



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 20, 2013

N.C. Division of Water Quality
585 Waughtown St.
Winston-Salem, NC 27107

ATTN: Ms. Amy Euliss
NCDOT Division 7 Coordinator

SUBJECT: **Application for Section 401 Water Quality Certification and Jordan Lake Watershed Riparian Buffer Authorization and Notice of Intent to Use Section 404 Nationwide Permits 3 and 13** for the replacement of Bridge No. 161 over North Prong Stinking Quarter Creek on SR 1124 (Stafford Mill Road), Alamance County, North Carolina. Federal Aid Project No. BRZ – 1124 (5), TIP No. B-4401.

Debit \$240.00 from WBS Element No. 33681.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 161 over North Prong Stinking Quarter Creek on SR 1124 (Stafford Mill Road) in Alamance County. The project will result in the following jurisdictional impacts to North Prong Stinking Quarter Creek: 87 linear feet of bank stabilization impacts and 29 linear feet of temporary stream impacts due to the placement of temporary rock causeways. An additional 0.01 acres of hand clearing will occur within Wetland WA. Buffer impacts associated with this project include 3,984 square feet of Zone 1 and 2,130 square feet of Zone 2 "Bridge" impacts, 291 square feet of Zone 1 and 2,619 square feet of Zone 2 "Road Crossing" impacts, 14 square feet of Zone 1 and 519 square feet of Zone 2 "Road Impacts Other Than Crossings of Streams and Other Surface Waters", and 1,202 square feet of Zone 1 and 573 square feet of Zone 2 buffer impacts classified as "Protection of Existing Structures, Facilities, and Stream Banks When This Requires Additional Disturbance of the Riparian Buffer or the Stream Channel".

No written approval is required from the U.S. Army Corps of Engineers (USACE) for impacts associated with this project. Therefore, this permit application is being sent to USACE as a courtesy copy for their records.

Please find enclosed the Pre-Construction Notification (PCN) form, N.C. Ecosystem Enhancement Program (EEP) acceptance letter, North Carolina Division of Water Quality (NCDWQ) On-Site Determination for Applicability to the Jordan Buffer Rules and Mitigation Rules, Stormwater Management Plan, permit drawings, buffer drawings, and roadway design

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

TELEPHONE: 919-707-6100

FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

PHYSICAL ADDRESS:
Century Center - Building B
1020 Birch Ridge Dr
Raleigh, NC 27610-4328

plans for the above-referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project in June 2012 and distributed shortly thereafter. Additional copies are available upon request.

The proposed let date for this project is November 19, 2013, with a let review date of October 1, 2013. However, the let date may advance as additional funds become available.

A copy of this permit application will be posted on the NCDOT Website at: <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jim Mason at either jsmason@ncdot.gov or (919) 707-6136.

Sincerely,



for

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

cc: NCDOT Permit Application Standard Distribution List
Mr. Andrew Williams, USACE



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:	<input type="checkbox"/> Section 404 Permit <input type="checkbox"/> Section 10 Permit	
1b. Specify Nationwide Permit (NWP) number:		or General Permit (GP) number:
1c. Has the NWP or GP number been verified by the Corps?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input checked="" type="checkbox"/> 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: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Project Information		
2a. Name of project:	Replacement of Bridge No. 161 over North Prong Stinking Quarter Creek on SR 1124 (Stafford Mill Road)	
2b. County:	Alamance	
2c. Nearest municipality / town:	Kimesville	
2d. Subdivision name:	<i>not applicable</i>	
2e. NCDOT only, T.I.P. or state project no.:	B-4401	
3. Owner Information		
3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation	
3b. Deed Book and Page No.	<i>not applicable</i>	
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>	
3d. Street address:	1598 Mail Service Center	
3e. City, state, zip:	Raleigh, NC 27699-1598	
3f. Telephone no.:	(919) 707-6136	
3g. Fax no.:	(919) 212-5785	
3h. Email address:	jasmason@ncdot.gov	

4. Applicant Information (if different from owner)	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	<i>not applicable</i>
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:	<i>not applicable</i>
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):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.9747 (DD.DDDDDD) Longitude: - 79.5336 (-DD.DDDDDD)
1c. Property size:	1.8 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	North Prong Stinking Quarter Creek
2b. Water Quality Classification of nearest receiving water:	WS-V 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: SR 1124 is classified as a Rural Local Route. Land use within the vicinity includes Forested Land, Agriculture, Silviculture, and Low- to Medium-Density Residential.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.02 acres	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 170 linear feet	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project consists of replacing the existing four-span, 106-foot long bridge with a three-span, 140-foot bridge. Traffic will be maintained via an off-site detour. Temporary causeways will be installed on both sides of the creek to assist with bridge demolition and construction; causeways will not be simultaneously placed in the creek. 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: Site visit by USACE and NCDWQ on 3/8/10; NCDWQ JD received 3/15/10, USACE JD pending.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Principal Investigator: Jim Mason	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. NCDWQ - March 15, 2010	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	

6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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):						
<input checked="" type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> 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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
2g. Total wetland impacts					0 Perm. 0 Temp.	
2h. Comments: The entirety of Wetland WA (emergent, Non-tidal Freshwater Marsh), totaling 0.01 acres, will be hand-cleared.						
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 length (linear feet)
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary Rock Causeways	North Prong Stinking Quarter Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	30-35	29
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	North Prong Stinking Quarter Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	30-35	87
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input checked="" type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts					87 Perm 29 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 <input type="checkbox"/> P <input type="checkbox"/> T								
O2 <input type="checkbox"/> P <input type="checkbox"/> T								
O3 <input type="checkbox"/> P <input type="checkbox"/> T								
O4 <input type="checkbox"/> P <input type="checkbox"/> T								
4f. Total open water impacts						0 Permanent 0 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?				<input type="checkbox"/> Yes <input type="checkbox"/> 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?		<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba		<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input checked="" type="checkbox"/> Other: Jordan
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 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge	North Prong Stinking Quarter Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,984	2,130
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Crossing	North Prong Stinking Quarter Creek	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	291	2,619
B3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Impacts Other Than Crossings of Streams and Other Surface Waters (Parallel Impacts)	North Prong Stinking Quarter Creek	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	14	519
B4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Protection of Existing Structures, Facilities, and Stream Banks When This Requires Additional Disturbance of the Riparian Buffer or the Stream Channel	North Prong Stinking Quarter Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,202	573
6h. Total buffer impacts				5,491	5,841

6i. Comments: Wetland in Buffer Impacts: 263 square feet in Zone 1, 139 square feet in Zone 2, all of which are within the "Protection of existing structures, facilities, and stream banks when this requires additional disturbance of the riparian buffer or the stream channel" buffer impact type, which is Allowable.

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. An off-site detour will be employed; A special cut ditch with a Class B rip-rap pad at its terminus will be installed between STA. 13+50 and STA. 14+25 LT; A pre-formed scour hole will be installed at STA. 15+80 RT; A rip-rap-lined lateral base ditch underlain with filter fabric will be installed between STA. 16+40 and STA. 18+50 LT. At the ditch's origin will be a an 18-inch reinforced concrete pipe; at its terminus will be Class I rip-rap underlain with filter fabric starting at the end of the ditch and extending to/onto the streambank; A PSRM-lined lateral base ditch will be installed between STA. 16+90 and STA. 17+40 RT.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Bridge Demolition and Removal will be implemented during the removal of the existing bridge; Best Management Practices for the Protection of Surface Waters will be employed; Additionally, since this project is located within the Jordan Lake Watershed and buffer rules apply, Design Standards in Sensitive Watersheds will be employed.		
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	<input checked="" type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input checked="" type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> 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.	<input checked="" type="checkbox"/> Yes	
4b. Stream mitigation requested:	0 linear feet	
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	5,622 square feet	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 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	Road Crossing/Parallel Impact	305	3 (2 for Catawba)	915
Zone 2	Road Crossing/Parallel Impact	3,138	1.5	4,707
6f. Total buffer mitigation required:				5,622

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).
 Payment into an approved in-lieu fee fund (EEP)

6h. Comments:

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments: See buffer drawings	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> 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):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NC Natural Heritage Program data, USFWS website, NCDOT survey for bald eagle (no threatened or endangered species listed for Alamance Co.).		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	2.20.13 Date



PROGRAM

February 19, 2013

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4401, Replace Bridge Number 161 over North Prong Stinking Quarter Creek on SR 1124 (Stafford Road), 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 February 15, 2013, 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 Impacts (in square feet)		
				Zone 1	Zone 2	TOTAL
Impacts	Cape Fear -- Haw Arm	03030002	CP	305.0	3,138.0	3,443.0

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-4401. 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.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

Michael Ellison
EEP Acting Director

Cc: Mr. Andy Williams, USACE -- Raleigh Regulatory Field Office
Ms. Amy Chapman, NC Division of Water Quality
File: B-4401

Restoring... Enhancing... Protecting Our State





North Carolina Department of Environment and Natural Resources

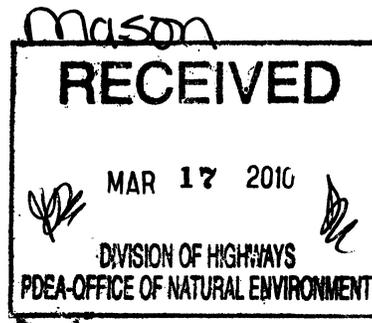
Division of Water Quality

Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

March 15, 2010



James Mason
NCDOT PDEA
Natural Environment Unit
1598 Mail Service Center
Raleigh NC 27699-1598

Subject: NCDOT TIP #B-4401, Guilford County
North Prong Stinking Quarter Creek [Cape Fear, 03-06-03, WSV; NSW]

On-Site Determination for Applicability to the Jordan Buffer Rules (15A NCAC 2B .0267)
On-Site Determination for Applicability to the Mitigation Rules (15A NCAC 2H .0506(h))

Dear Mr. Mason:

On March 9, 2010, at your request and in your attendance, Amy Euliss, NC Division of Water Quality (NCDWQ) staff, conducted an on-site determination to review drainage features located at Bridge 61 on SR 1124 in Alamance County for applicability to the Jordan Lake buffer Rules and for applicability to the mitigation rules (15A NCAC 2H .0506(h)). The drainage features are approximated on the attached map initialed and dated March 15, 2010.

Feature ID	Stream/ Wetland Name	Site Visited	Stream/Wetland Type	Buffers
SA	UT 1 to North Prong Stinking Quarter Creek	Yes	Perennial	Yes
SB	UT 1 to North Prong Stinking Quarter Creek	Yes	Perennial	Yes*
WA	Wetland A	Yes	Riverine	NA
WB	Wetland B	Yes	Riverine	NA

*stream and buffers outside of project study area

Please note that no other features at the site were evaluated. Also, this letter only addresses applicability to the Jordan Buffer Rules at the site specifically marked on the attached map and does not apply to reaches of the channel [or drainage feature] further downstream from the NCDOT project area, or to any other drainage features in the vicinity.

This letter only addresses the applicability to the mitigation rules and the buffer rules and does not approve any activity within the buffer, Waters of the United States, or Waters of the State. Any impacts to wetlands, streams and buffers must comply with the Jordan Buffer Rules, 404/401 regulations, water supply regulations (15A NCAC 2B .0216), and any other required federal, state and local regulations. Please be aware that even if no direct impacts are proposed to the protected buffers, sheet flow of all new stormwater runoff as per 15A NCAC 2B .0267 is required.

The owner (or future owners) or permittee should notify NCDWQ (and other relevant agencies) of this

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 2321 Crabtree Blvd., Raleigh, North Carolina 27604
Phone: 919-733-1786 \ FAX: 919-733-6893
Internet: <http://h2o.enr.state.nc.us/ncwetlands/>

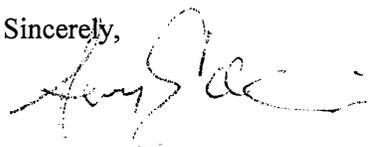


decision in any future correspondences concerning this property and/or project. This on-site determination shall expire five (5) years from the date of this letter.

Landowners or affected parties that dispute a determination made by NCDWQ or Delegated Local Authority that a surface water exists and that it is subject to the mitigation rules may request a determination by the Director. A request for a determination by the Director shall be referred to the Director in writing c/o Brian Wrenn, NCDWQ Wetlands/401 Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650. Individuals that dispute a determination by NCDWQ or Delegated Local Authority that "exempts" a surface water from the mitigation rules may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. Applicants are hereby notified that the 60-day statutory appeal time does not start until the affected party (including downstream and adjacent landowners) is notified of this decision. NCDWQ recommends that the applicant conduct this notification in order to be certain that third party appeals are made in a timely manner. To ask for a hearing, send a written petition, which conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This determination is final and binding unless you ask for a hearing within 60 days.

If you have any additional questions or require additional information please call Amy Euliss at 336-771-4959 or at amy.euliss@ncdenr.gov.

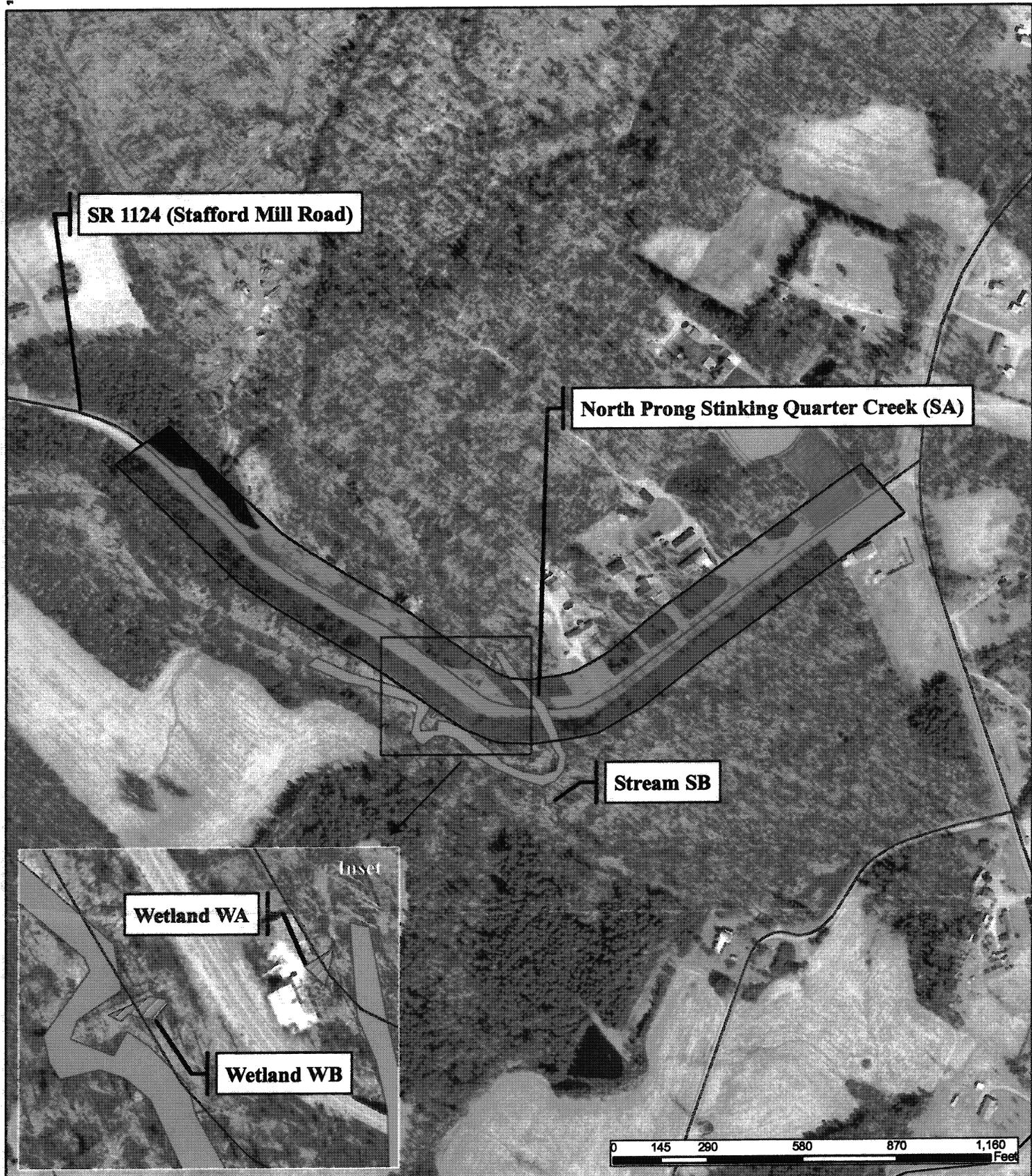
Sincerely,

A handwritten signature in black ink, appearing to read "Amy Euliss", written over a light blue horizontal line.

Amy Euliss

Attachments: signed location map

cc: Andy Williams, US Army Corps of Engineers – Raleigh Regulatory Field Office
NCDWQ Wetlands 401 Transportation permitting Unit
File Copy



- Legend**
- Study Area
 - Floodplain Forest
 - Mixed Pine/Hardwood Forest
 - Maintained/Disturbed
 - Pine Forest
 - N. Pr. Stinking Qtr. Crk. (SA)
 - Wetlands
 - Stream SB

**FIGURE 3: JURISDICTIONAL FEATURES
AND TERRESTRIAL COMMUNITIES**

B-4401, Alamance County
Updated March 9, 2010



HE 3/15/2010



North Carolina Department of Transportation
 Highway Stormwater Program
 STORMWATER MANAGEMENT PLAN
 FOR LINEAR ROADWAY PROJECTS



(Version 1.2) Released July 2012

Project/TIP No.: 33681.1.1

County(ies): Alamance

General Project Information

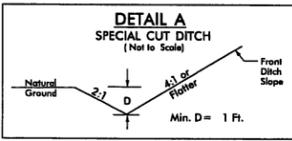
Page 1 of 3

Project No.:	33681.1.1	Project Type:	Bridge Replacement	Date:	1/18/2013
NCDOT Contact:	Marshall Clawson, P.E.	Contractor / Designer:	David Bocker, PE		
Address:	Hydraulics Unit 1020 Birch Ridge Road Raleigh, NC 27610	Address:	7500 E. Independence Blvd, Site 100 Charlotte, NC 28227		
Phone:	919-707-6713	Phone:	704-537-7300		
Email:	mclawson@ncdot.gov	Email:	dbocker@mulkeyinc.com		
City/Town:	Macedonia Church	County(ies):	Alamance		
River Basin(s):	Cape Fear	CAMA County?	No		
Primary Receiving Water:	North Prong Stinking Quarter Creek	NCDWQ Stream Index No.:			
NCDWQ Surface Water Classification for Primary Receiving Water		Water Supply V (WS-V)			
Other Stream Classification:	None	Nutrient Sensitive Waters (NSW)			
303(d) Impairments:	None				
Buffer Rules In Effect	Yes, Cape Fear				
Project Description					
Project Length (lin. Miles or feet):	0.141 miles	Surrounding Land Use:	Undeveloped, rural	Existing Site	
Project Built-Upon Area (ac.)	0.39	Proposed Project		0.33	ac.
Typical Cross Section Description:	2 Lane shoulder section with paved shoulders			2 Lane Shoulder section	
Average Daily Traffic (veh/hr/day):	Design/Future: 400 vpd			Existing:	200 vpd
General Project Narrative:					

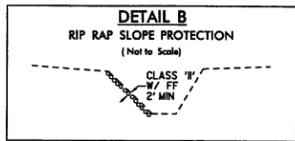
RECEIVED
 FEB 8 2013
 DIVISION OF HIGHWAYS
 PDEA-OFFICE OF NATURAL ENVIRONMENT

References

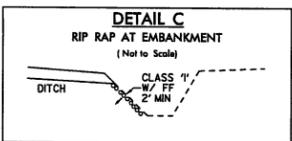
5/14/99



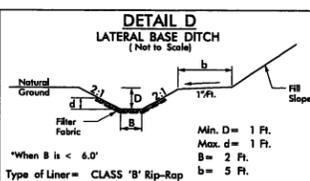
FROM STA.13+50 TO STA.14+25 LT



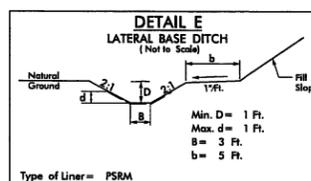
STA. 16+15 - EST. 135 TONS CL. II RR W/145 SY FF
STA. 16+65 - EST. 130 TONS CL. II RR W/140 SY FF



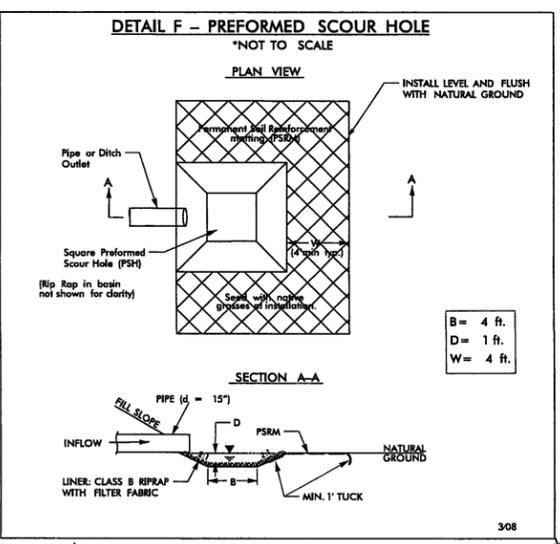
STA. 16+40 LT - EST. 10 TONS CL. II RR W/11 SY FF



FROM STA.16+40 TO STA.18+50 LT
EST. 94 TONS CL. B Riprap w/266 SY Filter Fabric

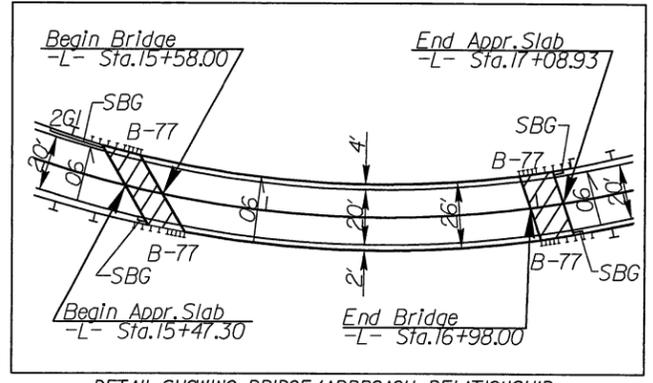
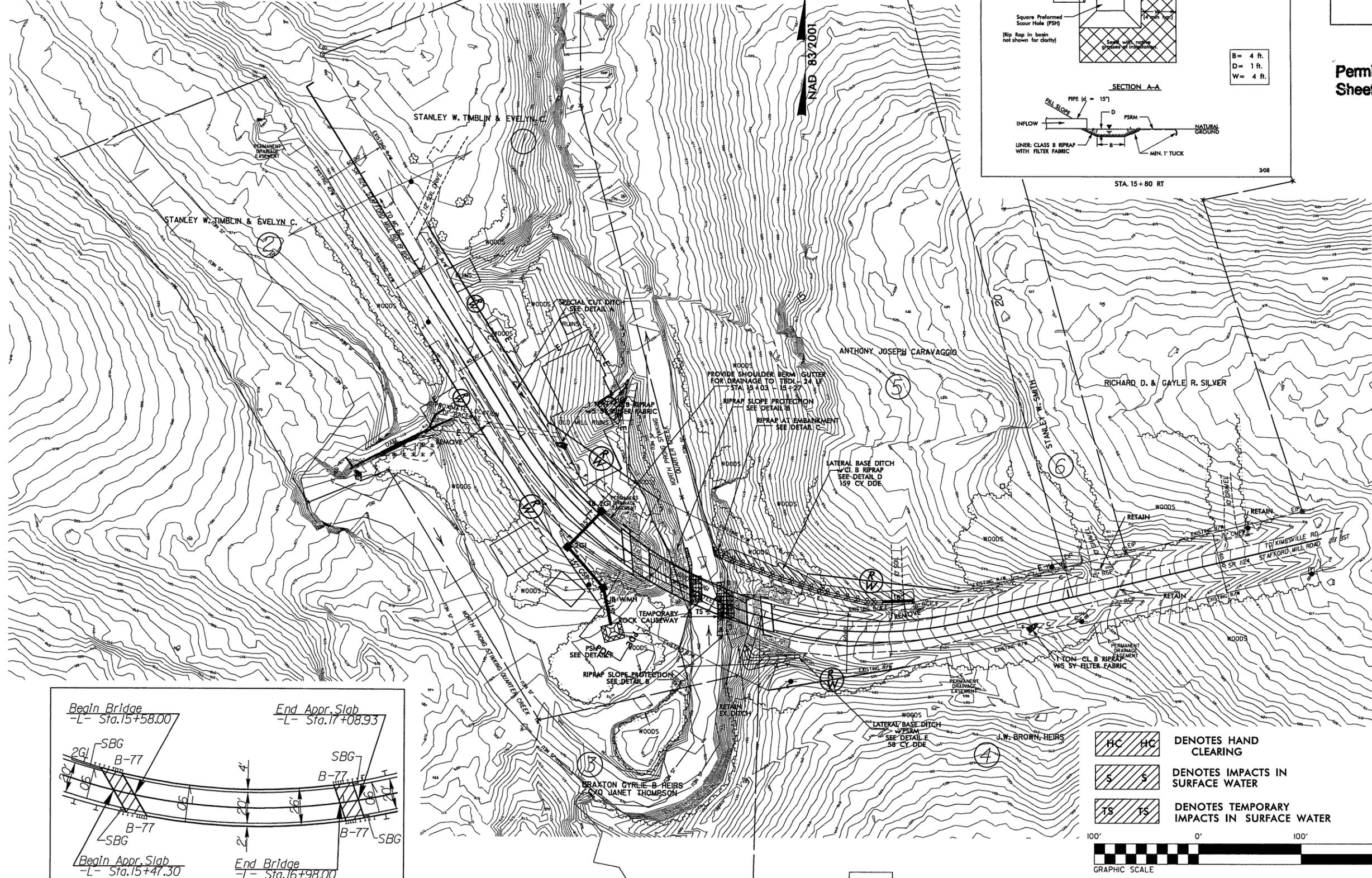


FROM STA.16+90 TO STA.17+40 RT
EST. 40 SY PSRM



PROJECT REFERENCE NO. B-4401	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 3 of 8



DETAIL SHOWING BRIDGE/APPROACH RELATIONSHIP
SBG = "Shoulder Berm Gutter"

- HC HC DENOTES HAND CLEARING
- S S DENOTES IMPACTS IN SURFACE WATER
- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



Unclassified
Structure
Excavation
(See Structure Plans)

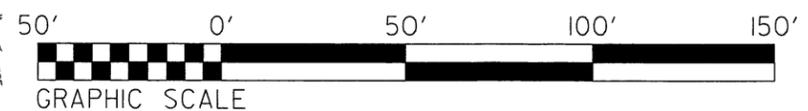
Notes:
Design Exception Required for Horizontal SSD (25mph)
See Sheet 5 for -L- Profile
See Sheet 5-I Thru 5- For Structure Plans
See Sheet 3-A for Shoulder Berm Gutter (SBG) Summary

I:\31\2013 Environmental\Drawings\b4401-hyd-prm-wet-psh.dgn
2/4/2015 10:24:25 AM

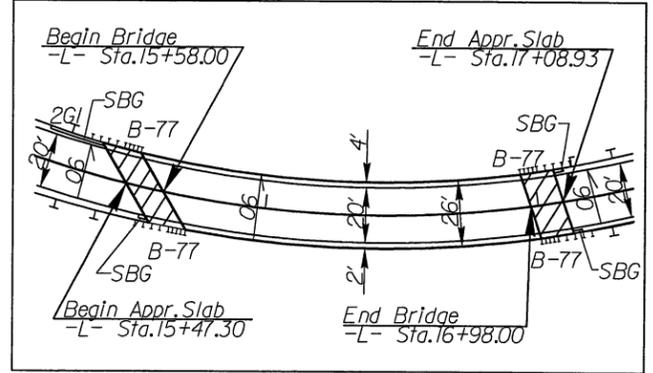
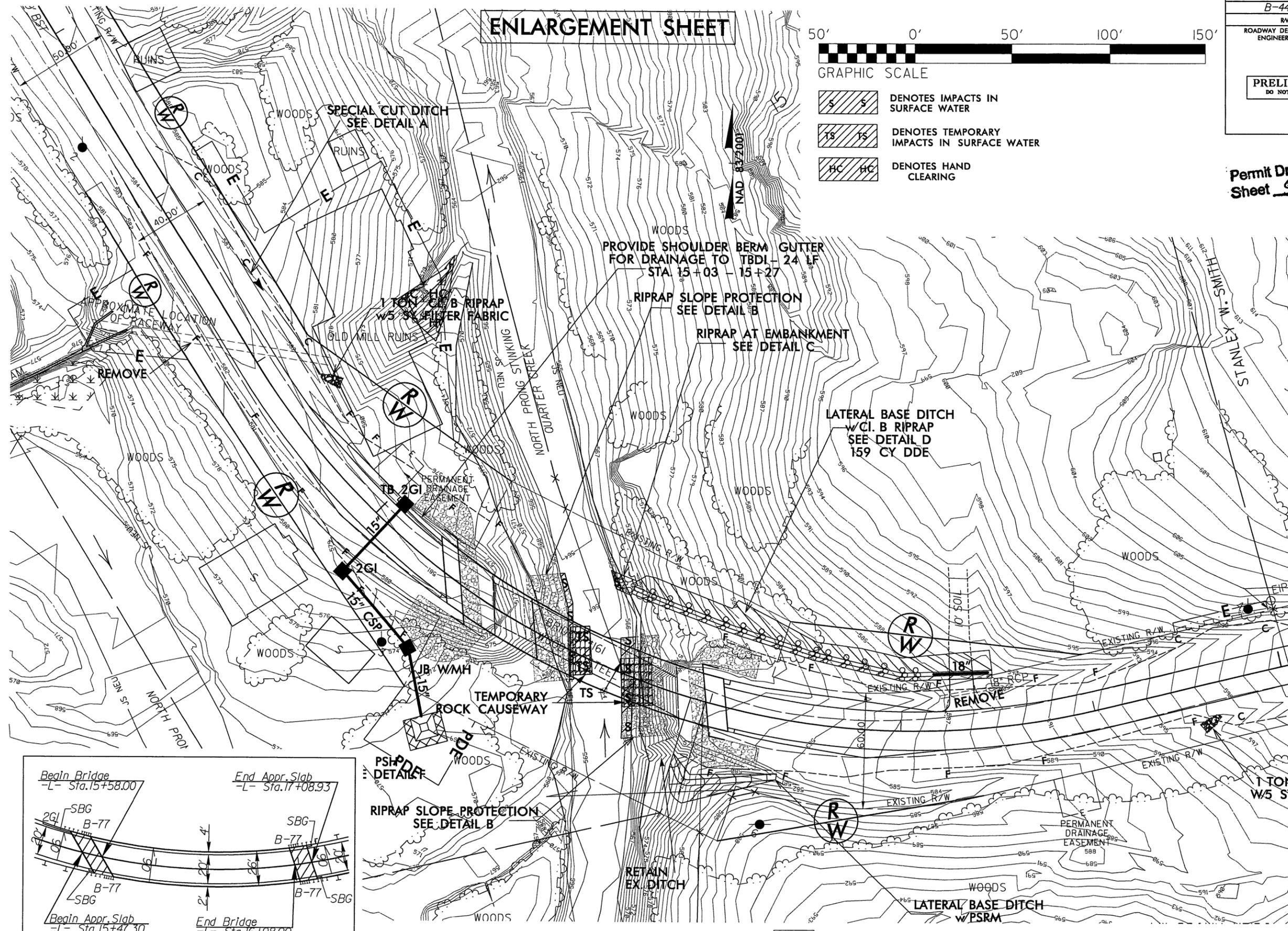
PROJECT REFERENCE NO. B-4401	SHEET NO. 4
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 5 of 8

ENLARGEMENT SHEET



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES HAND CLEARING



Unclassified Structure Excavation
(See Structure Plans)

Notes:
 Design Exception Required for Horizontal SSD (25mph)
 See Sheet 5 for -L- Profile
 See Sheet S-1 Thru S- For Structure Plans
 See Sheet 3-A for Shoulder Berm Gutter (SBG) Summary

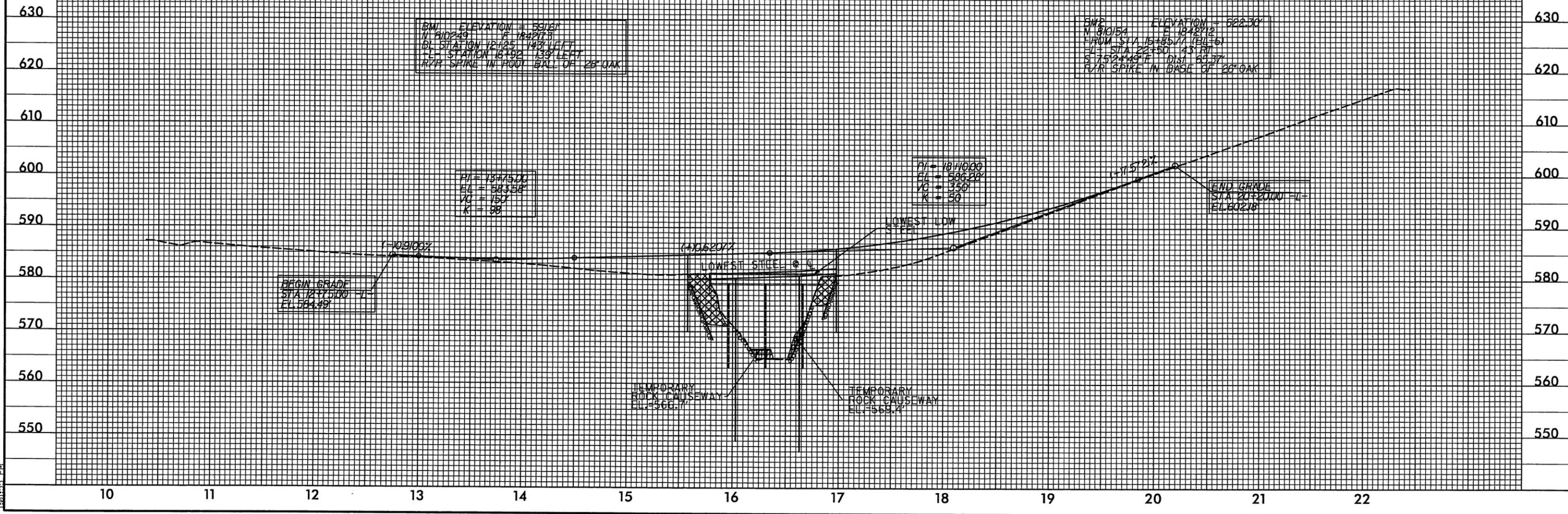
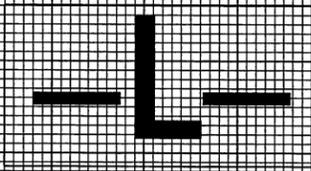
5/14/99
 I:\17\2013\Environment\Drawings\4401_hyd_prm_wet_psh_50_scale.dgn
 4/25/13 10:59 AM

5/14/99

R:\18\2012\K\Hydro\ulica\Permits Environmental\Drawings\4401_hyd_wet_pf1.dgn
10:15:55 AM

PROJECT REFERENCE NO. B-4401	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 6 of 8



PROPERTY OWNERS
NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
1	STANLEY W. TIMBLIN & EVELYN C.	4 FOREST HILL CT GREENSBORO, NC 27410

NCDOT
DIVISION OF HIGHWAYS
ALAMANCE COUNTY
PROJECT: B-4401
REPLACE BRIDGE #161
ON SR 1124 OVER
NORTH PRONG OF
STINKING QUARTER
CREEK
SHEET 7 OF 8 12/17/2012

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4401	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33681.1.1	BRZ-1124(5)	PE	

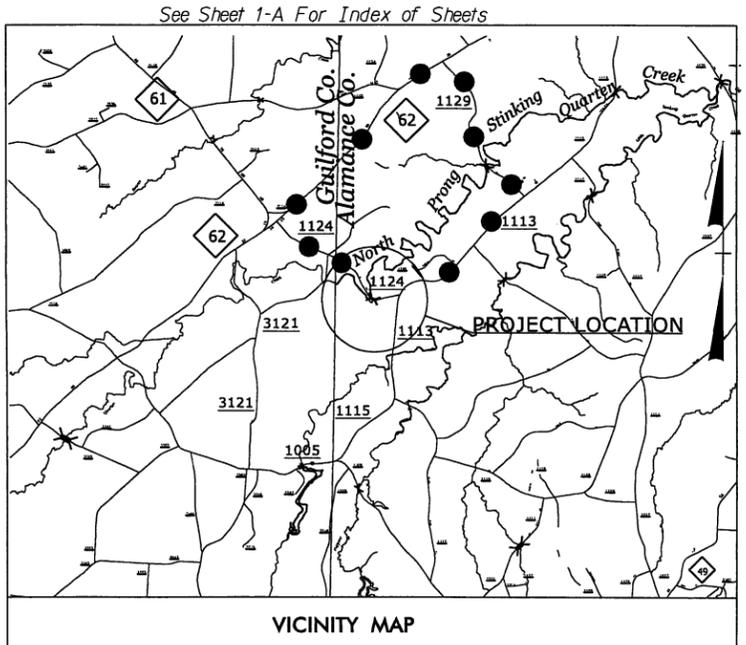
Buffer Drawing
Sheet 1 of 5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALAMANCE COUNTY

LOCATION: Bridge #161 Over North Prong
Stinking Quarter Creek on SR 1124 (Stafford Mill Road)
TYPE OF WORK: Grading, Drainage, Paving and Structure

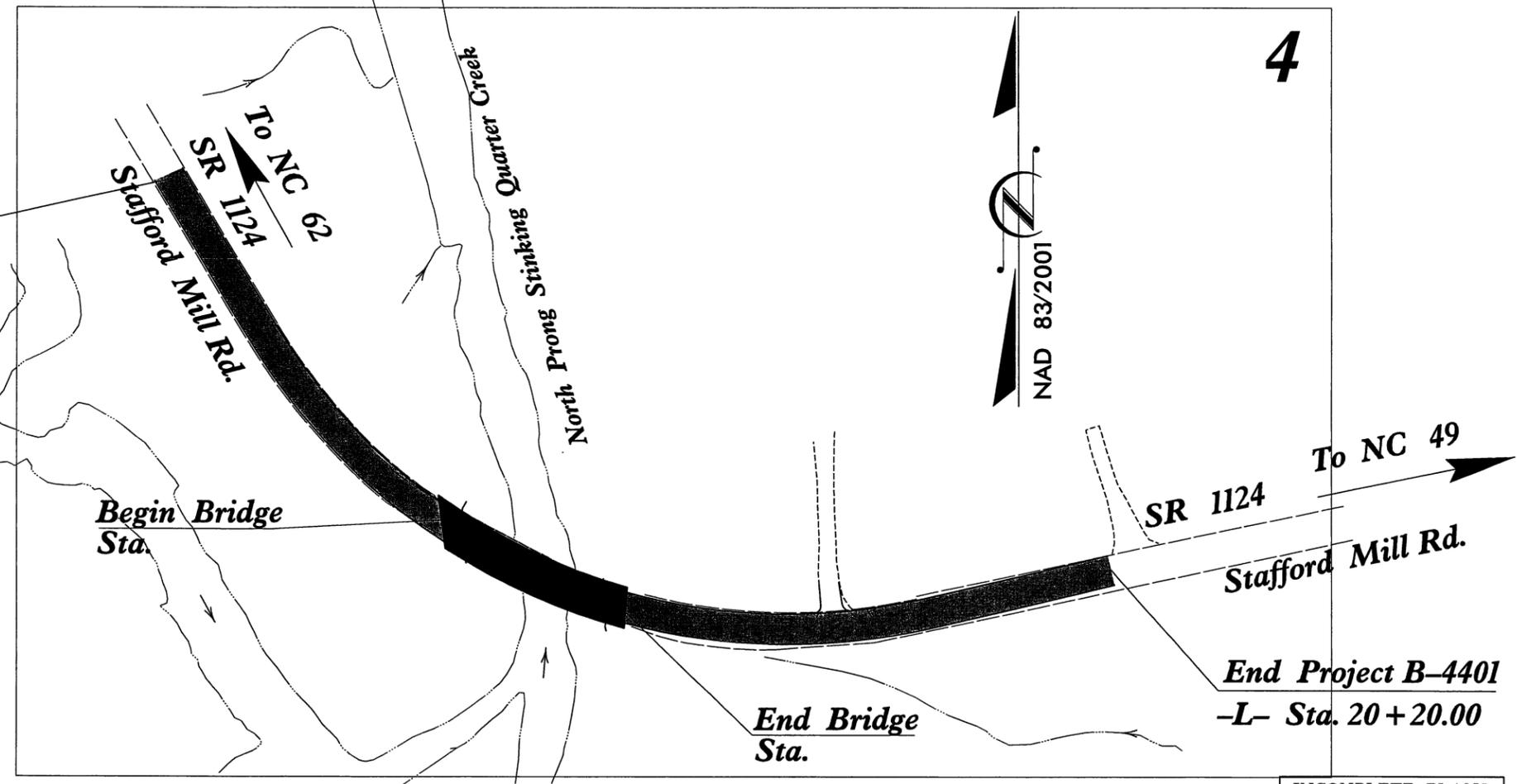
BUFFER IMPACTS PERMIT



VICINITY MAP

●●●●● Offsite Detour Route

Begin Project B-4401
-L- Sta. 12 + 75.00

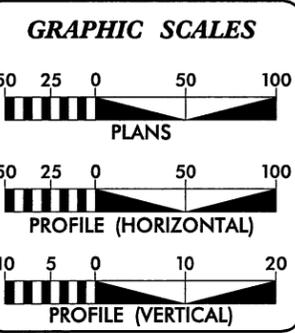


Design Exception Required for Horizontal SSD
This Project is Not Within the Limits of Any Municipality
Method of Clearing _____

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

TIP PROJECT: B-4401

CONTRACT:



DESIGN DATA

ADT 2010 =	200 vpd
ADT 2035 =	400 vpd
DHV =	13 %
D =	85 %
T =	14 % *
V =	35 MPH
* TTST 4%	DUAL 10%
Functional Class- Rural Local	
Sub Regional Tier	

PROJECT LENGTH

Total Length TIP Project B-4401 = 0.141 Miles

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

2006 STANDARD SPECIFICATIONS

PRODUCTION RIGHT OF WAY DATE:
November 16, 2012

PRODUCTION LETTING DATE:
May 21, 2013

James Speer, PE
PROJECT ENGINEER

John Lansford, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

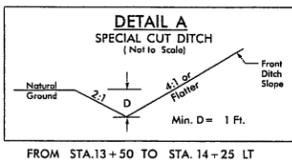
SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

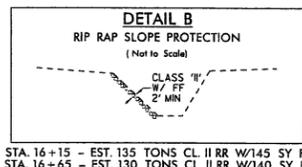
STATE HIGHWAY DESIGN ENGINEER P.E.

11/26/2012 R:\Hydro\Qualics\Permits Environmental\Drawings\b4401_hyd...buf...tsh.dgn 3:20:19 PM

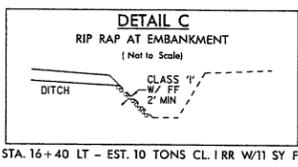
5/14/99



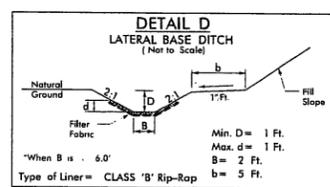
FROM STA.13+50 TO STA.14+25 LT



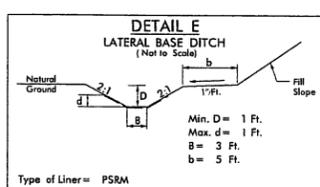
STA.16+15 - EST.135 TONS CL.II RR W/145 SY FF
STA.16+65 - EST.130 TONS CL.II RR W/140 SY FF



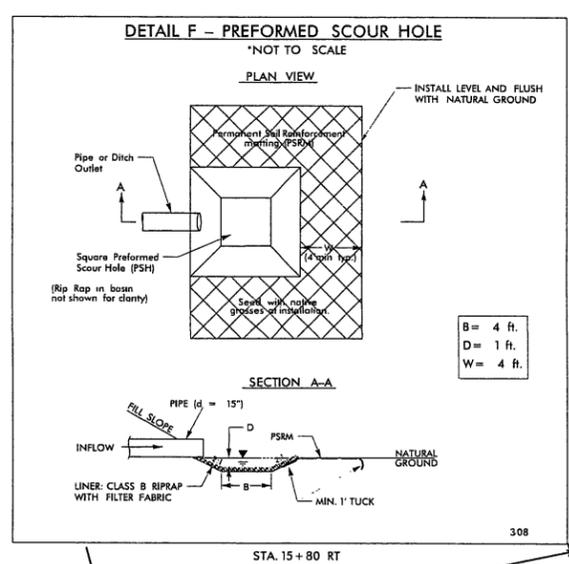
STA.16+40 LT - EST.10 TONS CL.I RR W/11 SY FF



FROM STA.16+40 TO STA.18+50 LT
EST.94 TONS CL.B Riprap w/266 SY Filter Fabric



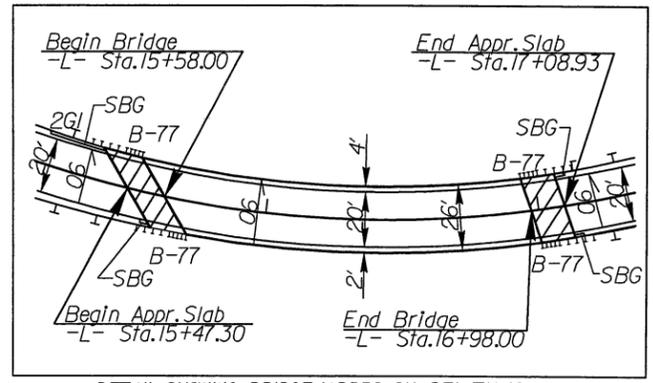
FROM STA.16+90 TO STA.17+40 RT
EST.40 SY PSRM



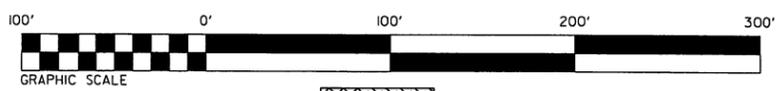
B = 4 ft.
D = 1 ft.
W = 4 ft.

PROJECT REFERENCE NO. B-4401	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Buffer Drawing Sheet **2** of **5**



DETAIL SHOWING BRIDGE/APPROACH RELATIONSHIP
SBG = "Shoulder Berm Gutter"



- ALLOWABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 2

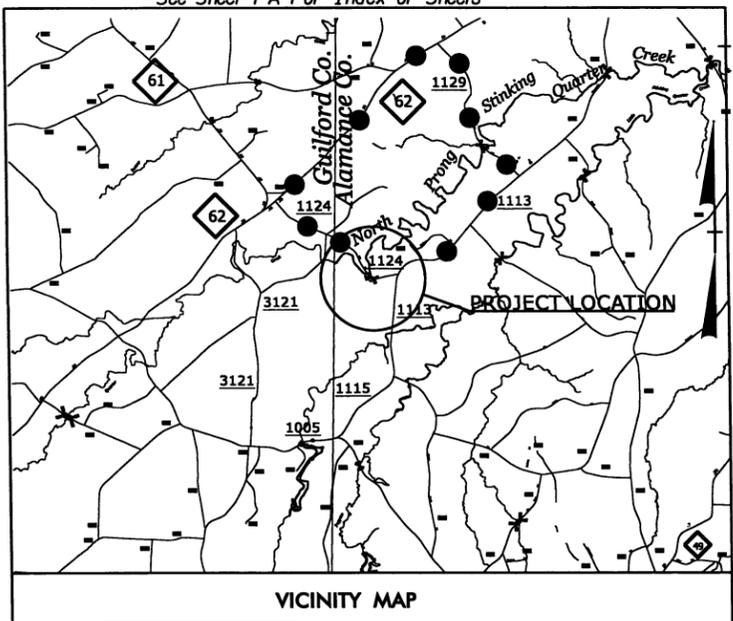
Unclassified Structure Excavation (See Structure Plans)

Notes:
Design Exception Required for Horizontal SSD (25mph)
See Sheet 5 for -L- Profile
See Sheet S-1 Thru S- For Structure Plans
See Sheet 3-A for Shoulder Berm Gutter (SBG) Summary

2/1/2013 10:55:56 AM prmts_Envrmental\Drawings\4401_hyd_prm_buf_psh.dgn

09/08/09

See Sheet 1-A For Index of Sheets



VICINITY MAP

●●●●● Offsite Detour Route

Begin Project B-4401

-L- Sta. 11 + 75.00

Begin Construction

Sta. 12 + 40.00 -L-

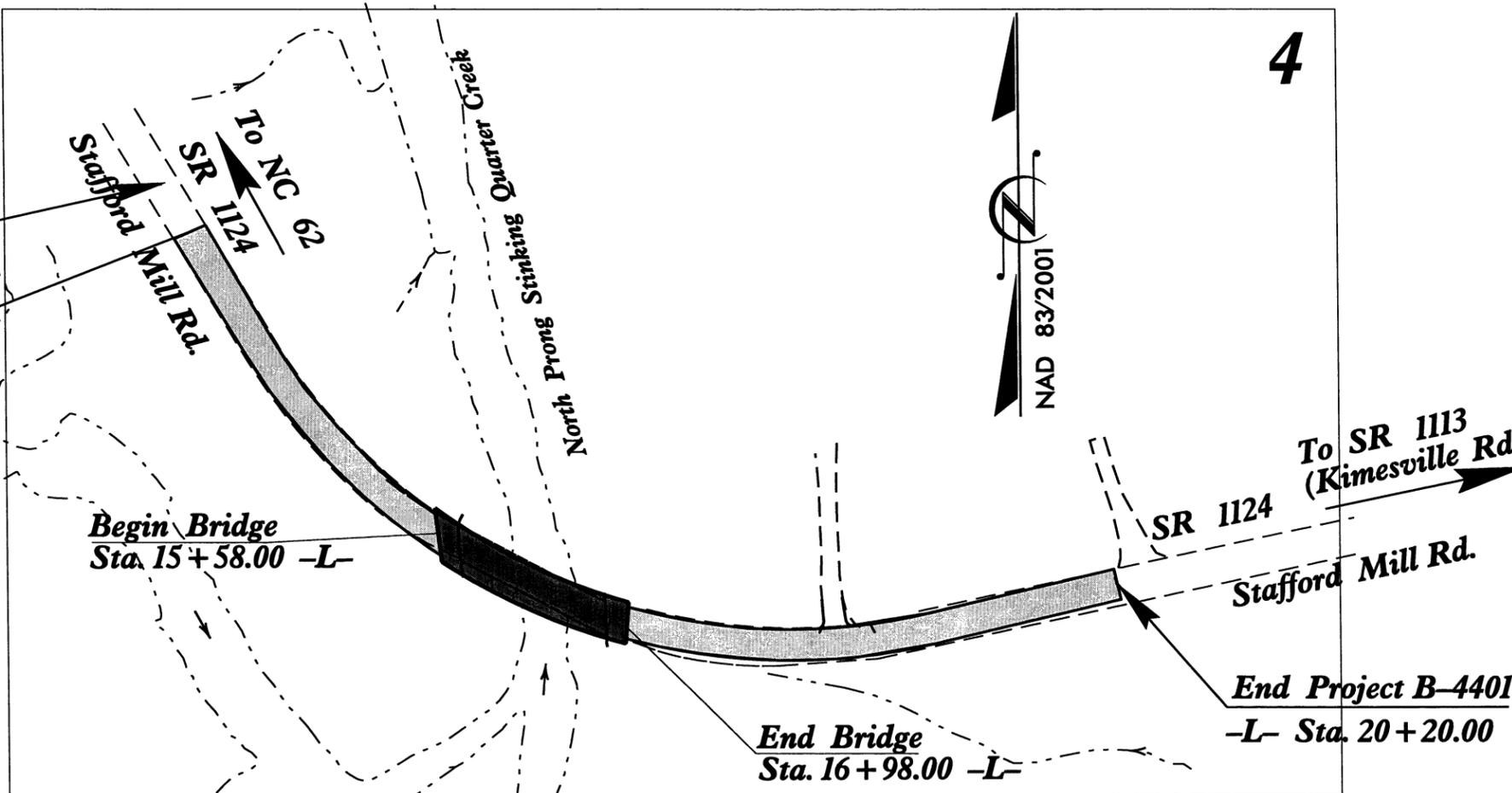
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALAMANCE COUNTY

LOCATION: Bridge #161 Over North Prong
Stinking Quarter Creek on SR 1124
(Stafford Mill Road)

TYPE OF WORK: Grading, Drainage, Paving and Structure

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4401	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33681.1.1	BRZ-1124(5)	PE	
33681.2.1	BRZ-1124(5)	RW & UTILITIES	



Design Exception Required for Horizontal SSD (25mph)
This Project is Not Within the Limits of Any Municipality
Method of Clearing II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-4401

CONTRACT:

GRAPHIC SCALES



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 200 vpd
ADT 2035 = 400 vpd
DHV = 13 %
D = 85 %
T = 14 % *
V = 35 MPH
* TTST 4% DUAL 10%
Functional Class- Rural Local
Sub Regional Tier

PROJECT LENGTH

Length Roadway TIP Project B-4401 = 0.133 Miles
Length Structure TIP Project B-4401 = 0.027 Miles
Total Length TIP Project B-4401 = 0.160 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
November 13, 2012

LETTING DATE:
November 19, 2013

James Speer, PE
PROJECT ENGINEER

John Lansford, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



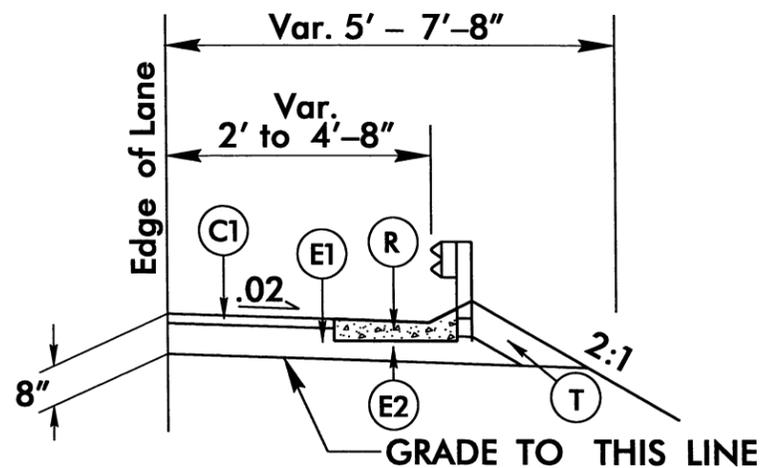
14-NOV-2012 13:36 R:\Roadway\Projects\B4401_rdy_tsh.dgn \$\$\$USERNAME\$\$\$

FINAL PAVEMENT DESIGN

PAVEMENT SCHEDULE

C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 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 5½" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

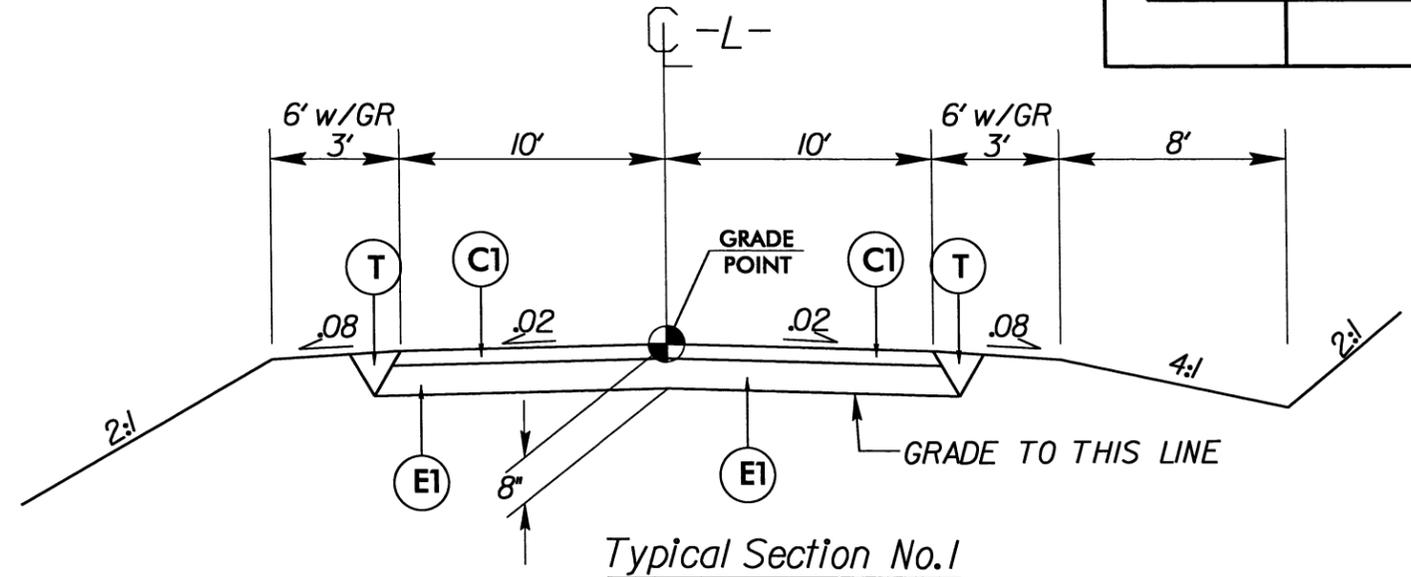
Note: All Slopes are 1:1 Unless Otherwise Shown



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

SEE SHEET 3-A FOR SHOULDER BERM GUTTER SUMMARY

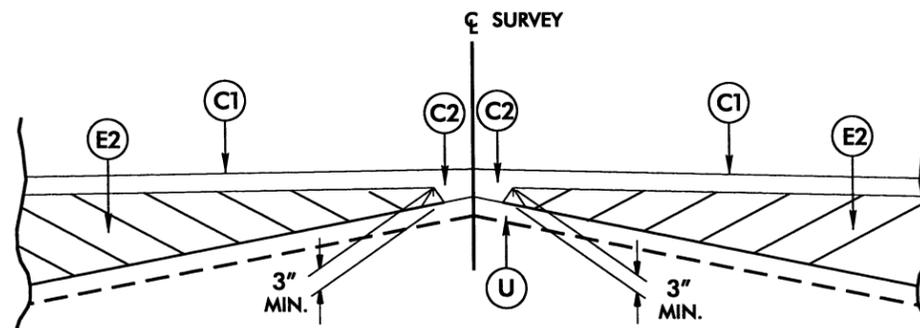
PROJECT REFERENCE NO. B-4401	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Typical Section No.1

USE TYPICAL SECTION NO.1:

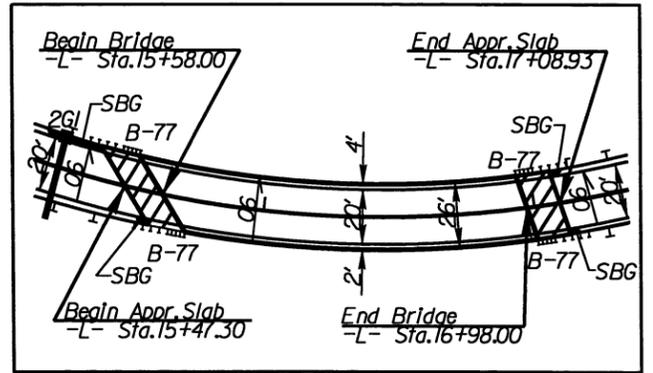
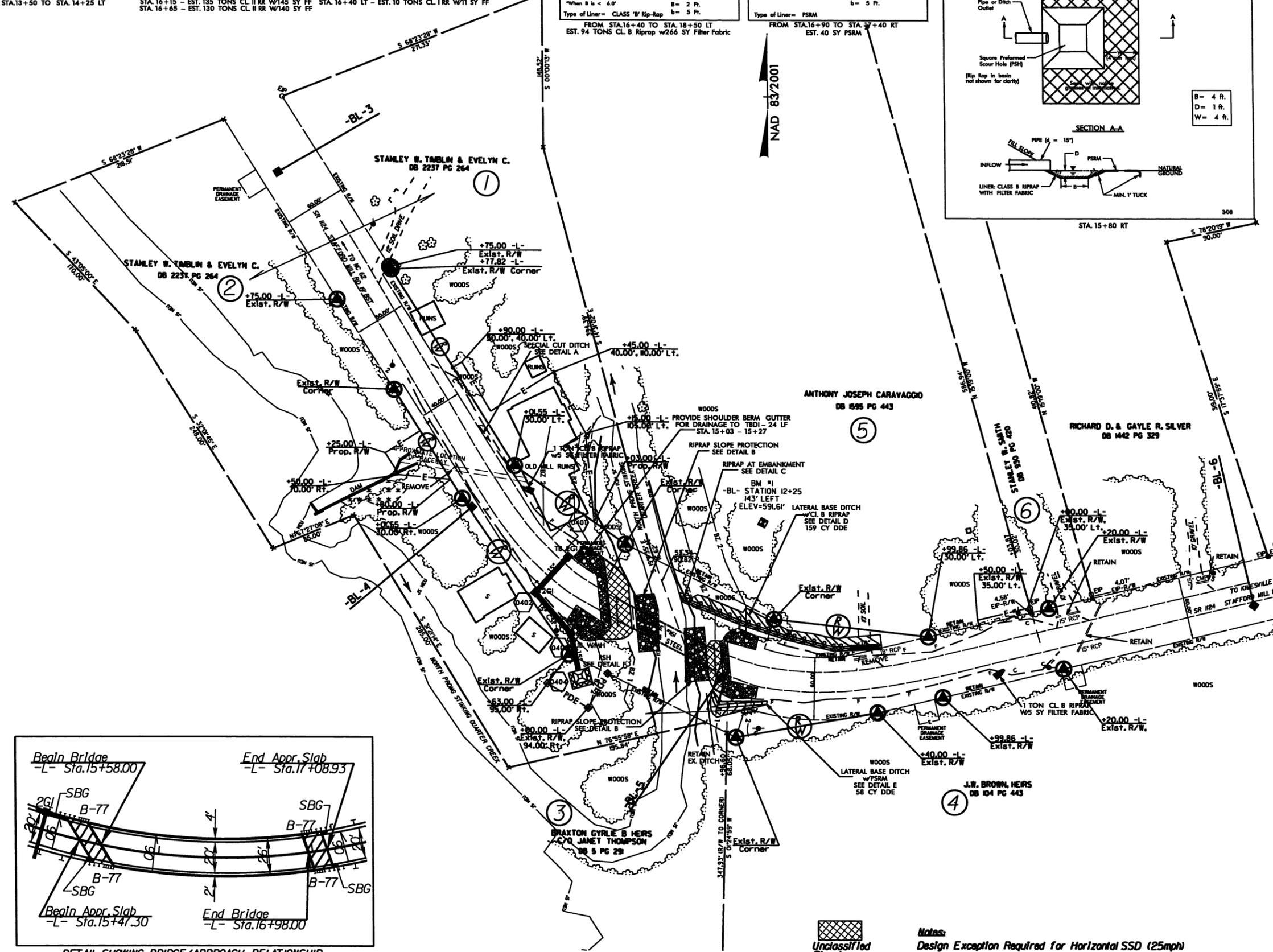
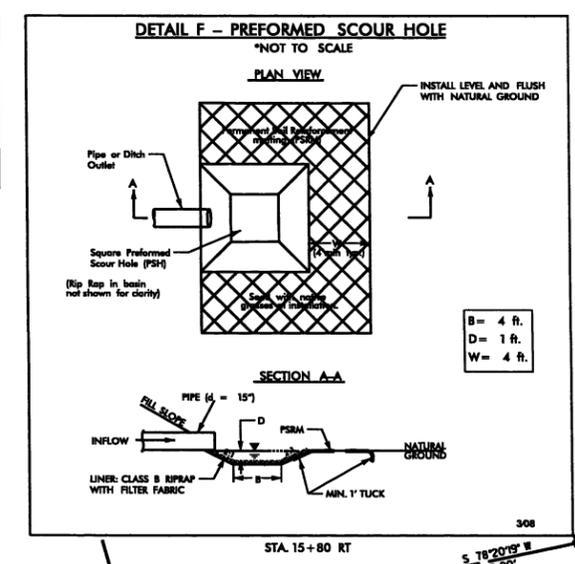
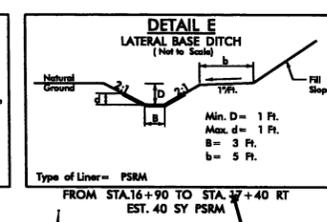
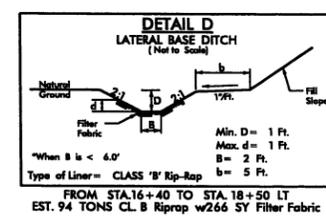
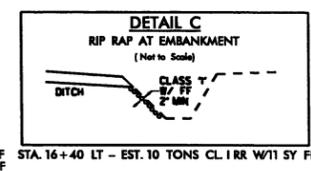
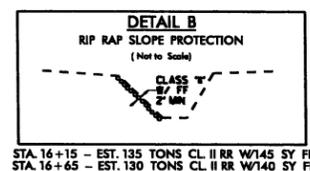
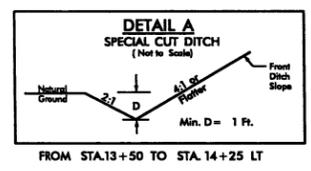
- L- Sta.12+75.00 to 15+58.00 (Begin Bridge)
- L- Sta.16+98.00 (End Bridge) to 20+20.00



Detail Showing Method of Wedging

5/14/99 14-NV-2012 1335 nb4401.rdw-tpj.dgn

PROJECT REFERENCE NO. B-4401	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Unclassified Structure Excavation
(See Structure Plans)

Notes:
Design Exception Required for Horizontal SSD (25mph)
See Sheet 5 for -L- Profile
See Sheet S-1 thru S- For Structure Plans
See Sheet 3-A for Shoulder Berm Gutter (SBG) Summary

5/14/09
14-NOV-2012 13:35 b4401.r.dg.pah.dgn

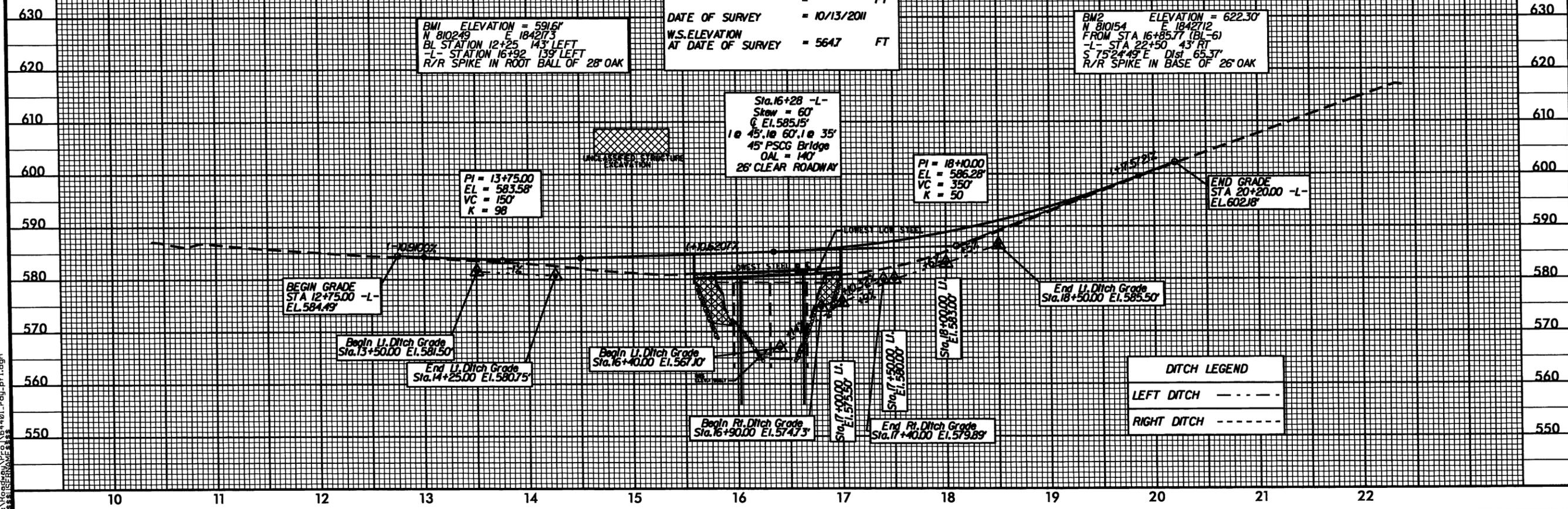
5/14/99

PROJECT REFERENCE NO. B-4401	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



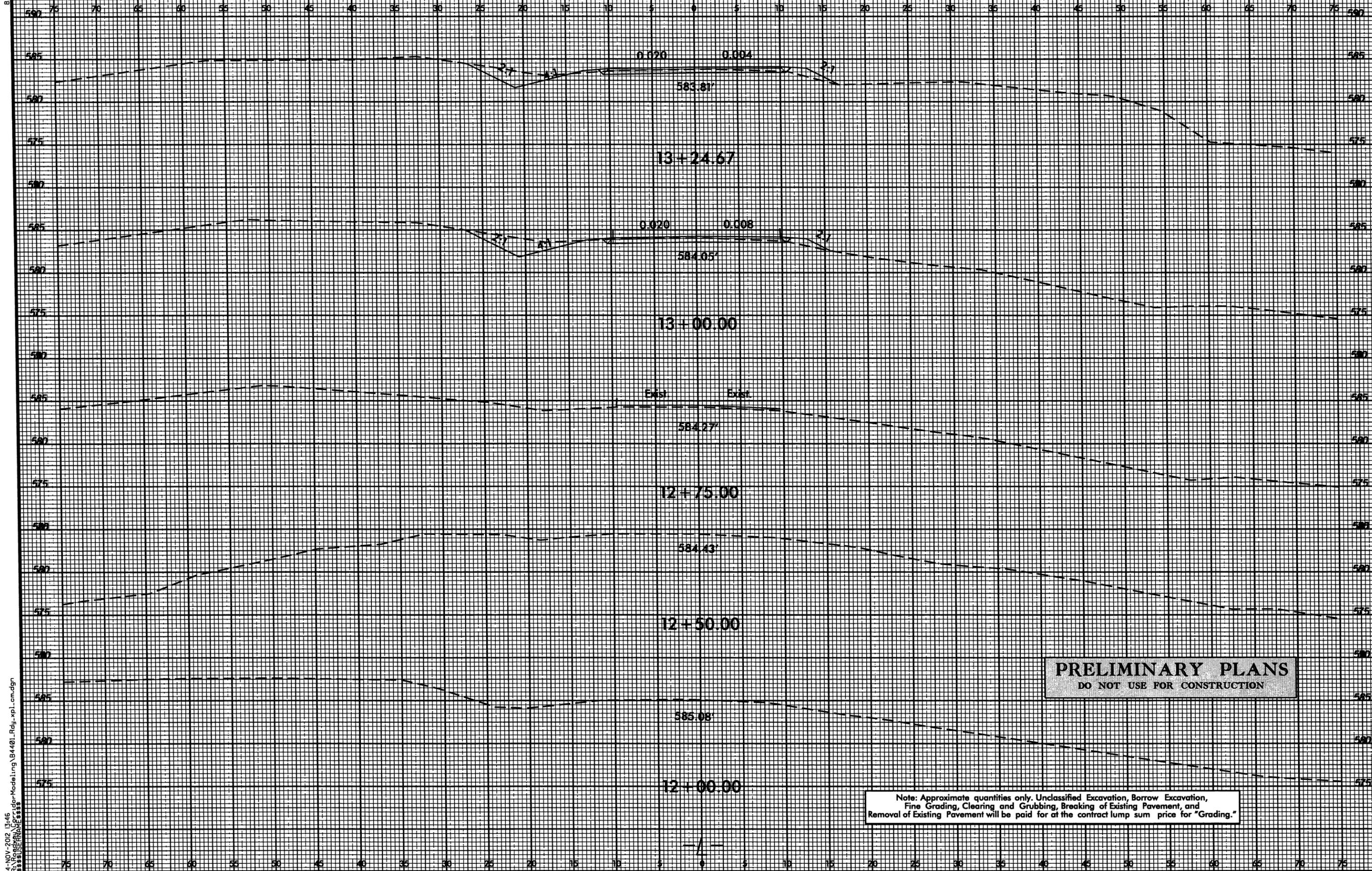
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 4300	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 576.4	FT
BASE DISCHARGE	= 5500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 577.8	FT
OVERTOPPING DISCHARGE	= 12850	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 584.1	FT
DATE OF SURVEY	= 10/13/2011	FT
W.S. ELEVATION AT DATE OF SURVEY	= 564.7	FT



14-NOV-2012 13:35
R:\PROJECTS\B-4401\rdj.pfl.dgn

8/23/99



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, 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."

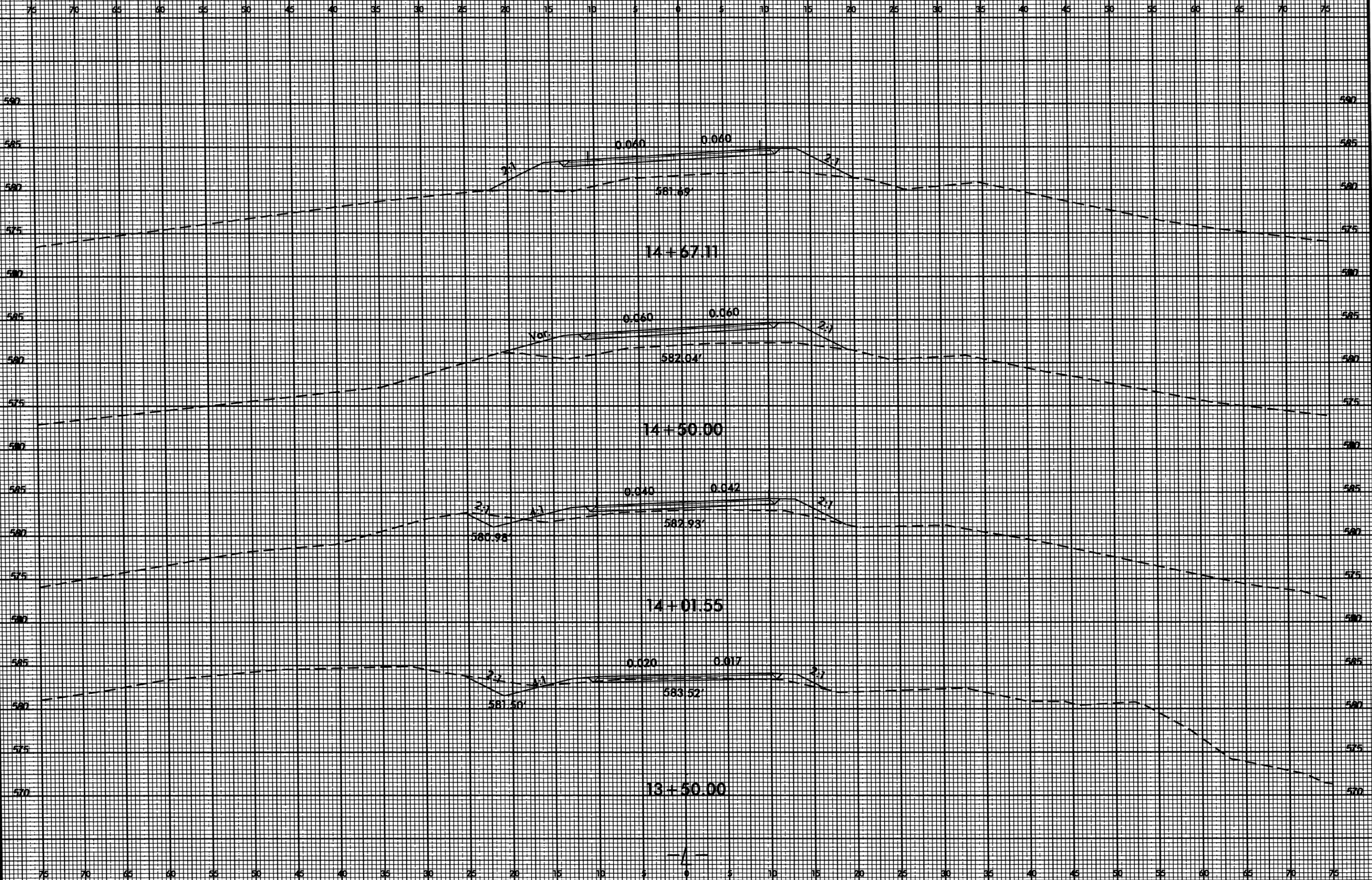
14-NOV-2012 13:46
R:\Projects\B4401\Grading-Modeling\B4401_Rdy_xpl_cm.dgn
888 USER:RMANE

B/23/99



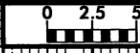
PROJ. REFERENCE NO.
B-4401

SHEET NO.
X-3



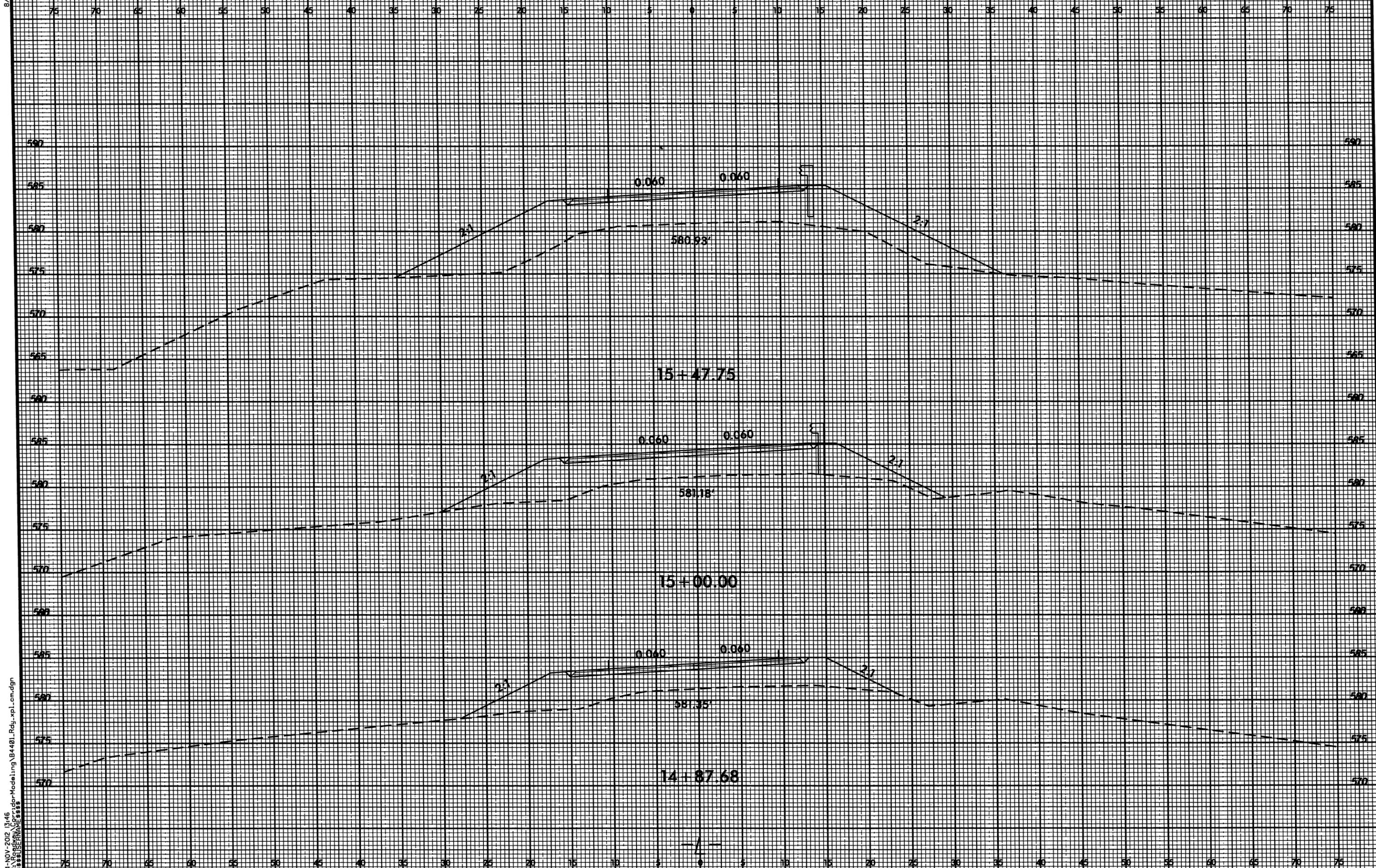
14-NOV-2012 13:46
R:\nog\m\m\Corridor-Modeling\B4401_Rdy_xpl.cm.dgn
USERNAME

B/23/99



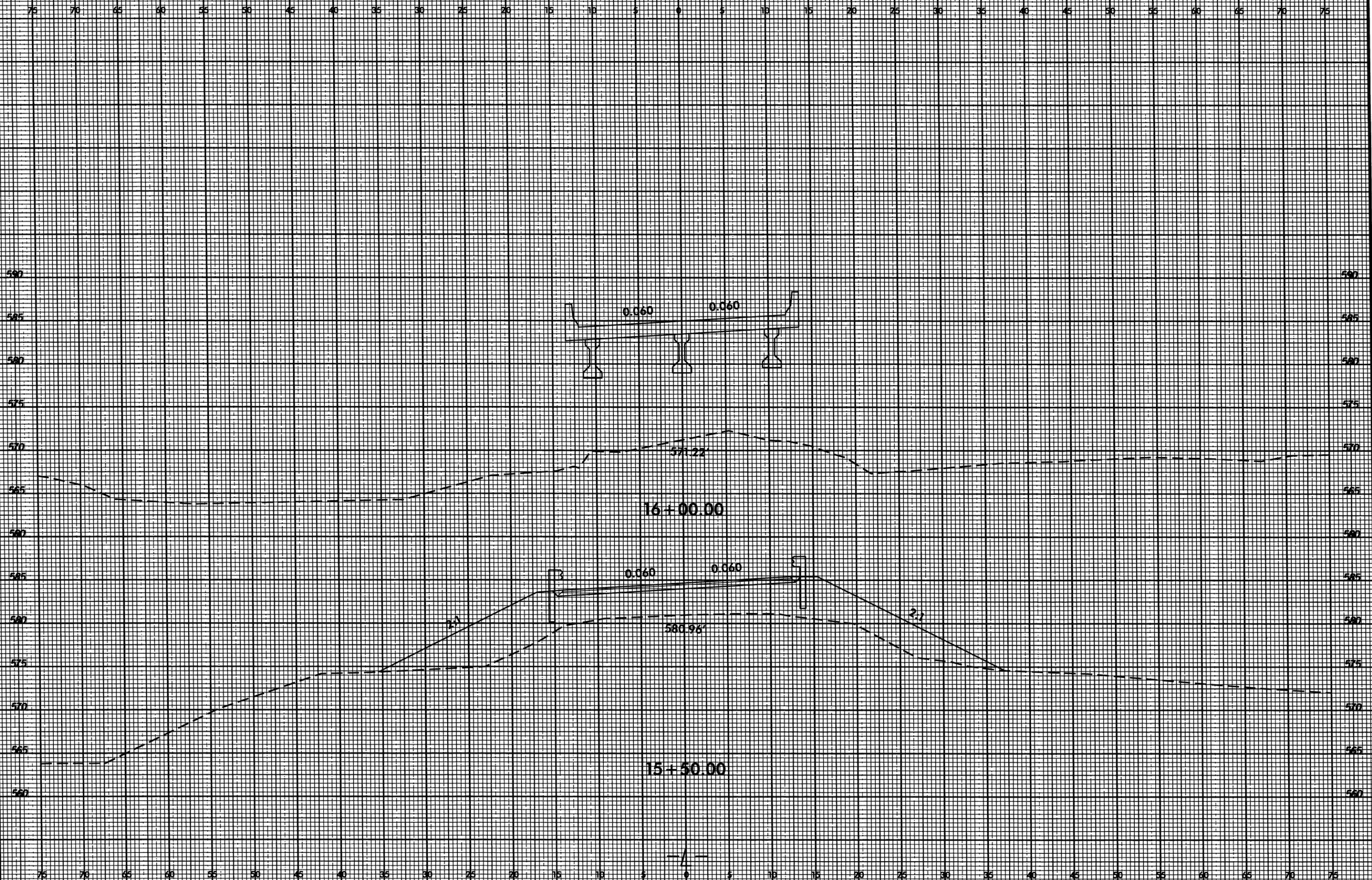
PROJ. REFERENCE NO.
B-4401

SHEET NO.
X-4



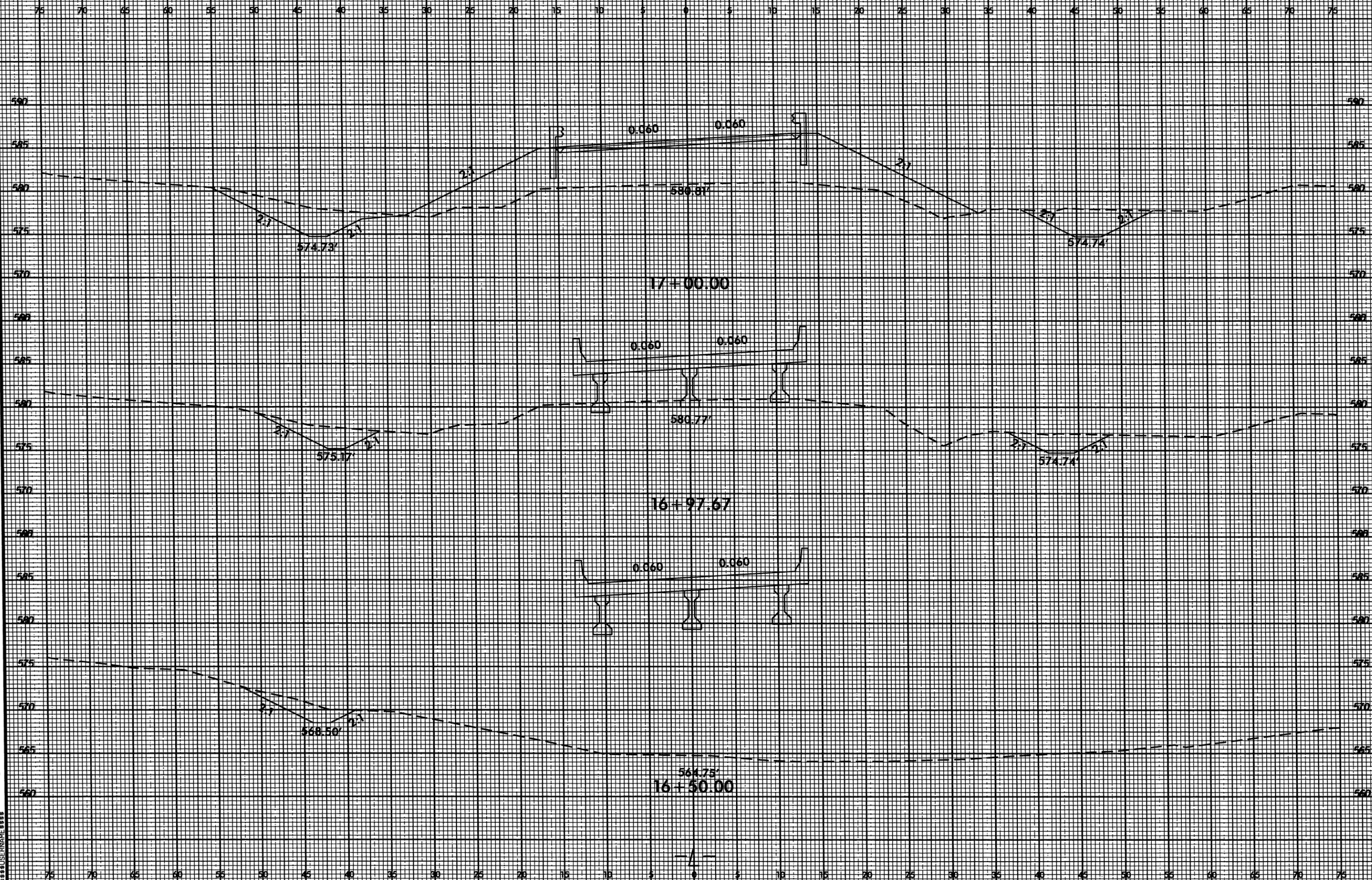
14-NOV-2012 3:46
R:\P05819\Corridor-Modeling\B4401_Rdy_xpl.cm.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

B/23/95



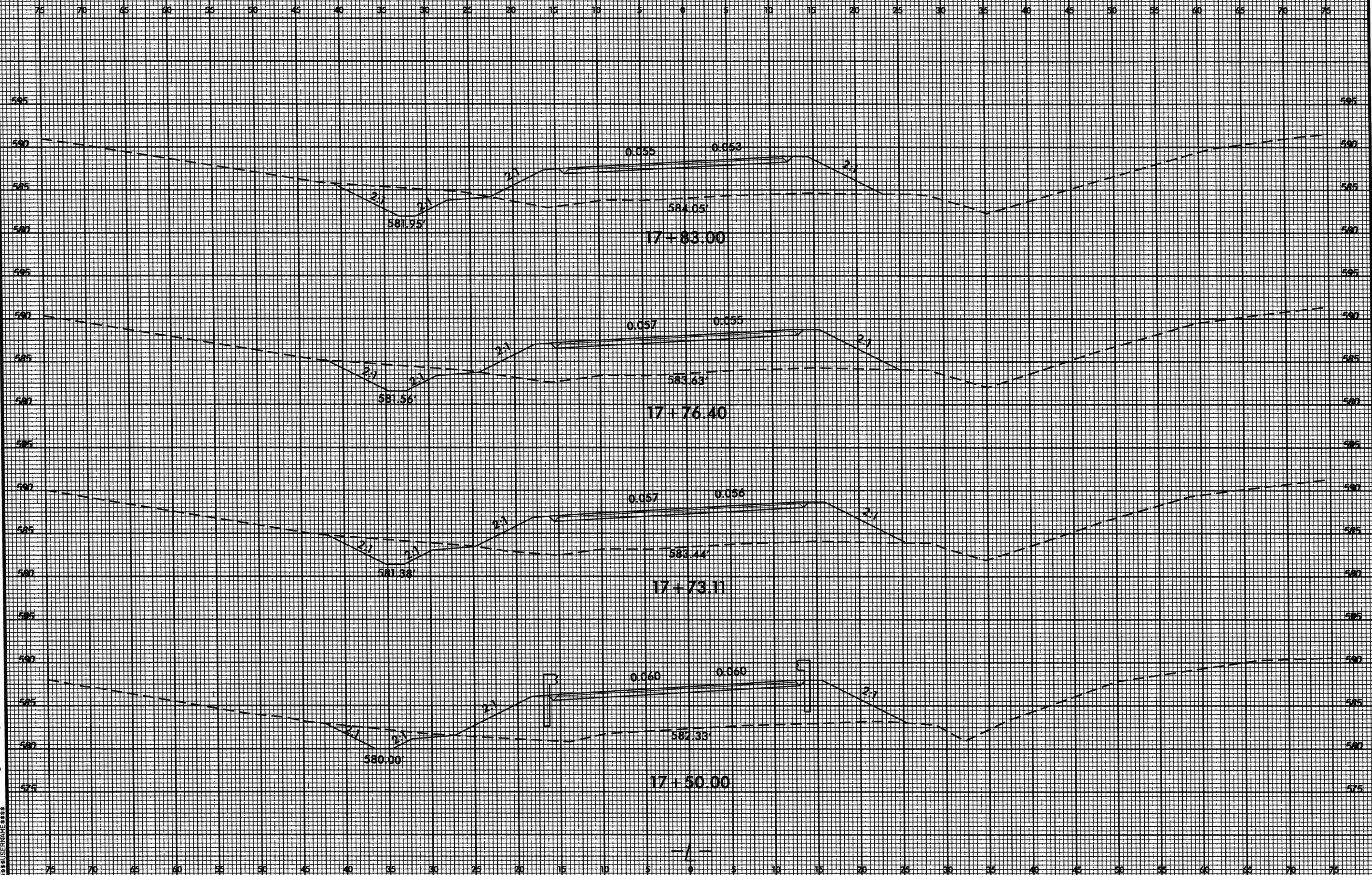
14-NOV-2012 3:46
P:\GIS\B4401\B4401-Modeling\B4401_Rdy_xpl.cm.dgn

B/23/99



14-NOV-2012 3:46
R:\Projects\B4401\B4401.dwg
B4401.dwg

8/23/99



14-NOV-2012 3:46
R:\Projects\Corrado-Modeling\B4401_Rdy_xpl.cm.dgn
R:\Projects\Corrado-Modeling\B4401_Rdy_xpl.cm.dgn

8/23/99
14-NOV-2012 3:46
R:\Projects\B4401\B4401_Std-Modeling\B4401_Rdy_xpl.cm.dgn
830551111

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4401	X-8

