



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

April 28, 2017

N.C. Department of Environmental Quality
Winston-Salem Regional Office
450 West Hanes Mill Road, Suite 300
Winston Salem, NC 27105

ATTN: Mr. David Wanucha
NCDOT Division 7 Project Coordinator

SUBJECT: **Application for Section 401 Water Quality General Certification No. 4085 and Jordan Lake Watershed Riparian Buffer Authorization** for the replacement of Bridge No. 6 over the Haw River on SR 2426 (Cunningham Mill Road), Division 7, Rockingham County, North Carolina. Federal Aid Project No. BRZ – 2426 (1), TIP Project No. B-4807.

Debit \$240.00 from WBS 38577.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 6 over the Haw River on SR 2426 (Cunningham Mill Road) in Rockingham County. The project will consist of replacing the existing three-span, 121-foot structure with a two-span, 147.33-foot bridge on the existing alignment. An on-site detour will be employed.

Proposed impacts include 17 linear feet of temporary impacts to the Haw River along the detour and <0.01 acre of permanent fill in wetlands, also along the detour. The temporary river impact is due to the placement of temporary bank stabilization at the end of a ditch along the detour. The stabilization will be removed at the completion of the project and the area will be restored to pre-existing conditions.

Proposed buffer impacts along the Haw River (Site 1) include allowable Bridge impacts totaling 4,713 square feet in Zone 1 and 665 square feet in Zone 2; and allowable Road Crossing impacts totaling 1,491 square feet in Zone 1 and 3,307 square ft. in Zone 2.

Please find enclosed the Pre-Construction Notification; Preliminary Jurisdictional Determination; Stormwater Management Plan; permit drawings; buffer drawings; and roadway plans for the subject project. A Categorical Exclusion (CE) was completed for this project in February 2016.

The proposed let date for this project is January 16, 2018, with a let review date of November 28, 2017. However, the let date may advance as additional funds become available.


Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
NATURAL ENVIRONMENT SECTION
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

A copy of this permit application will be posted on the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>, under *Quick Links > Permit Applications*. A copy of the CE is also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jim Mason at either jmason@ncdot.gov or (919) 707-6136.

Sincerely,


for Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head

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 checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 3 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input checked="" type="checkbox"/> Yes	<input 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. 6 over the Haw River on SR 2426 (Cunningham Mill Road)
2b. County:	Rockingham
2c. Nearest municipality / town:	Monroeton
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-4807

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6136
3g. Fax no.:	(919) 212-5785
3h. Email address:	jsmason@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	<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: 36.268252 (DD.DDDDDD) Longitude: - 79.732626 (-DD.DDDDDD)
1c. Property size:	2.94 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Haw River
2b. Water Quality Classification of nearest receiving water:	WS-V, NSW
2c. River basin:	Cape Fear
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Cunningham Mill Road is classified as a Minor Collector in the Statewide Functional Classification System and is not a National Highway System Route. Land use within the vicinity primarily consists of forested land, agriculture, silviculture, and low-density residential.	
3b. List the total estimated acreage of all existing wetlands on the property: <0.01	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 168 (163 Haw River; 5 Stream SB)	
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 will consist of replacing the existing three-span, 121-foot structure with a two-span, 147.33-foot bridge on the existing alignment. An on-site detour will be employed. 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: Action ID No. SAW-2009-00923	<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): Erica McLamb	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 5/14/2009. JD is expired; site visited 4/7/17 and there were no changes to the site or previously-JD'ed features.	
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):

- 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	2f. Area of impact (acres)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Permanent Fill (Detour)	Riverine Swamp Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
Site <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site <input type="checkbox"/> P <input type="checkbox"/> T		Choose One	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					<0.01 ac Perm. 0 ac Temp.
2h. Comments:					

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary Fill (Detour) (Bank Stabilization)	Haw River	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	40-50	17
Site <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 <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 <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 <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						0 ft. Perm. 17 ft Temp.

3i. Comments: The temporary bank stabilization will be removed when the detour is deconstructed and the bank will be restored to pre-existing conditions.

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)
<input type="radio"/> <input type="checkbox"/> P <input type="checkbox"/> T				
<input type="radio"/> <input type="checkbox"/> P <input type="checkbox"/> T				
<input type="radio"/> <input type="checkbox"/> P <input type="checkbox"/> T				
<input type="radio"/> <input type="checkbox"/> P <input type="checkbox"/> T				
4f. Total open water impacts				0 ac Permanent 0 ac 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"/> Tar-Pamlico	<input checked="" type="checkbox"/> Other: Jordan Lake	
		<input type="checkbox"/> Catawba	<input type="checkbox"/> Randleman		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge	Haw River	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4,713	665
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Crossing	Haw River	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,491	3,307
Site <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
Site <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts				6,204	3,972

6i. Comments: Stream SB on the eastern side of the project is Not Subject to the buffer rules since it is not on the topographic nor the soil survey mapping. There are 101 square ft. of wetlands in buffer in Zone 1 and 219 square feet in Zone 2.

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. Promotion of sheet flow and infiltration with grassed shoulders except where shoulder berm gutter to 2GI at bridge; Drainage system outlets to preformed scour hole; Deck Drains not required for proposed bridge; Elimination of 1 interior bent will help with debris buildup; Used a flat rip rap pad in the south-west quadrant to create diffuse flow and reduce velocities before entering the buffer.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Due to the project's location within the Jordan Lake Watershed, Design Standards in Sensitive Watersheds will be employed; NCDOT Best Management Practices for Construction and Maintenance Activities and Best Management Practices for the Protection of Surface Waters will be employed.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: wetland impacts are <0.1 ac.; there are no perm. surface water impacts; all buffer impacts are allowable.	
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:	0 linear feet	
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	0 sq. ft. Zone 1 and 0 sq. ft. Zone 2	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

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

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?

Yes No

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


Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
6f. Total buffer mitigation required:				

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: Please see attached 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: Please 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 type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A

F. Supplementary Information	
1. Environmental Documentation (DWQ Requirement)	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Violations (DWQ Requirement)	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this bridge-to-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	

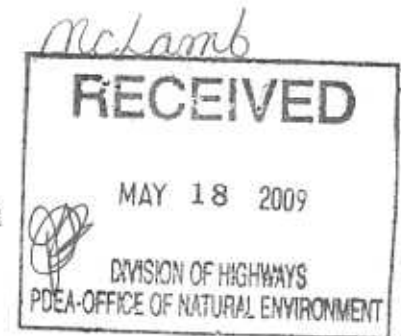
5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NC Natural Heritage Program data, USFWS website, NCDOT field surveys; No nesting habitat, nests, or individuals present for bald eagle; the northern long-eared bat (NLEB) is covered by the Programmatic Biological Opinion for Divisions 1 through 8; Habitat present, but no individuals or occurrences for smooth coneflower (last surveyed 10/15/2015). Biological Conclusion of No Effect for coneflower.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<i>PHS</i> Philip S. Harris III, P.E., C.P.M. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	04-28-2017 Date

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2009-00923

County: Rockingham

U.S.G.S. Quad: Reidsville



NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: Ms. Erica McLamb
Address: NC Department of Transportation
Project Development and Environmental Analysis
Natural Environmental Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
Telephone No.: 919-715-1521

Property description:
Size (acres) undetermined Nearest Town Monroeton
Nearest Waterway Haw River River Basin Haw
USGS HUC 03030002 Coordinates N 36.2668 W -79.7314
Location description TIP Project No. B-4807, Bridge No. 6 on SR 2426 over the Haw River, Rockingham County, North Carolina.

Indicate Which of the Following Apply:

A. Preliminary Determination

Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- We strongly suggest you have the waters of the U.S. including wetlands on your project area delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.
- The waters of the U.S. on your property have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.
- The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

- The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact Andrew Williams at 919-554-4884 ext. 26.

C. Basis For Determination

The three (3) streams are relatively permanent waters (RPWs) and are unnamed tributaries to the Haw River, a traditionally navigable water (TNW), which is tributary to the Cape Fear River a navigable water of the United States. The Ordinary High Water Marks (OHWMs) of the unnamed tributaries were indicated by the following physical characteristics: Bed and banks, clear natural line impressed on the bank, shelving, scour, and the destruction of terrestrial vegetation. The wetlands are adjacent to the Haw River and meet the hydrophytic vegetation, wetland hydrology, and hydric soil criteria of the 1987 Corps of Engineers Wetland Delineation Manual.

D. Remarks

The Haw River, stream SA and Stream SC are perennial streams that will require 2:1 mitigation. Stream SB is an intermittent stream lacking important aquatic function and will not require compensatory mitigation, if impacts occur.

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn: Andrew Williams, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by June 12, 2009.

****It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.****

Corps Regulatory Official: Andrew Williams

Date May 14, 2009

Expiration Date May 14, 2014

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at <http://regulatory.usacesurvey.com/> to complete the survey online.

Copy furnished:

Amy Euliss
North Carolina Department of Natural Resources
Division of Water Quality
585 Waughtown Street
Winston-Salem, NC 27107



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 2.01: Released December 2014)

WBS Element: 38577.1.1 TIP No.: B-4807 County(ies): Rockingham Page 1 of 2

General Project Information

WBS Element:	38577.1.1	TIP Number:	B-4807	Project Type:		Date:	2/7/2017
NCDOT Contact:	William H. Elam Jr., PE/Craig J. Lee, PE		Contractor / Designer:	William H. Elam Jr., PE/Craig J. Lee, PE			
Address:	1020 Birch Ridge Dr Raleigh, NC 27610		Address:	1020 Birch Ridge Dr Raleigh, NC 27610			
	Phone:	919-707-6718 / 919-707-6708		Phone:	919-707-6718 / 919-707-6708		
	Email:	belam@ncdot.gov / cjlee@ncdot.gov		Email:	belam@ncdot.gov / cjlee@ncdot.gov		
City/Town:	Reidsville		County(ies):	Rockingham			
River Basin(s):	Cape Fear		CAMA County?	No			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.19	Surrounding Land Use:	Woods					
	Proposed Project		Existing Site					
Project Built-Upon Area (ac.)	0.7	ac.	0.5 ac.					
Typical Cross Section Description:	Two 11' lanes, 4' paved shoulder, 2' grassed shoulder, side slope vary 2:1 to 3:1 front slope, and 2:1 back slope			Two 11' lanes, 1' to 2' grassed shoulder, side slope vary 2:1 or flatter front slope, and 2:1 or flatter back slope				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	4,600	Year:	2035	Existing:	3,555	Year:	2018
General Project Narrative: (Description of Minimization of Water Quality Impacts)	<p>The project consists of replacing Bridge# 6 on SR 2426 (Cunningham Mill Road) over Haw River. The approach work will consist of raising the existing roadway grade and providing paved and grass shoulders and guardrails. Bridge #6 existing 3 span structure (117.7' total length) will be replaced with a 2 span (1 @80', 1 @65) 33" Box Beam with 4' caps. Bridge #6 eliminates 1 bent which is at water edge and the new interior bent avoid all jurisdictional features.</p> <p>Best Mgmt. Practices: -Promotion of sheet flow and infiltration with grassed shoulders except where shoulder berm gutter to 2GI at bridge. -Drainage system outlets to preformed scour hole. -Deck Drains not required for proposed bridge. -Elimination of 1 interior bent will help with debree buildup. -Used a flat rip rap pad in the south-west quadrant to defuse flow and reduce velocities before entering the buffer.</p>							

Waterbody Information

Surface Water Body (1):	Haw River		NCDWR Stream Index No.:	16-1(b)			
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply V (WS-V)					
	Supplemental Classification:	Nutrient Sensitive Waters (NSW)					
Other Stream Classification:	None						
Impairments:	None						
Threatened/Endangered Species?	No	Comments:					
NRTR Stream ID:	Haw River			Buffer Rules in Effect:	Jordan Lake		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	N/A		
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
	(If yes, provide justification in the General Project Narrative)						



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



(Version 2.01; Released December 2014)

WBS Element: 38577.1.1

TIP No.: B-4807

County(ies): Rockingham

Page 2 of 2

Preformed Scour Holes and Energy Dissipators

Sheet No.	Station (Road Projects) or Coordinates (Non-Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
4	-L- Sta. 13+80 LT	(1)Haw River	PSH	Class 'B'	0.1	Pipe	15	0.5	0.6	Yes

Additional Comments

PSH outlets approximately 50' from buffer

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

-LDET- V_{DET} = 45 mph

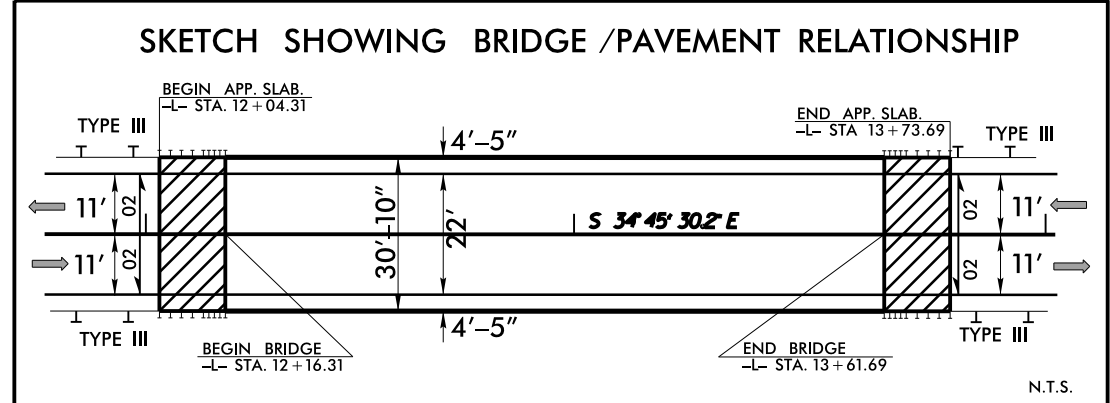
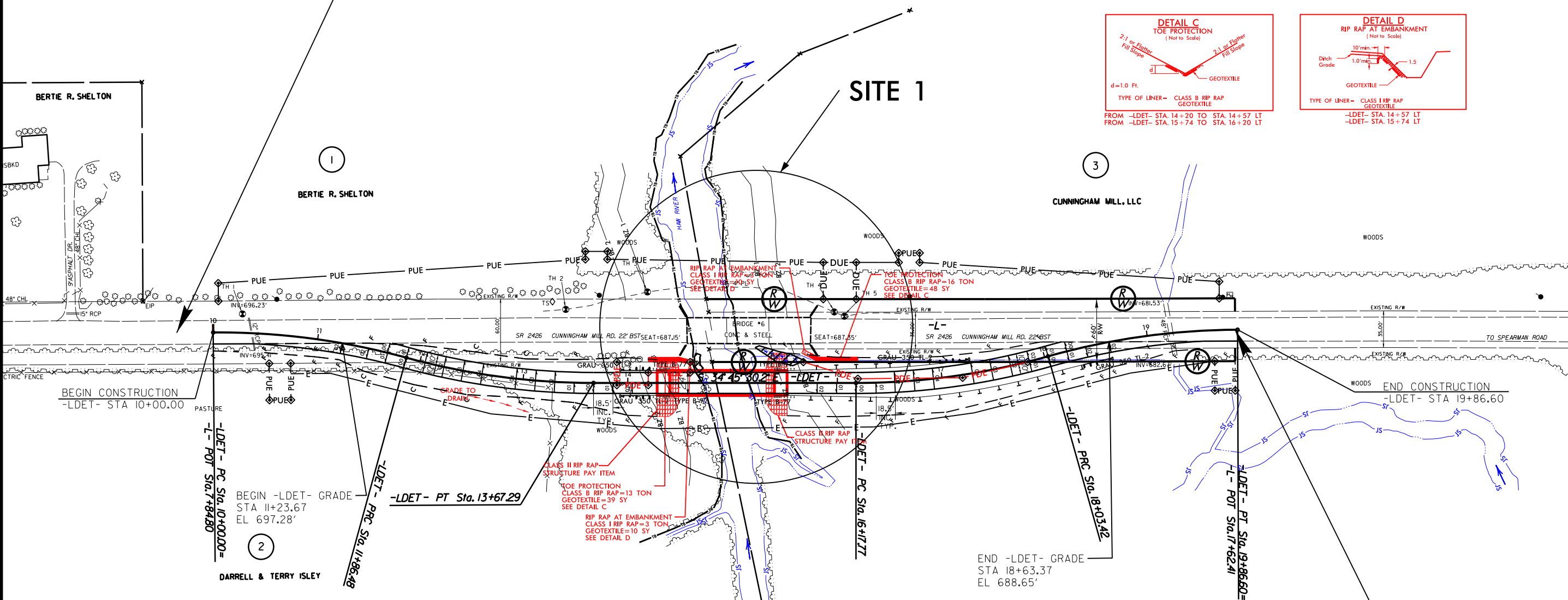
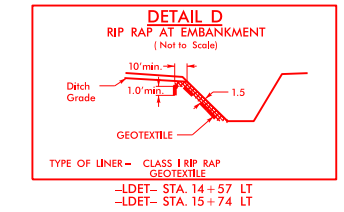
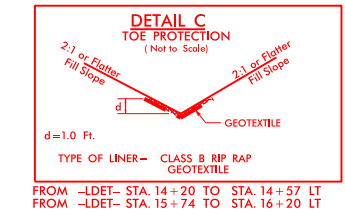
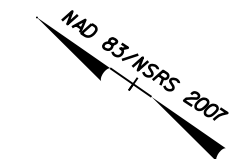
PI Sta 10+93.84 Δ = 15° 51' 08.4" (RT) D = 8' 30" 03.1" L = 186.48' T = 93.84' R = 674.00' SE = VAR.	PI Sta 12+77.43 Δ = 15° 22' 12.2" (LT) D = 8' 30" 03.1" L = 180.81' T = 90.95' R = 674.00' SE = 4%	PI Sta 17+11.9 Δ = 15° 46' 55.6" (LT) D = 8' 30" 03.1" L = 185.65' T = 93.42' R = 674.00' SE = 4%	PI Sta 18+95.58 Δ = 15° 34' 18.3" (RT) D = 8' 30" 03.1" L = 183.18' T = 92.16' R = 674.00' SE = VAR.
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BEGIN TIP PROJECT B-4807 -L- STA. 7+50.00

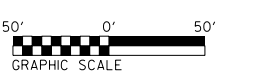
PROJECT REFERENCE NO. B-4807	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**PERMIT DRAWING
SHEET 2 OF 9**



END TIP PROJECT B-4807 -L- STA. 17+60.00



- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND

SEE SHEET 6 FOR PROFILE VIEW

REVISIONS
 ROW REVISED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG
 4/17/2017
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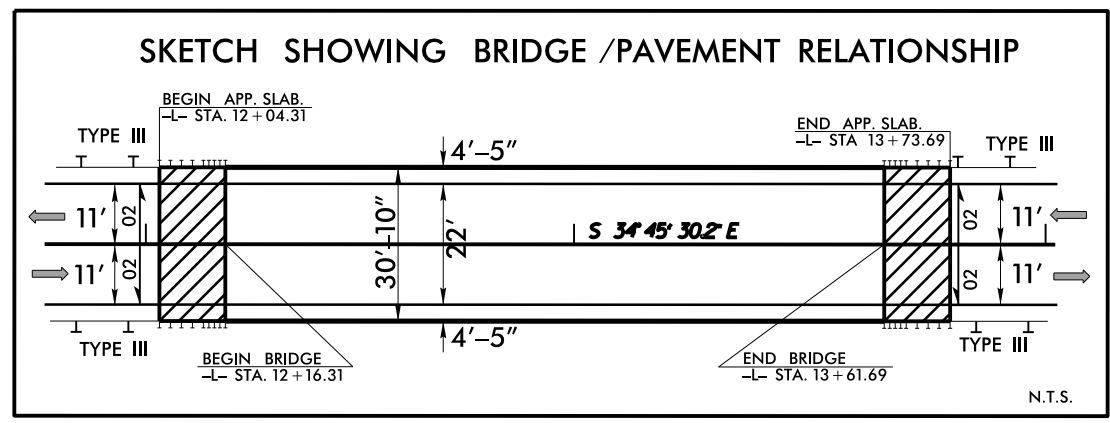
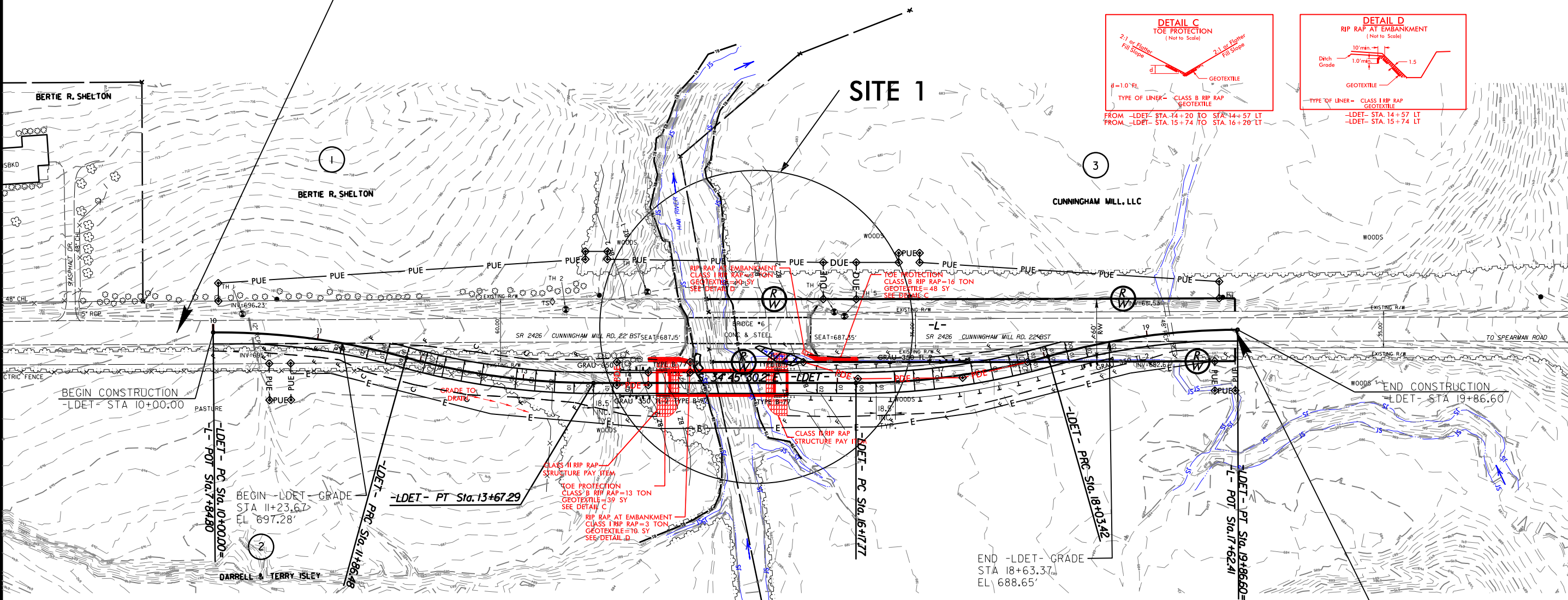
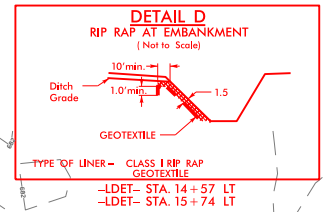
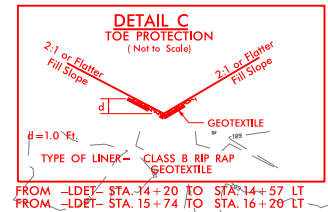
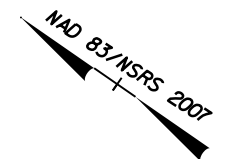
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PROJECT REFERENCE NO. B-4807	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

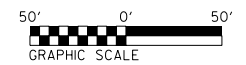
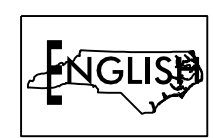
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UNLESS ALL SIGNATURES COMPLETED**

**PERMIT DRAWING
SHEET 3 OF 9**

**BEGIN TIP PROJECT B-4807
-L- STA. 7+50.00**



**END TIP PROJECT B-4807
-L- STA. 17+60.00**



- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND

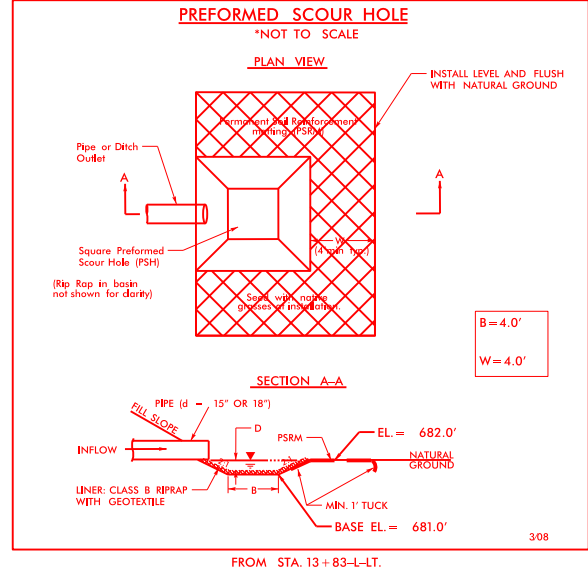
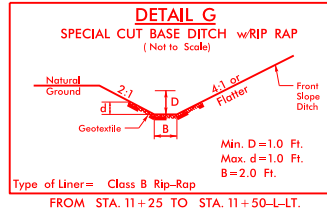
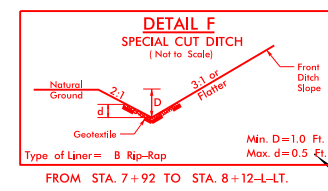
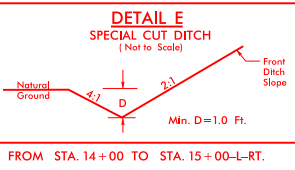
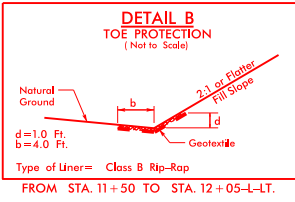
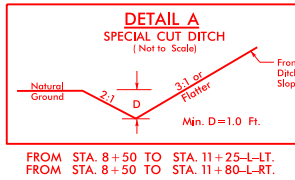
SEE SHEET 6 FOR PROFILE VIEW

REVISIONS
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 4/17/2017
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PROJECT REFERENCE NO. B-4807	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

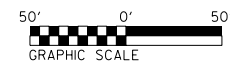
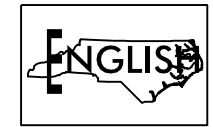
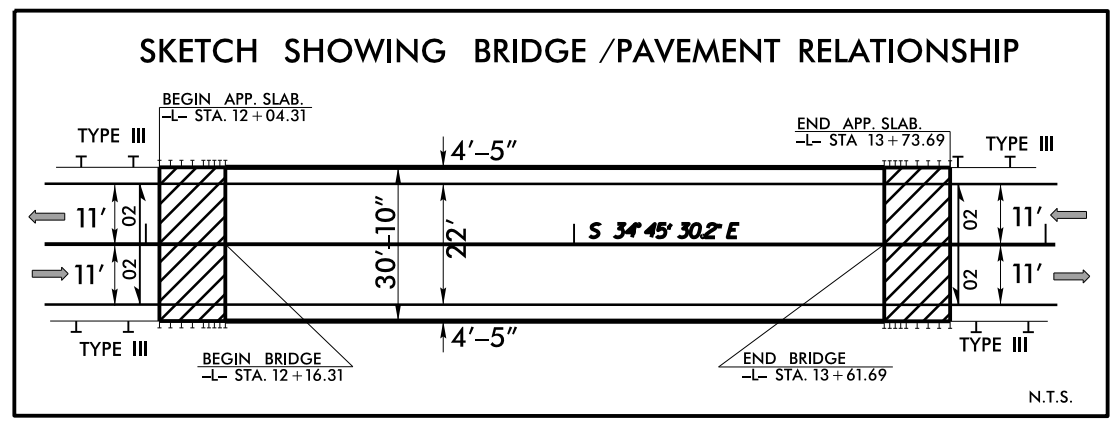
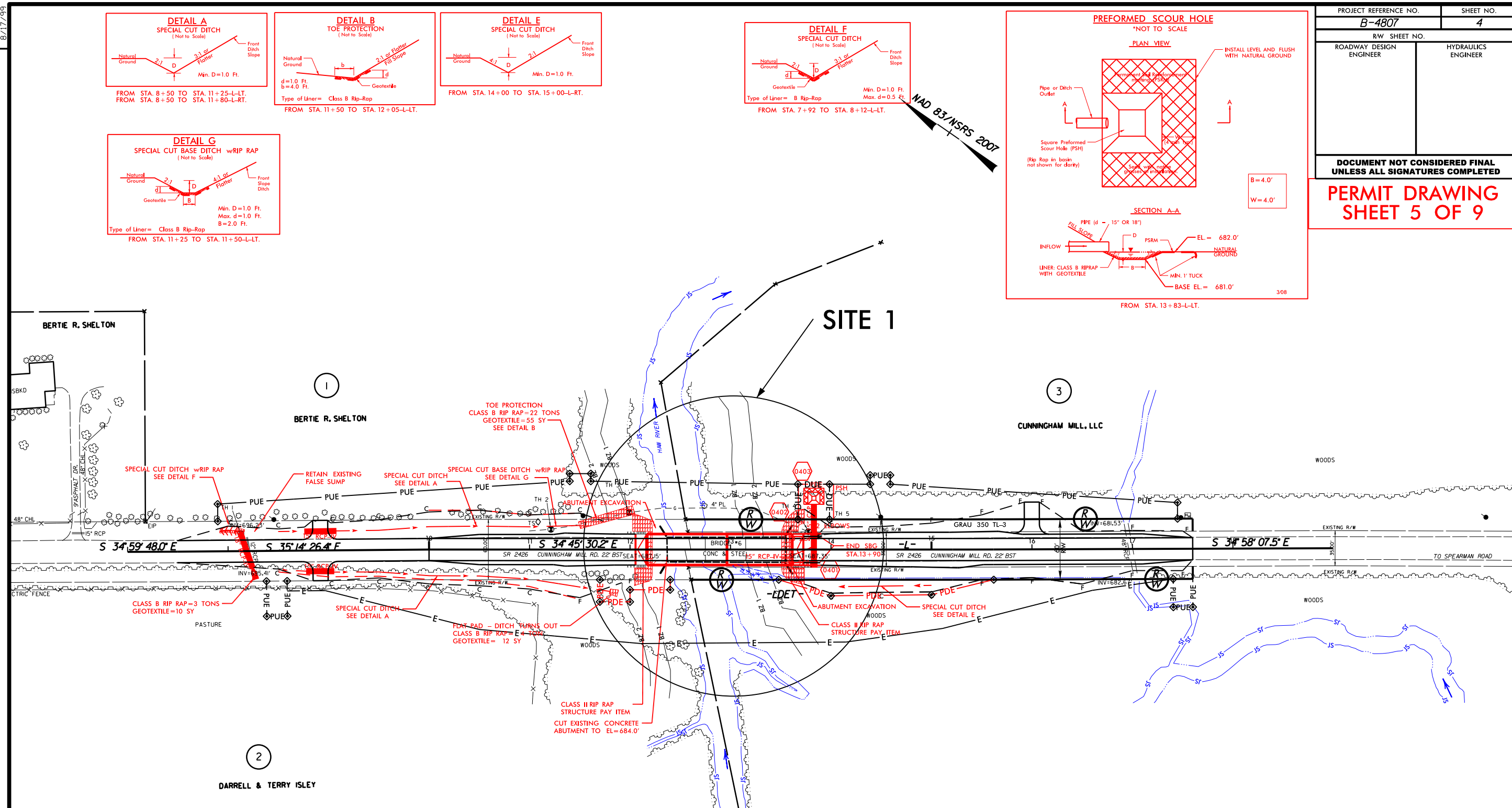
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UNLESS ALL SIGNATURES COMPLETED**

**PERMIT DRAWING
SHEET 5 OF 9**



REVISIONS

REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG



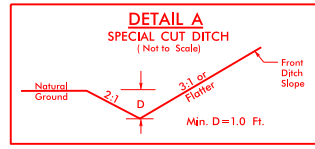
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TO PROPOSED BRIDGE**

SEE SHEET 6 FOR PROFILE VIEW

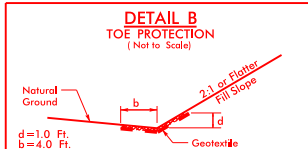
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R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

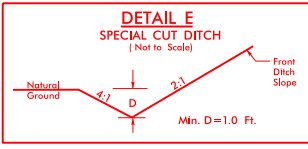
PERMIT DRAWING SHEET 6 OF 9



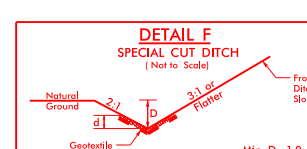
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FROM STA. 8+50 TO STA. 11+80-LRT.



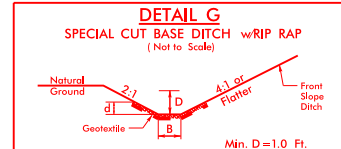
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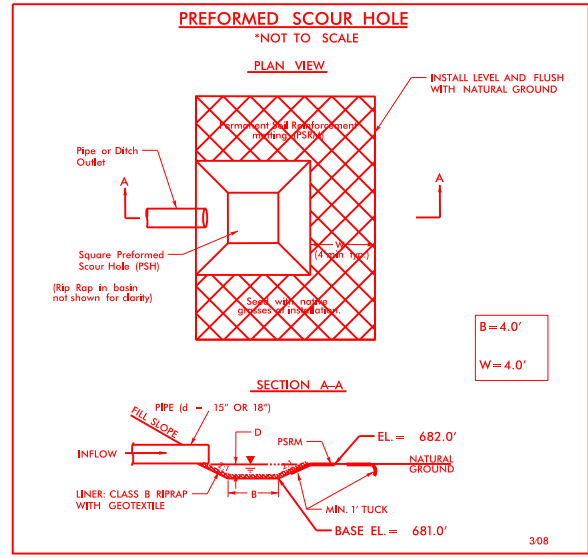
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FROM STA. 7+92 TO STA. 8+12-LT.

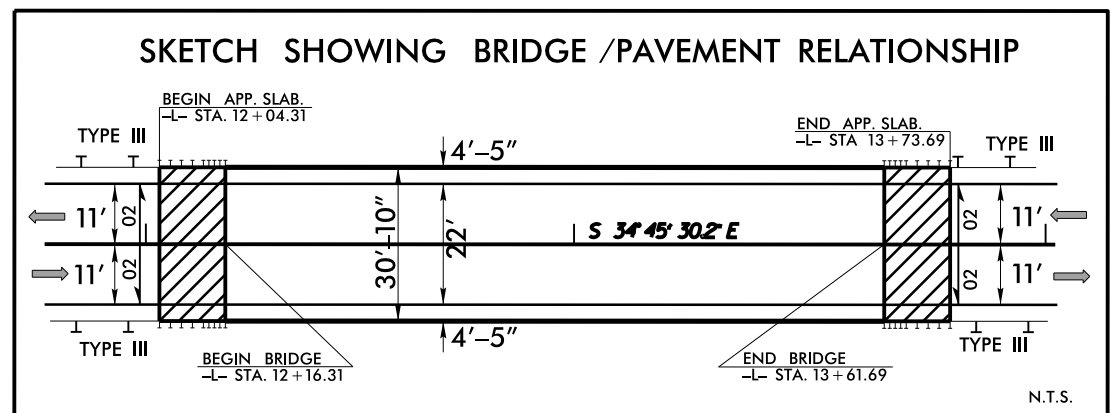
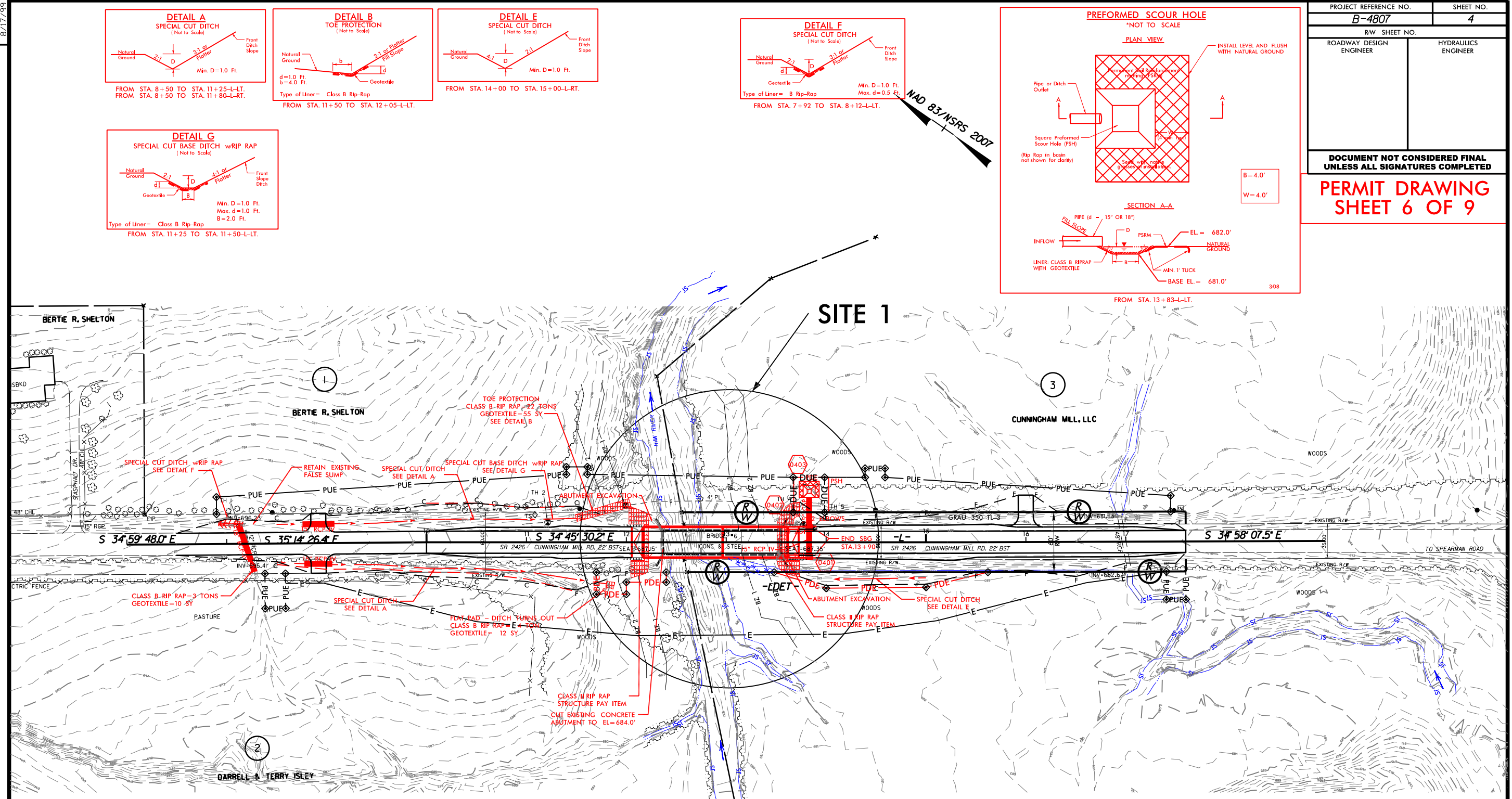


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REVISIONS

REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG



NO IMPACTS DUE TO PROPOSED BRIDGE

SEE SHEET 6 FOR PROFILE VIEW

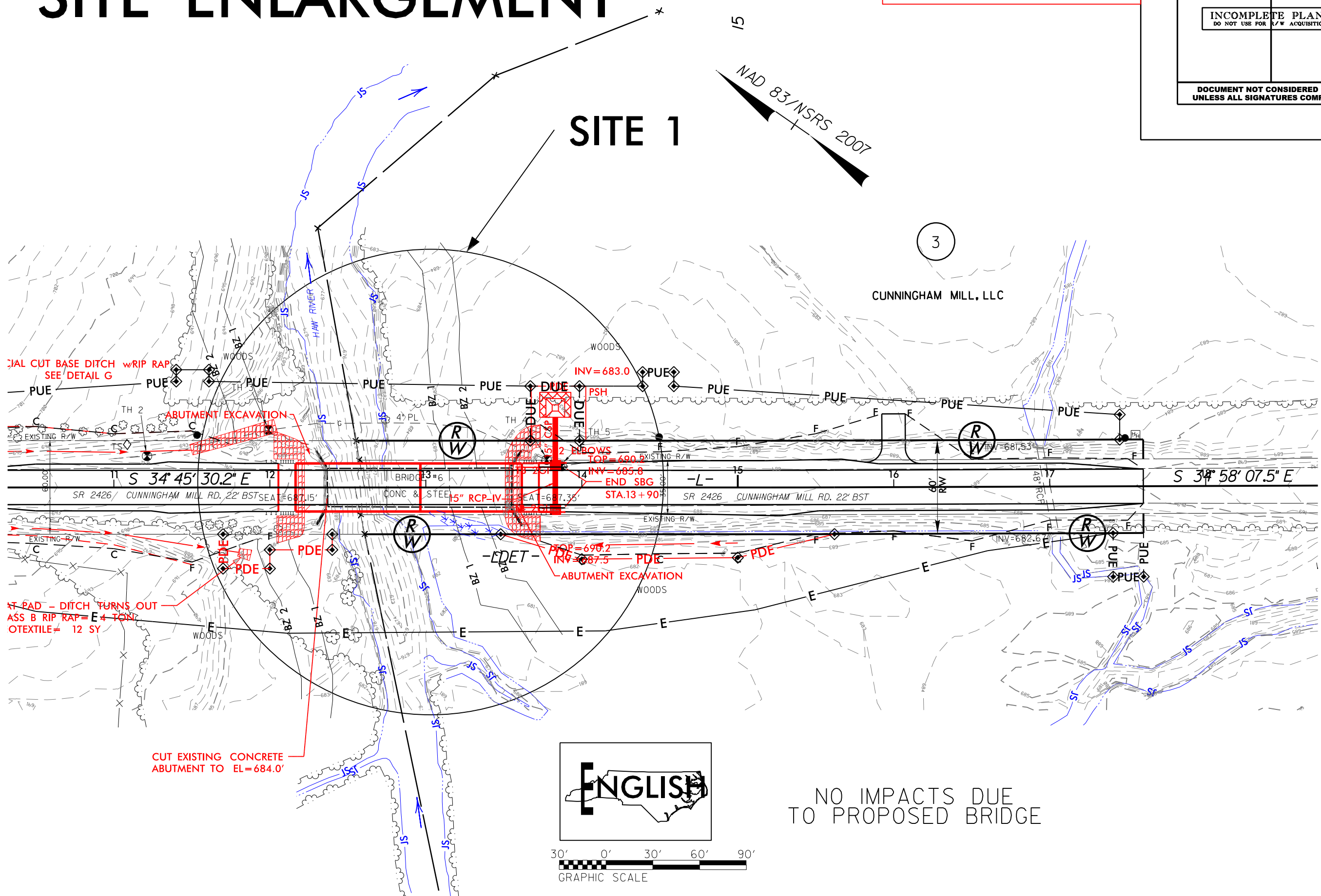
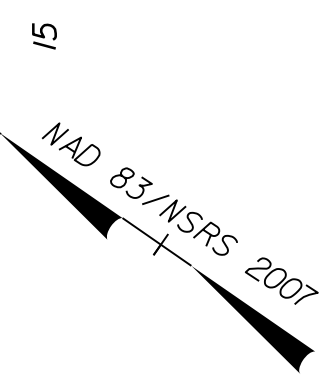
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SITE ENLARGEMENT

PERMIT DRAWING
SHEET 7 OF 9

PROJECT REFERENCE NO. B-4807	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SITE 1



ADJACENT CUT BASE DITCH w/ RIP RAP
SEE DETAIL G

ABUTMENT EXCAVATION

INV = 683.0

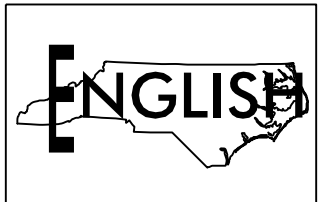
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STA. 13 + 90

INV = 690.2

INV = 687.5

CUT EXISTING CONCRETE
ABUTMENT TO EL = 684.0'



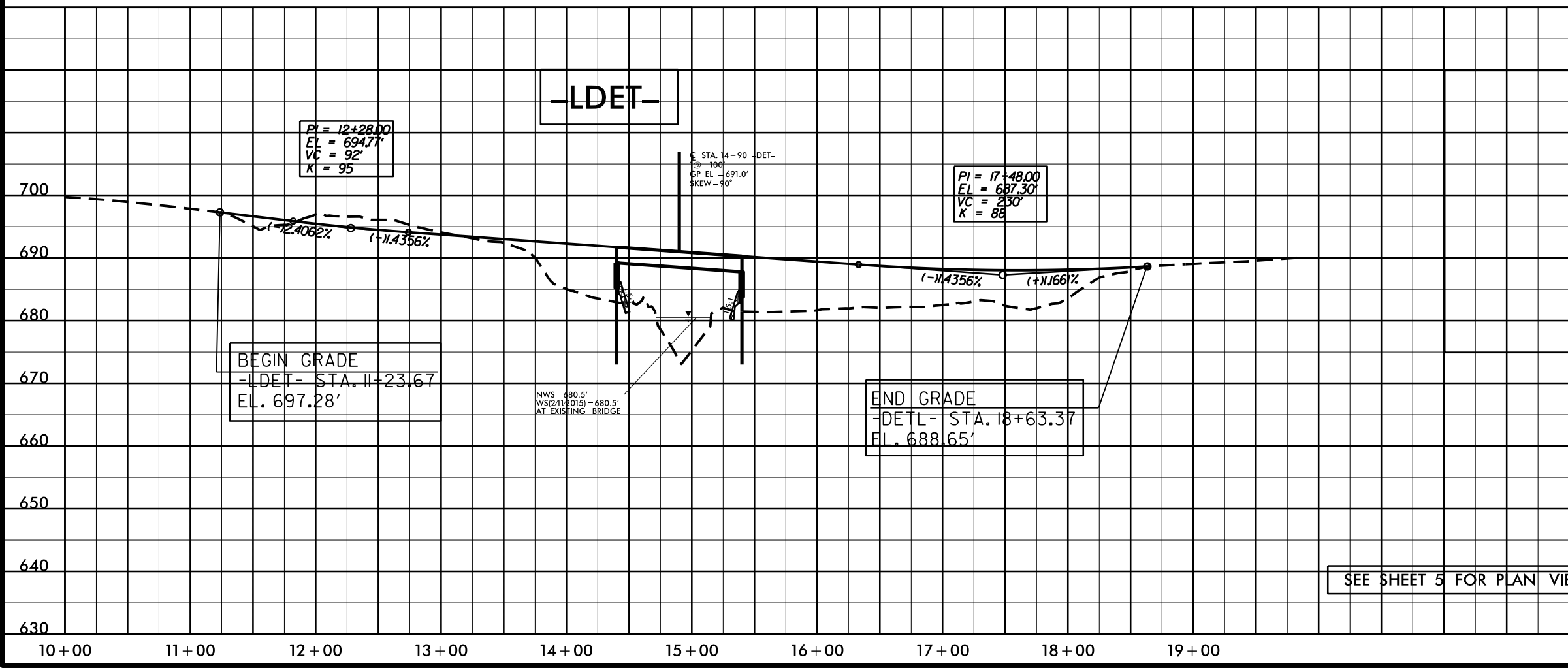
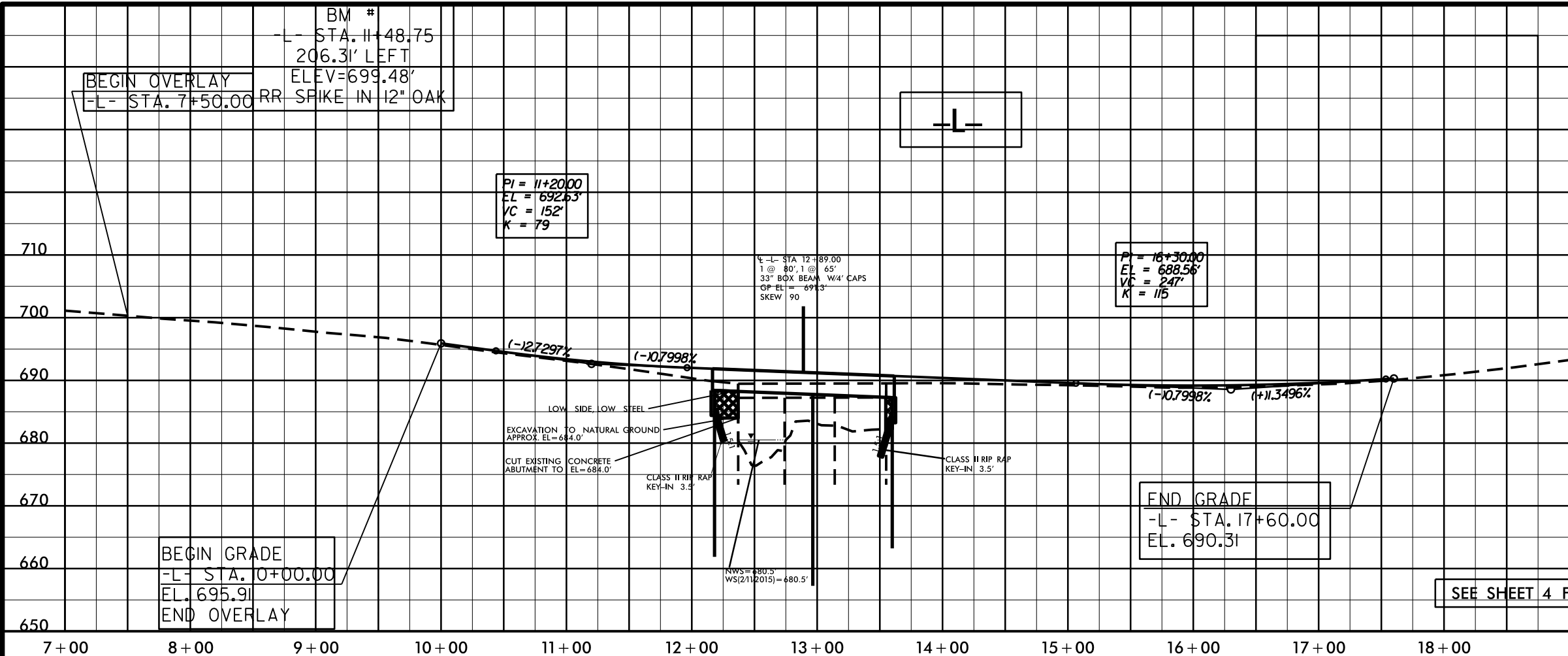
NO IMPACTS DUE
TO PROPOSED BRIDGE

REVISIONS

4/17/2017
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5/28/99

PERMIT DRAWING
SHEET 8 OF 9710



SYTIME\$\$\$\$\$\$\$\$\$
\$\$\$\$\$\$\$\$\$

WETLAND AND SURFACE WATER IMPACTS 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	-DET- 14+65 LT	Bank Stabilization						< 0.01			17	
1	-DET- 15+22 to 15+68 LT	FILL	< 0.01									
TOTALS*:			< 0.01					< 0.01	0	17	0	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 02/07/2017
 ROCKINGHAM
 B-4807
 38577.1.1
 SHEET 9 OF 9

09/08/19

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**BUFFER DRAWING
SHEET 1 OF 9**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4807	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38577.1.1	BRZ-2426(1)	PE	
38577.2.1		RW	
38577.2.2		UTIL	

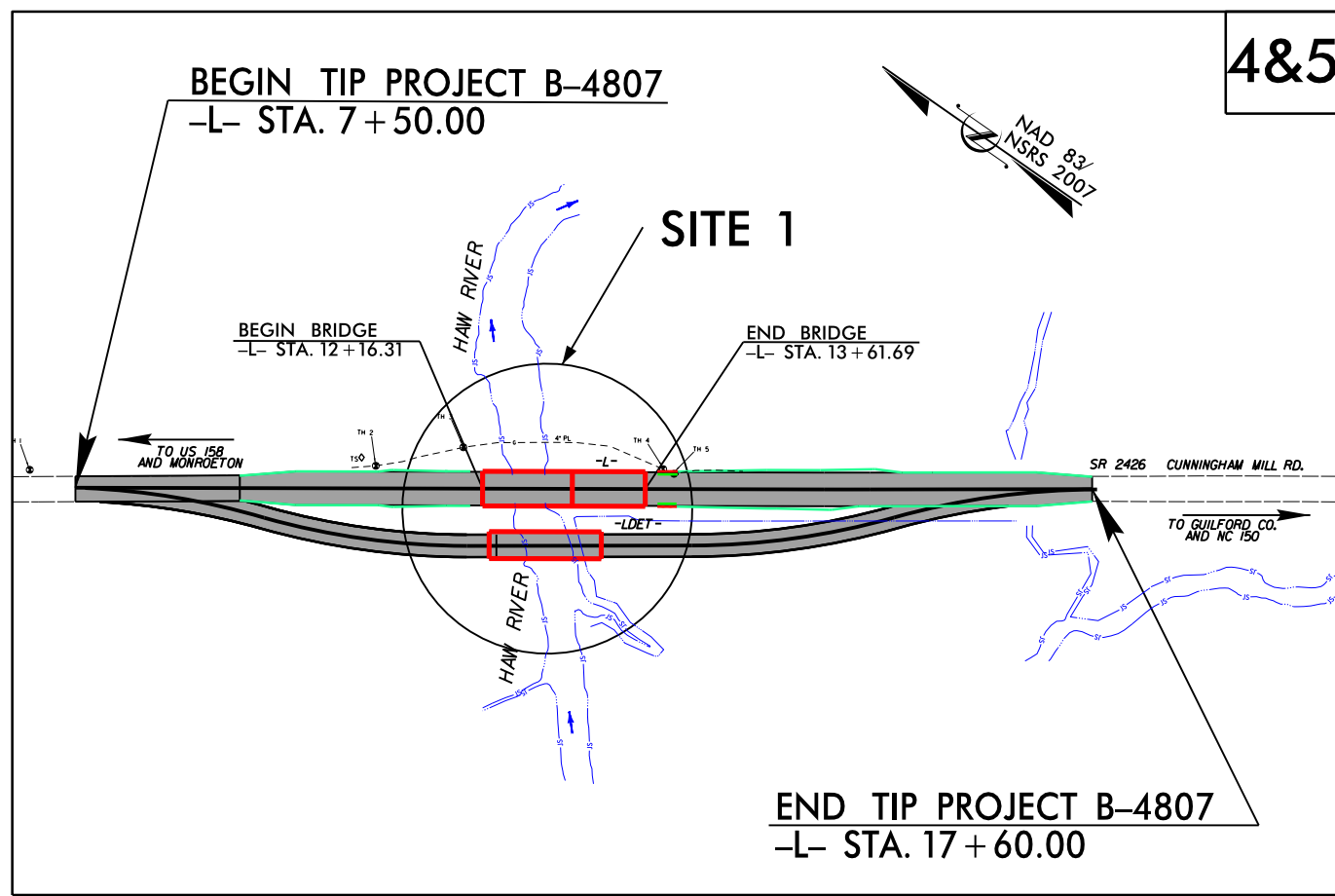
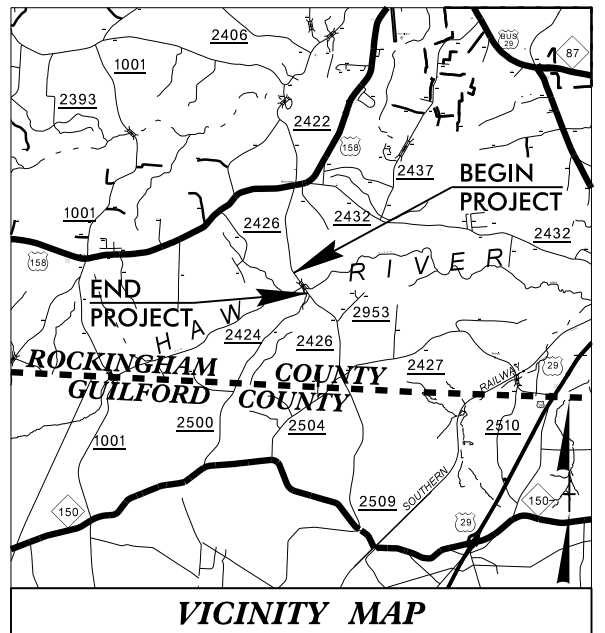
ROCKINGHAM COUNTY

LOCATION: BRIDGE NO. 6 OVER HAW RIVER ON SR 2426
(CUNNINGHAM MILL RD.)

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

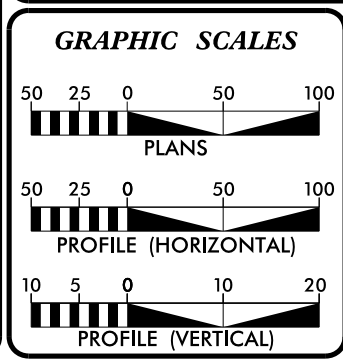
BUFFER IMPACTS PERMIT

CONTRACT: TIP PROJECT: B-4807



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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2018 =	3,555
ADT 2035 =	4,600
K =	13 %
D =	55 %
T =	6 % *
V =	55 MPH
V _{DET} =	45 MPH
* TTST 1% DUAL 5%	
FUNC CLASS =	RURAL COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4807 =	0.163 MI
LENGTH STRUCTURE TIP PROJECT B-4807 =	0.028 MI
TOTAL LENGTH OF TIP PROJECT B-4807 =	0.191 MI

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

2012 DESIGN SPECIFICATIONS	
RIGHT OF WAY DATE:	JAMES A. SPEER, PE PROJECT ENGINEER
	JANUARY 26, 2017
LETTING DATE:	NYA K. BOAYUE, PE PROJECT DESIGN ENGINEER
	JANUARY 16, 2018

HYDRAULICS ENGINEER	SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER	SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

4/17/2017
C:\Users\jgibson\Documents\Projects\B-4807_Hwy\B-4807_Hwy.dwg
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\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

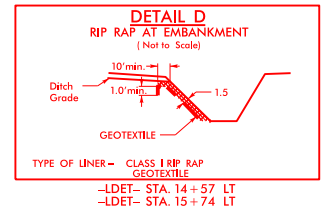
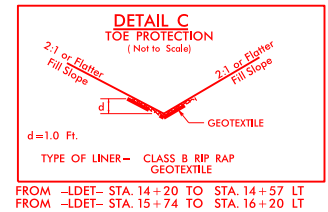
-LDET- $V_{DET} = 45 \text{ mph}$

PI Sta 10+93.84 $\Delta = 15^\circ 51' 08.4" \text{ (RT)}$ $D = 8' 30" 03.1"$ $L = 186.48'$ $T = 93.84'$ $R = 674.00'$ SE = VAR.	PI Sta 12+77.43 $\Delta = 15^\circ 22' 12.2" \text{ (LT)}$ $D = 8' 30" 03.1"$ $L = 180.81'$ $T = 90.95'$ $R = 674.00'$ SE = 4%	PI Sta 17+11.9 $\Delta = 15^\circ 46' 55.6" \text{ (LT)}$ $D = 8' 30" 03.1"$ $L = 185.65'$ $T = 93.42'$ $R = 674.00'$ SE = 4%	PI Sta 18+95.58 $\Delta = 15^\circ 34' 18.3" \text{ (RT)}$ $D = 8' 30" 03.1"$ $L = 183.18'$ $T = 92.16'$ $R = 674.00'$ SE = VAR.
--	--	---	--

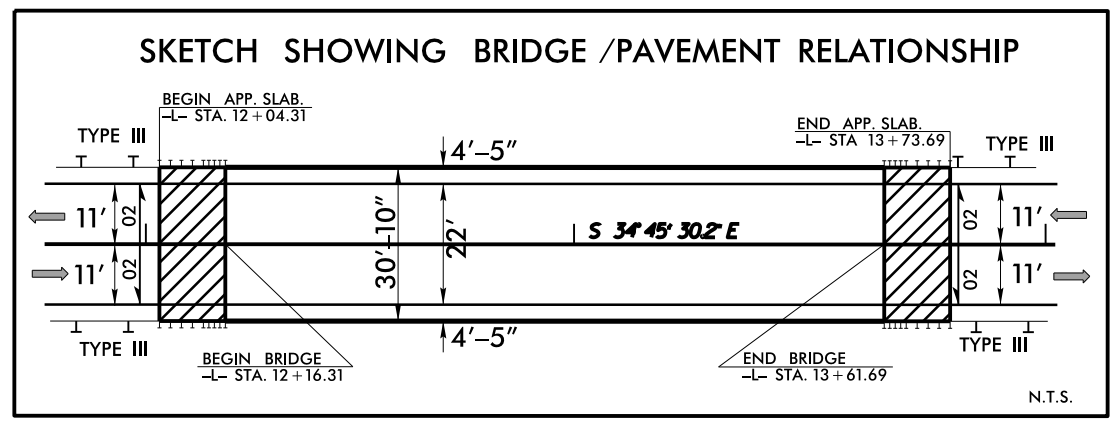
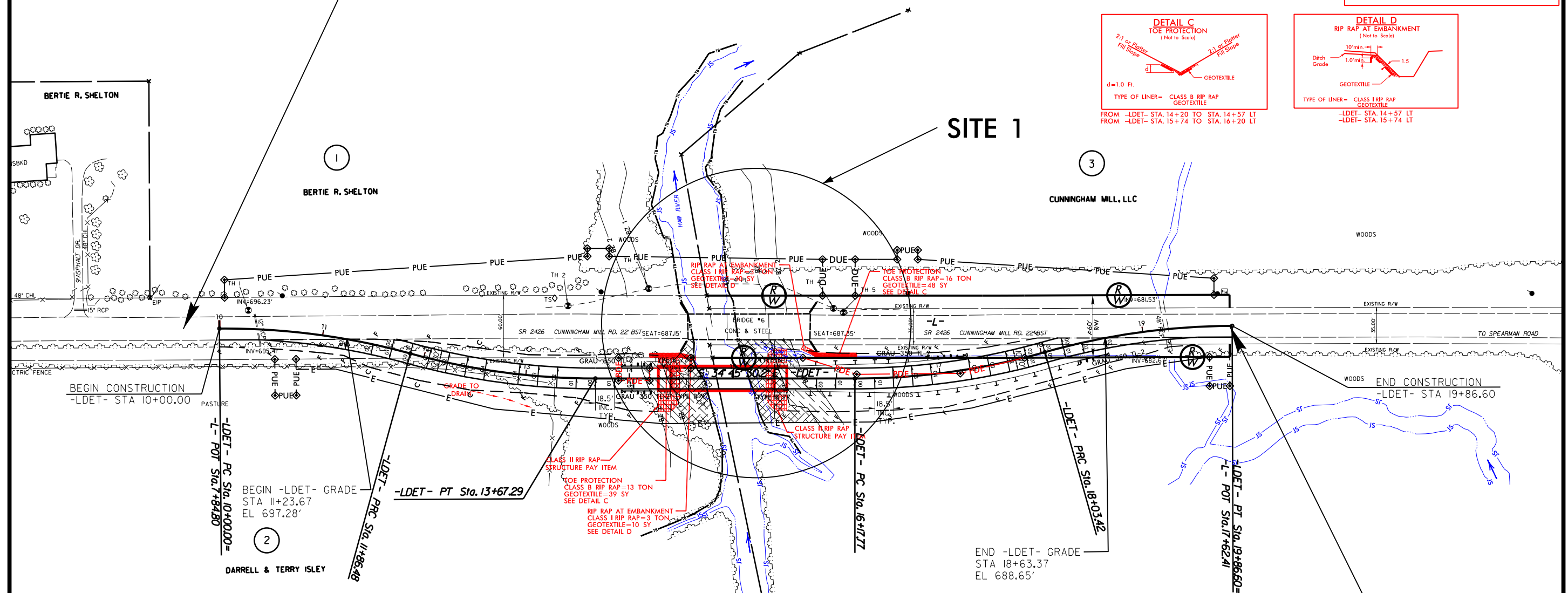
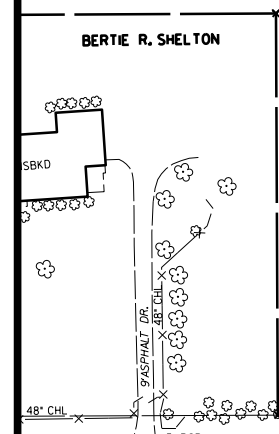
BEGIN TIP PROJECT B-4807
-L- STA. 7+50.00

PROJECT REFERENCE NO. B-4807	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

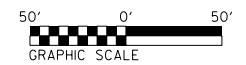
BUFFER DRAWING
SHEET 2 OF 9



REVISIONS
ROW DEVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 030717 JBG



END TIP PROJECT B-4807
-L- STA. 17+60.00



SEE SHEET 6 FOR PROFILE VIEW

4/17/2017
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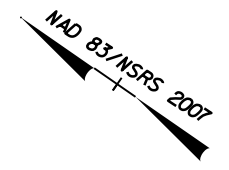
PROJECT REFERENCE NO.	SHEET NO.
B-4807	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-LDET- $V_{DET} = 45 \text{ mph}$

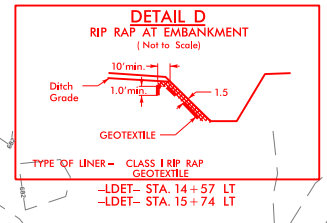
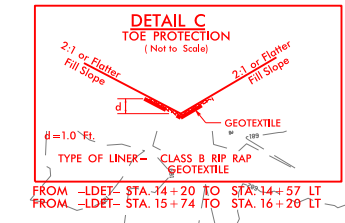
PI Sta 10+93.84 $\Delta = 15^\circ 51' 08.4" \text{ (RT)}$ $D = 8' 30" 03.1"$ $L = 186.48'$ $T = 93.84'$ $R = 674.00'$ $SE = \text{VAR.}$	PI Sta 12+77.43 $\Delta = 15^\circ 22' 12.2" \text{ (LT)}$ $D = 8' 30" 03.1"$ $L = 180.81'$ $T = 90.95'$ $R = 674.00'$ $SE = 4\%$	PI Sta 17+11.19 $\Delta = 15^\circ 46' 55.6" \text{ (LT)}$ $D = 8' 30" 03.1"$ $L = 185.65'$ $T = 93.42'$ $R = 674.00'$ $SE = 4\%$	PI Sta 18+95.58 $\Delta = 15^\circ 34' 18.3" \text{ (RT)}$ $D = 8' 30" 03.1"$ $L = 183.18'$ $T = 92.16'$ $R = 674.00'$ $SE = \text{VAR.}$
---	---	---	---

BEGIN TIP PROJECT B-4807

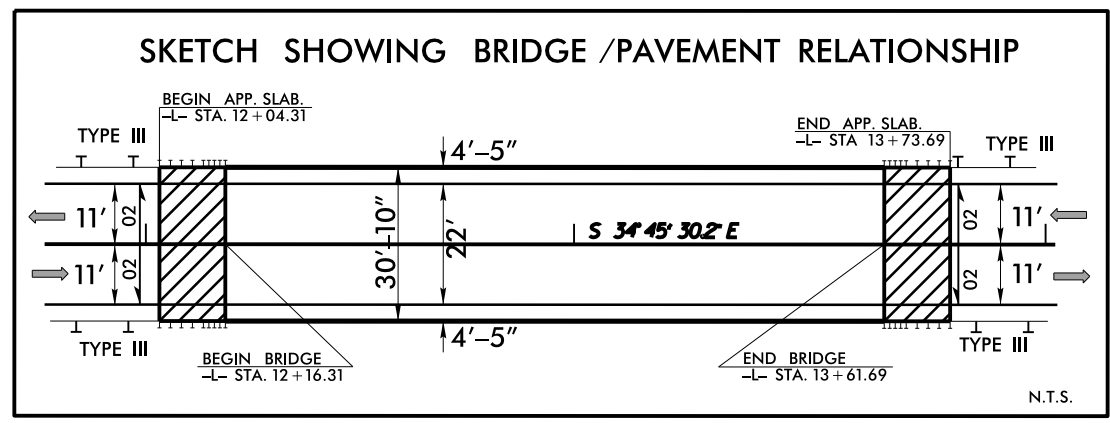
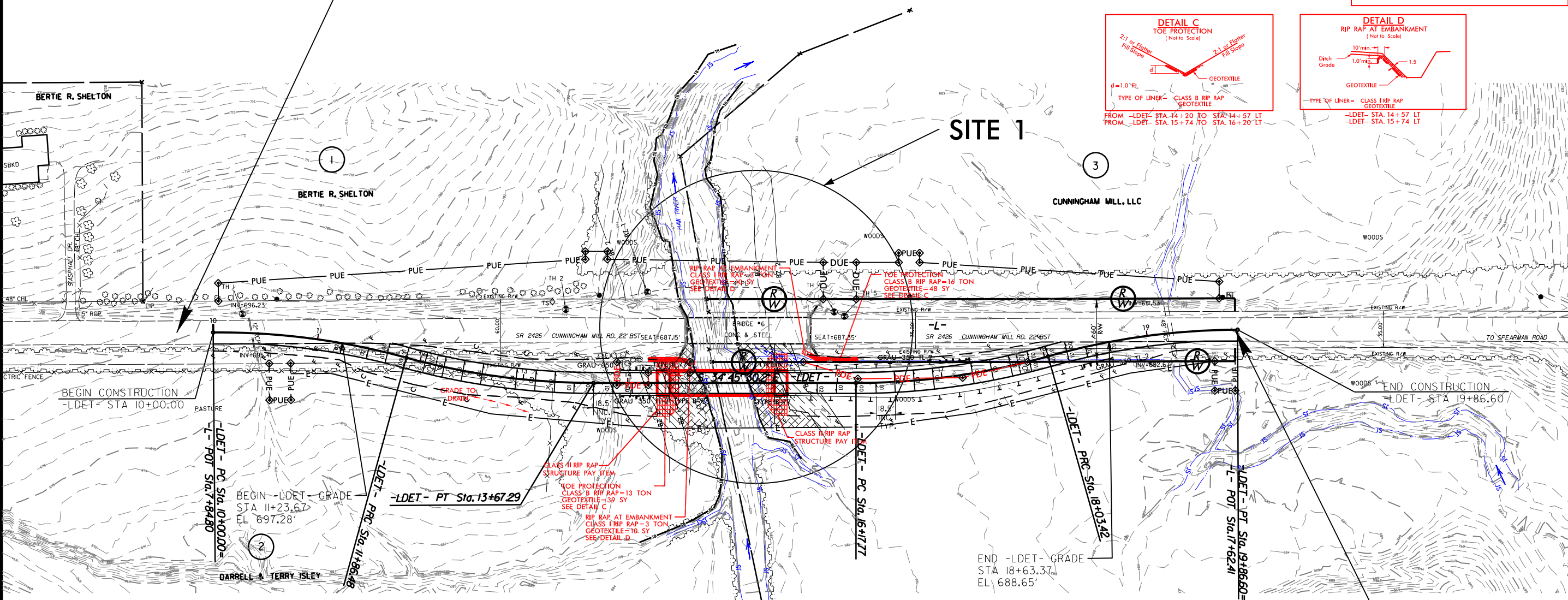
-L- STA. 7+50.00



BUFFER DRAWING
SHEET 3 OF 9

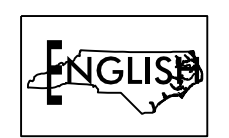


8/17/99
 REVISIONS
 ROW REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG
 4/17/2017
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 \$\$\$\$\$\$DATE\$\$\$\$\$\$



END TIP PROJECT B-4807

-L- STA. 17+60.00



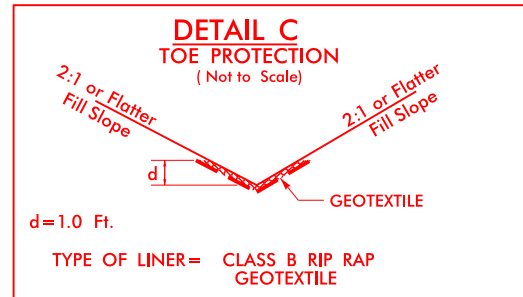
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

SEE SHEET 6 FOR PROFILE VIEW

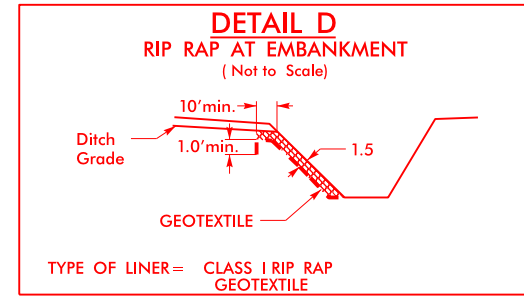
SITE ENLARGEMENT

**BUFFER DRAWING
SHEET 4 OF 9**

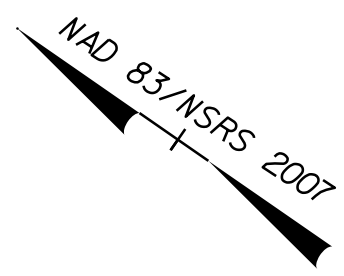
PROJECT REFERENCE NO. B-4807	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FROM -LDET- STA. 14+20 TO STA. 14+57 LT
FROM -LDET- STA. 15+74 TO STA. 16+20 LT



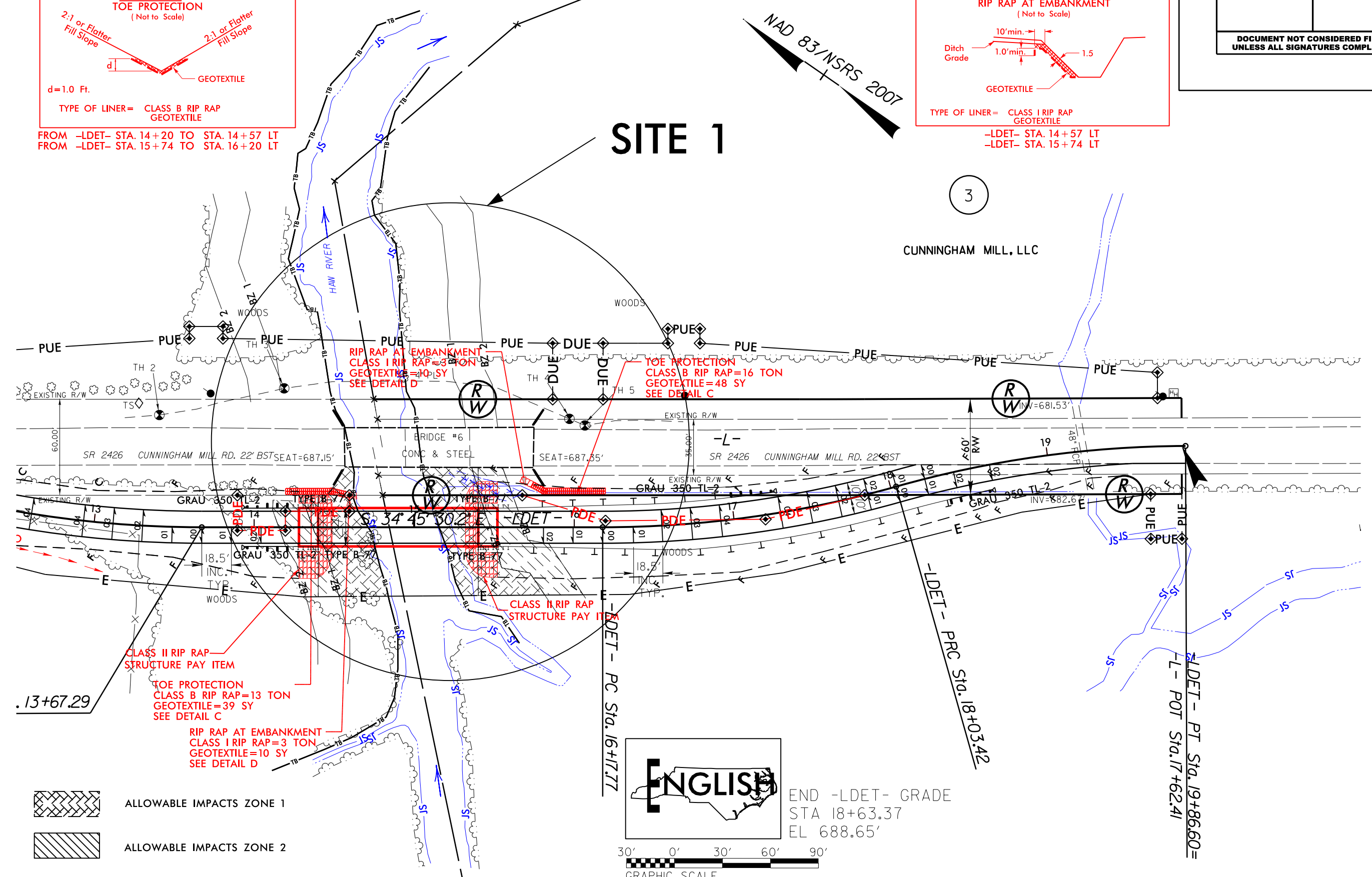
-LDET- STA. 14+57 LT
-LDET- STA. 15+74 LT



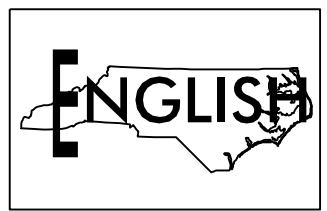
SITE 1

3

CUNNINGHAM MILL, LLC



- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2



END -LDET- GRADE
STA 18+63.37
EL 688.65'



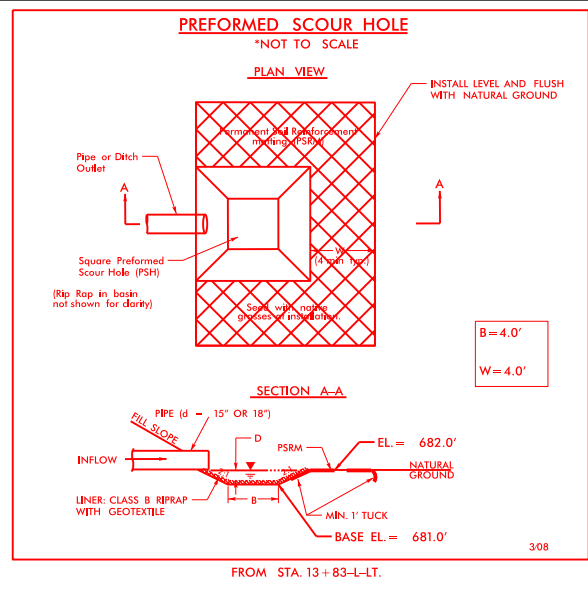
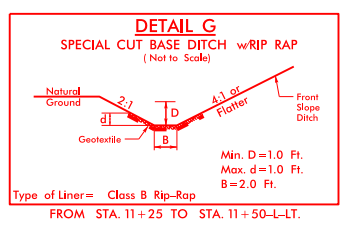
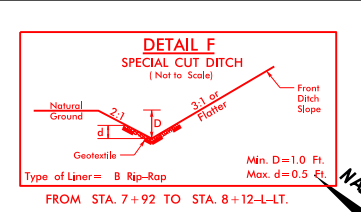
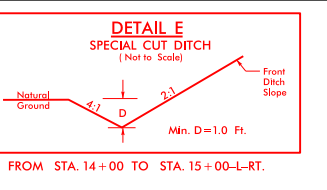
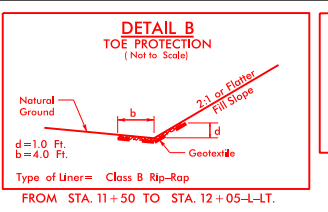
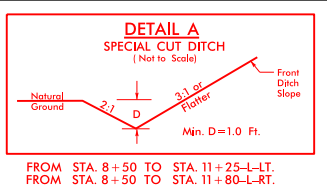
REVISIONS

4/17/2017
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DESIGNED BY: JRM
CHECKED BY: JRM
DATE: 4/17/2017

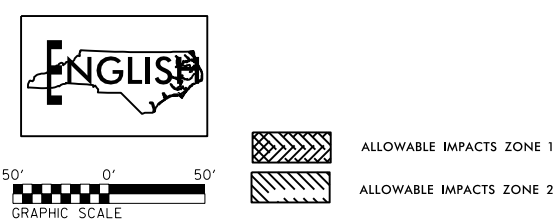
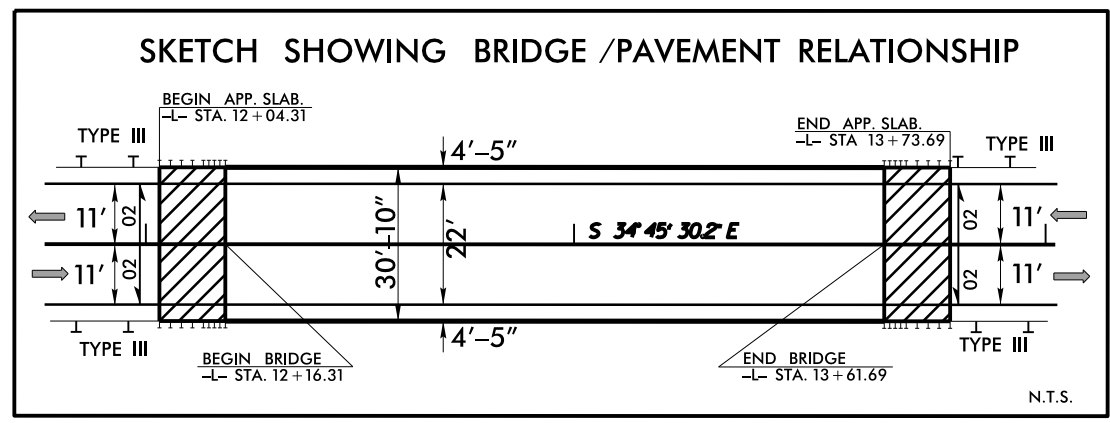
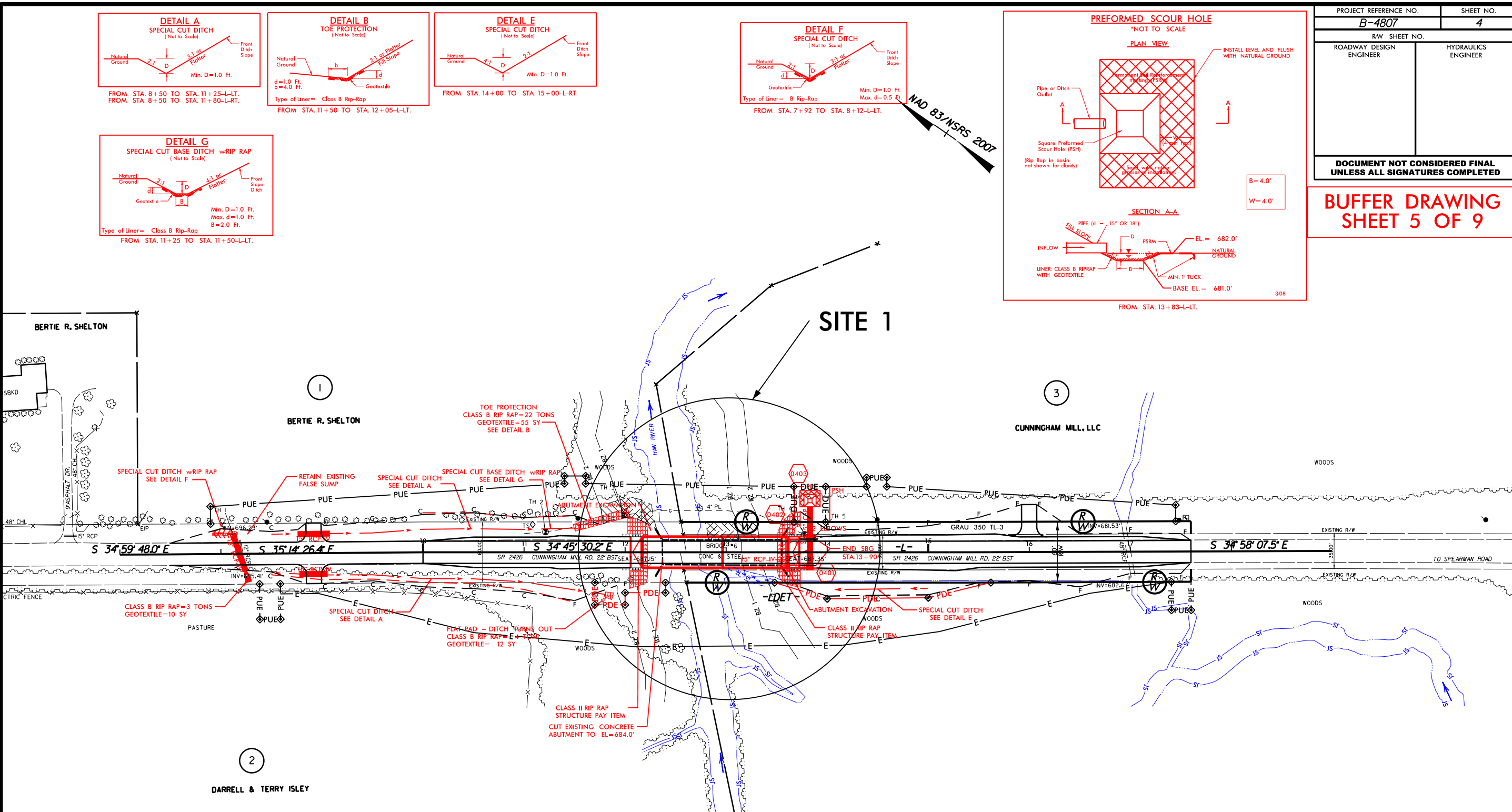
PROJECT REFERENCE NO. B-4807	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

**BUFFER DRAWING
SHEET 5 OF 9**



8/17/99
 REVISIONS
 PARCEL 1. 030717 JBG
 REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 030717 JBG
 4/17/2017
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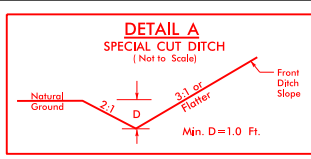


SEE SHEET 6 FOR PROFILE VIEW

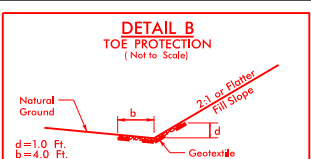
PROJECT REFERENCE NO. B-4807	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

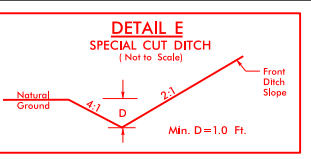
**BUFFER DRAWING
SHEET 6 OF 9**



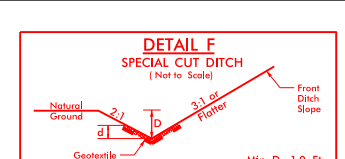
FROM STA. 8+50 TO STA. 11+25-LT.
FROM STA. 8+50 TO STA. 11+80-LRT.



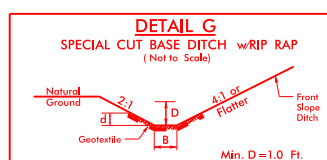
Type of Liner= Class B Rip-Rap
FROM STA. 11+50 TO STA. 12+05-L-LT.



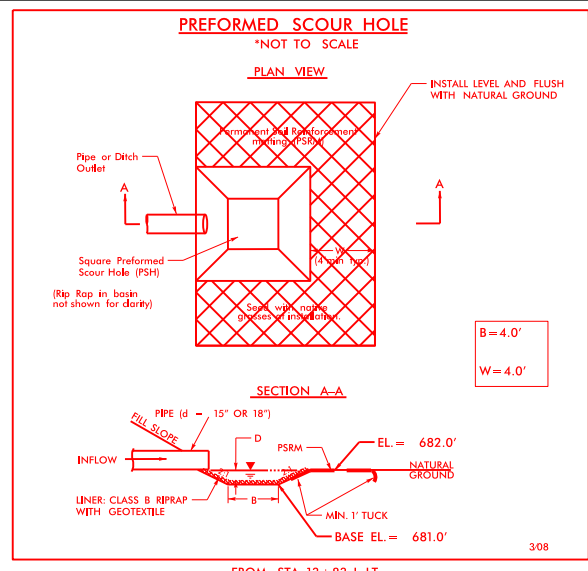
FROM STA. 14+00 TO STA. 15+00-L-RT.



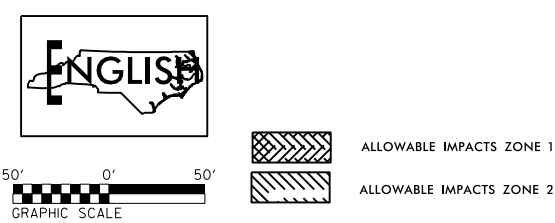
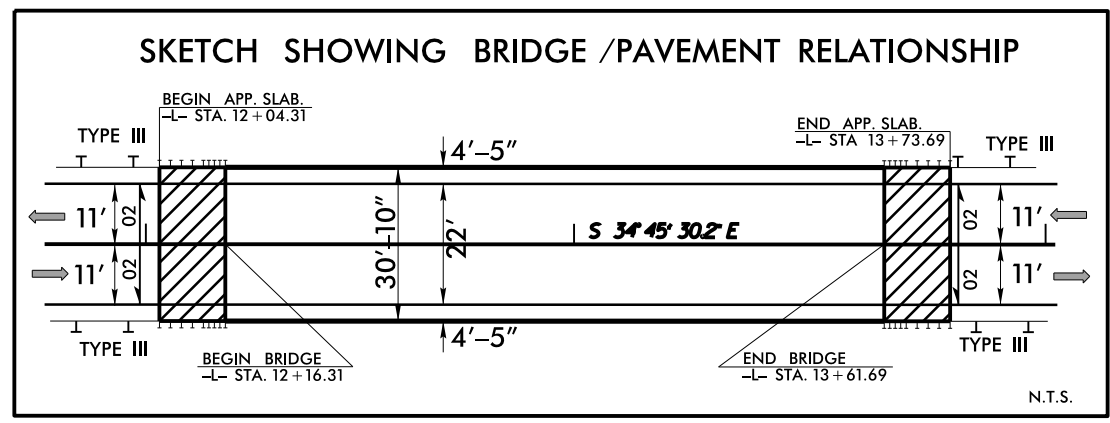
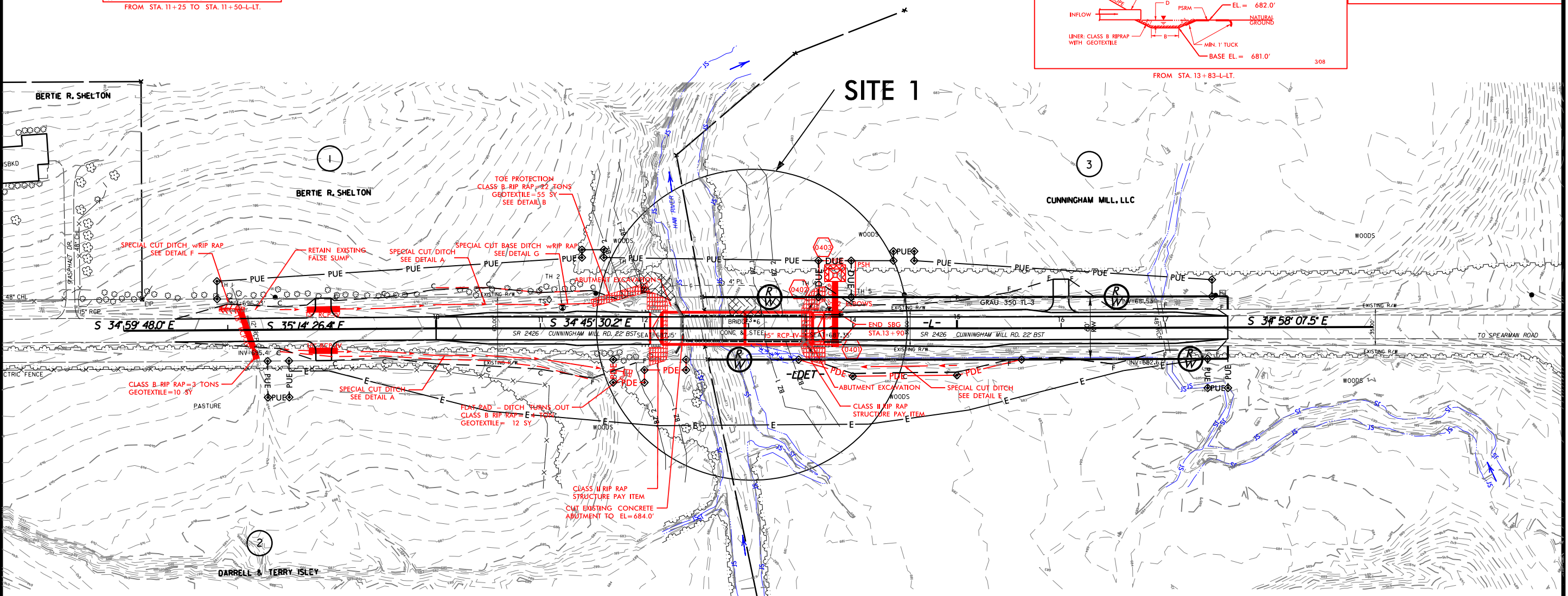
Type of Liner= B Rip-Rap
FROM STA. 7+92 TO STA. 8+12-L-LT.



Type of Liner= Class B Rip-Rap
FROM STA. 11+25 TO STA. 11+50-L-LT.



8/17/99
 REVISIONS
 03/07/17 JBG
 REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG
 4/17/2017
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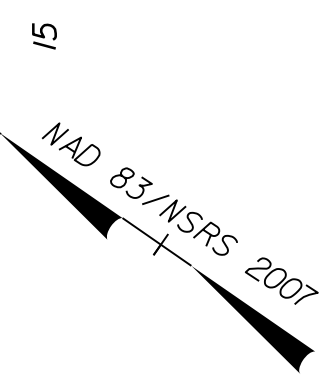
SEE SHEET 6 FOR PROFILE VIEW

SITE ENLARGEMENT

**BUFFER DRAWING
SHEET 7 OF 9**

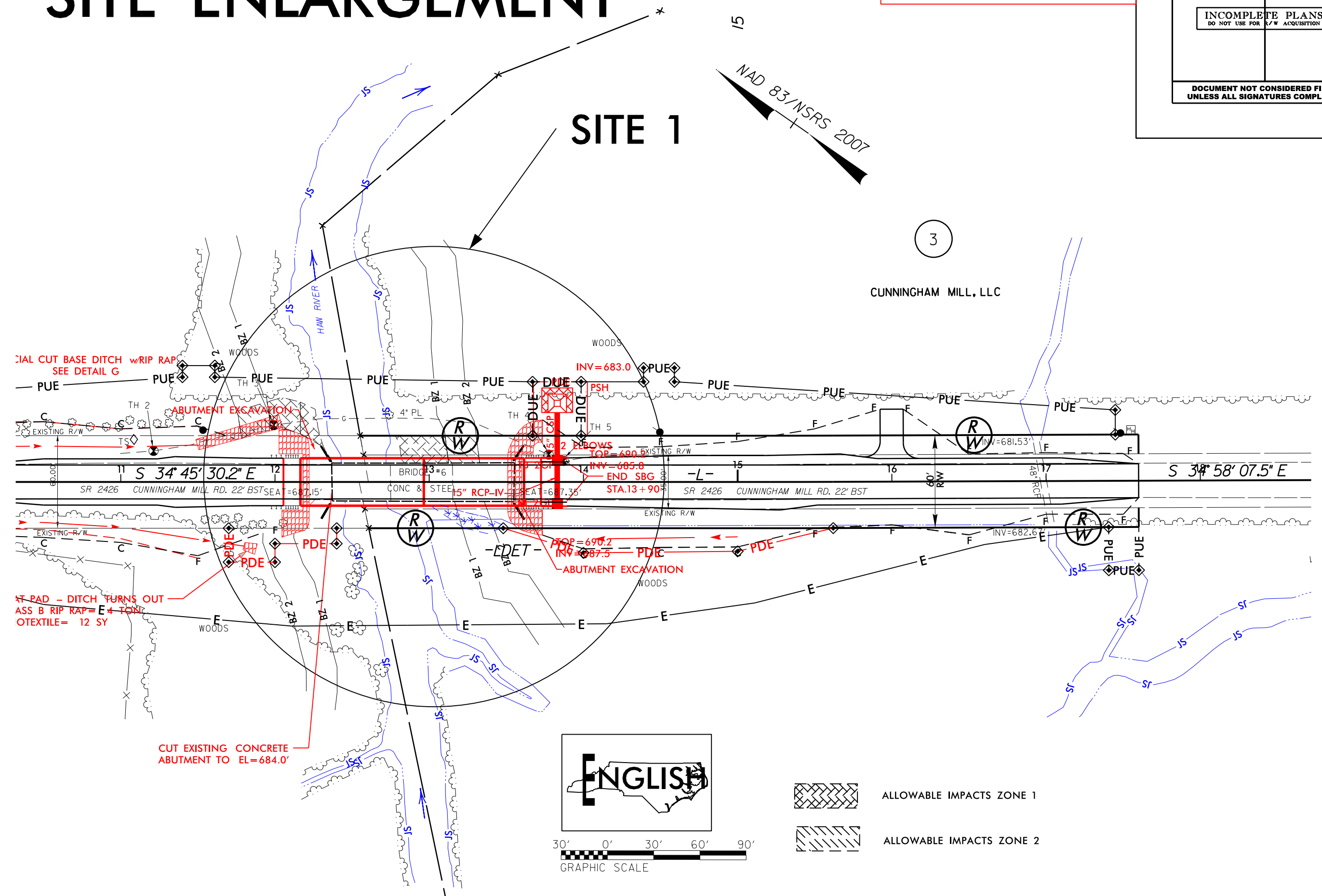
PROJECT REFERENCE NO. B-4807	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SITE 1



3

CUNNINGHAM MILL, LLC



ADJACENT CUT BASE DITCH w/ RIP RAP
SEE DETAIL G

AT PAD - DITCH TURNS OUT
ASS B RIP RAP = E 4 TON
OTEXTILE = 12 SY

CUT EXISTING CONCRETE
ABUTMENT TO EL = 684.0'



GRAPHIC SCALE



ALLOWABLE IMPACTS ZONE 1



ALLOWABLE IMPACTS ZONE 2

REVISIONS

4/17/2017
C:\Users\jwheeler\Documents\Projects\B4807_2\HW_07_07\p4807.dgn
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DESIGN\$\$\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$

RIPARIAN BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			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		LDET 14+12 RT - 14+40 RT	X			127	1007	1134					
1		LDET 14+40 RT - 15+40 RT		X		3915	308	4223					
1		LDET 15+40 RT - 16+05 RT	X			962	1950	2912					
1		L 11+75 LT to 12+16 LT	X			402	350	752					
1		L 12+16 RT to 13+61 LT		X		798	357	1155					
TOTAL:						6204	3972	10176	0.0	0.0	0.0	0.0	0.0

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 COUNTY: ROCKINGHAM
 PROJECT: B-4807
 38577.1.1

 DATE: 04/17/2017
 SHEET 8 OF 9

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)	WETLANDS IN BUFFERS	
		ZONE 1 (ft ²)	ZONE 2 (ft ²)
1	LDET 15+21 - 15+62 LT	101	219
TOTAL:		101	219

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 COUNTY: ROCKINGHAM
 PROJECT: B-4807

 DATE 02/07/2017
 SHEET 9 OF 9

09.08/199

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

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

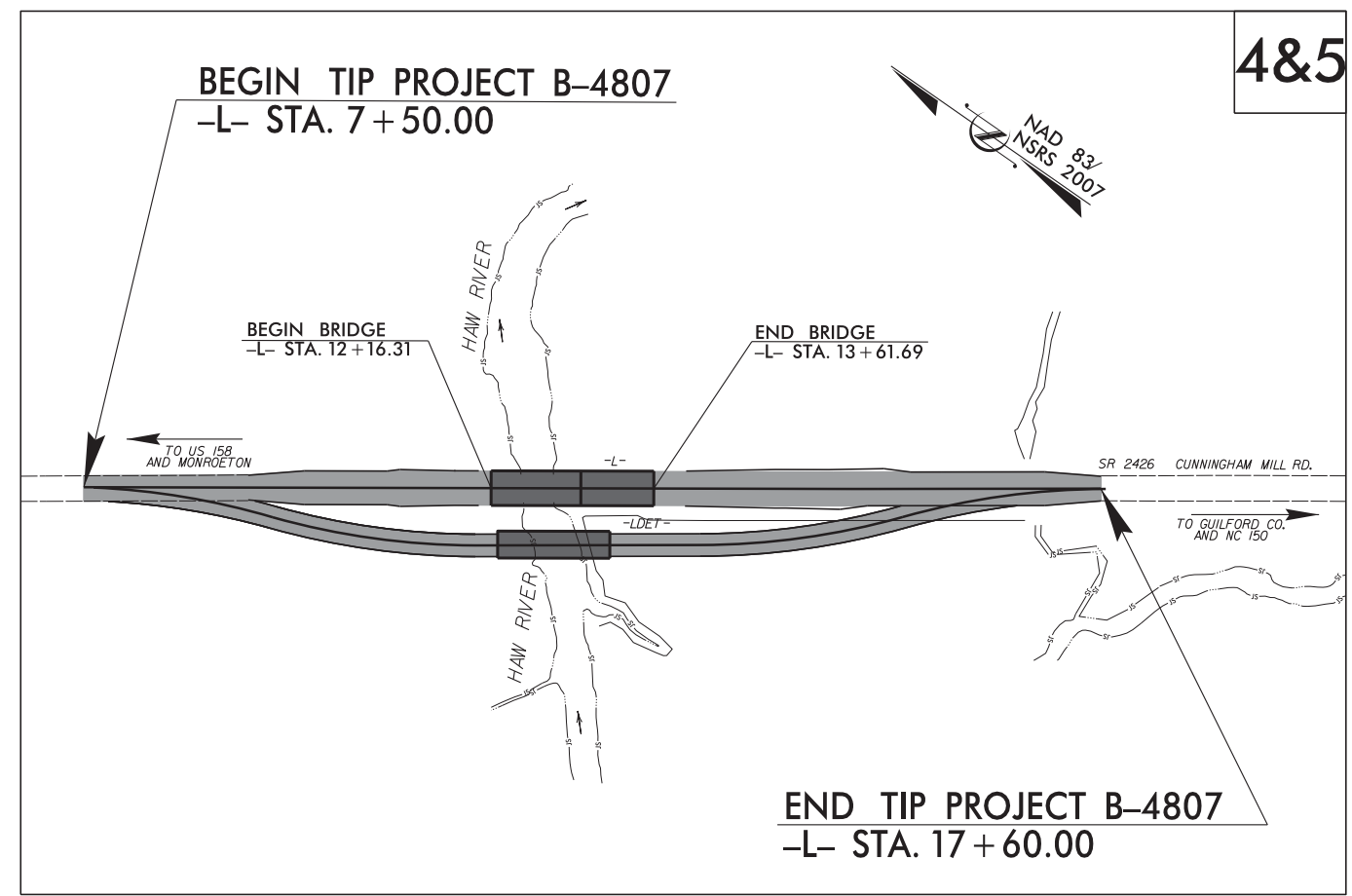
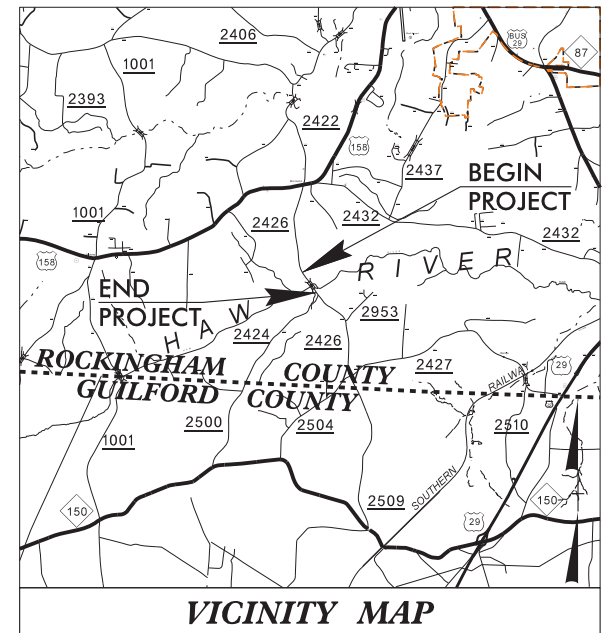
ROCKINGHAM COUNTY

LOCATION: BRIDGE NO. 6 OVER HAW RIVER ON SR 2426
 (CUNNINGHAM MILL RD.)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4807	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38577.1.1	BRZ-2426(1)	PE	
38577.2.1		RW	
38577.2.2		UTIL	

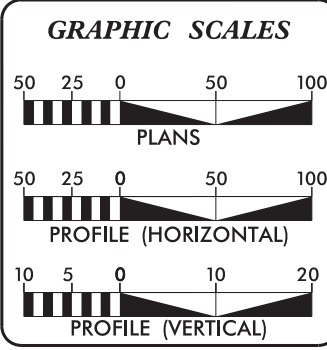
TIP PROJECT: B-4807



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

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

ADT 2018 =	3,555
ADT 2035 =	4,600
K =	13 %
D =	55 %
T =	6 % *
V =	55 MPH
V _{DET} =	45 MPH
* TTST 1%	DUAL 5%
FUNC CLASS =	RURAL COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4807 =	0.163 MI
LENGTH STRUCTURE TIP PROJECT B-4807 =	0.028 MI
TOTAL LENGTH OF TIP PROJECT B-4807 =	0.191 MI

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

2012 DESIGN SPECIFICATIONS	
RIGHT OF WAY DATE: JANUARY 26, 2017	JAMES A. SPEER, PE PROJECT ENGINEER
LETTING DATE: JANUARY 16, 2018	NYA K. BOAYUE, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

14-FEB-2017 12:07
 R:\Roadway\Proj\B-4807_Rdy_1.sh.dgn
 \$\$\$SERNAME\$\$\$

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale *S.U.E. = *Subsurface Utility Engineering*

04/06/15

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	☠ ☠
Potential Contamination Area: Soil	☠ ☠
Known Contamination Area: Water	☠ ☠
Potential Contamination Area: Water	☠ ☠
Contaminated Site: Known or Potential	☠ ☠

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	← FLOW
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	○ RW
Proposed Right of Way Line with Iron Pin and Cap Marker	○ RW ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ RW ○
Proposed Control of Access Line with Concrete C/A Marker	○ C/A
Existing Control of Access	○ C/A
Proposed Control of Access	○ C/A
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-S-

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----P-----
U/G Power Line LOS C (S.U.E.*)	-----P-----
U/G Power Line LOS D (S.U.E.*)	-----P-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊞
Telephone Cell Tower	⊞
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	-----T-----
U/G Telephone Cable LOS C (S.U.E.*)	-----T-----
U/G Telephone Cable LOS D (S.U.E.*)	-----T-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----TC-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----TC-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----TC-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----TFD-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----TFD-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----TFD-----

WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊞
U/G Water Line LOS B (S.U.E.*)	-----W-----
U/G Water Line LOS C (S.U.E.*)	-----W-----
U/G Water Line LOS D (S.U.E.*)	-----W-----
Above Ground Water Line	-----A/G Water-----

TV:

TV Pedestal	⊞
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	-----TV-----
U/G TV Cable LOS C (S.U.E.*)	-----TV-----
U/G TV Cable LOS D (S.U.E.*)	-----TV-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----TV FO-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----TV FO-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----TV FO-----

GAS:

Gas Valve	◇
Gas Meter	⊞
U/G Gas Line LOS B (S.U.E.*)	-----G-----
U/G Gas Line LOS C (S.U.E.*)	-----G-----
U/G Gas Line LOS D (S.U.E.*)	-----G-----
Above Ground Gas Line	-----A/G Gas-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊞
U/G Sanitary Sewer Line	-----SS-----
Above Ground Sanitary Sewer	-----A/G Sanitary Sewer-----
SS Forced Main Line LOS B (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS C (S.U.E.*)	-----FSS-----
SS Forced Main Line LOS D (S.U.E.*)	-----FSS-----

MISCELLANEOUS:

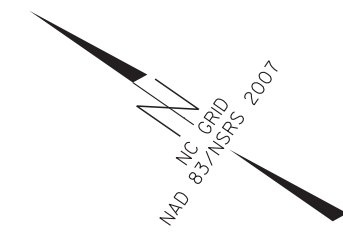
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊞
Utility Unknown U/G Line LOS B (S.U.E.*)	-----ZUTL-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊞
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊞
U/G Test Hole LOS A (S.U.E.*)	⊞
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

12/01/2005

B-4807 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-4807	1C
Location and Surveys	

BEGIN TIP PROJECT B-4807
-L- STA. 10 + 00.00



NCDOT BASELINE
 STATION "B4807-2"
 N = 918258.6150
 E = 1783398.5150

BM1
 ELEV = 699.48

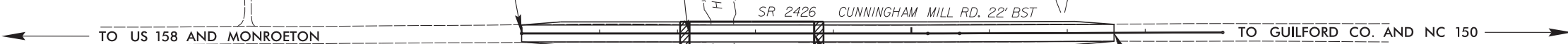
BEGIN BRIDGE
-L- STA. 12 + 15.30

NCDOT BASELINE
 STATION "BL-3"
 N = 917382.7279
 E = 1783959.2712

END BRIDGE
-L- STA. 13 + 75.30

NCDOT BASELINE
 STATION "BL-4"
 N = 916632.4877
 E = 1784472.8329

BM2
 ELEV = 714.27



TYPE	STATION	NORTH	EAST
POT	7+00.00	917816.3134	1783674.0337
POT	7+50.00	917775.3541	1783702.7101
POT	10+00.00	917571.1734	1783846.9609
PC	15+21.12	917143.0397	1784144.0608
PT	15+61.07	917109.6023	1784167.3554
POT	18+99.47	916832.9476	1784360.8463

-L- PRELIMINARY NEW R/W MONUMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+95.20	-30.00	917378.61162	1784017.10330
L	12+60.79	30.00	917339.61451	1783970.99475
L	15+21.12	-30.00	917169.14317	1784168.70768
L	15+21.12	30.00	917125.43614	1784119.41387
L	15+61.07	30.00	917092.40842	1784142.77146
L	15+61.07	-30.00	917126.79619	1784191.93935
L	17+60.00	30.00	916930.04665	1784256.32646
L	17+60.00	-30.00	916964.43442	1784305.49434
L	17+60.00	-17.50	916957.27830	1784295.25103
L	17+60.00	17.50	916937.21077	1784266.56977

-L- PRELIMINARY NEW PERMANENT UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	8+38.00	30.00	917686.12026	1783728.91327
L	8+58.50	30.00	917669.38368	1783740.75111
L	8+38.00	65.00	917665.97559	1783700.39936
L	8+58.50	65.00	917649.23251	1783712.22811
L	7+98.00	-29.89	917759.92927	1783750.19953
L	7+98.00	-47.00	917769.00426	1783764.17715
L	11+40.00	-68.00	917494.91929	1783982.64583
L	11+40.00	-75.50	917499.19517	1783988.80756
L	11+61.00	-75.50	917481.94234	1784000.78002
L	11+61.00	-68.00	917477.66646	1783994.61829
L	13+67.00	-65.00	917306.71405	1784109.59773
L	13+98.50	-65.00	917280.83480	1784127.55642
L	14+39.00	-65.00	917247.56148	1784150.64617
L	14+39.00	-74.00	917252.69253	1784158.04024
L	14+59.00	-74.00	917236.26127	1784169.44258
L	14+59.00	-65.00	917231.13021	1784162.04851
L	17+45.00	-46.00	916985.89647	1784310.00884
L	17+45.00	-30.00	916976.72639	1784296.89740
L	17+40.50	30.00	916946.02621	1784245.15043
L	17+40.50	58.00	916929.97859	1784222.20542
L	17+60.00	58.00	916913.99902	1784233.38144
L	17+60.00	30.00	916930.04665	1784256.32646

-L- PRELIMINARY NEW PERMANENT DRAINAGE UTILITY EASEMENTS

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+67.00	-65.00	917306.71405	1784109.59773
L	13+98.50	-65.00	917280.83480	1784127.55642
L	13+98.50	-30.00	917260.88070	1784098.80170
L	13+67.00	-30.00	917286.75995	1784080.84301

END TIP PROJECT B-4807
-L- STA. 17 + 60.00

BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4807-1	919097.6550	1783024.2460	748.81	OUTSIDE PROJECT LIMITS	
2	B4807-2	918258.6150	1783398.5150	708.01	OUTSIDE PROJECT LIMITS	
3	BL-3	917382.7279	1783959.2712	689.35	12+18.85	15.17 RT
4	BL-4	916632.4877	1784472.8329	701.75	OUTSIDE PROJECT LIMITS	

NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX](https://connect.ncdot.gov/resources/location/pages/default.aspx)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4807_LS_CONTROL.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4807-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 918,258.615(ft) EASTING: 1,783,398.515(ft) ELEVATION: 708.01'(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000018754
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4807-2" TO -L- STATION 10+00.00 IS S 33°07'05" E 820.78'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

BENCHMARK DATA

.....
 BM1 ELEVATION = 699.48
 N 917567 E 1784101
 BL STATION 23+00.00 219 LEFT
 RR SPIKE IN ROOT OF 12' OAK

 BM2 ELEVATION = 714.27
 N 916441 E 1784575
 BL STATION 33+68.00
 S 28°02'41.88" E DIST 217.07
 RR SPIKE IN ROOT OF 21' HICKORY

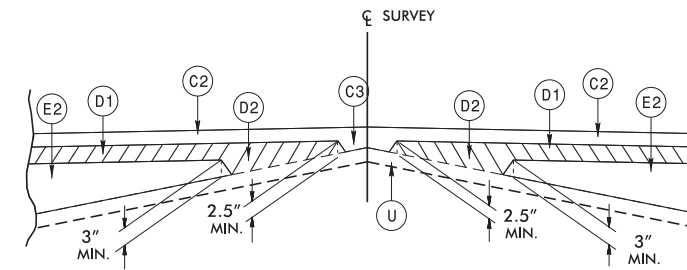
NOTE: DRAWING NOT TO SCALE

14-FEB-2017 12:07 H:\Users\B4807_1s_1c-1_161130.dgn

PAVEMENT SCHEDULE

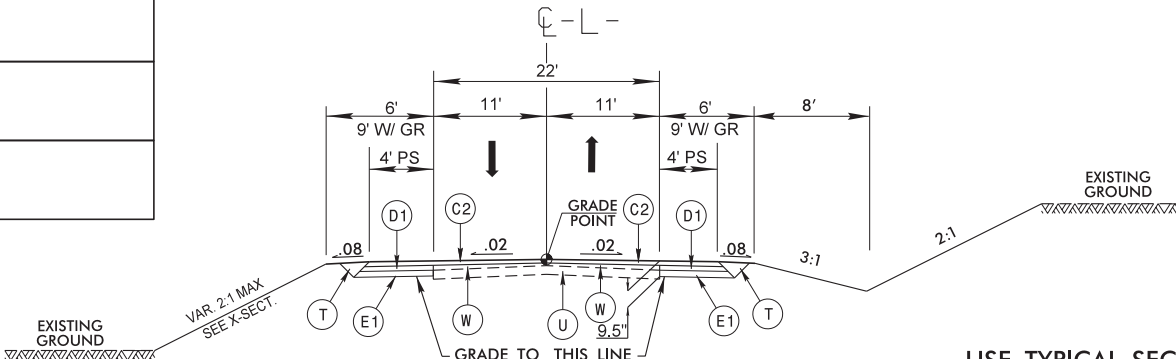
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224.0 LBS. PER SQ. YD.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168.0 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J	PROP. 8" AGGREGATE BASE COURSE.
C3	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 TO EXCEED 2" IN DEPTH.	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4.0" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL)

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



Detail Showing Method of Wedging

PROJECT REFERENCE NO. <i>B-4807</i>	SHEET NO. <i>2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

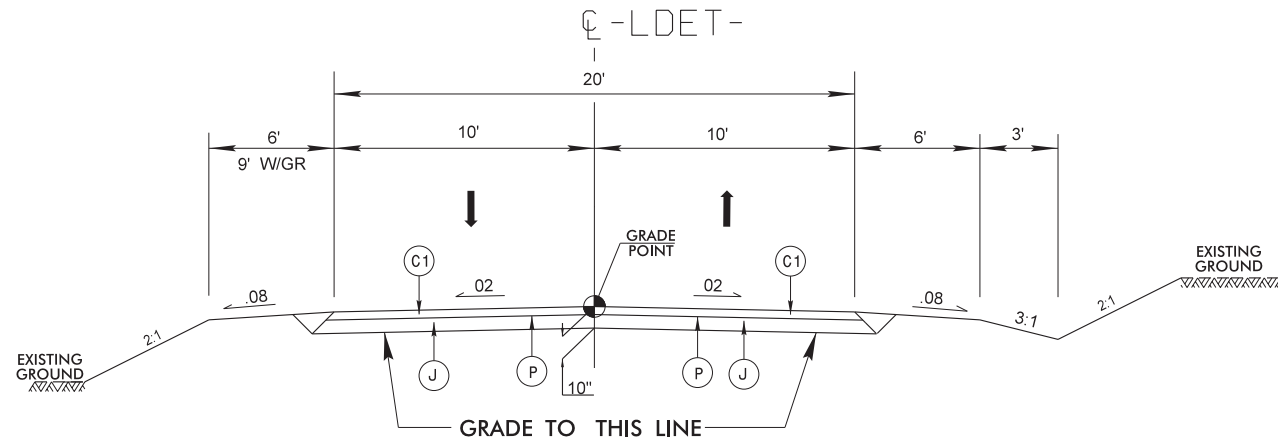


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

- L- STA. 10+00.00 TO STA. 11+50.00
- L- STA. 14+00.00 TO STA. 17+60.00

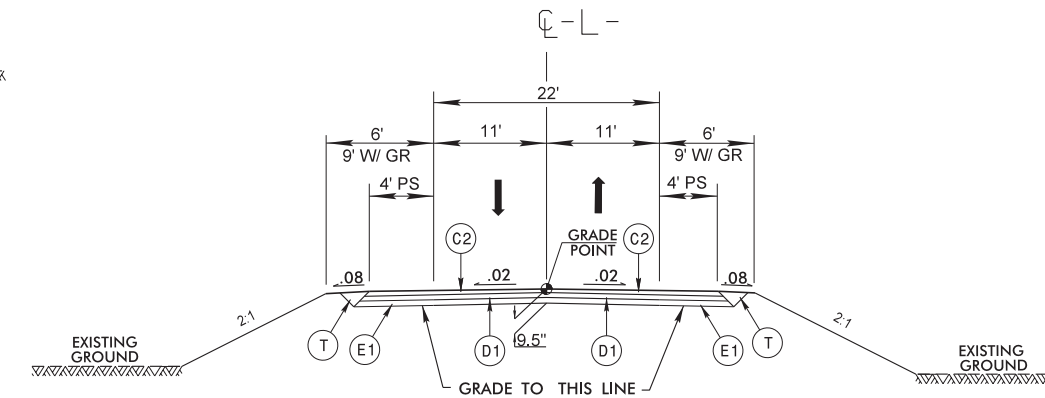
NOTE: OVERLAY EXISTING PAVEMENT W/C1 FROM -L- STA. 7+50.00 TO STA. 10+00.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

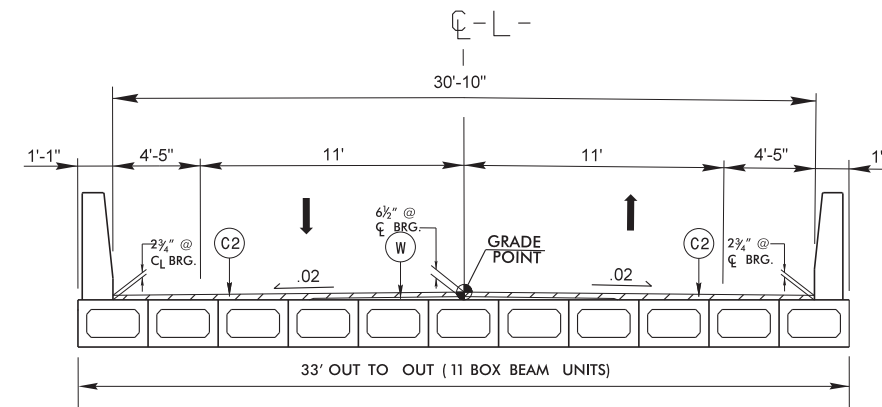
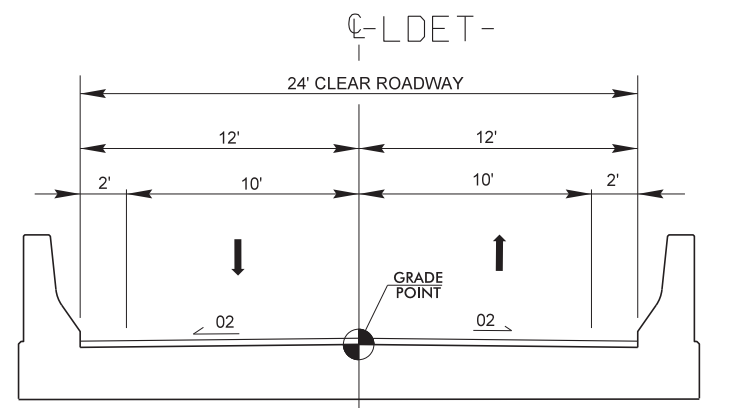
- LDET- STA. 11+23.67 TO STA. 14+40.00 (BEGIN BRIDGE)
- LDET- STA. 15+40.00 (END BRIDGE) TO STA. 18+63.37



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

- L- STA. 11+50.00 TO STA. 12+16.31 (BEGIN BRIDGE)
- L- STA. 13+61.69 (END BRIDGE) TO STA. 14+00.00



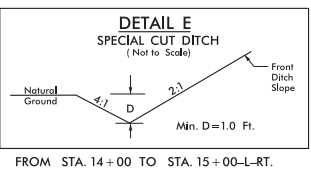
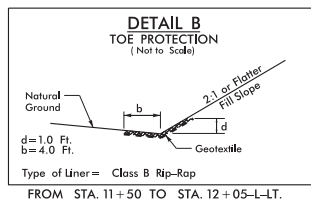
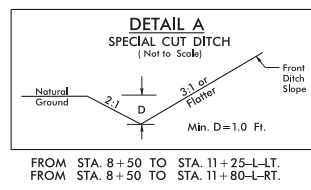
TYPICAL SECTION ON STRUCTURE

BEGIN BRIDGE -L- STA. 12+16.31 TO END BRIDGE -L- STA. 13+61.69
NOTE: SR 2426 IS A LOCAL BICYCLE ROUTE.

BEGIN BRIDGE -LDET- STA. 14+40.00 TO END BRIDGE -LDET- STA. 15+40.00

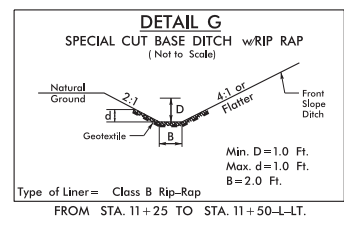
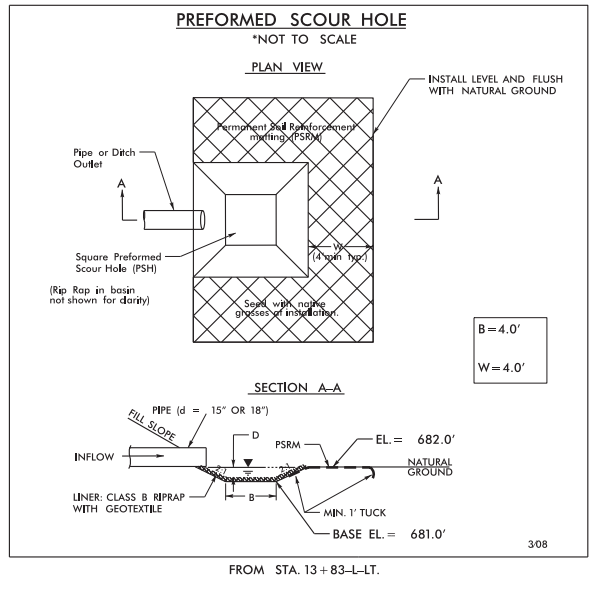
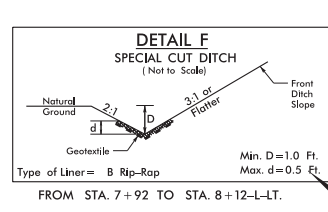
REVISIONS

PROJECT REFERENCE NO. B-4807	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-

PI Sta 15+41.49
 $\Delta = 0^{\circ}12'37.3''$ (LT)
 $D = 0^{\circ}30'58.2''$
 $L = 40.75'$
 $T = 20.38'$
 $R = 11,000.00'$
 $SE = NC$



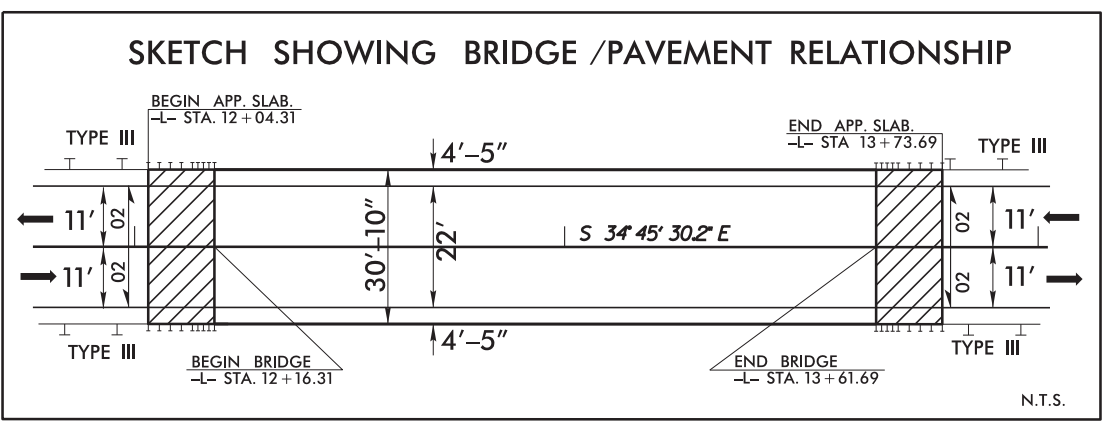
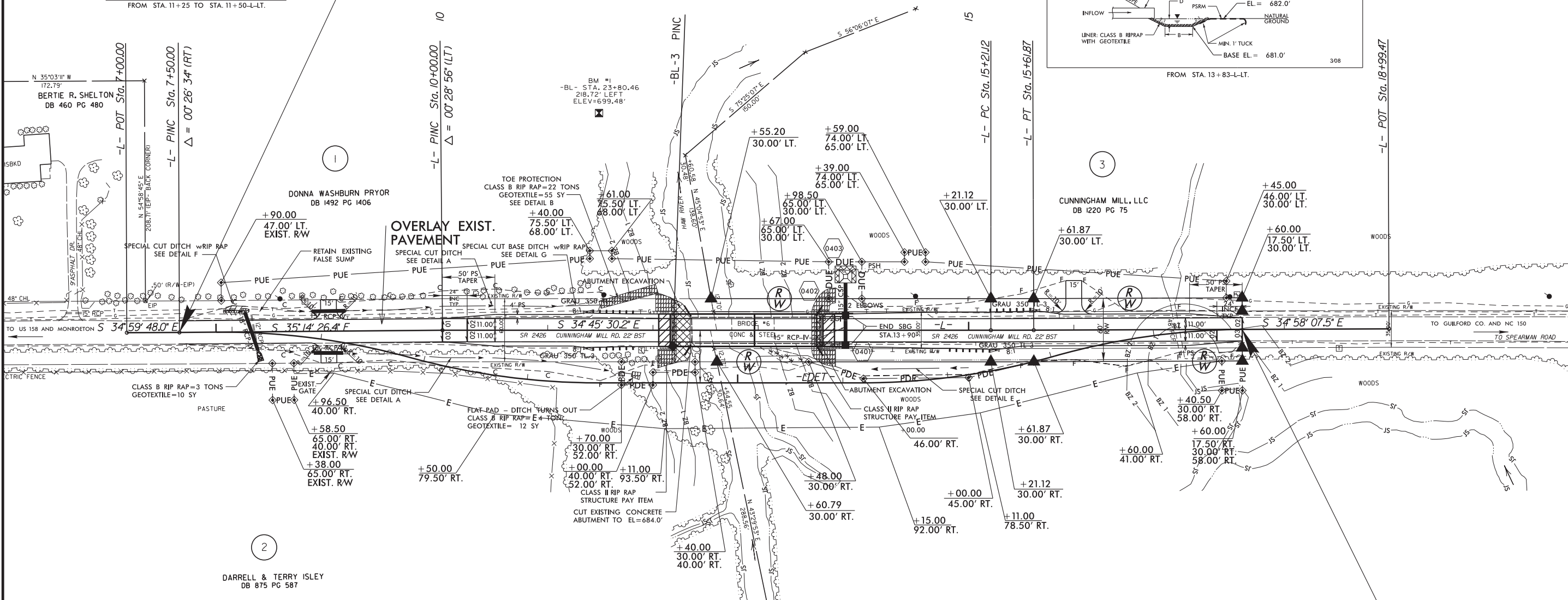
BEGIN TIP PROJECT B-4807 -L- STA. 7+50.00

8/17/99

REVISIONS

ROW REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG

23-MAR-2017 12:02
 R:\Foodshon\Projects\B-4807_RdJ_psh4.dgn
 USER:RJD



END TIP PROJECT B-4807 -L- STA. 17+60.00

SEE SHEET 6 FOR PROFILE VIEW

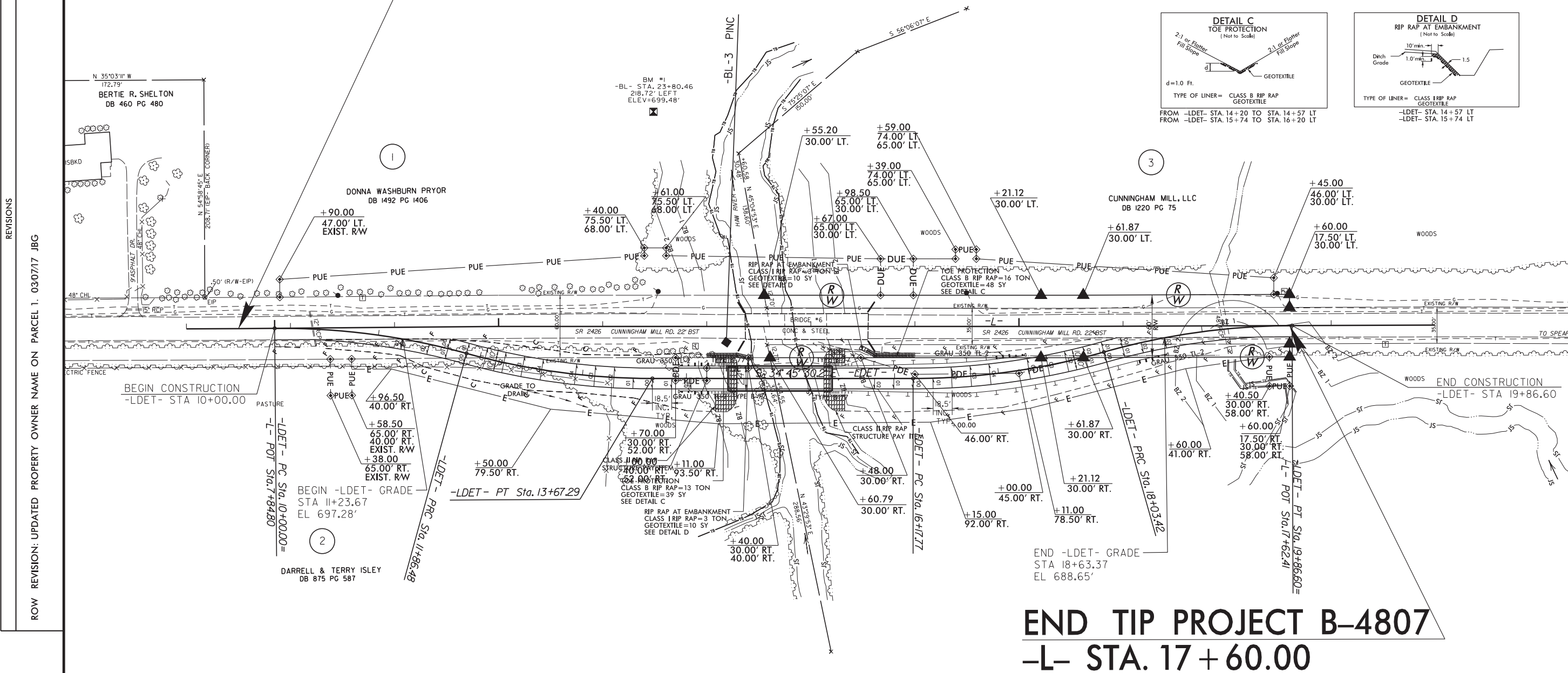
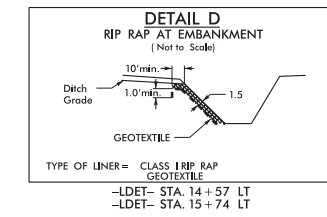
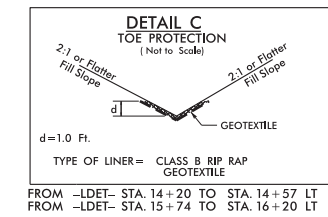
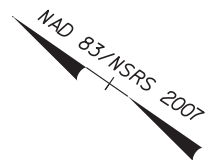
-LDET- $V_{DET} = 45 \text{ mph}$

PI Sta 10+93.84 $\Delta = 15^\circ 51' 08.4" \text{ (RT)}$ $D = 8^\circ 30' 03.1"$ $L = 186.48'$ $T = 93.84'$ $R = 674.00'$ SE = VAR.	PI Sta 12+77.43 $\Delta = 15^\circ 22' 12.2" \text{ (LT)}$ $D = 8^\circ 30' 03.1"$ $L = 180.81'$ $T = 90.95'$ $R = 674.00'$ SE = 4%	PI Sta 17+11.9 $\Delta = 15^\circ 46' 55.6" \text{ (LT)}$ $D = 8^\circ 30' 03.1"$ $L = 185.65'$ $T = 93.42'$ $R = 674.00'$ SE = 4%	PI Sta 18+95.58 $\Delta = 15^\circ 34' 18.3" \text{ (RT)}$ $D = 8^\circ 30' 03.1"$ $L = 183.18'$ $T = 92.16'$ $R = 674.00'$ SE = VAR.
---	---	--	---

BEGIN TIP PROJECT B-4807

-L- STA. 7+50.00

PROJECT REFERENCE NO. B-4807	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



END TIP PROJECT B-4807

-L- STA. 17+60.00

REVISIONS
ROW REVISION: UPDATED PROPERTY OWNER NAME ON PARCEL 1. 03/07/17 JBG

8/17/99
23-MAR-2017 12:02
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USER:RDM

SEE SHEET 6 FOR PROFILE VIEW

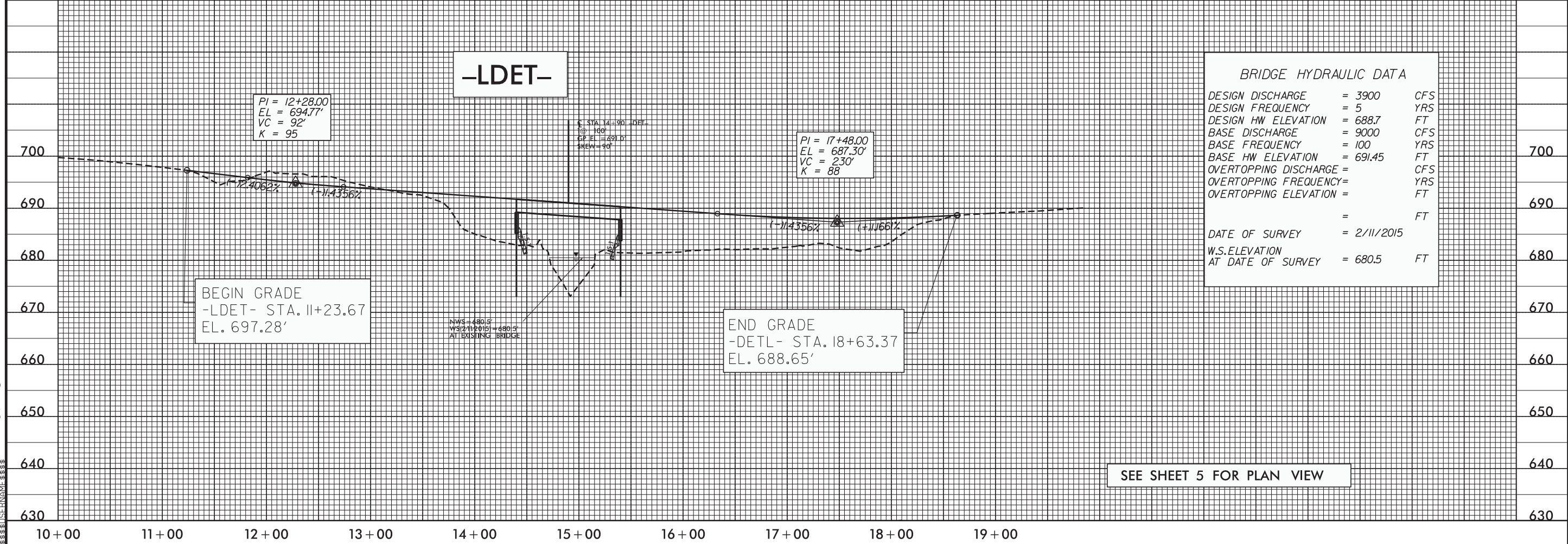
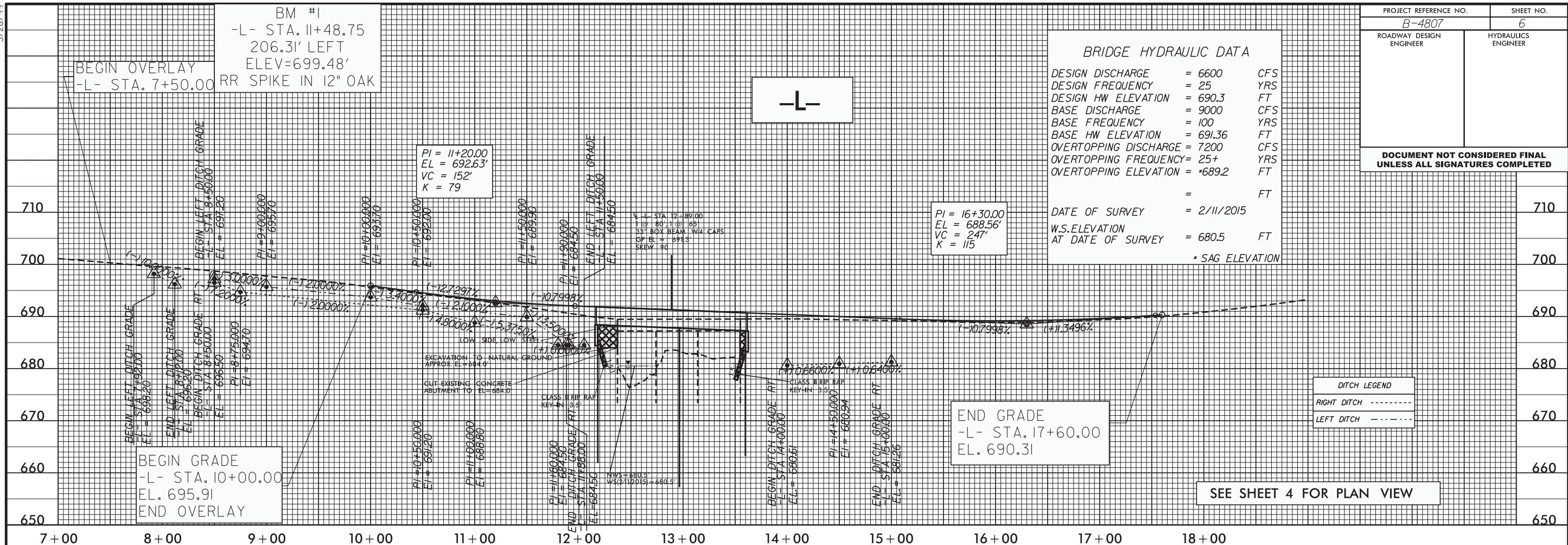
5/28/99

PROJECT REFERENCE NO. B-4807	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

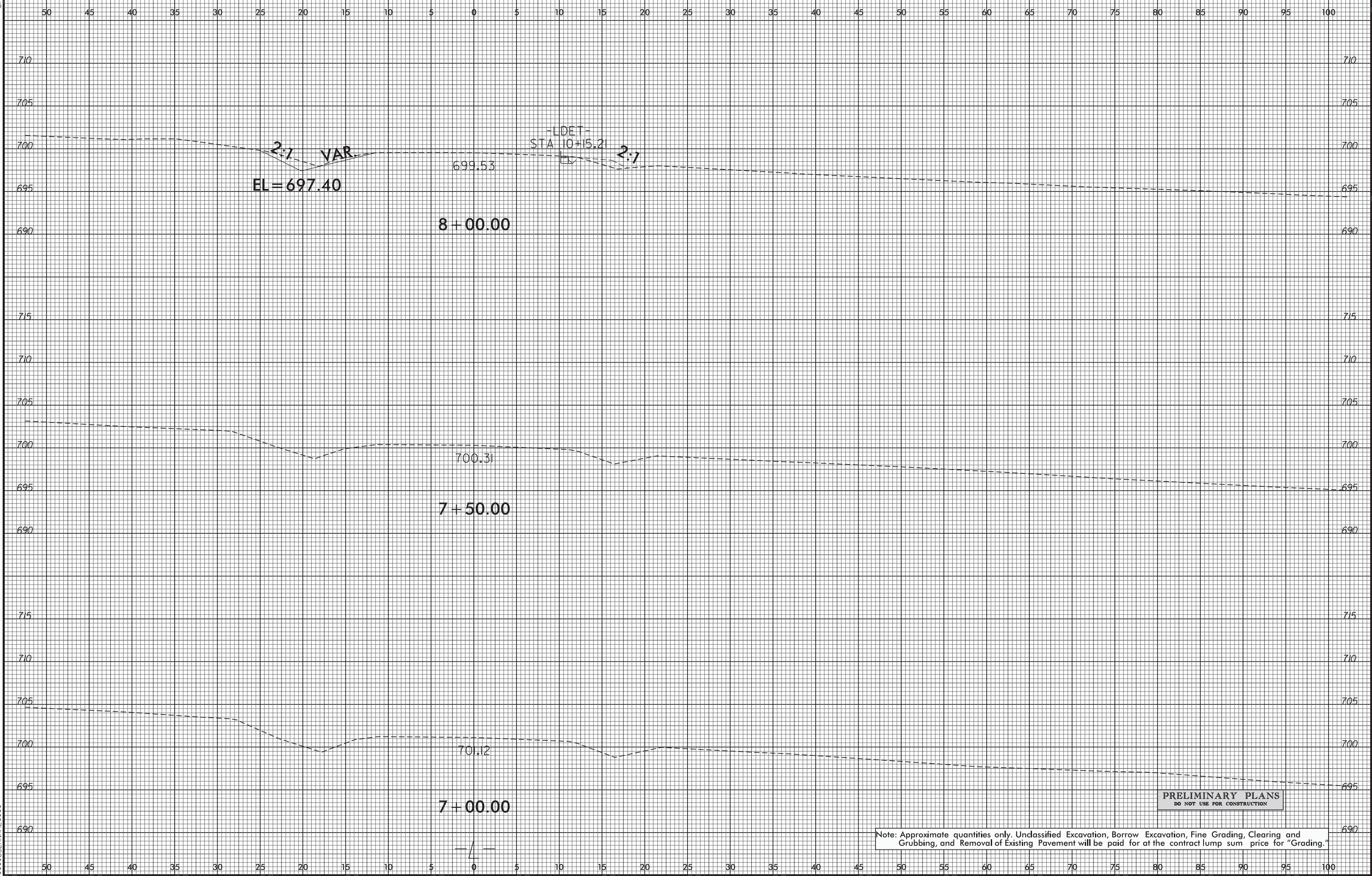
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 6600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 690.3	FT
BASE DISCHARGE	= 9000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 691.36	FT
OVERTOPPING DISCHARGE	= 7200	CFS
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING ELEVATION	= 689.2	FT
DATE OF SURVEY	= 2/11/2015	FT
W.S.ELEVATION AT DATE OF SURVEY	= 680.5	FT
* SAG ELEVATION		



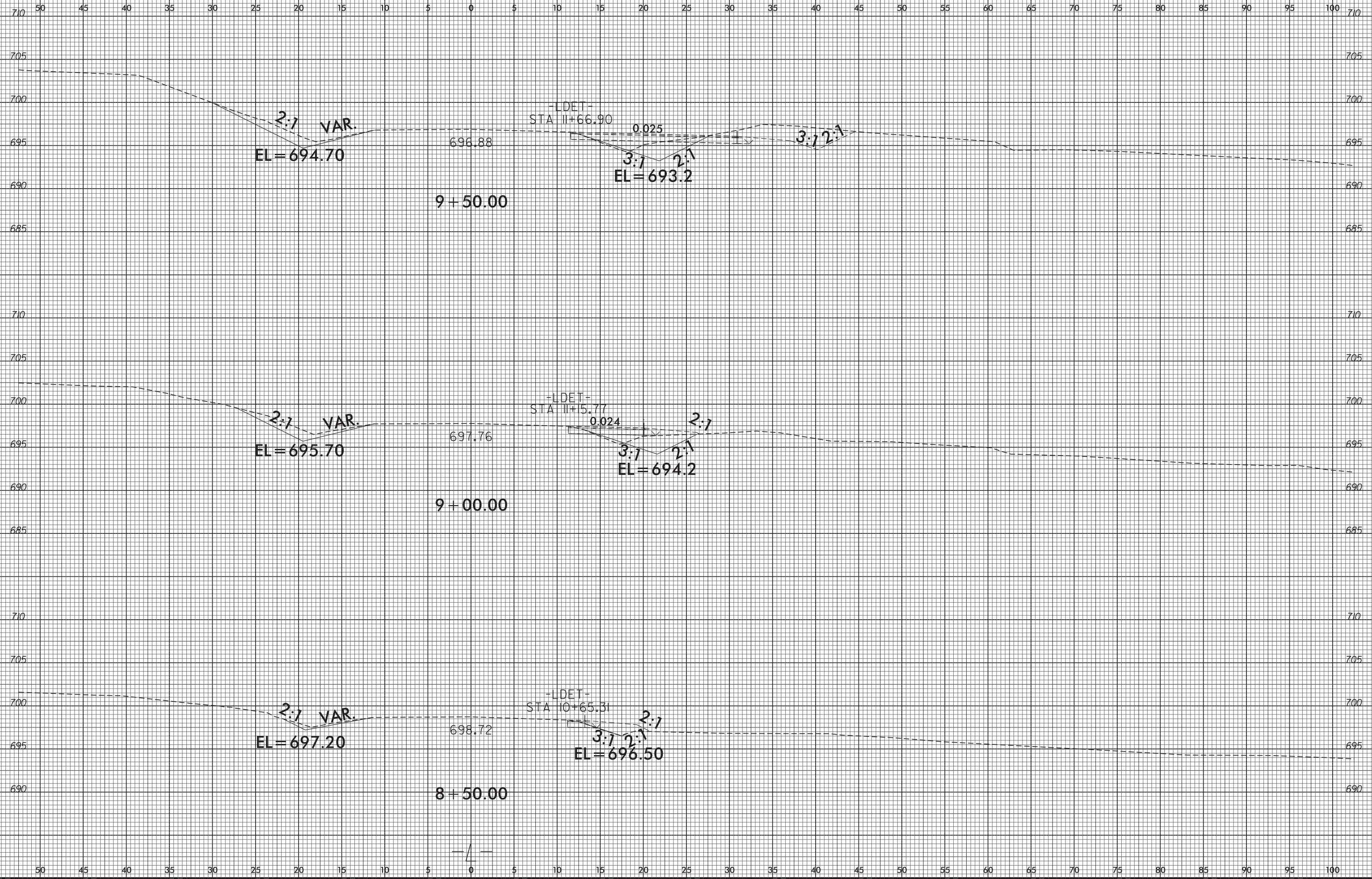
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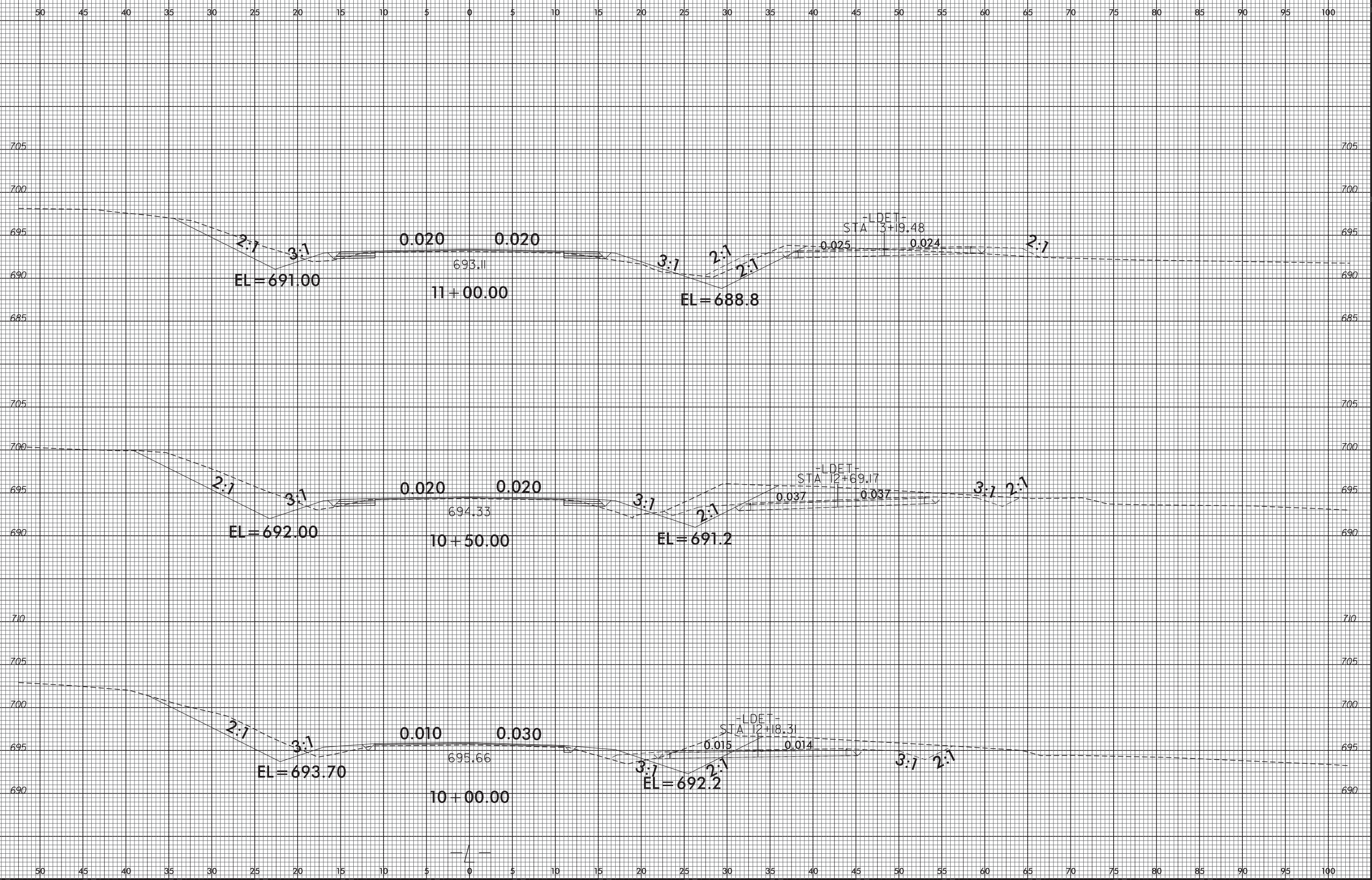


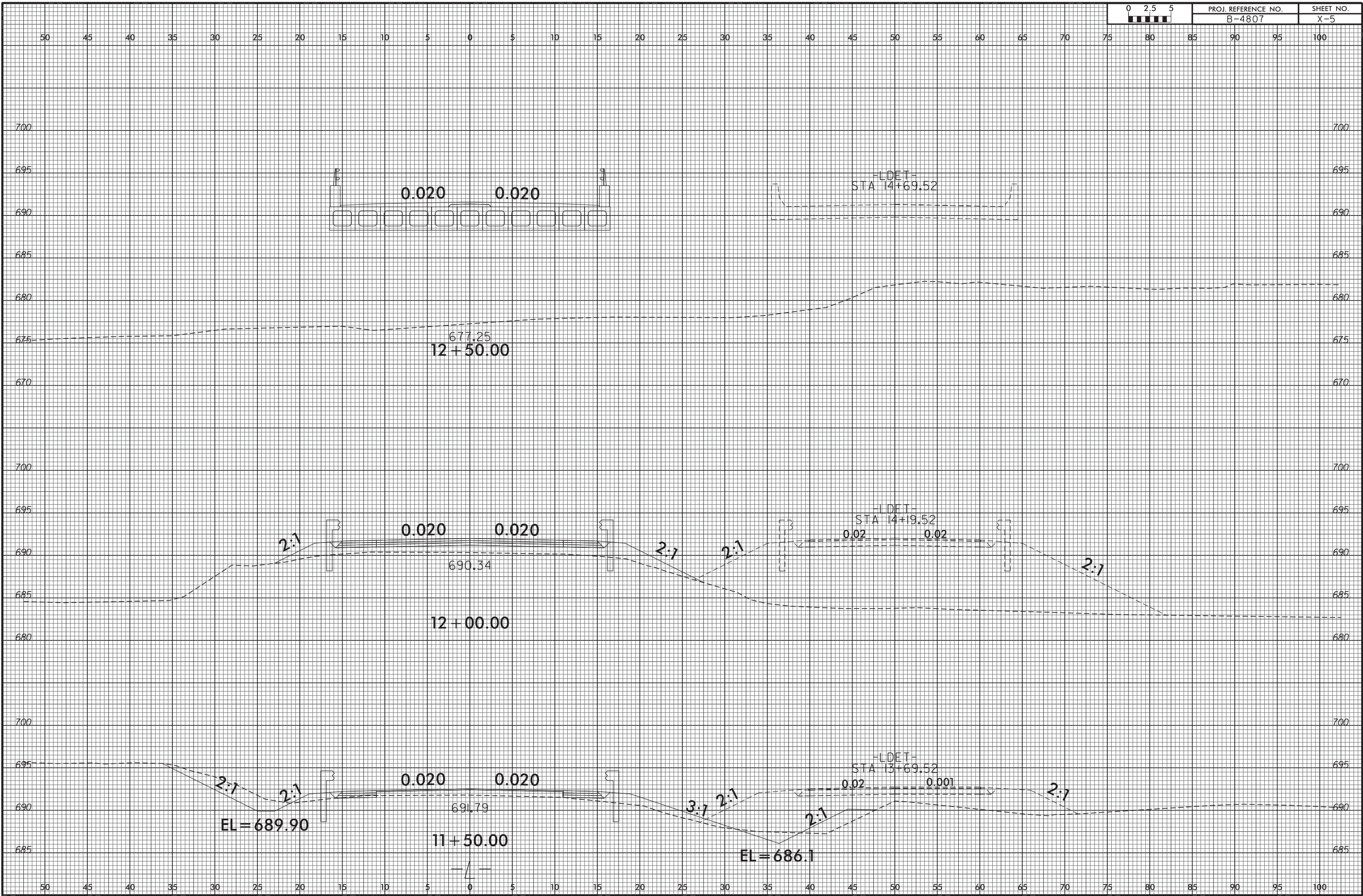
27-MAR-2017 12:02:40 Modeling\B-4807_Rdy_xpl.Lodgn
\$\$\$\$\$USERNAME\$\$\$\$\$

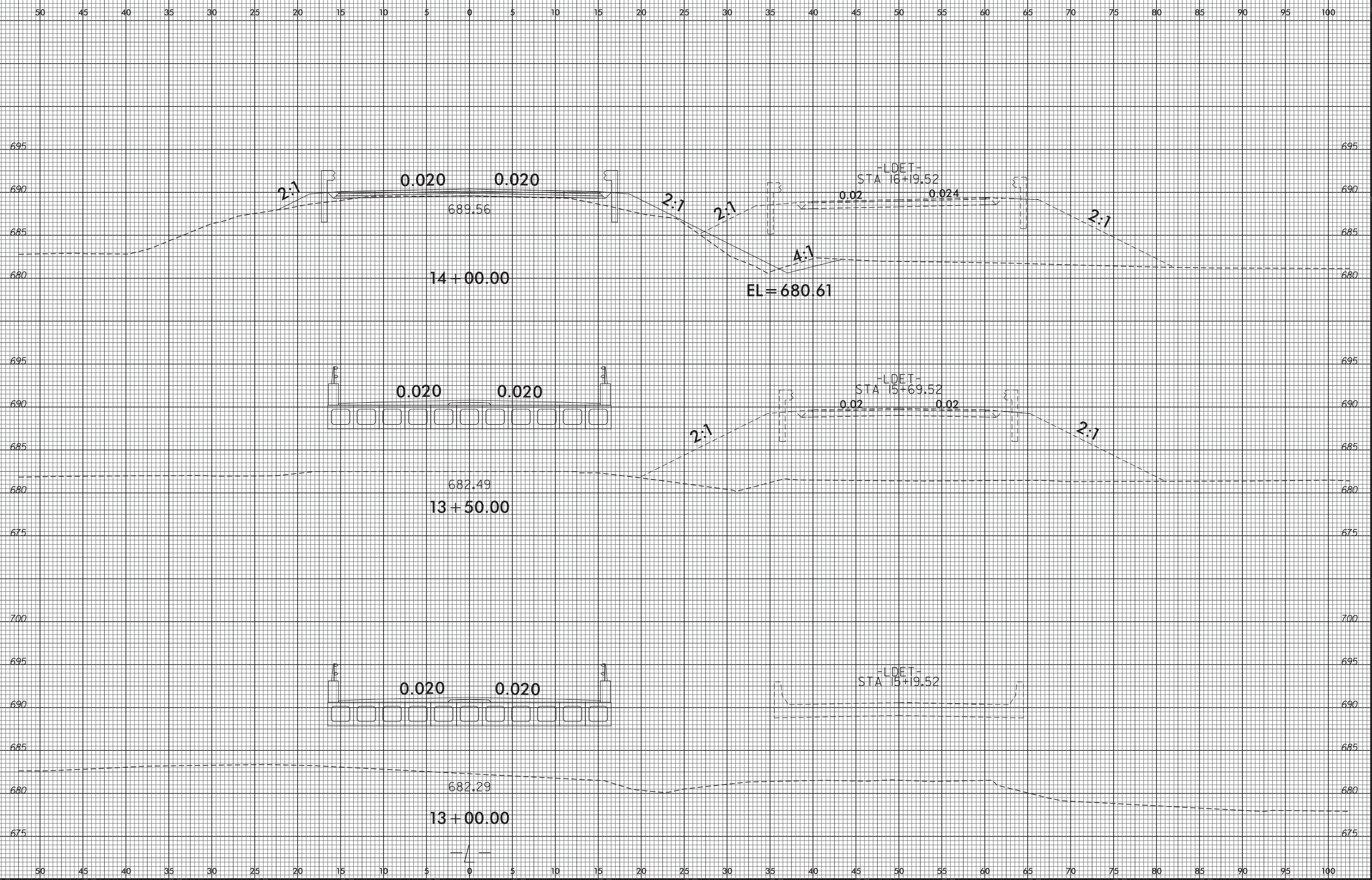
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

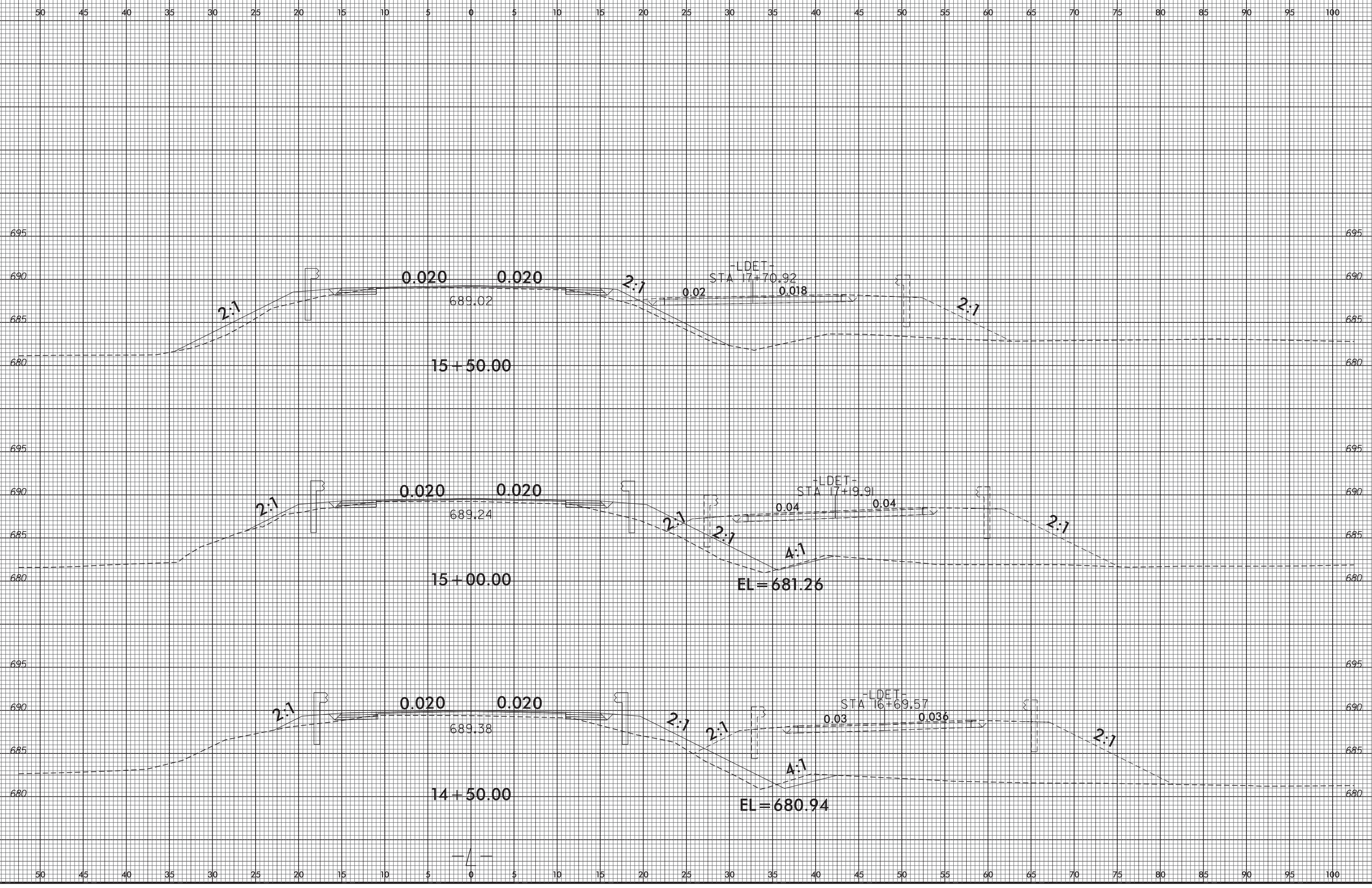
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

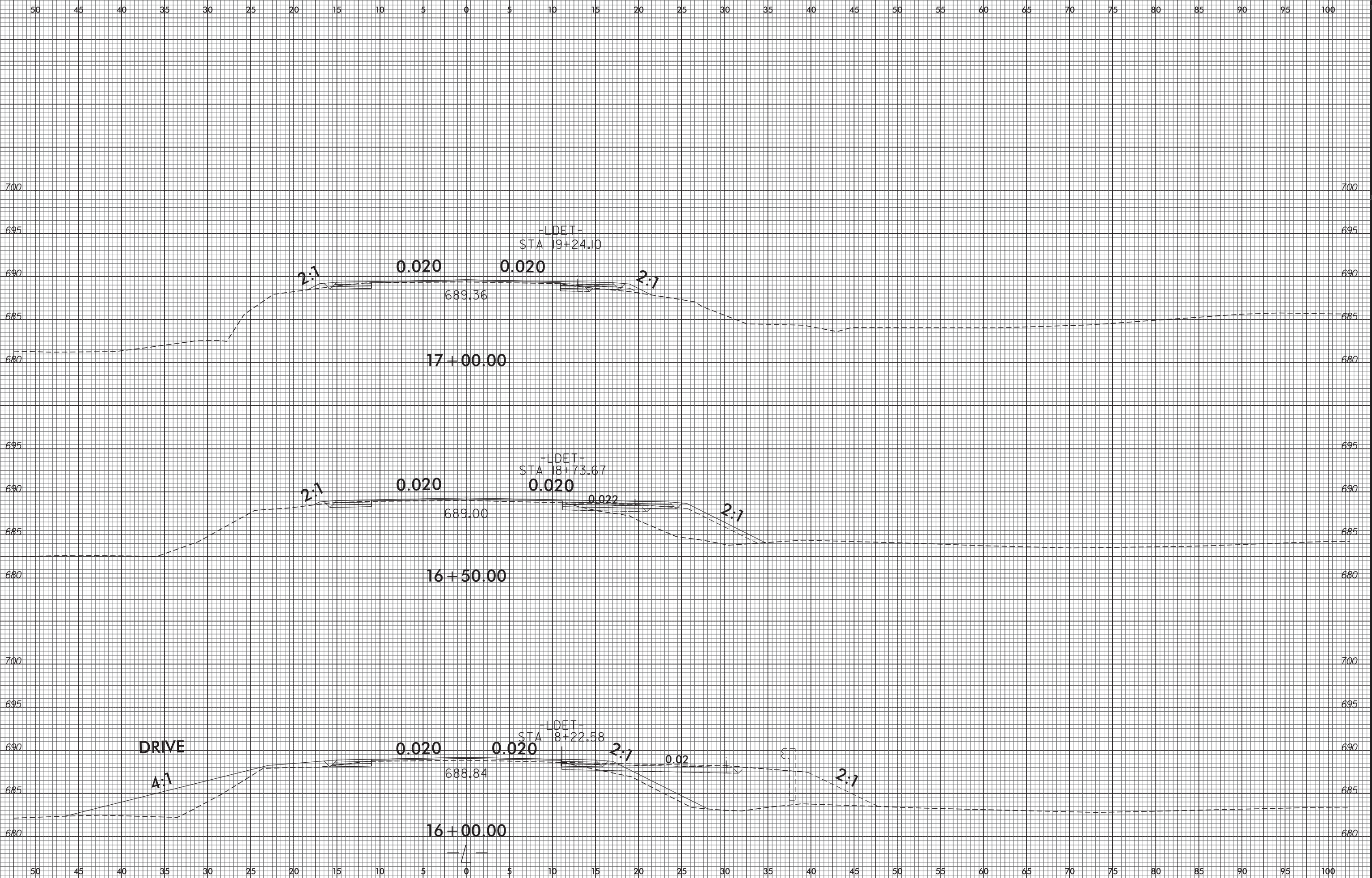












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