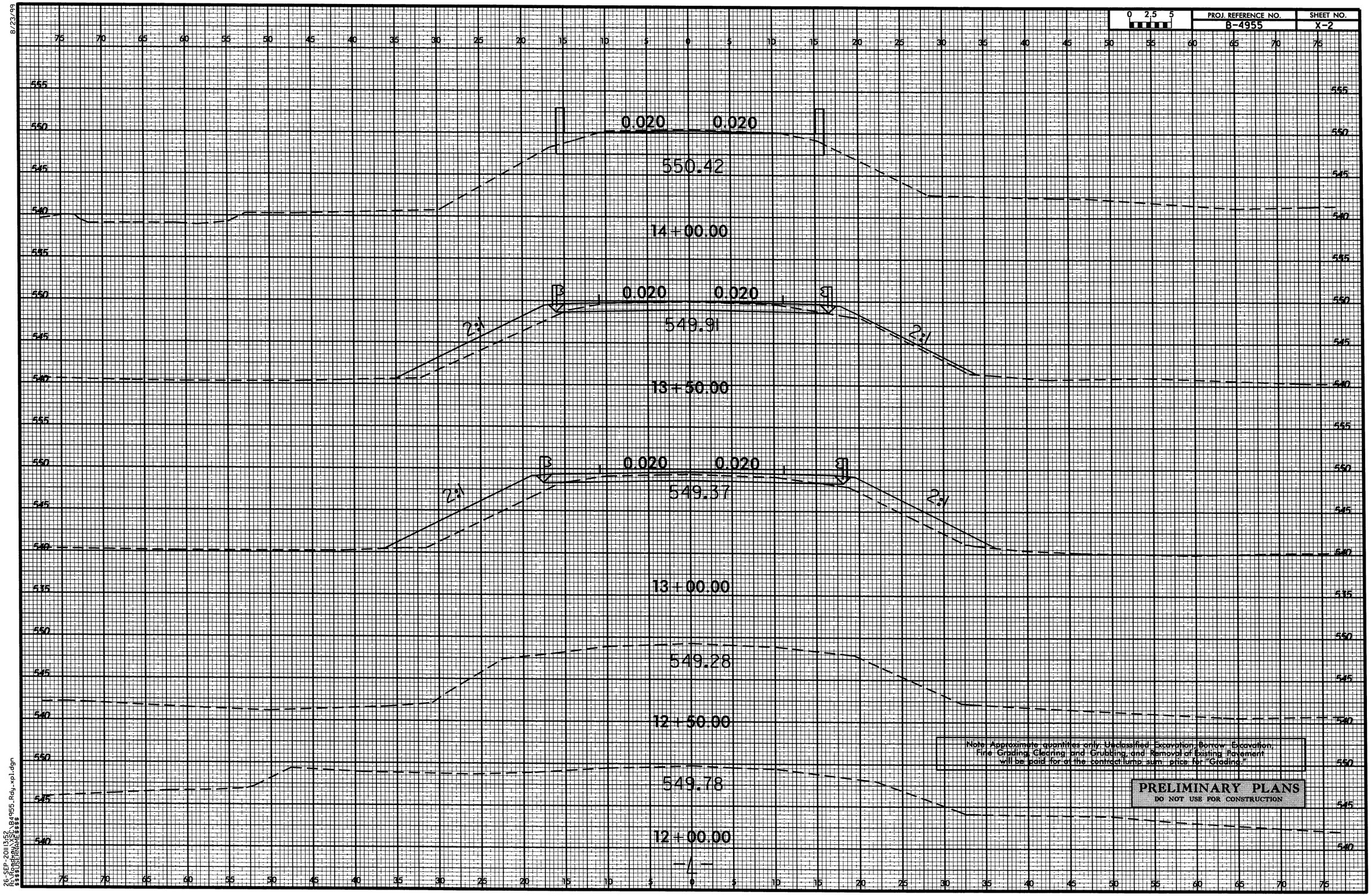
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4955	X-2



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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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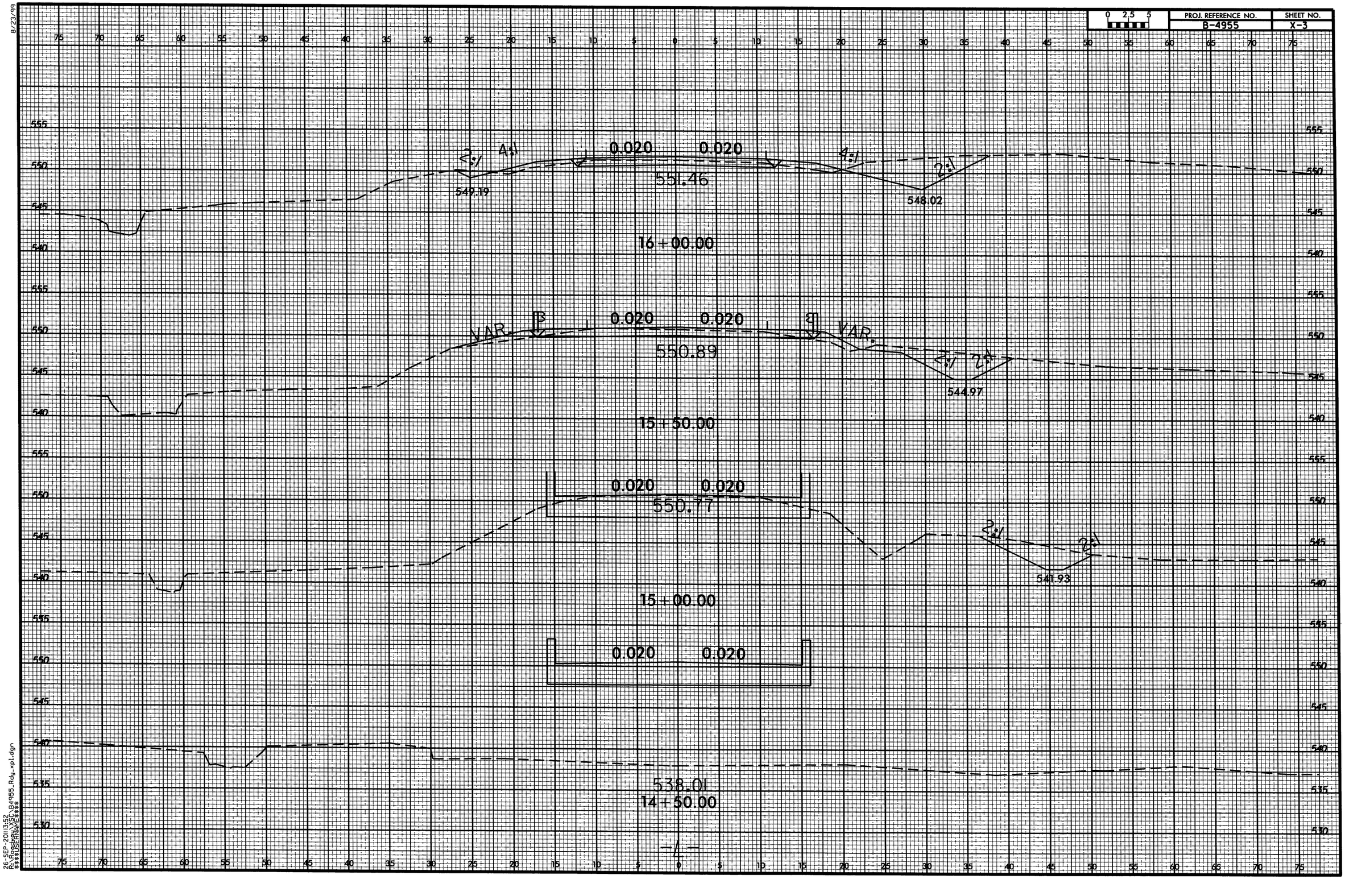
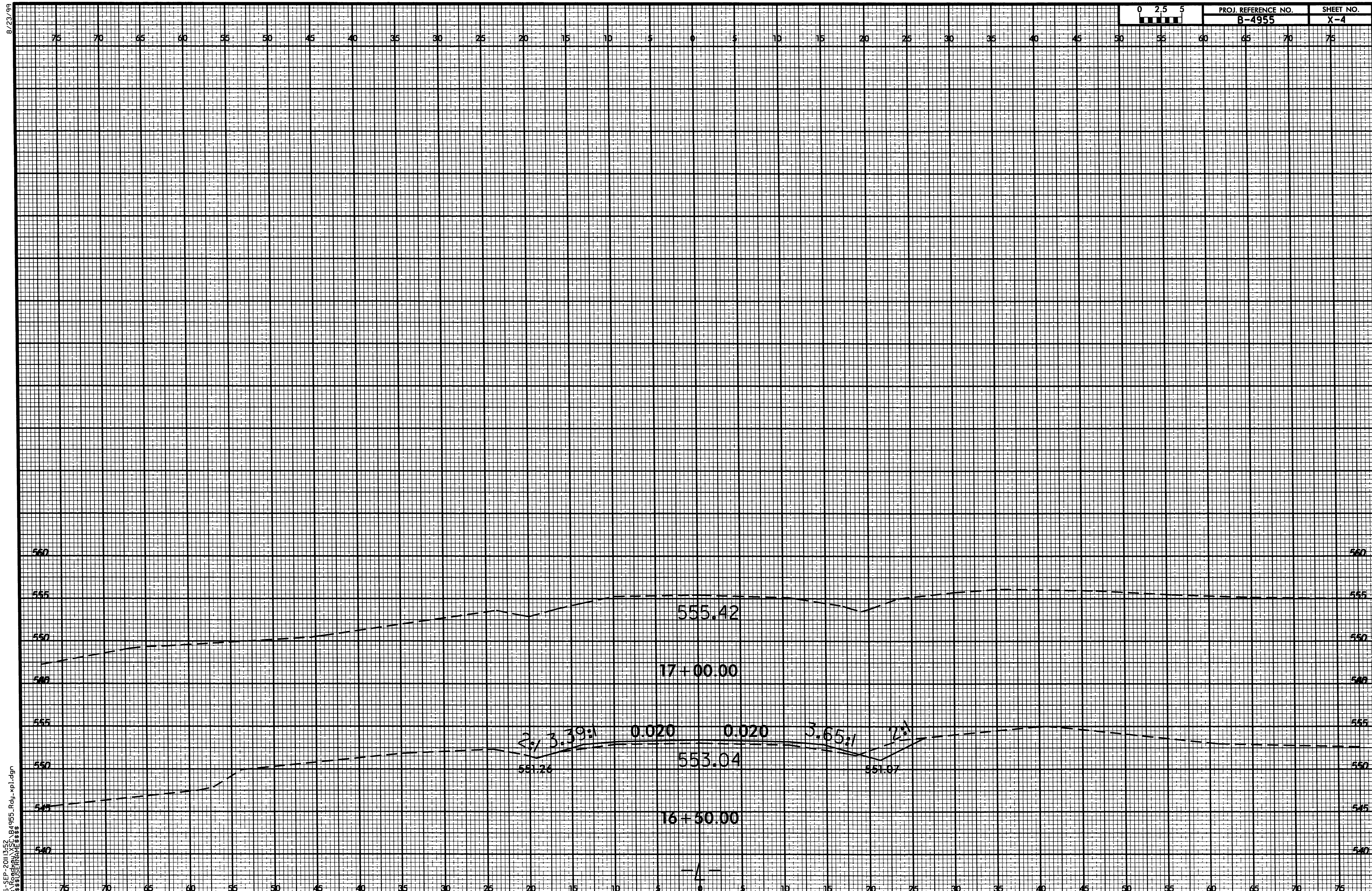
	B-4955	X-3





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17+00.00
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0.020
3.65:1
2:1
553.04
551.26
551.07
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