

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

August 6, 2013

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

ATTN: Mr. Andy Williams
NCDOT Division 7 Coordinator

SUBJECT: **Request for Modification of Section 404 Nationwide Permits 13 and 33**
associated with the replacement of Bridge No. 35 over Rattlesnake Creek
on SR 1523 (Blanch Road), Caswell County, North Carolina. Federal Aid
Project No. BRZ-1523 (7), TIP No. B-5162.

REFERENCE: Application for Section 404 Nationwide Permits 13 and 33 and Section
401 Water Quality Certification, dated December 19, 2012

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 35 over Rattlesnake Creek on SR 1523 (Blanch Road) in Caswell County. In December 2012, NCDOT applied for Nationwide Permits 13 and 33 for jurisdictional impacts associated with this project and obtained them via Permit by Default. Since that time, modifications to the project design have resulted in additional jurisdictional impacts that were not previously reported. These new impacts to Rattlesnake Creek include 20 linear feet of bank stabilization impacts and 10 linear feet of temporary stream impacts at the outlet of a lateral V-ditch along the project alignment and 35 linear feet of temporary bank stabilization impacts at the outlet of a lateral V-ditch along the on-site detour route.

Please find enclosed updated versions of the Pre-Construction Notification (PCN) form, permit drawings, and roadway design plans showing these modifications. The Stormwater Management Plan is also enclosed; however, no changes have been made to it since our initial application.

The proposed let date for this project is October 15, 2013, with a let review date of August 27, 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>

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

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,

A handwritten signature in blue ink that reads "E. L. Lusk".Handwritten initials "for" in blue ink.

Debbie Barbour, P.E.
Director of Preconstruction

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 NWP 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. 35 over Rattlesnake Creek on SR 1523 (Blanch Rd.)
2b. County:	Caswell
2c. Nearest municipality / town:	Blanch
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-5162

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:	jsmason@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ 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: 36.5079 (DD.DDDDDD) Longitude: - 79.2932 (-DD.DDDDDD)
1c. Property size:	2.1 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Rattlesnake Creek
2b. Water Quality Classification of nearest receiving water:	C
2c. River basin:	Roanoke
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 1523 (Blanch Road) is classified as a rural minor collector in the Statewide Functional Classification System and is not a National Highway System Route. Land use within the vicinity includes Forested Land, Agriculture, and Low-Density Residential.	
3b. List the total estimated acreage of all existing wetlands on the property: 0 acres	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 160 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 six-span, 120-foot long bridge with a three-span, 138-foot bridge on the existing alignment. Traffic will be maintained via an on-site detour. The detour will be constructed to the south of the existing transportation facility and a temporary bridge will be employed. Two temporary work pads are proposed and, if required, will likely be in place at the same time to allow for quick installation of the drilled piers. Rip rap bank stabilization will be added to both stream banks under the new bridge and to the end of a lateral "V" ditch in the southwestern quadrant. Additionally, temporary rip rap bank stabilization will be placed at the end of a lateral "V" ditch associated with the on-site detour; this rip rap will be removed upon re-grading of the ditch and replaced with coir fiber matting. 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:	☐ 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): 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. Preliminary Jurisdictional Determination form provided with original permit application, date December 19, 2012.	

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. An application for Section 404 Nationwide Permits (NWP) 13 and 33 and Section 401 Water Quality Certification, dated December 19, 2012, was submitted to USACE and NCDWQ. NCDOT obtained the NWPs 13 and 33 via Permit by Default. NCDWQ informed NCDOT that written approval was not required.	
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		
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
2g. Total wetland impacts					0 Perm. 0 Temp.	
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 length (linear feet)
Site 1 ☒ P ☐ T	Bank Stabilization	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	30
Site 1 ☐ P ☒ T	Temporary Fill	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	20
Site 1 ☐ P ☒ T	Temporary Work Pads	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	<0.01 ac.
Site 1 ☒ P ☐ T	Bank Stabilization	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	20
Site 1 ☐ P ☒ T	Temporary Fill	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	10
Site 1 ☐ P ☒ T	Bank Stabilization	Rattlesnake Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	25-30	35
3h. Total stream and tributary impacts						50 ft Perm 65 ft + <0.01 ac.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				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?	☐ 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 ☐ Catawba			☐ Tar-Pamlico ☐ Randleman			☐ Other:		
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			☐ Yes ☐ No								
B2 ☐ P ☐ T			☐ Yes ☐ No								
B3 ☐ P ☐ T			☐ Yes ☐ No								
6h. Total buffer impacts											
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 new bridge will be longer than the existing one; An on-site detour will be employed; however, no permanent wetland or stream impacts will result from its use; A lateral V-ditch will be installed from -L- STA. 14+50 to STA. 16+60 RT; A lateral V-ditch will be installed on the detour from -LDET- STA. 11+95 to STA. 13+60 RT; A Class B rip rap pad will be placed at -L- STA. 16+05 LT at a roadside pipe outlet; A Class B rip rap pad will be place at -LDET- STA. 13+15.5 RT at a roadside pipe outlet.		
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; Design Standards in Sensitive Watersheds will also be employed due to the project's proximity to the Dan River, which is on the North Carolina 2012 Final 303(d) List of Impaired Waters for turbidity.		
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: Bank stabilization and temporary impacts will not incur a loss of Waters of the U.S.; Permanent impacts are less than 150 linear feet and do not require mitigation by DWQ.	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps	
2c. If yes, which mitigation 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:	0 linear feet	
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):	0 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			3 (2 for Catawba)	
Zone 2			1.5	
	6f. Total buffer mitigation required:			0
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).				
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?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	☐ 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, indicate 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? NC Natural Heritage Program data, USFWS website, NCDOT field surveys		
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		
Debbie Barbour, P.E. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	8.6.13 Date



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: B-5162

County(ies): Caswell

Page 1 of 3

General Project Information

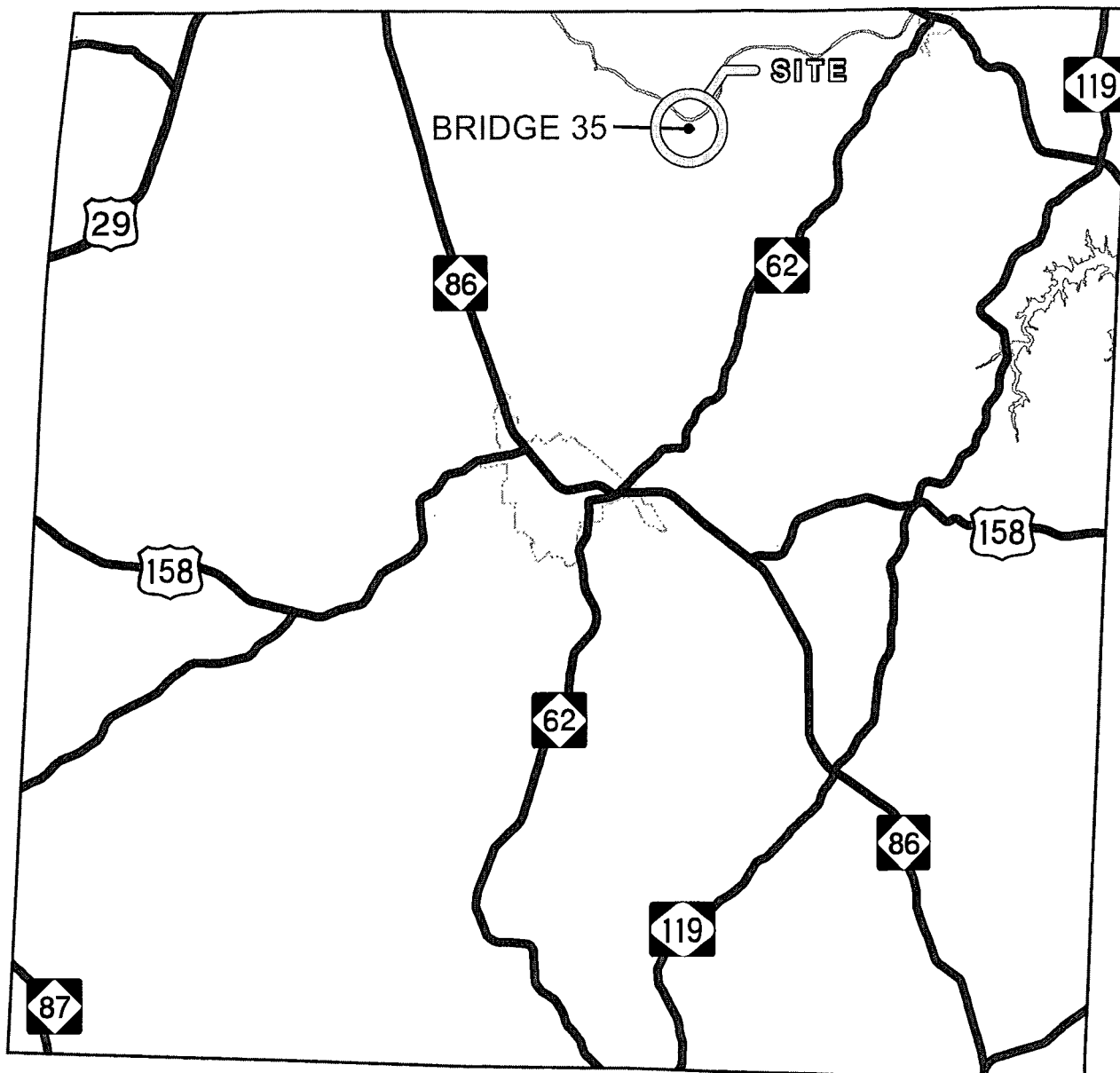
Project No.:	B-5162	Project Type:	Bridge Replacement	Date:	10/26/2012
NCDOT Contact:	Marshall Clawson, PE	Contractor / Designer:	RK&K Engineers - Eleni Riggs, PE		
Address:	NCDOT Hydraulics Unit	Address:	900 Ridgefield Drive		
	1590 Mail Service Center		Suite 350		
	Raleigh, NC 27699-1590		Raleigh, NC 27609		
Phone:	919-707-6713	Phone:	919-878-9560		
Email:	mclawson@ncdot.gov	Email:	eriggs@rkk.com		
City/Town:	Yanceyville	County(ies):	Caswell		
River Basin(s):	Yadkin-Pee Dee	CAMA County?	No		
Primary Receiving Water:	See Environmental Summary	NCDWQ Stream Index No.:	See Environmental Summary		
NCDWQ Surface Water Classification for Primary Receiving Water	Primary:	Class C			
	Supplemental:				
Other Stream Classification:					
303(d) Impairments:	None				
Buffer Rules in Effect	N/A				

Project Description

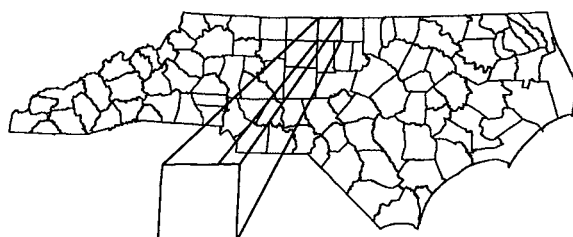
Project Length (lin. Miles or feet):	Total 0.148 miles	Surrounding Land Use:	Rural
	Proposed Project	Existing Site	
Project Built-Upon Area (ac.)	0.38 ac.	0.35 ac.	
Typical Cross Section Description:	2-lanes at 10' each with 3'-11" shoulder		
Average Daily Traffic (veh/hr/day):	Design/Future: 82,900 (2033)	Existing:	50,300 (2013)
General Project Narrative:	This project is replacing the existing structure (#35) on SR 1523. The existing structure is six spans at approximately 20' each span with timber deck on steel I-beam superstructures, approximately 120' long. The proposed bridge is three spans, 1 @ 40', 1 @ 55' and 1 @ 40' with 21" cored slab units, approximately 135' long. A detour structure will be utilized in order to maintain traffic during the demolition and construction of bridge #35. The detour structure will be constructed approximately 40' upstream of the existing location and will be approximately 125' long. The Built Upon Area for the temporary detour = 0.24 acres for a total Built Upon Area when the detour is in place of 0.62 acres.		

References





VICINITY MAP



CASWELL

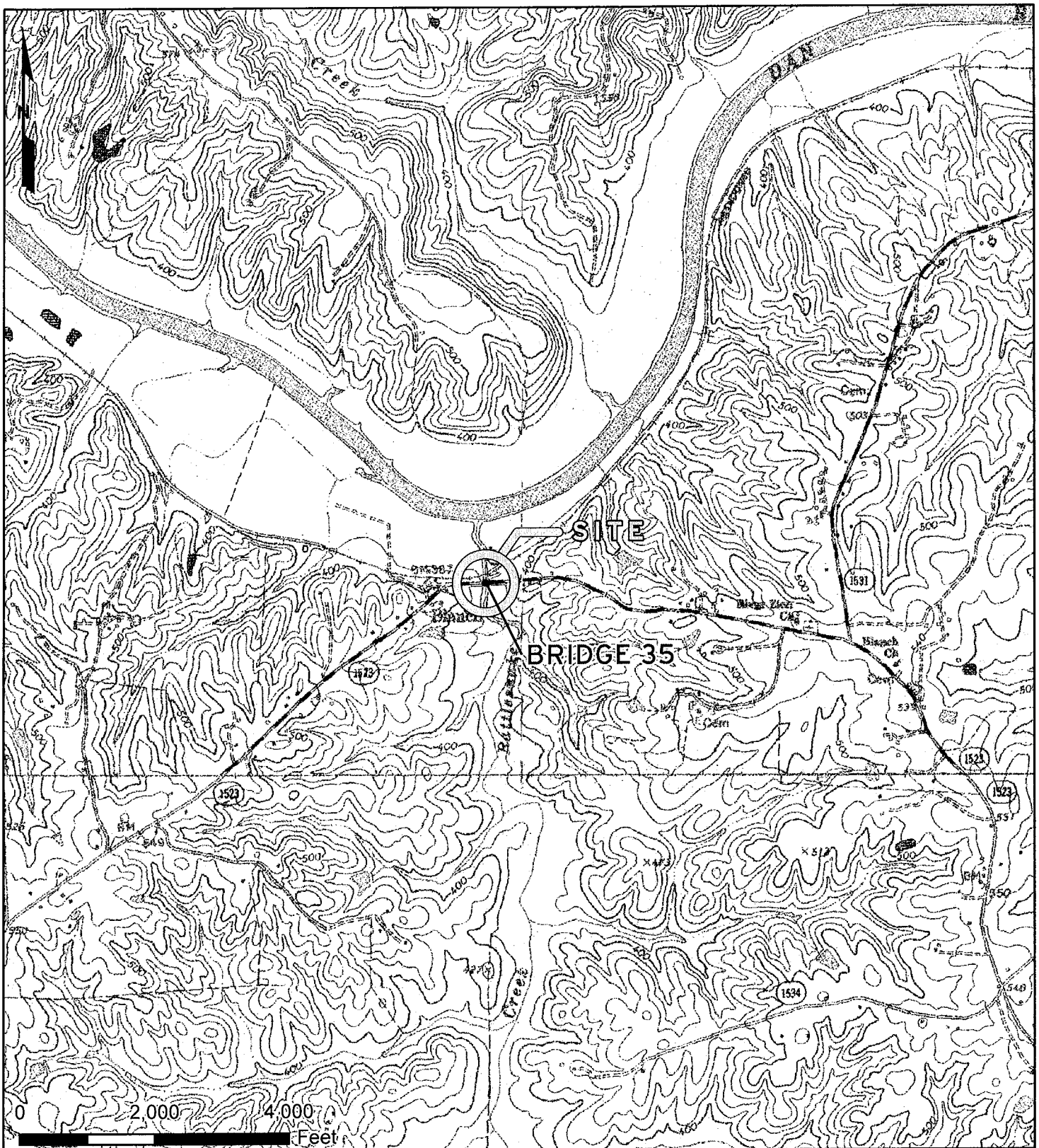
NCDOT

DIVISION OF HIGHWAYS
CASWELL COUNTY

PROJECT: B-5162
BRIDGES NO. 35 OVER
NORTH FORK RATTLESNAKE CREEK
ON SR 1523 (Blanch Road)

SHEET 1

of 11



1 inch = 2,000 feet

LOCATION MAP

NCDOT
DIVISION OF HIGHWAYS
CASWELL COUNTY

PROJECT: B-5162
BRIDGES NO. 35 OVER
NORTH FORK RATTLESNAKE CREEK
ON SR 1523 (Blanch Road)

SHEET 2

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
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5	JOHNNY ALLEN BRANDON & ROBERT EDWARD BRANDON	
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NCDOT

DIVISION OF HIGHWAYS

CASWELL COUNTY

PROJECT: 42337.1.1 (B-5162)

BRIDGE NO. 35 OVER

NORTH FORK RATTLESNAKE CREEK

ON SR 1523 (BLANCH ROAD)

SHEET 3 OF 11

Revised
04/17/13

WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
	-L- 16+75 & 17+05	Bank Stab.						0.01	<0.01	30	20	
		TEMP. WORK PAD							<0.01			
	-L- 16+70 RT	Bank Stab.						<0.01	<0.01	20	10	
	-LDET- 13+70 RT	Bank Stab.							<0.01		35	
TOTALS:								0.02	0.02	50	65	

Bank stabilization required due to ditch discharging directly down the slope of the bank.

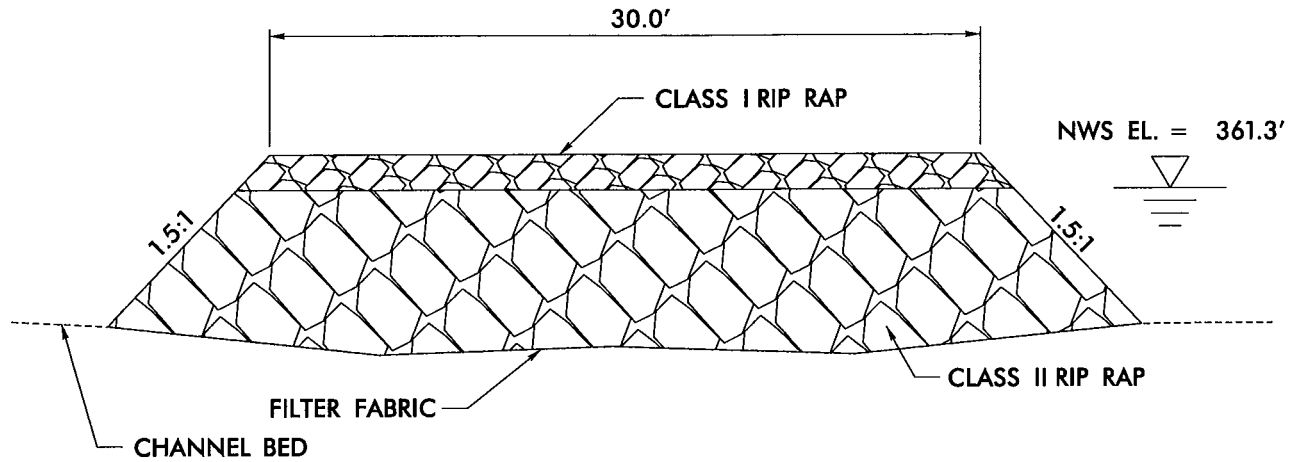
The ditch on -LDET- is temporary. The rip rap bank stabilization should be removed following the regrading of the ditch and coir fiber matting should be placed on the slope for stabilization.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

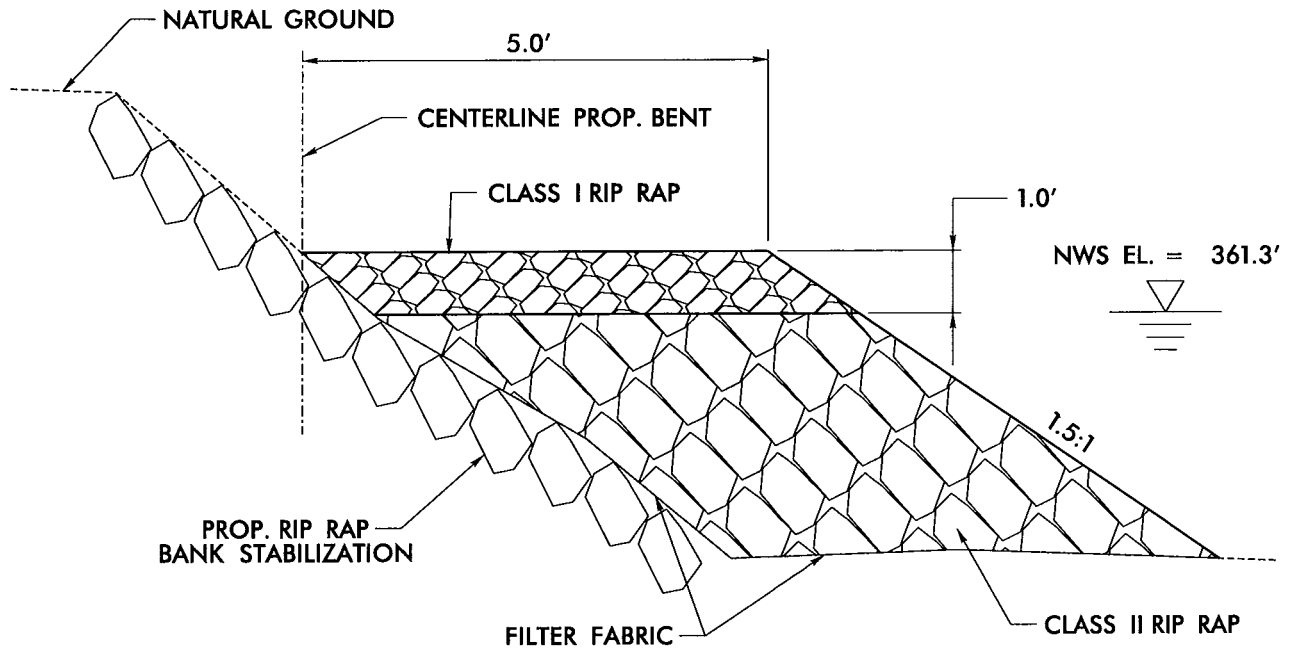
CASWELL COUNTY
WBS - 42337.1.1 (B-5162)
Revised
7/19/2013

TEMPORARY WORK PAD DETAIL

NOT TO SCALE



SECTION A-A



SECTION B-B

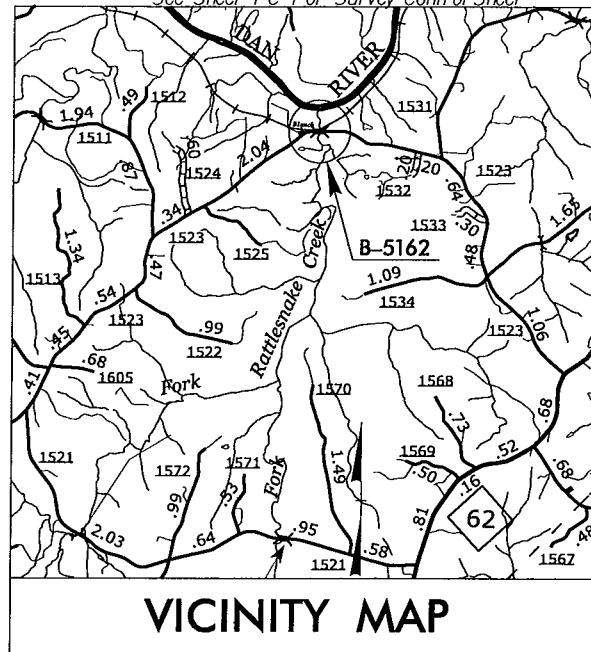
NCDOT
DIVISION OF HIGHWAYS
CASWELL COUNTY
PROJECT: 42337.1.1 (B-5162)
BRIDGE NO. 35 OVER
NORTH FORK RATTLESNAKE CREEK
ON SR 1523 (BLANCH ROAD)

4/17/2013
R:\Hydraulics\PERMITS_Environmental\Drawings\b5162_hyd_prm_tsh.dgn
eriggs

TIP PROJECT: B-5162

CONTRACT:

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



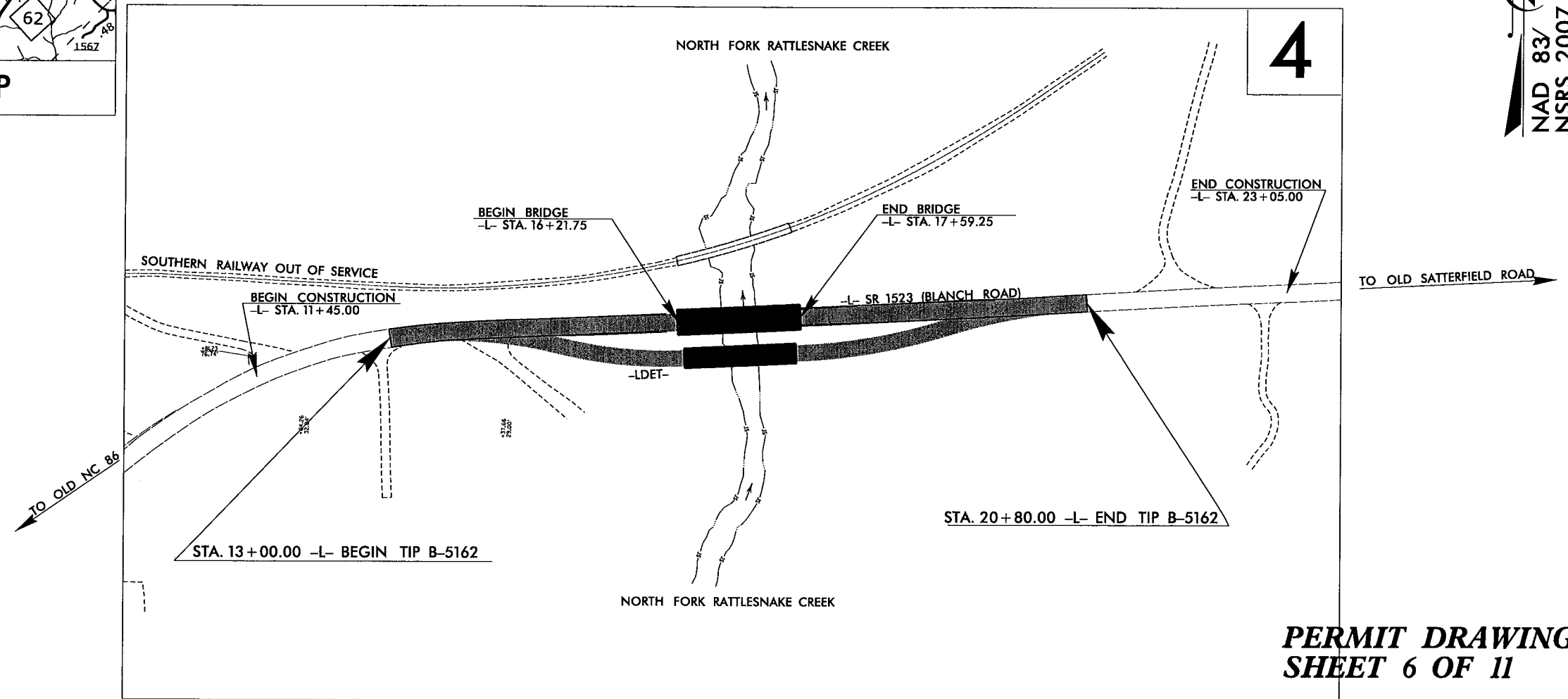
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

LOCATION: BRIDGE NO. 35 OVER NORTH FORK RATTLESNAKE CREEK
ON SR 1523 (BLANCH ROAD)

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

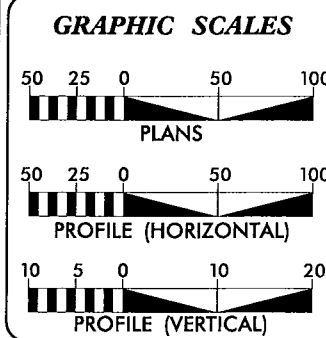
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5162	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42337.1.1	BRZ-1523(7)	PE	



PERMIT DRAWING
SHEET 6 OF 11

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA
ADT 2013 = 325
ADT 2035 = 500
DHV = 10 %
D = 60 %
T = 5 %*
V = 55 MPH
V_{DET} = 35 MPH
*TTST = 2% DUAL = 3%
FUNC CLASS =
RURAL COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5162 = 0.122 MILES
LENGTH STRUCTURE TIP PROJECT B-5162 = 0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-5162 = 0.148 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 19, 2012

LETTING DATE:
OCTOBER 15, 2013

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
ENGINEER

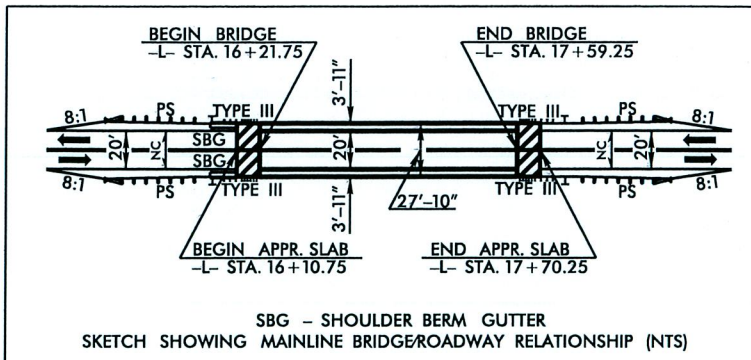
SIGNATURE: _____ P.E.



8/17/99

7/19/2013
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REVISIONS

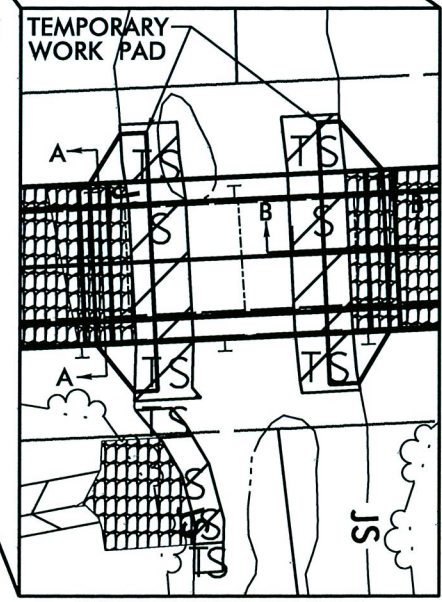
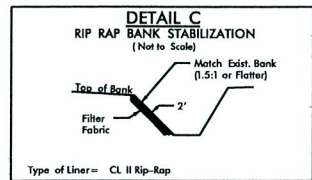
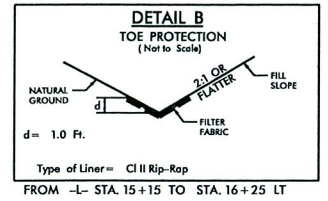
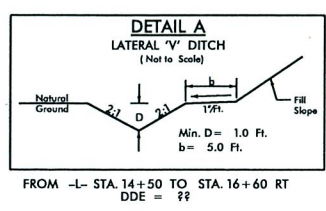
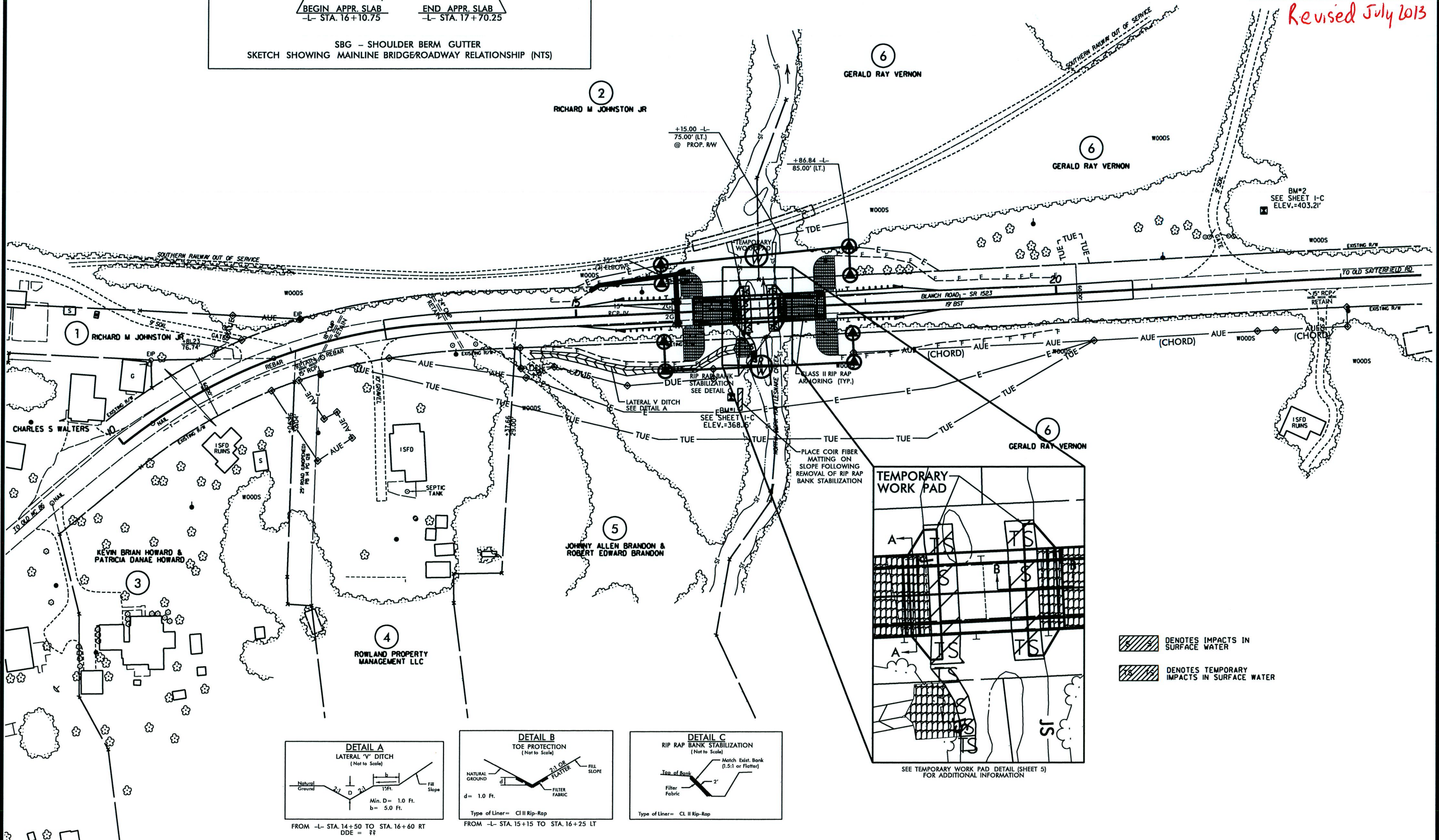


-L-		
PI Sta 11+86.20 $\Delta = 35' 38" 31.5' (RT)$ $D = 9' 53' 31.6'$ $L = 360.3'$ $T = 186.20'$ $R = 579.2'$	PI Sta 19+98.06 $\Delta = 0' 26' 59.9' (LT)$ $D = 0' 06' 23.5'$ $L = 422.44'$ $T = 211.22'$ $R = 53789.13'$	PI Sta 23+06.93 $\Delta = 1' 22' 35.2' (RT)$ $D = 0' 52' 53.3'$ $L = 156.15'$ $T = 78.08'$ $R = 6,500.00'$
SE SEE PLANS		

NAD 83/NRCS 2007

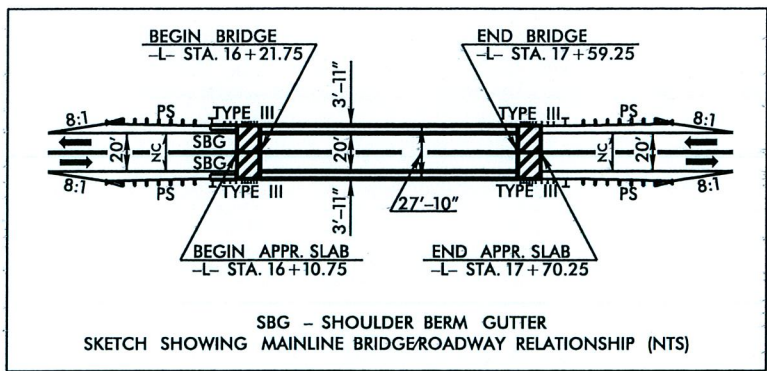
PROJECT REFERENCE NO.	SHEET NO.
B-5162	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PERMIT DRAWING	
SHEET 7 OF 11	

Revised July 2013



SEE SHEET 6 FOR -L- PROFILE
SEE SHEET S-1 THRU S-7 FOR STRUCTURE PLANS

8/17/99
7/19/2013
R:\Hydraulics\PERMITS\Environmental\Drawings\B5162_bud_p.m.4 CON.dgn

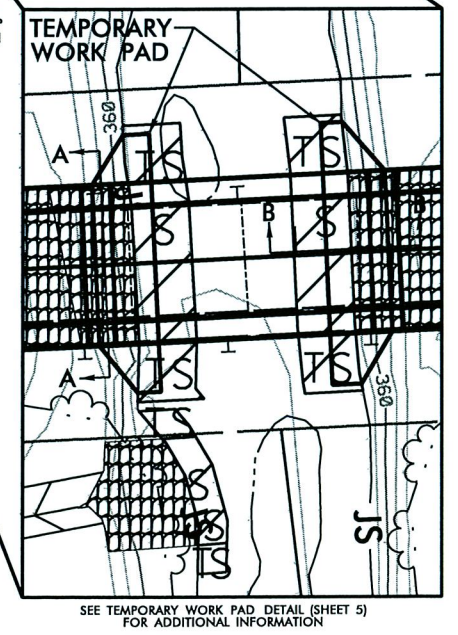
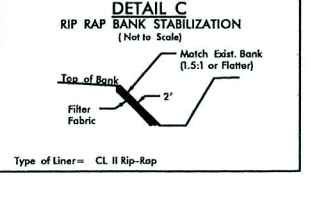
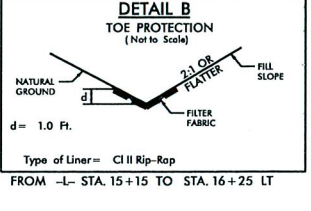
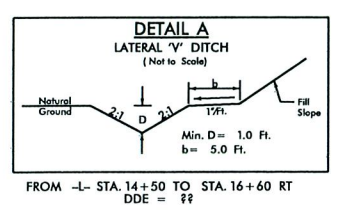
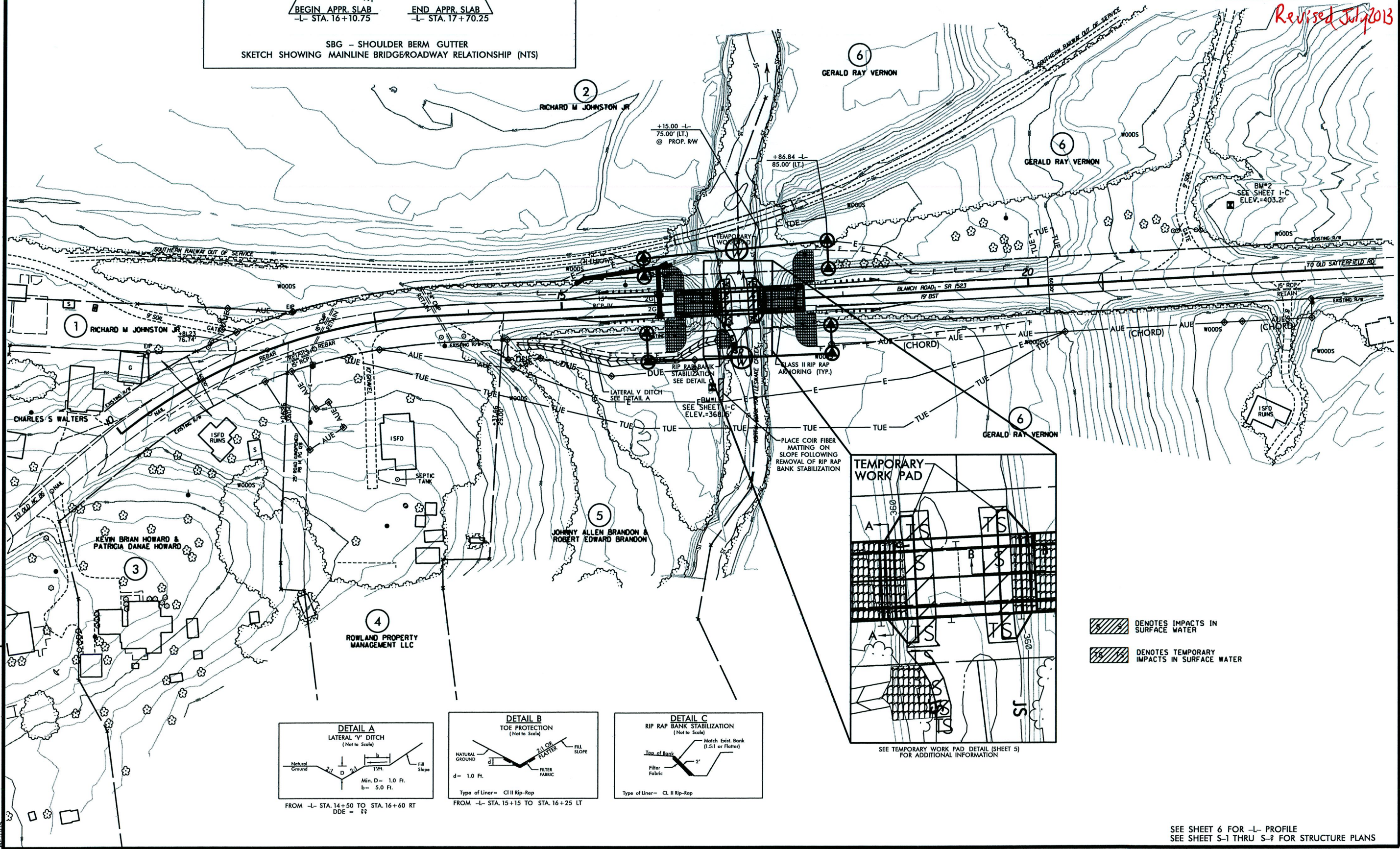


-L-		
PI Sta 11+86.20 Δ = 35° 38' 31.5" (RT) D = 9° 53' 31.6" L = 360.31' T = 186.20' R = 579.21'	PI Sta 19+98.06 Δ = 0° 26' 59.9" (LT) D = 0° 06' 23.5" L = 422.44' T = 211.22' R = 5378913'	PI Sta 23+06.93 Δ = 1° 22' 35.2" (RT) D = 0° 52' 53.3" L = 156.15' T = 78.08' R = 6,500.00'
SE SEE PLANS		

NAD 83/NRS 2007

PROJECT REFERENCE NO. B-5162	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 8 OF 11	

Revised July 2013

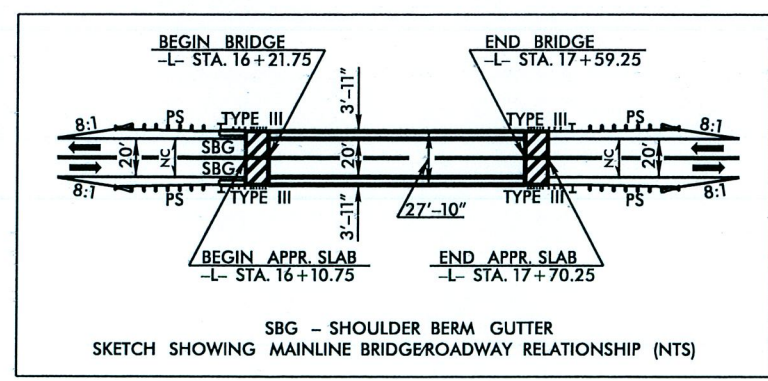


SEE SHEET 6 FOR -L- PROFILE
SEE SHEET S-1 THRU S-2 FOR STRUCTURE PLANS

$$V_{\text{DESIGN}} = 35 \text{ MPH}$$


SEE SHEET 6 FOR -L- PROFILE
SEE SHEET S-1 THRU S-? FOR STRUCTURE PLANS

8/17/99
7/19/2013
R:\Hydraulics\PERMITS\Environmental\Drawings\B5162_hyd_pcm_5.CON.dgn



-L-			-LDET-			
PI Sta 11+86.20	PI Sta 19+98.06	PI Sta 23+06.93	PI Sta 10+92.79	PI Sta 12+53.38	PI Sta 15+37.40	PI Sta 16+98.03
$\Delta = 35^\circ 38' 31.5''$ (RT)	$\Delta = 0^\circ 26' 59.9''$ (LT)	$\Delta = 1^\circ 22' 35.2''$ (RT)	$\Delta = 2^\circ 39' 42.9''$ (RT)	$\Delta = 16^\circ 25' 46.9''$ (LT)	$\Delta = 14^\circ 28' 12.9''$ (LT)	$\Delta = 14^\circ 09' 39.2''$ (RT)
D = 9' 53' 31.6"	D = 0' 06' 23.5"	D = 0' 52' 53.3"	D = 1' 48' 48.8"	D = 1' 48' 48.8"	D = 8' 54' 38.5"	D = 8' 54' 38.5"
L = 360.31'	L = 422.44'	L = 156.15'	L = 183.36'	L = 139.07'	L = 162.39'	L = 158.92'
T = 186.20'	T = 211.22'	T = 78.08'	T = 92.79'	T = 70.02'	T = 81.63'	T = 79.87'
R = 579.21'	R = 53789.13'	R = 6500.00'	R = 485.00'	R = 485.00'	R = 643.00'	R = 643.00'
SE SEE PLANS			SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

V_{DESIGN} = 35 MPH

PROJECT REFERENCE NO. **B-5162** SHEET NO. **4**

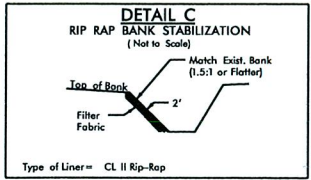
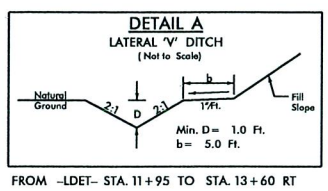
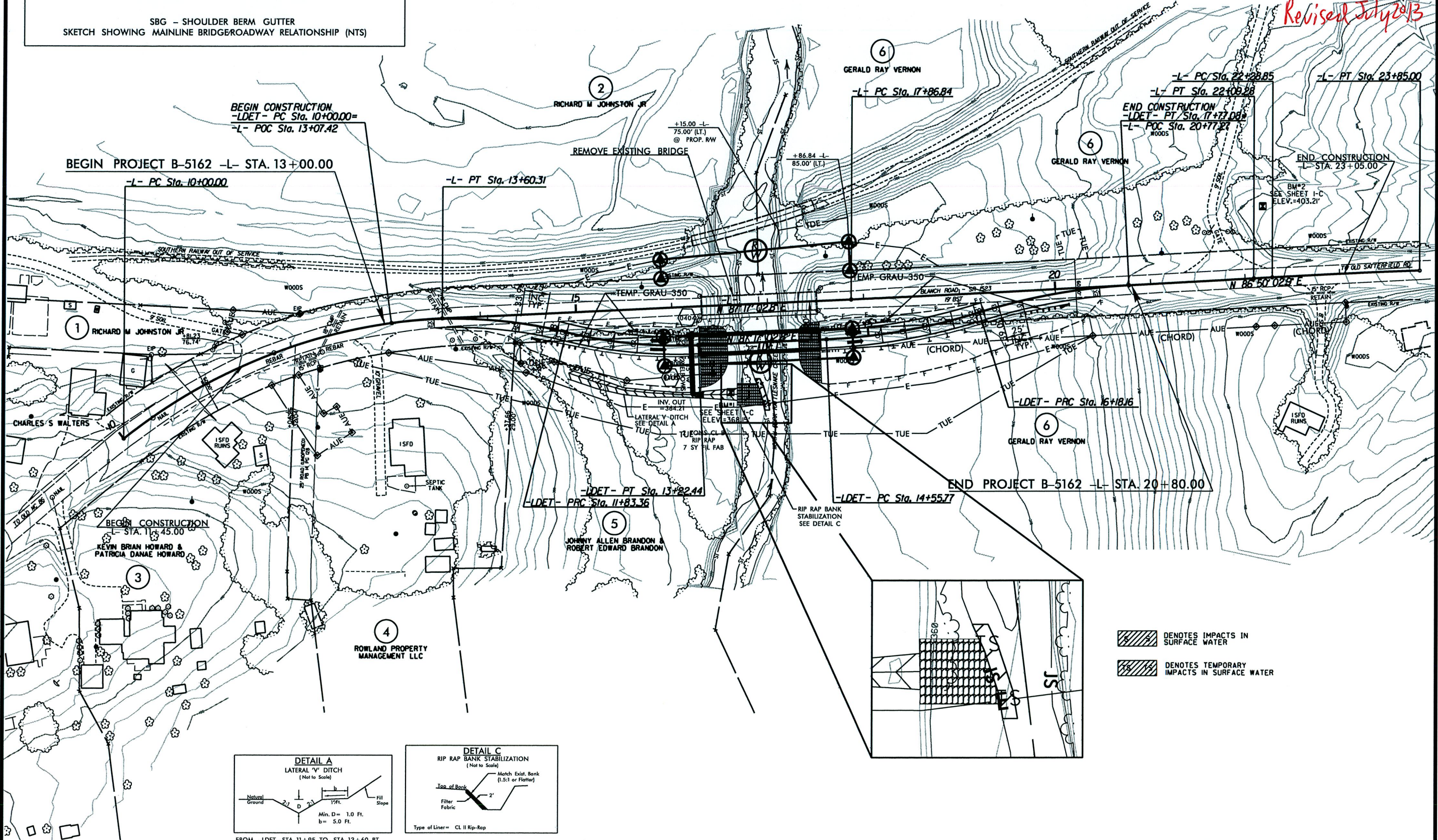
RAW SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 10 OF 11

Revised July 2013



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 6 FOR -L- PROFILE
SEE SHEET S-1 THRU S-7 FOR STRUCTURE PLANS

5/28/99

A:\7/2013\Hydraulics\PERMITS\Environmental\Drawings\B5162.hyd.prm-pfl.dgn

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 3,700	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 370J	FT
BASE DISCHARGE	= 5,517	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 371.97	FT
OVERTOPPING DISCHARGE	= 19,000	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 382.3	FT
NORMAL W.S.ELEVATION	= 361.3	FT
DATE OF SURVEY	= 1/16/2012	
W.S.ELEVATION AT DATE OF SURVEY	= 358.5	FT

PROJECT REFERENCE NO.	B-5162	SHEET NO.	6
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PERMIT DRAWING SHEET 11 OF 11			

-L-

BM2 ELEVATION=403.21'
N 1004051 E 1914316
L STATION 22+23.00 74' LEFT
RR SPIKE IN 15" OAK

END RESURFACING
-L- STA. 20+80.00

END GRADE -L- STA. 20+00.00
EL = 386.76'
(INCLUDES 2.5" RESURFACING)

PI = 19+20.00
EL = 383.87'
VC = 160'
K = 52 (DS > 35 MPH)

END GRADE -L- STA. 14+75.00
EL = 383.30'
(INCLUDES 2.5" RESURFACING)

BEGIN RESURFACING
-L- STA. 13+00.00

BEGIN GRADE -L- STA. 14+75.00
EL = 383.30'
(INCLUDES 2.5" RESURFACING)

PI = 15+50.00
EL = 381.99'
VC = 125'
K = 55 (DS > 35 MPH)

END LATERAL V DITCH
-L- STA. 16+60 RT.
EL = 362.77'

PI = -L- STA. 15+50 RT.
EL = 364.20'

BEGIN LATERAL V DITCH
-L- STA. 14+50 RT.
EL = 375.20'

TEMP. WORK PAD EXTENDS
5' BEYOND PROP. BENT

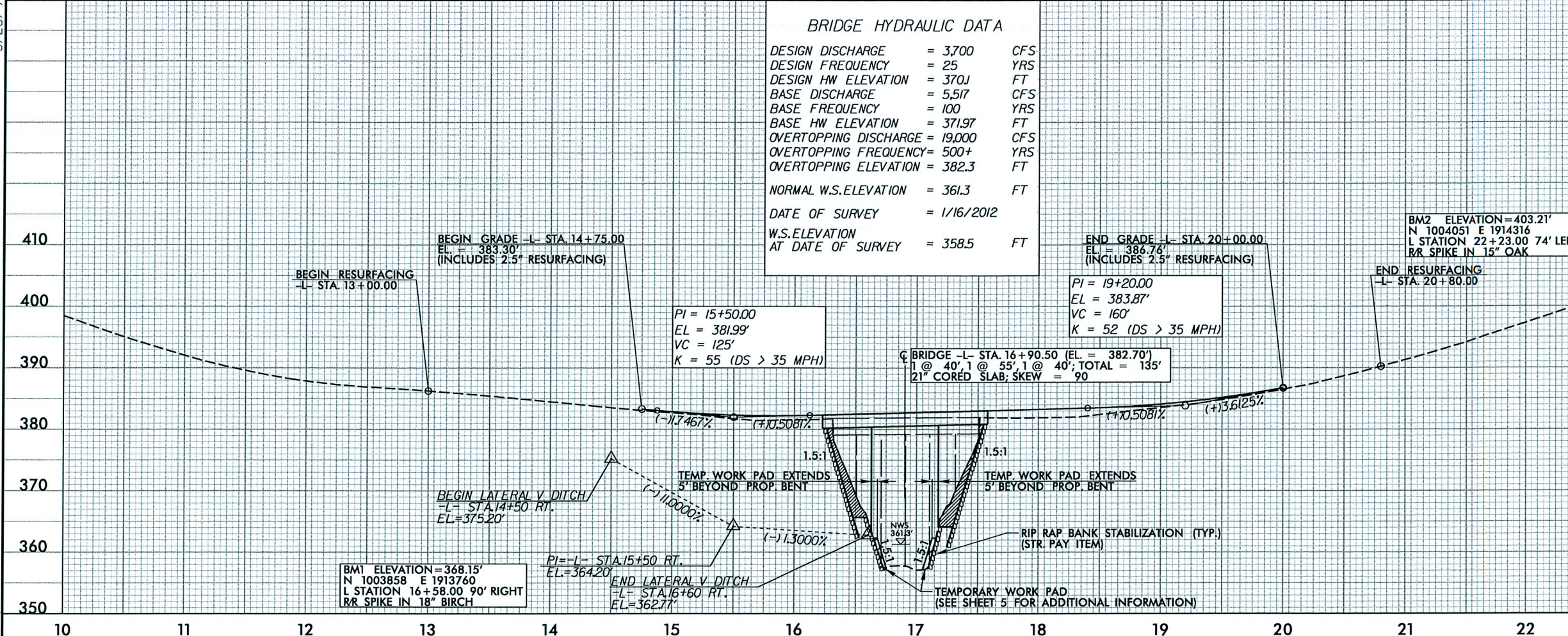
TEMP. WORK PAD EXTENDS
5' BEYOND PROP. BENT

RIP RAP BANK STABILIZATION (TYP.)
(STR. PAY ITEM)

TEMPORARY WORK PAD
(SEE SHEET 5 FOR ADDITIONAL INFORMATION)

CL BRIDGE -L- STA. 16+90.50 (EL. = 382.70')
1 @ 40', 1 @ 55', 1 @ 40'; TOTAL = 135'
21" CORED SLAB; SKEW = 90

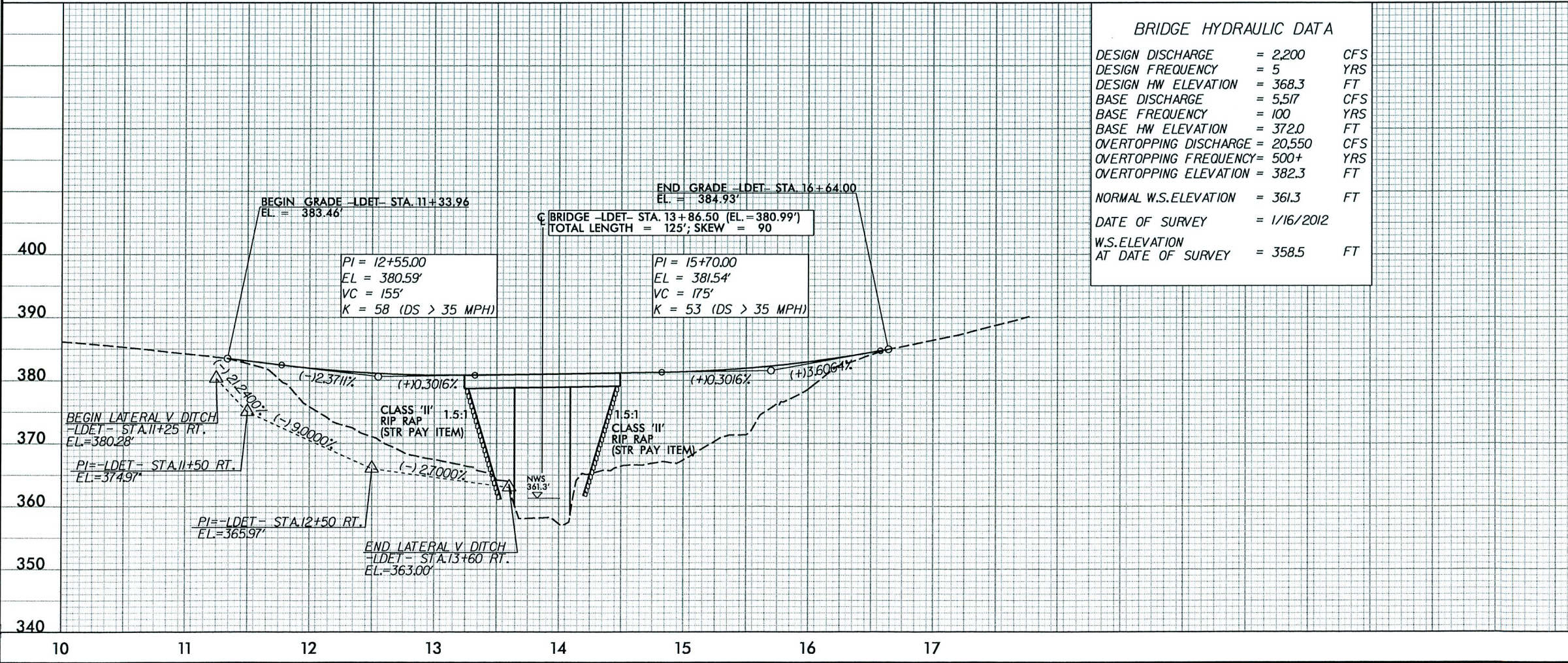
DITCH LEGEND
RIGHT DITCH -----
SEE SHEET 4 FOR PLAN VIEW



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2,200	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 368.3	FT
BASE DISCHARGE	= 5,517	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 372.0	FT
OVERTOPPING DISCHARGE	= 20,550	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 382.3	FT
NORMAL W.S.ELEVATION	= 361.3	FT
DATE OF SURVEY	= 1/16/2012	
W.S.ELEVATION AT DATE OF SURVEY	= 358.5	FT

-LDET-

DITCH LEGEND
RIGHT DITCH -----
SEE SHEET 5 FOR PLAN VIEW

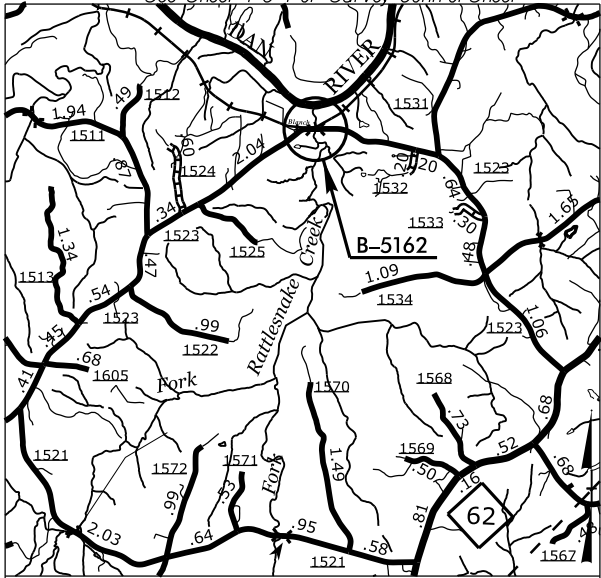


09/08/99

TIP PROJECT: B-5162

CONTRACT: C203252

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



VICINITY MAP

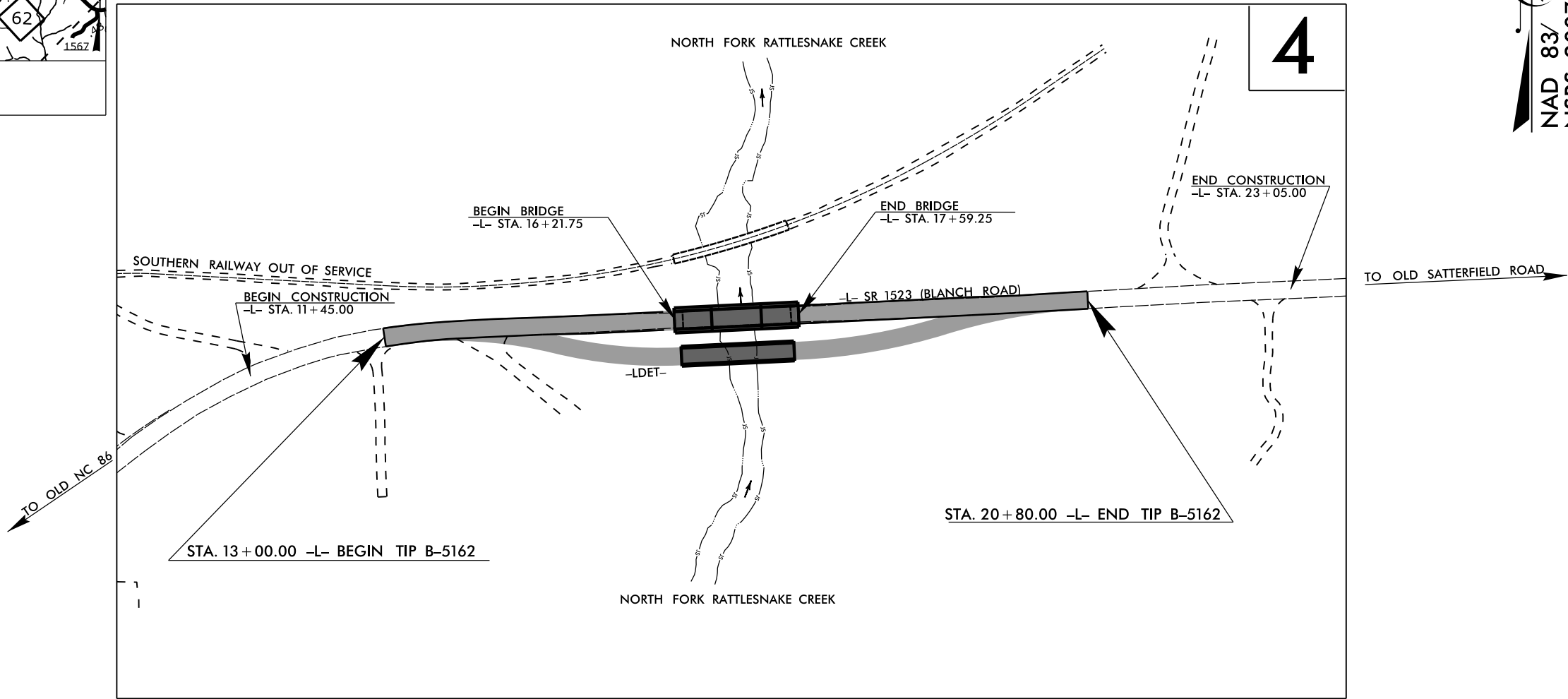
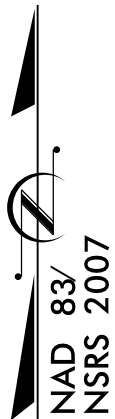
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

LOCATION: BRIDGE NO. 35 OVER NORTH FORK RATTLESNAKE CREEK
ON SR 1523 (BLANCH ROAD)

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

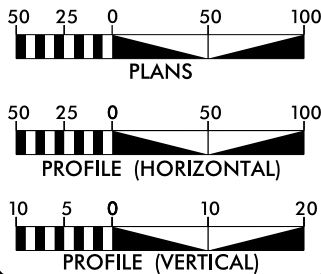
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5162	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42337.1.1	BRZ-1523(7)	PE	
42337.2.1	BRZ-1523(7)	R/W & UTILITIES	



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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2013 = 325
ADT 2035 = 500
DHV = 10 %
D = 60 %
T = 5 %*
V = 55 MPH
V_{DET} = 35 MPH
*TTST = 2% DUAL = 3%
FUNC CLASS =
RURAL COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5162 = 0.122 MILES
LENGTH STRUCTURE TIP PROJECT B-5162 = 0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-5162 = 0.148 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 22, 2012

LETTING DATE:
OCTOBER 15, 2013

JAMES A. SPEER, PE
PROJECT ENGINEER

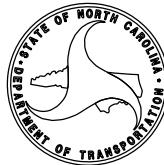
DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.



Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----x
Property Monument	□ ECU
Parcel/Sequence Number	②3
Existing Fence Line	-x-x-x-
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: Area or Site	☠☠
Potential Soil Contamination: Area or Site	☠☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
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	-----
False Sump	▽

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◇
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete C/A 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
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	⊕
Storm Sewer	---S---

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	-----
Recorded U/G Telephone Cable	---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	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	---A/G Water---

TV:

TV Satellite Dish	✕
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	-----
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:

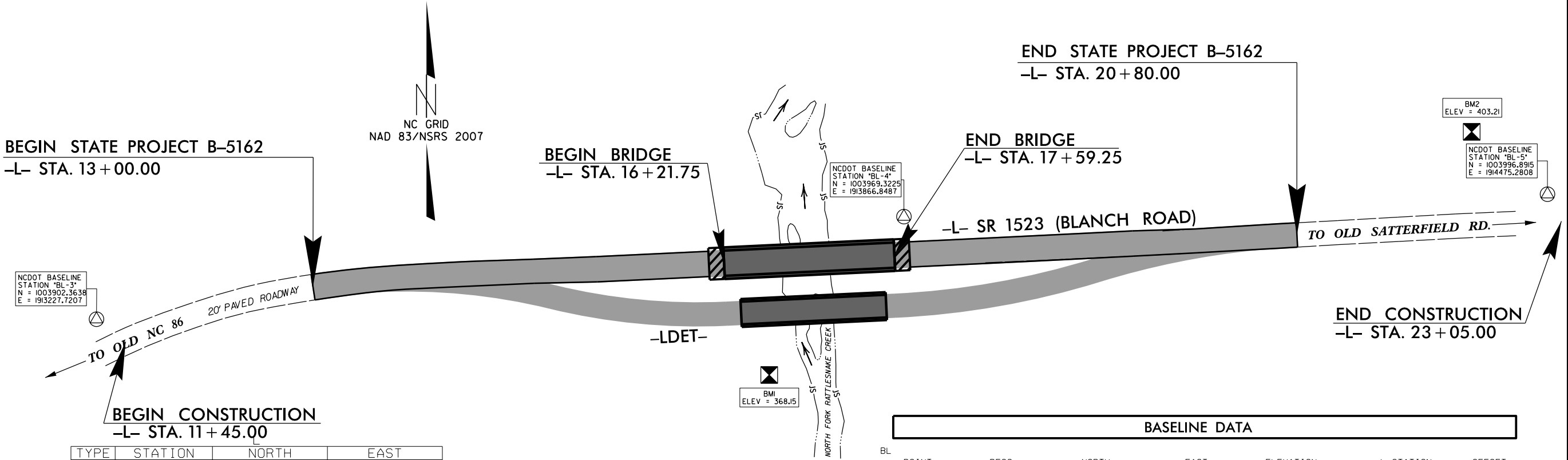
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
Recorded SS Forced Main Line	---FSS---
Designated SS Forced Main Line (S.U.E.*)	---FSS---

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	---TUTL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.

SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5162	1-C
Location and Surveys	



TYPE	STATION	NORTH	EAST
PC	10+00.00	1003809.7367	1913127.0694
PT	13+60.31	1003934.1085	1913459.0647
PC	17+86.84	1003954.3189	1913885.1172
PT	22+09.28	1003975.9922	1914306.9977
PC	22+28.85	1003977.0731	1914326.5409
PT	23+85.00	1003983.8233	1914482.5438

BASELINE DATA						
BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION OFFSET
2		B-5162-2	1003404.6340	1912680.7610	439.23	OUTSIDE PROJECT LIMITS
3		BL-3	1003902.3638	1913227.7207	387.50	11+31.73 25.75 LT
4		BL-4	1003969.3225	1913866.8487	380.39	17+69.30 15.85 LT
5		BL-5	1003996.8915	1914475.2808	407.64	23+78.17 13.29 LT

PRELIMINARY NEW R/W MONUMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	15+90.00	29.64	1003915.3853	1913689.9028
L	15+90.00	60.00	1003885.0594	1913691.3414
L	17+86.84	60.00	1003894.3863	1913887.9602
L	17+86.84	30.00	1003924.3526	1913886.5387
L	17+86.84	-58.71	1004012.9634	1913882.3354
L	17+86.84	-30.00	1003984.2853	1913883.6957

PRELIMINARY PERMANENT DRAINAGE EASEMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	15+90.00	-50.00	1003994.9359	1913686.1292
L	15+90.00	-11.45	1003956.4251	1913687.9561

BENCHMARK DATA	
BM1	ELEVATION = 368.15 N 1003858 E 1913760 L STATION 16+58.00 90 RIGHT R/R SPIKE IN 18" BIRCH
BM2	ELEVATION = 403.21 N 1004051 E 1914316 L STATION 22+23.00 74 LEFT R/R SPIKE IN 15" OAK

PRELIMINARY PERMANENT AERIAL UTILITY EASEMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+58.00	-57.16	1003942.5071	1913240.6385
L	11+45.00	-39.00	1003920.2491	1913234.9200
L	11+57.00	-30.00	1003917.0448	1913250.1641
L	11+66.00	30.00	1003864.9936	1913281.3323
L	11+98.00	30.00	1003875.5462	1913309.7767
L	11+88.00	115.00	1003792.4230	1913329.5637
L	12+39.00	103.00	1003816.1384	1913365.5409
L	12+29.00	73.00	1003842.8613	1913349.4867
L	12+12.00	76.00	1003835.7674	1913336.1415
L	13+00.00	30.00	1003898.4664	1913403.6099
L	14+45.00	60.00	1003878.1889	1913546.5043
L	14+75.00	50.00	1003889.5991	1913575.9967
L	17+86.84	50.00	1003904.3751	1913887.4865
L	20+37.00	50.00	1003916.8211	1914137.5693
L	22+09.28	50.00	1003926.0685	1914309.7590
L	22+28.85	50.00	1003927.1494	1914329.3022
L	23+05.00	50.00	1003930.8805	1914404.7730
L	23+05.00	30.00	1003950.8615	1914403.9025

PRELIMINARY PERMANENT DRAINAGE UTILITY EASEMENTS				
ALIGN	STATION	OFFSET	NORTH	EAST
L	14+40.00	28.88	1003909.0332	1913540.0355
L	14+40.00	50.00	1003887.9407	1913541.0360
L	15+50.00	73.00	1003870.1787	1913652.0023
L	16+40.00	70.00	1003877.4398	1913741.7591
L	16+40.00	60.00	1003887.4286	1913741.2852
L	14+75.00	50.00	1003889.5991	1913575.9967

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5162-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 1003404.6341(FT) EASTING: 1912680.7611(FT) ELEVATION: 439.23'(FT) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999034608 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5162-2" TO -L- STATION 13+00.00 IS N 53°54'59" E 888.83' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

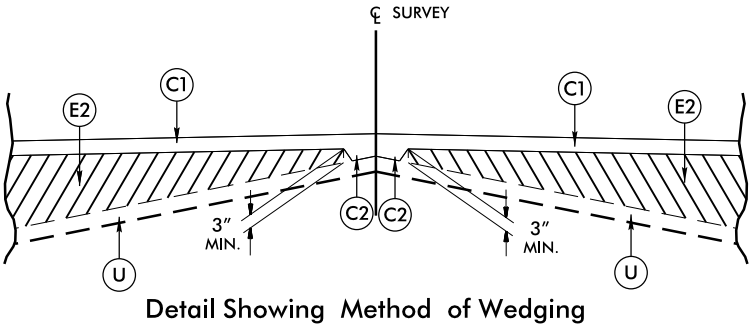
HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

B5162-LS-CONTROL.TXT

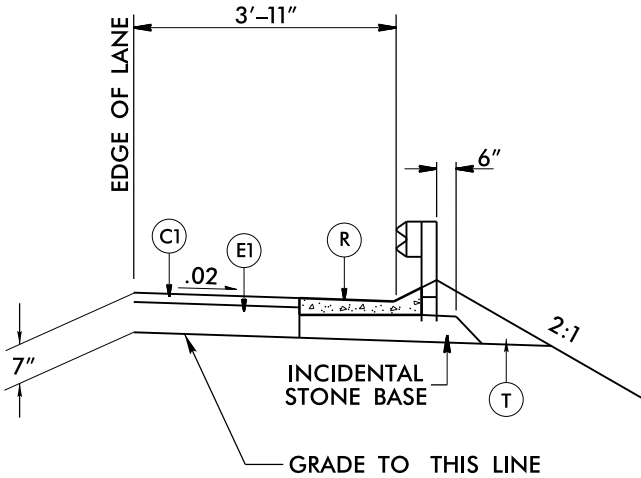
SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.
- NOTE: DRAWING NOT TO SCALE**

PROJECT REFERENCE NO.		SHEET NO.	
B-5162		2	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

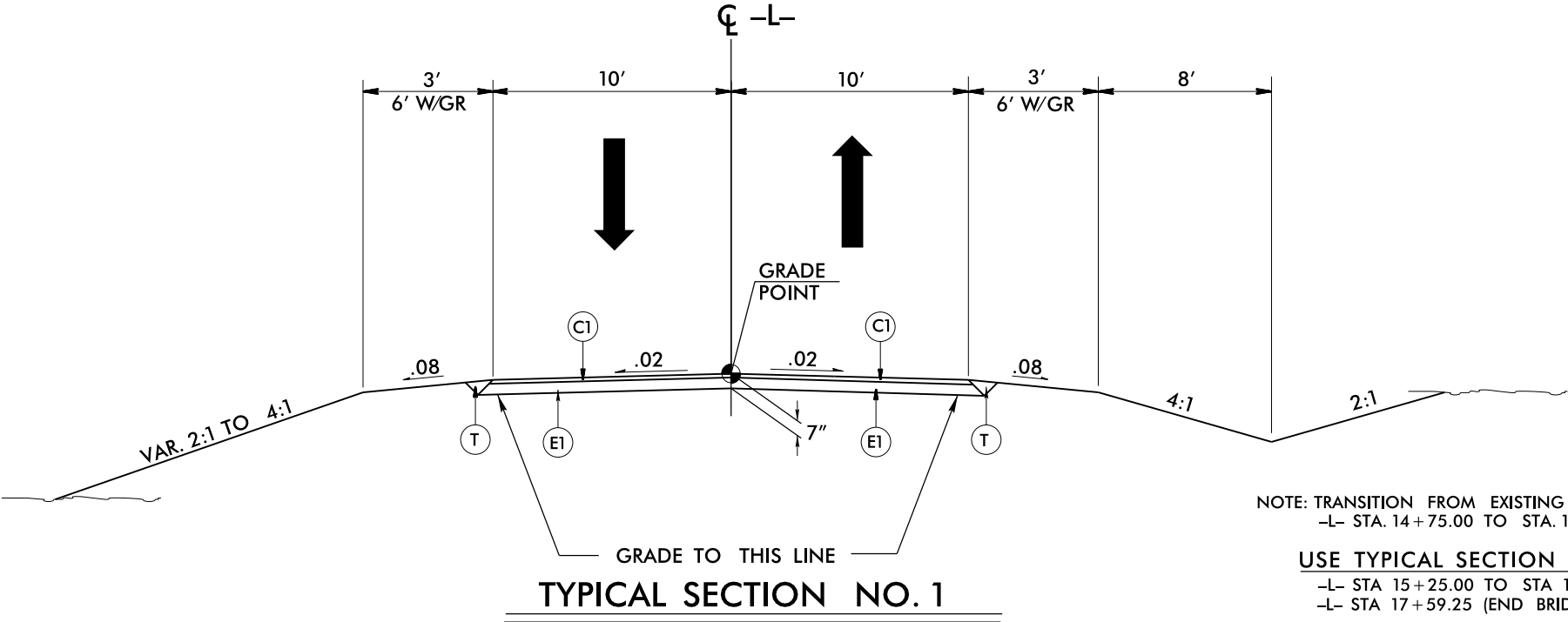


PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 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.
J	6" AGGREGATE BASE COURSE
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
-L- STA 16+00.00 TO BEGIN APPROACH SLAB LT.
-L- STA 16+00.00 TO BEGIN APPROACH SLAB RT.
END OF APPROACH SLAB TO -L- STA 17+71.75 LT.
END OF APPROACH SLAB TO -L- STA 17+71.75 RT.



NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
-L- STA. 14+75.00 TO STA. 15+25.00

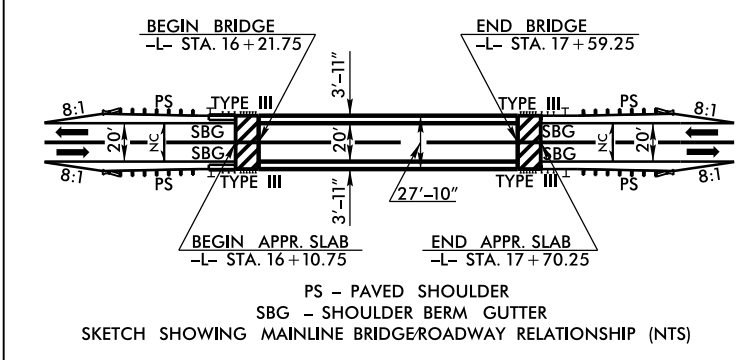
USE TYPICAL SECTION NO. 1 AS FOLLOWS
-L- STA 15+25.00 TO STA 16+21.75 (BEGIN BRIDGE)
-L- STA 17+59.25 (END BRIDGE) TO STA 19+50.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING
-L- STA. 19+50.00 TO STA. 20+00.00

REVISIONS
B.M. REVISION 4-19-13 (DMG) - THE PROPERTY LINE BETWEEN PARCELS 5, JOHNNY ALLEN BRANDON & ROBERT EDWARD BRANDON AND PARCEL 6 (GERALD RAY VERNON) WAS RELOCATED TO THE CENTER OF THE CREEK.

8/17/99

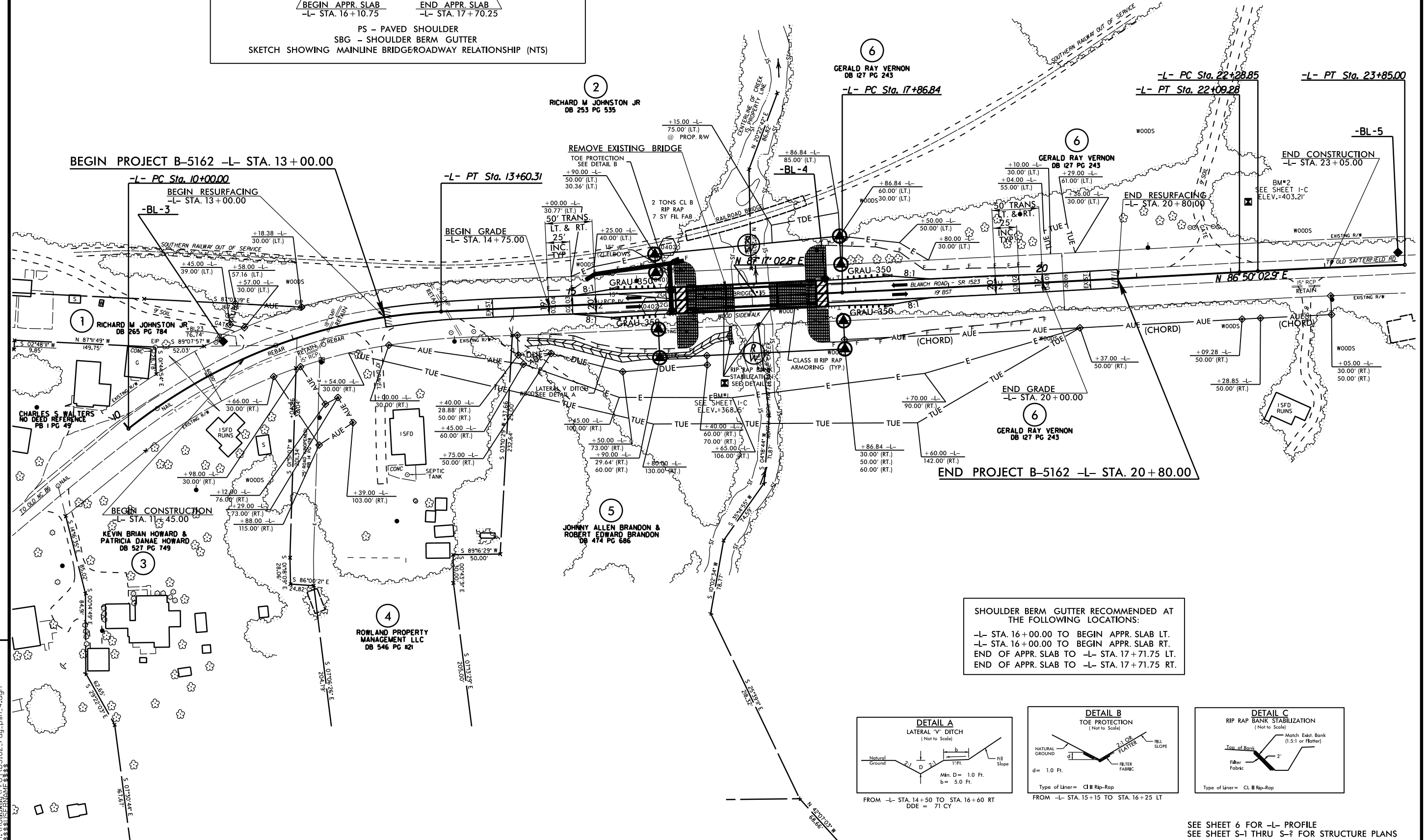
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B5162.DWG



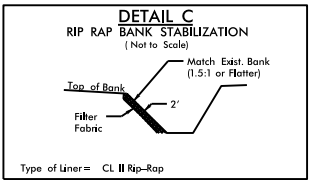
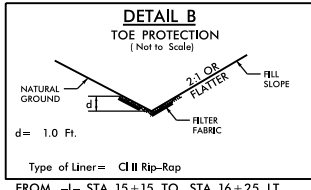
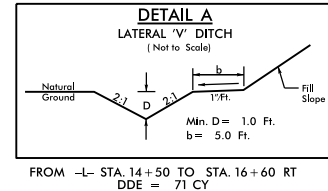
-L-		
PI Sta 11+86.20 $\Delta = 35^\circ 38' 31.5''$ (RT) $D = 9^\circ 53' 31.6''$ $L = 360.31'$ $T = 186.20'$ $R = 579.21'$	PI Sta 19+98.06 $\Delta = 0^\circ 26' 59.9''$ (LT) $D = 0^\circ 06' 23.5''$ $L = 422.44'$ $T = 211.22'$ $R = 53789.13'$	PI Sta 23+06.93 $\Delta = 1^\circ 22' 35.2''$ (RT) $D = 0^\circ 52' 53.3''$ $L = 156.15'$ $T = 78.08'$ $R = 6500.00'$
SE SEE PLANS		

NAD 83/NSRS 2007

PROJECT REFERENCE NO. B-5162	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



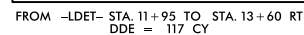
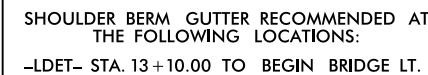
SHOULDER BERM GUTTER RECOMMENDED AT THE FOLLOWING LOCATIONS:
-L- STA. 16+00.00 TO BEGIN APPR. SLAB LT.
-L- STA. 16+00.00 TO BEGIN APPR. SLAB RT.
END OF APPR. SLAB TO -L- STA. 17+71.75 LT.
END OF APPR. SLAB TO -L- STA. 17+71.75 RT.



SEE SHEET 6 FOR -L- PROFILE
SEE SHEET S-1 THRU S-2 FOR STRUCTURE PLANS


$$V_{\text{DESIGN}} = 35 \text{ MPH}$$

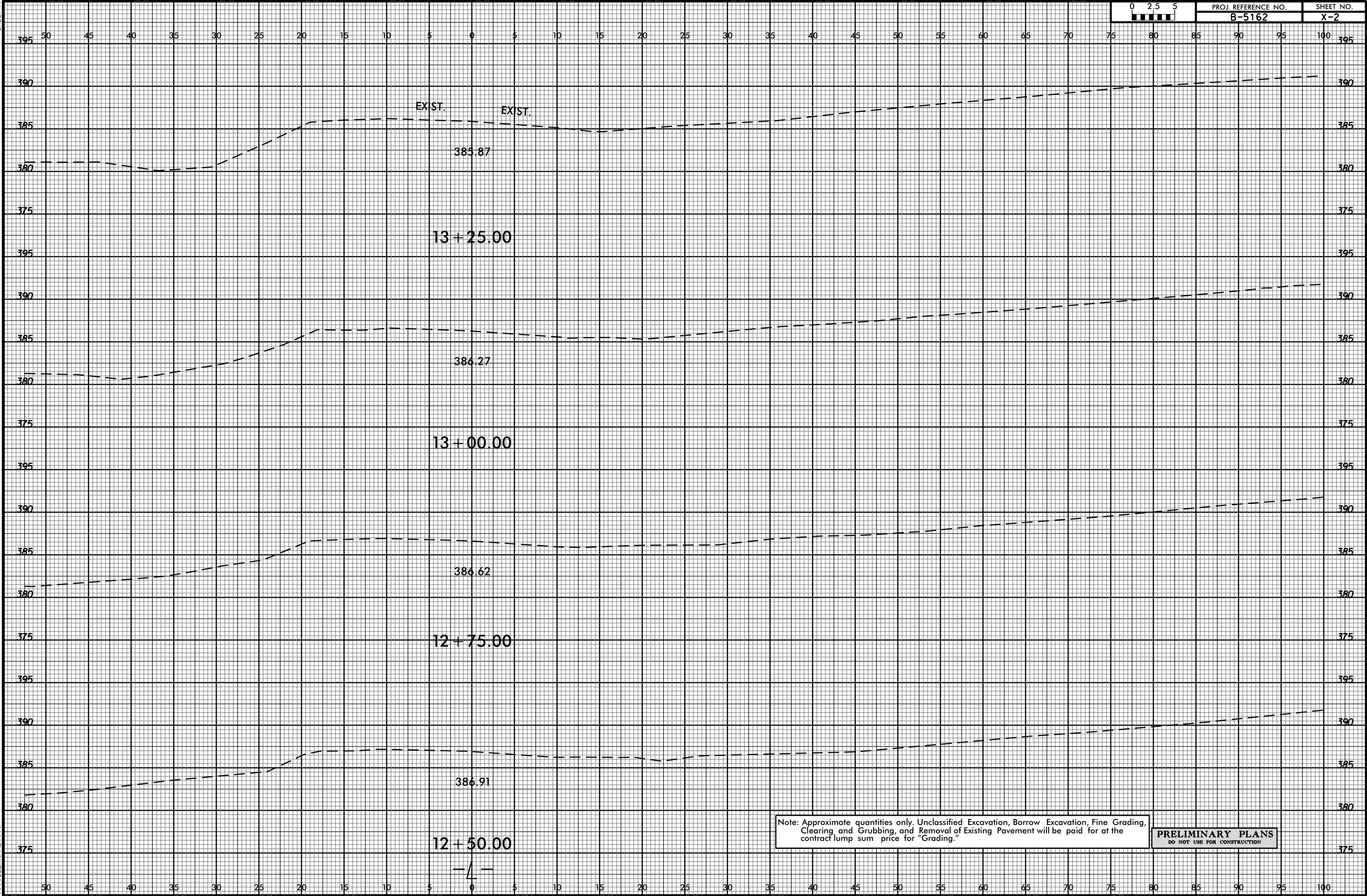
REVISIONS



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8/23/99

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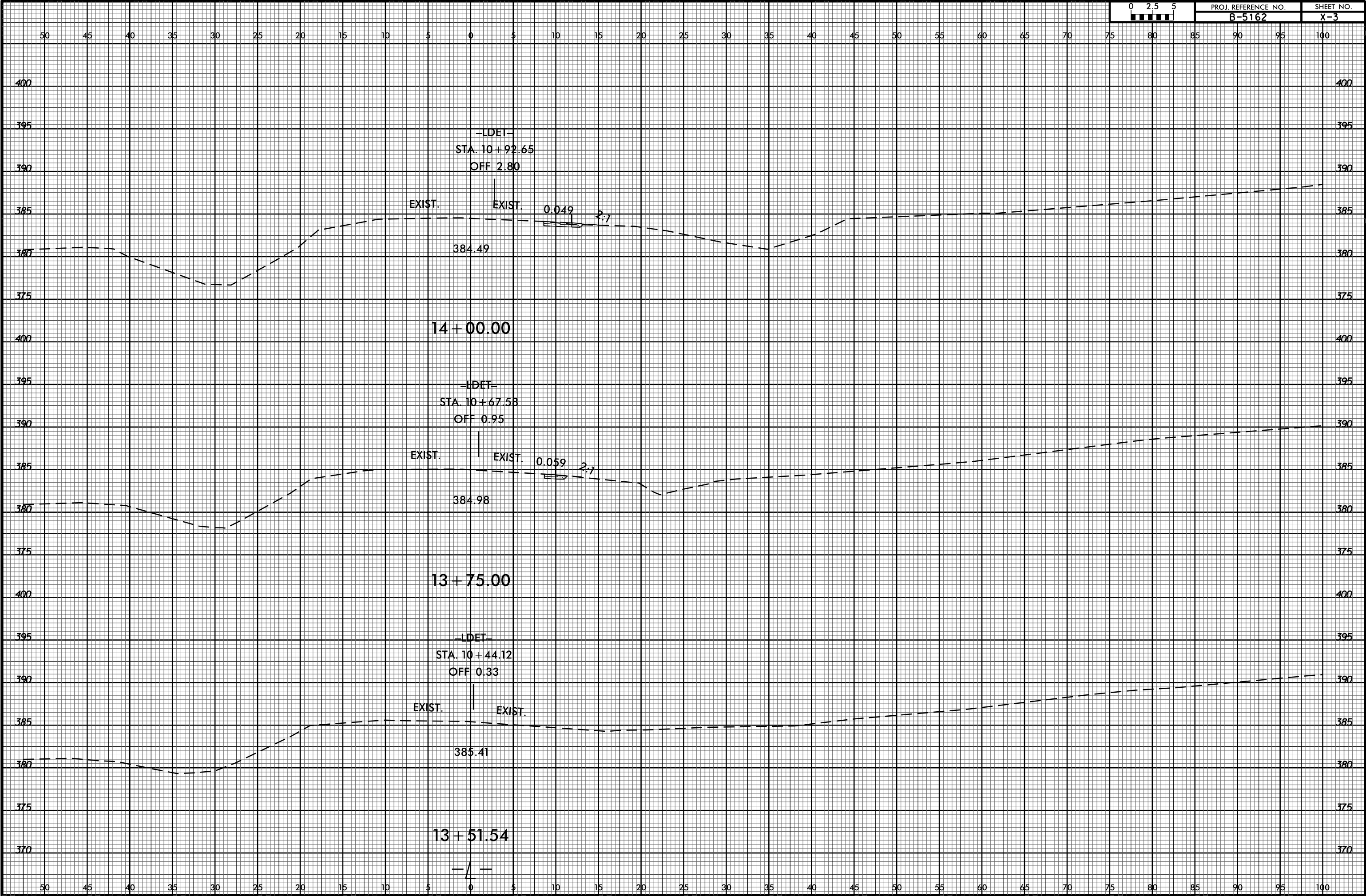


Note: Approximate quantities only. Unclassified Excavation, Borrow, Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

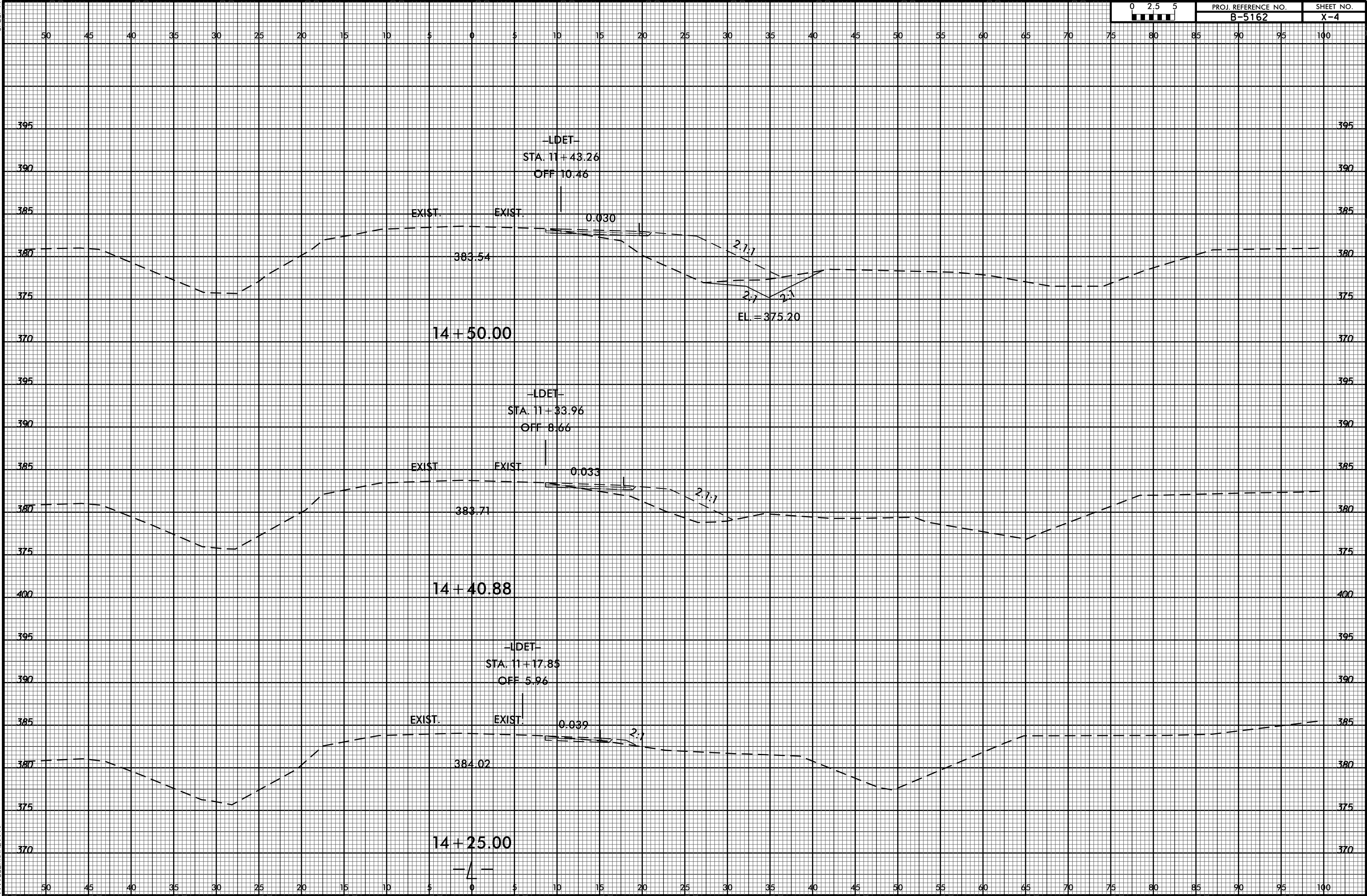
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/23/99

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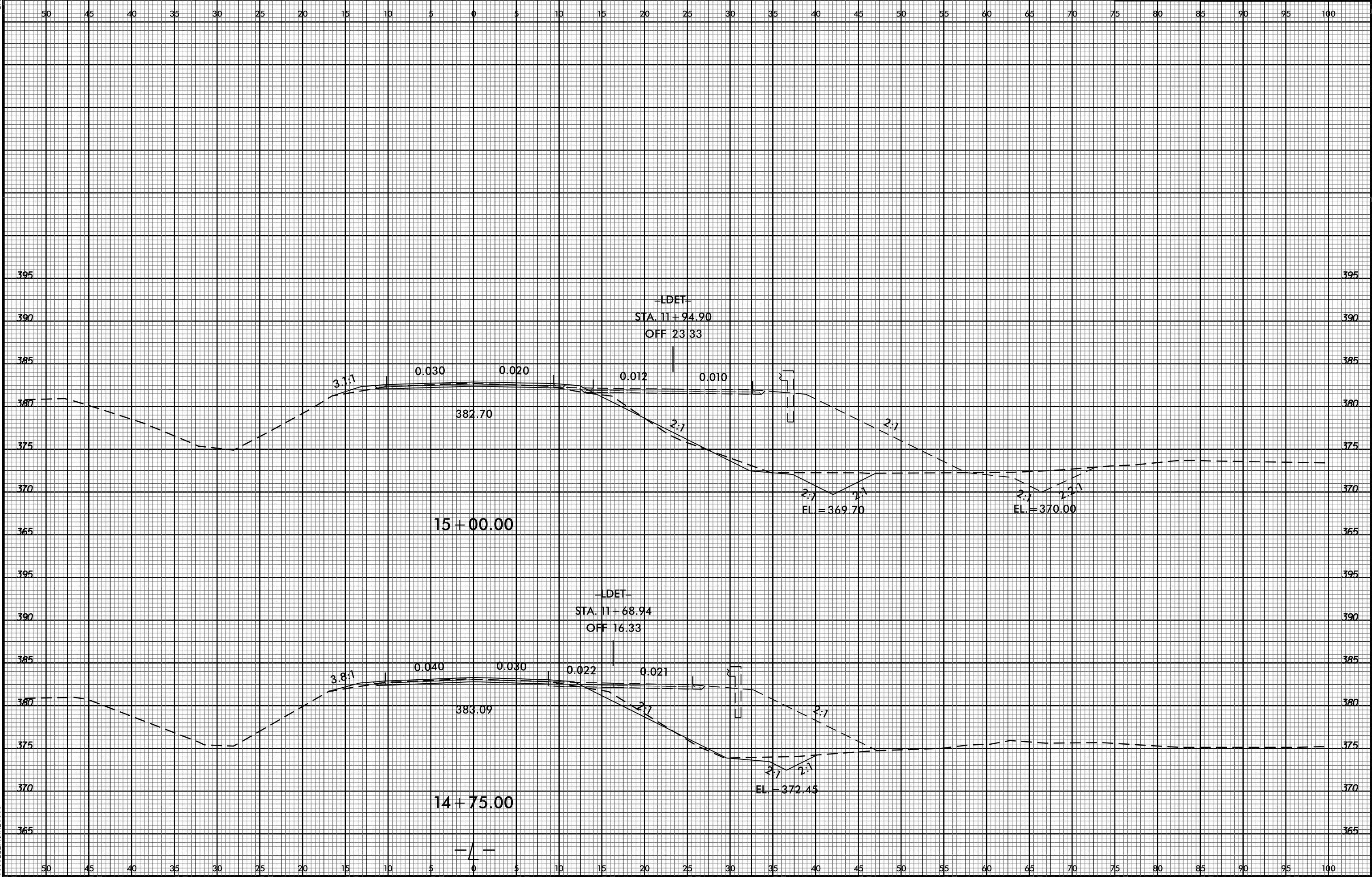
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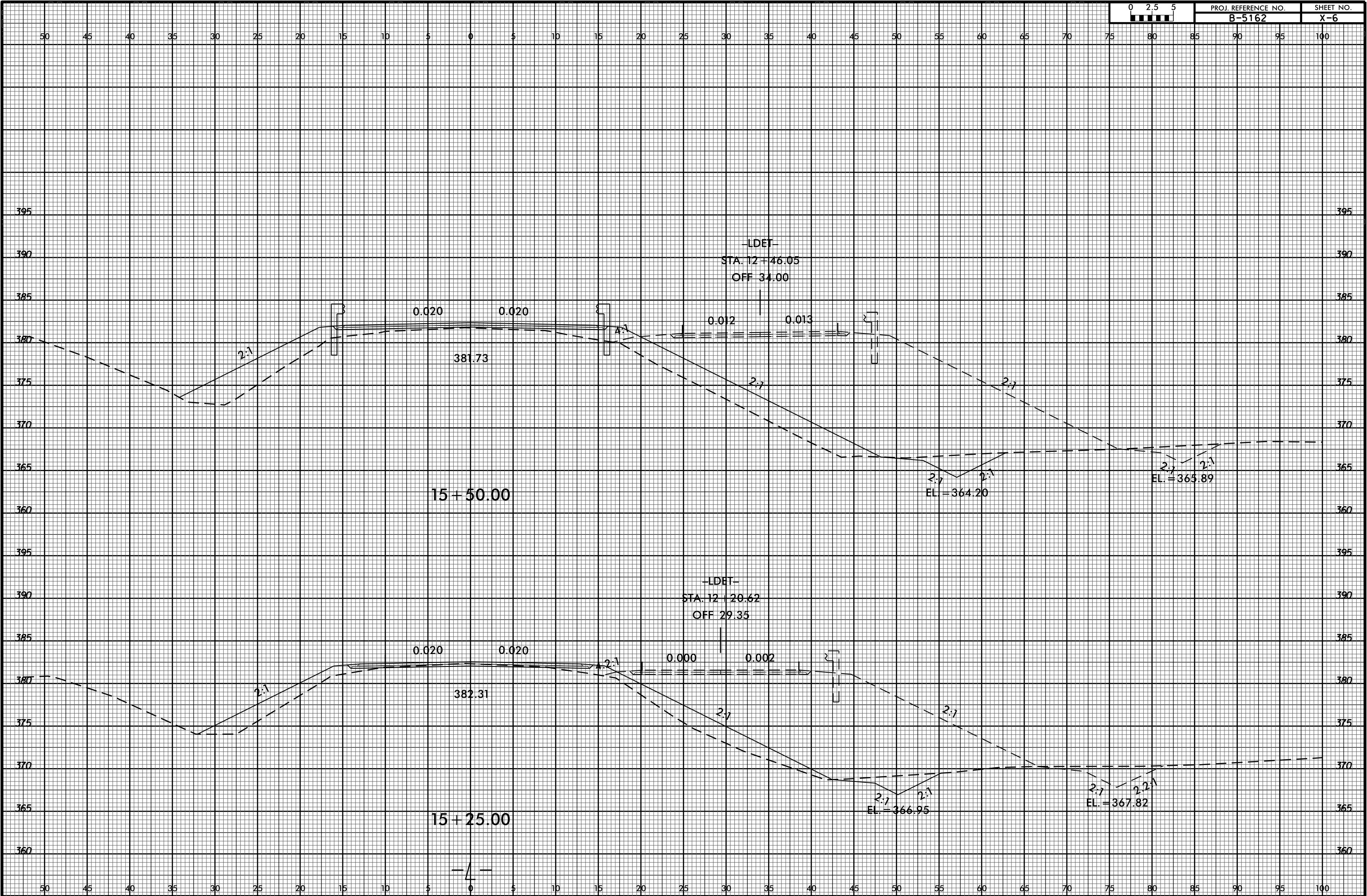


8/23/99

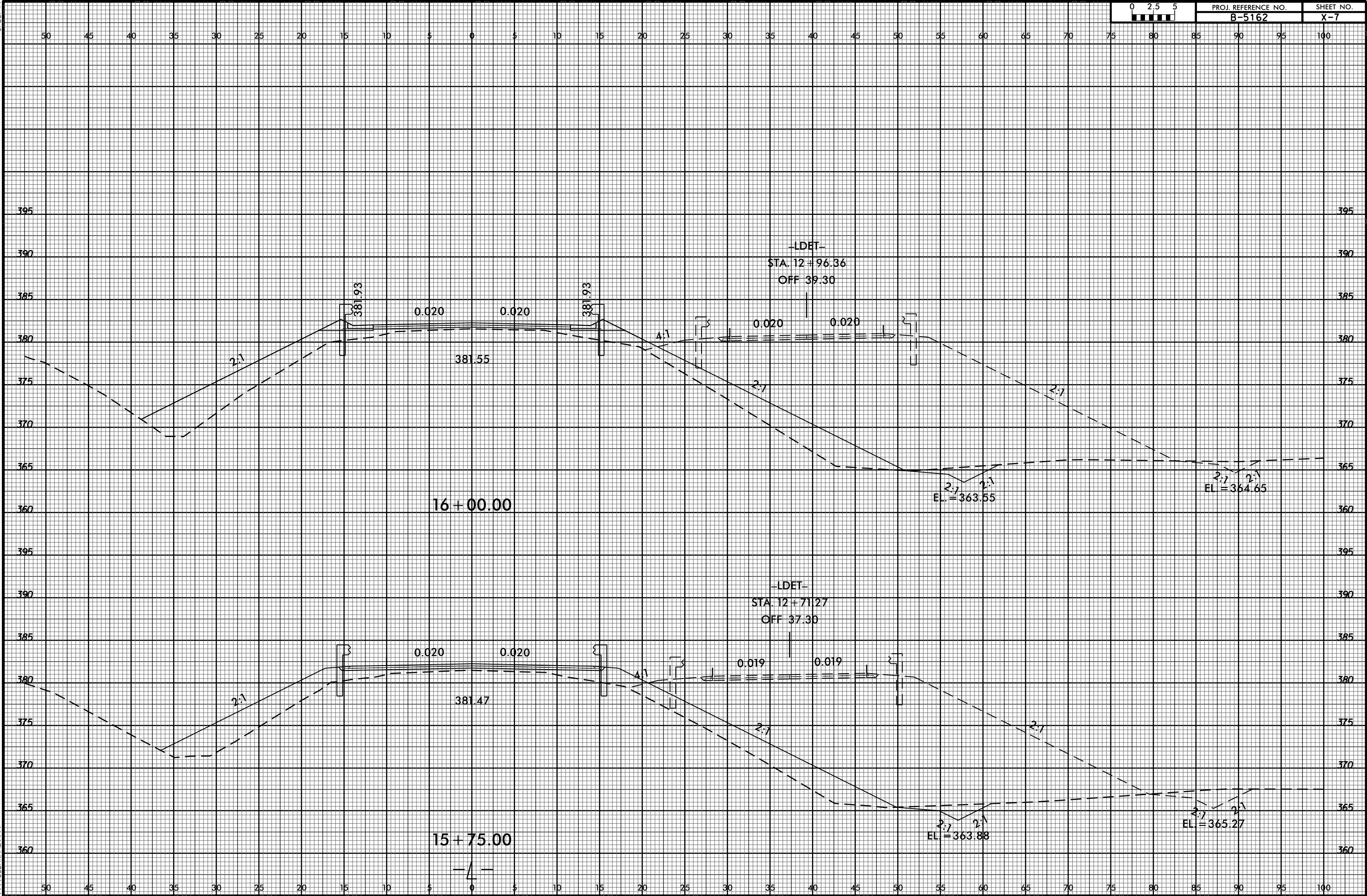
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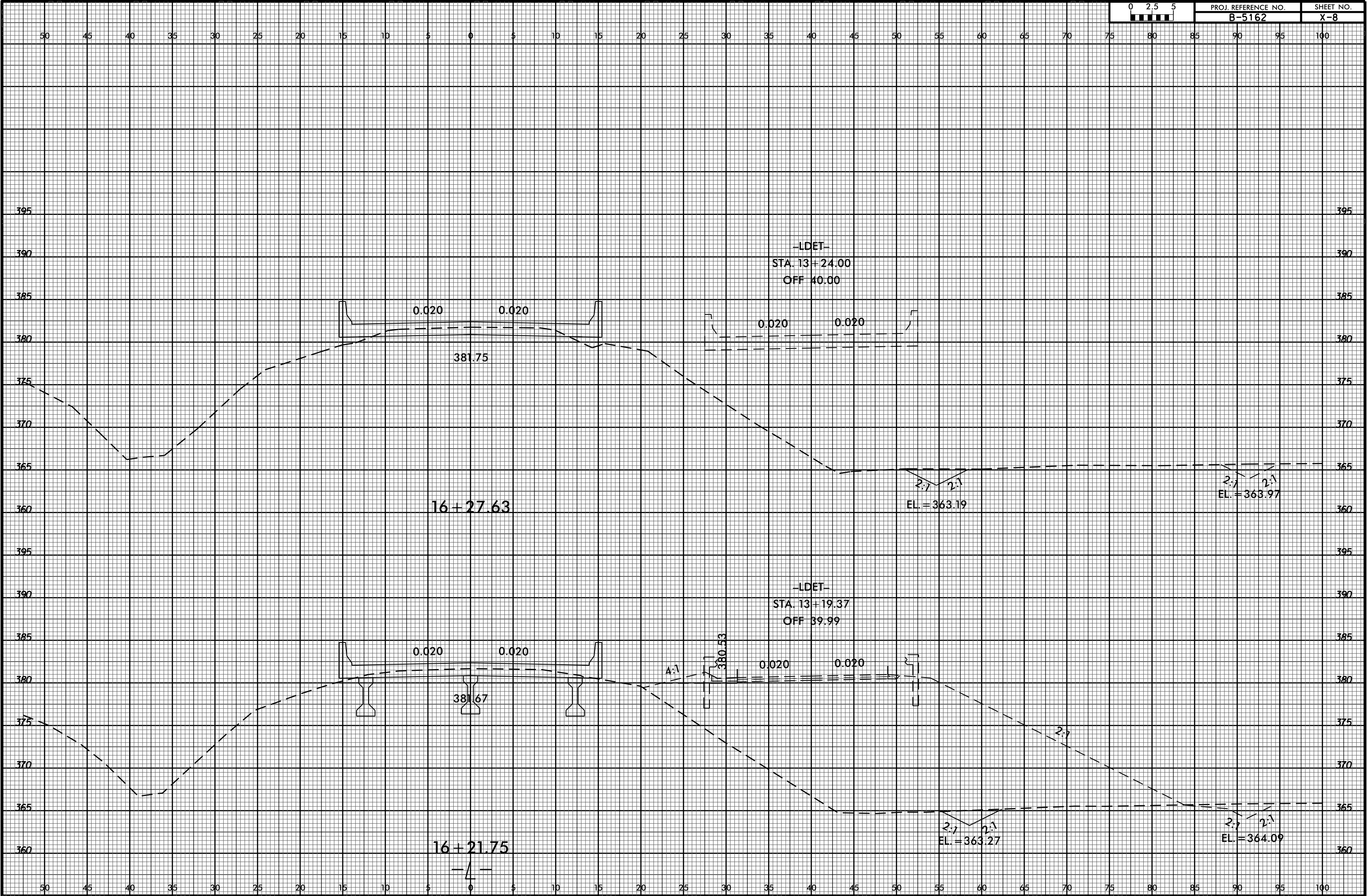
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-5162	X-5

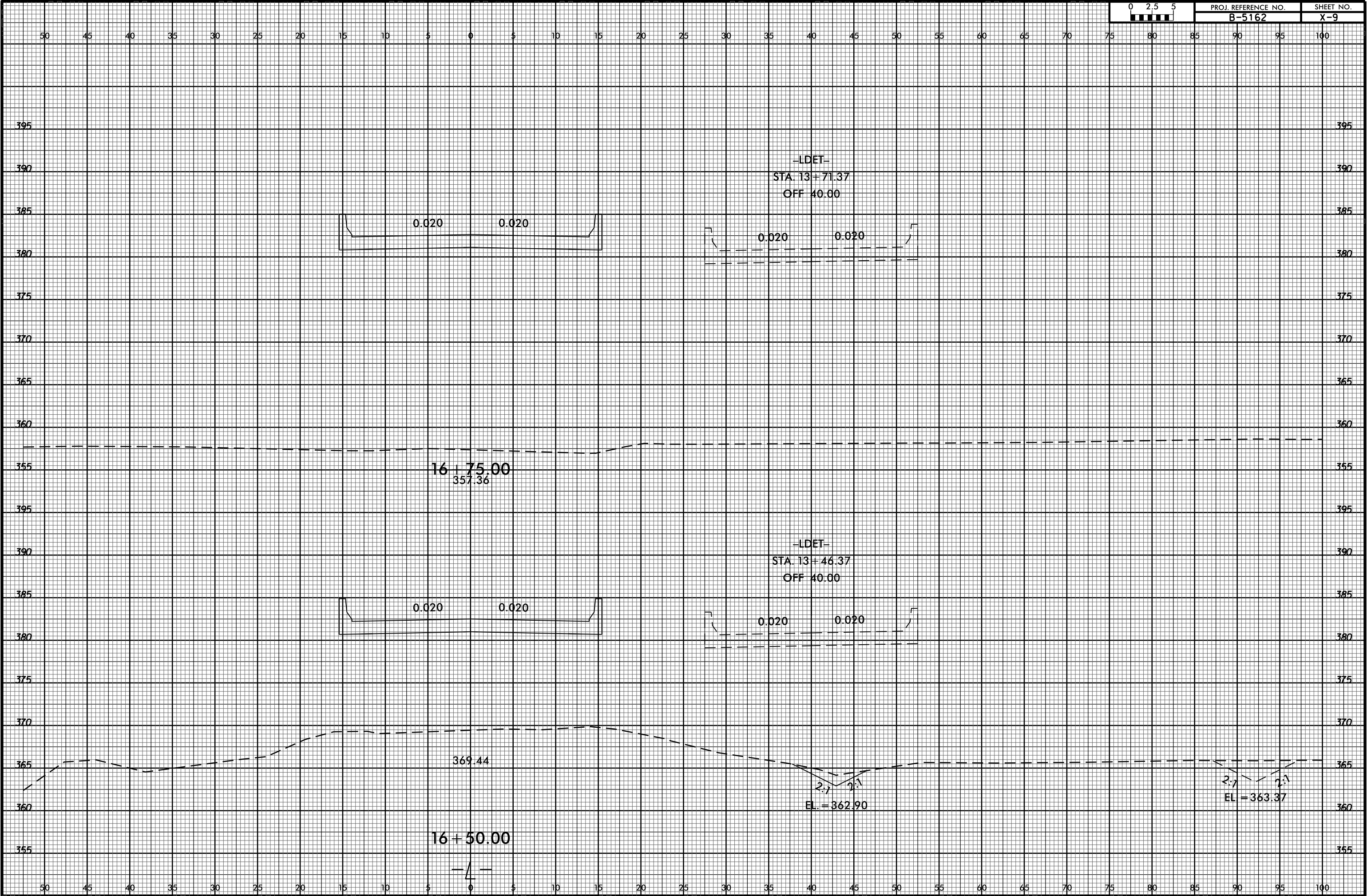


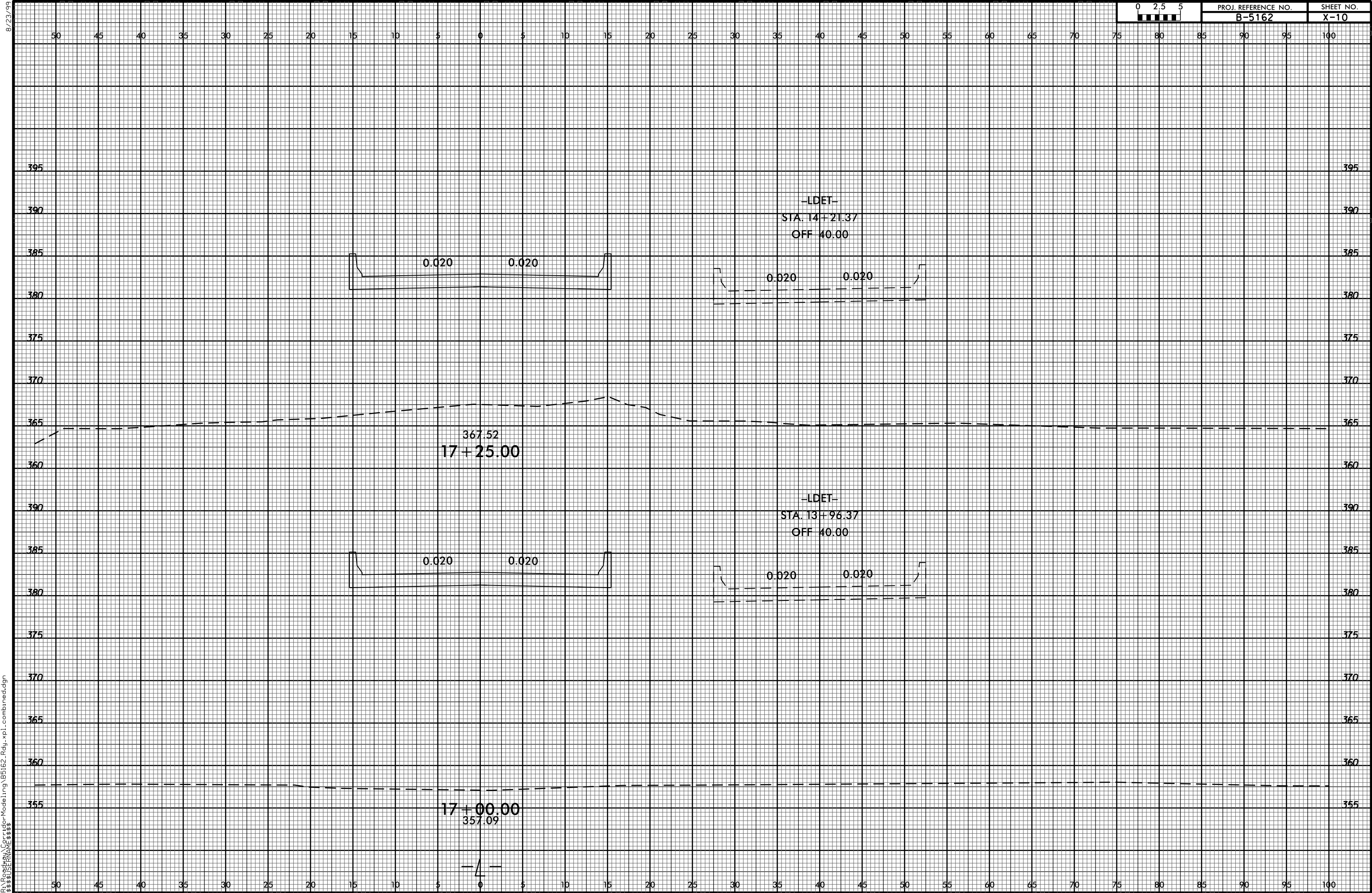


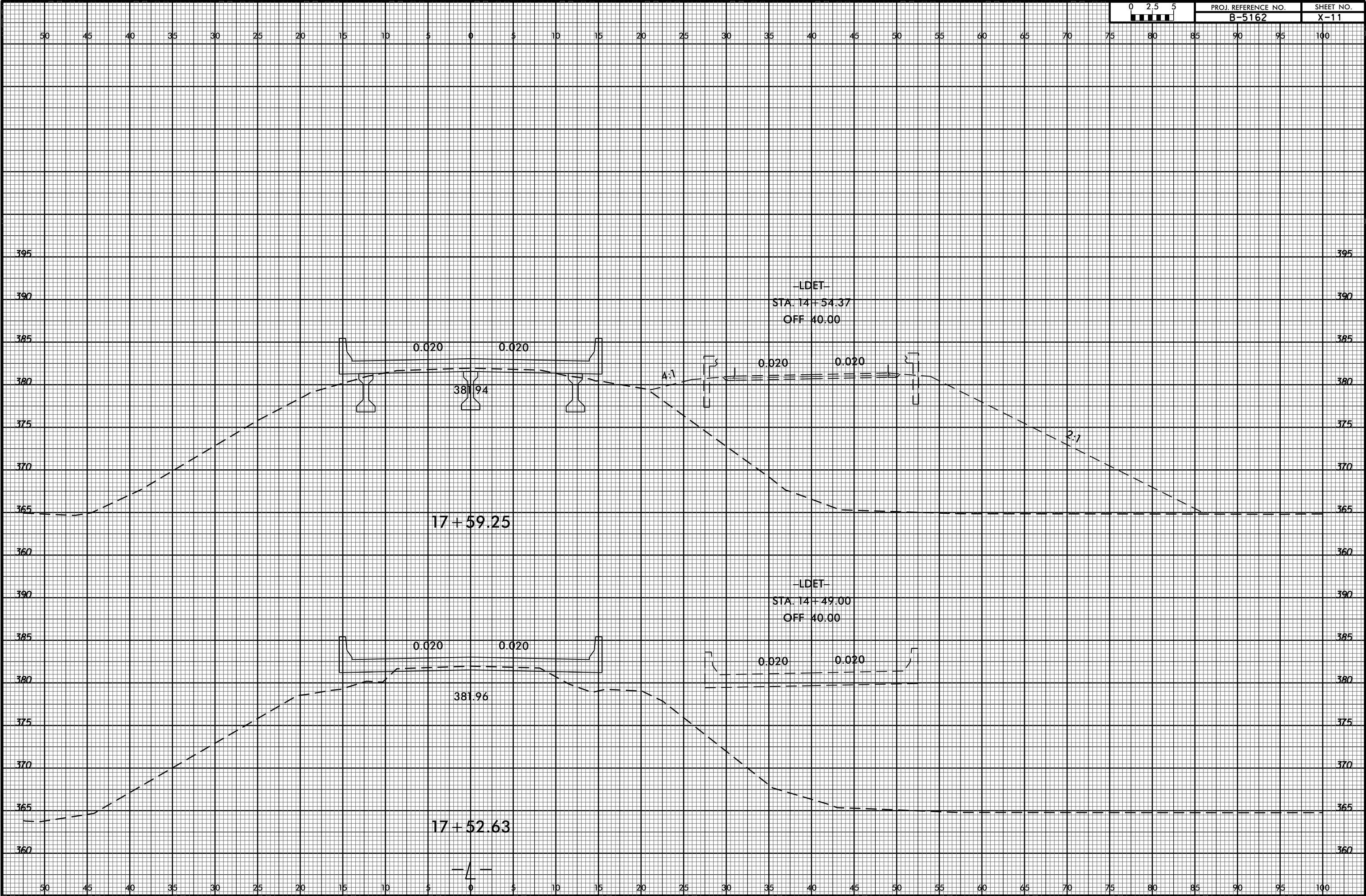
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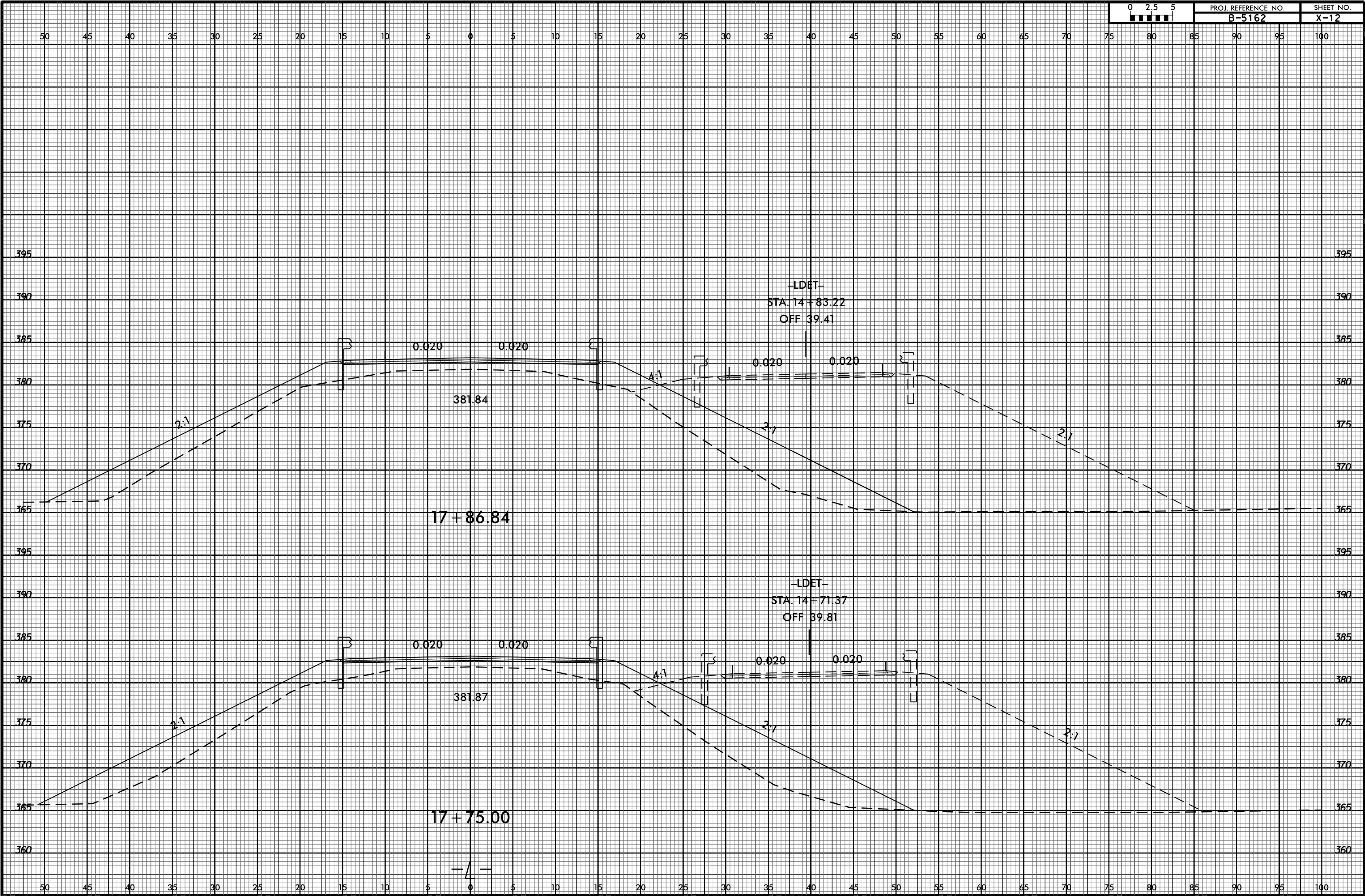


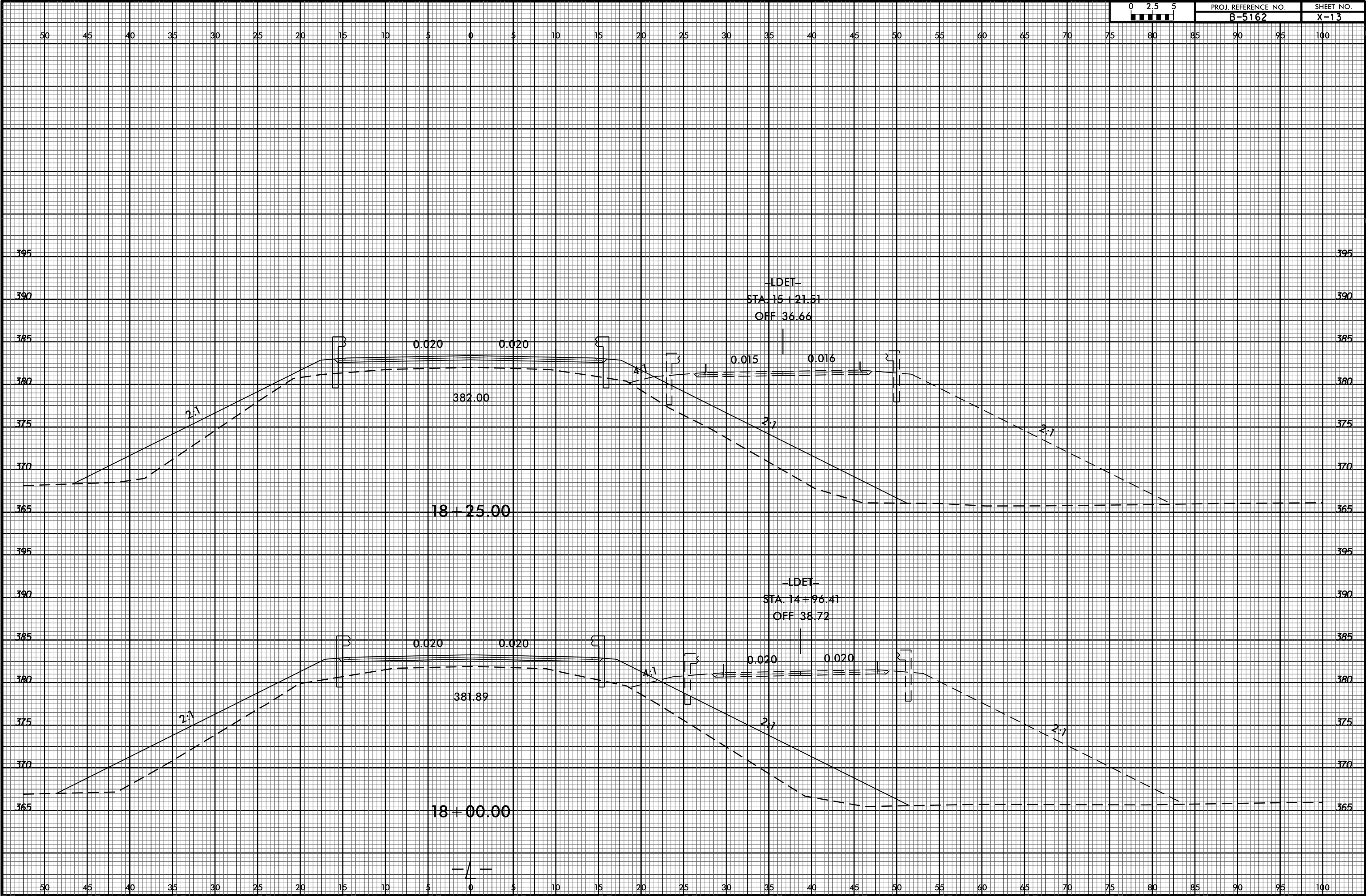


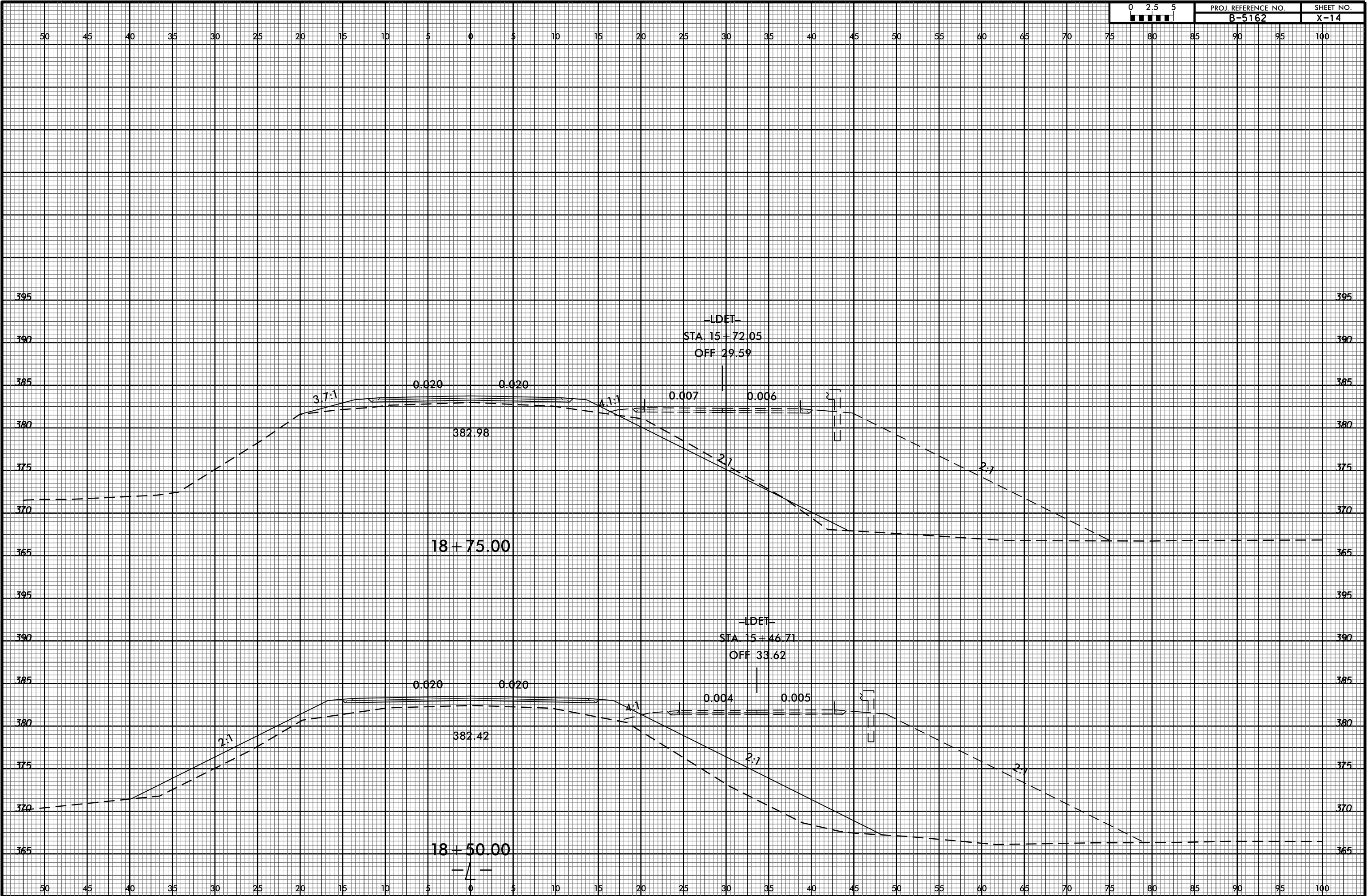


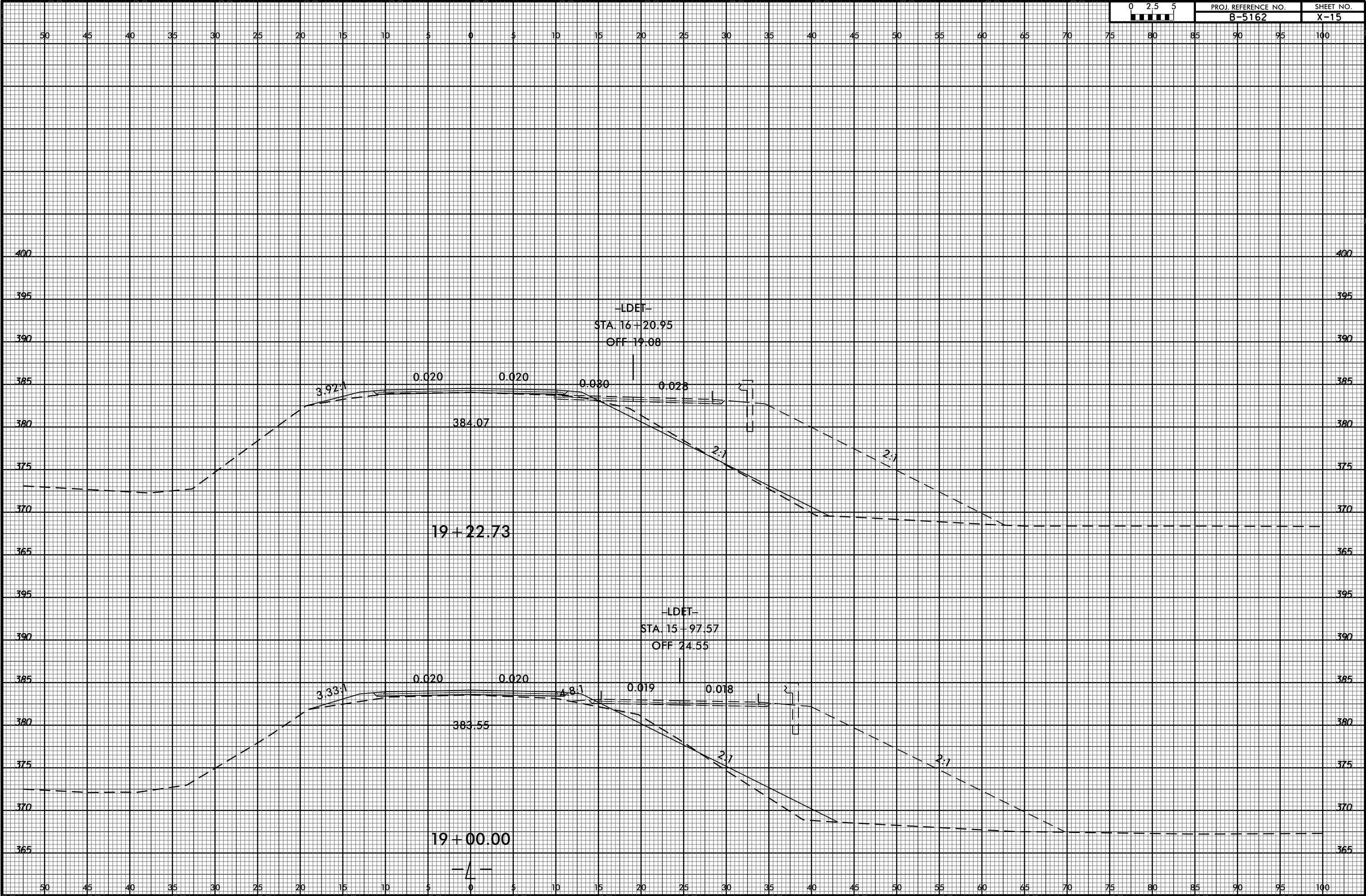












8/23/99

