



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 13, 2013

U.S. Army Corps of Engineers
Regulatory Field Office
2407 West 5th Street
Washington, NC 27889

ATTN: Mr. Bill Biddlecome
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 198200031 and Section 401 Water Quality Certification** for the Pea Island Long-Term Improvements on NC 12 in Dare County, Division 1; TIP No. B-2500 A, WBS Element 13201.1028011.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing three span temporary bridge over "New Inlet," which was reopened by Hurricane Irene in September 2011, with a 2.1 mile bridge.

Due to the urgency and the dynamics of the environment, this application is being submitted pending receipt of the following elements, which will be forwarded as soon as possible: Endangered Species Act Section 7 Concurrence for this section, and Avoidance and Minimization meeting minutes (Concurrence Point 4A, 4B, & 4C). Attachments that are enclosed include: Stormwater Management Plan, PCN form, permit drawings, utility drawings, and roadway drawings.

Project Description

The project consists of constructing a new 2.1 mile long bridge on NC 12. This project was necessitated by the formation of breach at Pea Island, which resulted from Hurricane Irene. The total project length, which includes the temporary roadway alignment, is 2.7 miles. The proposed bridge will be a two-lane section (12' travel lanes with 8' shoulders), and will have 98 spans. The drainage system will consist of open scuppers on the main bridge spans, grate inlets and pipe systems for the ramps and end spans, and roadside ditches for the approach pavement.

Proposed Let Date

This project calls for a letting date of July 16, 2013, with a review date of May 28, 2013.

NEPA Document Status

In December 2010, following extensive environmental study and coordination with other agencies, a Record of Decision (ROD) was issued for TIP Project No. B-2500 (NC 12 Replacement of the Herbert C. Bonner Bridge). The environmental documents studied several detailed alternatives for maintaining the NC 12 corridor between Bodie Island and the village of Rodanthe. The Record of Decision authorized an initial phase consisting of a parallel bridge replacement for Bonner Bridge and established a Transportation Management Plan (TMP) for the study and selection of future project phases along the NC 12 corridor. Although the ROD deferred final decisions for future phases, the various Parallel Bridge Corridor alternatives (Nourishment, Road North/Bridge South, All Bridge, and Phased Approach) were encompassed within the environmental study as potential phases beyond Phase I and were representative of the range of potential impacts under the ROD's selected alternative.

As a result of coastal conditions following Hurricane Irene (August 2011), NCDOT initiated Phases IIA (New Inlet/Pea Island) and IIB (Rodanthe) of TIP Project No. B-2500 in order to implement long-term improvements at two roadway sections breached by the hurricane. In accordance with the TMP, NCDOT has performed environmental monitoring, hosted a Peer Exchange panel of coastal experts, held informational public workshops, convened the Merger Team and obtained concurrence from agency partners on key points.

FHWA and NCDOT issued a new Environmental Assessment in February 2013. This EA explains the screening of alternatives for Phase IIA, a process that identified the "Bridge within Existing NC 12 Easement Alternative" as the sole detailed-study alternative, the Preferred Alternative, and the Least Environmentally Damaging Practicable Alternative (LEDPA). The EA updated the previous environmental analyses with respect to this alternative.

Based on the EA and on coordination with state and federal environmental resource and regulatory agencies, FHWA has expressed the belief that the changes identified and assessed in the EA would not result in any new, significant impacts not previously identified in the 2008 Final Environmental Impact Statement, 2010 Environmental Assessment, or 2010 ROD.

Impacts to Waters of the US

The new bridge will be constructed on the current location of the existing NC 12. Therefore a temporary road will be built to the west, which accounts for the majority of the temporary wetland impacts. At the site of the current bridge over New Inlet, a temporary construction platform/ bridge will be used to build the new bridge, as the existing temporary bridge will continue to carry NC 12 traffic.

Wetlands:

There will be 0.01 acre of permanent fill, and 1.12 acres of temporary fill.

Surface Waters:

There will be 0.04 acre of permanent fill, and 0.28 acre of temporary fill in the New Inlet and adjacent jurisdictional surface waters.

Only visual monitoring is proposed for the temporary wetland impact sites. NCDOT shall monitor the temporary impact sites by visual observation for survival and aerial cover of vegetation. The target elevation for restoring the sites to their previous condition will be based on the adjacent wetland area

elevation for restoring the sites to their previous condition will be based on the adjacent wetland area and verified during construction. NCDOT will hold a field inspection meeting to allow the resource agencies to review the sites prior to discontinuing monitoring.

Jetting

Jetting will be necessary for the installation of new bridge bents and the removal the temporary bridge at New Inlet. All jetting that occurs within New Inlet will occur at ebb tide. This jetting operation will require the use of pumping and water intakes at three designated locations shown on the attached drawings. Jetting spoils will be confined to the 100' Transportation Easement within the Pea Island National Wildlife Refuge, unless the Refuge accepts the material for Refuge use.

Utilities

One electrical transmission pole will be relocated and the existing pole and associated guy wire and pole will be removed.

All existing underground telephone fiber optic and copper cables inside the project construction limits will be abandoned and new underground fiber optic and copper cables will be installed inside the Cape Hatteras EMC power easement. A portion of the utilities between Stations 3168+00 to 3181+00 will remain in place. All of the cables to be relocated will be directionally bored to avoid impacts to wetlands.

There will be no impacts to jurisdictional resources from utility relocations for this project.

Regulatory Approvals

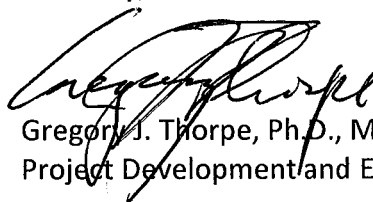
Section 404 Permit: Application is hereby made for a USACE General 198200031 Permit as required for the above-described activities.

Section 401 Permit: Application is hereby made for a Section 401 Water Quality Certification 3884 from the NC DWQ. We are providing 2 copies of this application to the NCDWQ for their approval. Authorization to debit \$240 from WBS 13201.1028011 is hereby given for the permit application fee.

CAMA: Application for CAMA related permits have been submitted under separate cover.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <https://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, contact Michael Turchy at maturchy@ncdot.gov or 919 707-6157.

Sincerely,



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

The "cc" List:
NCDOT Permit Application Standard Distribution List



Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number:	and General Permit (GP) number: 198200031
1c. Has the NWP or GP number been verified by the Corps?	☒ Yes ☐ No
1d. Type(s) of approval sought from the DWQ (check all that apply): ☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit ☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization	
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No
	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☐ Yes ☒ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☒ Yes ☐ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☒ Yes ☐ No

2. Project Information

2a. Name of project:	Replacement of the temporary bridge over New Inlet on NC 12 in Dare County.
2b. County:	Dare
2c. Nearest municipality / town:	Rodanthe
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-2500 A

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) 707-6157
3g. Fax no.:	(919) 212-5785
3h. Email address:	maturchy@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	<i>not applicable</i>
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	<i>not applicable</i>
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.68427 (DD.DDDDDD) Longitude: - 75.48389 (-DD.DDDDDD)
1c. Property size:	30.3 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Pamlico Sound/ Atlantic Ocean
2b. Water Quality Classification of nearest receiving water:	SA
2c. River basin:	Pasquotank
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: Natural barrier island conditions. Area protected by USFWS Pea Island National Wildlife Refuge.	
3b. List the total estimated acreage of all existing wetlands on the property: 170 acres, as approved by the Corps on the 7/18/2012 JD, which includes wetlands outside of the easement.	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 100 feet (New Inlet)	
3d. Explain the purpose of the proposed project: To replace a temporary bridge built in 2011 to span an inlet opened in September 2011 by Hurricane Irene, with a 2.1 mile permanent structure in order to restore and improve the transportation infrastructure along NC 12 serving the Outer Banks.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a temporary bridge near the existing alignment with a permanent 2.1 mile bridge. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Ms. Lorrie Laliberte Boswell	Agency/Consultant Company: CZR Incorporated Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attached documentation. 7/18/2012	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☐ No See attached cover letter.
6b. If yes, explain.	

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
☒ Wetlands		☐ Streams - tributaries		☐ Buffers		
☒ Open Waters		☐ Pond Construction				
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)	
Site 1 ☐ P ☒ T	Fill	Marsh	☐ Yes ☒ No	☒ Corps ☐ DWQ	1.12	
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
2g. Total wetland impacts					1.12 acre Temporary	
2h. Comments: There will be 0.01 acre of permanent fill in wetlands due to Bent #67. There will be 0.28 acre of hand clearing. 0.08 acre of temporary fill in wetlands in the hand clearing areas for erosion control measures.						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
3h. Total stream and tributary impacts						

3i. Comments:								
4. Open Water Impacts If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.								
4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact			4d. Waterbody type	4e. Area of impact (acres)		
O1 ☐ P ☒ T	Pamlico Sound	Fill			Sound	0.01		
O7 ☐ P ☒ T	Isolated Pond	Fill			Isolated Pond	0.03		
O8 ☐ P ☒ T	Isolated Pond	Fill			Isolated Pond	0.1		
O10 ☐ P ☒ T	New Inlet	Fill			Inlet	0.04		
O11 ☐ P ☒ T	Isolated Pond	Fill			Isolated Pond	0.05		
O15 ☐ P ☒ T	New Inlet	Fill			Inlet	0.02		
O16 ☐ P ☒ T	Pamlico Sound	Fill			Sound	0.03		
4f. Total open water impacts						0.28 Temporary		
4g. Comments: There will be 0.04 acre of permanent fill in surface waters due to Bents 71, 72, and 73.								
5. Pond or Lake Construction If pond or lake construction proposed, then complete the chart below.								
5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
5f. Total								
5g. Comments:								
5h. Is a dam high hazard permit required?		☐ Yes ☐ No If yes, permit ID no:						
5i. Expected pond surface area (acres):								
5j. Size of pond watershed (acres):								
5k. Method of construction:								

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

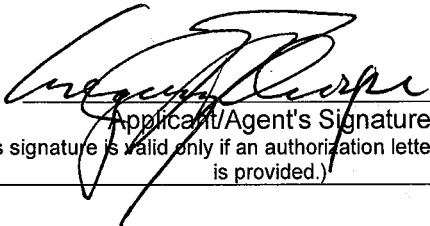
6a. Project is in which protected basin?			☐ Neuse ☐ Catawba			☐ Tar-Pamlico ☐ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)		
B1 ☐ P ☐ T			☐ Yes ☐ No				
B2 ☐ P ☐ T			☐ Yes ☐ No				
B3 ☐ P ☐ T			☐ Yes ☐ No				
6h. Total buffer impacts							
6i. Comments:							

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The final bridge structure will be entirely within the 100' Transportation Easment within the Pea Island National Wildlife Refuge (PINWR). All jetting spoils will also be disposed of within this 100' Transportation Easment unless the Pea Island National Wildlife Refuge accepts the material for Refuge use. The bridge design will have the flexibility to accommodate future phases or lengthening as practicable in the future.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Temporary construction runoff will be controlled by using Silt Fence, Special Silt Fence, Temporary Slope Drains, Rock Silt Checks, and Temporary Matting and Grassing. Preventative measures will be taken to minimize impacts to fish species during water intake for jetting operations. Temporary fill in wetlands will be required. Areas will be re-graded to preconstruction elevations and replanted with native vegetation. Jetting spoils will not be disposed of in jurisdictional areas. Jetting spoils may be used by the PINWR at their discretion. A screen will be used on the intake of the jetting pumping operations to prevent the intake of larval species. Jetting piping will be placed by hand to reduce impacts in wetland areas. Jetting installation of the bents in New Inlet will occur during at ebb tide.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☐ Yes ☒ No If no, explain: Only permanent impacts are from bridge bents.	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps	
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☐ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☐ Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):	n/a square feet	
4e. Riparian wetland mitigation requested:	n/a acres	
4f. Non-riparian wetland mitigation requested:	n/a 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?	☐ Yes ☒ 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.	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☒ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☒ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☒ Yes	☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☒ Yes	☐ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☒ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? Consultation with the USFWS		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☒ Yes	☐ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☒ Yes	☐ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	13 Feb 13 Date

Turchy, Michael A

From: Biddlecome, William J SAW <William.J.Biddlecome@usace.army.mil>
Sent: Tuesday, January 22, 2013 4:39 PM
To: Turchy, Michael A; Rivenbark, Chris; Lorrie Laliberte Boswell; Mike_Bryant@fws.gov; Dennis_Stewart@fws.gov; Sara_Strickland@nps.gov
Subject: Entire Bonner Project Electronic JD Confirmation - TIP # B-2500, Action ID # SAW-2013-00107 (UNCLASSIFIED)
Attachments: Bonner total JD Determination for whole project 2013 SAW-2013-00107.pdf

Classification: UNCLASSIFIED

Caveats: NONE

Attached is electronic signed JD confirmation for the above. There will be no paper copy sent for this unless someone requests it specifically. If anyone has questions please feel free to contact me at the address and phone number below. Note that this delineation includes the whole Bonner Bridge Project corridor from Bodie Island to Rodanthe and supersedes the previous actions for Phase I and II A & B. Those delineations from previous actions were incorporated into this action. Thanks!

Bill Biddlecome
Regulatory Project Manager
Washington Regulatory Field Office
2407 West 5th Street
Washington, North Carolina 27889
(910) 251-4558
william.j.biddlecome@usace.army.mil

We at the U.S. Army Corps of Engineers Regulatory Branch are committed to improving service to our customers. We would appreciate your feedback on how we are performing our duties. Our automated Customer Service Survey is located at:

<http://per2.nwp.usace.army.mil/survey.html>

Thank you for taking the time to visit this site and complete the survey.

Classification: UNCLASSIFIED

Caveats: NONE

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2013-00107 County: Dare U.S.G.S. Quad: Oregon Inlet, Pea Island and Rodanthe, NC

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner: Dr. Gregory J. Thorpe, Ph.D.

Agent:

Ms. Lorrie Laliberte Boswell

Environmental Management Director, PDEA

CZR Incorporated

Address: N.C. Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Address: 4709 College Acres Drive, Suite 2
Wilmington, North Carolina 28403-1725

Property description: NC Highway 12

Size (acres) 3,399

River Basin

Pasquotank

Nearest Waterway Pamlico Sound

Coordinates

Start- 35.800649, 75.46219 End

USGS HUC 03020105

35.5911, 75.46810

Nearest Town Rodanthe

Location description: A project corridor paralleling the existing NC Highway 12 corridor varying in width from approximately 700 - 3800 feet. The northern portion of the project starts at the Bodie Island Campground entrance on Bodie Island and extends southward ending in Rodanthe at Sudie Payne Road. The total project length is approximately 15.7 miles and is adjacent to the Pamlico Sound and the Atlantic Ocean.

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). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

B. Approved Determination

- ☒ There are Navigable Waters of the United States within the above described project area 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 wetlands on your property 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. including wetlands on your project area 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 waters of the U.S. including 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 project area 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.

- X** 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 Morehead City, NC, at (252) 808-2808 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 **Bill Biddlecome** at **(910) 251-4558**.

C. Basis For Determination This site exhibits wetland criteria as described in the 1987 Corps Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Interim Regional Supplement (Supplement) to the 1987 Wetland Delineation Manual and is part of a broad continuum of wetlands connected to the Pamlico Sound.

D. Remarks Approved jurisdictional delineation/determination for the entire Bonner Bridge TIP # B-2500 project area including Phase I, Phase IIA & B, and all the areas between these Phases from north of Oregon Inlet to Rodanthe. This determination incorporates all previously approved actions (Reference Action ID 2012-00715 for Phase I and 2012-00836 & 2012-00715 for Phase II) and is considered the complete approved jurisdictional determination for the entire project length superseding the above mentioned actions.

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. 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:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801

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 Division 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 **March 23, 2013**.

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

BIDDLECOME.WILLIAM.J.JR.12

Corps Regulatory Official: **28726504**

Digitally signed by BIDDLECOME.WILLIAM.J.JR.1228726504
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA,
cn=BIDDLECOME.WILLIAM.J.JR.1228726504
Date: 2013.01.22 16:36:41 -05'00'

Date: **1/22/2013**

Expiration Date: **1/22/2018**

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 attached customer Satisfaction Survey or visit <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online.



Legend

Type

Both

Fill

Road



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 13, 2013

N.C. Division of Coastal Management
1367 US 17 South
Elizabeth City, NC 27909

ATTN: Mr. Paul Williams
NCDOT Coordinator

Subject: **Application for Modification of CAMA Major Permit (No. 106-12, issued September 19, 2012)** for the Pea Island Long-Term Improvements on NC 12 in Dare County, Division 1; TIP No. B-2500 A, \$475.00 Debit Work Order WBS Element 13201.1028011.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing three span temporary bridge over "New Inlet," which was reopened by Hurricane Irene in September 2011, with a 2.1 mile bridge.

Due to the urgency and the dynamics of the environment, this application is being submitted pending receipt of the following elements, which will be forwarded as soon as possible: Endangered Species Act Section 7 Concurrence for this section, and Avoidance and Minimization meeting minutes (Concurrence Point 4A, 4B, & 4C). Attachments that are enclosed include: stormwater management plan, adjacent riparian landowner certified mail receipts, MP 1 and 5 forms, permit drawings, utility drawings, and roadway drawings.

Project Description

The project consists of constructing a new 2.1 mile long bridge on NC 12. This project was necessitated by the formation of a breach at Pea Island, which resulted from Hurricane Irene. The total project length, which includes the temporary roadway alignment, is 2.7 miles. The proposed bridge will be a two-lane section (12' travel lanes with 8' shoulders), and will have 98 spans. The drainage system will consist of open scuppers on the main bridge spans, grate inlets and pipe systems for the ramps and end spans, and roadside ditches for the approach pavement. This bridge design will have the flexibility to accommodate future phases or lengthening as practicable in the future.

Proposed Let Date

This project calls for a letting date of July 16, 2013, with a review date of May 28, 2013.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

NEPA Document Status

In December 2010, following extensive environmental study and coordination with other agencies, a Record of Decision (ROD) was issued for TIP Project No. B-2500 (NC 12 Replacement of the Herbert C. Bonner Bridge). The environmental documents studied several detailed alternatives for maintaining the NC 12 corridor between Bodie Island and the village of Rodanthe. The Record of Decision authorized an initial phase consisting of a parallel bridge replacement for Bonner Bridge and established a Transportation Management Plan (TMP) for the study and selection of future project phases along the NC 12 corridor. Although the ROD deferred final decisions for future phases, the various Parallel Bridge Corridor alternatives (Nourishment, Road North/Bridge South, All Bridge, and Phased Approach) were encompassed within the environmental study as potential phases beyond Phase I and were representative of the range of potential impacts under the ROD's selected alternative.

As a result of coastal conditions following Hurricane Irene (August 2011), NCDOT initiated Phases IIA (New Inlet/Pea Island) and IIB (Rodanthe) of TIP Project No. B-2500 in order to implement long-term improvements at two roadway sections breached by the hurricane. In accordance with the TMP, NCDOT has performed environmental monitoring, hosted a Peer Exchange panel of coastal experts, held informational public workshops, convened the Merger Team and obtained concurrence from agency partners on key points.

FHWA and NCDOT issued a new Environmental Assessment in February 2013. This EA explains the screening of alternatives for Phase IIA, a process that identified the "Bridge within Existing NC 12 Easement Alternative" as the sole detailed-study alternative, the Preferred Alternative, and the Least Environmentally Damaging Practicable Alternative (LEDPA). The EA updated the previous environmental analyses with respect to this alternative.

Based on the EA and on coordination with state and federal environmental resource and regulatory agencies, FHWA has expressed the belief that the changes identified and assessed in the EA would not result in any new, significant impacts not previously identified in the 2008 Final Environmental Impact Statement, 2010 Environmental Assessment, or 2010 ROD.

Impacts to Waters of the US

There will be 0.42 acre of impacts to CAMA wetlands, by way of 0.33 acre of temporary impact and 0.09 acre of hand clearing. Please see enclosed copies of the MP forms, permit drawings and design plans for the above-referenced project.

Only visual monitoring is proposed for the temporary wetland impact sites. NCDOT shall monitor the temporary impact sites by visual observation for survival and aerial cover of vegetation. The target elevation for restoring the sites to their previous condition will be based on the adjacent wetland area and verified during construction. NCDOT will hold a field inspection meeting to allow the resource agencies to review the sites prior to discontinuing monitoring.

Jetting will be necessary for the installation of new bridge bents and the removal the temporary bridge at New Inlet. All jetting that occurs within New Inlet will occur at ebb tide. This jetting operation will require the use of pumping and water intakes at three designated locations as shown on the attached

permit drawings. Jetting spoils will be confined to the 100' Transportation Easement within the Pea Island National Wildlife Refuge, unless the Refuge accepts the material for Refuge use.

Utility Impacts

All existing underground telephone fiber optic and copper cables inside the project construction limits will be abandoned and new underground fiber optic and copper cables will be installed inside the Cape Hatteras EMC power easement. A portion of the utilities between Stations 3168+00 to 3181+00 will remain in place. All of the cables to be relocated will be directionally bored to avoid impacts to wetlands.

Regulatory Approvals

Section 404 Permit, and Section 401 Water Quality Certification:

Application will be made under separate cover for these approvals.

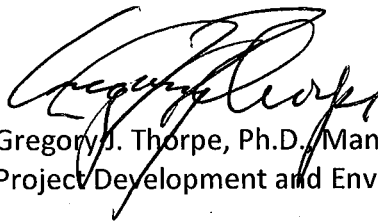
CAMA:

Per previous coordination with DCM, NCDOT requests that the bridge work and directionally bored utility relocations be authorized under a Coastal Area Management Act Major Permit, by the modification of the existing B-2500 Phase I permit (Permit 106-12, issued September 19, 2012. The adjacent riparian landowner return receipts will be forwarded once they are received. Authorization to debit the \$475 Permit Application Fee from WBS Element 13201.1028011 is hereby given.

A copy of this permit application will be posted on the NCDOT Website at:

<https://connect.ncdot.gov/resources/Environmental/Pages> Thank you for your assistance with this project. If you have any questions or need additional information, please contact Michael Turchy at maturchy@ncdot.gov or (919) 707-6157.

Sincerely,



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

The "cc" List:

NCDOT Permit Application Standard Distribution List

APPLICATION for Major Development Permit

(last revised 12/27/06)



North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information				
Business Name North Carolina Department Of Transportation		Project Name (if applicable) B-2500 A		
Applicant 1: First Name Gregory	MI	Last Name Thorpe		
Applicant 2: First Name	MI	Last Name		
<i>If additional applicants, please attach an additional page(s) with names listed.</i>				
Mailing Address 1020 Birch Ridge Drive		PO Box	City Raleigh	State NC
ZIP 27623	Country US	Phone No. 919 - 707 - 6157 ext.		FAX No. - -
Street Address (if different from above)		City	State	ZIP -
Email				

2. Agent/Contractor Information				
Business Name N/A				
Agent/ Contractor 1: First Name	MI	Last Name		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address		PO Box	City	State
ZIP		Phone No. 1 - - ext.		Phone No. 2 - - ext.
FAX No.		Contractor #		
Street Address (if different from above)		City	State	ZIP -
Email				

<Form continues on back>

3. Project Location

County (can be multiple) Dare	Street Address Existing NC 12 from just south of southern most freshwater pond to north of Rodanthe. 21111 A NC Highway 12		State Rd. # NC-12
Subdivision Name N/A	City Rodanthe	State NC	Zip n/a -
Phone No. N/A - - ext.		Lot No.(s) (if many, attach additional page with list) N/A, , ,	
a. In which NC river basin is the project located? Pasquotank		b. Name of body of water nearest to proposed project Pamlico Sound	
c. Is the water body identified in (b) above, natural or manmade? ☒ Natural ☐ Manmade ☐ Unknown		d. Name the closest major water body to the proposed project site. Atlantic Ocean	
e. Is proposed work within city limits or planning jurisdiction? ☐ Yes ☒ No		f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. N/A	

4. Site Description

a. Total length of shoreline on the tract (ft.) N/A	b. Size of entire tract (sq.ft.) 166,720
c. Size of individual lot(s) N/A, (If many lot sizes, please attach additional page with a list)	d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level) 3' ☒ NHW or ☐ NWL
e. Vegetation on tract Brackish marsh, smooth cordgrass, maritime shrub thicket, salt/shrub grassland, maritime grassland, black needlerush, reed stands, beach, dunes and disturbed wetland and upland vegetation.	
f. Man-made features and uses now on tract Existing NC-12, utility lines, recreation.	
g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site. Recreational (federal Seashore and Refuge lands), open space, open water and water foul impoundments.	
h. How does local government zone the tract? Unzoned	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) ☐ Yes ☐ No ☒ NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? ☐ Yes ☒ No	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. ☒ Yes ☐ No ☐ NA If yes, by whom? NCDOT	
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? ☒ Yes ☐ No ☐ NA	

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒ Yes ☐ No
(ii) Are there coastal wetlands on the site?	☒ Yes ☐ No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? (Attach documentation, if available)	☒ Yes ☐ No
n. Describe existing wastewater treatment facilities. N/A	
o. Describe existing drinking water supply source. N/A	
p. Describe existing storm water management or treatment systems. Grass swales and Rip rap pads at the pipe ends	

5. Activities and Impacts

a. Will the project be for commercial, public, or private use?	☐ Commercial ☒ Public/Government ☐ Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. NCDOT Roadway	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. Work bridge over open water. Crane and backhoe for pier construction.	
d. List all development activities you propose. Roadway re-alignment and new bridge.	
e. Are the proposed activities maintenance of an existing project, new work, or both?	Both
f. What is the approximate total disturbed land area resulting from the proposed project?	166,720 ☒ Sq.Ft or ☐ Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	☒ Yes ☐ No ☐ NA
h. Describe location and type of existing and proposed discharges to waters of the state. Runoff from paved surface will drain to roadside grass swales. Bridge deck will drain using open scuppers. Bridge is 15'-25' above the ground elevation.	
i. Will wastewater or stormwater be discharged into a wetland?	☒ Yes ☐ No ☐ NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐ Yes ☒ No ☐ NA
j. Is there any mitigation proposed?	☐ Yes ☒ No ☐ NA
If yes, attach a mitigation proposal.	

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

- a. A project narrative.
- b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.
- c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.
- d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.
- e. The appropriate application fee. Check or money order made payable to DENR.
- f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.
- | | |
|---------|-----------|
| Name | Phone No. |
| Address | |
| Name | Phone No. |
| Address | |
| Name | Phone No. |
| Address | |
- g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.
- h. Signed consultant or agent authorization form, if applicable.
- i. Wetland delineation, if necessary.
- j. A signed AEC hazard notice for projects in oceanfront and inlet areas. (Must be signed by property owner)
- k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

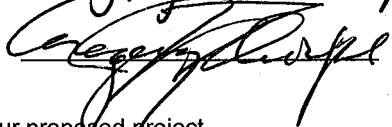
I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 13 Feb 13

Print Name Gregory J. Thorpe

Signature 

Please indicate application attachments pertaining to your proposed project.

- ☐ DCM MP-2 Excavation and Fill Information
- ☐ DCM MP-3 Upland Development
- ☐ DCM MP-4 Structures Information
- ☒ DCM MP-5 Bridges and Culverts

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES☐ This section not applicable

- a. Is the proposed bridge:
☐ Commercial ☒ Public/Government ☐ Private/Community
- b. Water body to be crossed by bridge:
 Pea Island Breach
- c. Type of bridge (construction material):
 Reinforced Concrete
- d. Water depth at the proposed crossing at NLW or NWL:
 Approx. 8' (NWL) at breach
- e. (i) Will proposed bridge replace an existing bridge? ☒ Yes ☐ No
 If yes,
 (ii) Length of existing bridge: 650'
 (iii) Width of existing bridge: 24'
 (iv) Navigation clearance underneath existing bridge: 15'
 (v) Will all, or a part of, the existing bridge be removed?
 (Explain) All parts of the existing bridge will be removed.
- f. (i) Will proposed bridge replace an existing culvert? ☐ Yes ☒ No
 If yes,
 (ii) Length of existing culvert: _____
 (iii) Width of existing culvert: _____
 (iv) Height of the top of the existing culvert above the NHW or NWL: _____
 (v) Will all, or a part of, the existing culvert be removed?
 (Explain)
- g. Length of proposed bridge: 11,160'
- h. Width of proposed bridge: 42'-7"
- i. Will the proposed bridge affect existing water flow? ☐ Yes ☒ No
 If yes, explain:
- j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☒ Yes ☐ No
 If yes, explain: New breach between Pamlico Sound and Atlantic Ocean.
- k. Navigation clearance underneath proposed bridge: Approx. 25'
- l. Have you contacted the U.S. Coast Guard concerning their approval? ☒ Yes ☐ No
 If yes, explain: Advanced approval is anticipated.
- m. Will the proposed bridge cross wetlands containing no navigable waters? ☒ Yes ☐ No
 If yes, explain: Coastal wetlands
- n. Height of proposed bridge above wetlands: Approx. 15'-25'

2. CULVERTS☒ This section not applicable

- a. Number of culverts proposed: _____
- b. Water body in which the culvert is to be placed:

< Form continues on back >

c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge?

☐ Yes ☐ No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed?
(Explain)

e. (i) Will proposed culvert replace an existing culvert?

☒ Yes ☐ No

If yes,

(ii) Length of existing culvert(s): 70'

(iii) Width of existing culvert(s): 24"

(iv) Height of the top of the existing culvert above the NHW or
NWL: ~3'

(v) Will all, or a part of, the existing culvert be removed?
(Explain) The entire pipe will be removed.

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL.

i. Depth of culvert to be buried below existing bottom contour.

j. Will the proposed culvert affect navigation by reducing or
increasing the existing navigable opening? ☐ Yes ☐ No

If yes, explain:

k. Will the proposed culvert affect existing water flow?

☐ Yes ☐ No

If yes, explain:

3. EXCAVATION and FILL

☐ This section not applicable

a. (i) Will the placement of the proposed bridge or culvert require any
excavation below the NHW or NWL? ☐ Yes ☒ No

If yes,

(ii) Avg. length of area to be excavated: _____

(iii) Avg. width of area to be excavated: _____

(iv) Avg. depth of area to be excavated: _____

(v) Amount of material to be excavated in cubic yards: _____

b. (i) Will the placement of the proposed bridge or culvert require any
excavation within coastal wetlands/marsh (CW), submerged
aquatic vegetation (SAV), shell bottom (SB), or other wetlands
(WL)? If any boxes are checked, provide the number of square
feet affected.

☐ CW _____ ☐ SAV _____ ☐ SB _____

☐ WL _____ ☒ None

(ii) Describe the purpose of the excavation in these areas:

c. (i) Will the placement of the proposed bridge or culvert require any
high-ground excavation? ☐ Yes ☒ No

If yes,

(ii) Avg. length of area to be excavated: _____

(iii) Avg. width of area to be excavated: _____

(iv) Avg. depth of area to be excavated: _____

(v) Amount of material to be excavated in cubic yards: _____

Form DCM MP-5 (Bridges and Culverts, Page 3 of 4)

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: Jetting spoils will be confined to the 100' Transportation Easement within the Pea Island National Wildlife Refuge, unless the Refuge accepts the material for Refuge use.

(ii) Dimensions of the spoil disposal area: TBD by contractor, possibly in conjunction with the Refuge.

(iii) Do you claim title to the disposal area? ☐ Yes ☒ No (If no, attach a letter granting permission from the owner.)

(iv) Will the disposal area be available for future maintenance? ☐ Yes ☒ No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐ CW ☐ SAV ☐ WL ☐ SB ☒ None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐ Yes ☒ No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒ Yes ☐ No

If yes,

(ii) Avg. length of area to be filled: temporary: 855' total

(iii) Avg. width of area to be filled: temporary: 3'

(iv) Purpose of fill: Temporary fill for temporary roadway to for shifting to build permanent bridge in transportation easment.

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒ CW 47,900 ☐ SAV ☐ SB

☐ WL ☐ None

(ii) Describe the purpose of the excavation in these areas:

Roadway approach to bridge and bridge piers.

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☒ Yes ☐ No

If yes,

(ii) Avg. length of area to be filled: 1000'

(iii) Avg. width of area to be filled: 60'

(iv) Purpose of fill: Roadway approaches to bridge

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒ Yes ☐ No

If yes, explain: Application has been submitted as a CAMA General to authorize the utility impacts.

b. Will the proposed project require the construction of any temporary detour structures? ☐ Yes ☒ No

If yes, explain:

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

< Form continues on back >

- c. Will the proposed project require any work channels?
☐ Yes ☒ No

If yes, complete Form DCM-MP-2.

- d. How will excavated or fill material be kept on site and erosion controlled?
 Standard erosion control measures such as silt fence and rock filter dams.

- e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?
 Work bridge over open water; Crane and backhoe for piers.

- f. Will wetlands be crossed in transporting equipment to project site?
☐ Yes ☒ No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

- g. Will the placement of the proposed bridge or culvert require any shoreline stabilization?
☐ Yes ☒ No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

13 Feb 13
 Date

B-2500A
 Project Name

Gregory J. Thorpe
 Applicant Name

Gregory J. Thorpe
 Applicant Signature



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 13, 2013

Pea Island National Wildlife Refuge
ATTN: Mr. Dennis Stewart
PO BOX 1969
Manteo, NC 27954-1969

Dear Landowner:

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing three span temporary bridge over "New Inlet," which was reopened by Hurricane Irene in September 2011, with a 2.1 mile bridge. This project crosses an Area of Environmental Concern, as defined by the North Carolina Division of Coastal Management (DCM), and must be approved by the DCM under provisions of the Coastal Area Management Act (CAMA). One of the prerequisites to this approval is that adjacent riparian landowners be given an opportunity to comment on the proposal. A permit application, vicinity map and site drawings are enclosed for your review.

The attached form is submitted to ensure that you have an opportunity to comment on the proposal. The work planned is depicted in the attached drawing. If you have no objections to the proposal, please return the form with your response within 30 days to this office. If you do have objections to the project, please forward your comments to:

Mr. Paul Williams
N.C. Division of Coastal Management
1367 US 17 South
Elizabeth City, NC 27909

Thank you for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory D. Thorpe".

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

Enclosures

cc: Paul Williams, NCDOT
File B-2500 A

ADJACENT RIPARIAN LANDOWNER STATEMENT

(Dare County: Construction of Bridge over New Inlet)

NCDOT TIP B-2500 A

General Statutes and Division of Coastal Management Major Development Permit approval procedures require that riparian landowners with property adjoining a proposed development in an Area of Environmental Concern (AEC) be given thirty (30) days in which to comment on the proposed development. This form allows the adjacent riparian landowner to express either: (1) that he objects to the project; or, (2) that he does not object and desires to waive his/her right to the 30-day period so that the processing of the application can progress more rapidly. Of course, the adjacent riparian landowner need not sign this form at all if he/she so chooses.

I, _____, am an adjacent riparian property owner and am aware of the North Carolina Department of Transportation's plans for constructing a permanent bridge over New Inlet in Dare County, North Carolina. I am further aware that this work will occur in one or more Areas of Environmental Concern and therefore will require authorization from the Division of Coastal Management in accordance with the Coastal Area Management Act (CAMA).

_____ I have no objection to the project as presently proposed and hereby waive that right of objection as provided in General Statute 113-229

_____ I have objections to the project as presently proposed and my comments are attached

Signature of Adjacent Riparian Landowner

Date

Phone Number with Area Code

OCEAN HAZARD AEC NOTICE

Project is in an: X Ocean Erodible Area X High Hazard Flood Area X Inlet Hazard Area

Property Owner: N.C. Department of Transportation

Property Address: Approximately 21111 A NC Highway 12, Rodanthe, NC

Date Lot Was Platted: _____

This notice is intended to make you, the applicant, aware of the special risks and conditions associated with development in this area, which is subject to natural hazards such as storms, erosion and currents. The rules of the Coastal Resources Commission require that you receive an AEC Hazard Notice and acknowledge that notice in writing before a permit for development can be issued.

The Commission's rules on building standards, oceanfront setbacks and dune alterations are designed to minimize, but not eliminate, property loss from hazards. By granting permits, the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development. Permits issued in the Ocean Hazard Area of Environmental Concern include the condition that structures be relocated or dismantled if they become imminently threatened by changes in shoreline configuration. The structure(s) must be relocated or dismantled within two (2) years of becoming imminently threatened, and in any case upon its collapse or subsidence.

The best available information, as accepted by the Coastal Resources Commission, indicates that the annual long-term average ocean erosion rate for the area where your property is located is up to 8 feet per year.

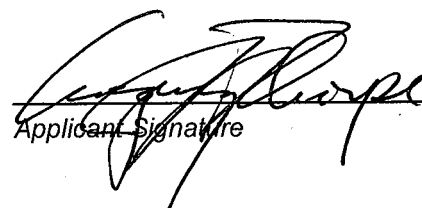
The rate was established by careful analysis of aerial photographs of the coastline taken over the past 50 years.

Studies also indicate that the shoreline could move as much as _____ feet landward in a major storm.

The flood waters in a major storm are predicted to be about feet deep in this area.

Preferred oceanfront protection measures are beach nourishment and relocation of threatened structures. Hard erosion control structures such as bulkheads, seawalls, revetments, groins, jetties and breakwaters are prohibited. Temporary sand bags may be authorized under certain conditions.

The applicant must acknowledge this information and requirements by signing this notice in the space below. Without the proper signature, the application will not be complete.

 13 Feb 13
Applicant Signature Date

SPECIAL NOTE: This hazard notice is required for development in areas subject to sudden and massive storms and erosion. Permits issued for development in this area expire on December 31 of the third year following the year in which the permit was issued. Shortly before work begins on the project site, the Local Permit Officer must be contacted to determine the vegetation line and setback distance at your site. If the property has seen little change since the time of permit issuance, and the proposed development can still meet the setback requirement, the LPO will inform you that you may begin work. Substantial progress on the project must be made within 60 days of this setback determination, or the setback must be re-measured. Also, the occurrence of a major shoreline change as the result of a storm within the 60-day period will necessitate re-measurement of the setback. It is important that you check with the LPO before the permit expires for official approval to continue the work after the permit has expired. Generally, if foundation pilings have been placed and substantial progress is continuing, permit renewal can be authorized. It is unlawful to continue work after permit expiration.

For more information, contact:

Paul C. Williams, Jr., DOT Field Rep.

Local Permit Officer

1367 US 17 South, Elizabeth City, NC 27909

Address

NCDOT Division 1

Locality

252-264-3901

Phone Number

BEFORE YOU BUILD

Setting Back for Safety: A Guide to Wise Development Along the Oceanfront

When you build along the oceanfront, you take a calculated risk. Natural forces of water and wind collide with tons of force, even on calm days.

Man-made structures cannot be guaranteed to survive the force of a hurricane. Long-term erosion (or barrier island migration) may take from two to ten feet of the beach each year, and, sooner or later, will threaten oceanfront structures. These are the facts of life for oceanfront property owners.

The Coastal Resources Commission (CRC) has adopted rules for building along the oceanfront. The rules are intended to avoid an unreasonable risk to life and property, and to limit public and private losses from storm and long-term erosion. These rules lessen but do not eliminate the element of risk in oceanfront development.

As you consider building along the oceanfront, the CRC wants you to understand the rules and the risks. With this knowledge, you can make a more informed decision about where and how to build in the coastal area.

The Rules

When you build along the oceanfront, coastal management rules require that the structure be sited to fit safely into the beach environment.

Structures along the oceanfront, less than 5,000 square feet in size, must be behind the frontal dune, landward of the crest of the primary dune, and set back from the first line of stable natural vegetation a distance equal to 30 times the annual erosion rate (a minimum of 60 feet). The setback calculation increases as the size of the structure increases [15A NCAC 7H.0306(a)(2)]. For example: A structure between 5,000 and 10,000 square feet would require a setback from the first line of stable, natural vegetation to a distance equal to 60 times the annual erosion rate (a minimum of 120 feet). The graduated setback continues to increase through structure sizes greater than 100,000 square feet.

The Reasons

The beachfront is an ever-changing landform. The beach and the dunes are natural “shock absorbers,” taking the beating of the wind and waves and protecting the inland areas. By incorporating building setbacks into the regulations, you have a good chance of enjoying the full life of the structure. At first, it seems very inviting to build your dream house as close to the beach as possible, but in five years you could find the dream has become a nightmare as high tides and storm tides threaten your investment.

The Exception

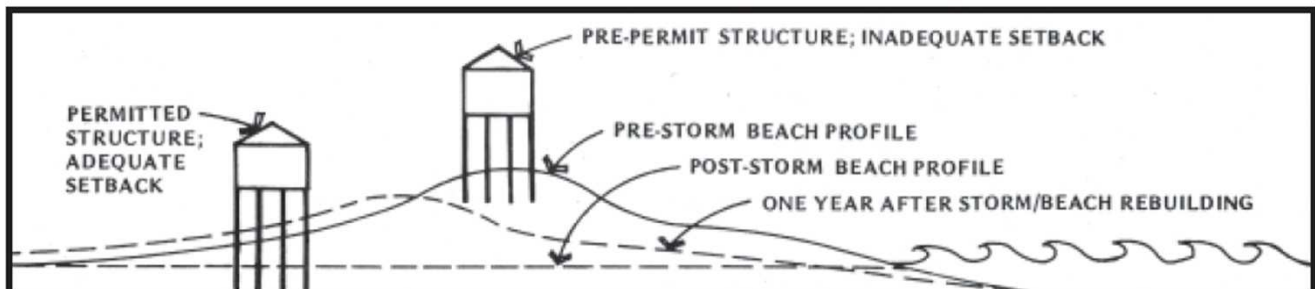
The Coastal Resources Commission recognized that these rules, initially passed in June 1979, might prove a hardship for some property owners. Therefore, they established an exception for lots that cannot meet the setback requirement. The exception allows buildings in front of the current setback, if the following conditions apply:

- 1) the lot must have been platted as of June 1, 1979, and is not capable of being enlarged by combining with adjoining land under the same ownership;
- 2) development must be constructed as far back on the property as possible and in no case less than 60 feet landward of the vegetation line;
- 3) no development can take place on the frontal dune;
- 4) special construction standards on piling depth and square footage must be met; and
- 5) all other CAMA, state and local regulations must be met.

The exception is not available in the Inlet Hazard Area.

To determine eligibility for the exception the Local Permit Officer will make these measurements and observations:

- _____ required setback from vegetation line
- _____ exception setback (maximum feasible)
- _____ rear property line setback
- _____ max. allowable square footage on lowest floor



After the storm, the house on the dune will be gone. The other house has a much better chance of survival.

STORMWATER MANAGEMENT PLAN

Project: 13201.1028011

I.D. No.: B2500-Ph. 2

County: Dare County

Date: 04/09/12

Hydraulics Project Manager: Edward Vance, P.E. (STV Incorporated)
Marshall Clawson, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project consists of constructing a new 2.1 mile long coastal bridge on NC-12. This project was initiated by the breach at Pea Island as a result of Hurricane Irene. The total project length which includes the temporary roadway alignment is 2.7 miles. The proposed bridge will be a two-lane section (12' travel lanes with 8' shoulders), and will have 98 spans. The drainage system will consist of open scuppers on the main bridge spans, grate inlets and pipe systems for the ramps and end spans, and roadside ditches for the approach pavement.

ENVIRONMENTAL DESCRIPTION

The project is located within the Pasquotank Basin in Dare County which is also a CAMA county. Since the project is sited on a coastal barrier island, runoff from the roadway will outfall either directly to the ocean, sound, or to the abutting coastal wetlands. Impacts have been minimized by using roadside ditches which are generally flat and will infiltrate stormwater into the sandy soils.

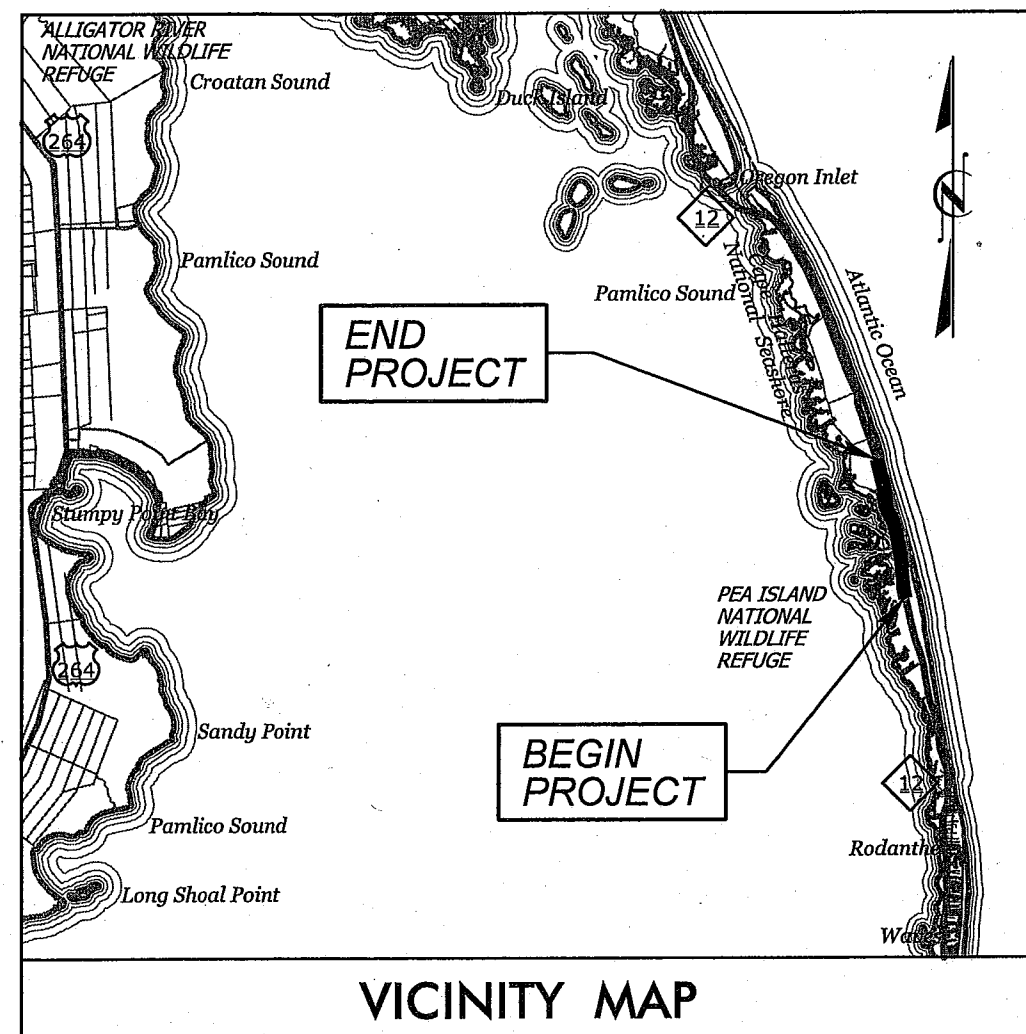
BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

Temporary construction runoff will be controlled by using Silt Fence, Special Silt Fence, Temporary Slope Drains, Rock Silt Checks, and Temporary Matting and Grassing.

Open scuppers are proposed for the main spans of the permanent bridge because the height of the low chord of the bridge is approximately 15' above the ground elevation. The bridge height will allow the wind to disperse stormwater from the bridge drains before it impacts the ground. Also, open scuppers are typically allowed in locations where the volume of runoff is very small relative to the open water body to which the runoff is discharging such as sounds and Intracoastal Waterways.

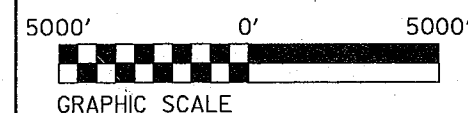
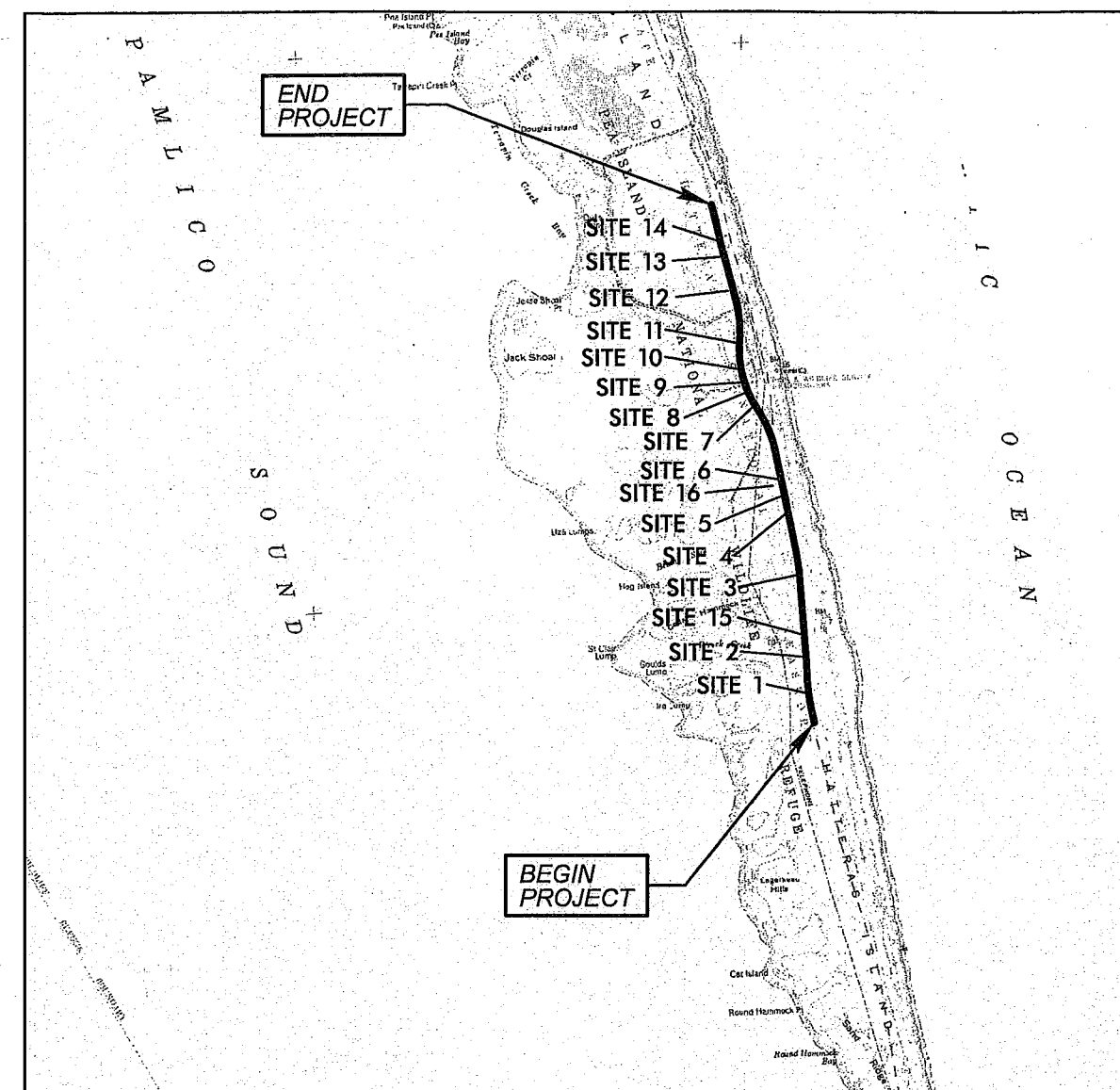
Permanent BMP measures used on this project to reduce stormwater impacts are:

- Grass swales,
- Rip rap pads at the pipe ends.



VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A
NC HWY 12 OVER PEA
ISLAND BREACH



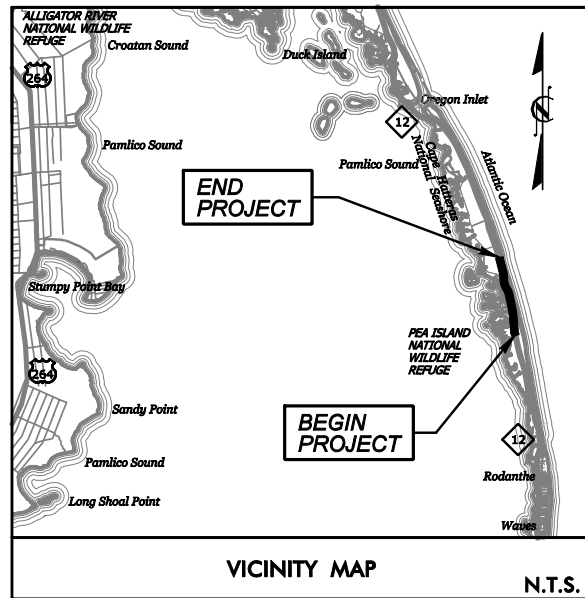
LOCATION MAP

NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A
NC HWY 12 OVER
PEA ISLAND BREACH

PROJECT: B-2500A

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

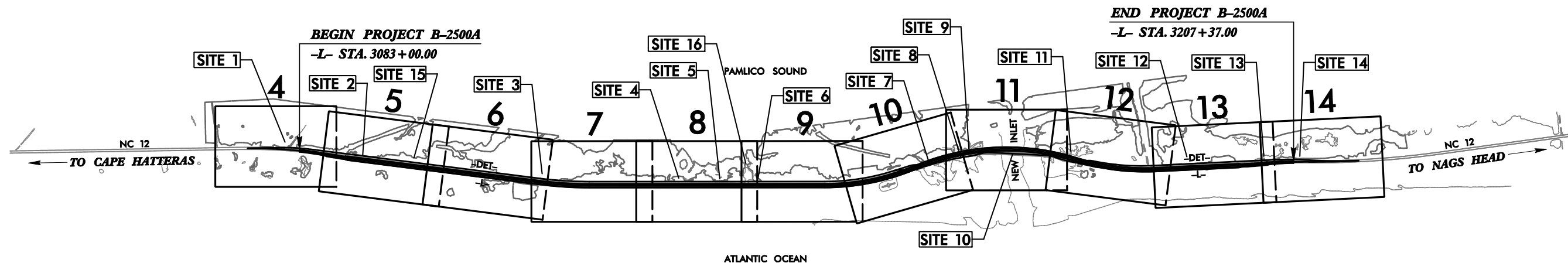
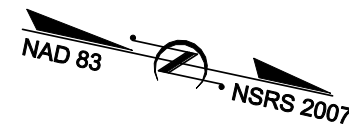
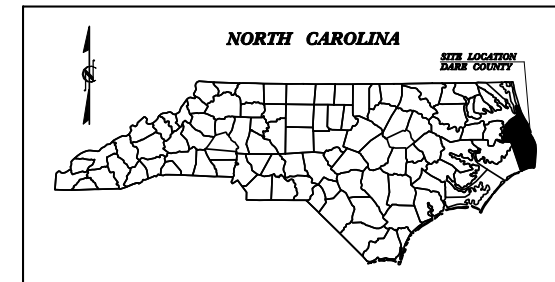
DARE COUNTY

LOCATION: NC HWY 12 OVER PEA ISLAND BREACH

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

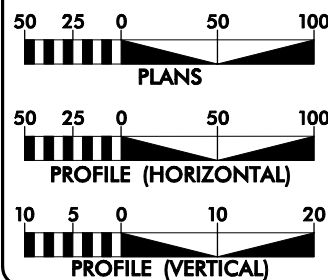
WETLAND & SURFACE WATER IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2500A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
13201.10228025		P.E.	



Permit Drawing
Sheet 4 of 59

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 7,300
ADT 2032 = 10,900
DHV = N/A
D = N/A
T = 6%
V = 60 MPH
FUNC. CLASSIFICATION:
COLLECTOR
T = 1% TTST+5% DUALS
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT = 0.241 MILES
LENGTH OF STRUCTURE TIP PROJECT = 2.114 MILES
TOTAL LENGTH OF TIP PROJECT = 2.355 MILES

NCDOT CONTACT: DOUG TAYLOR, PE
Asst. Unit Head, Roadway Design

PLANS PREPARED FOR THE NCDOT BY:
STV/RALPH WHITEHEAD ASSOCIATES, INC.
1000 West Morehead St., Ste. 200, Charlotte NC, 28208
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
AUGUST 14, 2012

JOHN N. JOHNSON, PE
PROJECT ENGINEER

JOSEPH A. FREEMAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS
ENGINEER

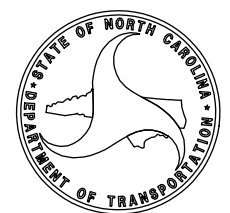
PRELIMINARY SEAL
DO NOT USE FOR CONSTRUCTION
NORTH CAROLINA PROFESSIONAL ENGINEER
JOHN C. MORRISON

SIGNATURE:

ROADWAY DESIGN
ENGINEER

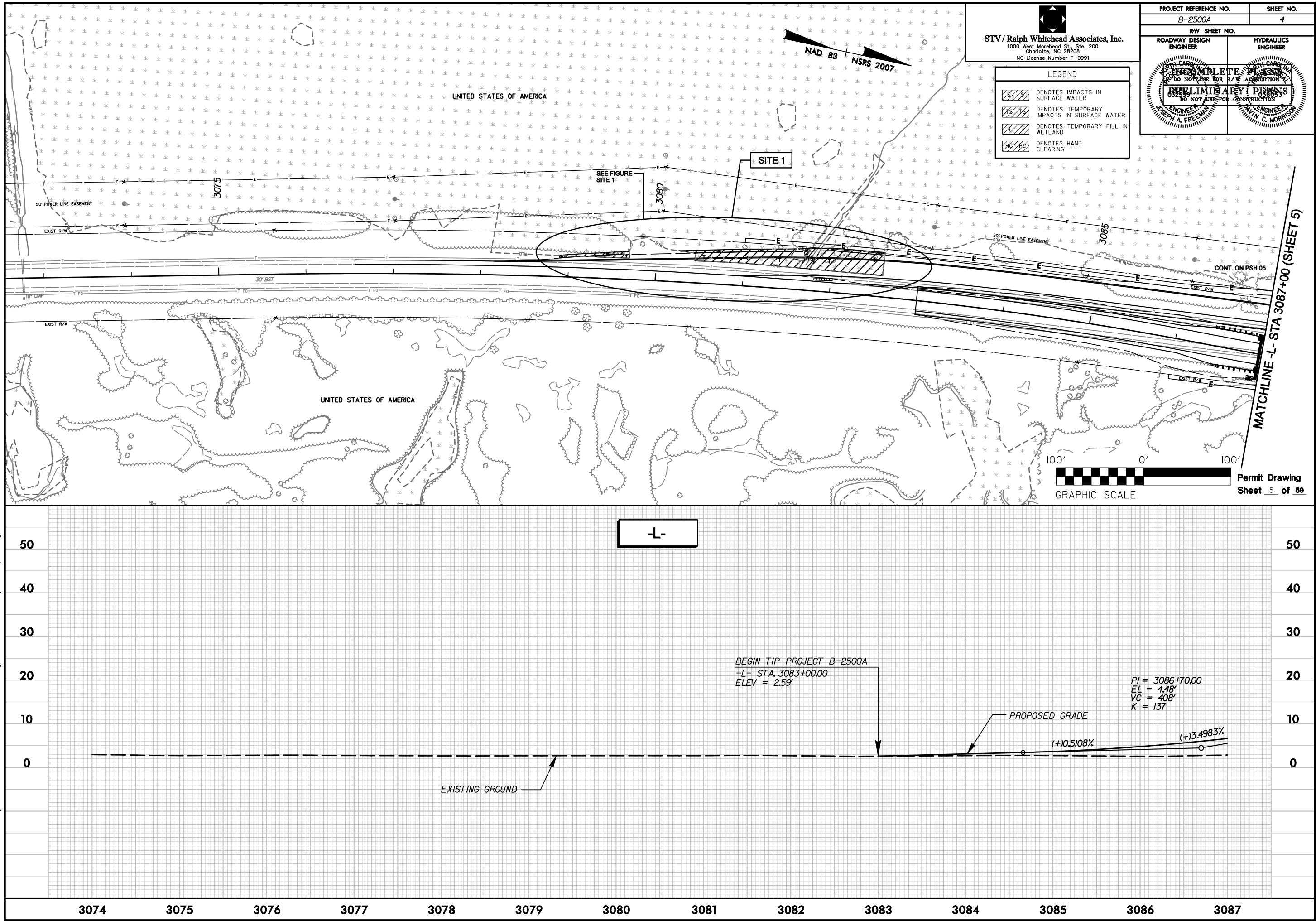
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NORTH CAROLINA PROFESSIONAL ENGINEER
JOHN N. JOHNSON

SIGNATURE:

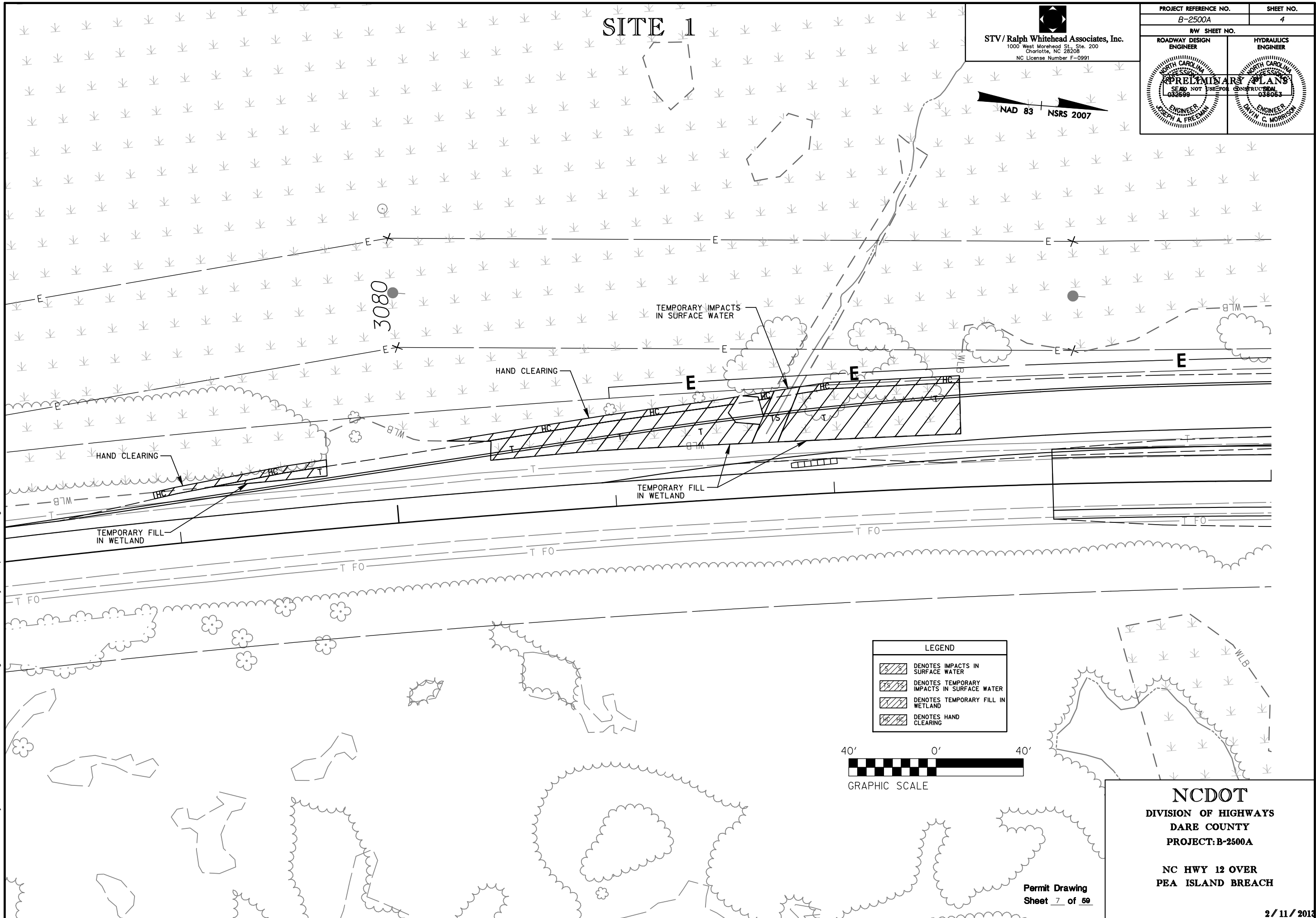


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2/11/2013

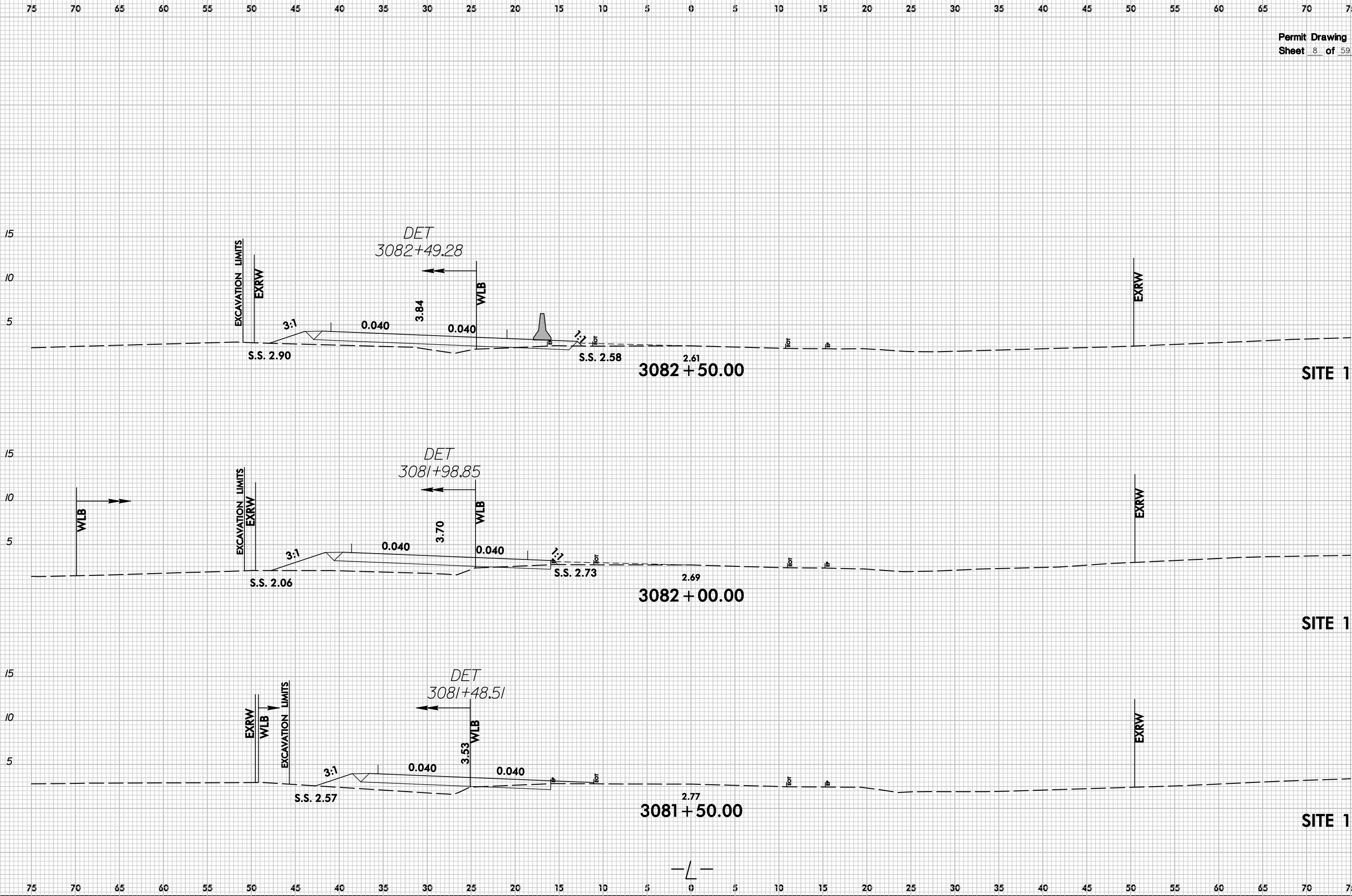


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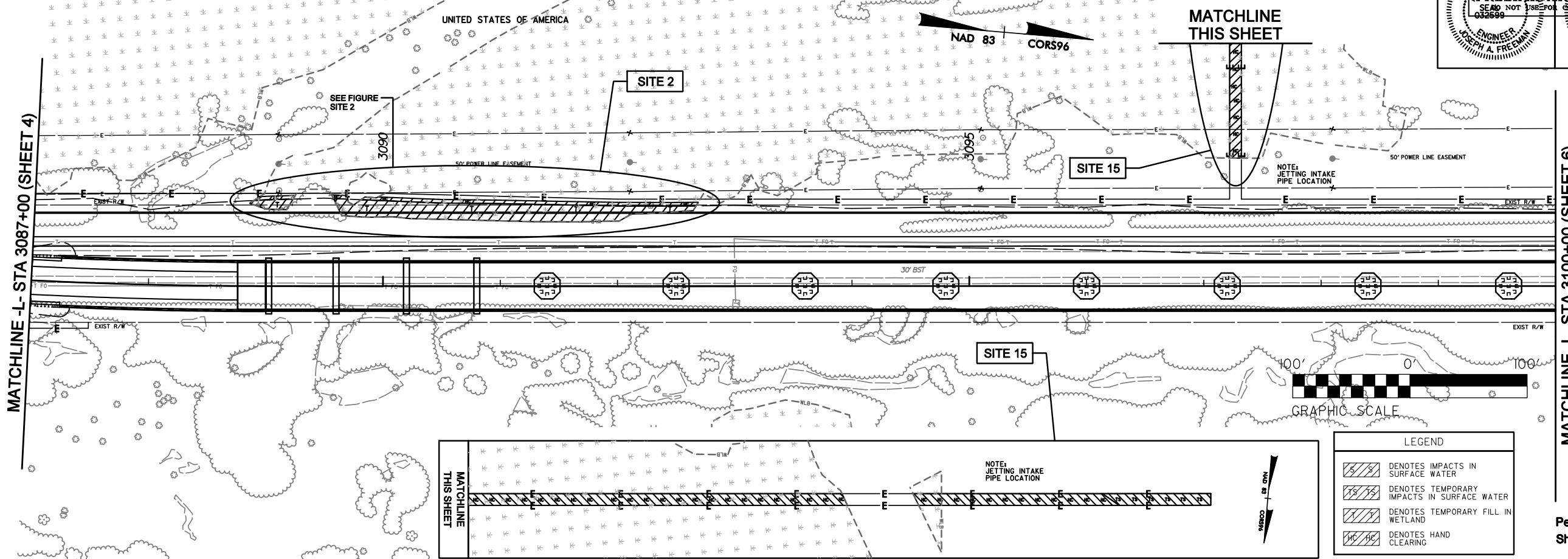
8/23/99

Permit Drawing
Sheet 8 of 59

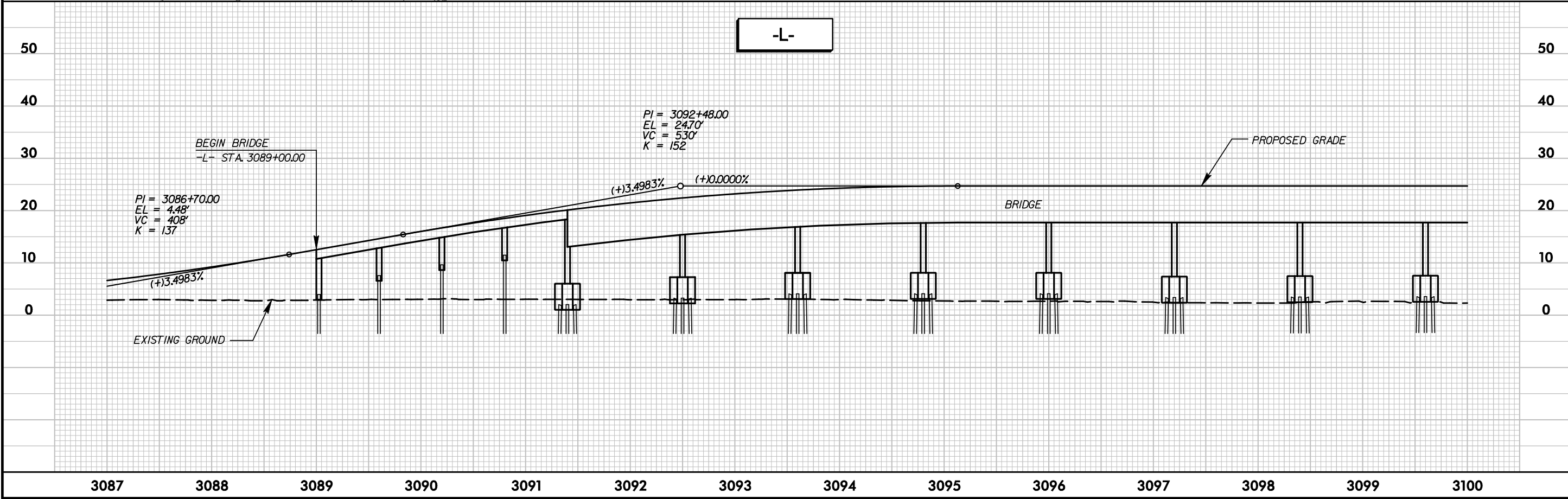


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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON



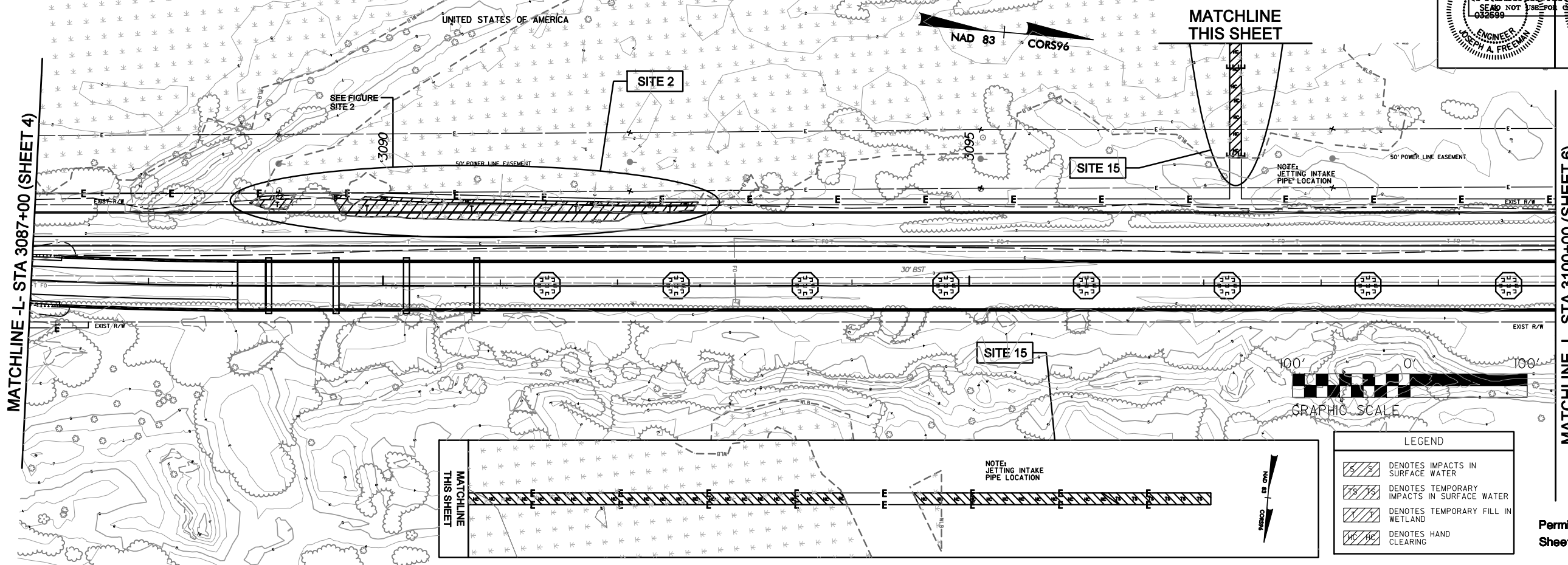
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Sheet 9 of 59



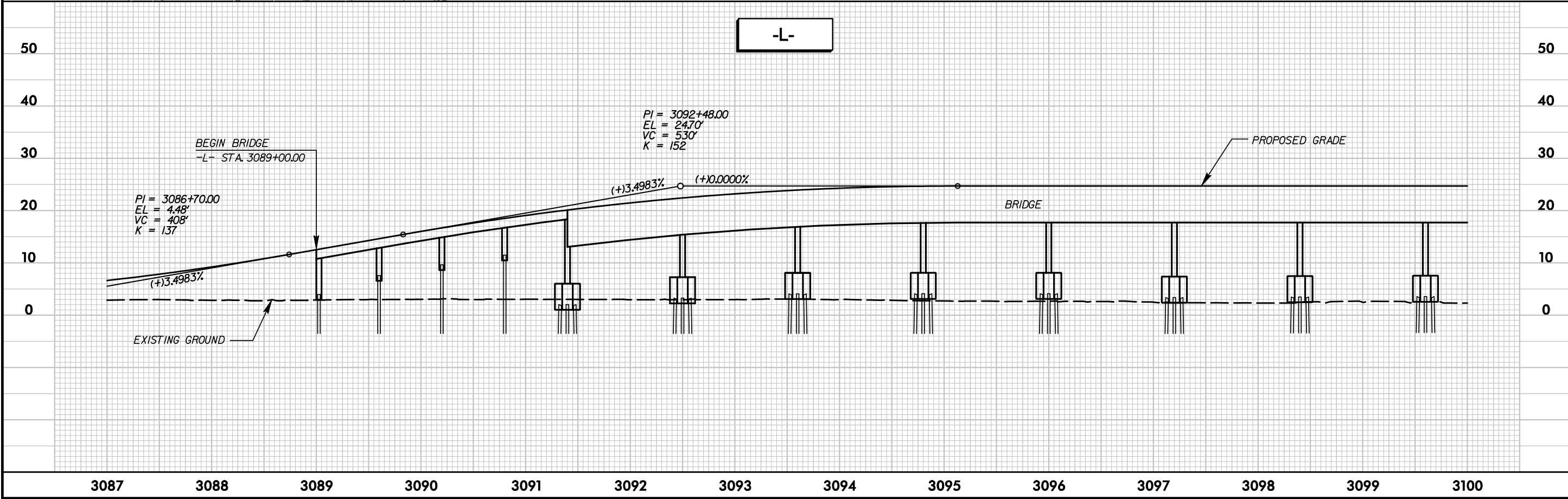
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2/11/2013

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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL ENGINEER JOSEPH A. FREEMAN 032699		NORTH CAROLINA PROFESSIONAL ENGINEER DAVID C. MORRISON 038063



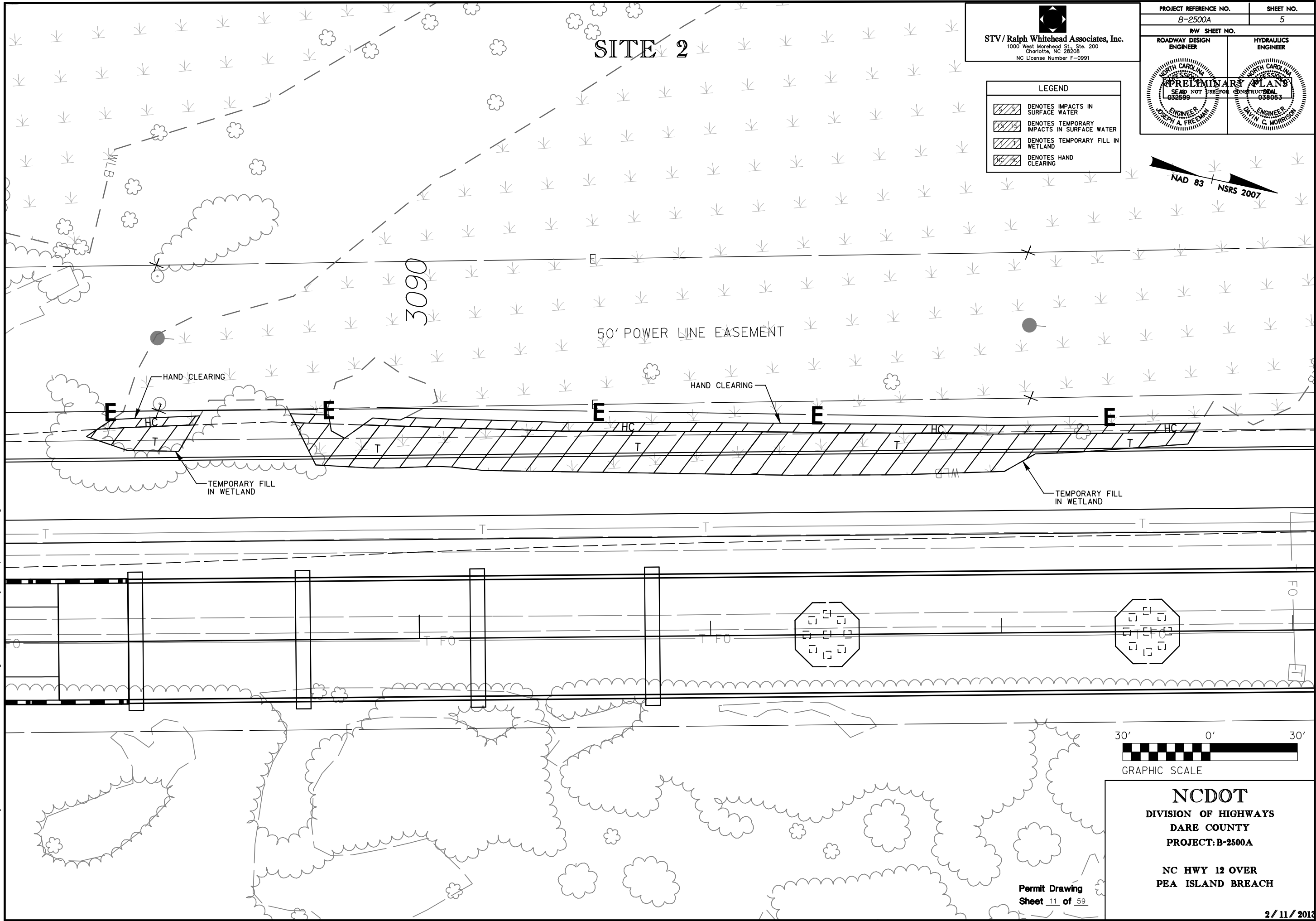
Permit Drawing
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2/11/2013

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2/11/2013



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Charlotte, NC 28208
NC License Number F-0991

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

PROJECT REFERENCE NO.		SHEET NO.	
B-2500A		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			



NC DOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

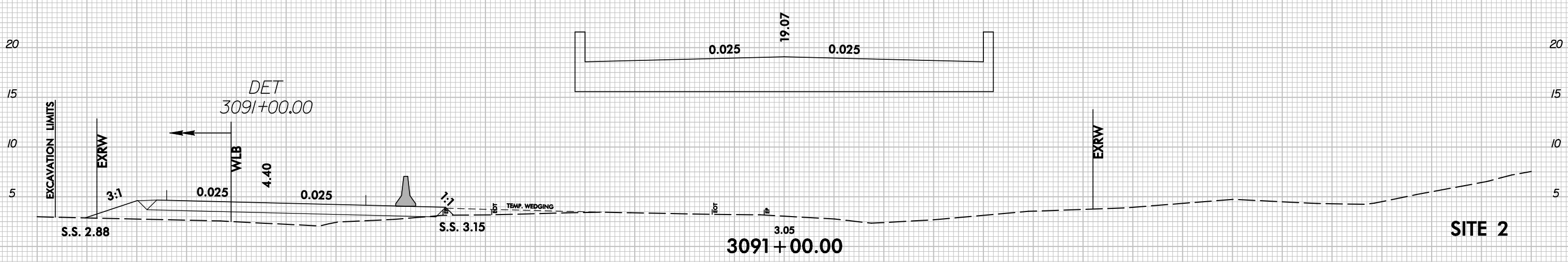
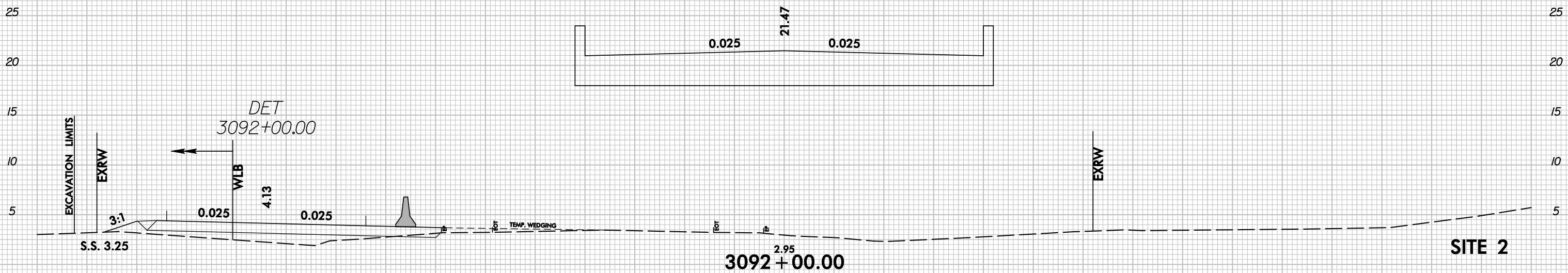
Permit Drawing
Sheet 11 of 59

2/11/2013

8/23/99

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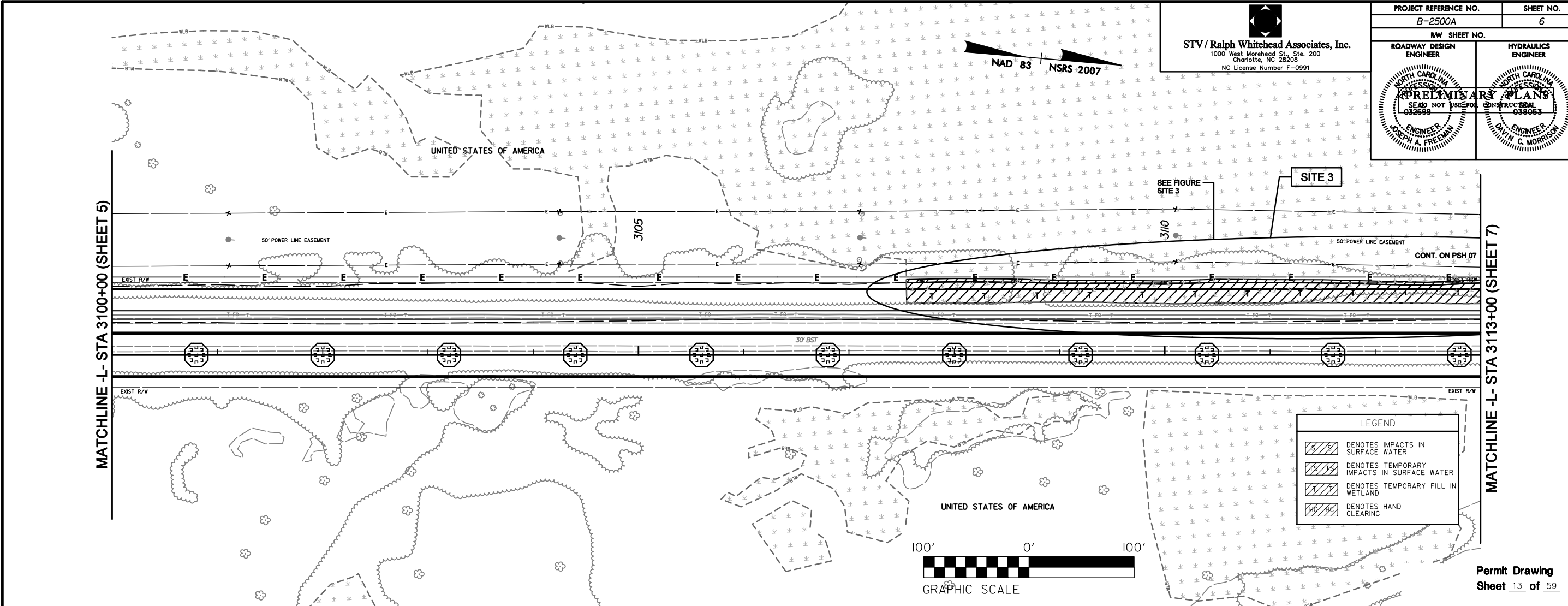
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Sheet 12 of 59



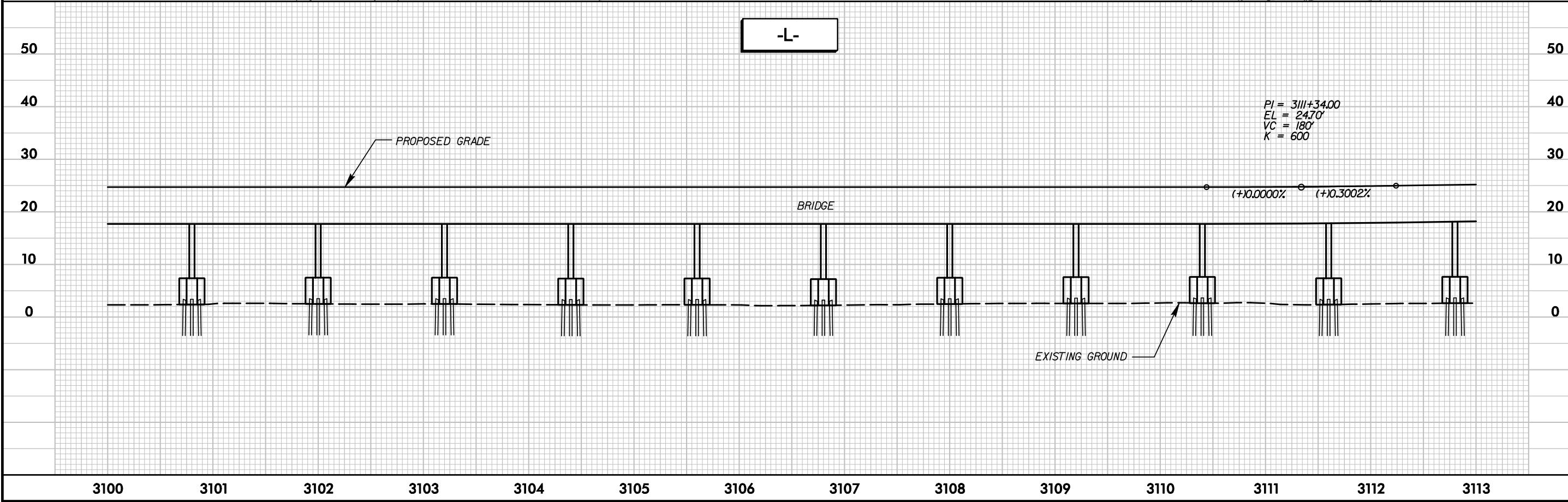
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MATCHLINE -L- STA 3100+00 (SHEET 5)

MATCHLINE -L- STA 3113+00 (SHEET 7)

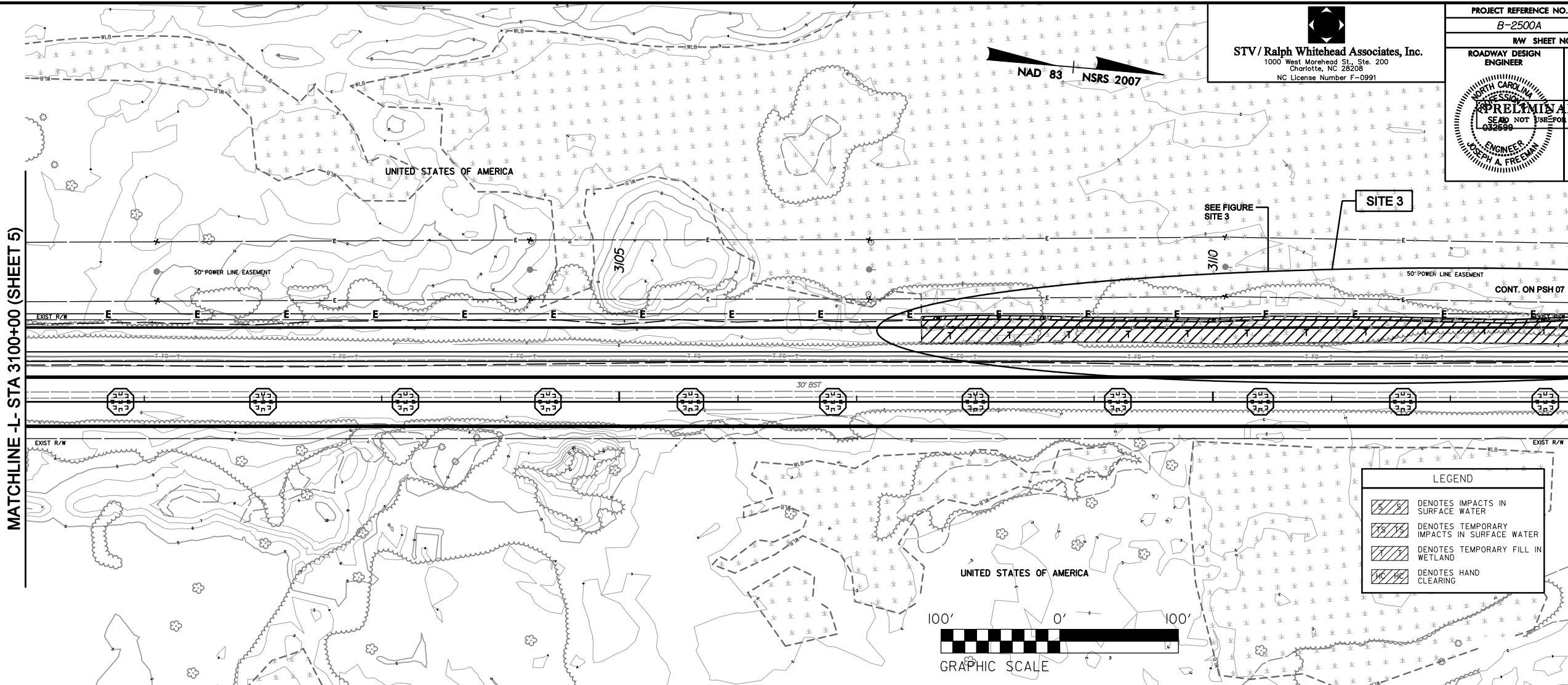


Permit Drawing
Sheet 13 of 59

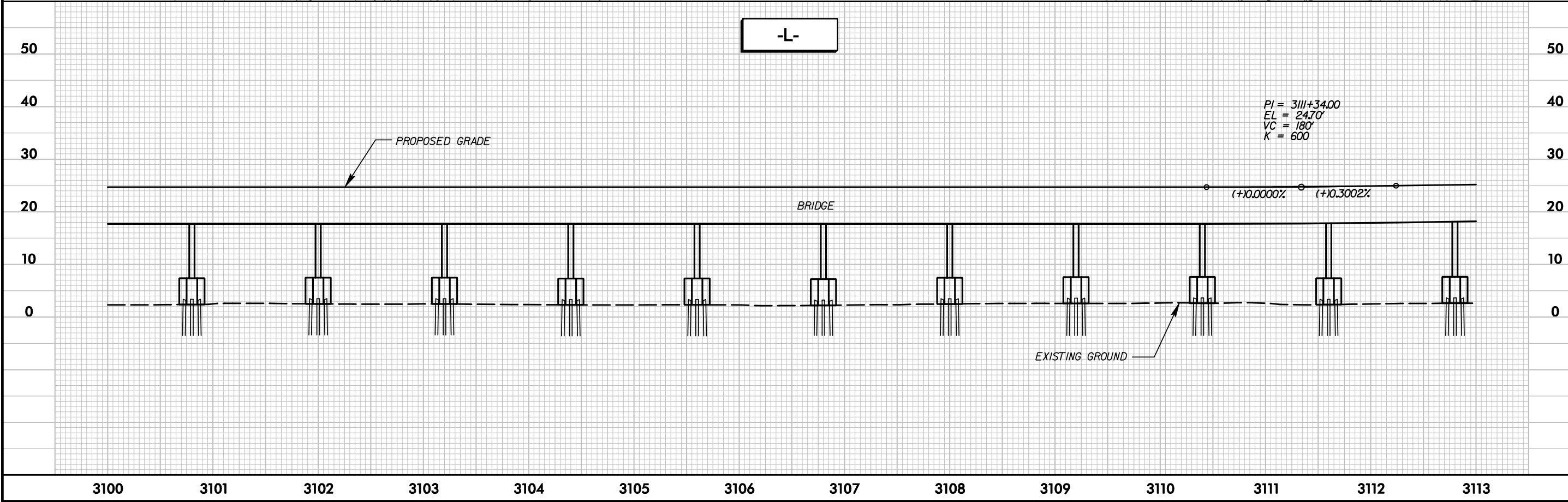


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Permit Drawing
Sheet 14 of 59



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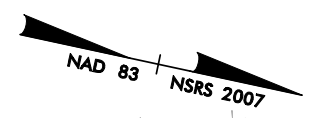
SITE 3
(SHEET 1 OF 2)

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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 6
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

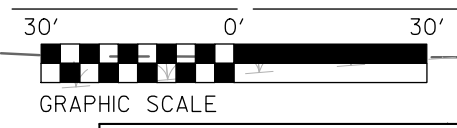
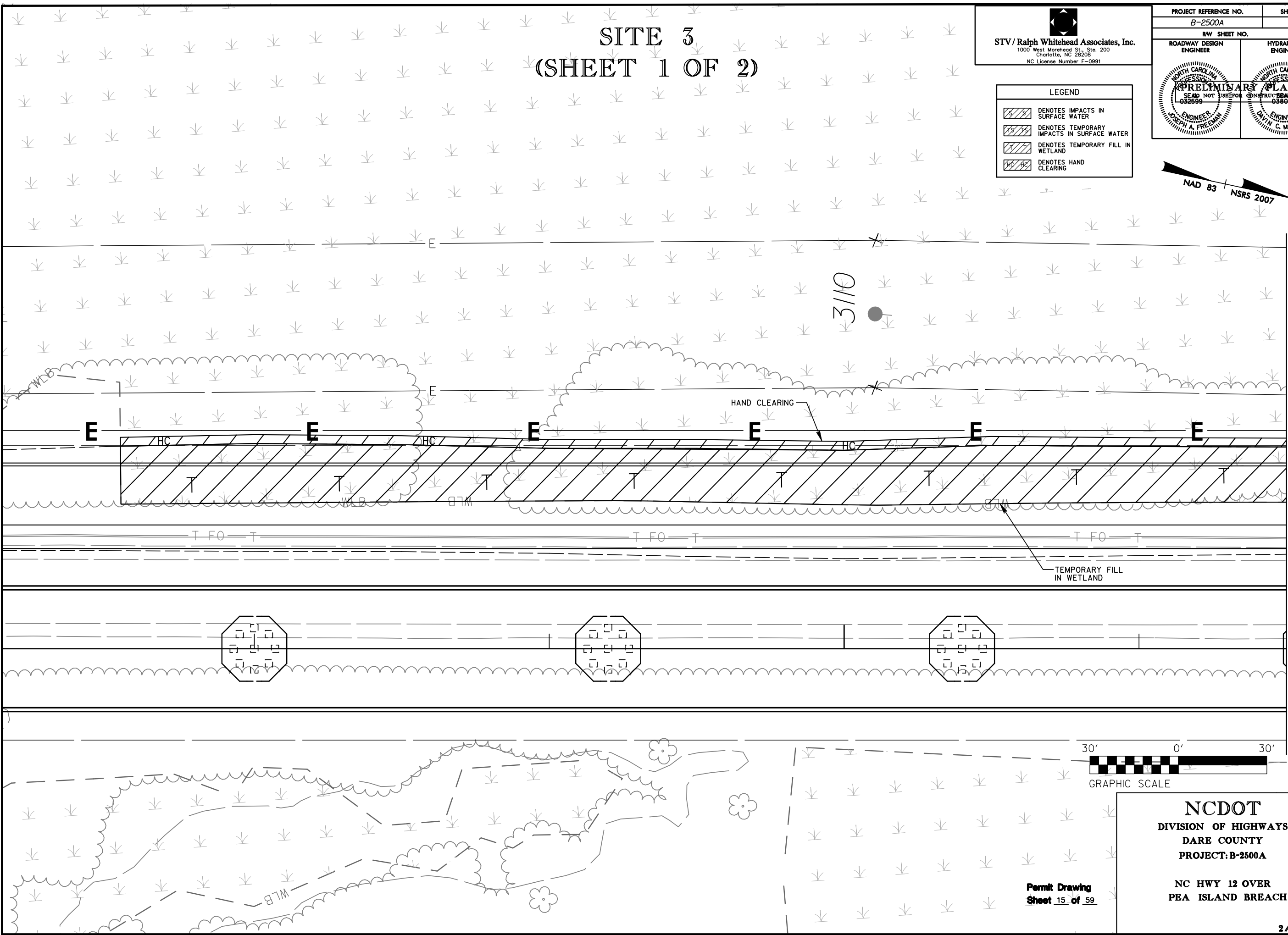
LEGEND

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



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MATCHLINE -L- STA 3111+50 (SHEET 6)



NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

Permit Drawing
Sheet 15 of 59

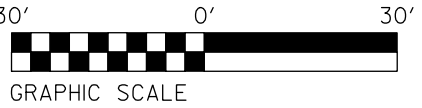
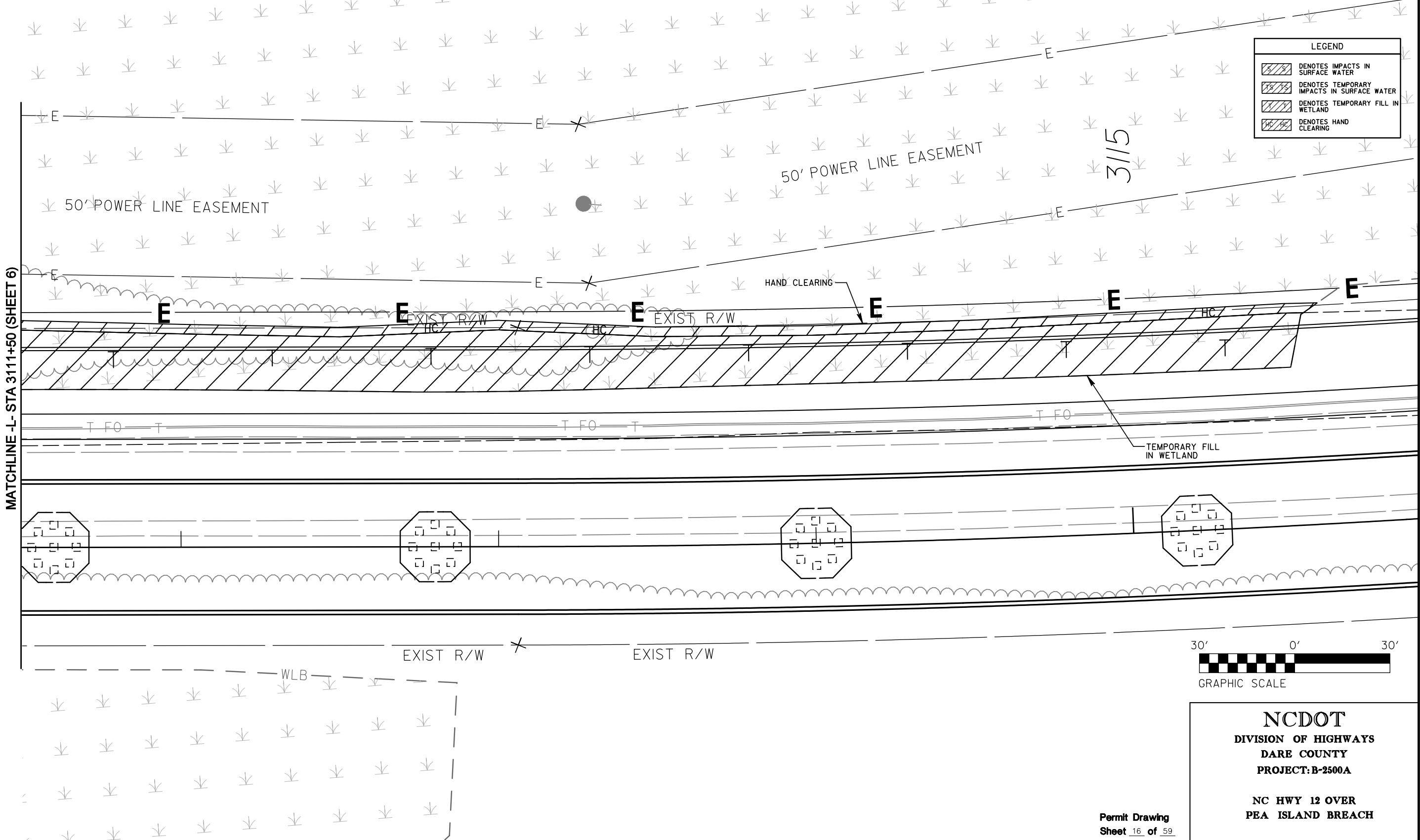
SITE 3
(SHEET 2 OF 2)

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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991



PROJECT REFERENCE NO. B-2500A		SHEET NO. 6	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING



NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

Permit Drawing
Sheet 16 of 59

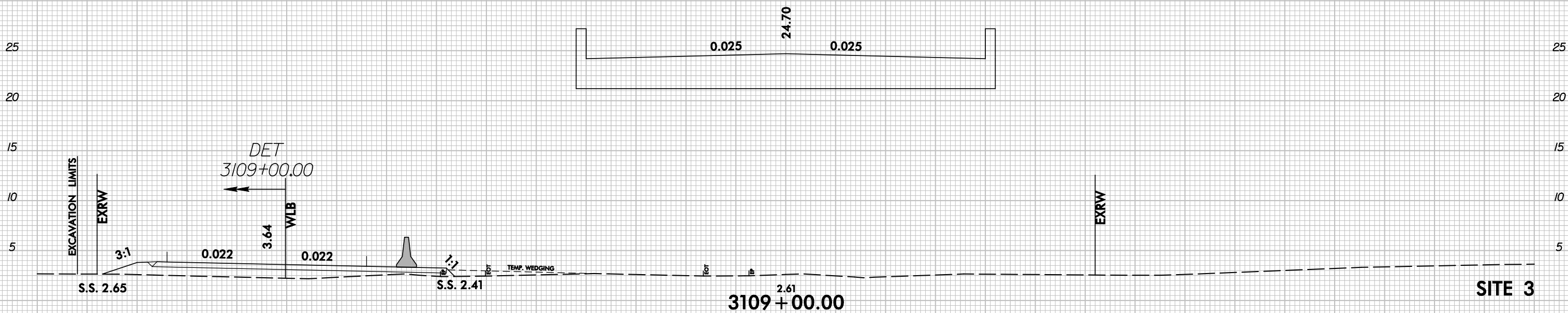
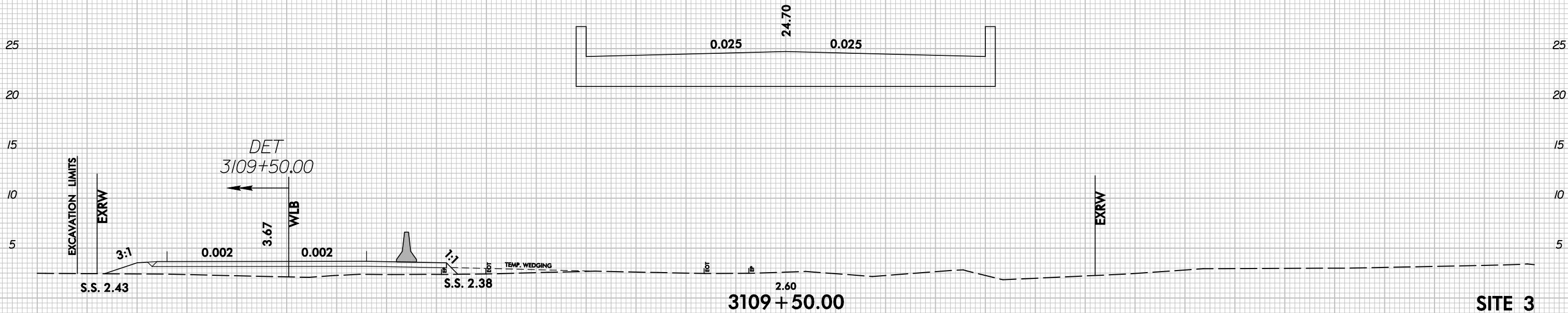
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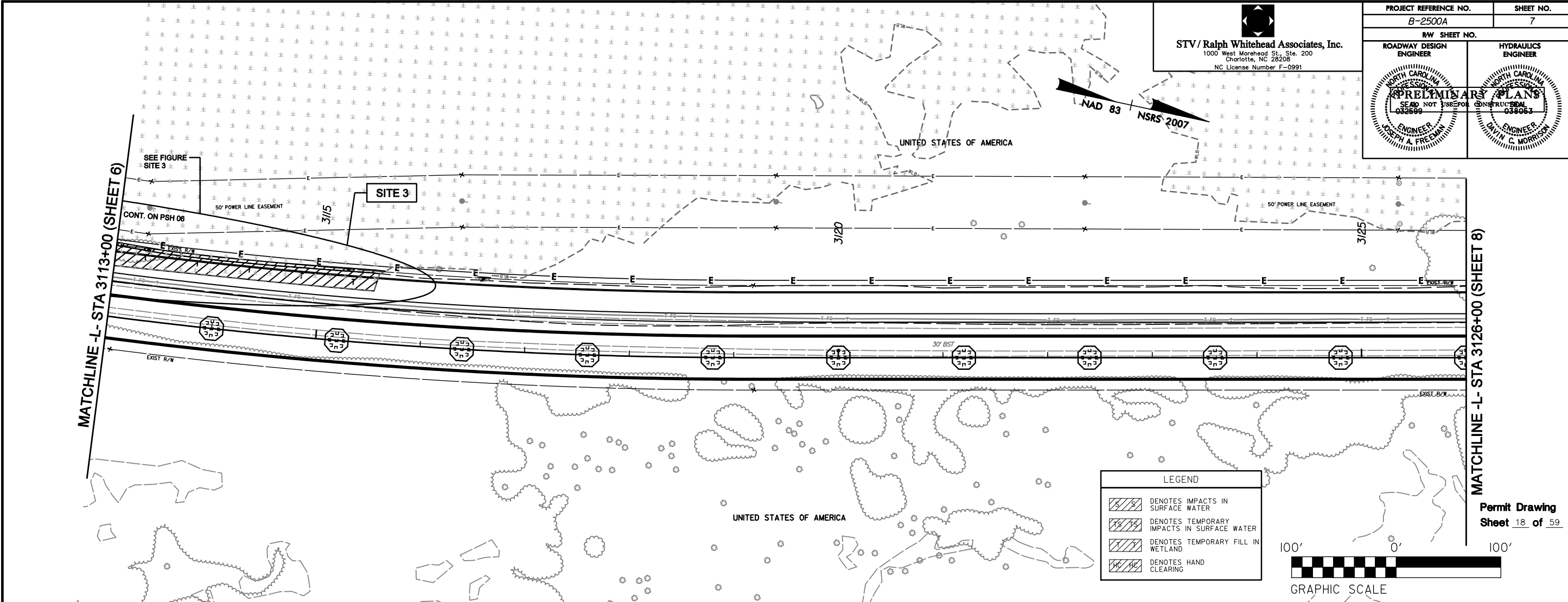
Permit Drawing
Sheet 17 of 59



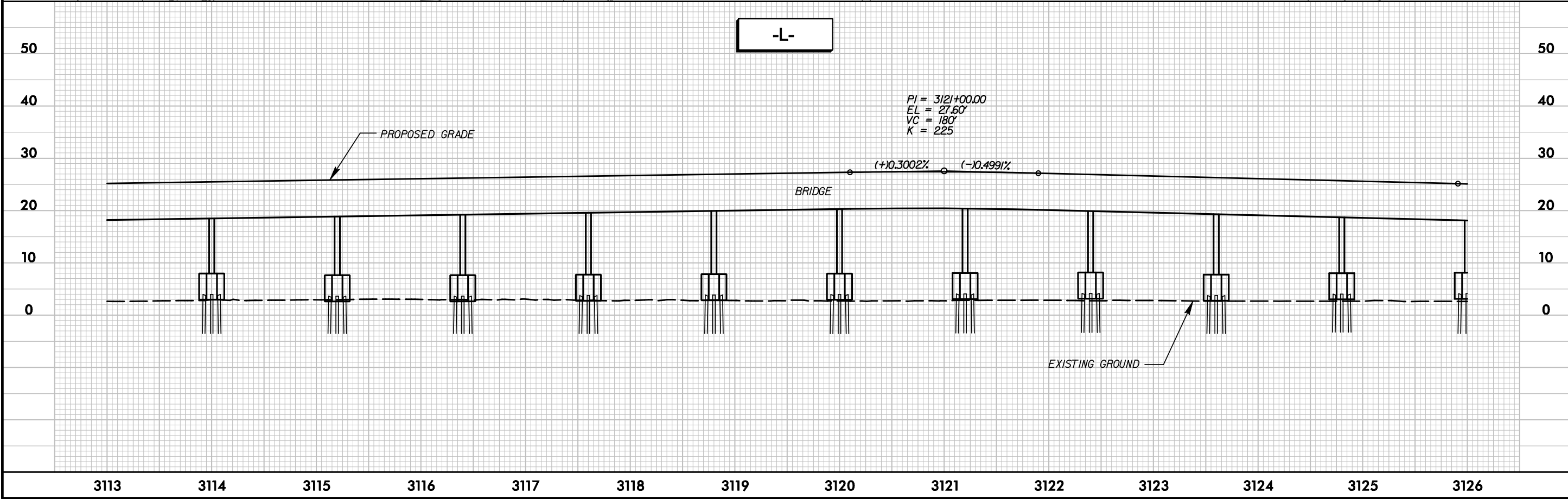
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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 7	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NO. 032699 JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL SEAL NO. 038063 DAVID C. MORRISON	



Permit Drawing
Sheet 18 of 59

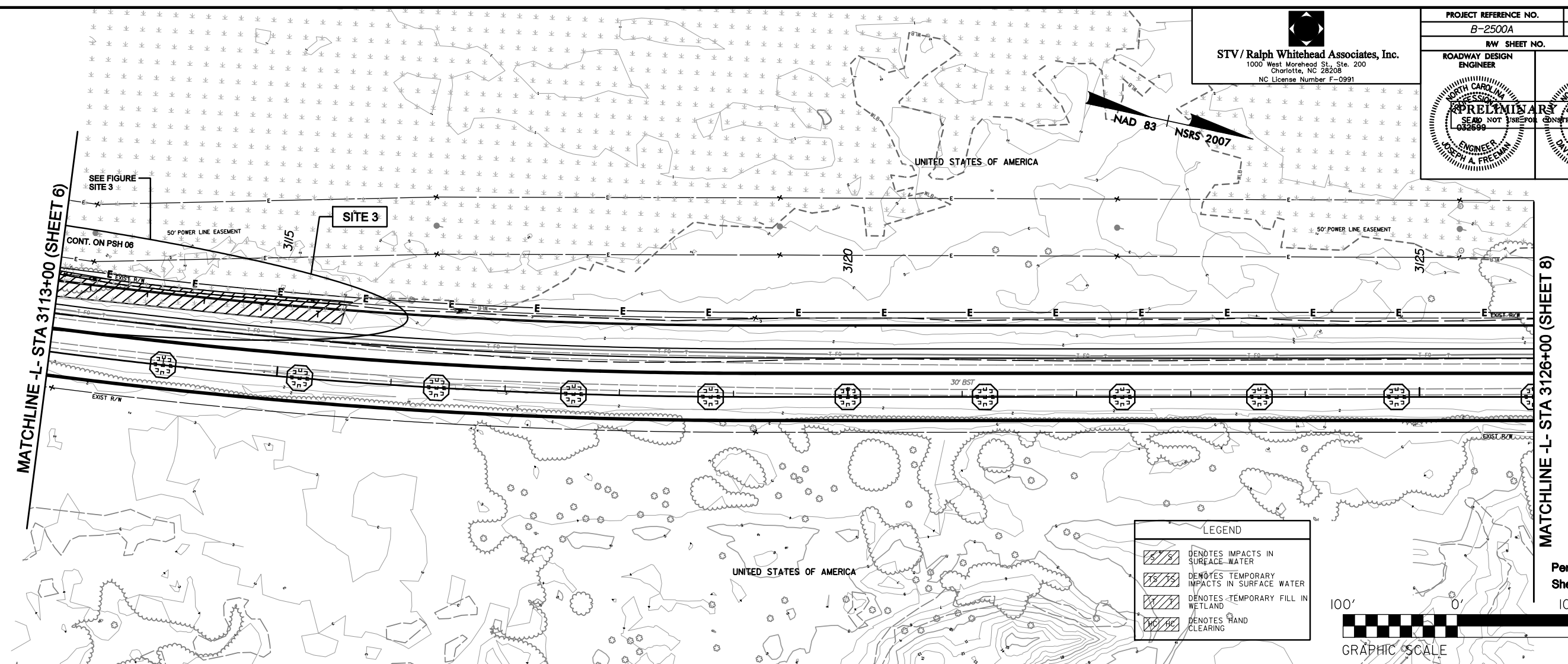


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2/11/2013

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 7
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 032699	
ENGINEER JOSEPH A. FREEMAN		ENGINEER DAVID C. MORRISON

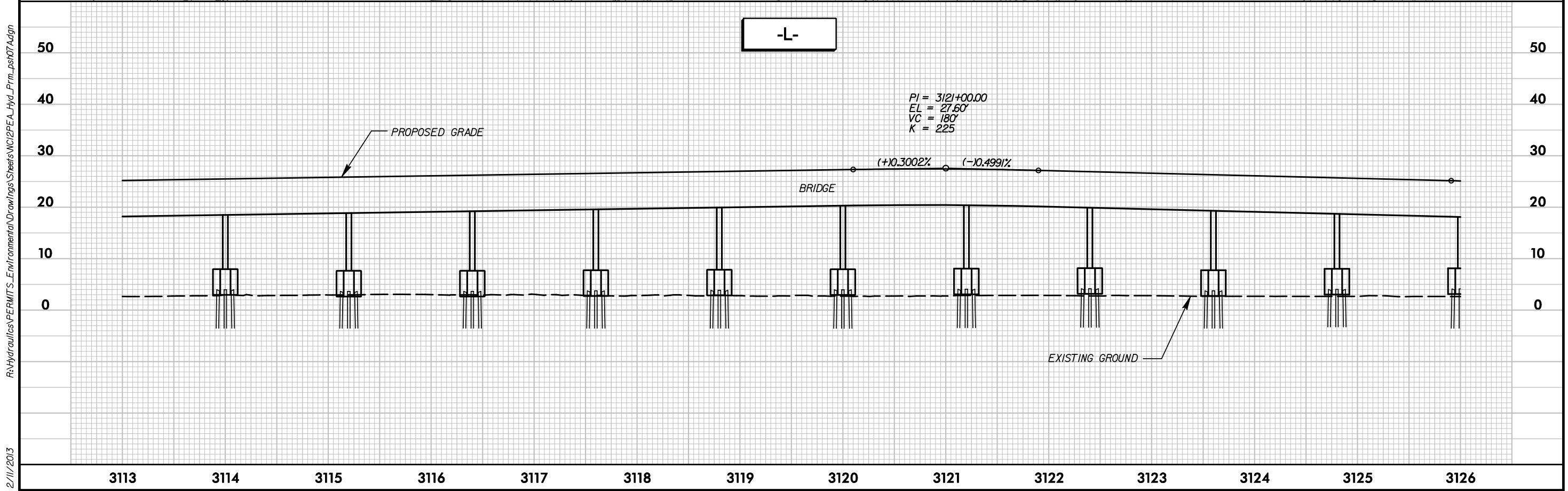


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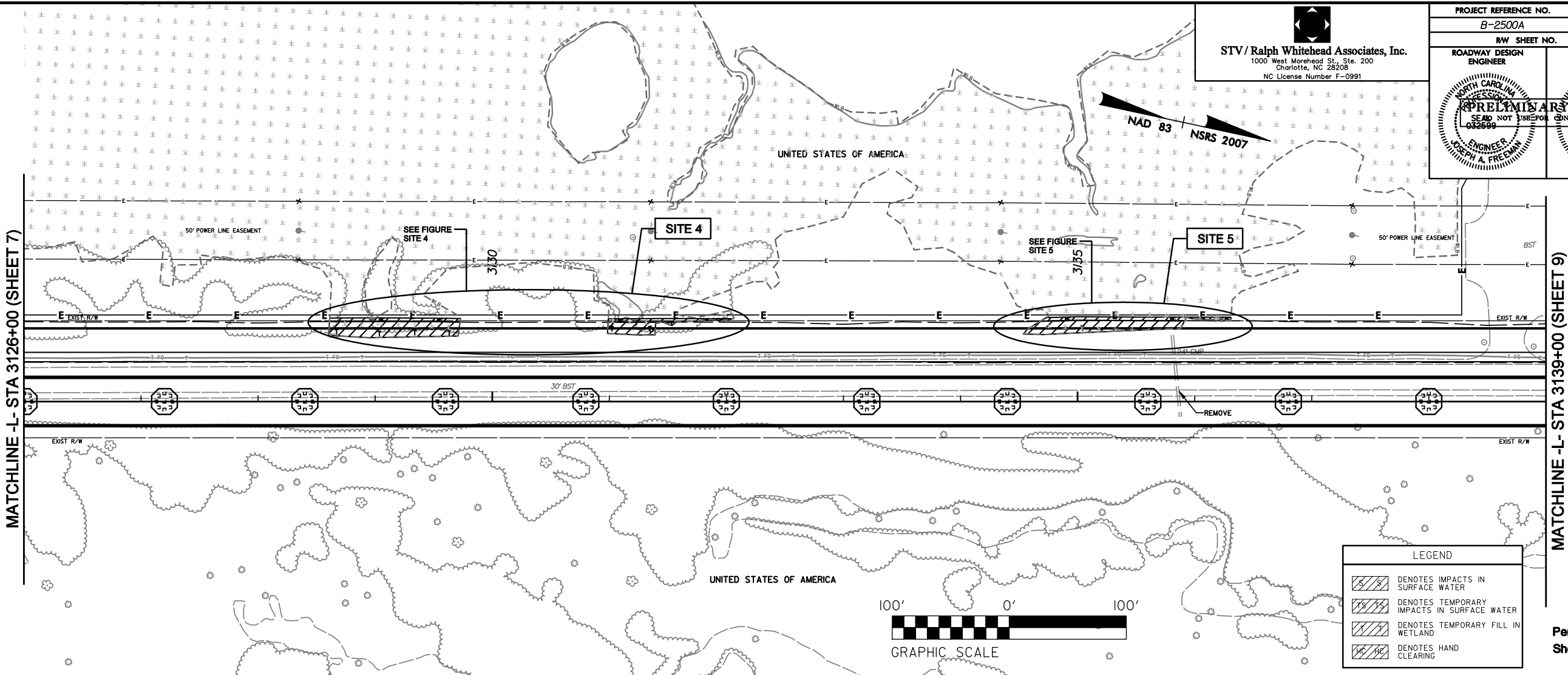
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES HAND CLEARING



Permit Drawing
Sheet 19 of 59



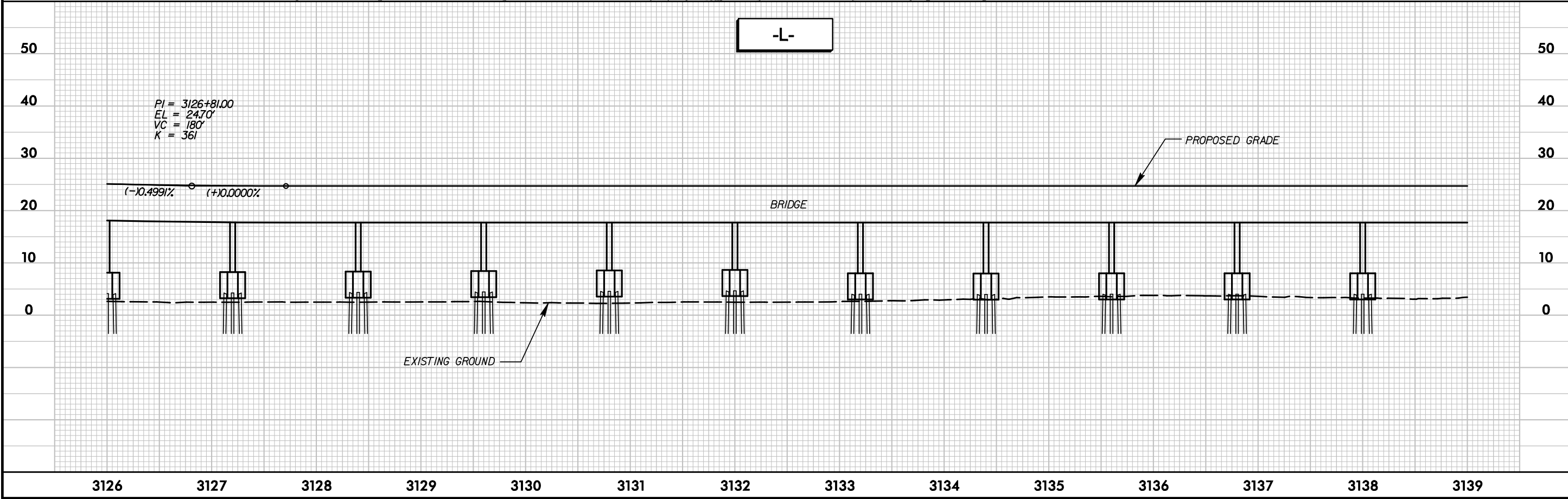
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2/11/2013



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PROJECT REFERENCE NO. B-2500A		SHEET NO. 8
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL NO. 31567 032699 JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL ENGINEER SEAL NO. 31567 032699 DAVID C. MORRISON

Permit Drawing
Sheet 20 of 59

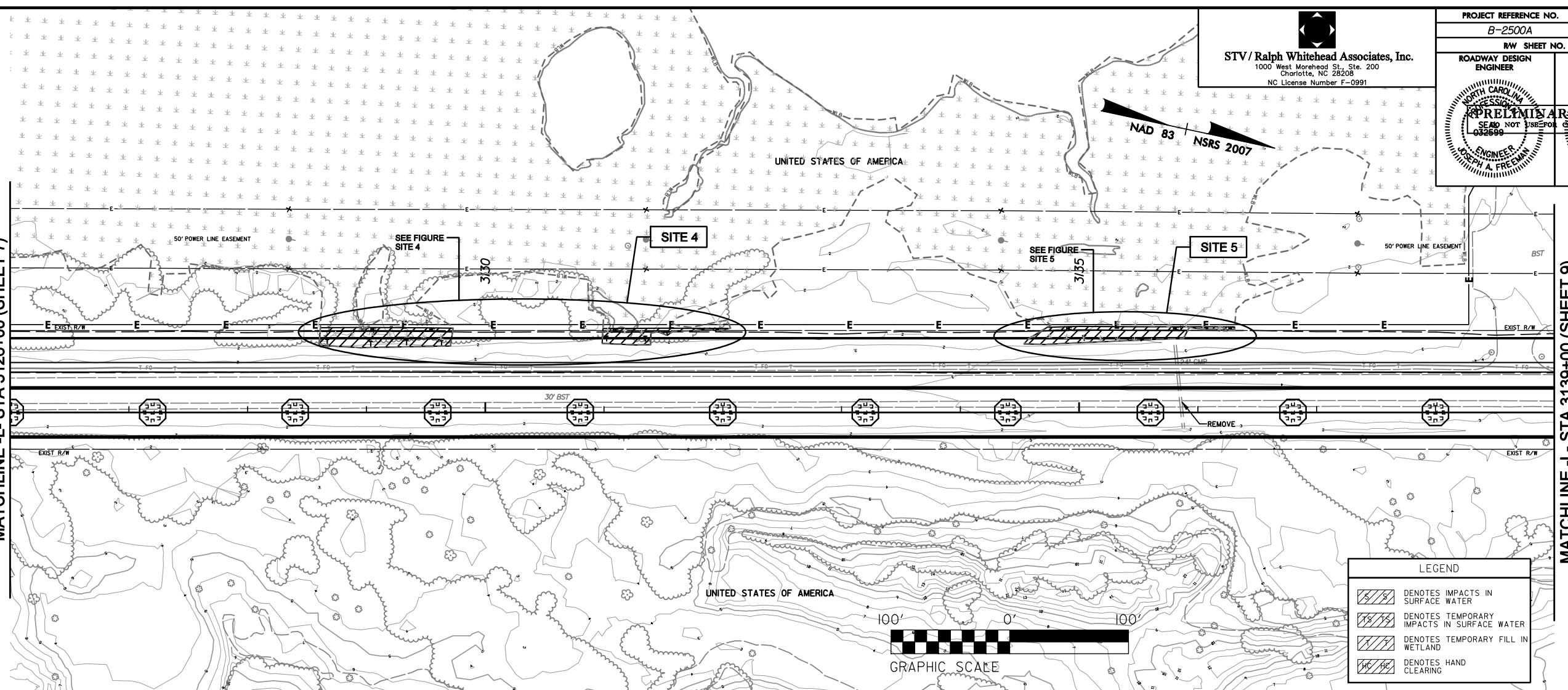


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2/11/2013

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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 8
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL ENGINEER JOSEPH A. FREEMAN 032699		NORTH CAROLINA PROFESSIONAL ENGINEER DAVID C. MORRISON 038063

MATCHLINE -L- STA 3126+00 (SHEET 7)

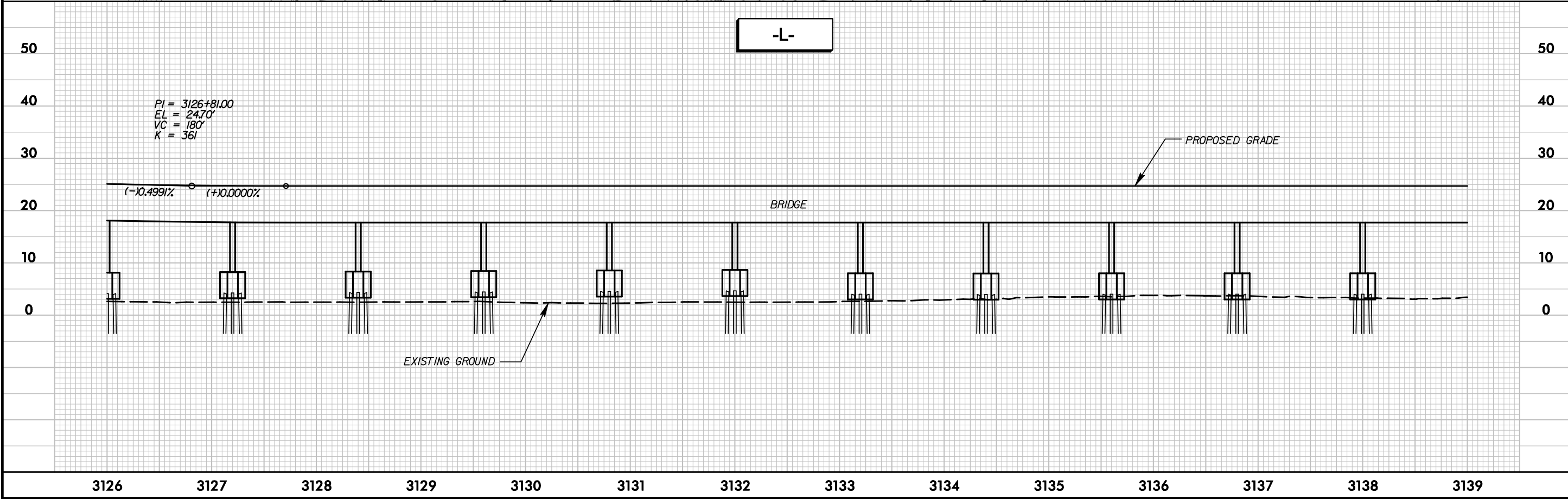


MATCHLINE -L- STA 3139+00 (SHEET 9)

LEGEND

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

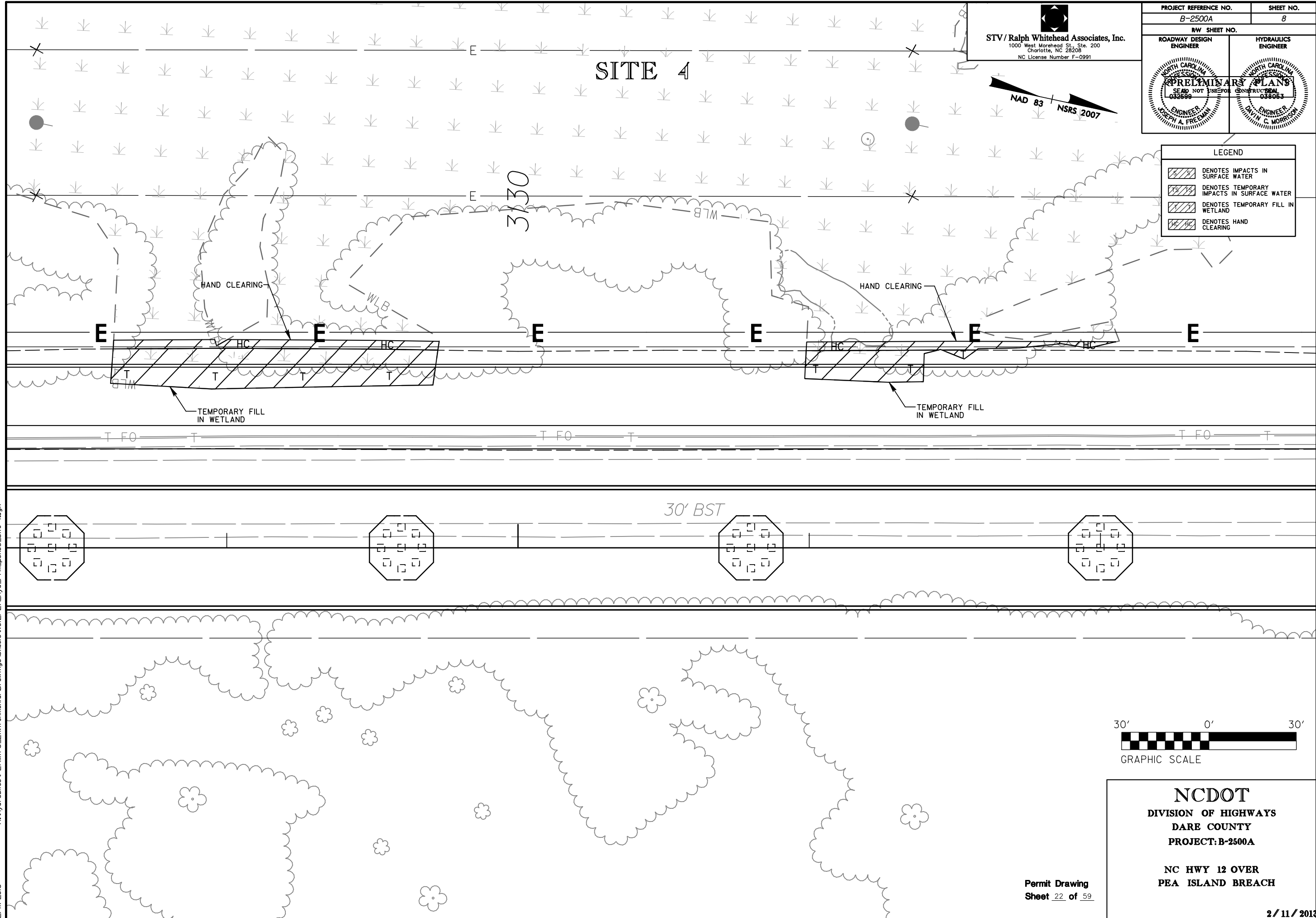
Permit Drawing
Sheet 21 of 59



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2/11/2013

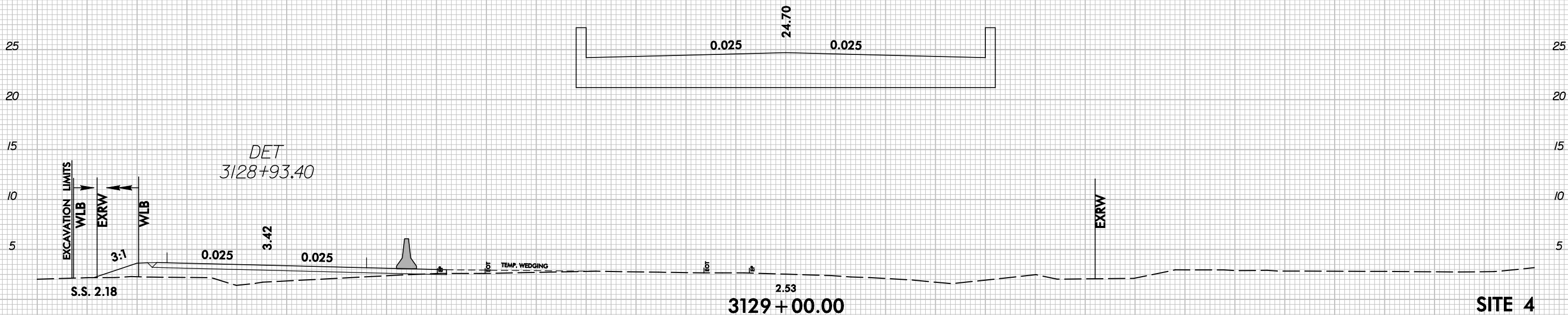
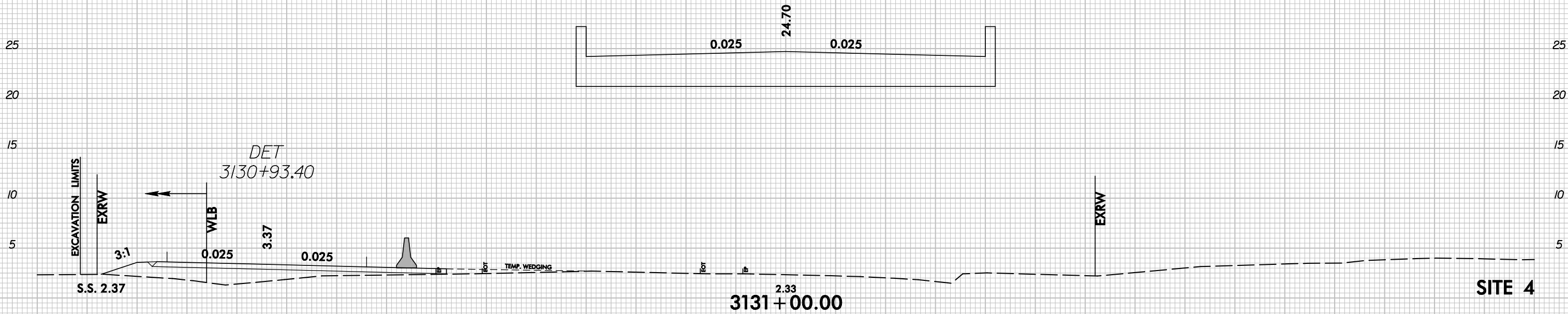
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2/11/2013



8/23/99

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Permit Drawing
Sheet 23 of 59

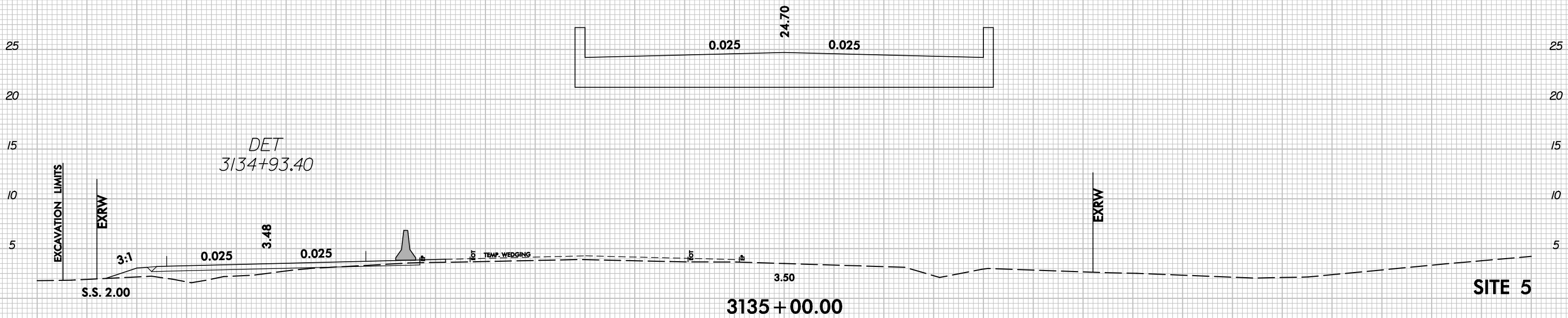
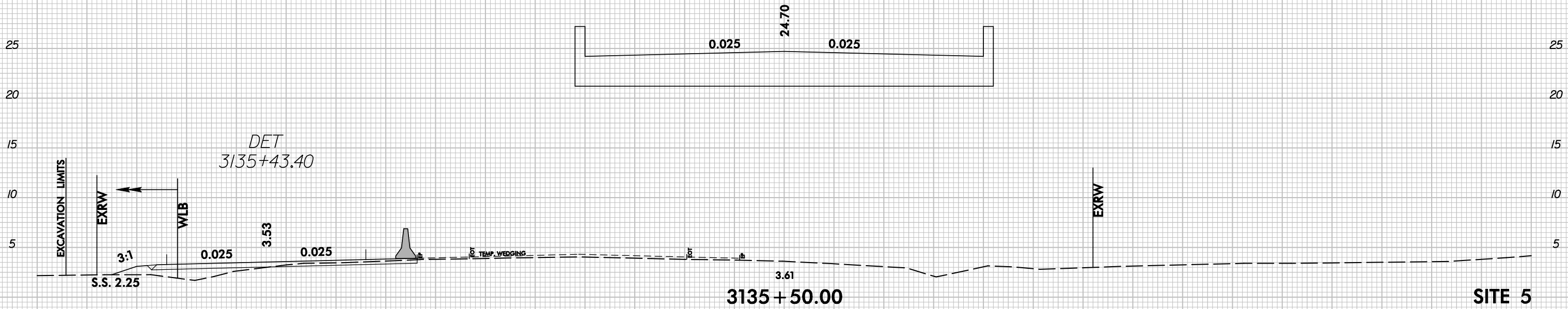


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8/23/99

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Permit Drawing
Sheet 25 of 59

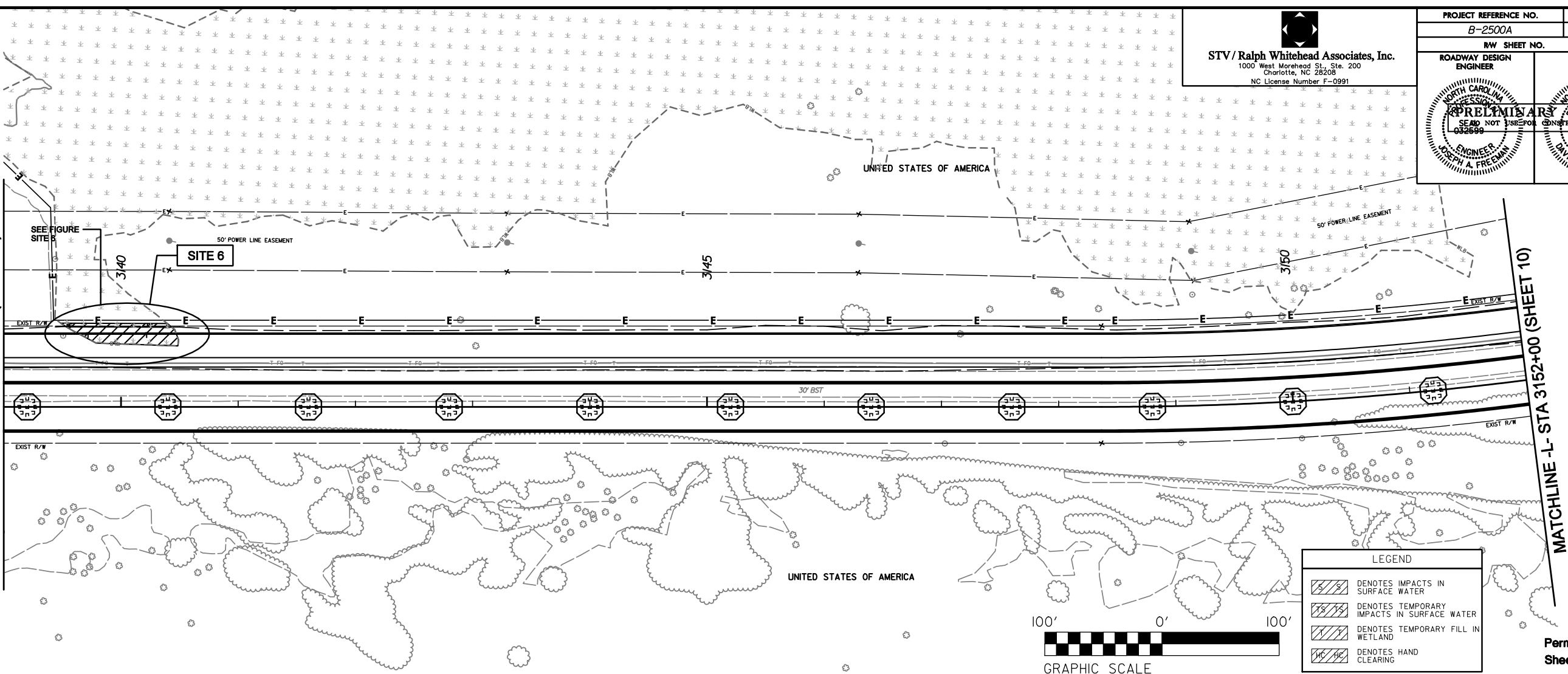


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Charlotte, NC 28208
NC License Number F-0991

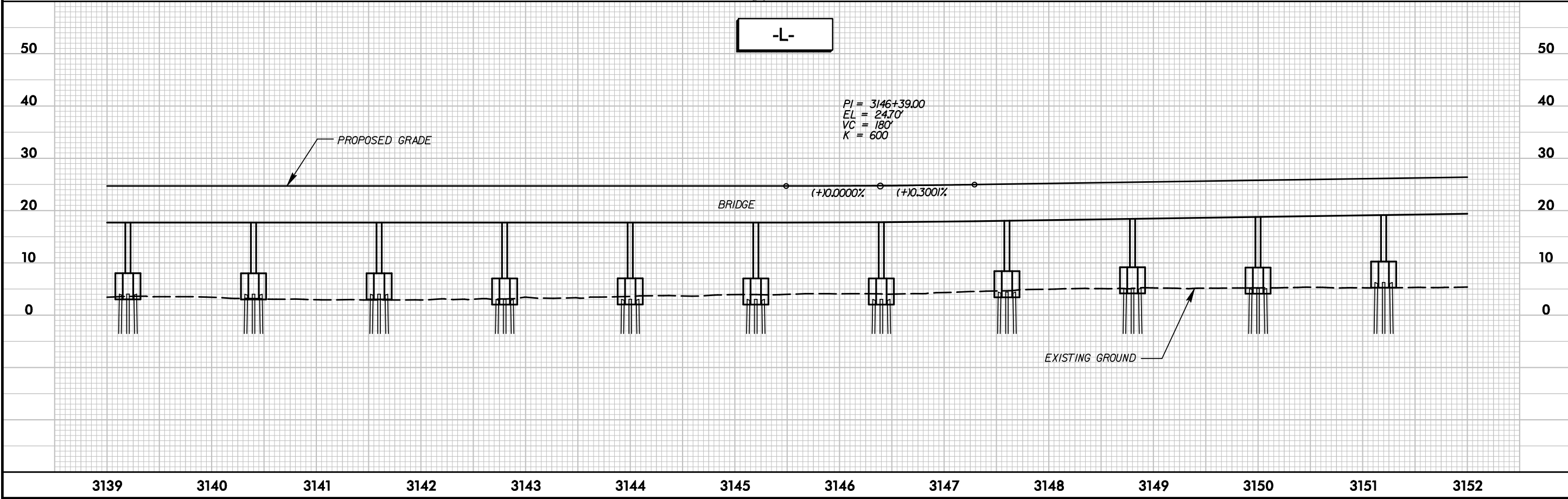
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RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 032699		NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 038063	
ENGINEER JOSEPH A. FREEMAN		ENGINEER DAVID C. MORRISON	

MATCHLINE -L- STA 3139+00 (SHEET 8)

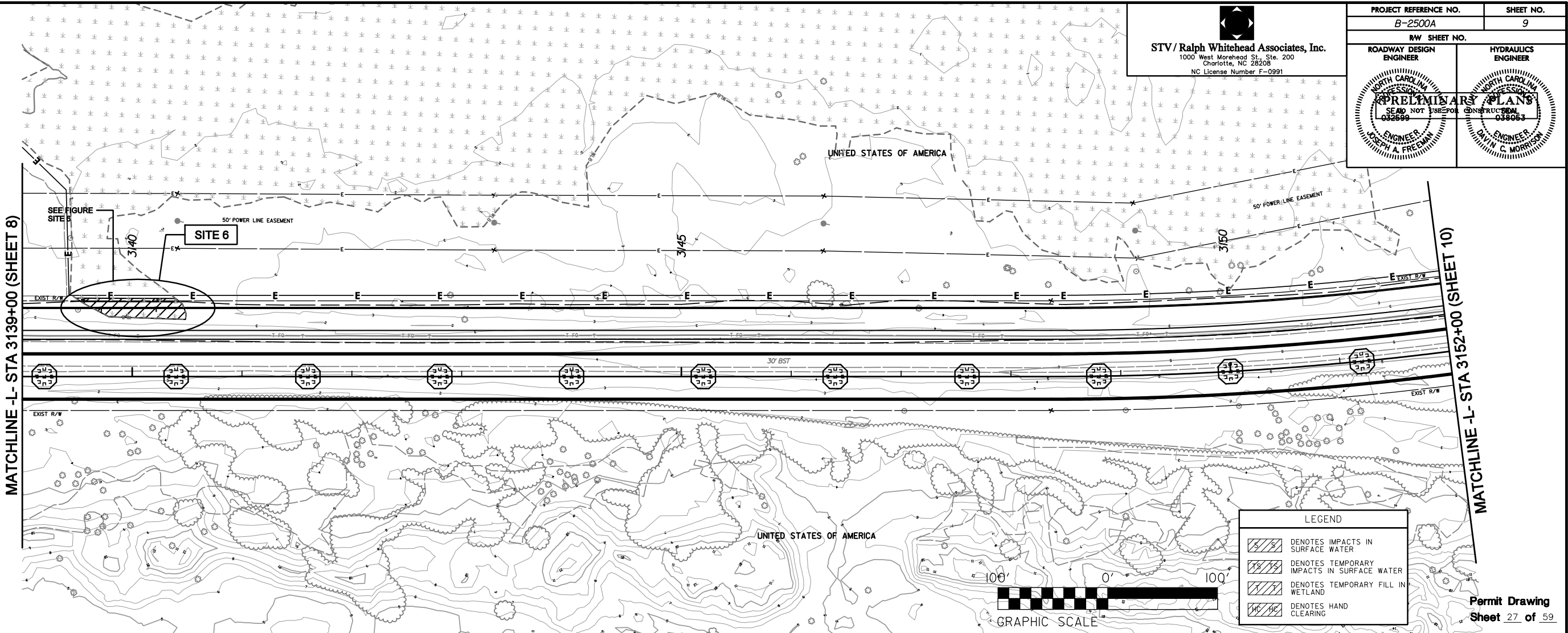


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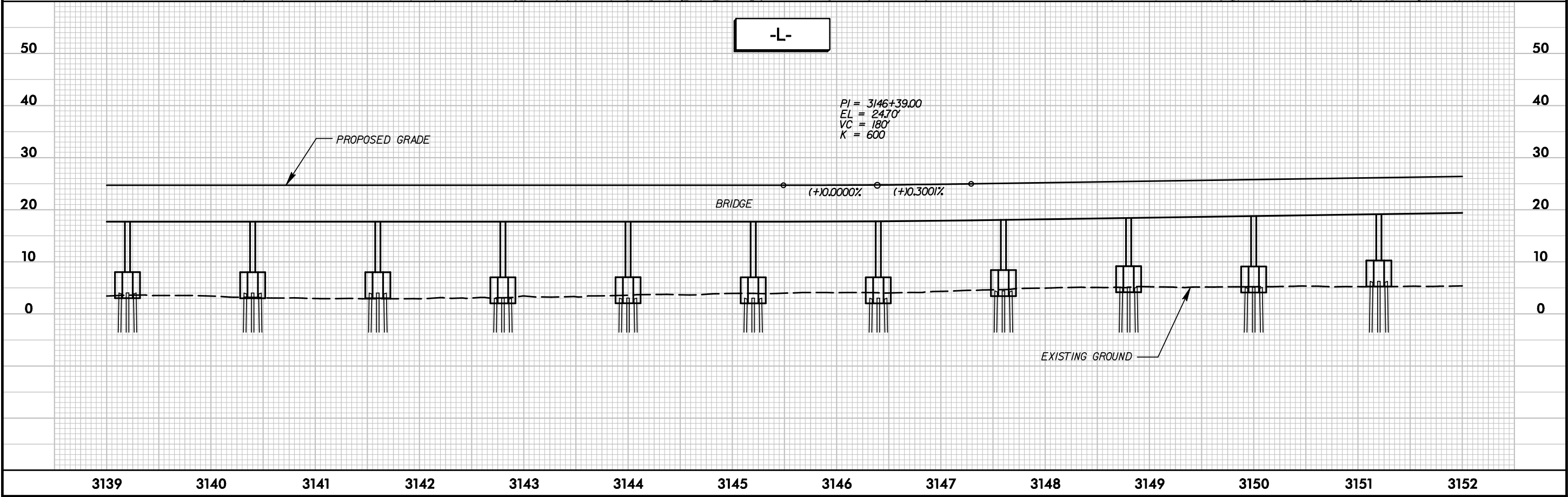
Permit Drawing
Sheet 26 of 59



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2/11/2013



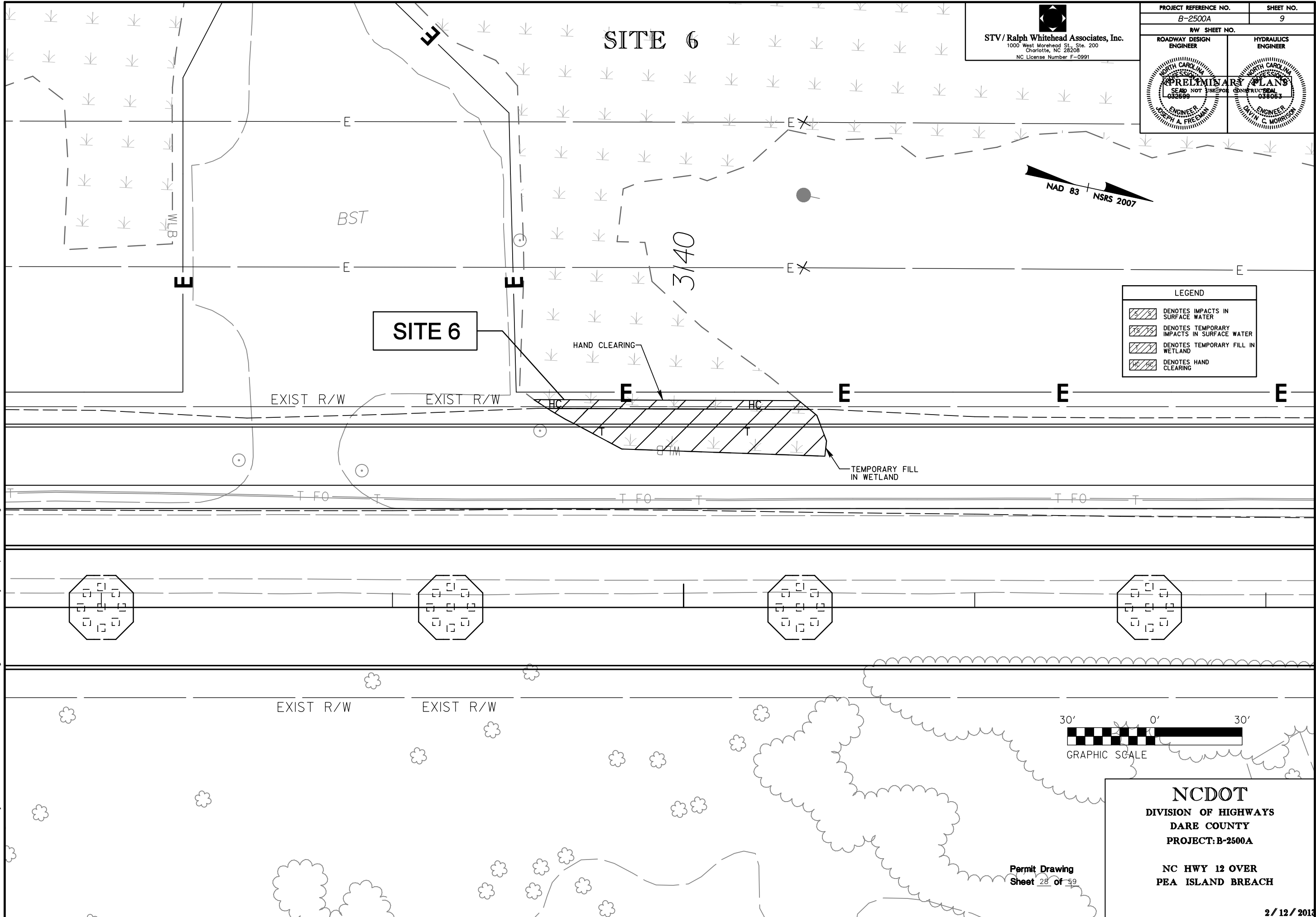
Permit Drawing
Sheet 27 of 59



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2/11/2013

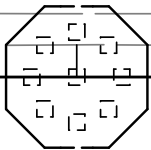
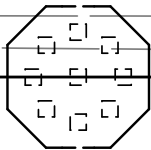
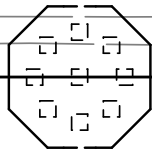
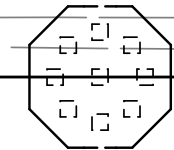
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2/12/2013



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NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
B-2500A		9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

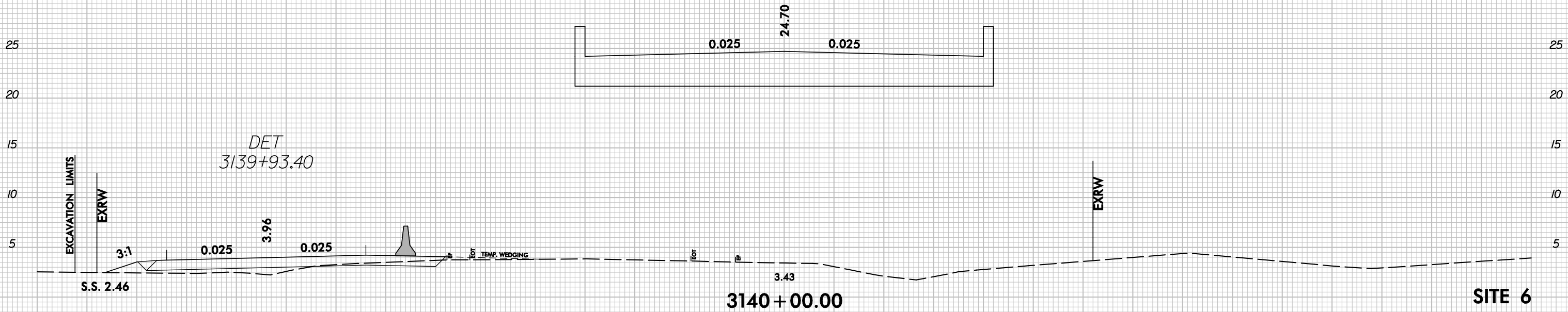
LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING



8/23/99

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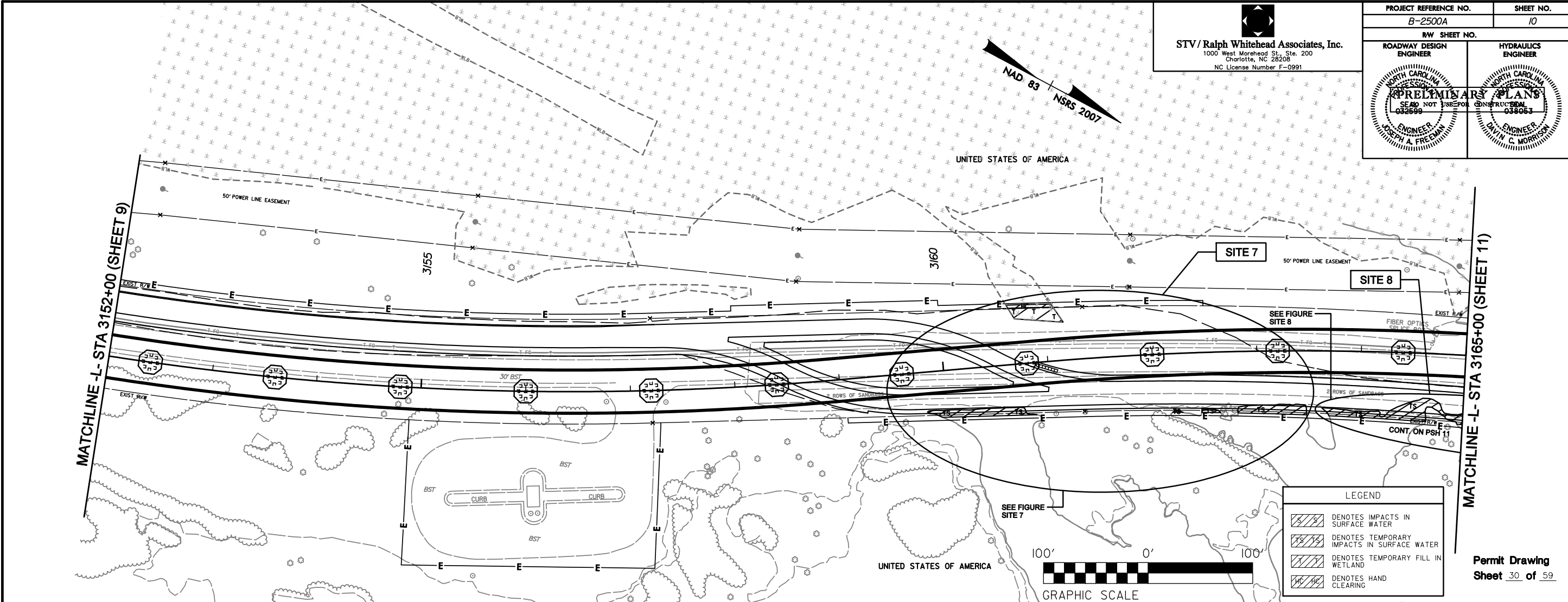
Permit Drawing
Sheet 29 of 59



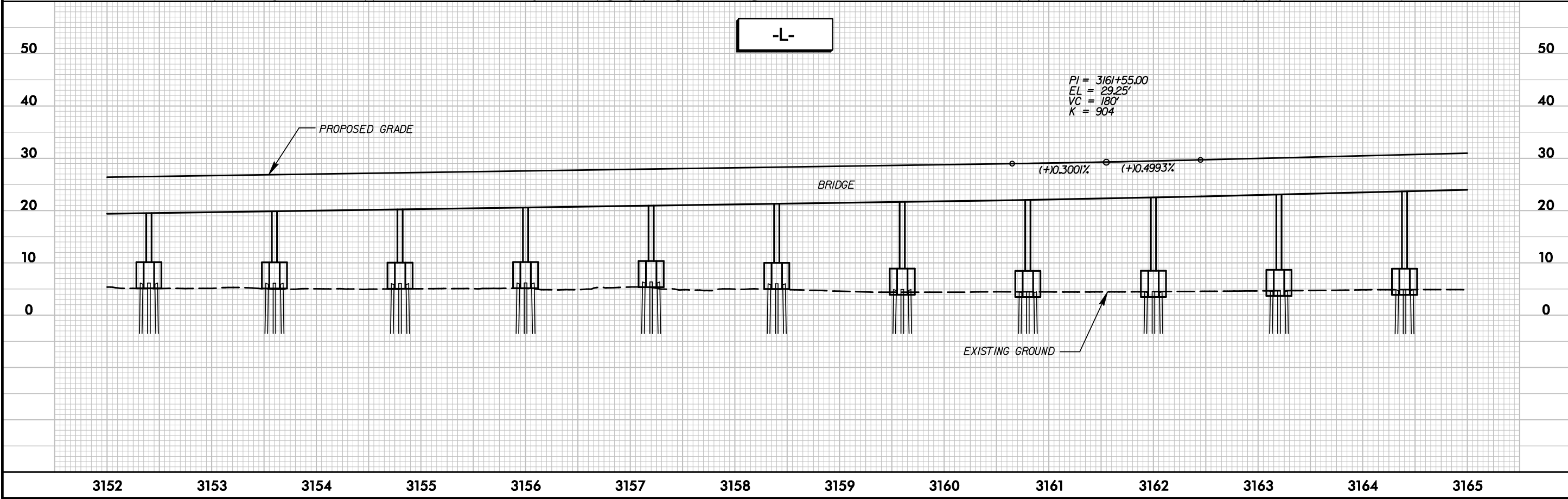
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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 10	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON	



Permit Drawing
Sheet 30 of 59

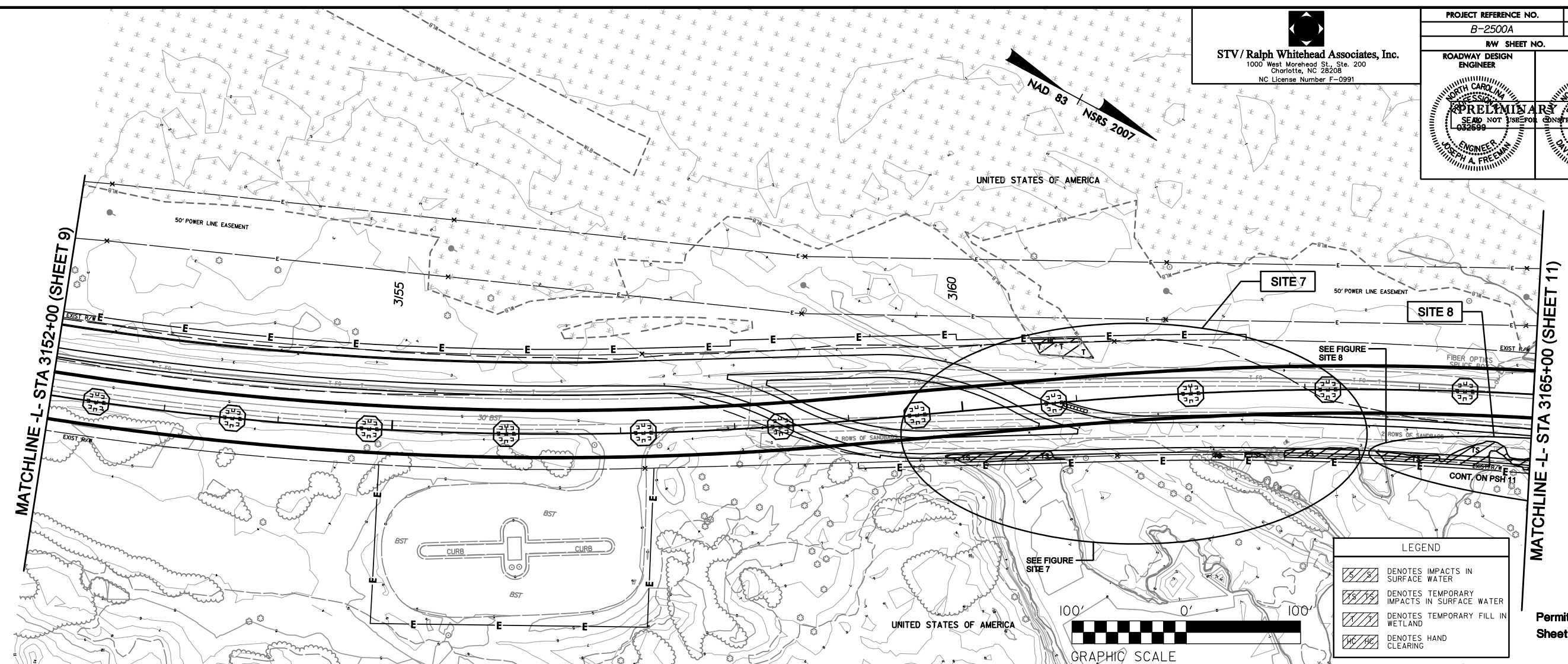


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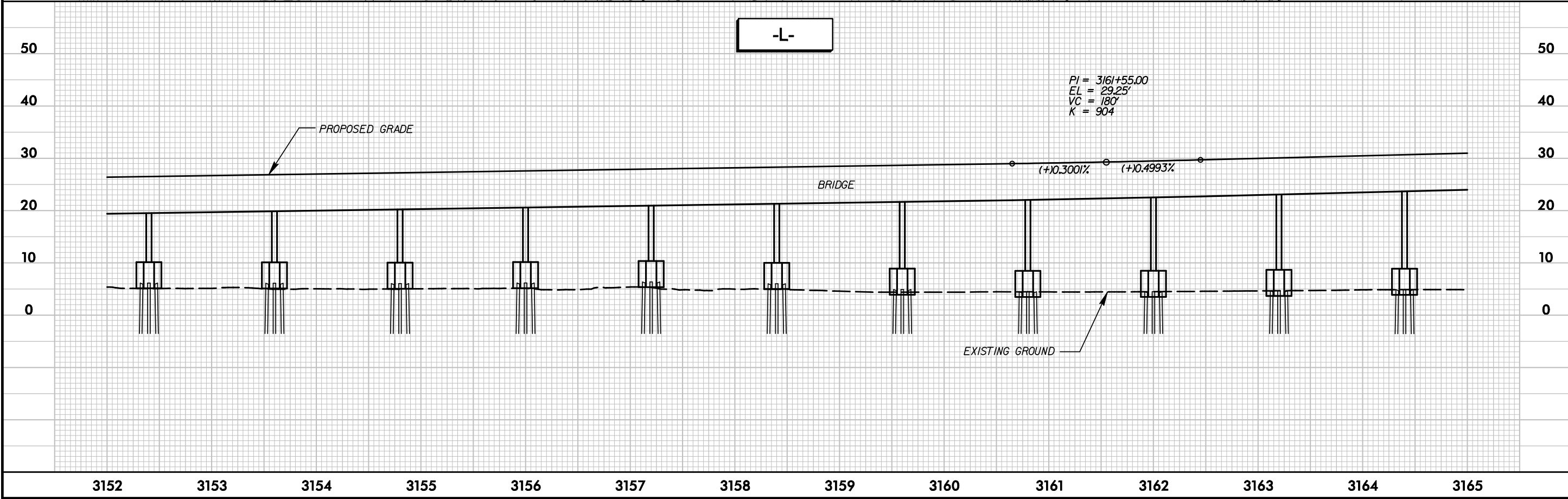
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 10	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON	



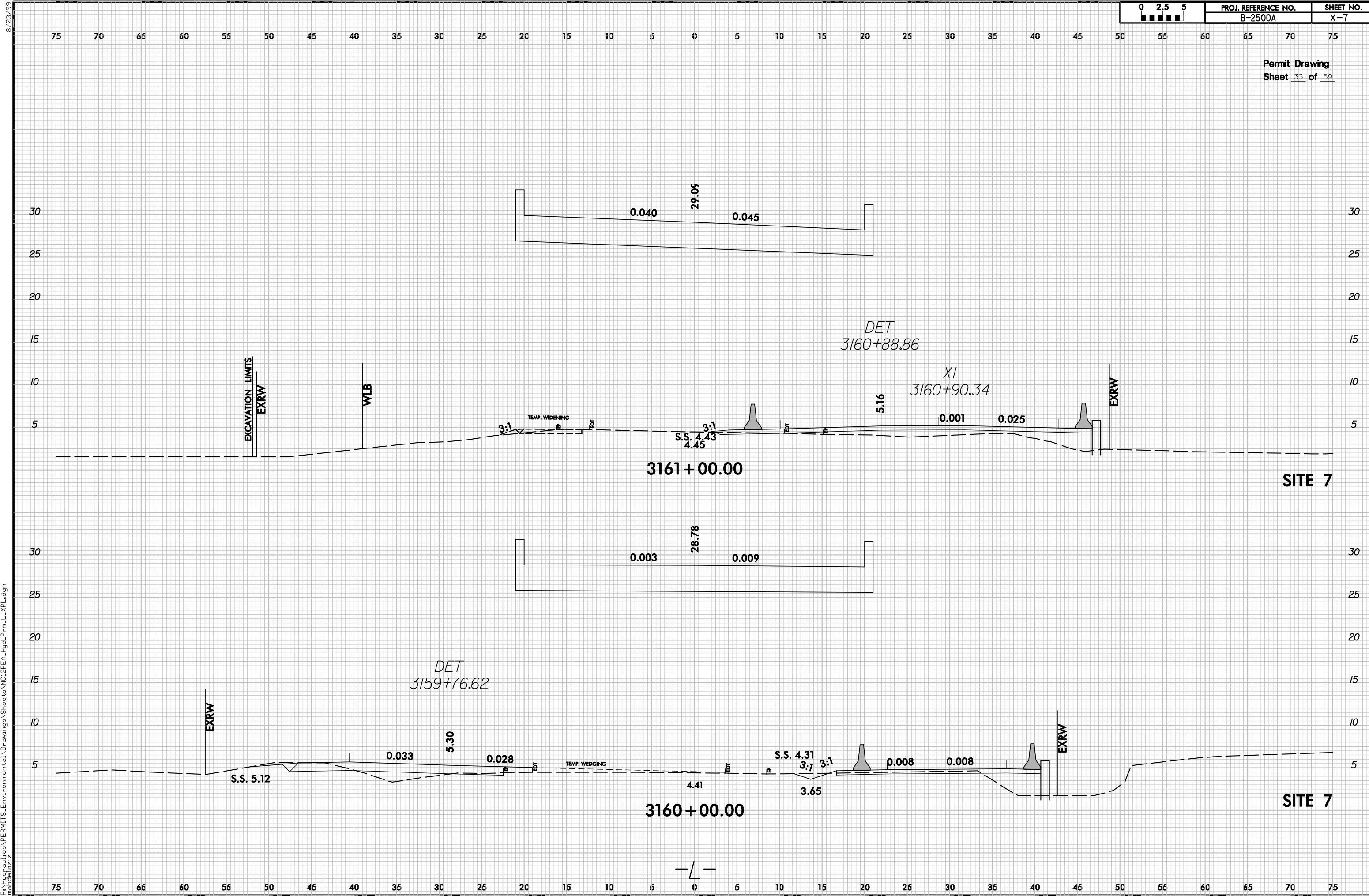
Permit Drawing
Sheet 31 of 59

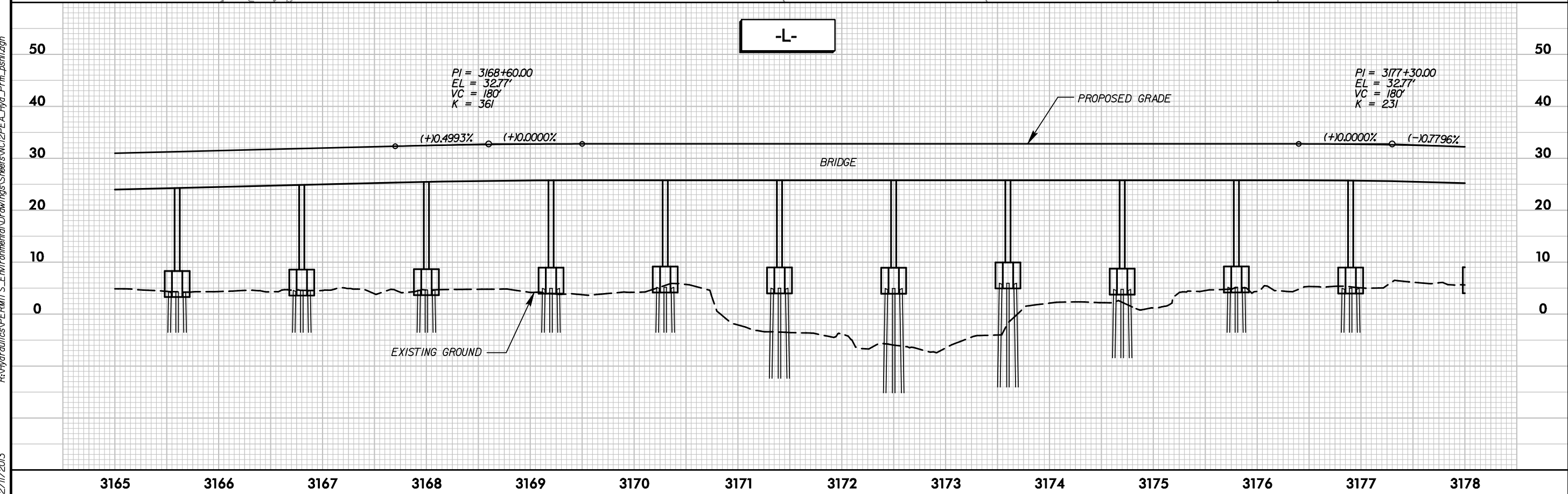
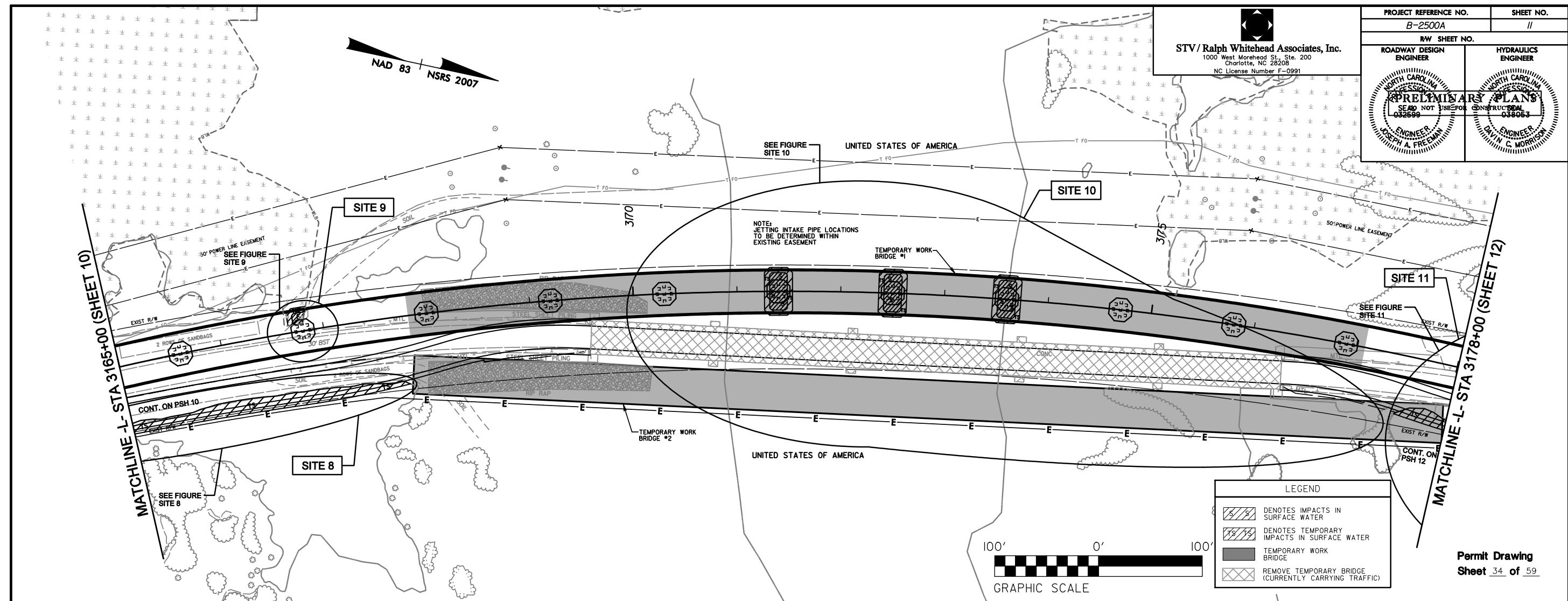
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2/11/2013

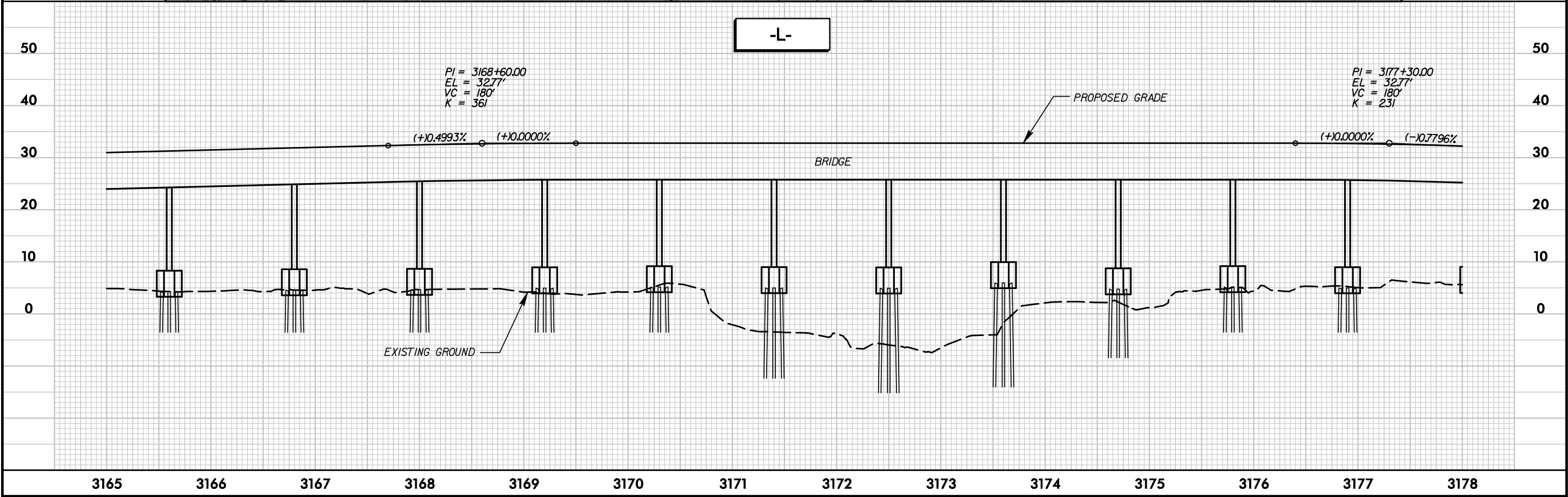
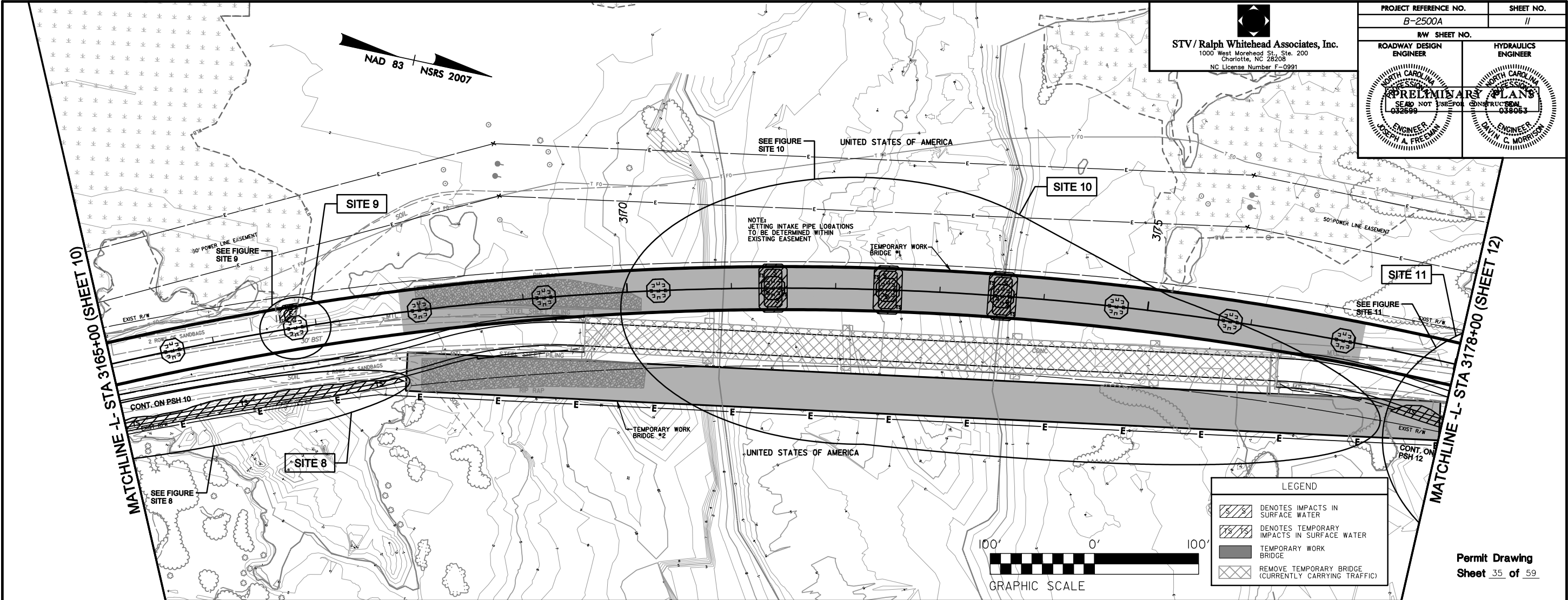


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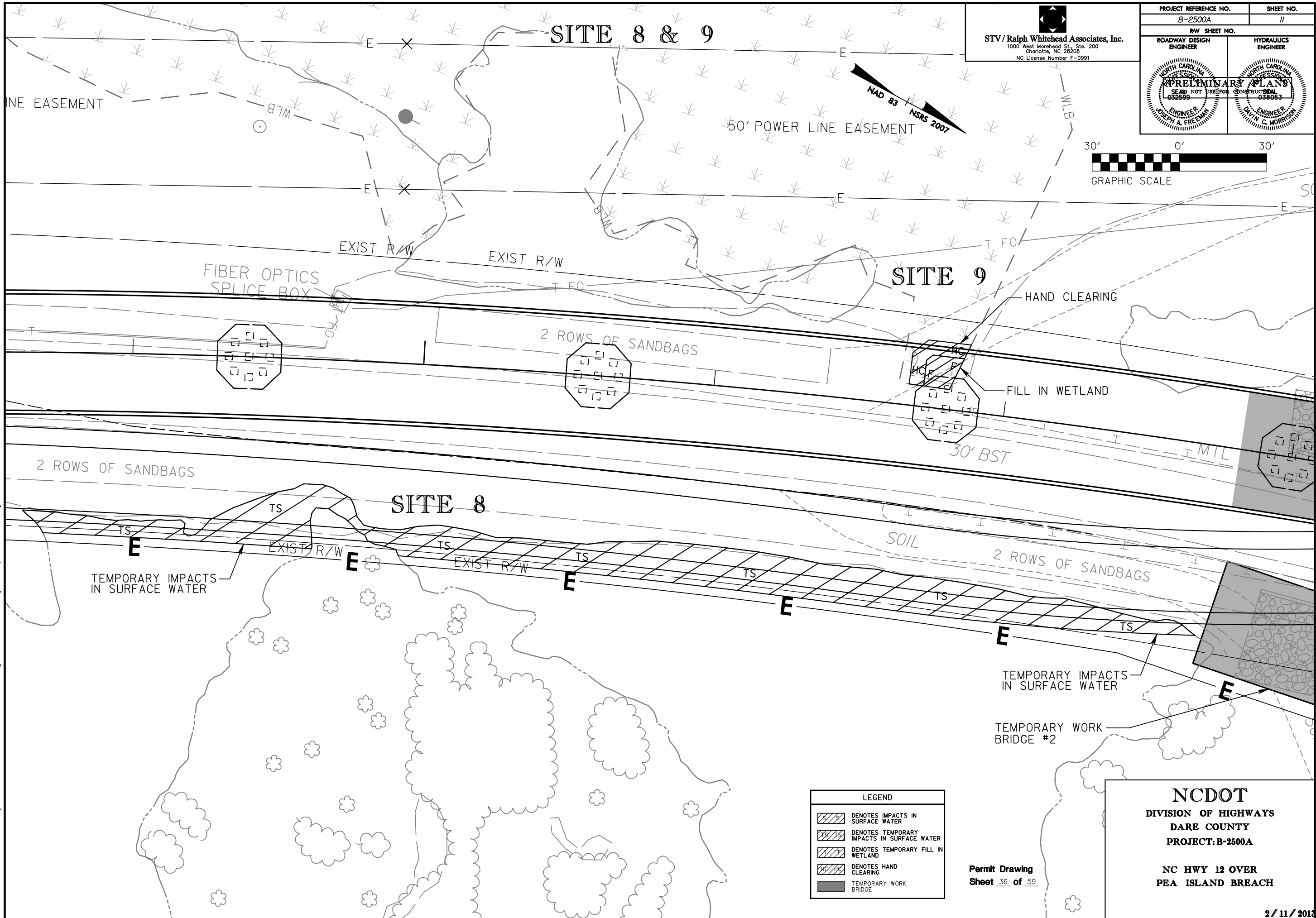
Permit Drawing
Sheet 33 of 59







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2/11/2013

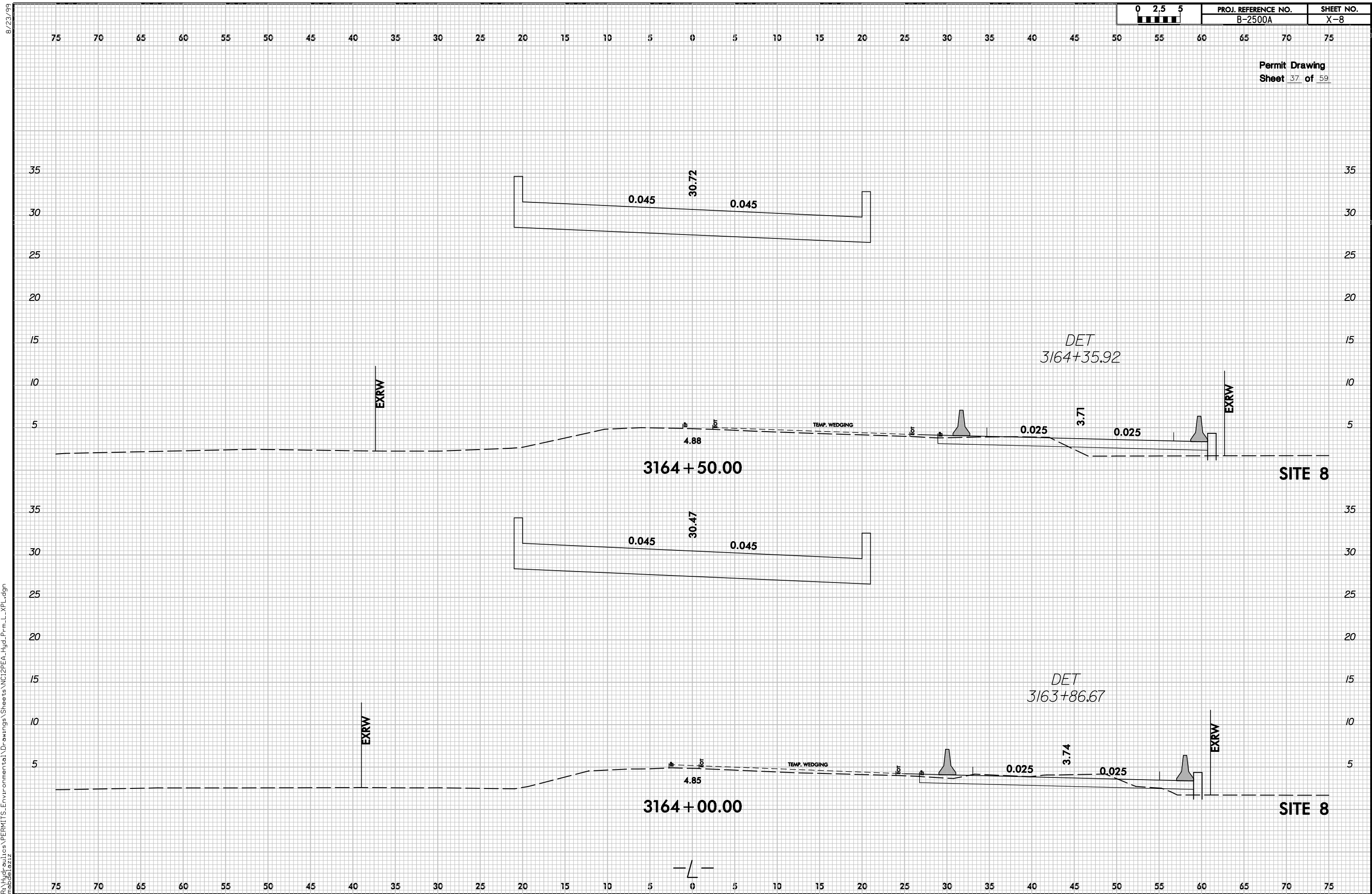


LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING
	TEMPORARY WORK BRIDGE

Permit Drawing
Sheet 36 of 59

NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

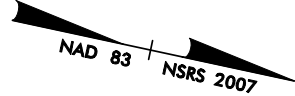
NC HWY 12 OVER
PEA ISLAND BREACH



SITE 10

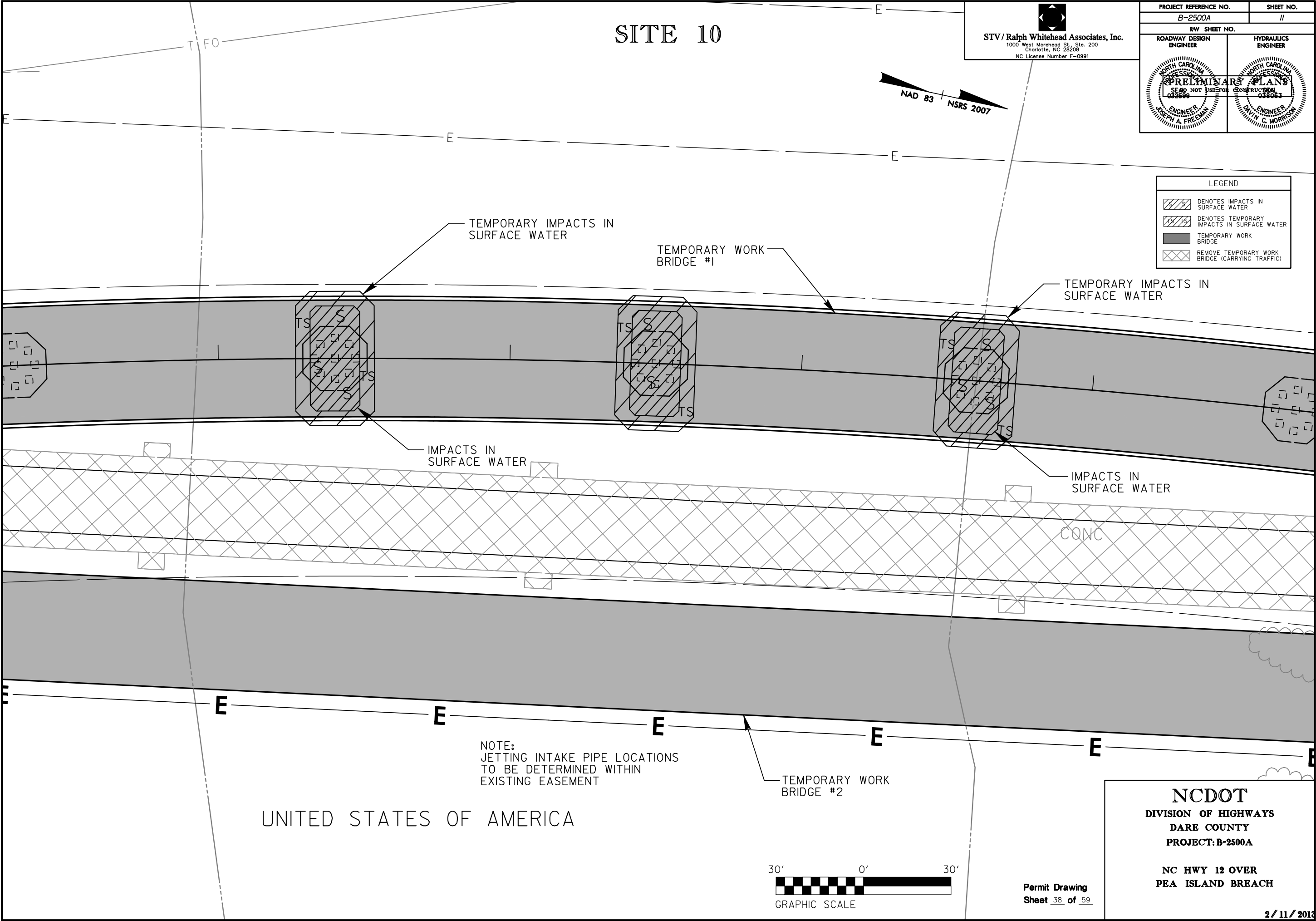
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. II	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

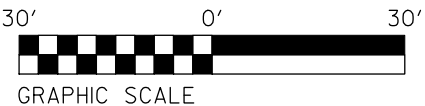


LEGEND

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- TEMPORARY WORK BRIDGE
- REMOVE TEMPORARY WORK BRIDGE (CARRYING TRAFFIC)



NOTE:
JETTING INTAKE PIPE LOCATIONS
TO BE DETERMINED WITHIN
EXISTING EASEMENT



NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

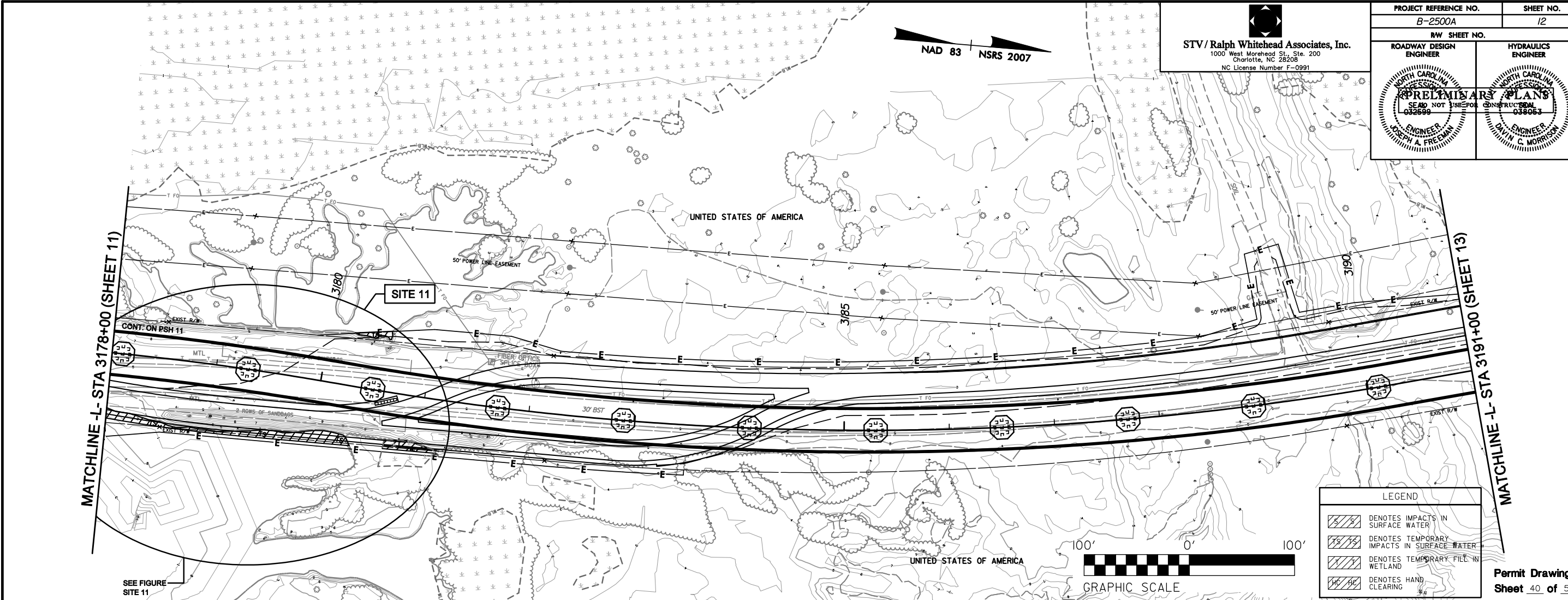
NC HWY 12 OVER
PEA ISLAND BREACH

Permit Drawing
Sheet 38 of 59

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2/11/2013

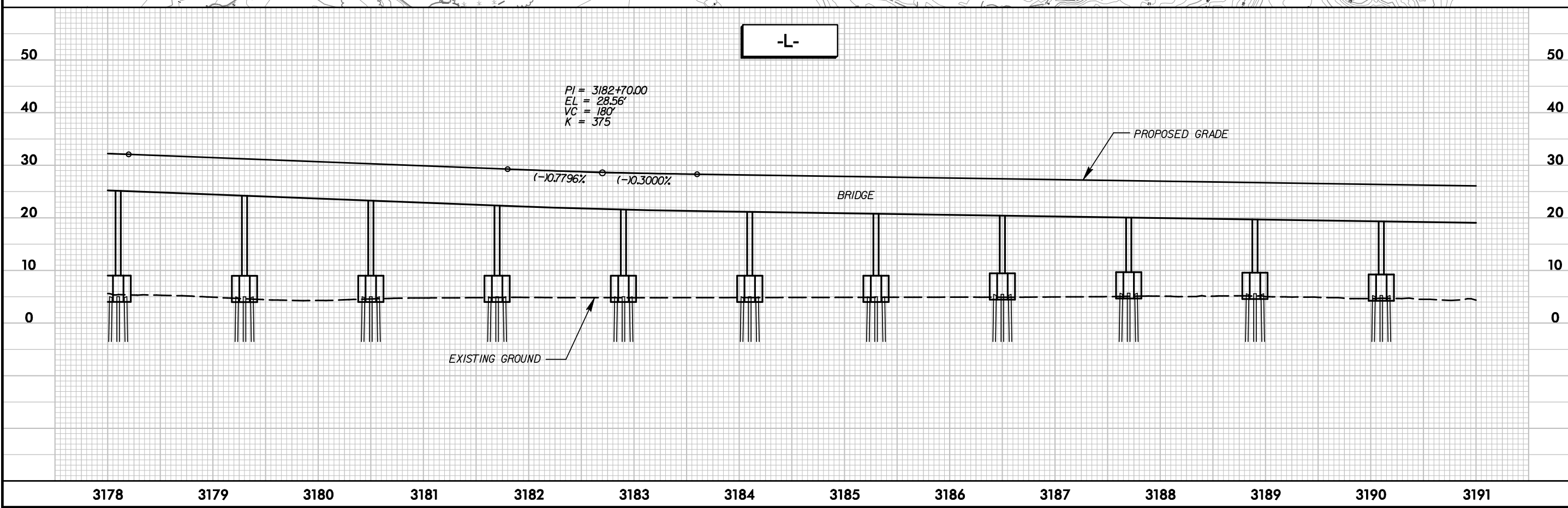
MATCHLINE L- STA 3178+00 (SHEET 11)

MATCHLINE L- STA 3191+00 (SHEET 13)



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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 12	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON	



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2/11/2013

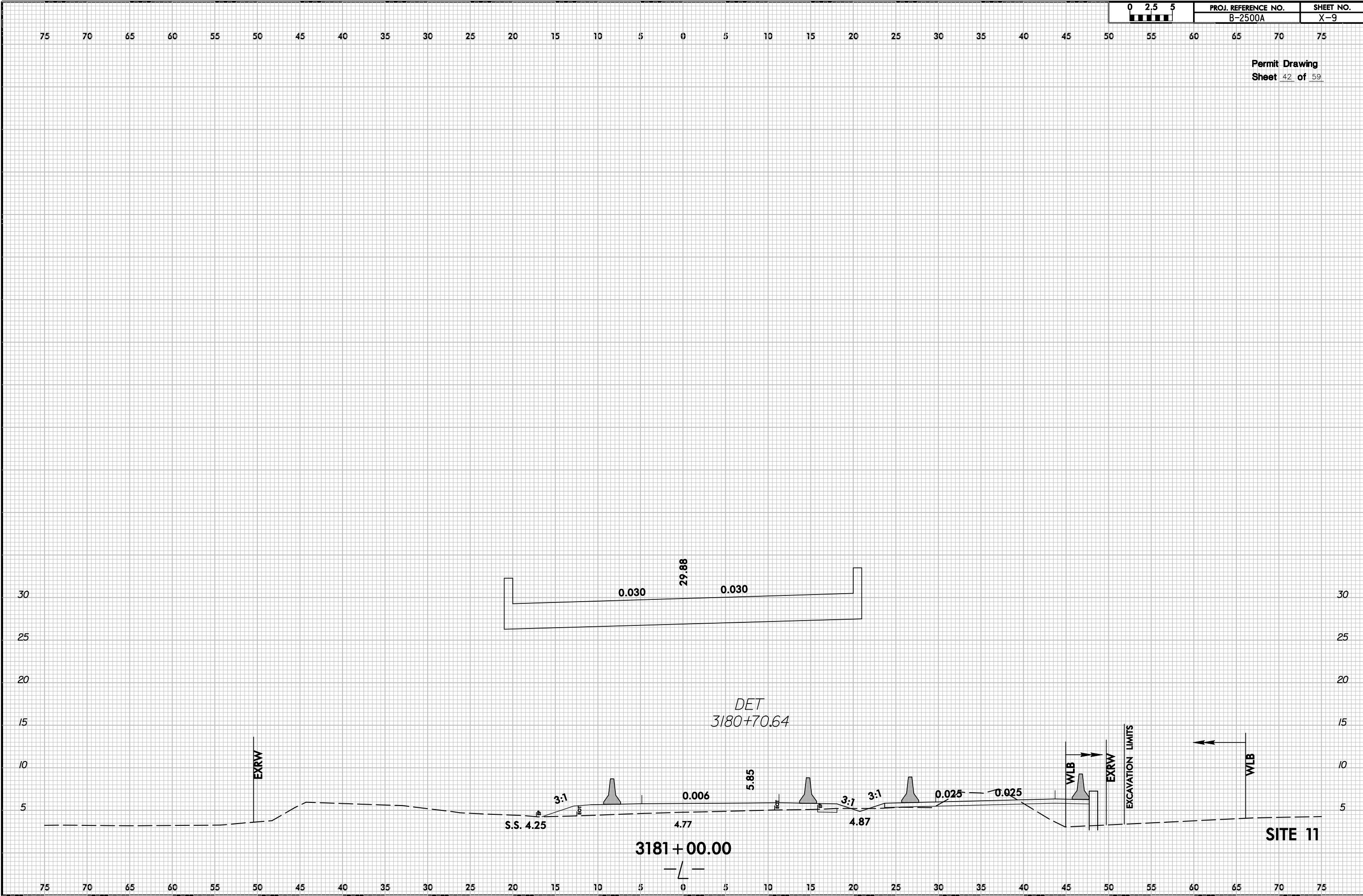
Permit Drawing
Sheet 40 of 59

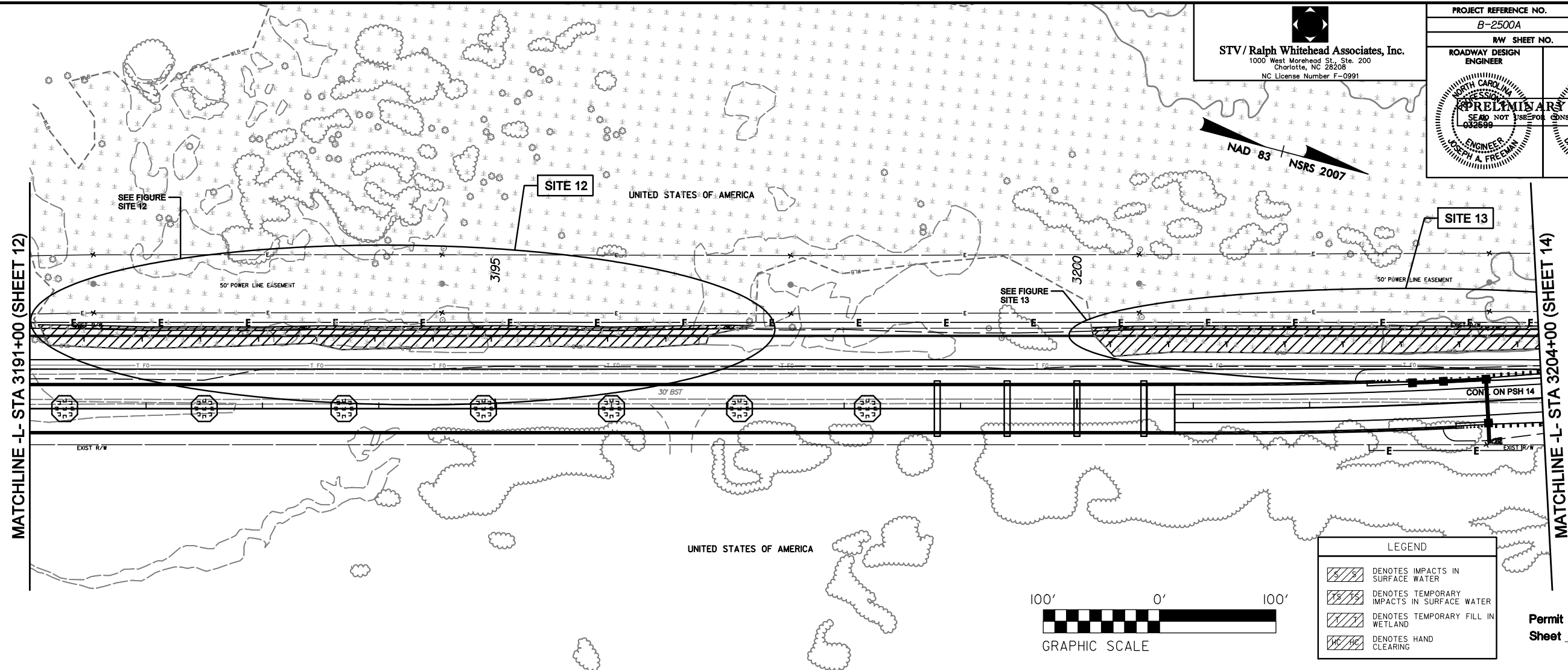
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-2500A	X-9

Permit Drawing
Sheet 42 of 59

2/11/2013
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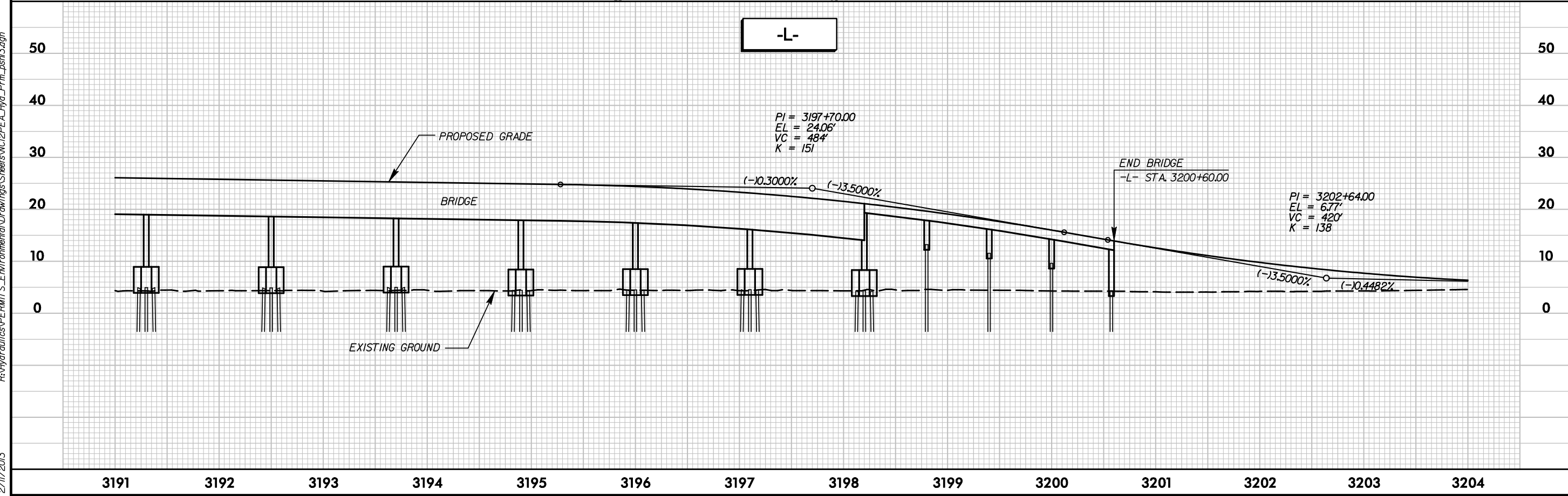


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Charlotte, NC 28208
NC License Number F-0991

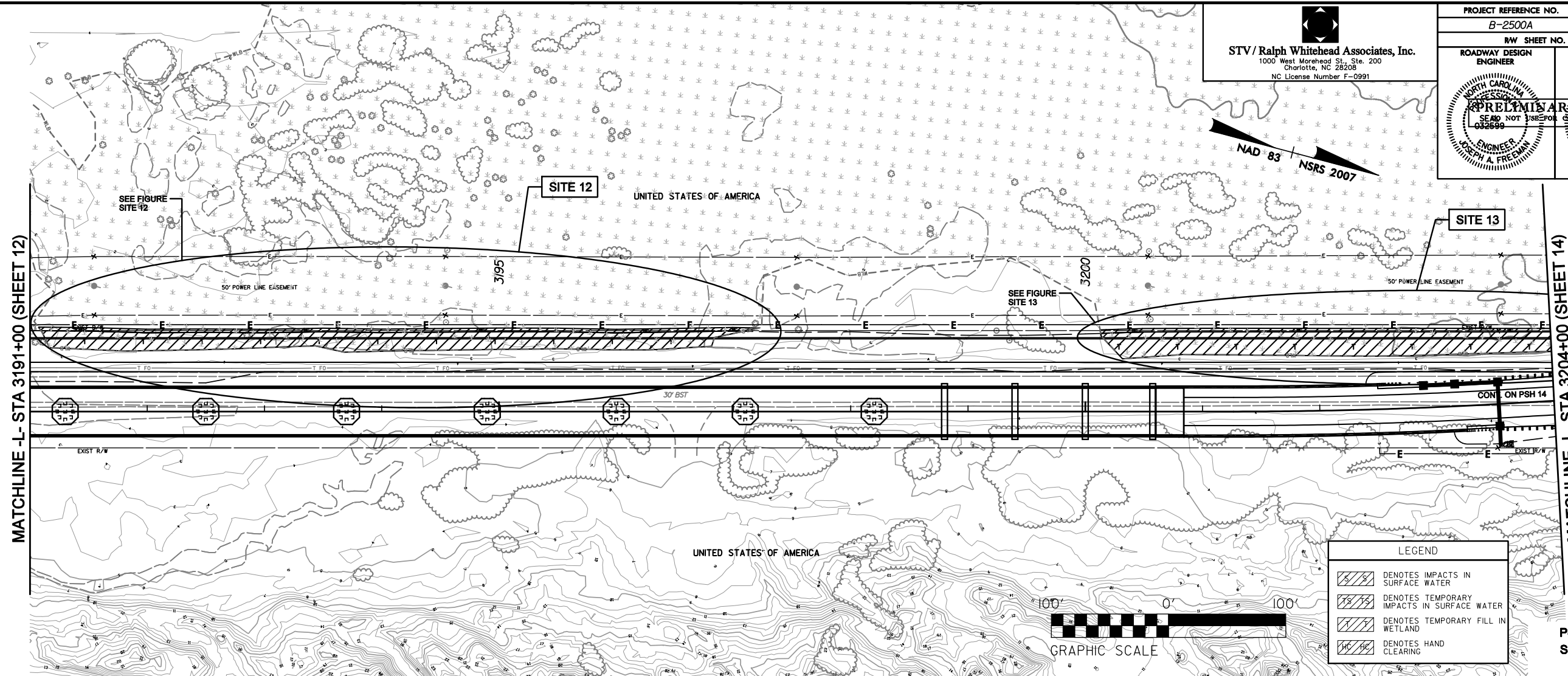
PROJECT REFERENCE NO. B-2500A		SHEET NO. 13	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 032699		NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 038063	
JOSEPH A. FREEMAN		DAVID C. MORRISON	

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

Permit Drawing
Sheet 43 of 59



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2/11/2013

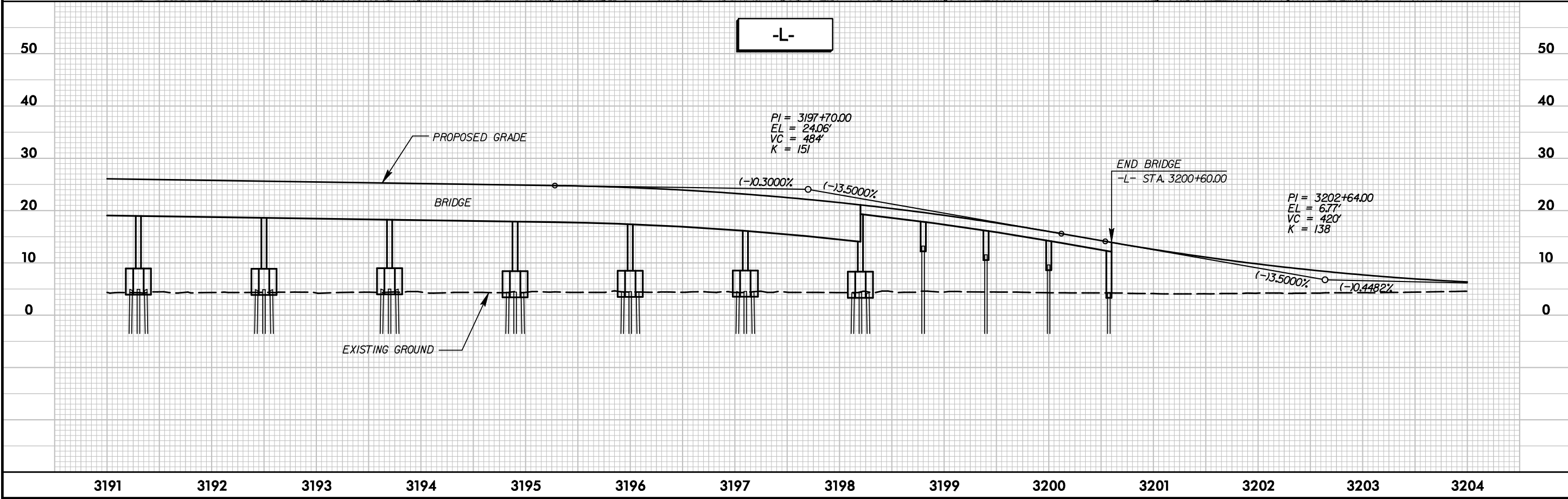


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Charlotte, NC 28208
NC License Number F-0991

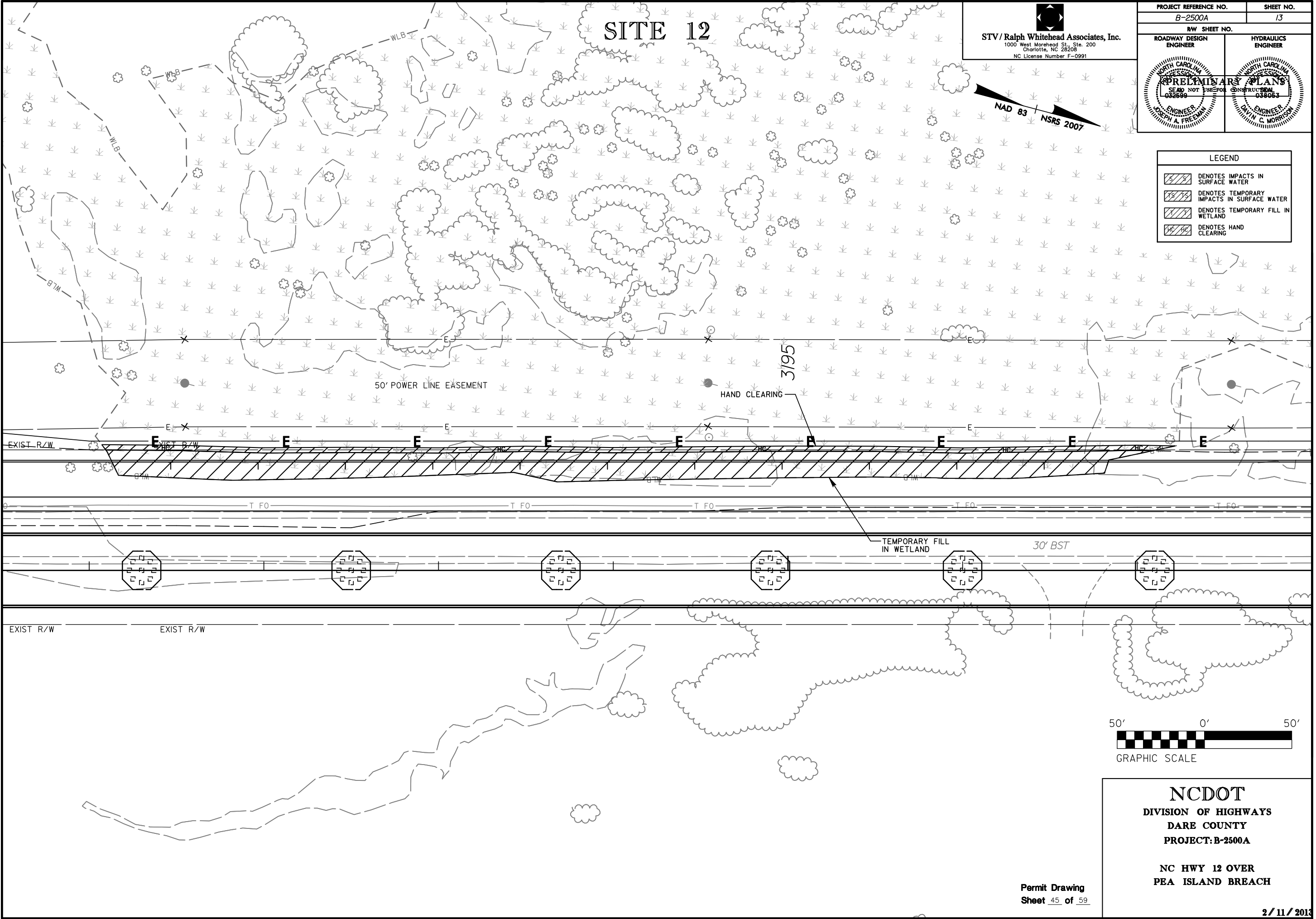
PROJECT REFERENCE NO. B-2500A		SHEET NO. 13	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 032699		NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 038063	
JOSEPH A. FREEMAN		DAVID C. MORRISON	

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2/11/2013

Permit Drawing
Sheet 44 of 59



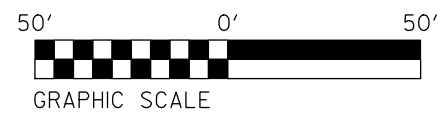
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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
B-2500A		13
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

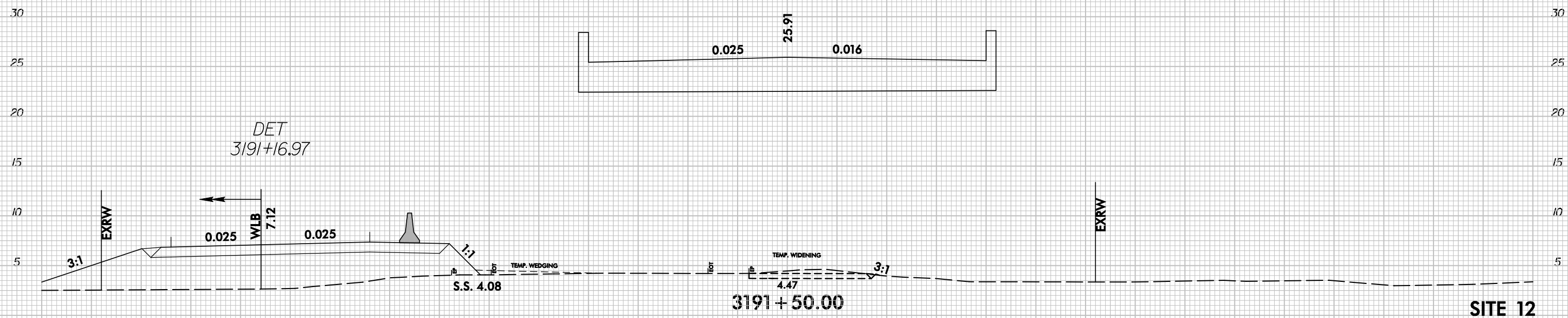
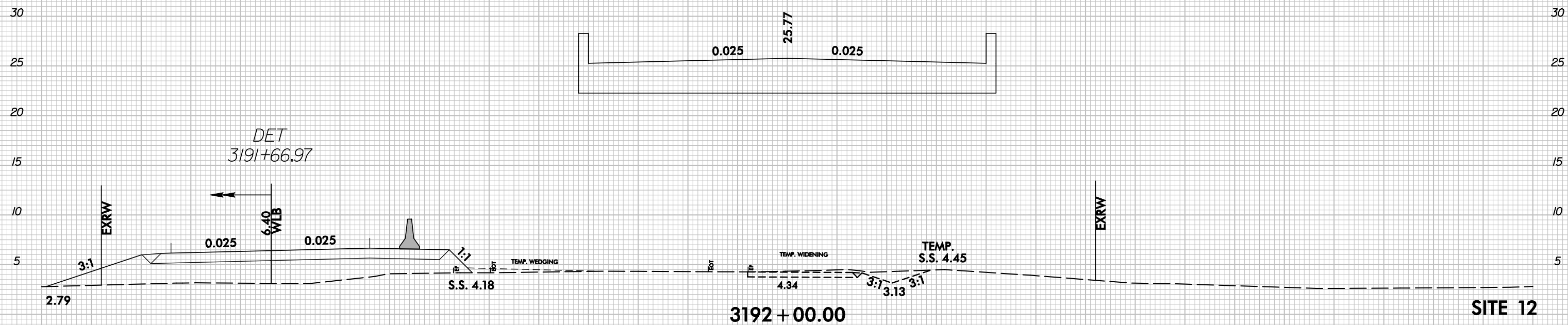


NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

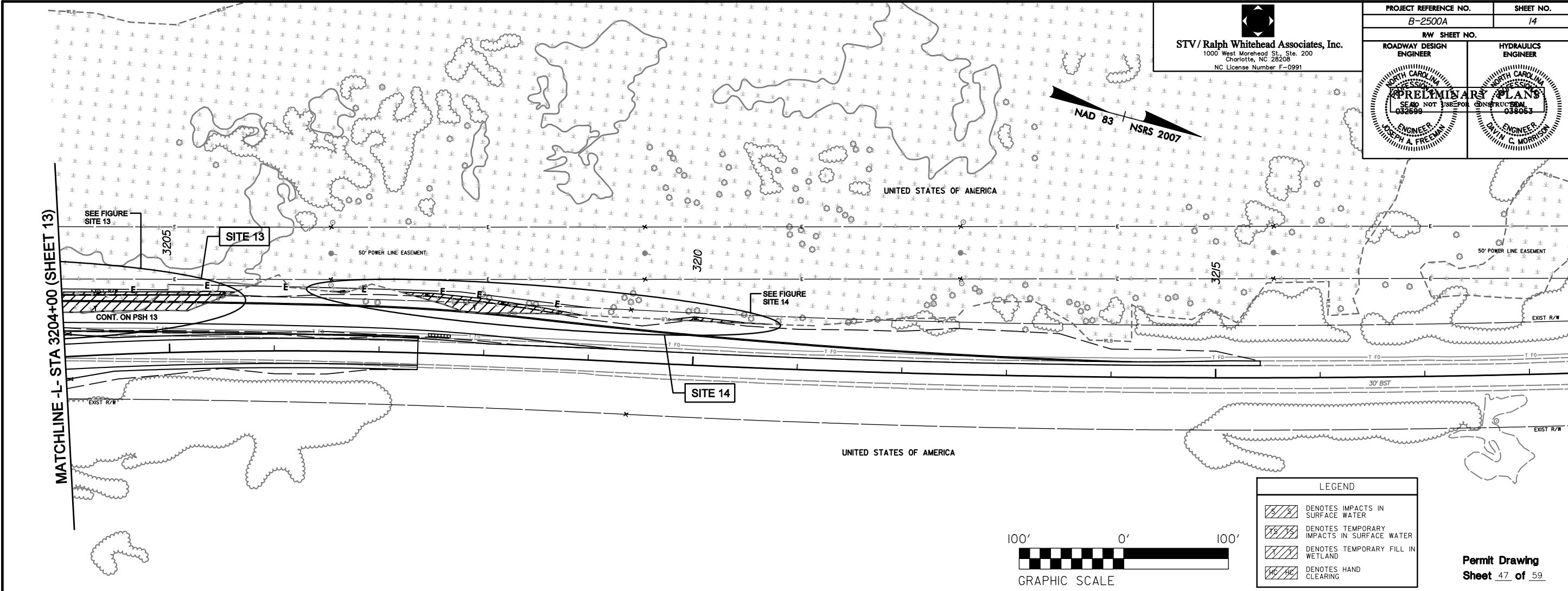
Permit Drawing
Sheet 45 of 59

2/11/2013



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Charlotte, NC 28208
NC License Number F-0991

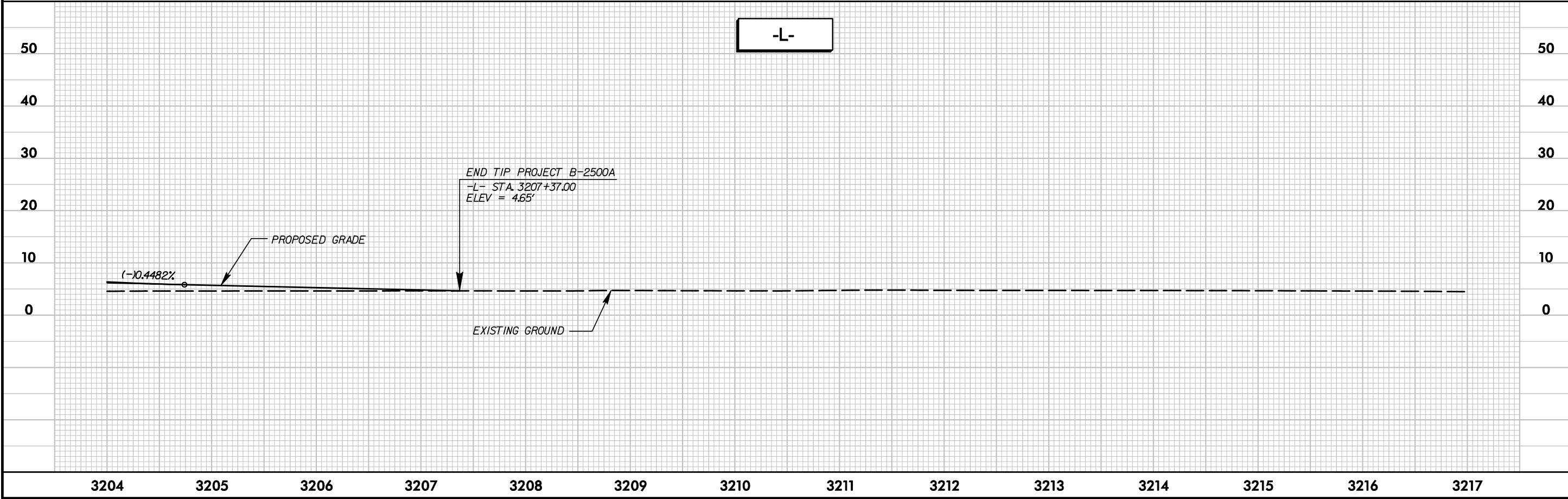
PROJECT REFERENCE NO. B-2500A		SHEET NO. 14	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



LEGEND

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

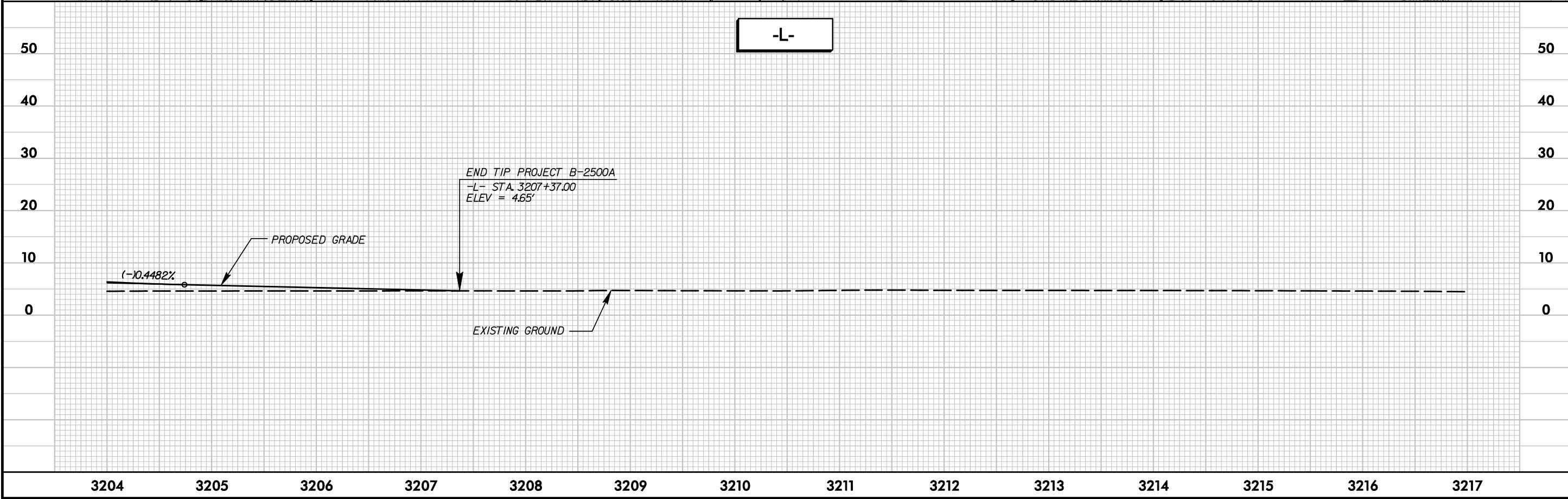
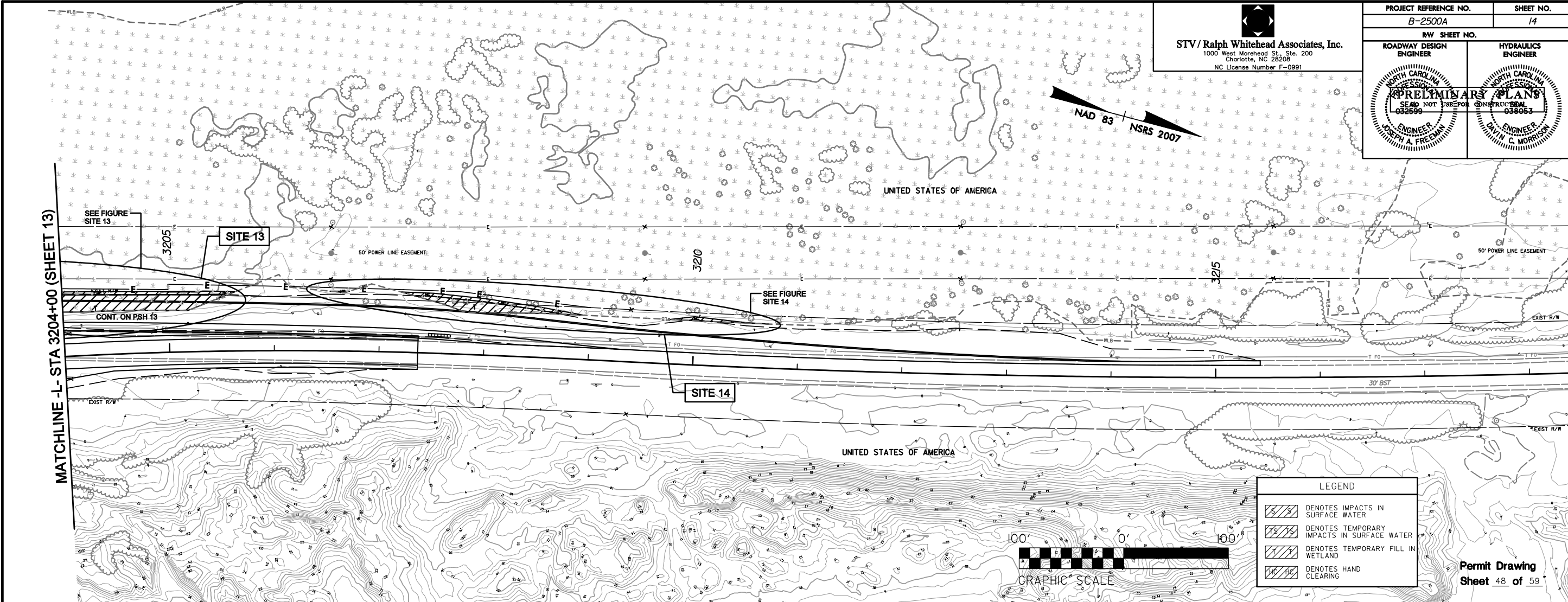
Permit Drawing
Sheet 47 of 59



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2/11/2013

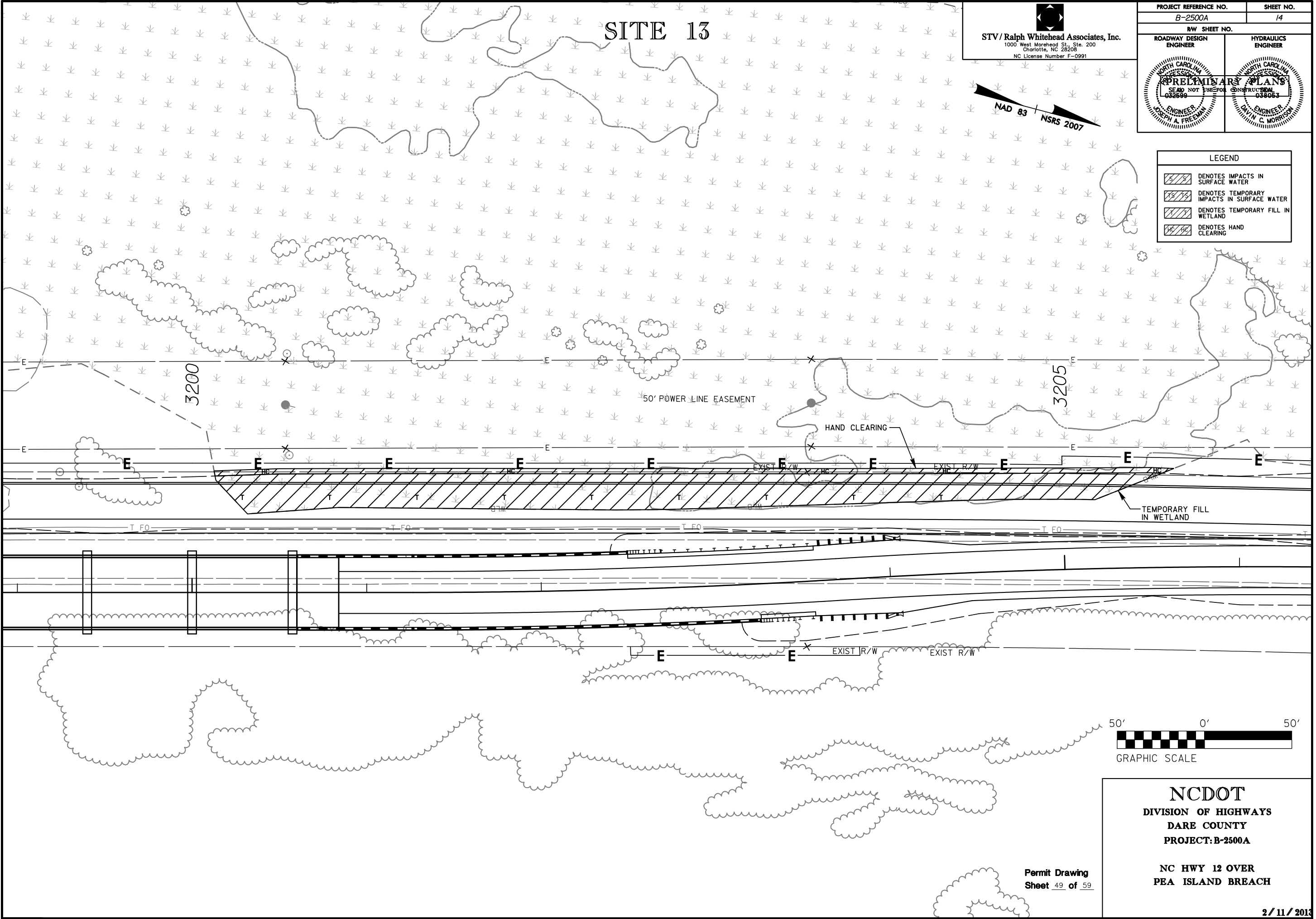
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 14	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 032699		NORTH CAROLINA PROFESSIONAL SEAL NOT IN USE FOR 032693	
JOSEPH A. FREEMAN		DAVID C. MORRISON	



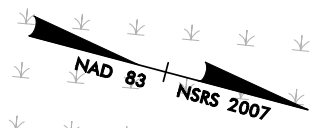
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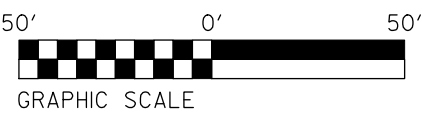
SITE 13

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991



PROJECT REFERENCE NO. B-2500A		SHEET NO. 14	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING



NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

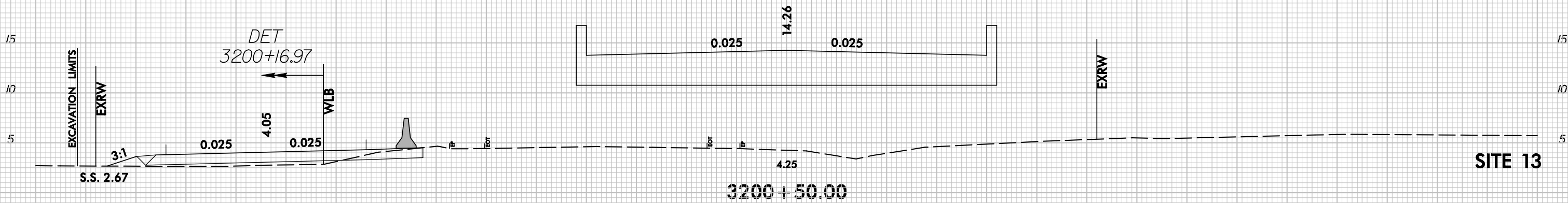
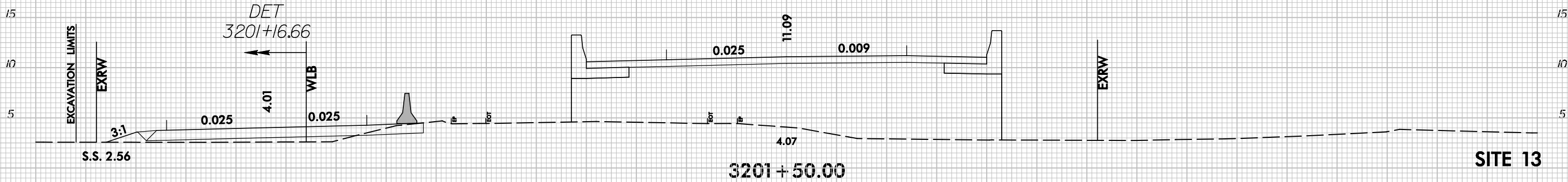
NC HWY 12 OVER
PEA ISLAND BREACH

Permit Drawing
Sheet 49 of 59

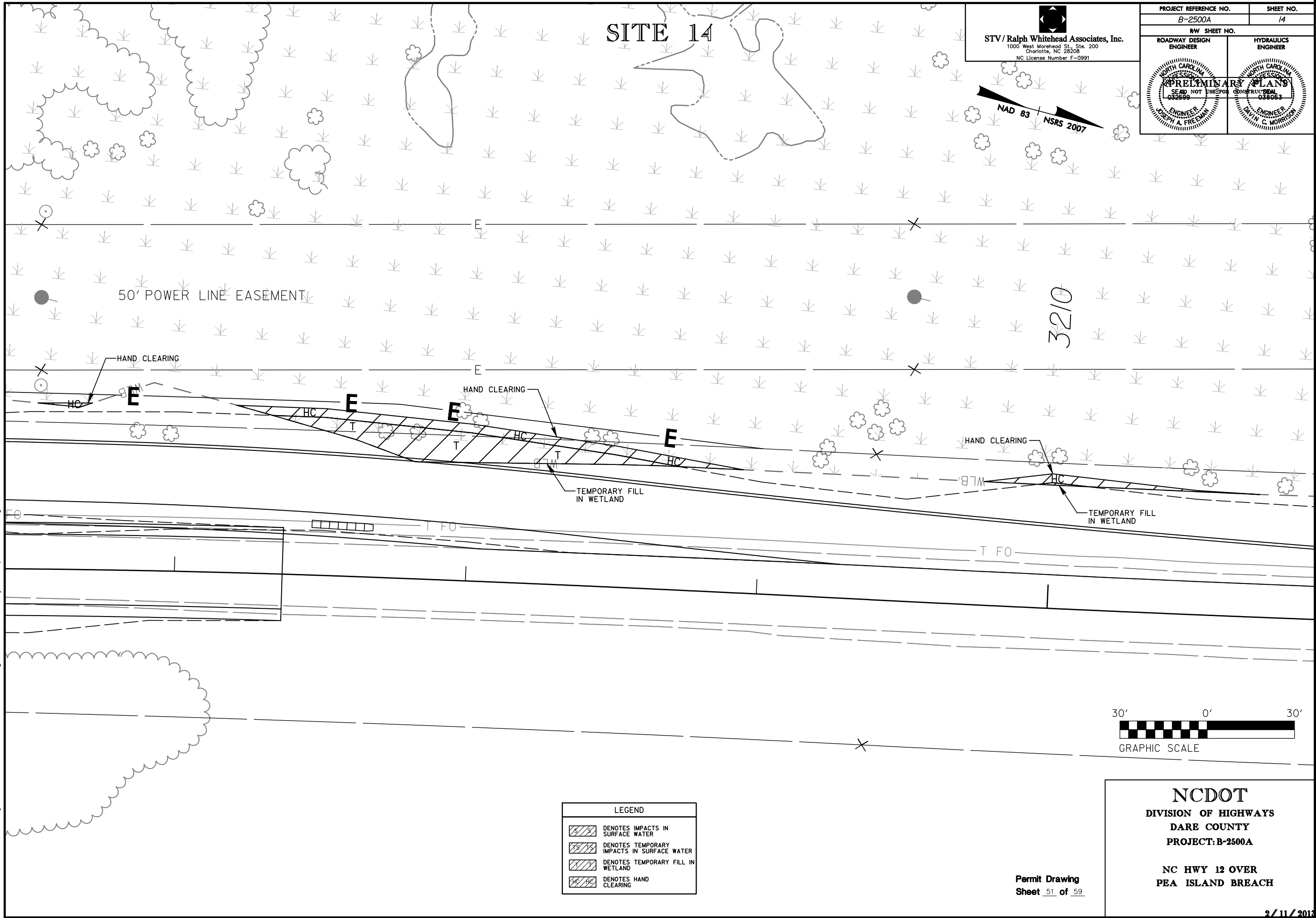
2 / 11 / 2013

8/23/99

Permit Drawing
Sheet 50 of 59

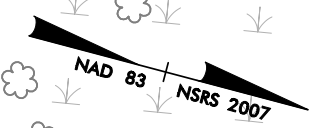


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2/11/2013



STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

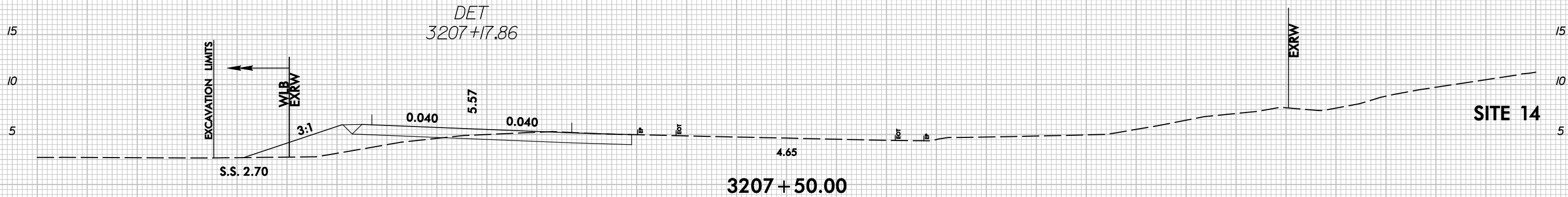
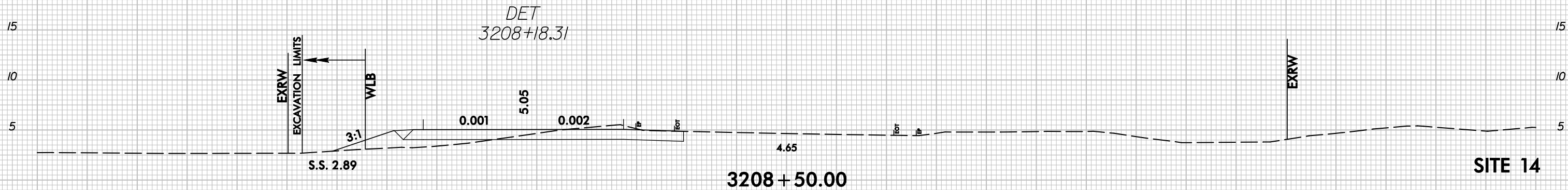
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B-2500A		14	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			



8/23/99

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Permit Drawing
Sheet 52 of 59

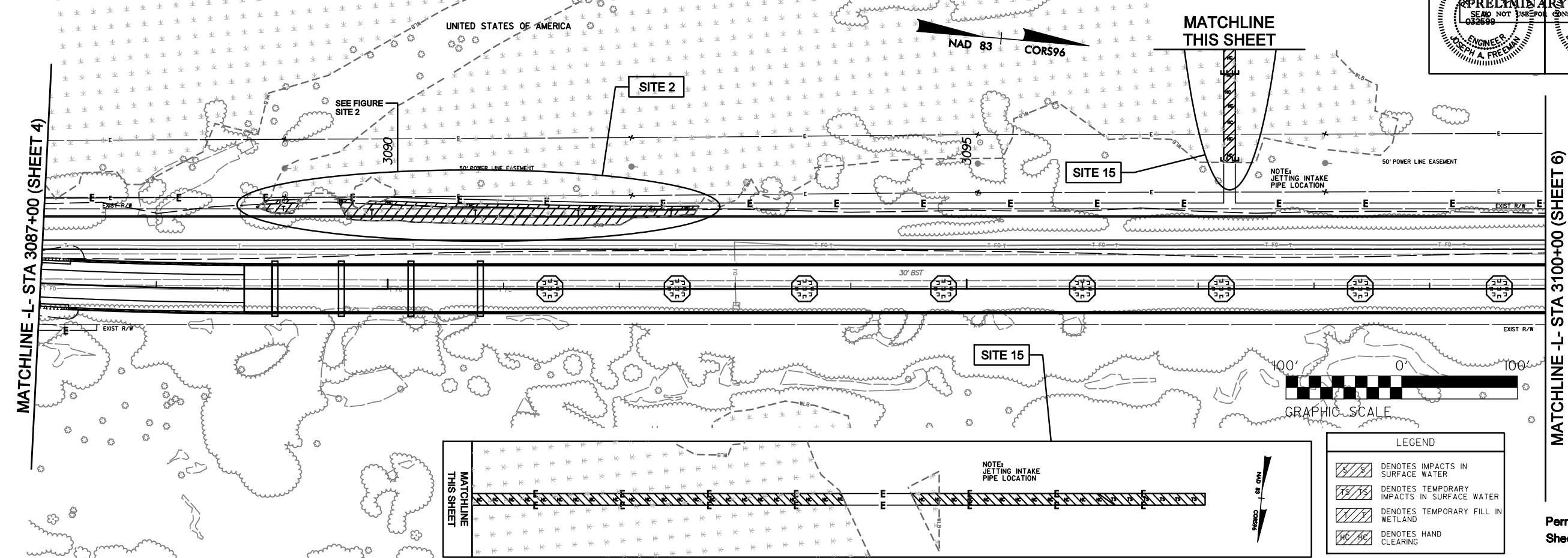


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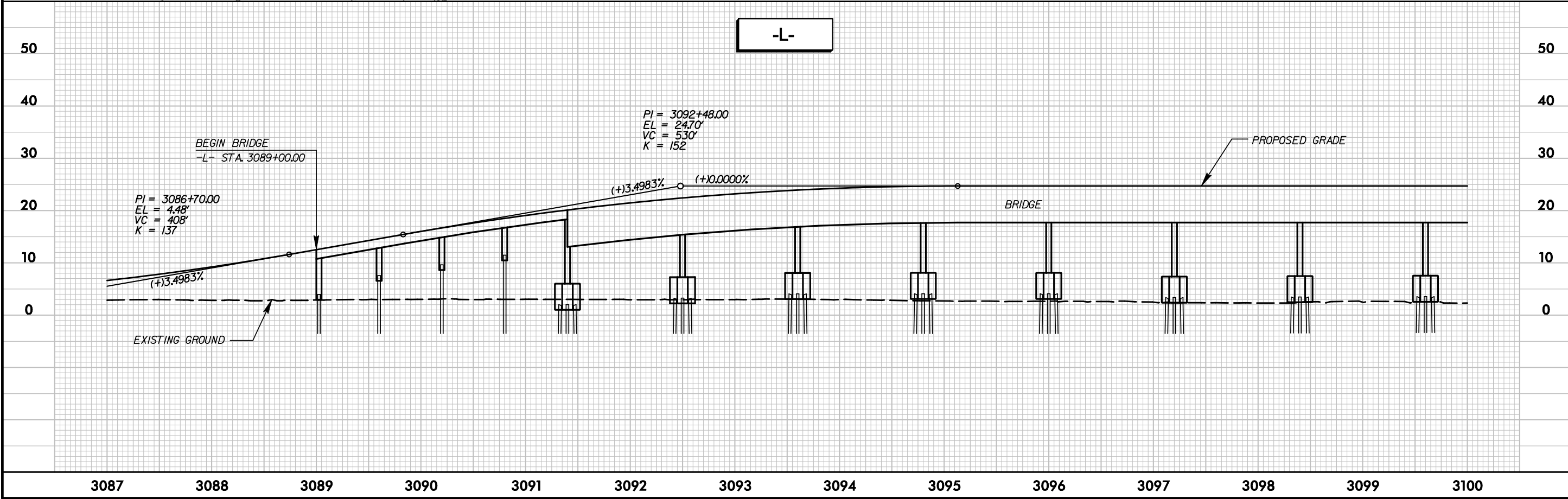
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON



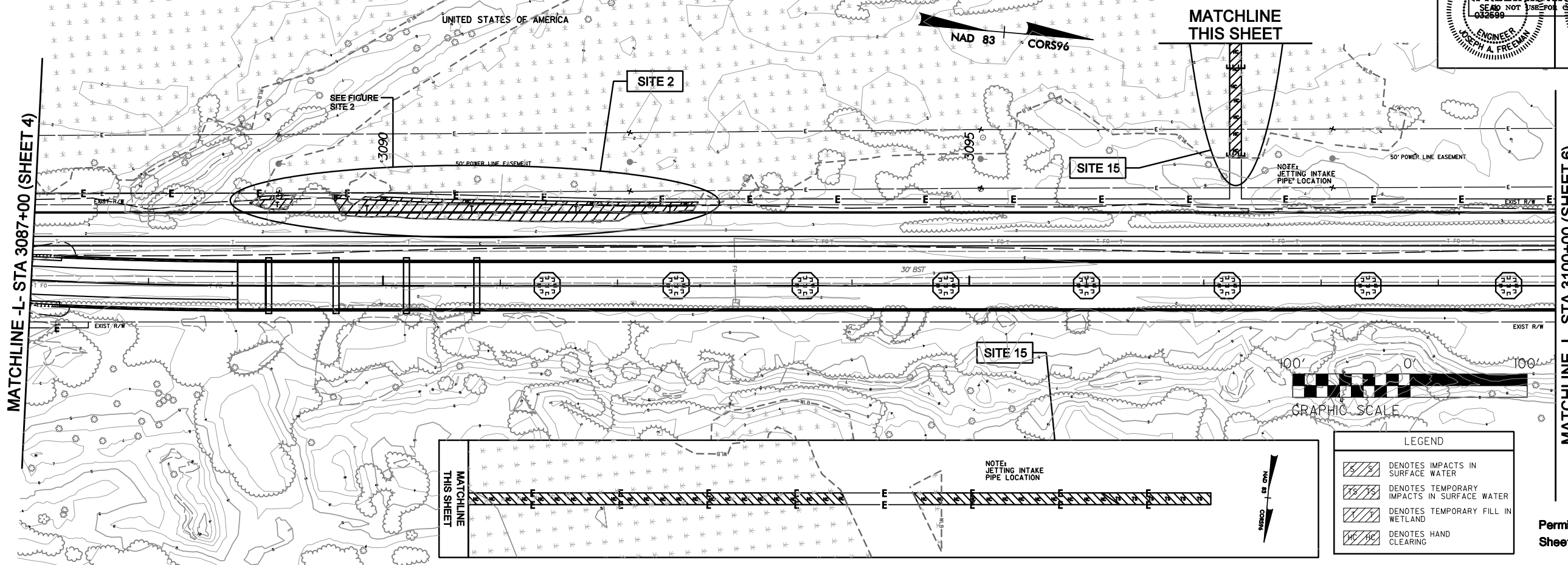
Permit Drawing
Sheet 53 of 59

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2/11/2013

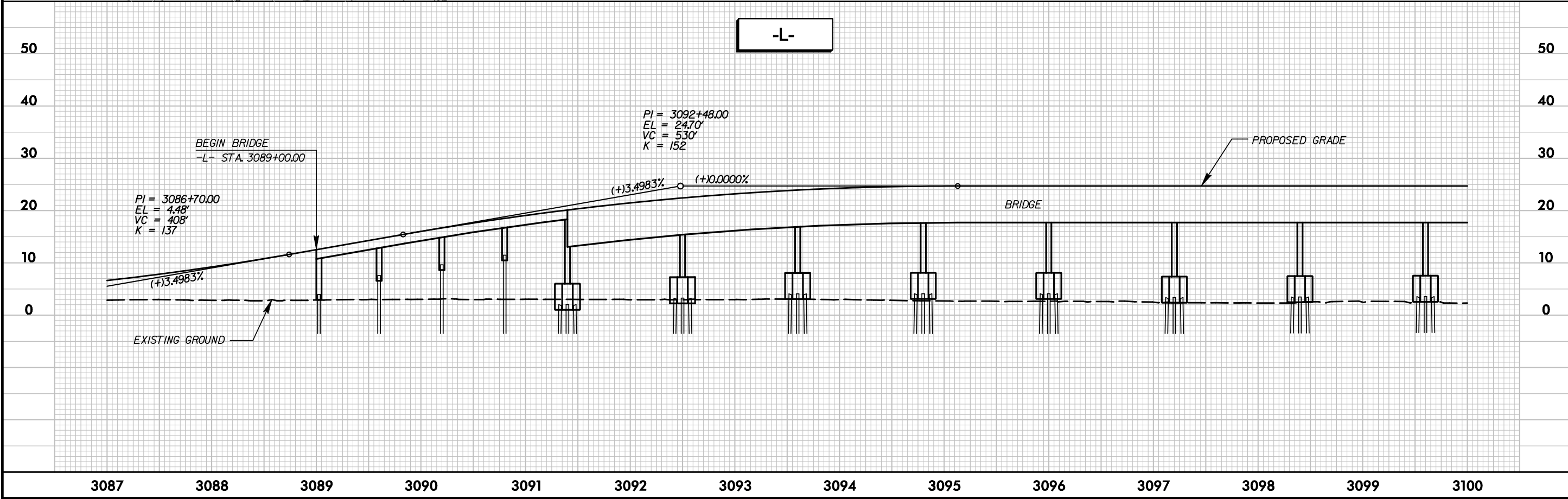


STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 032699 ENGINEER JOSEPH A. FREEMAN		PRELIMINARY PLANS SEAL NOT FOR CONSTRUCTION 038063 ENGINEER DAVID C. MORRISON

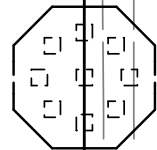
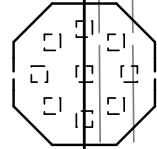
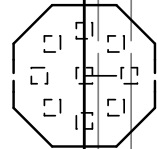


Permit Drawing
Sheet 54 of 59



R:\Hydraulics\PERMIT'S_Environmental\Drawings\Sheets\NC\2PEA_Hyd_Prm_pst05XAdgn
2/11/2013

2/11/2013 R:\Hydraulics\PERMITS_Environmental\Drawings\Sheets\NC12PEA_Hyd_Prm_pos05X_Site 15Adgn



TFO

TFO

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NOTE:
JETTING INTAKE
PIPE LOCATION

50' POWER

HC

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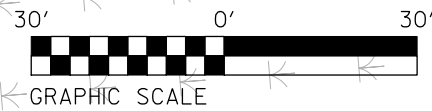
MATCHLINE

SITE 15 (SHEET 1 OF 2)

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

PROJECT REFERENCE NO.		SHEET NO.	
B-2500A		5	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



Permit Drawing
Sheet 55 of 59

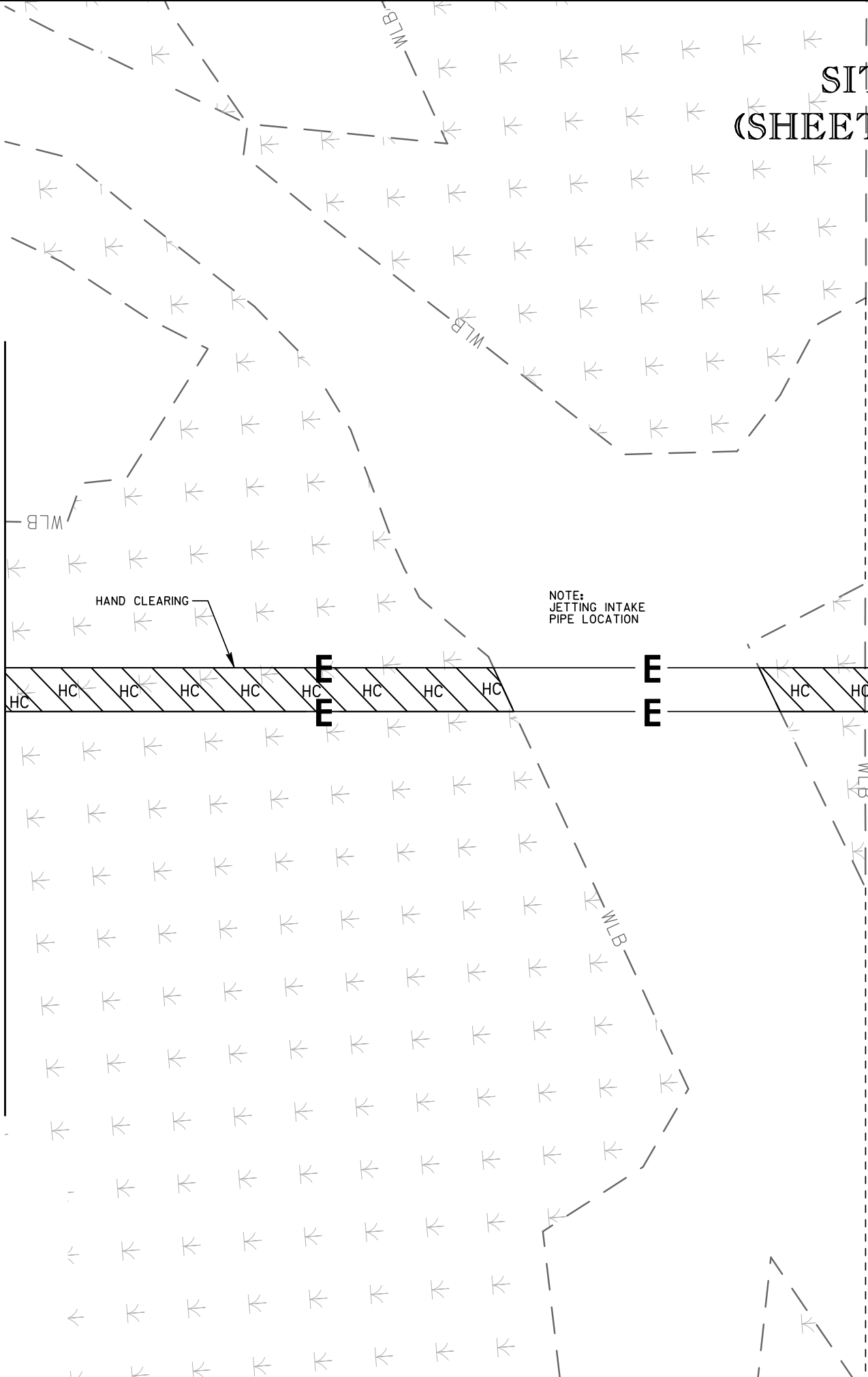
NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

R:\Hydraulics\PERMITS_Environmental\Drawings\Sheets\NC12PEA-Hyd_Prm_pos05X_Site 15B.dgn

2/11/2013

MATCHLINE



SITE 15
(SHEET 2 OF 2)

NOTE:
JETTING INTAKE
PIPE LOCATION

HAND CLEARING

HAND CLEARING

TEMPORARY IMPACTS
IN SURFACE WATER

FROM AERIAL

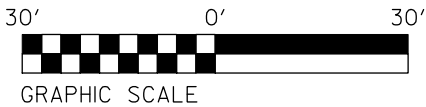
FROM AERIAL

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

PROJECT REFERENCE NO.		SHEET NO.	
B-2500A		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			

NAD 83
NSRS 2007



Permit Drawing
Sheet 56 of 59

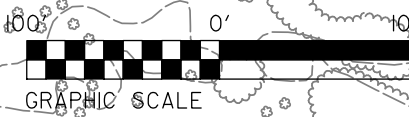
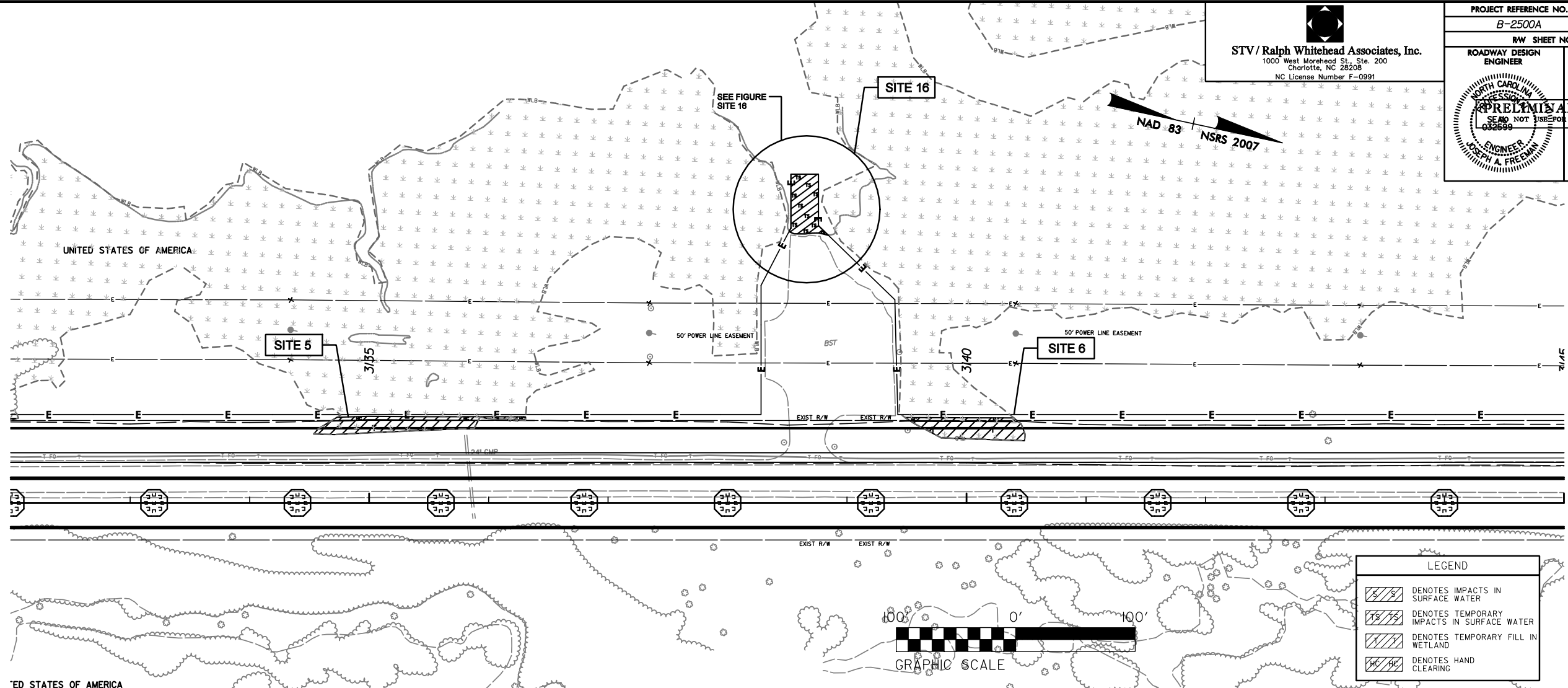
NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH

2 / 11 / 2013

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

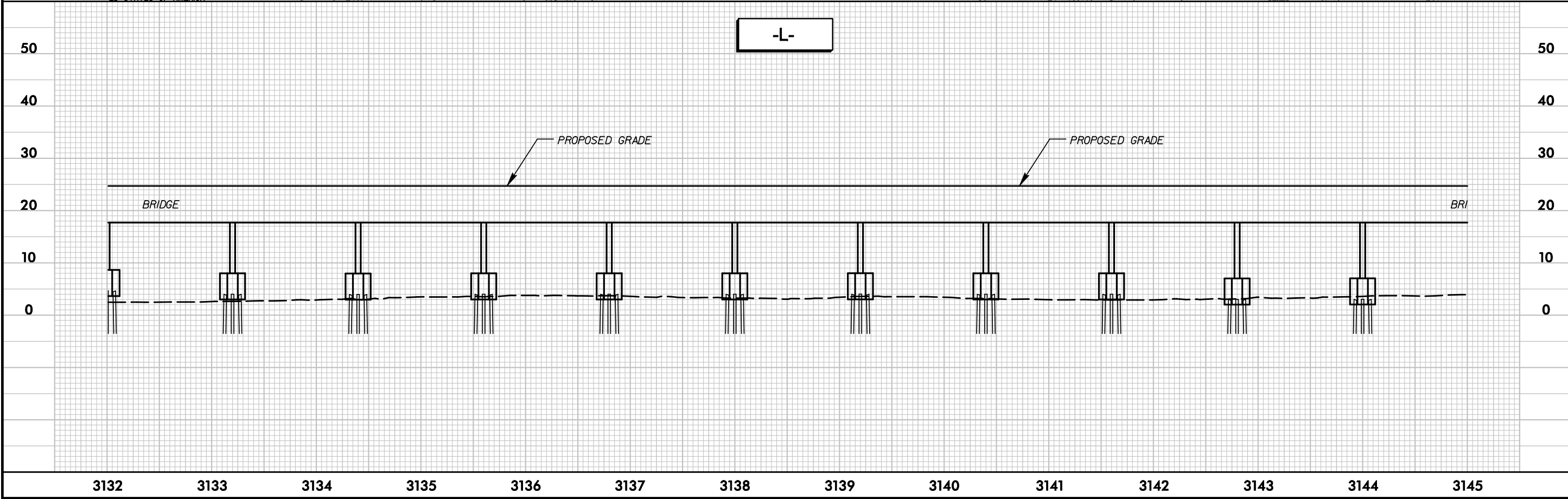
PROJECT REFERENCE NO. B-2500A		SHEET NO. 8	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

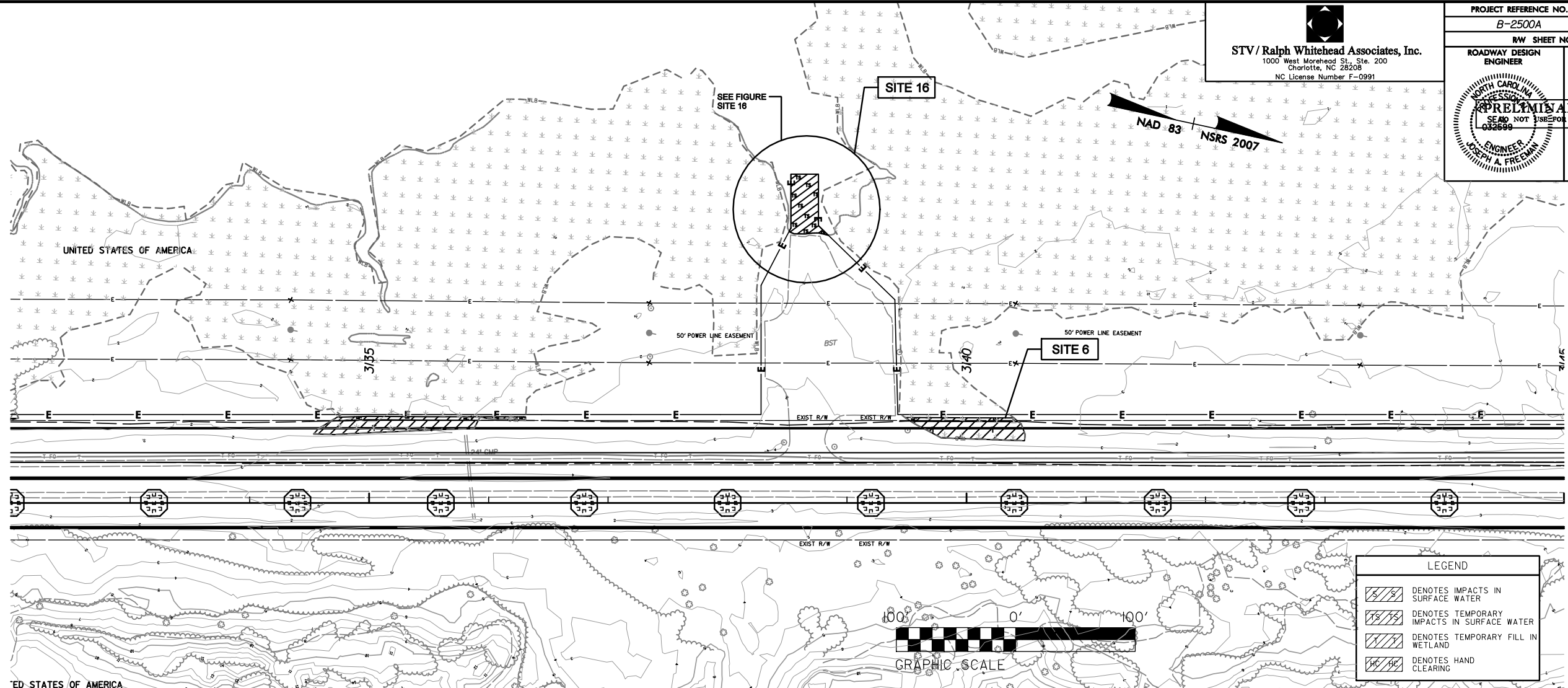
Permit Drawing
Sheet 57 of 59

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2/11/2013

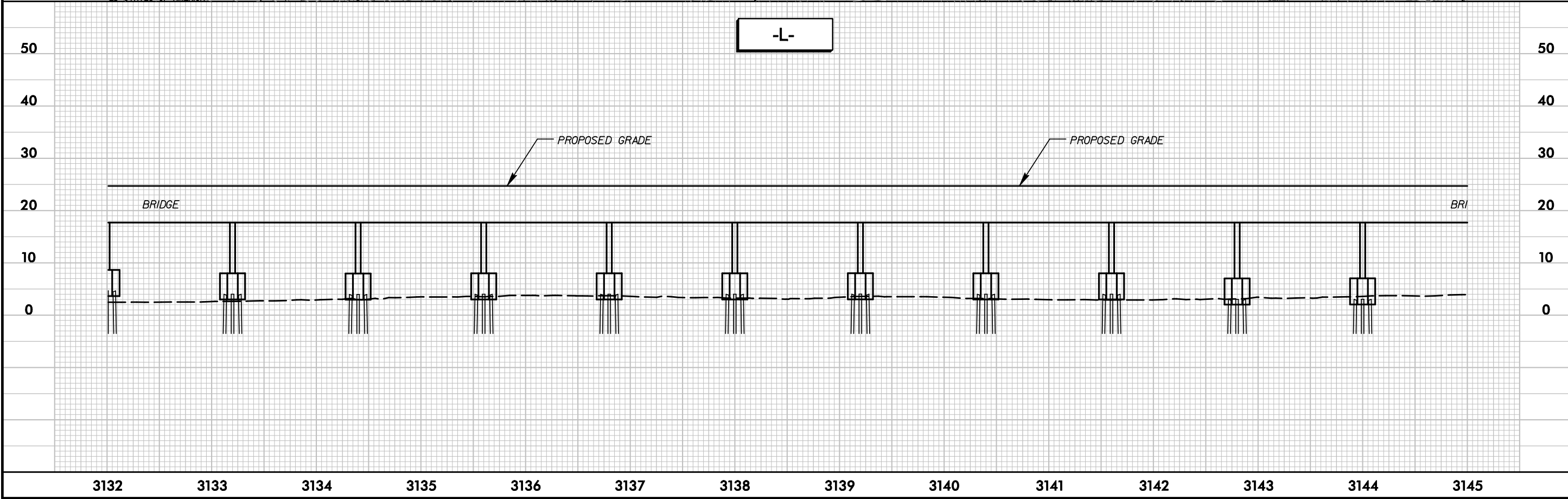


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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 8	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



Permit Drawing
Sheet 58 of 59



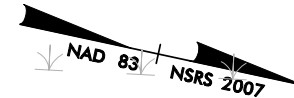
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2/11/2013

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2/11/2013

SITE 16

SITE 16

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991



PROJECT REFERENCE NO.		SHEET NO.
B-2500A		9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

TEMPORARY IMPACTS
IN SURFACE WATER

NOTES:
1) JETTING INTAKE PIPE LOCATION
2) EXISTING BOAT ACCESS

BST

SITE 6

3/40

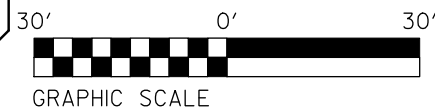
LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES HAND CLEARING

EXIST R/W

EXIST R/W

NCDOT
DIVISION OF HIGHWAYS
DARE COUNTY
PROJECT: B-2500A

NC HWY 12 OVER
PEA ISLAND BREACH



Permit Drawing
Sheet 59 of 59

NC 12 NEU Narrative**Utility Owners:**

- **Telephone:** CenturyLink (contact: Bruce Herrington 252-267-6767)
- **Power:** Cape Hatteras EMC (contact: George Price 252-995-5616)

General Utility Relocation:

All existing underground telephone fiber optic and copper cables inside the project construction limits will be abandoned and new underground fiber optic and copper cables will be installed further west 5' inside the Cape Hatteras EMC power easement. The portion of existing underground telephone cables between Sta. 3168+00 to 3181+00 will remain in place.

Existing Utilities:

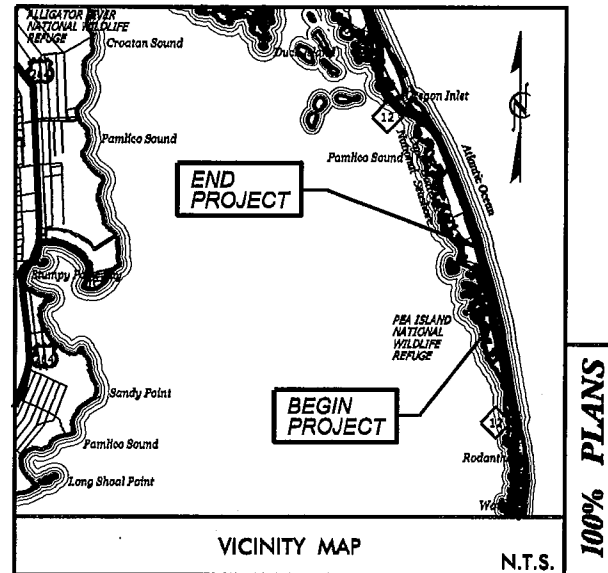
- **Telephone:** the existing underground telephone fiber optic and copper cables are located on the east and west side of NC 12.
- **Power:** the existing guide pole will be removed to the left of Sta. 3189+41.01

Proposed Utility Relocation:

- **Telephone:** CenturyLink will abandon all existing facilities except for the telephone lines between Sta. 3168+00 and 3181+00. The new underground telephone fiber optic and copper cables will be installed further west 5' inside the Cape Hatteras EMC power easement. All proposed telephone cables will be directionally bored through the wetland areas. There will be no environmental impacts.
- **Power:** Cape Hatteras EMC will remove existing guide pole to the left of Sta. 3189+41.1 and replace with a self-supporting transmission pole.

CONTRACT: PROJECT: NC 12 PEA ISLAND BREACH

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbolology Sheet



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

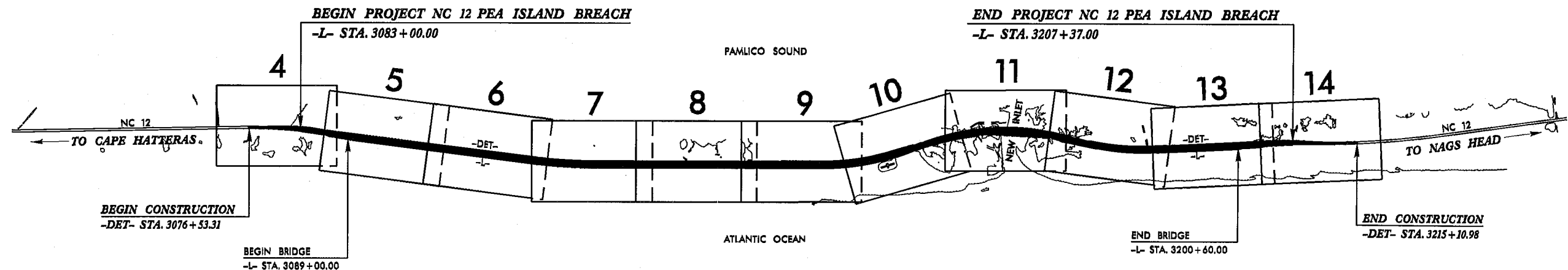
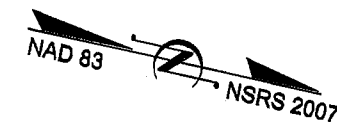
DARE COUNTY

LOCATION: NC HWY 12 OVER PEA ISLAND BREACH

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE /
UTILITY WORK RELOCATE TELEPHONE FIBER
OPTIC AND COPPER CABLES

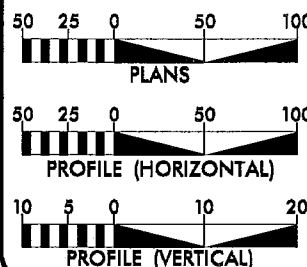
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	NC 12	1	
STATE PROJECT NO.	F.A. PROJECT NO.	DESCRIPTION	
13201.10228025		P.E.	

Utility Permit Drawing
Sheet 1 of 22



NC 12 NEU PLANS
5/14/2012

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 7,300
ADT 2032 = 10,900
DHV = N/A
D = N/A
T = 6%
V = 60 MPH
FUNC. CLASSIFICATION:
COLLECTOR
T = 1% TTST+5% DUALS
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT = 0.241 MILES
LENGTH OF STRUCTURE TIP PROJECT = 2.114 MILES
TOTAL LENGTH OF TIP PROJECT = 2.355 MILES

NCDOT CONTACT: DOUG TAYLOR, PE
Asst. Unit Head, Roadway Design

PLANS PREPARED FOR THE NCDOT BY:
STV/RALPH WHITEHEAD ASSOCIATES, INC.
1000 West Morehead St., Ste. 200, Charlotte NC, 28208
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
AUGUST 14, 2012

JOHN N. JOHNSON, PE
PROJECT ENGINEER

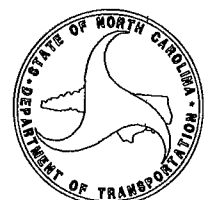
JOSEPH A. FREEMAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS
ENGINEER

SIGNATURE:

ROADWAY DESIGN
ENGINEER

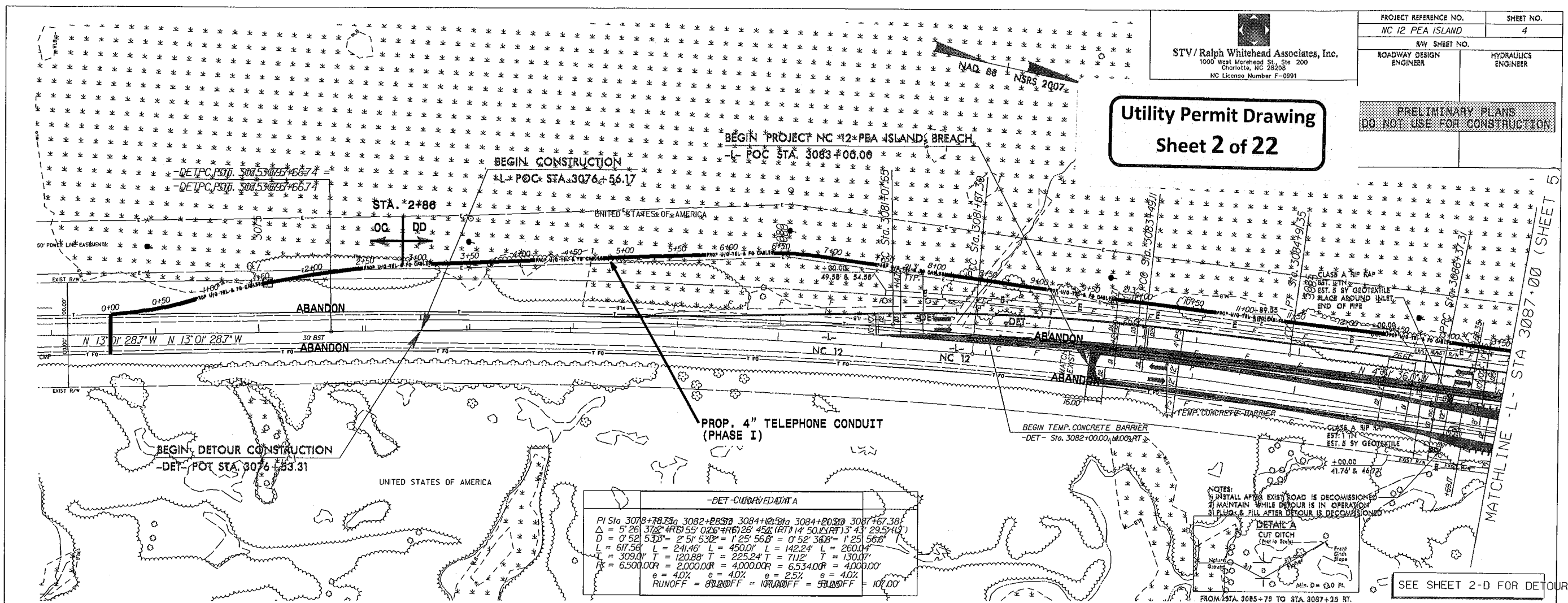
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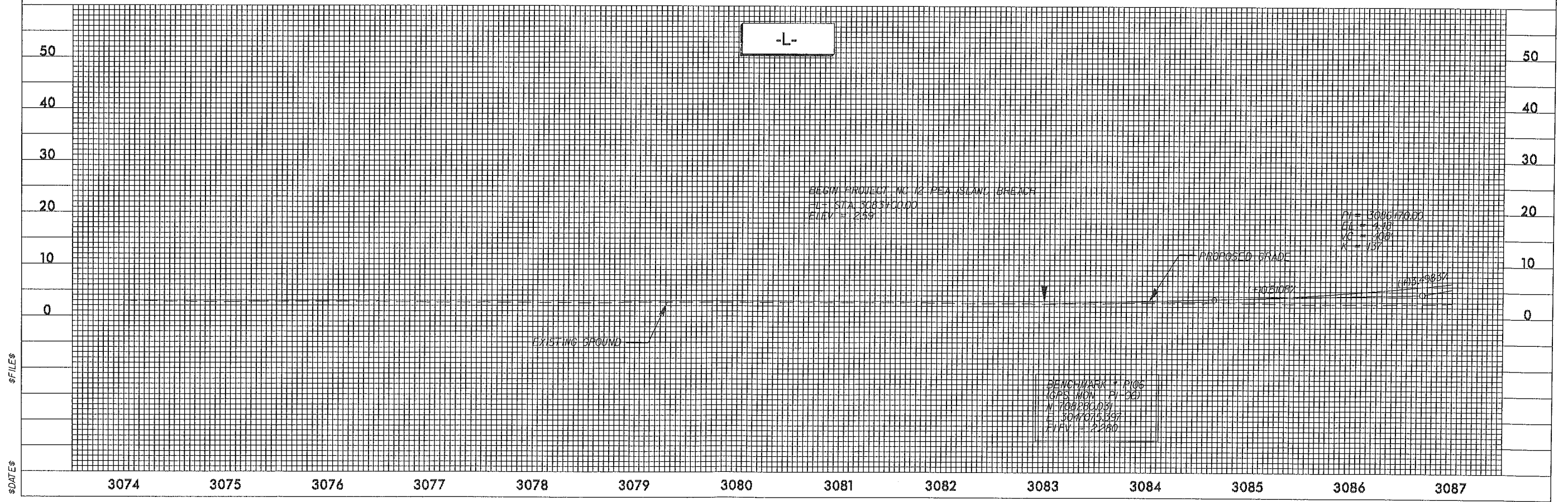
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28206
NC License Number F-0991

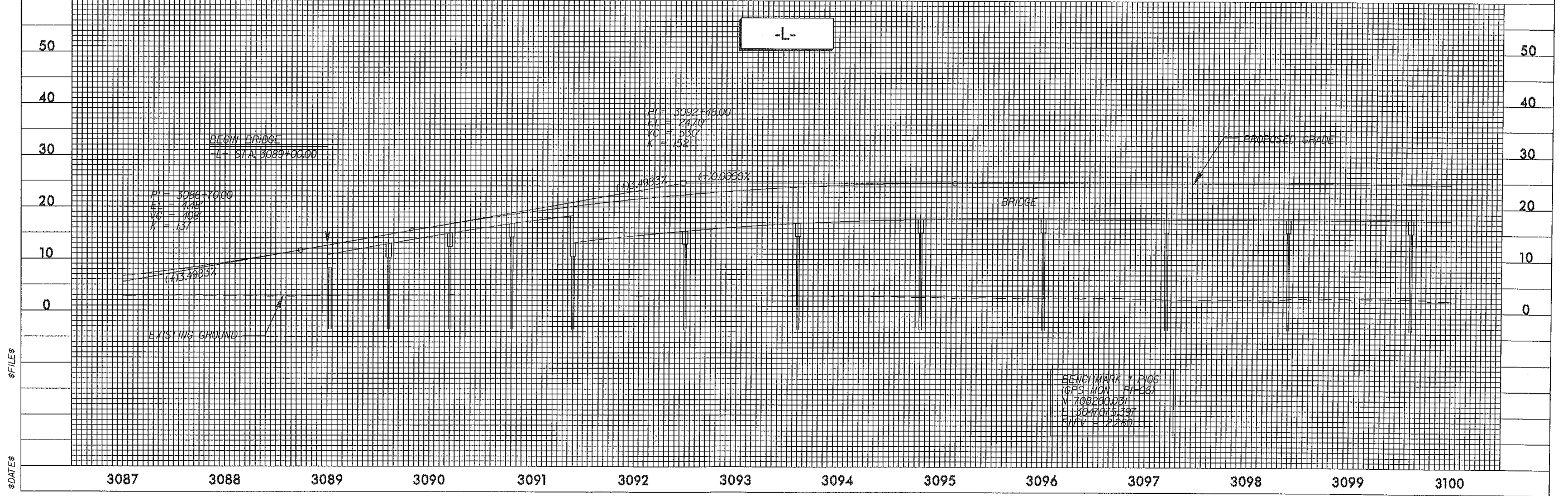
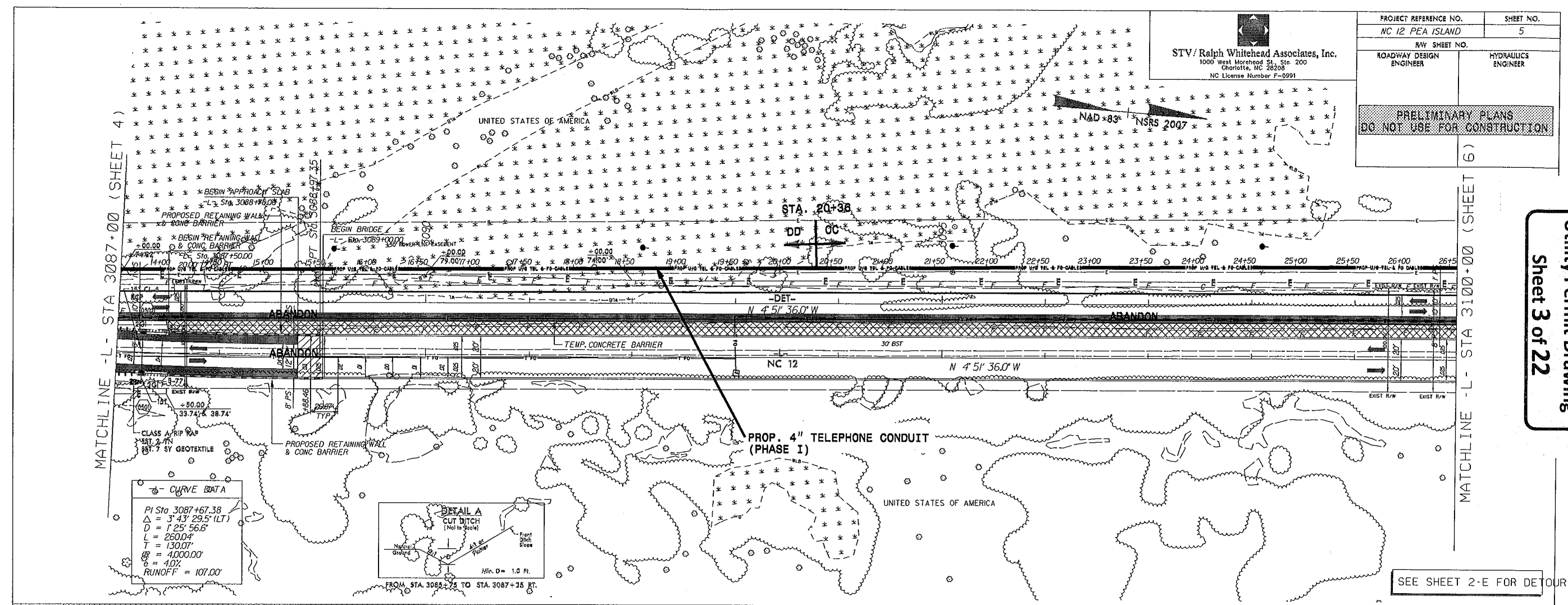
PROJECT REFERENCE NO. NC 12 PEA ISLAND		SHEET NO. 4
RAW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

Utility Permit Drawing
Sheet 2 of 22



-DET CURVED DATA	
PI Sta 3078+79.25	3082+88.53
Δ = 5° 26' 37.8"	44° 15' 02.6"
D = 0' 52' 5.33"	2' 51' 5.32"
L = 617.58'	L = 241.46'
T = 309.01'	T = 120.88'
R = 6500.00'	R = 2000.00'
e = 4.0%	e = 4.0%
Runoff = 83.00'	Runoff = 10.00'

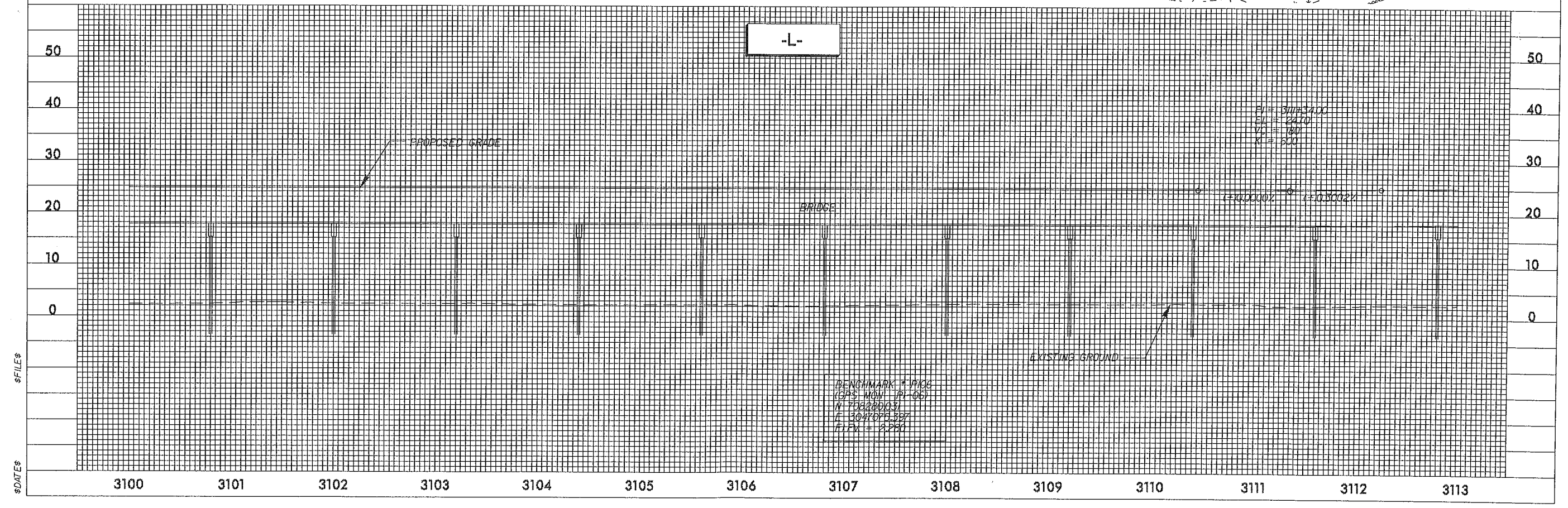
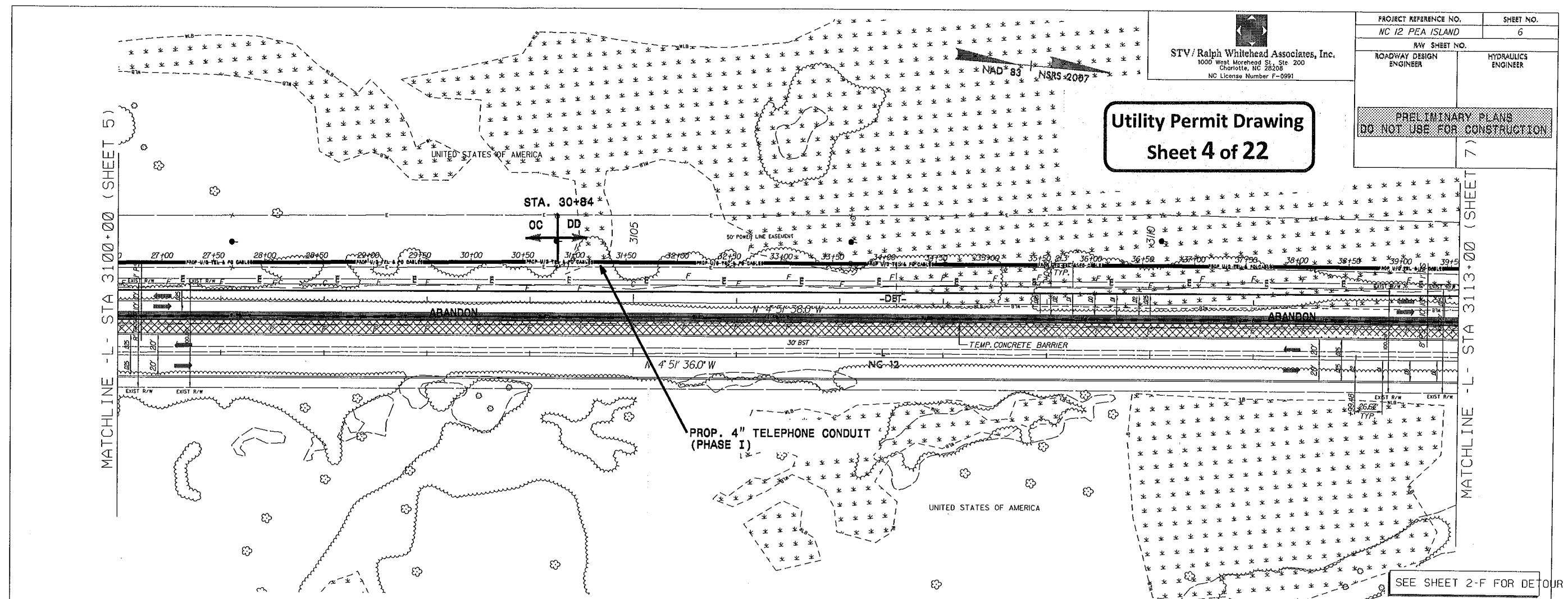


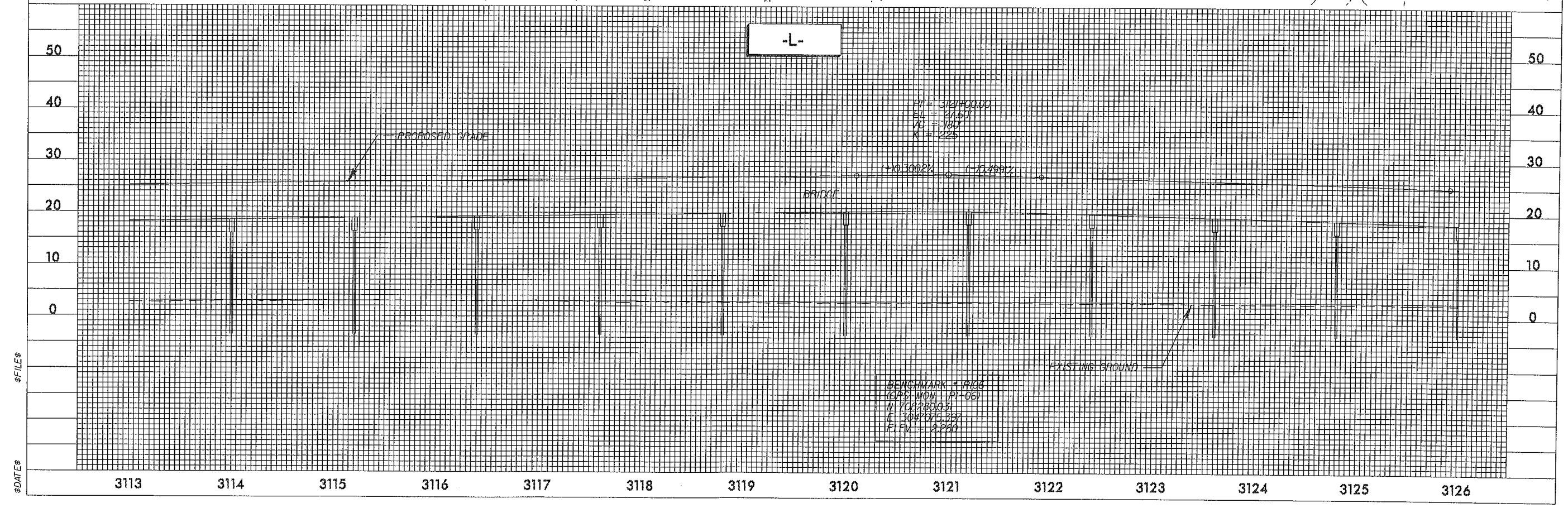
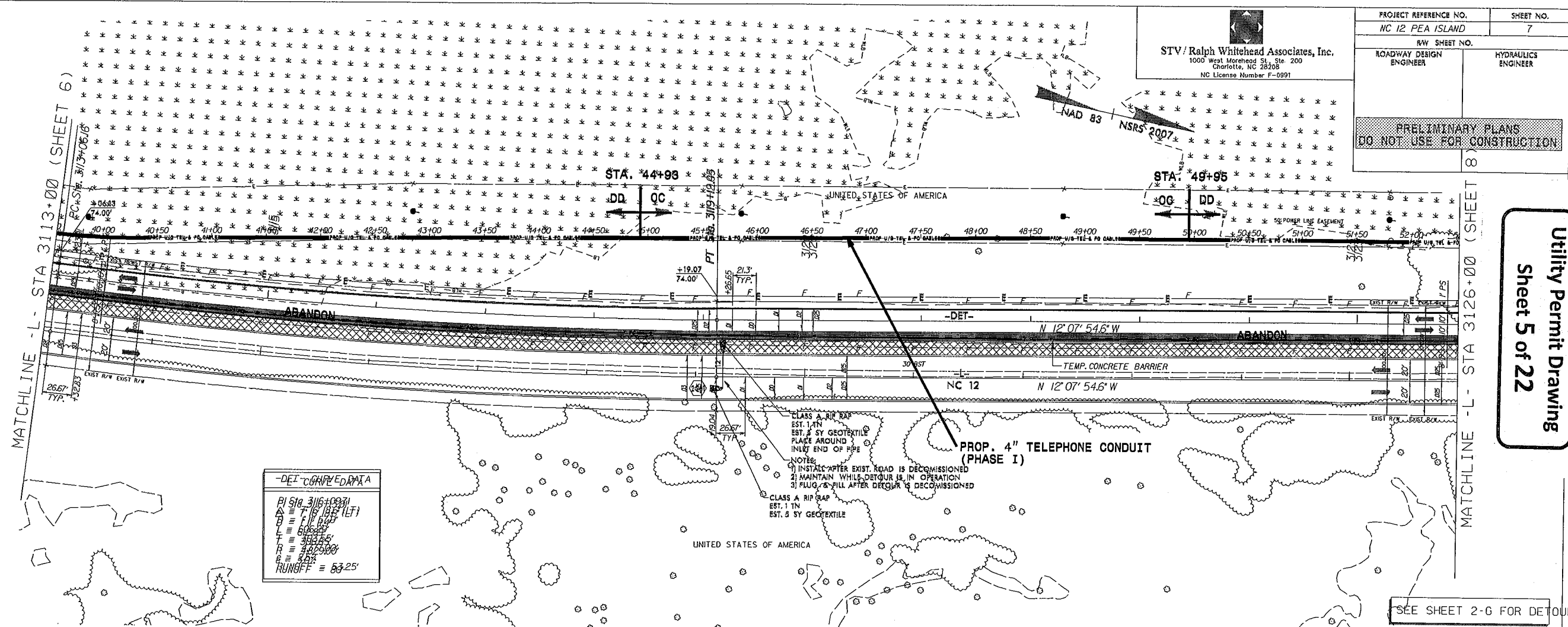

 Utility Permit Drawing
Sheet 3 of 22

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

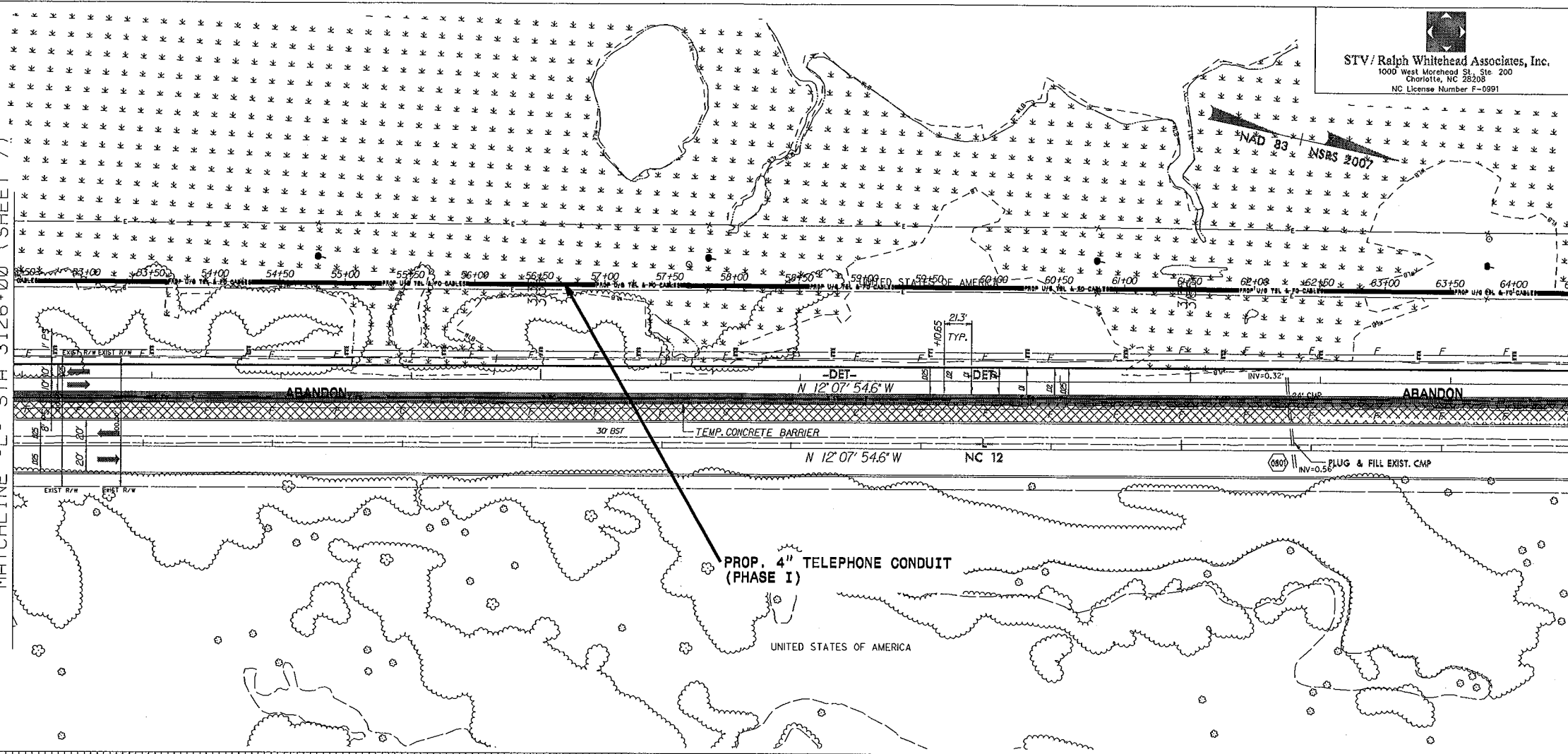
PROJECT REFERENCE NO. NC 12 PEA ISLAND		SHEET NO. 6
RAW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
		7)

Utility Permit Drawing
Sheet 4 of 22





MATCHLINE -L- STA 3126+00 (SHEET 7)



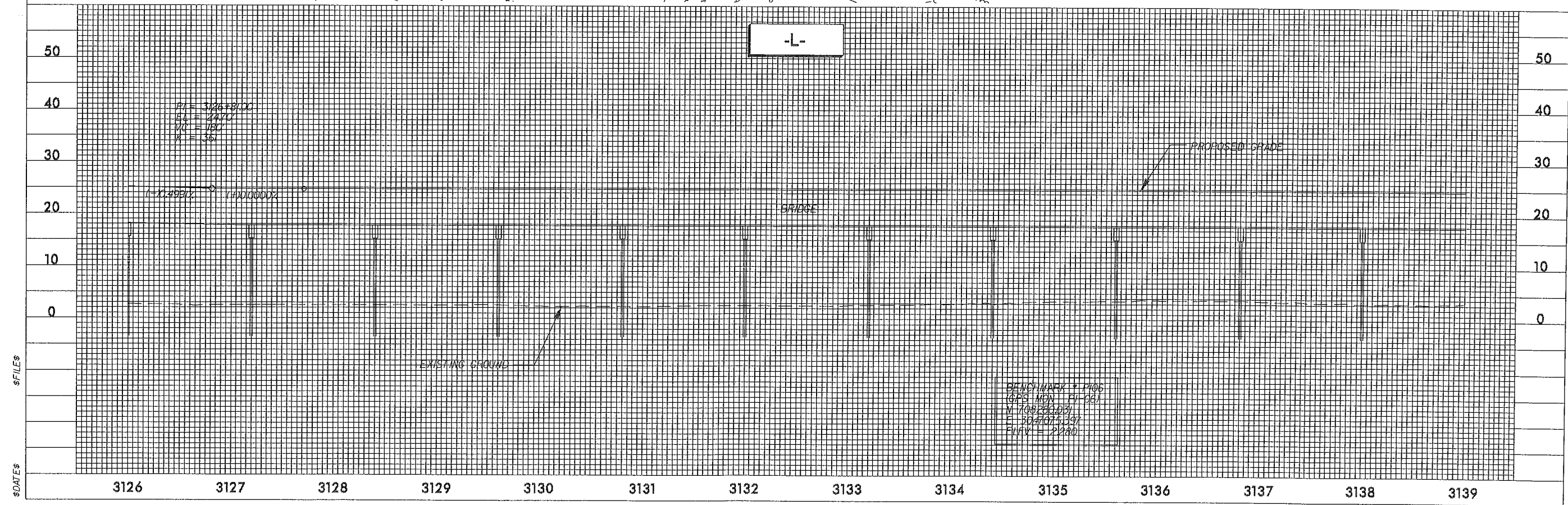
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
NC 12 PEA ISLAND		8
RAW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
		6

MATCHLINE -L- STA 3139+00 (SHEET 9)

Utility Permit Drawing
Sheet 6 of 22

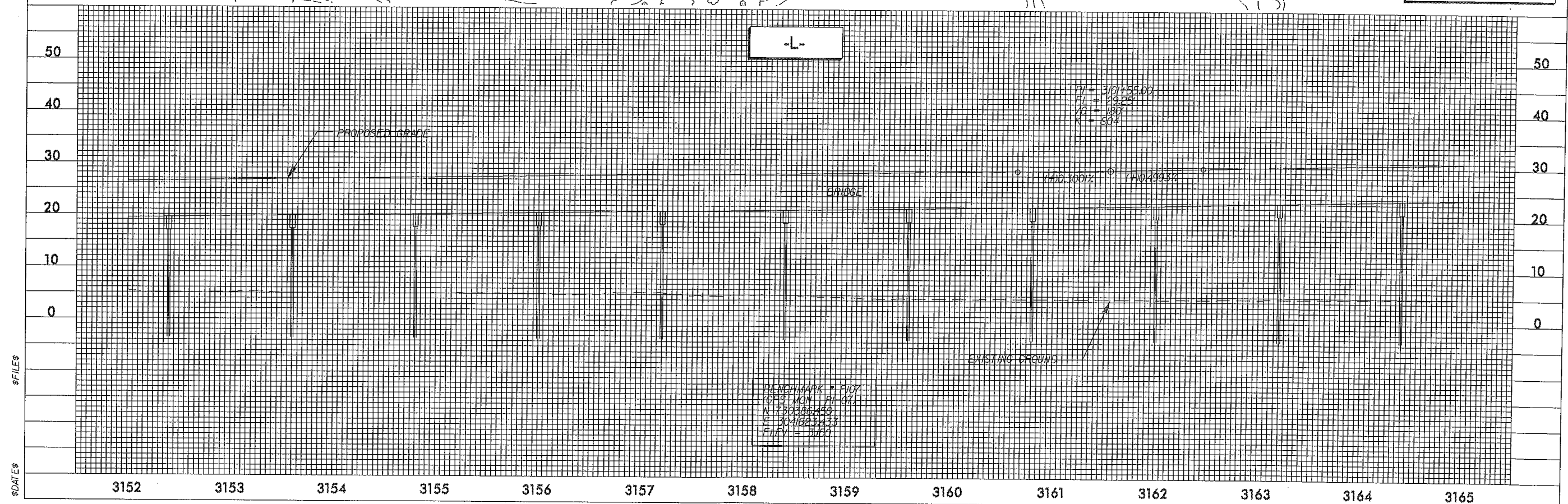
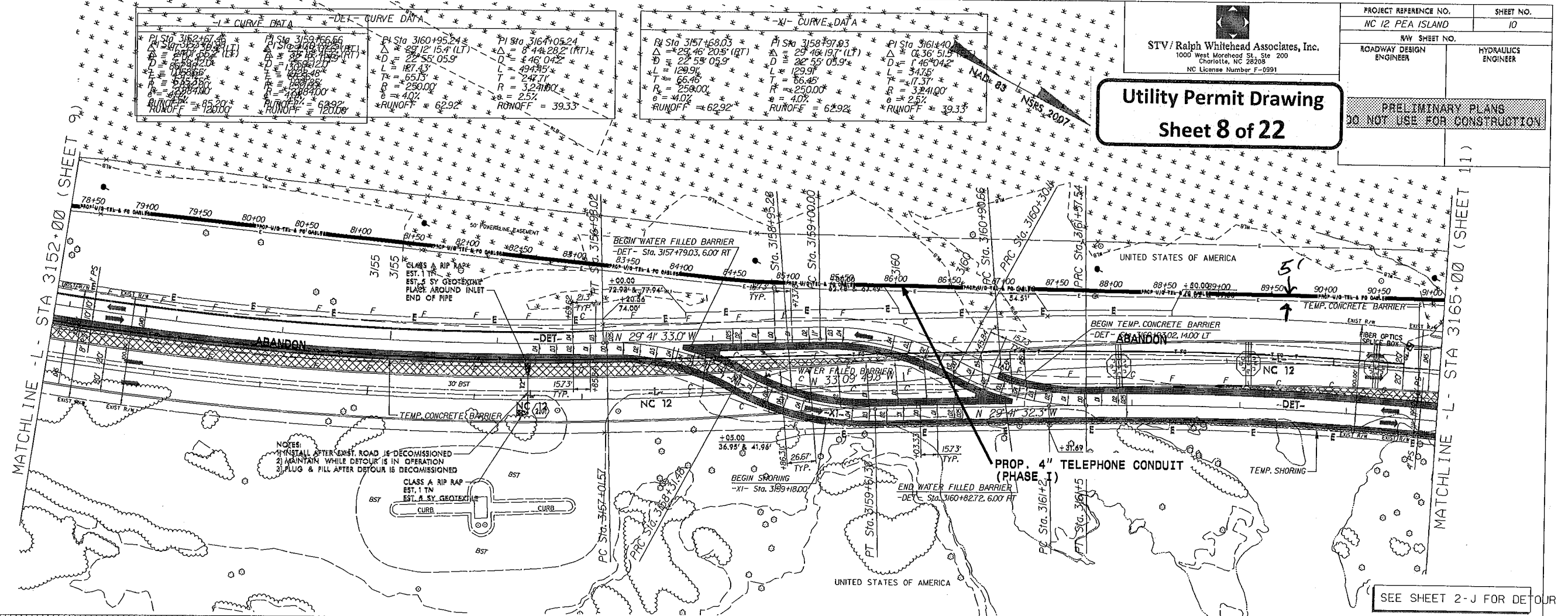
SEE SHEET 2-H FOR DETOUR



PROJECT REFERENCE NO.	SHEET NO.
NC 12 PEA ISLAND	10
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste 200
Charlotte, NC 28208
NC License Number F-0991

Utility Permit Drawing
Sheet 8 of 22



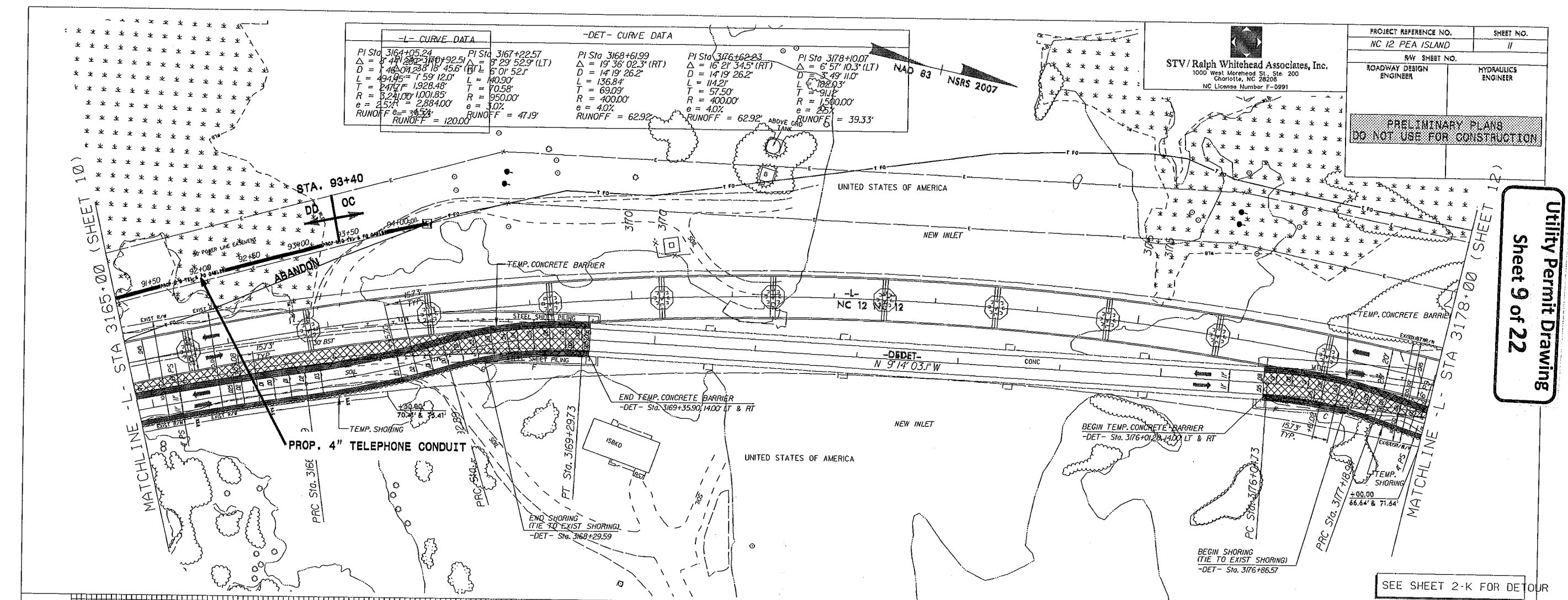
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D = 142.07	D = 141.9
L = 494.95	L = 140.90
T = 247.2	T = 70.58
R = 5,241.00	R = 950.00
e = 2.54%	e = 3.0%
RUNOFF = 39.33	RUNOFF = 47.19
	RUNOFF = 120.00

-DET- CURVE DATA	
PI Sta. 3168+61.99	PI Sta. 3176+62.23
$\Delta = 19^\circ 36' 02.3"$ (RT)	$\Delta = 16^\circ 21' 34.5"$ (RT)
D = 141.9	D = 141.9
L = 136.84	L = 114.21
T = 69.09	T = 57.50
R = 400.00	R = 400.00
e = 4.0%	e = 4.0%
RUNOFF = 62.92	RUNOFF = 62.92

-L- CURVE DATA	
PI Sta. 3178+10.07	PI Sta. 3178+10.07
$\Delta = 6^\circ 57' 10.3"$ (LT)	$\Delta = 6^\circ 57' 10.3"$ (LT)
D = 141.9	D = 141.9
L = 108.03	L = 108.03
T = 91.16	T = 91.16
R = 1,500.00	R = 1,500.00
e = 2.54%	e = 2.54%
RUNOFF = 39.33	RUNOFF = 39.33

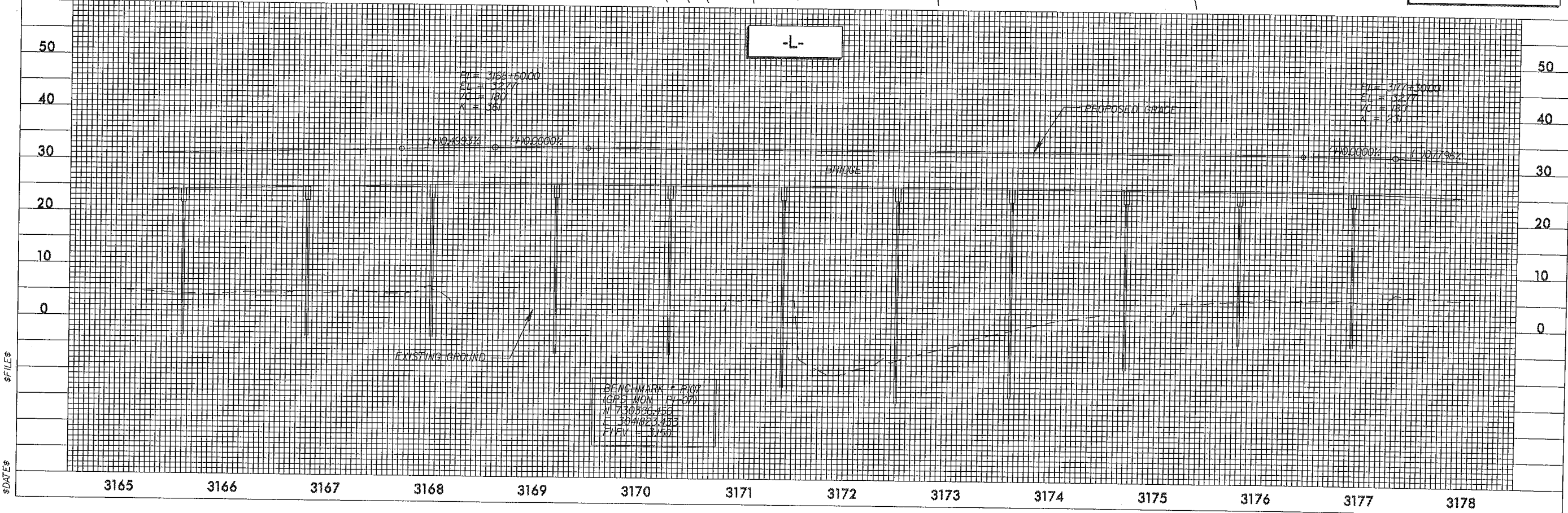
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

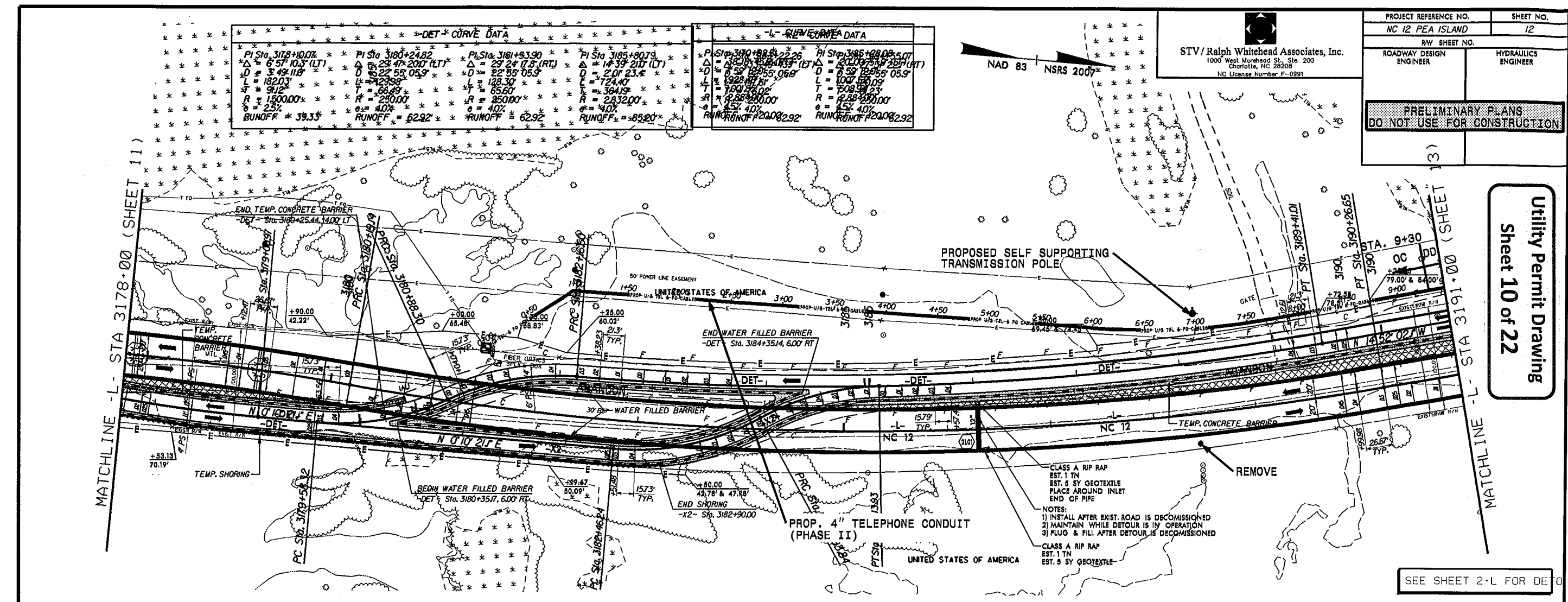
PROJECT REFERENCE NO. NC 12 PEA ISLAND	SHEET NO. II
RDWY SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



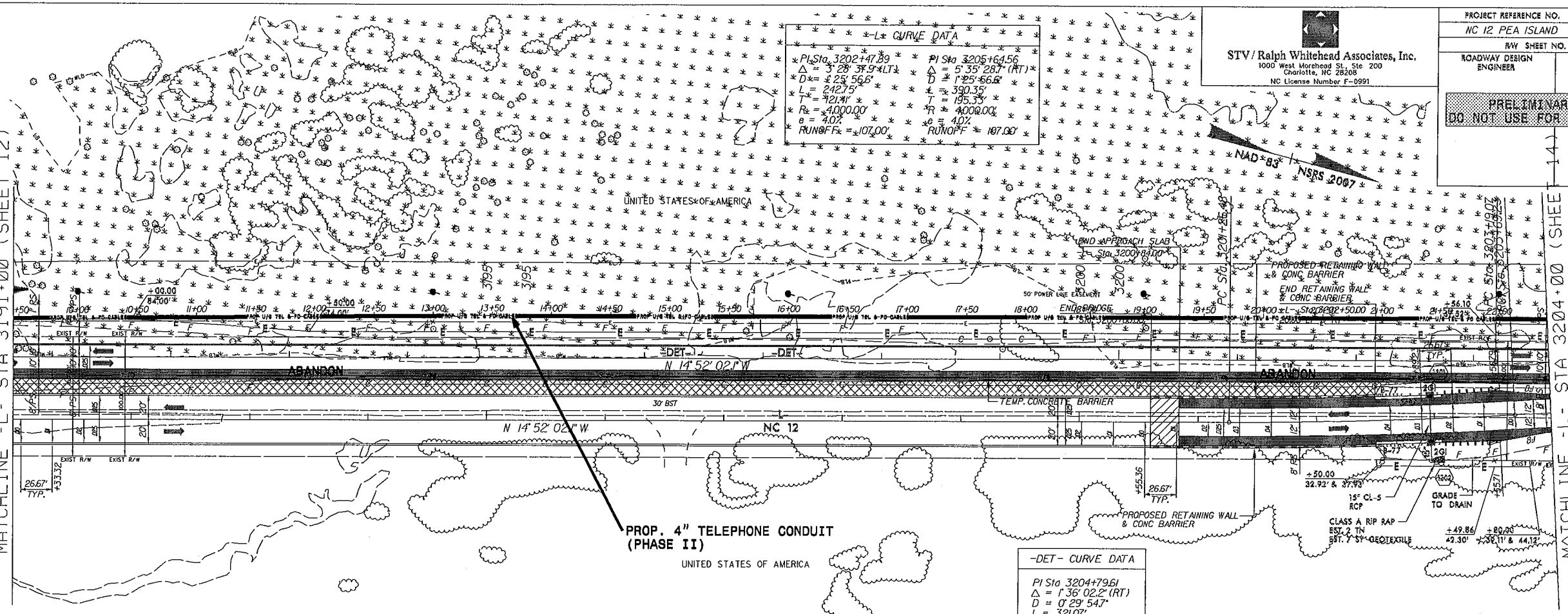
Utility Permit Drawing
Sheet 9 of 22

SEE SHEET 2-K FOR DETOUR





MATCHLINE -L- STA 3191+00 (SHEET 12)



-L- CURVE DATA

PI Sta 3202+47.89	PI Sta 3205+64.56
$\Delta = 3^\circ 28' 39.41''$	$\Delta = 5^\circ 35' 28.71''$
$D = 125.566'$	$D = 125.566'$
$L = 242.75'$	$L = 390.35'$
$T = 121.41'$	$T = 195.35'$
$R = 14000.00'$	$R = 4000.00'$
$\theta = 4.02^\circ$	$\theta = 4.02^\circ$
$Runoff = 107.00'$	$Runoff = 107.00'$

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

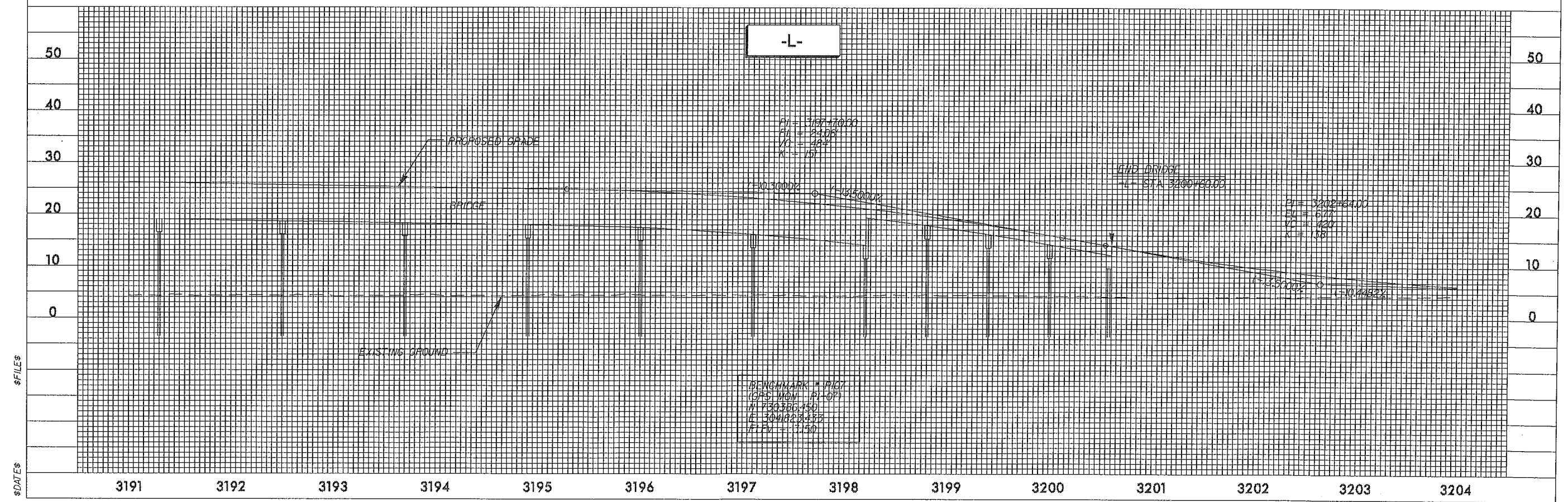
PROJECT REFERENCE NO. NC 12 PEA ISLAND	SHEET NO. 13
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

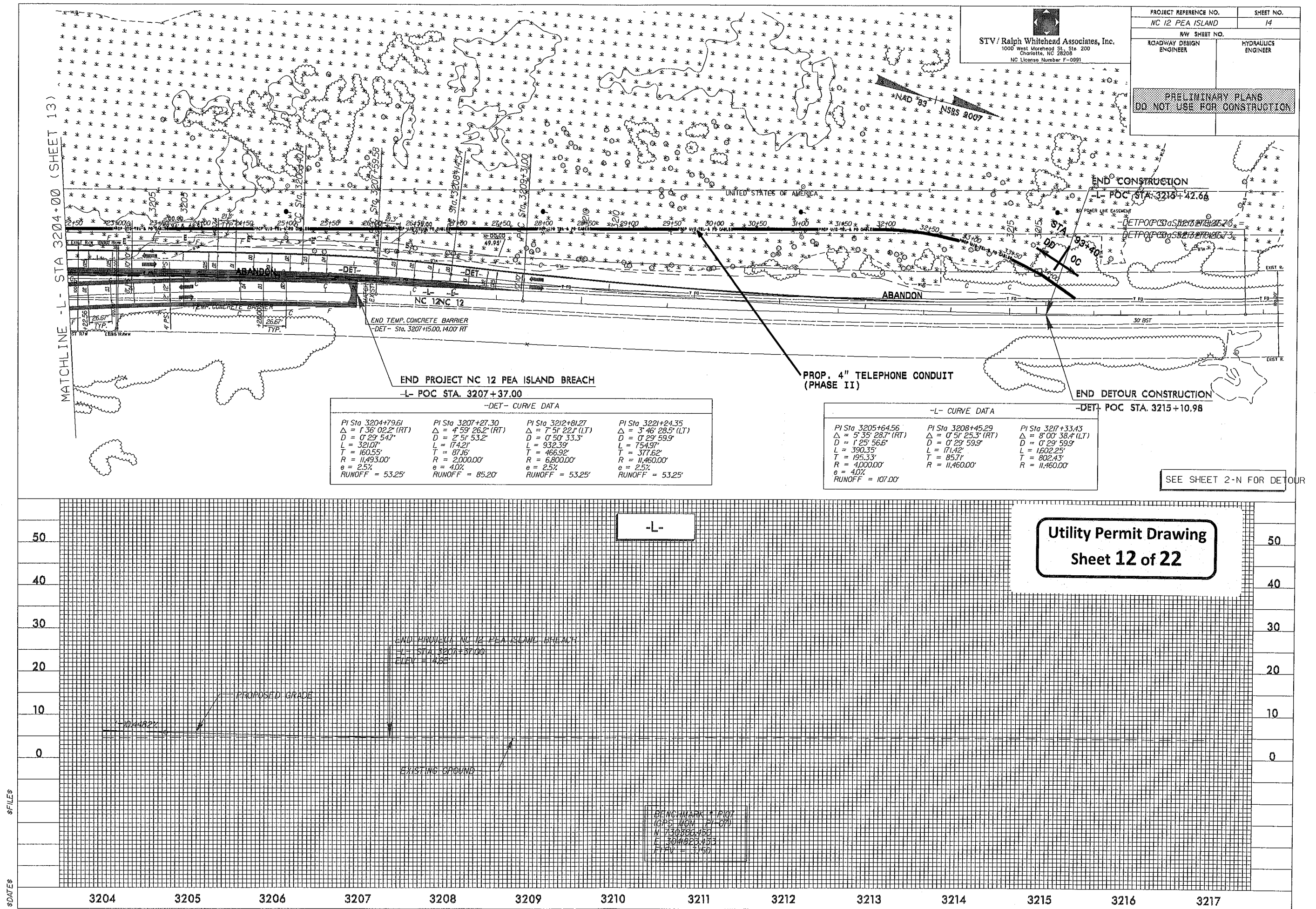
-DET- CURVE DATA

PI Sta 3204+79.61
$\Delta = 1^\circ 36' 02.2''$ (RT)
$D = 0^\circ 29' 54.7''$
$L = 321.07'$
$T = 160.55'$
$R = 11493.00'$
$\theta = 2.52^\circ$
$Runoff = 53.25'$

Utility Permit Drawing
Sheet 11 of 22

SEE SHEET 2-M FOR DETOUR



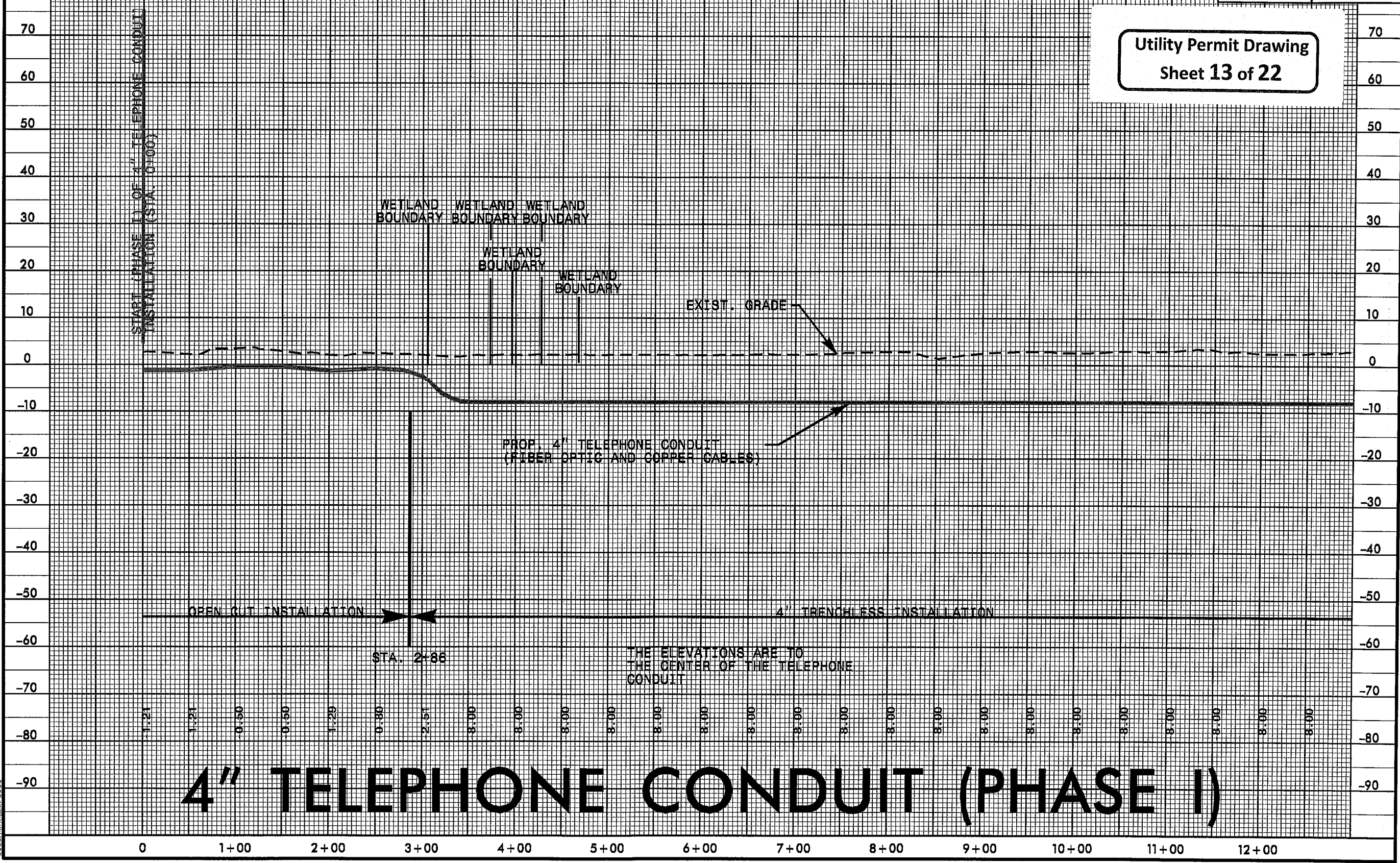


5/14/99

14-MAY-2012 11:23
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PROJECT REFERENCE NO.		SHEET NO.	
NC 12 PEA ISLAND		15	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

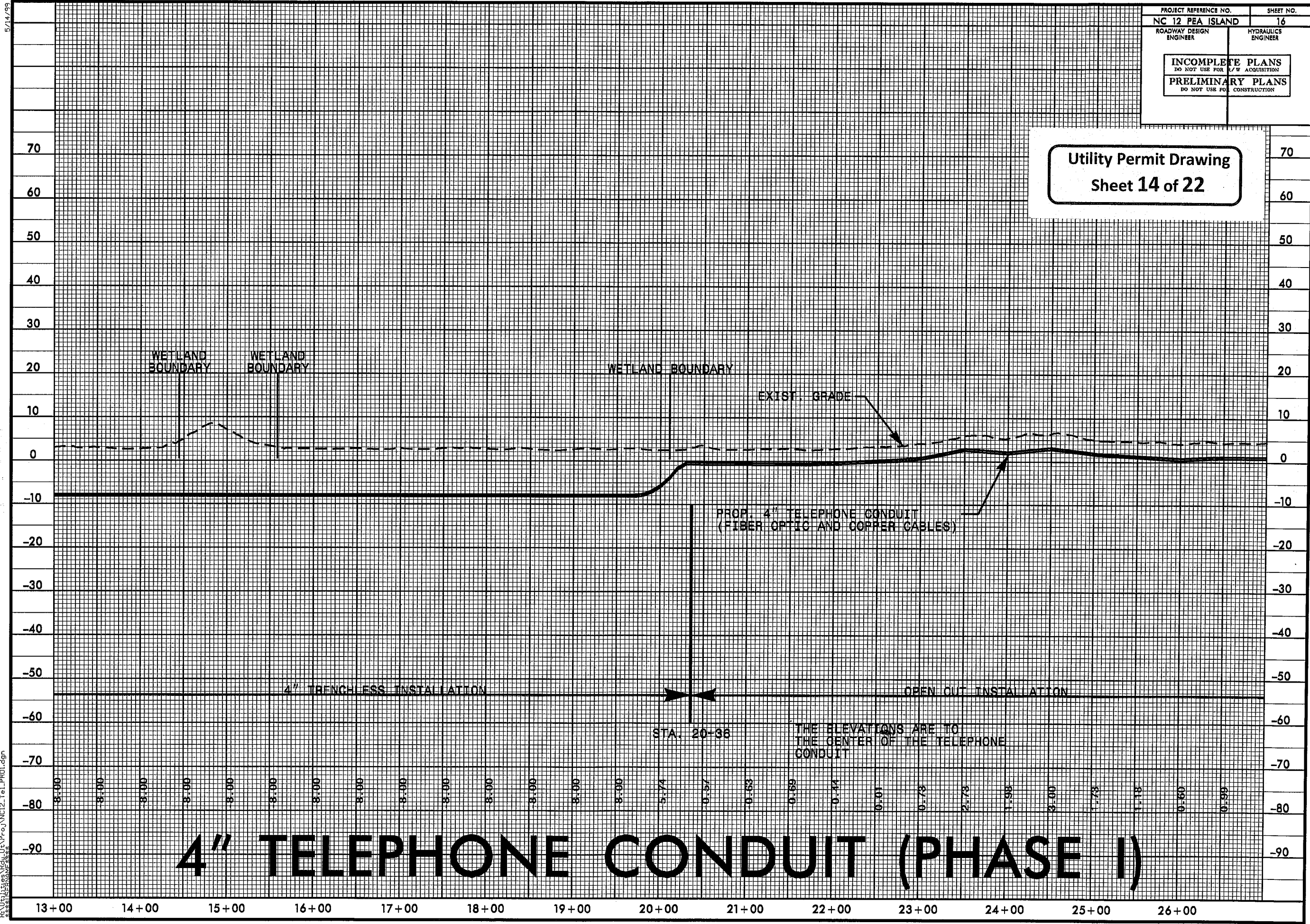
Utility Permit Drawing
Sheet 13 of 22



5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
NC 12 PEA ISLAND		16	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Utility Permit Drawing
Sheet 14 of 22

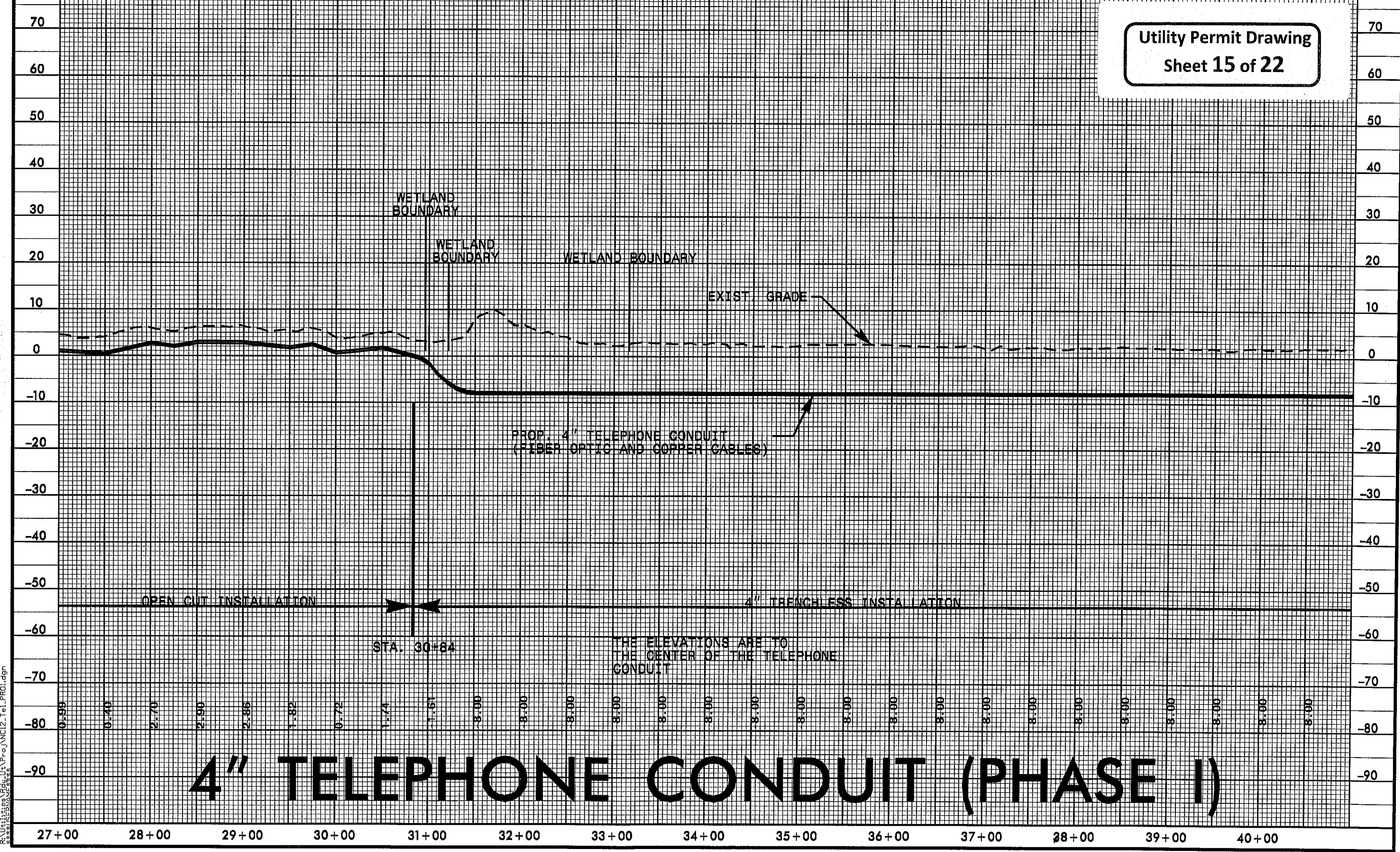


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5/14/99

PROJECT REFERENCE NO.		SHEET NO.
NC 12 PEA ISLAND		17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

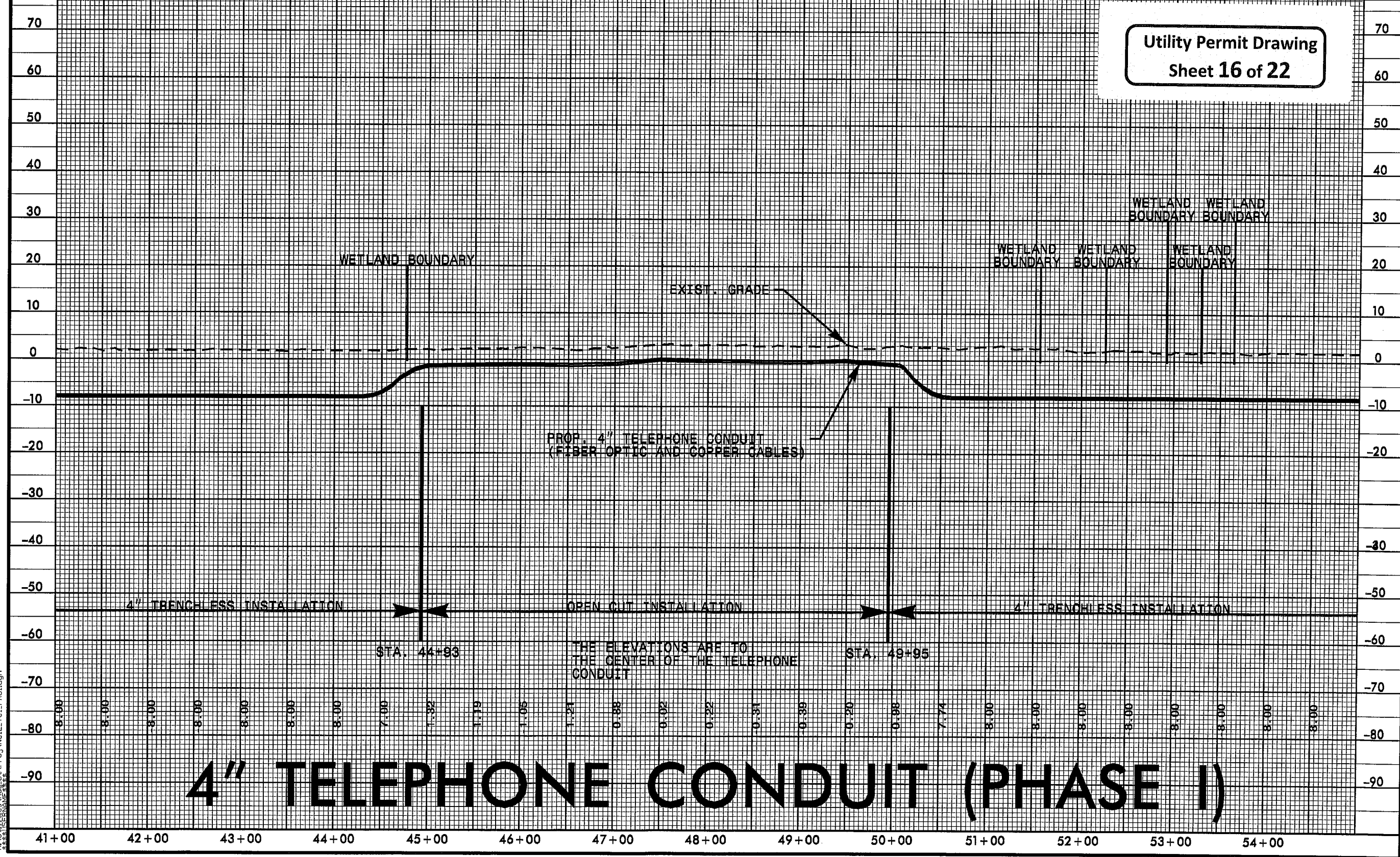
Utility Permit Drawing
Sheet 15 of 22



4" TELEPHONE CONDUIT (PHASE I)

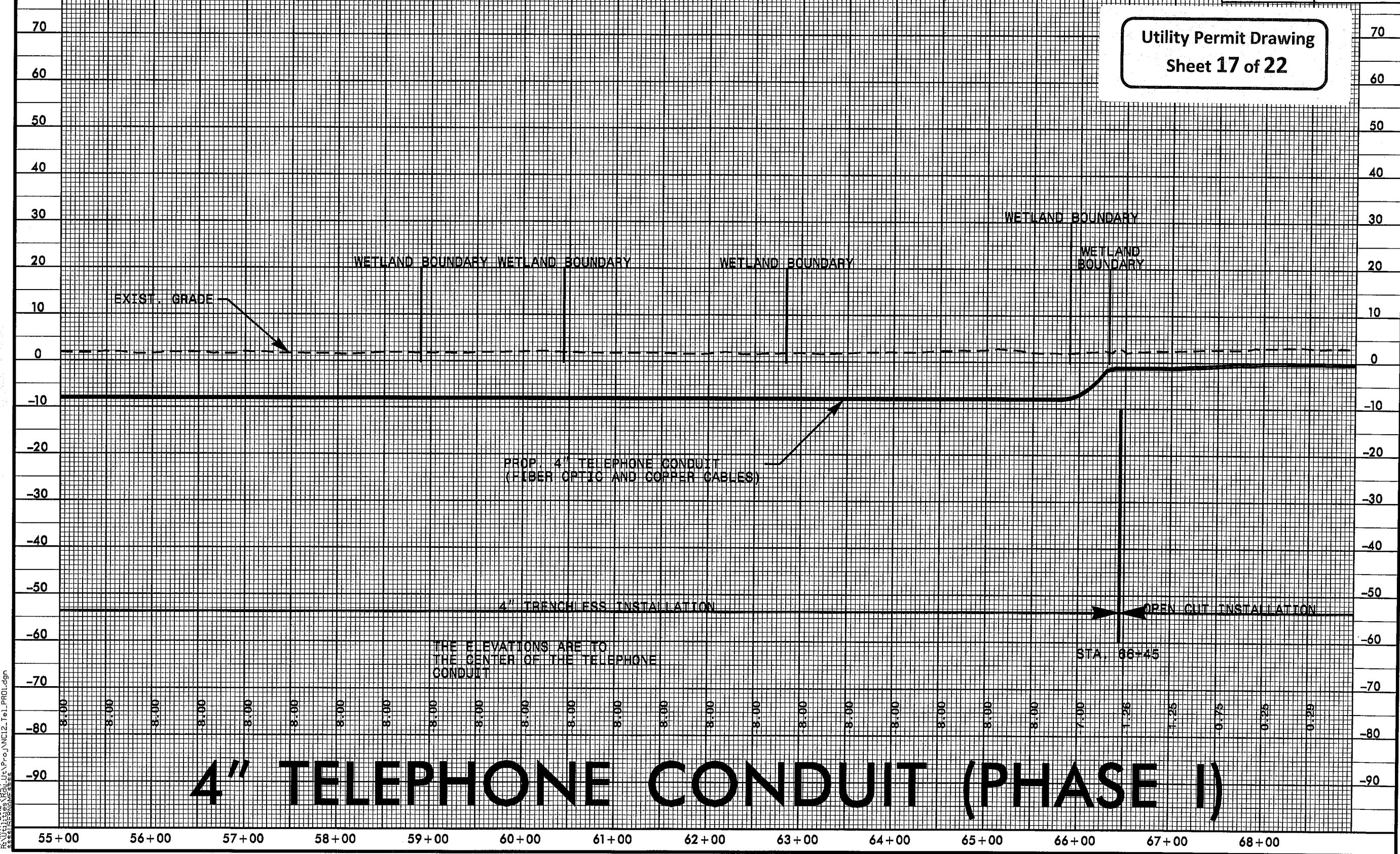
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\$\$\$\$\$USERNAME\$\$\$

Utility Permit Drawing
Sheet 16 of 22



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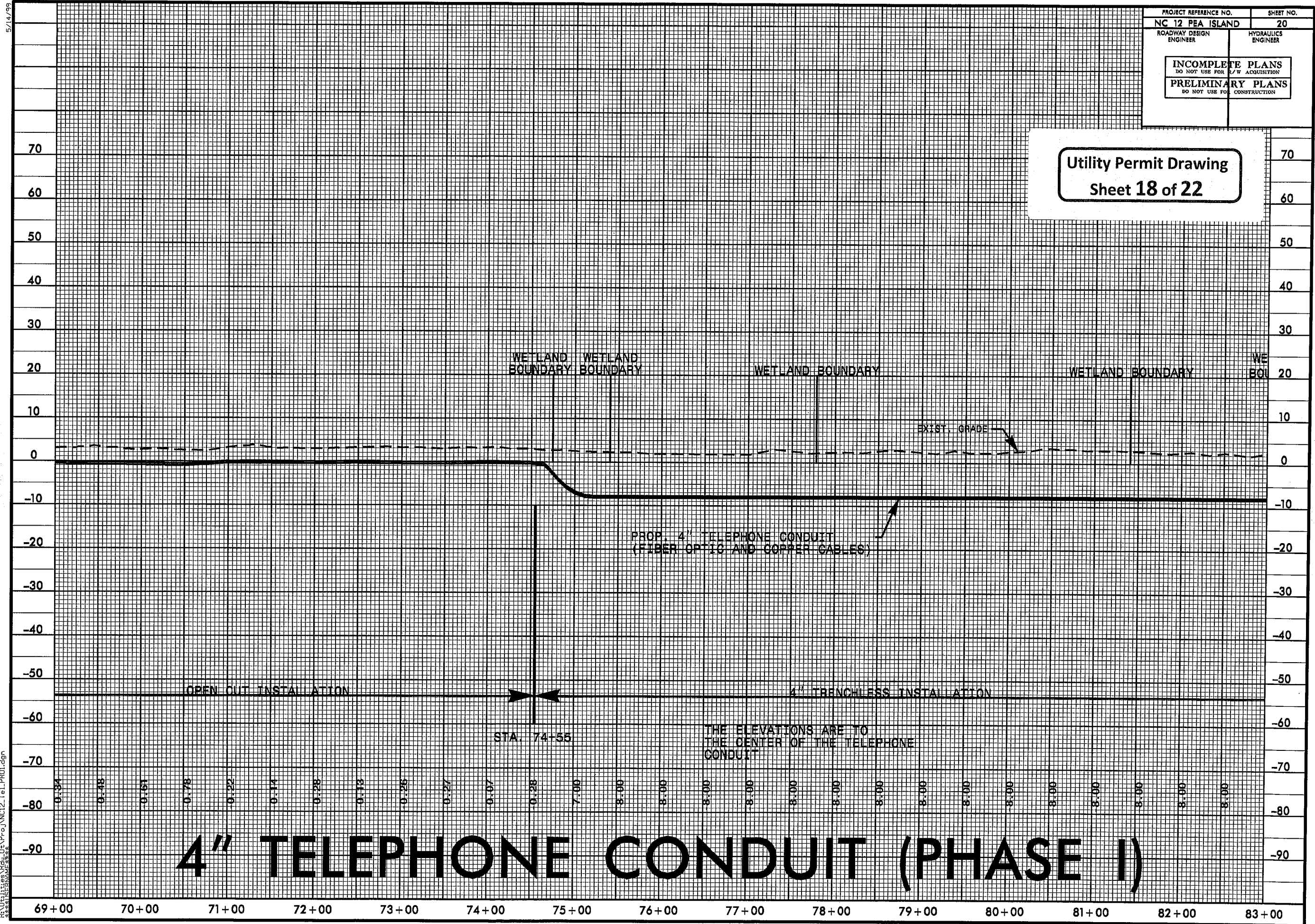
Utility Permit Drawing
Sheet 17 of 22



5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
NC 12 PEA ISLAND		20	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Utility Permit Drawing
Sheet 18 of 22

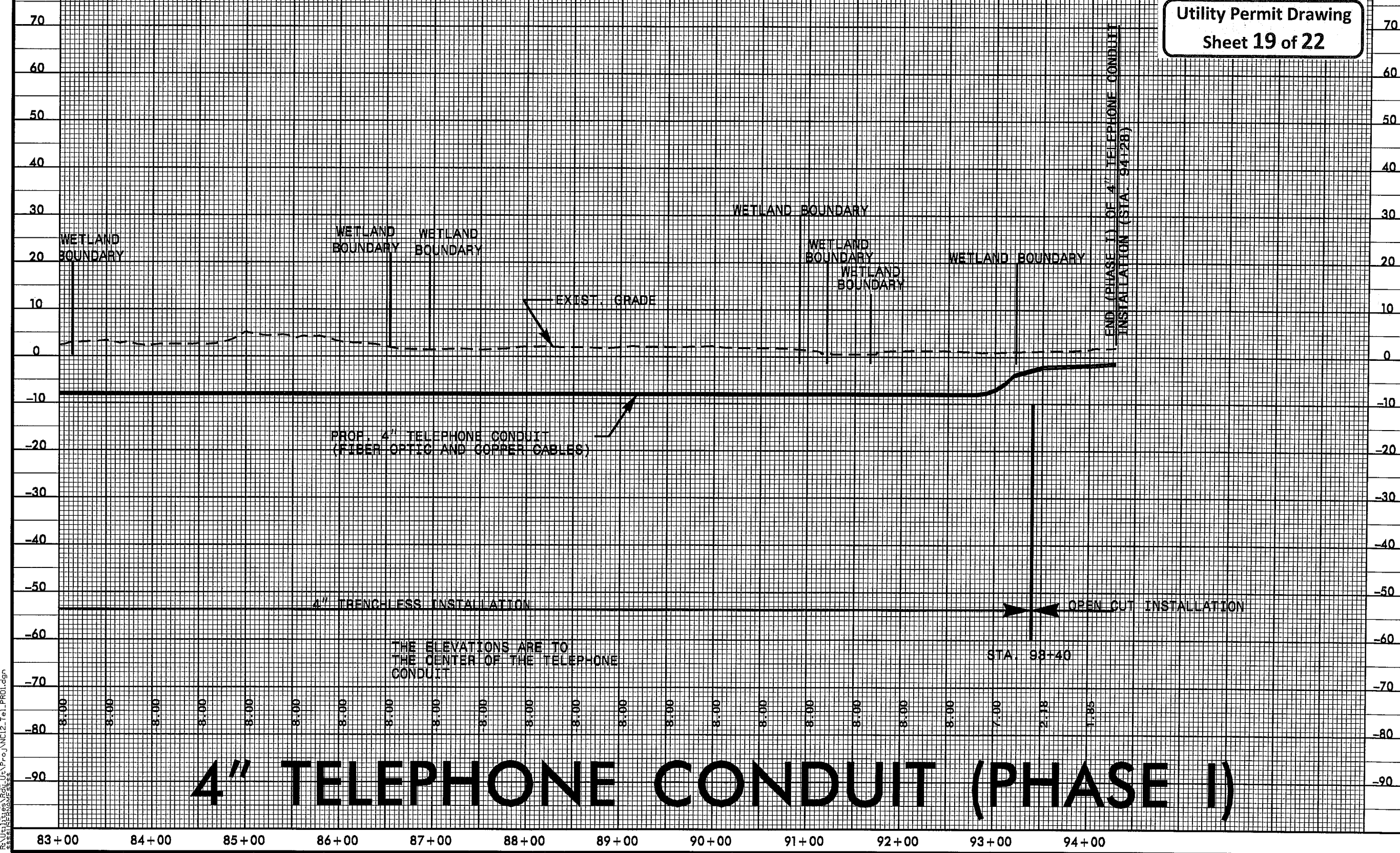


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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
NC 12 PEA ISLAND	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Utility Permit Drawing
Sheet 19 of 22

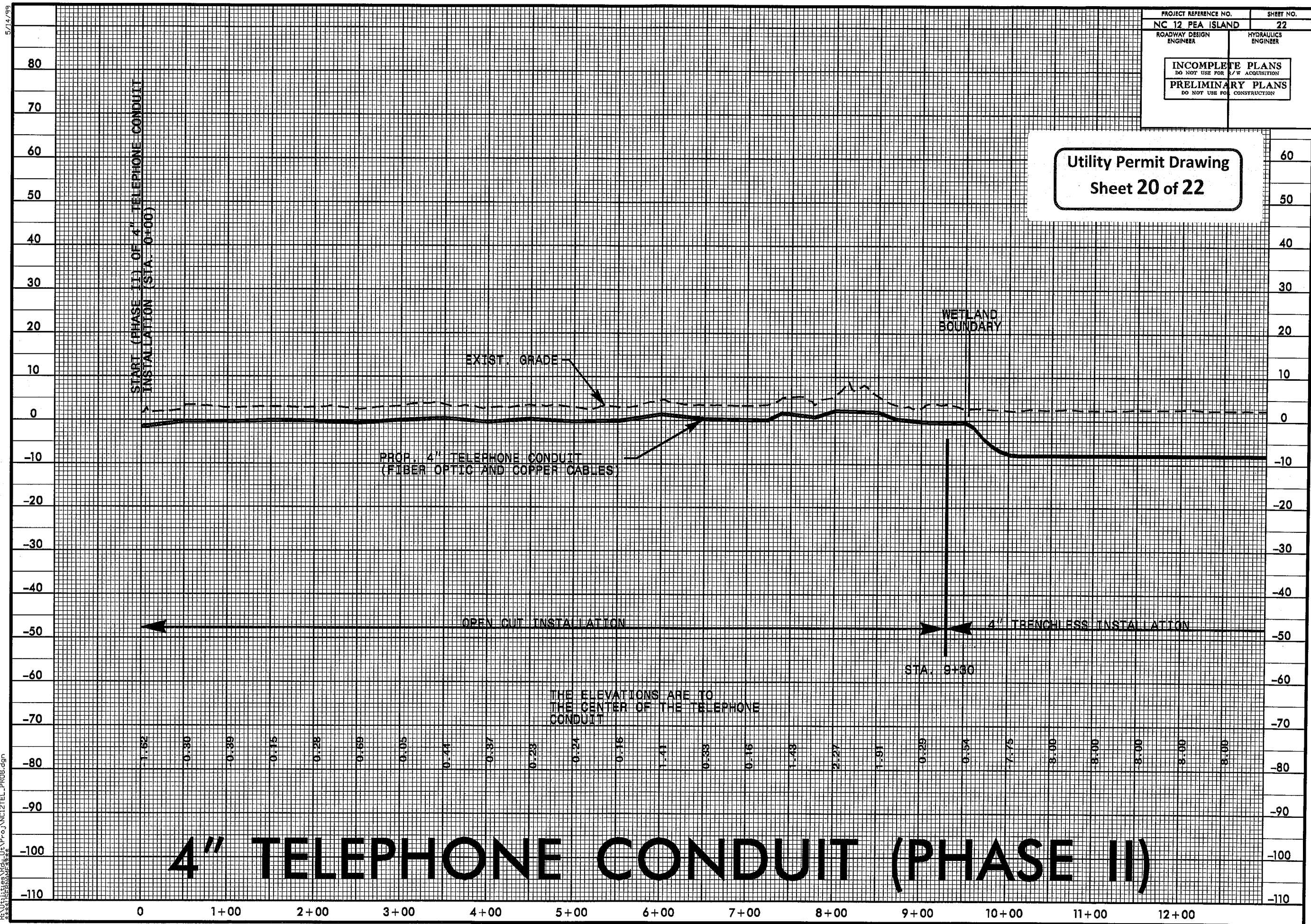


5/14/99

PROJECT REFERENCE NO.	SHEET NO.
NC 12 PEA ISLAND	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Utility Permit Drawing
Sheet 20 of 22

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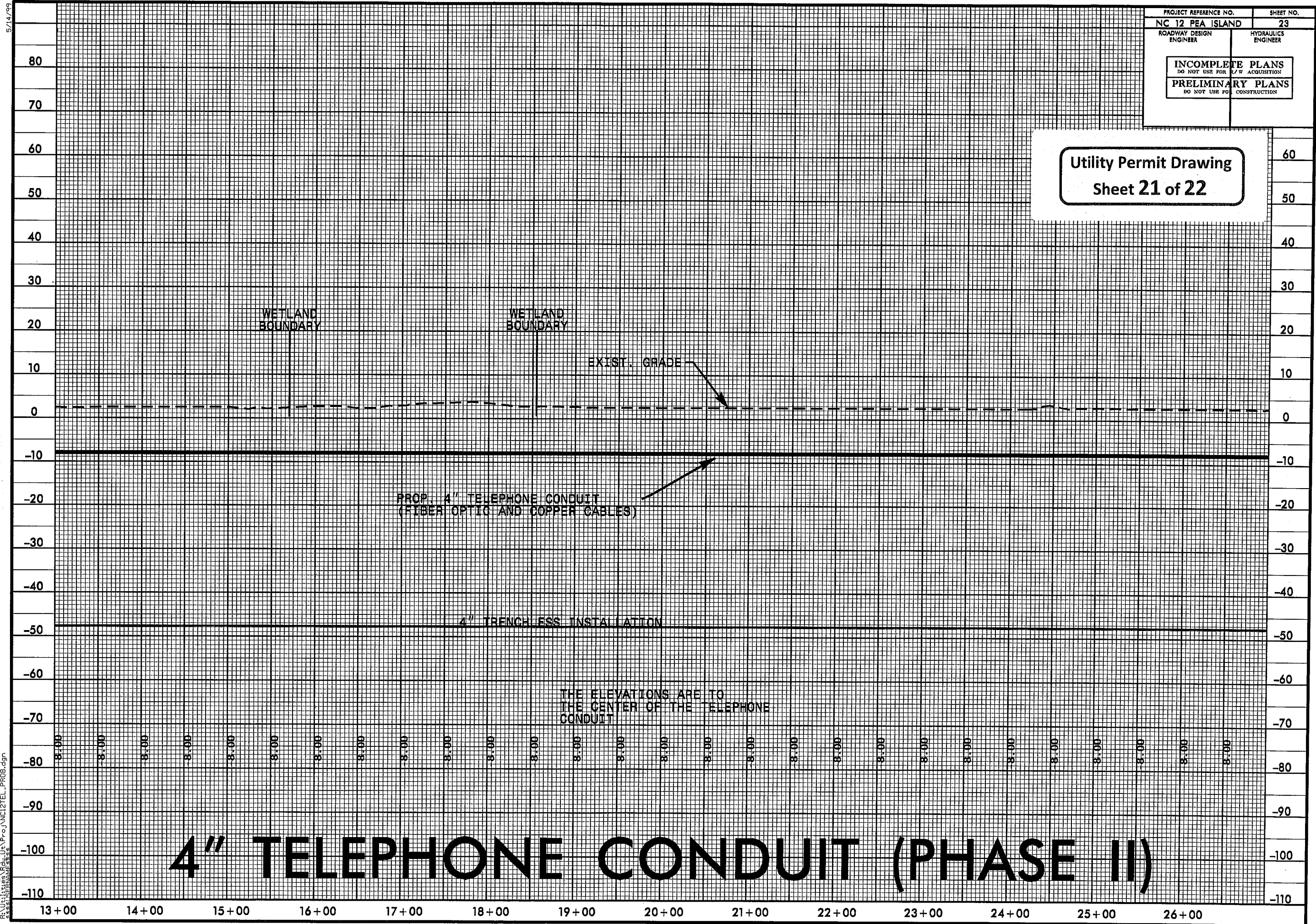


5/14/99

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PROJECT REFERENCE NO.		SHEET NO.
NC 12 PEA ISLAND		23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

Utility Permit Drawing
Sheet 21 of 22

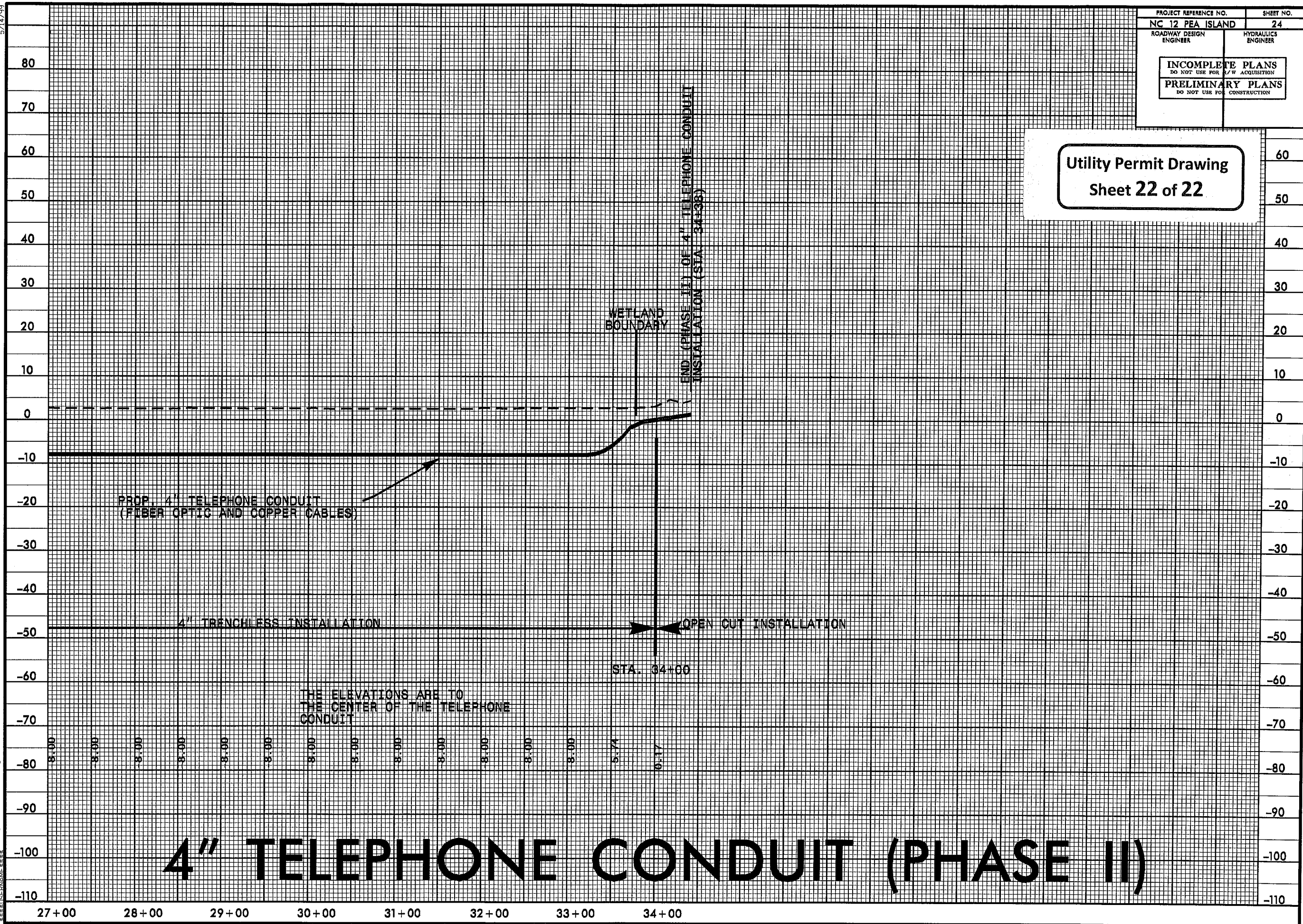


5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
NC 12 PEA ISLAND	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

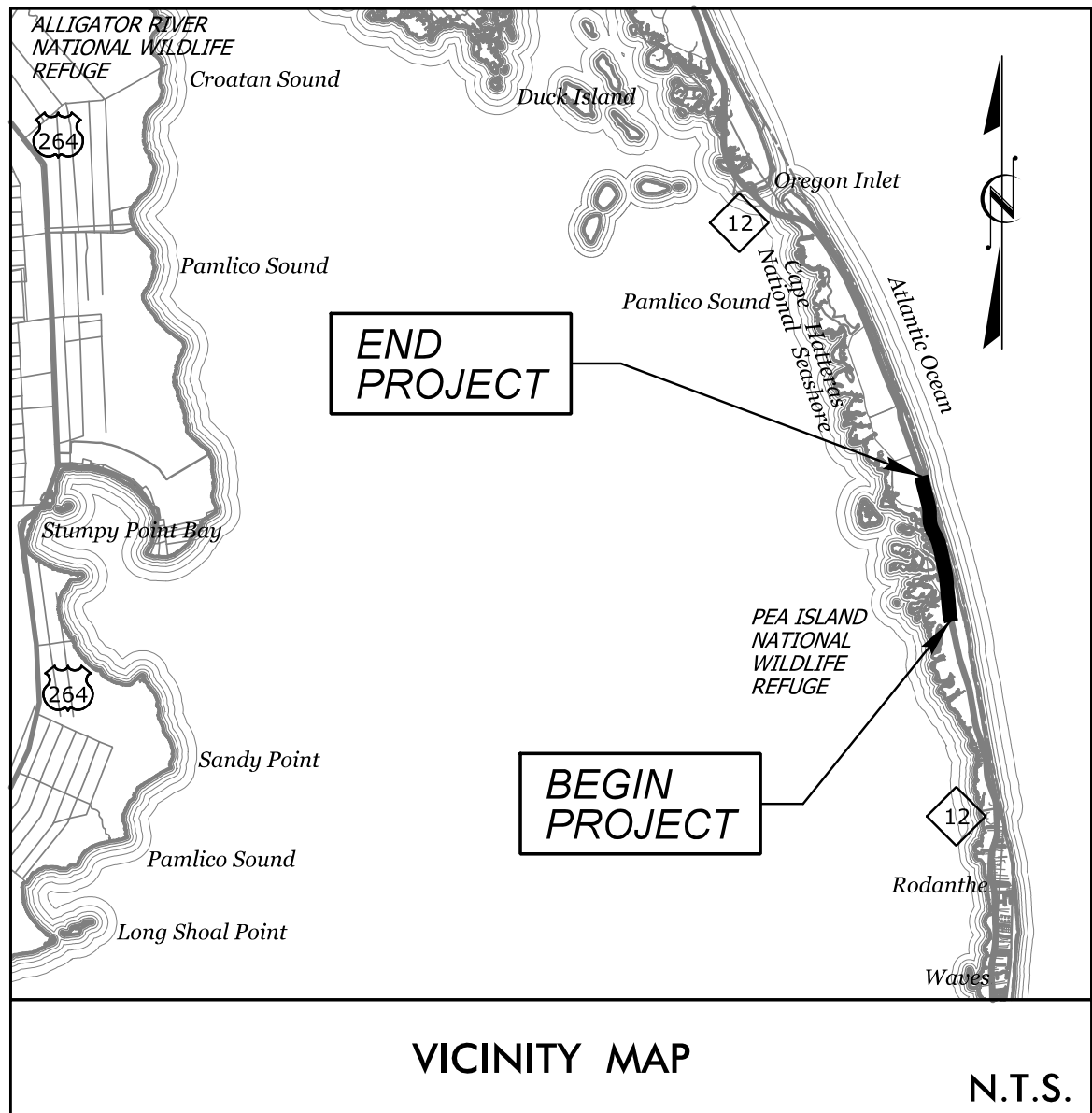
Utility Permit Drawing
Sheet 22 of 22



PROJECT: B-2500A

CONTRACT: C203171

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet

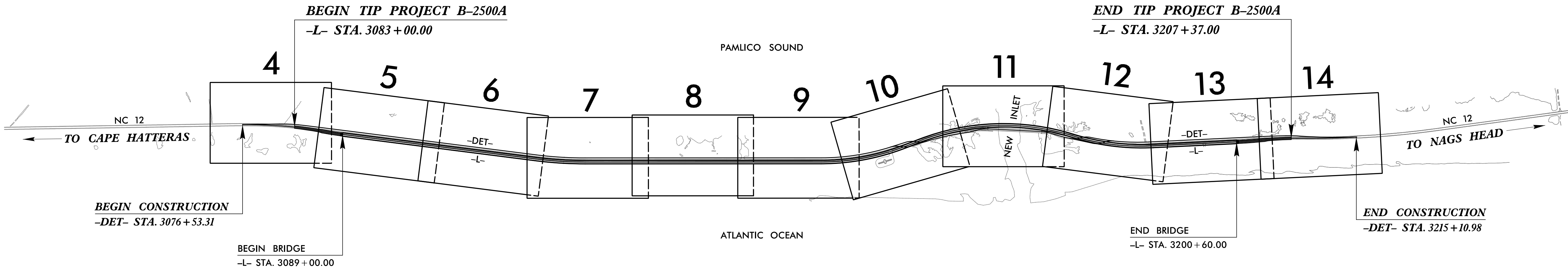
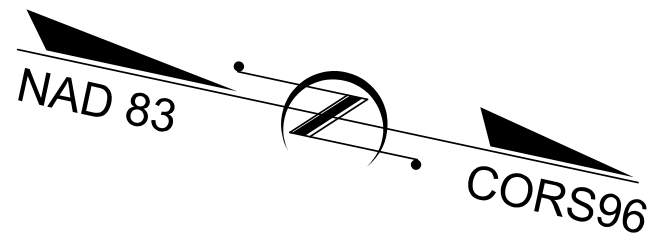


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

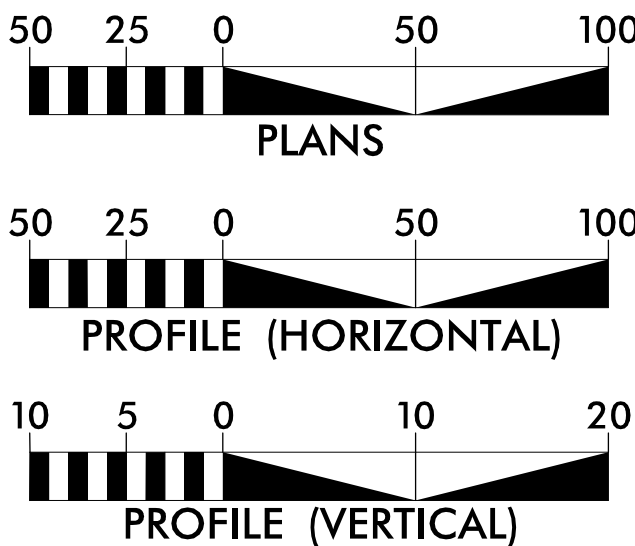
DARE COUNTY

LOCATION: PHASE II, NC 12 LONG-TERM IMPROVEMENTS AT PEA ISLAND
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2500A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32635.1.6		P.E.	
32635.2.2	BRNHF-0012(55)	UTIL.	
32635.3.6	BRNHF-0012(55)	CONST.	



GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 7,300
ADT 2032 = 10,900
DHV = N/A
D = N/A
T = 6 %
V = 60 MPH
FUNC. CLASSIFICATION:
COLLECTOR
T = 1% TTST+5% DUALS
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-2500A = 0.241 MILES
LENGTH OF STRUCTURE TIP PROJECT B-2500A = 2.114 MILES
TOTAL LENGTH OF TIP PROJECT B-2500A = 2.355 MILES

NCDOT CONTACT: GARY LOVERING, PE
Project Engineer, Roadway Design

PLANS PREPARED FOR THE NCDOT BY:
STV/RALPH WHITEHEAD ASSOCIATES, INC.
1000 West Morehead St., Ste. 200, Charlotte NC, 28208
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
N/A

LETTING DATE:
DECEMBER 18, 2012

JOHN N. JOHNSON, PE
PROJECT ENGINEER

JOSEPH A. FREEMAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS
ENGINEER

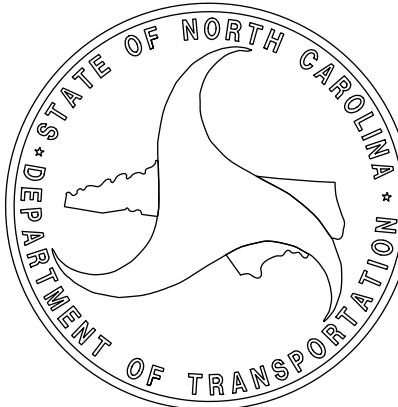
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: P.E.



Note: Not to Scale

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

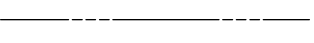
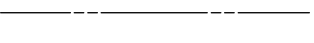
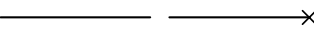
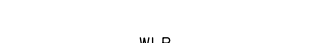
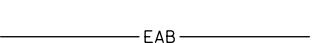
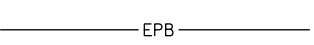
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-2500A	I-B

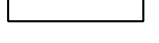
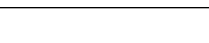
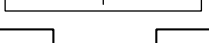
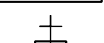
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONVENTIONAL PLAN SHEET SYMBOLS

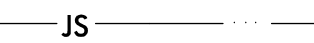
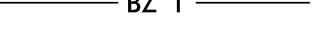
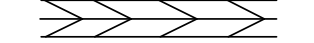
BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Known Soil Contamination: Area or Site	
Potential Soil Contamination: Area or Site	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

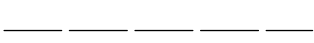
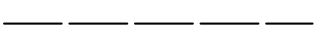
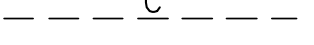
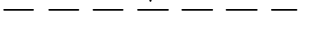
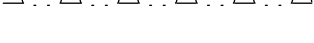
RAILROADS:

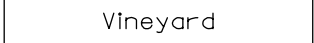
Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY:

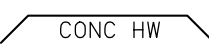
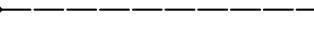
Baseline Control Point	
Existing Right of Way Marker	
Existing Right of Way Line	
Proposed Right of Way Line	
Proposed Right of Way Line with Iron Pin and Cap Marker	
Proposed Right of Way Line with Concrete or Granite Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage / Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	
Proposed Permanent Easement with Iron Pin and Cap Marker	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
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	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Booth	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
Recorded U/G Telephone Cable	
Designated U/G Telephone Cable (S.U.E.*)	
Recorded U/G Telephone Conduit	
Designated U/G Telephone Conduit (S.U.E.*)	
Recorded U/G Fiber Optics Cable	
Designated U/G Fiber Optics Cable (S.U.E.*)	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
Recorded U/G Water Line	
Designated U/G Water Line (S.U.E.*)	
Above Ground Water Line	

TV:

TV Satellite Dish	
TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
Recorded U/G TV Cable	
Designated U/G TV Cable (S.U.E.*)	
Recorded U/G Fiber Optic Cable	
Designated U/G Fiber Optic Cable (S.U.E.*)	

GAS:

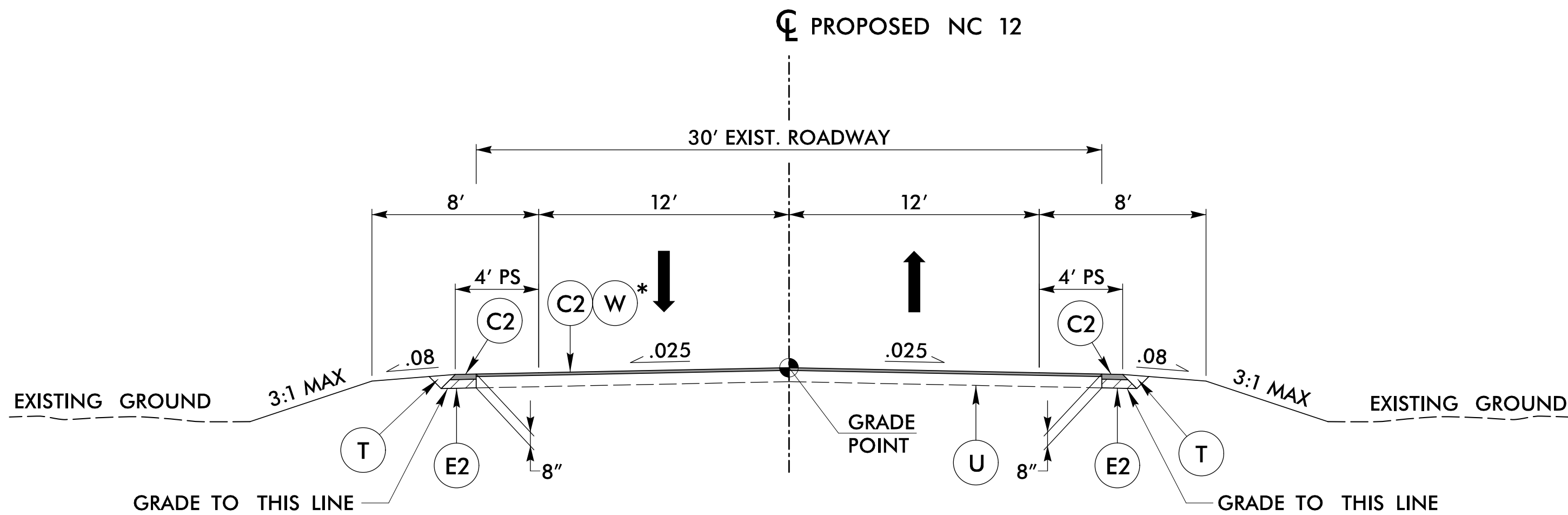
Gas Valve	
Gas Meter	
Recorded U/G Gas Line	
Designated U/G Gas Line (S.U.E.*)	
Above Ground Gas Line	

SANITARY SEWER:

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

MISCELLANEOUS:

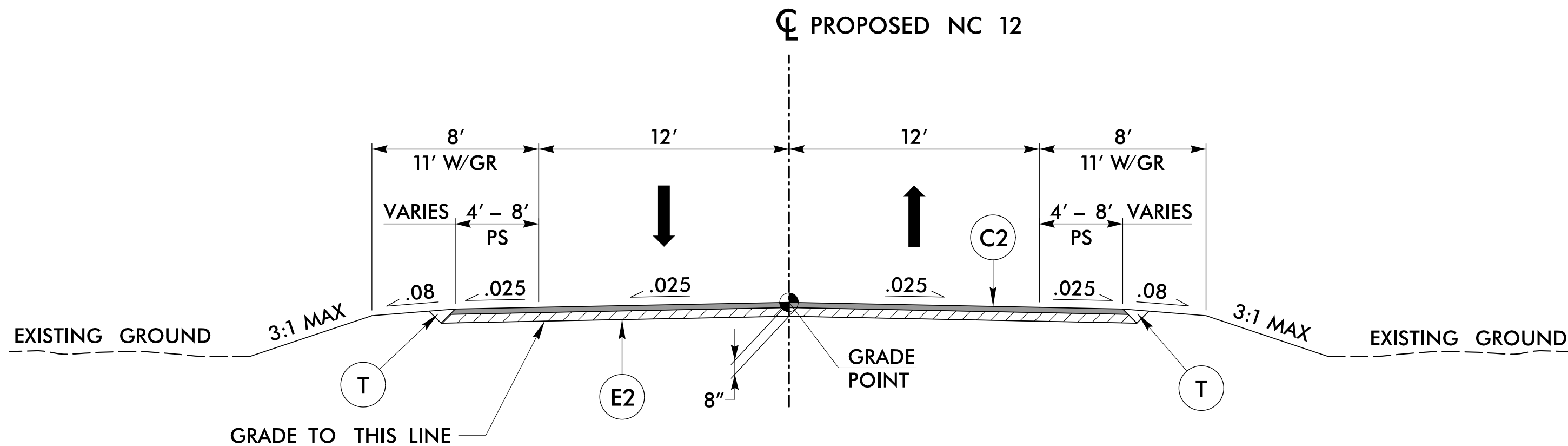
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	



TYPICAL SECTION #1

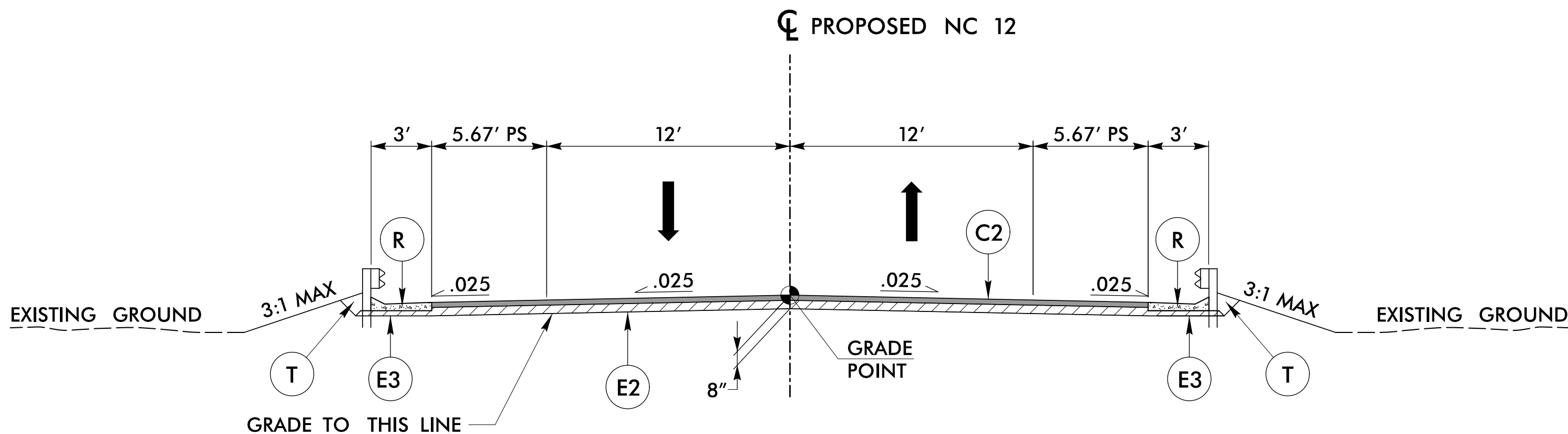
-L- STA. 3083+00.00 TO STA. 3086+92.67
-L- STA. 3204+46.89 TO STA. 3207+37.00

* NOTES:
1. USE WEDGING DETAIL #1



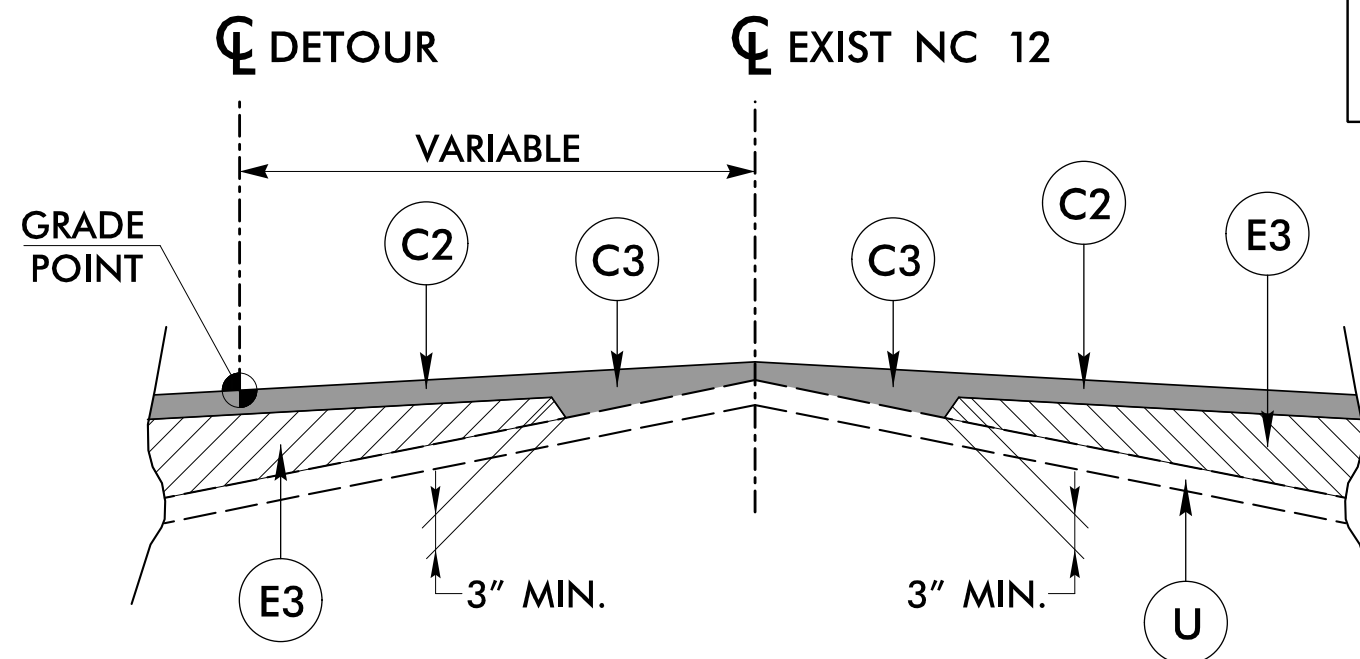
TYPICAL SECTION #2

-L- STA. 3086+02.91 TO STA. 3086+92.67
-L- STA. 3203+55.04 TO STA. 3204+46.89

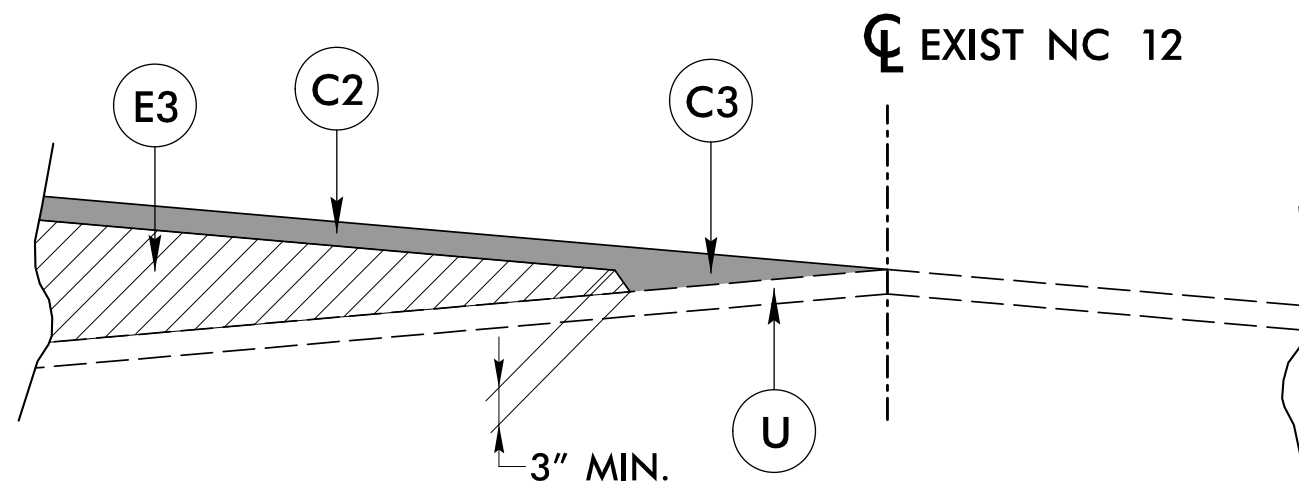


TYPICAL SECTION #3

-L- STA. 3086+92.67 TO STA. 3087+25.91
-L- STA. 3202+50.66 TO STA. 3203+55.04



WEDGING DETAIL #1

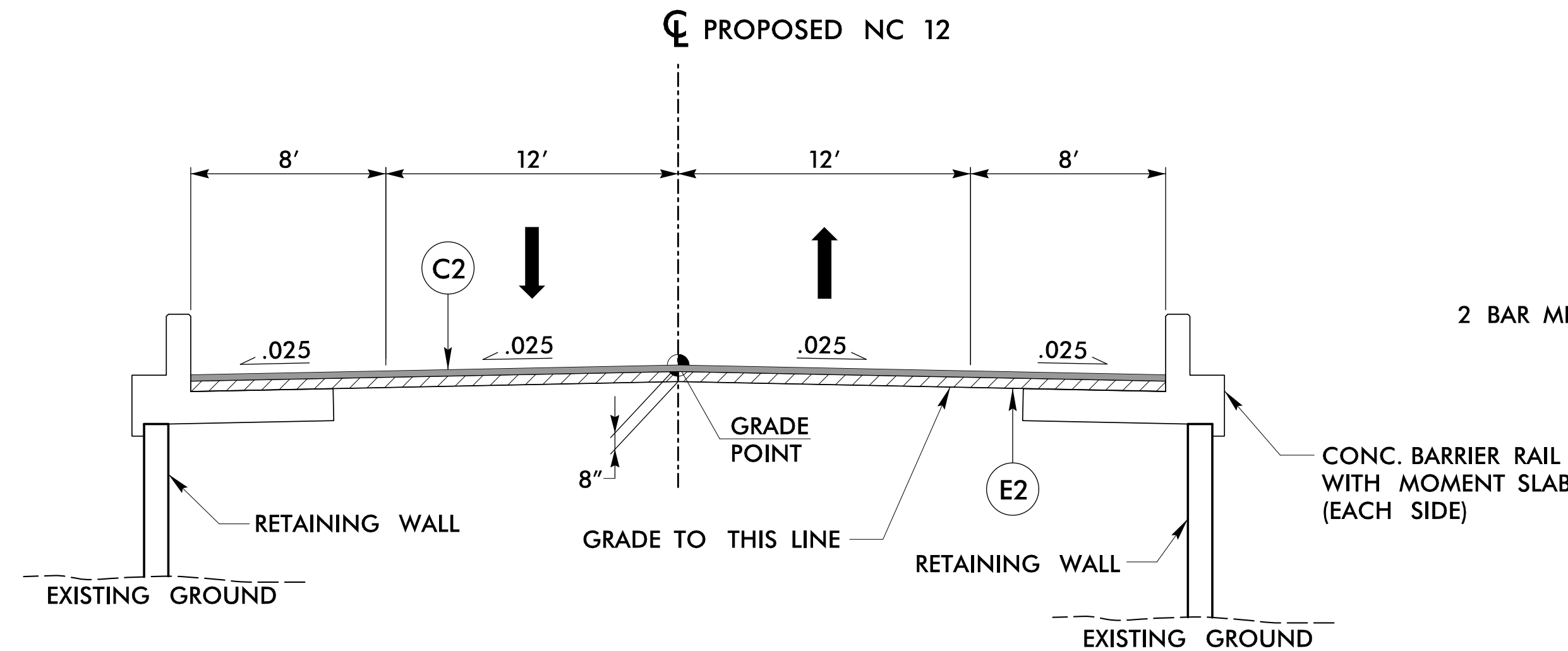


WEDGING DETAIL #2

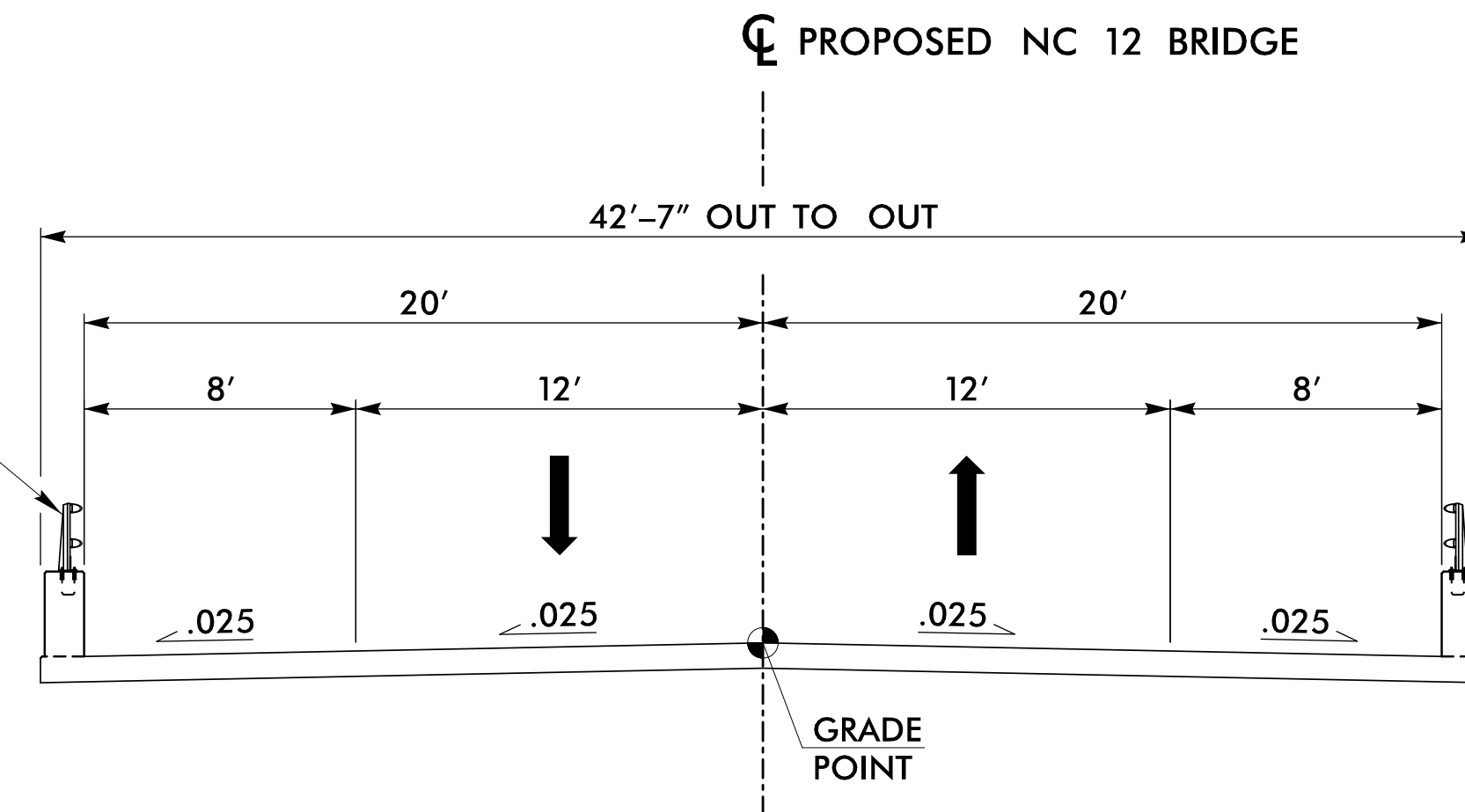
PAVEMENT SCHEDULE

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ.YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
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 LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
E3	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" OR GREATER THAN 5.5" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT (SEE WEDGING DETAIL THIS SHEET)

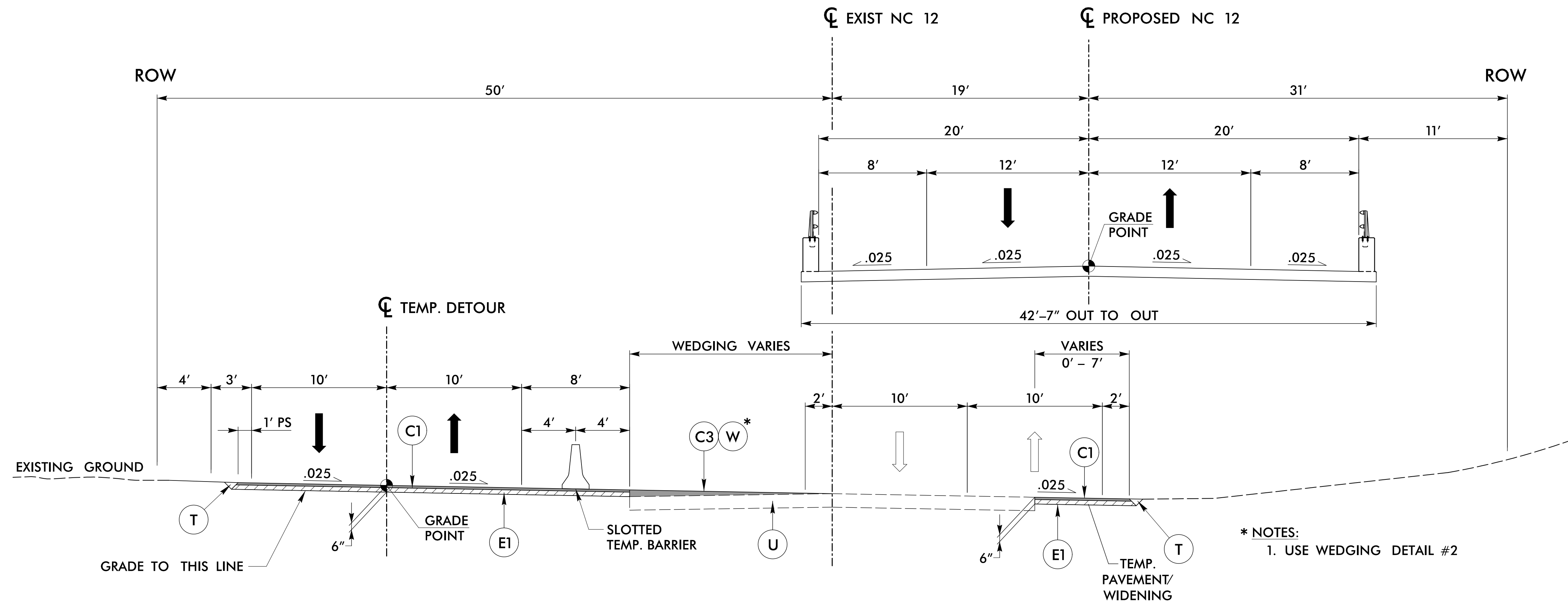
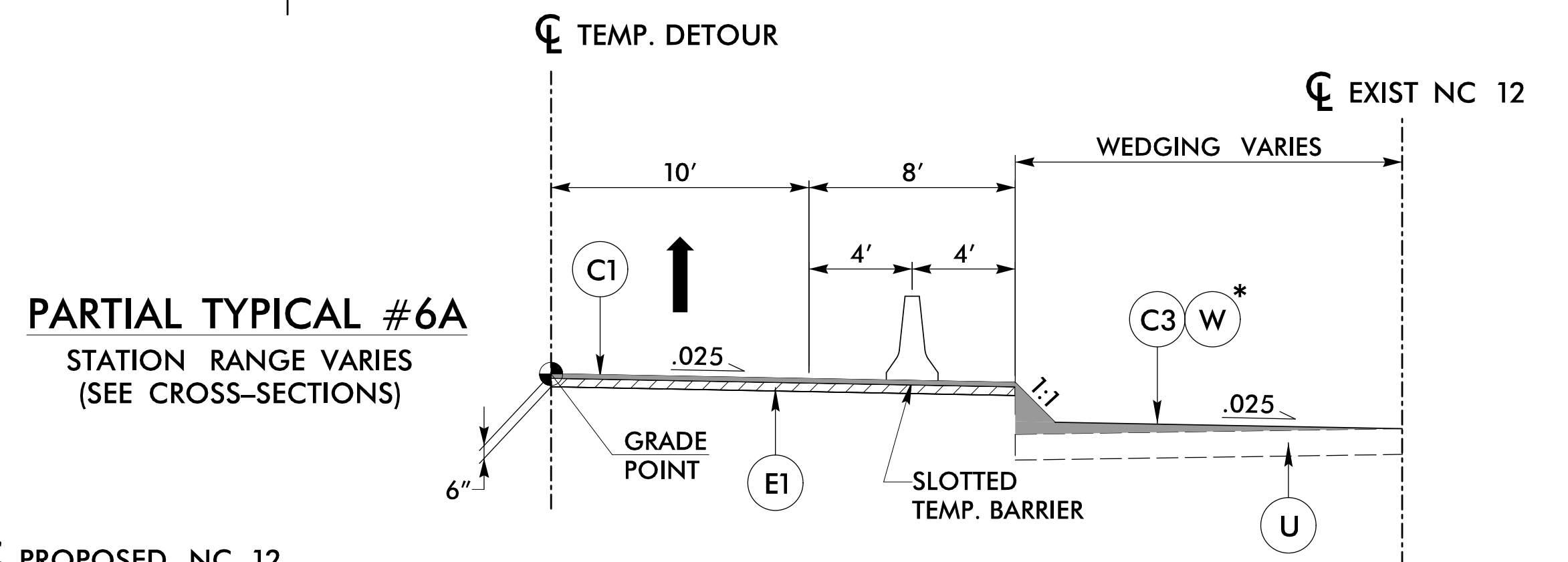
ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE



-L- STA. 3087+50.00 TO STA. 3089+00.00 (BEGIN BRIDGE)
-L- STA. 3200+60.00 (END BRIDGE) TO STA. 3202+50.00



TYPICAL SECTION #5
-L- STA. 3089+00.00 (BEGIN BRIDGE)
TO STA. 3200+60.00 (END BRIDGE)

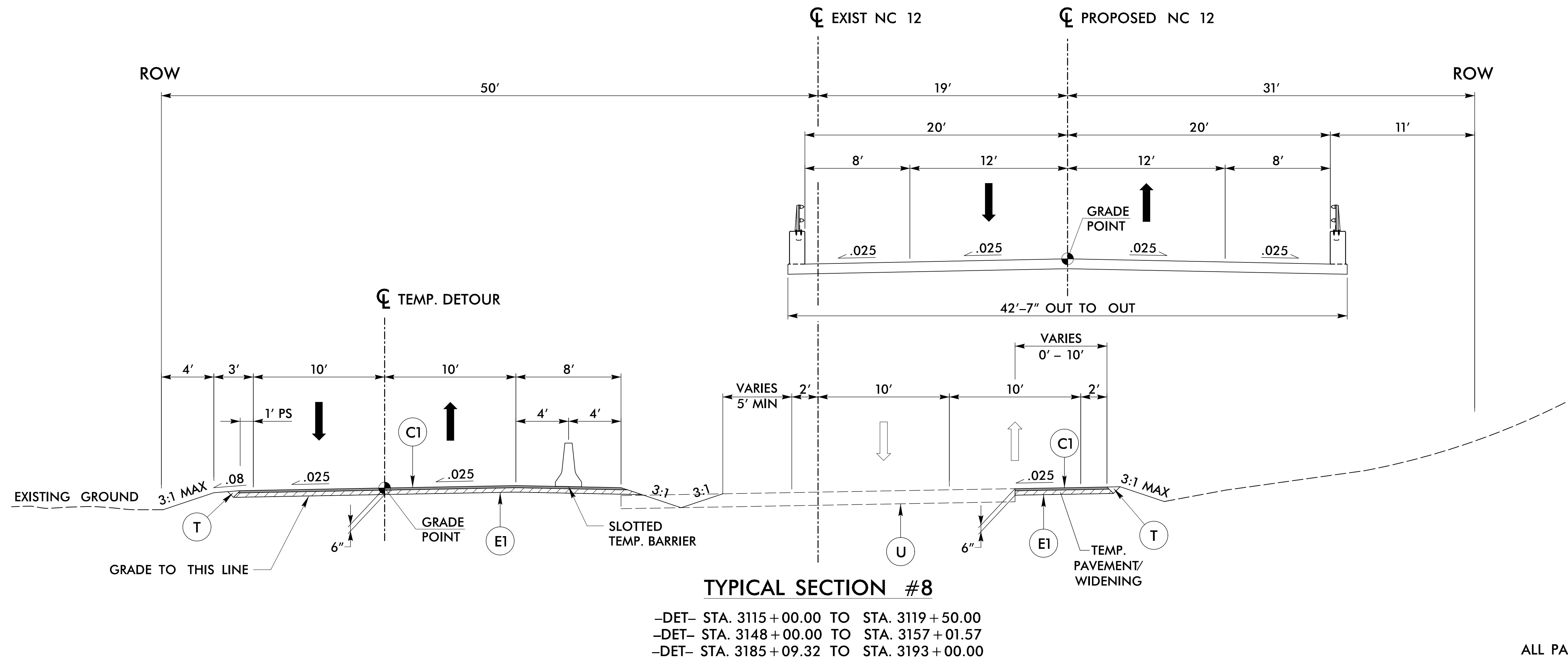
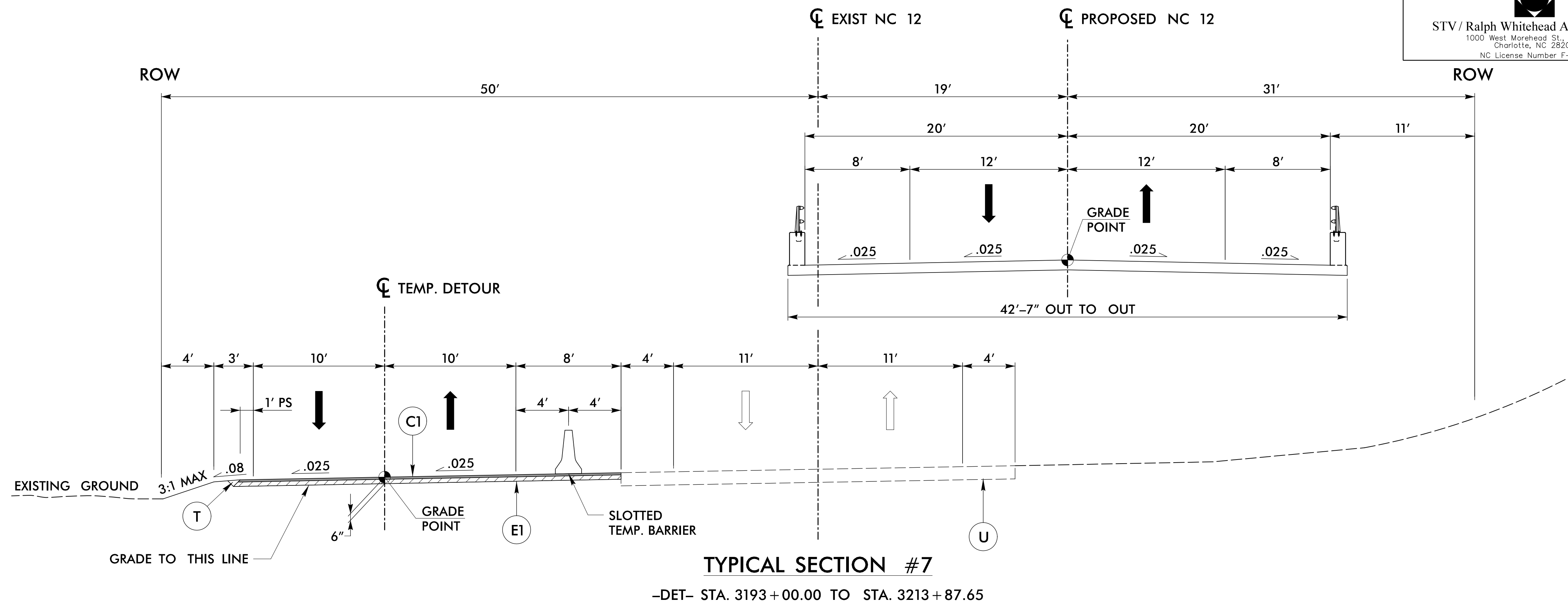


TYPICAL SECTION #6
-DET- STA. 3078+12.67 TO STA. 3115+00.00
-DET- STA. 3119+50.00 TO STA. 3148+00.00

C1	2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
E1	4" B25.0B
E2	5" B25.0B
E3	VAR. B25.0B
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

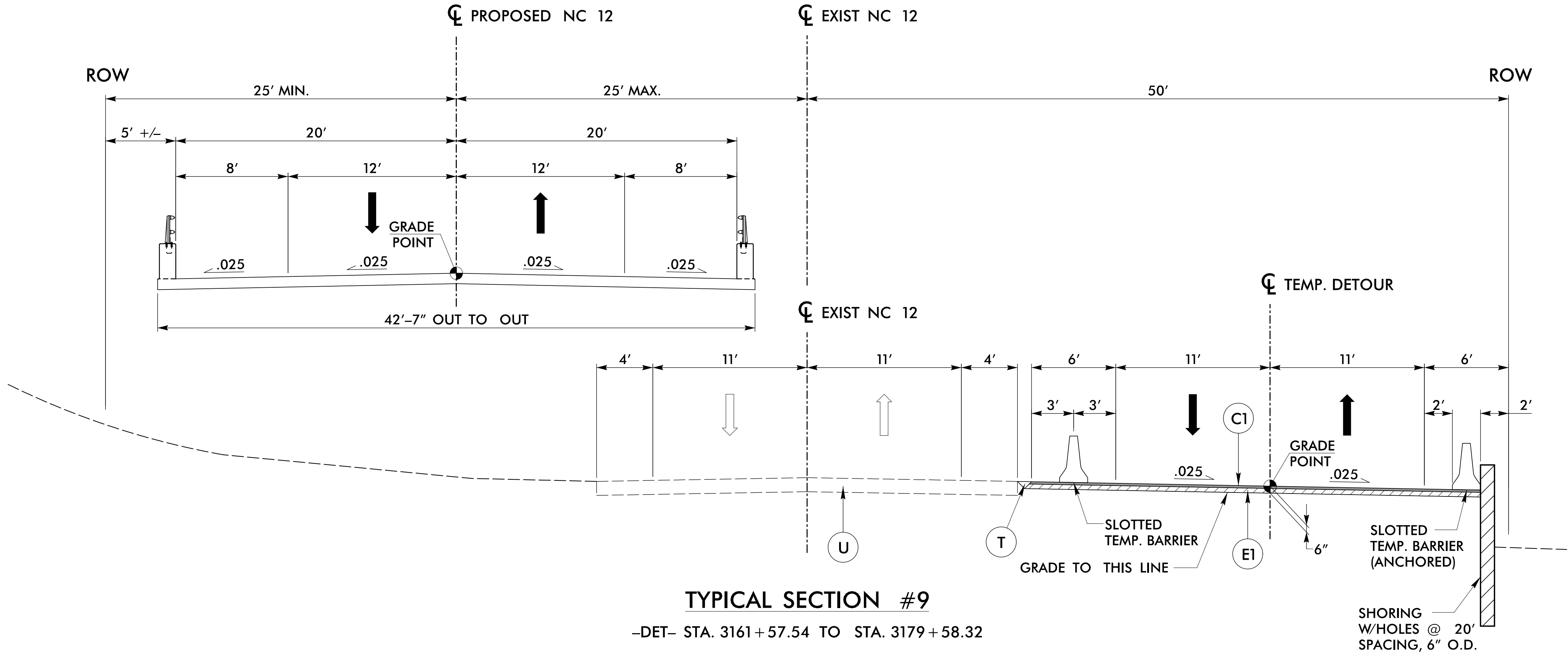
* NOTES:
1. USE WEDGING DETAIL #2

ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE



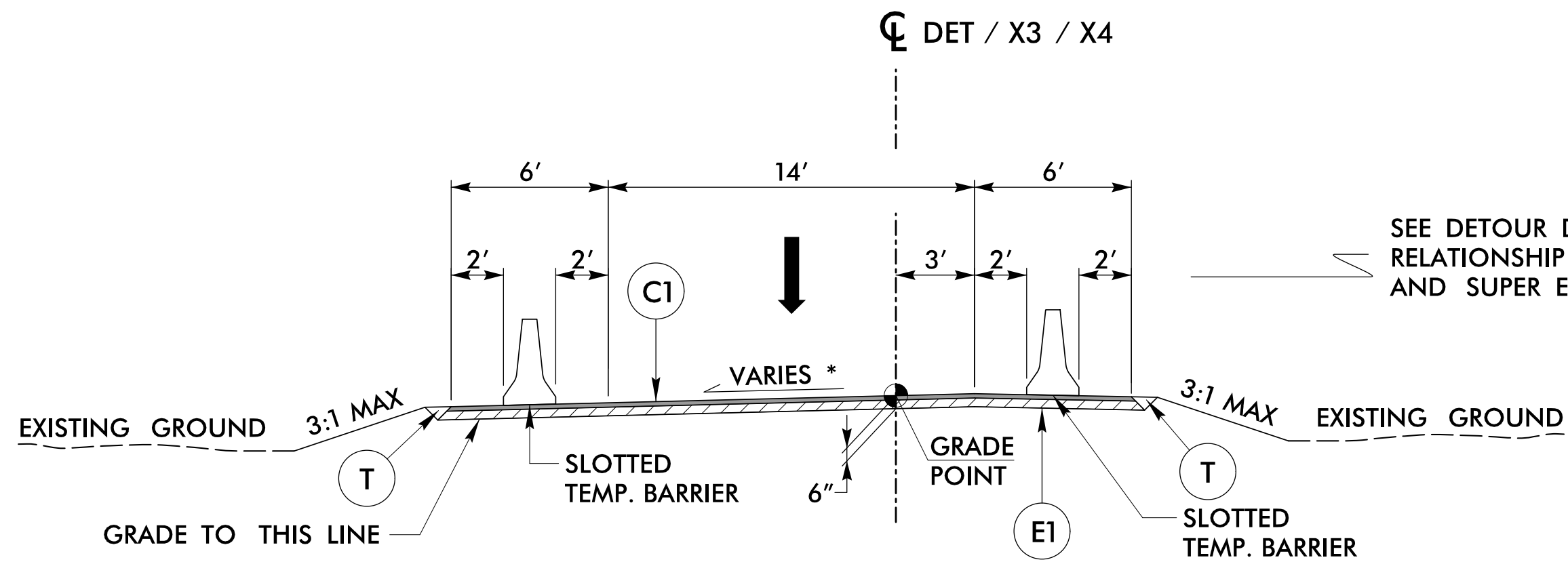
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
E1	4" B25.0B
E2	5" B25.0B
E3	VAR. B25.0B
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE



TYPICAL SECTION #9

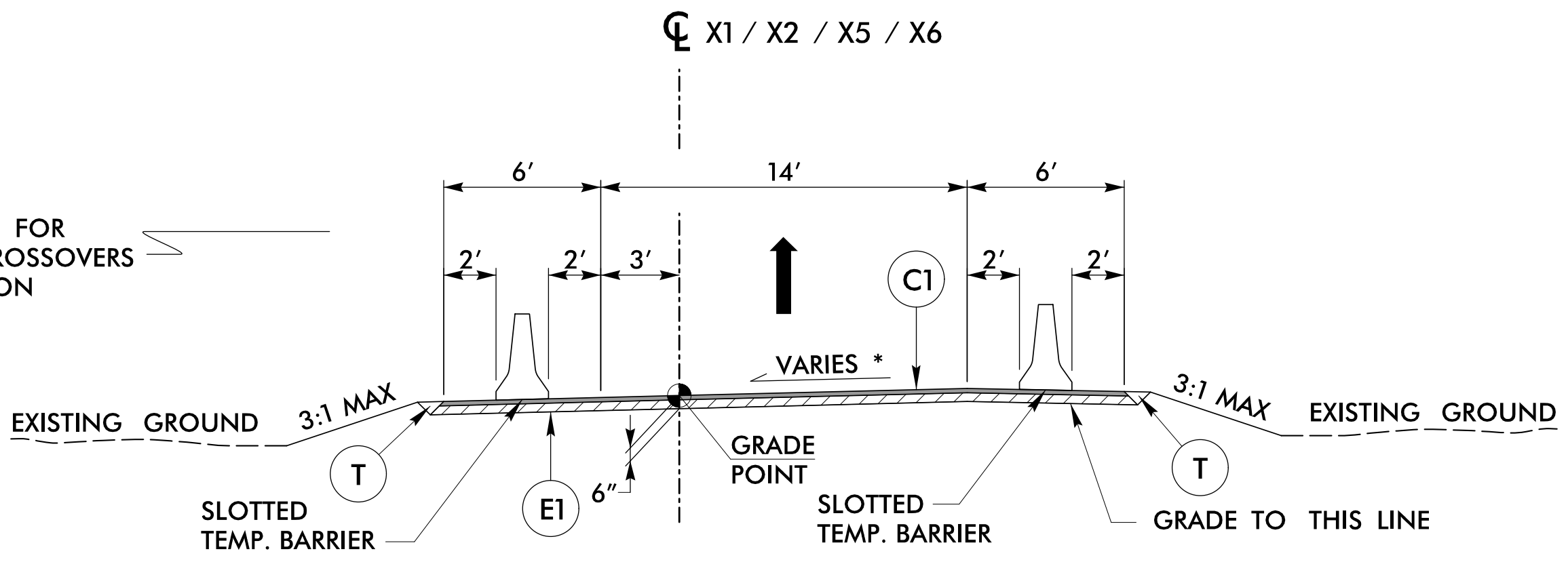
-DET- STA. 3161+57.54 TO STA. 3179+58.32



TYPICAL SECTION #10

-DET- STA. 3157+01.57 TO STA. 3161+57.54 (-X3-)
-DET- STA. 3179+58.32 TO STA. 3185+09.32 (-X4-)

* NOTES:
1. VARIABLE SUPER ROTATES
IN OPPOSITE DIRECTION
FOR CURVES TO THE LEFT.
SEE DETOUR PLANS FOR DETAILS.



TYPICAL SECTION #11

-DET- STA. 3157+01.57 TO STA. 3161+57.54 (-X1- & -X5-)
-DET- STA. 3179+58.32 TO STA. 3185+09.32 (-X2- & -X6-)

* NOTES:
1. VARIABLE SUPER ROTATES
IN OPPOSITE DIRECTION
FOR CURVES TO THE RIGHT.
SEE DETOUR PLANS FOR DETAILS.

C1	2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
E1	4" B25.0B
E2	5" B25.0B
E3	VAR. B25.0B
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO.
B-2500A

SHEET NO.
2-D

RW SHEET NO.

ROADWAY DESIGN ENGINEER

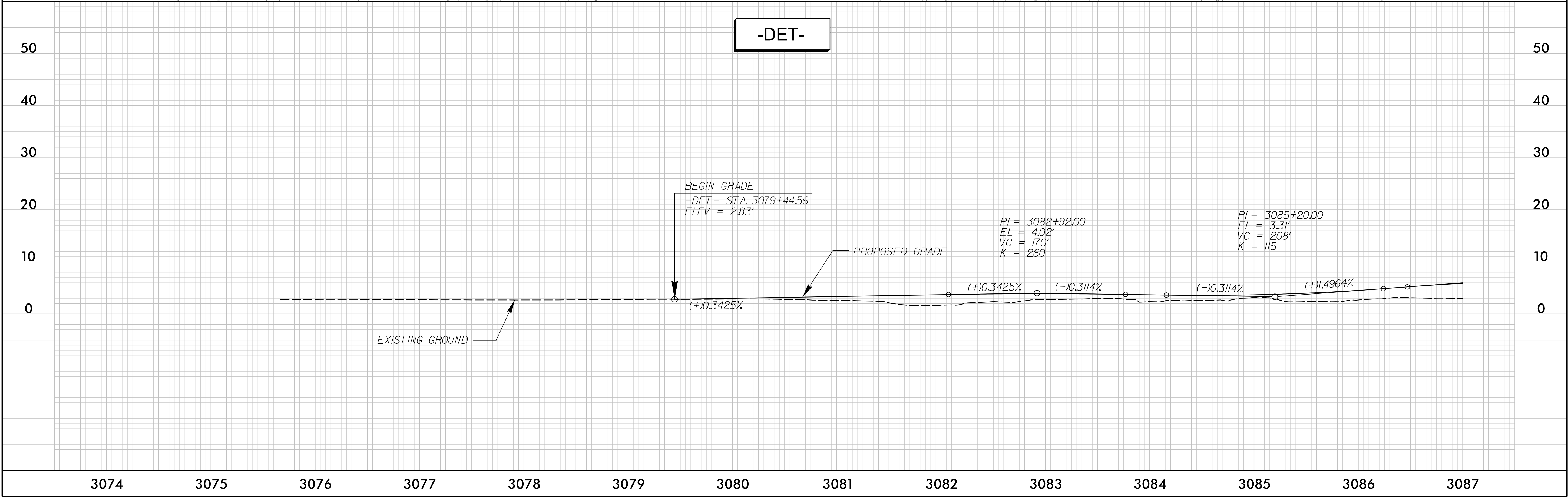
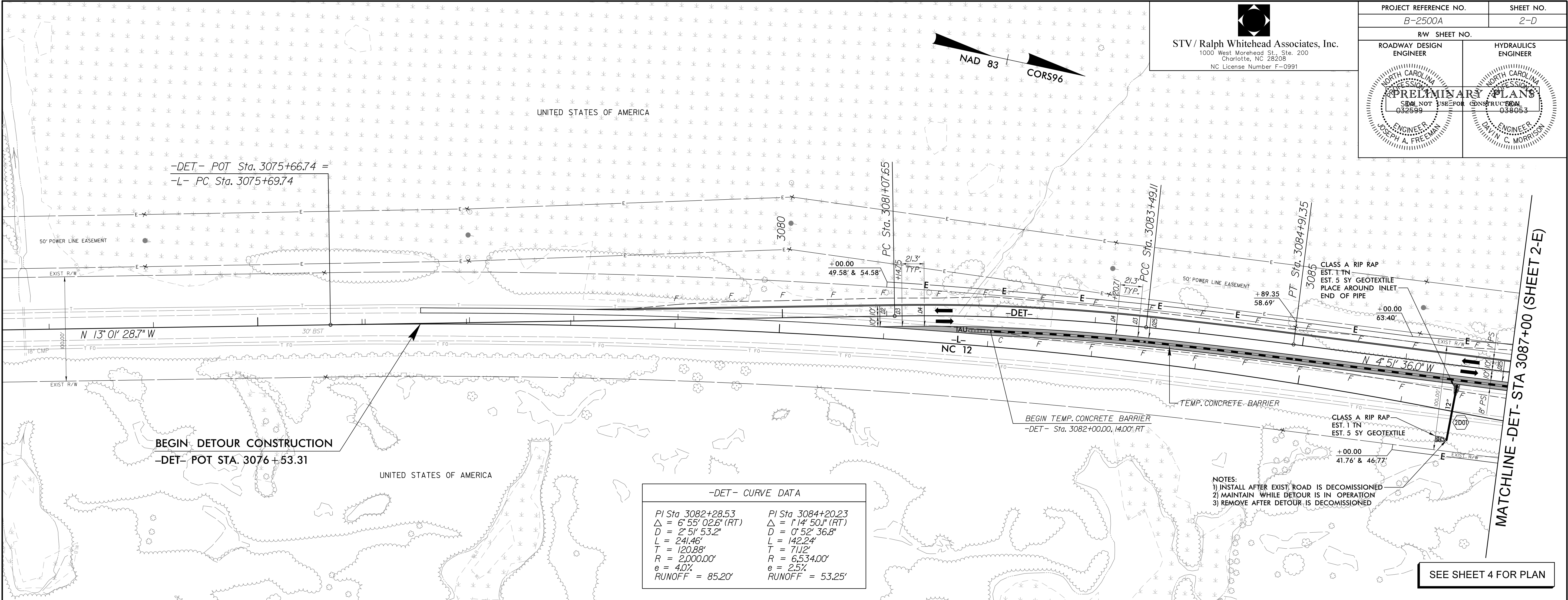
HYDRAULICS ENGINEER

PRELIMINARY PLANS
SHALL NOT BE USED FOR CONSTRUCTION
032599

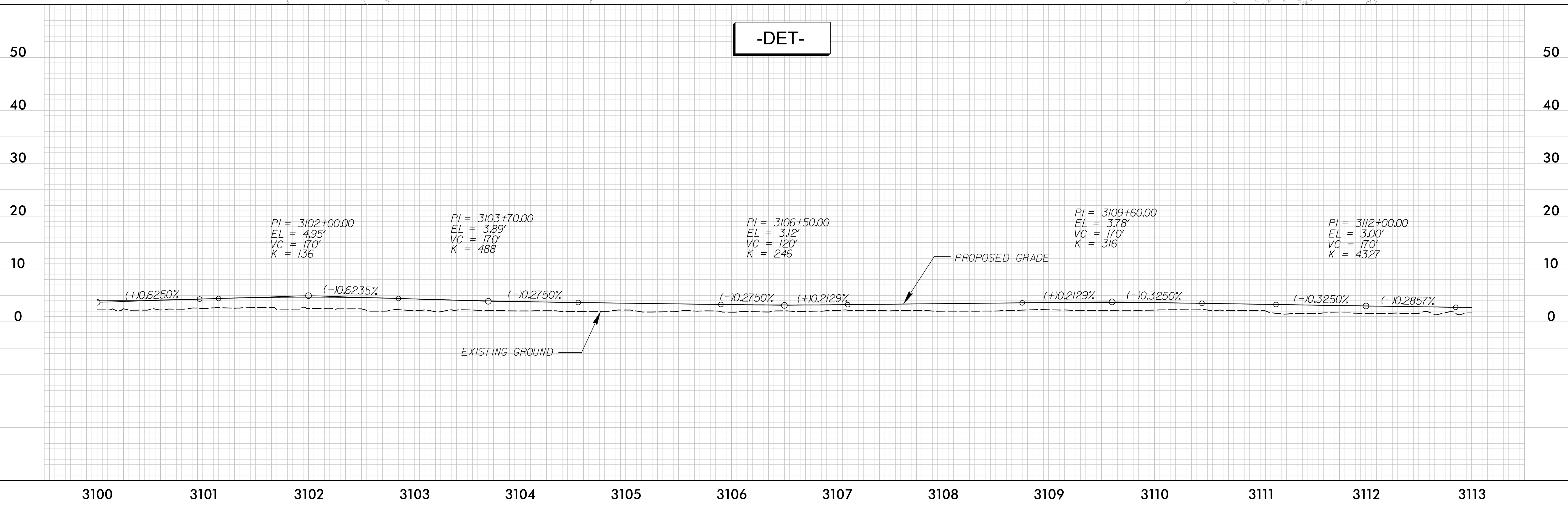
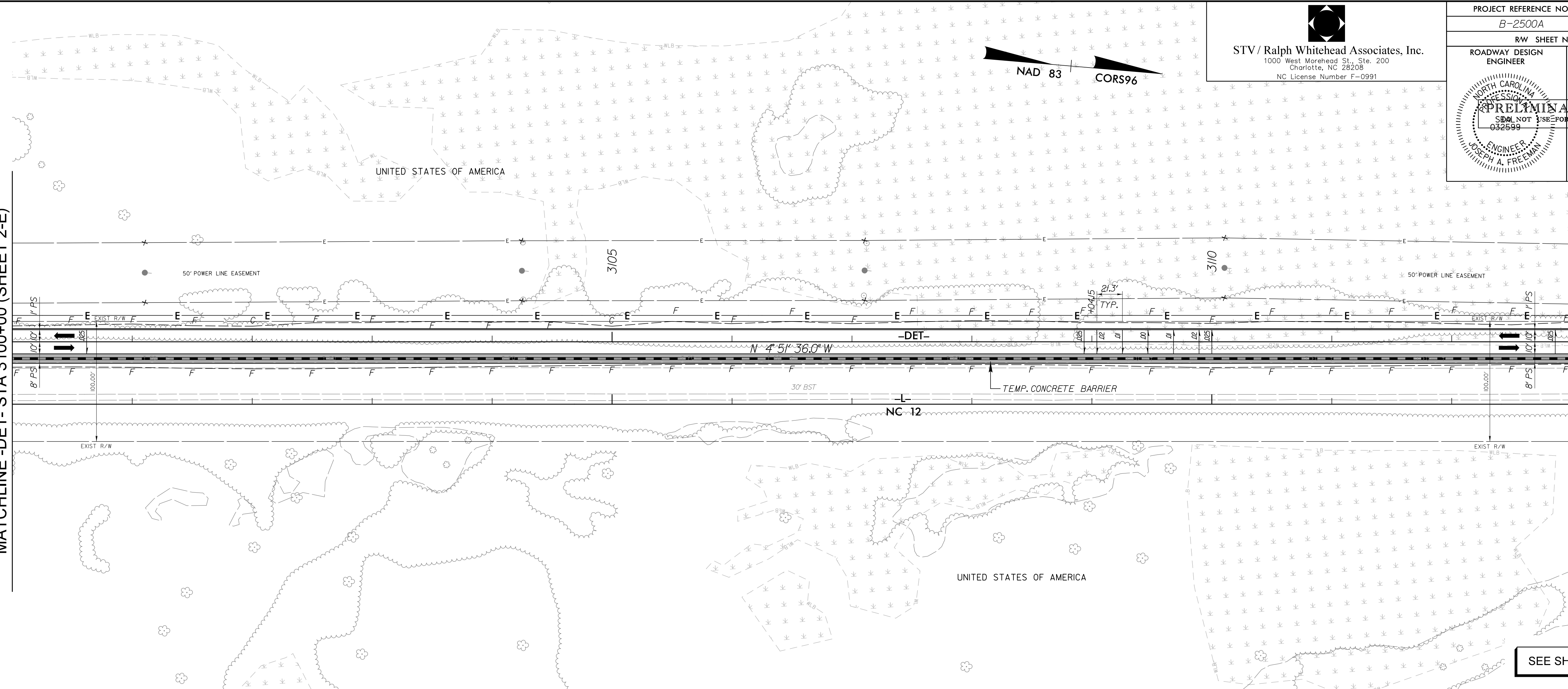
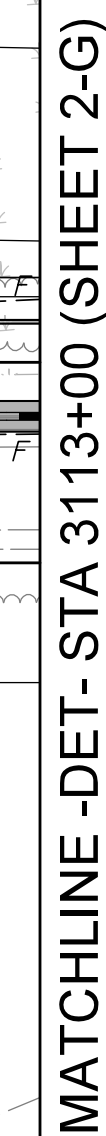
ENGINEER
JOSEPH A. FREEMAN

PRELIMINARY PLANS
SHALL NOT BE USED FOR CONSTRUCTION
034053

ENGINEER
DAVID C. MORRISON



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10/16/2012



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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
B-2500A		2-6
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL ENGINEER JOSEPH A. FREEMAN 032599		NORTH CAROLINA PROFESSIONAL ENGINEER DAVID C. MORRISON 034053

MATCHLINE -DET- STA 3113+00 (SHEET 2-F)

MATCHLINE -DET- STA 3126+00 (SHEET 2-H)

-DET- CURVE DATA
PI Sta 3116+09.71
 $\Delta = 7^{\circ}16'18.6"$ (LT)
 $D = 1^{\circ}11'57.9"$
 $L = 606.29'$
 $T = 303.55'$
 $R = 4,777.00'$
 $e = 2.5\%$
RUNOFF = 53.25'

CLASS A RIP RAP
EST. 1 TN
EST. 5 SY GEOTEXTILE
PLACE AROUND
INLET END OF PIPE
NOTES:
1) INSTALL AFTER EXIST. ROAD IS DECOMMISSIONED
2) MAINTAIN WHILE DETOUR IS IN OPERATION
3) REMOVE AFTER DETOUR IS DECOMMISSIONED

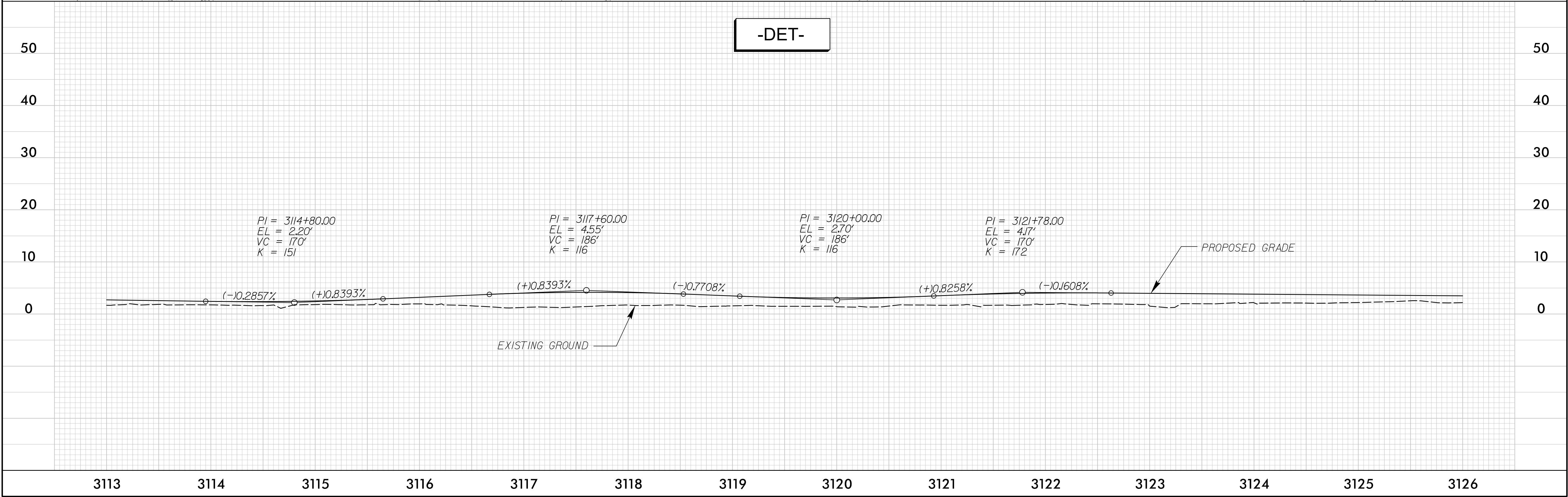
CLASS A RIP RAP
EST. 1 TN
EST. 5 SY GEOTEXTILE

SEE SHEET 7 FOR PLAN

-DET-

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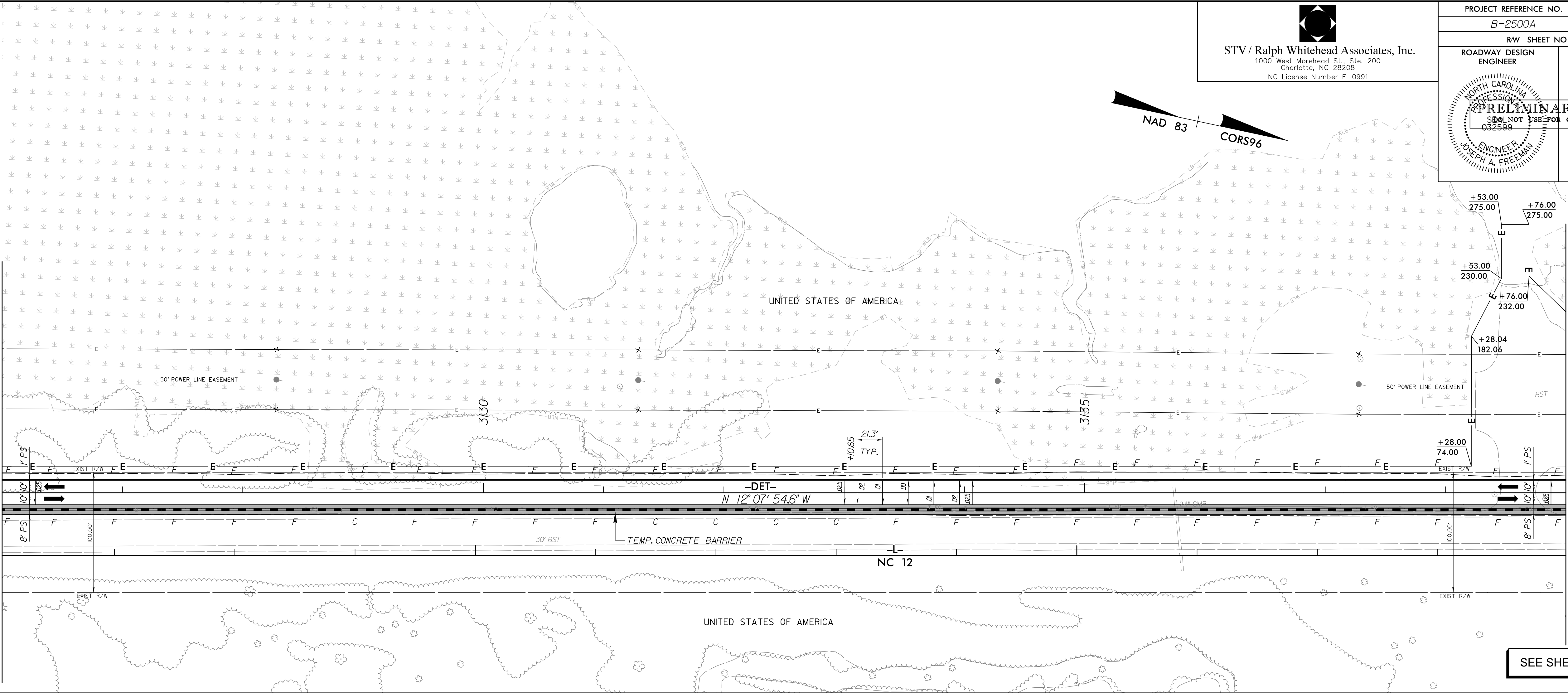
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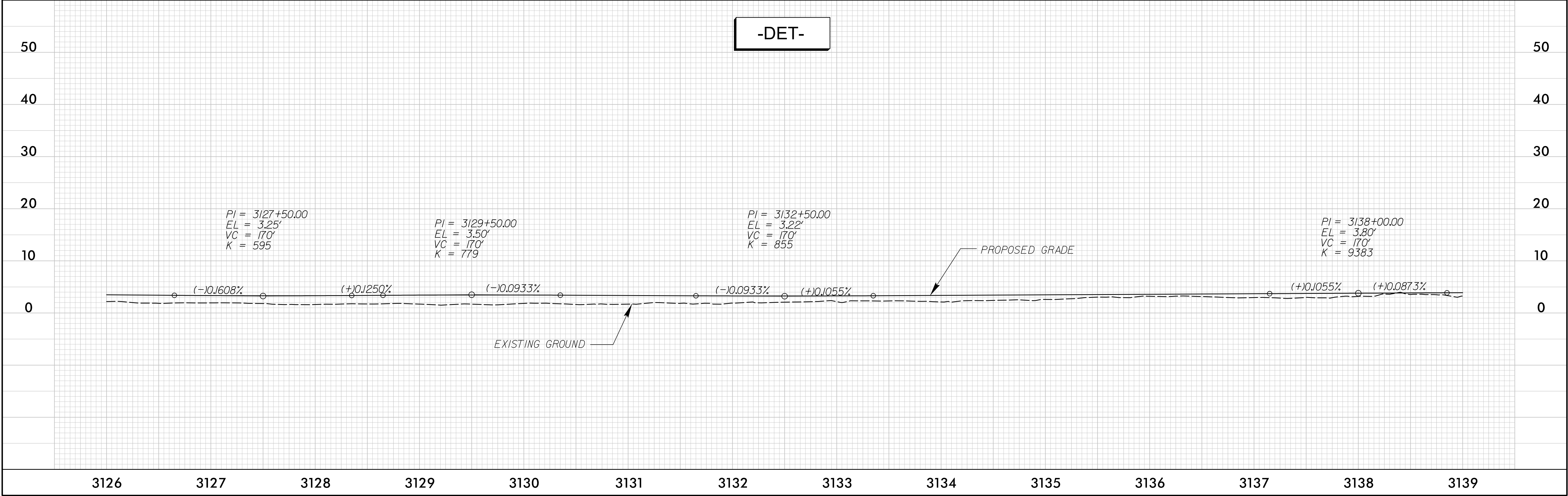
PROJECT REFERENCE NO.		SHEET NO.
B-2500A		2-H
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
ENGINEER JOSEPH A. FREEMAN		ENGINEER EDWARD J. VANCE

MATCHLINE -DET- STA 3126+00 (SHEET 2-G)



SEE SHEET 8 FOR PLAN

-DET-

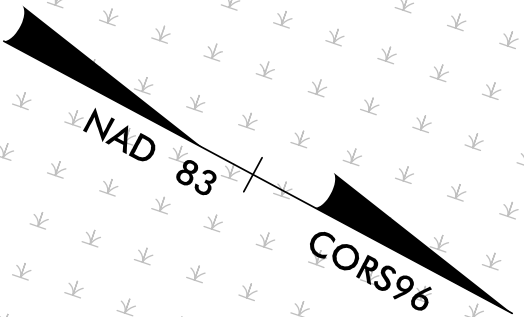


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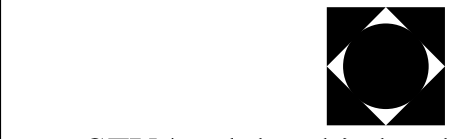
11/20/2012

-DET- CURVE DATA			
PI Sta 3152+67.46 Δ = 17° 33' 38.4" (LT) D = 2° 01' 23.4" L = 867.98' T = 437.42' R = 2,832.00' e = 4.0% RUNOFF = 85.20'	PI Sta 3159+66.56 Δ = 29° 49' 07.6" (RT) D = 22° 55' 05.9" L = 130.11' T = 66.56' R = 250.00' e = 4.0% RUNOFF = 62.92'	PI Sta 3160+95.24 Δ = 29° 12' 15.4" (LT) D = 22° 55' 05.9" L = 127.43' T = 65.13' R = 250.00' e = 4.0% RUNOFF = 62.92'	PI Sta 3164+05.24 Δ = 8° 44' 28.2" (RT) D = 1° 46' 04.2" L = 494.45' T = 247.71' R = 3,241.00' e = 2.5% RUNOFF = 39.33'

-XI- CURVE DATA		
PI Sta 3157+68.03 Δ = 29° 46' 20.5" (RT) D = 22° 55' 05.9" L = 129.91' T = 66.46' R = 250.00' e = 4.0% RUNOFF = 62.92'	PI Sta 3158+97.93 Δ = 29° 46' 19.7" (LT) D = 22° 55' 05.9" L = 129.91' T = 66.45' R = 250.00' e = 4.0% RUNOFF = 62.92'	PI Sta 3161+40.11 Δ = 0° 36' 51.5" (RT) D = 1° 46' 04.2" L = 347.5' T = 17.37' R = 3,241.00' e = 2.5% RUNOFF = 39.33'

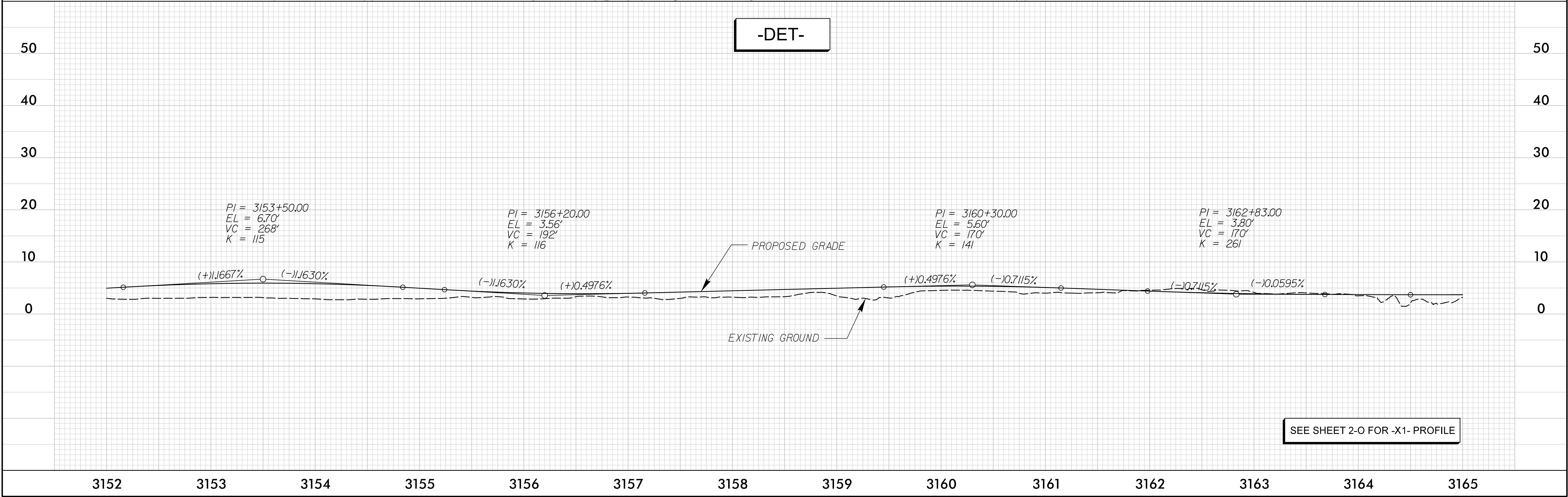
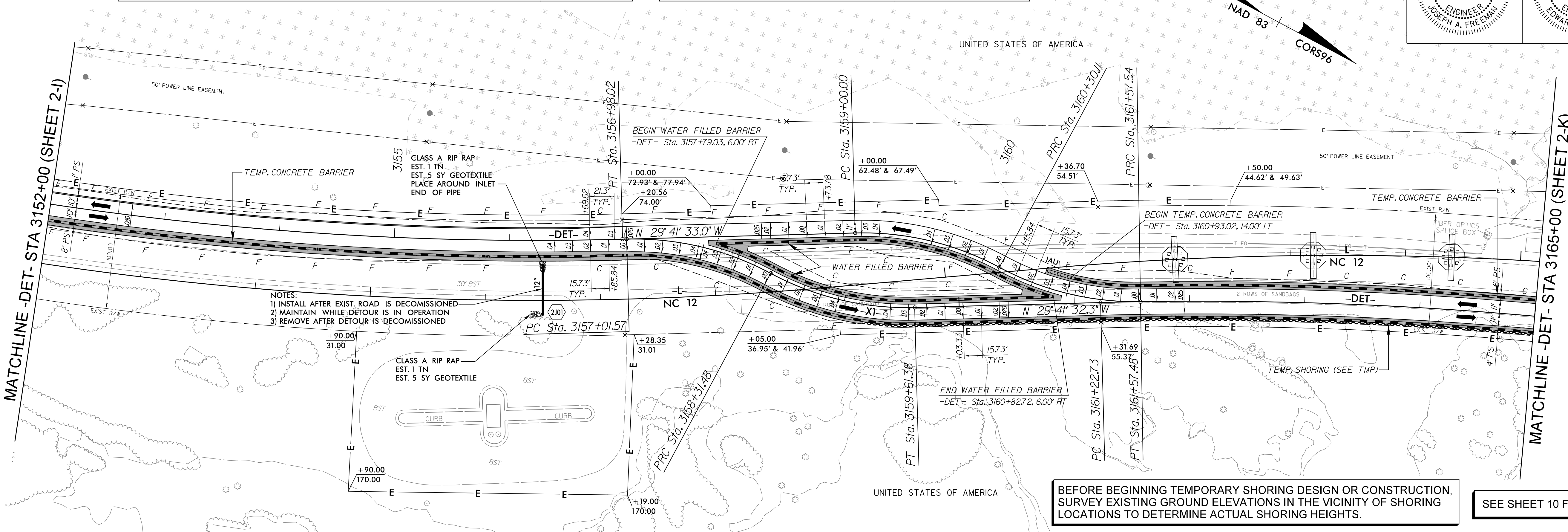


NAD 83
CORS96



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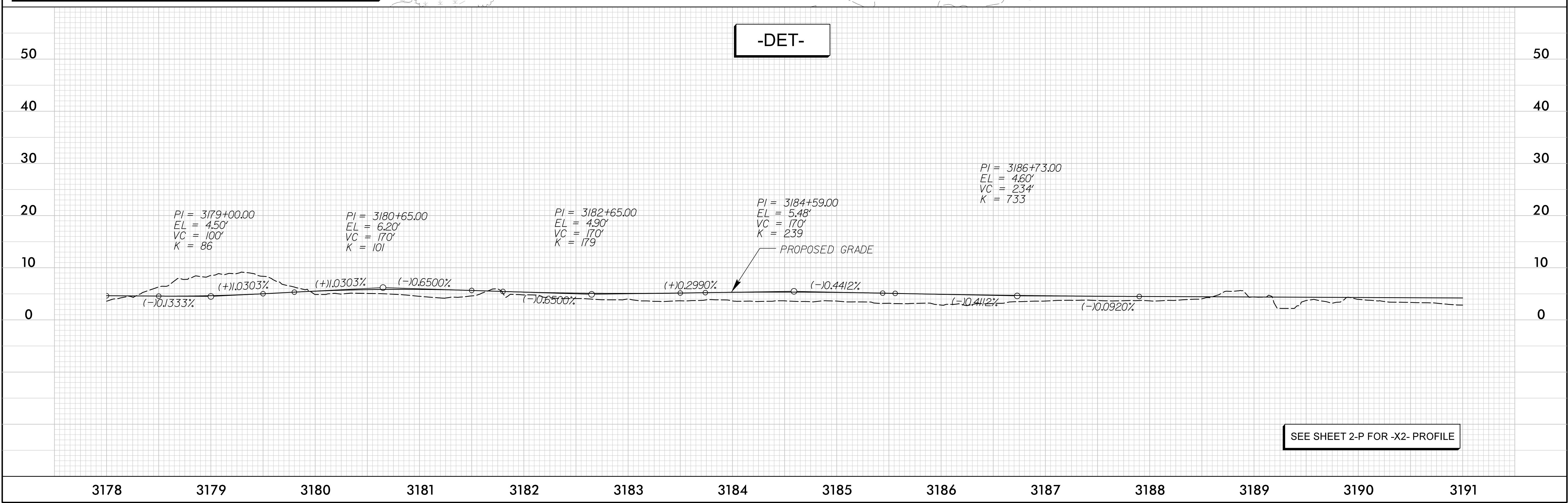
PROJECT REFERENCE NO. B-2500A		SHEET NO. 2-J
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	PRELIMINARY PLANS SHEET NOT TO BE USED FOR CONSTRUCTION 032599	
ENGINEER JOSEPH A. FREEMAN		ENGINEER EDWARD J. VANCE



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11/20/2012

-X2- CURVE DATA	
PI Sta 3183+22.26	PI Sta 3184+55.07
$\Delta = 33^{\circ} 49' 43.7''$ (LT)	$\Delta = 27^{\circ} 31' 22.1''$ (RT)
D = 22' 55" 05.9"	D = 22' 55" 05.9"
L = 147.61'	L = 120.09'
T = 76.02'	T = 61.23'
R = 250.00'	R = 250.00'
e = 4.0'	e = 4.0'
RUNOFF = 62.92'	RUNOFF = 62.92'

PROJECT REFERENCE NO.	SHEET NO.
B-2500A	2-L
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO.
B-2500A

SHEET NO.
2-N

RW SHEET NO.

ROADWAY DESIGN ENGINEER

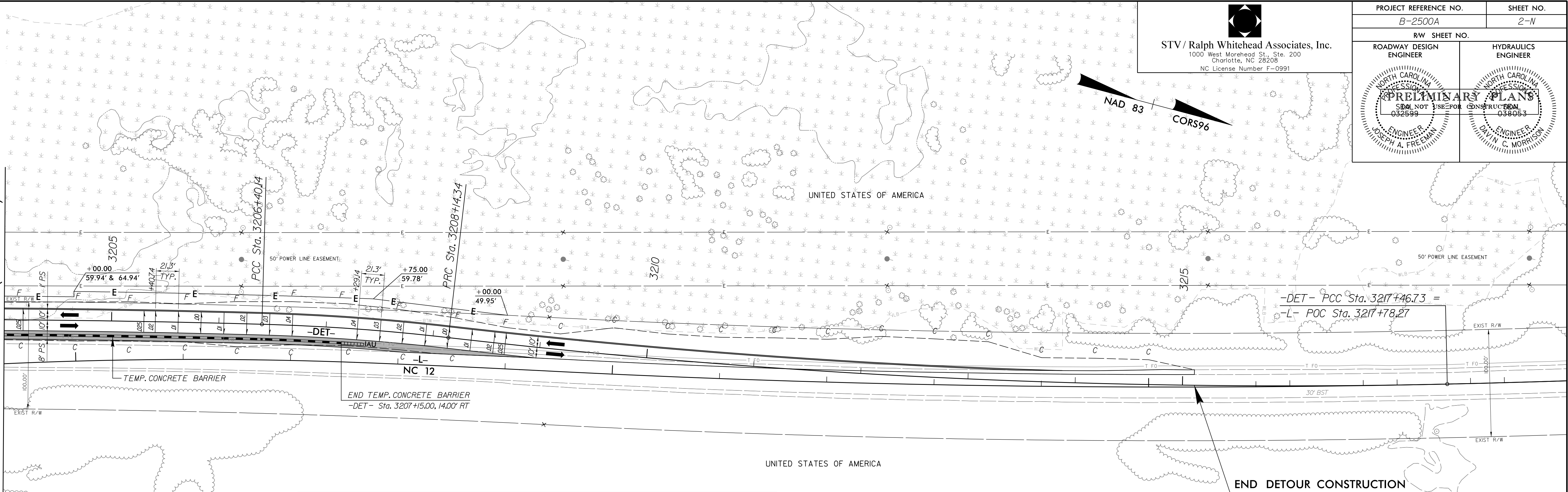
HYDRAULICS ENGINEER

NORTH CAROLINA
PROFESSIONAL
ENGINEER
JOSEPH A. FREEMAN
032599

NORTH CAROLINA
PROFESSIONAL
ENGINEER
DAVID C. MORRISON
034053

PRELIMINARY PLANS
SHALL NOT BE USED FOR CONSTRUCTION

MATCHLINE -DET- STA 3204+00 (SHEET 2-M)

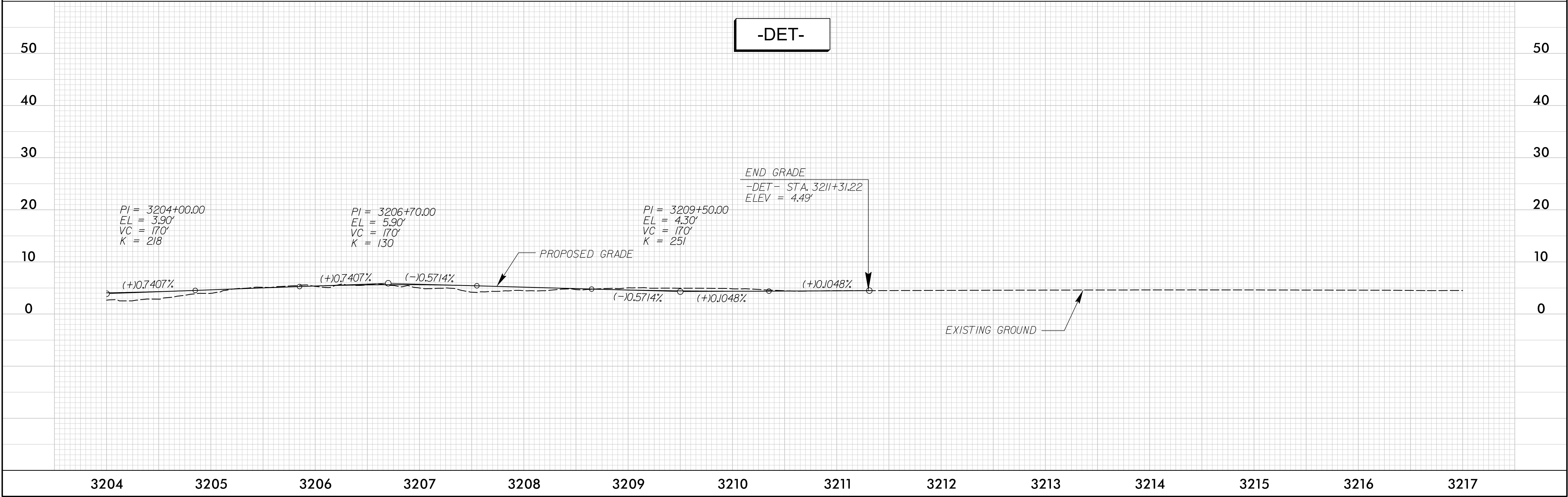


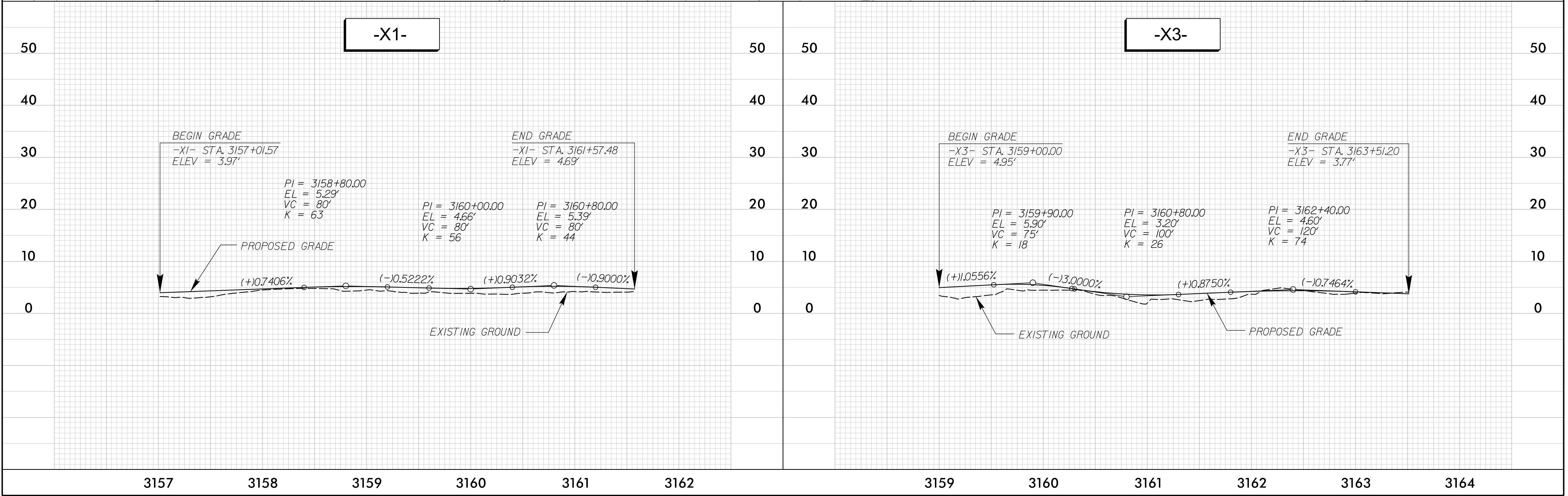
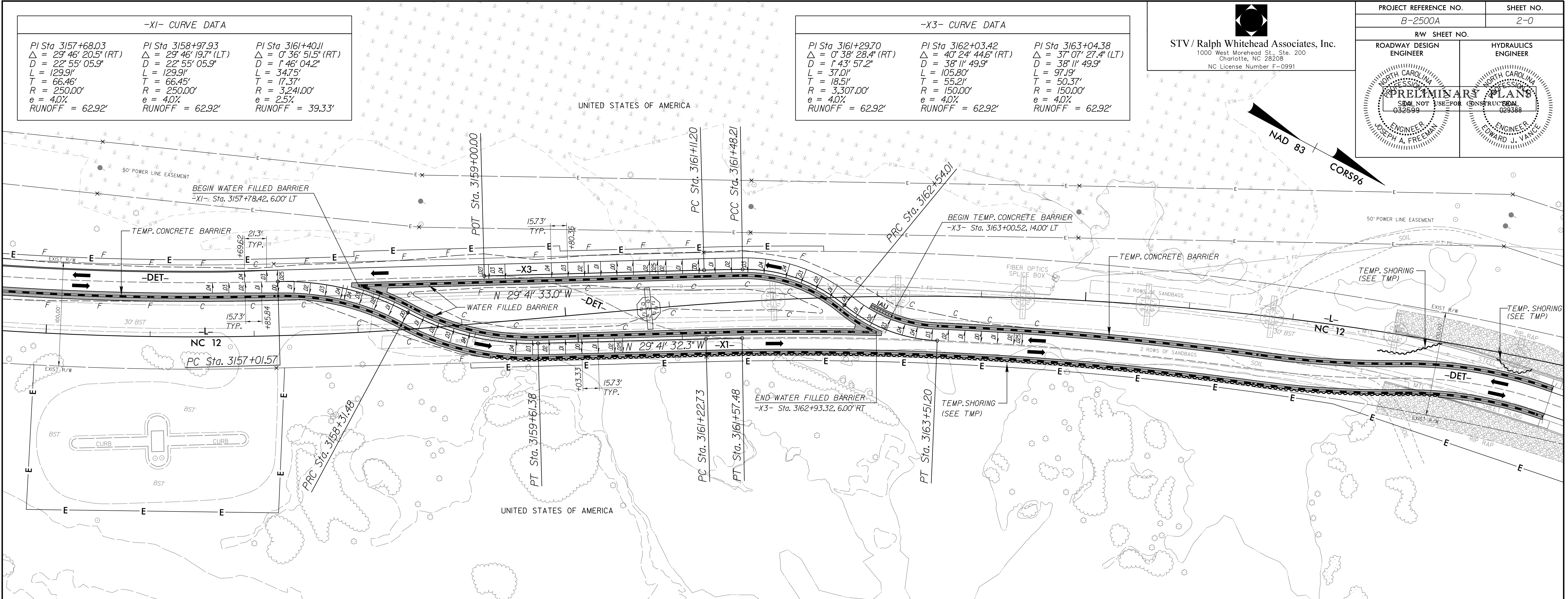
-DET- CURVE DATA			
PI Sta 3204+79.61	PI Sta 3207+27.30	PI Sta 3212+81.27	PI Sta 3221+24.35
$\Delta = 1^{\circ} 36' 02.2''$ (RT)	$\Delta = 4^{\circ} 59' 26.2''$ (RT)	$\Delta = 7^{\circ} 51' 22.1''$ (LT)	$\Delta = 3^{\circ} 46' 28.5''$ (LT)
$D = 0^{\circ} 29' 54.7''$	$D = 2^{\circ} 51' 53.2''$	$D = 0^{\circ} 50' 33.3''$	$D = 0^{\circ} 29' 59.9''$
$L = 321.07'$	$L = 174.21'$	$L = 932.39'$	$L = 754.97'$
$T = 160.55'$	$T = 87.16'$	$T = 466.92'$	$T = 377.62'$
$R = 11,493.00'$	$R = 2,000.00'$	$R = 6,800.00'$	$R = 11,460.00'$
$e = 2.5\%$	$e = 4.0\%$	$e = 2.5\%$	$e = 2.5\%$
$RUNOFF = 53.25'$	$RUNOFF = 85.20'$	$RUNOFF = 53.25'$	$RUNOFF = 53.25'$

SEE SHEET 14 FOR PLAN

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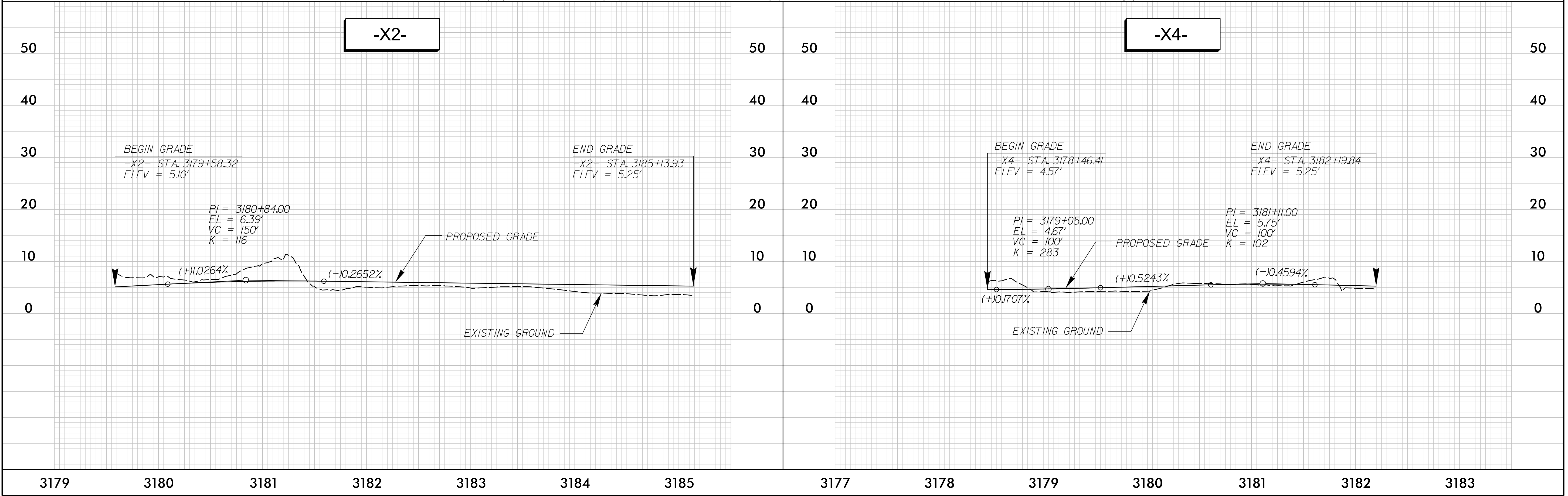
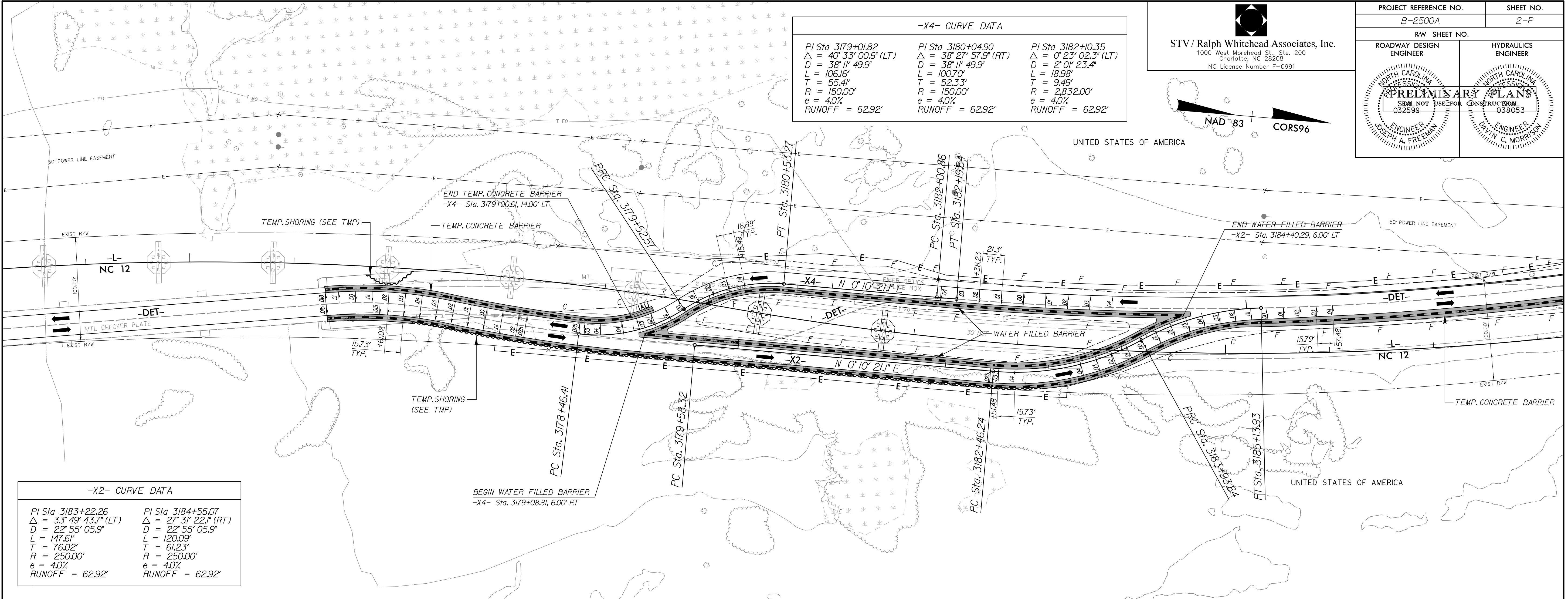
10/16/2012



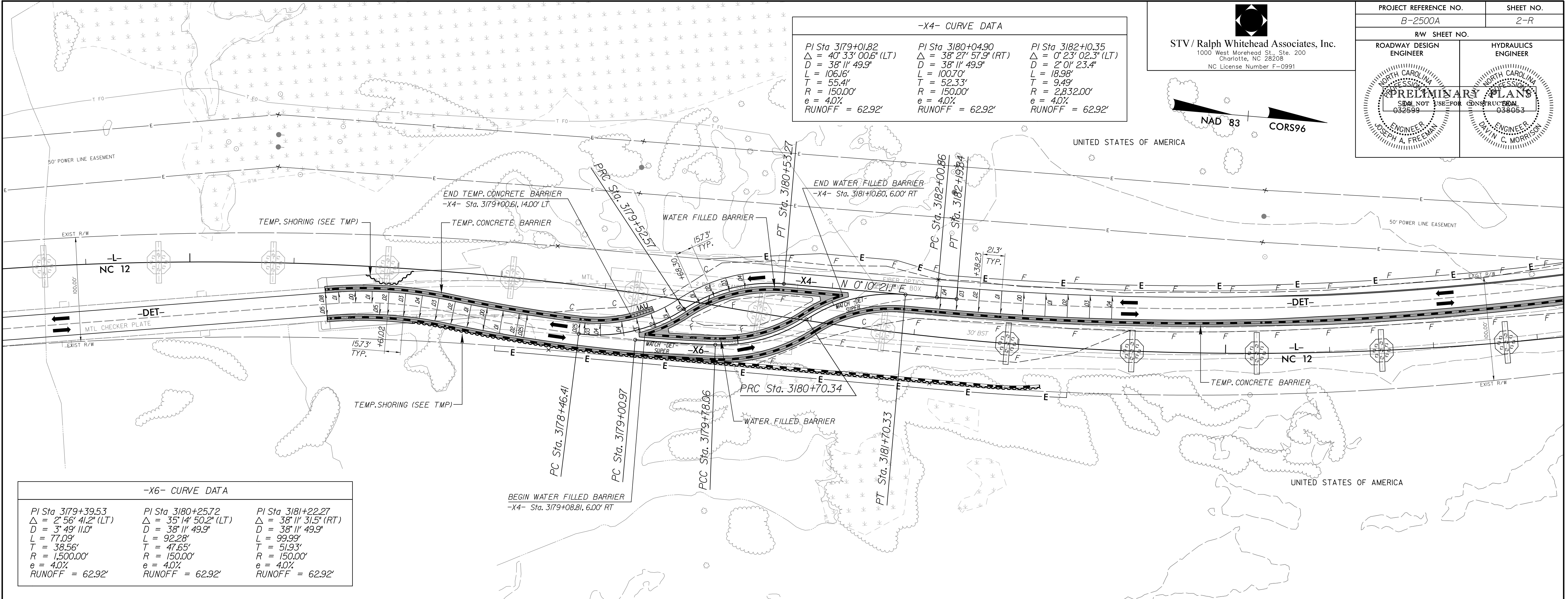


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11/20/2012



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10/16/2012



PROJECT REFERENCE NO.
B-2500A

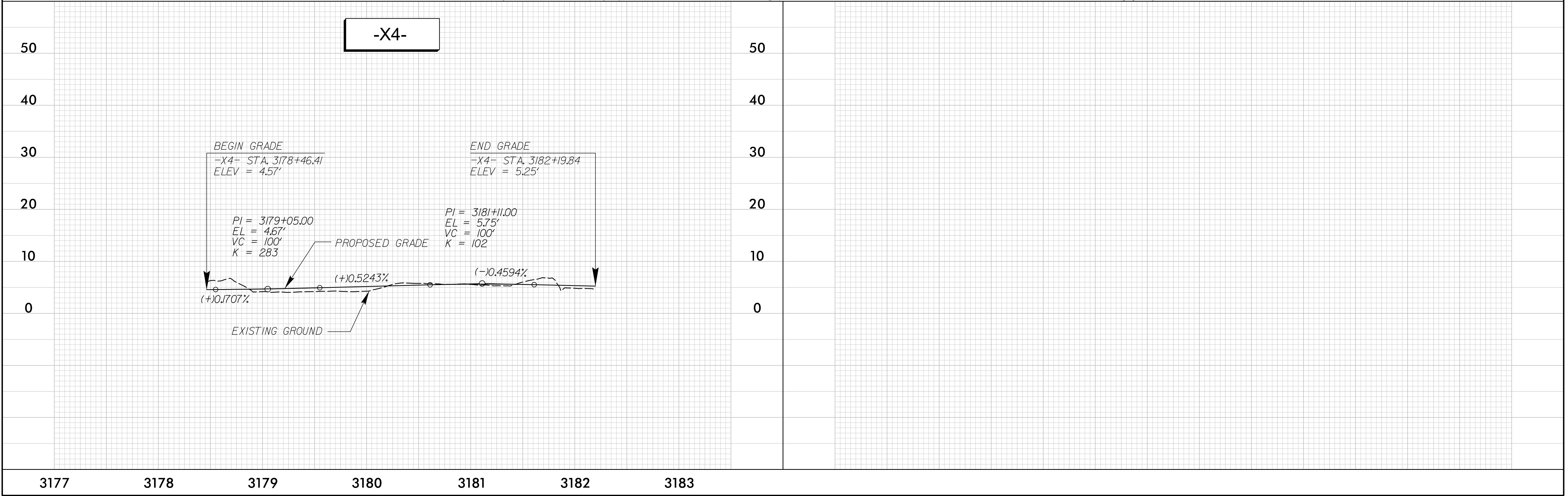
SHEET NO.
2-R

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Charlotte, NC 28208
NC License Number F-0991

ROADWAY DESIGN ENGINEER
JOSEPH A. FREEMAN
032599

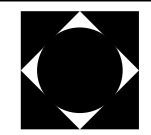
HYDRAULICS ENGINEER
DAVID C. MORRISON
034053

PRELIMINARY PLANS
SHALL NOT BE USED FOR CONSTRUCTION



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10/16/2012

BRIDGE /PAVEMENT RELATIONSHIP SKETCH



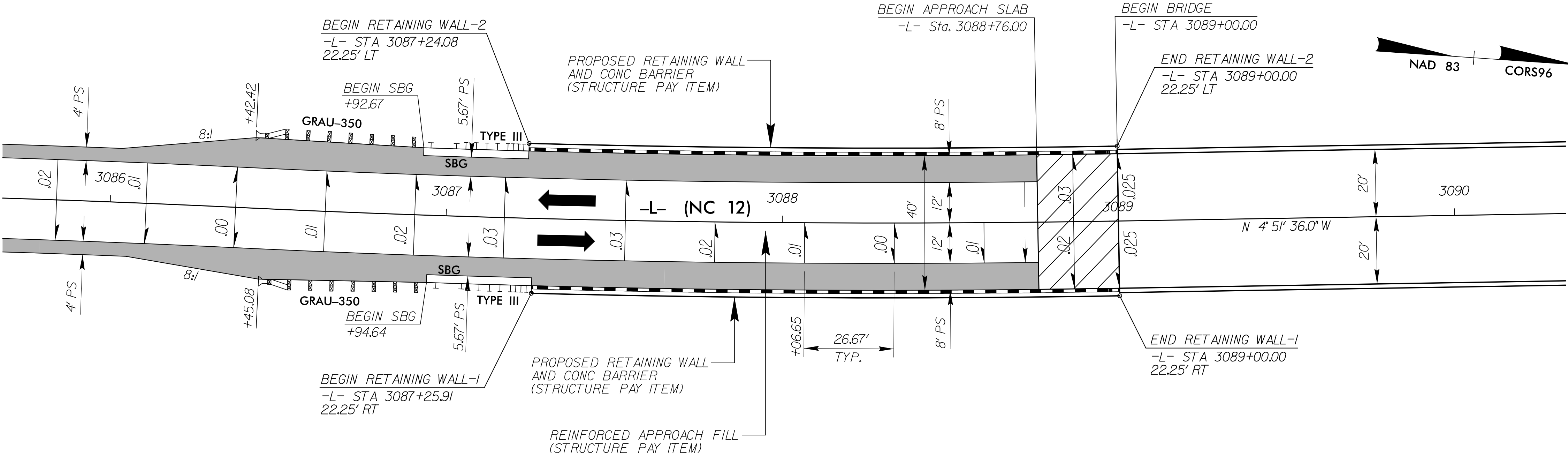
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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

GRAPHIC SCALE

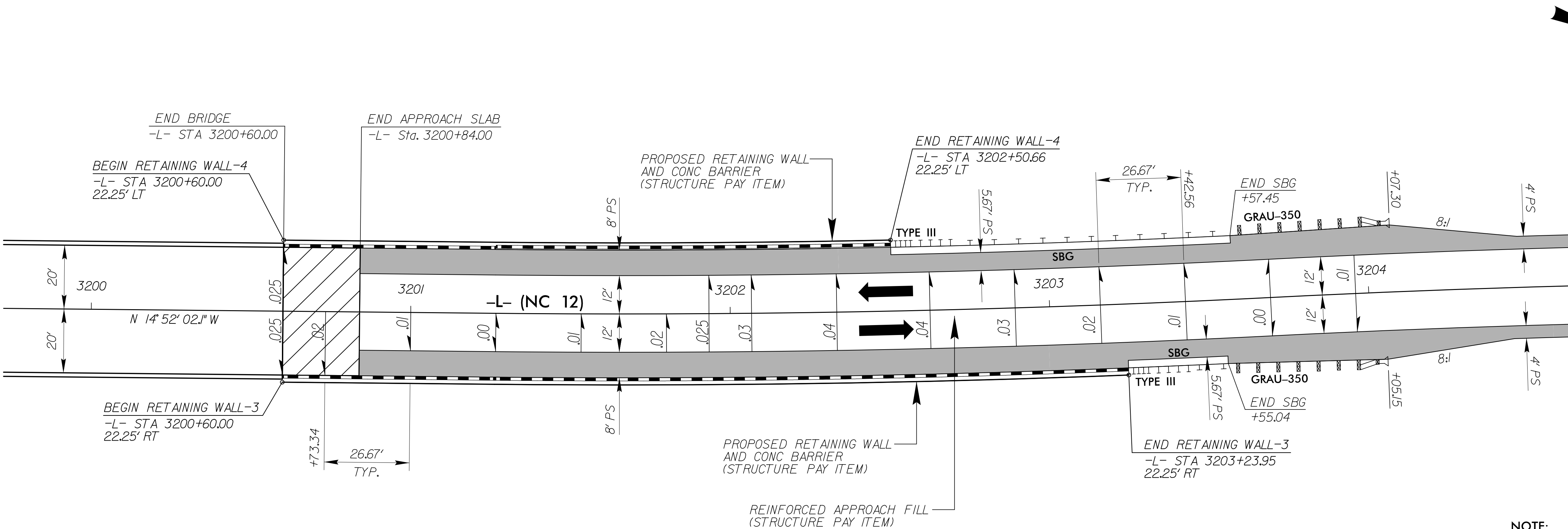
20 10 0 20

PLAN HORZ.

PROJECT REFERENCE NO.	SHEET NO.
B-2500A	2-S
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
NORTH CAROLINA PROFESSIONAL ENGINEER JOSEPH A. FREEMAN 032599	



SEE SHEET 5 FOR PLAN

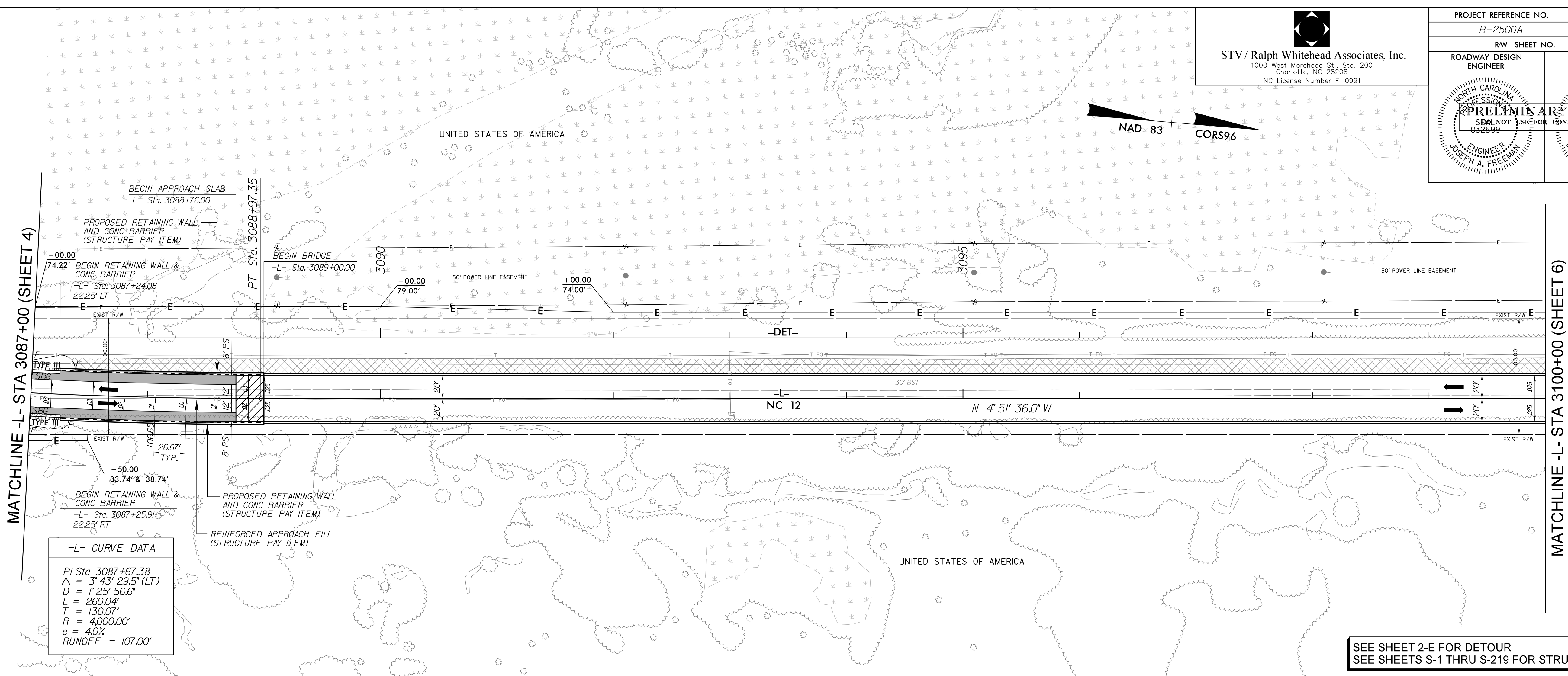


NOTE:
1. SEE STRUCTURE PLANS FOR ADDITIONAL
RETAINING WALL DETAILS AND INFORMATION.

SEE SHEET 13 FOR PLAN

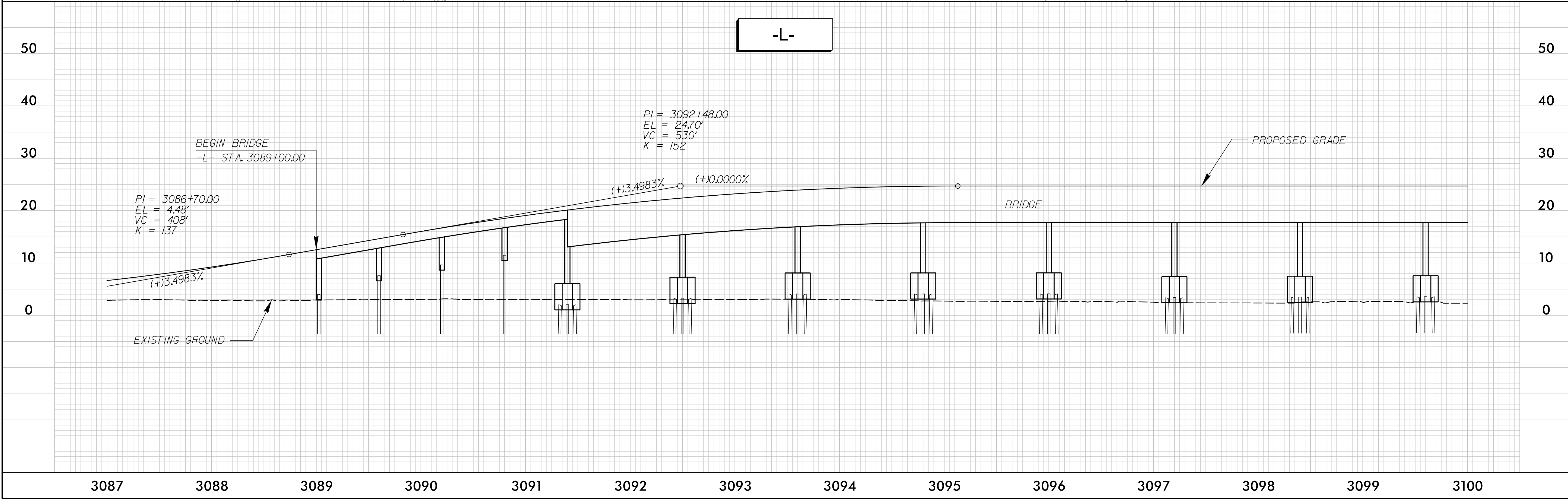
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1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0991

PROJECT REFERENCE NO. B-2500A		SHEET NO. 5	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL SEAL NOT TO BE USED FOR CONSTRUCTION 032599 ENGINEER JOSEPH A. FREEMAN		NORTH CAROLINA PROFESSIONAL SEAL SEAL NOT TO BE USED FOR CONSTRUCTION 034953 ENGINEER DAVID C. MORRISON	



-L- CURVE DATA
PI Sta. 3087+67.38
 $\Delta = 3^\circ 43' 29.5''$ (LT)
D = 125' 56.6"
L = 260.04'
T = 130.07'
R = 4000.00'
 $e = 4.0\%$
RUNOFF = 107.00'

SEE SHEET 2-E FOR DETOUR
SEE SHEETS S-1 THRU S-219 FOR STRUCTURE PLANS



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10/16/2012

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Charlotte, NC 28208

NC License Number F-0991

PROJECT REFERENCE NO.

B-2500A

SHEET NO.

10

RW SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA

DESIGNER

PRELIMINARY PLANS

SHALL NOT BE USED FOR CONSTRUCTION

032599

ENGINEER

JOSEPH A. FREEMAN

NORTH CAROLINA

DESIGNER

PRELIMINARY PLANS

SHALL NOT BE USED FOR CONSTRUCTION

029388

ENGINEER

EDWARD J. VANCE

Plan view of NC 12 bridge project. The drawing shows the bridge structure crossing NC 12. Key features include: Matchline L- STA 3152+00 (SHEET 9) on the left and Matchline L- STA 3165+00 (SHEET 11) on the right. Stationing markers for PT Sta. 3158+95.28 and PC Sta. 3160+90.66. A table of -L- CURVE DATA is provided:

-L- CURVE DATA	
PI Sta 3153+71.98	PI Sta 3170+92.51
$\Delta = 21^{\circ} 01' 55.2''$ (LT)	$\Delta = 38^{\circ} 18' 45.6''$ (RT)
D = 1' 59' 12.0"	D = 1' 59' 12.0"
L = 1,058.65'	L = 1,928.48'
T = 535.35'	T = 1,001.85'
R = 2,884.00'	R = 2,884.00'
e = 4.5%	e = 4.5%
RUNOFF = 120.00'	RUNOFF = 120.00'

 The drawing also shows existing ground, proposed grade, and various easements (50' POWER LINE EASEMENT, 30' BST). A note indicates: REMOVE APPROXIMATELY 136 SANDBAGS AND ASSOCIATED FABRIC STA. 3158+23+/- TO STA. 3168+21+/-.

Profile view of the bridge. The vertical axis shows elevation from 0 to 50 feet. The horizontal axis shows stationing from 3152 to 3165. The bridge structure is shown with multiple piers. Key data points include:

-L- CURVE DATA	
PI = 3161+55.00	EL = 29.25'
VC = 180'	K = 904

 The profile shows the proposed grade and existing ground. A note indicates: SEE SHEET 2-J FOR DETOUR and SEE SHEETS S-1 THRU S-219 FOR STRUCTURE PLANS.

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11/20/2012

