



PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

November 1, 2016

U. S. Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. John Thomas
NCDOT Division 9 Project Coordinator

SUBJECT: **Application for Section 404 General Permit No. 198200031 and Section 401 Water Quality Certification** for the proposed Interstate 85 (I-85) reconstruction, widening, and interchange improvements from north of SR 1308 (Moose Road) to north of the US 29/US 601 Connector (Exit 68), Rowan County, Division 9. Federal Aid Project No. NHIMF-085-2(78)63, TIP Project No. I-3802B.

Debit \$570.00 from WBS 36780.1.2

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to reconstruct and widen I-85 to an eight-lane divided facility from north of SR 1308 (Moose Road) to north of the US 29/US 601 Connector (Exit 68) in Rowan County.

There will be 819 linear feet of permanent stream impact and 331 linear feet of temporary stream impact associated with construction of the project. There will also be 579 linear feet of impact due to permanent bank stabilization as well as 210 linear feet of impact due to temporary bank stabilization. Permanent impacts to wetlands total 0.02 acre due to fill and excavation on the project. Less than 0.01 acre of temporary wetland impact and 0.03 acre of mechanized clearing will also occur due to project construction.

Please find enclosed the Pre-Construction Notification, NC Division of Mitigation Services mitigation acceptance letter, Jurisdictional Determination, Stormwater Management Plan, permit drawings, and roadway plans for the subject project. A Categorical Exclusion (CE) was completed for this project in December 2013. Additional copies are available upon request.

The let date for this project was March 28, 2016. Final completion is anticipated in June 2020.

A copy of this permit application will be posted on the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>, under *Quick Links > Permit Applications*. A copy of the CE is also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have



any questions or need additional information, please contact Jim Mason at either jmason@ncdot.gov or (919) 707-6136.

Sincerely,



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

cc:
NCDOT Permit Application Standard Distribution List
Khaled Al-Akhdar



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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: _____ or 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:	Interstate 85 (I-85) reconstruction, widening, and interchange improvements
2b. County:	Rowan
2c. Nearest municipality / town:	Kannapolis / China Grove
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	I-3802B

3. Owner Information

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

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ 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: 35.546605 (DD.DDDDDD) Longitude: - 80.572482 (-DD.DDDDDD)
1c. Property size:	Approx.200 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Cold Water Creek and Town Creek
2b. Water Quality Classification of nearest receiving water:	WS-IV for Cold Water Creek and C for Town Creek
2c. River basin:	Yadkin
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Land use within the project vicinity consists mainly of forested, agricultural, low density residential, industrial, and commercial areas.	
3b. List the total estimated acreage of all existing wetlands on the property: Approximately 25 acres based on NRTR.	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: Approximately 25,000 linear feet based on NRTR.	
3d. Explain the purpose of the proposed project: The primary purpose of the proposed project as detailed in the Categorical Exclusion is to improve Level of Service on I-85 and its interchanges within the project area.	
3e. Describe the overall project in detail, including the type of equipment to be used: The North Carolina Department of Transportation (NCDOT) proposes to reconstruct and widen approximately 5.5 miles of I-85, from north of SR 1308 (Moose Road) to north of the US 29/US 601 Connector (Exit 68), to an eight-lane divided facility. The project will improve interchanges at I-85/NC 152 and I-85/NC 152/US 29/US 601 Connector and replace Bridge Nos. 21 on US 29 over the Norfolk Southern Railway/North Carolina Railroad and Bridge No. 34 on NC 152/US 29 over the NC 152/US 29/US 601 Connector in Rowan County. Standard road building equipment 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): Mark Mickley	Agency/Consultant Company: Mulkey (now Calyx) Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 6/23/2014	
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
6b. If yes, explain.	

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
☒ Wetlands		☒ Streams - tributaries		☐ Buffers		
☐ Open Waters		☐ Pond Construction				
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction	2f. Area of impact (acres)	
Site 1 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ		
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						
2h. Comments: See attached Table 2						
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		
3h. Total stream and tributary impacts						
3i. Comments: See attached Table 3						

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				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
4f. Total open water impacts				

4g. Comments: **No open water impacts**

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: **No pond impacts**

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: There are no regulated buffers within the project area.					

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. Widening toward the median was incorporated to the project to minimize impacts. Urban discharge equations were used to accommodate future growth in the area. Supplemental pipes needed to accommodate the urban discharge were set at elevations above the existing resources to ensure no impacts during low flow. Bore pits required for trenchless excavations under I-85 were placed outside jurisdictional resources which require additional shoring along the outside shoulder throughout the project (these areas are shown on the attached permit drawings). Bank stabilization has been proposed in areas to minimize future scour and sedimentation as well as to fix existing pipe outlet issues. A new 36" replacement pipe is to be buried 20%. The existing pipes which are being retained and determined to be in good condition are being matched at their elevation, will have slopes incorporated to get closer to existing stream grade, or will have a drop box included if significantly perched to help dissipate energy. Hand clearing has been incorporated at a few areas to minimize impacts typically required due to Method III clearing. Reinforced slopes are used throughout the project to minimize surface water impacts to streams and wetlands. Three stormwater control measures will be used for the project: grass swales, preformed scour holes, and hazardous spill basins w/ media filters. Ditches have been designed to achieve grass swale credit to the maximum extent practical (approximately 34,100 linear feet of ditch is getting grass swale treatment throughout the project limits). Preformed scour holes are utilized near specified environmentally sensitive areas. Design Standards for Sensitive Watersheds will be employed within 0.5 mi. of the Lake Fisher Critical Area. Hazardous spill basins will minimize impacts to the Lake Fisher Critical Area and have been designed with a media filter to help improve water quality.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Construction and Maintenance Activities and Best Management Practices for the Protection of Surface Waters will be employed. All wetland areas not affected by the project will be protected from unnecessary encroachment. In the southern portion of the proposed project, Design Standards for Sensitive Watersheds will be employed within 0.5 mi. of the Lake Fisher Critical Area.		
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	
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: <i>not applicable</i>		
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:			3733.0	
4c. If using stream mitigation, stream temperature:			☒ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):			0 square feet	
4e. Riparian wetland mitigation requested:			1.0 acres	
4f. Non-riparian wetland mitigation requested:			0.5 acres	
4g. Coastal (tidal) wetland mitigation requested:			0 acres	
4h. Comments: See attached DMS letter.				
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: There are no state regulated buffers for the project area.				

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:	☐ 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 Stormwater Management Plan and Project Plan Sheets.	
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?	<i>not applicable</i>
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 N/A
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 N/A
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 the Categorical Exclusion dated December 2013.	☒ 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. The following was summarized from <i>Community Impact Assessment and Qualitative Indirect and Cumulative Effects Assessment</i> (July, 2008) [Pulled from the Categorical Exclusion approved December 2013]. Water resources in the study area, including a drinking water supply, could incur indirect and cumulative effects. Some protection will be provided from development restrictions within the Critical Area of the Water Supply Watershed, and to a lesser extent, in the Protected Area. There are no High Quality Waters (HQW), Outstanding Resource Waters (ORW), or Wild and Scenic Rivers in the FLUSA. Town Creek and Irish Buffalo Creek are 303(d) streams. Reduced congestion on I-85 and improvements to existing interchanges will likely contribute to travel time savings in the study area. An increase in development interests in the more rural portions of the study area could eventually result in some of those areas transitioning to residential and business land use. Local ordinances regulating development and designed to preserve agricultural lands will guide this development.	
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. <i>Not applicable</i>	

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? The USFWS county list and NCNHP database were consulted for Rowan County. Schweinitz's sunflower, northern long-eared bat, and the bald eagle are federally protected species noted for the county. A No Effect Biological Conclusion was rendered for the Schweinitz's sunflower. The last survey for Schweinitz's sunflower was on October 18, 2016. Since the date of the approved Categorical Exclusion (December 2013), the northern long-eared bat has been listed for Rowan County. A Federally Protected Bat Species Survey Report was completed for the project in November 2015 and found no bat evidence on the existing bridges or culverts within the project footprint. A memo regarding the project's 4(d) compliance was sent to the USFWS on October 31, 2016. Also, it has been determined that this project would not affect bald eagles.		
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 Categorical Exclusion Documentation approved December 2013.		
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		
For Philip S. Harris III, P.E., C.P.M. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	11-01-2016 Date

Table 2. I-3802B Wetland Impacts

Permit Site No.	Wetland ID	Impact Type ¹	Riparian or Non-riparian	WAM Classification	Forested	Type of Jurisdiction	Permanent Impacts (ac)	Temporary Impacts (ac)	USACE Mitigation Ratio ²
5	WAH	Fill	Riparian	Headwater Forest	Yes	Corps	<0.01	0	2:1
		Mechanized Clearing					<0.01	0	2:1
9	WAR	Fill	Riparian	Headwater Forest	Yes	Corps	0	<0.01	2:1
		Mechanized Clearing					<0.01	0	2:1
10	WAR	Mechanized Clearing	Riparian	Headwater Forest	Yes	Corps	<0.01	0	2:1
12	WAV	Fill	Non-riparian	Headwater Forest	Yes	Corps	<0.01	0	2:1
32	WBH	Excavation	Riparian	Headwater Forest	Yes	Corps	0.01	0	2:1
		Mechanized Clearing					0.02	0	2:1
Total							0.05	<0.01	

¹ Hand clearing will occur at Site 4 (0.08 ac to WAN), Site 8 (<0.01 ac to WAQ), and Site 12 (<0.01 ac to WAV). The hand clearing impacts are not included in the above impact areas.

² Mitigation ratios are based on the WAM/SAM forms which were provided to USACE. Ratios were assigned by NCDOT.

Table 3. I-3802B Surface Water Impacts

Permit Site No.	Stream Name	Perennial (PER) or Intermittent (INT)	Type of Jurisdiction	Average Stream Width (feet)	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)	Impacts Requiring USACE Mitigation (ft)	USACE Mitigation Ratio ²	Impacts Requiring 1:1 DWR Mitigation (ft)
1	UT to Cold Water Creek (SIA)	INT	Corps	6	Bank Stabilization	24	10	0	-	0
2	UT to Cold Water Creek (SIC)	INT	Corps	4-5	48" RCP	11	27	11	2:1	0
					Bank Stabilization	25	0	0	-	0
3	UT to Cold Water Creek (SIE/SBF)	PER	Corps	10-20	Bank Stabilization	60	20	0	-	0
6	Cold Water Creek (SJ)	PER	Corps	20-30	Culvert removal	0	40	0	-	0
7	Cold Water Creek (SJ)	PER	Corps	20-30	Bank Stabilization	11	10	0	-	11
9	UT to Cold Water Creek (SJA)	INT	Corps	5-10	42" RCP / 48" B&J	23	10	23	1:1	0
10	UT to Cold Water Creek (SJE)	INT	Corps	3	48" RCP	5	0	5	1:1	0
					Bank Stabilization	14	10	0	-	0
11	UT to Cold Water Creek (SJB)	PER	Corps	10	Bank Stabilization	11	10	0	-	0
13	Cold Water Creek (SJ)	PER	Corps	20-30	Bank Stabilization	22	10	0	-	22
14	Cold Water Creek (SJ)	PER	Corps	20-30	Bank Stabilization	10	10	0	-	10
15	Cold Water Creek (SJ)	PER	Corps	20-30	Bank Stabilization	12	10	0	-	12
16	Cold Water Creek (SJ)	PER	Corps	20-30	Bank Stabilization	30	10	0	-	30
	UT to Cold Water Creek (SJH)	INT	Corps	10	48" RCP	9	10	9	2:1	0
17	UT to Cold Water Creek (SJJ)	INT	Corps	5	Bank Stabilization	24	20	0	-	0

Table 3. I-3802B Surface Water Impacts

Permit Site No.	Stream Name	Perennial (PER) or Intermittent (INT)	Type of Jurisdiction	Average Stream Width (feet)	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)	Impacts Requiring USACE Mitigation (ft)	USACE Mitigation Ratio ²	Impacts Requiring 1:1 DWR Mitigation (ft)
18	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	18	10	0	-	18
19	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	13	10	0	-	13
20	UT to Cold Water Creek (SKC)	INT	Corps	3	Bank Stabilization	14	10	0	-	0
21	UT to Cold Water Creek (SKD)	INT	Corps	3	30" RCP	40	20	40	2:1	0
					Bank Stabilization	10	0	0	-	0
22	UT to Cold Water Creek (SKF)	PER	Corps	3-5	48" RCP	55	24	55	2:1	0
					Bank Stabilization	30	0	0	-	0
23	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	7	10	0	-	7
24	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	14	10	0	-	14
25	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	12	10	0	-	12
26	UT to Cold Water Creek (SKI)	INT	Corps	10	60" RCP Ext.	10	20	10	2:1	0
					Bank Stabilization	21	0	0	-	0
27	Cold Water Creek (SK)	PER	Corps	15-20	7'x7" RCBC Ext.	87	20	87	2:1	87
					Bank Stabilization	32	0	0	-	32
28	UT to Cold Water Creek (SKI)	INT	Corps	10	60" RCP Ext.	153	20	153	2:1	0
					Bank Stabilization	31	0	0	-	0
29	Cold Water Creek (SK)	PER	Corps	15-20	Bank Stabilization	15	10	0	-	15

Table 3. I-3802B Surface Water Impacts

Permit Site No.	Stream Name	Perennial (PER) or Intermittent (INT)	Type of Jurisdiction	Average Stream Width (feet)	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)	Impacts Requiring USACE Mitigation (ft)	USACE Mitigation Ratio ²	Impacts Requiring 1:1 DWR Mitigation (ft)
30	UT to Cold Water Creek (SKL)	INT	Corps	5-10	36" RCP Ext.	4	23	4	2:1	0
					Bank Stabilization	21	0	0	-	0
31	Cold Water Creek (SKM)	INT	Corps	3	Bank Stabilization	12	10	0	-	0
					Stream Daylighting	0	39	0	-	0
33	UT to Town Creek (SLA)	INT	Corps	3	54" RCP	14	10	14	1:1	0
					Bank Stabilization	15	0	0	-	0
34	UT to Cold Water Creek (SKO)	INT	Corps	20	30" RCP	93	20	93	2:1	0
					Bank Stabilization	21	0	0	-	0
35	UT to Cold Water Creek (SKJA)	INT	Corps	10	36" RCP	186	30	186	2:1	0
					Bank Stabilization	16	0	0	-	0
36	UT to Cold Water Creek (SKJ)	PER	Corps	5-7	30" RCP	113	18	113	2:1	0
					Bank Stabilization	13	0	0	-	0
37	UT to Cold Water Creek (SKN)	INT	Corps	3	Bank Stabilization	21	10	0	-	0
38	Cold Water Creek (SK) ¹	INT	Corps	5	Standard Base Ditch	16	0	16	2:1	0
TOTAL IMPACTS						1398	541	819³		283
Permanent Fill Impacts						819	0			
Temporary Fill Impacts						0	331			
Permanent Bank Stabilization Impacts						579	0			
Temporary Bank Stabilization Impacts						0	210			

¹SK was noted as intermittent upstream from the confluence with SKM

² Mitigation ratios are based on the WAM/SAM forms which were provided to USACE. Ratios were assigned by NCDOT.

³ 42 linear feet of stream impact is subject to the USACE 1:1 mitigation ratio and 777 linear feet of stream impact is subject to the USACE 2:1 mitigation ratio.



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Division of Mitigation Services

Donald R. van der Vaart
Secretary

July 7, 2015

Mr. Richard W. Hancock, P.E.
Manager, Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Hancock:

Subject: EEP Mitigation Acceptance Letter:

I-3802B, I-85 from Lane Street (Exit 63) in Cabarrus County to US 29 / 601 Connector (Exit 68)
in Rowan County, Cabarrus and Rowan Counties

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on June 17, 2015, the impacts are located in CU 03040105 of the Yadkin River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Yadkin 03040105 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	3,733.0	1.0	0.50	0	0	0

*Some of the stream and wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details on the mitigation ratio proposal. DMS is proposing to provide riparian wetland mitigation for all wetland impacts associated with this project.

In accordance with the directive from the February 8, 2011 IRT meeting, non-riparian wetland impacts located in the mountains and piedmont areas of North Carolina will be accepted as requested but mitigated utilizing riparian wetland mitigation credits. DMS commits to implementing sufficient compensatory warm stream mitigation and riparian wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
Asset Management Supervisor

cc: Mr. John Thomas, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Resources, Wetlands/401 Unit
File: I-3802B

1652 Mail Service Center, Raleigh, North Carolina 27699-1652
Phone: 919-707-8976 \ Internet: <http://portal.ncdenr.org/web/eeep>

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**U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

Action Id. 200803229

County: Rowan & Cabarrus U.S.G.S. Quad: Concord

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: Richard Hancock
Address: NC DOT
1598 Mail Service Center
Raleigh, NC 27699-1598
Telephone No.: 919 715-7217

COPY

Property description:

Size (acres)	<u>400</u>	Nearest Town	<u>China Grove</u>
Nearest Waterway	<u>Town Creek/ Cold Water Creek</u>	River Basin	<u>Yadkin River</u>
USGS HUC	<u>03040104</u>	Coordinates	<u>N 35.477019 W -80.5790540</u>

Location description I-85 widening from the US 29-601 connector south to SR 1430, adjacent to Town Creek, Cold Water Creek, and Irish Buffalo Creek, south of China Grove, in Rowan and Cabarrus Counties, North Carolina. TIP I-3802, I-3804, and I-3610.

As requested by your letter (i.e. agent's letter Mulkey Engineering dated June 10, 2014) and the documentation included with your letter this existing jurisdictional determination is modified to include the field verified jurisdictional determinations associated with US 29 US 601 interchange impacts to be include in the proposed I-85 widening project.

Indicate Which of the Following Apply:

A. Preliminary Determination

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

B. Approved Determination

- ☐ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- ☒ There are waters of the U.S. 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 wetland 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 wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

- ☐ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our

Action ID: _____

published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

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

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact John Thomas at 919 554-4884 ext. 25.

C. Basis For Determination

There are stream channels within your project site which are tributaries of Town Creek, Cold Water Creek, and Irish Buffalo Creek which flows into the Yadkin River and the Atlantic Ocean.

D. Remarks

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

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

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

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by August 23, 2014.

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

Corps Regulatory Official: _____

Date 06/23/2014

Expiration Date 06/23/2019

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

Copy furnished:

Brian Dustin, Mulkey Engineers & Consultants, P.O. Box 33127, Raleigh, NC 27636



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.05; Released April 2016)

WBS Element:	36780.3.GV3	TIP No.:	I-3802B	County(ies):	Cabarrus Rowan	Page	1	of	4
General Project Information									
WBS Element:	36780.3.GV3	TIP Number:	I-3802B	Project Type:	Roadway Widening	Date:	10/21/2016		
NCDOT Contact:	Matt Lauffer			Contractor / Designer:	James Rice				
Address:	1020 Birch Ridge Dr. Raleigh, NC 27610			Address:	555 Fayetteville St., Suite 900 Raleigh, NC 27601				
Phone:	919-707-6703			Phone:	919-232-6621				
Email:	mslauffer@ncdot.gov			Email:	james.rice@hdrinc.com				
City/Town:	China Grove			County(ies):	Cabarrus	Rowan			
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No	No			
Wetlands within Project Limits?	Yes								
Project Description									
Project Length (lin. miles or feet):	5.47		Surrounding Land Use:	Rural/Agricultural					
	Proposed Project			Existing Site					
Project Built-Up Area (ac.)	136.0 ac.			88.0 ac.					
Typical Cross Section Description:	8 lane divided freeway w/ a 22 ft median: (2) 12 foot paved shoulders, (4) 12 foot travel lanes, (2) 11 foot paved median shoulders - Total width of 142'			4 lane divided freeway w/ a 60 ft median: (2) 12 foot paved shoulders, (4) 12 foot travel lanes, (2) 4 foot paved median shoulders - Total width of 136'					
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	128,300	Year:	2040	Existing:	85,900	Year:	2016	
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The proposed project (I-3802B) will provide relief from present/future congestion and provide greater efficiency on I-85 from north of SR 1308 (Moose Rd) to south of SR 1505 (Mt Hope Church Rd). The project consists of reconstructing and widening approximately 8 miles of I-85, including interchange modifications. All stream crossings along the alignment will use culverts or pipes. Reinforced slopes will be used throughout the project to minimize surface water impacts to streams and wetlands. Three stormwater control measures will be used for the project: grass swales, preformed scour holes, and hazardous spill basins w/ media filters. The Design-Build Team has designed ditches to achieve grass swale credit to the maximum extent practical; there are approximately 34,100 linear feet of ditch that is getting grass swale treatment throughout the project limits. Preformed scour holes are utilized near specified environmentally sensitive areas. In the southern portion of the proposed project, hazardous spill basins will minimize impacts to the Lake Fisher Critical area, these basins have also been designed with a media filter to help improve water quality in this critical watershed area.								
Waterbody Information									
Surface Water Body (1):	UT to Lake Fisher			NCDWR Stream Index No.:	NA				
NCDWR Surface Water Classification for Water Body	Primary Classification:			Water Supply IV (WS-IV)					
	Supplemental Classification:			None					
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No			Comments:					
NRTR Stream ID:	SH					Buffer Rules in Effect:	N/A		
Project Includes Bridge Spanning Water Body?	No		Deck Drains Discharge Over Buffer?	N/A		Dissipator Pads Provided in Buffer?	N/A		
Deck Drains Discharge Over Water Body?	N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
(If yes, provide justification in the General Project Narrative)									



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.05; Released April 2016)

WBS Element:	36780.3.GV3	TIP No.:	I-3802B	County(ies):	Cabarrus Rowan	Page	2	of	4
Additional Waterbody Information									
Surface Water Body (2):	UT to Cold Water Creek			NCDWR Stream Index No.:	13-17-9-4-(0.5)				
NCDWR Surface Water Classification for Water Body			Primary Classification:	Water Supply IV (WS-IV)					
			Supplemental Classification:	None					
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No			Comments:					
NRTR Stream ID:	SIA, SIC, SJA, SJB, SJE, SJH, SJJ, SKA, SKC, SKD, SKF,SKJ,SKJA,SKI,SKK,SKL,SKM,SKN			Buffer Rules in Effect:					
Project Includes Bridge Spanning Water Body?	No			Deck Drains Discharge Over Buffer?	N/A		Dissipator Pads Provided in Buffer?		N/A
Deck Drains Discharge Over Water Body?			N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)									
Surface Water Body (3):	Cold Water Creek			NCDWR Stream Index No.:	13-17-9-4				
NCDWR Surface Water Classification for Water Body			Primary Classification:	Water Supply IV (WS-IV)					
			Supplemental Classification:	None					
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No			Comments:					
NRTR Stream ID:	SI, SJ, SK			Buffer Rules in Effect:		N/A			
Project Includes Bridge Spanning Water Body?	Yes			Deck Drains Discharge Over Buffer?	N/A		Dissipator Pads Provided in Buffer?		N/A
Deck Drains Discharge Over Water Body?			No		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)									
Surface Water Body (4):	UT to Town Creek			NCDWR Stream Index No.:	12-115-3				
NCDWR Surface Water Classification for Water Body			Primary Classification:	Class C					
			Supplemental Classification:	None					
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No			Comments:					
NRTR Stream ID:	SLA			Buffer Rules in Effect:					
Project Includes Bridge Spanning Water Body?	No			Deck Drains Discharge Over Buffer?	N/A		Dissipator Pads Provided in Buffer?		N/A
Deck Drains Discharge Over Water Body?			N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)									
Surface Water Body (5):				NCDWR Stream Index No.:					
NCDWR Surface Water Classification for Water Body			Primary Classification:						
			Supplemental Classification:						
Other Stream Classification:									
Impairments:									
Aquatic T&E Species?				Comments:					
NRTR Stream ID:				Buffer Rules in Effect:					
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?			Dissipator Pads Provided in Buffer?		
Deck Drains Discharge Over Water Body?					(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)									



Preformed Scour Holes and Energy Dissipators

[illegible]

Additional Comments

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

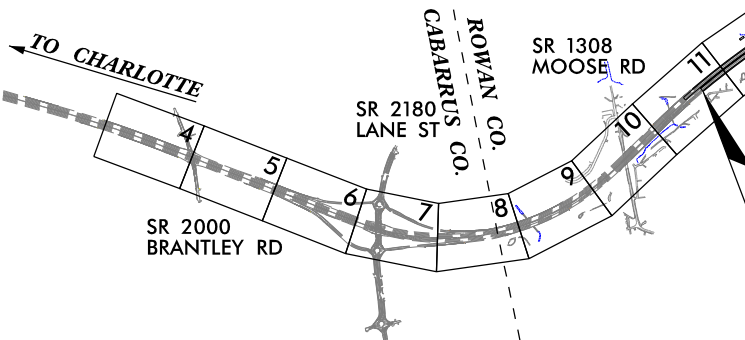
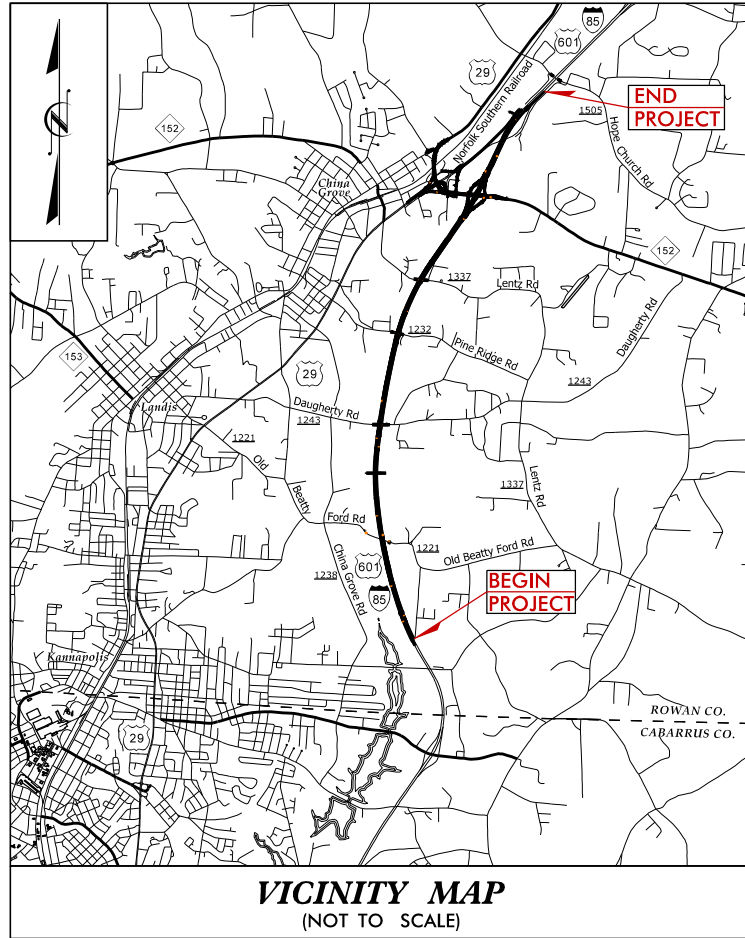


Additional Comments

TIP PROJECT: I-3802B

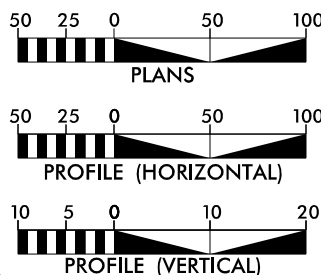
CONTRACT: C203702

See Sheet 1A For Conventional Symbology



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CHINA GROVE.

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 85,900
ADT 2040 = 128,300
DHV = 8 %
D = 55 %
T = 15 % *
V = 70 MPH
* (TTST 11% + DUALS 4%)
FUNC CLASS = INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-3802B = 5.472 MILES
LENGTH STRUCTURE TIP PROJECT I-3802B = 0.000 MILES
TOTAL LENGTH TIP PROJECT I-3802B = 5.472 MILES
BRIDGE LENGTH BASED ON CENTERLINE PROJECTION STATION

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

LANE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 25, 2016

LETTING DATE:
FEBRUARY 25, 2016

JONATHAN HENDERSON, P.E.
PROJECT ENGINEER

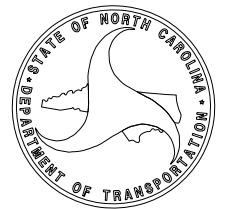
CALVIN W. MOODY, III, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.



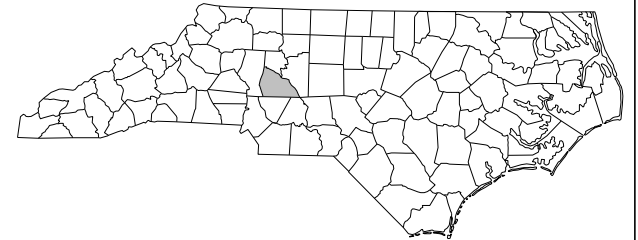
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROWAN COUNTY

LOCATION: I-85 FROM NORTH OF LANE ST (EXIT 63) TO NORTH
OF US 29 / 601 CONNECTOR INTERCHANGE (EXIT 68)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL,
STRUCTURES, & SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-3802B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
36780.3.GV3	NHMF-085-2(78)63		



NAD 83/NSRS 2007

I-3802B: WETLAND
AND SURFACE
WATER IMPACT PERMIT
SUBMITTED: 10-24-2016
SUBMITTAL #T-018

END TIP PROJECT I-3802B
-L- STA. 773 + 34.53

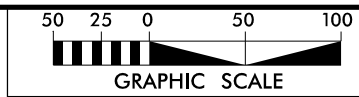
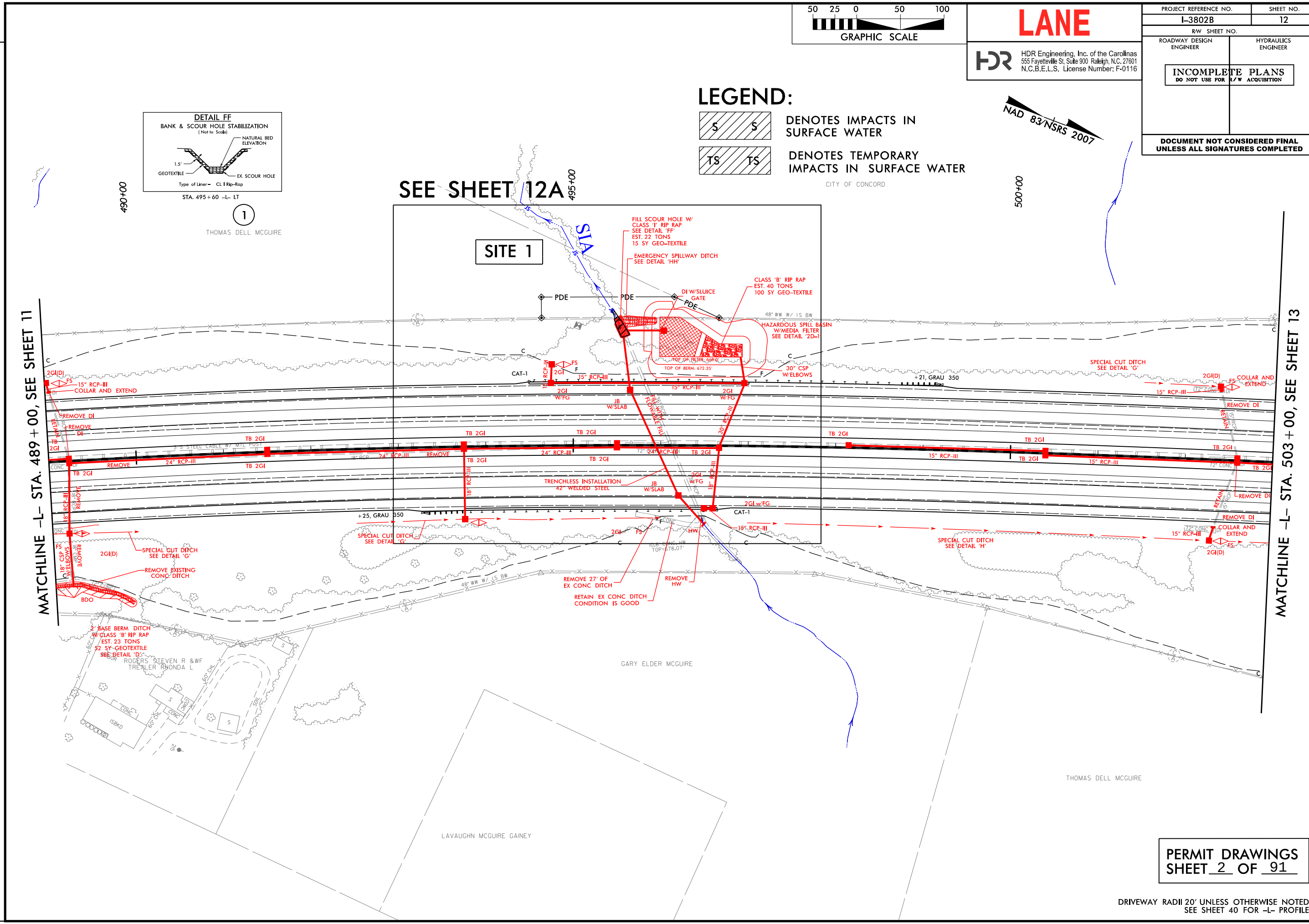
PERMIT DRAWINGS
SHEET 1 OF 91

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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DATE: 9/27/2016

REVISIONS



LANE
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

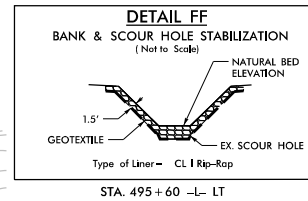
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I-3802B		12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			





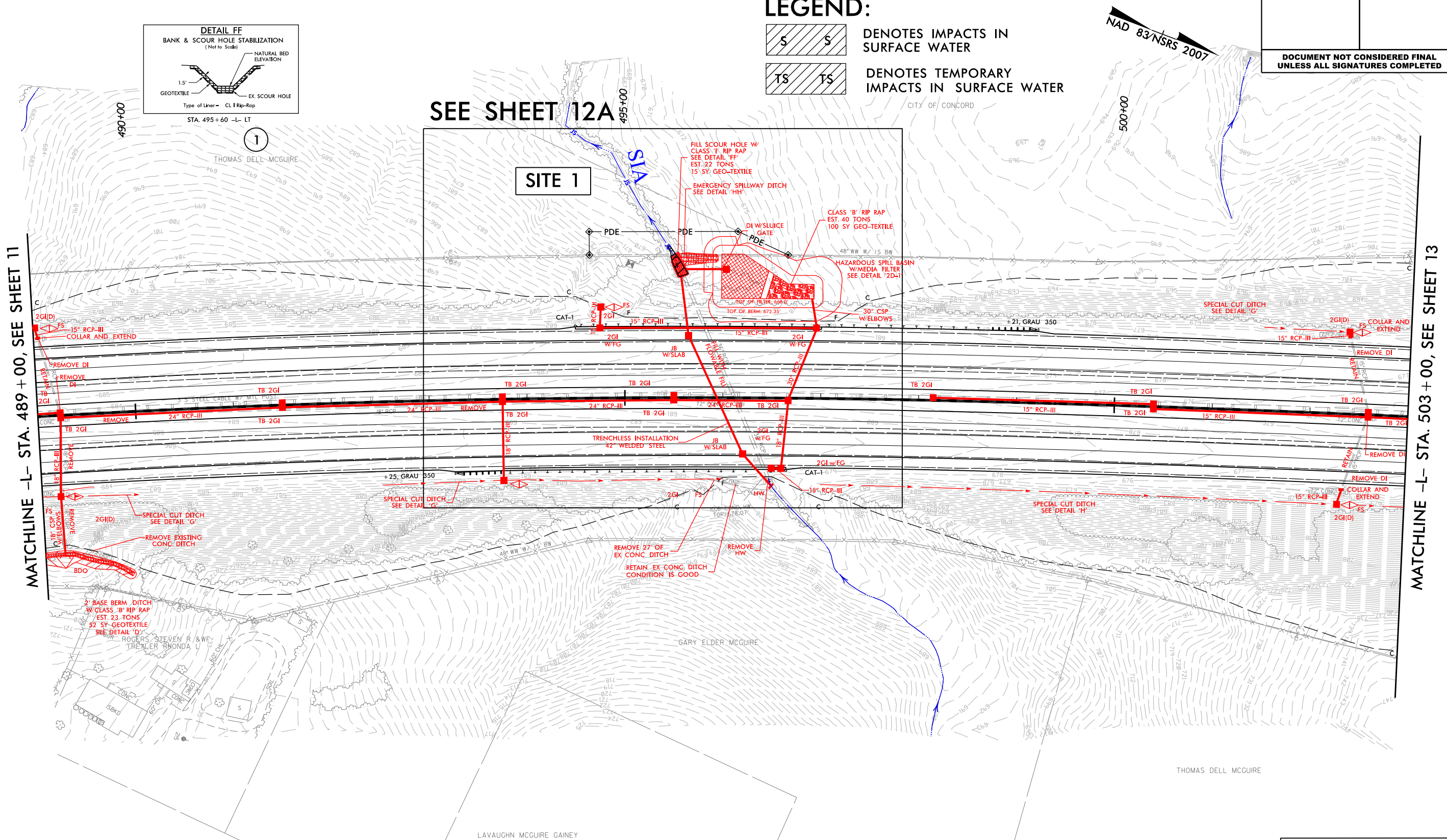
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I-3802B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



SEE SHEET 12A

SITE 1



MATCHLINE -L- STA. 489 + 00, SEE SHEET 11

MATCHLINE -L- STA. 503 + 00, SEE SHEET 13

PERMIT DRAWINGS
SHEET 3 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 40 FOR -L- PROFILE

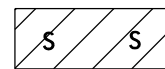
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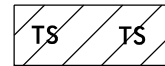
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REVISIONS

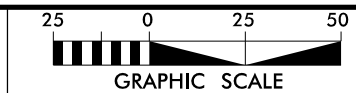
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



GRAPHIC SCALE

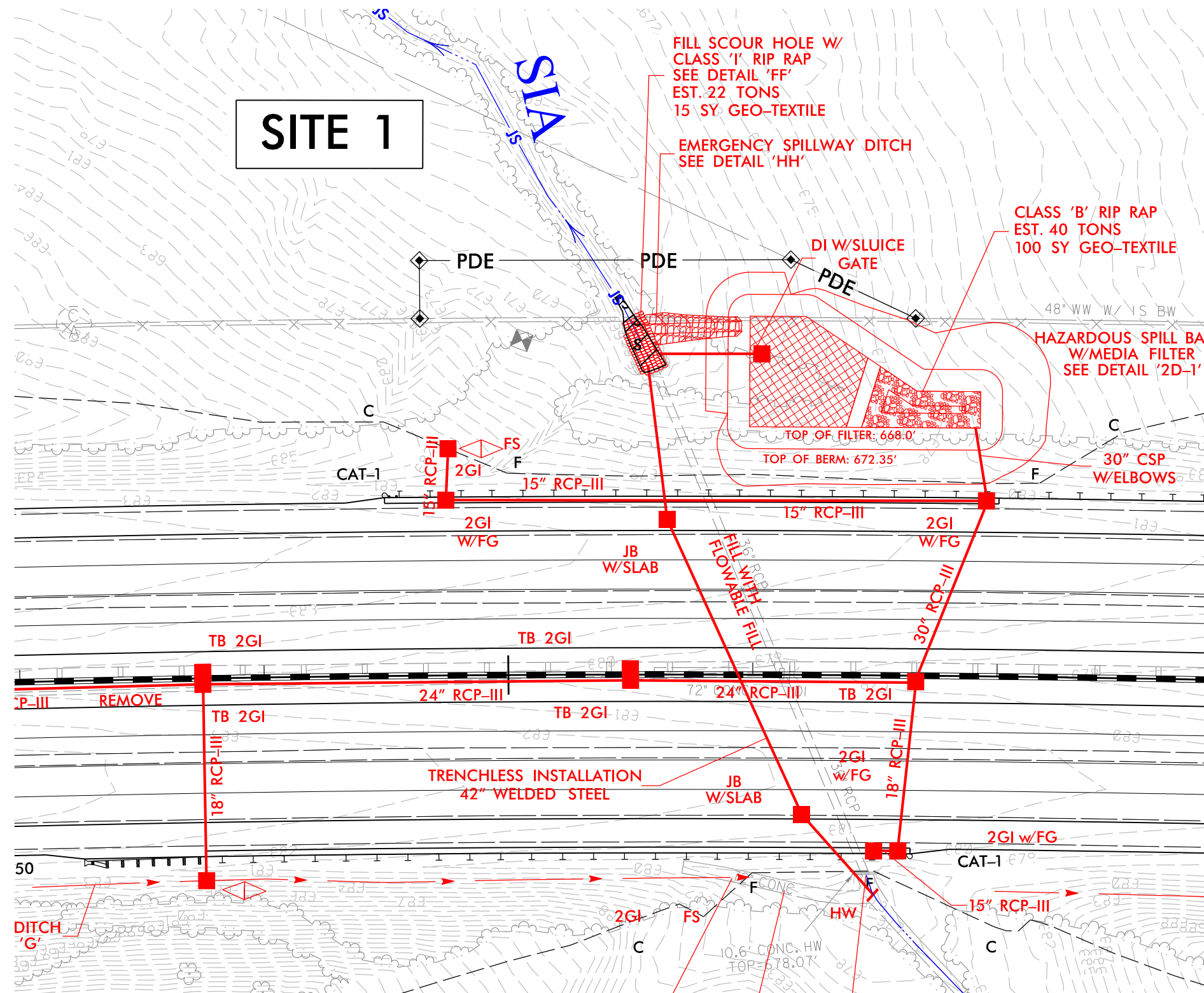
THE
LANE
CONSTRUCTION
CORPORATION



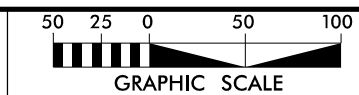
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		12A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

NAD 83/NSRS 2007



PERMIT DRAWINGS
SHEET 4 OF 91



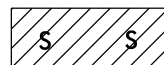
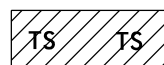
LANE

HDR

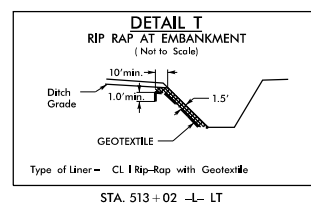
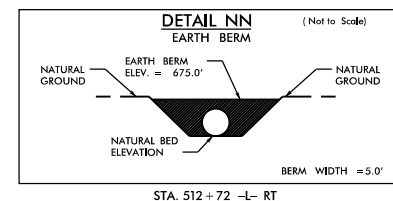
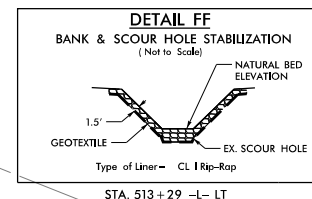
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

LEGEND:

DENOTES IMPACTS IN
SURFACE WATER

51
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

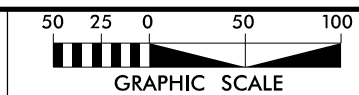


MATCHLINE -L- STA. 503+00, SEE SHEET 12

MATCHLINE -L- STA. 517 + 00, SEE SHEET 14

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 41 FOR -L- PROFILE

PERMIT DRAWINGS
SHEET 5 OF 91



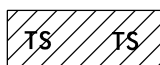
LANE

H2R

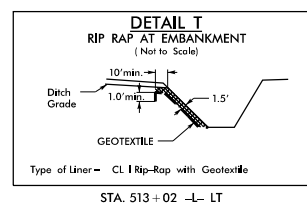
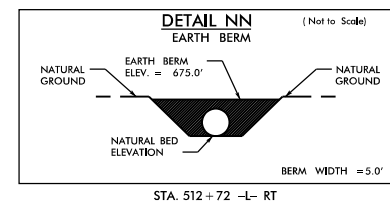
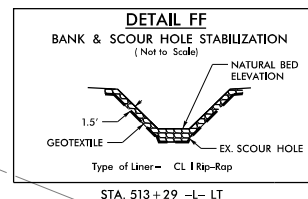
HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

LEGEND:

DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



MATCHLINE -L- STA. 503+00, SEE SHEET 12

MATCHLINE -L- STA. 517 + 00, SEE SHEET 14

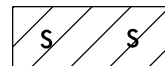
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 41 FOR -L- PROFILE

PERMIT DRAWINGS
SHEET 6 OF 91

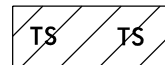
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DATE: 9/27/2016

REVISIONS

LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

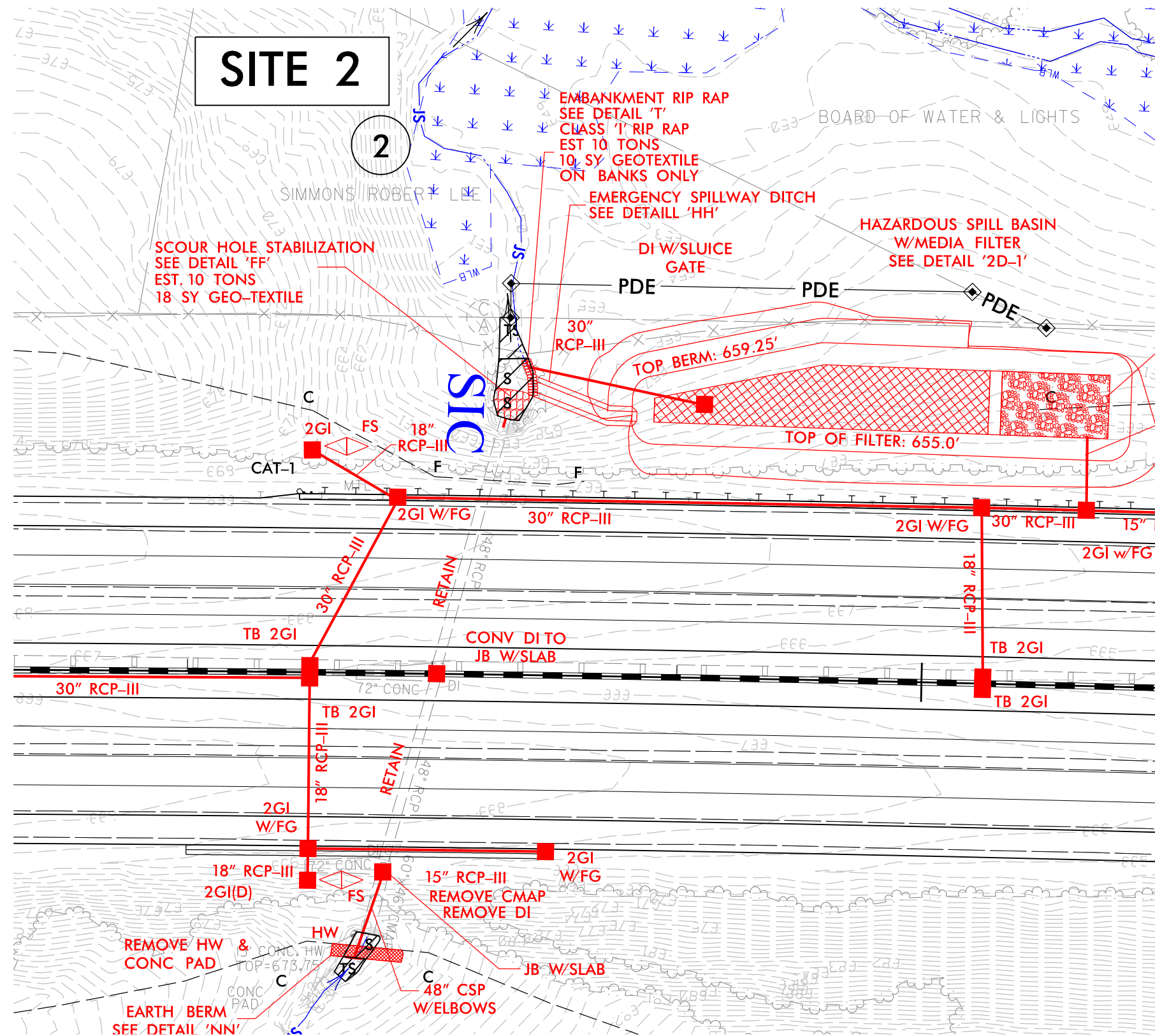
LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		13A	
RW/ SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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NAD 83/NSRS 2007

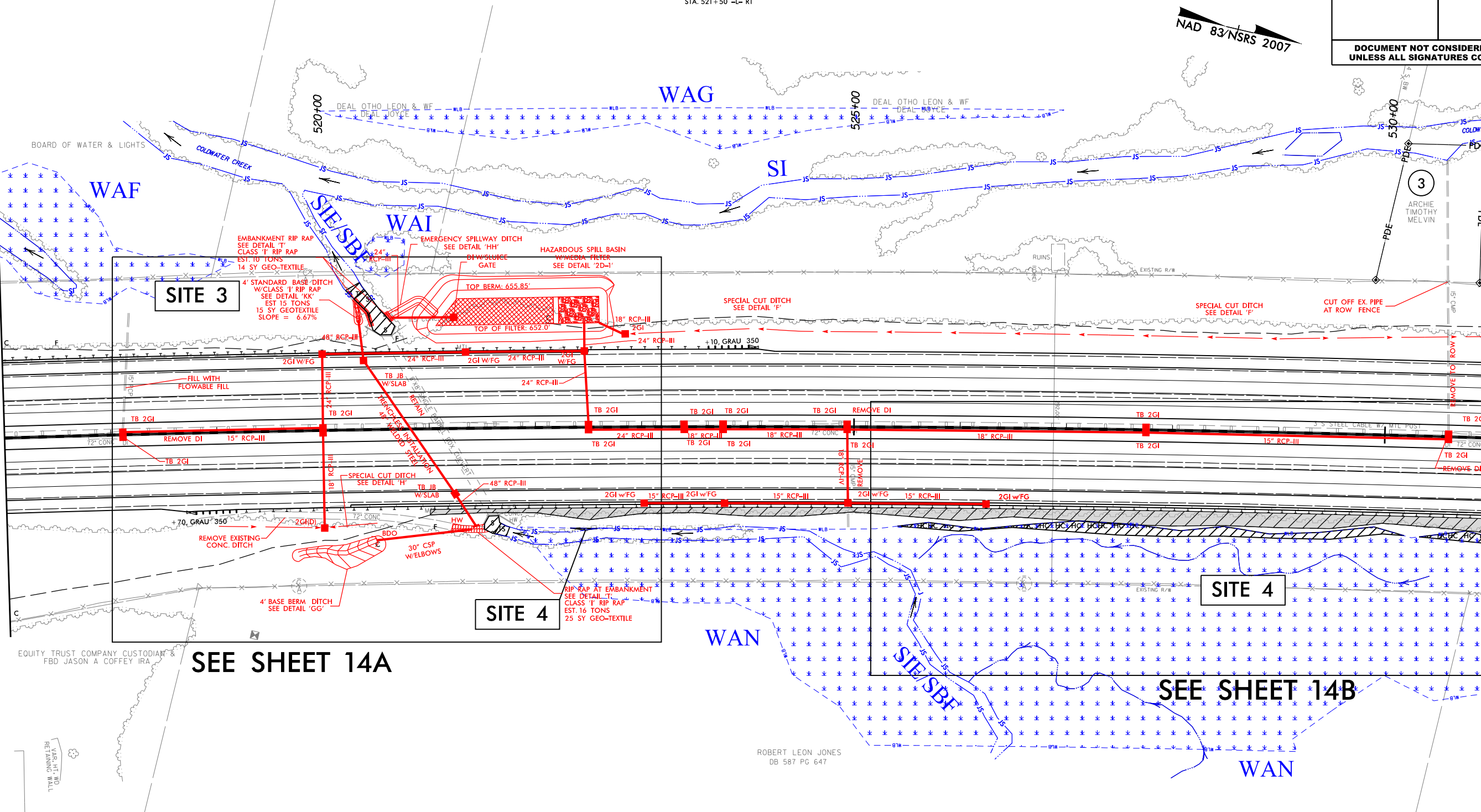


PERMIT DRAWINGS
SHEET 7 OF 91

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TIME: 4/24/11 PM
DATE: 10/11/2016

REVISIONS

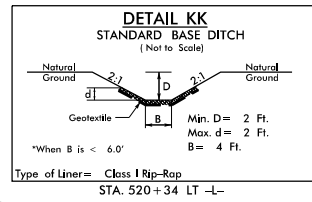
MATCHLINE -L- STA. 517 + 00, SEE SHEET 13



SEE SHEET 14A

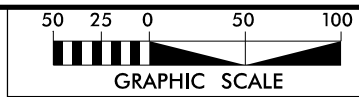
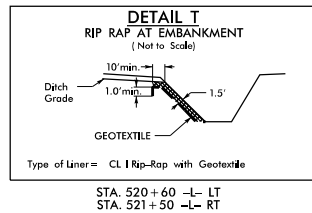
SEE SHEET 14B

MATCHLINE -L- STA. 531 + 00, SEE SHEET 15



LEGEND:

- HC HC DENOTES HAND CLEARING
- S S DENOTES IMPACTS IN SURFACE WATER
- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



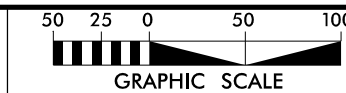
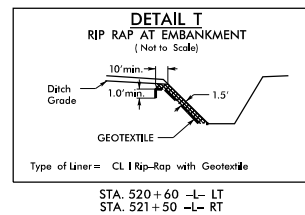
LANE

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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWINGS
SHEET 8 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 42 FOR -L- PROFILE

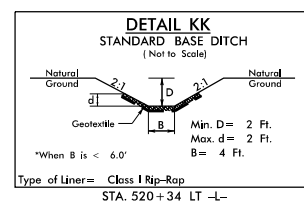
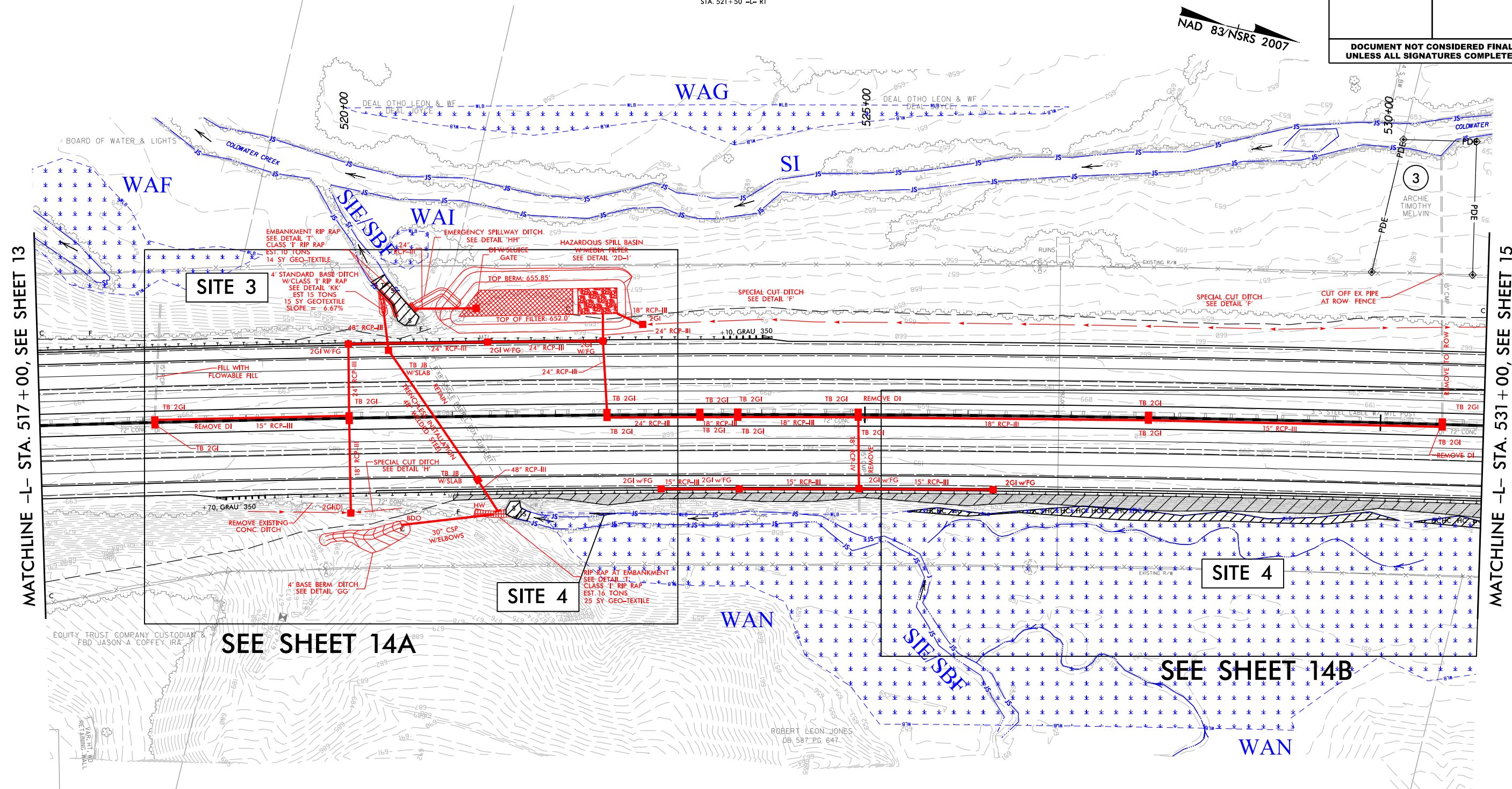


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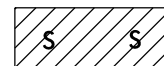
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	I-3802B		14	
	R/W SHEET NO.			
	ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION				
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED				



LEGEND:



DENOTES HAND
CLEARING



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

PERMIT DRAWINGS
SHEET 9 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 42 FOR -L- PROFILE

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REVISIONS

LEGEND:



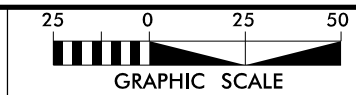
DENOTES HAND
CLEARING



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



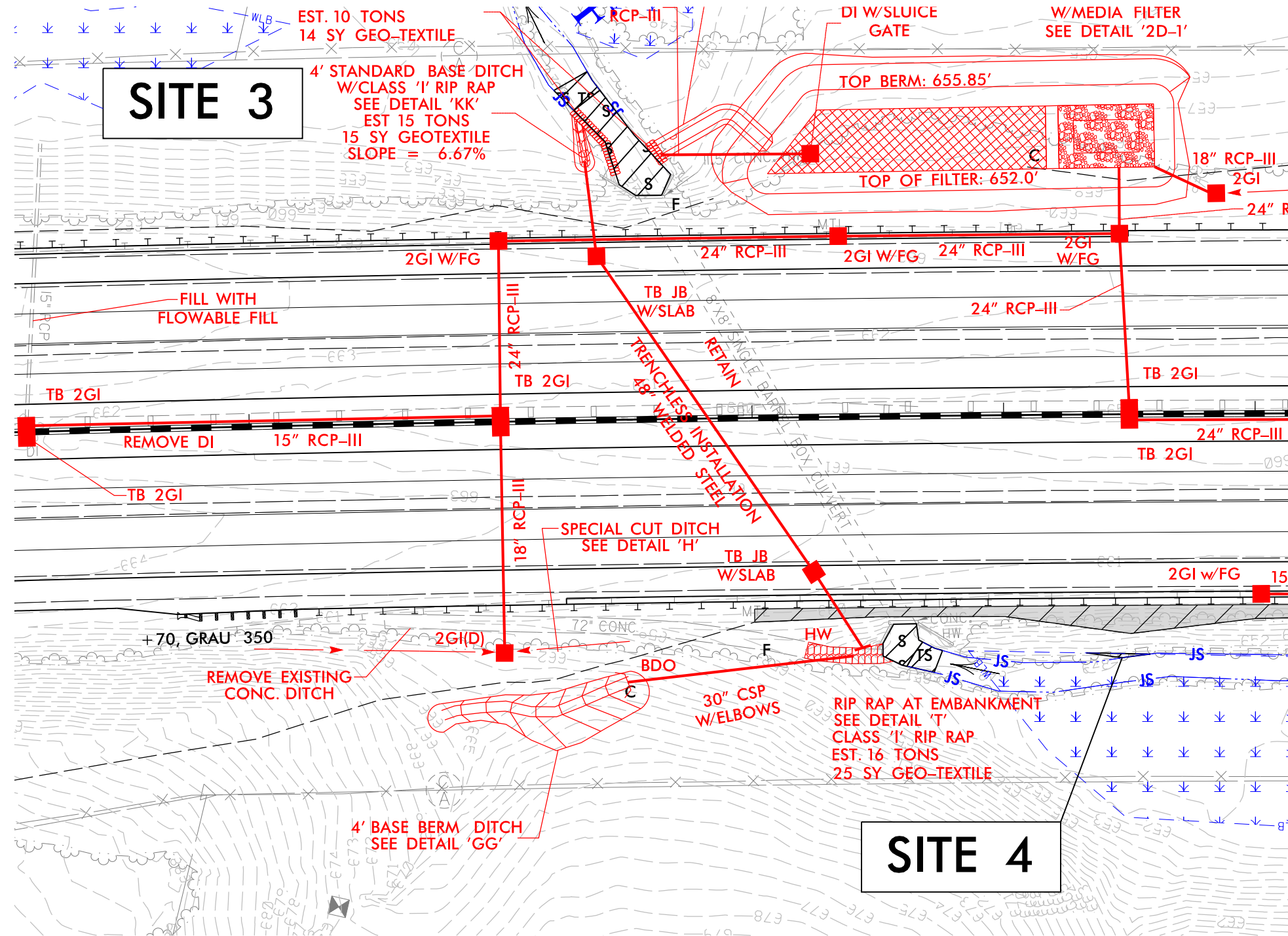
NAD 83/NSRS 2007

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		14A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



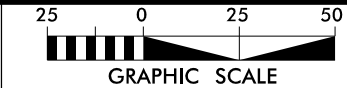
PERMIT DRAWINGS
SHEET 10 OF 91

REVISIONS

LEGEND:



DENOTES HAND
CLEARING



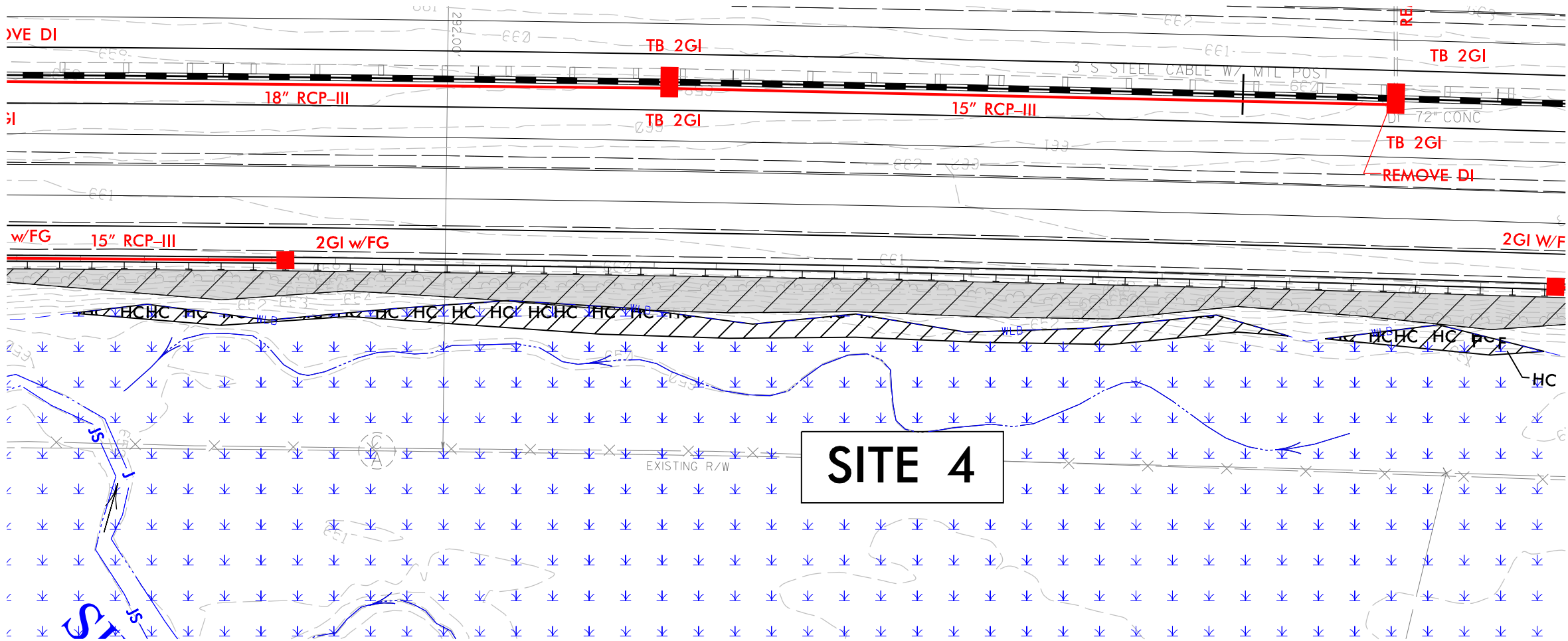
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LANE
CONSTRUCTION
CORPORATION



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N.C.B.E.L.S. License Number: F-0116

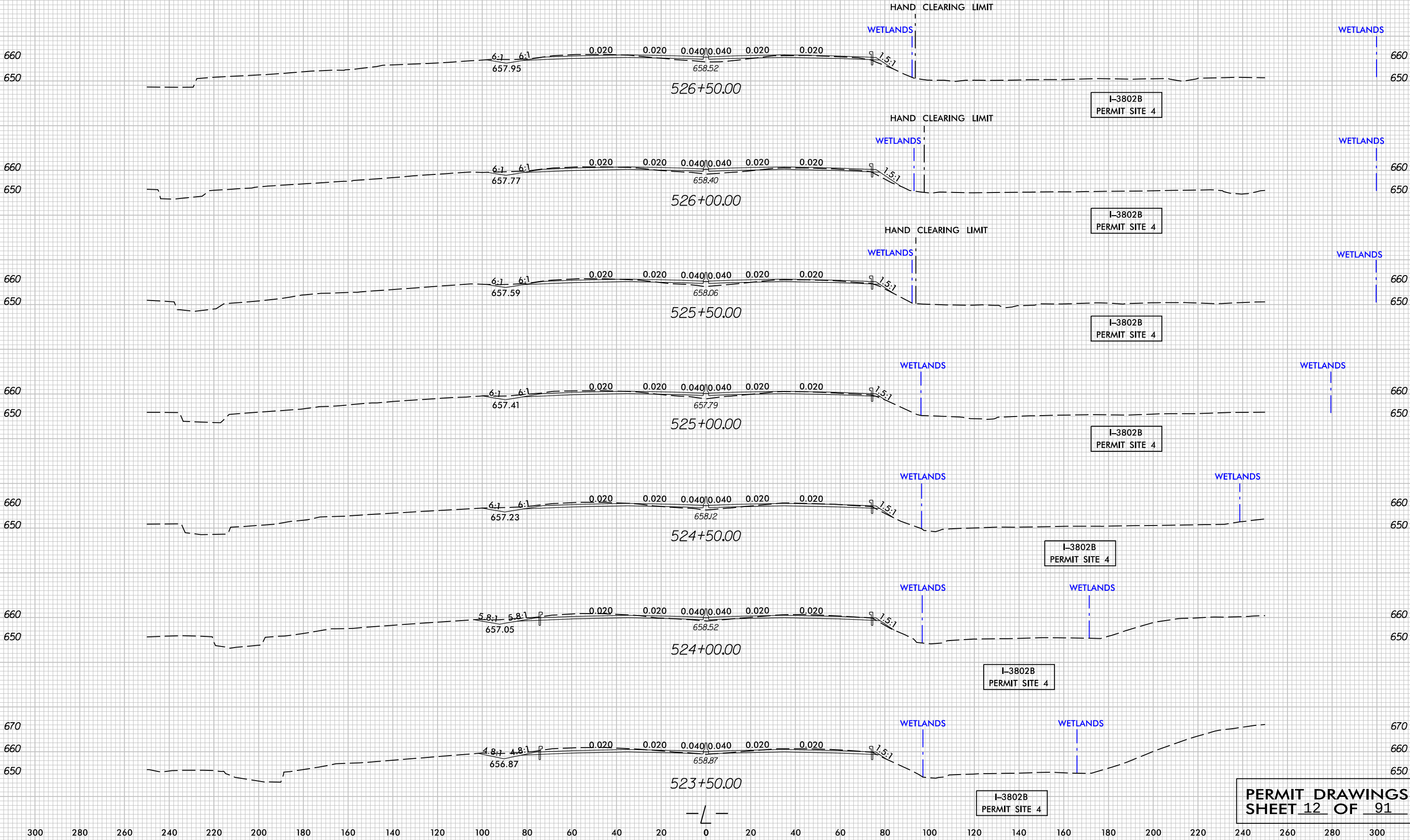
NAD 83/NSRS 2007

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		14B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			



8/23/99

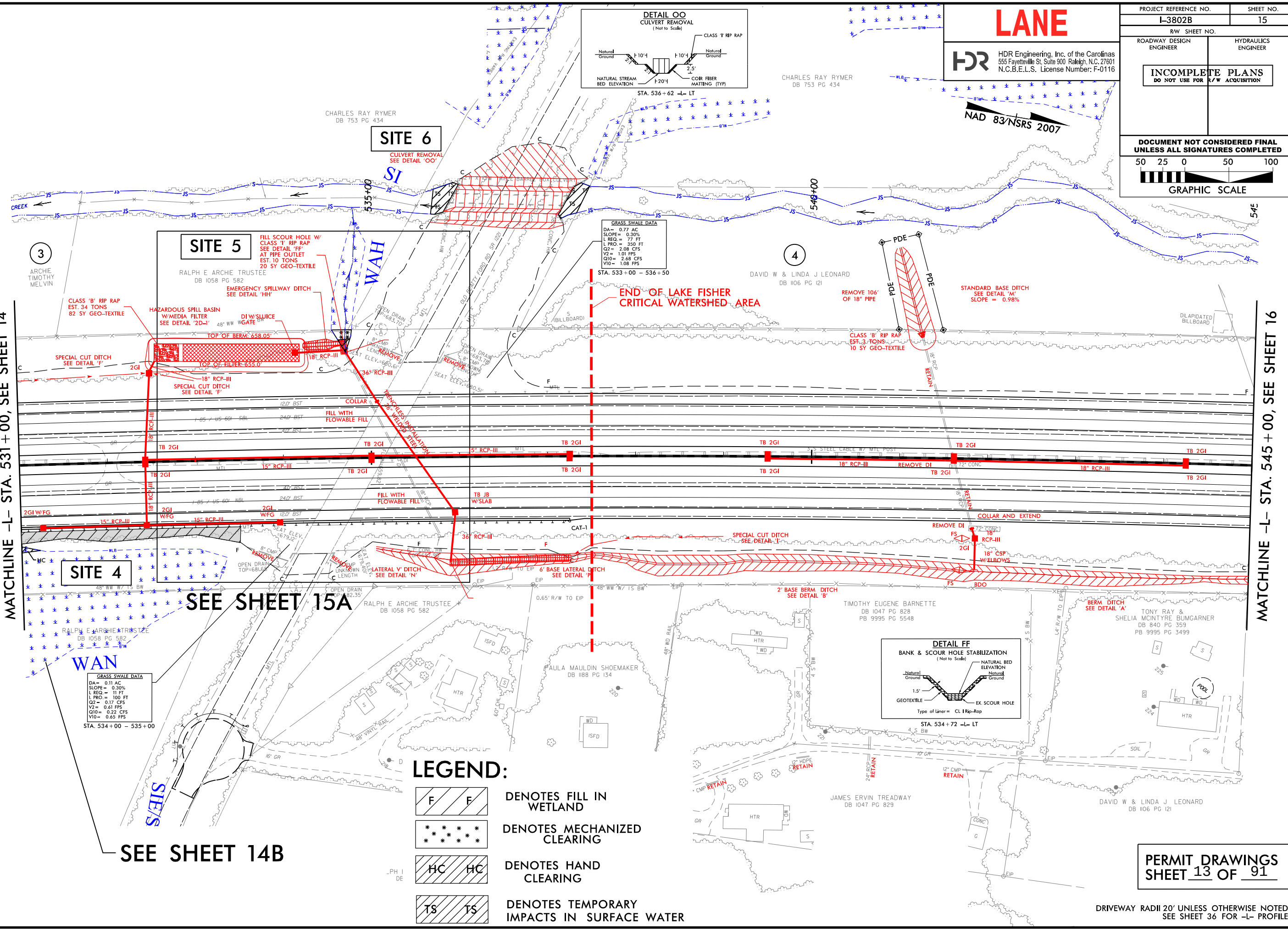
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REVISIONS

MATCHLINE -L- STA. 531+00, SEE SHEET 14

MATCHLINE -L- STA. 545+00, SEE SHEET 16



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PROJECT REFERENCE NO. I-3802B		SHEET NO. 15	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
50 25 0 50 100  GRAPHIC SCALE			

LEGEND:

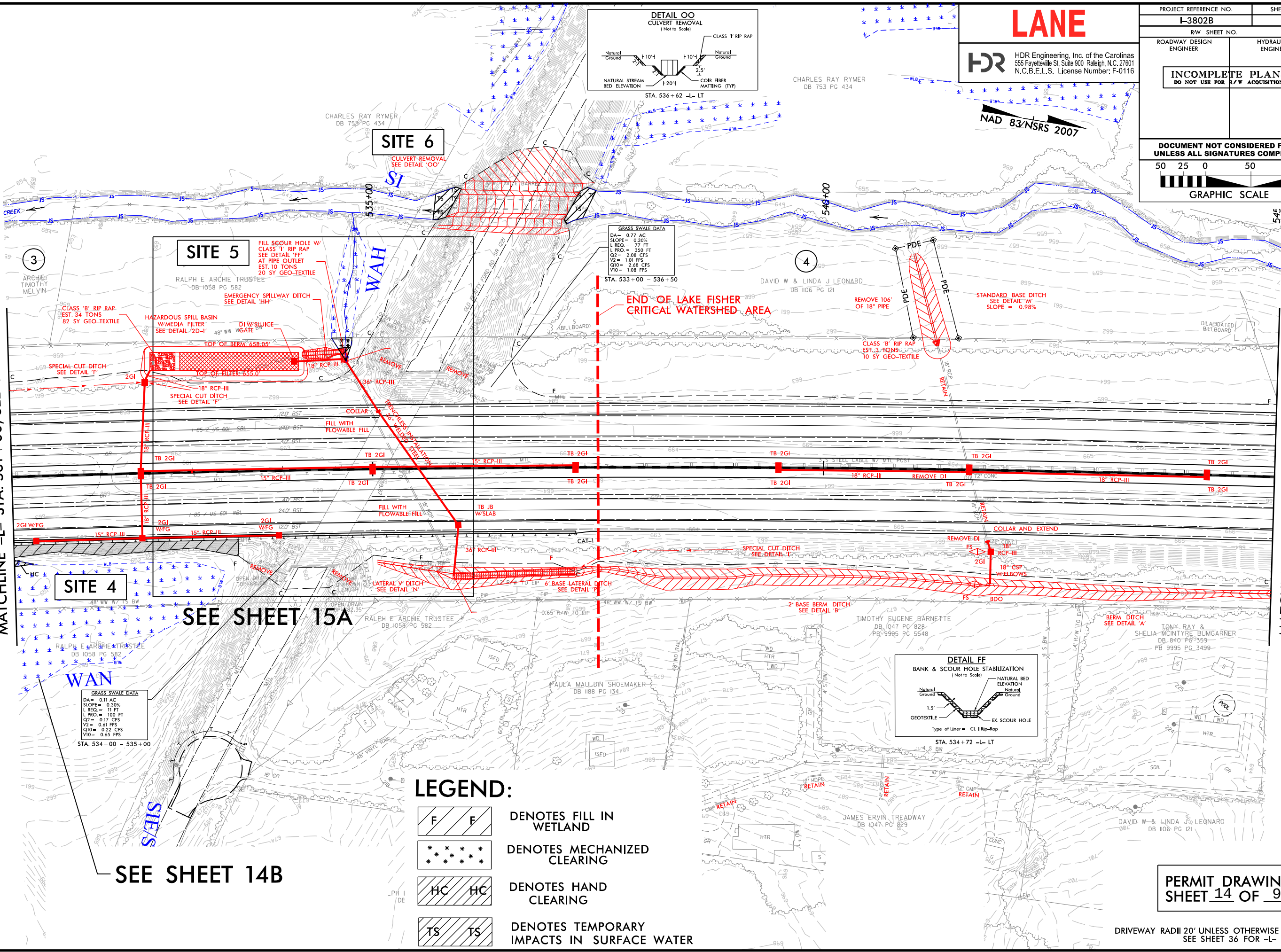
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES HAND CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 14B

SEE SHEET 15A

REVISIONS

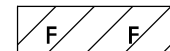
MATCHLINE -L- STA. 531+00, SEE SHEET 14



SEE SHEET 14B

SEE SHEET 15A

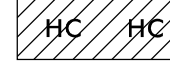
LEGEND:



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES HAND CLEARING



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. I-3802B		SHEET NO. 15	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
5025050100 GRAPHIC SCALE			

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DATE: 9/27/2016

REVISIONS

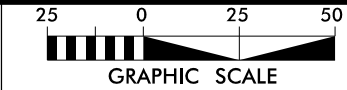
LEGEND:



DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING



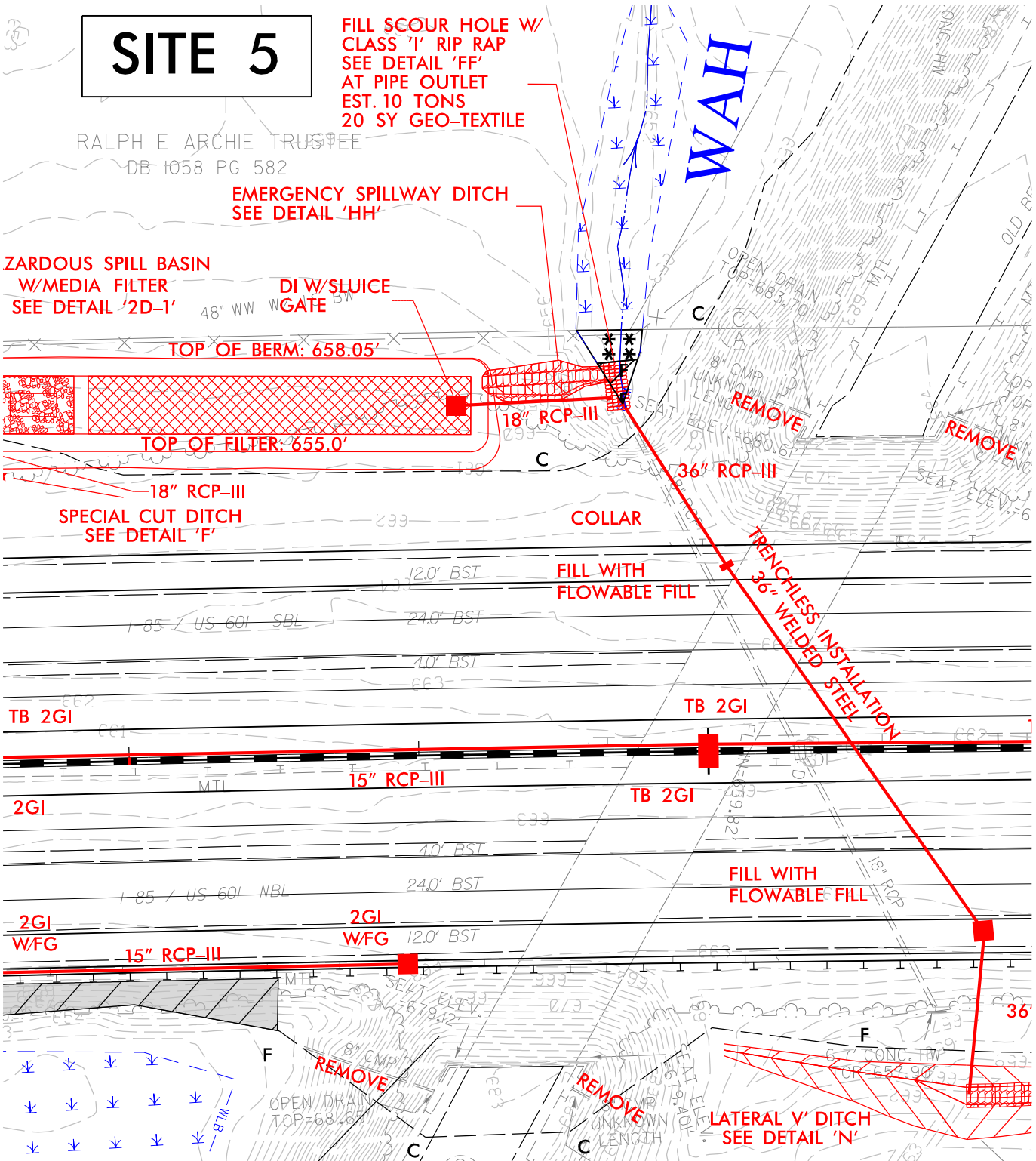
LANE



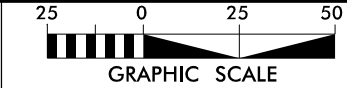
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		15A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



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LANE

HDR

HDR Engineering, Inc. of the Carolinas

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N.C.B.E.L.S. License Number: F-0116

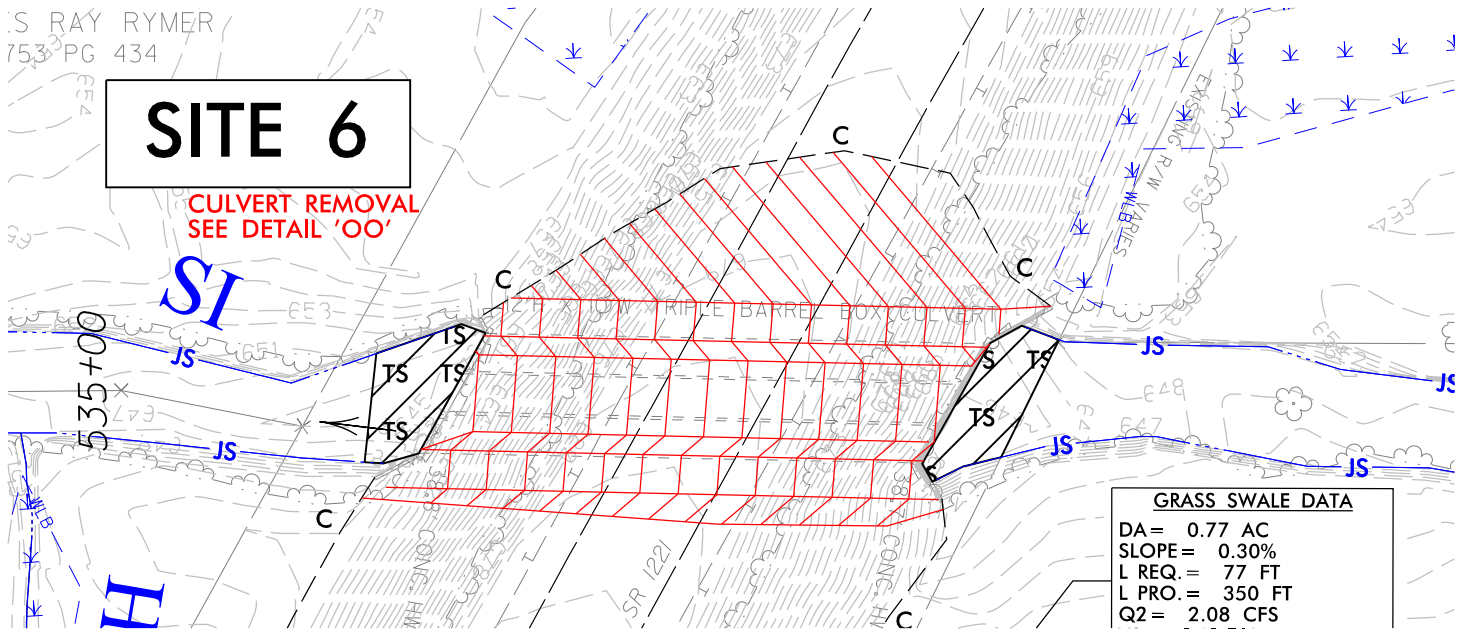
NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	15B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

LEGEND:



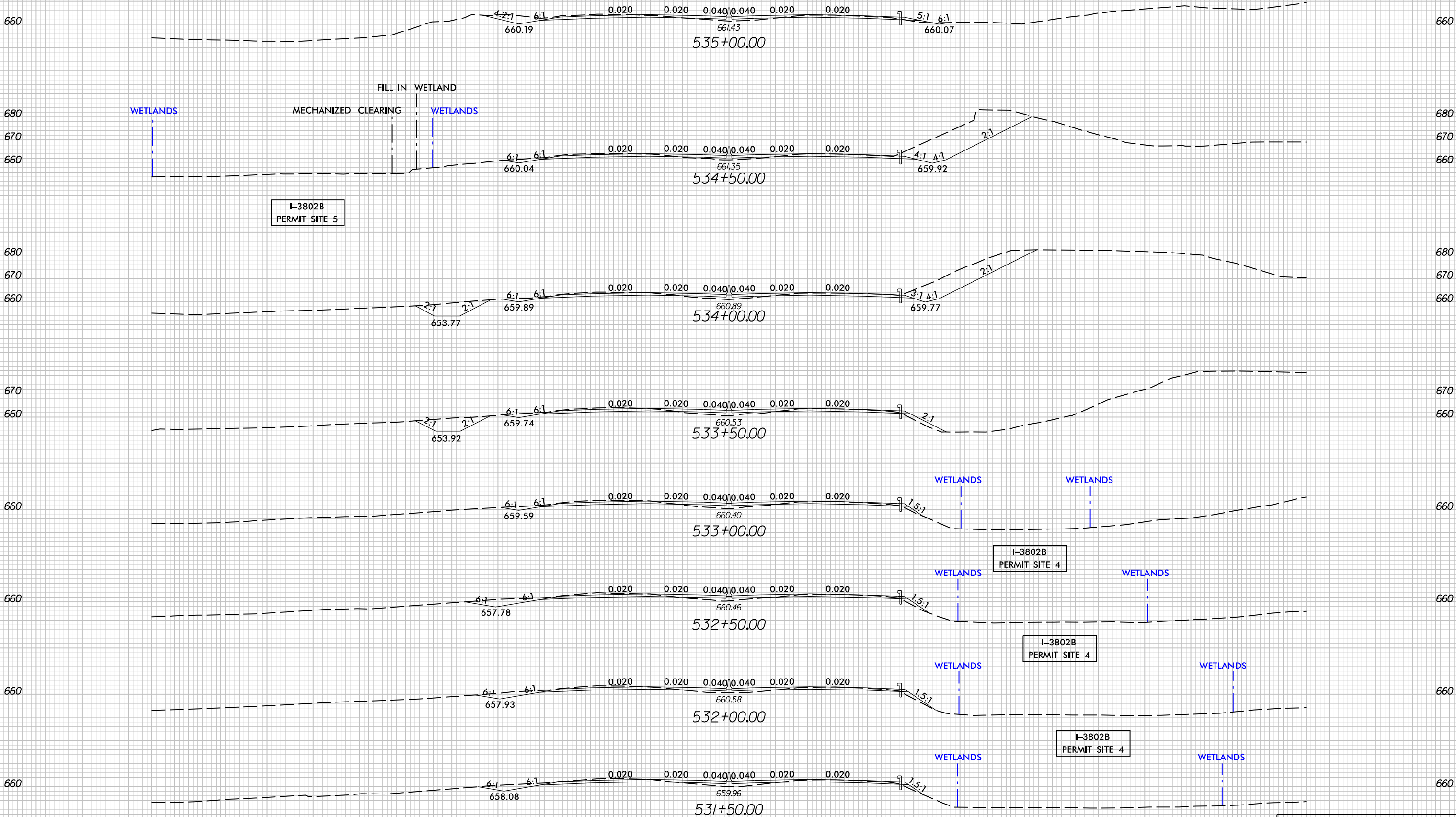
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



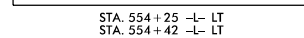
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SLOPE =	0.30%
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L PRO. =	350 FT
Q2 =	2.08 CFS

8/23/99

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3:00:40 PM
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\$\$\$\$\$USERNAME\$\$\$\$\$



STA. 554+25 -L- LT
STA. 554+42 -L- LT

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO
I-3802B	16

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
----------------------------	------------------------

INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	

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

50 25 0 50 100

GRAPHIC SCALE

A rectangular area with diagonal hatching (lines from top-left to bottom-right). Inside the rectangle, there are two 'S' symbols, one on the left and one on the right.

DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007



MATCHLINE -L- STA. 545 + 00, SEE SHEET 15

MATCHLINE -L- STA. 559 + 00, SEE SHEET 17
 MATCHLINE -R- STA. 560 + 00, SEE SHEET 18

C

JS

JS

WAQ

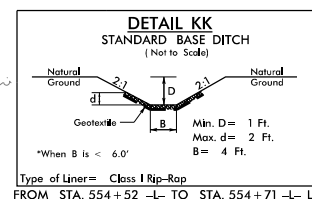
U	S
5	1

F	S
1	1

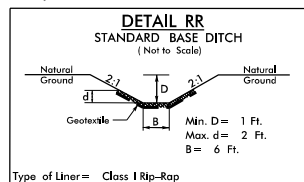
DRIVEWAY

PERMIT DRAWINGS
SHEET 18 OF 91

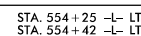
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 44 FOR -L- PROFILE



Type of Liner= Class I Rip-Rap
FROM STA. 554+52 -L- TO STA. 554+71 -L- L



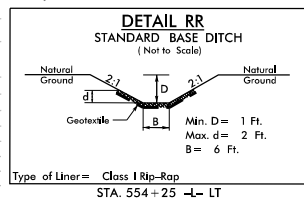
Type of Liner= Class I Rip-Rap
STA. 554+25 - LT



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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

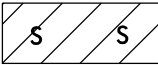


DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 44 FOR -L- PROFILE

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REVISIONS

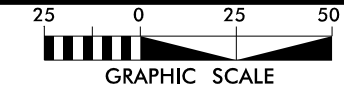
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



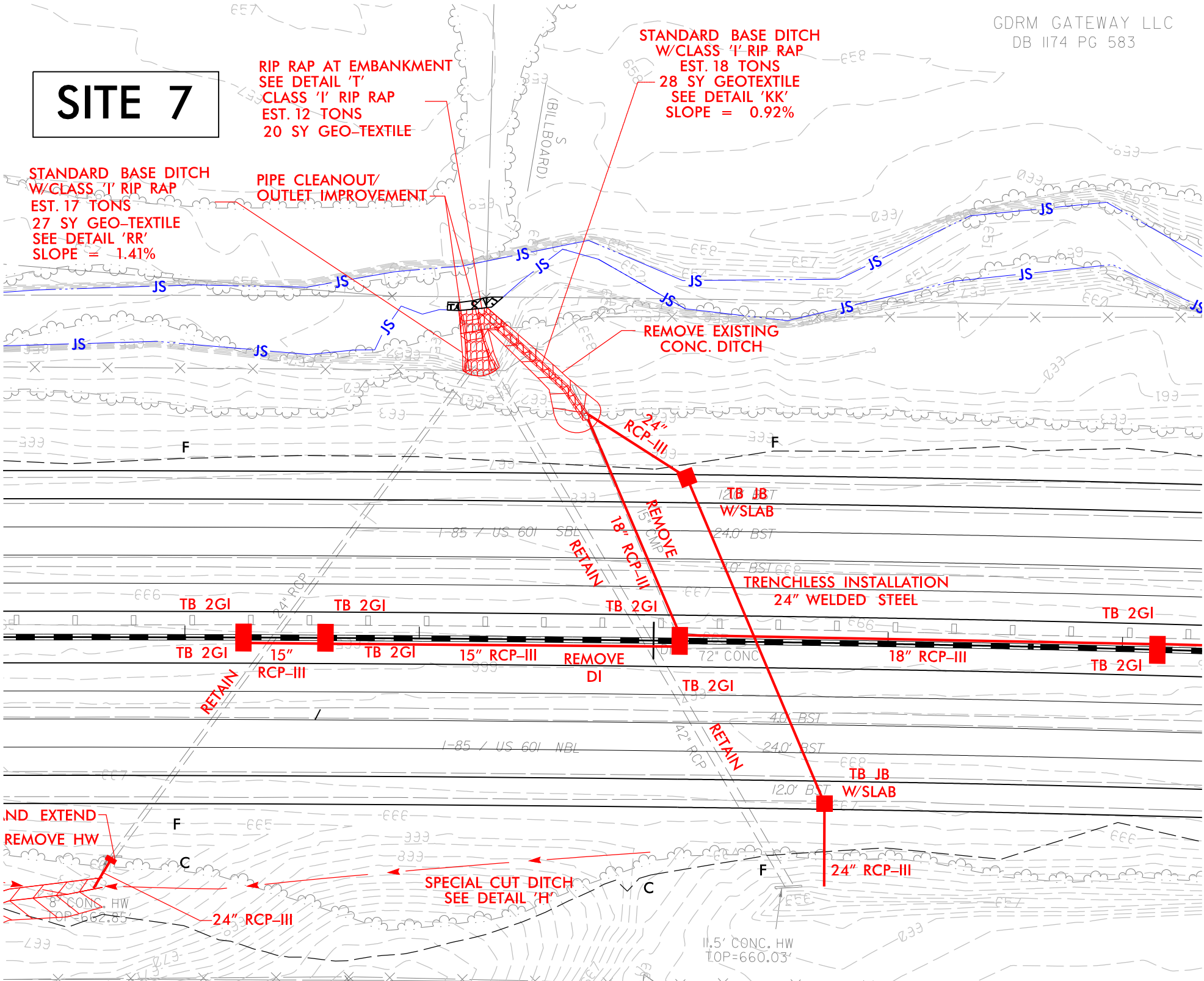
NAD 83/NSRS 2007

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CORPORATION



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. I-3802B		SHEET NO. 16A	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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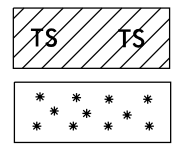
GDRM GATEWAY LLC
DB 1174 PG 583

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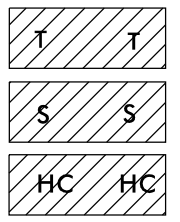
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DATE: 9/27/2016

REVISIONS

LEGEND:



DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING



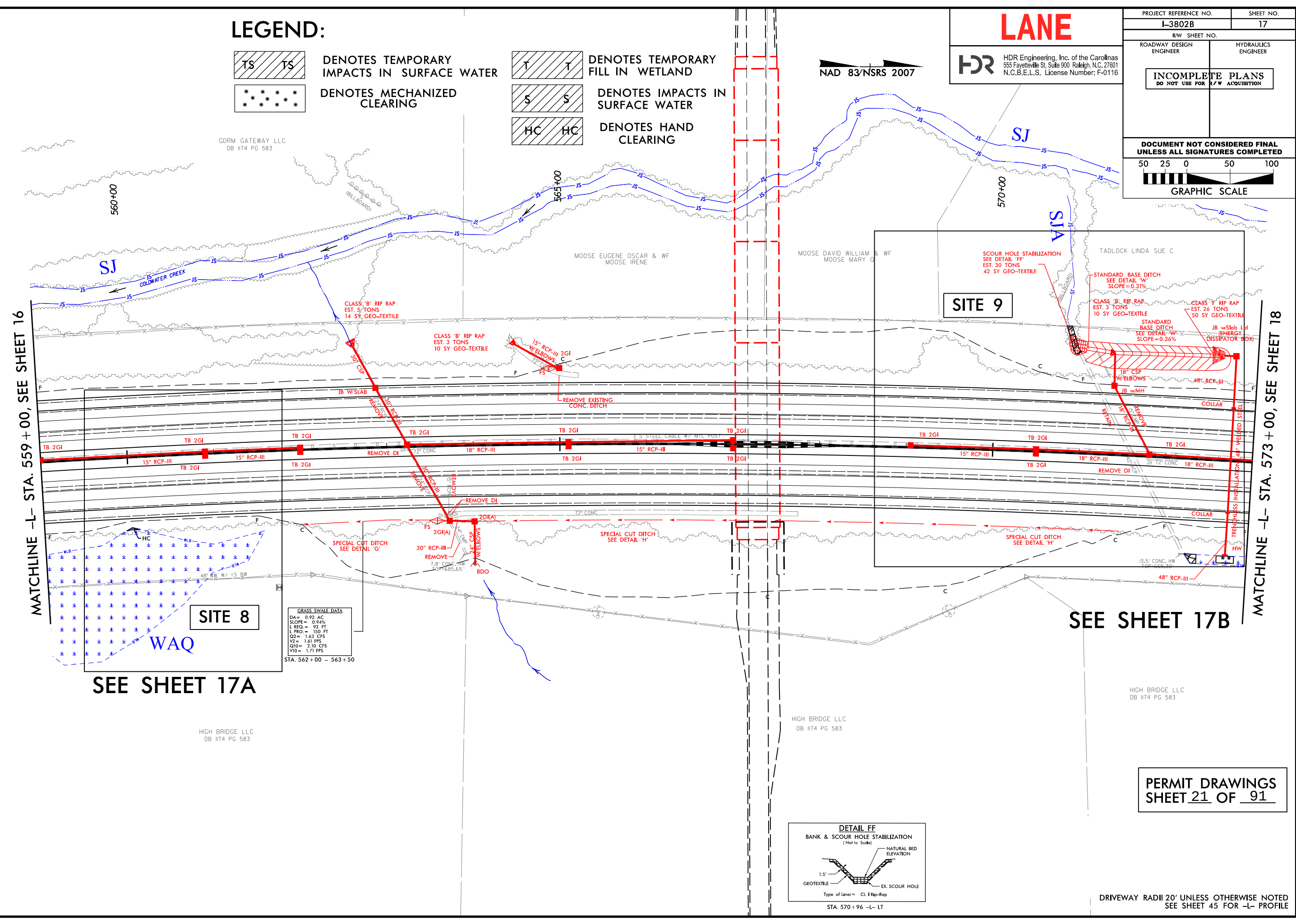
DENOTES TEMPORARY FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING

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PROJECT REFERENCE NO.	SHEET NO.
L-3802B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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NAD 83/NSRS 2007

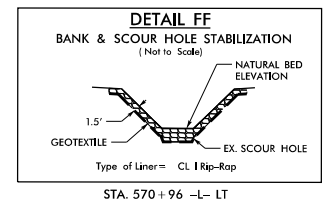


MATCHLINE -L- STA. 559 + 00, SEE SHEET 16

MATCHLINE -L- STA. 573 + 00, SEE SHEET 18

SEE SHEET 17A

SEE SHEET 17B



PERMIT DRAWINGS
SHEET 21 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 45 FOR -L- PROFILE

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 45 FOR -L- PROFILE

REVISIONS

LEGEND:



DENOTES HAND
CLEARING



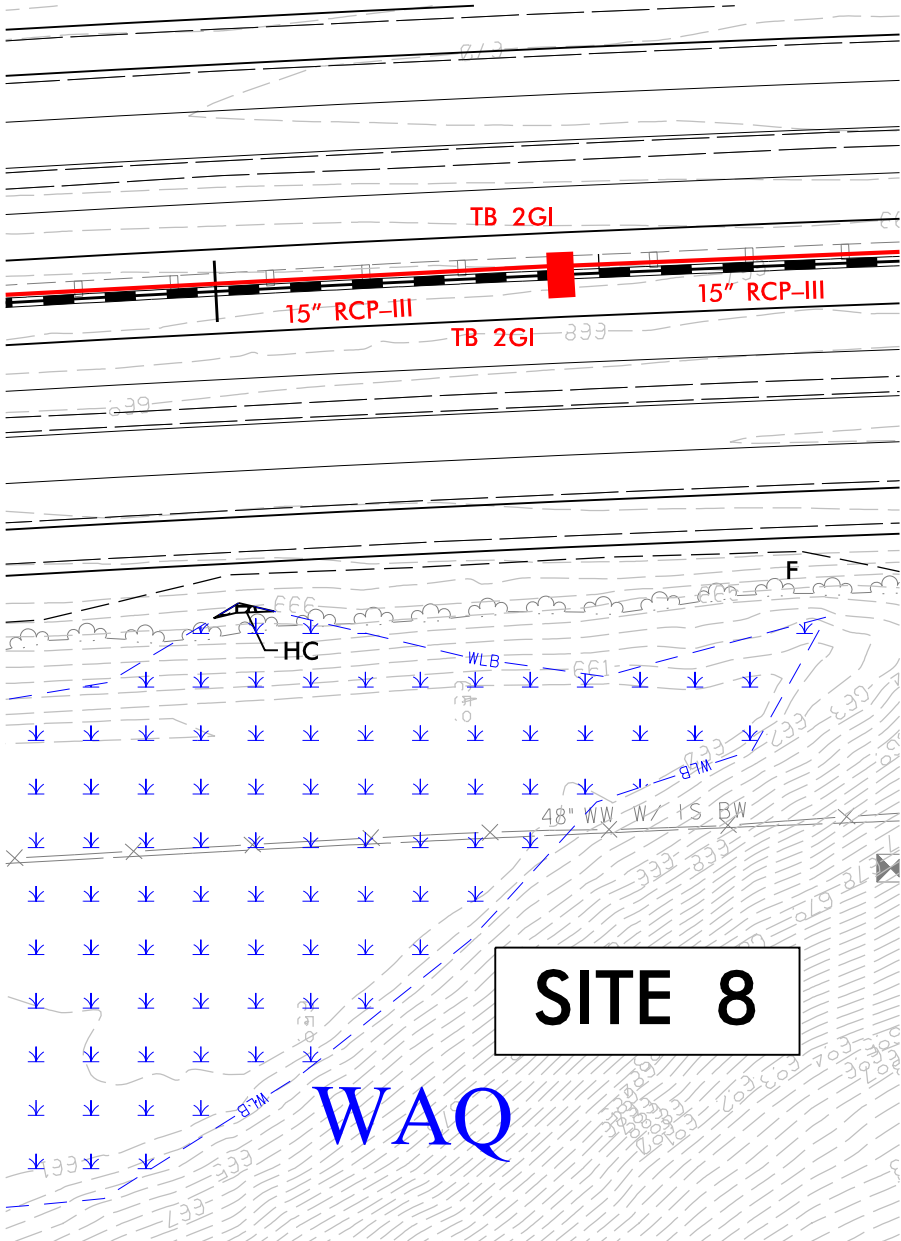
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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		17A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

NAD 83/NSRS 2007



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DATE: 9/27/2016

REVISIONS

LEGEND:

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DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- T

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DENOTES TEMPORARY FILL IN WETLAND
- S

S

DENOTES IMPACTS IN SURFACE WATER
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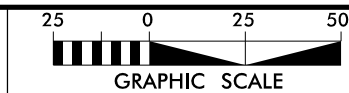
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DENOTES MECHANIZED CLEARING



THE

LANE

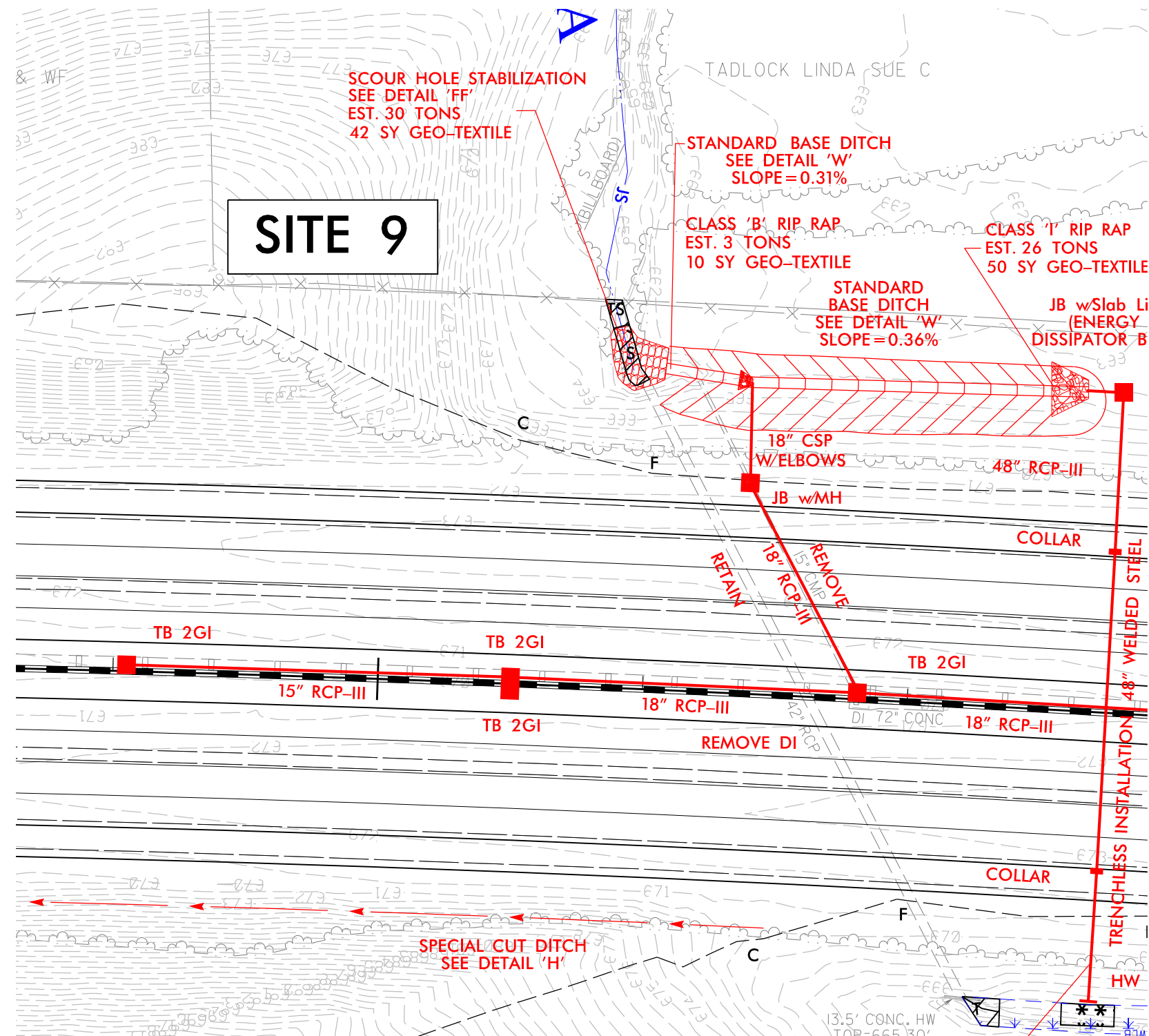
CONSTRUCTION CORPORATION

HR

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

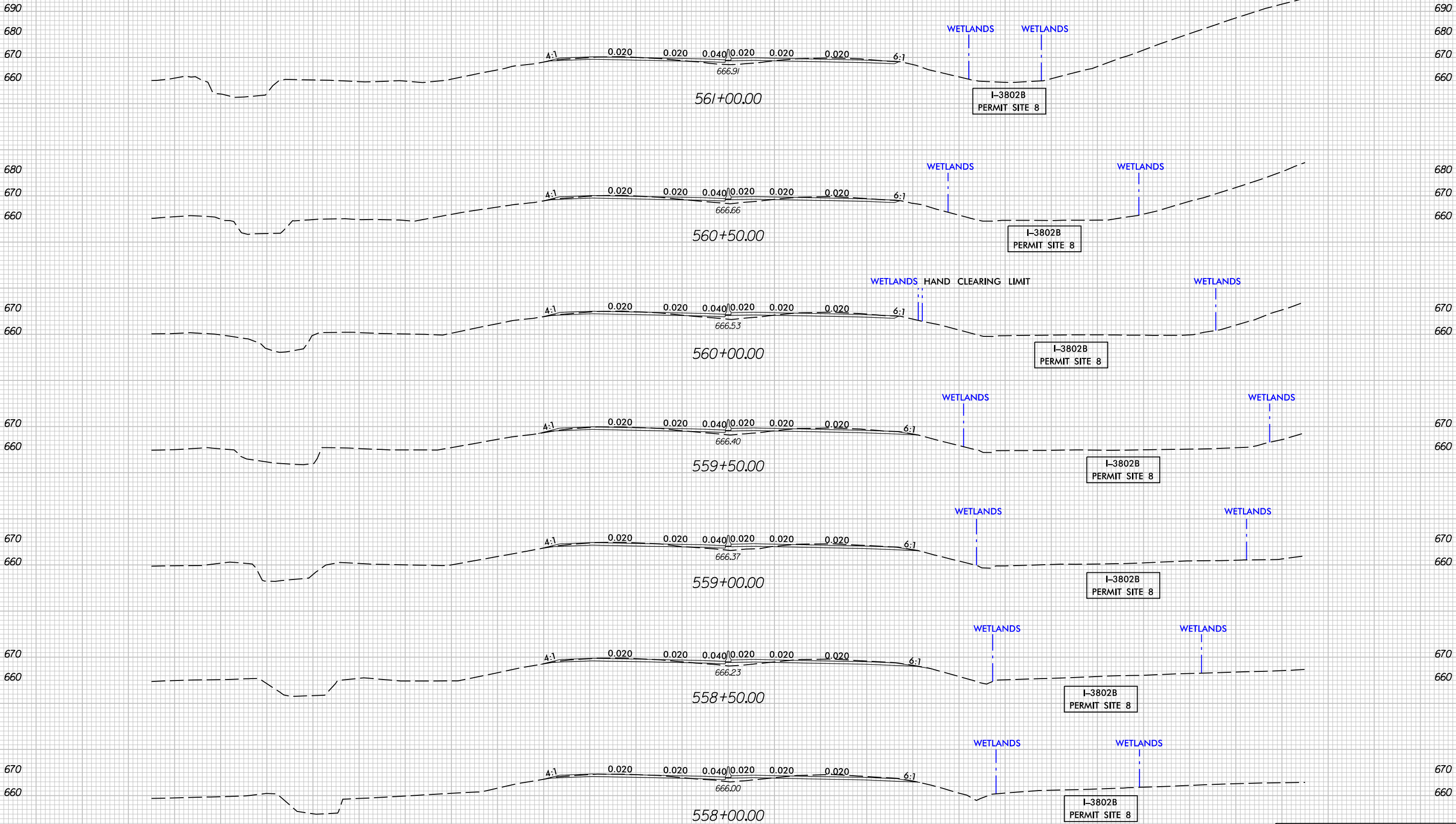
NAD 83/NSRS 2007

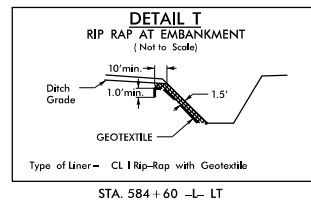
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			



8/23/99

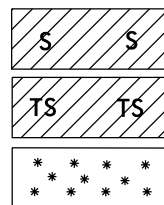
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TADLOCK LINDA SUE C

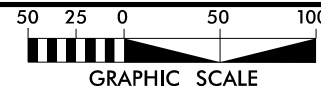
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES MECHANIZED
CLEARING



5
FRANK C CORRIHER BEEF &
SAUSAGE INC

LANE

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. _____

I-3802B

SHEET NO.

18

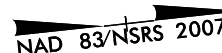
RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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



MATCHLINE -L- STA. 573+00, SEE SHEET 17

MATCHLINE -L- STA. 587 + 00, SEE SHEET 19

SEE SHEET 18A

WAR

SIAA

SJE

SEE SHEET 18B

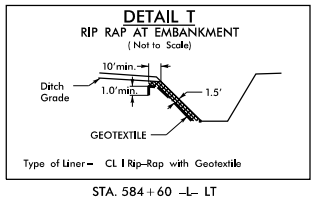
SITE 11

PERMIT DRAWINGS
SHEET 26 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 46 FOR -L- PROFILE

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REVISIONS



LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



DENOTES MECHANIZED
CLEARING



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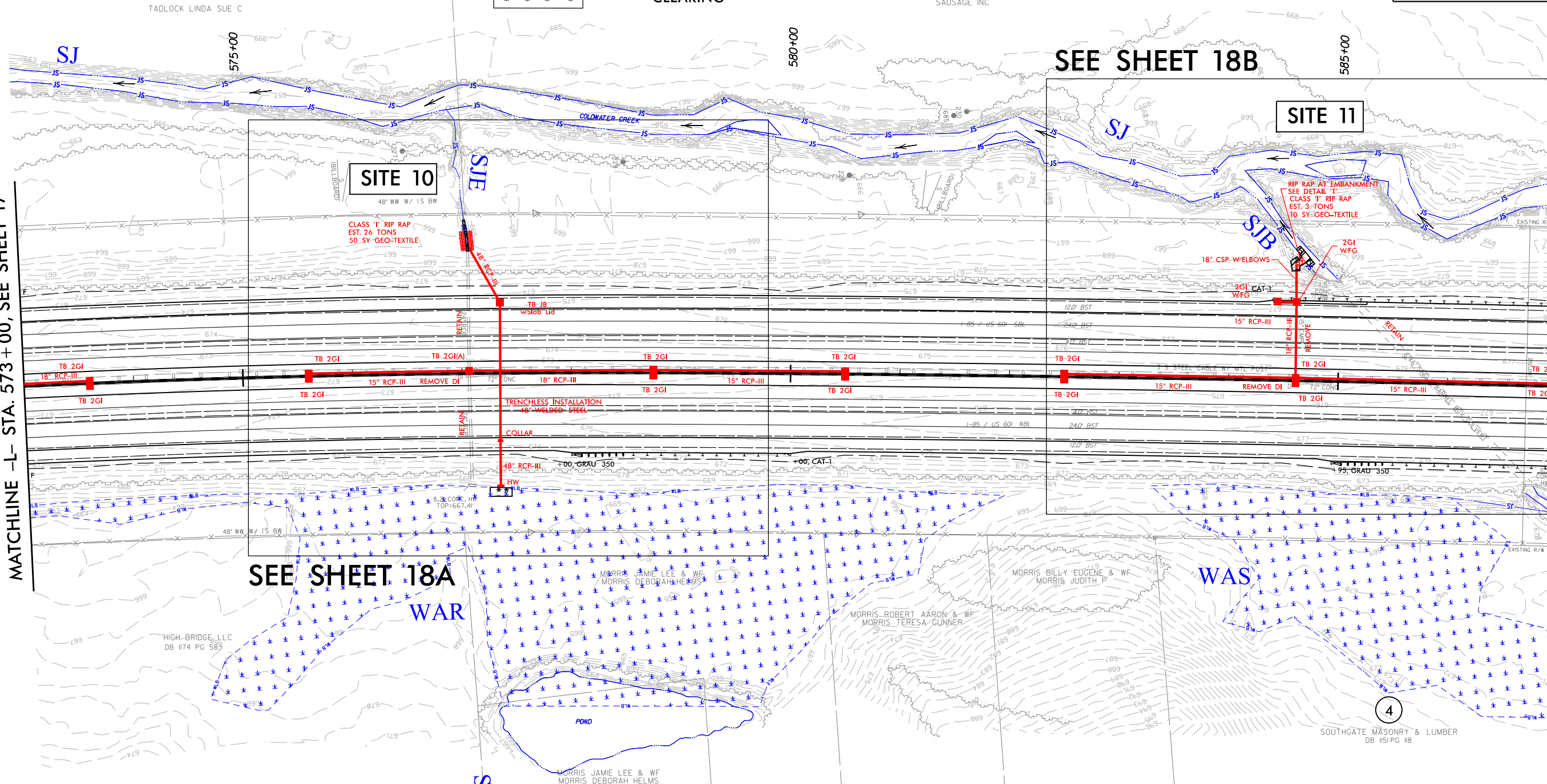
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I-3802B		18
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

NAD 83/NSRS 2007

5
FRANK C. CORRIHER BEEF &
SAUSAGE INC.

MATCHLINE -L- STA. 573+00, SEE SHEET 17

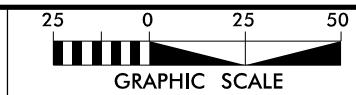
MATCHLINE -L- STA. 587+00, SEE SHEET 19



PERMIT DRAWINGS
SHEET 27 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 46 FOR -L- PROFILE

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING

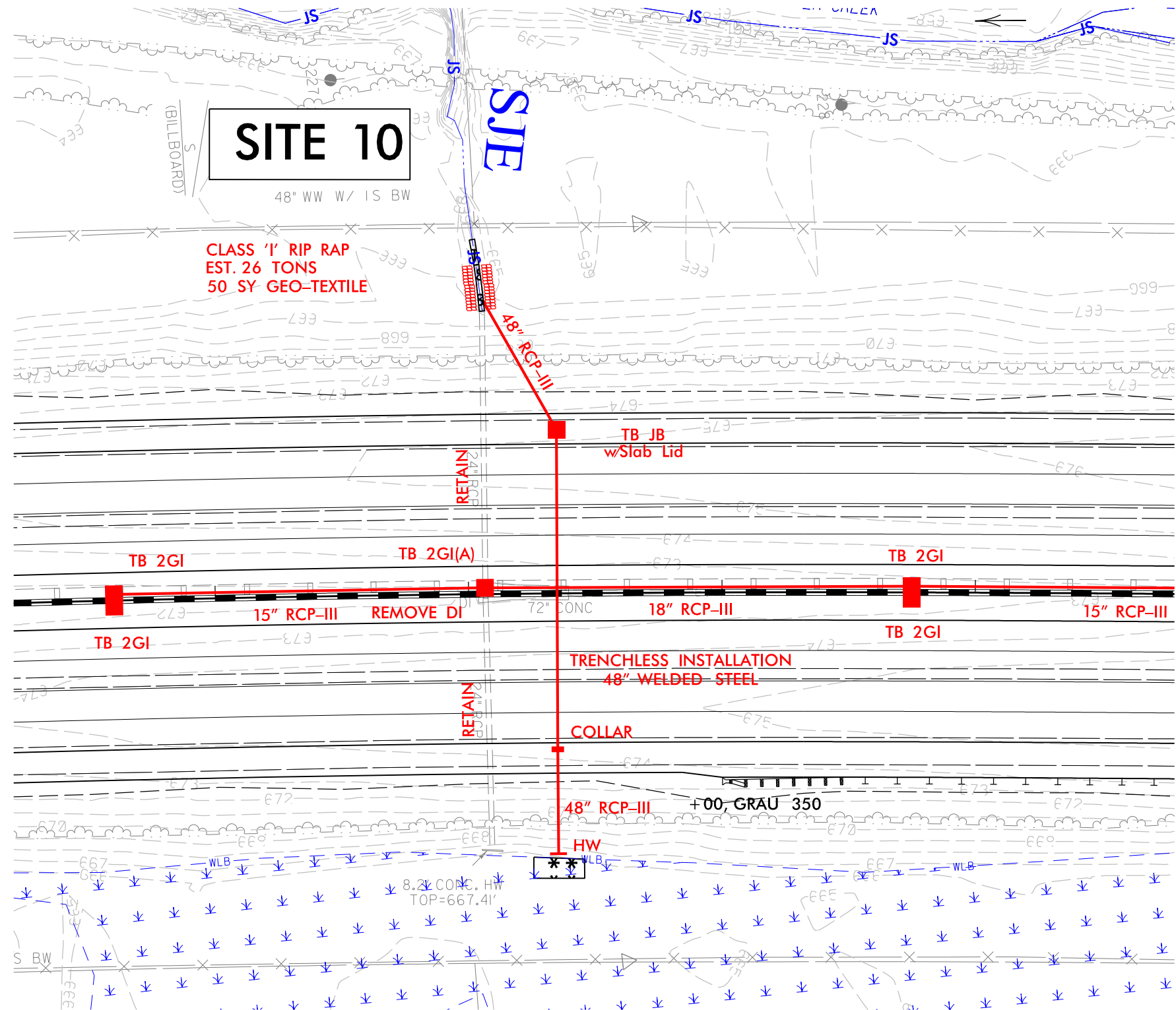


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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	18A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	



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REVISIONS

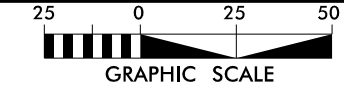
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



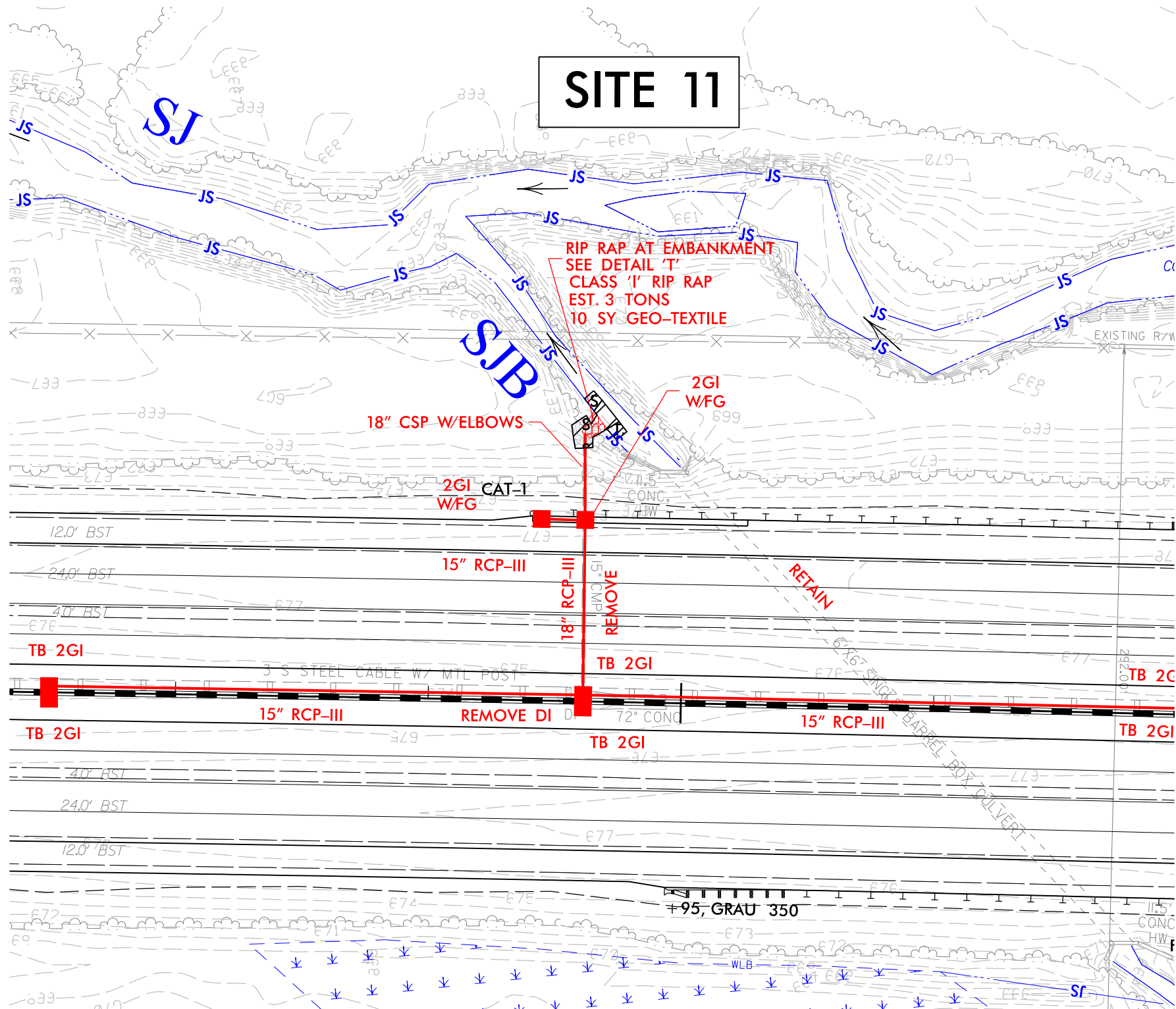
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CORPORATION



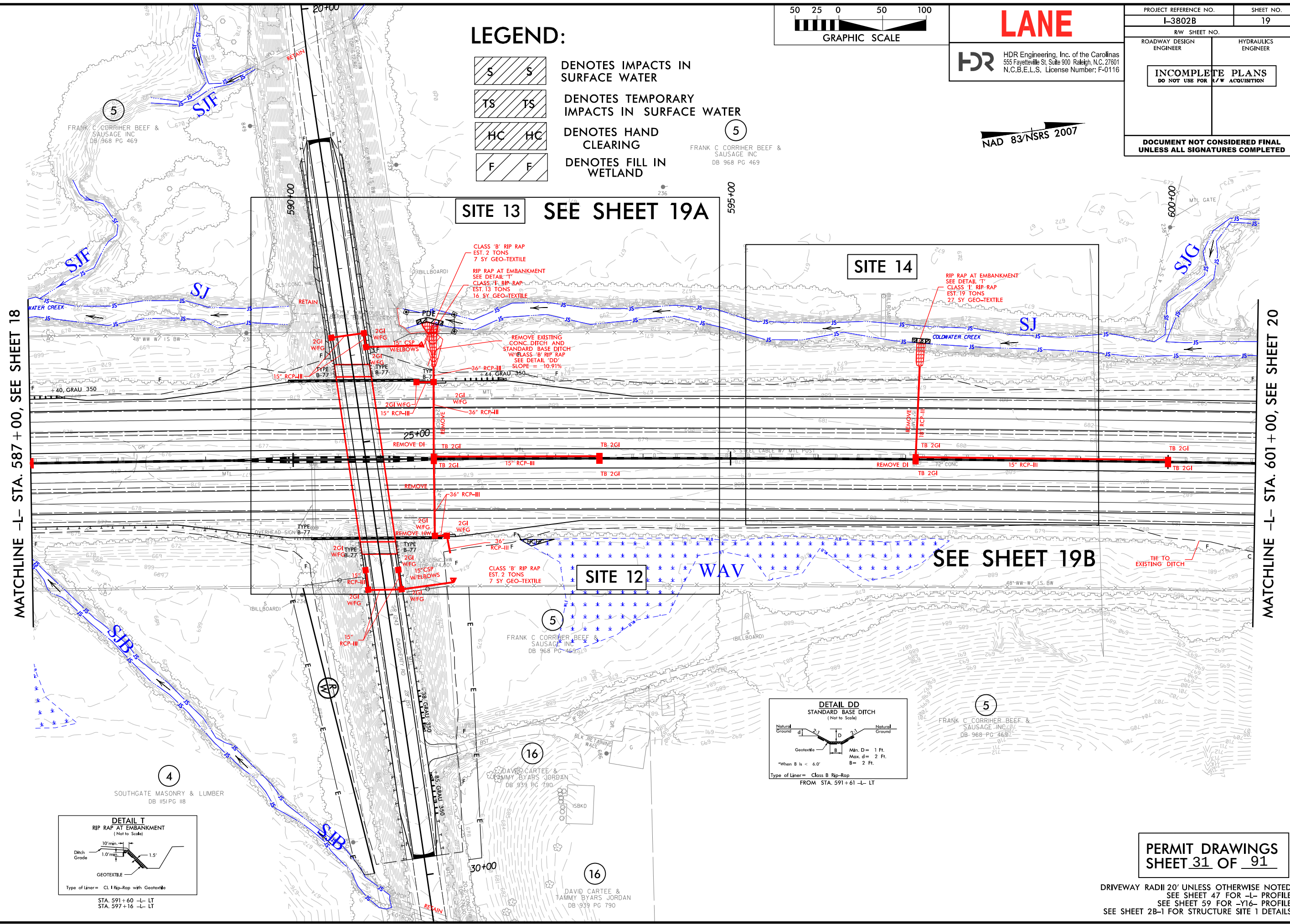
HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		18B	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

NAD 83/NSRS 2007



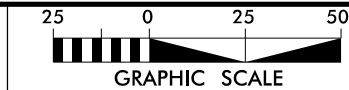




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TIME: 1:41:28 PM

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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		19A
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		

SITE 13

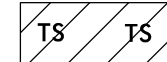
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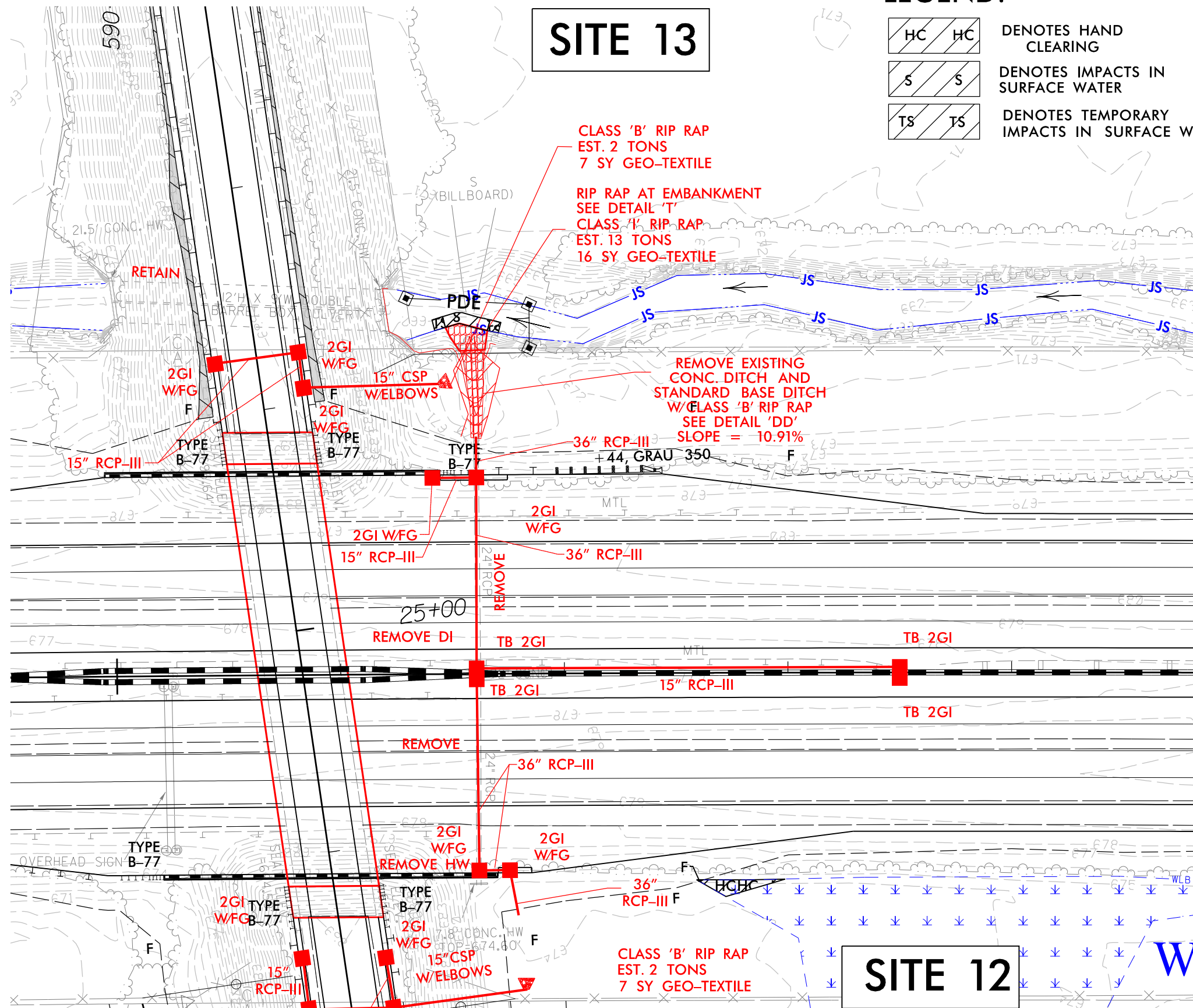
DENOTES HAND
CLEARING



DENOTES IMPACTS IN
SURFACE WATER

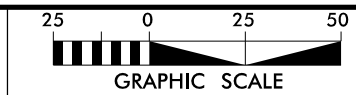


DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



SITE 12

PERMIT DRAWINGS
SHEET 32 OF 91

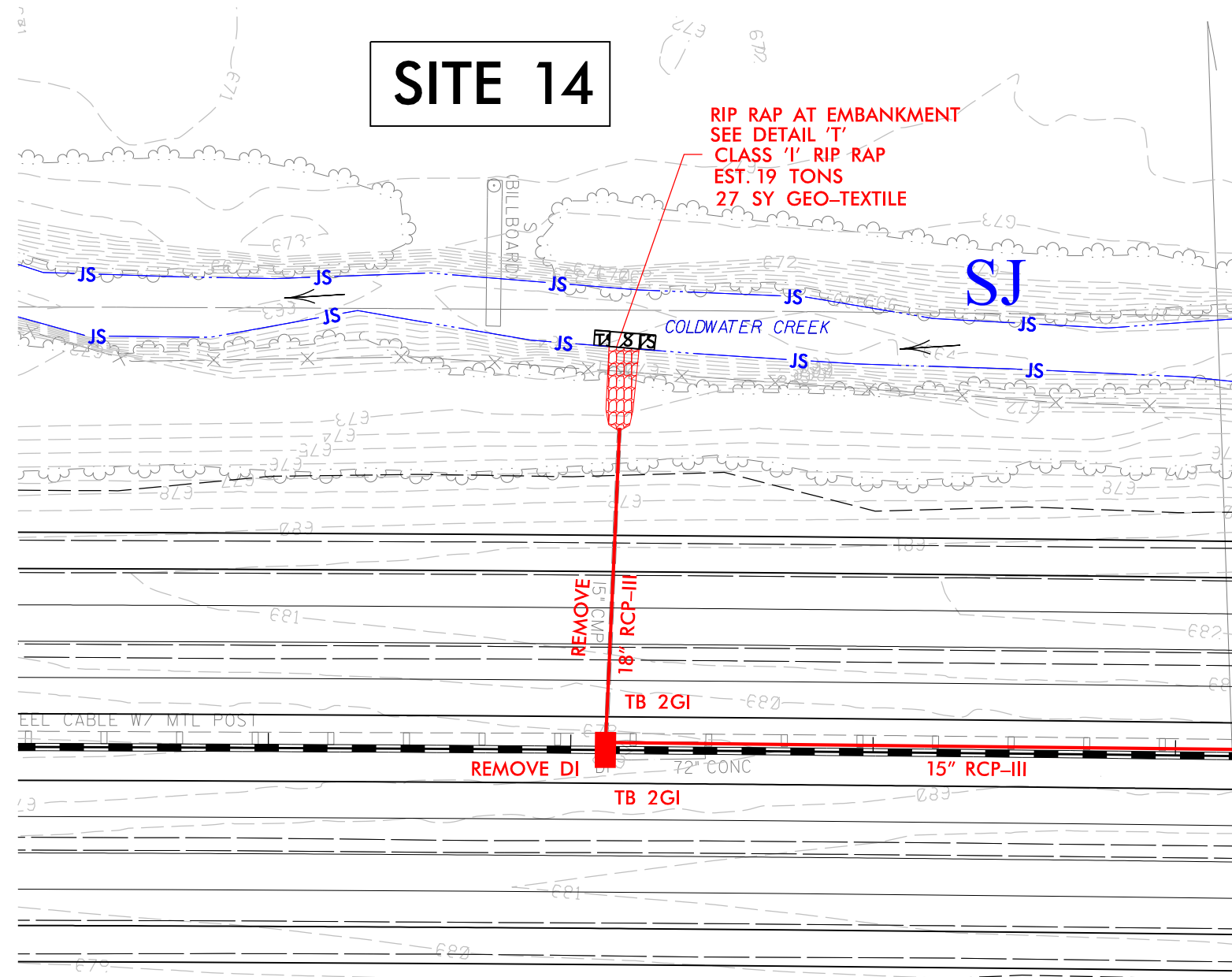


PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

LEGEND:



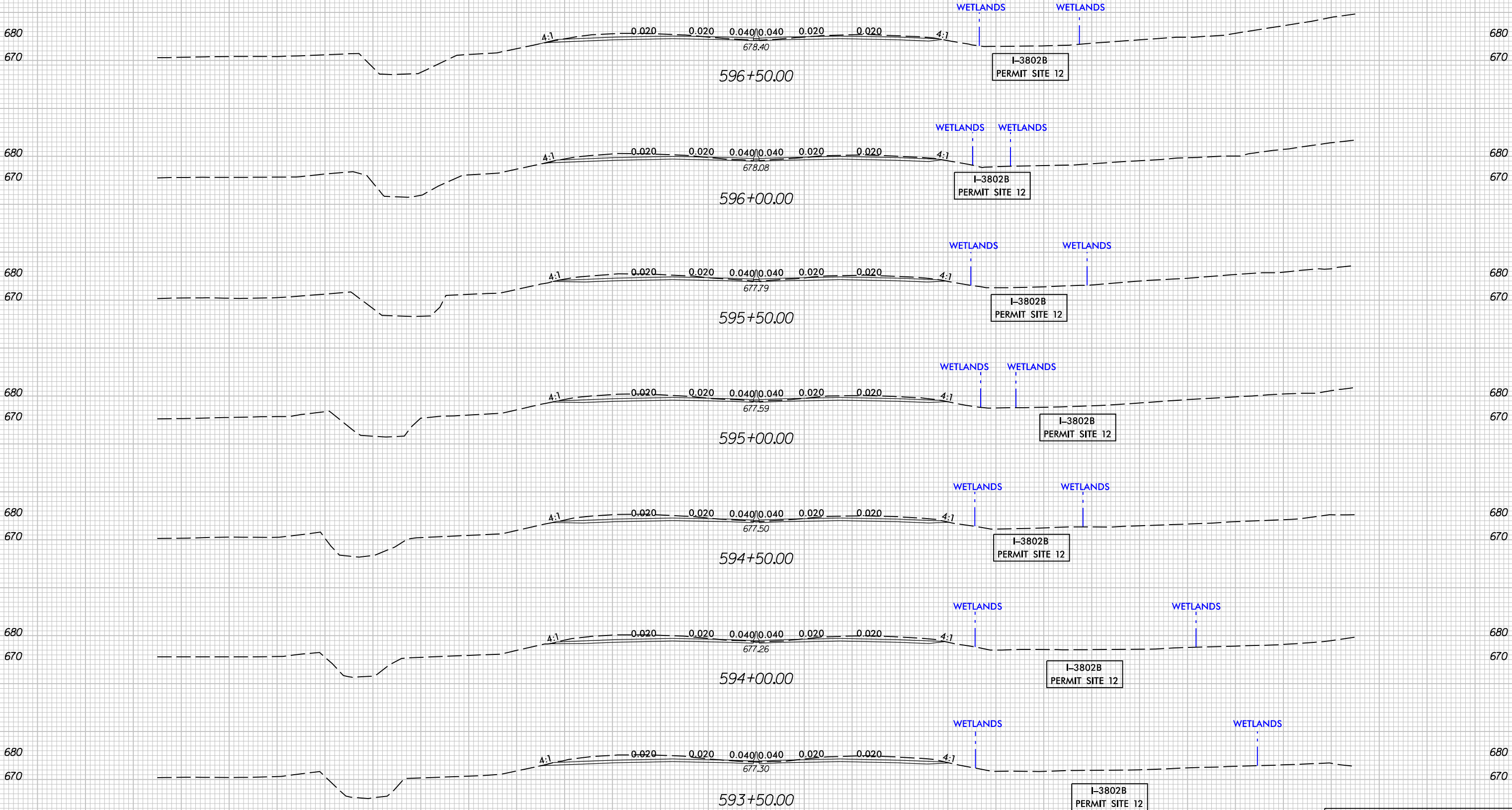
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN
SURFACE WATER

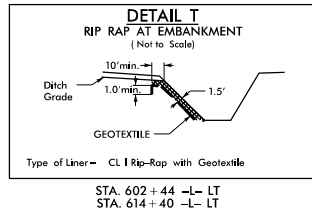
NAD 83/NSRS 2007

8/23/99

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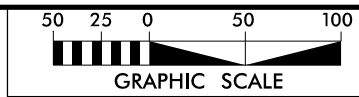
REVISIONS



LEGEND:

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

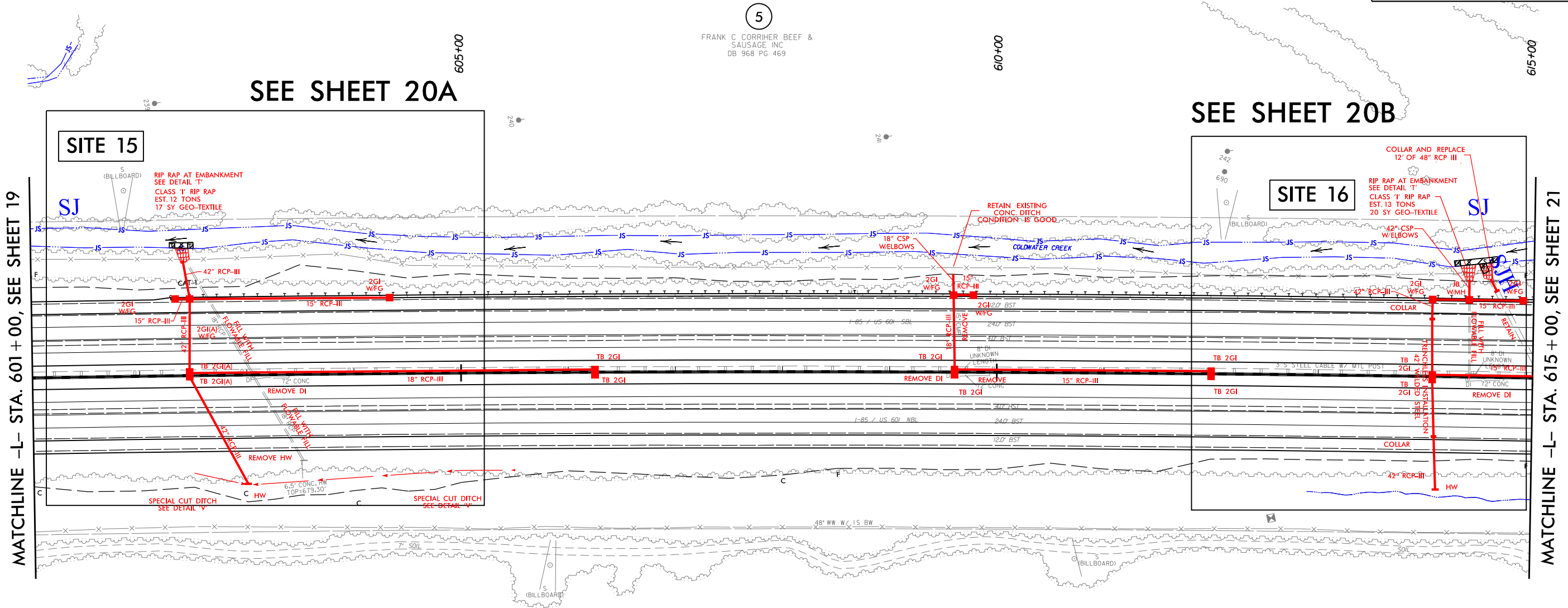


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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		20
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

NAD 83/NSRS 2007



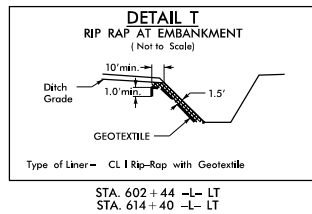
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FRANK C. CORRIHER BEEF & SAUSAGE INC.
DB 968 PG 469

PERMIT DRAWINGS
SHEET 35 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 48 FOR -L- PROFILE

REVISIONS



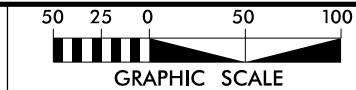
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DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



LANE

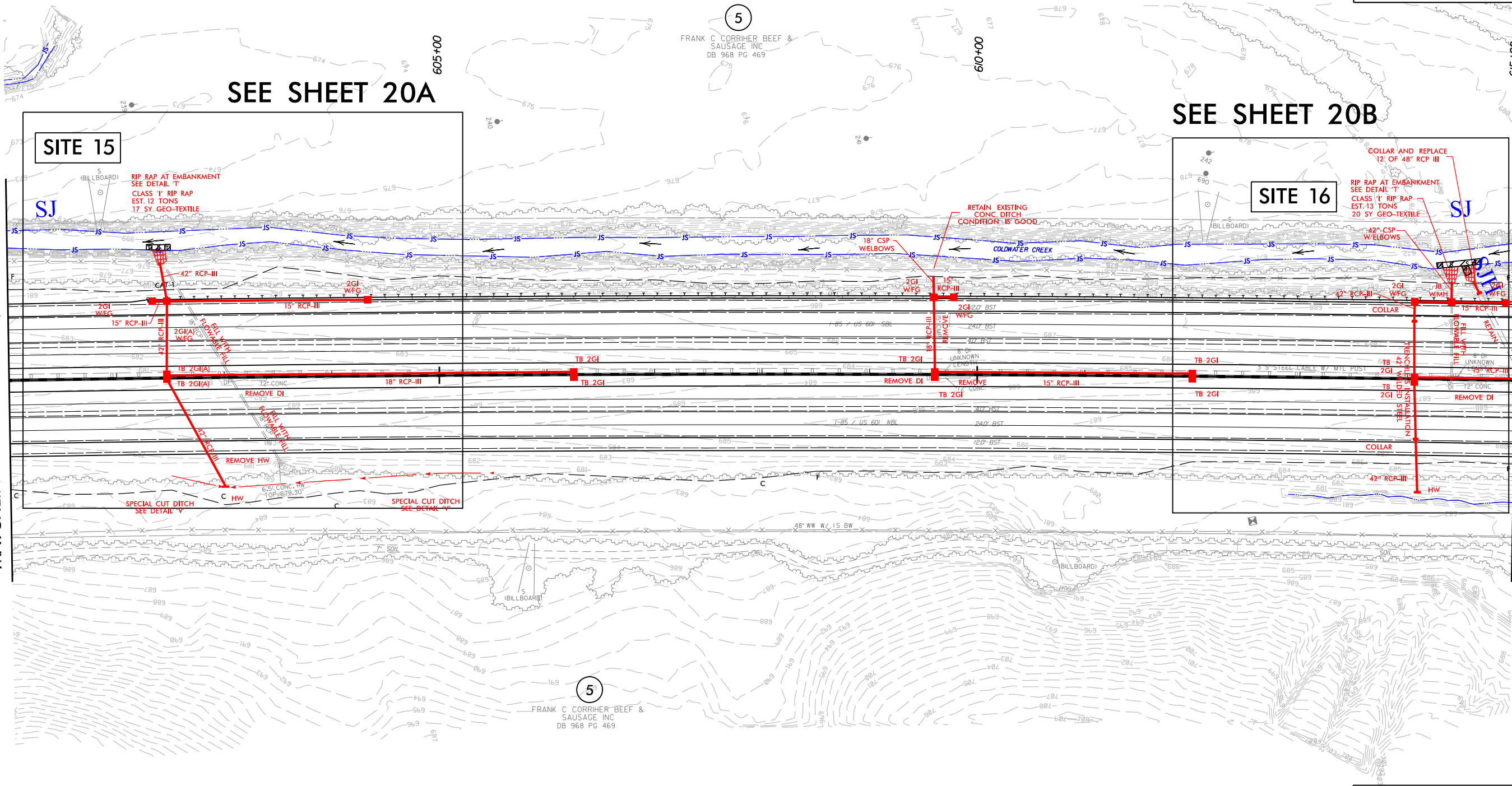


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N.C.B.E.L.S. License Number: F-0116

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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		20	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

MATCHLINE -L- STA. 601+00, SEE SHEET 19



MATCHLINE -L- STA. 615+00, SEE SHEET 21

PERMIT DRAWINGS
SHEET 36 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 48 FOR -L- PROFILE

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REVISIONS

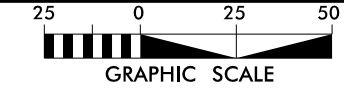
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



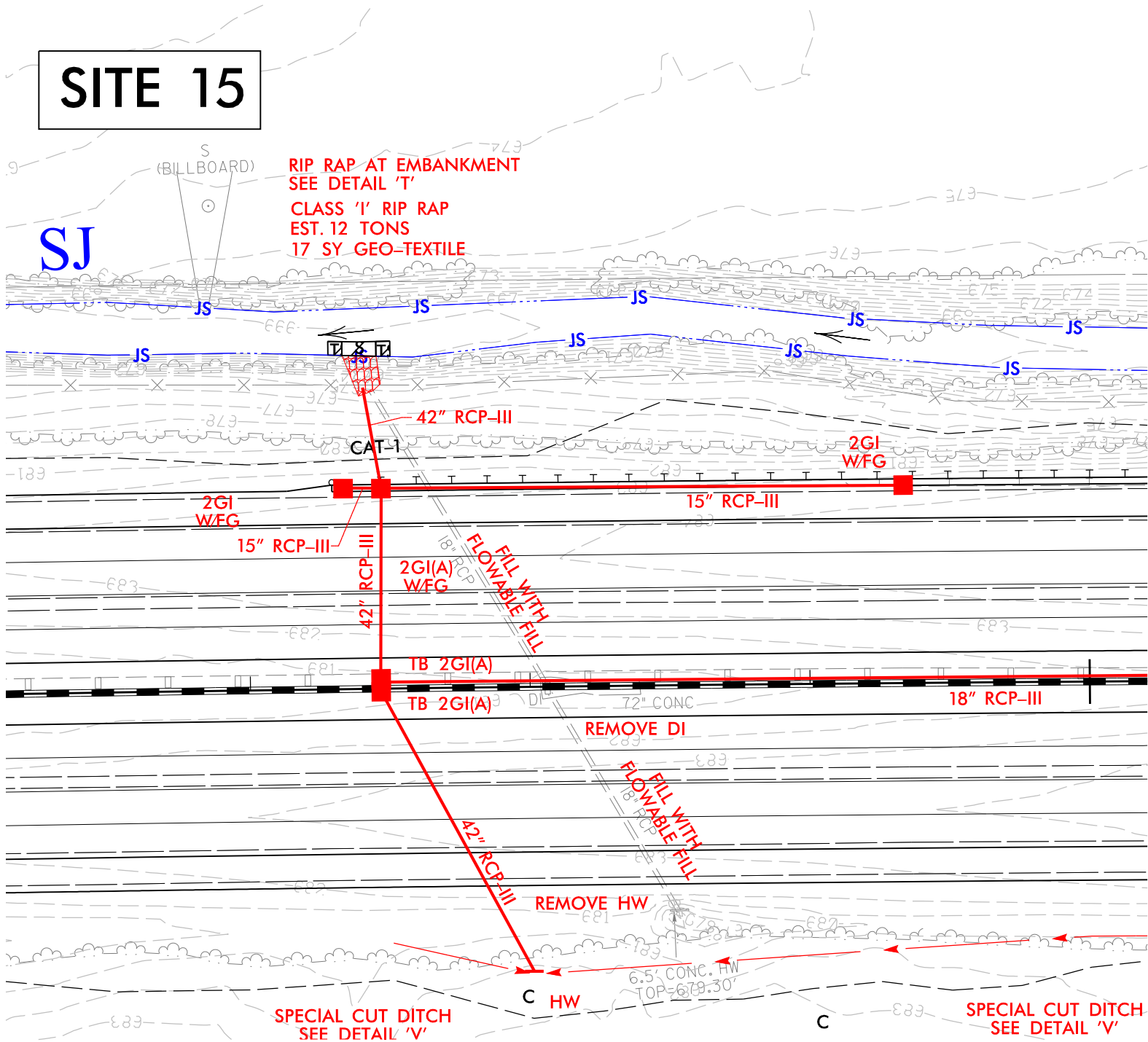
THE
LANE
CONSTRUCTION
CORPORATION

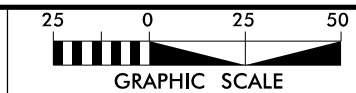


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N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		20A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			





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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.
I-3802B

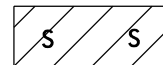
SHEET NO.
20B

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

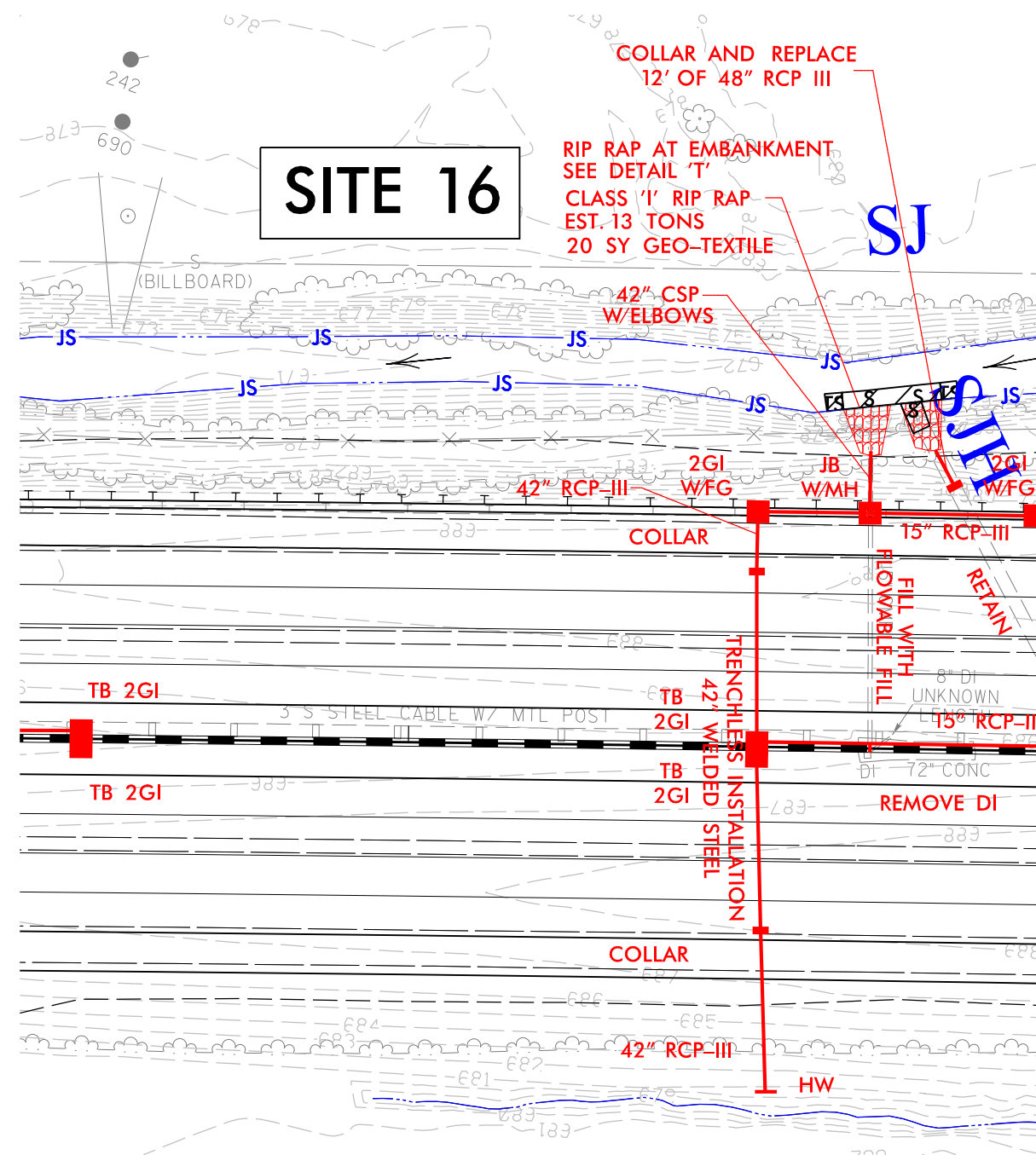
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



NAD 83/NSRS 2007

PERMIT DRAWINGS
SHEET 38 OF 91

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USER: MDIEHL
FILE: \

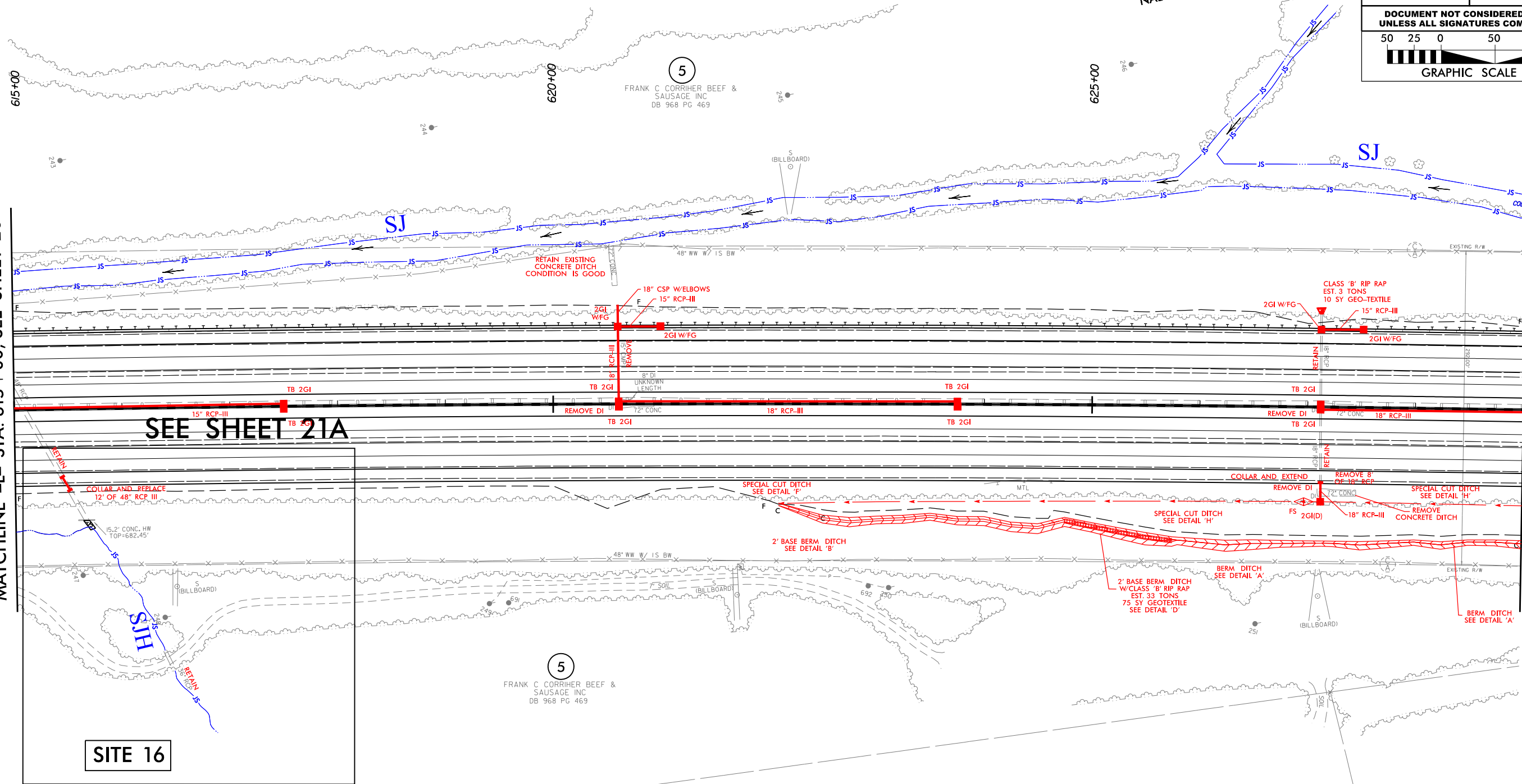
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DATE: 10/21/2016

REVISIONS

MATCHLINE -L- STA. 615+00, SEE SHEET 20

MATCHLINE -L- STA. 629+00, SEE SHEET 22



SITE 16

LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LINDA SUE C. TADLOCK
WB 07E PG 142

PROJECT REFERENCE NO.

L-3802B

SHEET NO.

21

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS

DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

GRAPHIC SCALE

LANE

HDR

HDR Engineering, Inc. of the Carolinas

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N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

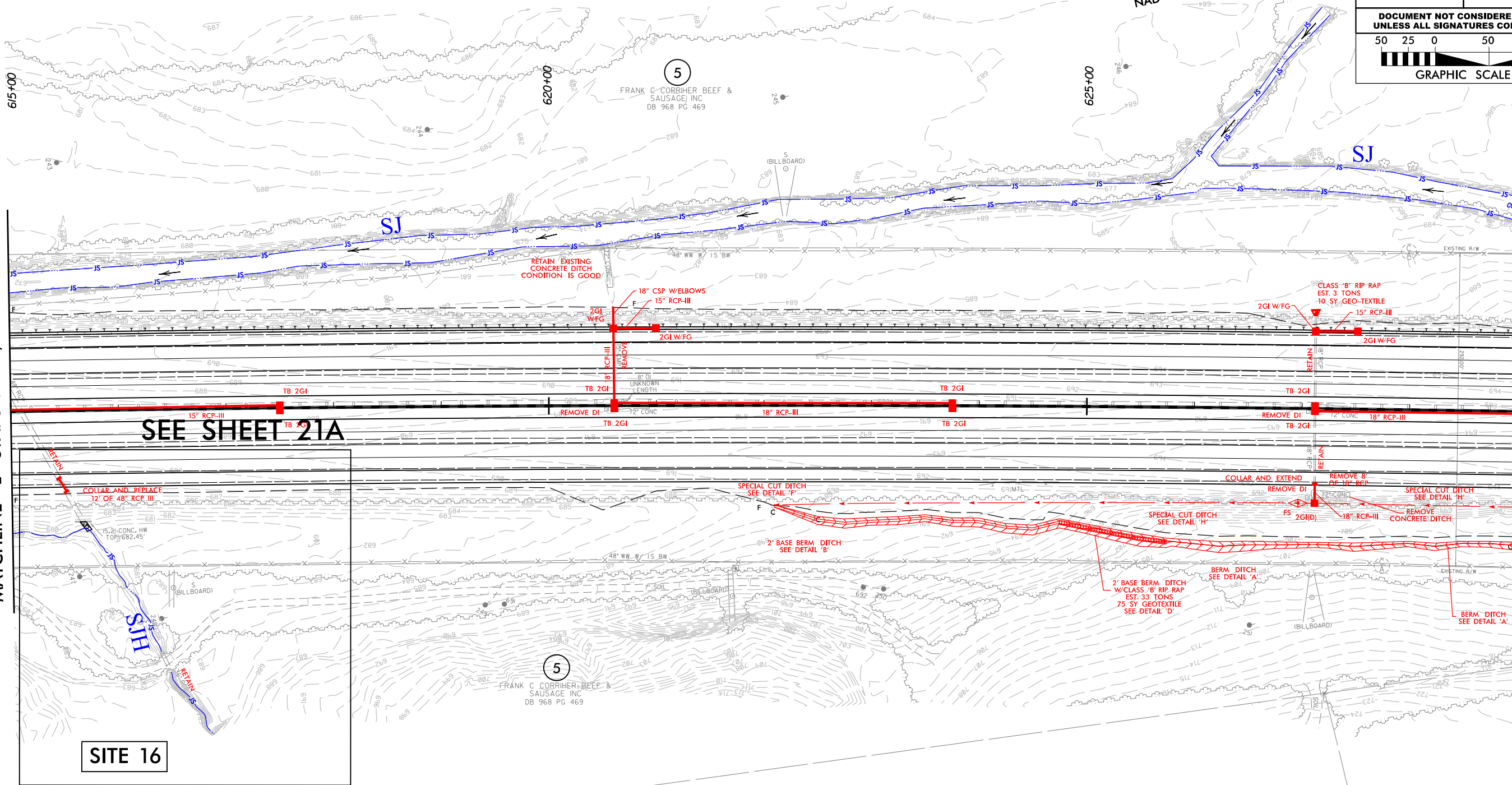
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 49 FOR -L- PROFILE

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DATE: 10/21/2016

REVISIONS

MATCHLINE -L- STA. 615+00, SEE SHEET 20



SITE 16

LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LINDA SUE C. TADLOCK
WB 07E PG 142

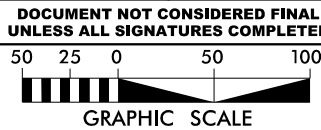
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 49 FOR -L- PROFILE

LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.
I-3802B		21
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		



PERMIT DRAWINGS
SHEET 40 OF 91

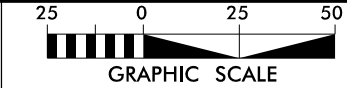
KIMBERLY HANEY
DB 956 PG 492

REVISIONS

LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

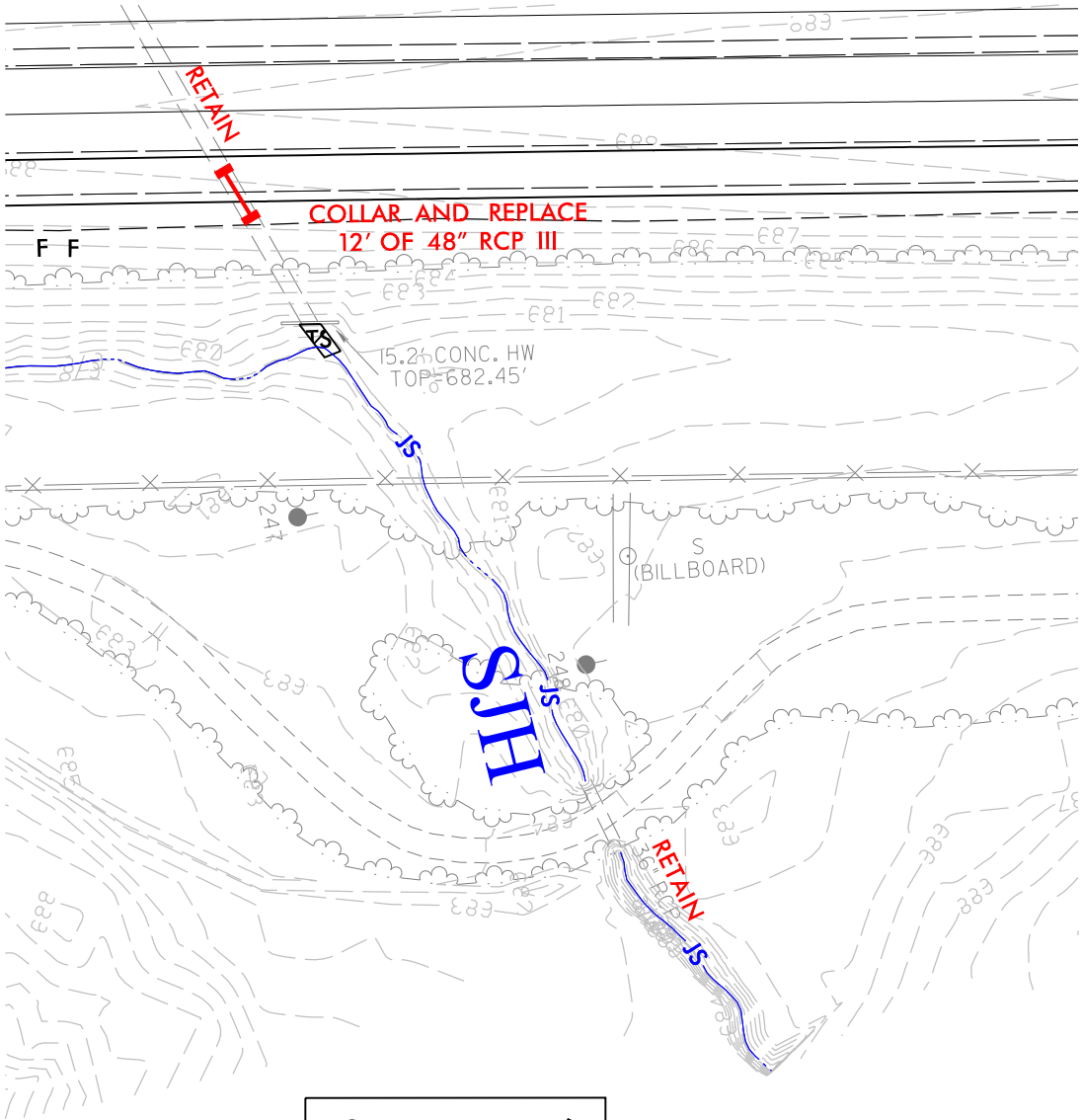


THE
LANE
CONSTRUCTION
CORPORATION

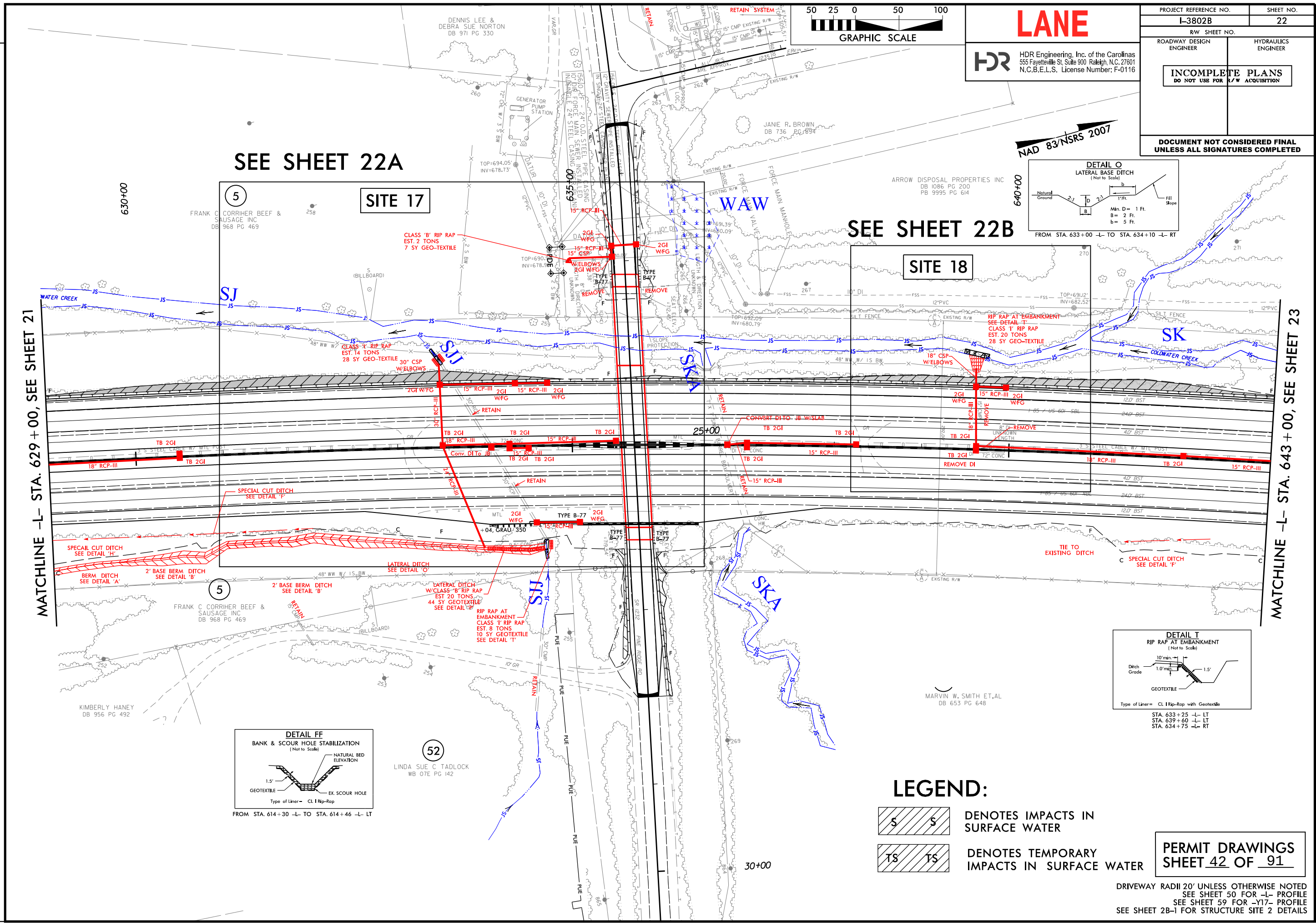
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

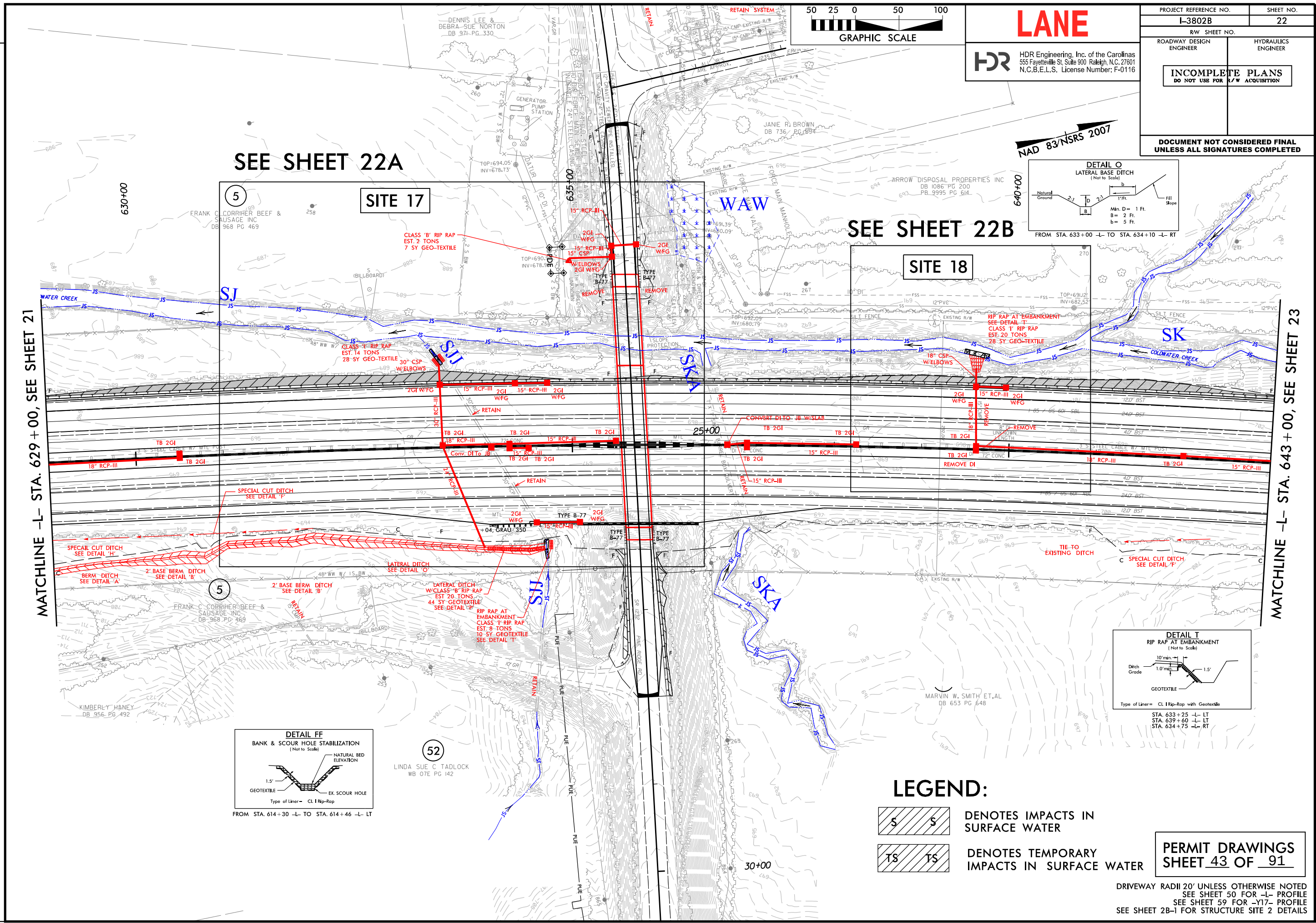
PROJECT REFERENCE NO.	SHEET NO.
I-3802B	21A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

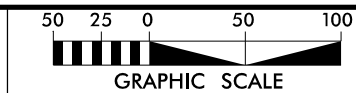


SITE 16



REVISIONS

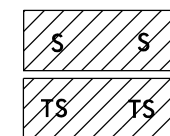




LANE
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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

LEGEND:

DENOTES IMPACTS IN
SURFACE WATERDENOTES TEMPORARY
IMPACTS IN SURFACE WATER

AD 83/NSRS 2007

D SCOTT COOK
DB I055 PG 277

SEE SHEET 23A

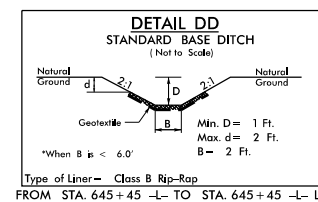
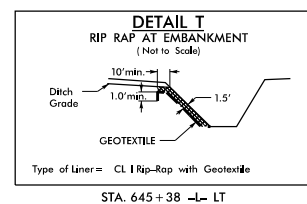
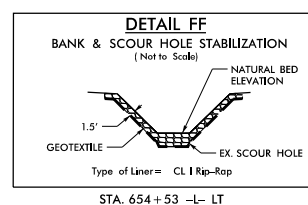
SITE 19

SITE 20

SEE SHEET 23B

ATCHLINE 1 - STA. 643+00, SEE SHEET 22

MATCHLINE -L- STA. 657 + 00, SEE SHEET 24

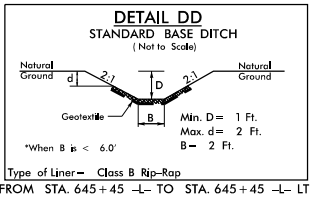
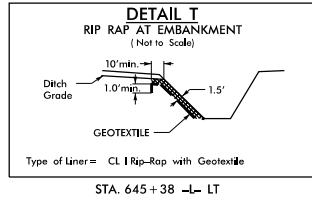
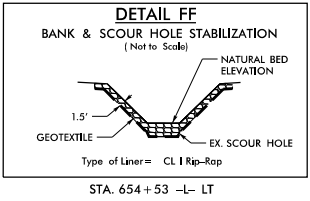
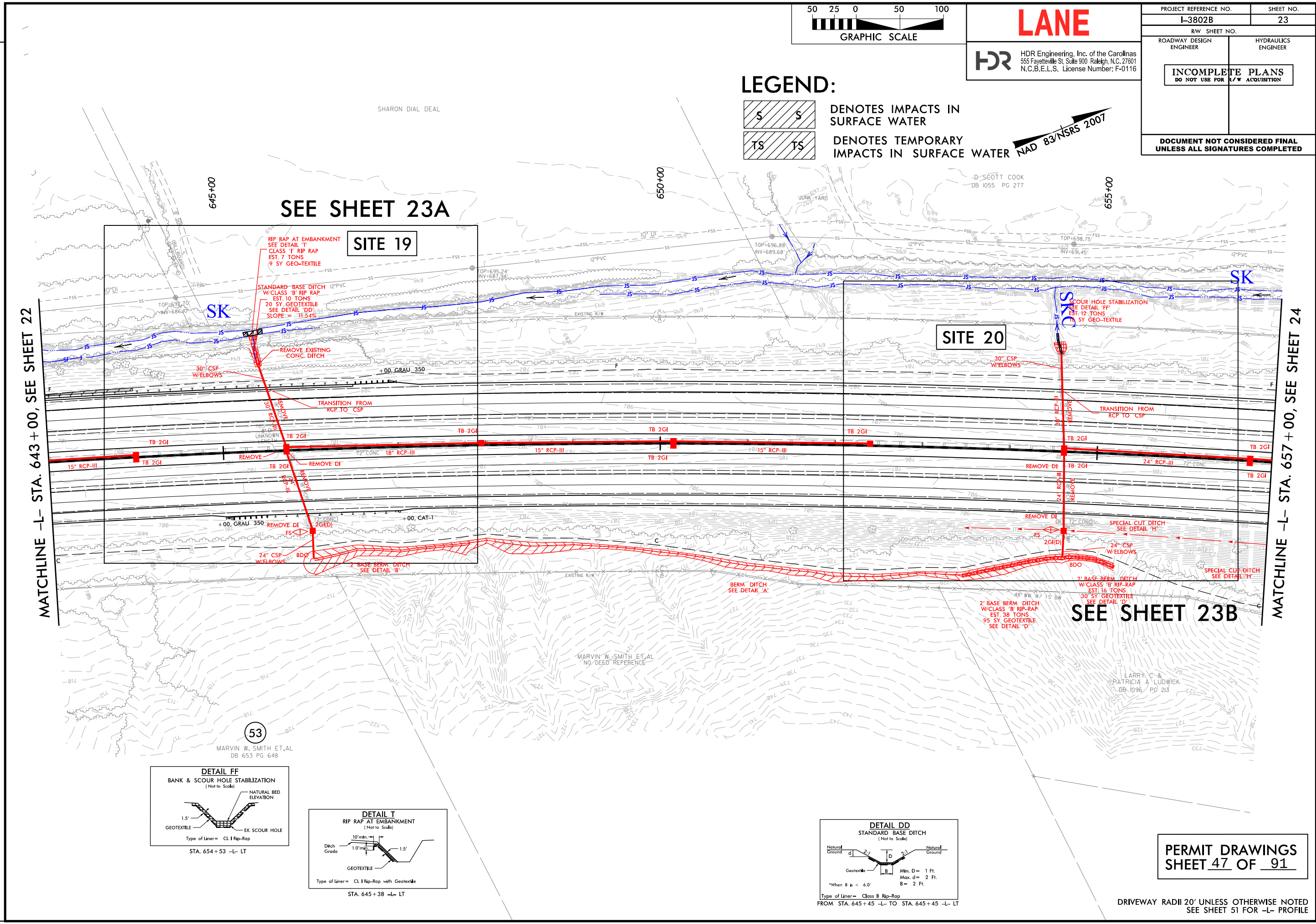


DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 51 FOR -L- PROFILE

PERMIT DRAWINGS
SHEET 46 OF 91

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REVISIONS



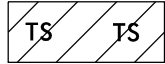
PERMIT DRAWINGS
SHEET 47 OF 91

REVISIONS

LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LANE



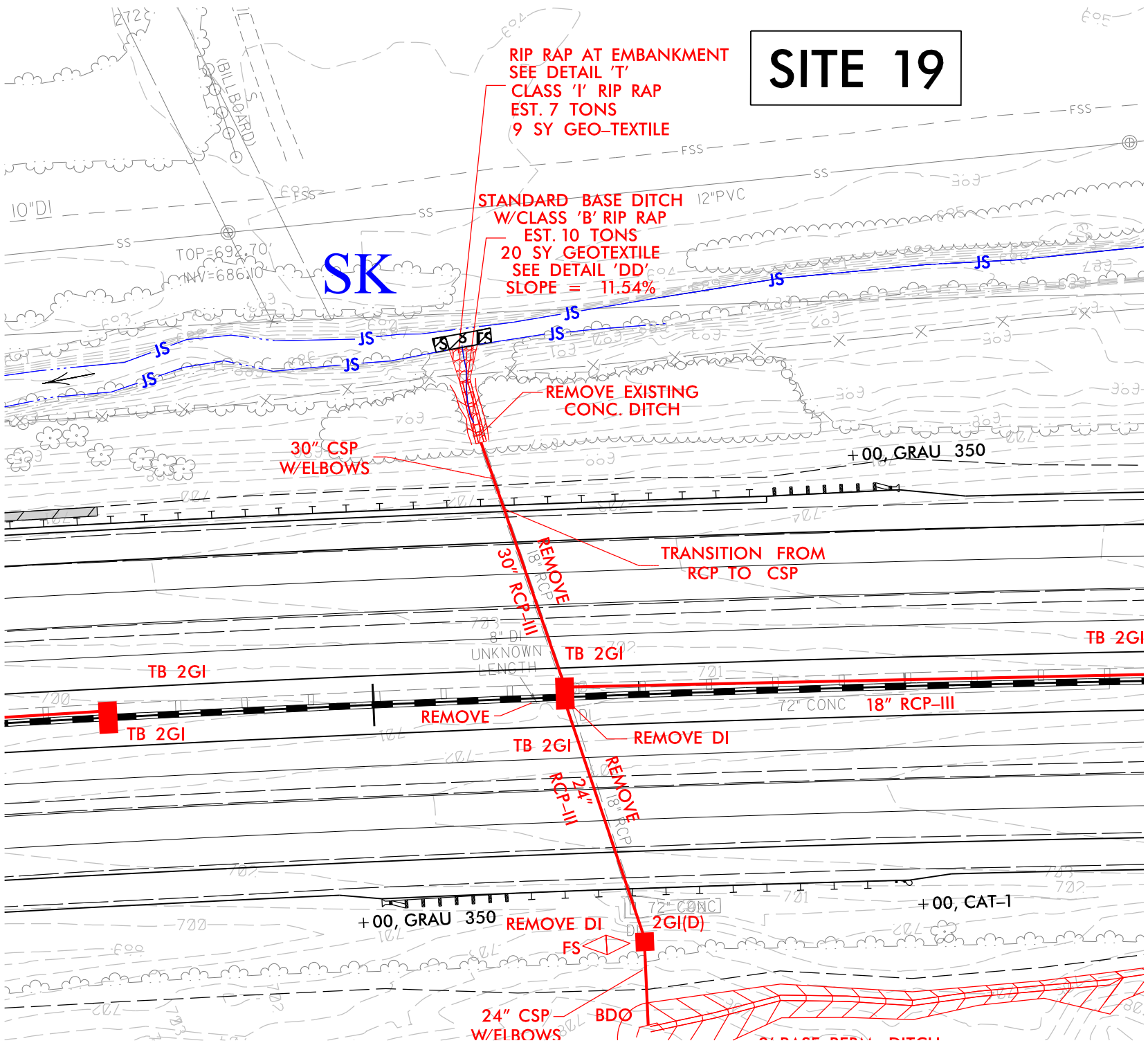
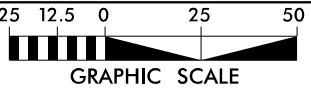
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. SHEET NO.
I-3802B 23A

RW SHEET NO.
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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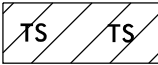
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REVISIONS

LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LANE



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PROJECT REFERENCE NO. SHEET NO.

I-3802B

23B

RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

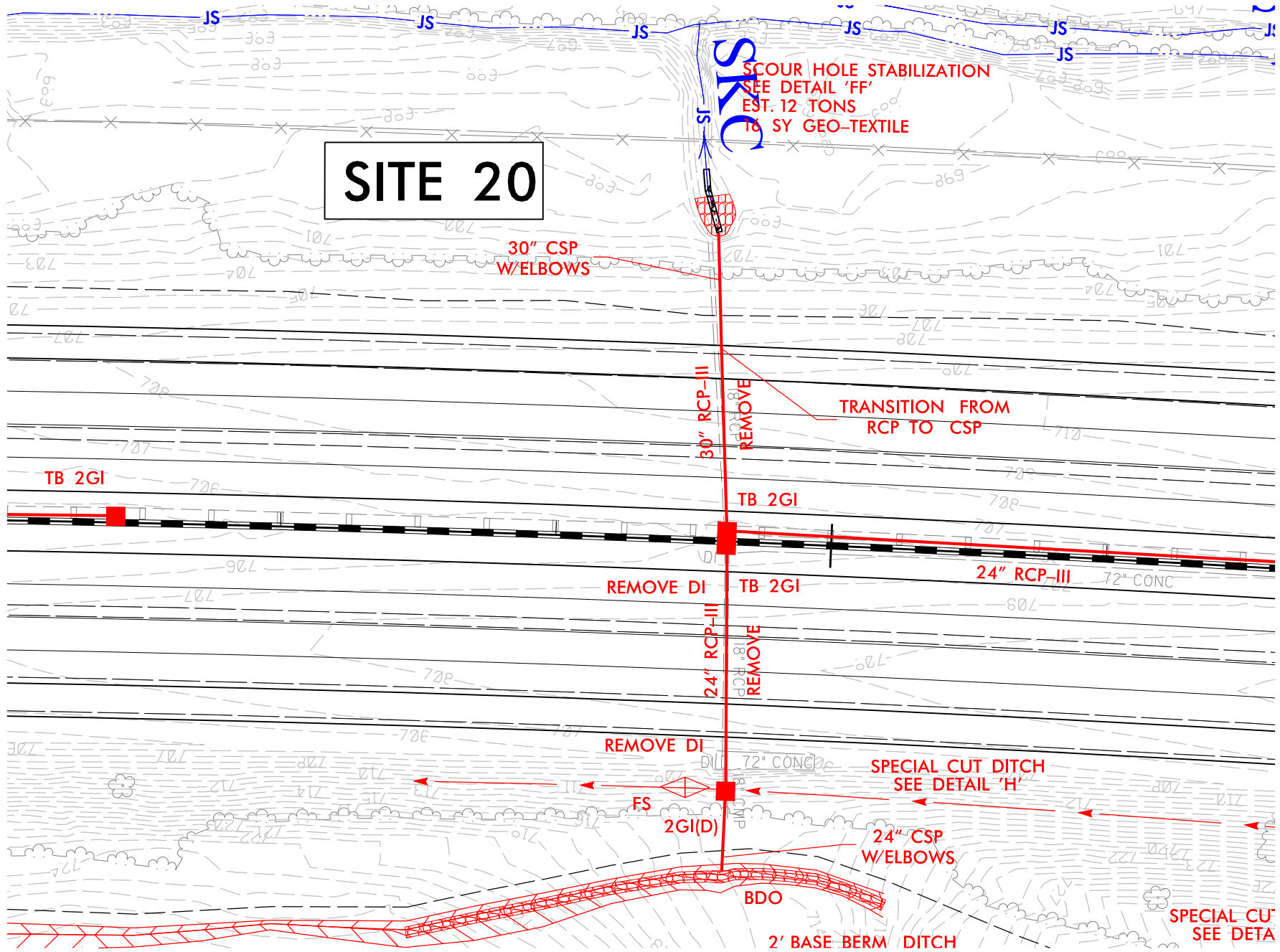
INCOMPLETE PLANS
DO NOT USE FOR ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



GRAPHIC SCALE

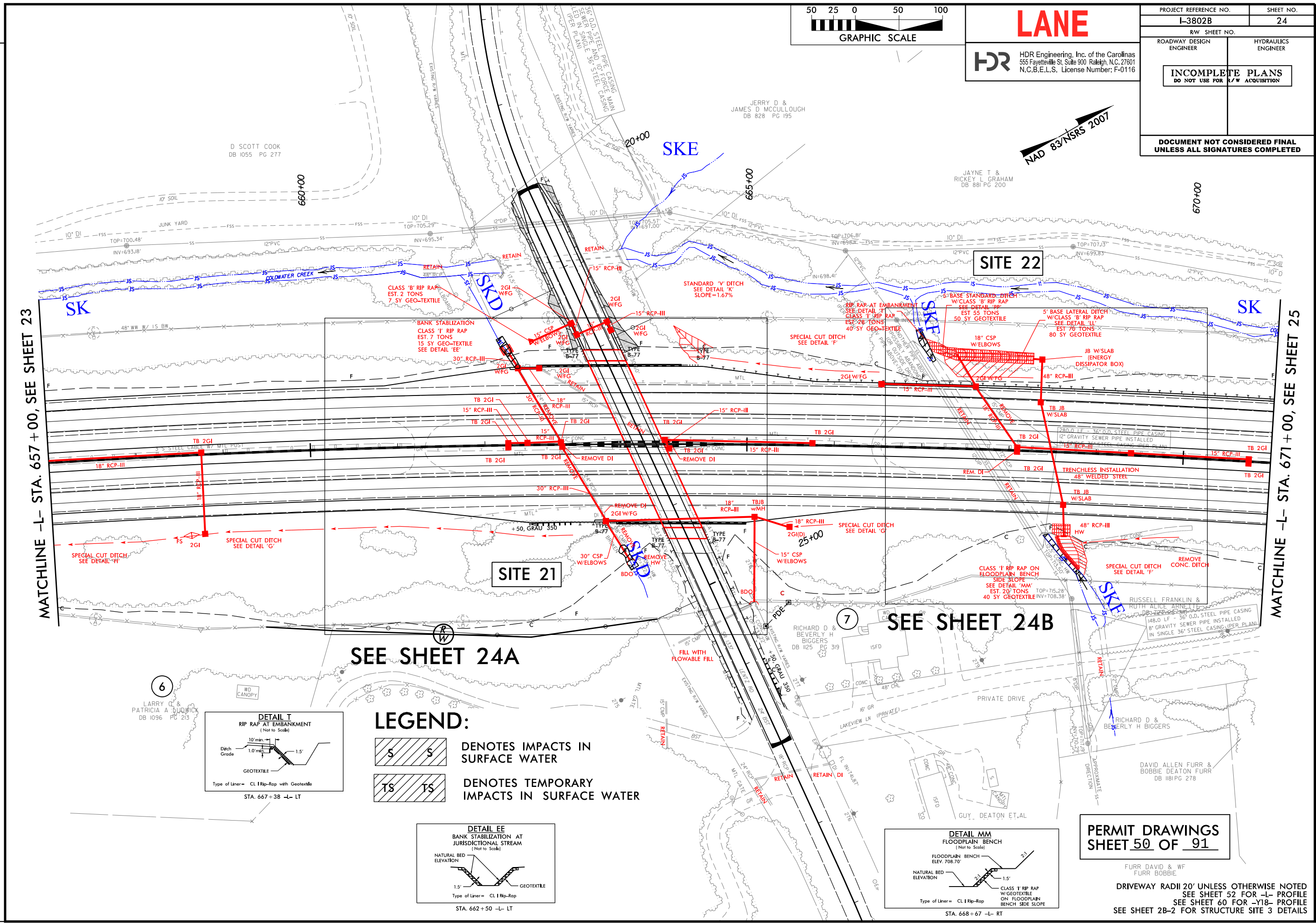
NAD 83/NSRS 2007



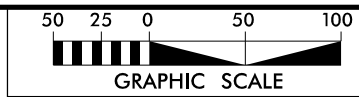
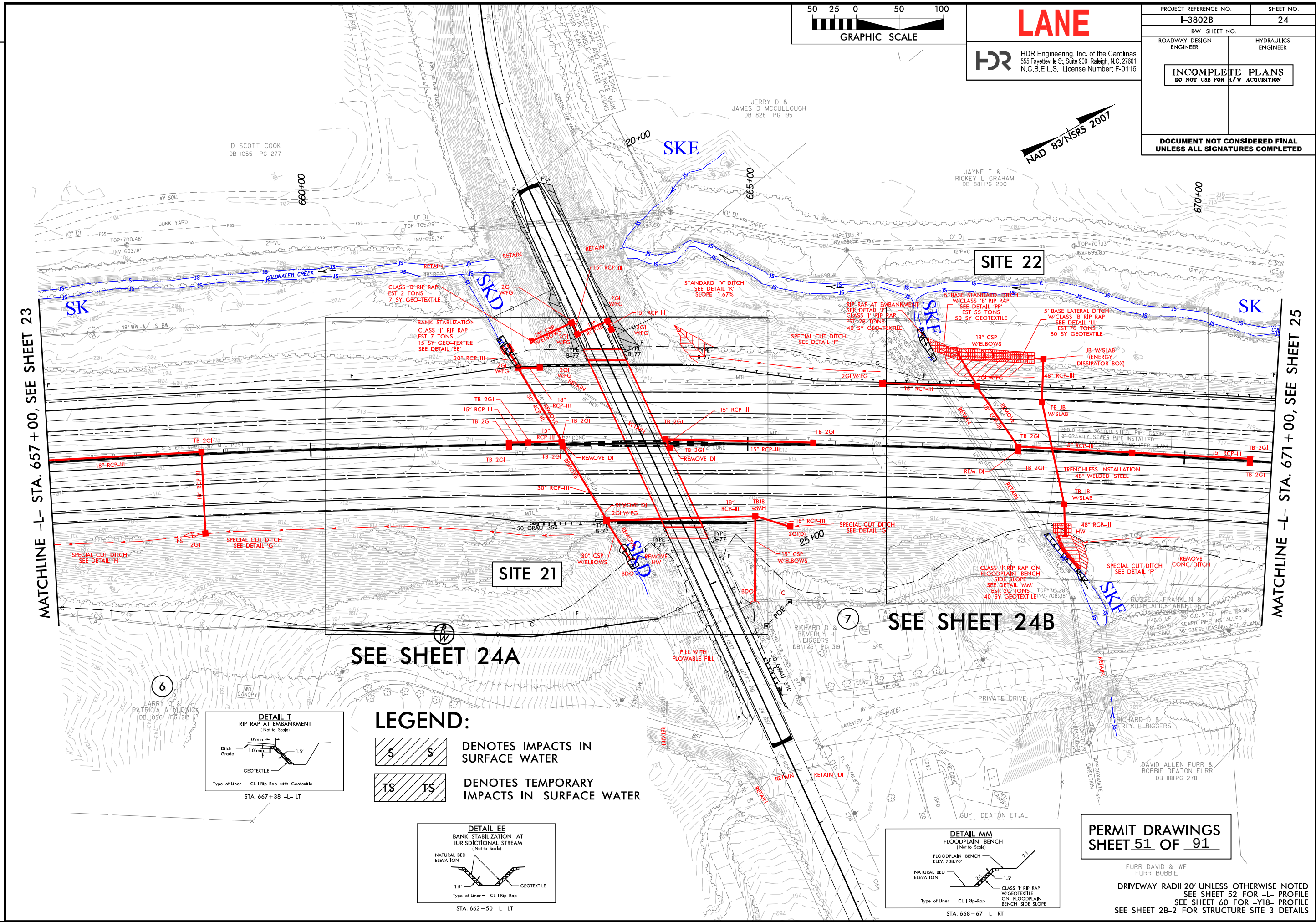
PERMIT DRAWINGS
SHEET 49 OF 91

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REVISIONS



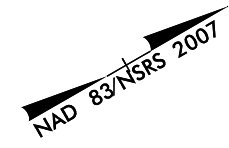
REVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -L- STA. 657 + 00, SEE SHEET 23

MATCHLINE -L- STA. 671 + 00, SEE SHEET 25

SEE SHEET 24A

SEE SHEET 24B

PERMIT DRAWINGS
SHEET 51 OF 91

FURR DAVID & WF
FURR BOBBIE

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 60 FOR -Y18- PROFILE
SEE SHEET 2B-2 FOR STRUCTURE SITE 3 DETAILS

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REVISIONS

LEGEND:

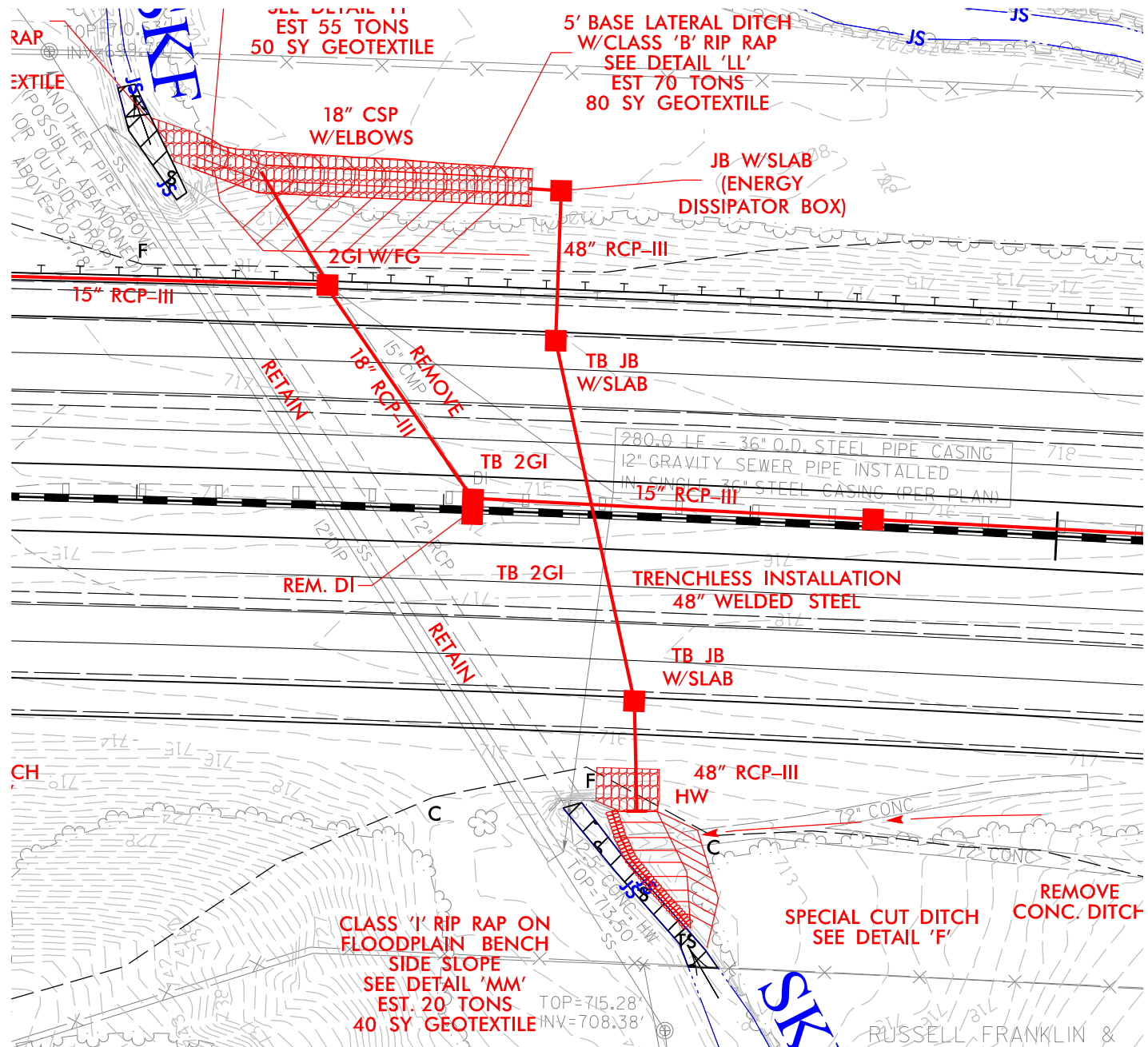


DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

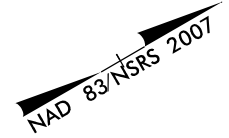
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LANE



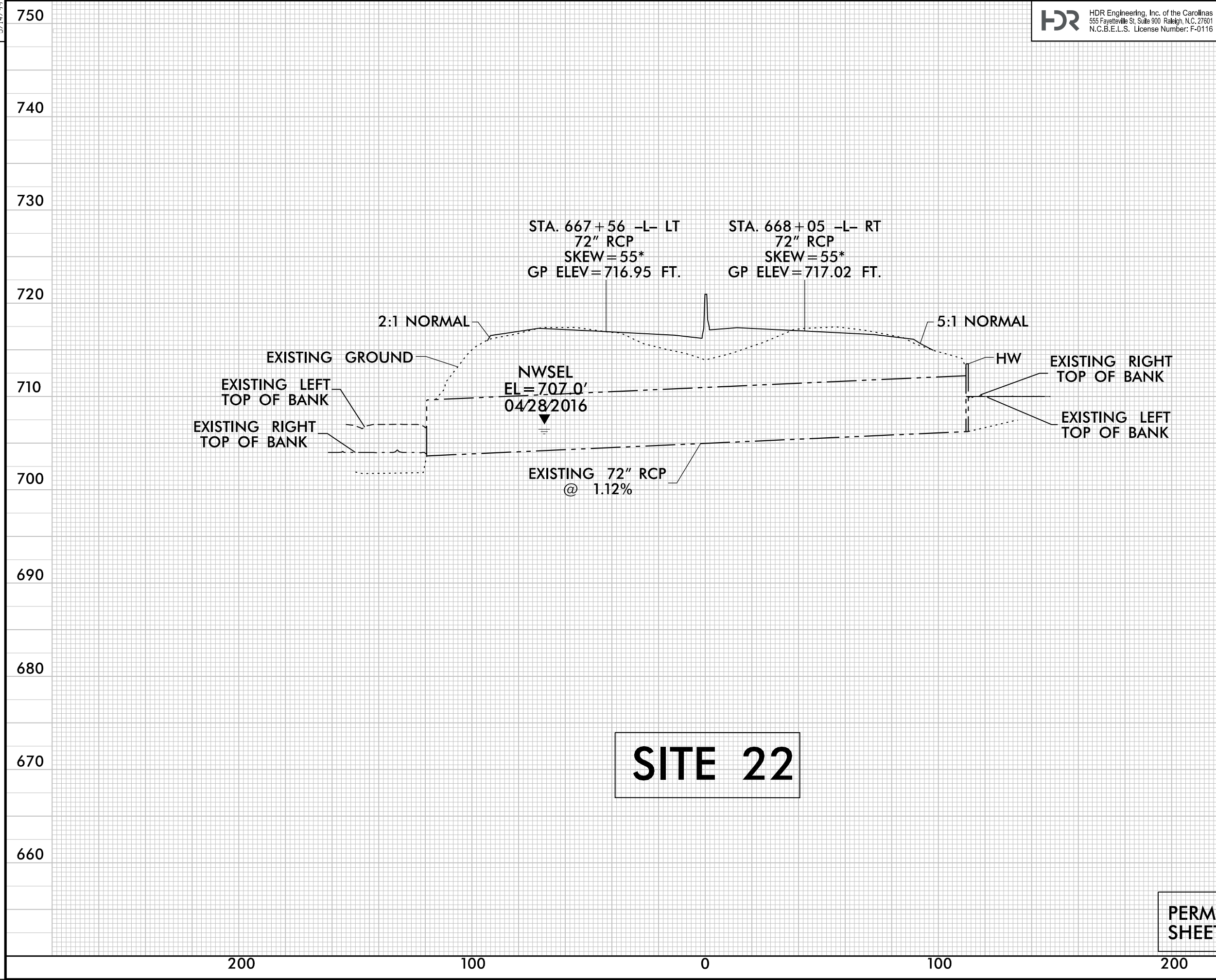
HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116



PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		24B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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GRAPHIC SCALE			

5/14/99

REVISIONS



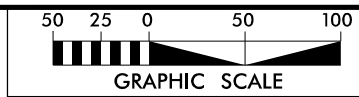


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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

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REVISIONS



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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		25	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND:

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

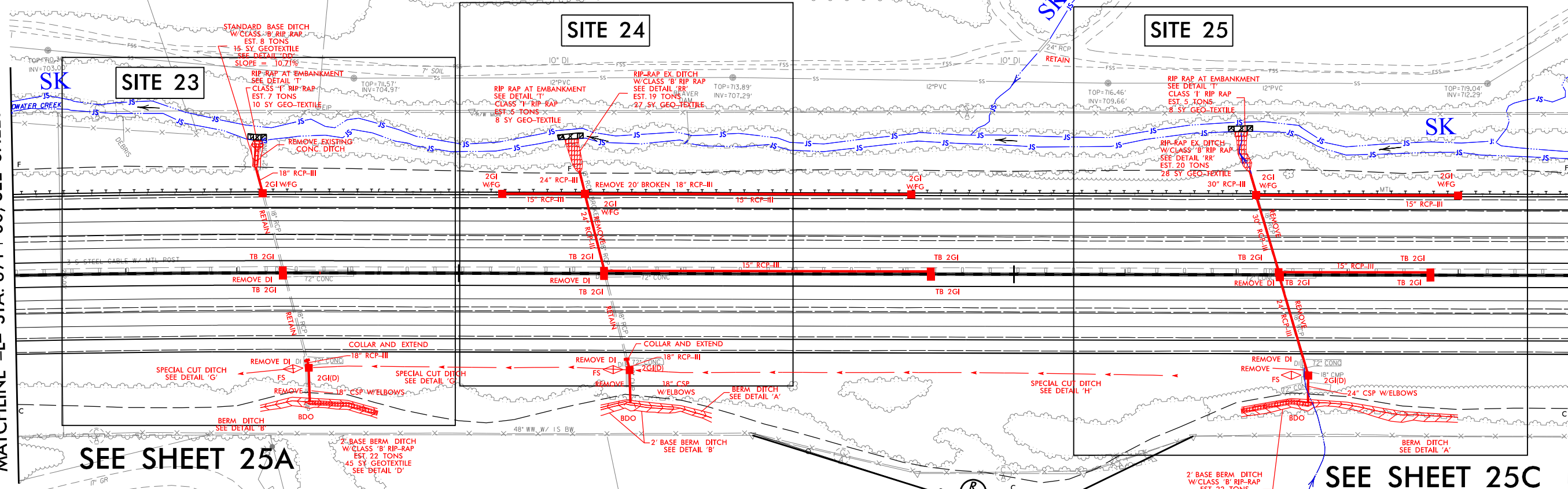
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TIAN RAY E

NAD 83/NSRS 2007

SEE SHEET 25B

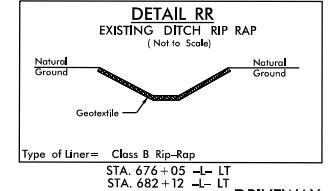
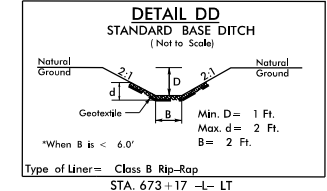
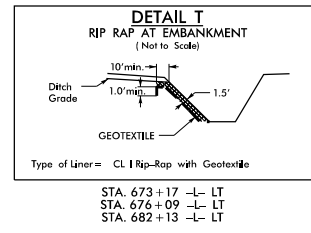
MATCHLINE -L- STA. 671+00, SEE SHEET 24

MATCHLINE -L- STA. 685+00, SEE SHEET 26



SEE SHEET 25A

SEE SHEET 25C



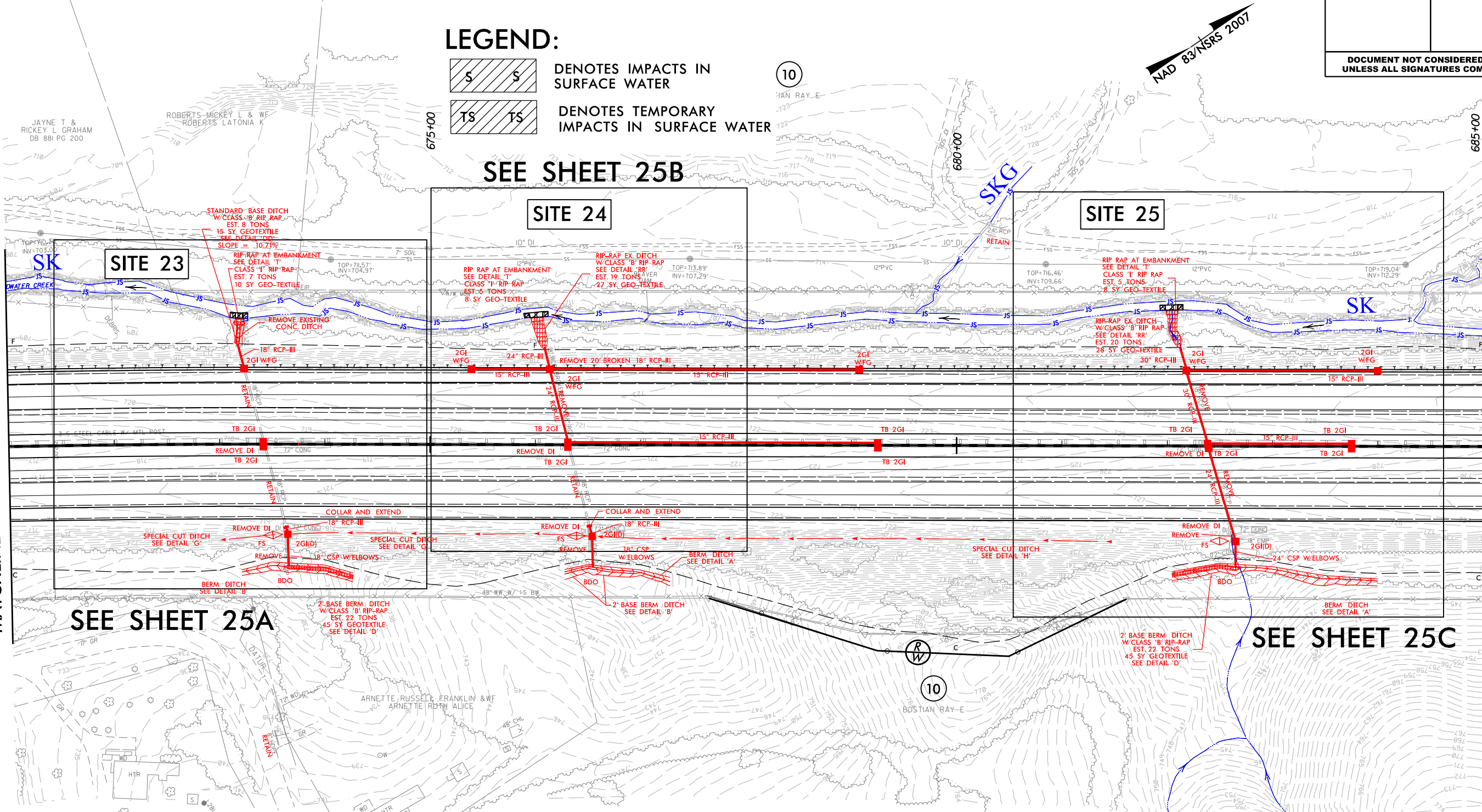
PERMIT DRAWINGS
SHEET 55 OF 91

DRIVEWAY RADIUS 20' UNLESS OTHERWISE NOTED
SEE SHEET 53 FOR -L- PROFILE

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DATE: 10/11/2016
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REVISIONS

MATCHLINE -L- STA. 671+00, SEE SHEET 24



SEE SHEET 25A

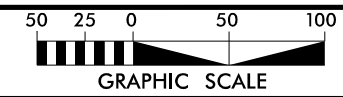
SEE SHEET 25B

SEE SHEET 25C

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LEGEND:

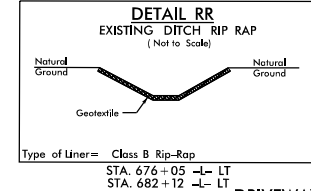
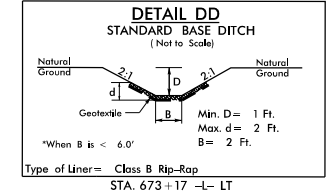
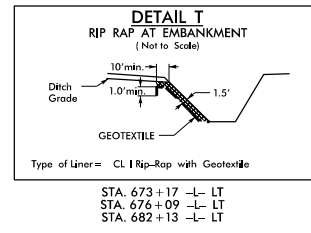
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		25
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



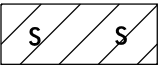
DRIVEWAY RADIUS 20' UNLESS OTHERWISE NOTED
SEE SHEET 53 FOR -L- PROFILE

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USER: cmyers
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TIME: 1:42:34 PM

REVISIONS

LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LANE



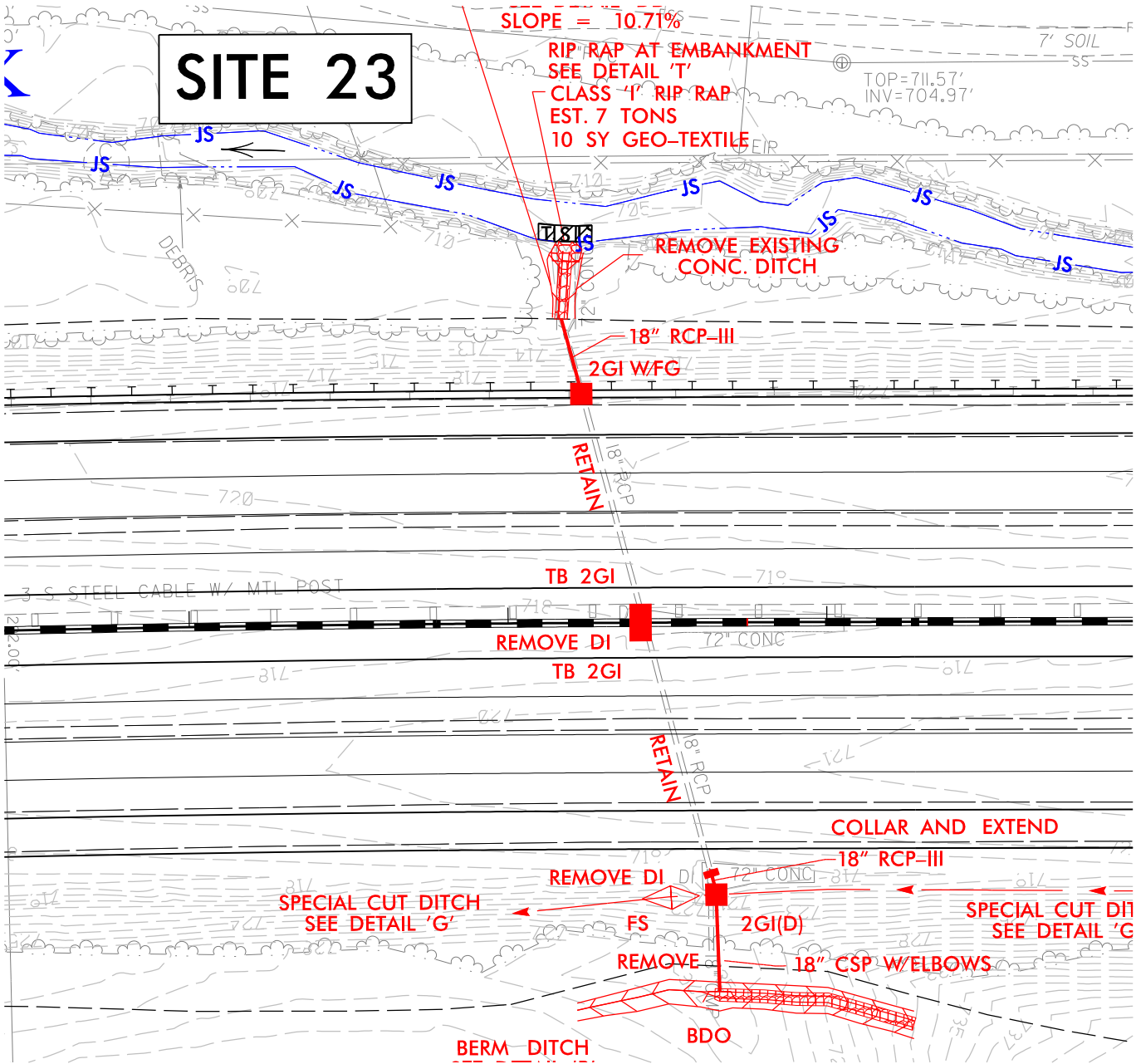
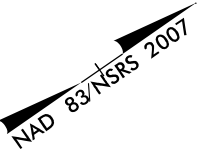
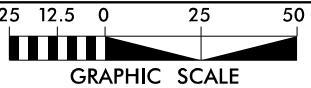
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. SHEET NO.
I-3802B 25A

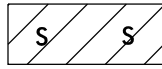
R/W SHEET NO.
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

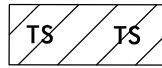
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UNLESS ALL SIGNATURES COMPLETED



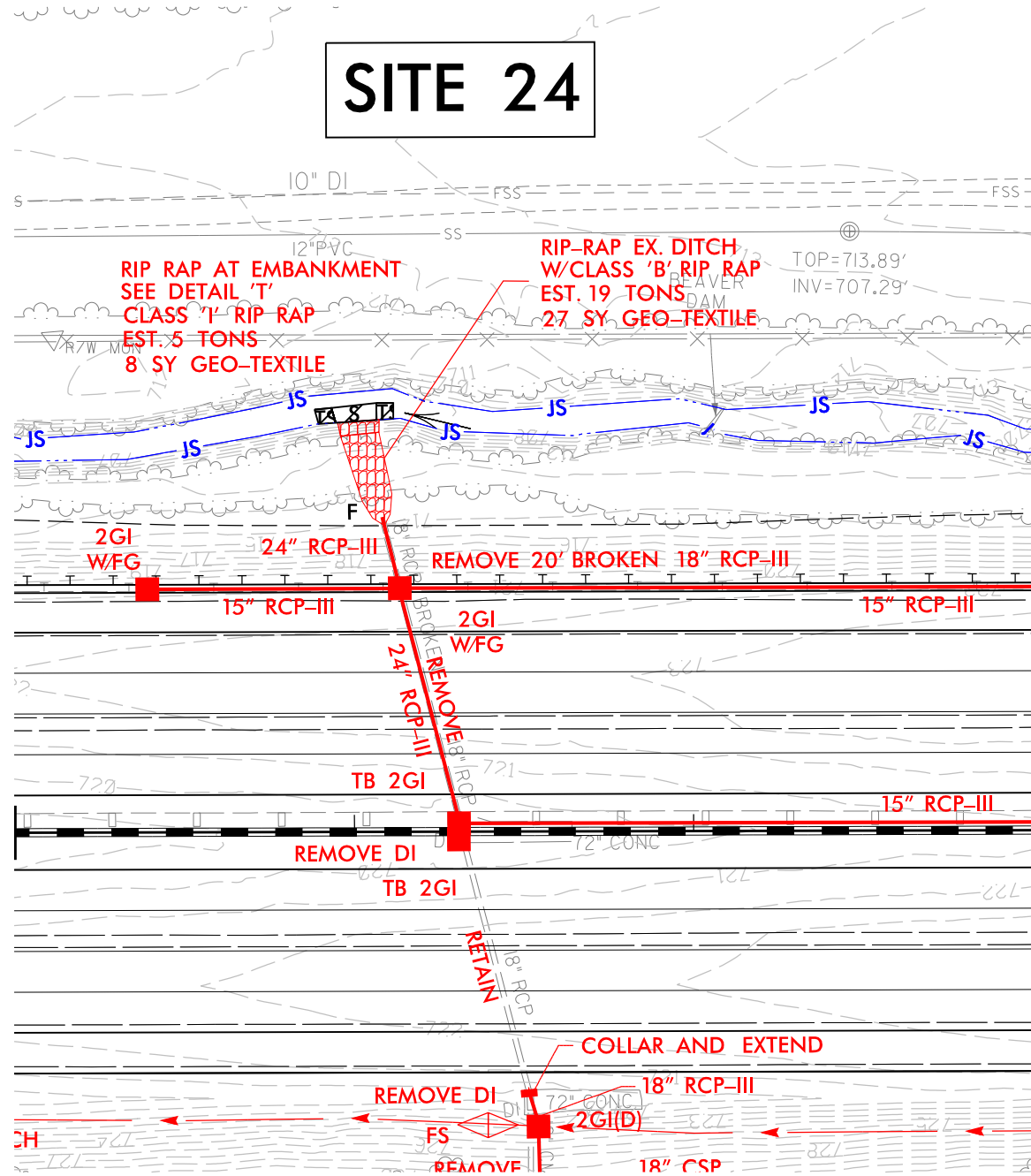
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

SITE 24



LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.

I-3802B

SHEET NO.

25B

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

**HYDRAULICS
ENGINEER**

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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



GRAPHIC SCALE

PERMIT DRAWINGS
SHEET 58 OF 91

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
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TIME: 1:42:41 PM

REVISIONS

LEGEND:

S

S

DENOTES IMPACTS IN SURFACE WATER

TS

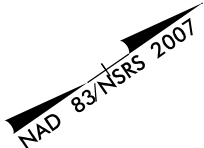
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DENOTES TEMPORARY IMPACTS IN SURFACE WATER

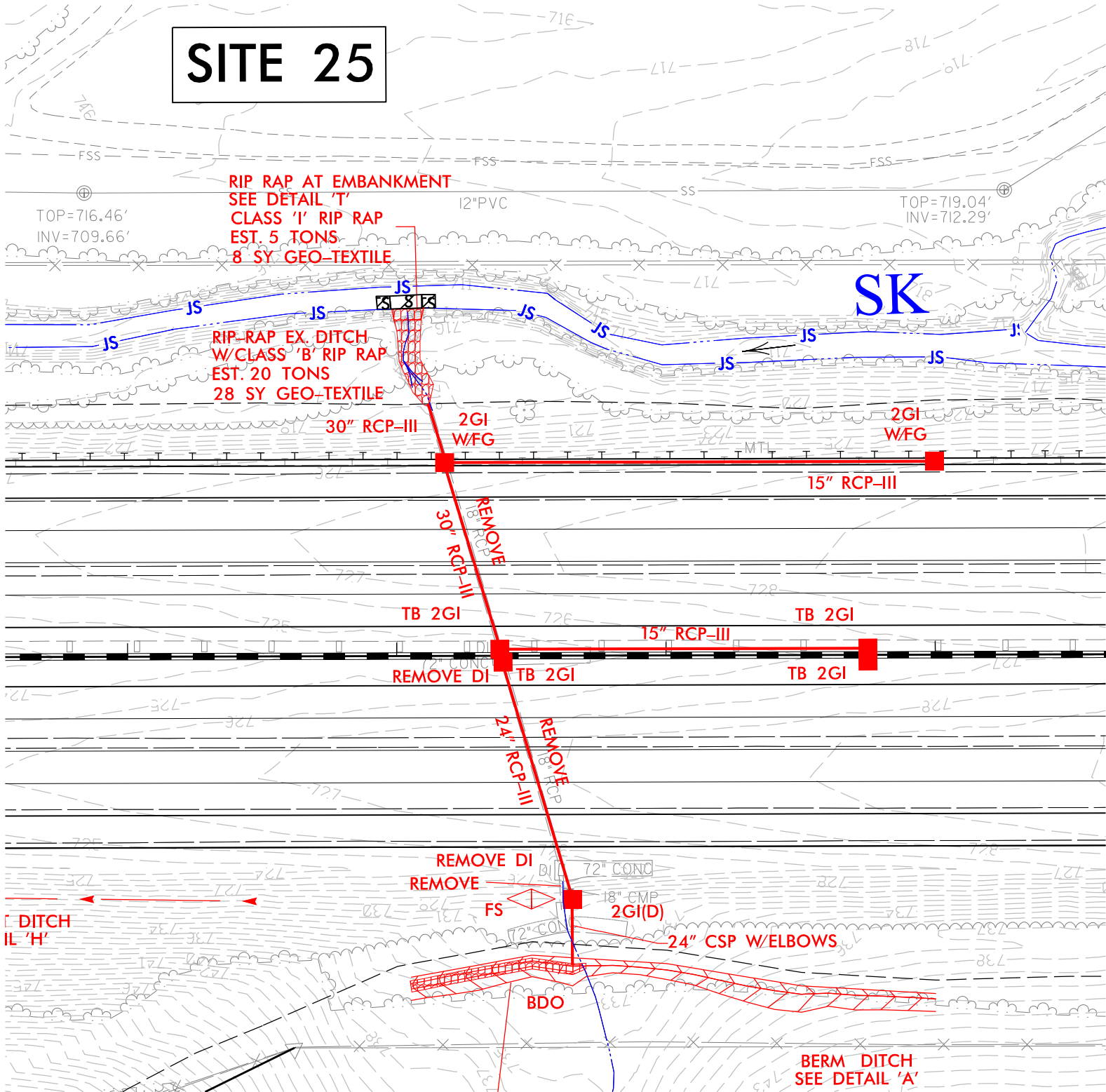
LANE

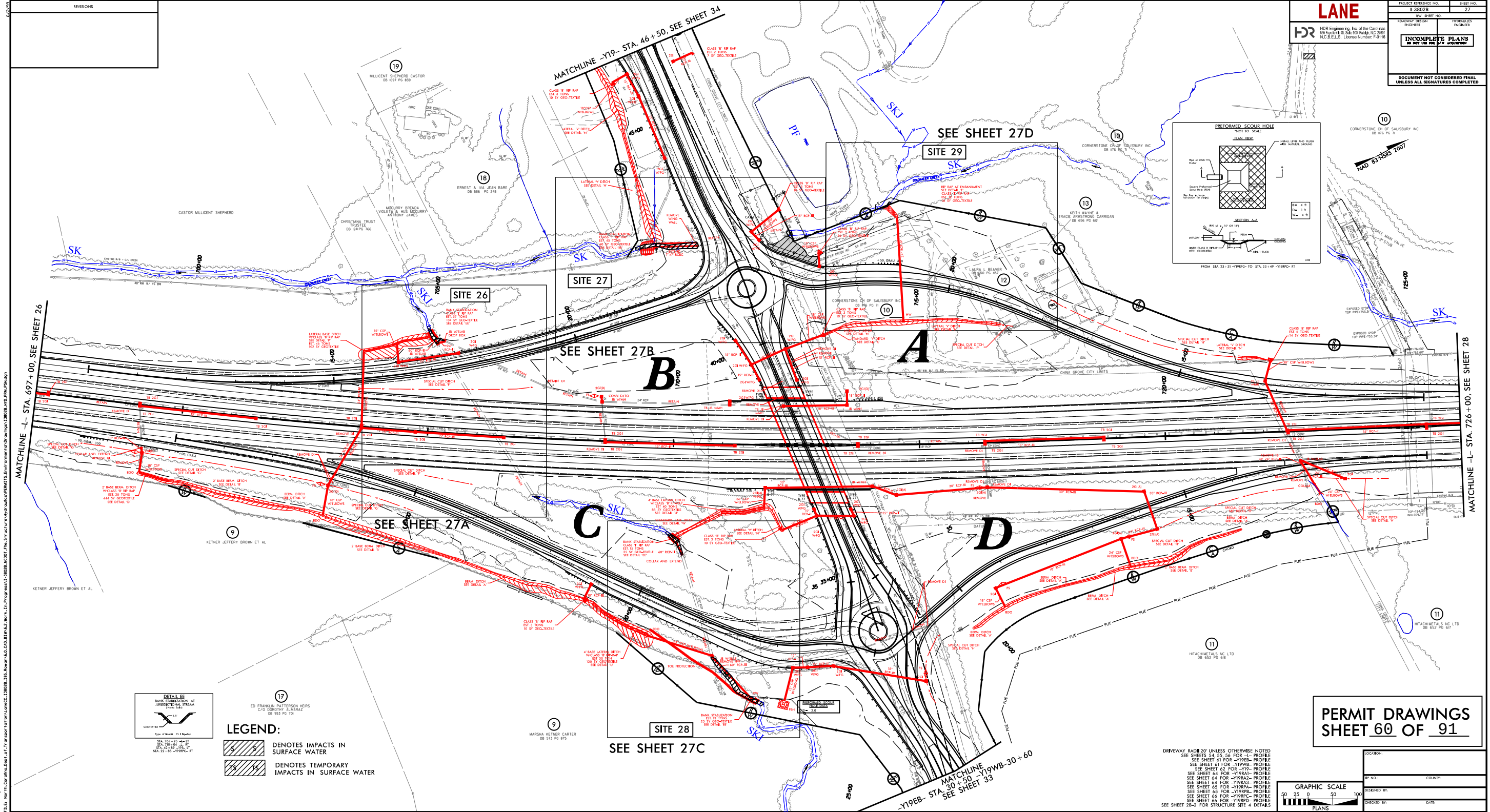
HDR

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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116



PROJECT REFERENCE NO. I-3802B		SHEET NO. 25C	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
25 12.5 0 25 50 GRAPHIC SCALE			





REVISIONS

LANE

FOR

PROJECT REFERENCE NO. **L-38028**

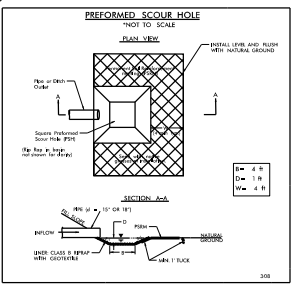
SHEET NO. **27**

ROADWAY DESIGN

INCOMPLETE PLANS

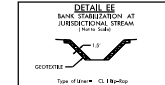
INCOMPLETE PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CORNERSTONE CH OF SALISBURY INC
DB 476 PG 10
NAD 83/NGS 2007

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DATE: 9/27/2016
TIME: 2:14 PM
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C:\ProgramData\Autodesk\LT2016\Tools\PlotTools\PlotTool.exe
C:\ProgramData\Autodesk\LT2016\Tools\PlotTools\PlotTool.exe



LEGEND:

DENOTES IMPACTS IN SURFACE WATER

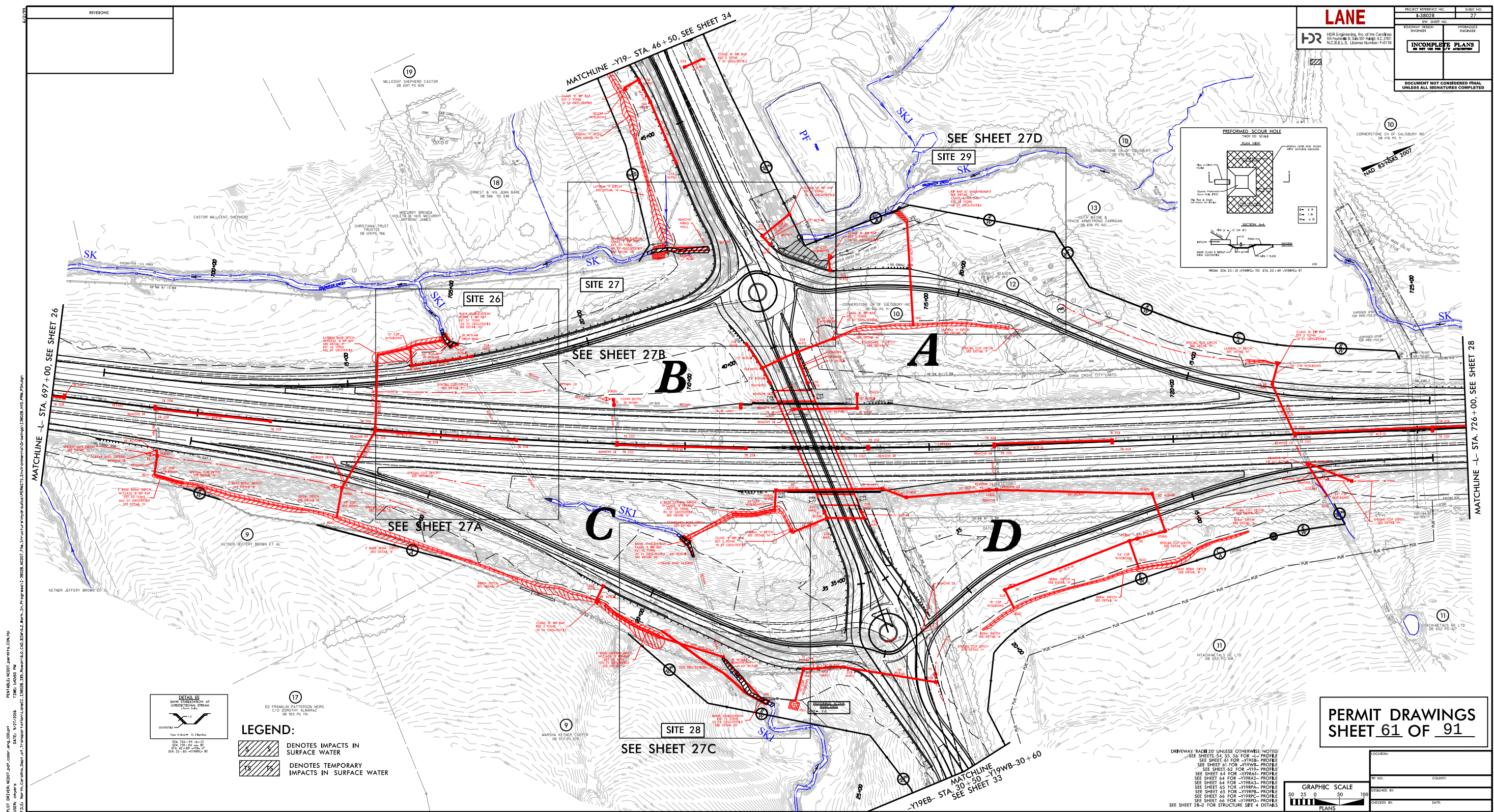
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWINGS
SHEET 60 OF 91

DRIVEWAY RADIUS UNLESS OTHERWISE NOTED
SEE SHEETS 54, 55, 56 FOR -L- PROFILE
SEE SHEET 61 FOR -Y19WB- PROFILE
SEE SHEET 62 FOR -Y19- PROFILE
SEE SHEET 64 FOR -Y19WB- PROFILE
SEE SHEET 64 FOR -Y19WB- PROFILE
SEE SHEET 65 FOR -Y19WB- PROFILE
SEE SHEET 65 FOR -Y19WB- PROFILE
SEE SHEET 66 FOR -Y19WB- PROFILE
SEE SHEET 66 FOR -Y19WB- PROFILE

GRAPHIC SCALE
0 25 50 100
PLANS

LOCATION:
TP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:



PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
USER: cmeyers
FILE: North_Carolina_Dept_of_Transportation\LaneCC.I3802B.I85.Rowan\6.0.CAD.BIM\6.2.Work_In_Progress\1-3802B.NCDOT.File_Structure\Hydraulics\PERMITS\Environmental\Drawings\I3802B_HYD_PRM_PSH.dgn

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REVISIONS

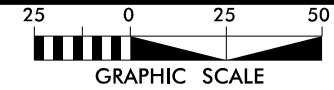
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

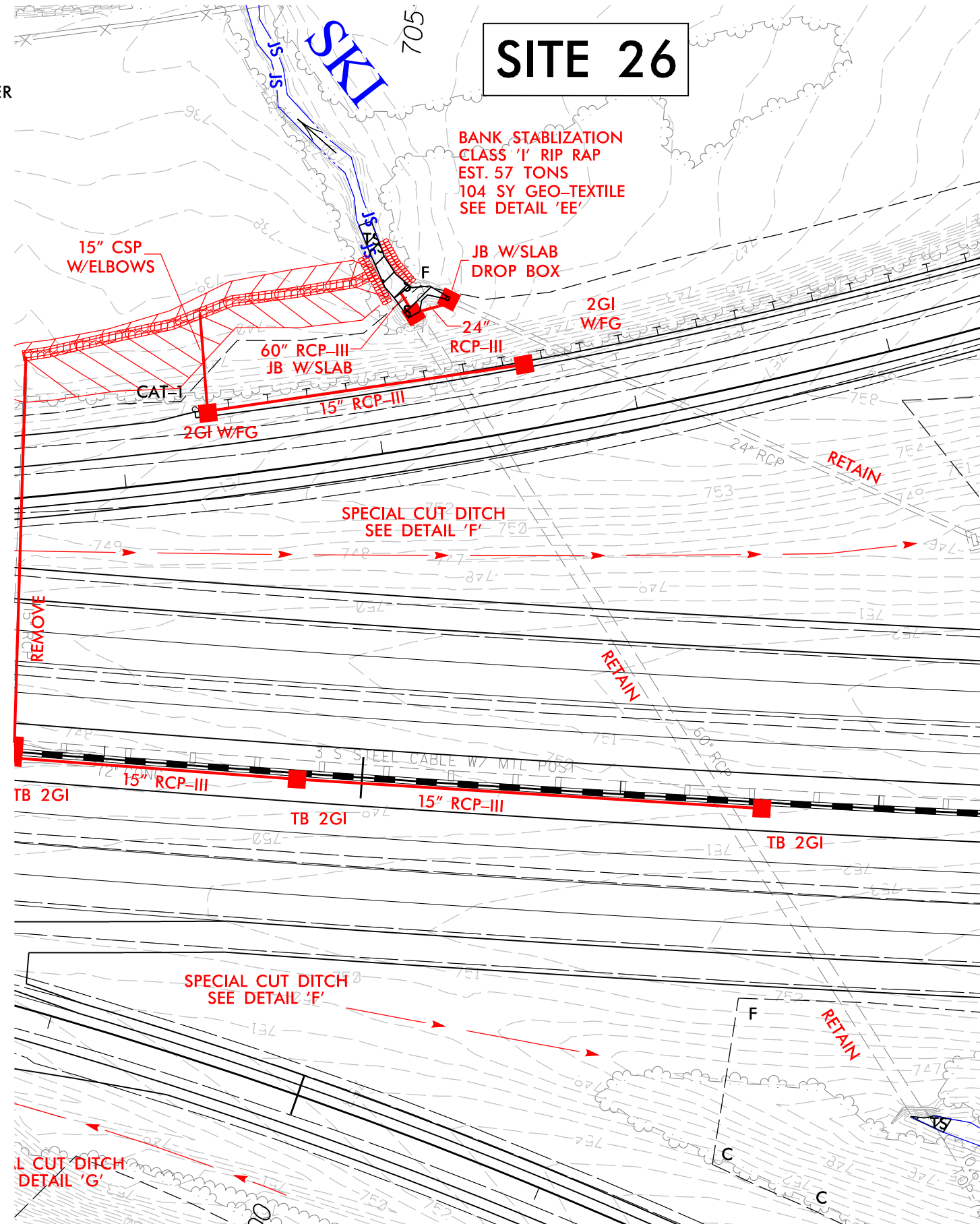
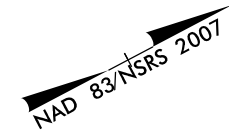


LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		27A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

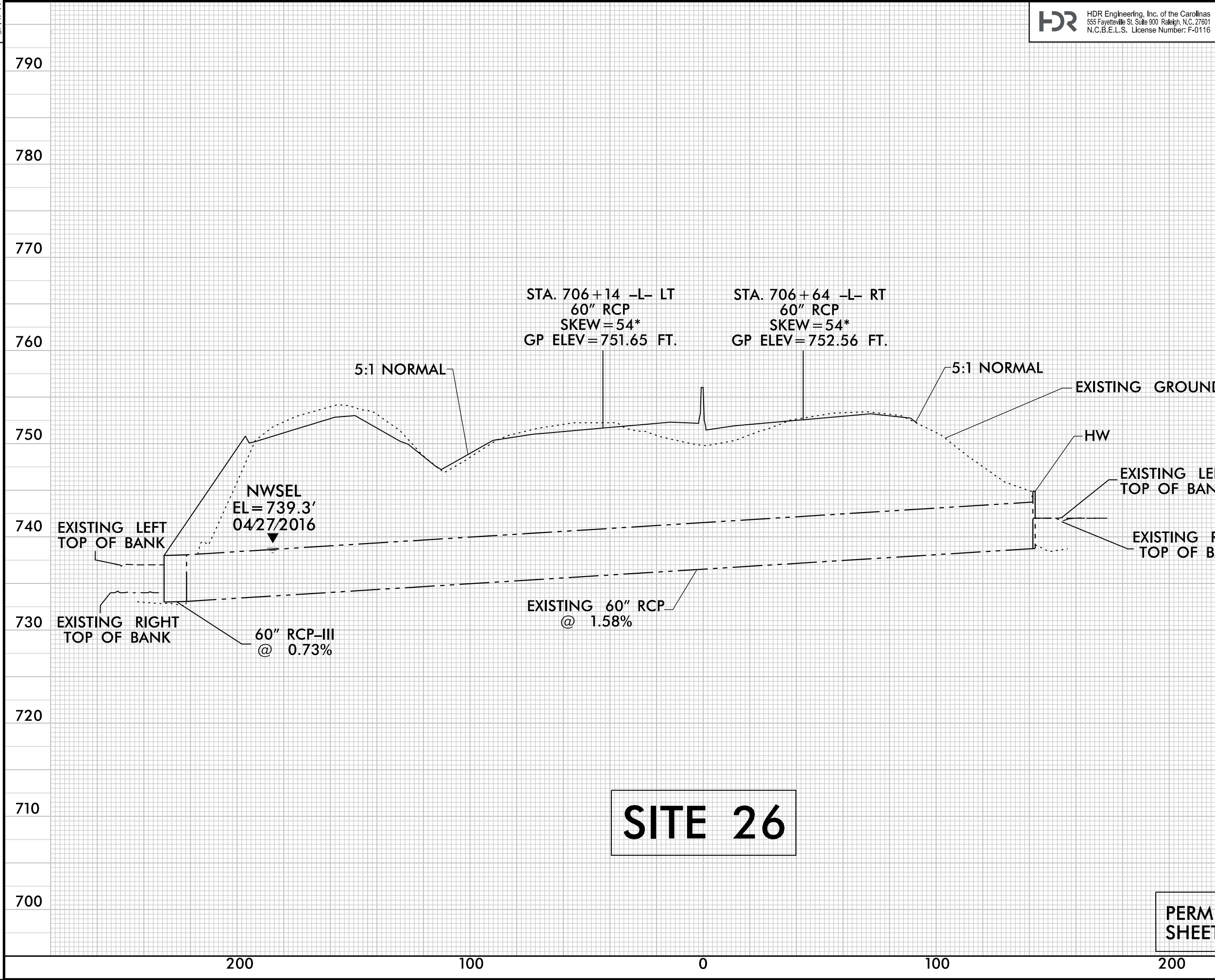


PERMIT DRAWINGS
SHEET 62 OF 91

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FILE: I3802B-HYD-PRM.PSH.dgn TIME: 4:29:28 PM

REVISIONS

5/14/99



	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	PROJECT REFERENCE NO.		SHEET NO.	
		I-3802B			
		ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SITE 26

PERMIT DRAWINGS
SHEET 63 OF 91

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
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DATE: 9/27/2016

REVISIONS

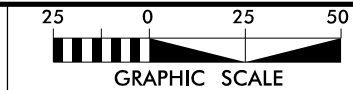
LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



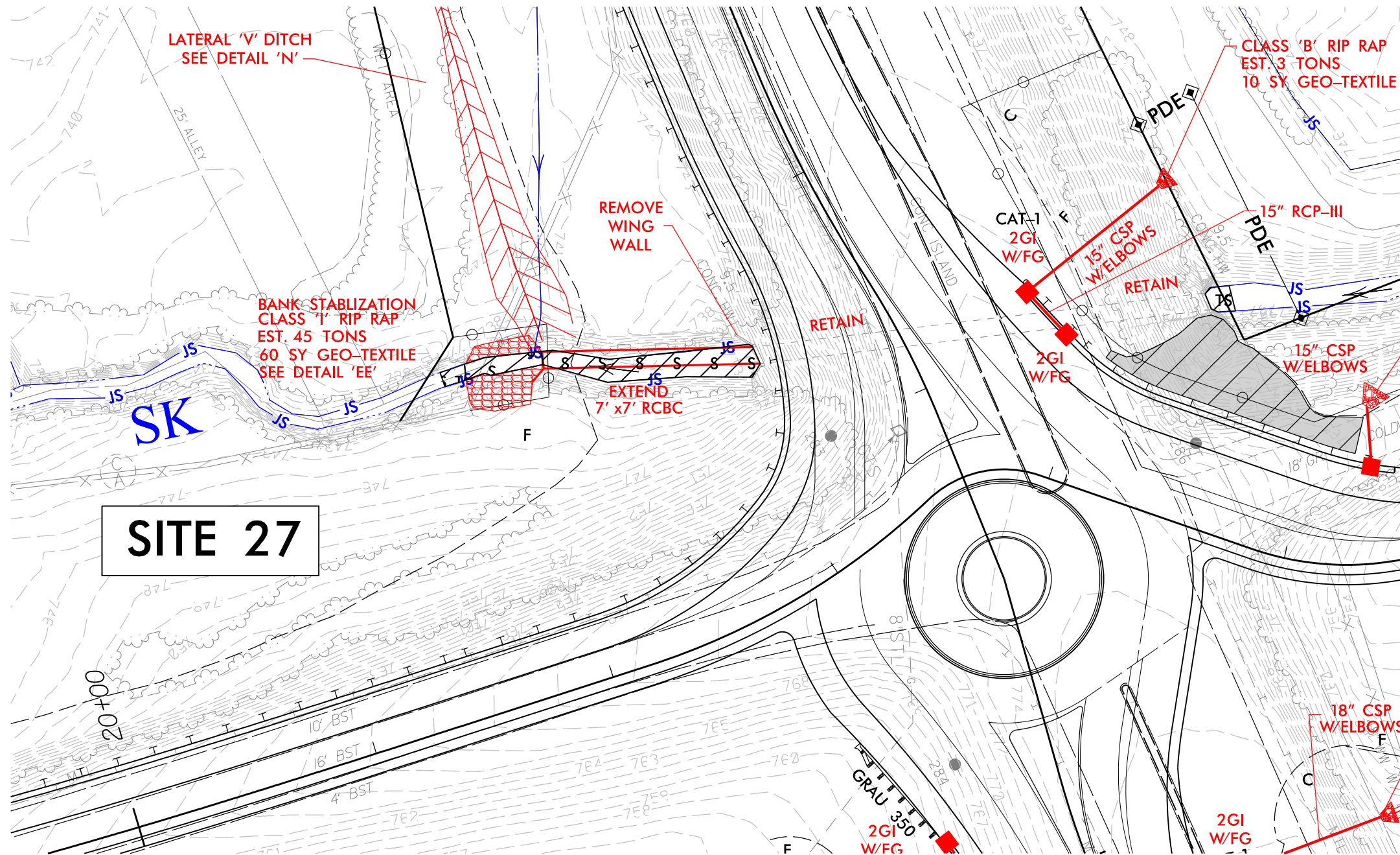
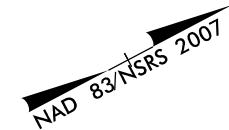
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		27B	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



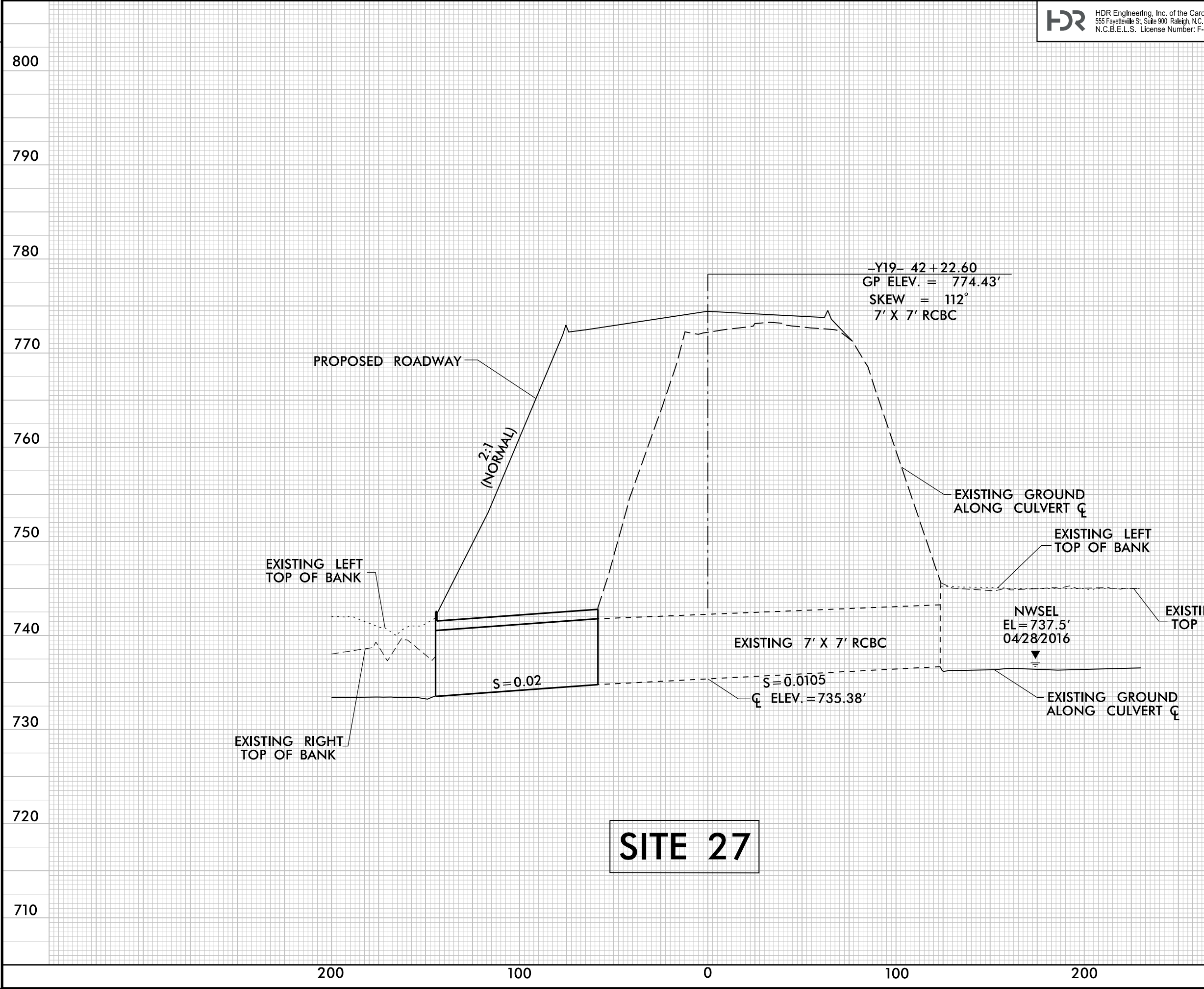


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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



LEGEND:



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

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PROJECT REFERENCE NO.

I-3802B

SHEET NO.

27C

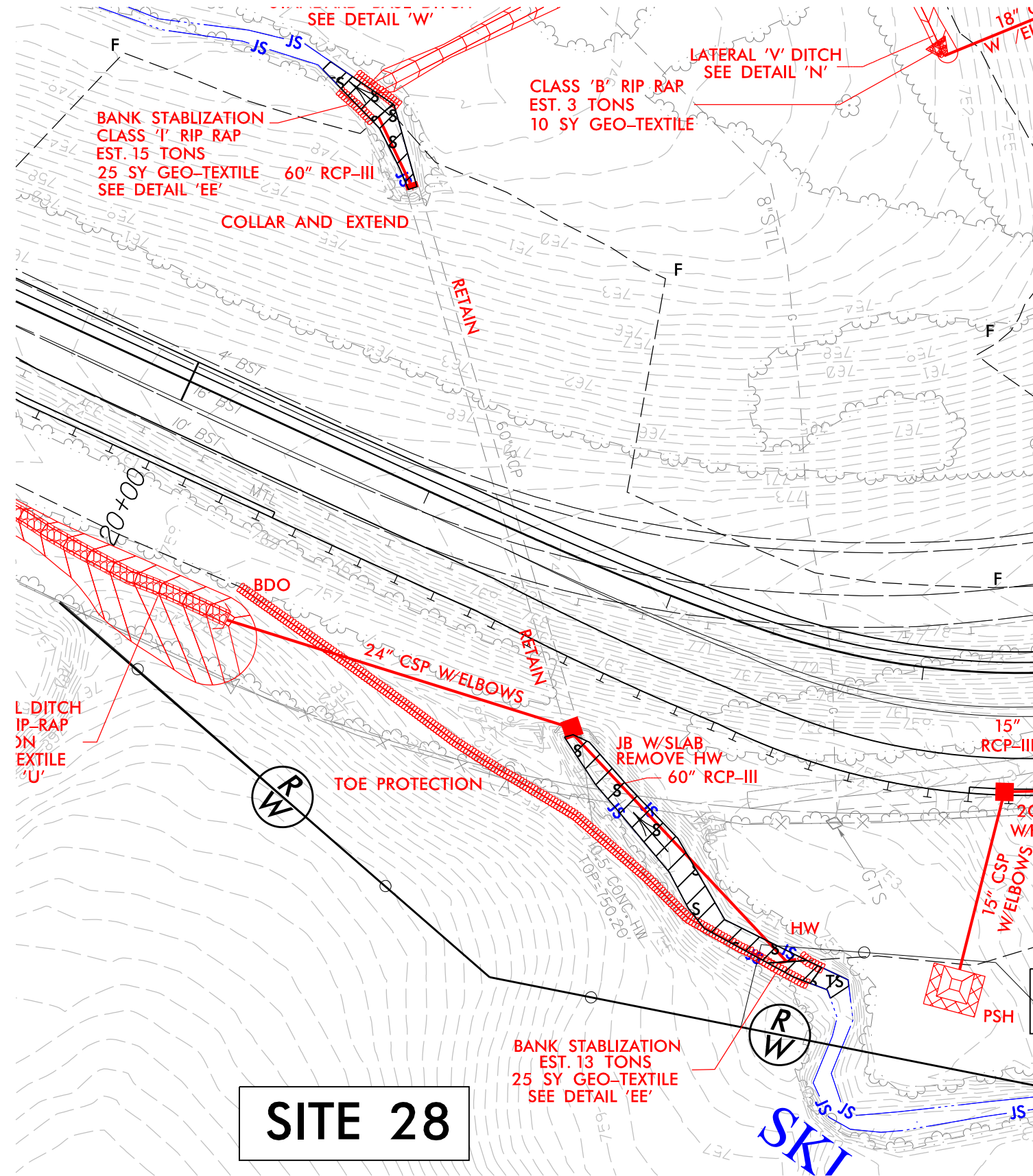
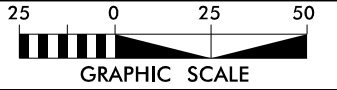
R/W SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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



NAD 83/NSRS 2007

SITE 28

PERMIT DRAWINGS
SHEET 66 OF 91

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REVISIONS

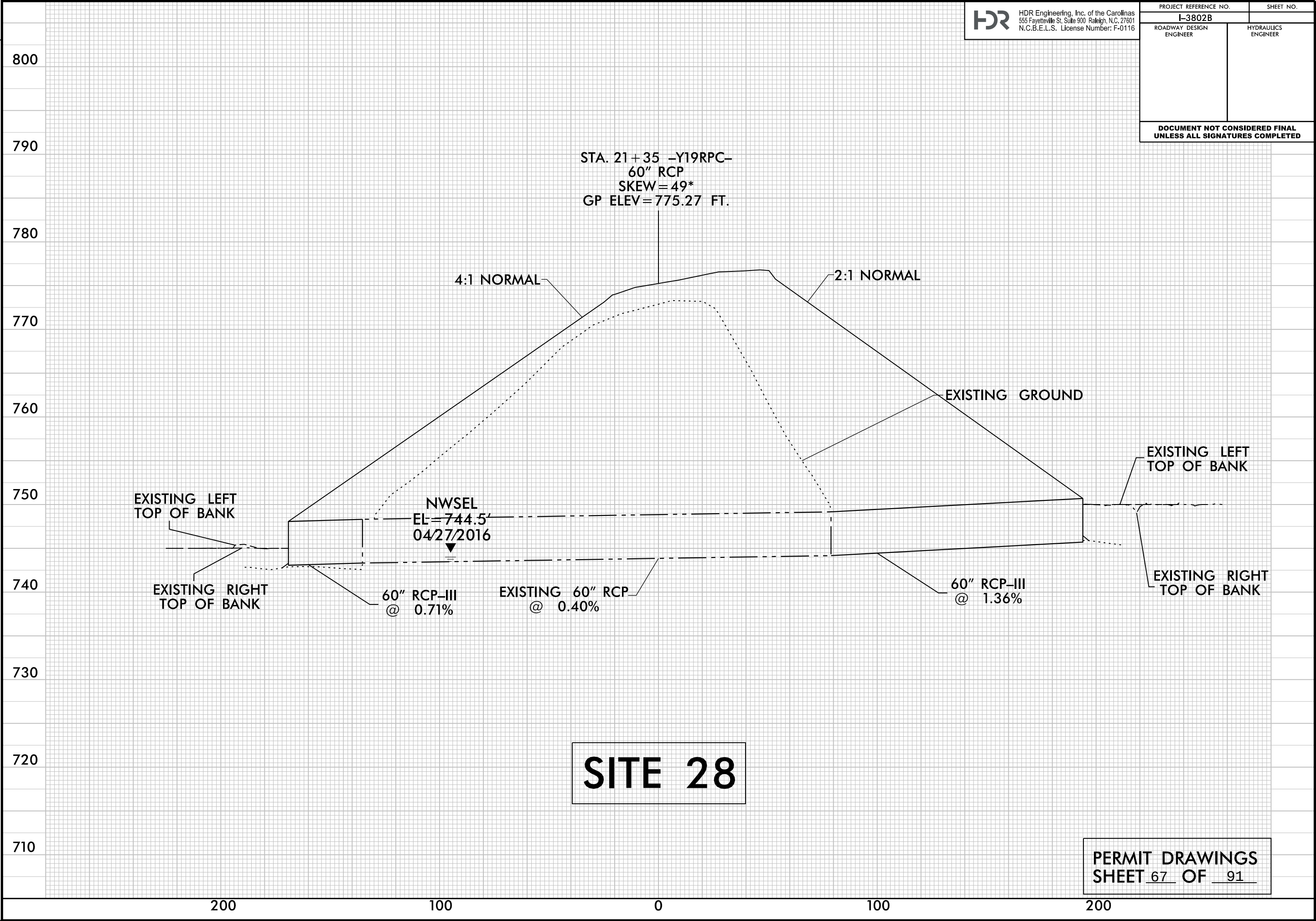
5/14/99



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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

SK

RIP RAP AT EMBANKMENT
SEE DETAIL 'T'
CLASS 'I' RIP RAP
EST. 12 TONS
16 SY GEO-TEXTILE

CLASS 'B' RIP RAP
EST. 3 TONS
10 SY GEO-TEXTILE

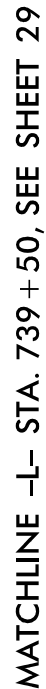
CLASS 'B' RIP RAP
EST. 3 TONS
10 SY GEO-TEXTILE

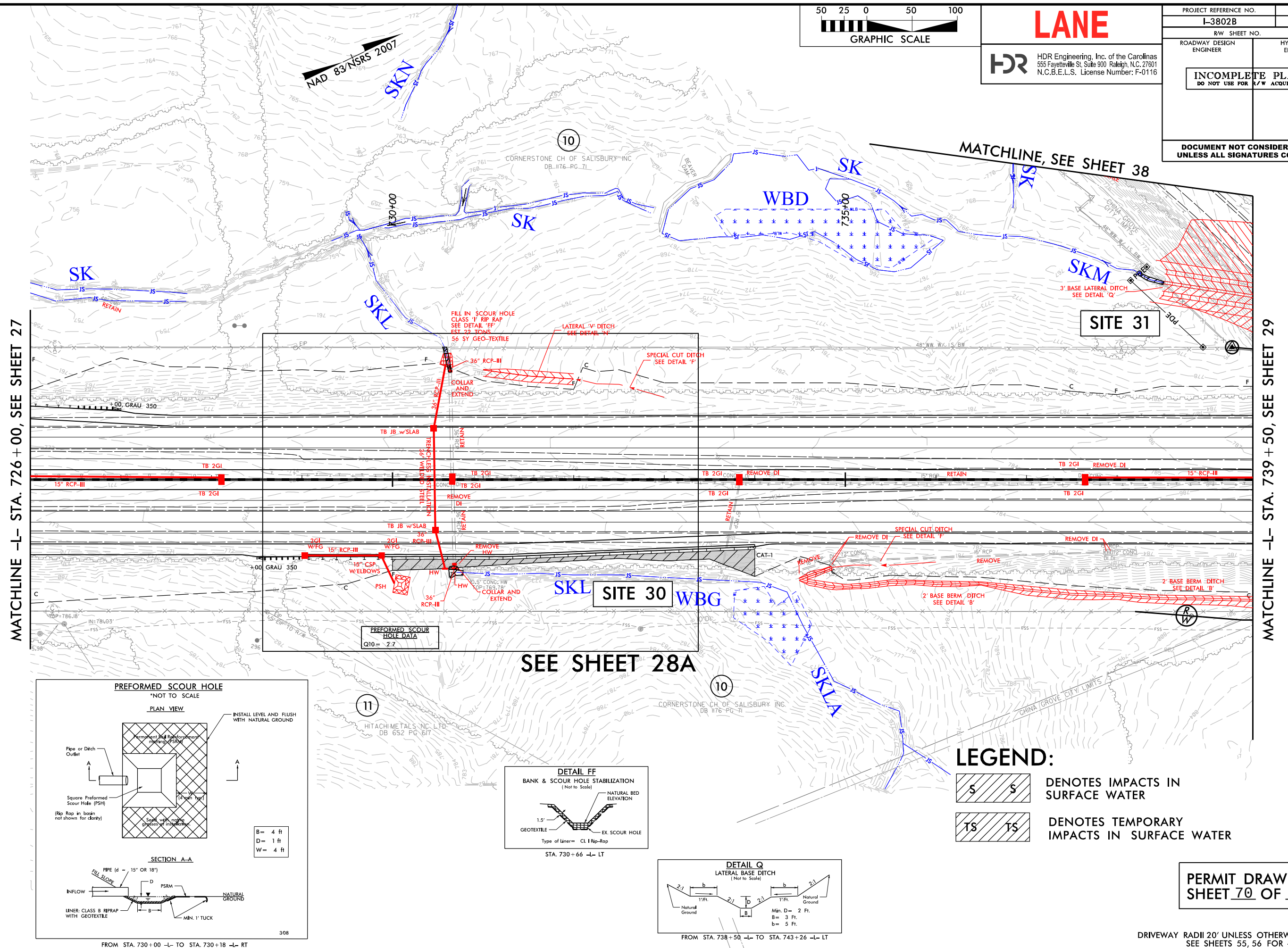
LATERAL 'V' DITCH
SEE DETAIL 'N'

[illegible]

NAD 83/NSRS 2007

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DATE: 9/27/2016
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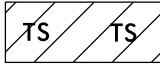


REVISIONS

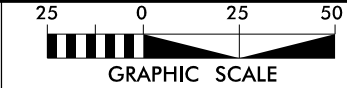
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DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

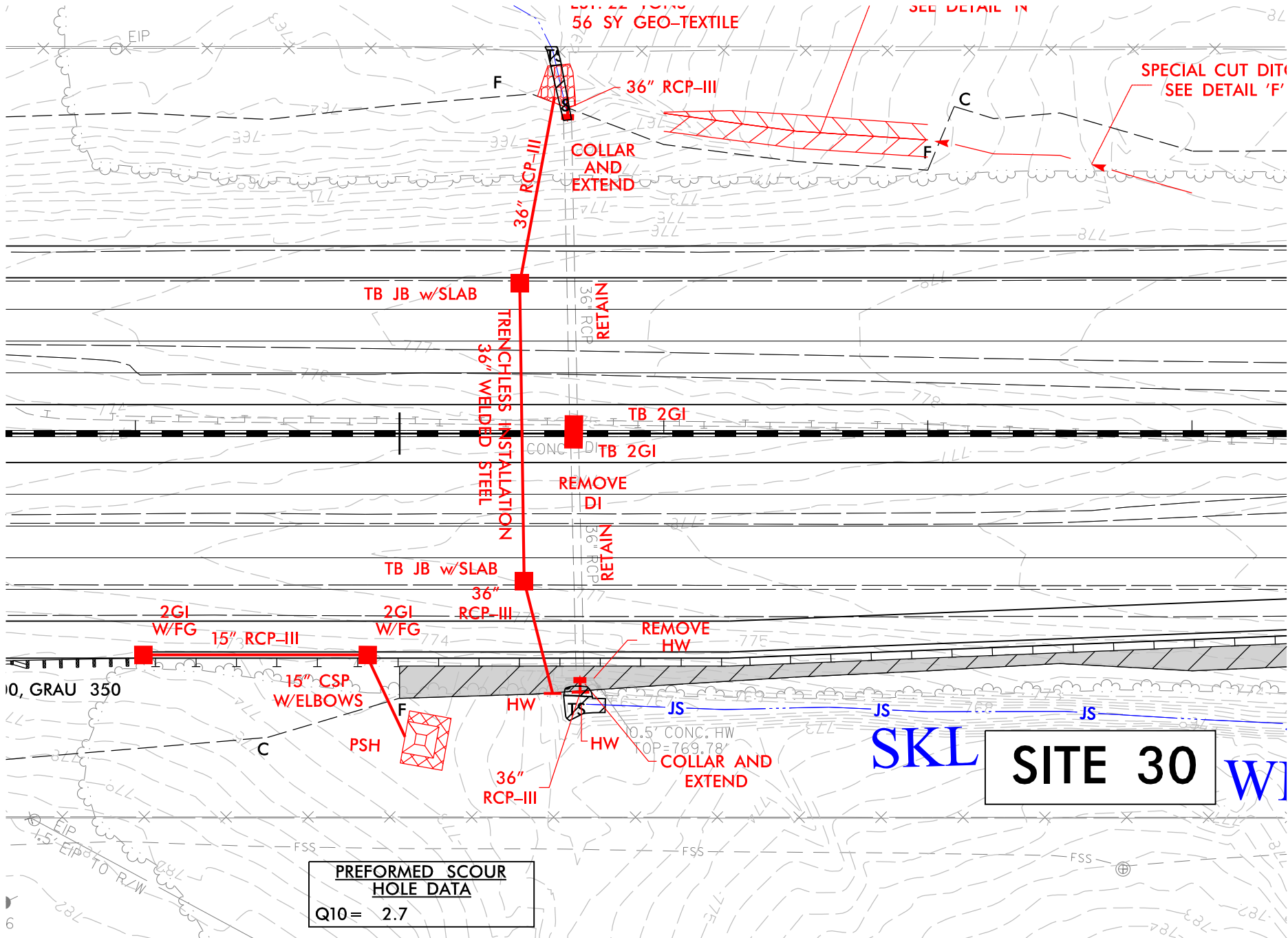


LANE



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N.C.B.E.L.S. License Number: F-0116

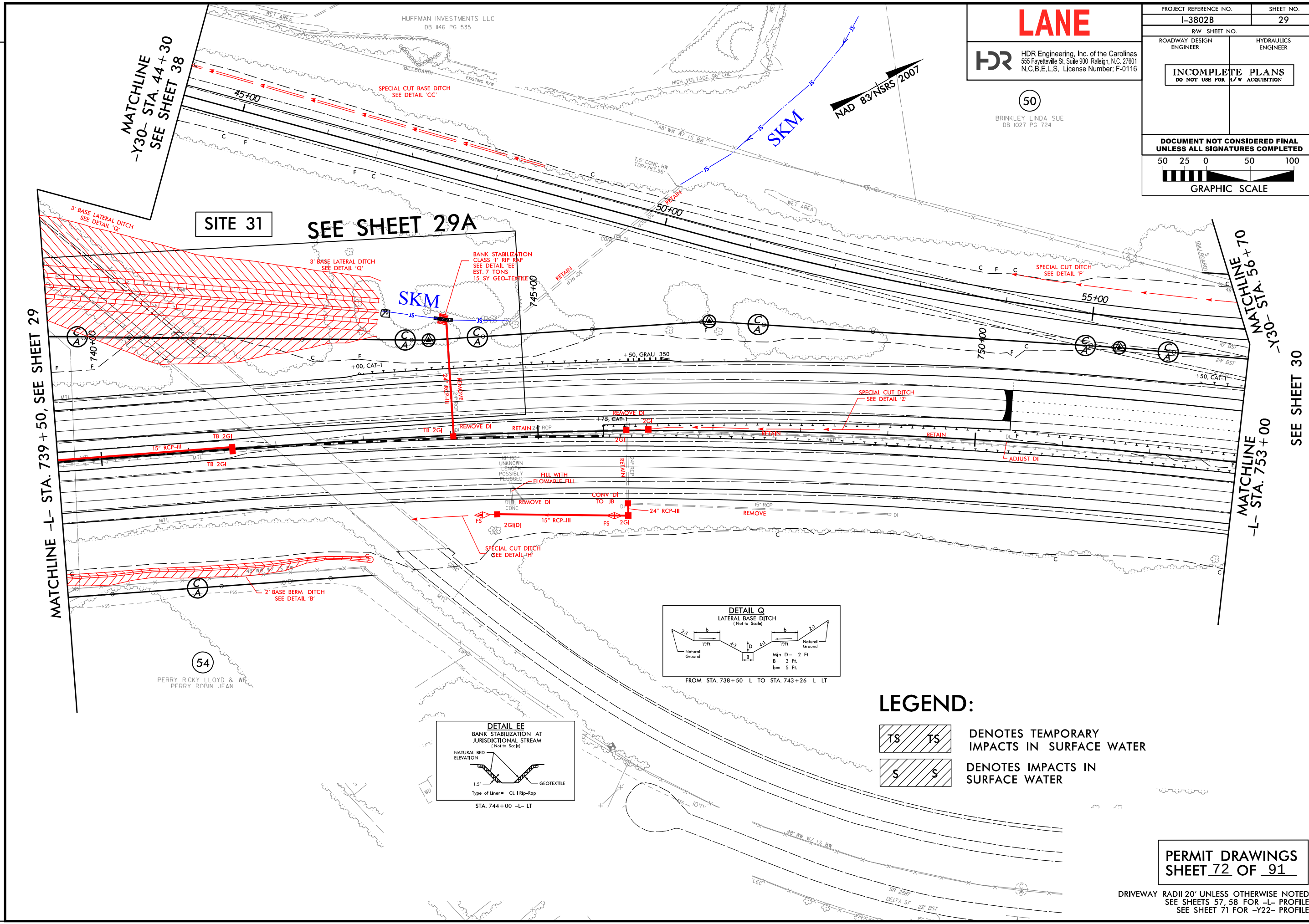
PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		28A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



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DATE: 9/27/2016

REVISIONS



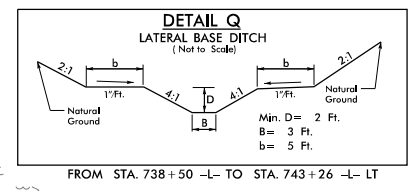
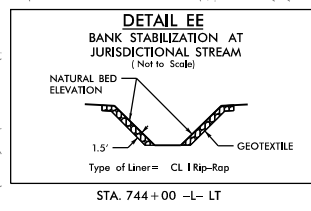
LANE

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N.C.B.E.L.S. License Number: F-0116

50
BRINKLEY LINDA SUE
DB 1027 PG 724

PROJECT REFERENCE NO. I-3802B		SHEET NO. 29	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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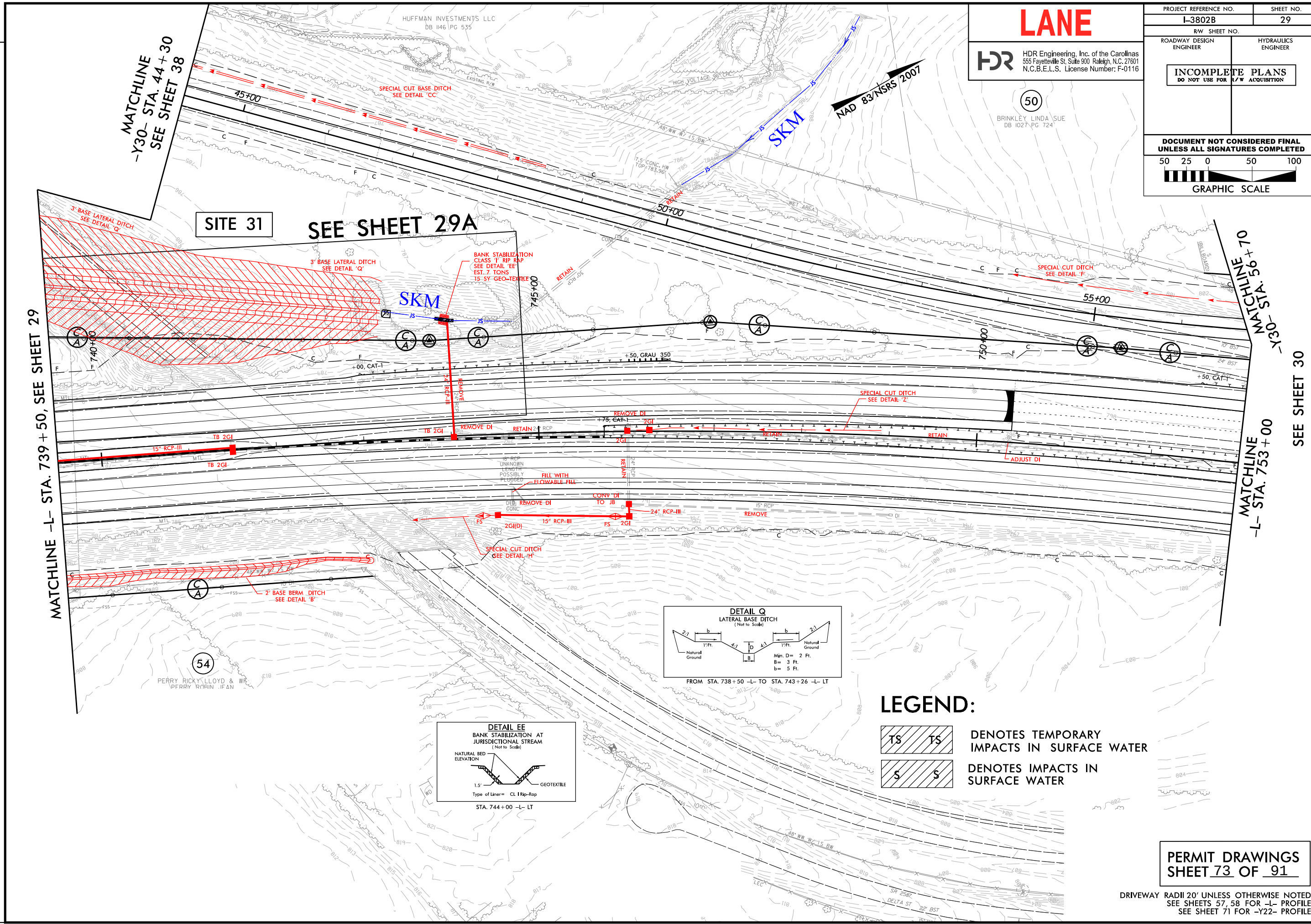
LEGEND:

		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
		DENOTES IMPACTS IN SURFACE WATER

PERMIT DRAWINGS
SHEET 72 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 57, 58 FOR -L- PROFILE
SEE SHEET 71 FOR -Y22- PROFILE

REVISIONS



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N.C.B.E.L.S. License Number: F-0116

50

BRINKLEY, LINDA SUE
DB 1027 PG 724

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		29	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
5025050100  GRAPHIC SCALE			

LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN
SURFACE WATER

PERMIT DRAWINGS
SHEET 73 OF 91

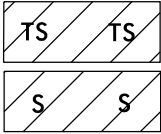
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 57, 58 FOR -L- PROFILE
SEE SHEET 71 FOR -Y22- PROFILE

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DATE: 9/27/2016

REVISIONS

LEGEND:



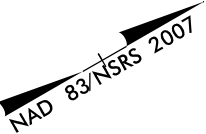
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN
SURFACE WATER

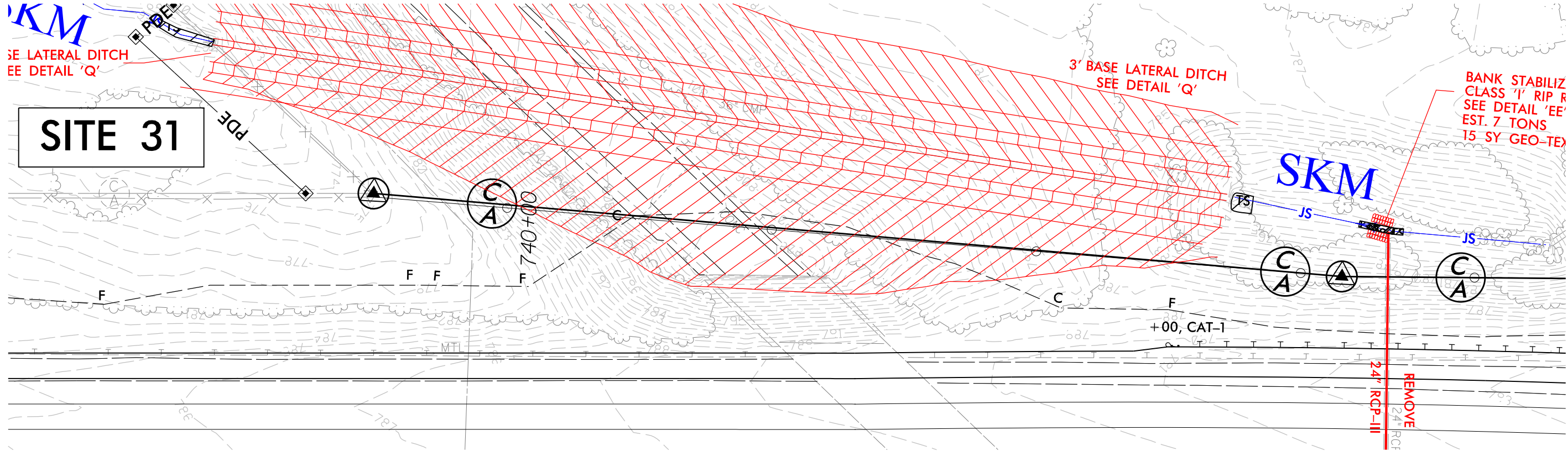
LANE



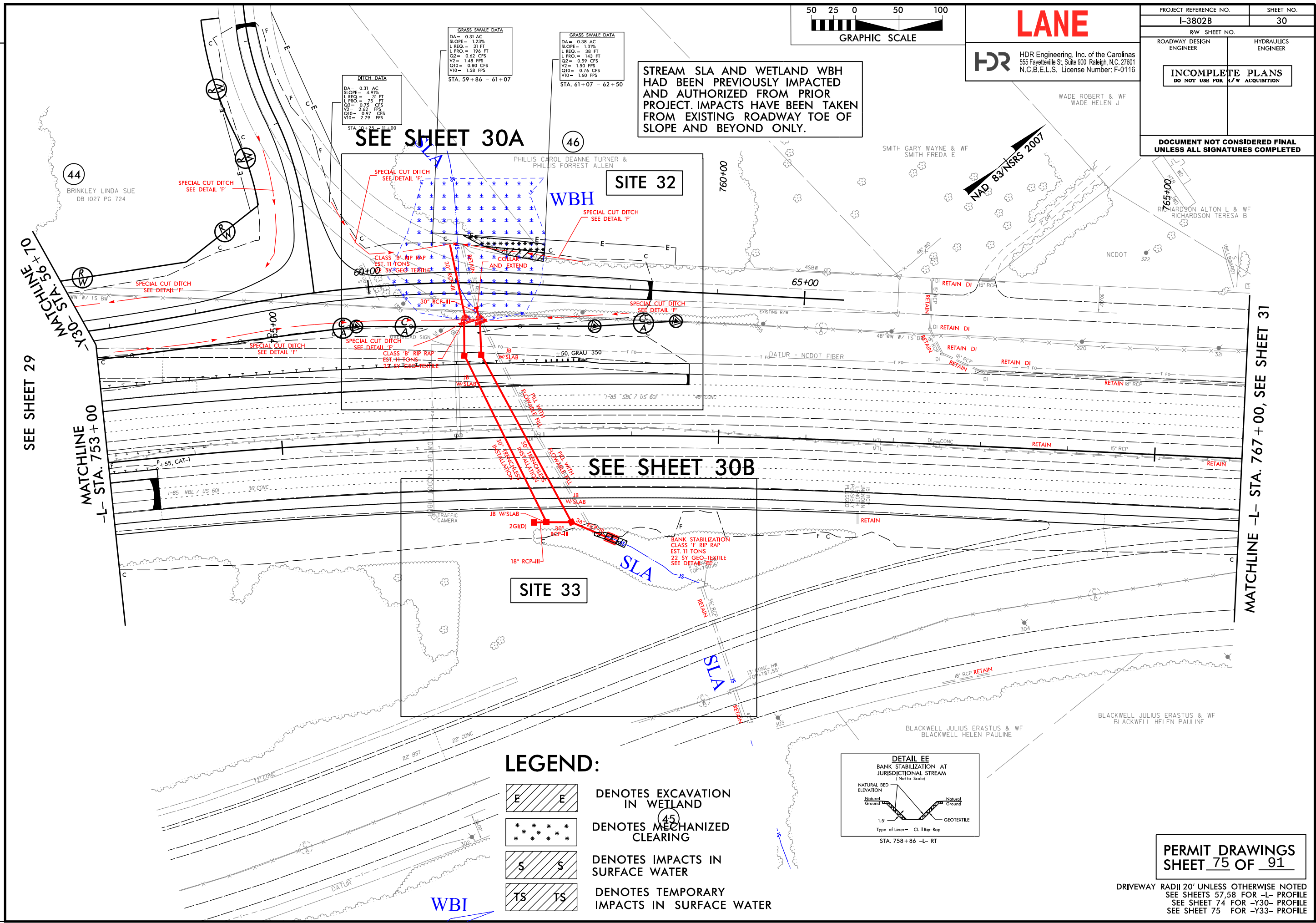
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

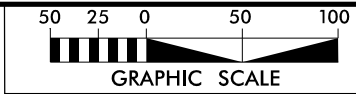


PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		29A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
2512.502550  GRAPHIC SCALE			



REVISIONS





LANE

HCR

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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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

STREAM SLA AND WETLAND WBH HAD BEEN PREVIOUSLY IMPACTED AND AUTHORIZED FROM PRIOR PROJECT. IMPACTS HAVE BEEN TAKEN FROM EXISTING ROADWAY TOE OF SLOPE AND BEYOND ONLY.

SEE SHEET 30A

SITE 32

SEE SHEET 30B

SITE 33

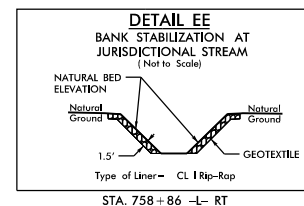
LEGEND:

DENOTES EXCAVATION
IN WETLAND

(45)
DENOTES MECHANIZED
CLEARING

DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



PERMIT DRAWINGS
SHEET 76 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 57,58 FOR -L- PROFILE
SEE SHEET 74 FOR -Y30- PROFILE
SEE SHEET 75 FOR -Y33- PROFILE

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
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REVISIONS

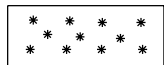
LEGEND:



DENOTES FILL IN
WETLAND



DENOTES EXCAVATION
IN WETLAND



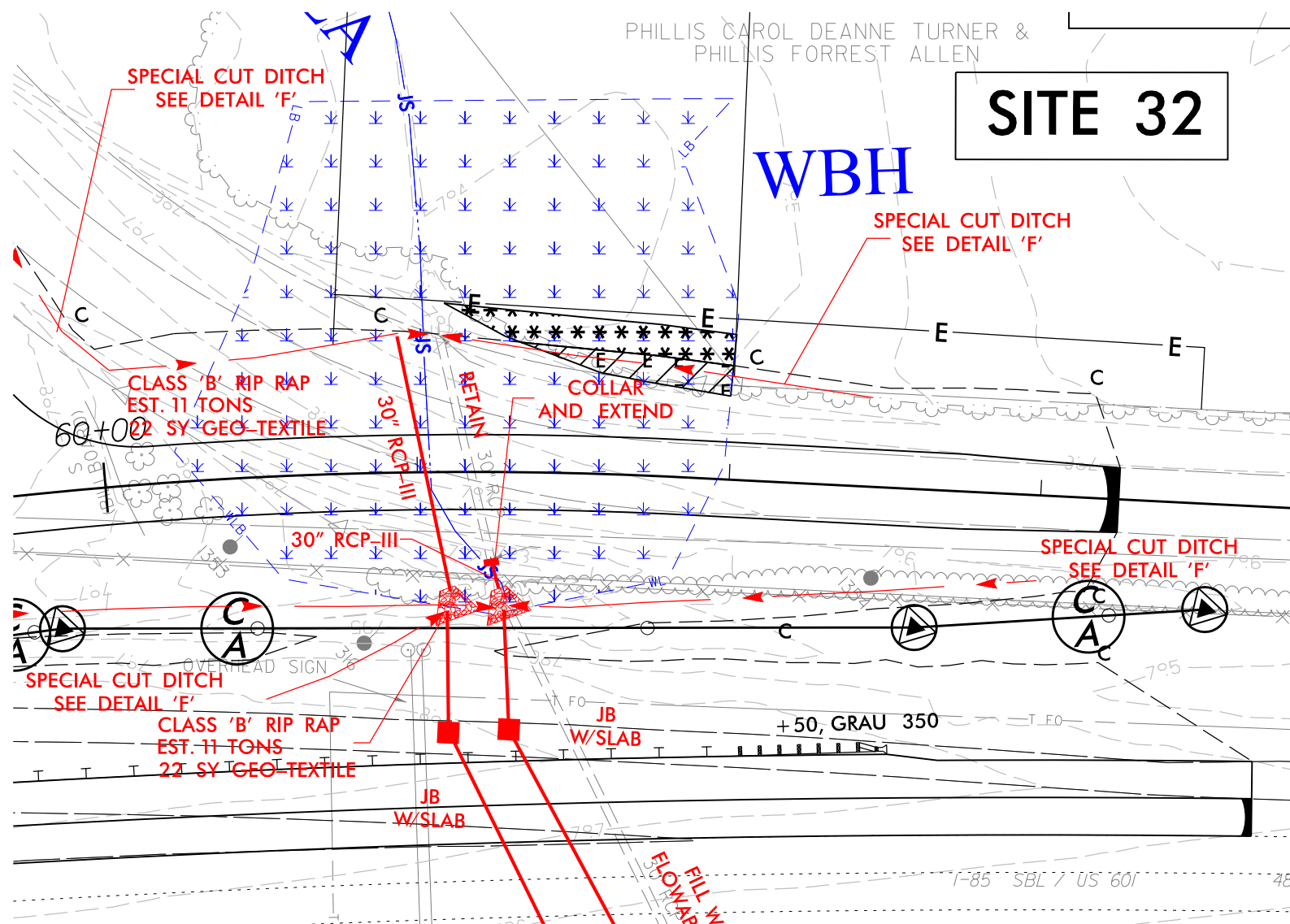
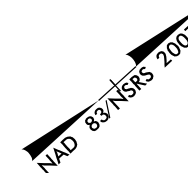
DENOTES MECHANIZED
CLEARING

LANE



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555 Fayetteville St, Suite 900, Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		30A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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GRAPHIC SCALE			



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PENTABLE: NCDOT_permits.CON.tbl
TIME: 1:43:41 PM

REVISIONS

LEGEND:

S

S

DENOTES IMPACTS IN
SURFACE WATER

TS

TS

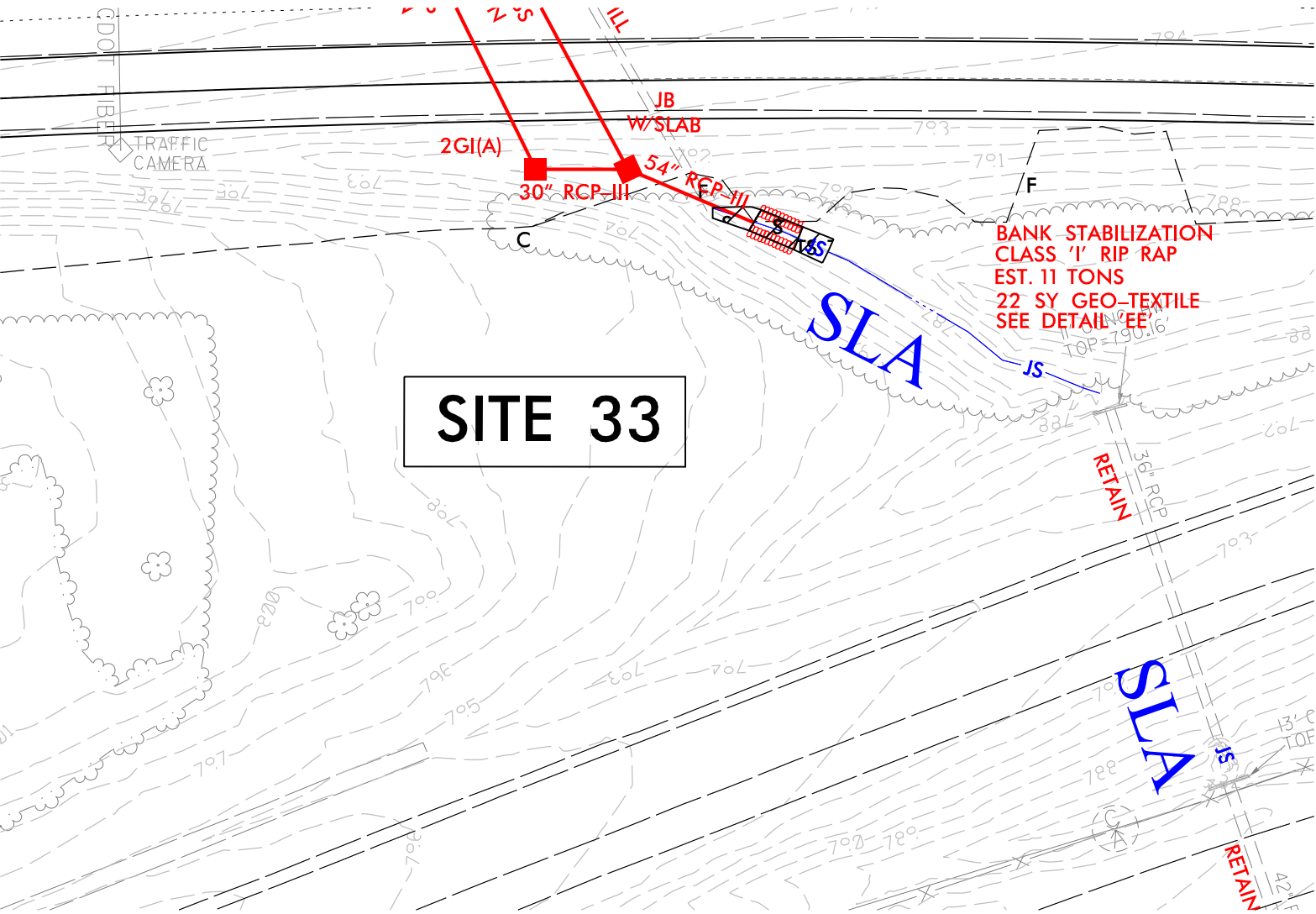
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

LANE

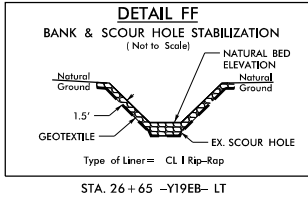
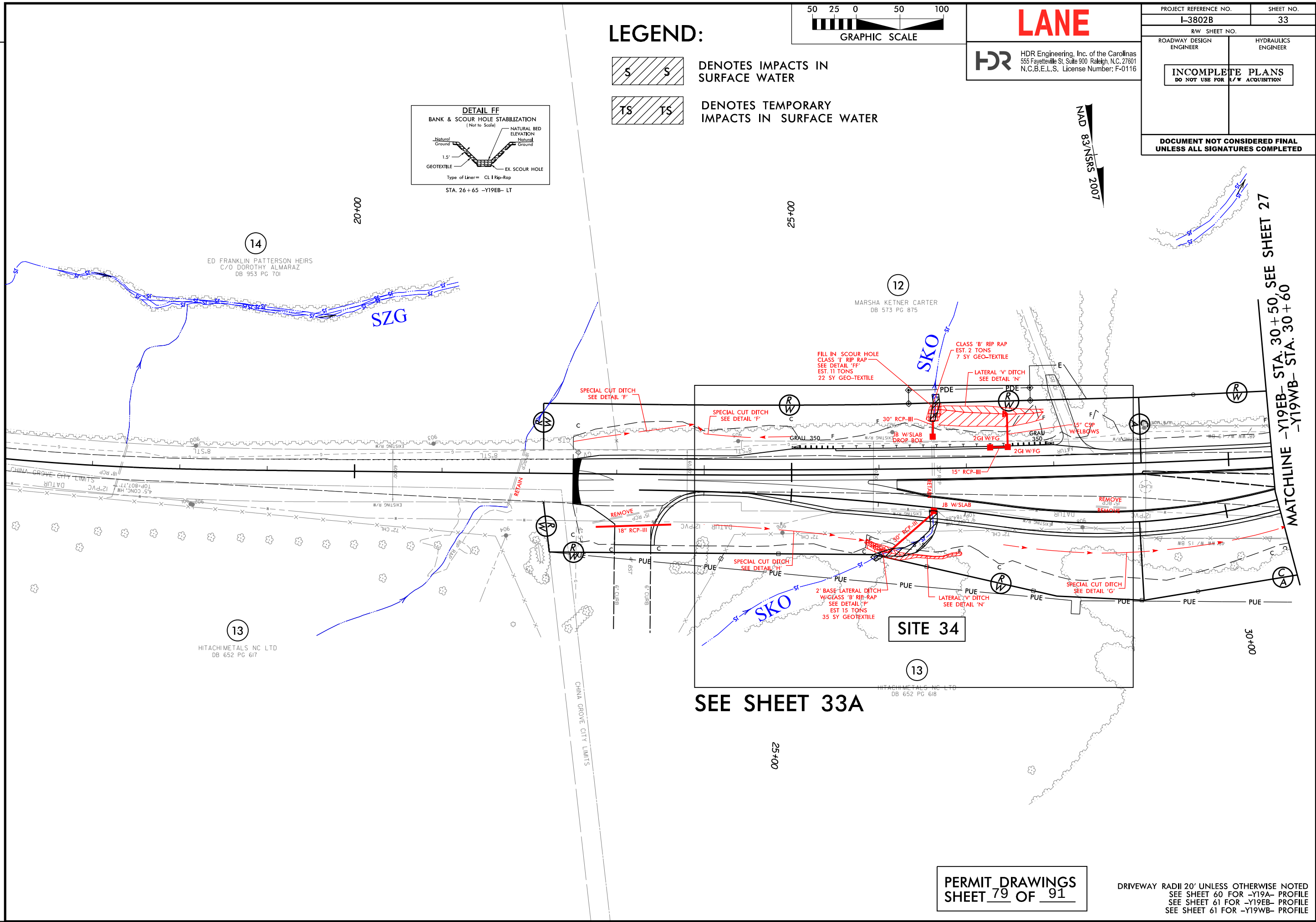
HDR

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	30B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
25 12.5 0 25 50 GRAPHIC SCALE	



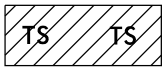
REVISIONS



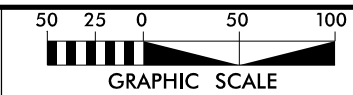
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DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

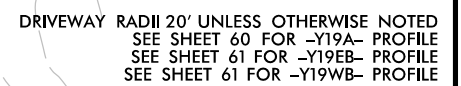


LANE



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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		33	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



REVISIONS

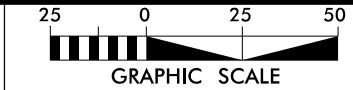
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DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

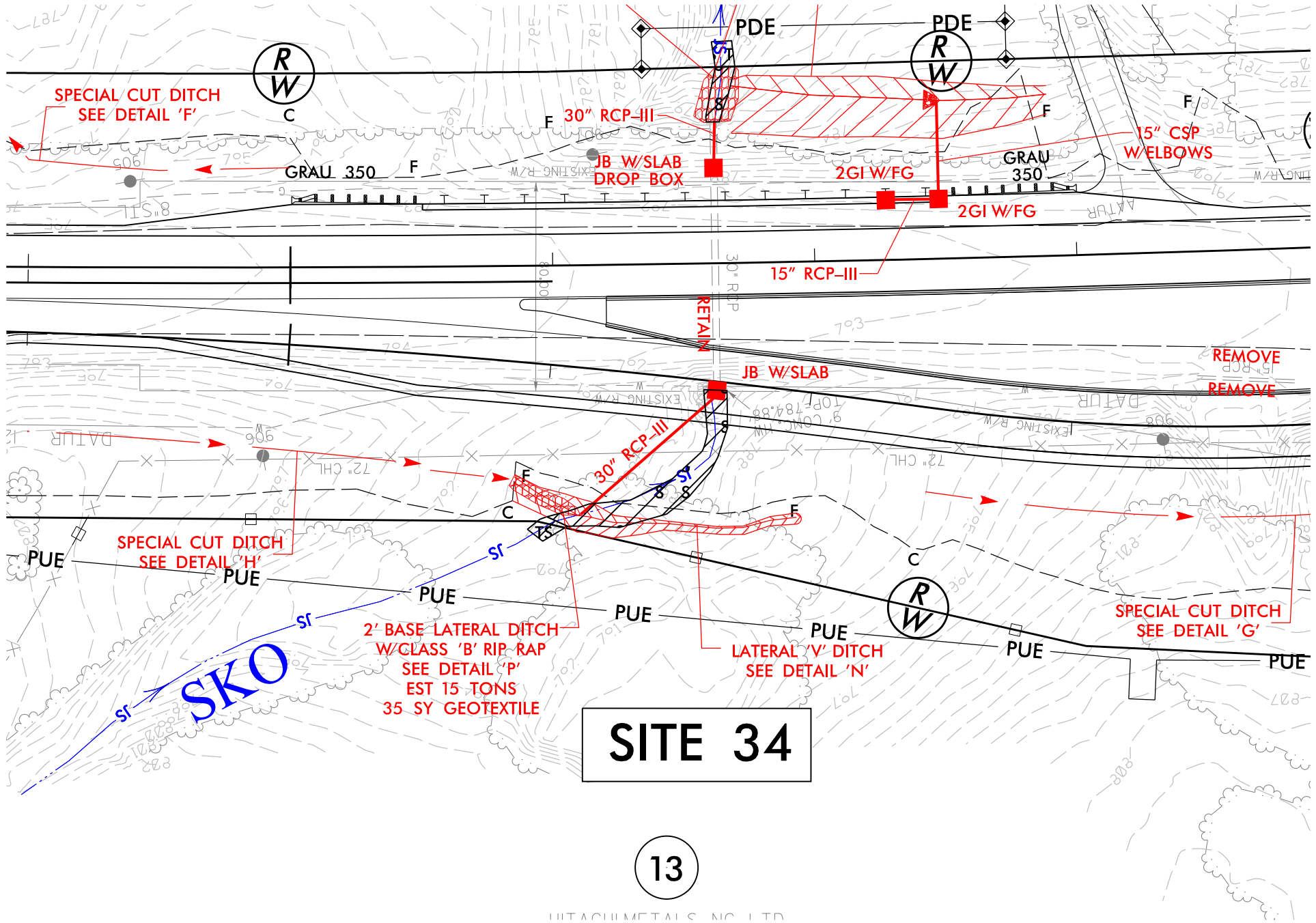


LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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

NAD 83/NSRS 2007



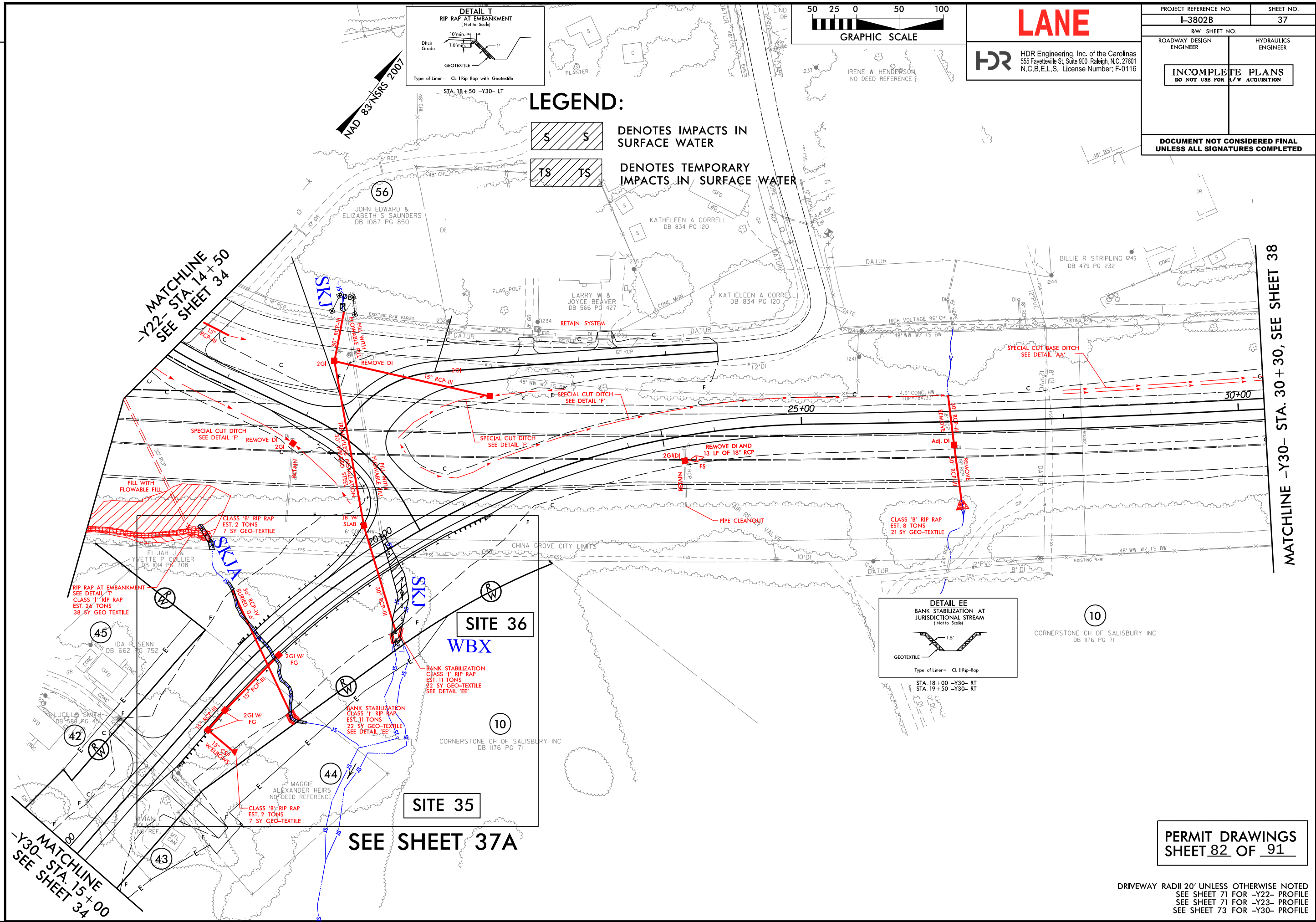
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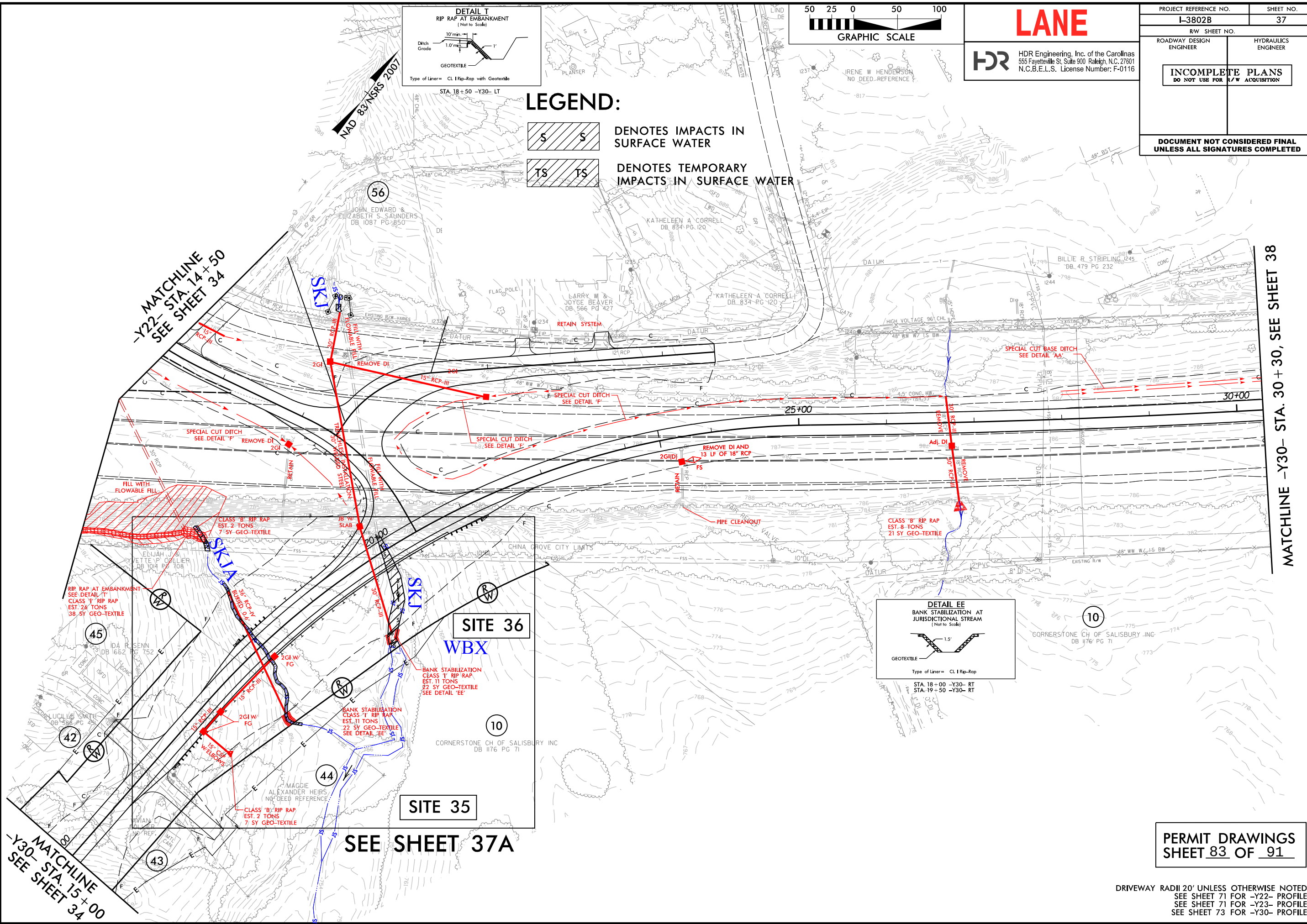
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REVISIONS



REVISIONS



MATCHLINE -Y30- STA. 30+30, SEE SHEET 38

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REVISIONS

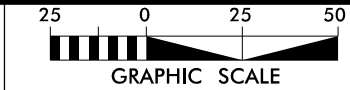
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DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



LANE



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.

I-3802B

SHEET NO.

37A

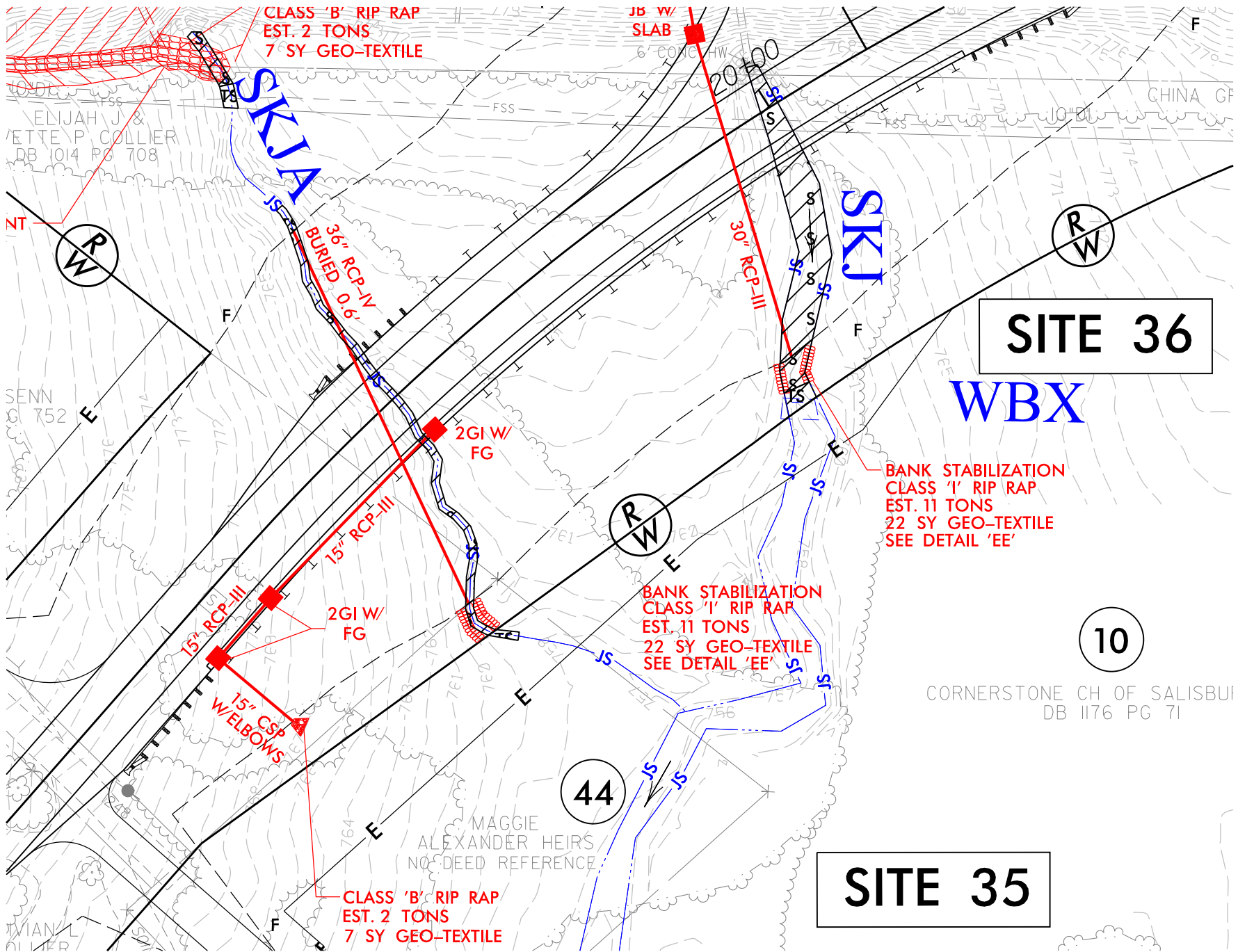
R/W SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

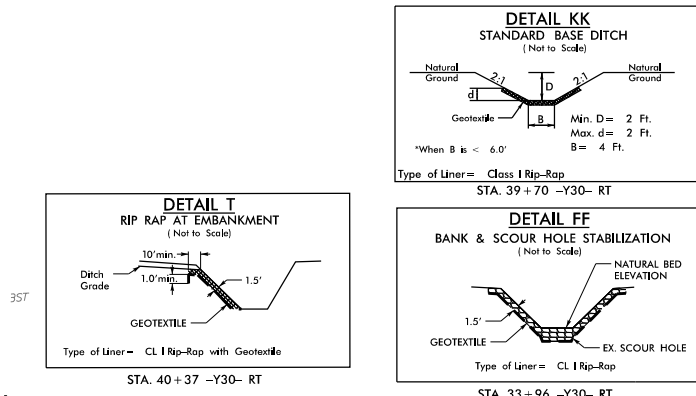
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWINGS
SHEET 84 OF 91

REVISIONS

MATCHLINE -Y30- STA. 30 + 30, SEE SHEET 37



SALVAGE AUTO AUCTIONS

BILLIE R STRIPLING
DB 479 PG 232

10 A/G 500 GAL DIESEL

SOIL & GR

HIGH VOLTAGE 96" CHL

SPECIAL CUT BASE DITCH
SEE DETAIL 'CC'

35+00

SITE 37

10

CORNERSTONE CH OF SALISBURY INC
DB 1176 PG 71

SCOUR HOLE STABILIZATION
SEE DETAIL 'FF'
EST. 15 TONS
20 SY GEO-TEXTILE

SKIN

SEE SHEET 38B

STANDARD BASE DITCH
W/CLASS 'I' RIP RAP
EST. 120 TONS
120 SY GEOTEXTILE
SEE DETAIL 'KK'

SITE 38

MATCHLINE, SEE SHEET 28

LANE

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N.C.B.E.L.S. License Number: F-0116

NAD 83/N83 2007

LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN
SURFACE WATER

HUFFMAN INVESTMENTS LLC
DB 1146 PG 535

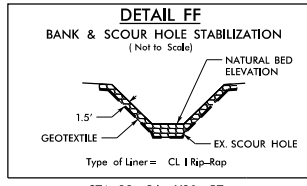
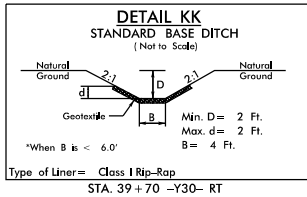
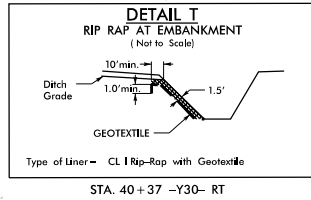
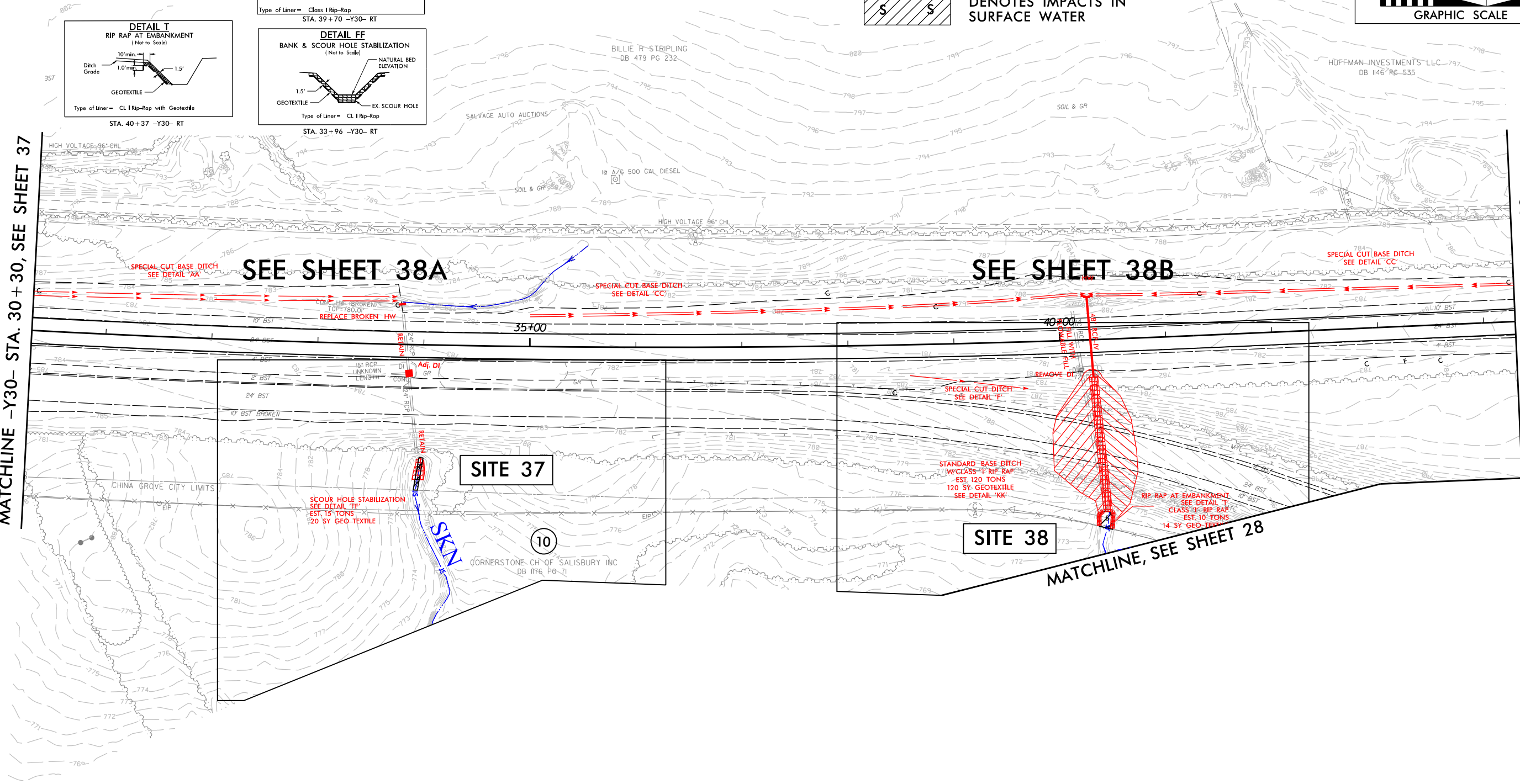
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I-3802B	38
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
50 25 0 50 100	GRAPHIC SCALE

PERMIT DRAWINGS
SHEET 85 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 73, 74 FOR -Y30- PROFILE

REVISIONS

MATCHLINE -Y30- STA. 30 + 30, SEE SHEET 37



LEGEND:



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN
SURFACE WATER

LANE



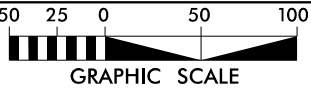
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. SHEET NO.
I-3802B 38

R/W SHEET NO.
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR A/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



GRAPHIC SCALE

MATCHLINE -Y30- STA. 44 + 30,
SEE SHEET 29

PERMIT DRAWINGS
SHEET 86 OF 91

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 73, 74 FOR -Y30- PROFILE

LANE

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N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

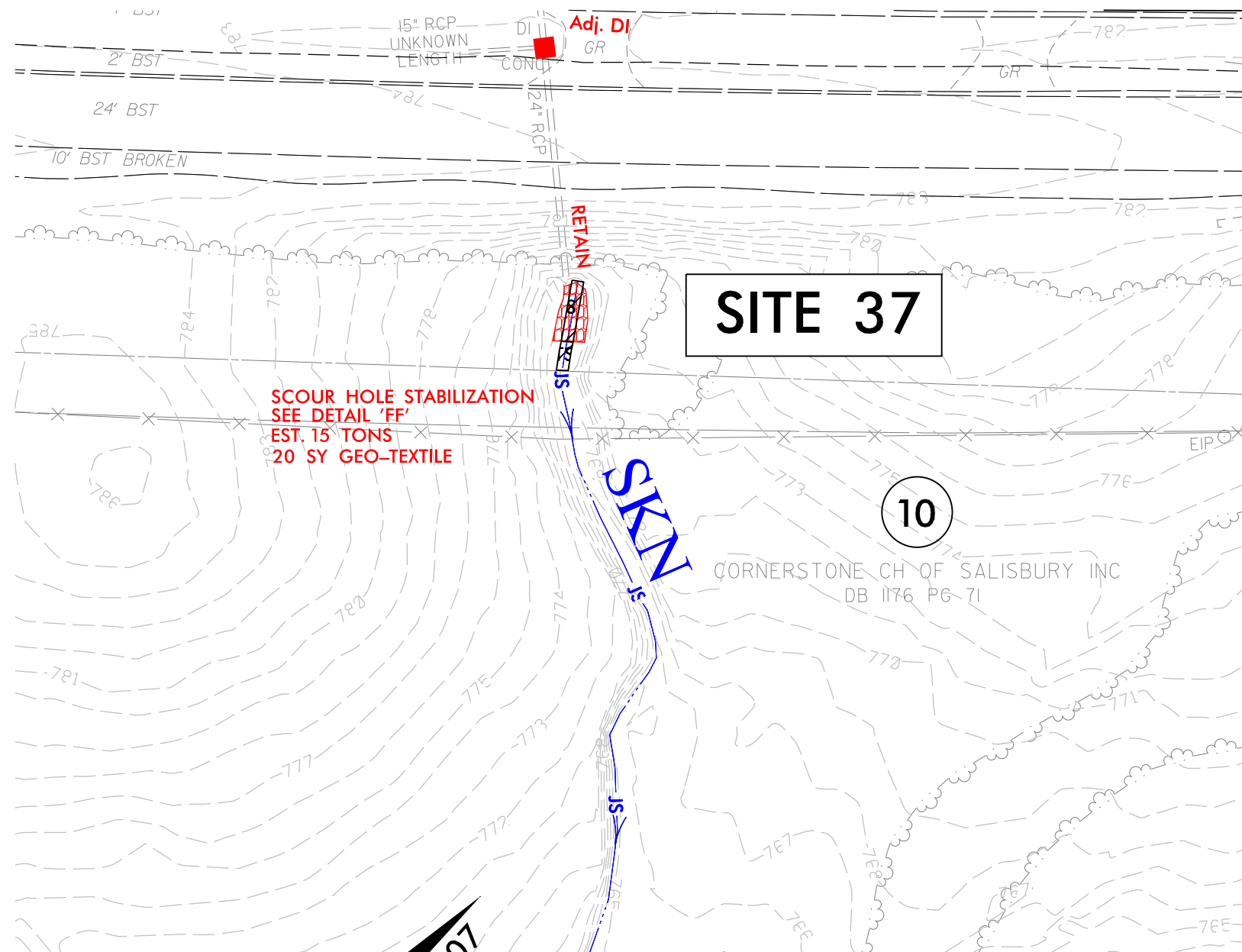
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I-3802B	38A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
25 12.5 0 25 50  GRAPHIC SCALE	

LEGEND:

Diagram of a rectangular domain with diagonal hatching. Two regions are labeled "TS".

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN
SURFACE WATER



PERMIT DRAWINGS
SHEET 87 OF 91

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DATE: 9/27/2016

REVISIONS

LANE



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

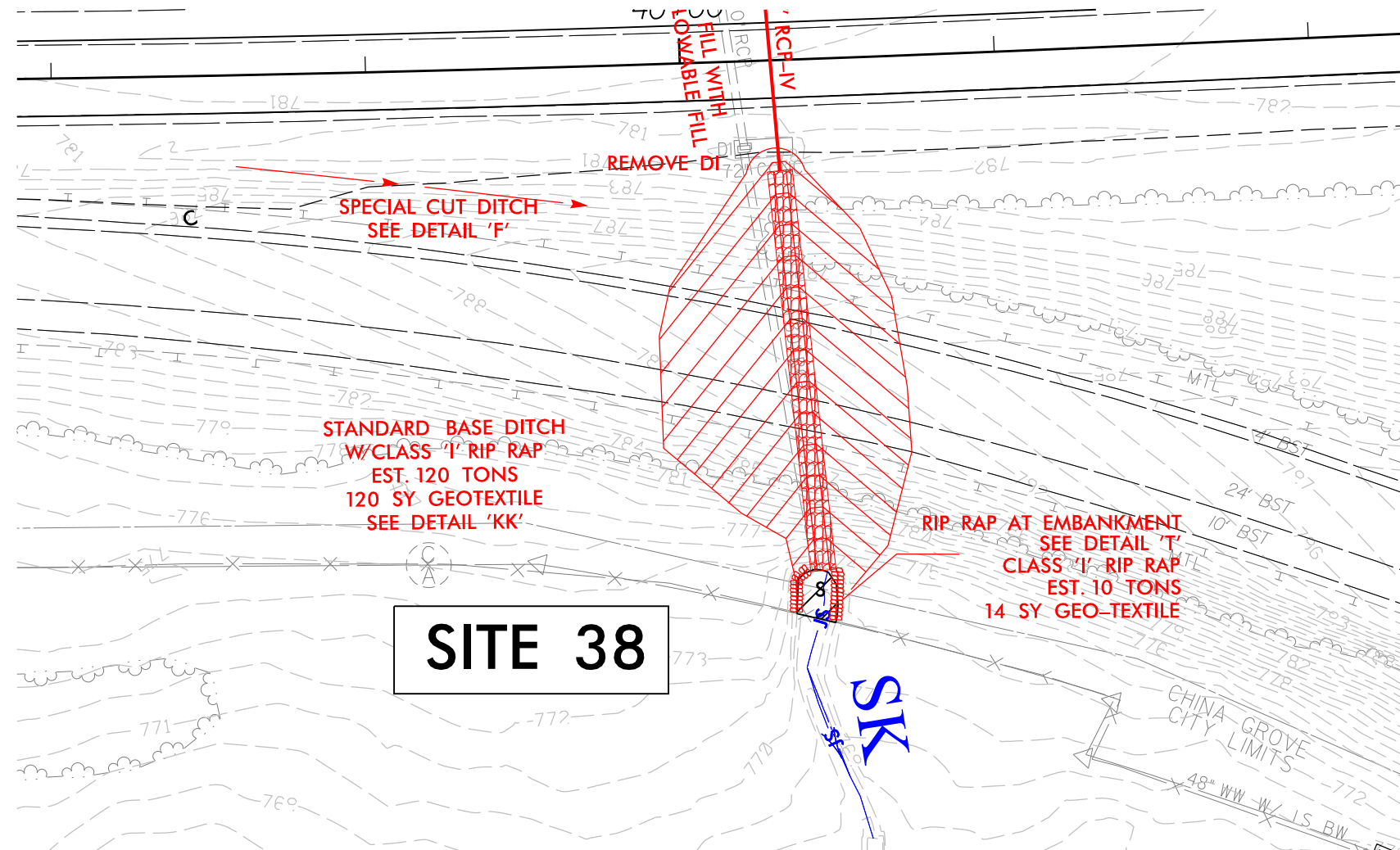
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ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
2512.502550  GRAPHIC SCALE			

LEGEND:



DENOTES IMPACTS IN
SURFACE WATER

NAD 83 NRS 2007



PERMIT DRAWINGS
SHEET 88 OF 91

WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	495+60 -L-LT	BANK STABILIZATION						< 0.01	< 0.01	24	10	
2	513+02 -L-	48" RCP						< 0.01	< 0.01	11	27	
2	513+02 -L-	BANK STABILIZATION						< 0.01		25		
3	521+12 -L-	BANK STABILIZATION						0.02	< 0.01	60	20	
4	525+41 to 531+21 -L- RT	ROADWAY FILL					0.08					
5	534+72 -L- LT	36" RCP	< 0.01			< 0.01						
6	536+57 -L- LT	CULVERT REMOVAL							0.03		40	
7	554+10 - 554+35-L- LT	BANK STABILIZATION						< 0.01	< 0.01	11	10	
8	560+02 -L- RT	ROADWAY FILL					< 0.01					
9	571+62 -L-	Exist. 42" RCP/48" B&J		< 0.01		< 0.01		< 0.01	< 0.01	23	10	
10	577+06	48" RCP						< 0.01		5		
10	577+06	BANK STABILIZATION				< 0.01		< 0.01	< 0.01	14	10	
11	584+60 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	11	10	
12	592+80 -L- RT	ROADWAY FILL	< 0.01				< 0.01					
13	591+60 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	22	10	
14	597+15 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	10	10	
15	602+41 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	12	10	
16	614+30 -L- LT	BANK STABILIZATION (SJ)						< 0.01	< 0.01	30	10	
16	634+07 -L- LT	48" RCP (SJH)						< 0.01	< 0.01	9	10	
17	634+07 -L- LT	BANK STABILIZATION (SJJ)						< 0.01	< 0.01	24	20	
18	639+60 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	18	10	
19	645+39 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	13	10	
20	654+55 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	14	10	
21	662+88 -L-	30" RCP						< 0.01	< 0.01	40	20	
TOTALS*:			< 0.01	< 0.01		0.01	0.08	0.07	0.06	376	257	

*Rounded totals are sum of actual impacts

NOTES:

-Site 6 culvert removal will daylight 132' LF of stream SI.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/28/2016
CABARRUS & ROWAN
I-3802B
36780.3.GV3

SHEET

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OF

91

WETLAND PERMIT IMPACT SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
21	662+29 -L- LT	BANK STABILIZATION						< 0.01		10		
22	668+50 -L-	48" RCP						< 0.01	< 0.01	55	24	
22	667+10 -L- LT	BANK STABILIZATION						< 0.01		30		
23	673+19 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	7	10	
24	676+00 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	14	10	
25	682+05 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	12	10	
26	706+38 -L-	60" RCP EXTENSION						< 0.01	< 0.01	10	20	
26	704+98 -L- LT	BANK STABILIZATION						< 0.01		21		
27	42+15 -Y19-	7'x7' RCBC EXTENSION						0.02	< 0.01	87	20	
27	42+86 -Y19- LT	BANK STABILIZATION						< 0.01		32		
28	21+35 -Y19RPC-	60" RCP EXTENSION						0.03	< 0.01	153	20	
28	21+35 -Y19RPC-	BANK STABILIZATION						< 0.01		31		
29	21+32 -Y19RPA- RT	BANK STABILIZATION						< 0.01	< 0.01	15	10	
30	730+66 -L-	36" RCP-EXTENSION						< 0.01	< 0.01	4	23	
30	730+66 -L- LT	BANK STABILIZATION						< 0.01		21		
31	744+00 -L- LT	BANK STABILIZATION						< 0.01	< 0.01	12	10	
31	738+23 to 743+38 -L- LT	DAYLIGHTED STREAM							< 0.01		39	
32	61+09to 62+00 -Y30- LT	ROADWAY			0.01	0.02						
33	758+85 -L- RT	54" RCP						< 0.01	< 0.01	14	10	
33	758+85 -L- RT	BANK STABILIZATION						< 0.01		15		
34	26+58 -Y19WB-	30" RCP-III						0.02	< 0.01	93	20	
34	26+58 -Y19WB- LT	BANK STABILIZATION						< 0.01		21		
35	18+23 -Y30-	36" RCP-IV						0.01	< 0.01	186	30	
35	18+23 -Y30- RT	BANK STABILIZATION						< 0.01		16		
TOTALS*:					0.01	0.02		0.12	0.03	859	256	0

*Rounded totals are sum of actual impacts

NOTES:

-Site 31 culvert removal will daylight 483' LF of stream SKM.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/28/2016
CABARRUS & ROWAN
I-3802B
36780.3.GV3

SHEET 90 OF 91

WETLAND PERMIT IMPACT SUMMARY													
			WETLAND IMPACTS					SURFACE WATER IMPACTS					
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)	
36	20+01 -Y30- RT	30" RCP						0.03	< 0.01	113	18		
36	20+01 -Y30- RT	BANK STABILIZATION						< 0.01		13			
37	33+96 -Y30- RT	BANK STABILIZATION						< 0.01	< 0.01	21	10		
38	40+38 -Y30- RT	STANDARD BASE DITCH						< 0.01		16			
		Subtotal Sheet 1	< 0.01	< 0.01		0.01	0.08	0.07	0.06	376	257		
		Subtotal Sheet 2			0.01	0.02		0.12	0.03	859	256		
TOTALS*:			Project Totals	< 0.01	< 0.01	0.01	0.03	0.08	0.23	0.10	1398	541	0

*Rounded totals are sum of actual impacts

NOTES:

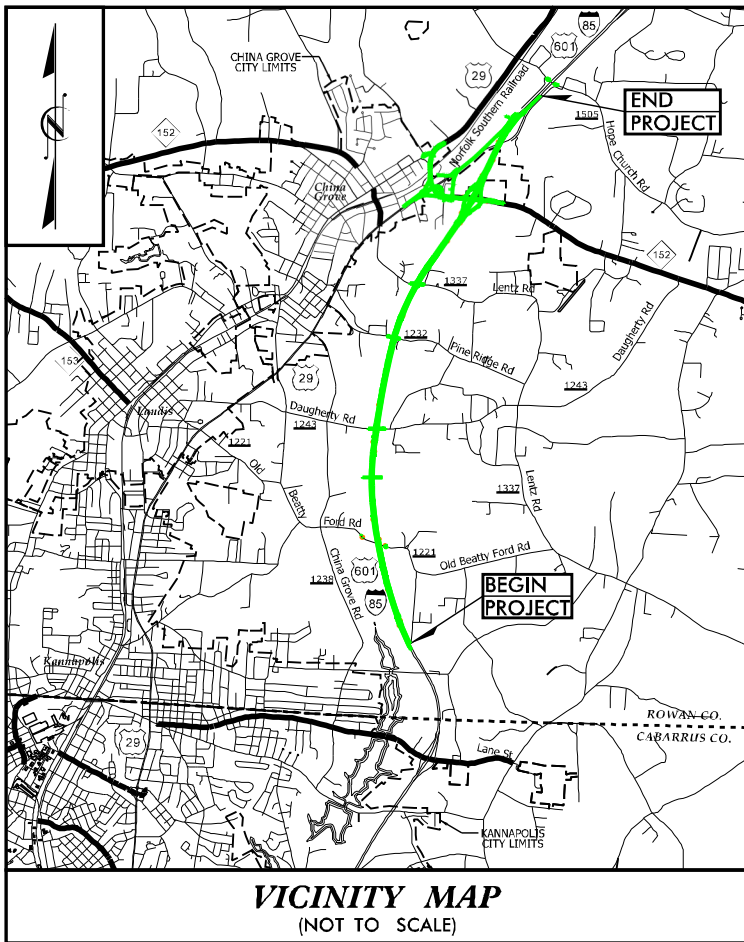
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/28/2016
CABARRUS & ROWAN
I-3802B
36780.3.GV3
SHEET 91 OF 91

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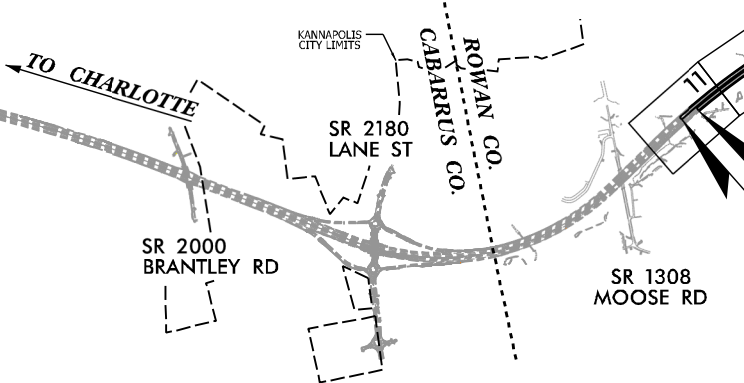
TIP PROJECT: I-3802B

CONTRACT: C203702

See Sheet 1A For Conventional Symbolology



VICINITY MAP
(NOT TO SCALE)



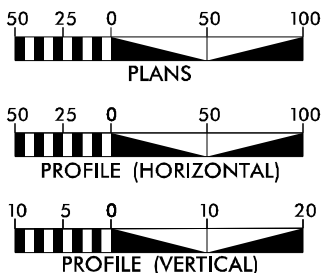
60% PLANS

END TIP PROJECT I-3802A
-L- STA. 484 + 40.00
BEGIN TIP PROJECT I-3802B
-L- STA. 484 + 40.00
BEGIN CONSTRUCTION
-L- STA. 483 + 40.00



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CHINA GROVE.

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 85,900
ADT 2040 = 128,300
DHV = 8 %
D = 55 %
T = 15 % *
V = 70 MPH
* (TTST 11% + DUALS 4%)
FUNC CLASS = INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-3802B = 5.472 MILES
LENGTH STRUCTURE TIP PROJECT I-3802B = 0.000 MILES
TOTAL LENGTH TIP PROJECT I-3802B = 5.472 MILES
BRIDGE LENGTH BASED ON CENTERLINE PROJECTION STATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROWAN COUNTY

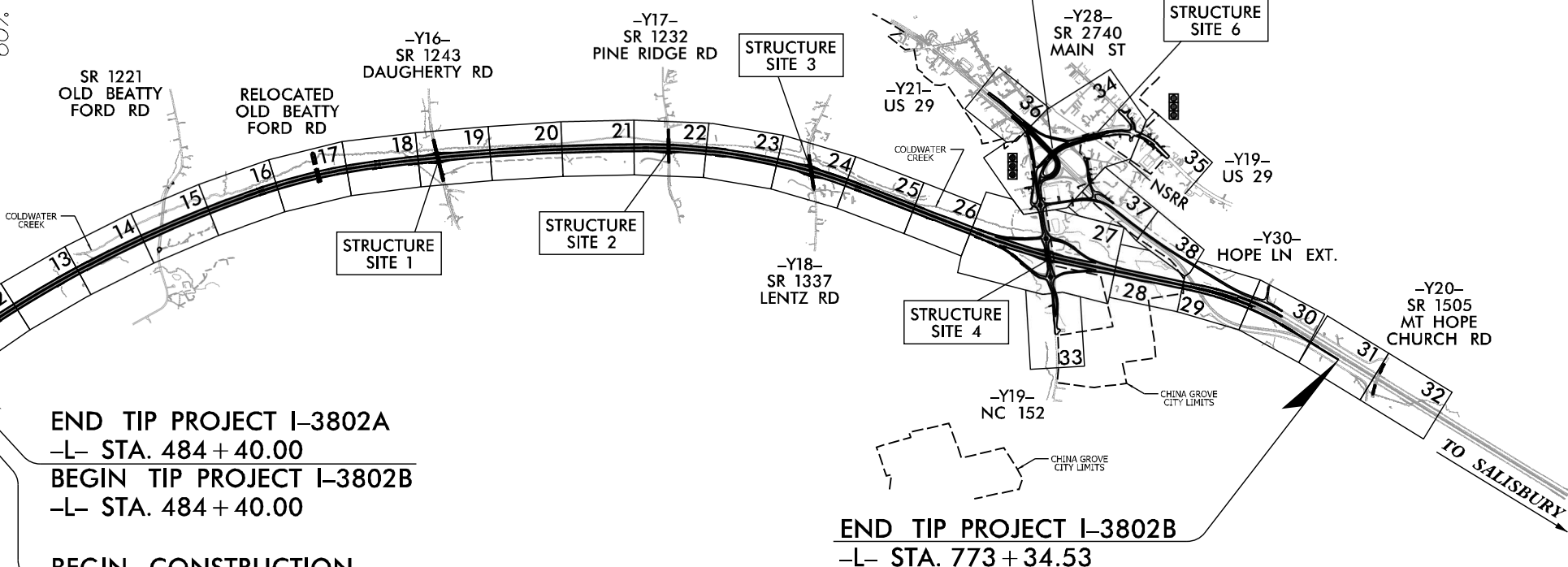
LOCATION: I-85 FROM NORTH OF LANE ST (EXIT 63) TO NORTH OF US 29 / 601 CONNECTOR INTERCHANGE (EXIT 68)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL, STRUCTURES, & SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-3802B	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
36780.3.GV3	NHMF-085-2(78)63		



NAD 83/NSRS 2007



END TIP PROJECT I-3802B
-L- STA. 773 + 34.53



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

LANE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

RIGHT-OF-WAY / 60%
ROADWAY PLANS

SUBMITTED: 8-23-2016

SUBMITTAL #T-010

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 25, 2016

LETTING DATE:
FEBRUARY 25, 2016

JONATHAN HENDERSON, P.E.
PROJECT ENGINEER

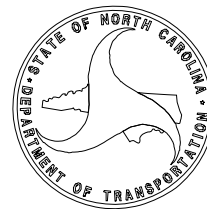
CALVIN W. MOODY, III, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.



STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

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	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
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 RW Marker	
Proposed Control of Access Line with Concrete C/A 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	
Single Tree	
Single Shrub	
Hedge	
Woods Line	

VEGETATION:

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	
U/G Power Line LOS B (S.U.E.*)	
U/G Power Line LOS C (S.U.E.*)	
U/G Power Line LOS D (S.U.E.*)	

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
U/G Telephone Cable LOS B (S.U.E.*)	
U/G Telephone Cable LOS C (S.U.E.*)	
U/G Telephone Cable LOS D (S.U.E.*)	
U/G Telephone Conduit LOS B (S.U.E.*)	
U/G Telephone Conduit LOS C (S.U.E.*)	
U/G Telephone Conduit LOS D (S.U.E.*)	
U/G Fiber Optics Cable LOS B (S.U.E.*)	
U/G Fiber Optics Cable LOS C (S.U.E.*)	
U/G Fiber Optics Cable LOS D (S.U.E.*)	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
U/G Water Line LOS B (S.U.E.*)	
U/G Water Line LOS C (S.U.E.*)	
U/G Water Line LOS D (S.U.E.*)	
Above Ground Water Line	

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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REVISIONS

PROJECT REFERENCE NO.

I-3802B

SHEET NO.

2A-1

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

LANE

HDR

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PAVEMENT SCHEDULE					
A1	11.0" JOINTED CONCRETE	E1	PROP. APPROX. 3.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R4	DOUBLE FACED CONCRETE BARRIER - TYPE T, T1, AND T2
A2	12.0" DOWELED JOINTED CONCRETE	E2	PROP. APPROX. 8.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 912 LBS. PER SQ. YD.	R5	SINGLE FACED CONCRETE BARRIER
A3	14.0" DOWELED JOINTED CONCRETE	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" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	R6	CONCRETE SHOULDER BERM GUTTER
C1	PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110.0 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH	R7	CONCRETE EXPRESSWAY GUTTER
C2	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	E5	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	J1	PROP. 8.0" DEPTH AGGREGATE BASE COURSE	T	EARTH MATERIAL
C4	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	J2	PROP. 10.0" DEPTH AGGREGATE BASE COURSE	U1	EXISTING CONCRETE PAVEMENT
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 3" IN DEPTH	K	SUBGRADE STABILIZATION	U2	EXISTING ASPHALT PAVEMENT
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 3" IN DEPTH	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.	V	NONWOVEN GEOTEXTILE
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER	W	VARIABLE DEPTH ASPHALT PAVEMENT (1.5" MINIMUM)
D2	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R2	2'-6" CONCRETE CURB AND GUTTER	X1	4" PERMEABLE ASPHALT DRAINAGE COURSE (PADC)
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH	R3	5" MONOLITHIC CONCRETE ISLAND	Y	PROPOSED MILLED RUMBLE STRIPS
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH				

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

REVISIONS

A1	11.0" JC	J1	8.0" ABC	T	EARTH MATERIAL
A2	12.0" DJC	K	SUBGRADE STABILIZATION	U1	EXIST. CONCRETE PAVEMENT
A3	14.0" DJC	R4	DOUBLE FACED CONC. BARRIER	V	NONWOVEN GEOTEXTILE
C1	1.0" SF9.5A	R6	SHOULDER BERM GUTTER	X1	4.0" PADC
C2	1.25" SF9.5A	R7	EXPRESSWAY GUTTER	Y	MILLED RUMBLE STRIPS

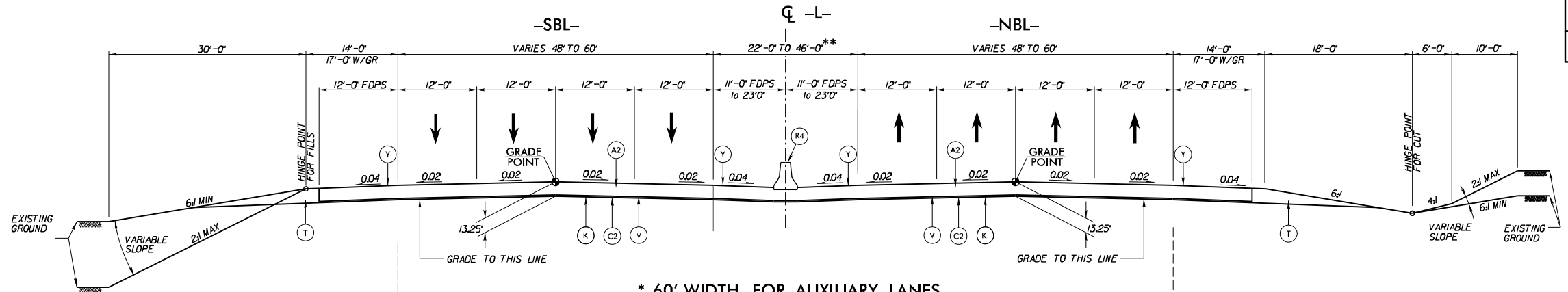
LANE

 HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		2A-2	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

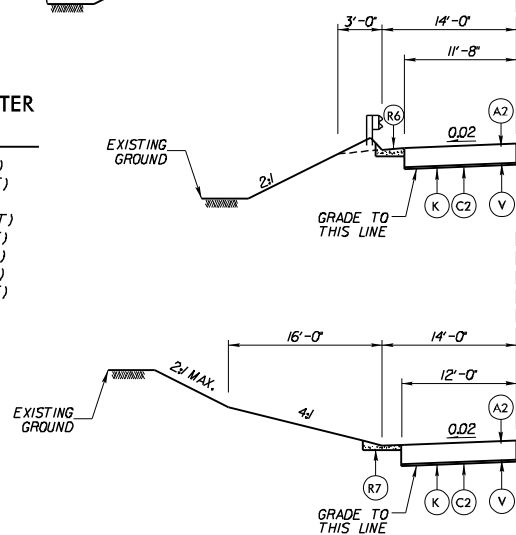
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SHOULDER BERM GUTTER
LOCATIONS

STA. 494+50 TO 497+00 (LT)
STA. 495+85 TO 496+58 (RT)
STA. 512+45 TO 521+25 (LT)
STA. 520+25 TO 537+25 (RT)
STA. 584+40 TO 585+25 (LT)
STA. 602+50 TO 646+50 (LT)
STA. 666+50 TO 686+50 (LT)
STA. 729+00 TO 734+00 (RT)



* 60' WIDTH FOR AUXILIARY LANES
** TRANSITION 22' TO 46' STA. 741+53.95 TO 749+93.95
TYPICAL SECTION NO. 1

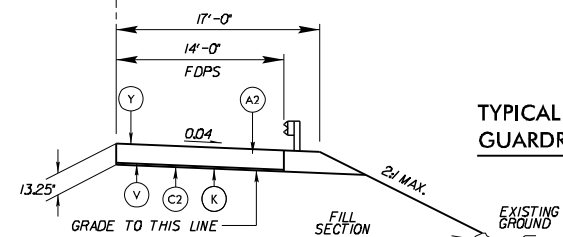
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-L-	484+40.00 LT	750+39.39 LT
-L-	484+40.00 RT	753+55.55 RT



TYPICAL NO. 1B
EXPRESSWAY GUTTER
LOCATIONS

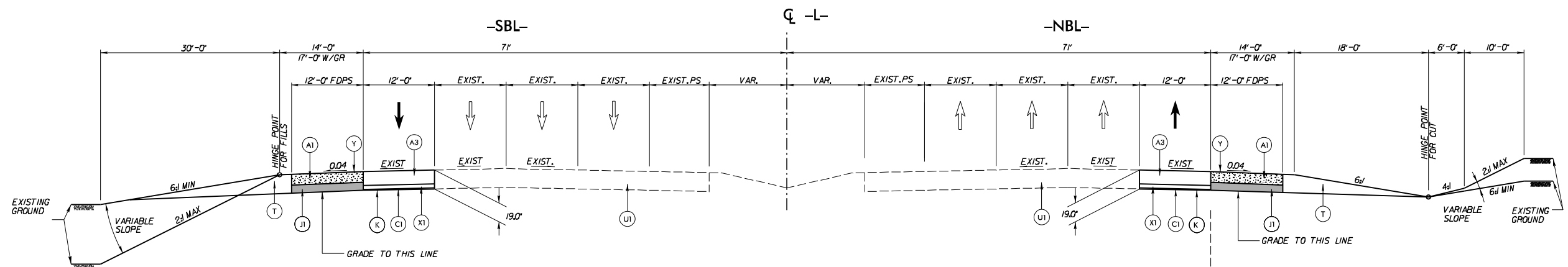
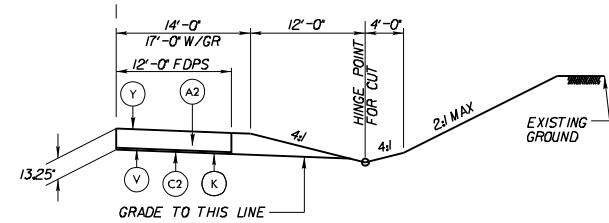
STA. 512+00 TO 513+50 (RT)

TYPICAL NO. 1C
GUARDRAIL LOCATIONS



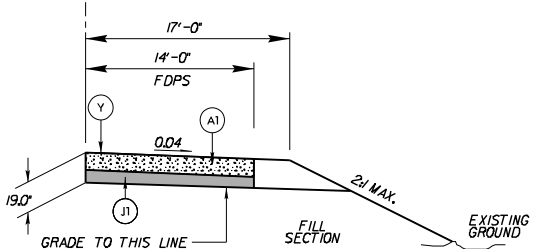
TYPICAL NO. 1D
MODIFIED DITCH LOCATIONS

STA. 486+50 TO 495+50 (RT)
STA. 498+50 TO 512+00 (LT)
STA. 510+00 TO 512+00 (RT)
STA. 513+50 TO 519+00 (RT)
STA. 562+50 TO 563+00 (RT)
STA. 568+50 TO 570+00 (LT)
STA. 659+00 TO 663+00 (RT)
STA. 665+50 TO 667+50 (RT)
STA. 674+00 TO 676+00 (RT)
STA. 698+00 TO 705+00 (RT)



TYPICAL SECTION NO. 2

LINE	FROM STATION	TO STATION
-L-	750+39.39 LT	759+65.42 LT
-L-	753+55.55 RT	773+34.53 RT



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

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REVISIONS

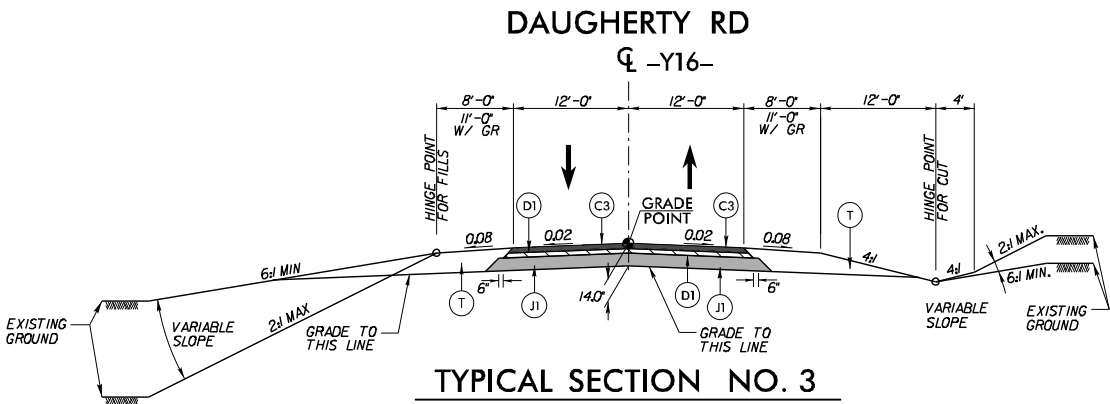
LANE



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N.C.B.E.L.S. License Number: F-0116

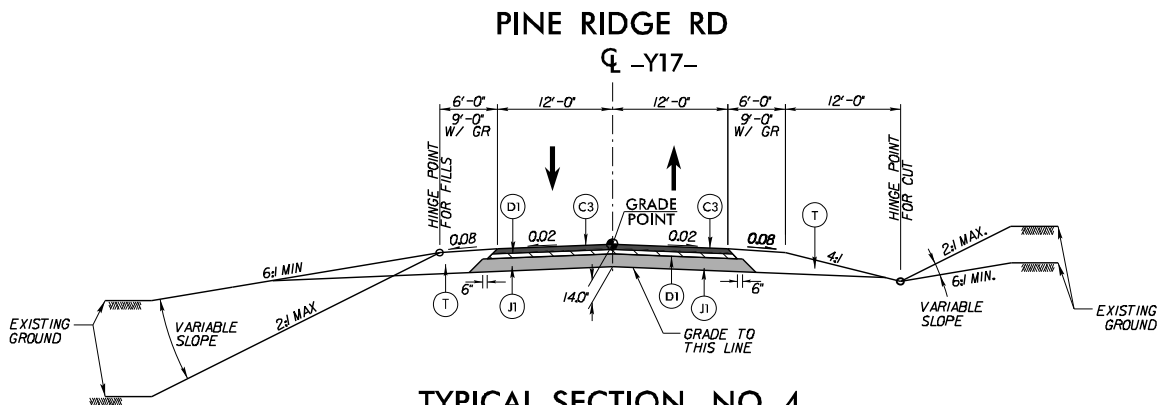
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I-3802B	2A-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

C3	3.0" S9.5B
D1	3.0" I19.0B
J1	8.0" ABC
T	EARTH MATERIAL



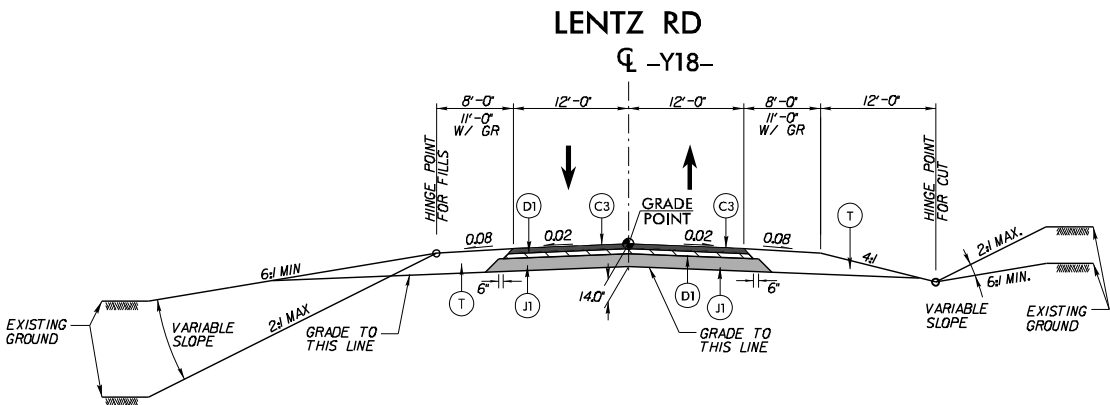
TYPICAL SECTION NO. 3

LINE	FROM STATION	TO STATION
-Y16-	21+50.00	24+24.55 (BEGIN BRIDGE)
-Y16-	26+15.37 (END BRIDGE)	29+80.00



TYPICAL SECTION NO. 4

LINE	FROM STATION	TO STATION
-Y17-	21+42.00	23+29.69 (BEGIN BRIDGE)
-Y17-	26+05.65 (END BRIDGE)	28+00.00



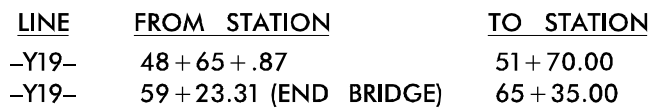
TYPICAL SECTION NO. 5

LINE	FROM STATION	TO STATION
-Y18-	20+00.00	22+17.95 (BEGIN BRIDGE)
-Y18-	24+27.89 (END BRIDGE)	27+00.00

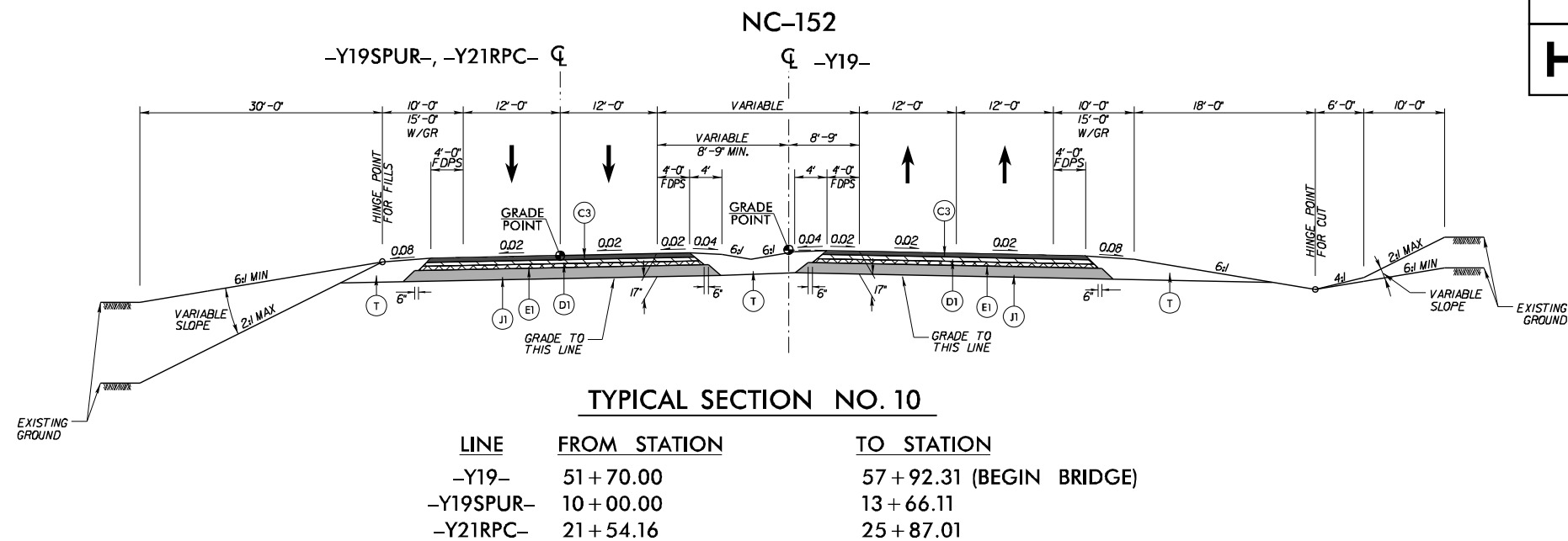
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



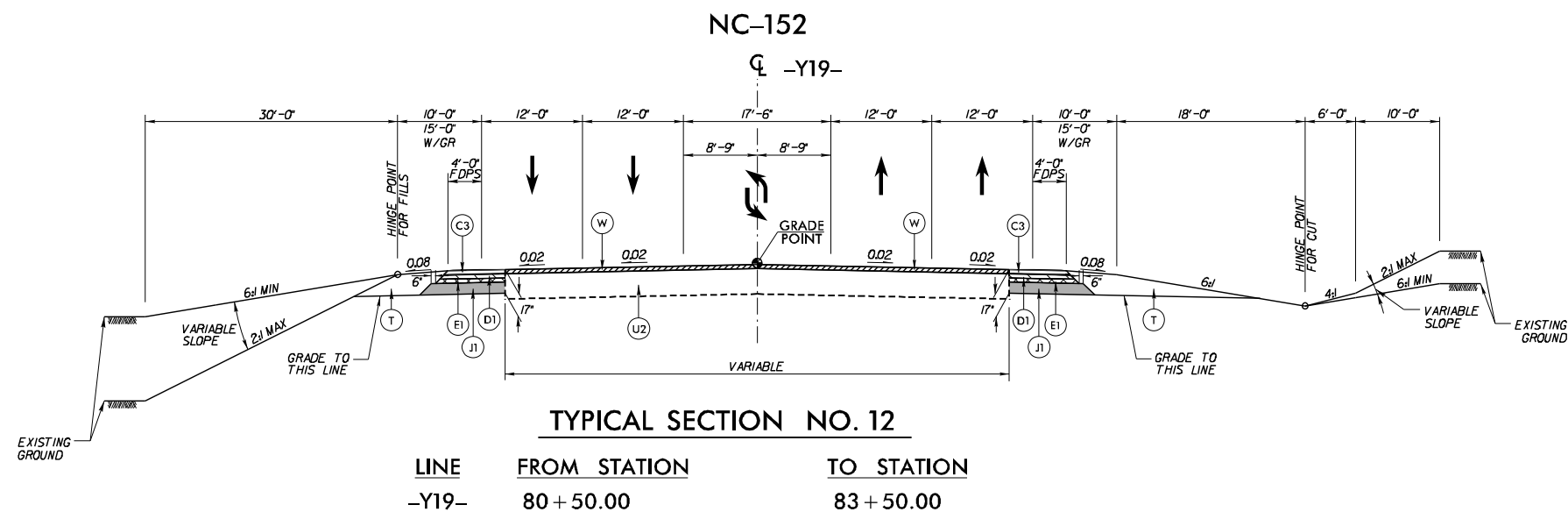
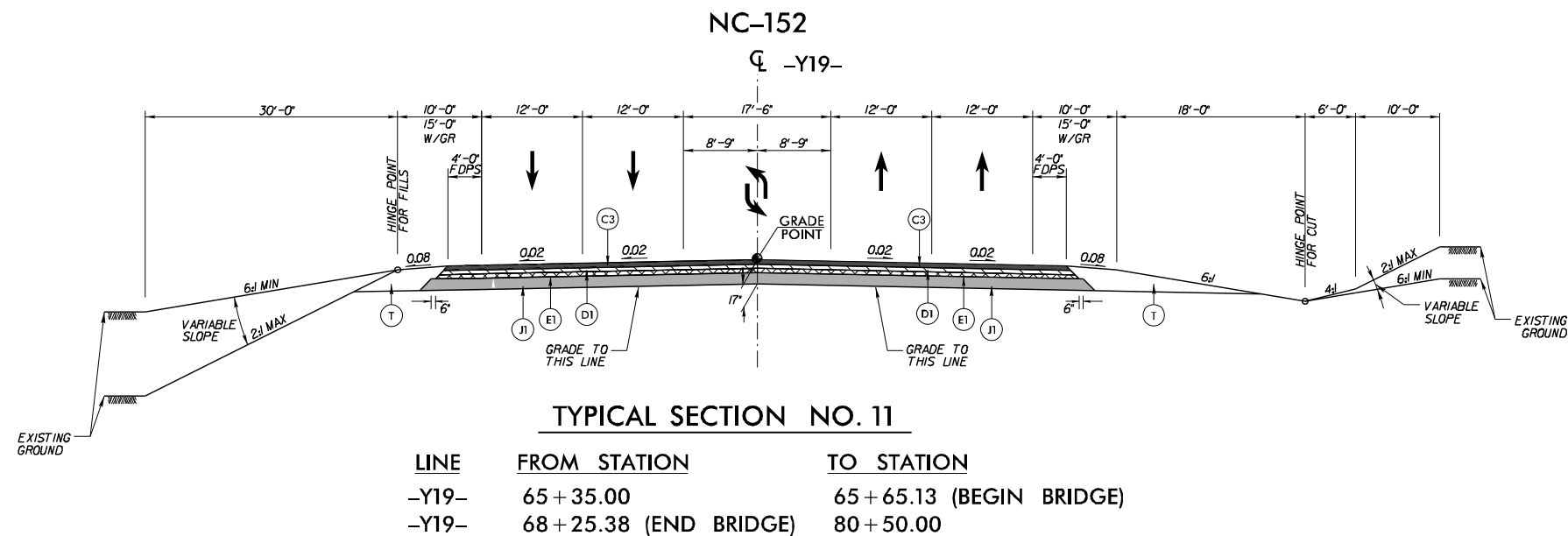
LINE	FROM STATION	TO STATION
-Y19-	36 + 40.00	36 + 73.37 (BEGIN BRIDGE)
-Y19-	38 + 80.18 (END BRIDGE)	40 + 59.27 (BEGIN ROUNDABOUT)
-Y19-	41 + 75.27 (END ROUNDABOUT)	47 + 21.77 (BEGIN ROUNDABOUT)
-Y19-	48 + 37.77 (END ROUNDABOUT)	48 + 65.87



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



C3	3.0" S9.5B
D1	3.0" I19.0B
E1	3.0" B25.0B
J1	8.0" ABC
T	EARTH MATERIAL
U2	EXIST. ASPHALT PAVEMENT
W	VAR. DEPTH ASPH. PAVEMENT

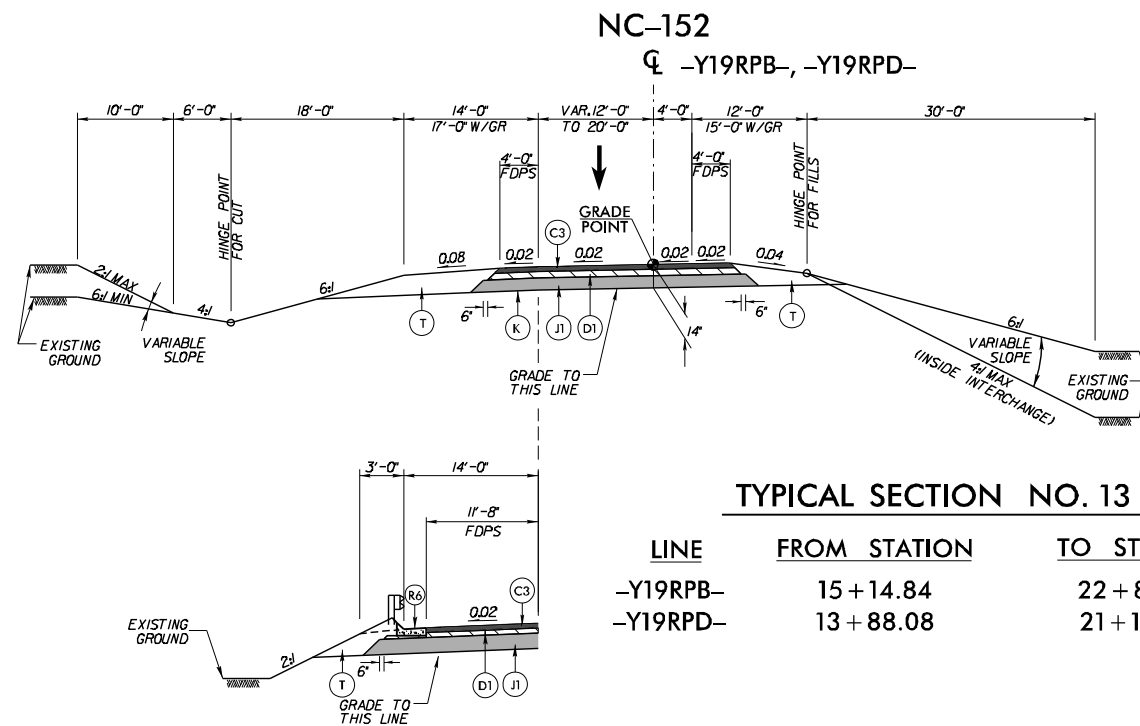


NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

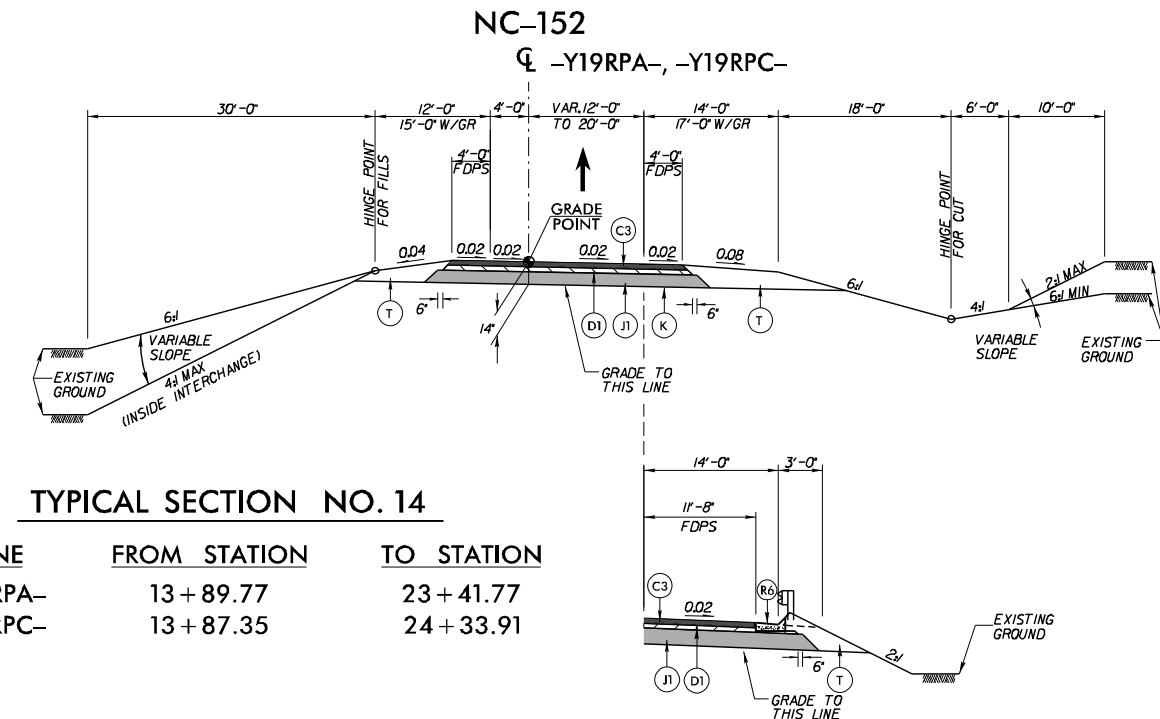
LANE

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

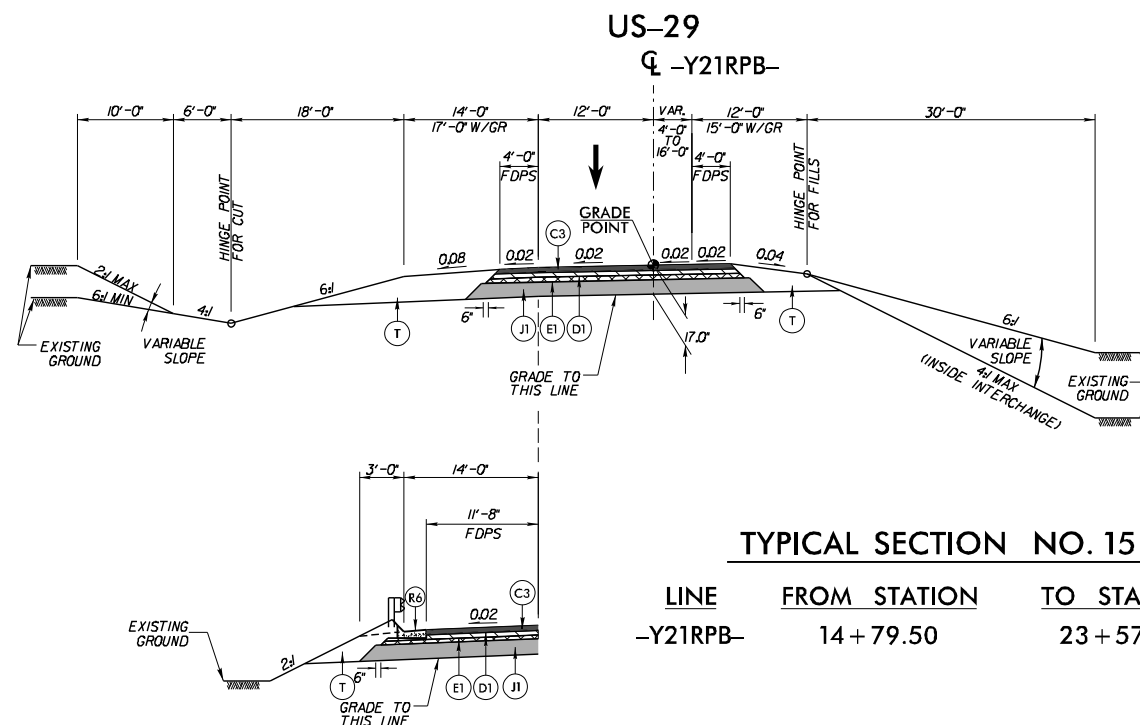
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ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



<u>TYPICAL SECTION NO. 13</u>		
<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
Y19RPB-	15 + 14.84	22 + 89.19
Y19RPD-	13 + 88.08	21 + 19.56

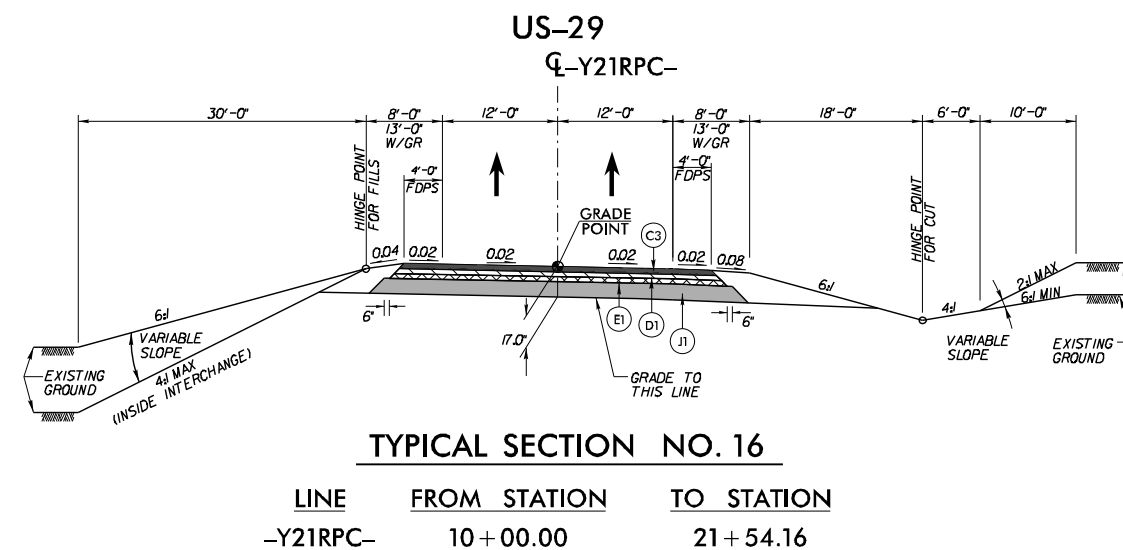


<u>TYPICAL SECTION NO. 14</u>		
<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
—Y19RPA—	13 + 89.77	23 + 41.77
—Y19RPC—	13 + 87.35	24 + 33.91



TYPICAL SECTION NO. 15		
LINE	FROM STATION	TO STATION
-Y21RPB-	14 + 79.50	23 + 57.79

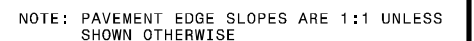
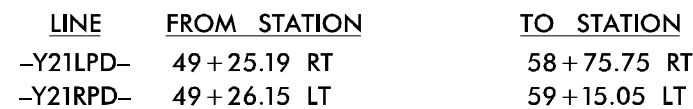
SHOULDER TYPICAL FOR GUARDRAIL LOCATIONS



TYPICAL SECTION NO. 16		
LINE	FROM STATION	TO STATION
-Y21RPC-	10+00.00	21+54.16

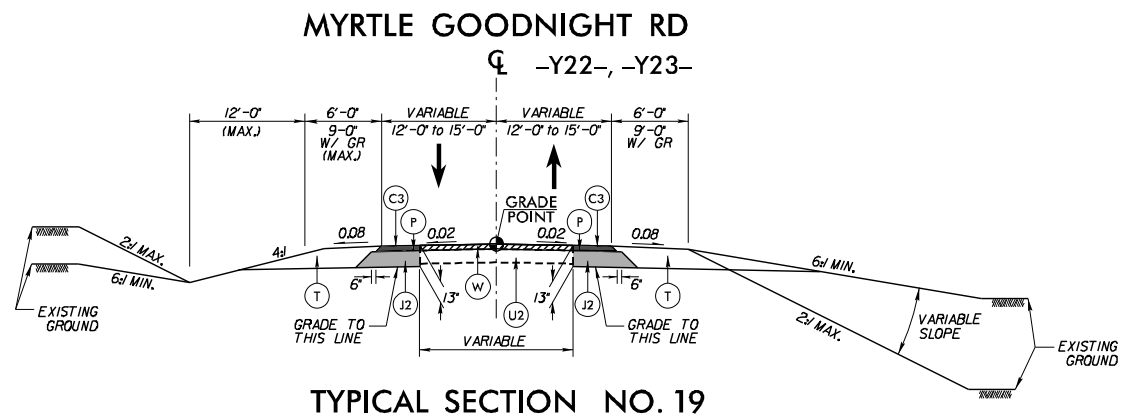
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

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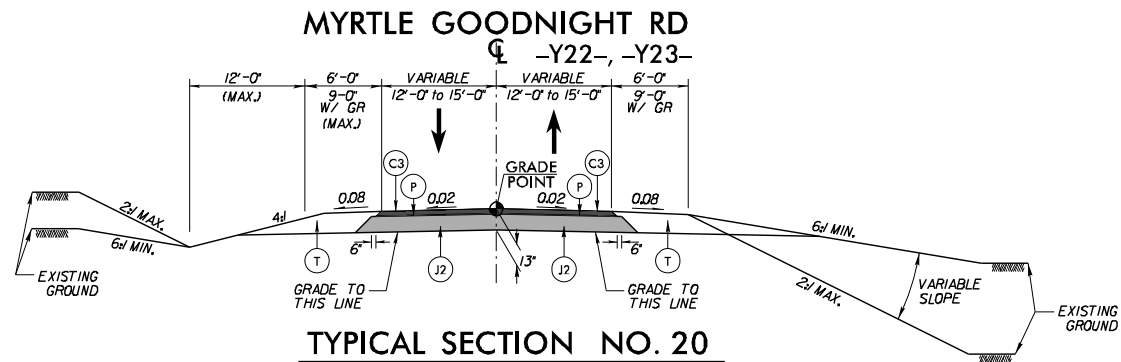
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REVISIONS



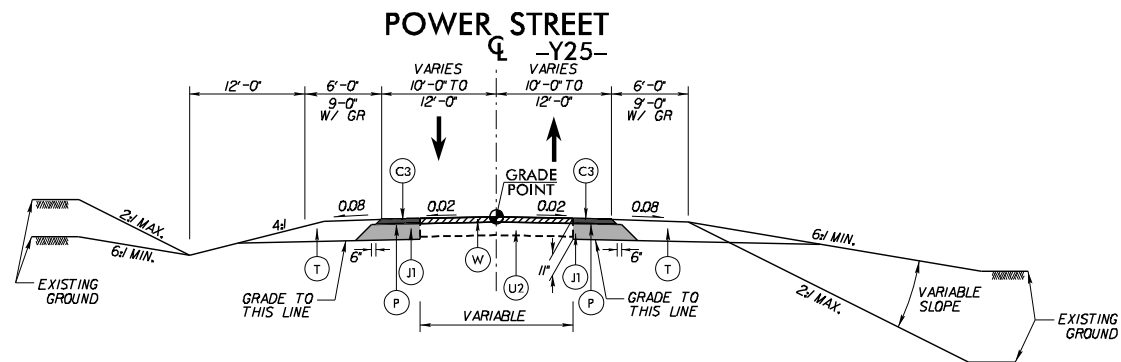
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LINE	FROM STATION	TO STATION
-Y22-	10 + 85.00	16 + 12.91
-Y23-	13 + 25.00	14 + 59.59



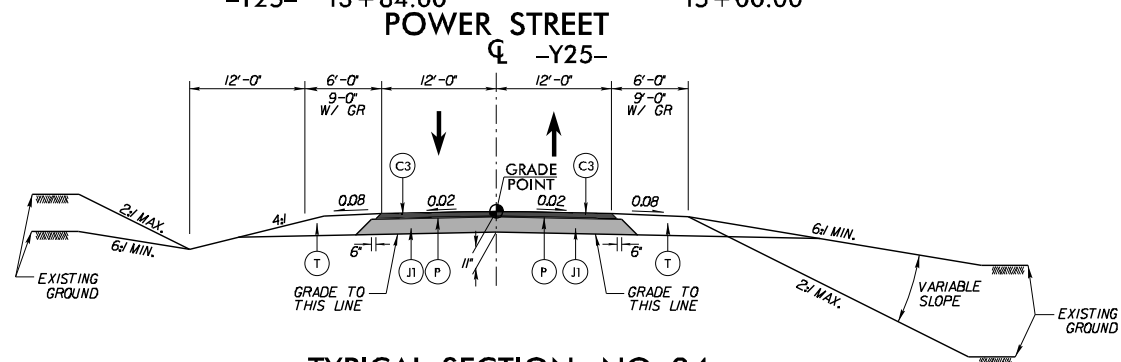
TYPICAL SECTION NO. 20

LINE	FROM STATION	TO STATION	LINE	FROM STATION	TO STATION
-Y22-	10 + 15.00	10 + 85.00	-Y23-	10 + 15.07	13 + 25.00
-Y22-	16 + 12.91	18 + 76.85			



TYPICAL SECTION NO. 22

LINE	FROM STATION	TO STATION
-Y25-	13 + 84.00	15 + 00.00



TYPICAL SECTION NO. 24

LINE	FROM STATION	TO STATION
-Y25-	15 + 00.00	21 + 19.00

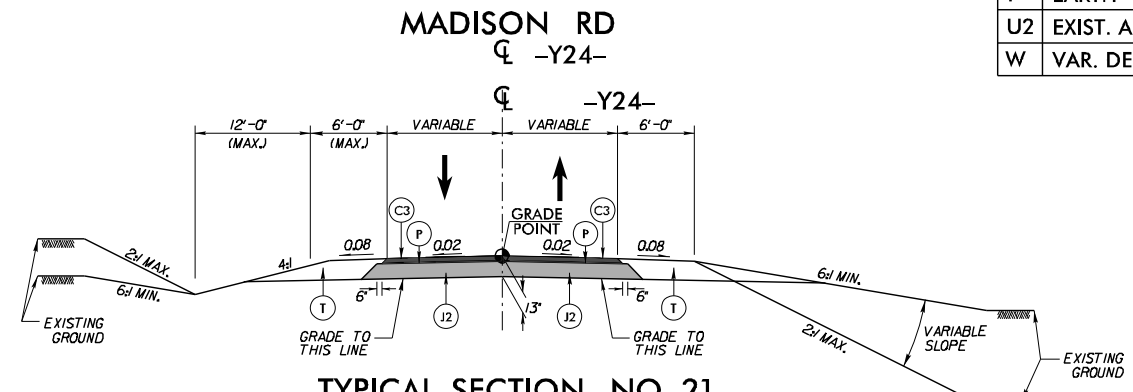
LANE

HDR

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

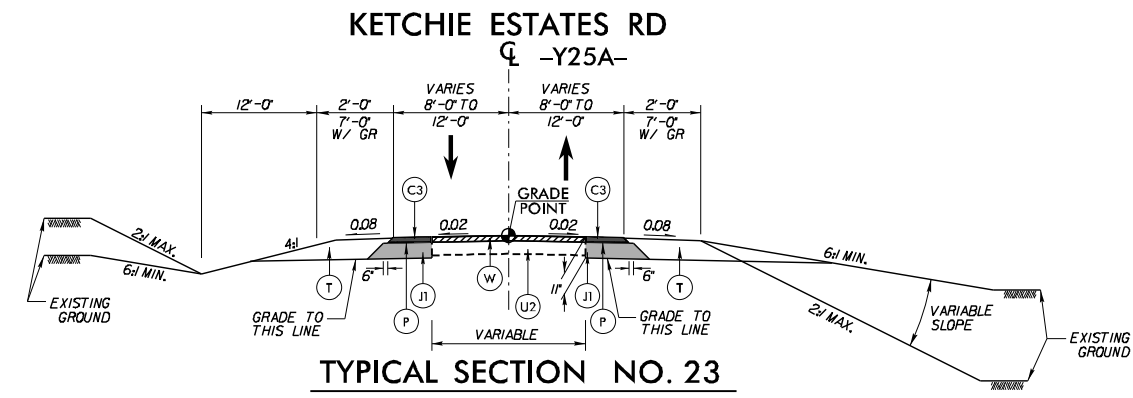
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I-3802B	2A-9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

C3	3.0" S9.5B
J1	8.0" ABC
J2	10.0" ABC
P	PRIME COAT
T	EARTH MATERIAL
U2	EXIST. ASPHALT PAVEMENT
W	VAR. DEPTH ASPH. PAVEMENT



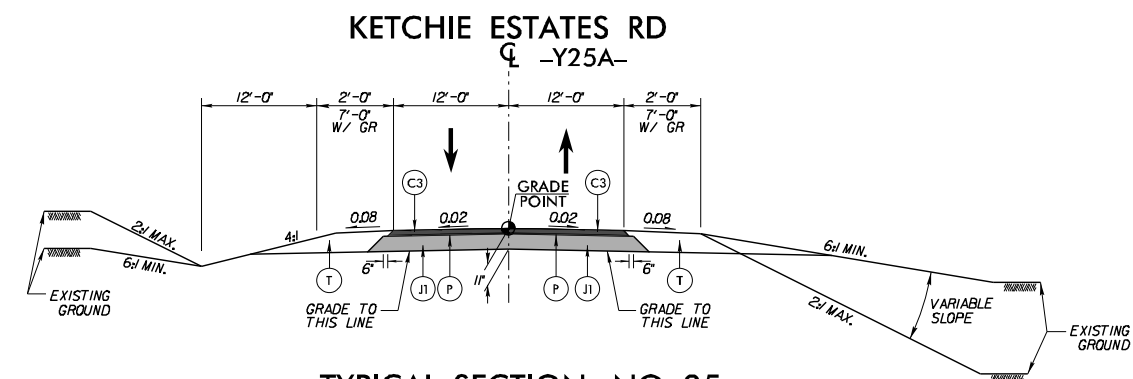
TYPICAL SECTION NO. 21

LINE	FROM STATION	TO STATION
-Y24-	10 + 12.00	11 + 07.53



TYPICAL SECTION NO. 23

LINE	FROM STATION	TO STATION
-Y25A-	10 + 80.00	11 + 25.00



TYPICAL SECTION NO. 25

LINE	FROM STATION	TO STATION
-Y25A-	11 + 25.00	12 + 38.00



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y28-	14 + 40.00	15 + 50.00



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y29-	10 + 18.00	11 + 00.00



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y28-	15 + 50.00	19 + 55.25



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y29-	11 + 00.00	11 + 50.00

C3	3.0" S9.5B
D1	3.0" I19.0B
E1	3.0" B25.0B
J1	8.0" ABC
R2	2'- 6" C & G
R3	5" MONOLITHIC ISLAND
T	EARTH MATERIAL
U2	EXIST. ASPHALT PAVEMENT
W	VAR. DEPTH ASPH. PAVEMENT



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y30-	10 + 75.83	23 + 40.00
-Y30-	55 + 25.00	61 + 86.75



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y30-	23 + 40.00	55 + 25.00
-Y30-	61 + 86.75	63 + 25.00



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y33-	10 + 00.00	11 + 20.91



<u>LINE</u>	<u>FROM STATION</u>	<u>TO STATION</u>
-Y33-	11+20.91	13+20.00

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
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FILE: North_Carolina_Dept_of_Transportation\LaneCC.I3802B.L85.Rowan\6.0.CAD.BIM\6.2.Work_In_Progress\I-3802B.NCDOT.File_Structure\Roadway\Pro\I3802B.RDY_STRUCTURE.TYP.dgn
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DATE: 8/23/2016

REVISIONS

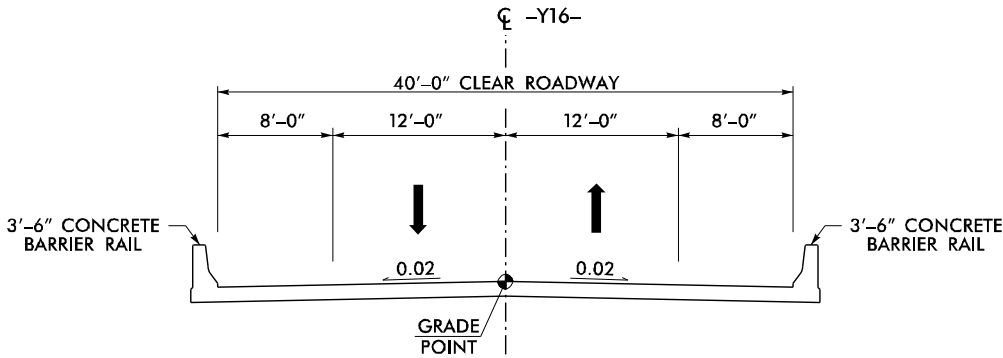
-Y16- (DAUGHERTY ROAD) OVER
-L- (I-85)

LANE

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.
I-3802B		2A-14
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

SITE 1 - STRUCTURE TYPICAL SECTION

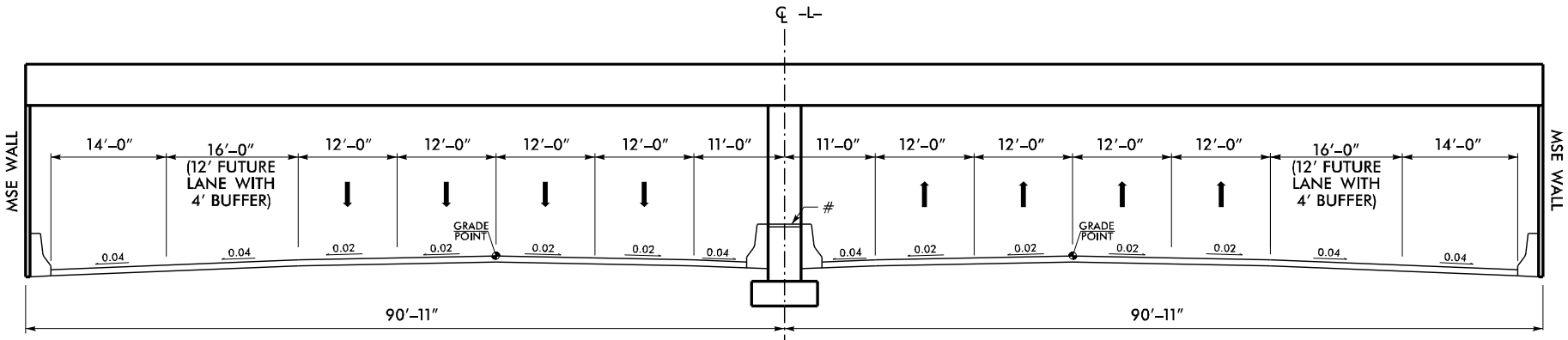


SITE 1 – TYPICAL SECTION NO. 1

-Y16- (DAUGHERTY ROAD) OVER
-L- (I-85)
-Y16- FUNCTIONAL CLASS. = LOCAL RURAL

(-Y16-) DAUGHERTY ROAD			
2016 ADT	1,450	TTST =	N/A
2040 ADT	2,050	DUALS =	N/A
		DHV =	N/A
		DIR =	N/A

TRAFFIC DATA NOT PROVIDED
TRAFFIC INFORMATION OBTAINED VIA NCDOT AADT MAPS



SITE 1 – TYPICAL SECTION NO. 2

-L- (I-85) UNDER
-Y16- (DAUGHERTY ROAD)
MINIMUM VERTICAL CLEARANCE = 17'
-L- FUNCTIONAL CLASS. = FREEWAY / INTERSTATE

BETWEEN COLUMNS, FILL AND
CAP WITH 4" CONCRETE COVER

(-L-) I-85			
2016 ADT	85,900	TTST =	11%
2040 ADT	128,300	DUALS =	4%
		DHV =	8%
		DIR =	55%

PLOT DRIVER: NCDOT.pdf_color_eng_50.plt
USER: erbrooks
FILE: North.Carolina.Dept.of.Transportation\LaneCC.I3802B.I85.Rowan\6.0.CAD.BTM\6.2.Work.In.Progress\I-3802B.NCDOT.File.Structure\Roadway\Pro\I3802B.RDY_STRUCTURE.TYP.dgn
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DATE: 8/23/2016

REVISIONS

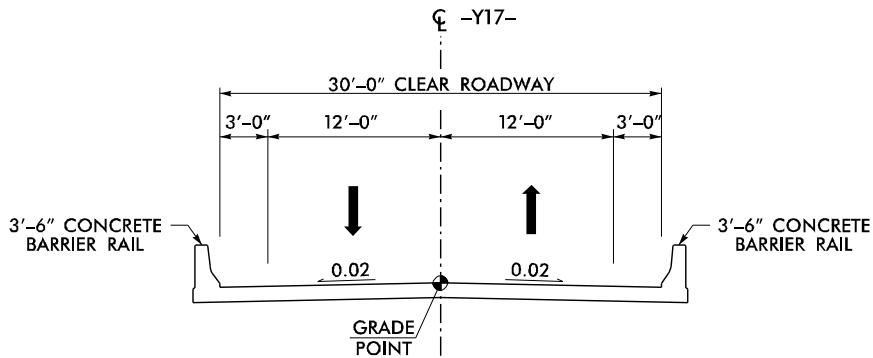
-Y17- (PINE RIDGE ROAD) OVER
-L- (I-85)

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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		2A-15	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

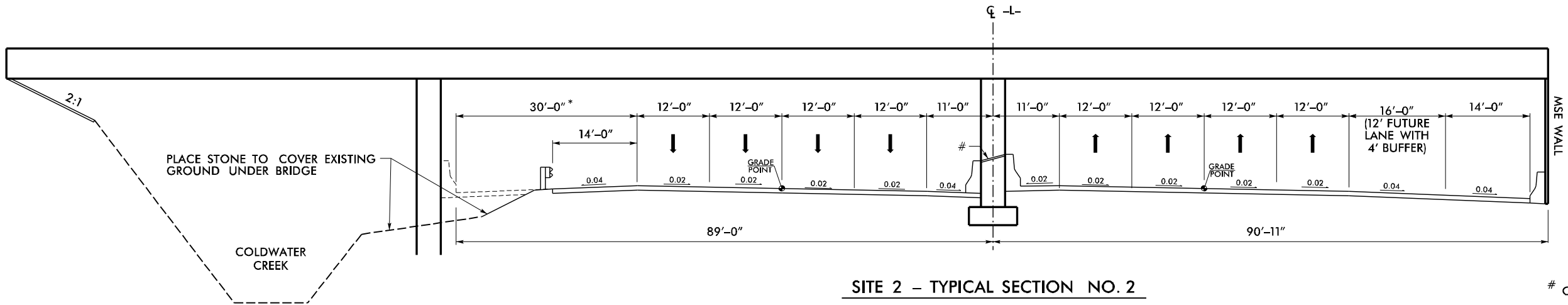
SITE 2 - STRUCTURE TYPICAL SECTION



(-Y17-) PINE RIDGE ROAD			
2016 ADT	890	TTST =	N/A
2040 ADT	1,070	DUALS =	N/A
		DHV =	N/A
		DIR =	N/A

TRAFFIC DATA NOT PROVIDED
TRAFFIC INFORMATION OBTAINED VIA NCDOT AADT MAPS

SITE 2 - TYPICAL SECTION NO. 1
-Y17- (PINE RIDGE ROAD) OVER
-L- (I-85)
-Y17- FUNCTIONAL CLASS. = LOCAL RURAL



SITE 2 - TYPICAL SECTION NO. 2
-L- (I-85) UNDER
-Y17- (PINE RIDGE ROAD)
MINIMUM VERTICAL CLEARANCE = 17'
-L- FUNCTIONAL CLASS. = FREEWAY / INTERSTATE

BETWEEN COLUMNS, FILL AND
CAP WITH 4" CONCRETE COVER

* -Y17- BRIDGE ACCOMMODATES FUTURE WIDENING.
FUTURE PAVEMENT NOT PROVIDED AT THIS TIME TO AVOID ENVIRONMENTAL
IMPACTS AT COLDWATER CREEK AND A POTENTIAL CLOMR.

(-L-) I-85			
2016 ADT	85,900	TTST =	11%
2040 ADT	128,300	DUALS =	4%
		DHV =	8%
		DIR =	55%

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: erbrooks
FILE: North_Carolina_Dept_of_Transportation\LaneCC_I3802B_I85_Rowan\6.0_CAD_BIM\6.2_Work_In_Progress\I-3802B_NCDOT_File_Structure\Roadway\Pro\I3802B_RDY_STRUCTURE_TYP.dgn
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TIME: 11:15:29 AM
DATE: 8/23/2016

REVISIONS

-Y18- (LENTZ ROAD) OVER
-L- (I-85)

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PROJECT REFERENCE NO.
I-3802B

SHEET NO.
2A-16

R/W SHEET NO.

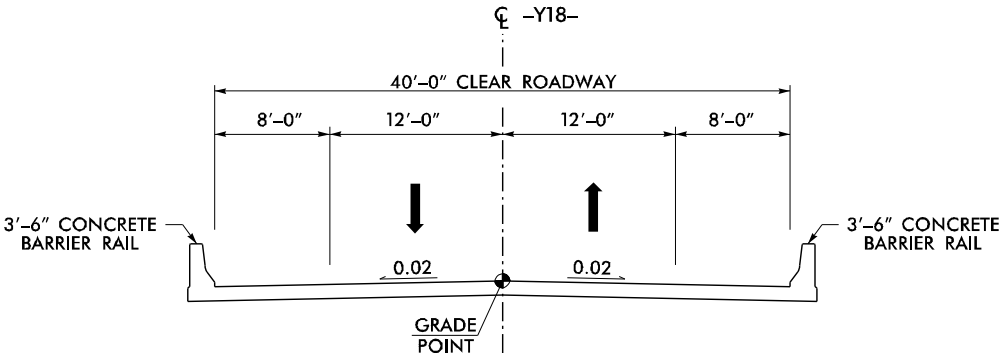
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SITE 3 - STRUCTURE TYPICAL SECTION

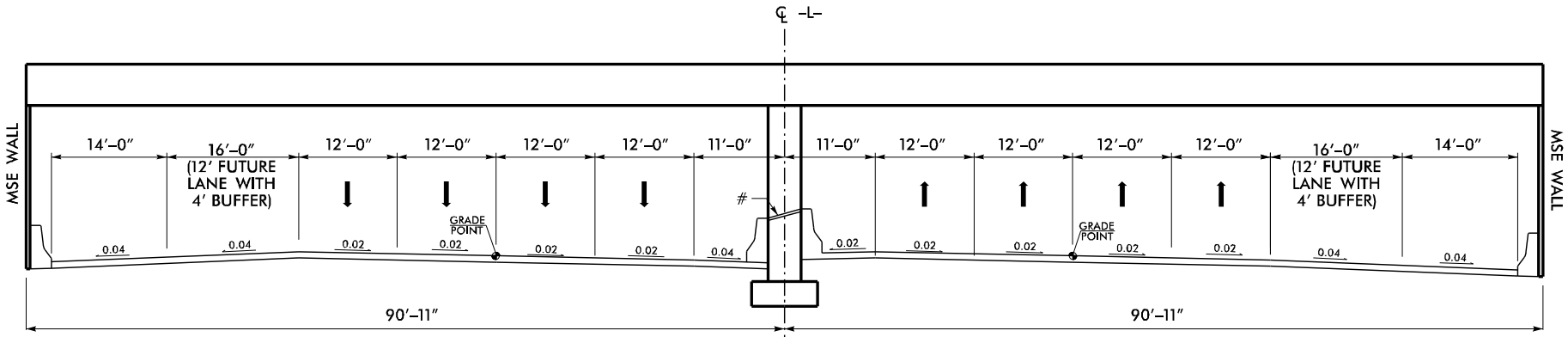


(-Y18-) LENTZ ROAD			
2016 ADT	2,250	TTST =	N/A
2040 ADT	2,850	DUALS =	N/A
		DHV =	N/A
		DIR =	N/A

TRAFFIC DATA NOT PROVIDED
TRAFFIC INFORMATION OBTAINED VIA NCDOT AADT MAPS

SITE 3 – TYPICAL SECTION NO. 1

-Y18- (LENTZ ROAD) OVER
-L- (I-85)
-Y18- FUNCTIONAL CLASS. = MINOR RURAL COLLECTOR



BETWEEN COLUMNS, FILL AND CAP WITH 4" CONCRETE COVER

SITE 3 – TYPICAL SECTION NO. 2

-L- (I-85) UNDER
-Y18- (LENTZ ROAD)
MINIMUM VERTICAL CLEARANCE = 17'
-L- FUNCTIONAL CLASS. = FREEWAY / INTERSTATE

(-L-) I-85			
2016 ADT	85,900	TTST =	11%
2040 ADT	128,300	DUALS =	4%
		DHV =	8%
		DIR =	55%

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: erbrooks
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REVISIONS

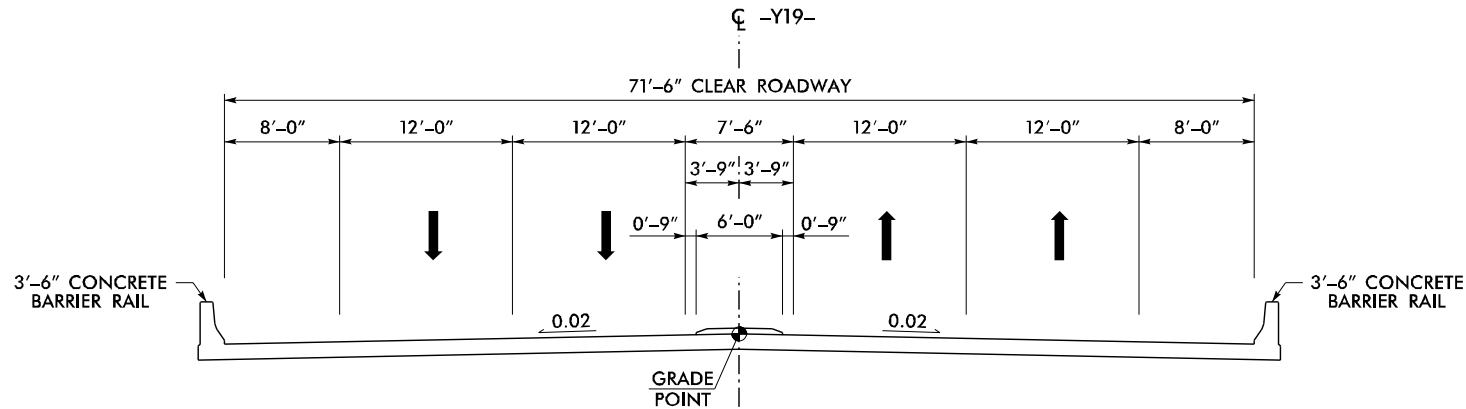
-Y19- (NC-152) OVER
-L- (I-85)

LANE

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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		2A-17
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

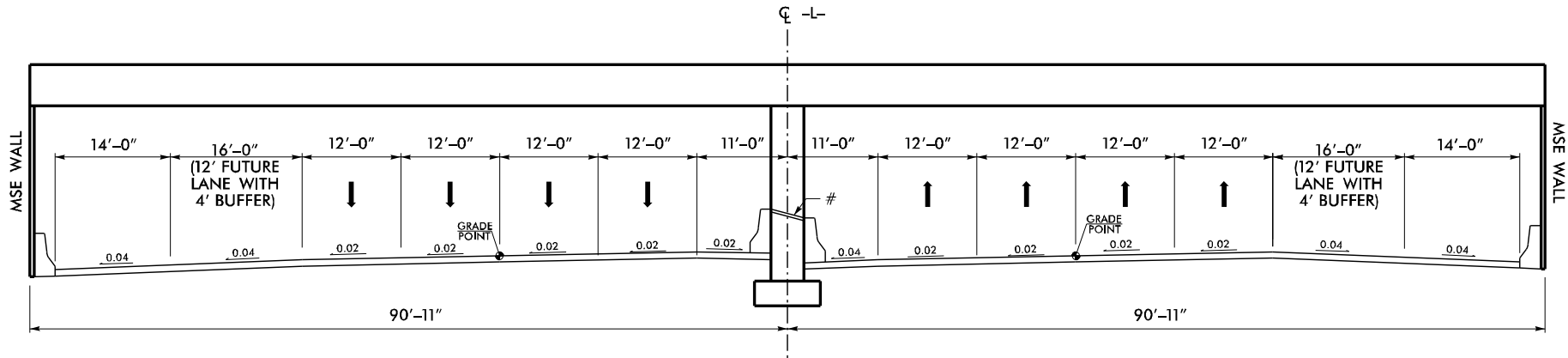
SITE 4 - STRUCTURE TYPICAL SECTION



SITE 4 - TYPICAL SECTION NO. 1

-Y19- (NC-152) OVER
-L- (I-85)
-Y19- FUNCTIONAL CLASS. = MINOR & PRINCIPAL ARTERIAL

(-Y19-) NC 152			
2016 ADT	23,100	TTST =	3%
2040 ADT	28,400	DUALS =	4%
		DHV =	10%
		DIR =	60%



SITE 4 - TYPICAL SECTION NO. 2

-L- (I-85) UNDER
-Y19- (NC 152)
MINIMUM VERTICAL CLEARANCE = 17'
-L- FUNCTIONAL CLASS. = FREEWAY / INTERSTATE

(-L-) I-85			
2016 ADT	85,900	TTST =	11%
2040 ADT	128,300	DUALS =	4%
		DHV =	8%
		DIR =	55%

BETWEEN COLUMNS, FILL AND
CAP WITH 4" CONCRETE COVER

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
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REVISIONS

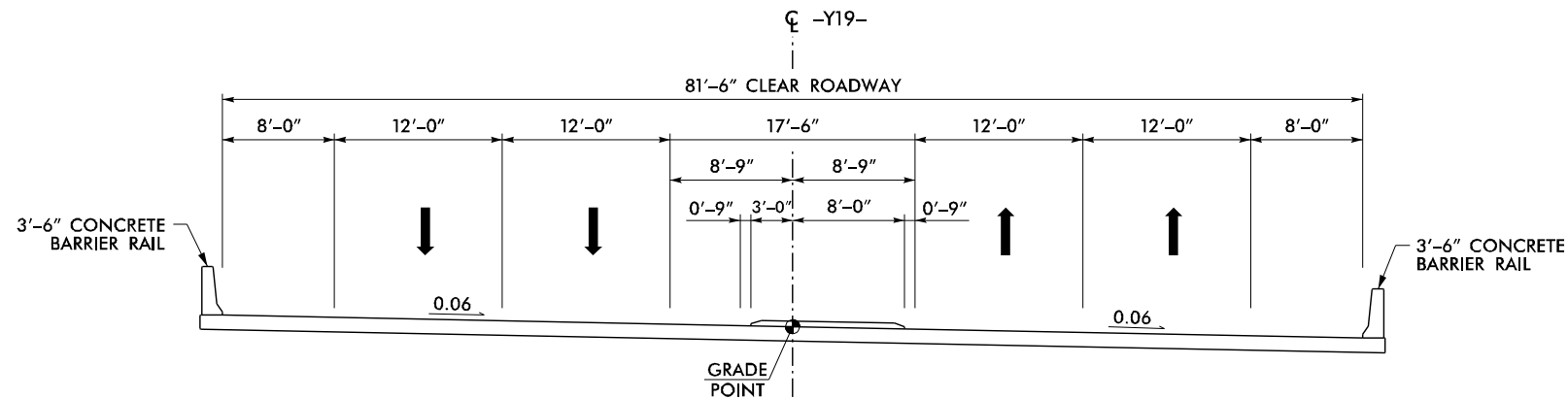
-Y19- (NC-152) OVER -Y21RPD- / -Y21LPD- (US 29)

LANE

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		2A-18	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

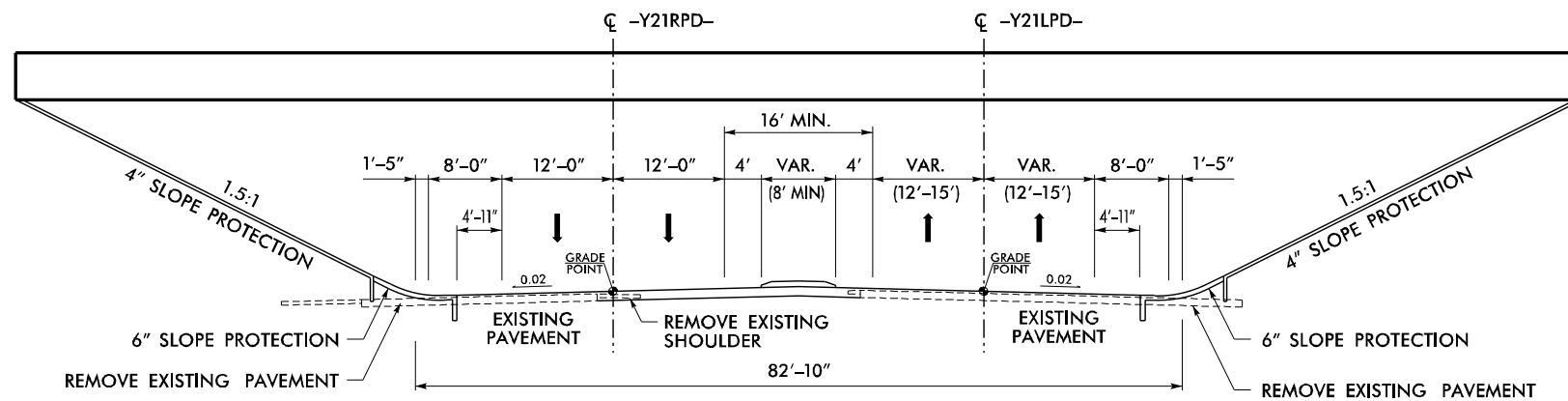
SITE 5 - STRUCTURE TYPICAL SECTION



SITE 5 - TYPICAL SECTION NO. 1

-Y19- (NC-152) OVER
-Y21RPD- / -Y21LPD- (US 29)
-Y19- FUNCTIONAL CLASS. = MINOR & PRINCIPAL ARTERIAL

(-Y19-) NC 152			
2016 ADT	23,100	TTST =	3%
2040 ADT	28,400	DUALS =	4%
		DHV =	10%
		DIR =	60%



SITE 5 - TYPICAL SECTION NO. 2

-Y21RPD- / -Y21LPD- (US 29) UNDER
-Y19- (NC 152)
MINIMUM VERTICAL CLEARANCE = 17'
-Y21RPD- / -Y21LPD- FUNCTIONAL CLASS. = LOOP

(-Y21RPD- / -Y21LPD-) US 29			
2016 ADT	8,100	TTST =	2%
2040 ADT	10,150	DUALS =	3%
		DHV =	9%
		DIR =	55%

PLOT DRIVER: NCDOT_color_eng_50.plt
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TIME: 8/23/2016 11:15:31 AM

REVISIONS

-Y19- (NC-152) OVER RAILROAD

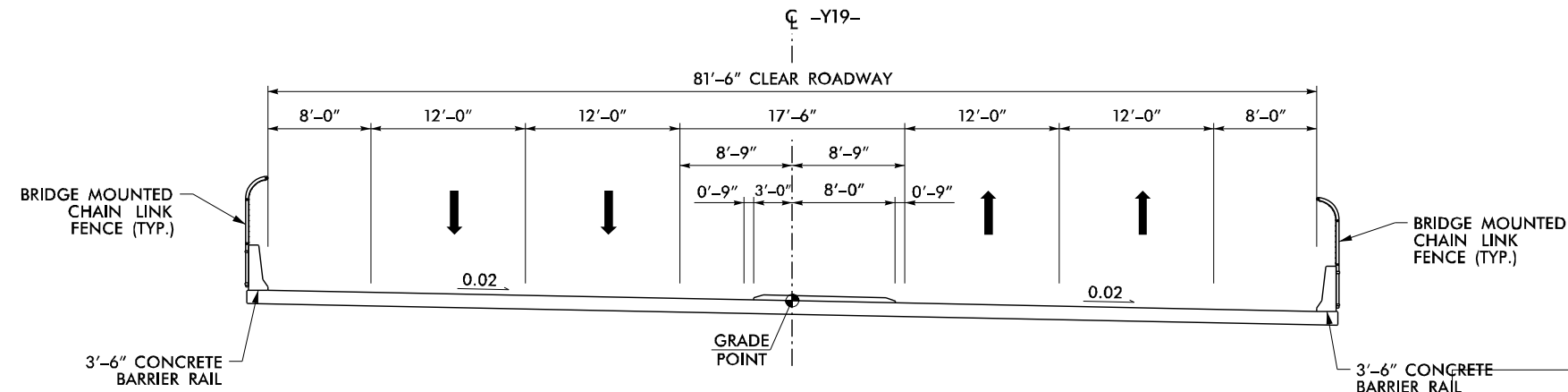
LANE



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N.C.B.E.L.S. License Number: F-0116

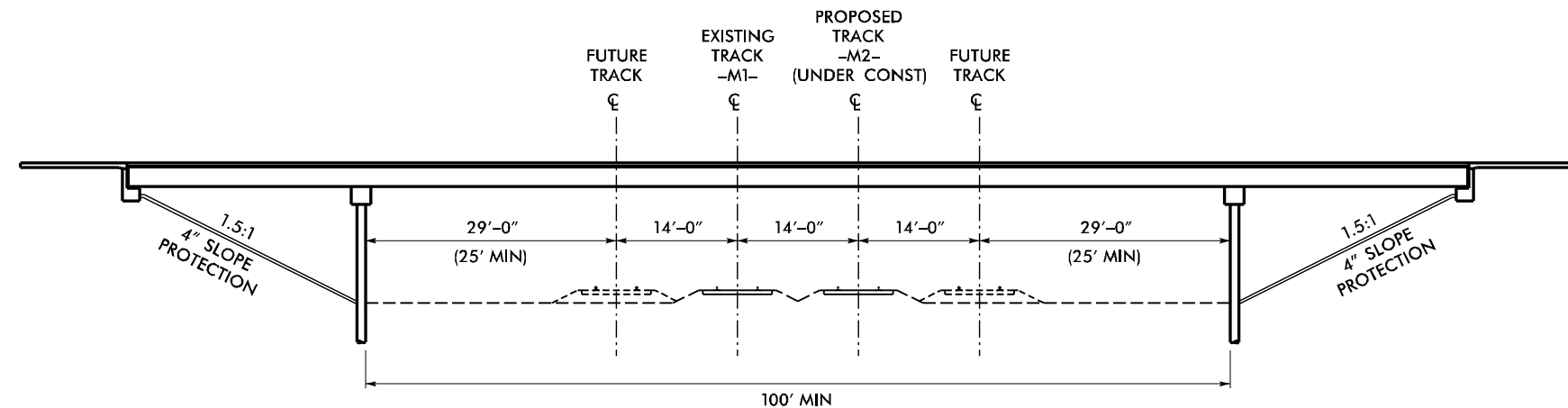
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I-3802B		2A-19	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SITE 6 - STRUCTURE TYPICAL SECTION

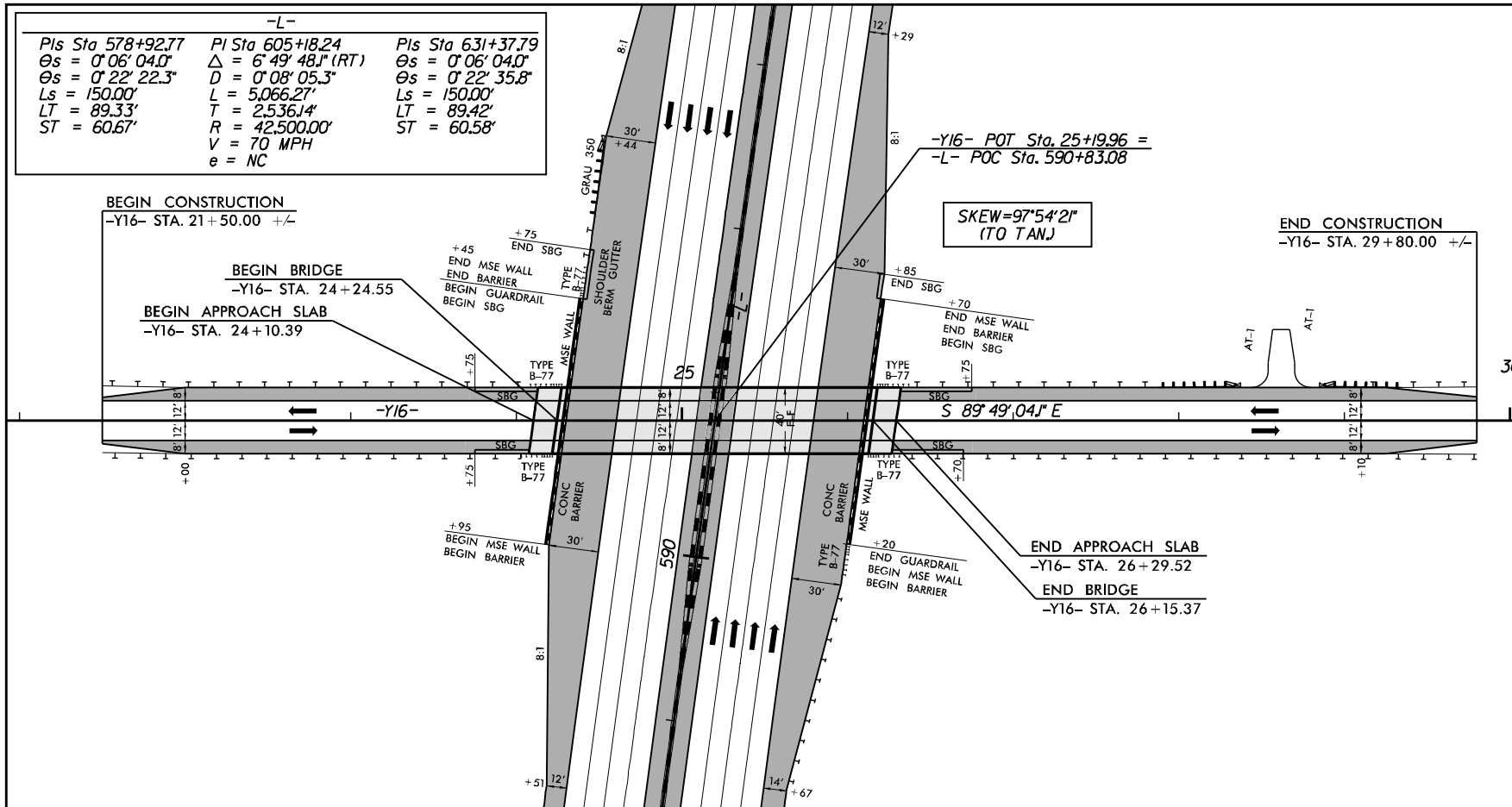


SITE 6 – TYPICAL SECTION NO. 1
-Y19- (NC-152) OVER RAILROAD
-Y19- FUNCTIONAL CLASS. = MINOR & PRINCIPAL ARTERIAL

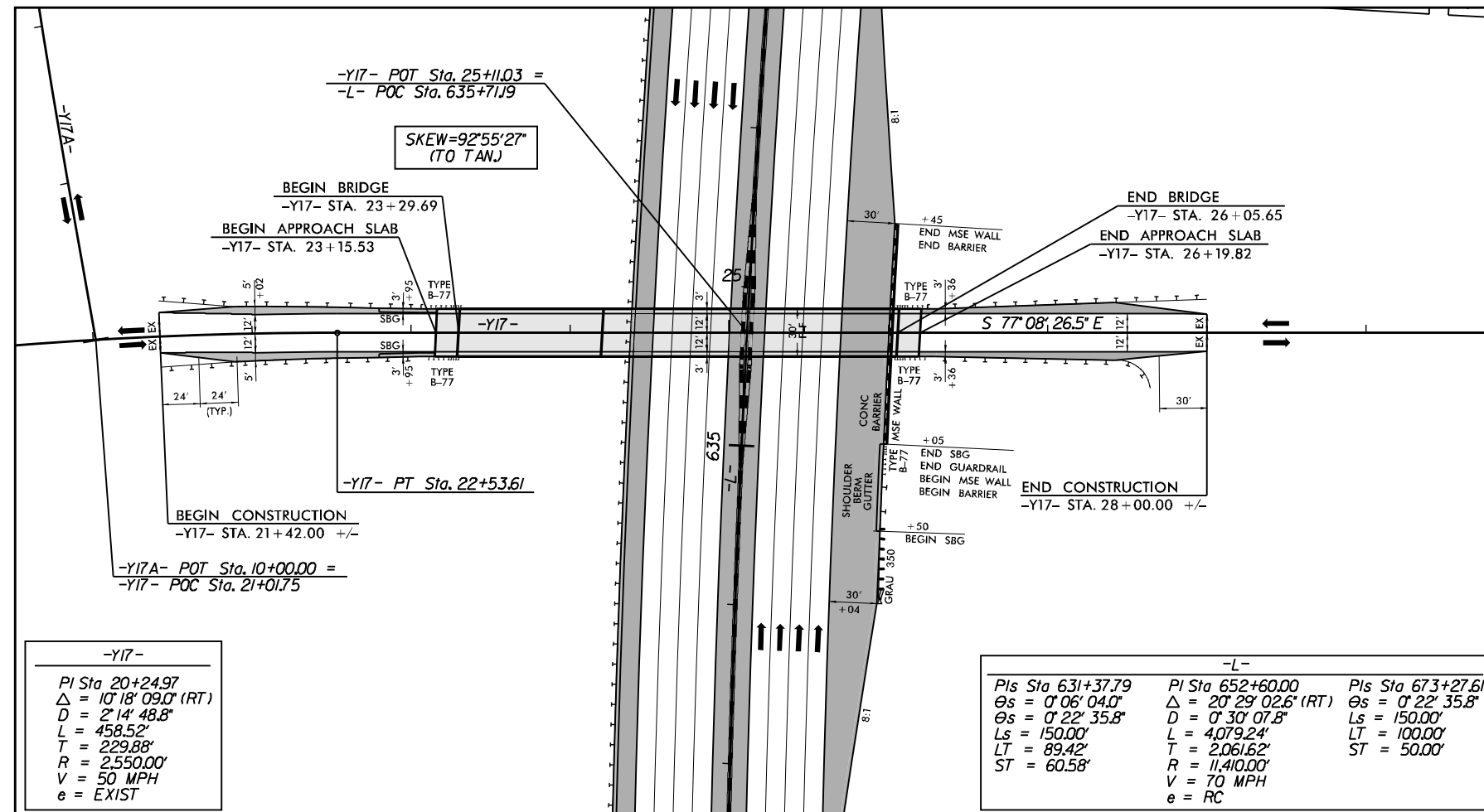
(-Y19-) NC 152			
2016 ADT	23,100	TTST =	3%
2040 ADT	28,400	DUALS =	4%
		DHV =	10%
		DIR =	60%



SITE 6 – TYPICAL SECTION NO. 2
NSR /NCRR UNDER
-Y19- (NC 152)
MINIMUM VERTICAL CLEARANCE = 23'-0"



**STRUCTURE SITE 2
-Y17- OVER -L-**
(SEE PLAN SHEET 22)

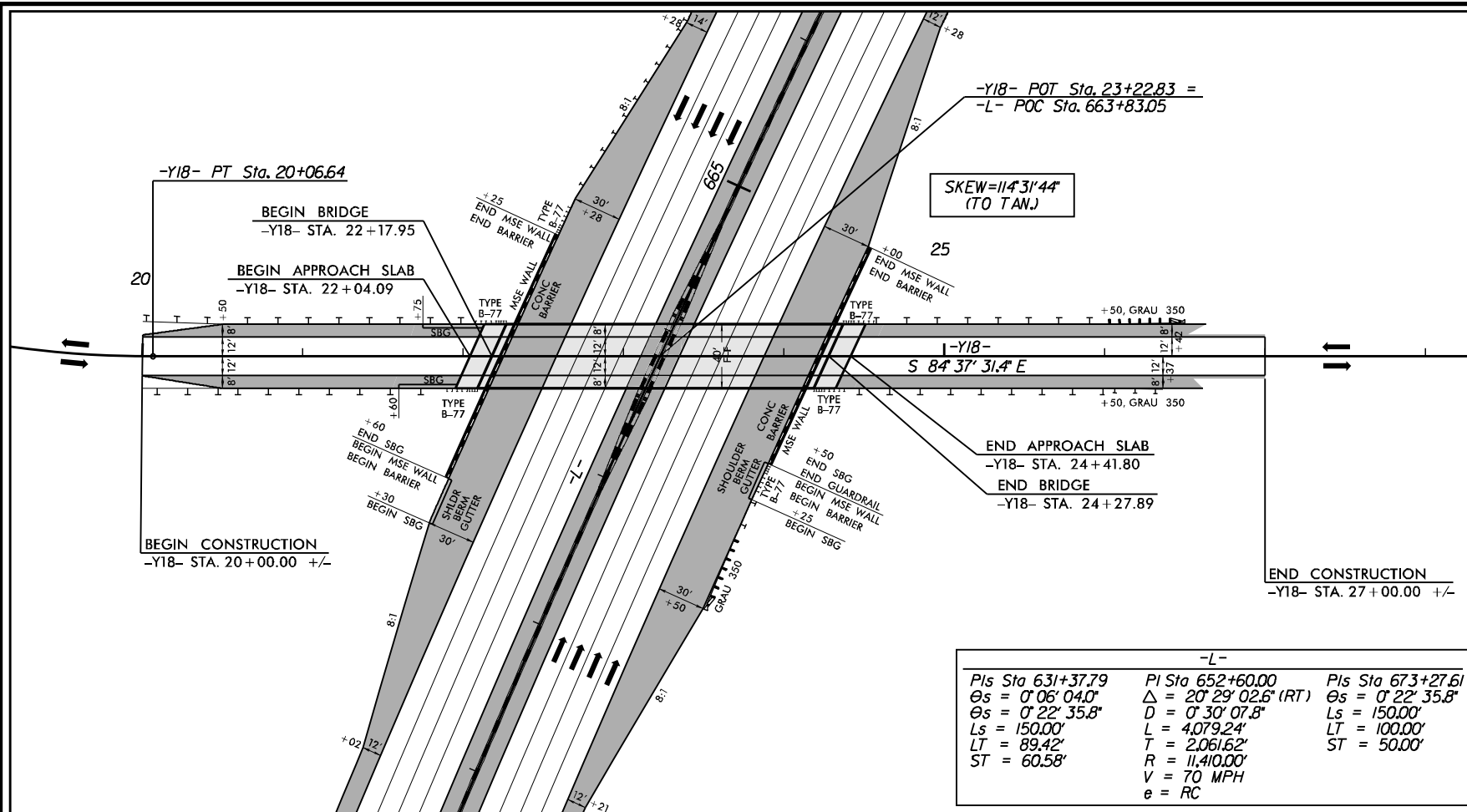


LANE

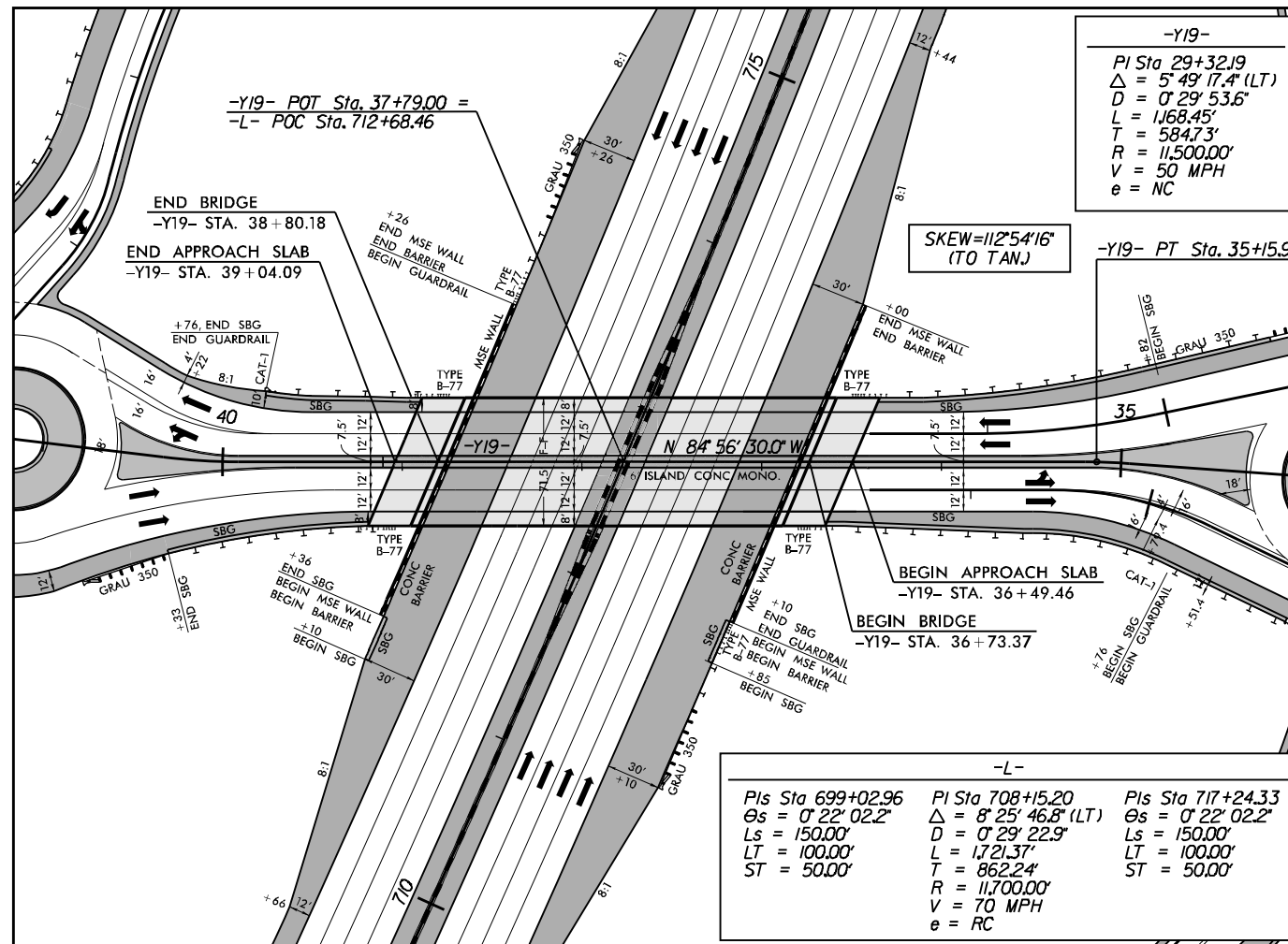


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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	2B-1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



STRUCTURE SITE 4
-Y19- OVER -L-
(SEE PLAN SHEET 27)

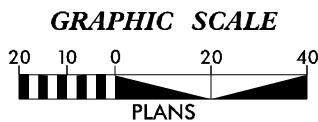


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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
I-3802B	2B-2
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

STRUCTURE SITE 3
-Y18- OVER -L-
(SEE PLAN SHEET 24)

(SEE PLAN SHEET 34)



-Y19EB-		
PI Sta 30+88.72	PI Sta 33+84.82	PI Sta 35+09.11
$\Delta = 13^{\circ} 28' 39.7" (LT)$	$\Delta = 36^{\circ} 58' 08.7" (RT)$	$\Delta = 25^{\circ} 54' 44.5" (LT)$
$D = 11^{\circ} 27' 33.0"$	$D = 98^{\circ} 47' 09.0"$	$D = 28^{\circ} 38' 52.4"$
$L = 117.62'$	$L = 37.42'$	$L = 90.45'$
$T = 59.08'$	$T = 19.39'$	$T = 46.01'$
$R = 500.00'$	$R = 58.00'$	$R = 200.00'$

Y19EB-		Y19RPC-	
53° 58' 08.7" (RT)	PI Sta 35+09.11	22° 46' 05.8" (RT)	PI Sta 21+90.39
3° 47' 09.0"	$\Delta = 25^\circ 54' 44.5" \text{ (LT)}$	130° 13' 03.7"	$\Delta = 122^\circ 46' 05.8" \text{ (RT)}$
42'	D = 28° 38' 52.4"	17.48'	D = 23° 13' 03.7"
39'	L = 90.45'	8.86'	L = 17.48'
3.00'	T = 46.01'	44.00'	T = 8.86'
	R = 200.00'		R = 44.00'

PI Sta 35+57.99
 $\Delta = 11^\circ 45' 46.1''$ (RT)
 $D = 11^\circ 27' 33.0''$
 $L = 102.65'$
 $T = 51.51'$
 $R = 500.00'$

-Y19RPC-		
PI Sta 23+04.97	PI Sta 24+32.68	PI Sta 25+06.87
$\Delta = 26^{\circ} 00' 18.2" (LT)$	$\Delta = 22^{\circ} 50' 44.7" (RT)$	$\Delta = 39^{\circ} 15' 30.4" (LT)$
$D = 19^{\circ} 05' 54.9"$	$D = 27^{\circ} 25' 05.9"$	$D = 130^{\circ} 13' 03.7"$
$L = 136.16'$	$L = 119.32'$	$L = 30.15'$
$T = 69.27'$	$T = 60.82'$	$T = 15.69'$
$R = 300.00'$	$R = 250.00'$	$R = 44.00'$

-Y19RAI- (CENTRAL ISLAND)			
PI Sta 10+40.00	PI Sta 11+02.83	PI Sta 11+65.66	PI Sta 12+28.50
$\Delta = 90^{\circ}00'00.0''$ (LT)	$\Delta = 90^{\circ}00'00.0''$ (LT)	$\Delta = 90^{\circ}00'00.0''$ (LT)	$\Delta = 90^{\circ}00'00.0''$ (LT)
D = 143°14' 22.0"	D = 143°14' 22.0"	D = 143°14' 22.0"	D = 143°14' 22.0"
L = 62.83'	L = 62.83'	L = 62.83'	L = 62.83'
T = 40.00'	T = 40.00'	T = 40.00'	T = 40.00'
R = 40.00'	R = 40.00'	R = 40.00'	R = 40.00'

REVISIONS

-Y19RPA-	
PI Sta 22+85.97	PI Sta 24+20.28
$\Delta = 27^{\circ} 48' 24.5" (RT)$	$\Delta = 41^{\circ} 12' 10.1" (LT)$
$D = 49^{\circ} 23' 34.5"$	$D = 130^{\circ} 13' 03.7"$
$L = 56.30'$	$L = 31.64'$
$T = 28.71'$	$T = 16.54'$
$R = 116.00'$	$R = 44.00'$

-Y19RPB-	
PI Sta 22+82.12	PI Sta 23+55.41
$\Delta = 25^{\circ} 35' 22.0" (LT)$	$\Delta = 21^{\circ} 23' 54.2" (RT)$
$D = 19^{\circ} 21' 24.1"$	$D = 130^{\circ} 13' 03.7"$
$L = 132.20'$	$L = 16.43'$
$T = 67.22'$	$T = 8.31'$
$R = 296.00'$	$R = 44.00'$

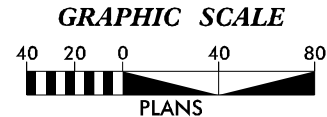
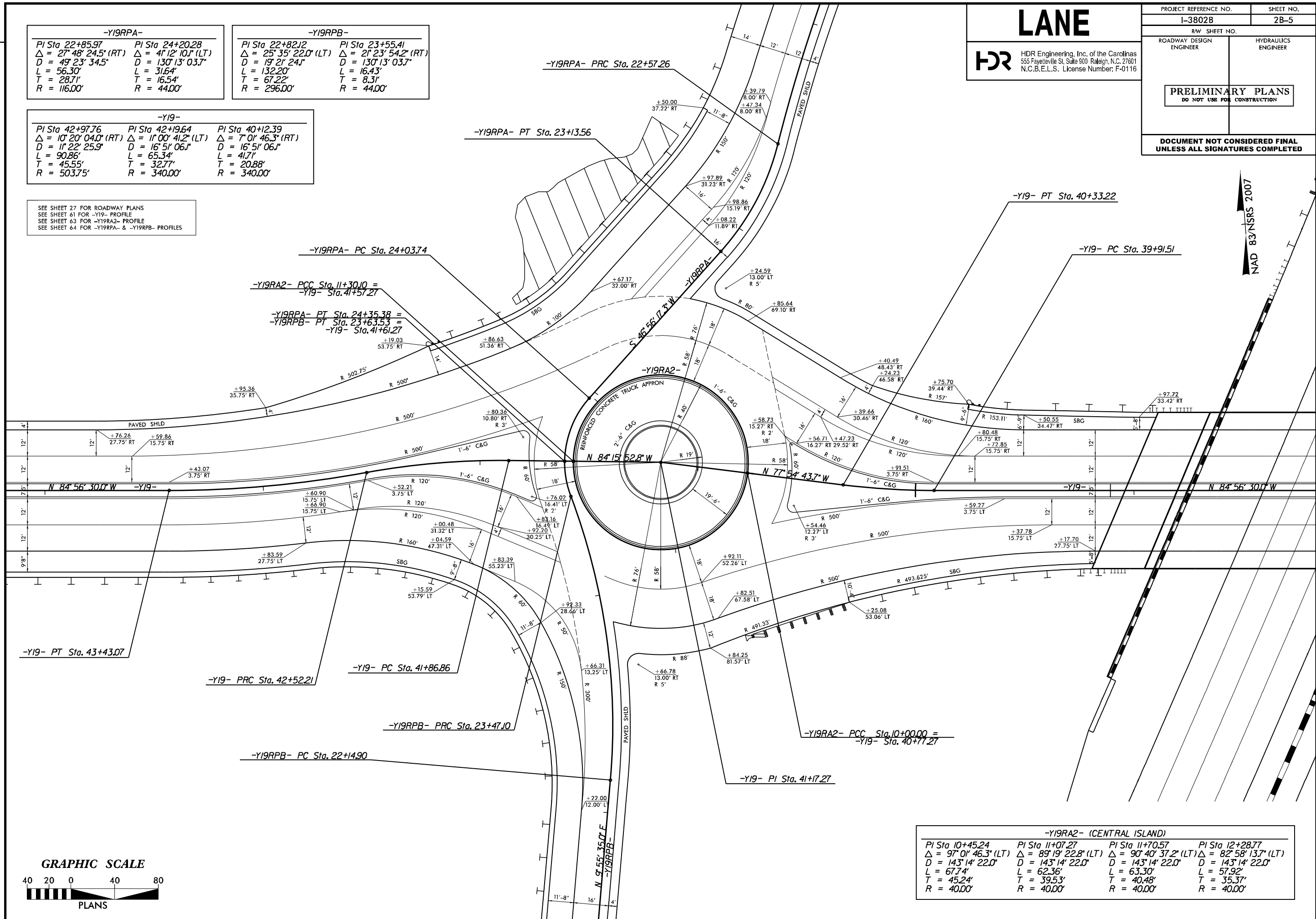
-Y19-		
PI Sta 42+97.76	PI Sta 42+19.64	PI Sta 40+12.39
$\Delta = 10^{\circ} 20' 04.0" (RT)$	$\Delta = 11^{\circ} 00' 41.2" (LT)$	$\Delta = 7^{\circ} 01' 46.3" (RT)$
$D = 11^{\circ} 22' 25.9"$	$D = 16^{\circ} 51' 06.1"$	$D = 16^{\circ} 51' 06.1"$
$L = 90.86'$	$L = 65.34'$	$L = 41.71'$
$T = 45.55'$	$T = 32.77'$	$T = 20.88'$
$R = 503.75'$	$R = 340.00'$	$R = 340.00'$

SEE SHEET 27 FOR ROADWAY PLANS
SEE SHEET 61 FOR -Y19- PROFILE
SEE SHEET 63 FOR -Y19RA2- PROFILE
SEE SHEET 64 FOR -Y19RPA- & -Y19RPB- PROFILES

LANE

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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		2B-5
RAW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-Y19RA2- (CENTRAL ISLAND)			
PI Sta 10+45.24	PI Sta 11+07.27	PI Sta 11+70.57	PI Sta 12+28.77
$\Delta = 97^{\circ} 01' 46.3" (LT)$	$\Delta = 89^{\circ} 19' 22.8" (LT)$	$\Delta = 90^{\circ} 40' 37.2" (LT)$	$\Delta = 82^{\circ} 58' 13.7" (LT)$
$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$
$L = 67.74'$	$L = 62.36'$	$L = 63.30'$	$L = 57.92'$
$T = 45.24'$	$T = 39.53'$	$T = 40.48'$	$T = 35.37'$
$R = 40.00'$	$R = 40.00'$	$R = 40.00'$	$R = 40.00'$

REVISIONS

-Y19-		
PI Sta 46+14.4	PI Sta 46+74.48	PI Sta 48+92.55
$\Delta = 6^{\circ} 39' 14.3" (LT)$	$\Delta = 10^{\circ} 27' 32.7" (RT)$	$\Delta = 9^{\circ} 36' 49.2" (LT)$
$D = 11^{\circ} 22' 25.9"$	$D = 16^{\circ} 51' 06.1"$	$D = 11^{\circ} 27' 33.0"$
$L = 58.50'$	$L = 62.07'$	$L = 83.90'$
$T = 29.28'$	$T = 31.12'$	$T = 42.05'$
$R = 503.75'$	$R = 340.00'$	$R = 500.00'$

-Y25-	
PI Sta 20+96.70	
$\Delta = 11^{\circ} 44' 33.4" (LT)$	
$D = 57^{\circ} 17' 44.8"$	
$L = 195.03'$	
$T = 147.54'$	
$R = 100.00'$	

-Y30-	
PI Sta 11+39.83	
$\Delta = 2^{\circ} 05' 27.7" (LT)$	
$D = 2^{\circ} 51' 53.2"$	
$L = 72.99'$	
$T = 36.50'$	
$R = 2,000.00'$	

PROJECT REFERENCE NO.

I-3802B

SHEET NO.

2B-6

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

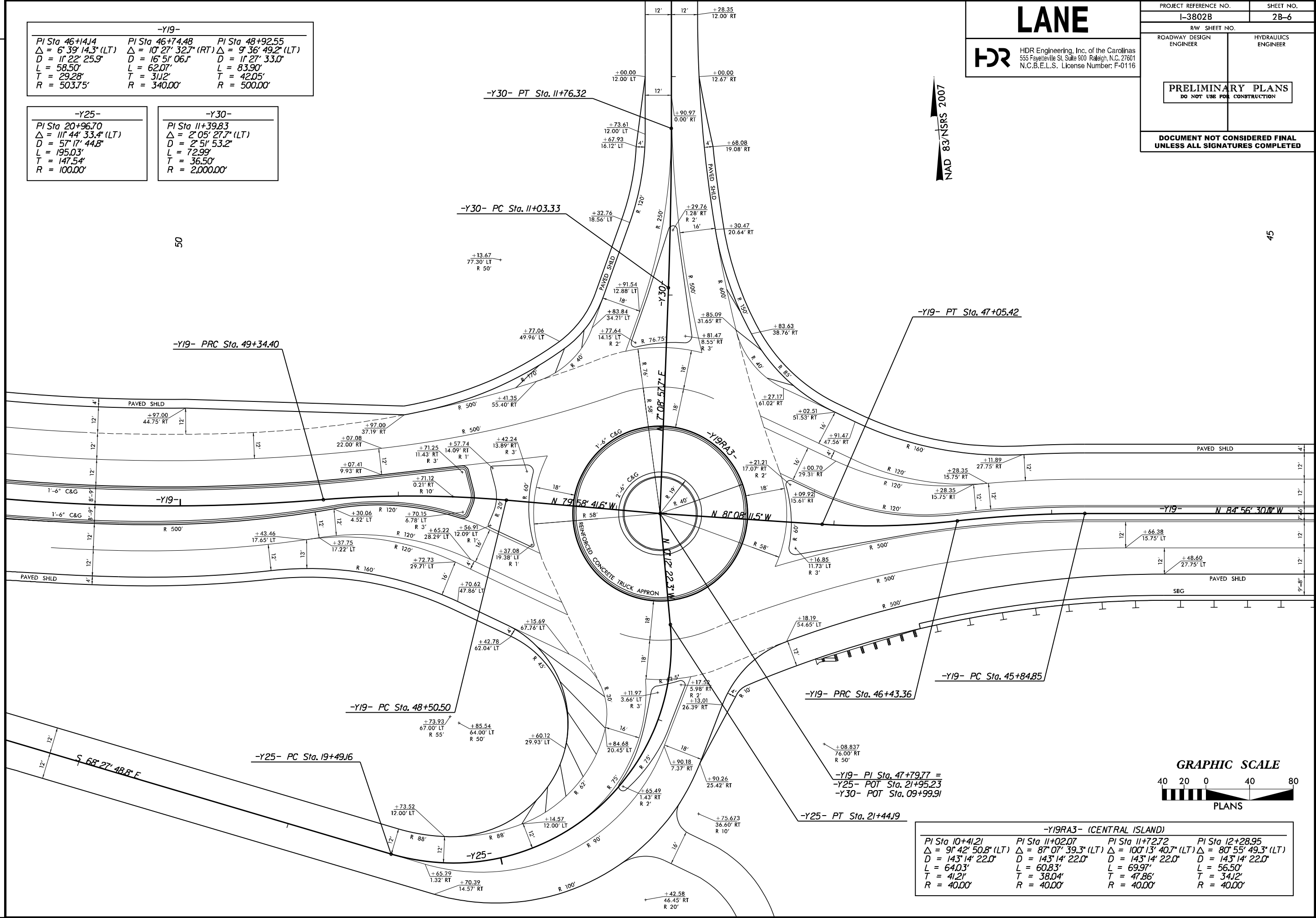
LANE

HDR

HDR Engineering, Inc. of the Carolinas

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N.C.B.E.L.S. License Number: F-0116



-Y19RA3- (CENTRAL ISLAND)			
PI Sta 10+41.21	PI Sta 11+02.07	PI Sta 11+72.72	PI Sta 12+28.95
$\Delta = 9^{\circ} 42' 50.8" (LT)$	$\Delta = 8^{\circ} 07' 39.3" (LT)$	$\Delta = 100^{\circ} 13' 40.7" (LT)$	$\Delta = 80^{\circ} 55' 49.3" (LT)$
$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$	$D = 143^{\circ} 14' 22.0"$
$L = 64.03'$	$L = 60.83'$	$L = 69.97'$	$L = 56.50'$
$T = 41.21'$	$T = 38.04'$	$T = 47.86'$	$T = 34.12'$
$R = 40.00'$	$R = 40.00'$	$R = 40.00'$	$R = 40.00'$

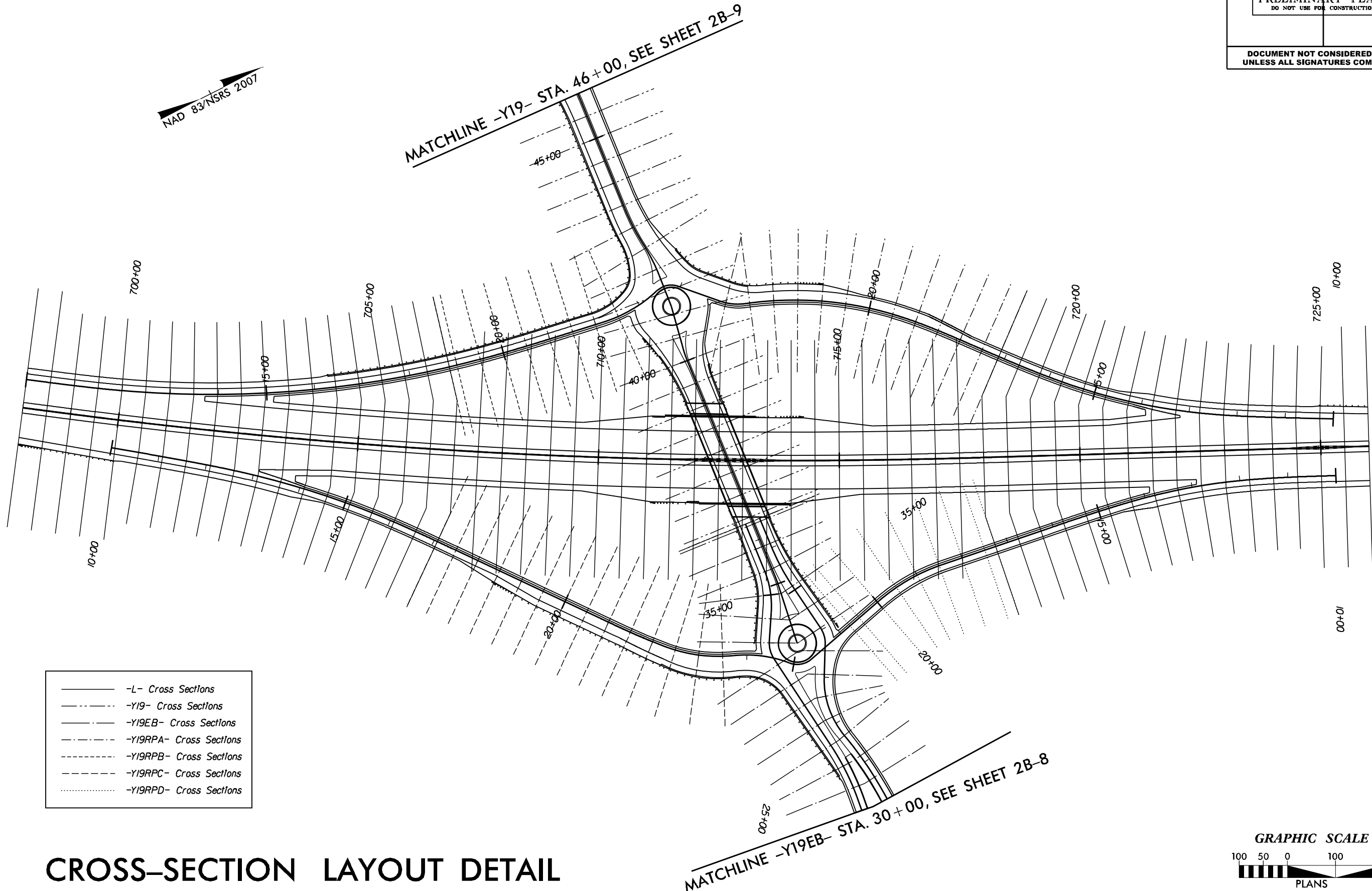
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PENTABLE: NCDOT_pshp.flx.tbl
TIME: 11:16:40 AM
DATE: 8/23/2016

REVISIONS

- L- Cross Sections
- Y19- Cross Sections
- Y19EB- Cross Sections
- Y19RPA- Cross Sections
- Y19RPB- Cross Sections
- Y19RPC- Cross Sections
- Y19RPD- Cross Sections

CROSS-SECTION LAYOUT DETAIL

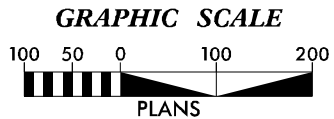


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PROJECT REFERENCE NO.	SHEET NO.
I-3802B	2B-7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

CROSS-SECTION LAYOUT DETAIL

-Y19A- Cross Sections

-Y19EB- Cross Sections

20+00

25+00

25+00

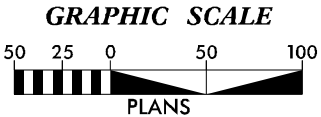
25+00

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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		2B-8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



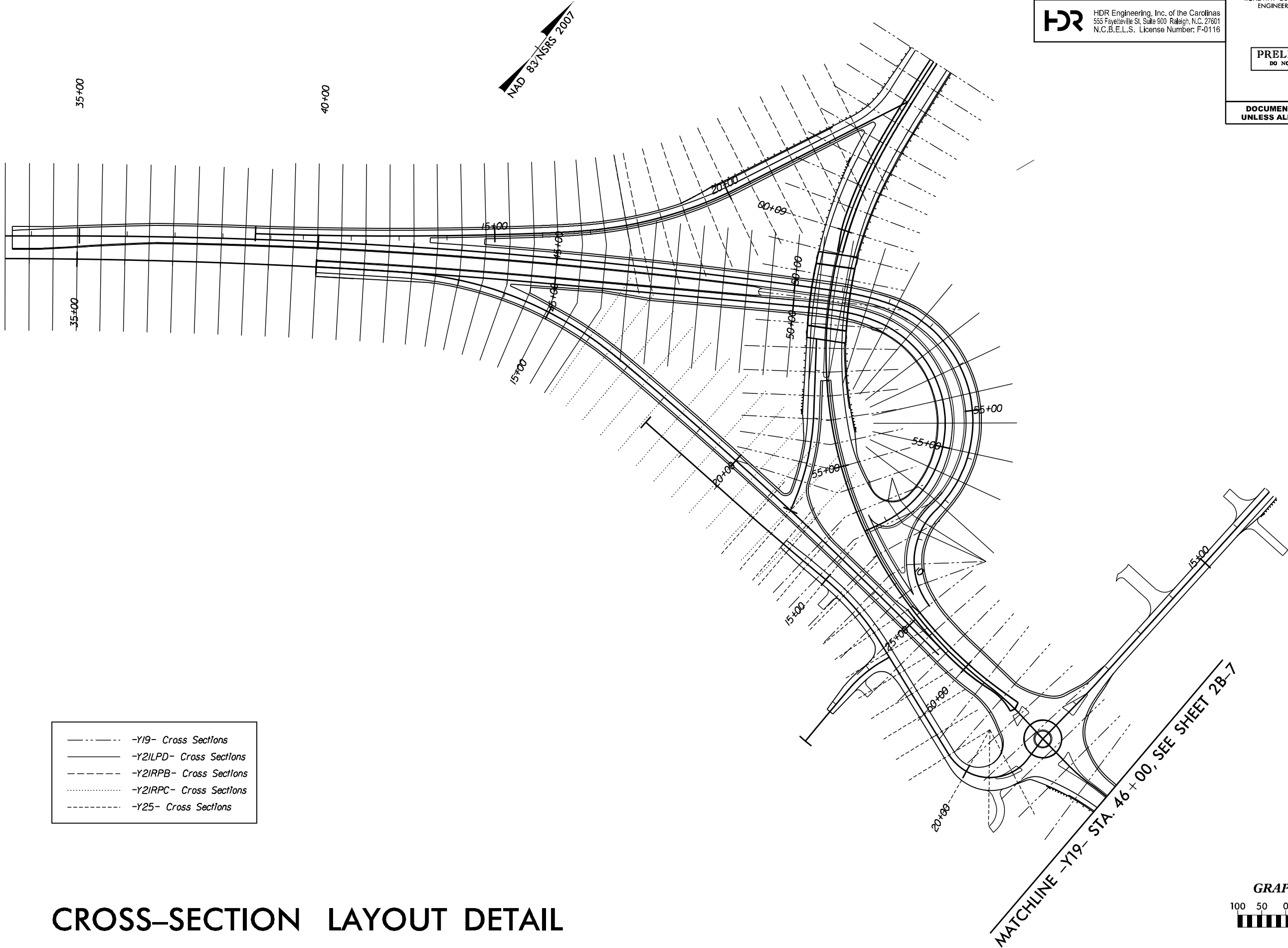
MATCHLINE -Y19EB- STA. 30+00,
SEE SHEET 2B-7

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REVISIONS

- Y19- Cross Sections
- Y2ILPD- Cross Sections
- Y2IRPB- Cross Sections
- Y2IRPC- Cross Sections
- Y25- Cross Sections

CROSS-SECTION LAYOUT DETAIL

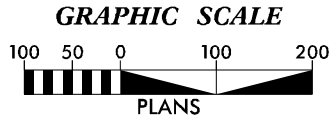


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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		2B-9	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



REVISIONS

LANE



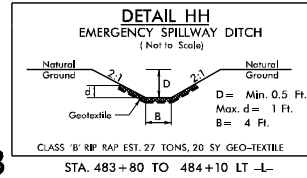
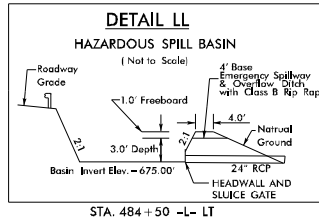
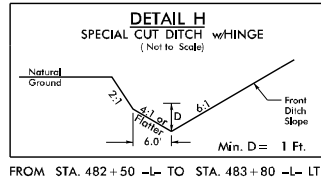
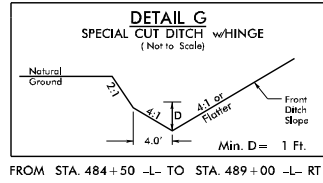
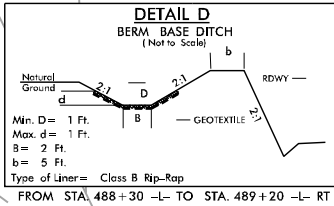
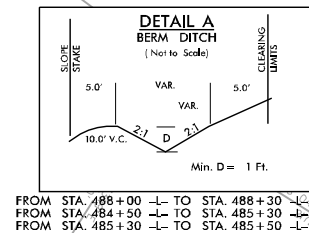
HDR Engineering, Inc. of the Carolinas
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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PLAN SHEETS 4 – 10 HAVE BEEN REMOVED FROM THIS PLAN SET

PREVIOUS PLANS SHOWED MILLING AND OVERLAY ON THE I-3802A PROJECT,
WHICH HAS BEEN REVISED TO PLACE FINAL PAVEMENT AND PAVEMENT
MARKINGS THAT WILL ACCOMMODATE THE TEMPORARY AND FINAL
REQUIREMENTS ON THE I-3802B PROJECT

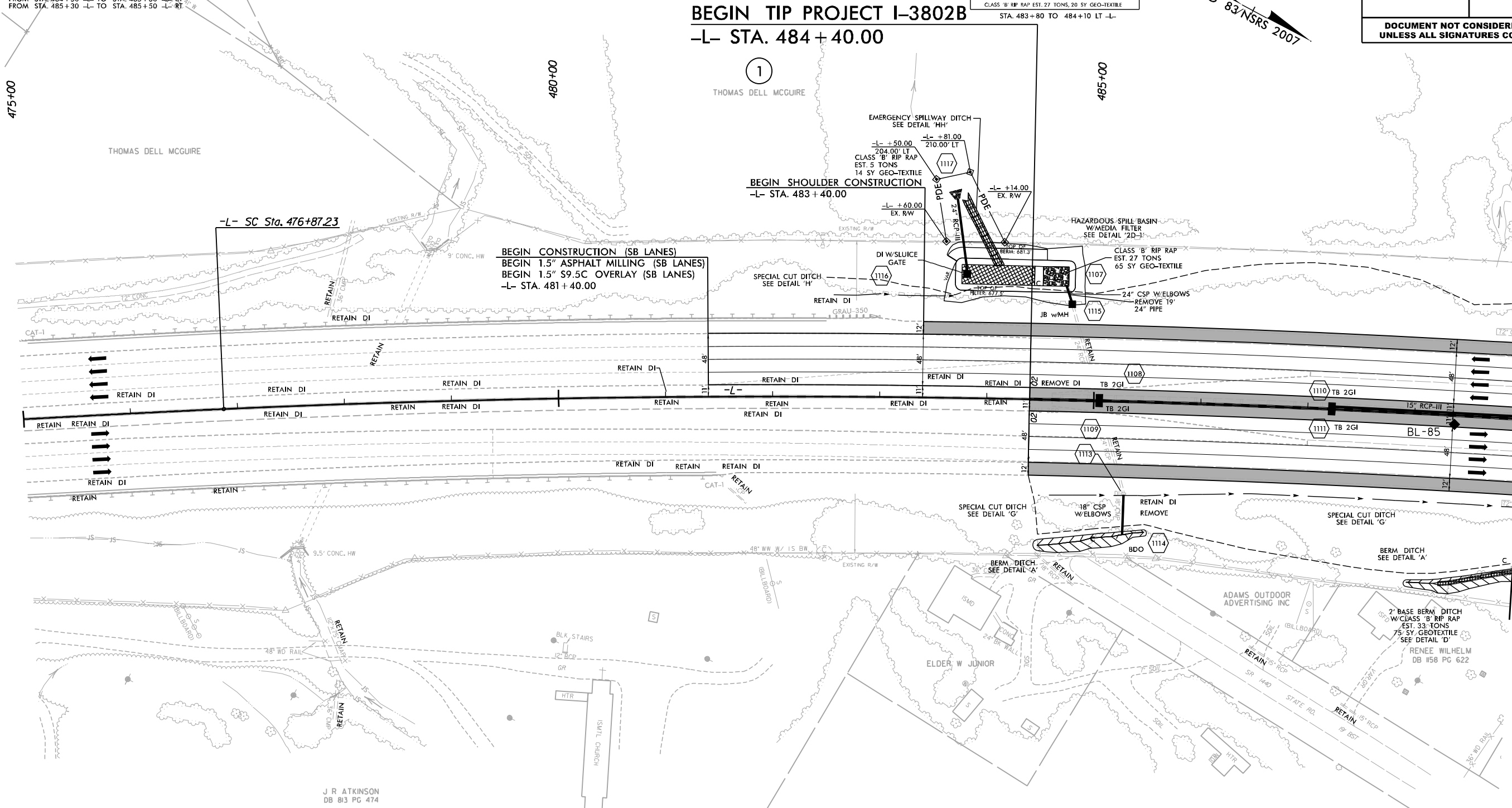
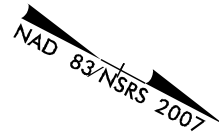
REVISIONS



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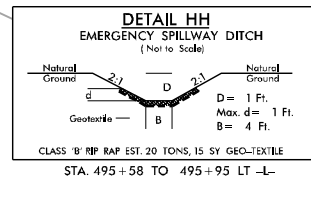
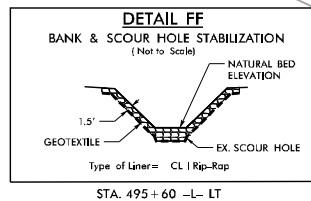
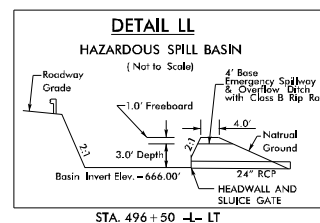
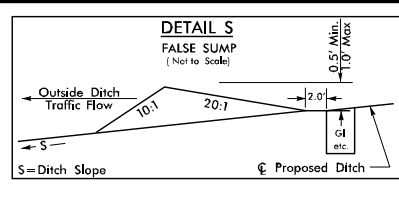
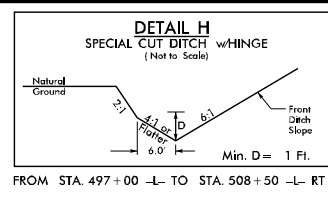
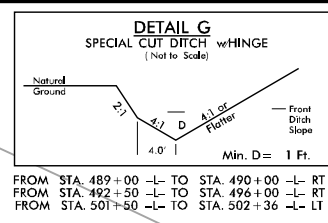
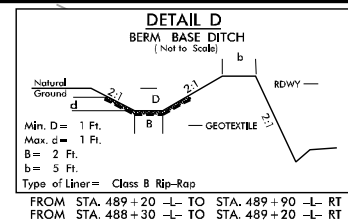
PROJECT REFERENCE NO.		SHEET NO.
I-3802B		11
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



-L-		
Pts Sta 476+20.56	Pts Sta 487+41.33	Pts Sta 498+56.19
Os = 0° 30' 01.4"	Os = 10° 31' 11.5" (RT)	Os = 0° 11' 16.1"
Ls = 200.00'	D = 0° 30' 01.4"	Os = 0° 22' 31.1"
LT = 133.33'	L = 2,102.29'	Ls = 150.00'
ST = 66.67'	T = 1,054.11'	LT = 83.32'
	R = 11,450.00'	ST = 66.68'
	V = 70MPH	
	e = 0.02	

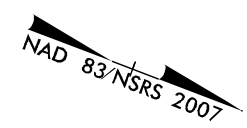
MATCHLINE -L- STA. 489+00, SEE SHEET 12

REVISIONS

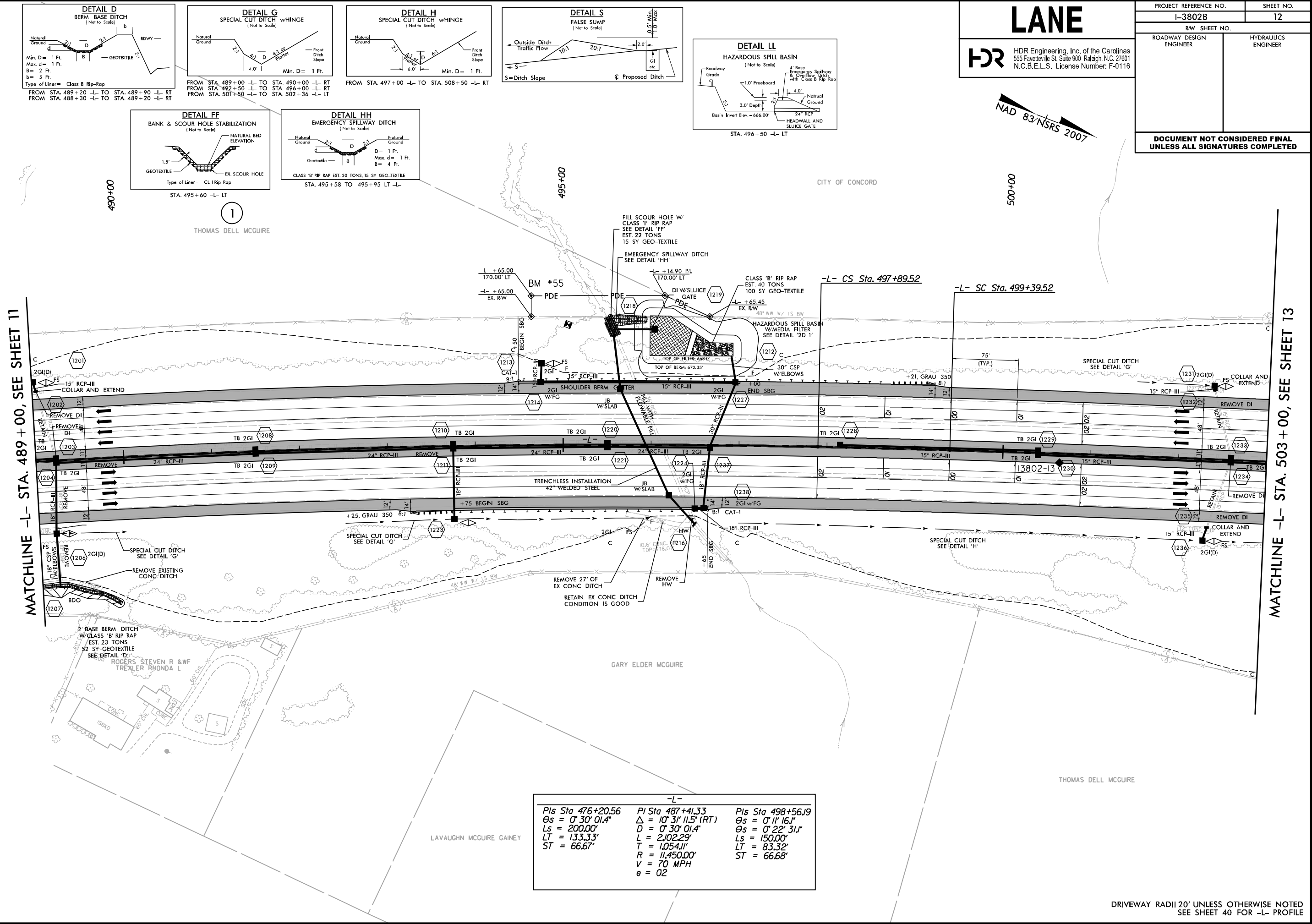


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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

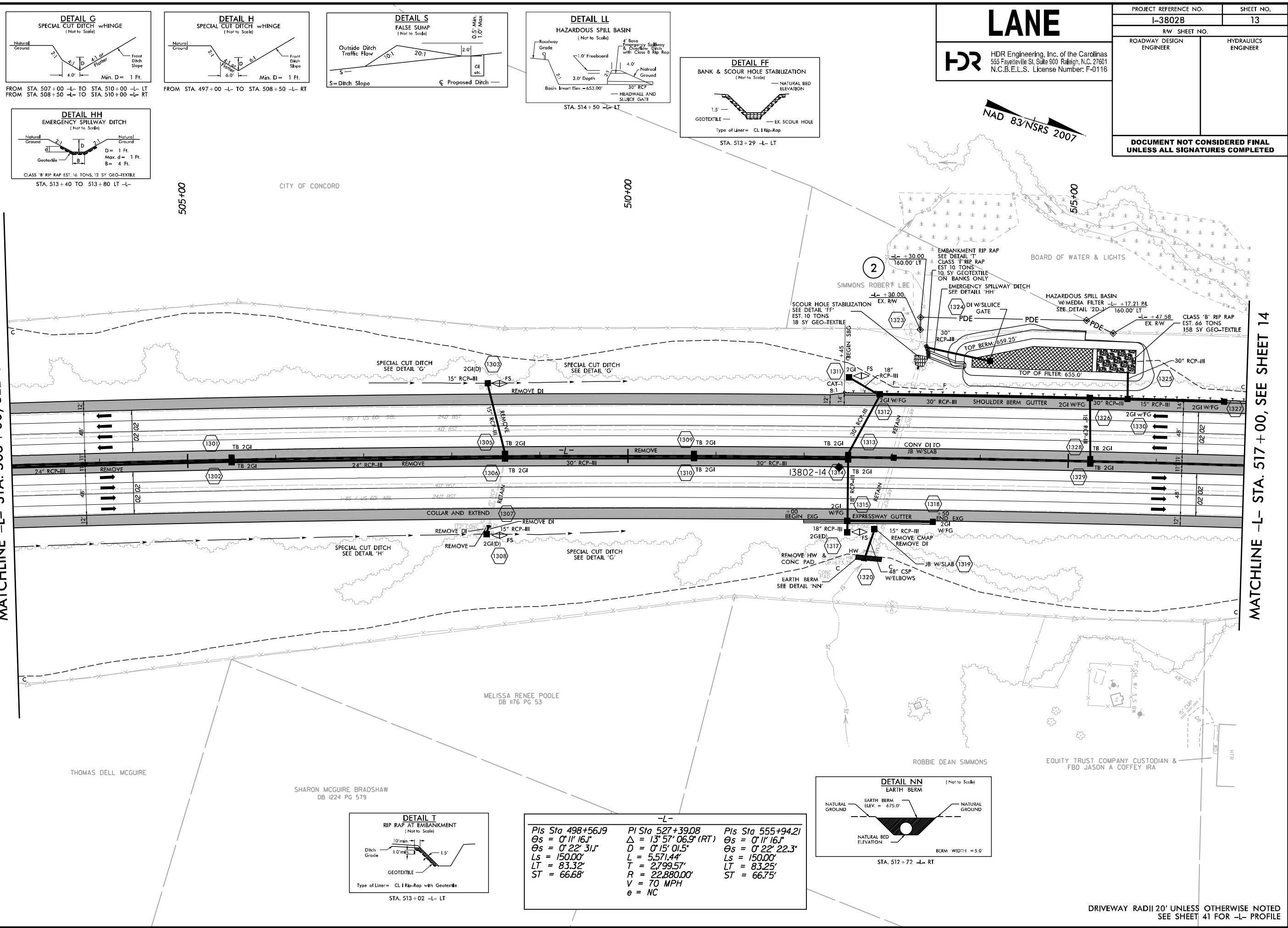


-L-		
Pls Sta 476+20.56	Pls Sta 487+41.33	Pls Sta 498+56.19
Os = 0° 30' 01.4"	Δ = 10° 31' 11.5" (RT)	Os = 0° 11' 16.1"
Ls = 200.00'	D = 0° 30' 01.4"	Os = 0° 22' 31.1"
LT = 133.33'	T = 2102.29'	Ls = 150.00'
ST = 66.67'	R = 11,450.00'	LT = 83.32'
	V = 70 MPH	ST = 66.68'
	e = 02	

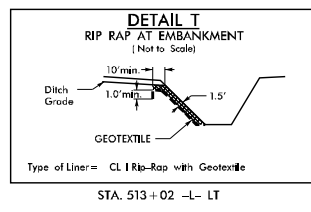
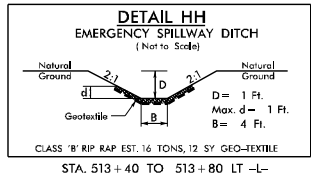
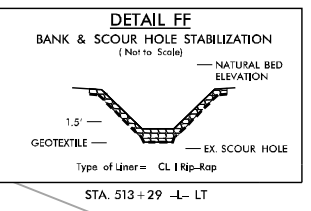
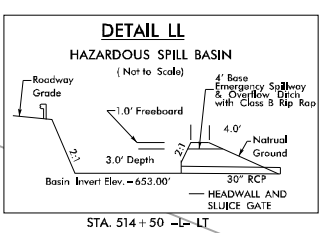
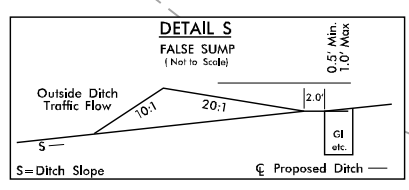
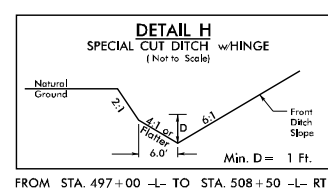
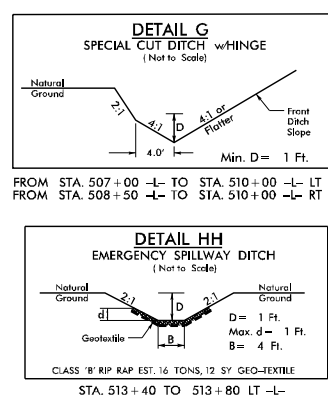
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 40 FOR -L- PROFILE

REVISIONS

MATCHLINE -L- STA. 503 + 00, SEE SHEET 12

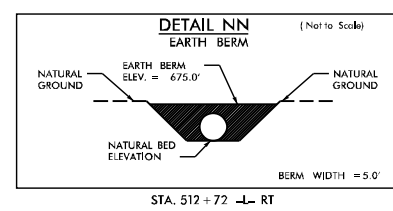


MATCHLINE -L- STA. 517 + 00, SEE SHEET 14



-L-

<i>Pls Sta 498+56.19</i>	<i>PI Sta 527+39.08</i>	<i>Pls Sta 555+94.21</i>
<i>Θs = 0° 11' 16.1"</i>	<i>Δ = 13° 57' 06.9" (RT)</i>	<i>Θs = 0° 11' 16.1"</i>
<i>Θs = 0° 22' 31.1"</i>	<i>D = 0° 15' 01.5"</i>	<i>Θs = 0° 22' 22.3"</i>
<i>Ls = 150.00'</i>	<i>L = 5.571.44'</i>	<i>Ls = 150.00'</i>
<i>LT = 83.32'</i>	<i>T = 2.799.57'</i>	<i>LT = 83.25'</i>
<i>ST = 66.68'</i>	<i>R = 22,880.00'</i>	<i>ST = 66.75'</i>
	<i>V = 70 MPH</i>	
	<i>θ = NC</i>	



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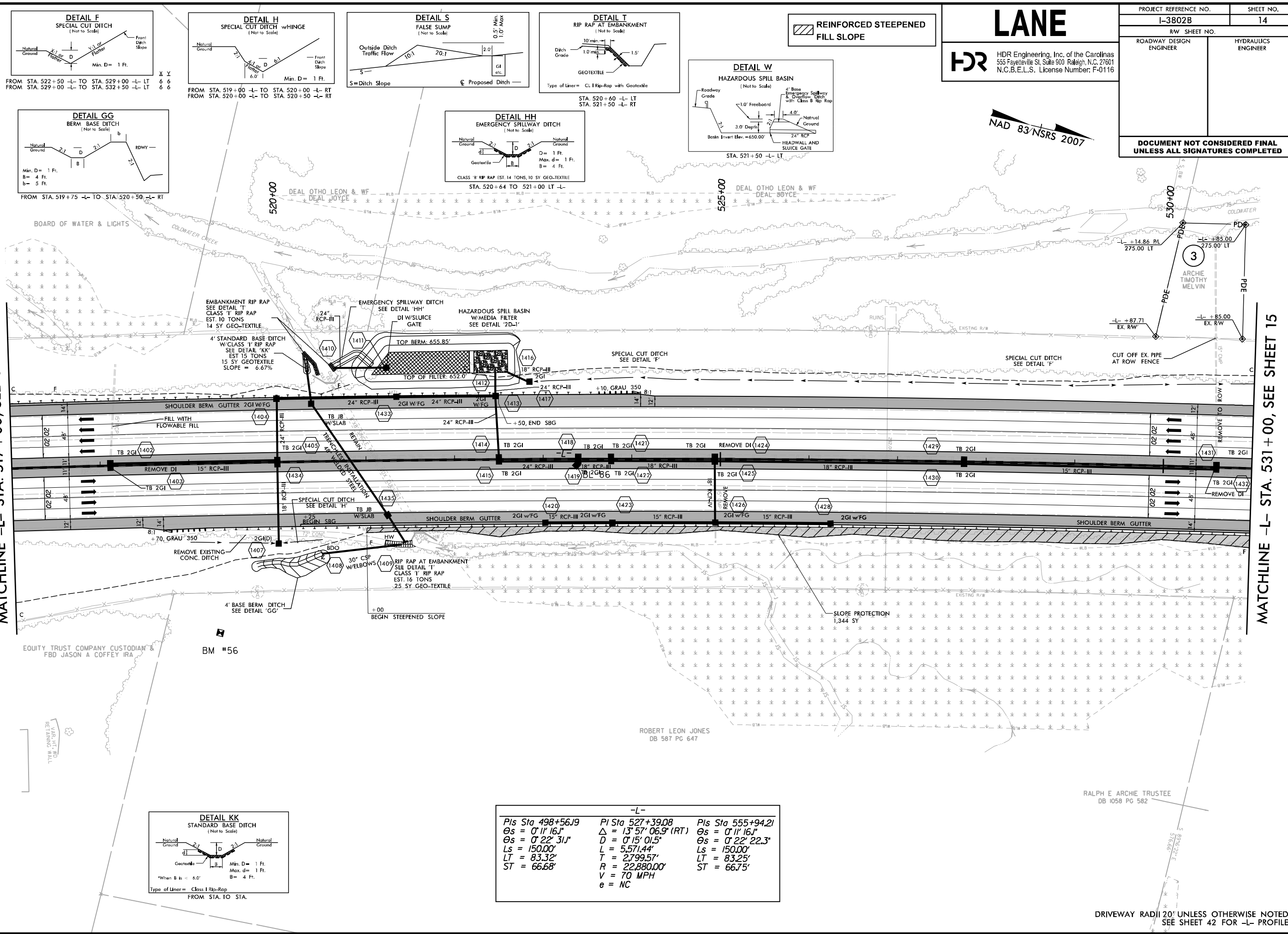
PROJECT REFERENCE NO.		SHEET NO.
I-3802B		13
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 41 FOR -L- PROFILE

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DATE: 9/27/2016
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REVISIONS

MATCHLINE -L- STA. 517+00, SEE SHEET 13



MATCHLINE -L- STA. 531+00, SEE SHEET 15

-L-		
Pls Sta 498+56.9	PI Sta 527+39.08	Pls Sta 555+94.21
$\Delta s = 0' 11' 16''$	$\Delta = 13' 57' 06.9''$ (RT)	$\Delta s = 0' 11' 16''$
$\Theta s = 0' 22' 31''$	$D = 0' 15' 01.5''$	$\Theta s = 0' 22' 22.3''$
$Ls = 150.00'$	$L = 5,571.44'$	$Ls = 150.00'$
$LT = 83.32'$	$T = 2,799.57'$	$LT = 83.25'$
$ST = 66.68'$	$R = 22,880.00'$	$ST = 66.75'$
	$V = 70$ MPH	
	$e = NC$	

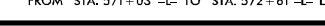
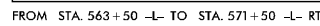
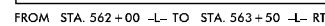
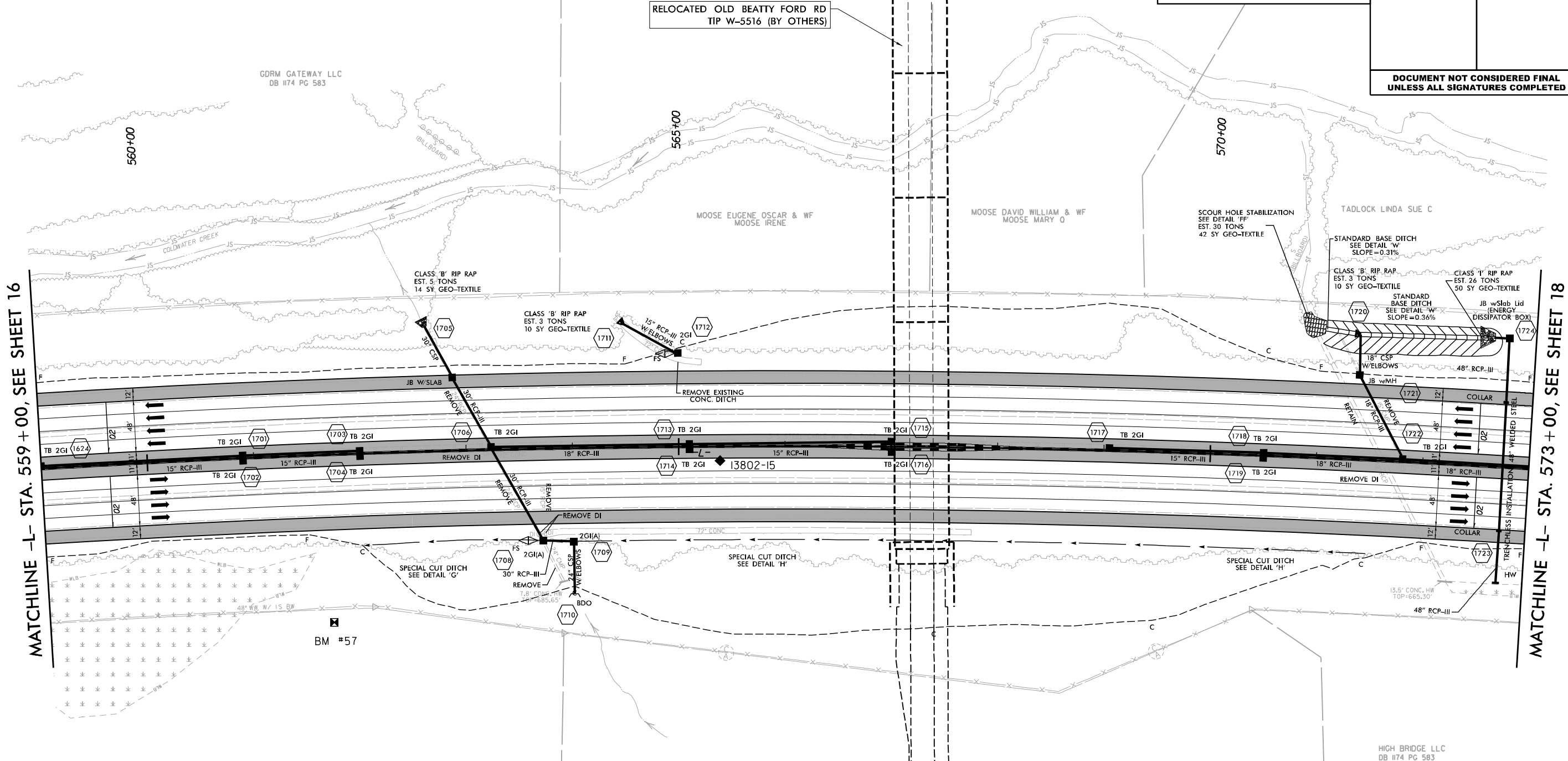
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 42 FOR -L- PROFILE

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N.C.B.E.L.S. License Number: F-0116

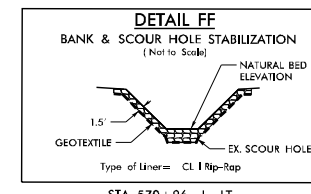
RELOCATED OLD BEATTY FORD RD
TIP W-5516 (BY OTHERS)

STATIONING - STA. 559+00, SEE SHEET 16

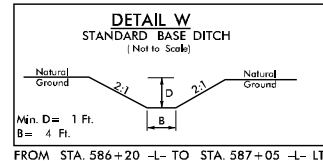
MATCHLINE -L- STA. 573 + 00, SEE SHEET 18



-L-		
<i>Pls</i> <i>Sta</i> 555+94.21	<i>Pl</i> <i>Sta</i> 567+49.75	<i>Pls</i> <i>Sta</i> 578+92.77
$\theta_s = 0^\circ 11' 16.4''$	$\Delta = 10^\circ 47' 37.3''$ (RT)	$\theta_s = 0^\circ 06' 04.0''$
$\theta_s = 0^\circ 22' 22.3''$	$D = 0^\circ 29' 49.7''$	$\theta_s = 0^\circ 22' 22.3''$
$L_s = 150.00'$	$L = 2,711.4'$	$L_s = 150.00'$
$LT = 83.25'$	$T = 1,088.79'$	$LT = 89.33'$
$ST = 66.75'$	$R = 11,525.00'$	$ST = 60.67'$
	$v = 70$ MPH	
	$e = 0.02$	



DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 45 FOR -L- PROFILE



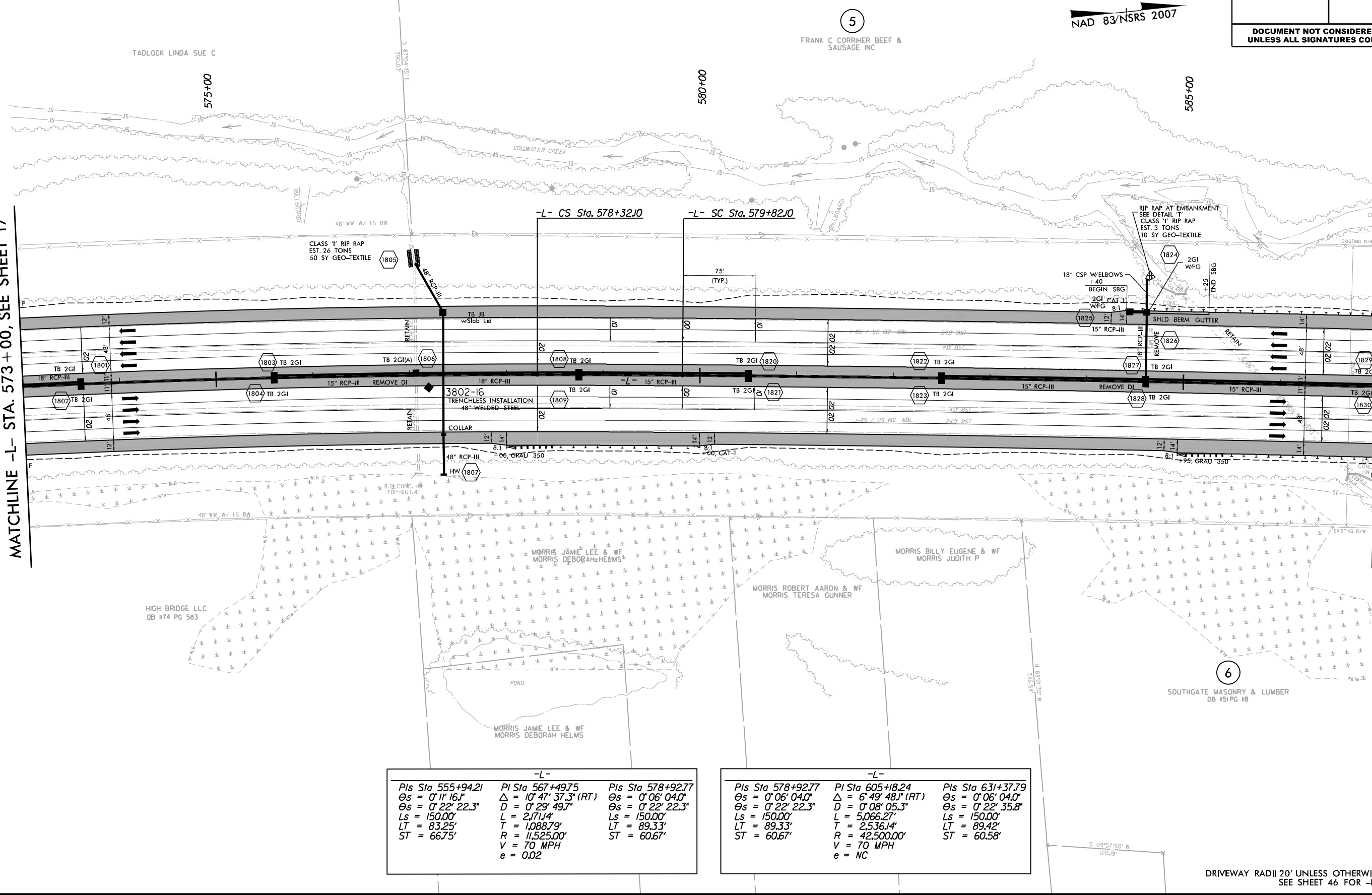
MATCHLINE -L- STA. 587+00, SEE SHEET 19

H2R

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NAD 83/NSRS 2007

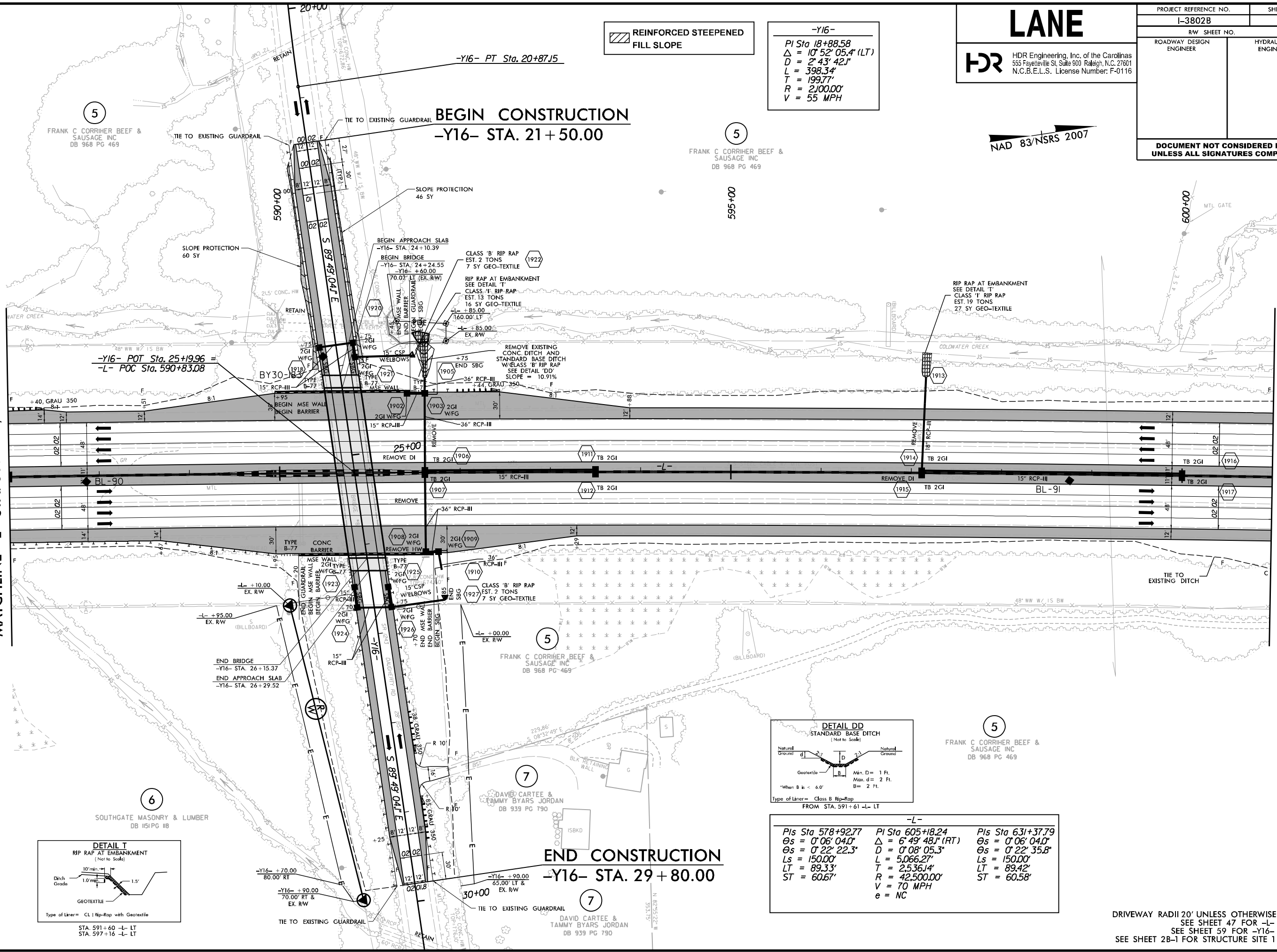
PROJECT REFERENCE NO.	SHEET NO.
I-3802B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETE	



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TIME: 3:30:37 PM
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REVISIONS

MATCHLINE -L- STA. 587+00, SEE SHEET 18



LANE



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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		19	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

NAD 83/NSRS 2007

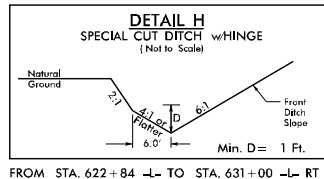
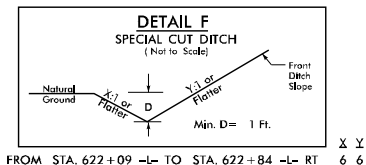
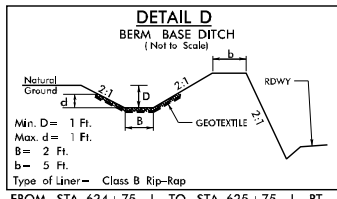
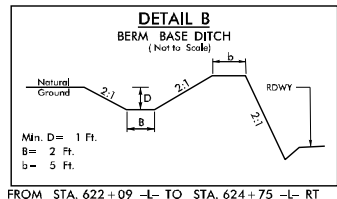
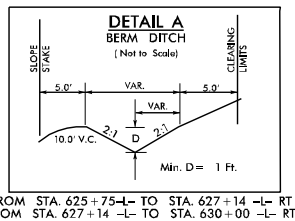
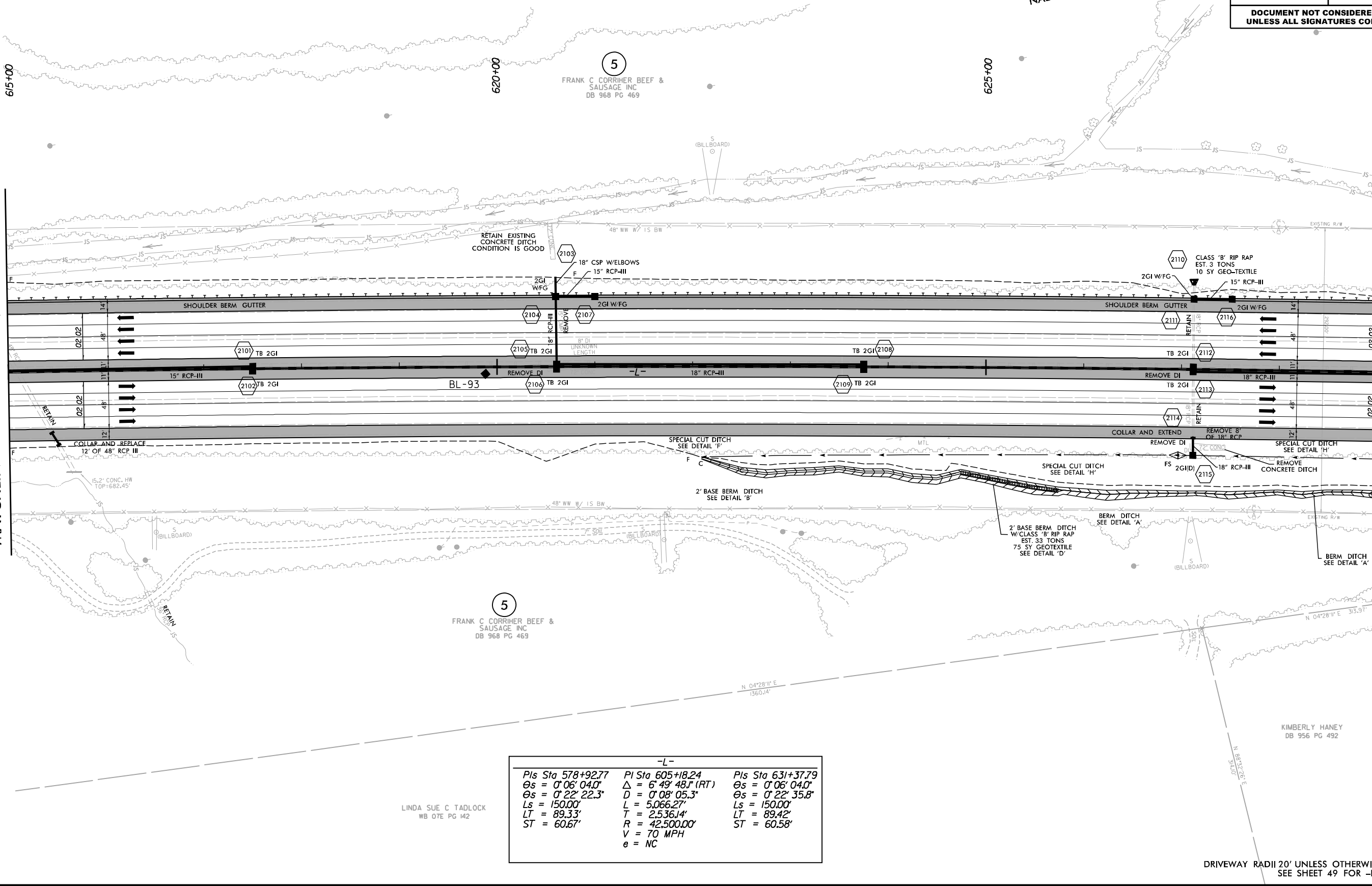
MATCHLINE -L- STA. 601+00, SEE SHEET 20

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 59 FOR -Y16- PROFILE
SEE SHEET 28-1 FOR STRUCTURE SITE 1 DETAILS

PLOT DRIVER: NCDOT_color_eng_50.plt
USER: erbrooks
DATE: 9/27/2016
FILE: North.Carolina.Dept.of.Transportation\LaneCC.I3802B.I85.Rowan\6.0.CAD.BIM\6.2.Work.In.Progress\I-3802B.NCDOT.File.Structure\Roadway\Proj\I3802B.RD_V_PSH-21.dgn

REVISIONS

MATCHLINE -L- STA. 615+00, SEE SHEET 20



NAD 83/NSRS 2007

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PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		21	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

MATCHLINE -L- STA. 629+00, SEE SHEET 22

LINDA SUE C. TADLOCK
WB OTE PG 142

-L-		
Pls Sta 578+92.77	Pls Sta 605+18.24	Pls Sta 631+37.79
$\Delta s = 0^{\circ}06'04.0''$	$\Delta = 6^{\circ}49'48.1''$ (RT)	$\Delta s = 0^{\circ}06'04.0''$
$\Delta s = 0^{\circ}22'22.3''$	$D = 0^{\circ}08'05.3''$	$\Delta s = 0^{\circ}22'35.8''$
$Ls = 150.00'$	$L = 5,066.27'$	$Ls = 150.00'$
$LT = 89.33'$	$T = 2,536.14'$	$LT = 89.42'$
$ST = 60.67'$	$R = 42,500.00'$	$ST = 60.58'$
	$V = 70$ MPH	
	$e = NC$	

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 49 FOR -L- PROFILE

KIMBERLY HANEY
DB 956 PG 492

HDR

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NAD 83/NSRS 2007

DETAIL O
LATERAL BASE DITCH
(Not to Scale)

2:1 D 2:1 1 Ft. b

Min. D = 1 Ft.
B = 2 Ft.
b = 5 Ft.

FROM STA. 633+00 -L- TO STA. 634+10 -L- RT

MATCHLINE -L- STA. 643 + 00, SEE SHEET 23

-Y17- STA. 21+42.00

$$\frac{-Y17A - POT \text{ Sta. } 10+00.00}{-Y17 - POC \text{ Sta. } 21+01.75}$$

-Y17A- PC Sta. 10+68.85

-Y17A- POT Sta. 12+70.00

-Y17A- PT Sta. 12+44.57

-Y17- PT Sta. 22+53.61

-L- SC Sta. 631+98.37

$\frac{-Y17 - POT Sta. 25+11.03}{-L - POC Sta. 635+7119}$

FRANK C CORRIHER BEEF &
SAUSAGE INC
DB 968 PG 469

FRANK C CORRIHER BEEF &
SAUSAGE INC
DB 968 PG 469

END CONSTRUCTION

- Y17- STA. 28+00.00

47

LINDA SUE C TADLOCK
WB 07E PG 142

DETAIL F

SPECIAL CUT DITCH
(Not to Scale)

		X	Y
FROM	STA. 631+00 -L- TO STA. 632+00 -L- RT	6	6
FROM	STA. 641+35 -L- TO STA. 642+36 -L- RT	6	6

☒ REINFORCED STEEPENED
FILL SLOPE

Pls Sta 578+92.77
 $\theta_s = 0^\circ 06' 04.0''$
 $\theta_s = 0^\circ 22' 22.3''$
 $L_s = 150.00'$
 $LT = 89.33'$
 $ST = 60.67'$

PI Sta 605+18.24
 $\Delta = 6^{\circ} 49' 48''$ (RT)
 $D = 0^{\circ} 08' 05.3''$
 $L = 5,066.27'$
 $T = 2,536.14'$
 $R = 42,500.00'$
 $V = 70$ MPH
 $e = NC$

Pls Sta 631+37.79
 $\theta_s = 0^\circ 06' 04.0''$
 $\theta_s = 0^\circ 22' 35.8''$
 $L_s = 150.00'$
 $LT = 89.42'$
 $ST = 60.58'$

Pls Sta 631+37.79
 $\theta_s = 0^\circ 06' 04.0''$
 $\theta_s = 0^\circ 22' 35.8''$
 $L_s = 150.00'$
 $LT = 89.42'$
 $ST = 60.58'$

PI Sta 652+60.00
 $\Delta = 20^\circ 29' 02.6"$ (RT)
 $D = 0^\circ 30' 07.8"$
 $L = 4,079.24'$
 $T = 2,061.62'$
 $R = 11,410.00'$
 $V = 70 \text{ MPH}$
 $e = 0.02$

Pls Sta 673+27.6'
 $\theta_s = 0^\circ 22' 35.8''$
 $L_s = 150.00'$
 $LT = 100.00'$
 $ST = 50.00'$

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 59 FOR -Y17- PROFILE
SEE SHEET 2B-1 FOR STRUCTURE SITE 2 DETAILS

DETAIL A
BERM DITCH
(Not to Scale)

SLOPE
STAKE

5.0'

VAR.

VAR.

5.0'

CLEARING
LIMITS

10.0' V.C.

2:1

D

1:1

Min. D = 1 Ft.

FROM STA. 627+14 TO STA. 630+00

DETAIL FF
BANK & SCOUR HOLE STABILIZATION
 (Not to Scale)

NATURAL BED ELEVATION

1.5'

GEOTEXTILE

EX. SCOUR HOLE

Type of Liner = CL Rip-Rip

FROM STA. 614 + 30 -L- TO STA. 614 + 46 -L-

DETAIL B
BERM, BASE DITCH
 (Not to Scale)

Native Ground

2:1

D

B

2:1

b

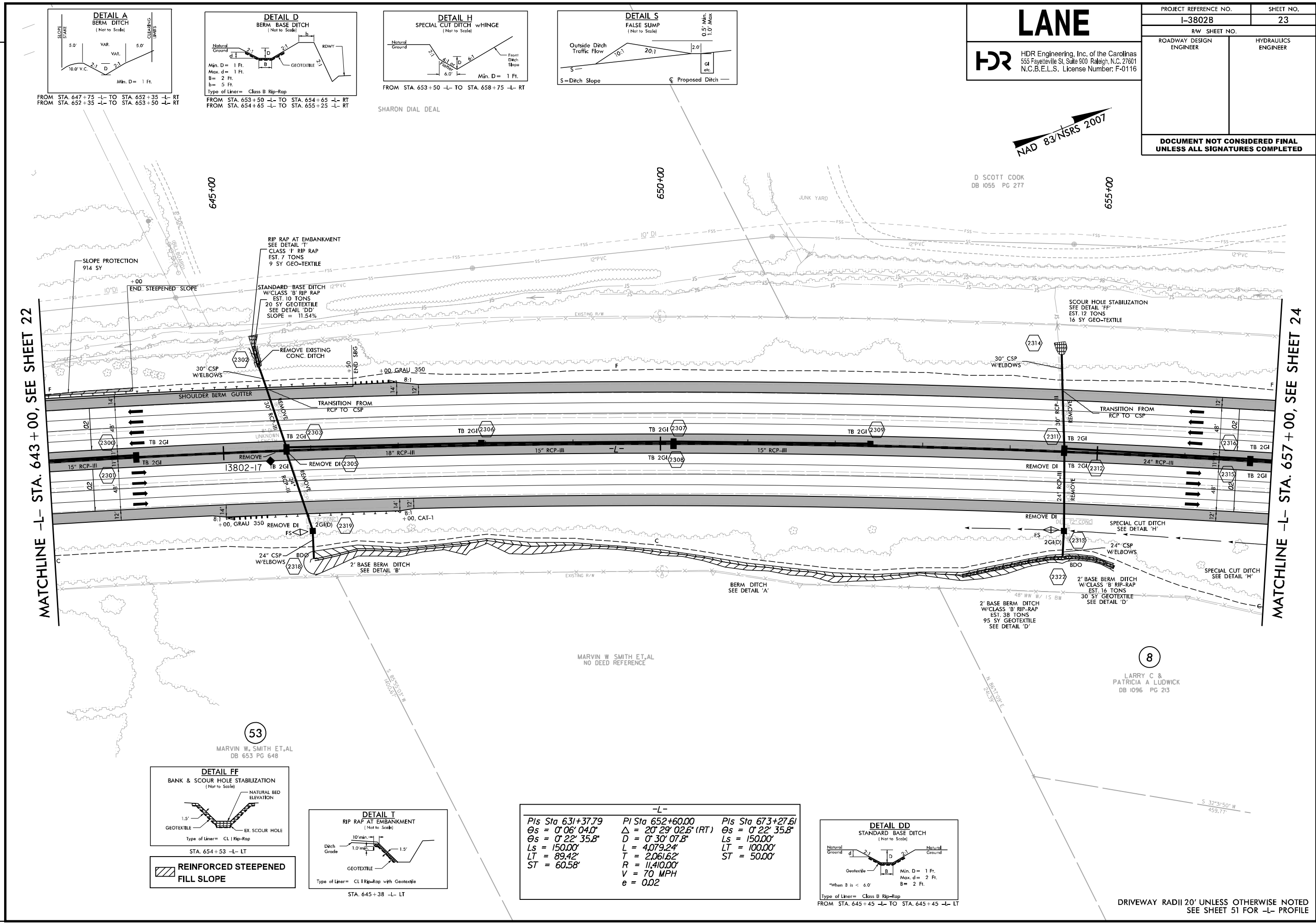
RDWY

2:1

Min. D = 1 Ft.
 B = 2 Ft.
 b = 5 Ft.

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PENTABLE: NCDOT_pshofit.tbl
USER: erbrooks
DATE: 9/27/2016
TIME: 3:31:11 PM
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REVISIONS

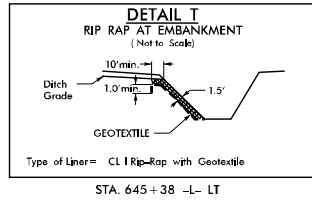
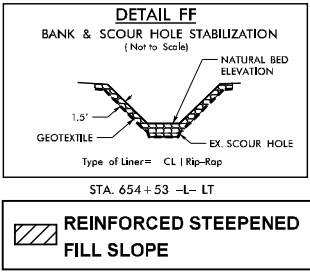
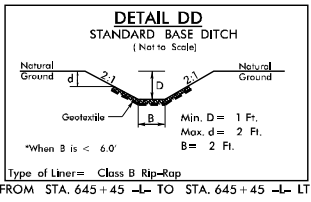


LANE

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.
I-3802B		23
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

-L-		
Pls Sta 631+37.79	Pl Sta 652+60.00	Pls Sta 673+27.61
Θs = 0° 06' 04.0"	Δ = 20° 29' 02.6" (RT)	Θs = 0° 22' 35.8"
Θs = 0° 22' 35.8"	D = 0° 30' 07.8"	Ls = 150.00'
Ls = 150.00'	L = 4,079.24'	LT = 100.00'
LT = 89.42'	T = 2,061.62'	ST = 50.00'
ST = 60.58'	R = 11,410.00'	
	V = 70 MPH	
	e = 0.02	



8
LARRY C &
PATRICIA A LUDWICK
DB 1096 PG 213

MARVIN W SMITH ET.AL
NO DEED REFERENCE

53
MARVIN W. SMITH ET.AL
DB 653 PG 648

MATCHLINE -L- STA. 643+00, SEE SHEET 22

MATCHLINE -L- STA. 657+00, SEE SHEET 24

D SCOTT COOK
DB 1055 PG 277

NAD 83/NSRS 2007

655+00

650+00

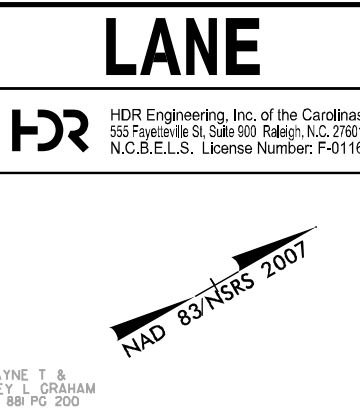
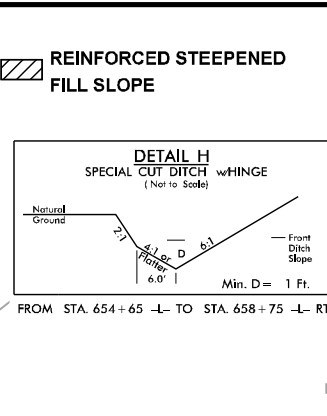
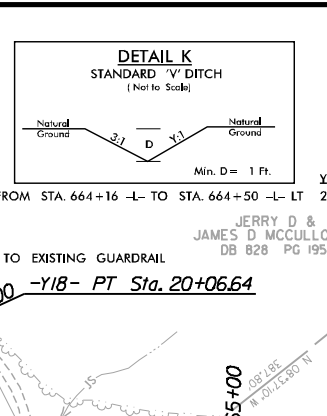
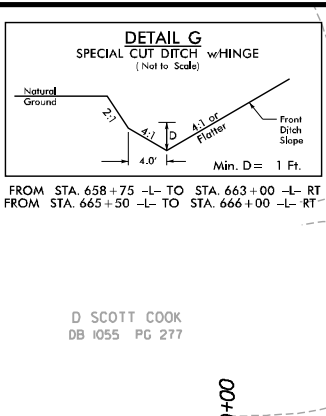
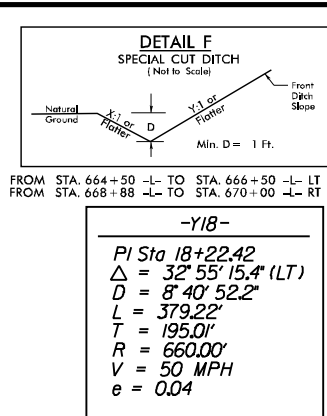
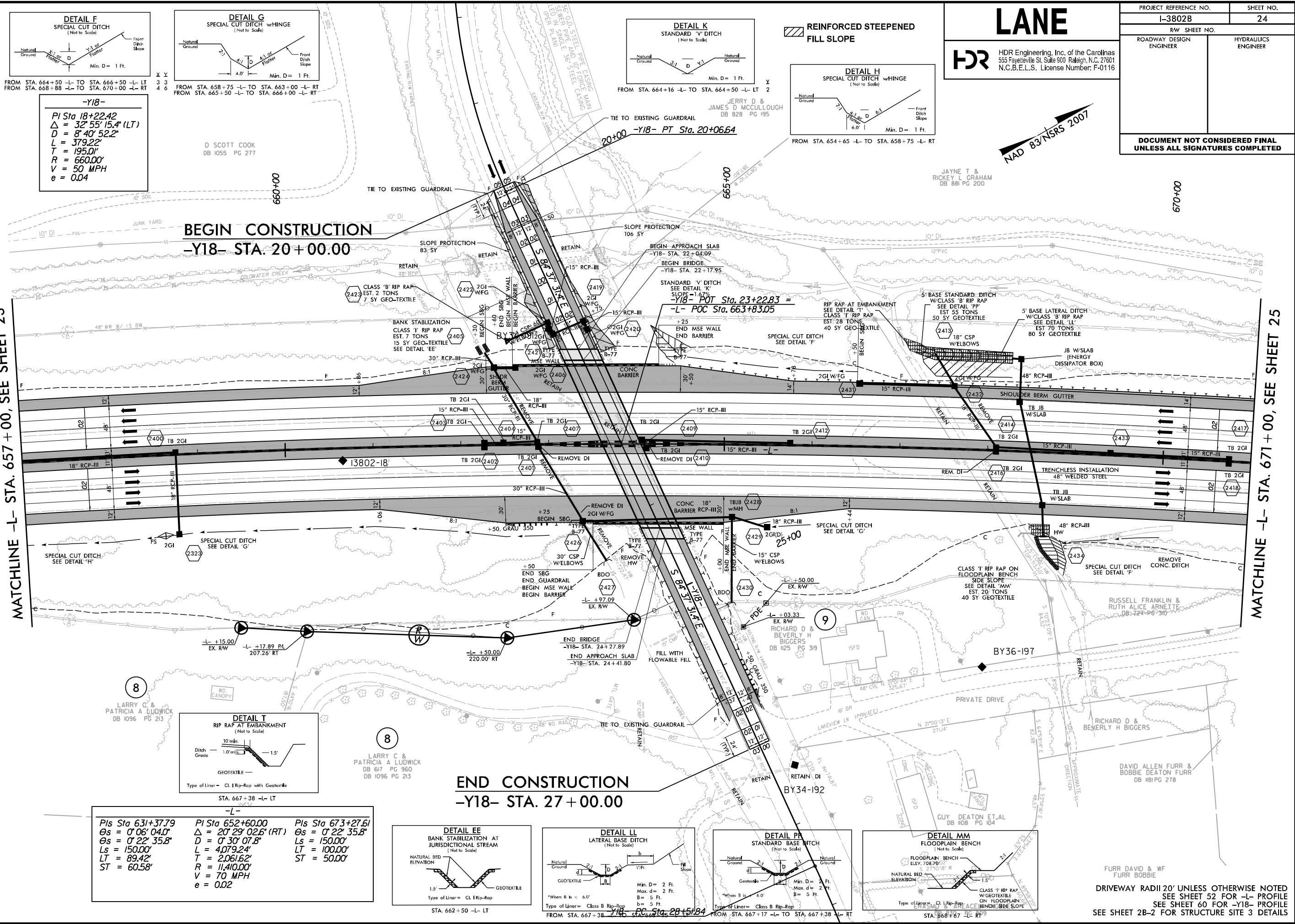
645+00

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 51 FOR -L- PROFILE

REVISIONS

MATCHLINE -L- STA. 657+00, SEE SHEET 23

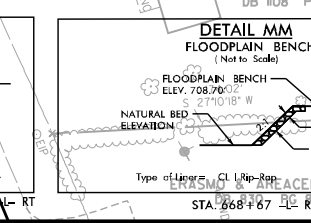
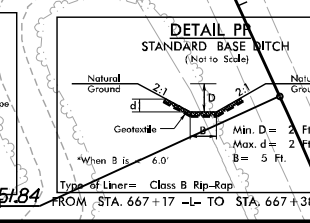
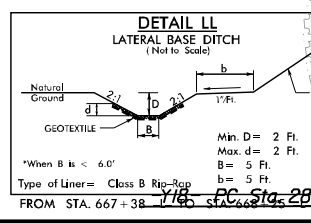
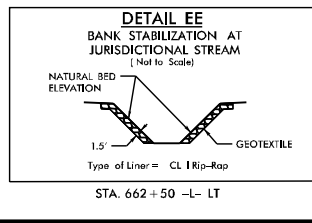
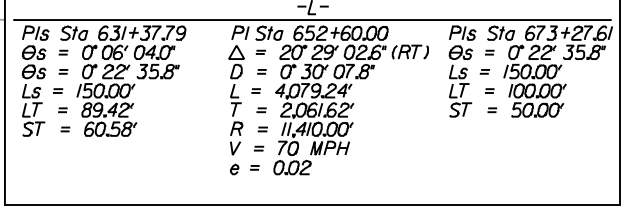
MATCHLINE -L- STA. 671+00, SEE SHEET 25



PROJECT REFERENCE NO.	SHEET NO.
I-3802B	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

BEGIN CONSTRUCTION
-Y18- STA. 20+00.00

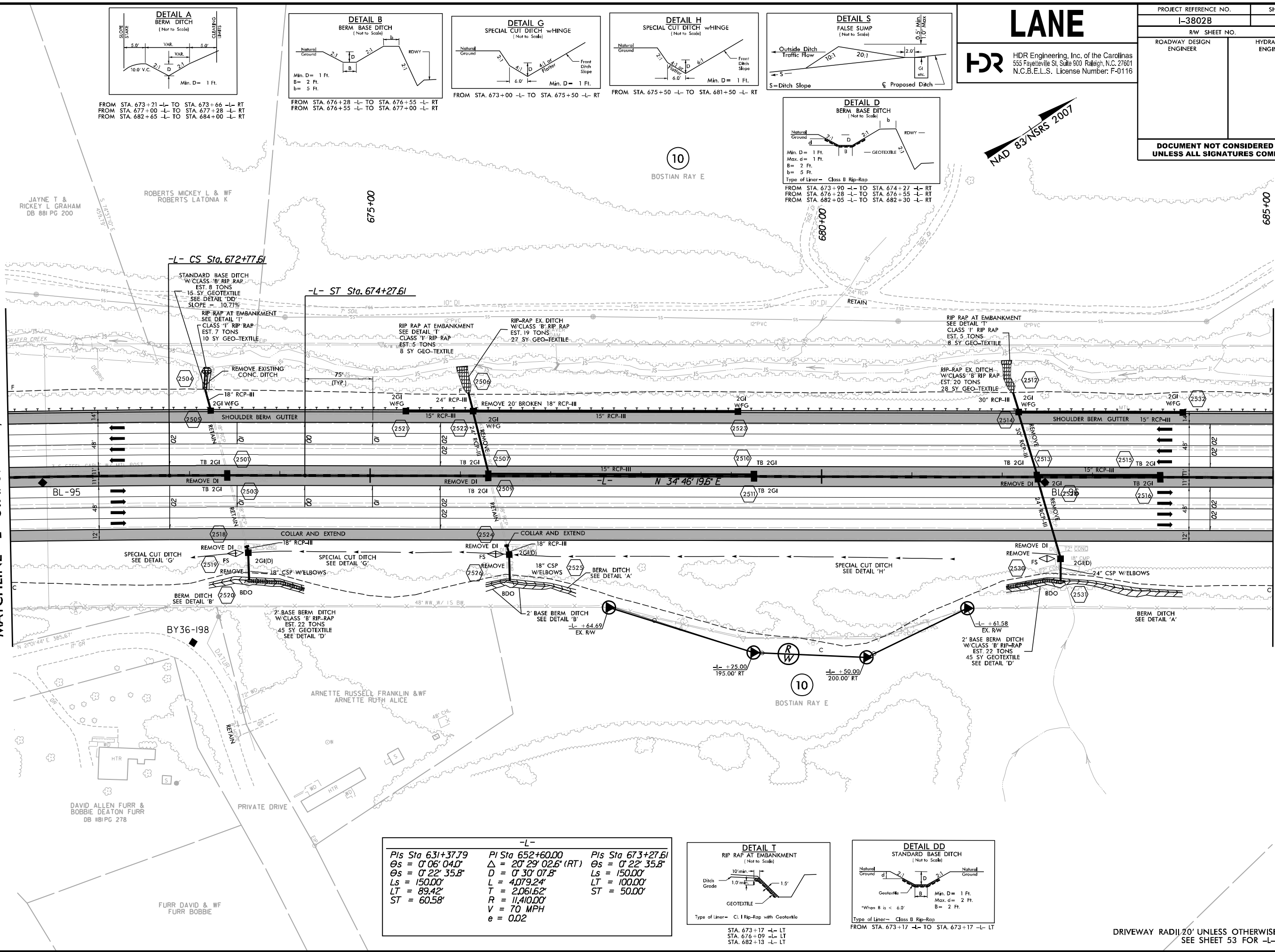
END CONSTRUCTION
-Y18- STA. 27+00.00



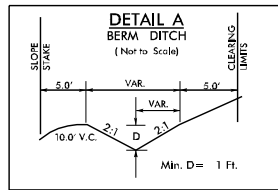
DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 60 FOR -Y18- PROFILE
SEE SHEET 2B-2 FOR STRUCTURE SITE 3 DETAILS

REVISIONS

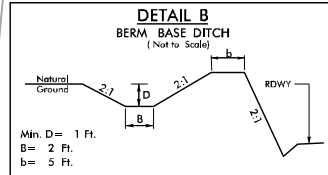
MATCHLINE -L- STA. 671+00, SEE SHEET 24



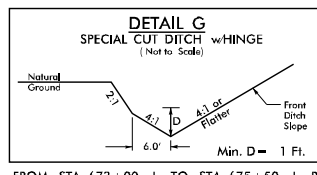
MATCHLINE -L- STA. 685+00, SEE SHEET 26



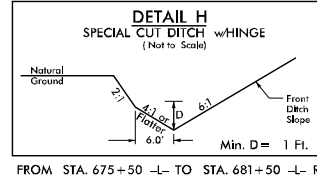
FROM STA. 673+21 -L- TO STA. 673+66 -L- RT
FROM STA. 677+00 -L- TO STA. 677+28 -L- RT
FROM STA. 682+65 -L- TO STA. 684+00 -L- RT



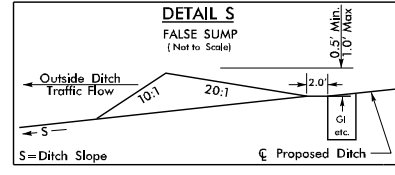
FROM STA. 676+28 -L- TO STA. 676+55 -L- RT
FROM STA. 676+55 -L- TO STA. 677+00 -L- RT



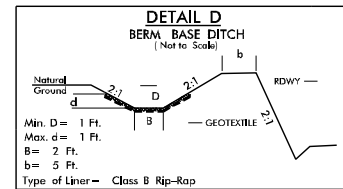
FROM STA. 673+00 -L- TO STA. 675+50 -L- RT



FROM STA. 675+50 -L- TO STA. 681+50 -L- RT



S=Ditch Slope



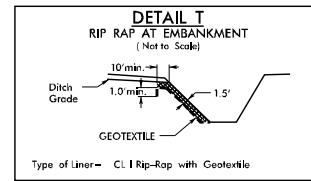
FROM STA. 673+90 -L- TO STA. 674+27 -L- RT
FROM STA. 676+28 -L- TO STA. 676+55 -L- RT
FROM STA. 682+05 -L- TO STA. 682+30 -L- RT

LANE

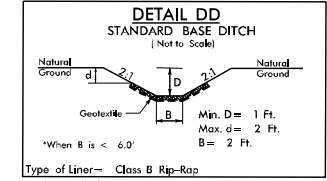
HDR HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		25	
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L-		
Pis Sta 631+37.79	PI Sta 652+60.00	Pis Sta 673+27.61
Os = 0'06'04.0"	Δ = 20'29'02.6" (RT)	Os = 0'22'35.8"
Os = 0'22'35.8"	D = 0'30'07.8"	Ls = 150.00'
Ls = 150.00'	L = 4079.24'	LT = 100.00'
LT = 89.42'	T = 2,061.62'	ST = 50.00'
ST = 60.58'	R = 11,410.00'	
	V = 70 MPH	
	e = 0.02	

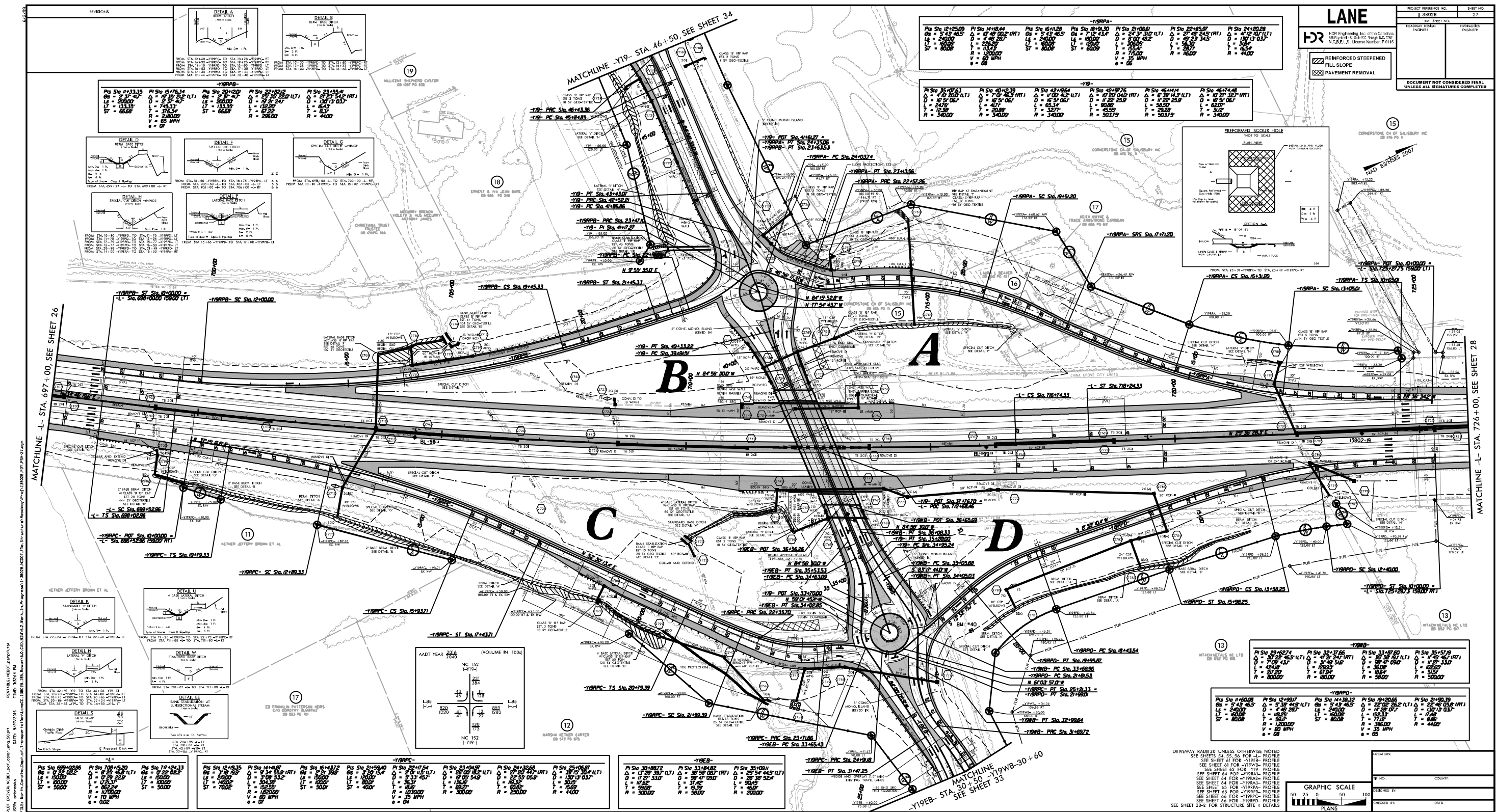


STA. 673+17 -L- LT
STA. 676+09 -L- LT
STA. 682+13 -L- LT



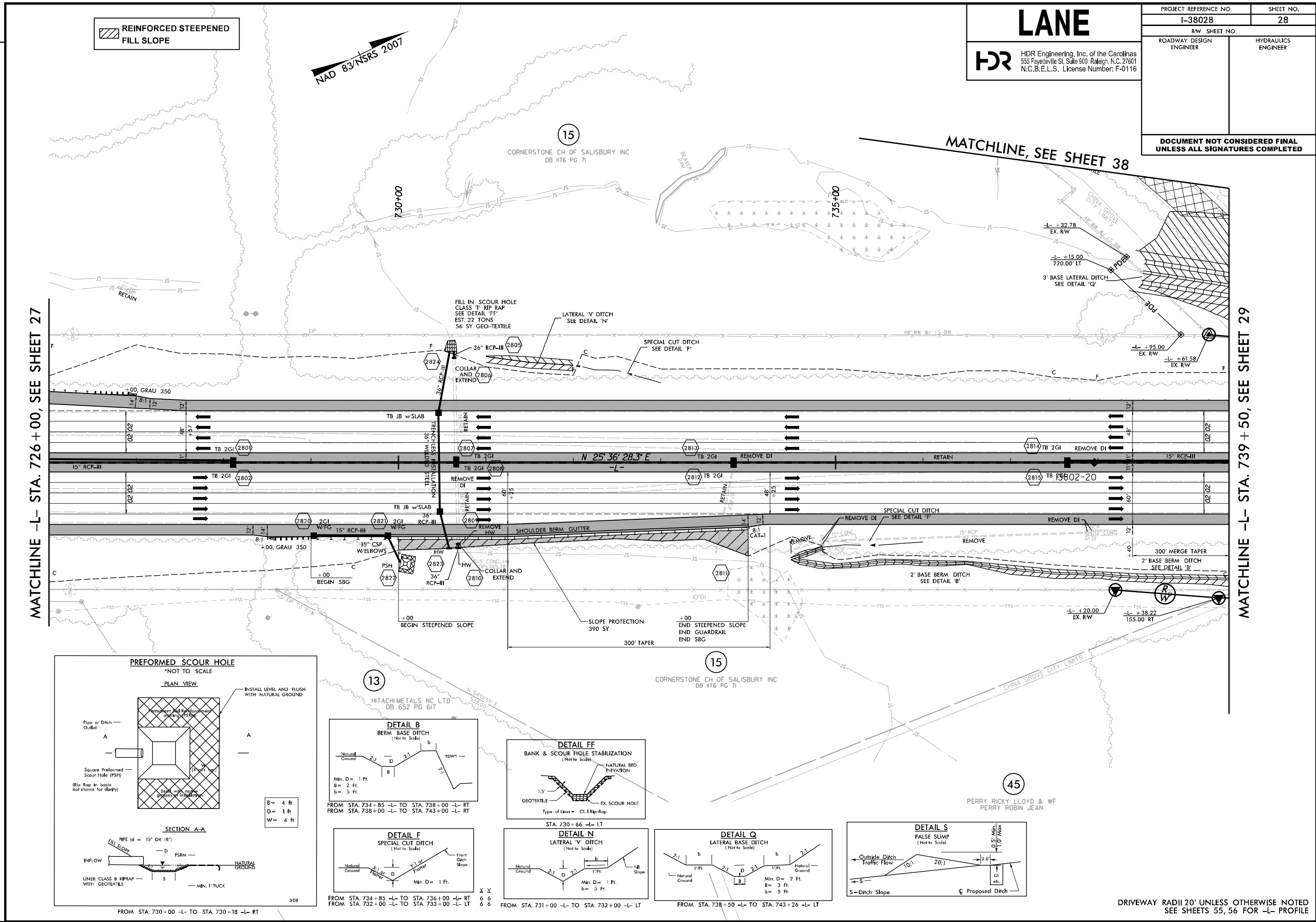
FROM STA. 673+17 -L- TO STA. 673+17 -L- LT

DRIVEWAY RADIUS 20' UNLESS OTHERWISE NOTED
SEE SHEET 53 FOR -L- PROFILE



PLOT DRIVER: NCDOT_color_eng_50.plt
USER: erbrooks
PENTABLE: NCDOT_color_eng_50.plt
DATE: 9/27/2016
TIME: 3:32:28 PM
FILE: North.Carolina.Dept.of.Transportation\LaneCC.I3802B.I85.Rowan\6.0.CAD.BIM\6.2.Work.In.Progress\I-3802B.NCDOT.File.Structure\Roadway\Proj\I3802B.RD.V.PSH-28.dgn

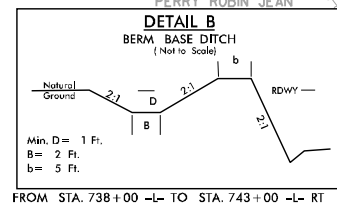
REVISIONS



REVISIONS

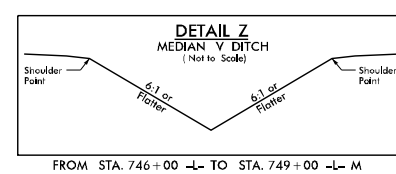
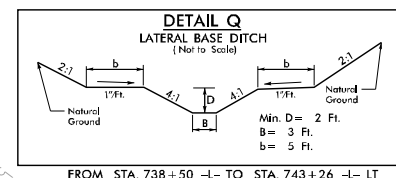
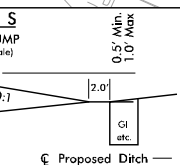
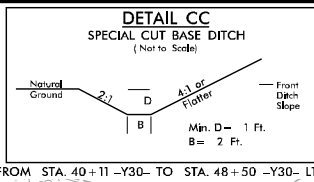
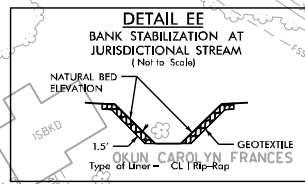
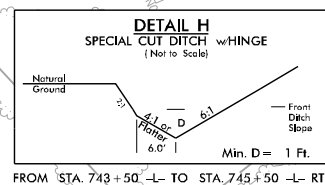
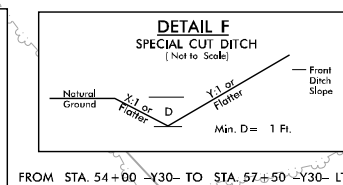
MATCHLINE -L- STA. 739+50, SEE SHEET 29

MATCHLINE -Y30- STA. 44+30
SEE SHEET 38



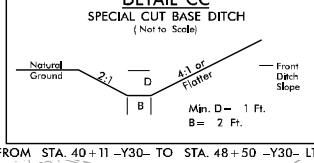
-L-

Pls Sta 742+71J8	Pls Sta 751+99.6I	Pls Sta 761+66.5S
$\Delta_s = 1^\circ 29' 59.6''$	$\Delta_s = 16^\circ 27' 12.7''$ (RT)	$\Delta_s = 1^\circ 29' 59.6''$
Ls = 300.00'	D = 0' 59' 59.7"	Ls = 300.00'
LT = 200.01'	LT = 1,645.47'	LT = 200.01'
ST = 100.01'	R = 828.44'	ST = 100.01'
	T = 5730.00'	
	V = 70 MPH	
	e = 0.04	



45

PERRY RICKY LLOYD & WF
PERRY ROBIN JEAN



-Y30-
PI Sta 54+57.42
 $\Delta = 13^\circ 58' 05.2''$ (LT)
D = 1' 46' 45.7"
L = 785.00'
T = 394.46'
R = 3,220.00'
V = 40 MPH
e = RC

PAVEMENT REMOVAL

LANE

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N.C.B.E.L.S. License Number: F-0116

44
BRINKLEY LINDA SUE
DB 1027 PG 724

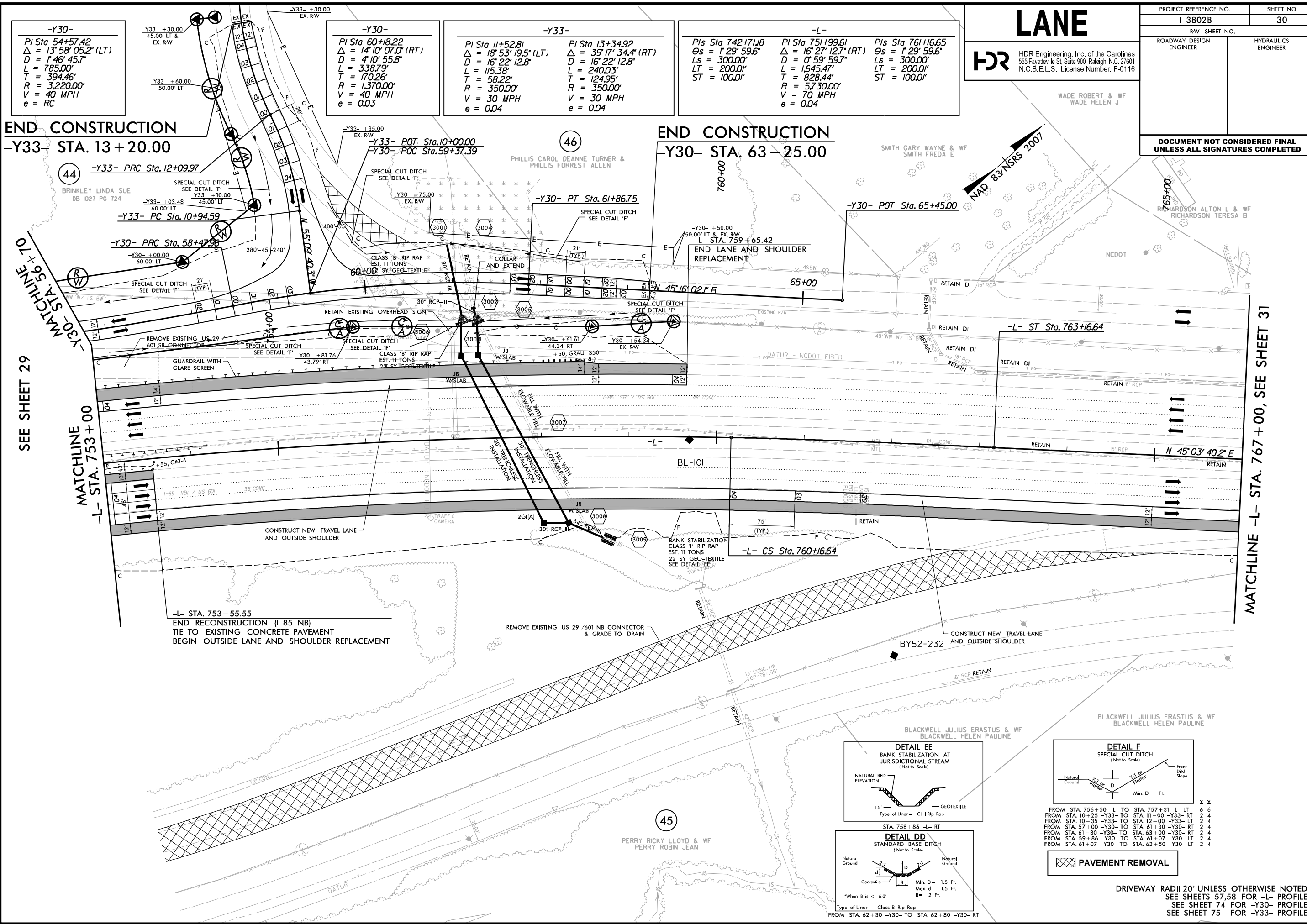
-L- STA. 750+39.39
END RECONSTRUCTION (I-85 SB)
TIE TO EXISTING CONCRETE PAVEMENT
BEGIN OUTSIDE LANE AND SHOULDER REPLACEMENT

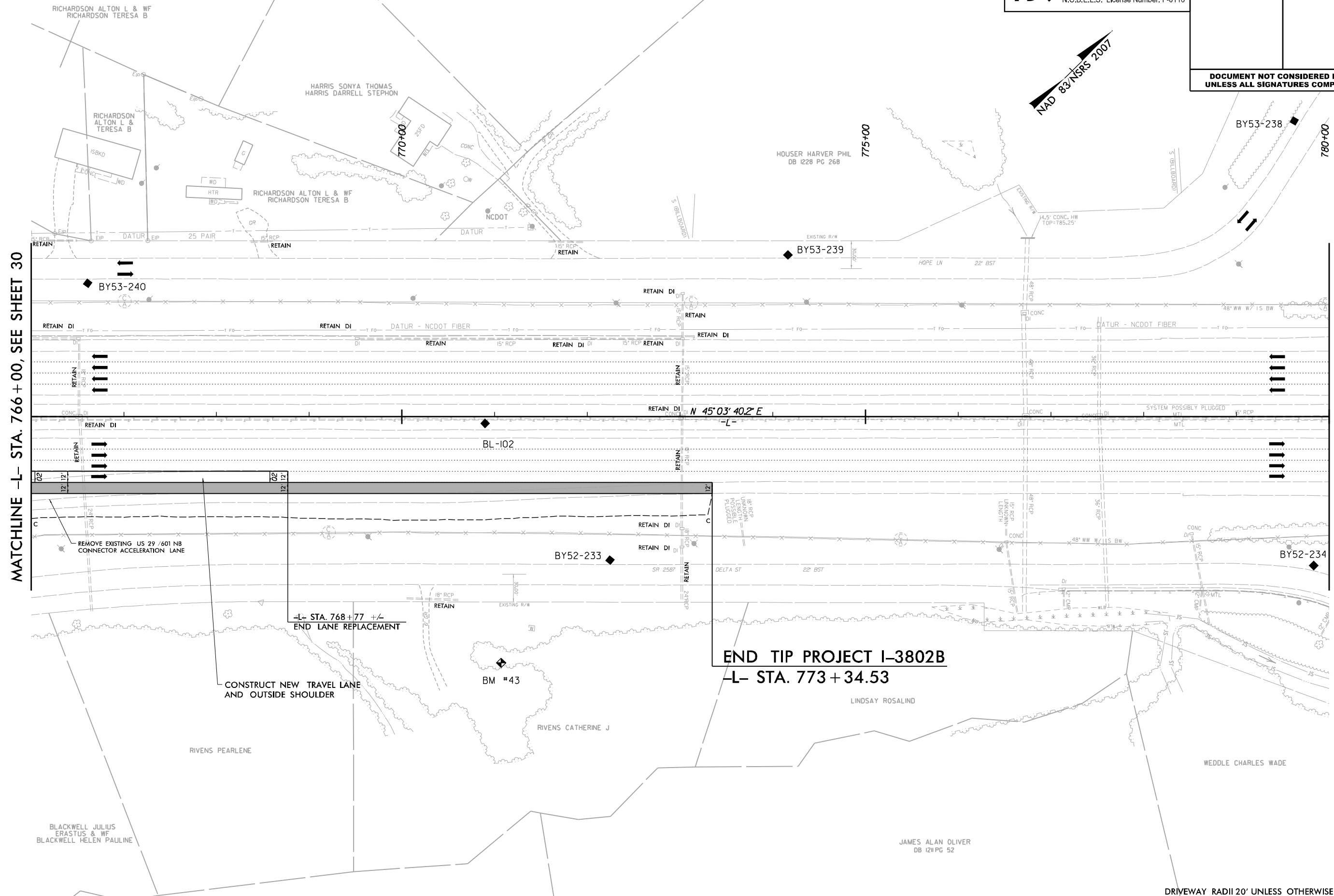
END WEDGE AND OVERLAY
-Y30- STA. 55+25.00

MATCHLINE -Y30- STA. 56+70
MATCHLINE -L- STA. 753+00
SEE SHEET 30

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 57, 58 FOR -L- PROFILE
SEE SHEET 71 FOR -Y22- PROFILE

REVISIONS



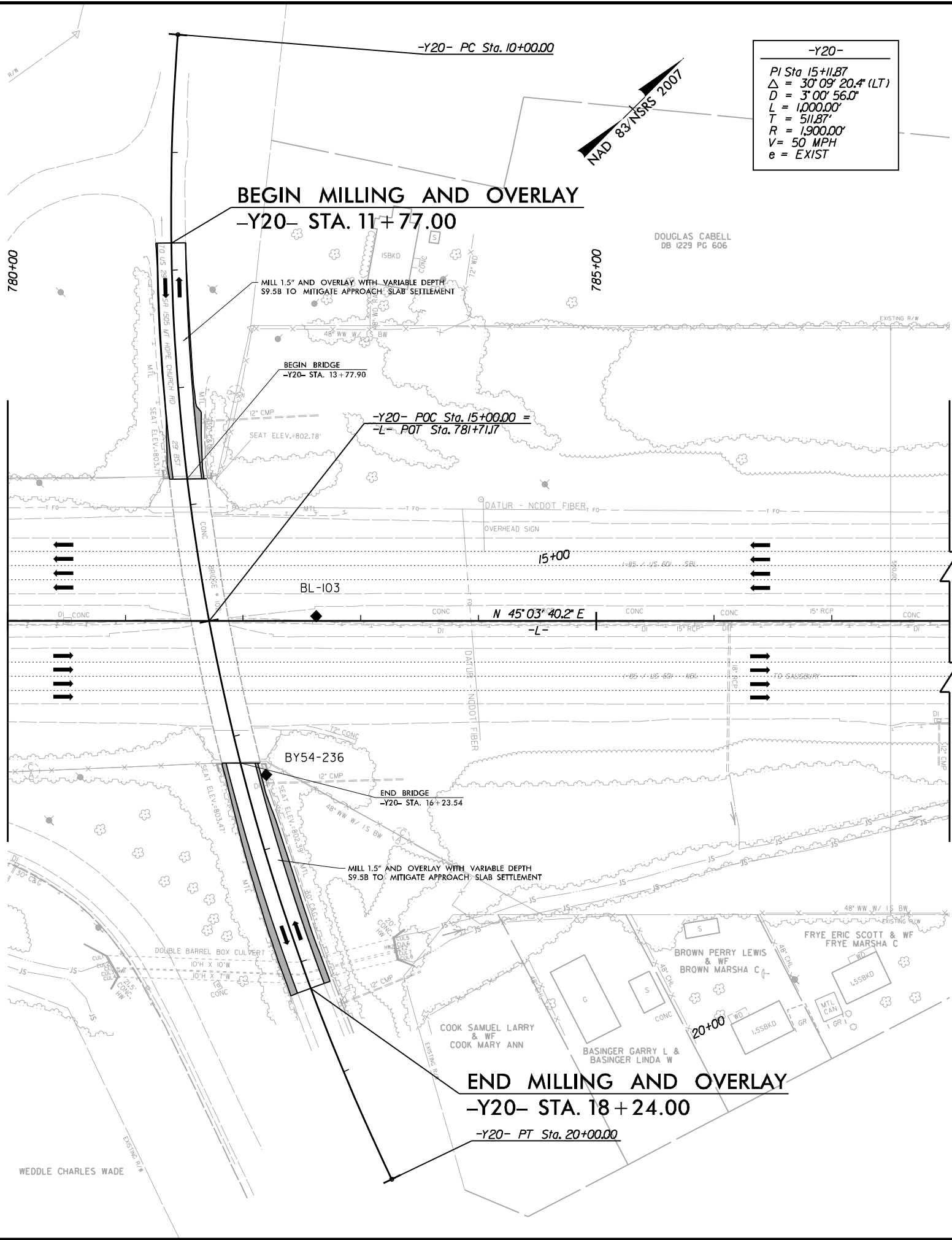


DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED

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REVISIONS

MATCHLINE -L- STA. 780+00, SEE SHEET 31



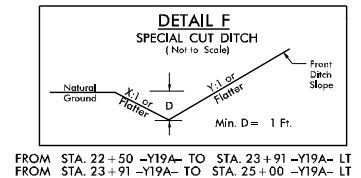
LANE



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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

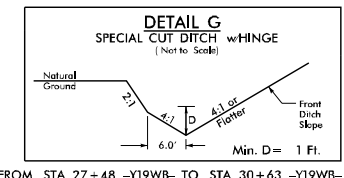
PROJECT REFERENCE NO.		SHEET NO.	
I-3802B		32	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS

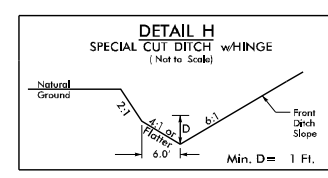


FROM STA. 22+50 -Y19A- TO STA. 23+91 -Y19A- LT
FROM STA. 23+91 -Y19A- TO STA. 25+00 -Y19A- RT

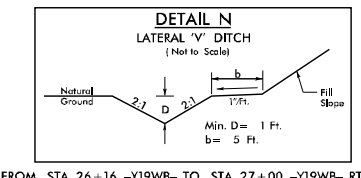
X Y
4 6
4 4



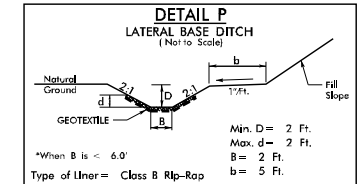
FROM STA. 27+48 -Y19WB- TO STA. 30+63 -Y19WB- RT



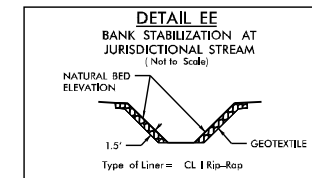
FROM STA. 24+00 -Y19A- TO STA. 25+50 -Y19A- RT



FROM STA. 26+16 -Y19WB- TO STA. 27+00 -Y19WB- RT
FROM STA. 26+69 -Y19EB- TO STA. 27+90 -Y19EB- LT



FROM STA. 25+90 -Y19WB- TO STA. 26+16 -Y19WB- RT



STA. 26+65 -Y19EB- LT

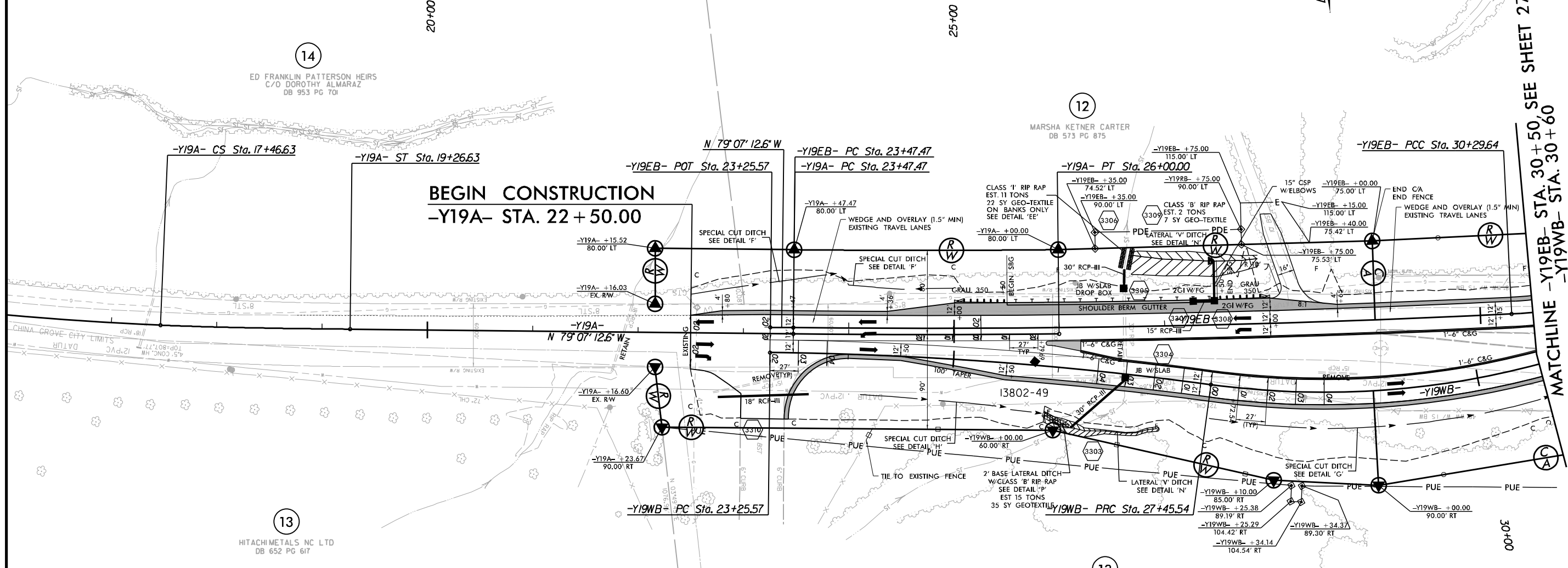
LANE

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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		33
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

NAD 83 NTS 2007

STA. 30+50, SEE SHEET 27
MATCHLINE -Y19WB- STA. 30+60

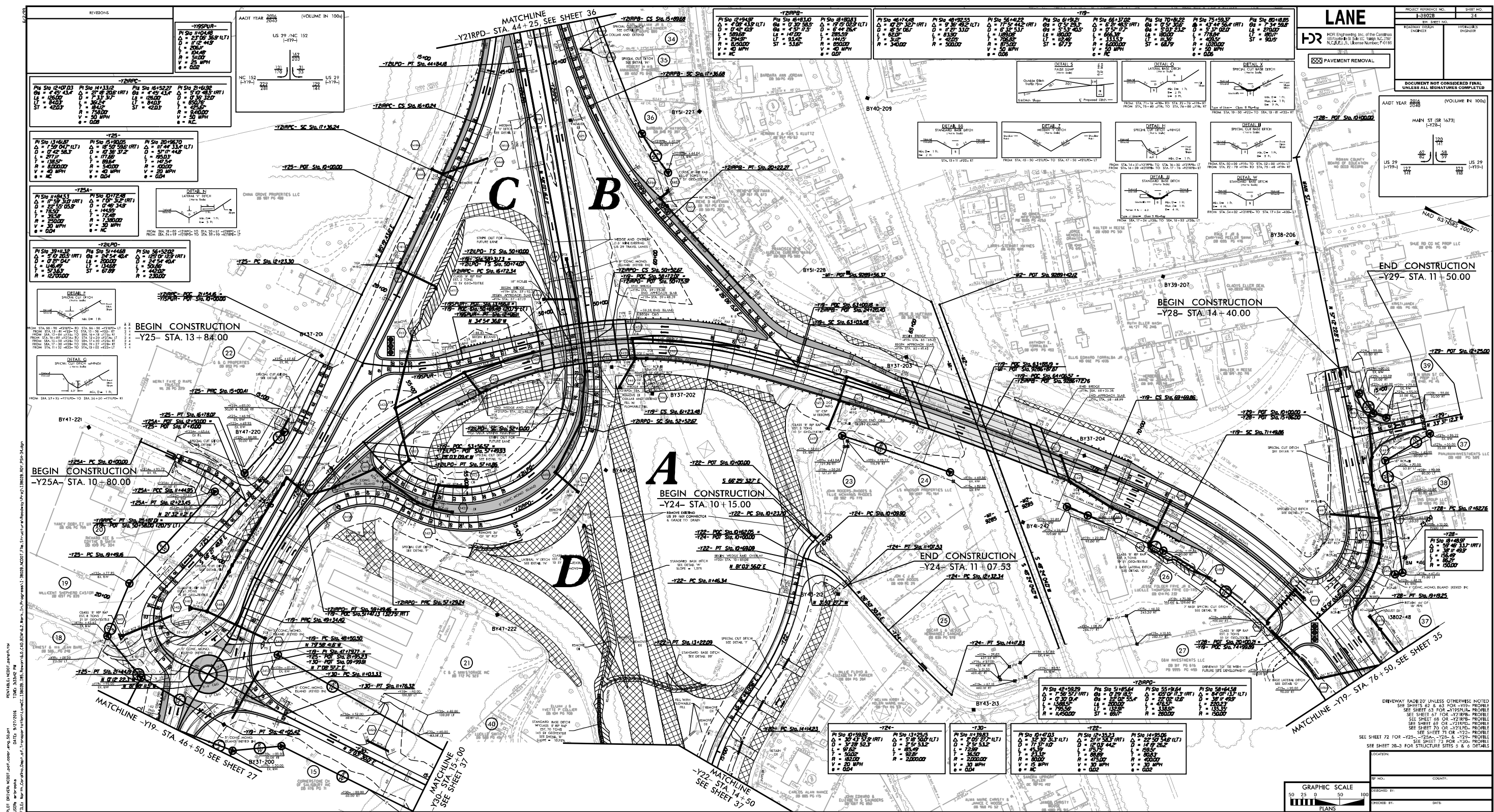


-Y19-		
PI Sta 13+75.39	PIs Sta 18+06.64	PI Sta 24+73.74
$\Delta = 14' 45'' 04.8''$ (LT)	$\Delta s = 1' 46'' 41.3''$	$\Delta = 1' 15'' 29.5''$ (LT)
$D = 1' 58'' 32.6''$	$Ls = 180.00'$	$D = 0' 29'' 53.6''$
$L = 746.63'$	$LT = 120.01'$	$L = 252.53'$
$T = 375.39'$	$ST = 60.01'$	$T = 126.27'$
$R = 2,900.00'$		$R = 11,500.00'$
$V = 50$ MPH		
$e = EXIST$		

-Y19EB-	
PI Sta 26+88.65	PI Sta 30+88.72
$\Delta = 3' 24'' 01.9''$ (LT)	$\Delta = 13' 28'' 39.7''$ (LT)
$D = 0' 29'' 54.5''$	$D = 1' 27'' 33.0''$
$L = 682.17'$	$L = 117.62'$
$T = 341.19'$	$T = 59.08'$
$R = 11,494.00'$	$R = 500.00'$
$V = 60$ MPH	
$e = NC$	

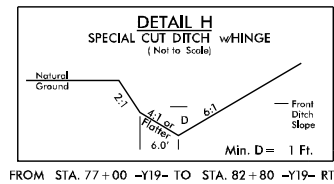
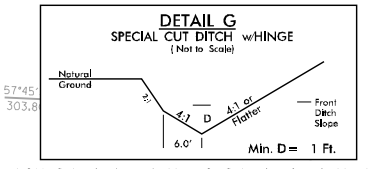
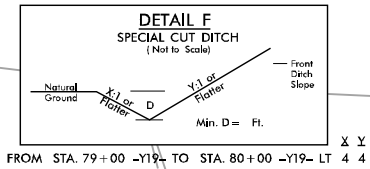
-Y19WB-	
PI Sta 25+35.82	PI Sta 29+62.74
$\Delta = 7' 04'' 38.1''$ (RT)	$\Delta = 30' 22'' 46.5''$ (LT)
$D = 1' 41'' 06.6''$	$D = 7' 09'' 43.1''$
$L = 419.97'$	$L = 424.18'$
$T = 210.25'$	$T = 217.20'$
$R = 3,400.00'$	$R = 800.00'$
$V = 60$ MPH	
$e = 04$	

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 60 FOR -Y19A- PROFILE
SEE SHEET 61 FOR -Y19EB- PROFILE
SEE SHEET 61 FOR -Y19WB- PROFILE



REVISIONS

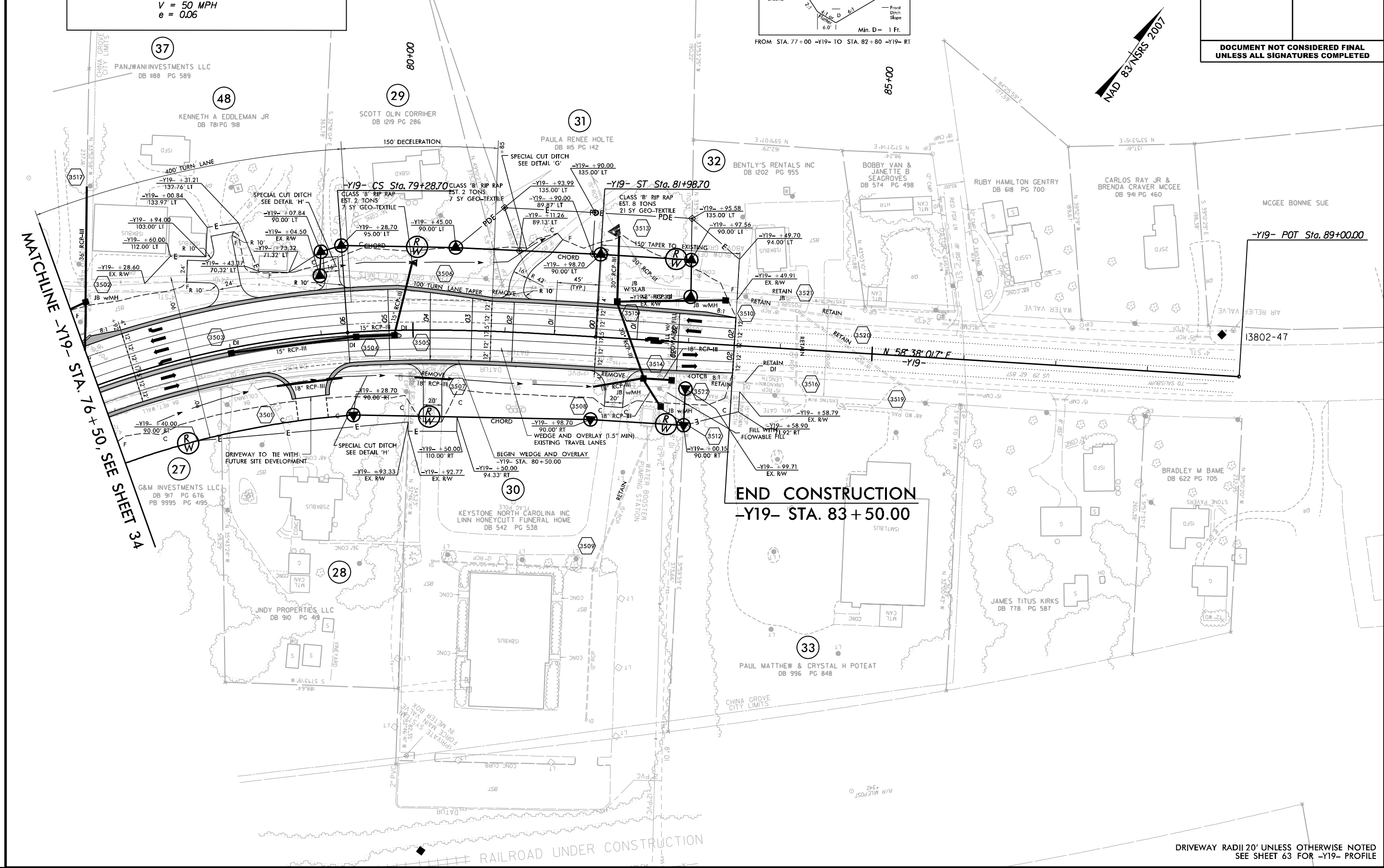
-Y19-		
Pis Sta 70+81.22	Pi Sta 75+59.37	Pis Sta 80+18.85
$\theta_s = 0^\circ 51' 30.6''$	$\Delta = 43^\circ 44' 56.4''$ (RT)	$\theta_s = 7^\circ 34' 59.8''$
$D = 5^\circ 03' 23.2''$	$L = 778.84'$	$L_s = 270.00'$
$L_s = 180.00'$	$T = 409.51'$	$LT = 180.7'$
$LT = 111.36'$	$R = 1,020.00'$	$ST = 90.15'$
$ST = 68.79'$	$V = 50$ MPH	
	$e = 0.06$	



LANE

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PROJECT REFERENCE NO.		SHEET NO.
I-3802B		35
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 63 FOR -Y19- PROFILE

HDR

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~~-Y21RPD- STA. 33 + 60.00~~

-Y2IRPD PC Sta. 34+63.73

-Y21LPD- STA. 40 + 00.00

-Y2IRPC- POT Sta. 10+00.00
-Y2ILPD- POC Sta. 40+00.00 (0.00' RT)

-Y2IRPC- CS Sta. 11+23.00

-Y2IRPC- SC Sta. 12+49.00

PI Sta 10+61.50
 $\Delta = 0^\circ 33' 17.7''$
 $D = 0^\circ 27' 04.1''$
 $L = 123.00'$
 $T = 61.50'$
 $R = 12,700.00'$
 $V = 50 \text{ MPH}$
 $e = N.C.$

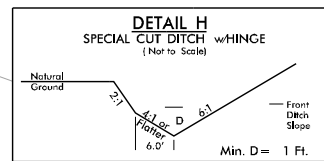
Pls Sta 12+07.03
 $\theta_s = 4^\circ 45' 43.4''$
 $L_s = 126.00'$
 $LT = 84.03'$
 $ST = 42.03'$

$PI\ Stn\ 14+33.12$
 $\Delta = 27^{\circ}18'20''$
 $D = 7^{\circ}33'31.12''$
 $L = 361.24'$
 $T = 184.12'$
 $R = 758.00'$
 $V = 50\ MPH$
 $e = 0.08$

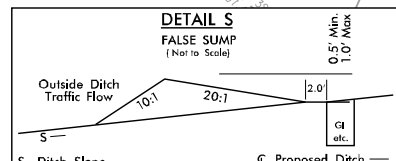
Pls Sta 16+52.27
 $\theta_s = 4^\circ 45' 43.4''$
 $L_s = 126.00'$
 $LT = 84.03'$
 $ST = 42.03'$

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 67 FOR -Y21RPB- PROFILE
SEE SHEET 68 FOR -Y21RPC- PROFILE
SEE SHEET 69 FOR -Y21RPD- PROFILE
SEE SHEET 70 FOR -Y21LPD- PROFILE

MATCHLINE -Y21RPD- STA. 44+25, SEE SHEET 34



FROM STA. 33+60 -Y21RPD- TO STA. 34+96 -Y21RPD- LT
FROM STA. 14+31 -Y21RPB- TO STA. 16+30 -Y21RPB- LT



S=Ditch Slope ☞ Proposed Ditch —

NAD 83/NSRS 2007

PLOT DRIVER: NC00T_pdf_color_eng_50.plt
PENTABLE: NC00T_pshpfl.tbl
USER: erbrooks
DATE: 9/27/2016
TIME: 3:34:09 PM
FILE: North_Carolina_Dept_of_Transportation\LaneC.I3802B.I85.Rowan\6.0.CAD_BIM\6.2.Work.In.Progress\I-3802B.NC00T.File.Structure\Roadway\Proj\I3802B.RDY.PSH-36.dgn

H2R

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N.C.B.E.L.S. License Number: F-0116

 PAVEMENT REMOVAL

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

DFA
{

DETAIL F
SPECIAL CUT DITCH
 (Not to Scale)

Natural Ground

Y:1 or Flatter

D

Y:1 or Flatter

Front Ditch Slope

Min. D = 1 Ft.

DETAIL

(Not to Scale)

Natural Ground

2:1

D

4:1 or Flatter

B

Min. D = 1 Ft.

B = 4 Ft.

MATCHLINE
-Y22- STA. 14+50
SEE SHEET 34

MATCHLINE -Y30- STA. 30+30, SEE SHEET 38

8
12
50
MATCHLINE
-Y30- STA. 15+00
SEE SHEET 34

DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEET 71 FOR -Y22- PROFILE
SEE SHEET 71 FOR -Y23- PROFILE
SEE SHEET 73 FOR -Y30- PROFILE

PLOT DRIVER: NC00T_pdf_color_eng_50.plt
PENTABLE: NC00T_pshpfl.tbl
DATE: 9/27/2016
TIME: 3:34:22 PM
USER: erbrooks
FILE: North_Carolina_Dept_of_Transportation\LaneCC.I3802B.185.Rowan\6.0.CAD.BIM\6.2.Work.In.Progress\I-3802B.NC00T_File_Structure\Roadway\Proj\I3802B.RDY.PSH-37.dgn

REVISIONS

NAD 83/NSRS 2007

DETAIL T
RIP-RAP AT EMBANKMENT
 (Not to Scale)

10' min.
 1.0' min.
 1'

GEOTEXTILE

Type of Liner = CL Rip-Rap with Geotextile

STA. 18+50 -Y30- LT

-Y23-

PI Sta 10+81.01
 $\Delta = 5^{\circ} 23' 36.3" (RT)$
 $D = 44^{\circ} 04' 25.2"$
 $L = 116.61'$
 $T = 62.56'$
 $R = 130.00'$
 $V = 25 \text{ MPH}$
 $e = 0.02$

-Y22-

PI Sta 17+84.22
 $\Delta = 34^{\circ} 46' 33.6"$ (RT)
 $D = 22^{\circ} 55' 05.9"$
 $L = 151.74'$
 $T = 78.29'$
 $R = 250.00'$
 $V = 30$ MPH
 $e = 0.04$

IRENE W HENDERSON
NO DEED REFERENCE

DETAIL F
SPECIAL CUT DITCH
 (Not to Scale)

— Natural Ground —
 — 1/2" or Plaster —
 — 1:1 or Plaster —
 — Front Ditch Slope —

Min. D = 1 Ft.

	X	Y
FROM STA. 13 + 81 -Y22- TO STA. 17 + 00 -Y22- RT	2	4
FROM STA. 16 + 62 -Y22- TO STA. 17 + 58 -Y22- RT	2	4
FROM STA. 10 + 35 -Y23- TO STA. 12 + 00 -Y23- RT	2	4
FROM STA. 20 + 73 -Y30- TO STA. 26 + 66 -Y30- LT	2	4

DETAIL S
FALSE SUMP
 (Not to Scale)

Outside Ditch Traffic Flow

10:1 20:1

2.0'

0.5' Min.
1.0' Max.

CI etc.

S = Ditch Slope

Proposed Ditch

DETAIL AA
SPECIAL CUT BASE DITCH
(Not to Scale)

8

2:1

Natural Ground

D

4:1 or flatter

Front Ditch Slope

Min. D = 1 Ft.
B = 4 Ft.

FROM STA. 28+00 -Y30- TO STA. 33+75 -Y30- (1)

15

CORNERSTONE CH OF SALISBURY INC
DB 1176 PG 71

DETAIL EE

WATER QUALITY

Type of Liner= CL I Rip-Rap

-Y30-

PI Sta 21+47.57
 $\Delta = 48^{\circ} 10' 31.0''$ (RT)
 $D = 6^{\circ} 09' 39.0''$
 $L = 781.96'$
 $T = 415.77'$
 $R = 930.00'$
 $V = 50$ MPH
 $e = 0.04$

PI Sta 33+21.18
 $\Delta = 8^{\circ} 10' 00.8''$ (LT)
 $D = 0^{\circ} 30' 23.7''$
 $L = 1,612.12'$
 $T = 807.43'$
 $R = 11,310.00'$
 $V = 50$ MPH
 $e = NC$

-Y22- POT Sta. 18+88.85
-Y30- POC Sta. 20+42.38

-Y30- +20.00
100.00' RT

-Y30- +60.00
100.00' RT

E1 BANK STABILIZATION
CLASS 'I' RIP RAP
EST. 11 TONS
22 SY GEO-TEXTILE

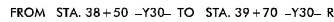
SEE DETAIL 'EE'

$\frac{-Y30- +75.00}{115.00' RT}$

15
CORNERSTONE CH OF

DB 1176 PC

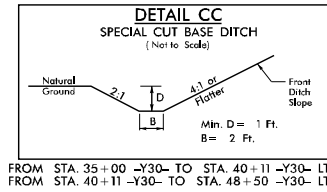




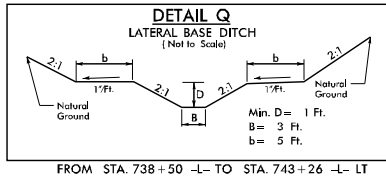
X	Y
2	4

-Y30-

PI Sta 33+21.8
 $\Delta = 8^{\circ} 10' 00.8''$ (LT)
 $D = 0^{\circ} 30' 23.7''$
 $L = 1,612.12'$
 $T = 807.43'$
 $R = 11,310.00'$
 $V = 50$ MPH
 $e = NC$

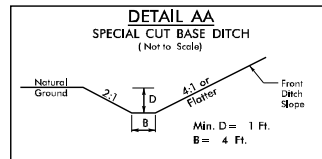


FROM STA. 35+00 -Y30- TO STA. 40+11 -Y30- LT
FROM STA. 40+11 -Y30- TO STA. 48+50 -Y30- LT

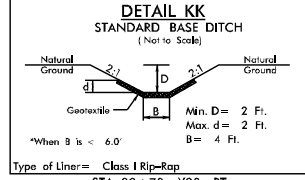


FROM STA. 738+50 -L- TO STA. 743+26 -L- LT

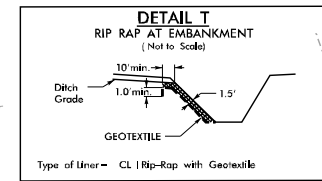
BILLIE R STRIPLING
DB 479 PG 232



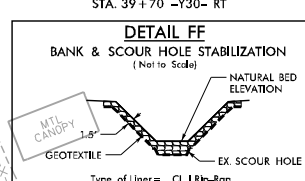
FROM STA. 28+00 -Y30- TO STA. 33+75 -Y30- LT



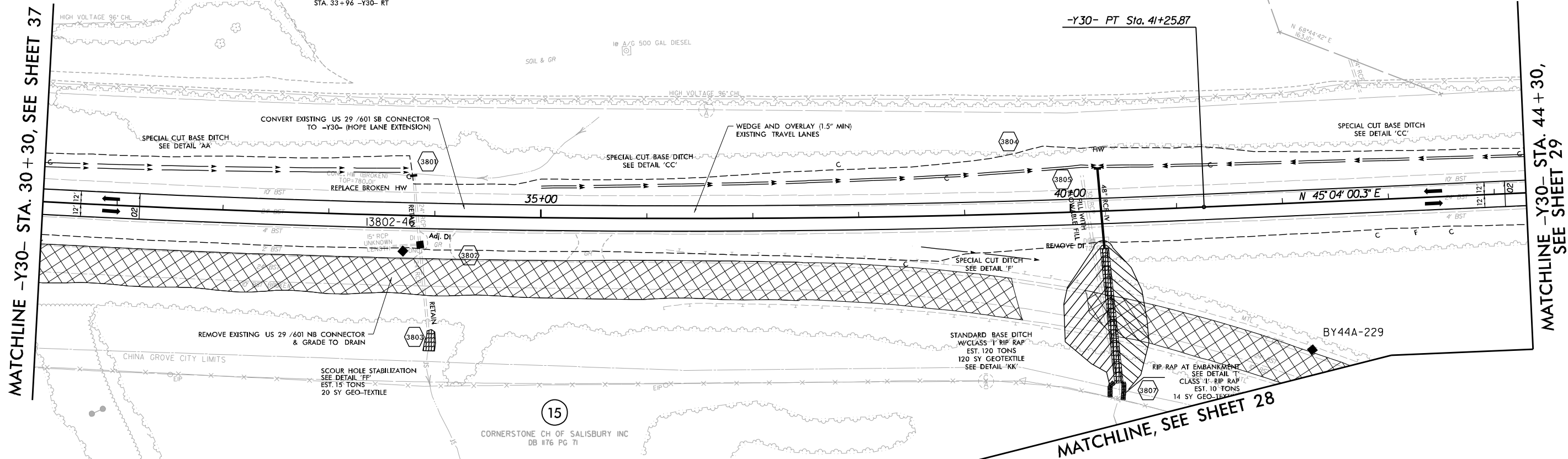
Type of Liner= Class I Rip-Rap



STA. 40+37 -Y30- RT



Type of Error = CE Trip-Rup



DRIVEWAY RADII 20' UNLESS OTHERWISE NOTED
SEE SHEETS 73, 74 FOR -Y30- PROFILE