



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

December 21, 2009

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

ATTN: Mr. David Baker
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 23 and Section 401 General Certification 3701 and Modification of Nationwide Permit 33 and General Certification 3688** for the proposed replacement of Bridge No. 123 over Scott Creek on SR 1437 (Hospital Road) in Jackson County, Federal Aid Project No. BRZ-1437 (3); Division 14; TIP No. B-4163 \$240.00 debit WBS 33511.1.1.

Reference: Nationwide Permits 13 and 33; SAW-2008-3214 issued January 8, 2009 and NC Division of Water Quality General Certifications 3689 and 3688 Project #20081777.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 123 over Scott Creek on SR 1437 (Hospital Road). This request is for two new stream impacts from the addition of an 18" Reinforced Concrete Pipe (RCP) to a UT of Scotts Creek (Station 11+44/11+74-YA-) that will incur 59 linear feet of permanent surface water impacts. The second impact will be 51 linear feet of permanent surface water fill to a UT of Scotts Creek at Station 17+09/17+60-L-RT. The total impacts for the project will now be 215 (105 linear feet from previous permit plus 110 linear feet of additional impacts) linear feet of permanent surface water impacts and 55 linear feet of temporary surface water impacts, reducing the previous temporary impacts from 77 linear feet.

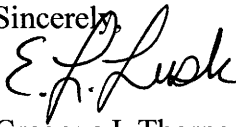
Please see enclosed copies of the Pre-Construction Notification (PCN), permit drawings, and design plans for the above-referenced project. The Categorical Exclusion (CE) was

completed in January 2008. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of March 16, 2010 and a review date of January 26, 2010; however the let date may advance as additional funding becomes available.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the United States Army Corps of Engineers (USACE). By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

A copy of this permit application will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please call Kris Dramby at (919) 431-6687 or by email at kjdramby@ncdot.gov.

Sincerely,

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

w/attachment

Mr. Brian Wrenn, NCDWQ (2 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Harold Draper, TVA

w/o attachment

Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mrs. Christy Wright Huff, Project Development Engineer



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 checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 & 33 Mod 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 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 type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes	<input checked="" 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:	Replacment of Bridge 123 Over Scott Creek on SR 1437 (Hospital Road).
2b. County:	Jackson
2c. Nearest municipality / town:	Sylva
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-4163

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) 431-6687
3g. Fax no.:	(919) 431-2002
3h. Email address:	kjdramby@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: 35.38908 (DD.DDDDDD) Longitude: - 83.20566 (-DD.DDDDDD)
1c. Property size:	.04 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Scott Creek
2b. Water Quality Classification of nearest receiving water:	C Tr
2c. River basin:	Little Tennessee
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: The site is located in an urban section of Jackson County primarily surrounded by residential, commercial, and forested land. The topography in the project study area is comprised of a nearly level floodplain of Scott Creek. Elevation within the project study area measures approximately 2100 feet above mean sea level.	
3b. List the total estimated acreage of all existing wetlands on the property: NA	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 495	
3d. Explain the purpose of the proposed project: Example: To replace a structurally deficient (and/ or) functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing the existing structure with a 75-foot bridge on the existing alignment with an off-site detour. 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:	<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 type="checkbox"/> Preliminary <input checked="" type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: EcoScience Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. January 8, 2009 - See permit SAW-2008-3214	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions. Previous permits have been obtained; NWP 33 and NWP 13. Previous NWP 33 impacts were 77 linear feet associated with construction of a temporary causeway. However, the temporary causeway impacts have been reduced to 55 linear feet based on new design. New information recognized the need for a NWP 23 and GC 3701 and are included in this PCN.	

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):

- 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 <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					X Permanent X Temporary

2h. Comments:

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	18" RCP	UT to Scott Creek	<input type="checkbox"/> PER <input checked="" type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3	59
Site 2 <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 3 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary Causeway	Scott Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	37	55
Site 4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Roadway Fill	UT to Scott Creek	<input type="checkbox"/> PER <input checked="" type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3	51
Site 5 <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 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						110 Perm 55 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				X Permanent X Temporary

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

5h. Is a dam high hazard permit required?	<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 type="checkbox"/> 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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts					
6i. Comments:					

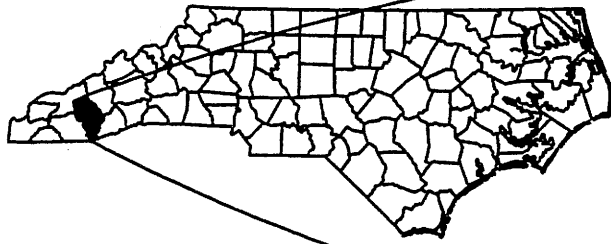
D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. Best management practices will be followed as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities." Design Standards for Sensitive Watersheds will be used for protection of downstream waters and Scott Creek will be spanned. Traffic will be routed to a temporary off site detour during construction. A trout moratorium prohibiting in-stream work and land disturbance within the 25-foot buffer is recommended from October 15 to April 15 to protect the egg and fry stages of trout.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. 3:1 fill slopes will be used where practicable.		
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	<input 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 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 type="checkbox"/> Yes	
4b. Stream mitigation requested:	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):	square feet	
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				<input type="checkbox"/> Yes <input type="checkbox"/> 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:				
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:				

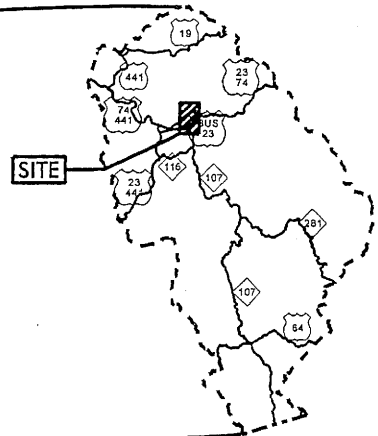
E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments: if yes, see attached permit drawings.	<input 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 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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	

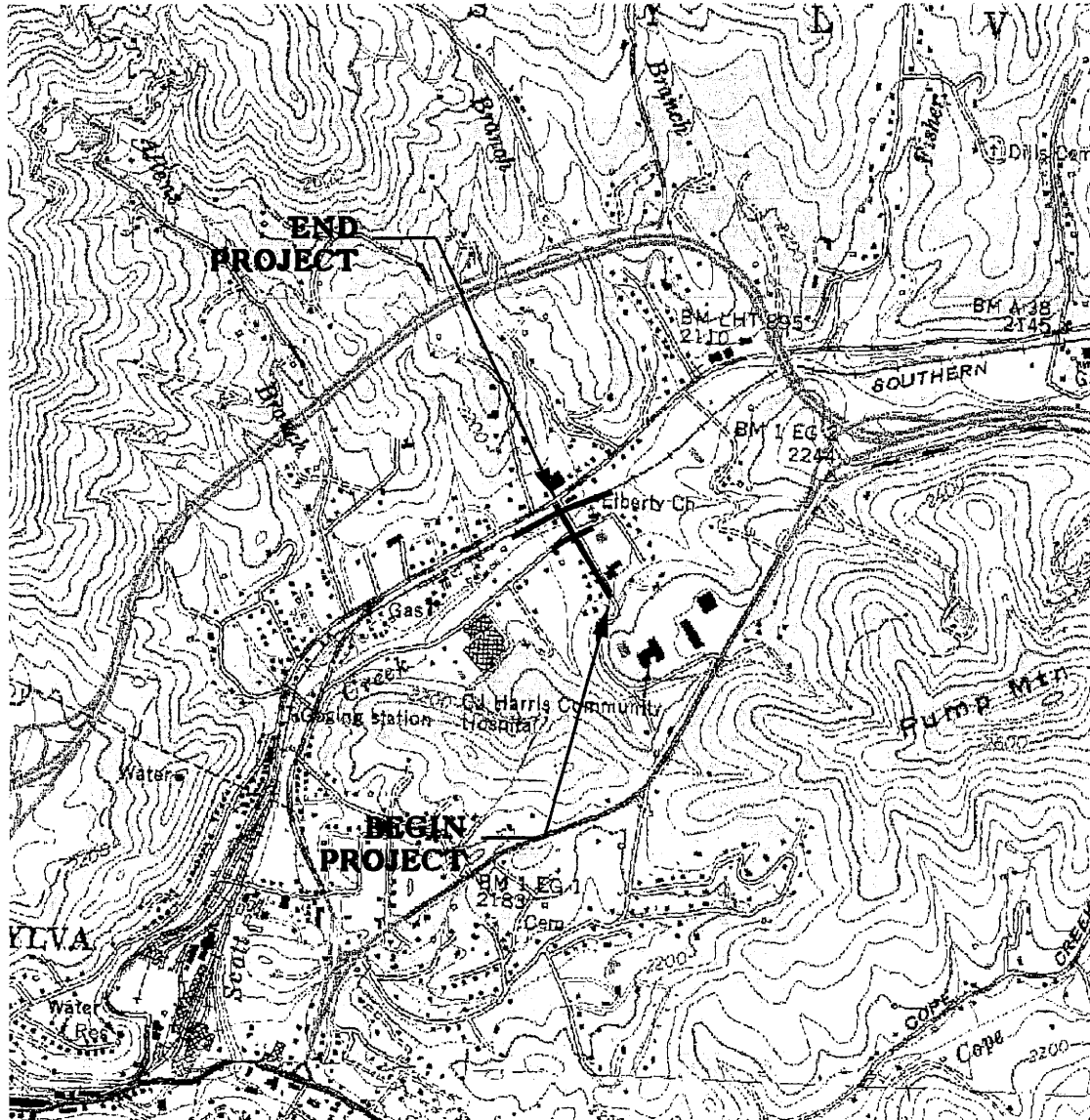
5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input 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? NHP and USFWS websites and NCDOT field surveys.		
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 coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 _____ Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	<u>12-21-09</u> Date



SEE INSET
BELOW



JACKSON COUNTY



WETLAND/STREAM IMPACTS
VICINITY MAP

Permit Drawing
Sheet 1 of 10

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
JACKSON COUNTY

PROJECT: 33511.1.1 (B-4163)
BRIDGE NO. 123 OVER SCOTTS
CREEK ON SR 1437
(HOSPITAL RD)

SHEET ___ OF ___

04/08/09

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
3	WANDA J. MOORE (CARRIE HOWELL, DECEASED)	479 HOSPITAL ROAD SYLVA, NC 28779
4	LIBERTY BAPTIST CHURCH	P.O. BOX 2134 SYLVA, NC 28779
7	KIRBY ENSLEY	P.O. BOX 696 SYLVA, NC 28779

Permit Drawing
Sheet 2 of 10

WETLAND/ STREAM
IMPACTS

NCDOT
DIVISION OF HIGHWAYS

JACKSON COUNTY

PROJECT: 33511.1.1 (B-4163)
BRIDGE NO. 123 OVER
SCOTTS CREEK ON SR 1437
(HOSPITAL RD.)

SHEET

OF

04/08/09

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)		
1	11+44/11+74 -YA-	18" RCP UT to Scotts Creek										59		
2	17+52/18+05 -L-	Bank Stabilization Scott Creek							0.02			105		
2	17+84/18+05 -L- RT	Temp. Causeway									0.020		55	
3	17+09/17+60 -L- RT	Roadway Fill UT to Scotts Creek										51		
TOTALS:									0.03		0.02	215	55	

Drawing
Sheet 3 of 10

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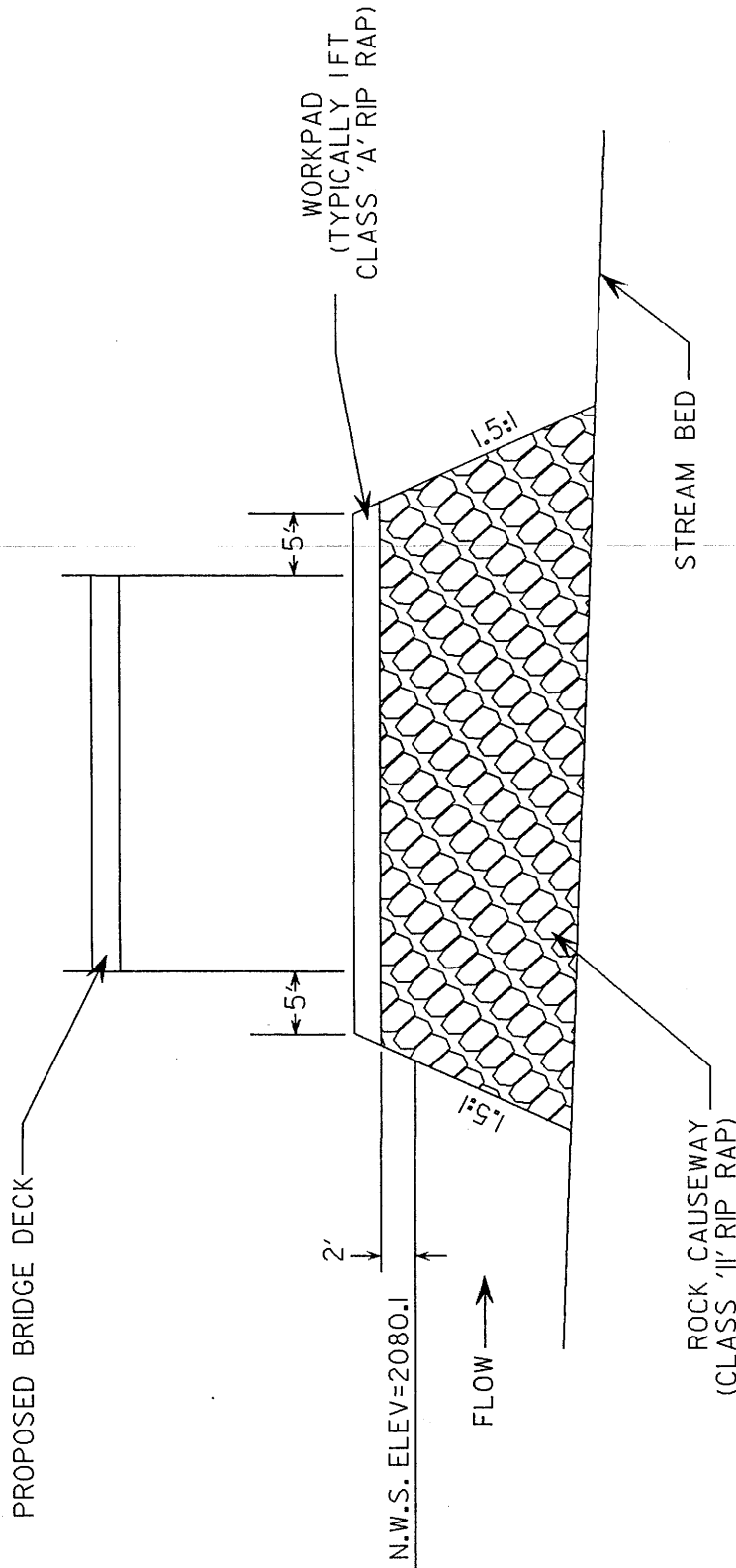
REVISED 12/2/09

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JACKSON COUNTY
WBS - 33511.1.1 (B-4163)

SHEET

WORKPAD DETAIL (NOT TO SCALE)



QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP = 62 yds³
 AREA OF CLASS II RIP RAP = 0.023 ac
 Estimate 88 Tons Class 'II' Rip Rap
 Estimate 53 Tons Class 'A' Rip Rap

Permit Drawing
 Sheet 4 of 10
 REVISED 11/3/2005

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 JACKSON COUNTY

PROJECT: 33511.1.1 (B-4163)
 BRIDGE NO. 123
 OVER SCOTTS CREEK
 ON SR 1437 (HOSPITAL ROAD)

SHEET ___ OF ___ 5/11/09

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4163	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33511.1.1	BRZ-1437(3)	PE	
33511.2.1	BRZ-1437(3)	RW & UTIL.	
33511.3.1	BRZ-1437(3)	CONST.	



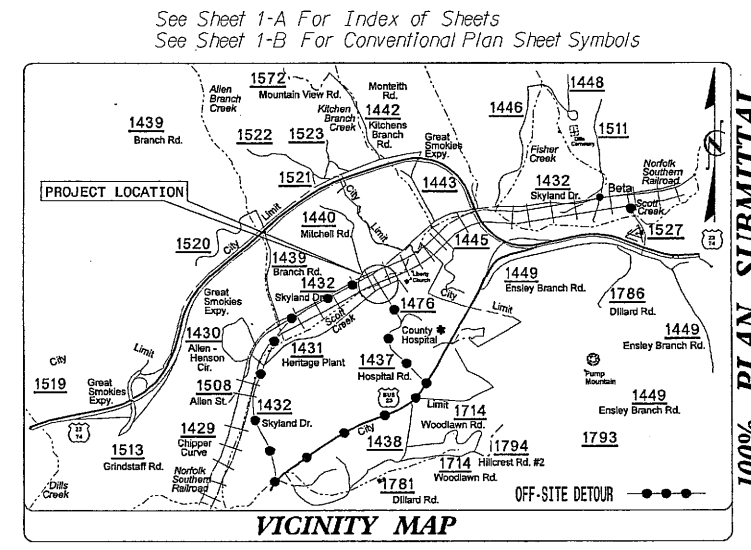
5/08/2009

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

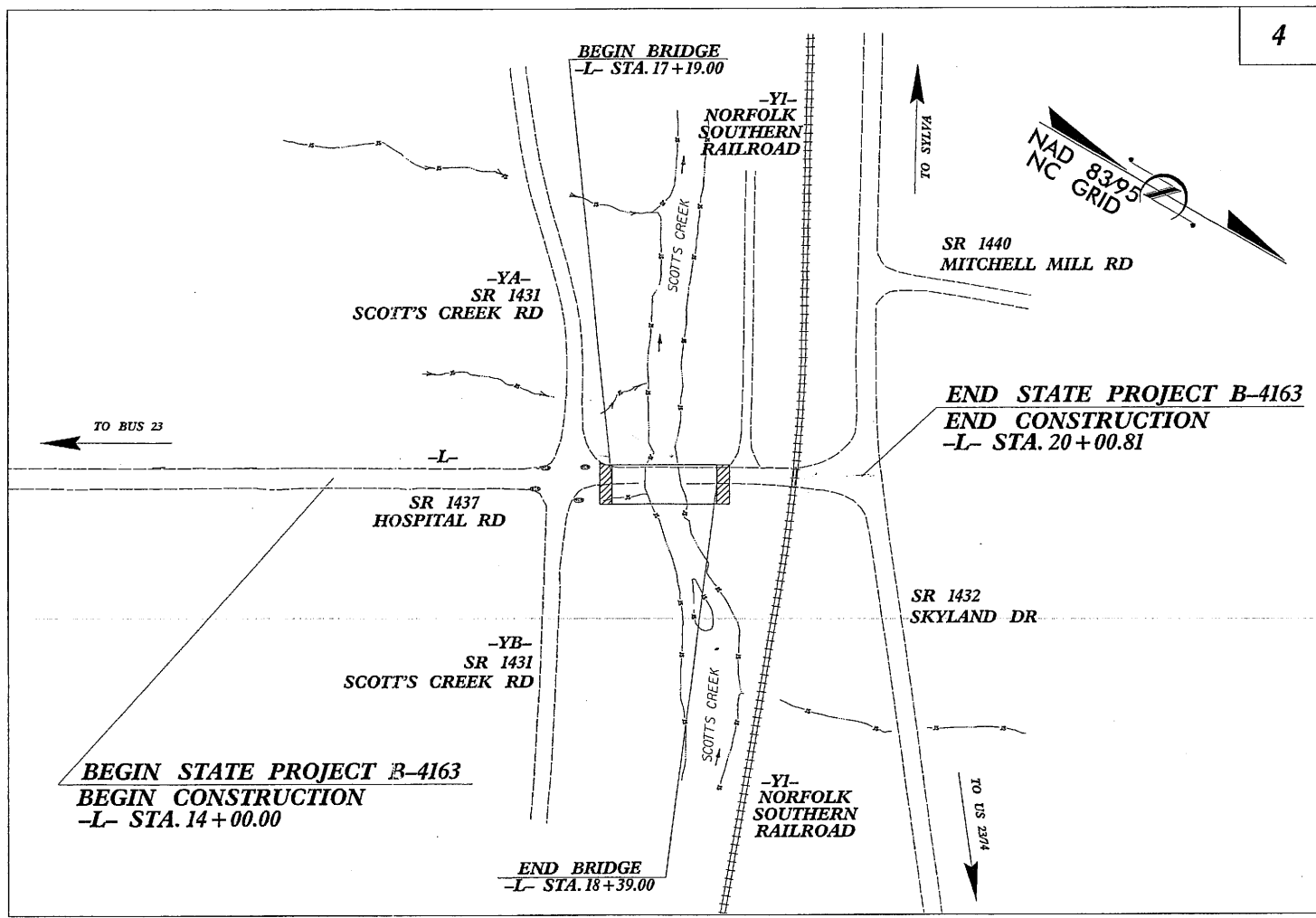
JACKSON COUNTY

LOCATION: BRIDGE NO. 123 OVER SCOTTS CREEK
ON SR 1437 (HOSPITAL RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE



100% PLAN SUBMITTAL



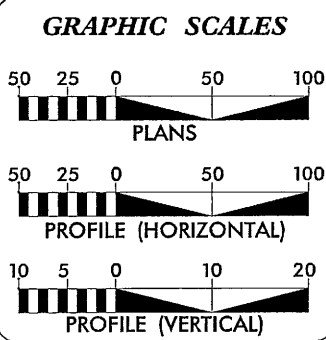
WETLAND/STREAM IMPACTS

Permit Drawing
Sheet 5 of 10
REVISED 11/3/2009
SUNGATE DESIGN GROUP, P.A.

915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-4258

TIP PROJECT: B-4163

CONTRACT: C202090



DESIGN DATA

ADT 2009 =	2830
ADT 2029 =	4045
DHV =	10 %
D =	60 %
T =	5 % *
V =	35 MPH
* TTST 2	DUAL 3
CLASS. -	URBAN LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4163	=	0.091 MILES
LENGTH STRUCTURE TIP PROJECT B-4163	=	0.023 MILES
TOTAL LENGTH TIP PROJECT B-4163	=	0.114 MILES

Prepared for the North Carolina Department of Transportation in the Office of:

WETHERILL ENGINEERING
559 Jones Franklin Rd., Suite 164
Raleigh, N.C. 27606
P.O. Box: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN
BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GIS -
CONSTRUCTION OBSERVATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 1, 2008
LETTING DATE: APRIL 21, 2009

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

BOB A. MAY, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: B. DOUG TAYLOR, PE
ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____



ROADWAY DESIGN ENGINEER

SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

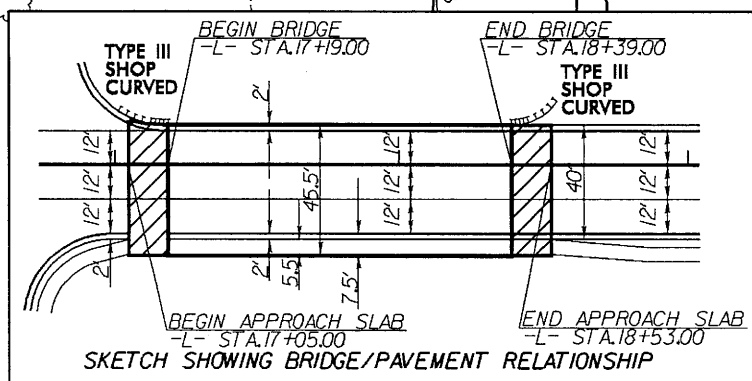
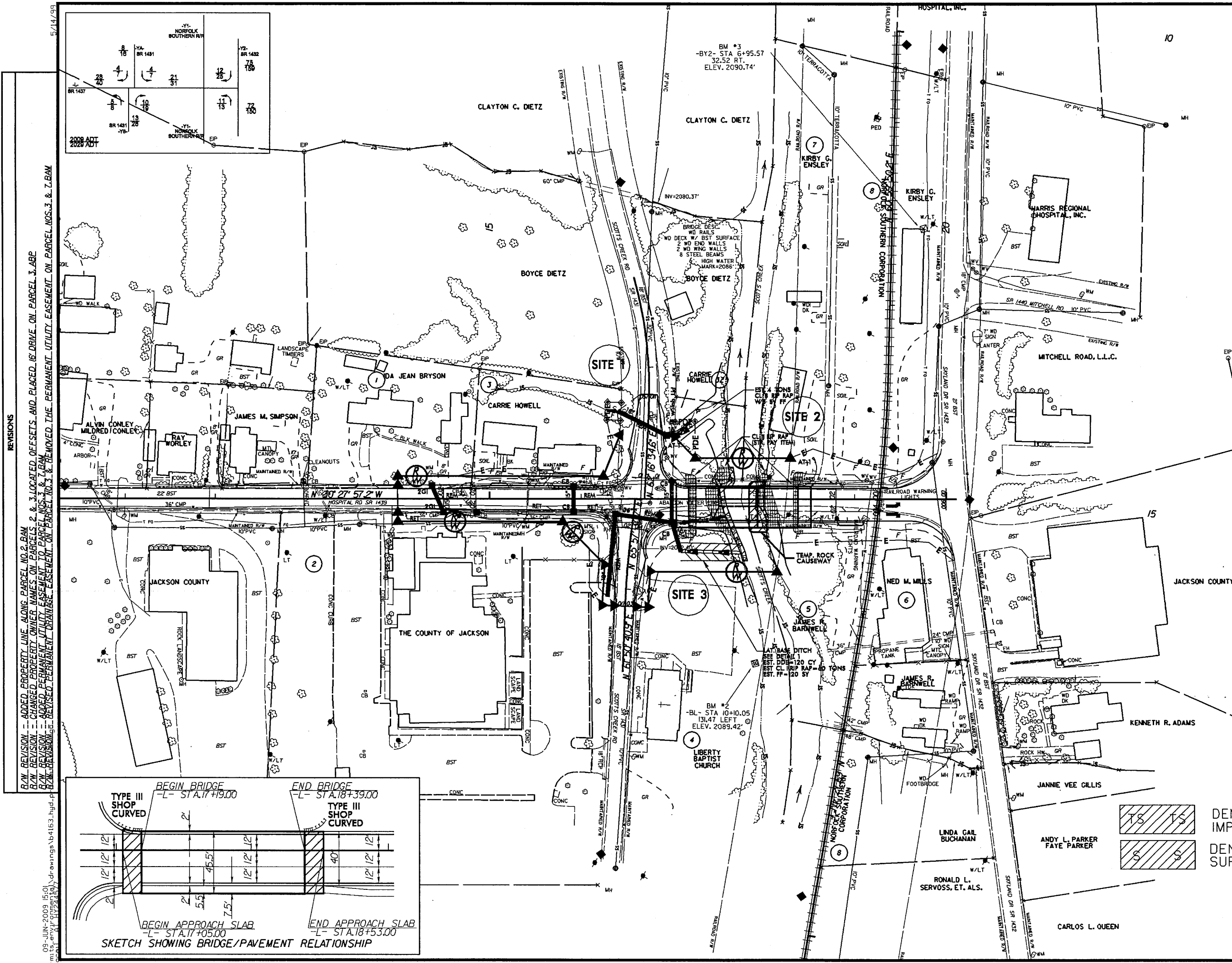
09/28/09 CONTRACT: C202090 TIP PROJECT: B-4163

PROJECT REFERENCE NO. B-4163	SHEET NO. 4
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
 <small>859 Jones Franklin Rd. Suite 144 Raleigh, NC 27604 Phone 919 851 8077 Fax 919 851 8107</small>	
<small>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GS/GPS - CONSTRUCTION OBSERVATION</small>	
SUNGATE DESIGN GROUP, P.A.  <small>915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL. (919) 859-2245 FAX (919) 859-6258</small>	




Permit Drawing
Sheet 6 of 10
REVISED 11/3/2009
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER

SEE SHEET S-1 THRU S-4 FOR STRUCTURE PLANS
SEE SHEET 5 FOR PROFILES



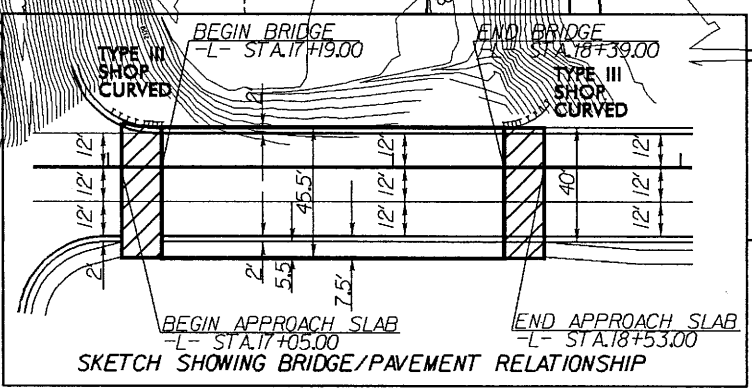
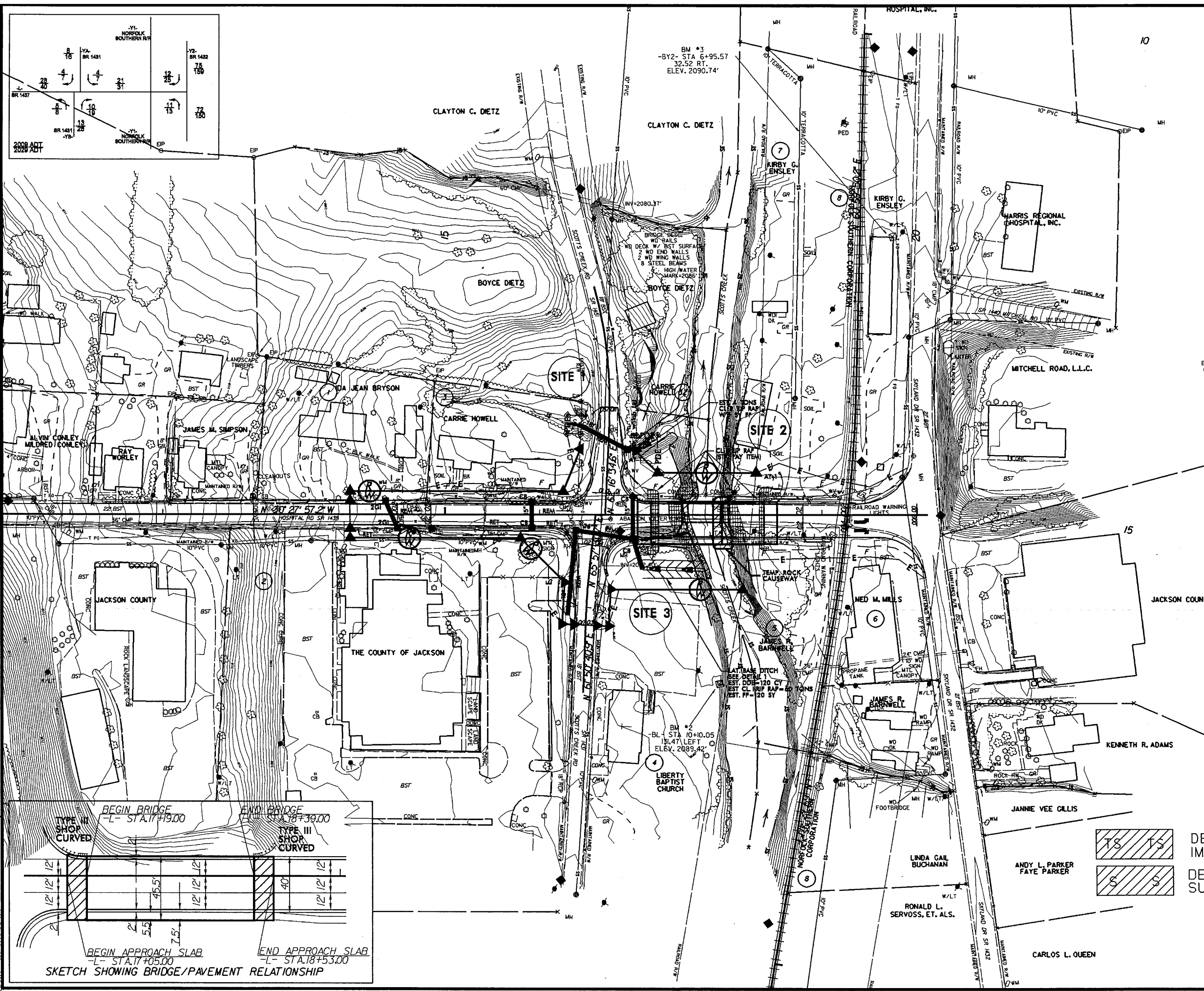
REVISIONS
 R/W REVISION -- ADDED PROPERTY LINE ALONG PARCEL NO. 2 B.M. 2 & 3 LOCATED OFFSETS AND PLACED 16 DRIVE ON PARCEL 3. APP.
 R/W REVISION -- CHANGED PROPERTY OWNER NAMES ON PARCELS 2 & 3 LOCATED OFFSETS AND PLACED 16 DRIVE ON PARCEL 3. APP.
 R/W REVISION -- ADDED PERMANENT UTILITY EASEMENT TO PARCEL NOS. 3 & 7 B.M.
 R/W REVISION -- REVISED PERMANENT UTILITY EASEMENT ON PARCEL NOS. 3 & 7 B.M.
 09 JUN 2009 15:01
 m.as...
 dr...
 5/14/09

PROJECT REFERENCE NO. B-4163	SHEET NO. 4
MW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
	
<small>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</small>	
SUNGATE DESIGN GROUP, P.A. <small>915 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL: (919) 859-2241 FAX: (919) 859-6259</small>	

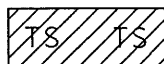
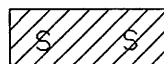


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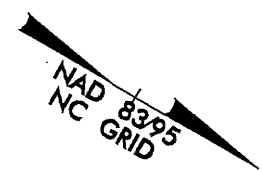
REVISIONS
 R/W REVISION - ADDED PROPERTY LINE ALONG PARCEL NO.2.BAM
 R/W REVISION - CHANGED PROPERTY OWNER NAMES ON PARCELS 2 & 3. LOCATED OFFSETS AND PLACED 16' DRIVE ON PARCEL 3. ABP
 R/W REVISION - ADDED PERMANENT UTILITY EASEMENT TO PARCEL NOS. 3 & 7. BAM
 R/W REVISION - ADDED PERMANENT UTILITY EASEMENT ON PARCEL NO.3 & REMOVED THE PERMANENT UTILITY EASEMENT ON PARCEL NOS.3 & 7. BAM
 R/W REVISION - REVISED PERMANENT DRAINAGE EASEMENT ON PARCEL NO.3 & 7. BAM




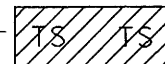
Permit Drawing
 Sheet 7 of 10
 REVISED 11/3/2009

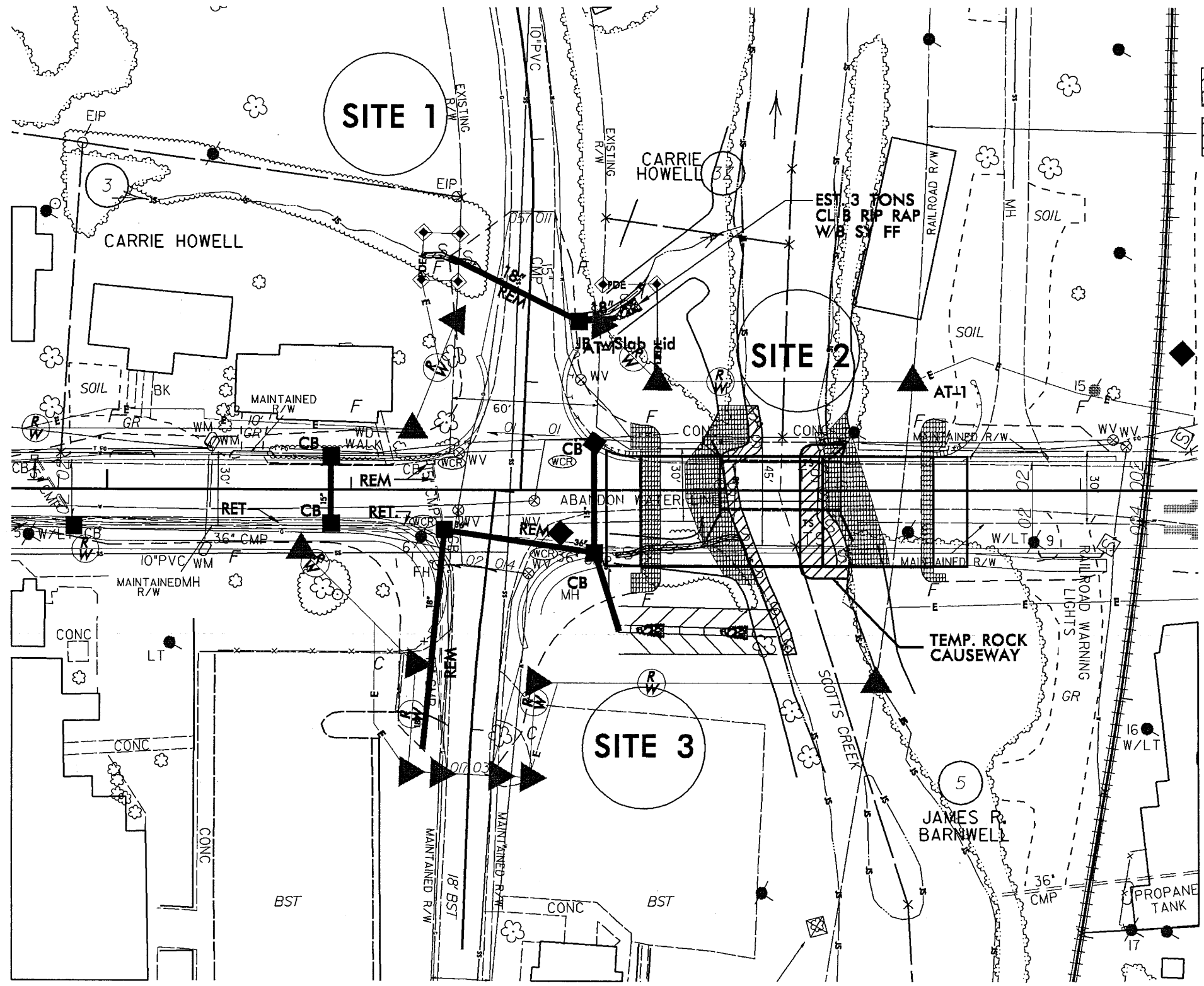
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES IMPACTS IN SURFACE WATER

SEE SHEET S-1 THRU S-4 FOR STRUCTURE PLANS
 SEE SHEET 5 FOR PROFILES



PROJECT REFERENCE NO. B-4163		SHEET NO.	
MW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



NAD 83
NC GRID

Drawing
 Sheet 8 of 10
 REVISED 11/3/2009

5/14/99

REVISIONS

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 11/3/09

PROJECT REFERENCE NO. B-4163
ROADWAY DESIGN ENGINEER

SHEET NO. 5
HYDRAULICS ENGINEER

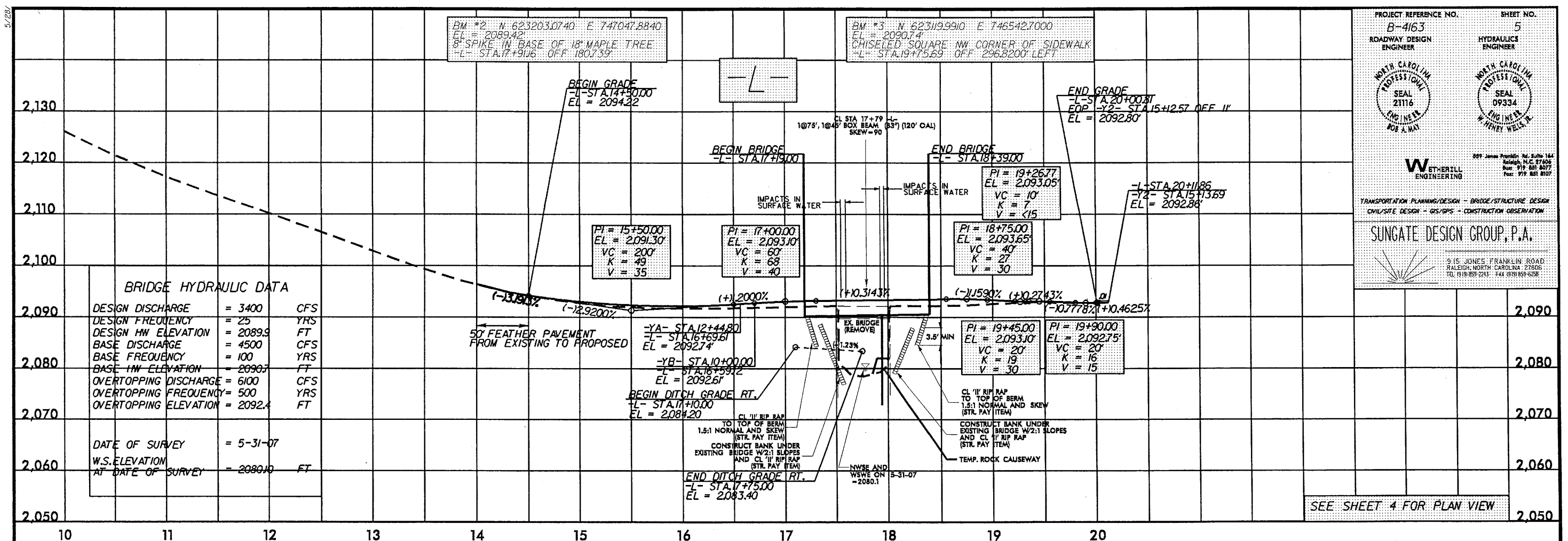
NORTH CAROLINA PROFESSIONAL SEAL 21116
NORTH CAROLINA PROFESSIONAL SEAL 09334

ETHERILL ENGINEERING
515 Jones Franklin Rd., Suite 144
Raleigh, NC 27605
Phone: 919.881.8077
Fax: 919.881.8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

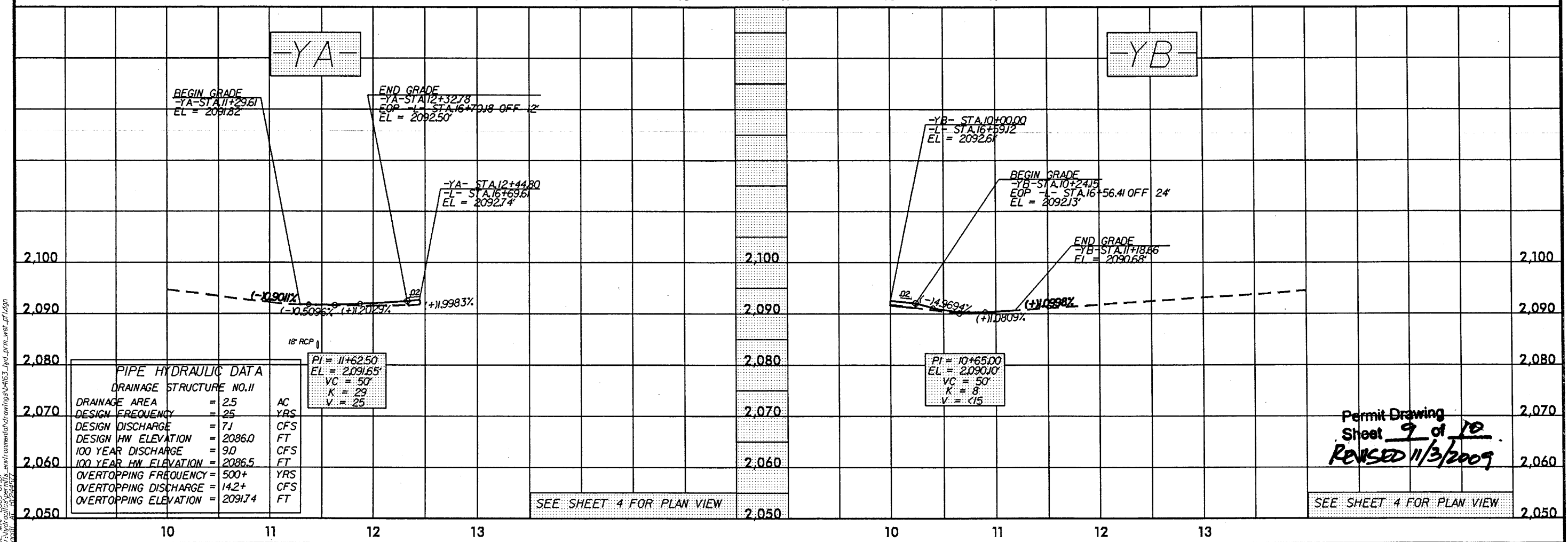
SUNGATE DESIGN GROUP, P.A.
515 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27605
TEL: 919.881.2211 FAX: 919.881.8108

5.287



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 3400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2089.9	FT
BASE DISCHARGE	= 4500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2090.7	FT
OVERTOPPING DISCHARGE	= 6100	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 2092.4	FT
DATE OF SURVEY	= 5-31-07	
W.S. ELEVATION AT DATE OF SURVEY	= 2080.10	FT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 11

DRAINAGE AREA	= 25	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 71	CFS
DESIGN HW ELEVATION	= 2086.0	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 2086.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14.2+	CFS
OVERTOPPING ELEVATION	= 2091.74	FT

SEE SHEET 4 FOR PLAN VIEW

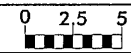
Permit Drawing
Sheet 9 of 10
REVISED 11/3/2009

SEE SHEET 4 FOR PLAN VIEW

SEE SHEET 4 FOR PLAN VIEW

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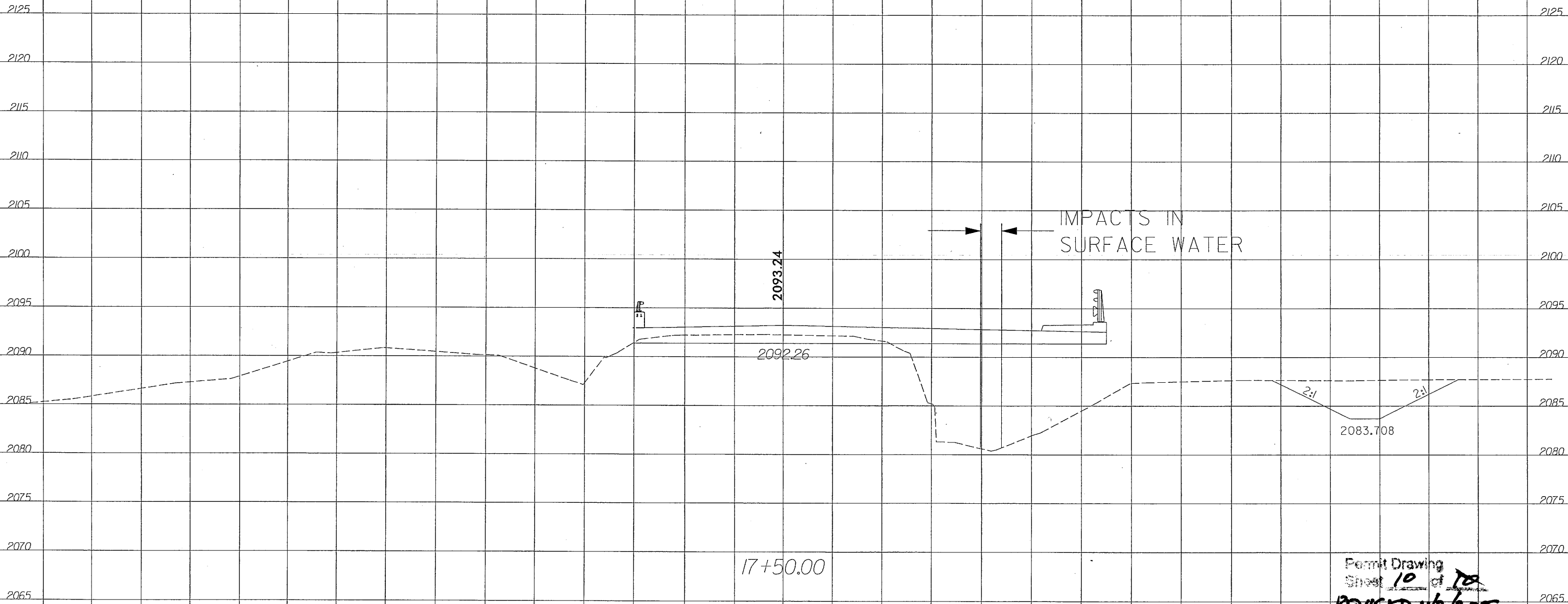
8/23/99



PROJ. REFERENCE NO.
B-4163

SHEET NO.
X-4

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17+50.00

-4-

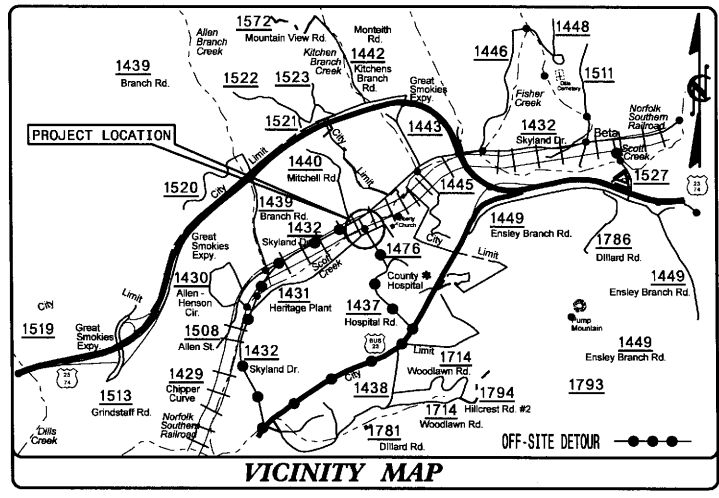
Permit Drawing
Sheet 10 of 10
REVISED 1/3/2009

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\$\$\$USERNAME\$\$\$
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09/28/09
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 4/7/2009

TIP PROJECT: B-4163
CONTRACT: C202090

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



100% PLAN SUBMITTAL

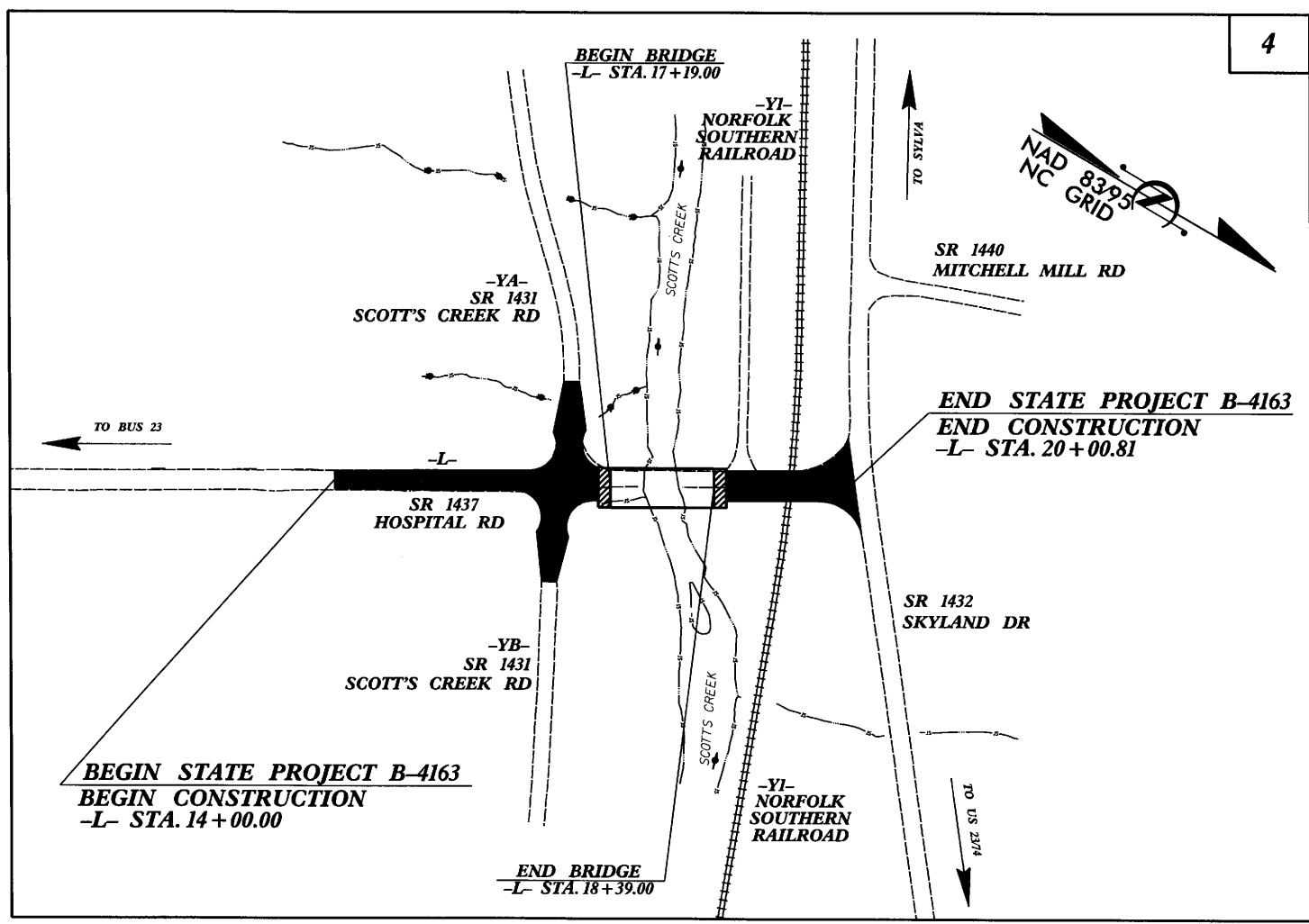
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
JACKSON COUNTY

**LOCATION: BRIDGE NO. 123 OVER SCOTTS CREEK
 ON SR 1437 (HOSPITAL RD.)**

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4163	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33511.1.1	BRZ-1437(3)	PE	
33511.2.1	BRZ-1437(3)	RW & UTIL.	
33511.3.1	BRZ-1437(3)	CONST.	

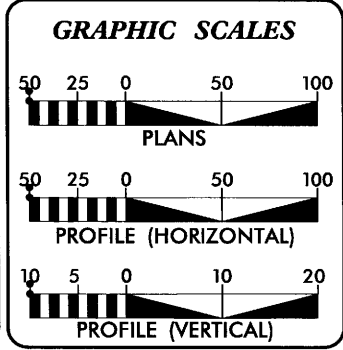
4/08/2009



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SUNGATE DESIGN GROUP, P.A.


 915 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 TEL: (919) 859-2243 FAX: (919) 859-6258



DESIGN DATA

ADT 2009 =	2830
ADT 2029 =	4045
DHV =	10 %
D =	60 %
T =	5 % *
V =	35 MPH
* TTST 2	DUAL 3
CLASS. -	URBAN LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4163	=	0.091 MILES
LENGTH STRUCTURE TIP PROJECT B-4163	=	0.023 MILES
TOTAL LENGTH TIP PROJECT B-4163	=	0.114 MILES

Prepared for the North Carolina Department of Transportation in the Office of:

WETHERILL ENGINEERING
559 Jones Franklin Rd., Suite 164
Raleigh, N.C. 27605
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN
BRIDGE STRUCTURE DESIGN
CIVIL/SITE DESIGN - GEO/OPS -
CONSTRUCTION OBSERVATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 1, 2008	EDWARD G. WETHERILL, PE PROJECT ENGINEER
LETTING DATE: APRIL 21, 2009	BOB A. MAY, PE PROJECT DESIGN ENGINEER
NCDOT CONTACT	B. DOUG TAYLOR, PE ENGINEERING COORDINATION SECTION 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.

3/15/06

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	○ _{EP}
Property Corner	-----
Property Monument	□ _{EM}
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	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

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	○ _{MILEPOST 35}
Switch	□ _{SWITCH}
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○ _{IP} ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ _{CM} ▲
Existing Control of Access	○ _{CA}
Proposed Control of Access	○ _{PCA}
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	----- _{TDE}
Proposed Permanent Drainage Easement	----- _{PDE}
Proposed Permanent Utility Easement	----- _{PUE}
Proposed Temporary Utility Easement	----- _{TUE}
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 Wheel Chair Ramp	□ _{WCR}
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	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ _{CB}
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ _S
Storm Sewer	-----

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ _T
Telephone Booth	□ _T
Telephone Pedestal	□ _T
Telephone Cell Tower	□ _T
U/G Telephone Cable Hand Hole	□ _{PH}
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	○ _W
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	□ _T
TV Tower	⊗
U/G TV Cable Hand Hole	□ _{PH}
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	○ _G
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	----- _{A/G Gas}

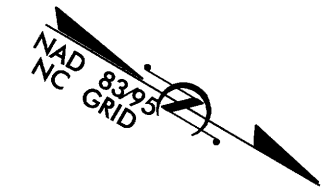
SANITARY SEWER:

Sanitary Sewer Manhole	○ _{SS}
Sanitary Sewer Cleanout	○ _{SC}
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	----- _{A/G Sanitary Sewer}
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

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

SURVEY CONTROL SHEET B-4163



POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	622451.3590	747264.3770	2122.53	10+33.46	13.80 LT
2	BL-2	623029.8780	746960.7760	2090.97	16+86.04	17.84 RT
3	BL-3	623313.8940	746773.7890	2092.40		OUTSIDE PROJECT LIMITS

POINT	DESC.	NORTH	EAST	ELEVATION	YB STATION	OFFSET
4	BY-4	622808.4230	746667.4160	2096.10		OUTSIDE PROJECT LIMITS
22	BL-2	623029.8780	746960.7760	2090.97	10+14.72	28.75 LT
5	BY-5	623163.1460	747315.2720	2094.16		OUTSIDE PROJECT LIMITS

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
6	BY1-6	623001.7130	746378.8620	2086.47	10+14.59	11.02 LT
7	BY1-7	623212.3770	746766.9180	2091.55	14+55.68	9.63 LT
8	BY1-8	623376.8620	747243.0650	2093.19	19+58.58	14.08 RT

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
9	BY2-9	623038.1840	746362.1070	2086.11	10+19.88	18.33 RT
33	BL-3	623313.8940	746773.7890	2092.40	15+15.80	13.64 LT
10	BY2-10	623613.2240	747200.1550	2094.65	20+36.41	13.84 RT

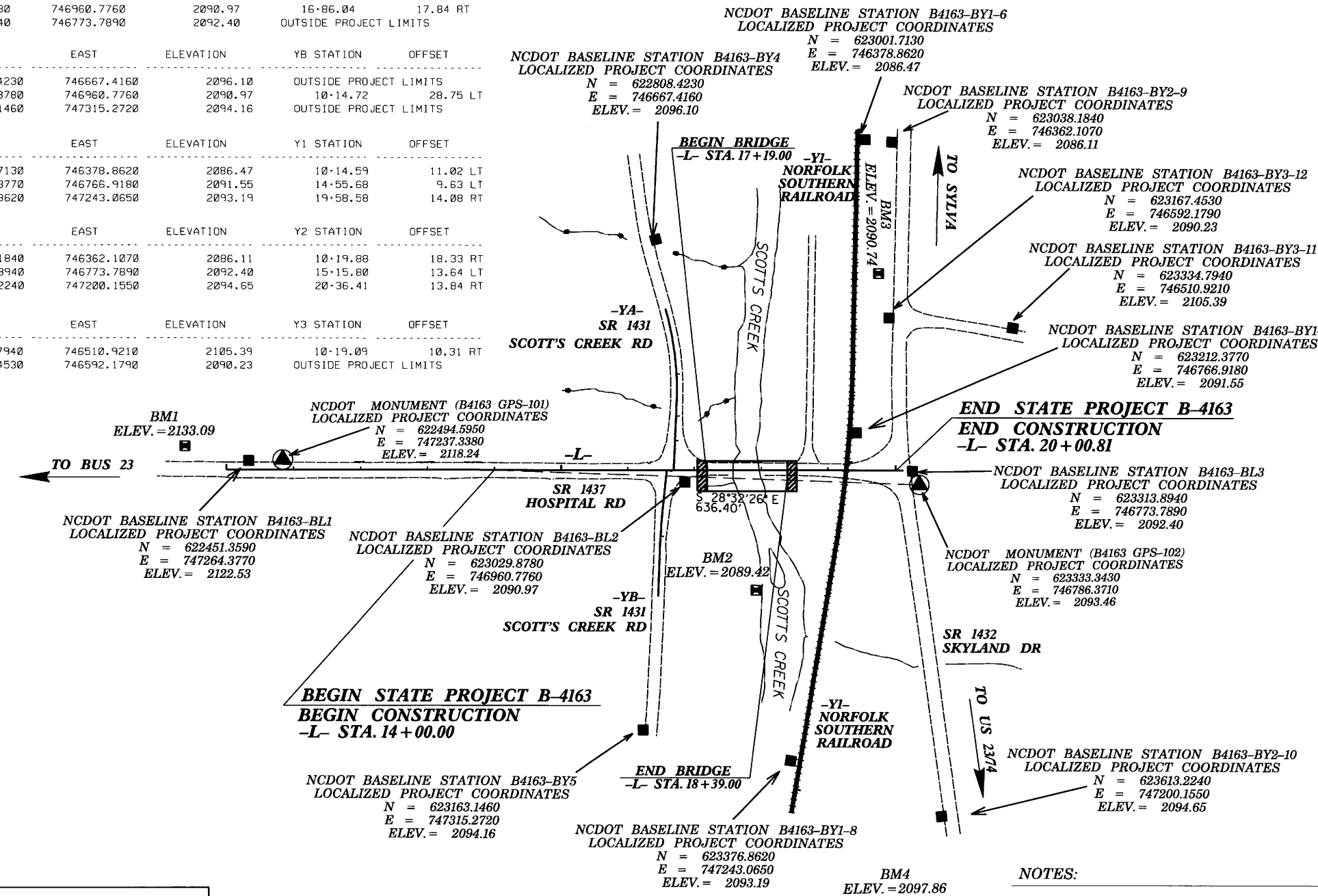
POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
11	BY3-11	623334.7940	746510.9210	2105.39	10+19.09	10.31 RT
12	BY3-12	623167.4530	746592.1790	2090.23		OUTSIDE PROJECT LIMITS

.....
 BM1 ELEVATION = 2133.09
 N 622358 E 747294
 BL STATION 5+00
 S 17° 32' 19.5" E DIST 98.22
 6 INCH SPIKE SET IN ROOT OF 36 INCH
 DOUBLE LOCUST.

 BM2 ELEVATION = 2089.42
 N 623203 E 747048
 BY STATION 10+10 131 LEFT
 8 INCH SPIKE IN BASE OF 18 INCH MAPLE
 TREE.

 BM3 ELEVATION = 2090.74
 N 623120 E 746543
 BY2 STATION 6+96 33 RIGHT
 FROM BY3-12 GOING WEST 70'. 23' FROM
 EP. CHISLED SQUARE NW CORNER.

 BM4 ELEVATION = 2097.86
 N 623688 E 747310
 BY2 STATION 15+16
 N 55° 36' 36.8" E DIST 133.16
 8 INCH SPIKE IN BASE OF POWER POLE.



DATUM DESCRIPTION

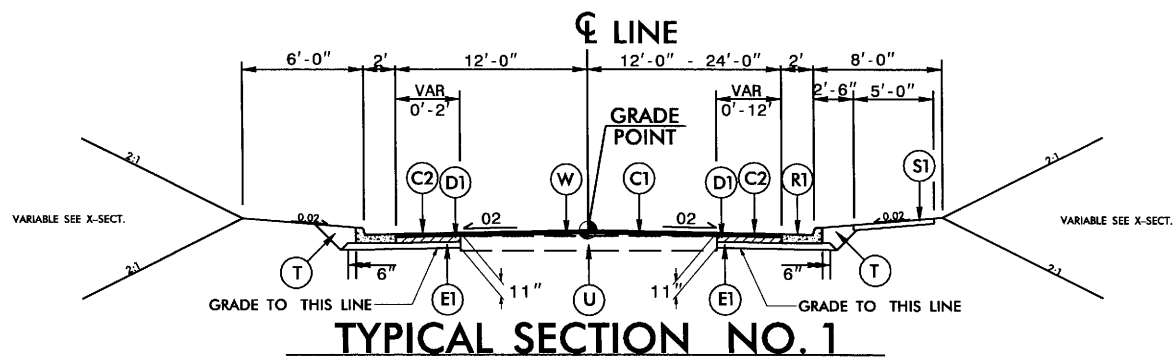
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4163 GPS 102" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 623333.3440(±) EASTING: 746786.3710(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 999774730 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS 102" TO -L- STATION 14+00.00 IS S 28° 32' 26" E 636.40 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.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/) THE FILES TO BE FOUND ARE AS FOLLOWS:
 TIPB4163_LS_CONTROL_071114.TXT
 TIPB4163_LS_IC_071114.DGN
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
 - INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

6/2/99
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 4/18/2008

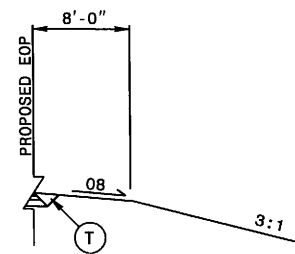
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4/8/2005



TYPICAL SECTION NO. 1

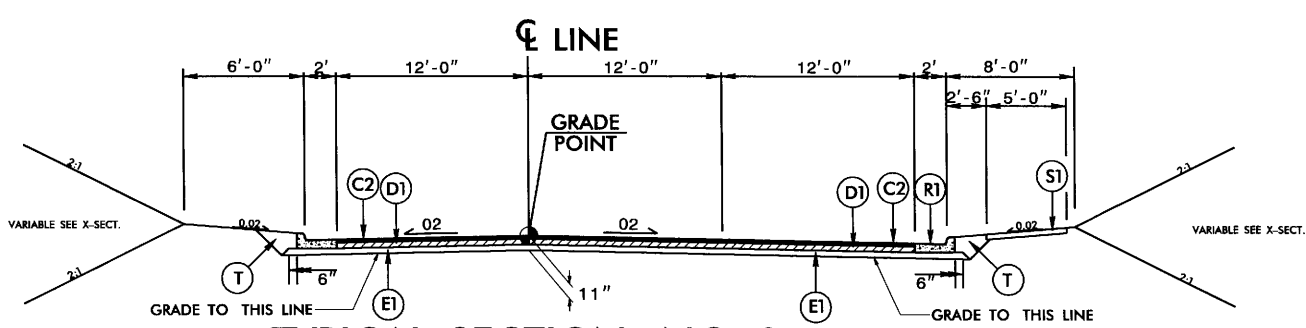
NOTE: TRANSITION FROM EXIST. PAVEMENT TO TYPICAL SECTION NO. 1
 -L- STA. 14+50.00 TO -L- STA. 15+00.00

USE TYPICAL SECTION NO. 1
 -L- STA. 15+00.00 TO 17+00.00
 -L- STA. 18+89.00 TO 19+20.50
 -L- STA. 19+38.50 TO 20+00.81



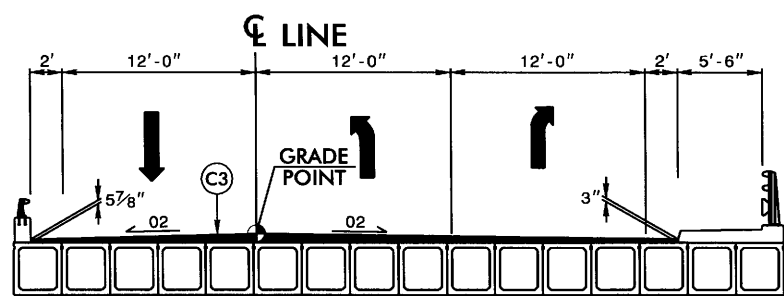
TYPICAL SECTION NO. 1A

USE TYPICAL NO. 1A IN CONJUNCTION WITH TYPICAL NOS. 1 & 2
 -L- STA. 19+14.44 TO -L- STA. 20+00.81 LT.
 -L- STA. 19+10.48 TO -L- STA. 20+00.81 RT.



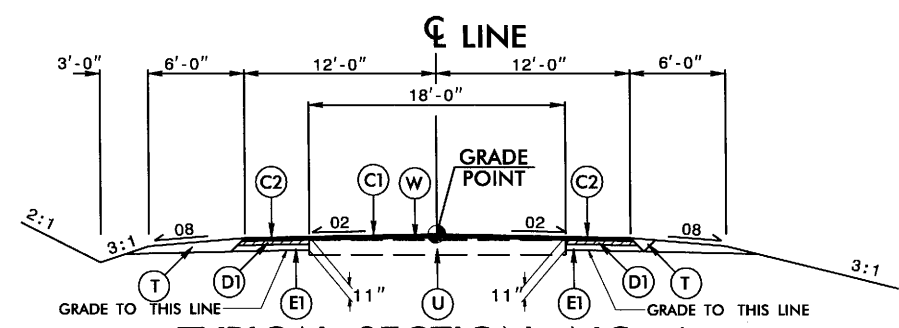
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 17+00.00 TO 17+19.00 (BEGIN BRIDGE)
 -L- STA. 18+39.00 (END BRIDGE) TO 18+89.00
 -L- STA. 19+20.50 TO 19+38.50



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -L- STA. 17+19.00 TO 18+39.00

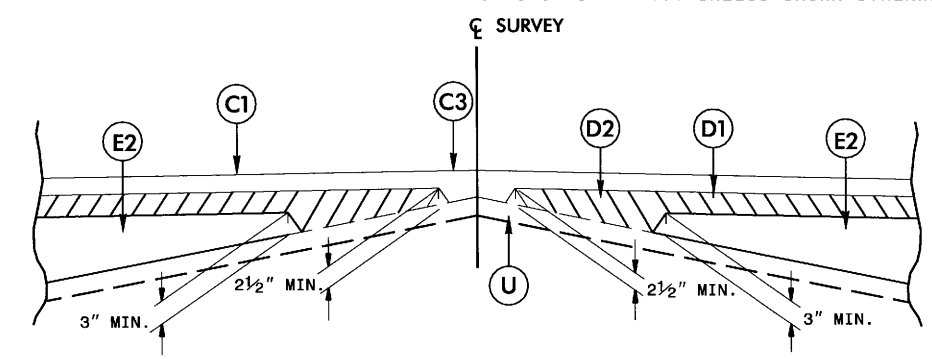


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
 -YA- STA. 12+32.78 TO 11+29.61
 -YB- STA. 10+24.15 TO 11+18.66

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
S1	4" CONCRETE SIDEWALK.
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.



Detail Showing Method of Wedging

PROJECT REFERENCE NO. B-4163	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

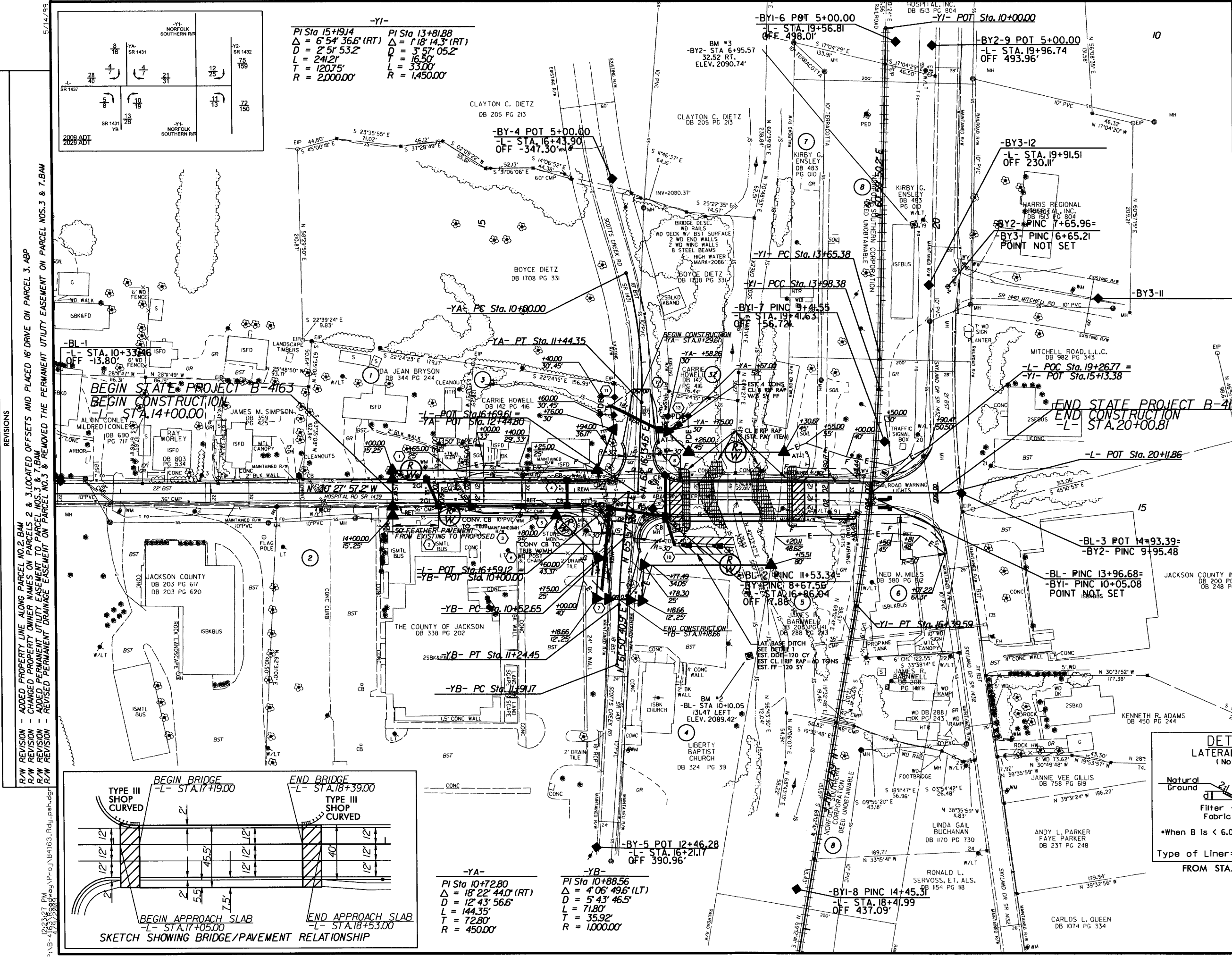
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27604
Bus: 919 851 8077
Fax: 919 851 8107

ETHERILL ENGINEERING

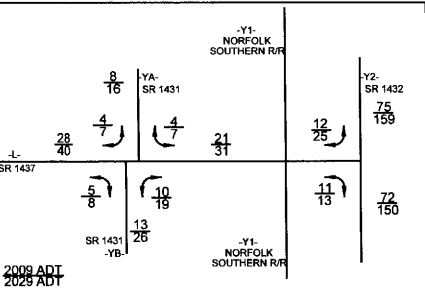
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION DESIGN

SUNGATE DESIGN GROUP, P.A.

915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL 919 859-2243 FAX 919 859-6258

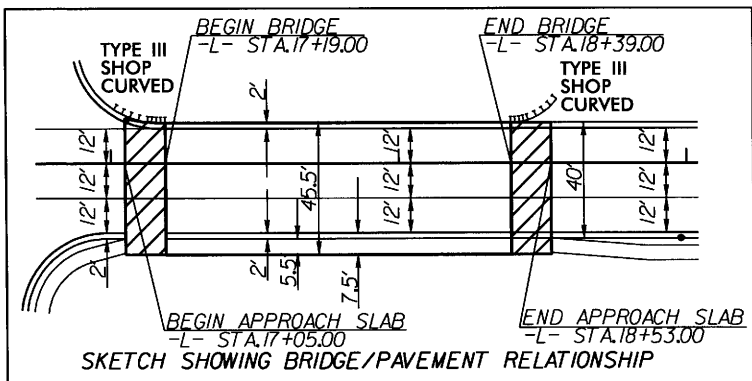


R/W REVISION - ADDED PROPERTY LINE ALONG PARCEL NO.2, B.M. 2 & 3, LOCATED OFFSETS AND PLACED 16' DRIVE ON PARCEL 3, ABP
 R/W REVISION - CHANGED PROPERTY OWNER NAMES ON PARCELS 2 & 3, LOCATED OFFSETS AND PLACED 16' DRIVE ON PARCEL 3, ABP
 R/W REVISION - ADDED PERMANENT UTILITY EASEMENT TO PARCEL NOS. 3 & 7, B.M.
 R/W REVISION - ADDED PERMANENT UTILITY EASEMENT TO PARCEL NO.3 & REMOVED THE PERMANENT UTILITY EASEMENT ON PARCEL NOS.3 & 7, B.M.
 R/W REVISION - REVISED PERMANENT DRAINAGE EASEMENT ON PARCEL NO.3 & 7, B.M.



-Y1-

PI Sta 15+19.14 Δ = 6°54'36.6" (RT) D = 2'51'53.2" L = 241.21' T = 120.75' R = 2,000.00'	PI Sta 13+81.88 Δ = 1°18'14.3" (RT) D = 3'57'05.2" L = 16.50' T = 33.00' R = 1,450.00'
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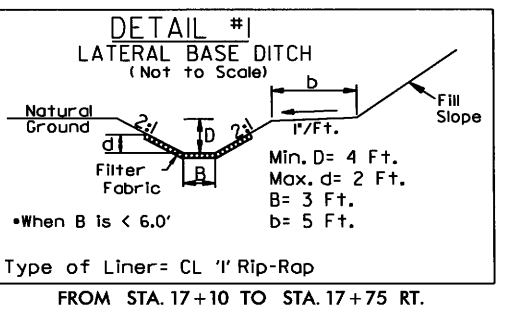


-YA-

PI Sta 10+72.80 Δ = 18°22'44.0" (RT) D = 12'43'56.6" L = 144.35' T = 72.80' R = 450.00'
--

-YB-

PI Sta 10+88.56 Δ = 4°06'49.6" (LT) D = 5'43'46.5" L = 71.80' T = 35.92' R = 1,000.00'



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

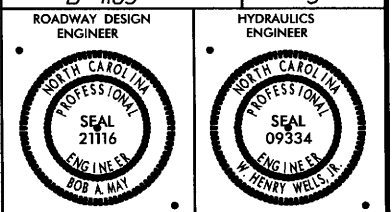
SEE SHEET 5 FOR PROFILES

5/28/09

BM #2 N 623203.0740 E 747047.8840
EL = 2089.42'
8" SPIKE IN BASE OF 18" MAPLE TREE
-L- STA.17+91.6 OFF 180.739'

BM #3 N 623119.9910 E 746542.7000
EL = 2090.74'
CHISELED SQUARE NW CORNER OF SIDEWALK
-L- STA.19+75.69 OFF 296.8200' LEFT

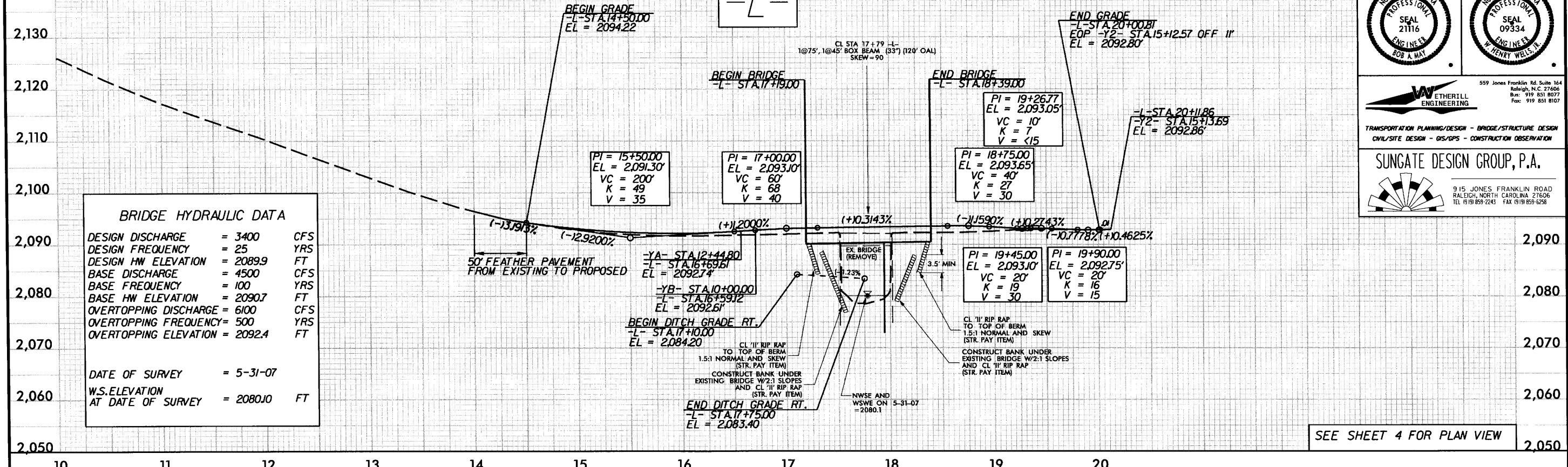
PROJECT REFERENCE NO. B-4163 SHEET NO. 5



ETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUNGATE DESIGN GROUP, P.A.
915 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL 919 859-2241 FAX 919 859-6258



BRIDGE HYDRAULIC DATA

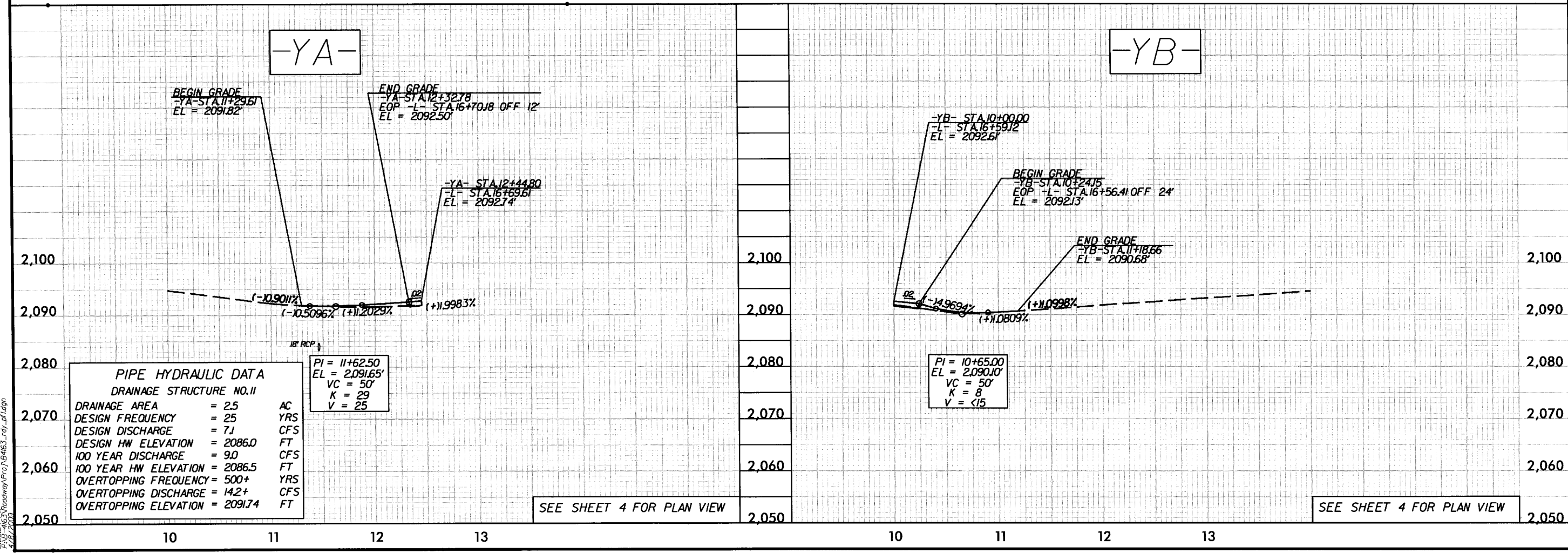
DESIGN DISCHARGE	= 3400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2089.9	FT
BASE DISCHARGE	= 4500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2090.7	FT
OVERTOPPING DISCHARGE	= 6100	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 2092.4	FT

DATE OF SURVEY = 5-31-07
W.S.ELEVATION AT DATE OF SURVEY = 2080.10 FT

SEE SHEET 4 FOR PLAN VIEW

-YA-

-YB-



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.11

DRAINAGE AREA	= 25	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 7.1	CFS
DESIGN HW ELEVATION	= 2086.0	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 2086.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14.2+	CFS
OVERTOPPING ELEVATION	= 2091.74	FT

PI = 11+62.50
EL = 2091.65'
VC = 50'
K = 29
V = 25

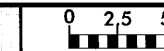
PI = 10+65.00
EL = 2090.10'
VC = 50'
K = 8
V = <15

SEE SHEET 4 FOR PLAN VIEW

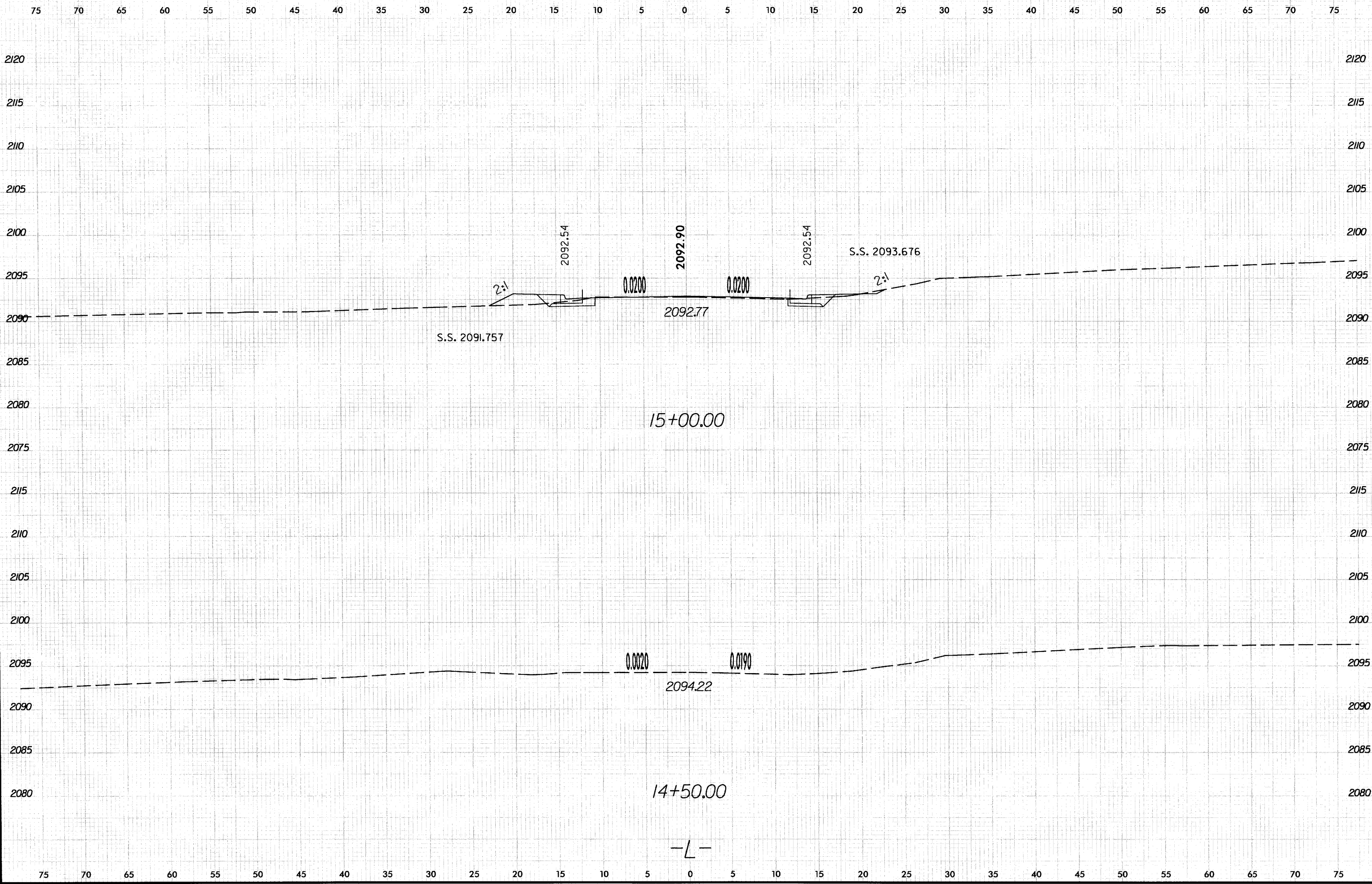
SEE SHEET 4 FOR PLAN VIEW

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8/23/98

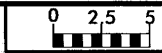


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B-4163	X-1



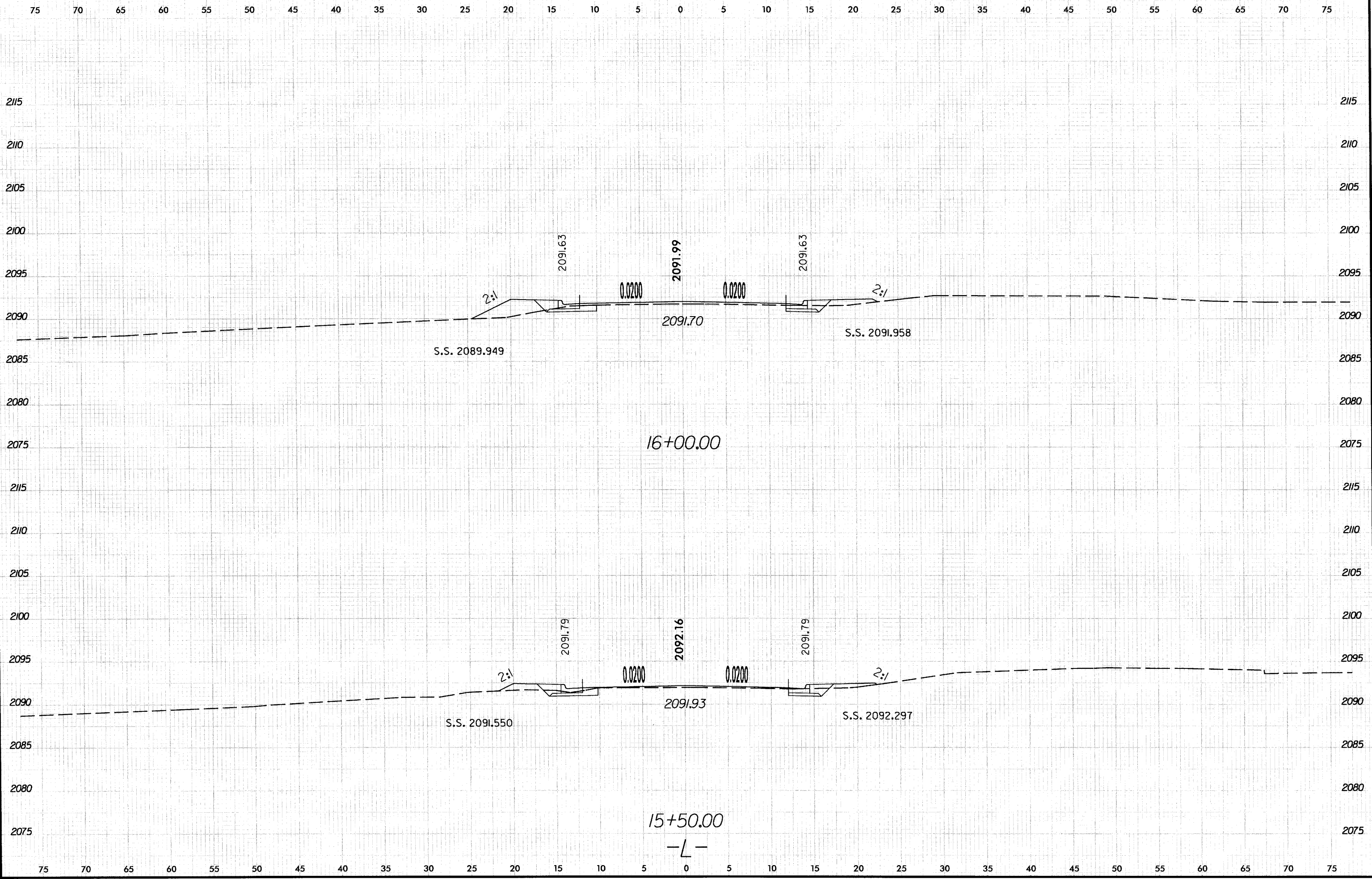
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8/23/99



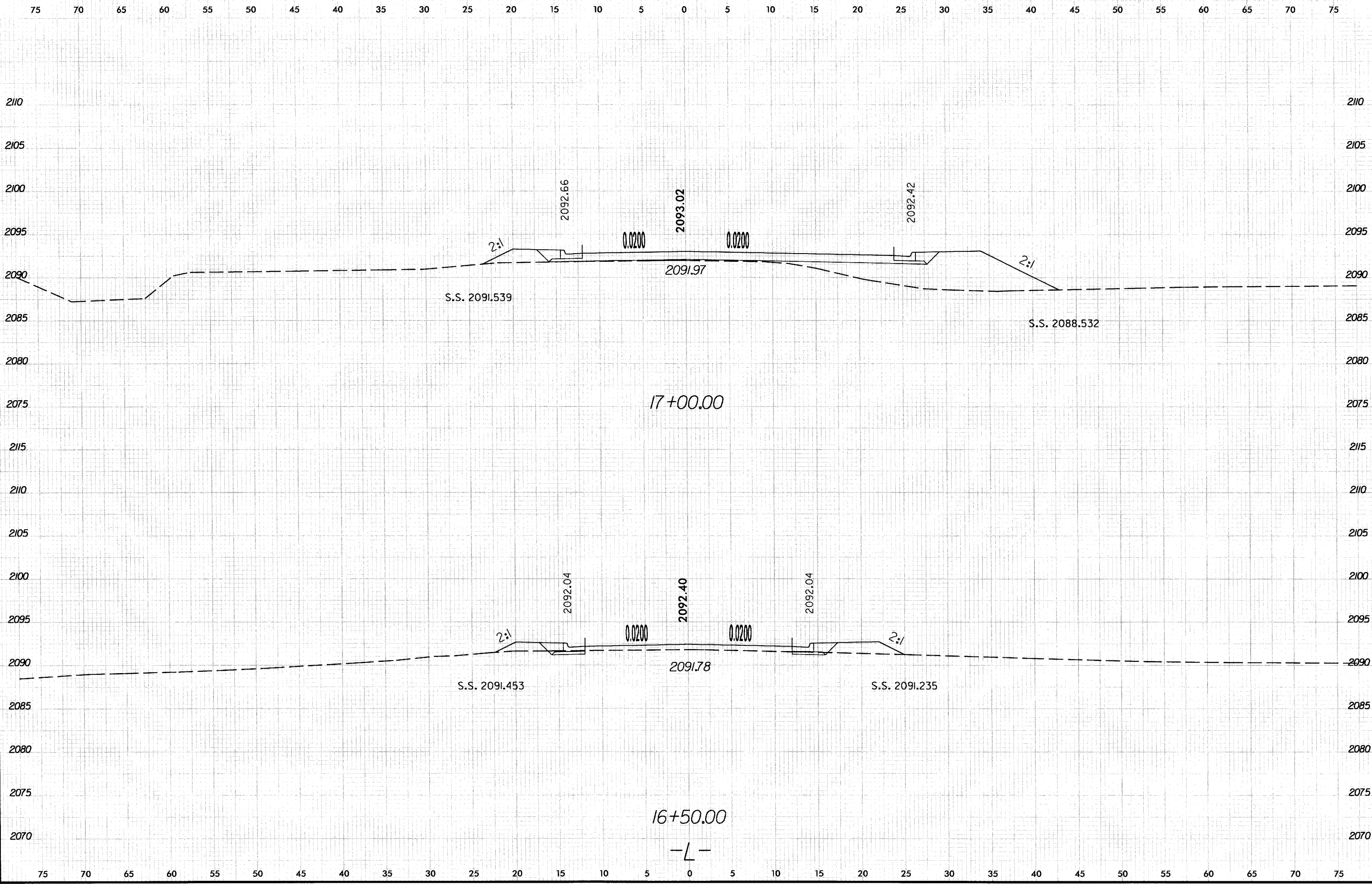
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B-4163

SHEET NO.
X-2

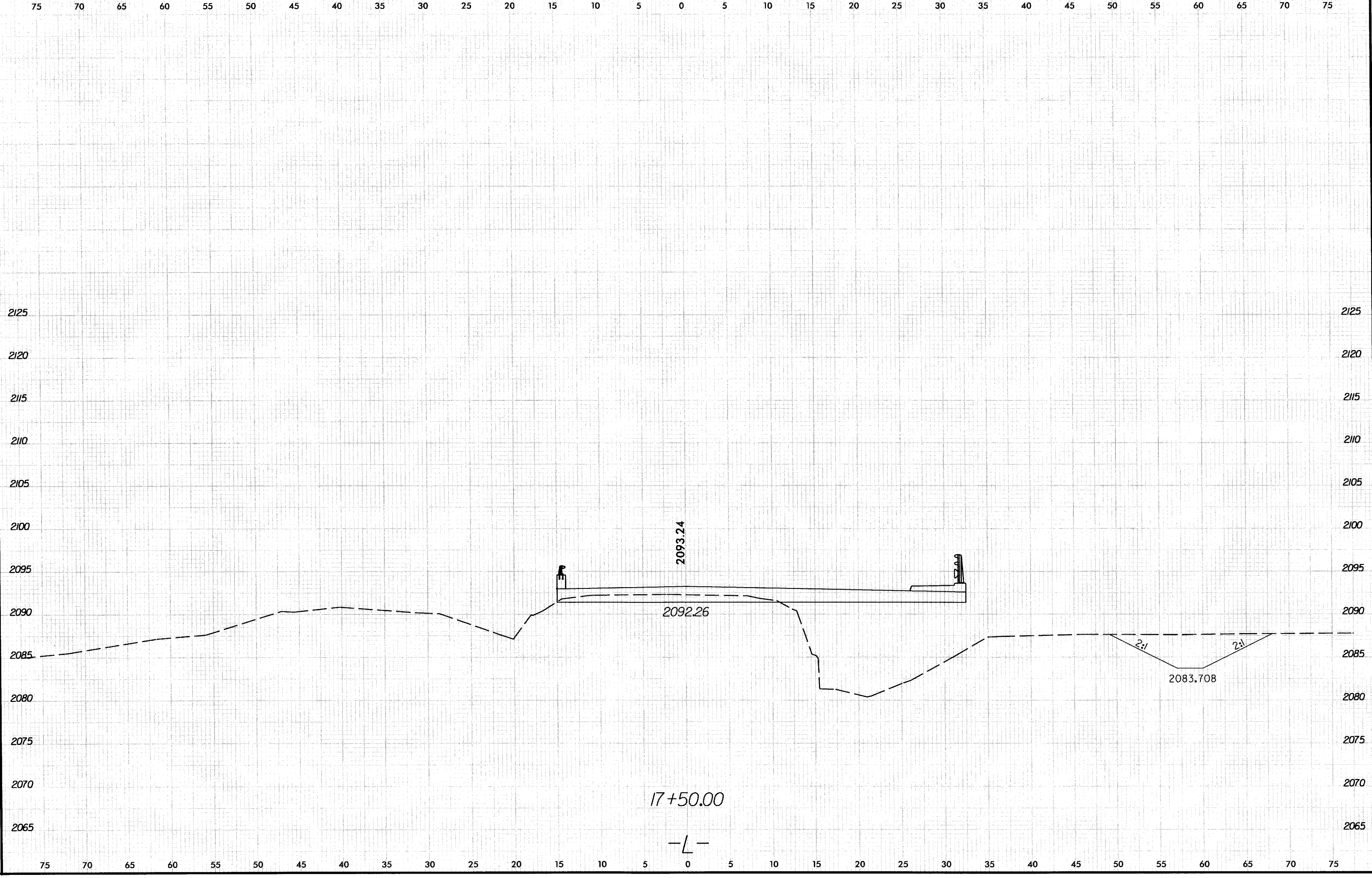


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8/23/99

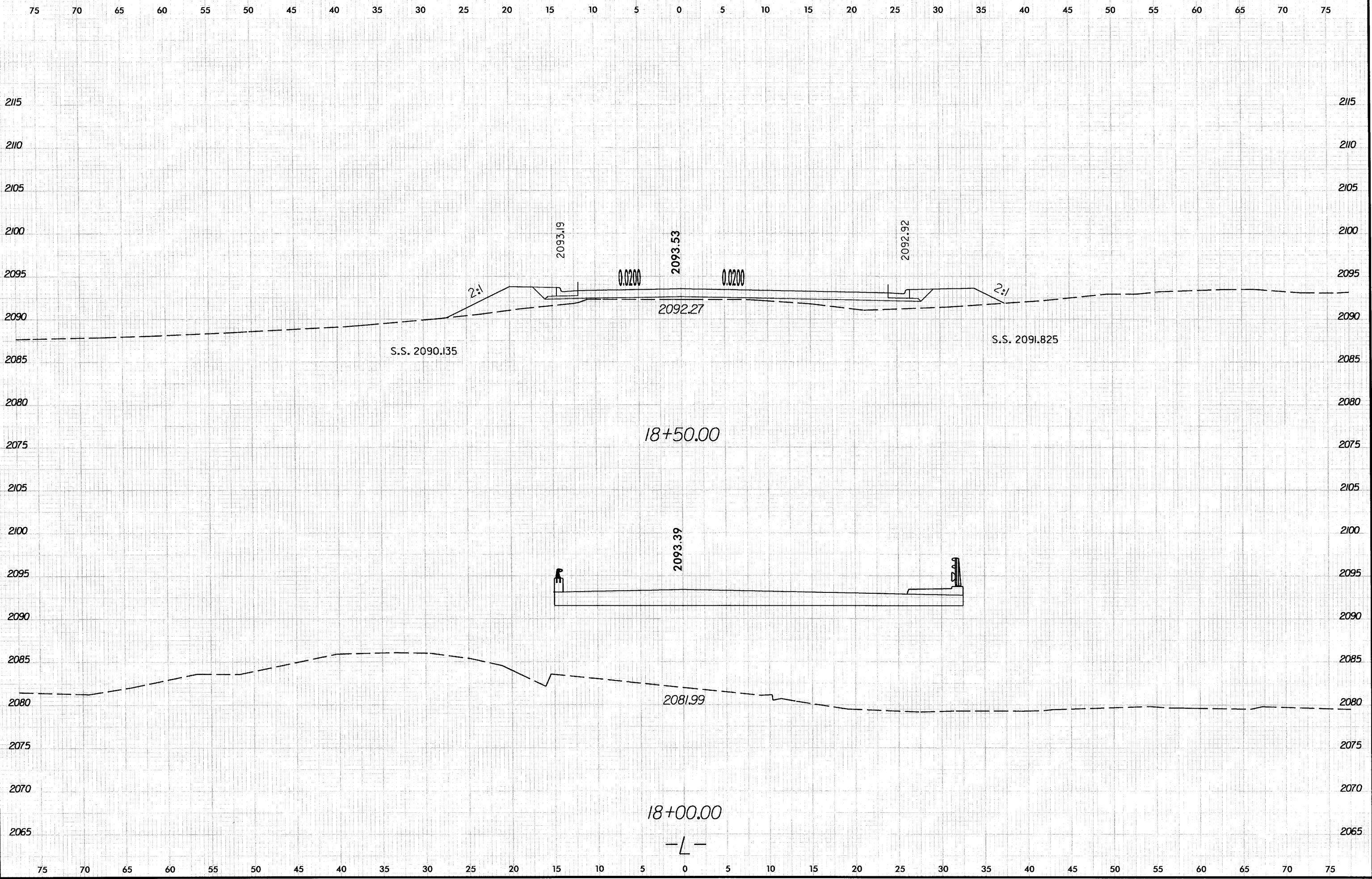


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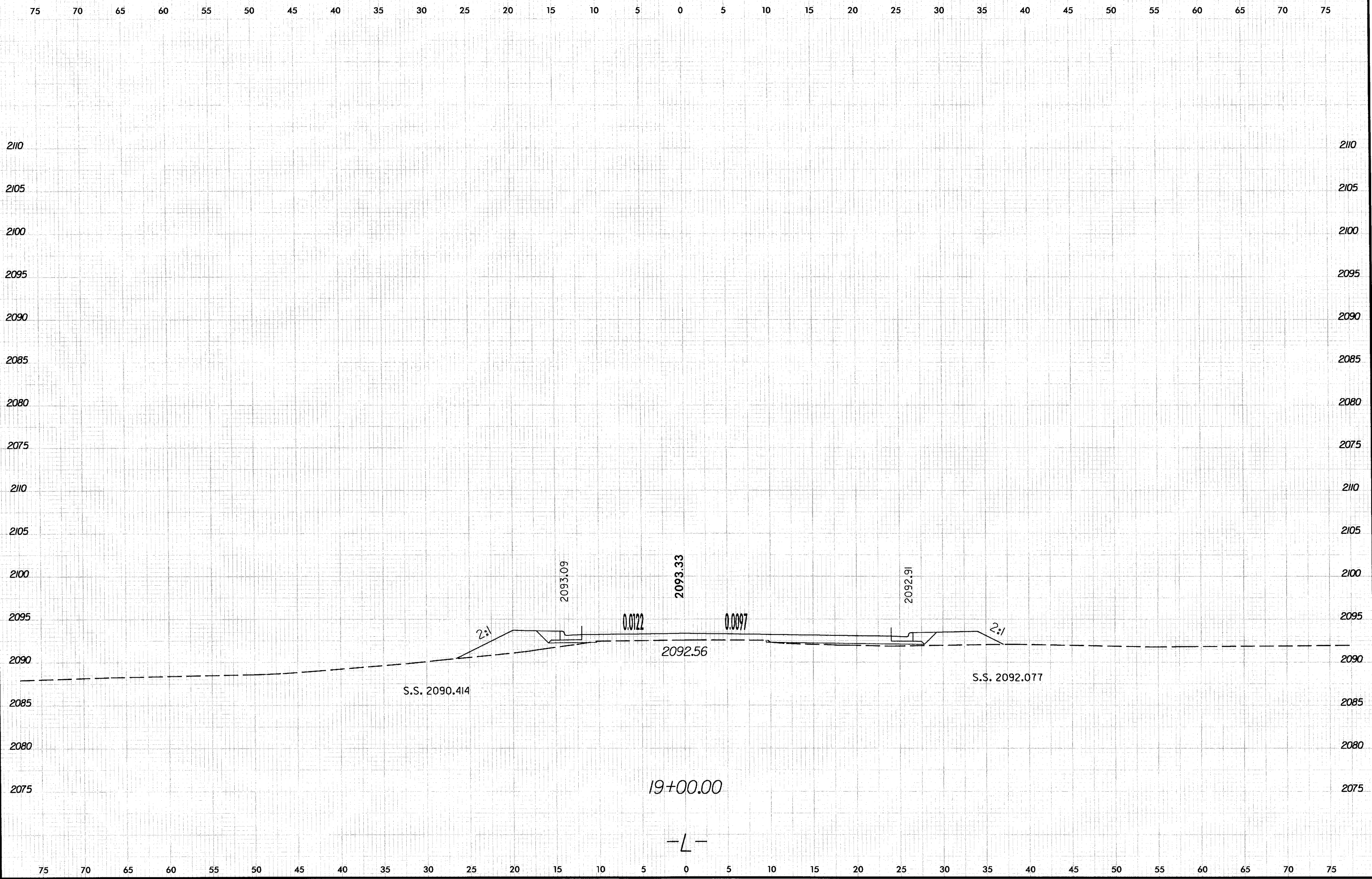
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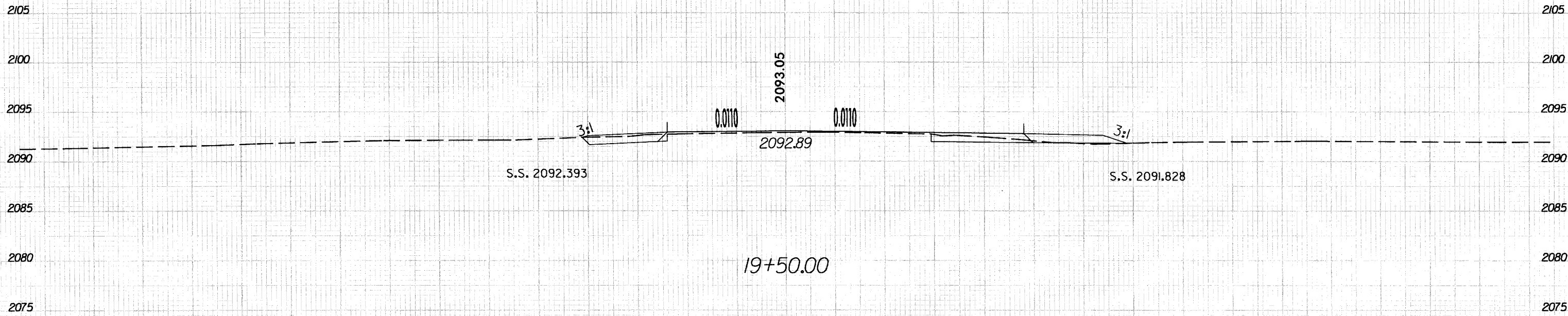
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PROJ. REFERENCE NO.
B-4163

SHEET NO.
X-7

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S.S. 2092.393

S.S. 2091.828

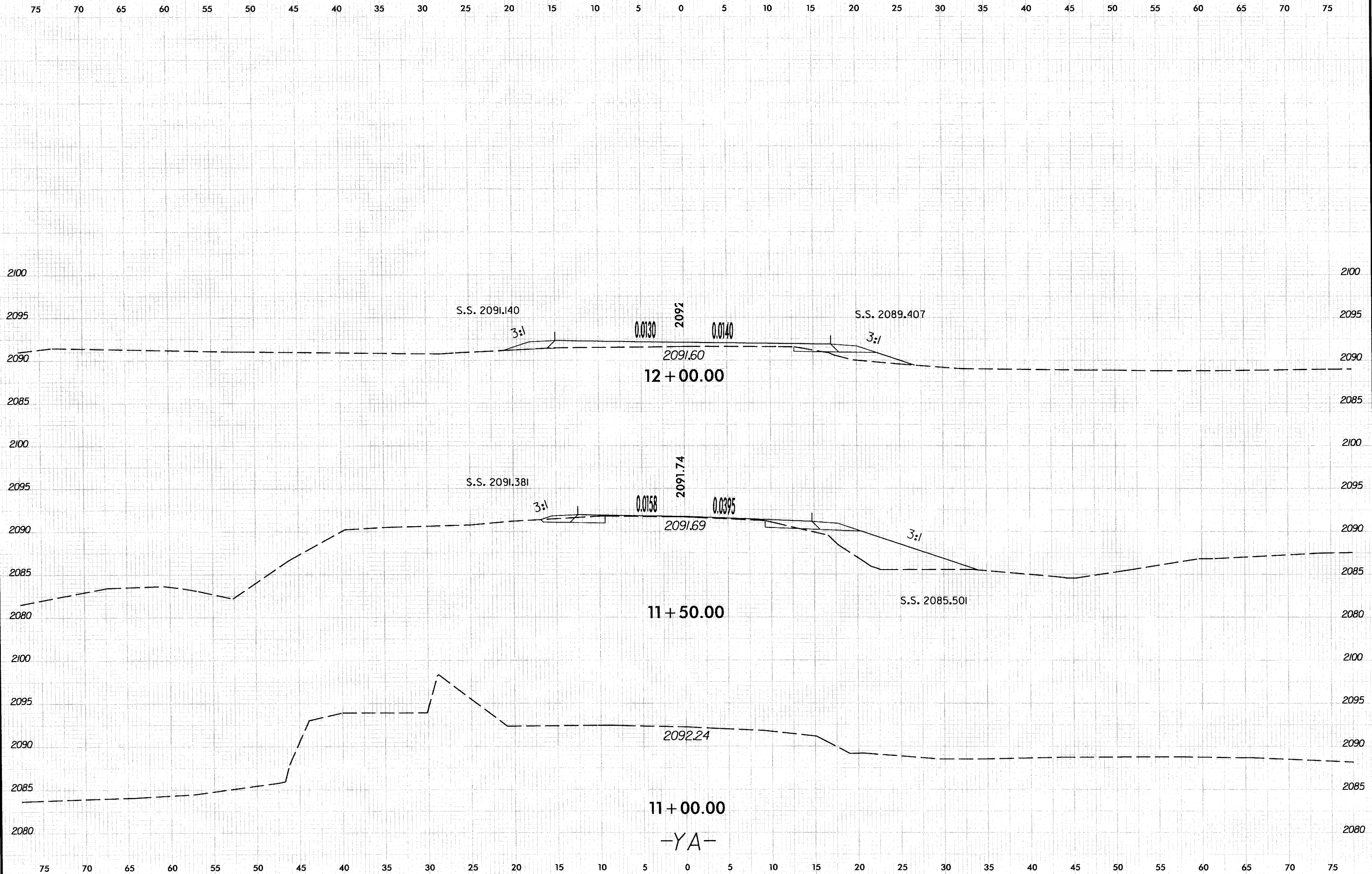
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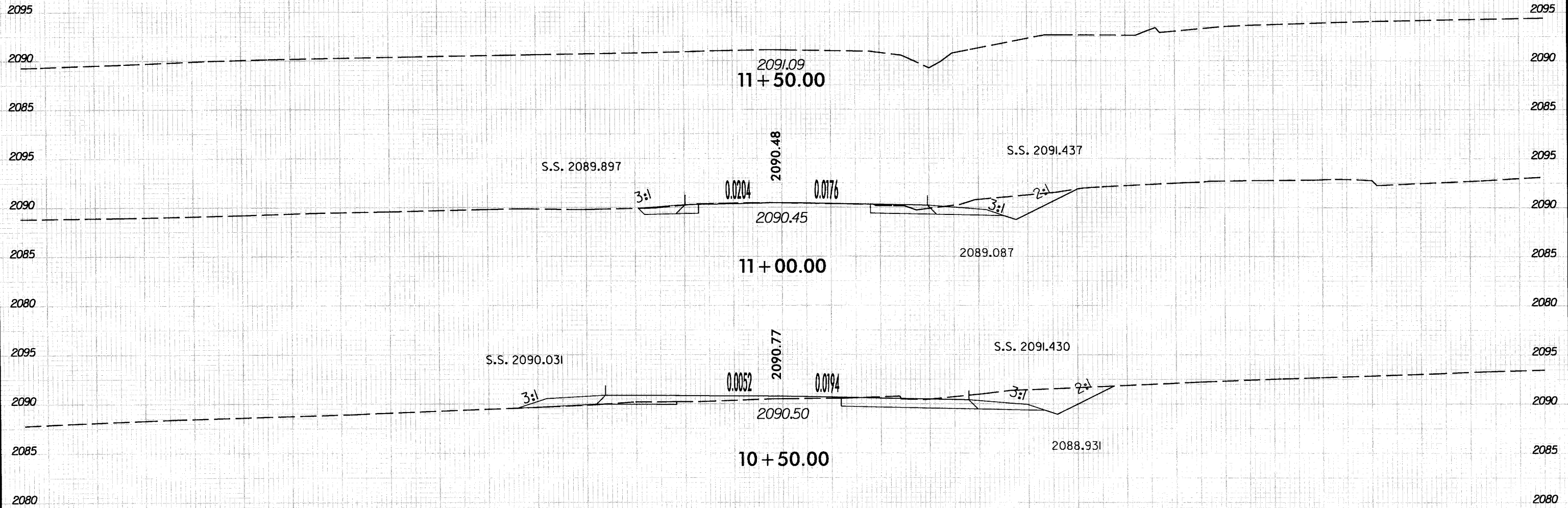
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