



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

February 10, 2014

Wilmington Regulatory Field Office  
US Army Corp. of Engineers  
69 Darlington Avenue  
Wilmington, NC 28403

ATTN: Brad Shaver  
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit 6 and Section 401 Water Quality Certification** for proposed geotechnical investigations prior to the proposed replacement of the US 17-74-76/NC 133 bridges over the Brunswick River and Alligator Creek, Brunswick County. Federal Aid Project No. NHS-0017(68); TIP No. R-3601.

Reference: R-3601 Nationwide Permit 23 and 5, approved August 19, 2013 (SAW-2007-03461-010)

Please find enclosed a Pre-Construction Notification (PCN) form and drawings for the above referenced activity. The North Carolina Department of Transportation (NCDOT) proposes to perform a geotechnical investigation (soil borings) for the Alligator Creek and Brunswick River bridge foundations as part of project R-3601. Mud rotary drilling (4" diameter) will occur at three locations within open water and one location within adjacent wetlands. The existing bridge decks will be used as a work platforms to keep equipment out of the water at the majority of the boring locations. Temporary impacts to open water and wetlands will be less than 0.01 acre.

The geotechnical investigation will commence upon permit approval. Previous agreements outline that geotechnical investigations may take place within the in-water work moratorium.

### Regulatory Approvals

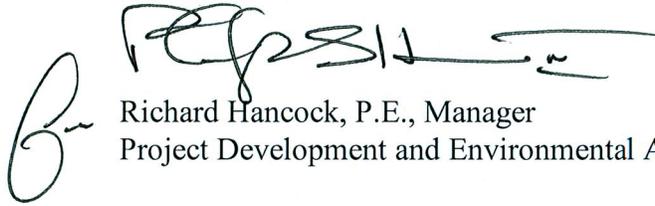
Section 404 Permit: The NCDOT requests that these activities be authorized by a Nationwide Permit 6.

Section 401 Permit: We anticipate 401 General Certification number 3883 will apply to this project. All general conditions of the Water Quality Certification will be met; therefore no written concurrence is requested.

A copy of this permit application will be posted on the NCDOT Website at:  
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx> under Quick Links > Permit Applications

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Amy James at [aejames2@ncdot.gov](mailto:aejames2@ncdot.gov) or (919) 707-6129.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Hancock', is written over a faint, light-colored rectangular stamp or watermark.

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

cc: NCDOT Permit Application Standard Distribution List



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

<b>Pre-Construction Notification (PCN) Form</b>		
<b>A. Applicant Information</b>		
<b>1. Processing</b>		
1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 6 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> Riparian Buffer Authorization		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>2. Project Information</b>		
2a. Name of project:	Geotechnical Investigation (soil test borings for the bridge foundations)	
2b. County:	Brunswick	
2c. Nearest municipality / town:	Leland	
2d. Subdivision name:	Not Applicable	
2e. NCDOT only, T.I.P. or state project no:	R-3601 (38868.1.1)	
<b>3. Owner Information</b>		
3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation	
3b. Deed Book and Page No.	Not Applicable	
3c. Responsible Party (for LLC if applicable):	Not Applicable	
3d. Street address:	1598 Mail Service Center	
3e. City, state, zip:	Raleigh, North Carolina, 27699-1598	
3f. Telephone no.:	(919) 707-6129	
3g. Fax no.:	(919) 212-5785	
3h. Email address:	aejames2@ncdot.gov	

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

<b>B. Project Information and Prior Project History</b>	
<b>1. Property Identification</b>	
1a. Property identification no. (tax PIN or parcel ID):	Not Applicable
1b. Site coordinates (in decimal degrees):	Latitude: 34.234449 Longitude: -77.979593
1c. Property size:	71 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water to proposed project:	Brunswick River, Alligator Creek
2b. Water Quality Classification of nearest receiving water:	SC (Brunswick River); SC,Sw (Alligator Creek)
2c. River basin:	Cape Fear
<b>3. Project Description</b>	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application:  The area surrounding the existing Brunswick River & Alligator Creek bridges is primarily undeveloped coastal marsh.	
3b. List the total estimated acreage of all existing wetlands on the property: 129.5 (entire project)	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 3,155 (entire project)	
3d. Explain the purpose of the proposed project: To obtain soil test borings to be used in the design of the new proposed Brunswick River & Alligator Creek bridge foundations.	
3e. Describe the overall project in detail, including the type of equipment to be used: Mud rotary drilling a 4-inch diameter. The drilling fluid will be recirculated during the process through temporary casing. Work will be performed with a mid-size geotechnical drill rig mounted on a rubber tracked carrier. One boring will be drilled in the water at Alligator Ck. Three borings will be performed at the Brunswick River bridge, two in the river & one between the existing bridges in the median wetland at low tide.	
<b>4. Jurisdictional Determinations</b>	
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Comments:
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): NCDOT (Amy James)	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. A preliminary JD was received for this part of the project on October 6, 2008.	
<b>5. Project History</b>	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions. A NWP 23 and a NWP 5 were approved by the USACE on 8/19/2013 (SAW-2007-03461-010). The NWP 23 covered the entire project while the NWP5 was for the installation of test piles in the Brunswick River. The corresponding 401 Water Quality Certification was approved by NC Division of Water Quality on May 16, 2013(DWQ#: 13-0472).	
<b>6. Future Project Plans</b>	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

<b>C. Proposed Impacts Inventory</b>						
<b>1. Impacts Summary</b>						
1a. Which sections were completed below for your project (check all that apply):						
<input checked="" type="checkbox"/> Wetlands <input type="checkbox"/> Streams – tributaries <input type="checkbox"/> Buffers <input checked="" type="checkbox"/> Open Waters <input type="checkbox"/> Pond Construction						
<b>2. Wetland Impacts</b>						
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	2d. Forested	2e. Type of jurisdiction Corps (404,10) or DWQ (401, other)	2f. Area of impact (acres)	
W1      T	Excavation	Tidal Freshwater Marsh	No	Corps	<0.01	
W2      -	Choose one	Choose one	Yes/No	-		
W3      -	Choose one	Choose one	Yes/No	-		
W4      -	Choose one	Choose one	Yes/No	-		
W5      -	Choose one	Choose one	Yes/No	-		
W6      -	Choose one	Choose one	Yes/No	-		
<b>2g. Total Wetland Impacts:</b>						<0.01 (Temp)
2h. Comments: Drilling a 4-inch diameter soil test boring in the median between the existing Brunswick River bridges. (Total of one boring = 0.087 square feet of temporary impacts)						
<b>3. Stream Impacts</b>						
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	3f. Average stream width (feet)	3g. Impact length (linear feet)
S1      -	Choose one		-	-		
S2      -	Choose one		-	-		
S3      -	Choose one		-	-		
S4      -	Choose one		-	-		
S5      -	Choose one		-	-		
S6      -	Choose one		-	-		
<b>3h. Total stream and tributary impacts</b>						
3i. Comments:						

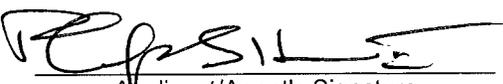
<b>4. Open Water Impacts</b>								
If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.								
4a. Open water impact number Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact		4d. Waterbody type	4e. Area of impact (acres)			
O1 T	Brunswick River	Excavation		Other	<0.01			
O2 T	Alligator Creek	Excavation		Other	<0.01			
O3 -		Choose one		Choose				
O4 -		Choose one		Choose				
<b>4f. Total open water impacts</b>					<0.01 (Temp)			
4g. Comments: Drilling a 4-inch diameter soil test borings. Drilled from the existing bridges with casing. (Total of 3 borings = 0.26 square feet of temporary impacts)								
<b>5. Pond or Lake Construction</b>								
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	
P1	Choose one							
P2	Choose one							
<b>5f. Total:</b>								
5g. Comments:								
5h. Is a dam high hazard permit required?		<input type="checkbox"/> Yes		<input type="checkbox"/> No		If yes, permit ID no:		
5i. Expected pond surface area (acres):								
5j. Size of pond watershed (acres):								
5k. Method of construction:								
<b>6. Buffer Impacts (for DWQ)</b>								
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 <b>MUST</b> fill out Section D of this form.								
6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman <input type="checkbox"/> Other:						
6b. Buffer Impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name			6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)	
B1 -					Yes/No			
B2 -					Yes/No			
B3 -					Yes/No			
B4 -					Yes/No			
B5 -					Yes/No			
B6 -					Yes/No			
<b>6h. Total Buffer Impacts:</b>								
6i. Comments:								

<b>D. Impact Justification and Mitigation</b>		
<b>1. Avoidance and Minimization</b>		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.  Performing most of the borings from the existing bridge decks to keep equipment out of the water. We will be recirculating drilling fluids to prevent excess handling of materials which will avoid any accidental releases.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Spill control countermeasures to divert and contain any petroleum contaminated materials resulting from our equipment. Any contaminated materials generated by our crew will be disposed off-site. Use of a mid-size geotechnical drill rig mounted on a rubber tracked carrier reducing the ground contact pressure. The soil test boring in the median at the Brunswick River will be performed at low tide.		
<b>2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State</b>		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The activity is temporary	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
<b>3. Complete if Using a Mitigation Bank</b>		
3a. Name of Mitigation Bank:		
3b. Credits Purchased (attach receipt and letter)	Type: Choose one Type: Choose one Type: Choose one	Quantity: Quantity: Quantity:
3c. Comments:		
<b>4. Complete if Making a Payment to In-lieu Fee Program</b>		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	Choose one	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
<b>5. Complete if Using a Permittee Responsible Mitigation Plan</b>		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
<b>6f. Total buffer mitigation required:</b>				
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:				

<b>E. Stormwater Management and Diffuse Flow Plan (required by DWQ)</b>	
<b>1. Diffuse Flow Plan</b>	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Stormwater Management Plan</b>	
2a. What is the overall percent imperviousness of this project?	%    Not Applicable
2b. Does this project require a Stormwater Management Plan?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:  This activity is covered under the SMP submitted as part of the R-3601 NW23 permit application.	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan:	
2e. Who will be responsible for the review of the Stormwater Management Plan?	DWQ 401 Unit
<b>3. Certified Local Government Stormwater Review</b>	
3a. In which local government's jurisdiction is this project?	
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4. DWQ Stormwater Program Review</b>	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input checked="" type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>5. DWQ 401 Unit Stormwater Review</b>	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No    N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No    N/A

<b>F. Supplementary Information</b>	
<b>1. Environmental Documentation (DWQ Requirement)</b>	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.)  Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Violations (DWQ Requirement)</b>	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
<b>3. Cumulative Impacts (DWQ Requirement)</b>	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description.  These activities are both temporary and part of a larger project that was determined not to significantly impact future development in the vicinity. (see R-3601 NW23 permit application)	
<b>4. Sewage Disposal (DWQ Requirement)</b>	
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	

<b>5. Endangered Species and Designated Critical Habitat (Corps Requirement)</b>		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	Raleigh	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP data, surveys, and correspondence with NCDMF biologists; concurrence for a 'May Affect, Not Likely to Adversely Affect' (MANLAA) determination for West Indian manatee was received from USFWS on September 17, 2008. Concurrence for a MANLAA determination for the Atlantic and shortnose sturgeons was received from the National Marine Fisheries Service on November 12, 2013.		
<b>6. Essential Fish Habitat (Corps Requirement)</b>		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
<b>7. Historic or Prehistoric Cultural Resources (Corps Requirement)</b>		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
Philip S. Harris III Applicant/Agent's Printed Name for Richard W. Hancock, P.E.	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	02/16/2014 Date



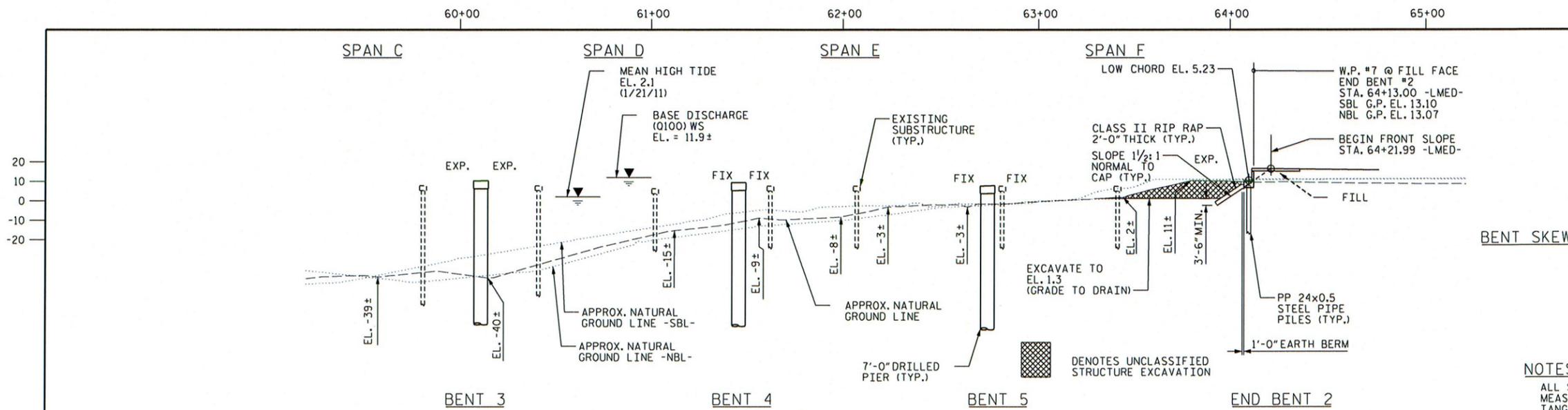
**BRIDGE 103**

BENT SKEW ANGLES @ WORK POINTS

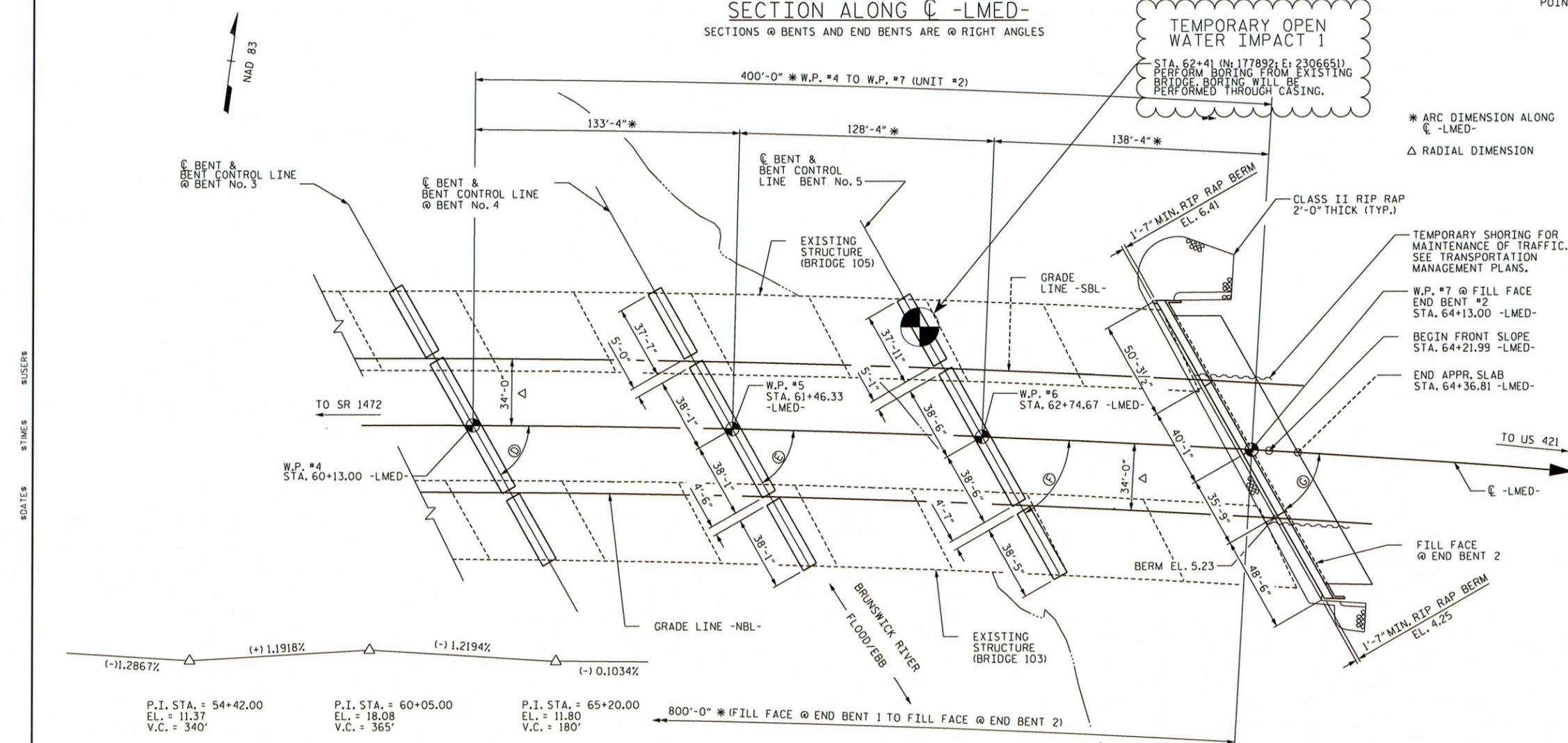
- (D) 60° 00' 00"
- (E) 59° 00' 00"
- (F) 58° 02' 15"
- (G) 57° 00' 00"

**NOTES:**

ALL SKEW ANGLES ARE MEASURED W/ RESPECT TO TANGENT TO -LMED- @ WORK POINT STA.



**SECTION ALONG C -LMED-**  
SECTIONS @ BENTS AND END BENTS ARE @ RIGHT ANGLES



**GRADE DATA C SURVEY -SBL-**

P.I. STA. = 54+42.00 EL. = 11.37 V.C. = 340'	P.I. STA. = 60+05.00 EL. = 18.08 V.C. = 365'	P.I. STA. = 65+20.00 EL. = 11.80 V.C. = 180'
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**GRADE DATA C SURVEY -NBL-**

P.I. STA. = 54+75.00 EL. = 11.69 V.C. = 285'	P.I. STA. = 60+03.00 EL. = 18.07 V.C. = 380'	P.I. STA. = 65+30.00 EL. = 11.64 V.C. = 190'
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**PLAN ALONG -LMED-**  
PILES NOT SHOWN IN PLAN VIEW FOR CLARITY

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

**PCN BORING LOCATION PLAN**



\$FILES \$DATES \$TIMES \$USERS



BRIDGE 107

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.  
THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR SEISMIC PERFORMANCE ZONE 1.  
ALL BENTS ARE PARALLEL.  
REPLACES BRIDGE 107.  
THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.

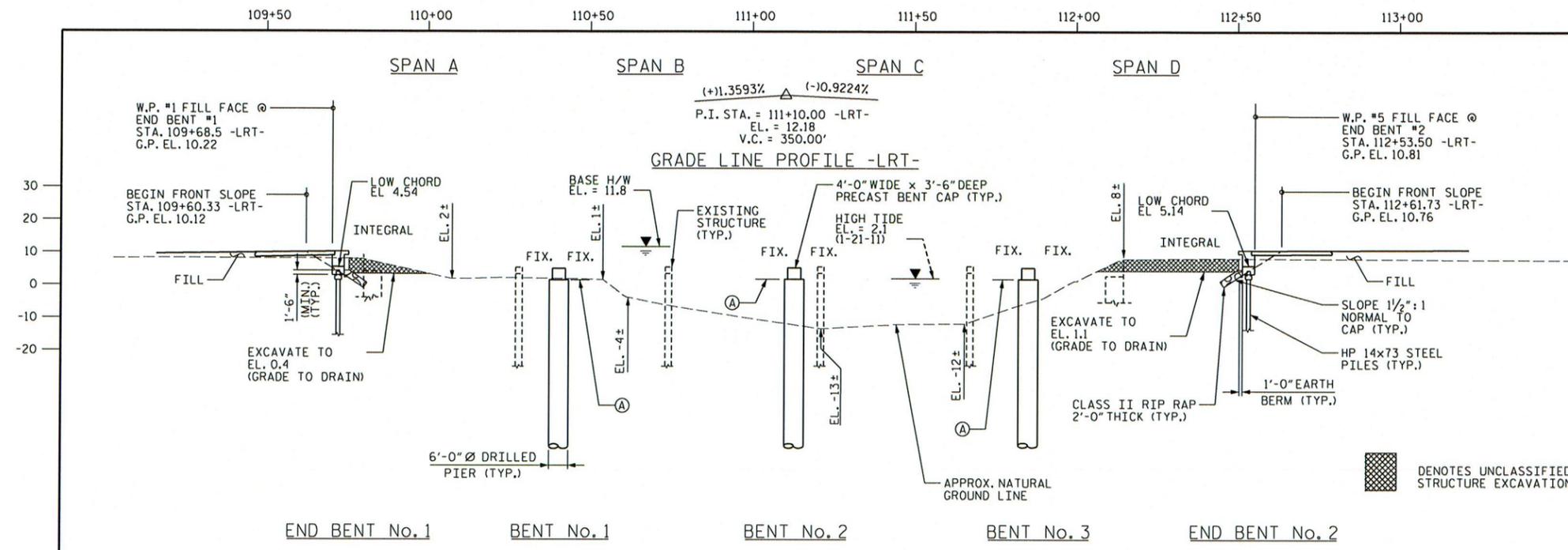
HYDRAULIC DESIGN DATA

DESIGN DISCHARGE	N/A
FREQUENCY	N/A
DESIGN HIGH WATER EL.	N/A
DRAINAGE AREA	8760 SQ. MI.
BASE DISCHARGE(1000)	9430 CFS.
BASE HIGH WATER EL.	11.8
OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	N/A
FREQUENCY	N/A
OVERTOPPING EL.	N/A

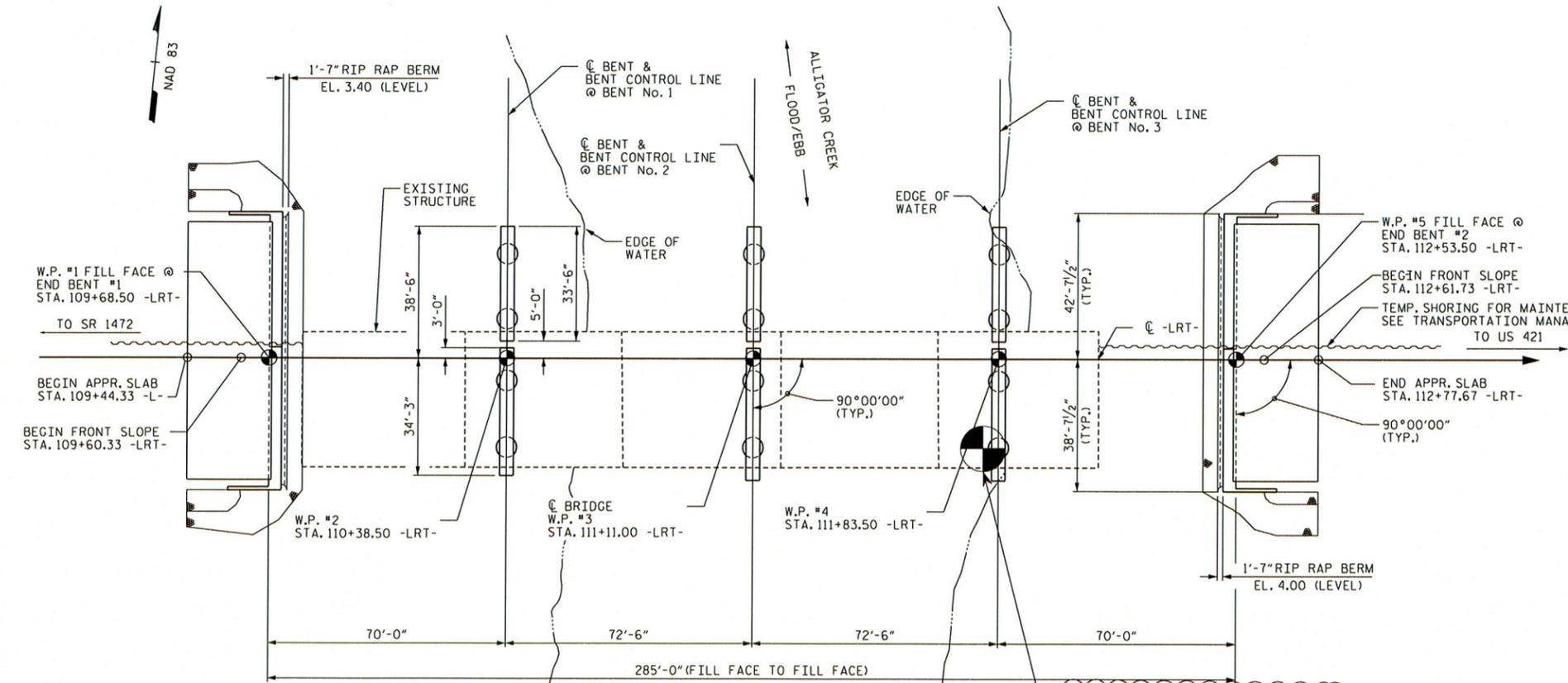
TOP OF DRILLED  
PIER ELEVATIONS (A)

LOCATION	STAGE I CONST. ELEVATION	STAGE II CONST. ELEVATION
BENT 1	1.39	1.54
BENT 2	1.72	1.87
BENT 3	1.70	1.85

NOTE: TIP ELEVATIONS FOR DRILLED PIERS SHALL BE NO HIGHER THAN EL. -90.00 UNLESS OTHERWISE ADJUSTED IN FINAL DESIGN.



SECTION ALONG C -LRT-  
SECTIONS @ BENTS AND END BENTS ARE @ RIGHT ANGLES



TEMPORARY OPEN WATER IMPACT 2  
STA. 111+79 (N: 177739; E: 2311587)  
PERFORM BORING FROM EXISTING BRIDGE. BORING WILL BE PERFORMED THROUGH CASING.



PLAN ALONG -LRT-  
PILES NOT SHOWN IN PLAN VIEW

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