



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

September 30, 2013

Department of Water Resources
1650 Mail Service Center
Raleigh, NC 27699-1650

ATTN: Ms. Amy Chapman
NCDOT Coordinator

Subject: **Application for Section 401 Water Quality Certification along with a Neuse Riparian Buffer Authorization with the intent to also use Section 404 Nationwide Permits 3 and 13** for the Replacement of Bridge No. 2 on SR 1147 (Holden Road) over Horse Creek in Franklin County, North Carolina, TIP No. B-4748, Federal Aid Project No. BRZ-1147 (10).

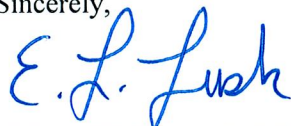
The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 2 on SR 1147 (Holden Road) over Horse Creek in Franklin County. Please find enclosed the Pre-Construction Notification (PCN) form, stormwater management plan, permit drawings, and design plans for the above referenced project. For impact totals, please see the PCN.

A Programmatic Categorical Exclusion (PCE) was completed for this project on November 13, 2012. Copies are available upon request. The proposed let date for the project is April 15, 2014 with a review date of February 25, 2014. However, the let date may advance as additional funds become available.

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

Thank you for your time and assistance with this project. Please contact Deanna Riffey at either driffey@ncdot.gov or (919) 707-6151 if you have any questions or need additional information.

Sincerely,


for

Richard W. Hancock, P.E. Manager
Project Development and Environmental Analysis Unit

Cc: NCDOT Permit Application Standard Distribution List



Office Use Only:
 Corps action ID no. _____
 DWQ project no. _____
 Form Version 1.4 January 2009

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	<input type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 3 13 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular	<input type="checkbox"/> Non-404 Jurisdictional General Permit	
<input type="checkbox"/> 401 Water Quality Certification – Express	<input checked="" type="checkbox"/> Riparian Buffer Authorization	
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	<input 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:	Replacement of Bridge No. 2 on SR 1147 (Holden Road) over Horse Creek
2b. County:	Franklin
2c. Nearest municipality / town:	Youngsville
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4748

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) 707-6151
3g. Fax no.:	(919) 212-5785
3h. Email address:	driffey@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: 36.2449 (DD.DDDDDD) Longitude: - 78.518973 (-DD.DDDDDD)
1c. Property size:	acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Horse Creek
2b. Water Quality Classification of nearest receiving water:	WSIV NSW
2c. River basin:	Neuse
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Land use in the project vicinity consists of agriculture, interspersed with residential development along roadways, and forestland along stream corridors.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.03	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 481	
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 involves replacing a 40-foot bridge with a 100-foot on the existing alignment with an off-site detour. Buffer impacts associated include 3,623 sq.ft. of Zone 1 and 1,117 sq.ft. of Zone 2 for Bridge Impacts and 686 sq. ft. of Zone 1 and 1,326 sq. ft. of Zone 2 for Road Impacts Other Than Crossing Streams and Other Surface Waters. 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: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. March 18, 2013	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
<input type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> Pond Construction				
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction	2f. Area of impact (acres)	
Site 1 <input type="checkbox"/> P <input type="checkbox"/> T	Choose One	Choose One	<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	Choose One	Choose One	<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	Choose One	Choose One	<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	Choose One	Choose One	<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	Choose One	Choose One	<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	Choose One	Choose One	<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	Stabilization	Horse Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	8	104
Site 2 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Dewatering	Horse Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	8	104
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T	Choose One		<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T	Choose One		<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T	Choose One		<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	Choose One		<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts						104 Perm 104 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		Choose One	Choose One	
O2 <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	Choose One	
O3 <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	Choose One	
O4 <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	Choose One	
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 checked="" 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 checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge	Horse Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3,623	1,117		
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Roadway	Horse Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	686	1,326		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
6h. Total buffer impacts				4,309	2,443		
6i. Comments:							

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed bridge replacement will take place on existing alignment and will be longer. Impacts were minimized by keeping bridge bents out of the water and replace in existing location.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT will use Design Standards for Sensitive Watersheds for sediment and erosion control. An off-site detour will be utilized.		
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?

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:				

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments: If required from 1a, see attached buffer permit drawings.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No n/a
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 N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No N/A

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input 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? USFWS county list and NCNHP database along with field surveys. No Effect for Alasmadonta heterodon, Elliptio steinstansana, and Rhus michauxii.		
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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<u>Richard W. Hancock, P.E.</u> Applicant/Agent's Printed Name	 _____ Applicant/Agent's Signature <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	<u>10.1.13</u> 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-4748 **County(ies):** Franklin **Page** 1 **of** 1

General Project Information

Project No.:	B-4748	Project Type:	Bridge Replacement	Date:	5/6/2013
NCDOT Contact:	Linda Johns	Contractor / Designer:	Same as Contact		
Address:	1590 Mail Service Center Raleigh, NC 27699-1590	Address:			
	Phone: 919-707-6728		Phone:		
	Email: lmjohns@ncdot.gov			Email:	
City/Town:	Youngsville	County(ies):	Franklin		
River Basin(s):	Neuse	CAMA County?	No		
Primary Receiving Water:	Horse Creek	NCDWQ Stream Index No.:	27-17-(0.7)		
NCDWQ Surface Water Classification for Primary Receiving Water	Primary:	Water Supply IV (WS-IV)			
	Supplemental:	Nutrient Sensitive Waters (NSW)			
Other Stream Classification:					
303(d) Impairments:	None				
Buffer Rules in Effect	Neuse				

Project Description

Project Length (lin. Miles or feet):	0.114 miles	Surrounding Land Use:	Agriculture, forests & rural residential		
	Proposed Project		Existing Site		
Project Built-Upon Area (ac.)	0.50 ac.		0.38 ac.		
Typical Cross Section Description:	2@12' lanes, open shoulder		2@12' lanes, 4' wide paved shoulders		
Average Daily Traffic (veh/hr/day):	Design/Future: 10000		Existing: 4900		

General Project Narrative: This project is a bridge replacement project with approach improvements. This project includes stormwater control devices such as grass swales and preformed scour holes, where possible prior to or through buffer zone 1 and 2. Bank stabilization is provided along the stream banks to stabilize the existing stream top of bank through the bridge opening.

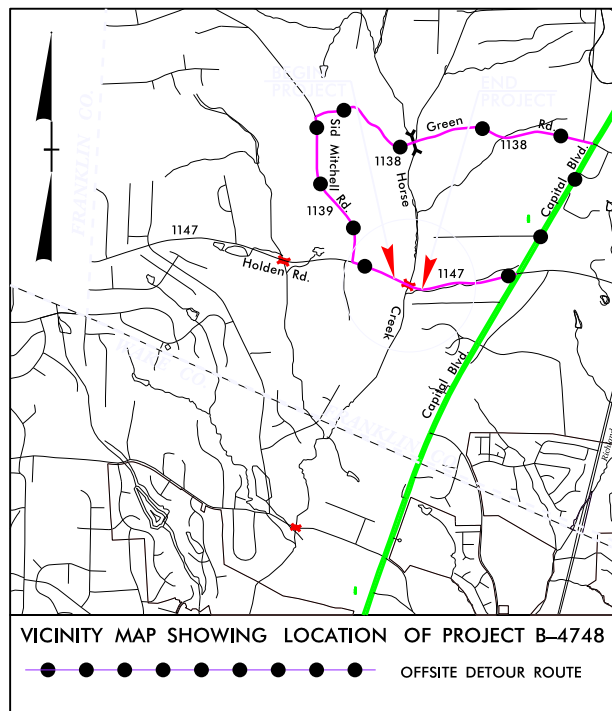
References

09/08/09

TIP PROJECT: B-4748

CONTRACT:

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

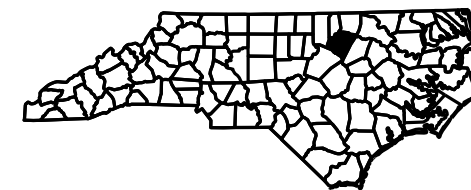
FRANKLIN COUNTY

**LOCATION: BRIDGE NO. 2 OVER HORSE CREEK
ON SR 1147 (HOLDEN ROAD)**

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

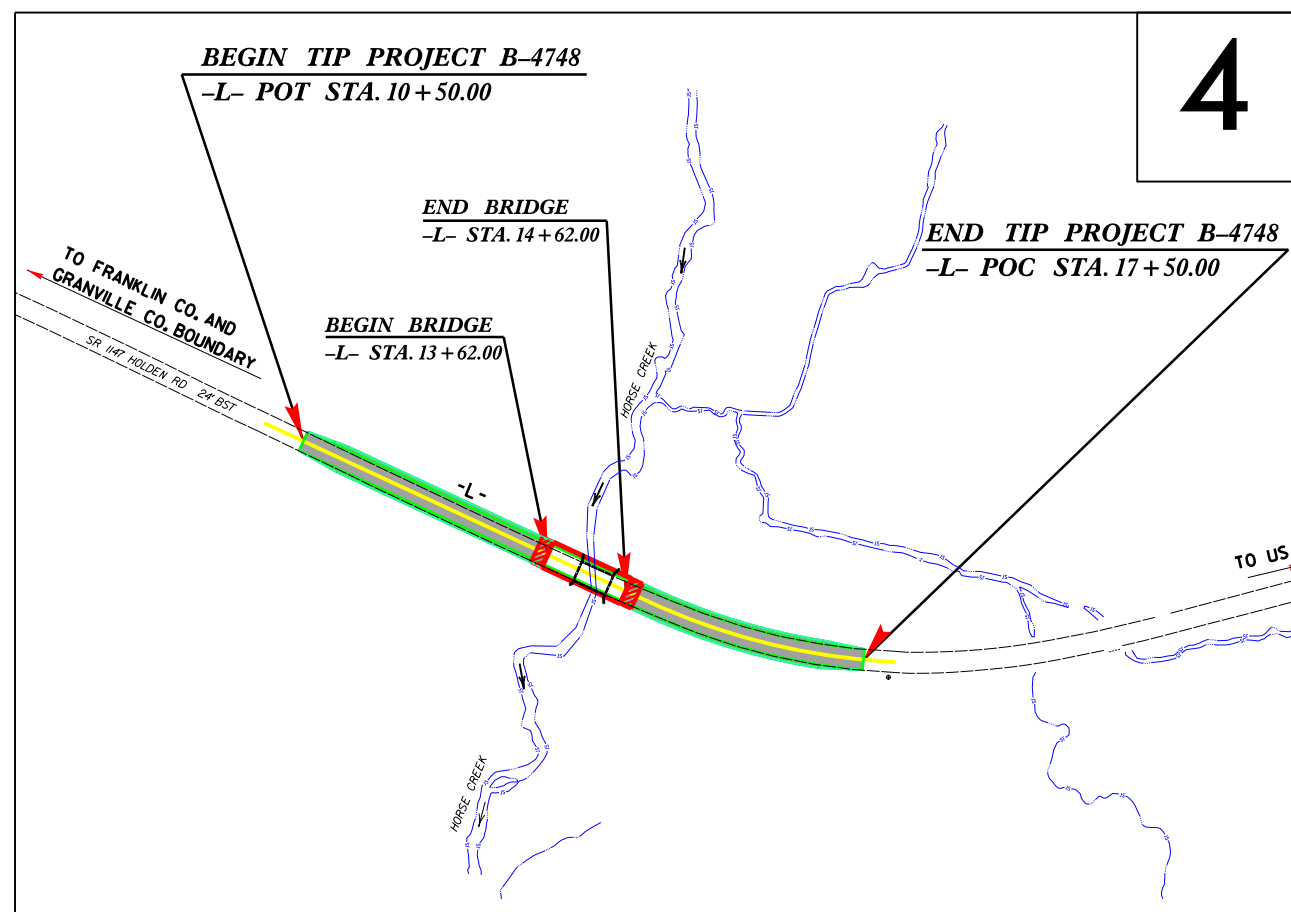
WETLAND & STREAM IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4748	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38520.1.1	BRZ-1147 (10)	PE	
38520.2.1	BRZ-1147 (10)	ROW & UTIL	
38520.3.1	BRZ-1147 (10)	CONSTRUCT	



WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING
SHEET 1 OF 7



THIS PROJECT WAS DESIGNED USING THE SUB REGIONAL TIER DESIGN GUIDELINES FOR BRIDGE PROJECTS.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2012 = 4,900 ADT 2035 = 10,000 DHV = 13 % D = 60 % T = 5 % * V = 50 MPH * TTST 3% DUAL 2% FUNC CLASS=RURAL LOCAL</p>	<p>PROJECT LENGTH</p> <p>Length Roadway Tip Project B-4748 = .114 MILES Length Structure Tip Project B-4748 = .019 MILES Total Length of Tip Project B-4748 = .133 MILES</p>	<p>Prepared In the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610</p> <p>2012 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: APRIL 30, 2013</p> <p>LETTING DATE: APRIL 15, 2014</p> <p>TONY HOUSER, PE PROJECT ENGINEER</p> <p>LEE ANN MOORE PROJECT DESIGN ENGINEER</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	
--	---	---	---	---	--

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

8/17/99

PROJECT REFERENCE NO. B-4748	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

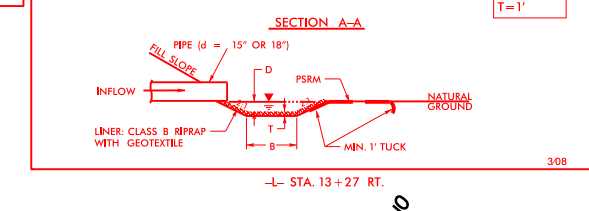
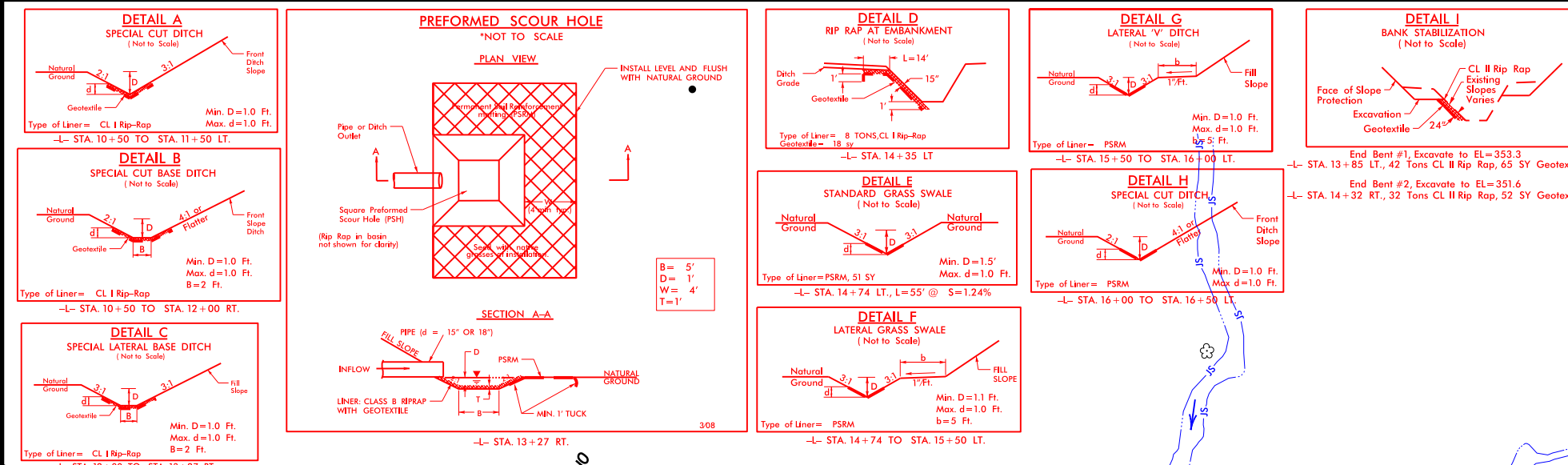
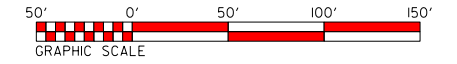
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PI Sta 16+26.57
 $\Delta = 20' 21" 240' (LT)$
 $D = 7' 32" 55.9'$
 $L = 269.67'$
 $T = 136.22'$
 $R = 759.00'$
 $SE = SEE PLANS$

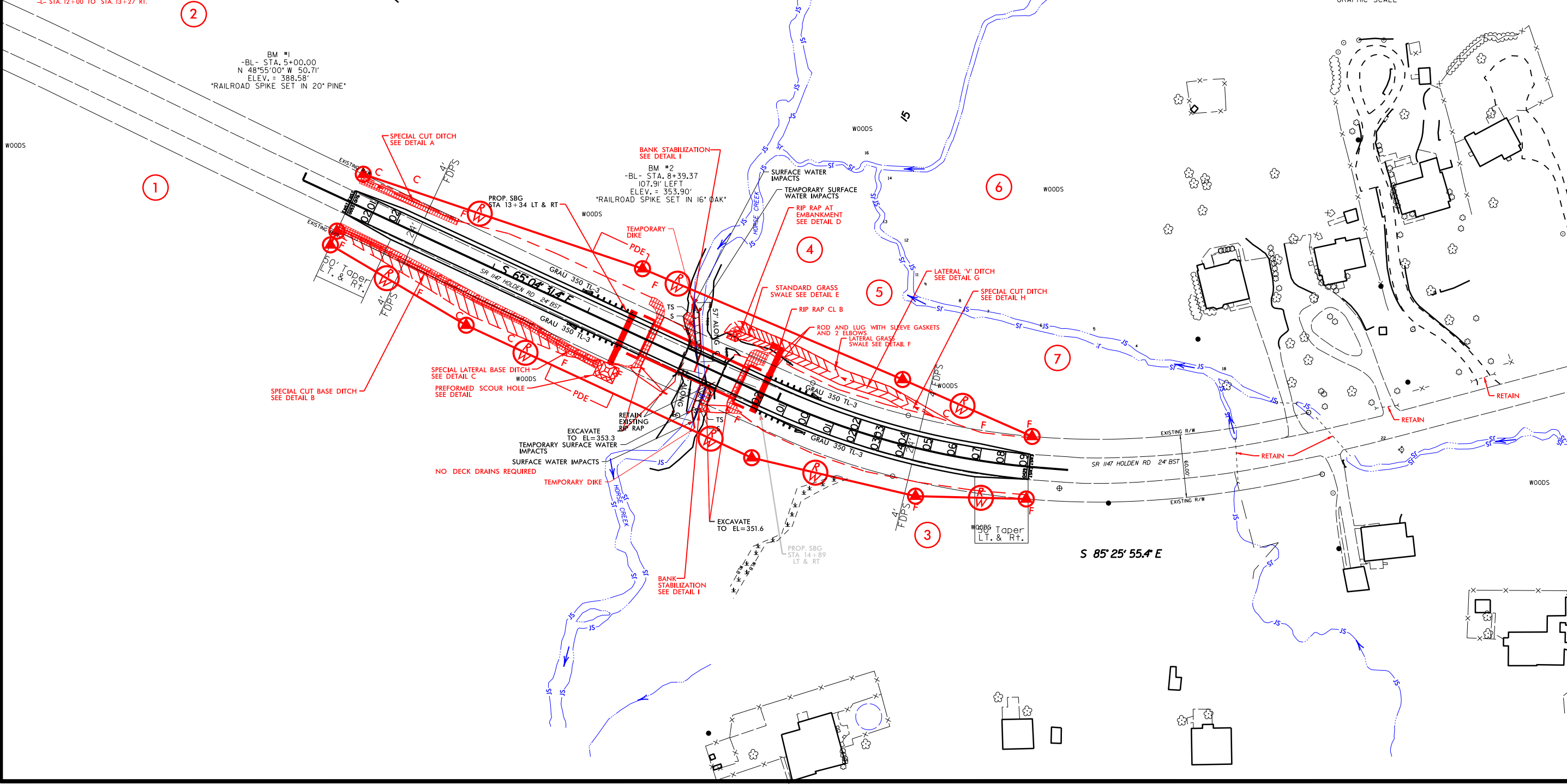
WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING SHEET 2 OF 7

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



REVISIONS



BM #1
 -BL- STA. 5+00.00
 N 48°55'00\"/>

BM #2
 -BL- STA. 8+39.37
 107.9' LEFT
 ELEV. = 353.90'
 *RAILROAD SPIKE SET IN 16\"/>

5/7/2013
 R:\Hydraulics\PERMITS_Environmental\Drawings\Surface Water Impacts\B-4748_Hyd_perm_ver.dgn
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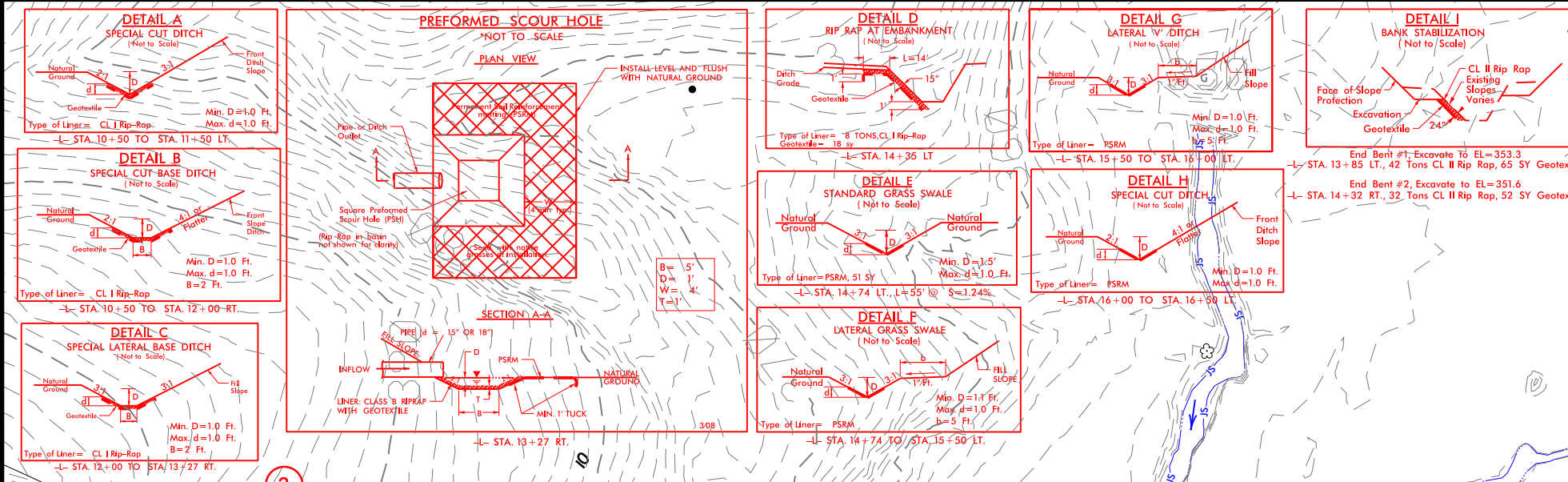
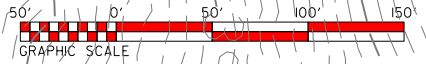
PROJECT REFERENCE NO.	SHEET NO.
B-4748	4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 PI Sta 16+26.57
 $\Delta = 20' 21' 240'' (LT)$
 $L = 7' 32' 55.9''$
 $L = 269.67'$
 $R = 136.27'$
 $R = 759.00'$
 SE = SEE PLANS

WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING
SHEET 3 OF 7

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



2

1

6

4

5

7

3

BM #1
 BL - STA. 5+00.00
 N 48°55'00" W 50.71'
 ELEV. = 388.58'
 RAILROAD SPIKE SET IN 20" PINE

BM #2
 BL - STA. 8+39.37
 107.91' LEFT
 ELEV. = 353.90'
 RAILROAD SPIKE SET IN 16" OAK

EXCAVATE TO EL=351.6

S 85° 25' 55.4" E

REVISIONS

5/7/2013
 R:\Hydraulic PERMITS Environmental Drawings\Surface Water Impacts (B-4748)_hyd_perm_wet.dgn
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 \$\$\$\$\$\$DATE\$\$\$\$\$\$
 \$\$\$\$\$\$USER\$\$\$\$\$\$
 \$\$\$\$\$\$CADD\$\$\$\$\$\$
 \$\$\$\$\$\$PLT\$\$\$\$\$\$
 \$\$\$\$\$\$PRN\$\$\$\$\$\$
 \$\$\$\$\$\$APP\$\$\$\$\$\$
 \$\$\$\$\$\$END\$\$\$\$\$\$

WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING
SHEET 5 OF 7

PROJECT REFERENCE NO. B-4748	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

STANDARD GRASS SWALE SEE DETAIL E

RIP RAP CL B

ROD AND 2 ELB L S

GRAU 350 TL-3
3.4" F
24' BST

GRAU 350 TL-3

GRAU 350 TL-

GRAU 350 T

**R
W**

**R
W**

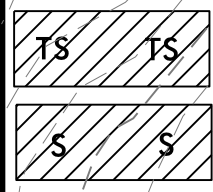
R

TS
S

57' ALONG Q
TOB

47' ALONG Q
TOB

PDE



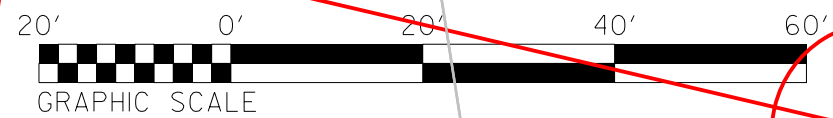
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER

RETAIN EXISTING RIP RAP

EXCAVATE TO EL = 353.3

TEMPORARY SURFACE WATER

PERMANENT SURFACE WATER IMPACTS



REVISIONS

6/17/99
R:\Hydraulics\PERMITS\Environmental\Drawings\Surface Water Impacts\B-4748_hyd_perm_wet_enhancement.dgn
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DESIGNED\$\$\$\$\$
\$\$\$\$\$DRAWN\$\$\$\$\$
\$\$\$\$\$CHECKED\$\$\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$

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

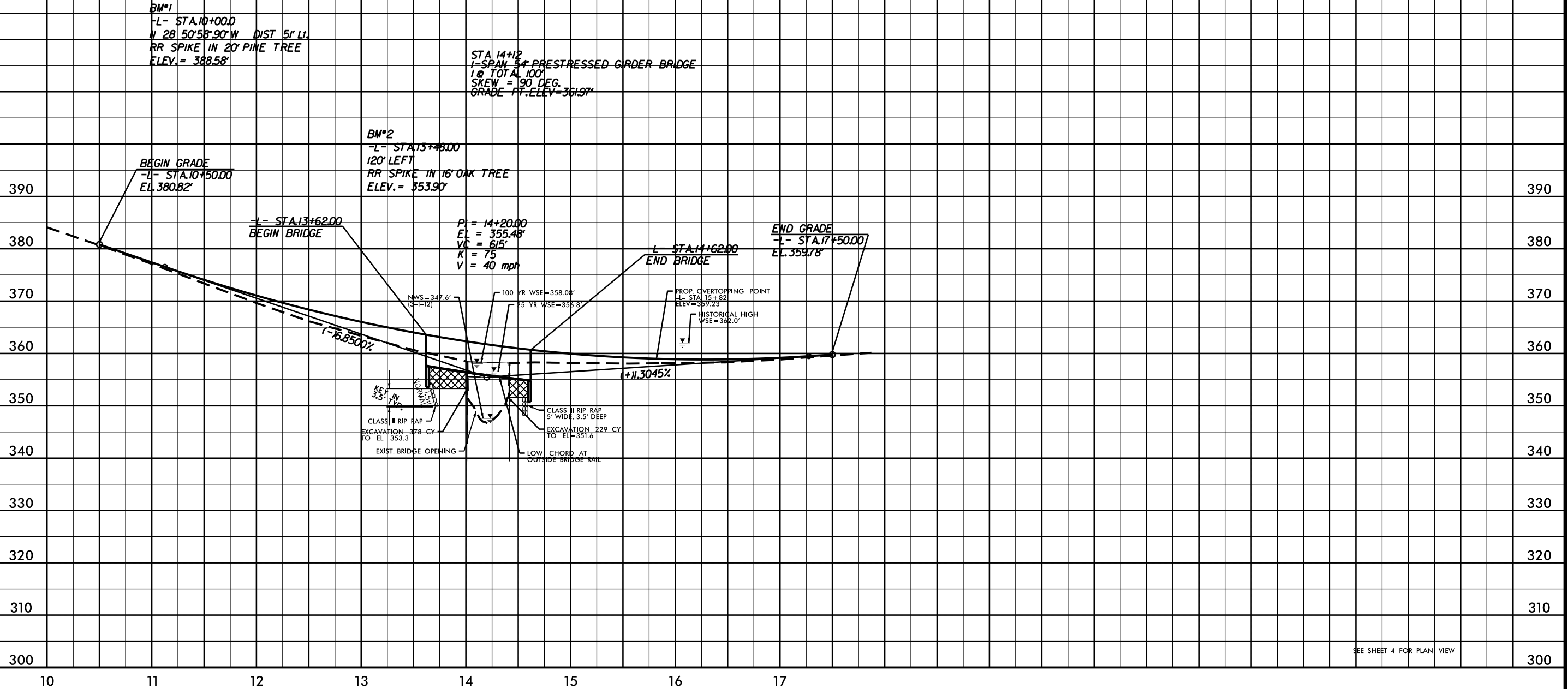
WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING SHEET 6 OF 7

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE = 1,900 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 356.8 FT
 BASE DISCHARGE = 2,495 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 358.08 FT
 OVERTOPPING DISCHARGE = 3,600 CFS
 OVERTOPPING FREQUENCY = 500+/- YRS
 OVERTOPPING ELEVATION = 359.23 FT

* OT OCCURS @ SAG LOCATION -L- STA 15+82.
 * OT ELEV. REPRESENTS HIGH SIDE OF PROPOSED ROADWAY.



SEE SHEET 4 FOR PLAN VIEW

5/14/99
 R:\Hydraulics\PERMITS_Environmental\Drawings\Surface Water Impacts\B-4748_Hyd_Lrm_wet_plt.dgn
 \$\$\$\$\$\$SYTIME\$\$\$\$\$\$
 \$\$\$\$SYTIME\$\$\$\$\$\$
 \$\$\$\$SYTIME\$\$\$\$\$\$

WETLAND PERMIT IMPACT SUMMARY

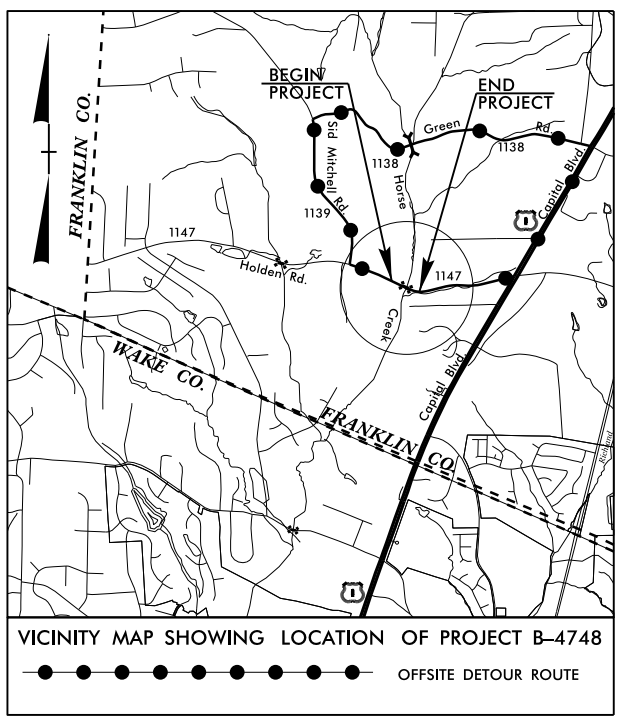
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+00 LT	BANK STABILIZATION						< 0.01	< 0.01	57	57	
1	14+30 RT	BANK STABILIZATION						< 0.01	< 0.01	47	47	
TOTALS:								< 0.01	< 0.01	104	104	

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 FRANKLIN COUNTY
 WBS - 38520.1.1 (B-4748)

09/05/14

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



THIS PROJECT WAS DESIGNED USING THE SUB REGIONAL TIER DESIGN GUIDELINES FOR BRIDGE PROJECTS.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

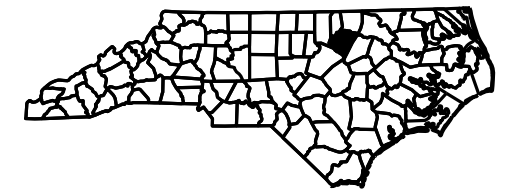
FRANKLIN COUNTY

LOCATION: BRIDGE NO. 2 OVER HORSE CREEK
ON SR 1147 (HOLDEN ROAD)

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

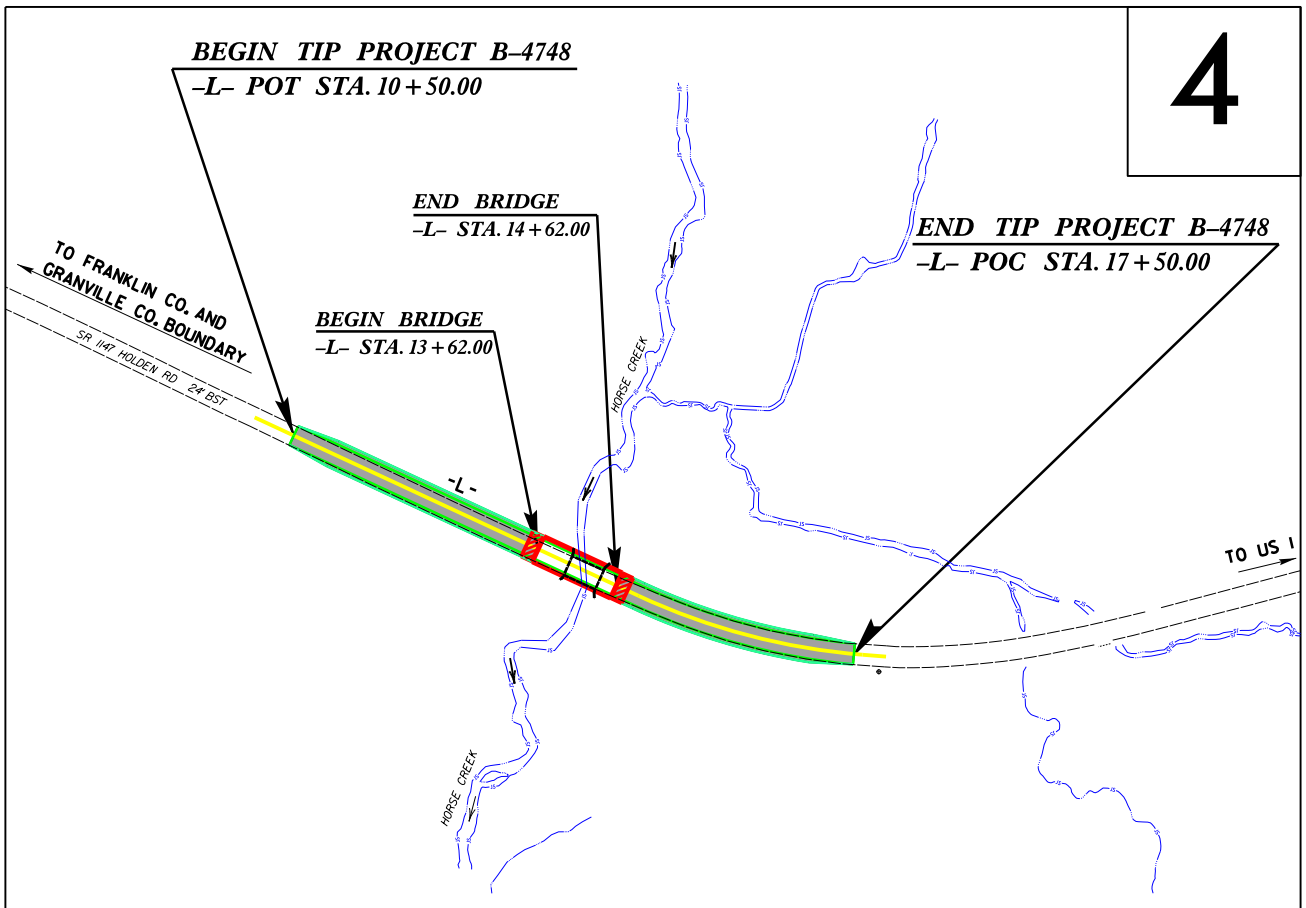
BUFFER IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4748	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38520.1.1	BRZ-1147 (10)	PE	
38520.2.1	BRZ-1147 (10)	ROW & UTIL	
38520.3.1	BRZ-1147 (10)	CONSTRUCT	



WETLAND AND SURFACE WATER IMPACTS PERMIT

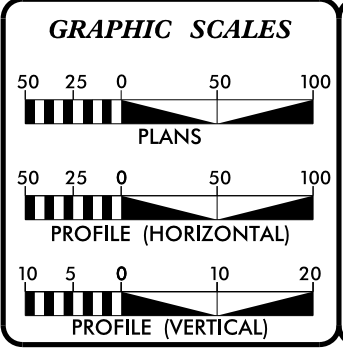
PERMIT DRAWING SHEET 1 OF 3



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2012 =	4,900
ADT 2035 =	10,000
DHV =	13 %
D =	60 %
T =	5 % *
V =	50 MPH
* TTST 3% DUAL 2%	
FUNC CLASS =	RURAL LOCAL

PROJECT LENGTH

Length Roadway Tip Project B-4748 =	.114 MILES
Length Structure Tip Project B-4748 =	.019 MILES
Total Length of Tip Project B-4748 =	.133 MILES

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: APRIL 30, 2013	TONY HOUSER, PE PROJECT ENGINEER
LETTING DATE: APRIL 15, 2014	LEE ANN MOORE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



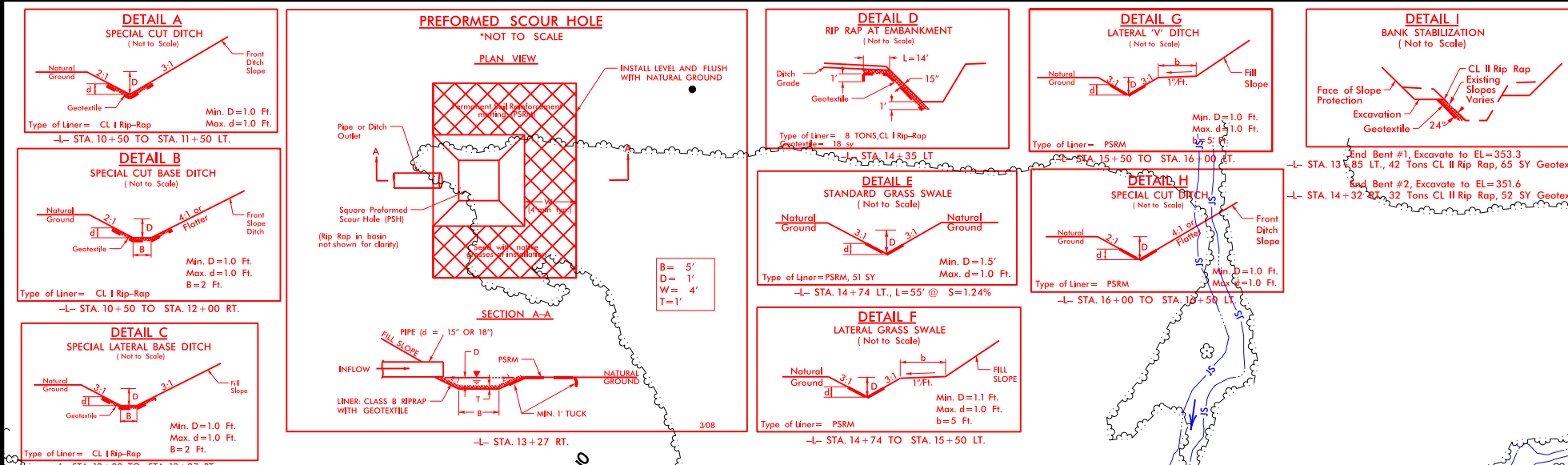
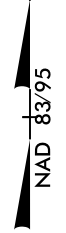
6/17/2013
Imjohns
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\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCN\$\$\$\$\$
\$\$\$\$\$SERNAME\$\$\$\$\$

PROJECT REFERENCE NO. B-4748	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

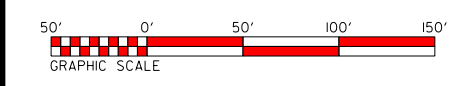
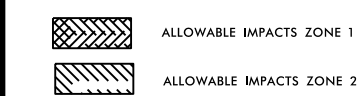
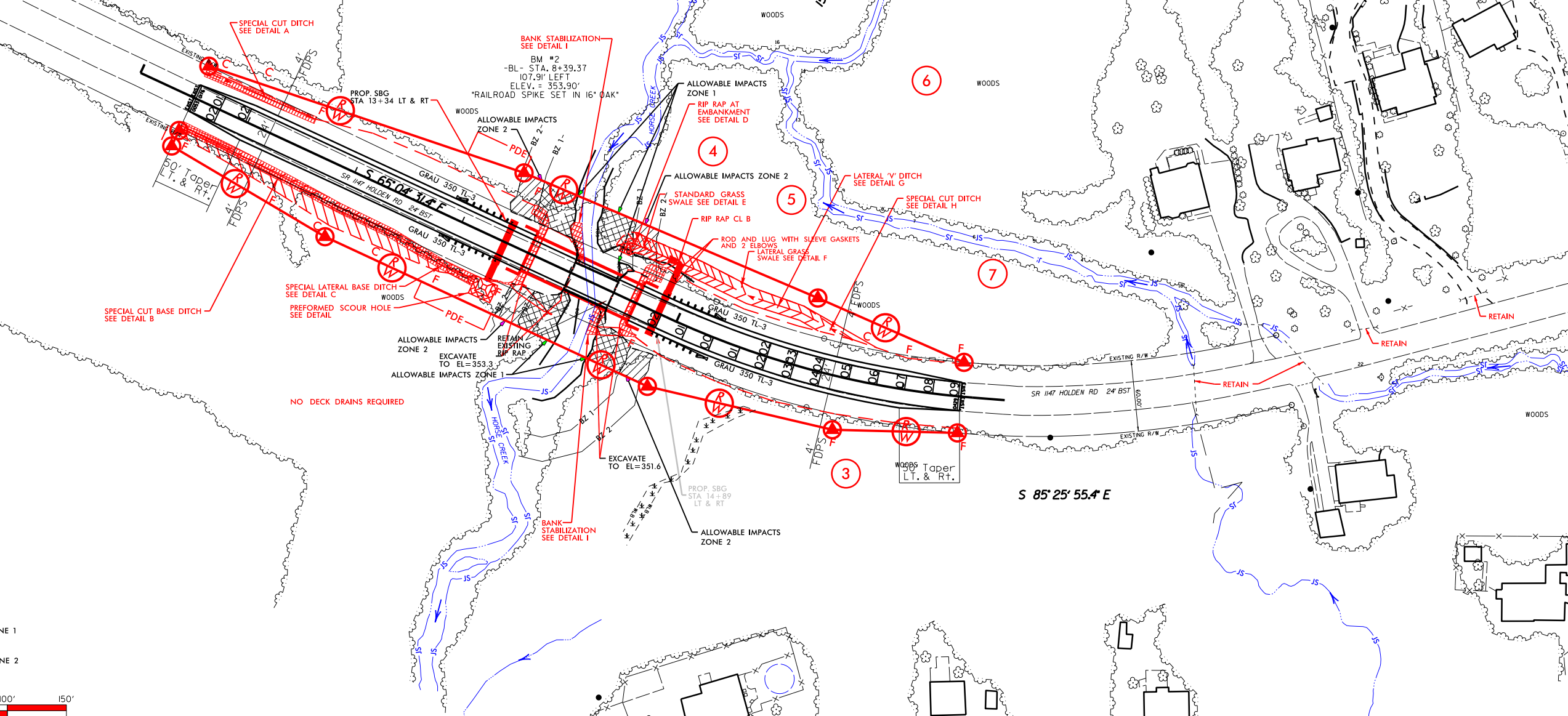
BUFFER IMPACTS PERMIT

BUFFER DRAWING SHEET 2 OF 3

-L-
 PI Sta 16+26.57
 $\Delta = 20' 21' 24.0" (LT)$
 $D = 7' 32' 55.9"$
 $L = 269.67'$
 $T = 136.27'$
 $R = 759.00'$
 $SE = SEE PLANS$



BM #1
 -BL- STA. 5+00.00
 N 48°55'00" W 50.71'
 ELEV. = 388.58'
 RAILROAD SPIKE SET IN 20" PINE"



REVISIONS

4/17/2013
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 \$\$\$\$\$\$DESIGN\$\$\$\$\$\$
 \$\$\$\$\$\$DATE\$\$\$\$\$\$

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)		
1	1@100' 54" PSG	14+12		X		3623	1117	4740					
1	Roadway Embankment	14+12	X			686	1326	2012					
TOTALS:						4309	2443	6752					

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

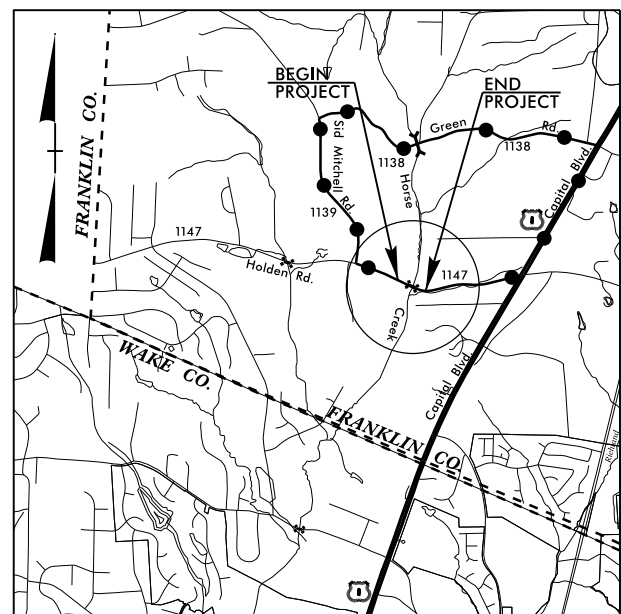
 FRANKLIN COUNTY
 PROJECT: 38520.1.1 (B-4748)

 6/17/2013
 SHEET 3 OF 3

09/08/99

CONTRACT: TIP PROJECT: B-4748

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



VICINITY MAP SHOWING LOCATION OF PROJECT B-4748
●●●●● OFFSITE DETOUR ROUTE

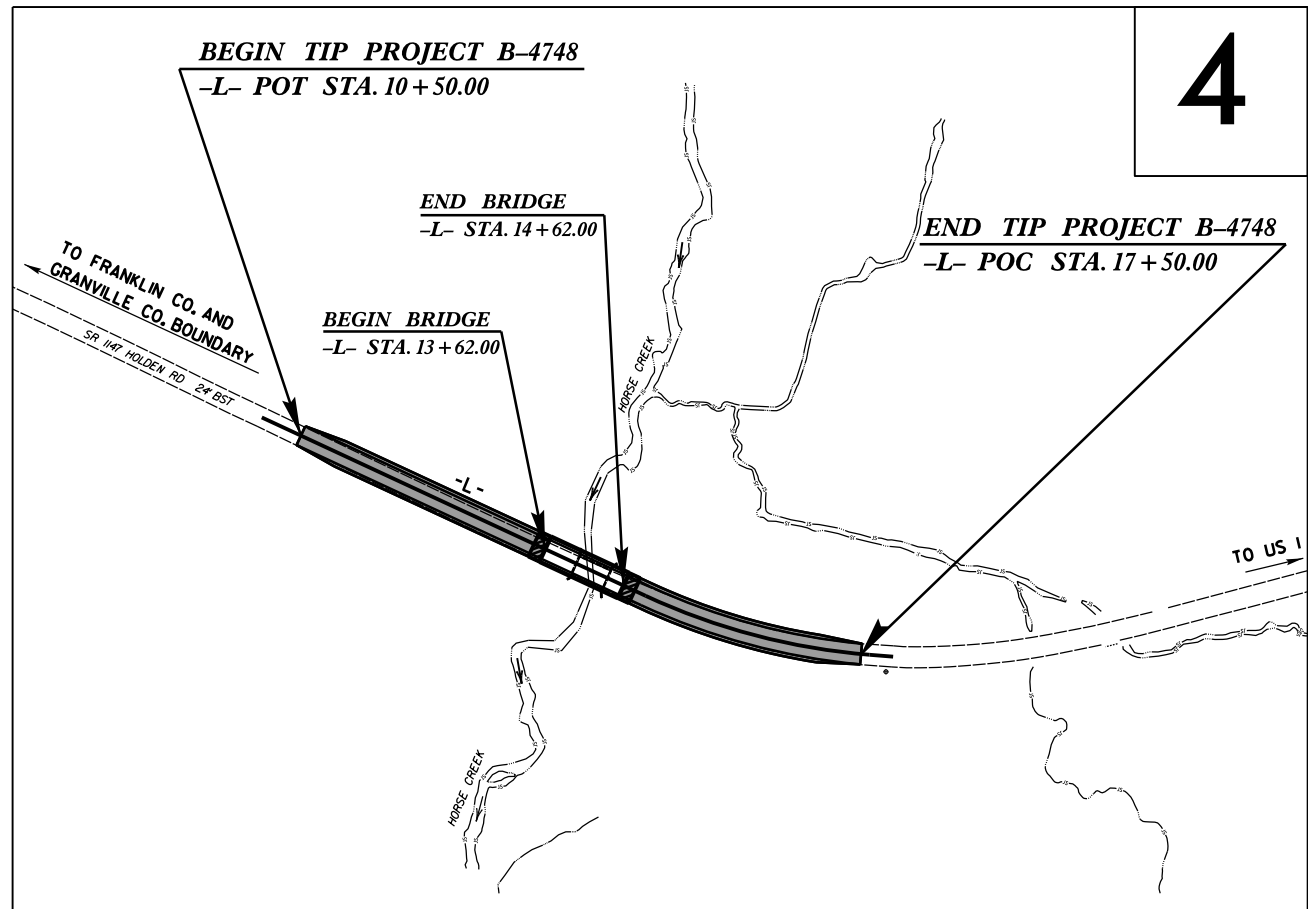
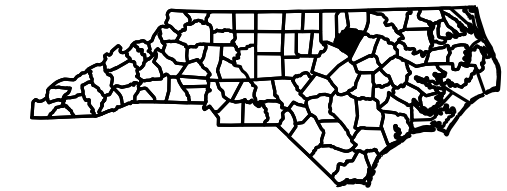
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FRANKLIN COUNTY

**LOCATION: BRIDGE NO. 2 OVER HORSE CREEK
ON SR 1147 (HOLDEN ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4748	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38520.1.1	BRZ-1147 (10)	PE	
38520.2.1	BRZ-1147 (10)	ROW & UTIL	
38520.3.1	BRZ-1147 (10)	CONSTRUCT	

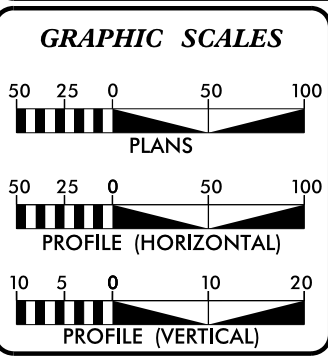


THIS PROJECT WAS DESIGNED USING
THE SUB REGIONAL TIER DESIGN GUIDELINES
FOR BRIDGE PROJECTS.



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2012 =	4,900
ADT 2035 =	10,000
DHV =	13 %
D =	60 %
T =	5 % *
V =	50 MPH
* TTST 3% DUAL 2%	
FUNC CLASS =	RURAL LOCAL

PROJECT LENGTH

Length Roadway Tip Project B-4748 =	.114 MILES
Length Structure Tip Project B-4748 =	.019 MILES
Total Length of Tip Project B-4748 =	.133 MILES

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

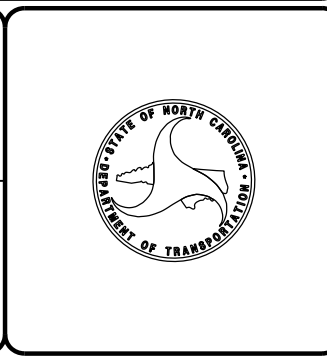
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: APRIL 30, 2013	TONY HOUSER, PE PROJECT ENGINEER
LETTING DATE: APRIL 15, 2014	LEE ANN MOORE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



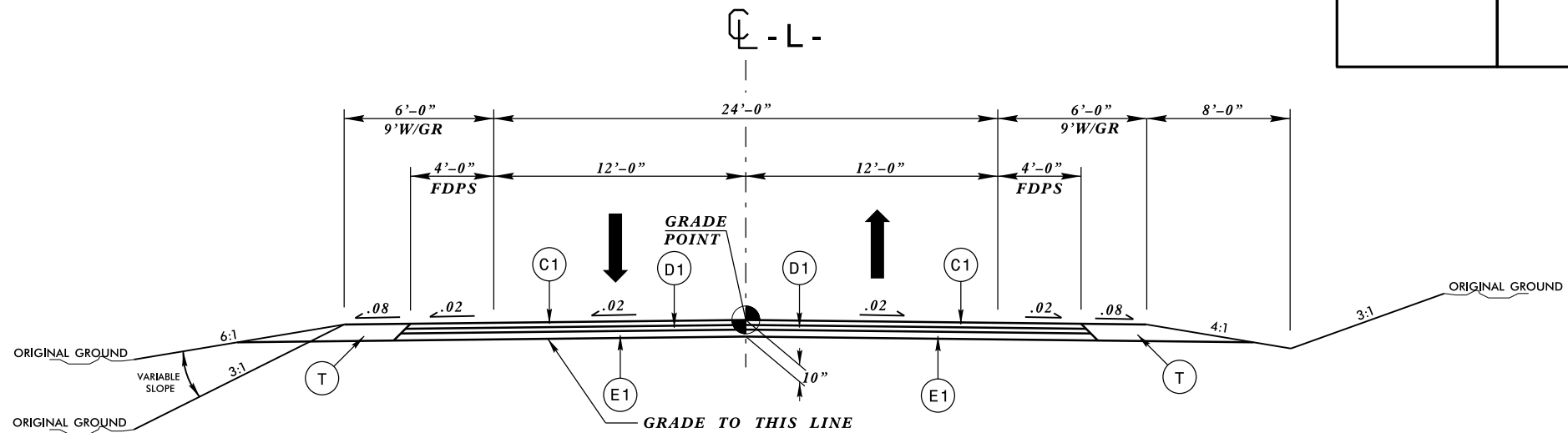
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CONTRACT:

6/2/99

PROJECT REFERENCE NO. B-4748	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

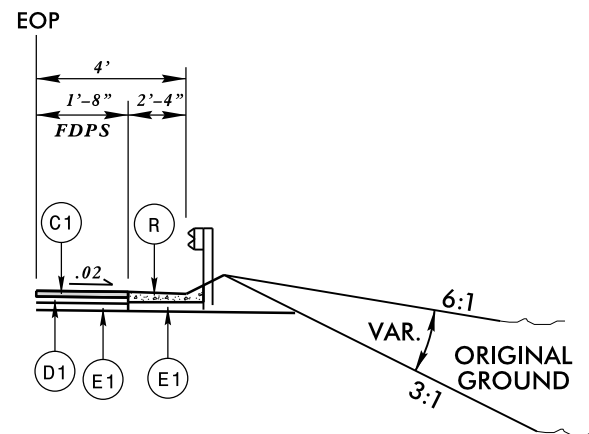
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.



TYPICAL SECTION NO. 1

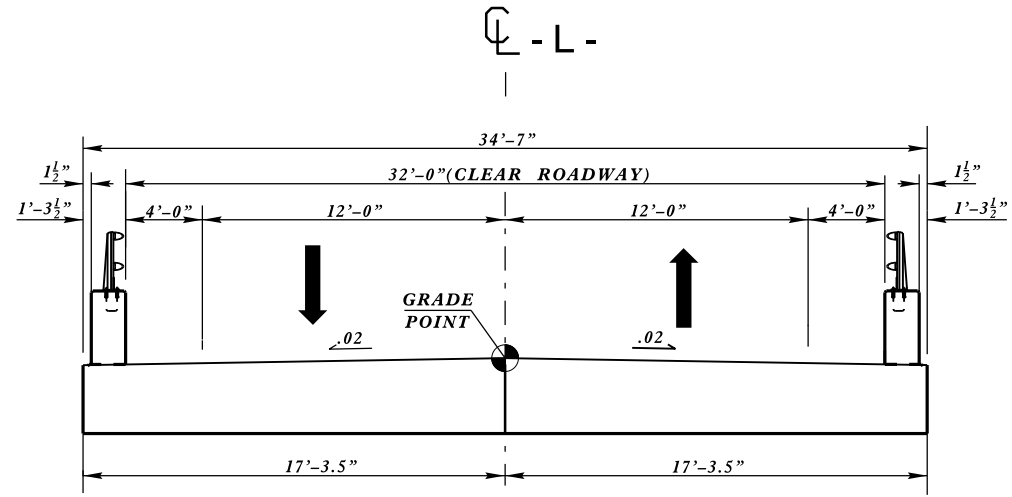
USE TYPICAL SECTION NO. 1:
 -L- STA. 10+50.00 TO 13+62.00 (BEG. BRIDGE)
 -L- STA. 14+62.00 (END BRIDGE) TO 17+50.00

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



SHOULDER BERM GUTTER DETAIL

-L- STA. 13+34.00 TO 13+47.83.00 (BEGIN APPROACH SLAB) RT. & LT.
 -L- STA. 14+76.17 (END APPROACH SLAB) TO 14+89.00 RT. & LT.



TYPICAL SECTION ON BRIDGE

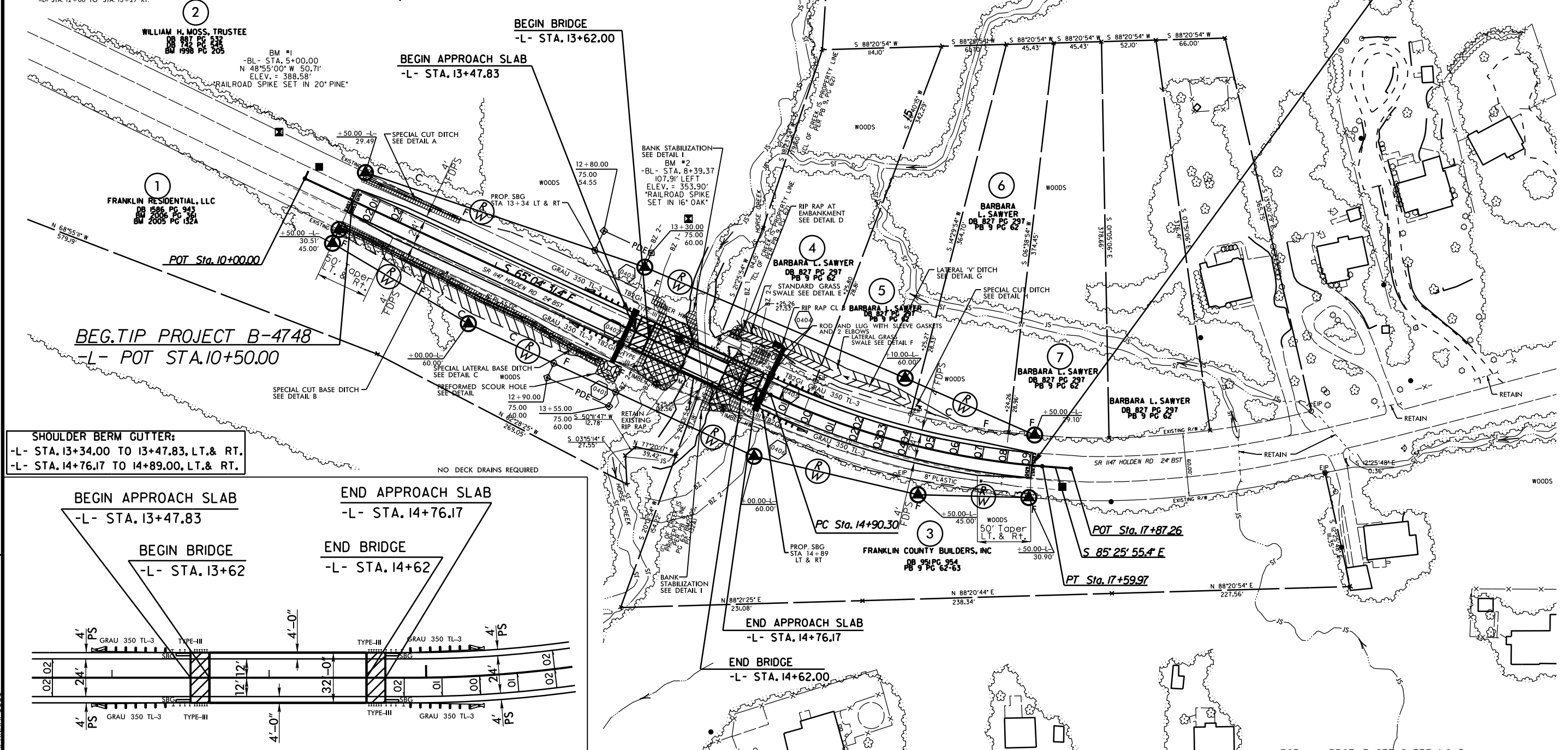
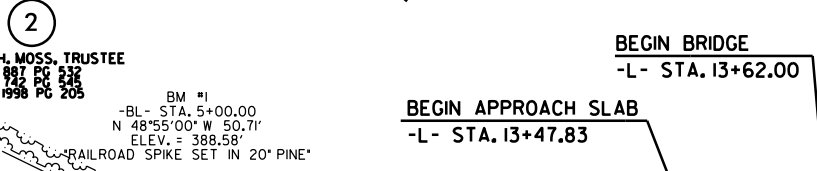
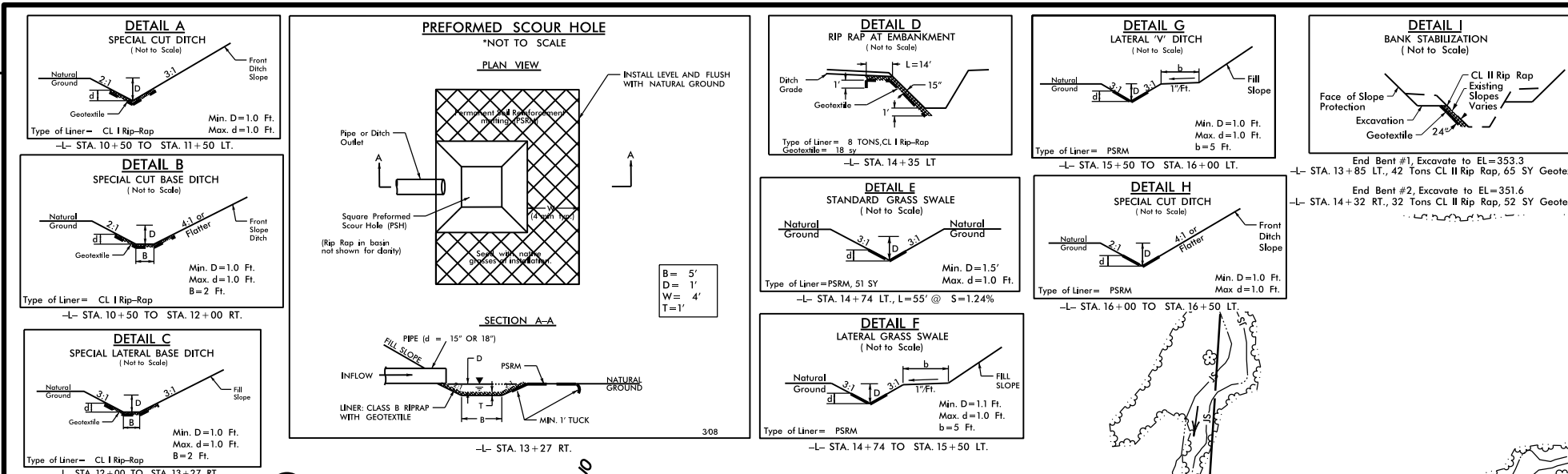
USE BRIDGE TYPICAL:
 -L- STA. 13+62 (BEG. BRIDGE) TO -L- STA. 14+62.00 (END BRIDGE)

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 5:58:11 PM

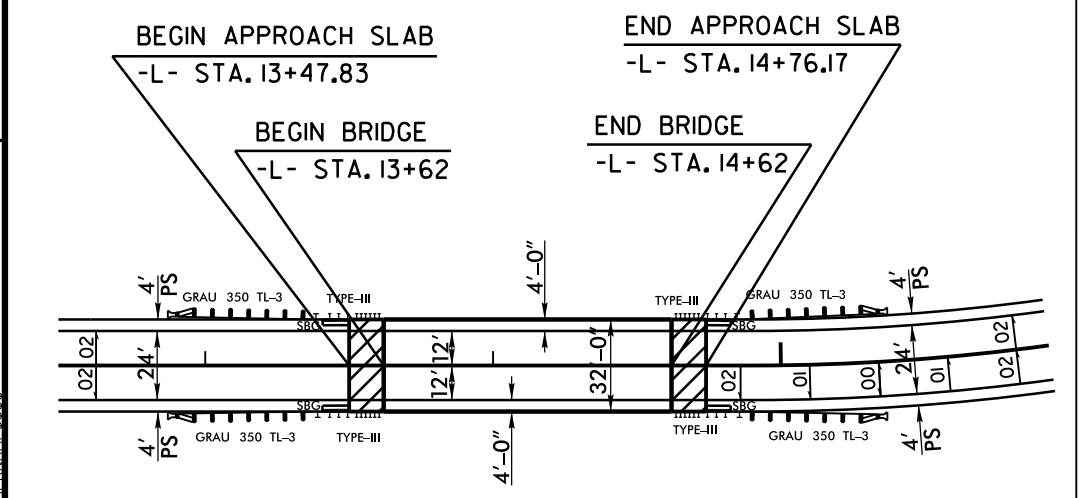
PROJECT REFERENCE NO. B-4748	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 PI Sta 16+26.57
 $\Delta = 20' 21" 240' (LT)$
 $D = 7' 32" 559'$
 $L = 269.67'$
 $T = 136.27'$
 $R = 759.00'$
 SE = SEE PLANS

NAD 83/95



SHOULDER BERM GUTTER:
 -L- STA. 13+34.00 TO 13+47.83, LT. & RT.
 -L- STA. 14+76.17 TO 14+89.00, LT. & RT.



SKETCH SHOWING BRIDGE PAVEMENT RELATIONSHIP

FOR -L- PROFILE, SEE SHEET NO. 5
 FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-

REVISIONS

30-AUG-2013 12:14
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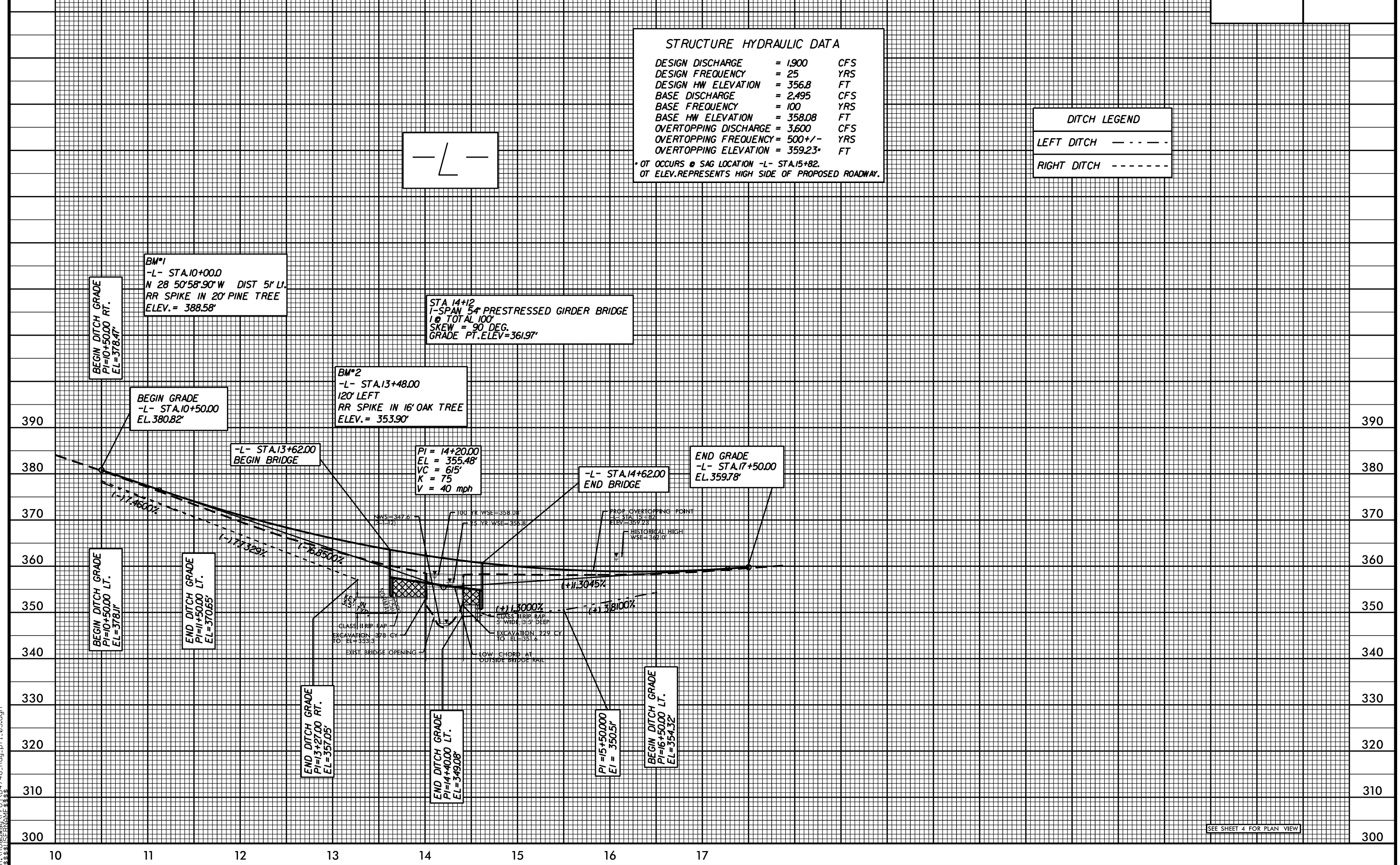
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DESIGN DISCHARGE	= 1900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 356.8	FT
BASE DISCHARGE	= 2,495	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 358.08	FT
OVERTOPPING DISCHARGE	= 3,600	CFS
OVERTOPPING FREQUENCY	= 500 +/-	YRS
OVERTOPPING ELEVATION	= 359.23	FT

* OT OCCURS @ SAG LOCATION -L- STA.15+82.
* OT ELEV. REPRESENTS HIGH SIDE OF PROPOSED ROADWAY.

LEFT DITCH	---
RIGHT DITCH	----

-L-



BM*1
-L- STA.10+00.0
N 28° 58' 30" W DIST 51' LT.
RR SPIKE IN 20' PINE TREE
ELEV. = 388.58'

STA 14+12
1-SPAN 54' PRESTRESSED GIRDER BRIDGE
10° TOTAL 100°
SKEW = 90 DEG.
GRADE PT. ELEV = 361.97'

BM*2
-L- STA.13+48.00
120' LEFT
RR SPIKE IN 16' OAK TREE
ELEV. = 353.90'

BEGIN GRADE
-L- STA.10+50.00
EL. 380.82'

-L- STA.13+62.00
BEGIN BRIDGE

PI = 14+20.00
EL = 355.48'
VC = 615'
K = 75
V = 40 mph

-L- STA.14+62.00
END BRIDGE

END GRADE
-L- STA.17+50.00
EL. 359.78'

BEGIN DITCH GRADE
PI=10+50.00 RT.
EL=378.47'

BEGIN DITCH GRADE
PI=10+50.00 LT.
EL=378.17'

END DITCH GRADE
PI=11+50.00 LT.
EL=370.85'

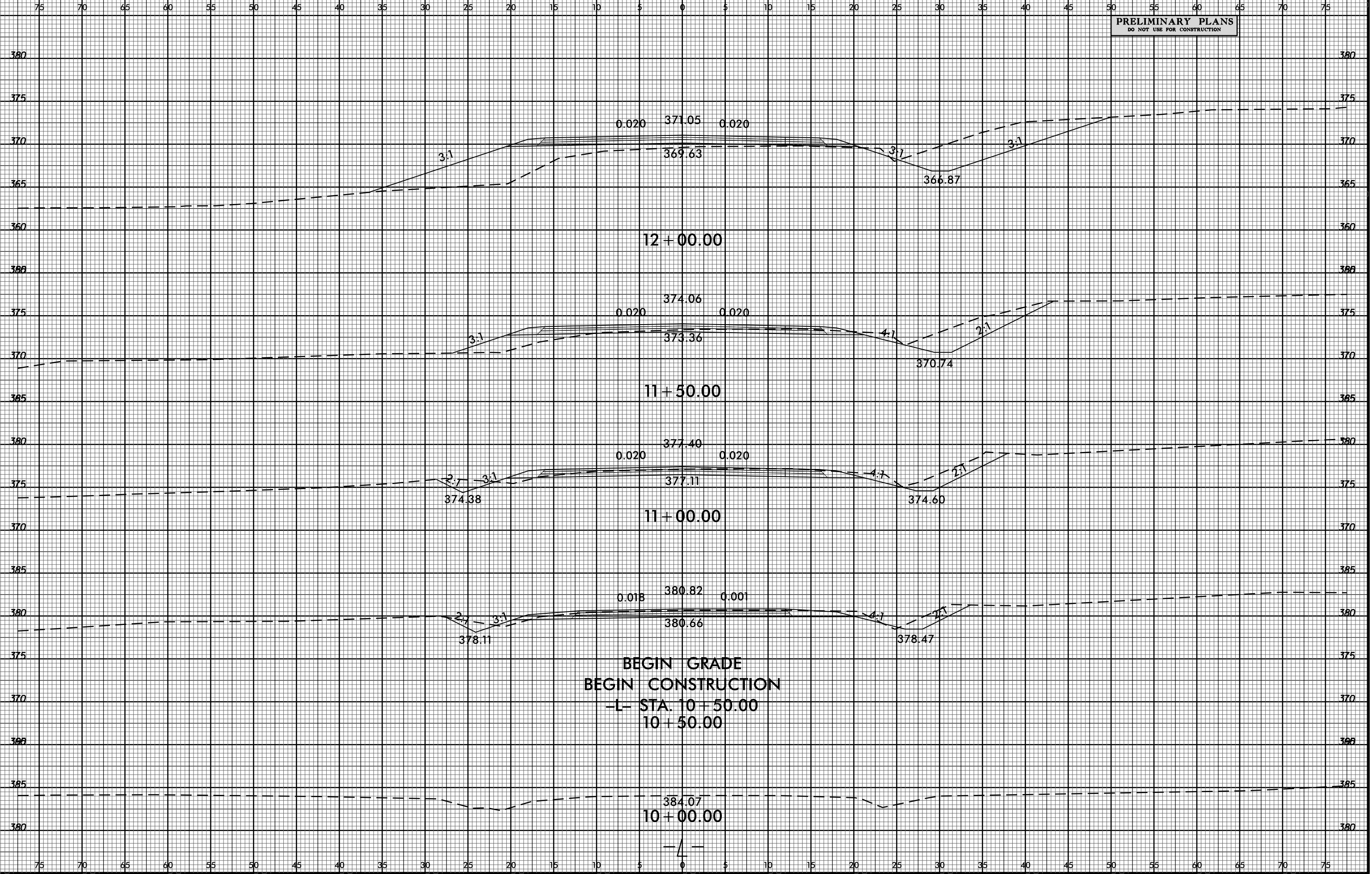
END DITCH GRADE
PI=13+27.00 RT.
EL=357.05'

END DITCH GRADE
PI=14+40.00 LT.
EL=349.08'

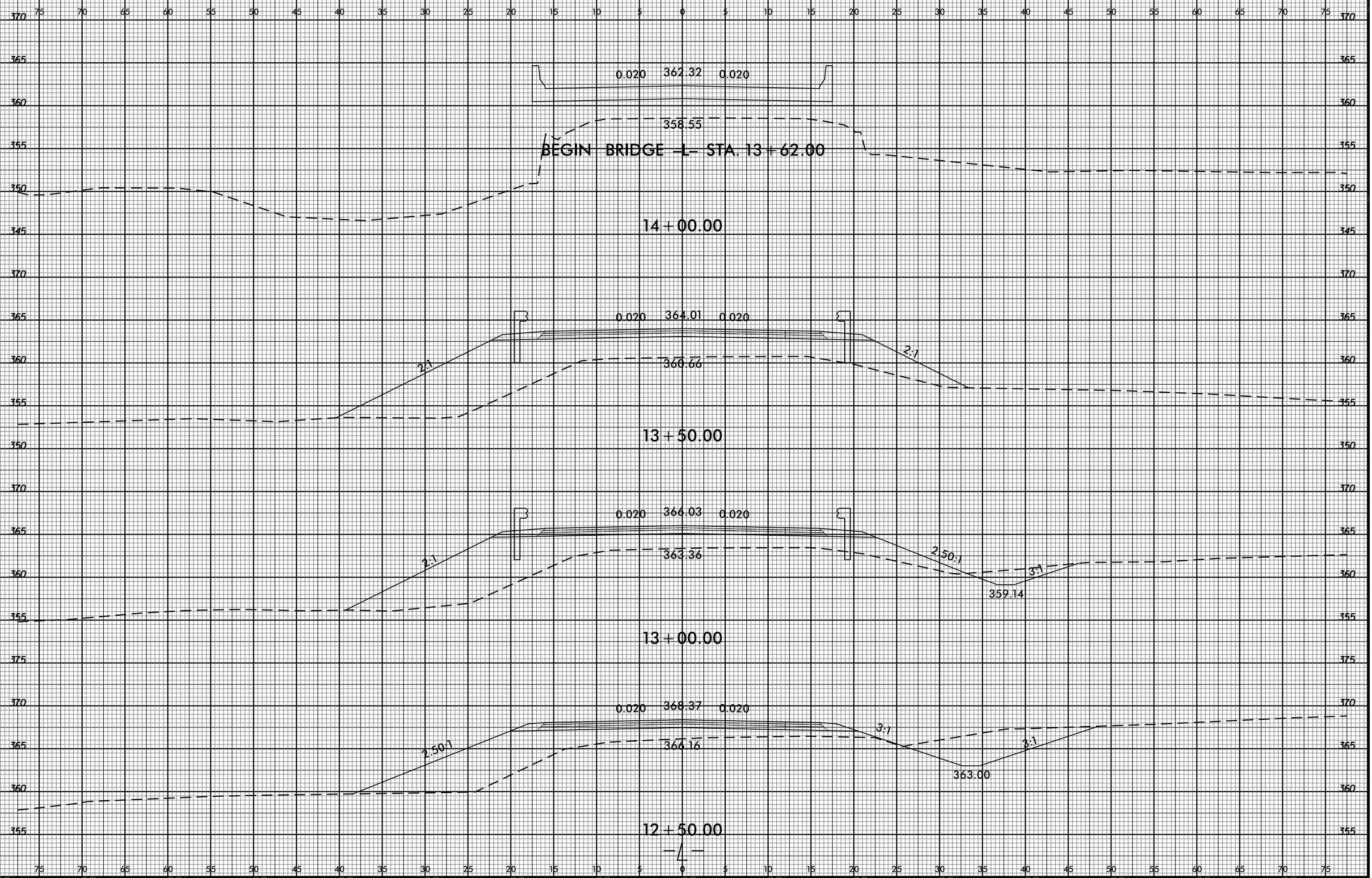
PI=15+50.00
EL=350.51'

BEGIN DITCH GRADE
PI=16+50.00 LT.
EL=354.32'

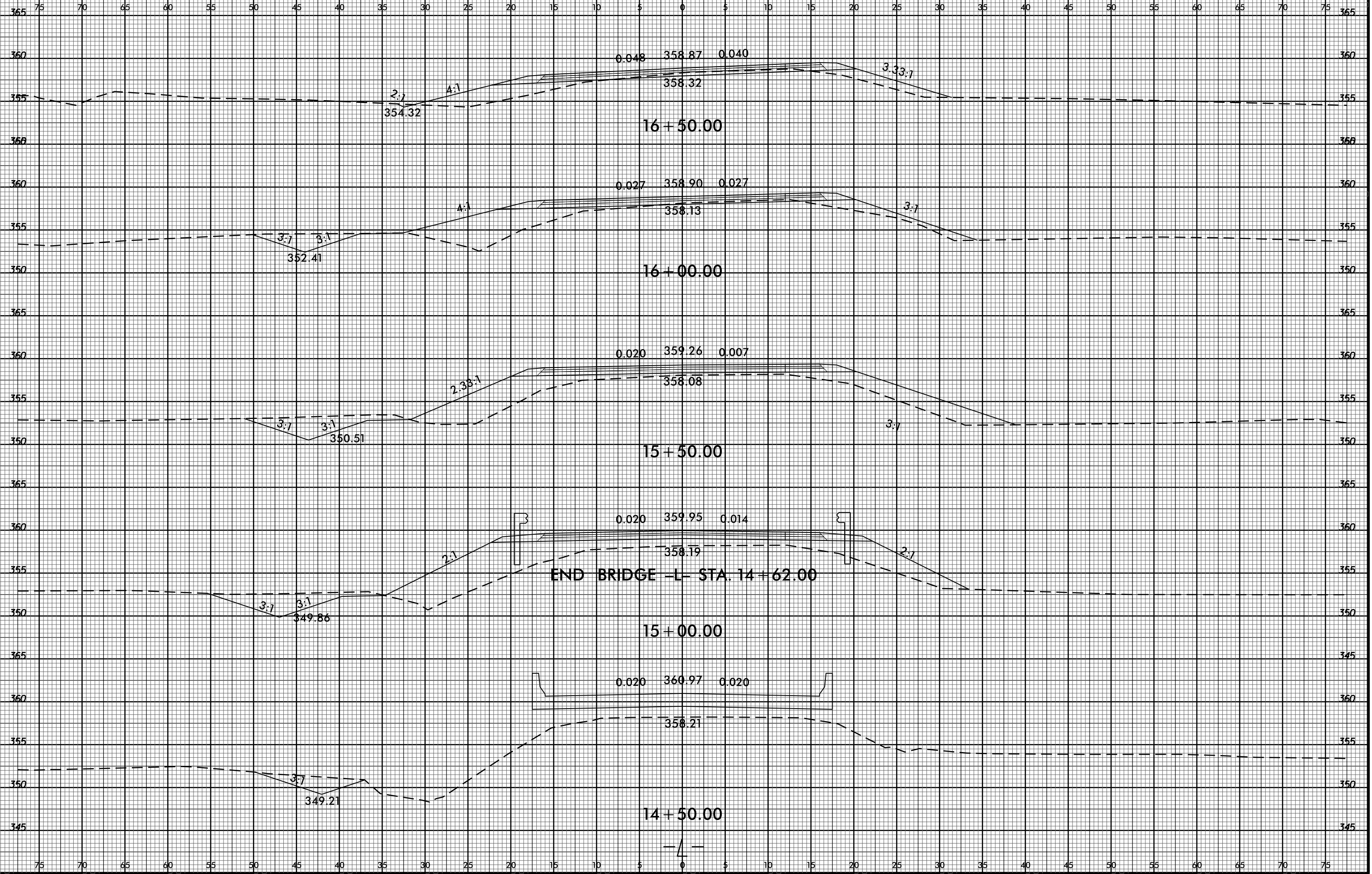
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